

THE RANCH PLAN PLANNED COMMUNITY
PLANNING AREAS 3 AND 4 RUNOFF MANAGEMENT PLAN

Michael Baker
INTERNATIONAL

TECHNICAL APPENDIX G.6

UH Expected Value – Complex Model

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Analysis prepared by:

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***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 126 *
* 2-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EVO2126C.DAT
TIME/DATE OF STUDY: 14:42 06/18/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 5.382 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.595; LOW LOSS FRACTION = 0.931
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.16; 30-MINUTE = 0.30; 1-HOUR = 0.41
3-HOUR = 0.77; 6-HOUR = 1.15; 24-HOUR = 2.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.341; 30-MINUTE = 0.392; 1-HOUR = 0.432
3-HOUR = 0.782; 6-HOUR = 0.902; 24-HOUR = 0.943

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.141 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.348; LOW LOSS FRACTION = 0.638
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.28; 1-HOUR = 0.37
3-HOUR = 0.62; 6-HOUR = 0.85; 24-HOUR = 1.44
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.341; 30-MINUTE = 0.392; 1-HOUR = 0.432
3-HOUR = 0.782; 6-HOUR = 0.902; 24-HOUR = 0.943

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing values for depth, outflow, and storage.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<

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*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 312.40; DOWNSTREAM ELEVATION (FT) = 286.00
CHANNEL LENGTH (FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.292 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.509; LOW LOSS FRACTION = 0.862
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.28; 1-HOUR = 0.37
3-HOUR = 0.62; 6-HOUR = 0.85; 24-HOUR = 1.44
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.341; 30-MINUTE = 0.392; 1-HOUR = 0.432
3-HOUR = 0.782; 6-HOUR = 0.902; 24-HOUR = 0.943

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

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INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

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*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.431 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.587; LOW LOSS FRACTION = 0.979
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.28; 1-HOUR = 0.37
3-HOUR = 0.62; 6-HOUR = 0.85; 24-HOUR = 1.44
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.341; 30-MINUTE = 0.392; 1-HOUR = 0.432
3-HOUR = 0.782; 6-HOUR = 0.902; 24-HOUR = 0.943

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

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>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 11

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<

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* AES FLOODSCx PROGRAM RESULTS SUMMARY *

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|INPUT FILENAME: [EV02126C.DAT]

Page: 1 of |

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|UPSTREAM DOWNSTREAM| | UPSTREAM DOWNSTREAM|

TIME (2) TO | MAX. STORAGE| |

| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS) |

PEAK (HR) | MODELED (AF) | FOOTNOTES |

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| 10100.00 119.00| Subarea (UH) Added to Stream #1| 0.0 520.1|

20.417 | | |

| 119.00 12603.00| Convex Routing: Stream #1| 520.1 518.3|

20.500 | | |

| 810.00 809.00| Subarea (UH) Added to Stream #2| 0.0 19.4|

16.167 | | |

| 809.00 12603.00| Flow-Through Basin: Stream #2| 19.4 1.6|

22.833 | 5.19| |

| 12603.00 12603.00| Stream #2 Added to: Stream #1| 518.3 519.9|

20.500 | | |

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-----+-----

| 12603.00 12603.00| Zero Out: Stream #2| 1.6 0.0|

| | |

| 12603.00 126.00| Convex Routing: Stream #1| 519.9 518.6|

20.583 | | |

| 920.00 905.00| Subarea (UH) Added to Stream #2| 0.0 18.9|

16.333 | | |

| 905.00 126.00| Flow-Through Basin: Stream #2| 18.9 1.5|

24.167 | 7.02| |

| 126.00 126.00| Stream #2 Added to: Stream #1| 518.6 520.1|

20.583 | | |

-----+-----

-----+-----

| 126.00 126.00| Zero Out: Stream #2| 1.5 0.0|

| | |

| 600.00 126.00| Subarea (UH) Added to Stream #2| 0.0 0.8|

16.500 | | |

| 126.00 126.00| Stream #2 Added to: Stream #1| 520.1 520.3|

20.583 | | |

| 126.00 126.00| Zero Out: Stream #2| 0.8 0.0|

| | |

| 126.00 126.00| View: Stream #1| 520.3|

20.583 | 561.15| 3 |

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|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT

INTERVAL |

| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF

THE DESIGN STORM |

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END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Analysis prepared by:

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***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 127 *
* 2-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EVO2127C.DAT
TIME/DATE OF STUDY: 09:59 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 5.382 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.595; LOW LOSS FRACTION = 0.931
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.17; 30-MINUTE = 0.31; 1-HOUR = 0.43
3-HOUR = 0.81; 6-HOUR = 1.20; 24-HOUR = 2.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.141 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.348; LOW LOSS FRACTION = 0.638
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.51
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing values for depth, outflow, and storage.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<

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*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.292 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.509; LOW LOSS FRACTION = 0.862
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.51
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

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INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.431 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.587; LOW LOSS FRACTION = 0.979
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.51
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 286.00; DOWNSTREAM ELEVATION (FT) = 258.00
CHANNEL LENGTH (FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.299 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.292; LOW LOSS FRACTION = 0.536
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.51
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 16.600
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.203 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.517
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.51
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941


```

*****
FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
-----
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 5.95 0.280
3 2.00 22.18 1.150
4 3.00 46.43 3.090
5 4.00 75.05 6.150
6 5.00 105.54 10.350
7 6.00 127.29 15.380
8 7.00 138.99 20.860
9 8.00 150.45 26.500
10 9.00 161.55 32.360
11 10.00 697.61 38.410
12 11.00 1666.99 44.700
-----
*****
FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
-----
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
-----
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
-----
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6
-----

```

3D-3

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
-----
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
-----
WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.380 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.251; LOW LOSS FRACTION = 0.478
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.51
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
-----
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 0.01 7.430

```

3C-1

```

3      2.00      0.02      15.170
4      3.00      2.70      23.230
5      4.00      4.69      31.610
6      5.00      6.04      40.320
7      6.00     10.72      49.360
8      7.00     17.77      58.730
9      8.00     424.53     68.440
10     9.00     1169.03    78.500
11    10.00    2113.61    88.500

```

```

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

```

```

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: Weir to
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN 3C-3
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

```

```

*****
FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

```

```

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.556 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.486; LOW LOSS FRACTION = 0.820
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.51
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

```

```

-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

3C-3

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-5

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

```

```

*****
FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

```

```

*****STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

```

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO**

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

```

```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.541 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.592; LOW LOSS FRACTION = 0.985
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.51
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 11
-----
>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<
=====

```

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV02127C.DAT]

Page: 1 of 1

UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
10100.00	119.00	Subarea (UH) Added to Stream #1	0.0	562.2
20.417				
119.00	12603.00	Convex Routing: Stream #1	562.2	559.0
20.500				
810.00	809.00	Subarea (UH) Added to Stream #2	0.0	20.8
16.250				
809.00	12603.00	Flow-Through Basin: Stream #2	20.8	1.7
23.167	5.47			
12603.00	12603.00	Stream #2 Added to: Stream #1	559.0	560.6
20.500				
12603.00	12603.00	Zero Out: Stream #2	1.7	0.0
12603.00	126.00	Convex Routing: Stream #1	560.6	558.4
20.583				
920.00	905.00	Subarea (UH) Added to Stream #2	0.0	19.5
16.333				
905.00	126.00	Flow-Through Basin: Stream #2	19.5	1.6
24.250	7.37			
126.00	126.00	Stream #2 Added to: Stream #1	558.4	559.9
20.583				
126.00	126.00	Zero Out: Stream #2	1.6	0.0
600.00	126.00	Subarea (UH) Added to Stream #2	0.0	0.9
16.500				
126.00	126.00	Stream #2 Added to: Stream #1	559.9	560.1
20.583				
126.00	126.00	Zero Out: Stream #2	0.9	0.0
126.00	12720.50	Convex Routing: Stream #1	560.1	558.9
20.750				
430.00	420.00	Subarea (UH) Added to Stream #2	0.0	37.4
16.333				
420.00	420.50	Flow-Through Basin: Stream #2	37.4	1.7
24.333	0.53			
420.50	427.00	Flow-Through Basin: Stream #2	1.7	1.1
26.167	0.18			
413.00	425.00	Subarea (UH) Added to Stream #3	0.0	18.4
16.250				

425.00	426.00	Flow-Through Basin: Stream #3	18.4	1.6
23.000	0.08			
426.00	427.00	Stream #3 Added to: Stream #2	1.1	2.2
24.167				
427.00	427.00	Zero Out: Stream #3	1.6	0.0
427.00	12720.50	Stream #2 Added to: Stream #1	558.9	558.9
20.750				
12720.50	12720.50	Zero Out: Stream #2	2.2	0.0
12720.50	12741.00	Convex Routing: Stream #1	558.9	558.1
20.833				
320.00	339.00	Subarea (UH) Added to Stream #2	0.0	83.0
16.417				
339.00	340.00	Flow-Through Basin: Stream #2	83.0	0.0
25.333	11.81			
339.00	372.00	Flowby Basin Model: Stream #2	0.0	0.0
25.333				
390.00	372.00	Subarea (UH) Added to Stream #4	0.0	7.1
16.583				
372.00	372.00	Stream #4 Added to: Stream #3	0.0	7.1
16.583				
372.00	372.00	Zero Out: Stream #4	7.1	0.0
372.00	373.00	Flow-Through Basin: Stream #3	7.1	1.5
19.833	2.84			
372.00	372.10	Flowby Basin Model: Stream #3	1.5	1.5
19.833				
373.00	373.00	Zero Out: Stream #5	0.0	0.0
373.00	340.00	Stream #3 Added to: Stream #2	0.0	1.5
19.917				
340.00	340.00	Zero Out: Stream #3	1.5	0.0
340.00	12741.00	Stream #2 Added to: Stream #1	558.1	559.7
20.833				
12741.00	12741.00	Zero Out: Stream #2	1.5	0.0
12741.00	127.00	Convex Routing: Stream #1	559.7	559.5
20.917				
12710.00	127.00	Subarea (UH) Added to Stream #2	0.0	2.9
16.583				

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV02127C.DAT ]
Page: 2 of |
-----+-----+
|UPSTREAM DOWNSTREAM| | UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE| |
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR) | MODELED (AF)| FOOTNOTES |
-----+-----+
| 127.00 127.00| Stream #2 Added to: Stream #1| 559.5 560.0|
20.917 | | |
| 127.00 127.00| Zero Out: Stream #2| 2.9 0.0|
| | | |
| 127.00 127.00| View: Stream #1| 560.0|
20.917 | 604.41| 3 |
-----+-----+
|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT
INTERVAL |
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF
THE DESIGN STORM |
-----+

```

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
(c) Copyright 1989-2013 Advanced Engineering Software (aes)
Ver. 20.0 Release Date: 06/01/2013 License ID 1264

Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 133C *
* 2-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV0233CC.DAT
TIME/DATE OF STUDY: 09:53 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 5.382 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.595; LOW LOSS FRACTION = 0.931
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.17; 30-MINUTE = 0.33; 1-HOUR = 0.44
3-HOUR = 0.84; 6-HOUR = 1.25; 24-HOUR = 2.20
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.141 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.348; LOW LOSS FRACTION = 0.638
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.30; 1-HOUR = 0.40
3-HOUR = 0.67; 6-HOUR = 0.92; 24-HOUR = 1.56
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

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BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing values for depth, outflow, and storage.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.292 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.509; LOW LOSS FRACTION = 0.862
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.30; 1-HOUR = 0.40
3-HOUR = 0.67; 6-HOUR = 0.92; 24-HOUR = 1.56
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

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INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.431 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.587; LOW LOSS FRACTION = 0.979
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.30; 1-HOUR = 0.40
3-HOUR = 0.67; 6-HOUR = 0.92; 24-HOUR = 1.56
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 286.00; DOWNSTREAM ELEVATION(FT) = 258.00
CHANNEL LENGTH(FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00

=====

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.299 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.292; LOW LOSS FRACTION = 0.536
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.30; 1-HOUR = 0.40
3-HOUR = 0.67; 6-HOUR = 0.92; 24-HOUR = 1.56
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 16.600
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.203 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.517
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.30; 1-HOUR = 0.40
3-HOUR = 0.67; 6-HOUR = 0.92; 24-HOUR = 1.56
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-3

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	5.95	0.280
3	2.00	22.18	1.150
4	3.00	46.43	3.090
5	4.00	75.05	6.150
6	5.00	105.54	10.350
7	6.00	127.29	15.380
8	7.00	138.99	20.860
9	8.00	150.45	26.500
10	9.00	161.55	32.360
11	10.00	697.61	38.410
12	11.00	1666.99	44.700

FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<<

FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<<
=====

FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<<
=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<<
=====

WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.380 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.251; LOW LOSS FRACTION = 0.478
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.30; 1-HOUR = 0.40
3-HOUR = 0.67; 6-HOUR = 0.92; 24-HOUR = 1.56
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<<
=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3C-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	7.430

```

3      2.00      0.02      15.170
4      3.00      2.70      23.230
5      4.00      4.69      31.610
6      5.00      6.04      40.320
7      6.00     10.72      49.360
8      7.00     17.77      58.730
9      8.00     424.53     68.440
10     9.00     1169.03    78.500
11    10.00     2113.61    88.500

```

```

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

```

```

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-3

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

```

```

*****
FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

```

```

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.556 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.486; LOW LOSS FRACTION = 0.820
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.30; 1-HOUR = 0.40
3-HOUR = 0.67; 6-HOUR = 0.92; 24-HOUR = 1.56
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

```

```

-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3

```

3C-3

```

THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:

```

```

DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-5

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

```

```

*****
FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

```

```

*****STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

```

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

```

```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====

WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.541 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.592; LOW LOSS FRACTION = 0.985
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.30; 1-HOUR = 0.40
3-HOUR = 0.67; 6-HOUR = 0.92; 24-HOUR = 1.56
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

```

```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.427 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.434; LOW LOSS FRACTION = 0.737
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.30; 1-HOUR = 0.40
3-HOUR = 0.67; 6-HOUR = 0.92; 24-HOUR = 1.56
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

5-2

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.256 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.553; LOW LOSS FRACTION = 0.923
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.30; 1-HOUR = 0.40
3-HOUR = 0.67; 6-HOUR = 0.92; 24-HOUR = 1.56
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.274 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.253; LOW LOSS FRACTION = 0.494
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.30; 1-HOUR = 0.40
3-HOUR = 0.67; 6-HOUR = 0.92; 24-HOUR = 1.56
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Table with 3 columns: DATA PAIR NUMBER, Qcenter (CFS), Qpass (CFS). Rows 1-5 showing flow data.

B Diversion Structure

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-10 showing basin data.

FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-4

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-23 showing basin data.

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 1.262 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.487; LOW LOSS FRACTION = 0.830
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.30; 1-HOUR = 0.40
3-HOUR = 0.67; 6-HOUR = 0.92; 24-HOUR = 1.56
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: **GBD Side**
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN **Weir**
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8

>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<

```

=====
***STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====

*****
****ERROR-STREAM 4 CONTAINS NO INFORMATION (EMPTY).
      PROCESS IS NEGATED.
*****

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====

*****
****ERROR-STREAM 4 CONTAINS NO INFORMATION (EMPTY).
      PROCESS IS NEGATED.
*****

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01      CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 427.51; DOWNSTREAM ELEVATION(FT) = 315.00
CHANNEL LENGTH(FT) = 9760.05      MANNING'S FACTOR = 0.040

```

```

=====
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE    13305.00 TO NODE    133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01      CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 315.00; DOWNSTREAM ELEVATION(FT) = 212.00
CHANNEL LENGTH(FT) = 6877.24      MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    133.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.947 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.449; LOW LOSS FRACTION = 0.750
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.30; 1-HOUR = 0.40
3-HOUR = 0.67; 6-HOUR = 0.92; 24-HOUR = 1.56
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE    133.00 TO NODE    133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE    133.00 TO NODE    133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE    133.00 TO NODE    133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

```

```
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 11
>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<
=====
```

```
-----+-----
|                                     * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV0233CC.DAT ]
Page: 1 of |
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
|UPSTREAM DOWNSTREAM|                                     | UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE|                                     |
| NODE #     NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR)   | MODELED (AF)| FOOTNOTES |
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 10100.00  119.00| Subarea (UH) Added to Stream #1|      0.0    555.9|
20.417 | |
| 119.00    12603.00| Convex Routing:      Stream #1|    555.9    554.3|
20.500 | |
| 810.00    809.00| Subarea (UH) Added to Stream #2|      0.0    19.1|
16.167 | |
| 809.00    12603.00| Flow-Through Basin: Stream #2|    19.1    1.7|
23.417 | 5.63|
| 12603.00  12603.00| Stream #2 Added to: Stream #1|    554.3    555.9|
20.500 | |
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 12603.00  12603.00| Zero Out:      Stream #2|      1.7    0.0|
|
| 12603.00  126.00| Convex Routing:      Stream #1|    555.9    554.8|
20.583 | |
| 920.00    905.00| Subarea (UH) Added to Stream #2|      0.0    18.8|
16.333 | |
| 905.00    126.00| Flow-Through Basin: Stream #2|    18.8    1.6|
24.250 | 7.58|
| 126.00    126.00| Stream #2 Added to: Stream #1|    554.8    556.4|
20.583 | |
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 126.00    126.00| Zero Out:      Stream #2|      1.6    0.0|
|
| 600.00    126.00| Subarea (UH) Added to Stream #2|      0.0    0.8|
16.500 | |
| 126.00    126.00| Stream #2 Added to: Stream #1|    556.4    556.5|
20.583 | |
| 126.00    126.00| Zero Out:      Stream #2|      0.8    0.0|
|
| 126.00    12720.50| Convex Routing:      Stream #1|    556.5    555.7|
20.750 | |
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 430.00    420.00| Subarea (UH) Added to Stream #2|      0.0    35.5|
16.333 | |
| 420.00    420.50| Flow-Through Basin: Stream #2|    35.5    2.4|
24.333 | 0.77|
| 420.50    427.00| Flow-Through Basin: Stream #2|      2.4    1.7|
25.750 | 0.29|
| 413.00    425.00| Subarea (UH) Added to Stream #3|      0.0    17.1|
16.250 | |
```


	425.00	426.00	Flow-Through Basin:	Stream #3	17.1	1.9
22.000		0.09				
+-----+-----+						
	426.00	427.00	Stream #3 Added to:	Stream #2	1.7	2.9
24.167						
	427.00	427.00	Zero Out:	Stream #3	1.9	0.0
	427.00	12720.50	Stream #2 Added to:	Stream #1	555.7	556.9
20.750						
	12720.50	12720.50	Zero Out:	Stream #2	2.9	0.0
	12720.50	12741.00	Convex Routing:	Stream #1	556.9	556.5
20.833						
+-----+-----+						
	320.00	339.00	Subarea (UH) Added to	Stream #2	0.0	78.5
16.417						
	339.00	340.00	Flow-Through Basin:	Stream #2	78.5	0.0
25.333		12.89				
	339.00	372.00	Flowby Basin Model:	Stream #2	0.0	0.0
25.333						
	390.00	372.00	Subarea (UH) Added to	Stream #4	0.0	6.9
16.583						
	372.00	372.00	Stream #4 Added to:	Stream #3	0.0	6.9
16.583						
+-----+-----+						
	372.00	372.00	Zero Out:	Stream #4	6.9	0.0
	372.00	373.00	Flow-Through Basin:	Stream #3	6.9	1.5
19.833		2.91				
	372.00	372.10	Flowby Basin Model:	Stream #3	1.5	1.5
19.833						
	373.00	373.00	Zero Out:	Stream #5	0.0	0.0
	373.00	340.00	Stream #3 Added to:	Stream #2	0.0	1.6
20.000						
+-----+-----+						
	340.00	340.00	Zero Out:	Stream #3	1.5	0.0
	340.00	12741.00	Stream #2 Added to:	Stream #1	556.5	558.1
20.833						
	12741.00	12741.00	Zero Out:	Stream #2	1.6	0.0
	12741.00	127.00	Convex Routing:	Stream #1	558.1	557.7
20.833						
	12710.00	127.00	Subarea (UH) Added to	Stream #2	0.0	2.8
16.583						
+-----+-----+						
+-----+-----+						
Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT						
INTERVAL						
3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF						
THE DESIGN STORM						
+-----+-----+						
+-----+-----+						

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV0233CC.DAT]

Page: 2 of 1

UPSTREAM TIME (2) TO	DOWNSTREAM MAX. STORAGE	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
NODE #	NODE #	HYDROLOGIC/HYDRAULIC PROCESS	PEAK (CFS)
PEAK (HR)	MODELED (AF)	FOOTNOTES	

127.00	127.00	Stream #2 Added to:	Stream #1	557.7	558.2
20.833					
127.00	127.00	Zero Out:	Stream #2	2.8	0.0
127.00	12902.00	Convex Routing:	Stream #1	558.2	558.0
21.000					
50220.00	50347.00	Subarea (UH) Added to	Stream #2	0.0	63.4
16.500					
50347.00	50347.00	Flow-Through Basin:	Stream #2	63.4	9.7
21.750	30.25				

50347.00	12902.00	Convex Routing:	Stream #2	9.7	9.7
21.917					
12902.00	12902.00	Stream #2 Added to:	Stream #1	558.0	567.6
21.000					
12902.00	12902.00	Zero Out:	Stream #2	9.7	0.0
12902.00	129.00	Convex Routing:	Stream #1	567.6	567.3
21.083					
50400.00	129.00	Subarea (UH) Added to	Stream #2	0.0	8.4
16.333					

129.00	129.00	Stream #2 Added to:	Stream #1	567.3	568.4
21.083					
129.00	129.00	Zero Out:	Stream #2	8.4	0.0
210.00	221.00	Subarea (UH) Added to	Stream #2	0.0	27.7
16.333					
221.00	221.00	Flowby Basin Model:	Stream #2	27.7	13.8
16.333					
221.00	223.00	Flow-Through Basin:	Stream #2	13.8	6.2
17.917	2.68				

221.00	222.00	Flow-Through Basin:	Stream #5	14.0	3.9
18.333	2.20				
223.00	222.00	Stream #5 Added to:	Stream #2	6.2	10.1
18.000					
222.00	222.00	Zero Out:	Stream #5	3.9	0.0
222.00	129.00	Stream #2 Added to:	Stream #1	568.4	576.1
21.083					

129.00	129.00	Zero Out:	Stream #2	10.1	0.0
21.167					
13010.00	132.00	Subarea (UH) Added to	Stream #2	0.0	145.2
17.333					
132.00	132.00	Flowby Basin Model:	Stream #2	145.2	145.2
17.333					
132.00	132.00	Zero Out:	Stream #3	0.0	0.0
132.00	132.00	Zero Out:	Stream #4	0.0	0.0

132.00	13305.00	Convex Routing:	Stream #2	145.2	143.6
17.917					
13305.00	133.00	Convex Routing:	Stream #2	143.6	143.0
18.250					
132.00	133.00	Subarea (UH) Added to	Stream #3	0.0	77.8
17.000					
133.00	133.00	Stream #3 Added to:	Stream #2	143.0	209.1
17.167					
133.00	133.00	Zero Out:	Stream #3	77.8	0.0

133.00	133.00	Stream #2 Added to:	Stream #1	575.6	651.9
19.167					
133.00	133.00	Zero Out:	Stream #2	209.1	0.0
133.00	133.00	View:	Stream #1		651.9
19.167	799.91	3			

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Ver. 20.0 Release Date: 06/01/2013 License ID 1264

Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 133T *
* 2-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EVO233TC.DAT
TIME/DATE OF STUDY: 12:39 06/13/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 1.262 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.487; LOW LOSS FRACTION = 0.830
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.28; 1-HOUR = 0.37
3-HOUR = 0.62; 6-HOUR = 0.85; 24-HOUR = 1.44
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.744; 30-MINUTE = 0.744; 1-HOUR = 0.744
3-HOUR = 0.959; 6-HOUR = 0.978; 24-HOUR = 0.986

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: **GBD Side**
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN **Weir**
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00

3 4682.00 3013.00
4 6819.00 4013.00
5 8100.00 4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8

>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<<

****ERROR-STREAM 4 CONTAINS NO INFORMATION (EMPTY).
PROCESS IS NEGATED.

```

*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<<
=====
*****
****ERROR-STREAM 4 CONTAINS NO INFORMATION (EMPTY).
      PROCESS IS NEGATED.
*****

*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 427.51; DOWNSTREAM ELEVATION(FT) = 315.00
CHANNEL LENGTH(FT) = 9760.05 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 13305.00 TO NODE 133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 315.00; DOWNSTREAM ELEVATION(FT) = 212.00
CHANNEL LENGTH(FT) = 6877.24 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```
*****
```

```

FLOW PROCESS FROM NODE 132.00 TO NODE 133.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<<
=====
WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.947 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.449; LOW LOSS FRACTION = 0.750
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.28; 1-HOUR = 0.37
3-HOUR = 0.62; 6-HOUR = 0.85; 24-HOUR = 1.44
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.744; 30-MINUTE = 0.744; 1-HOUR = 0.744
3-HOUR = 0.959; 6-HOUR = 0.978; 24-HOUR = 0.986

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 11
-----
>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<<
=====

```

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

| INPUT FILENAME: [EV0233TC.DAT]

Page: 1 of 1

UPSTREAM TIME (2) TO	DOWNSTREAM MAX. STORAGE	HYDROLOGIC/HYDRAULIC PROCESS	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
NODE #	NODE #	FOOTNOTES		

13010.00	132.00	Subarea (UH) Added to Stream #2	0.0	352.4
17.333				
132.00	132.00	Flowby Basin Model: Stream #2	352.4	352.4
17.333				
132.00	132.00	Zero Out: Stream #3	0.0	0.0
132.00	132.00	Zero Out: Stream #4	0.0	0.0
132.00	13305.00	Convex Routing: Stream #2	352.4	339.8
17.667				

13305.00	133.00	Convex Routing: Stream #2	339.8	329.9
17.917				
132.00	133.00	Subarea (UH) Added to Stream #3	0.0	179.8
17.000				
133.00	133.00	Stream #3 Added to: Stream #2	329.9	403.3
17.917				
133.00	133.00	Zero Out: Stream #3	179.8	0.0
133.00	133.00	Stream #2 Added to: Stream #1	0.0	403.3
17.917				

133.00	133.00	Zero Out: Stream #2	403.3	0.0
133.00	133.00	View: Stream #1		403.3
17.917	171.09	3		

|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
 | 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Ver. 20.0 Release Date: 06/01/2013 License ID 1264

Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 133U *
* 2-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EVO233UC.DAT
TIME/DATE OF STUDY: 09:54 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 5.382 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.595; LOW LOSS FRACTION = 0.931
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.18; 30-MINUTE = 0.33; 1-HOUR = 0.45
3-HOUR = 0.87; 6-HOUR = 1.26; 24-HOUR = 2.23
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.141 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.348; LOW LOSS FRACTION = 0.638
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.31; 1-HOUR = 0.41
3-HOUR = 0.68; 6-HOUR = 0.94; 24-HOUR = 1.58
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing values for depth, outflow, and storage.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.292 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.509; LOW LOSS FRACTION = 0.862
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.31; 1-HOUR = 0.41
3-HOUR = 0.68; 6-HOUR = 0.94; 24-HOUR = 1.58
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

4F-1

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.431 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.587; LOW LOSS FRACTION = 0.979
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.31; 1-HOUR = 0.47
3-HOUR = 0.68; 6-HOUR = 0.94; 24-HOUR = 1.58
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 286.00; DOWNSTREAM ELEVATION (FT) = 258.00
CHANNEL LENGTH (FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.299 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.292; LOW LOSS FRACTION = 0.536
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.31; 1-HOUR = 0.41
3-HOUR = 0.68; 6-HOUR = 0.94; 24-HOUR = 1.58
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 16.600
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.203 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.517
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.31; 1-HOUR = 0.41
3-HOUR = 0.68; 6-HOUR = 0.94; 24-HOUR = 1.58
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-3

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	5.95	0.280
3	2.00	22.18	1.150
4	3.00	46.43	3.090
5	4.00	75.05	6.150
6	5.00	105.54	10.350
7	6.00	127.29	15.380
8	7.00	138.99	20.860
9	8.00	150.45	26.500
10	9.00	161.55	32.360
11	10.00	697.61	38.410
12	11.00	1666.99	44.700

FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<<

FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<<
=====

FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<<
=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<<
=====

WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.380 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.251; LOW LOSS FRACTION = 0.478
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.31; 1-HOUR = 0.41
3-HOUR = 0.68; 6-HOUR = 0.94; 24-HOUR = 1.58
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<<
=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3C-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	7.430

```

3      2.00      0.02      15.170
4      3.00      2.70      23.230
5      4.00      4.69      31.610
6      5.00      6.04      40.320
7      6.00      10.72     49.360
8      7.00      17.77     58.730
9      8.00      424.53    68.440
10     9.00      1169.03   78.500
11    10.00     2113.61   88.500

```

```

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

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```

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: Weir to
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN 3C-3
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

```

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*****
FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

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>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

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```

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.556 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.486; LOW LOSS FRACTION = 0.820
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.31; 1-HOUR = 0.41
3-HOUR = 0.68; 6-HOUR = 0.94; 24-HOUR = 1.58
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

```

```

-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

3C-3

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE: Weir to
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN 3C-5
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

```

```

*****
FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

```

```

*****STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

```

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

```

```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====

WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.541 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.592; LOW LOSS FRACTION = 0.985
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.31; 1-HOUR = 0.41
3-HOUR = 0.68; 6-HOUR = 0.94; 24-HOUR = 1.58
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

```

```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.427 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.434; LOW LOSS FRACTION = 0.737
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.31; 1-HOUR = 0.41
3-HOUR = 0.68; 6-HOUR = 0.94; 24-HOUR = 1.58
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

5-2

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.256 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.553; LOW LOSS FRACTION = 0.923
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.31; 1-HOUR = 0.41
3-HOUR = 0.68; 6-HOUR = 0.94; 24-HOUR = 1.58
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.274 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.253; LOW LOSS FRACTION = 0.494
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.31; 1-HOUR = 0.41
3-HOUR = 0.68; 6-HOUR = 0.94; 24-HOUR = 1.58
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Table with 3 columns: DATA PAIR NUMBER, Qcenter (CFS), Qpass (CFS). Rows 1-5 showing flow data.

B Diversion Structure

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-10 showing depth vs outflow data.

FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-4

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-23 showing depth vs outflow data.

	425.00	426.00	Flow-Through Basin:	Stream #3	18.8	2.0
21.250		0.10				
+-----+						
	426.00	427.00	Stream #3 Added to:	Stream #2	2.1	3.4
24.167						
	427.00	427.00	Zero Out:	Stream #3	2.0	0.0
	427.00	12720.50	Stream #2 Added to:	Stream #1	600.1	602.1
20.750						
	12720.50	12720.50	Zero Out:	Stream #2	3.4	0.0
	12720.50	12741.00	Convex Routing:	Stream #1	602.1	601.1
20.833						
+-----+						
	320.00	339.00	Subarea (UH) Added to	Stream #2	0.0	85.6
16.417						
	339.00	340.00	Flow-Through Basin:	Stream #2	85.6	0.0
25.333		13.67				
	339.00	372.00	Flowby Basin Model:	Stream #2	0.0	0.0
25.333						
	390.00	372.00	Subarea (UH) Added to	Stream #4	0.0	7.4
16.583						
	372.00	372.00	Stream #4 Added to:	Stream #3	0.0	7.4
16.583						
+-----+						
	372.00	372.00	Zero Out:	Stream #4	7.4	0.0
	372.00	373.00	Flow-Through Basin:	Stream #3	7.4	1.6
19.750		2.97				
	372.00	372.10	Flowby Basin Model:	Stream #3	1.6	1.6
19.750						
	373.00	373.00	Zero Out:	Stream #5	0.0	0.0
	373.00	340.00	Stream #3 Added to:	Stream #2	0.0	1.6
19.917						
+-----+						
	340.00	340.00	Zero Out:	Stream #3	1.6	0.0
	340.00	12741.00	Stream #2 Added to:	Stream #1	601.1	602.7
20.833						
	12741.00	12741.00	Zero Out:	Stream #2	1.6	0.0
	12741.00	127.00	Convex Routing:	Stream #1	602.7	602.5
20.917						
	12710.00	127.00	Subarea (UH) Added to	Stream #2	0.0	3.0
16.583						

[Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL

| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV0233UC.DAT]

Page: 2 of 1

UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS FOOTNOTES	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
127.00 20.917	127.00	Stream #2 Added to: Stream #1	602.5	603.0
127.00	127.00	Zero Out: Stream #2	3.0	0.0
127.00 21.000	12902.00	Convex Routing: Stream #1	603.0	602.3
50220.00 16.500	50347.00	Subarea (UH) Added to Stream #2	0.0	67.7
50347.00 21.417	50347.00 30.64	Flow-Through Basin: Stream #2	67.7	10.1
50347.00 21.583	12902.00	Convex Routing: Stream #2	10.1	10.1
12902.00 21.000	12902.00	Stream #2 Added to: Stream #1	602.3	612.4
12902.00	12902.00	Zero Out: Stream #2	10.1	0.0
12902.00 21.083	129.00	Convex Routing: Stream #1	612.4	611.3
50400.00 16.333	129.00	Subarea (UH) Added to Stream #2	0.0	9.0
129.00 21.083	129.00	Stream #2 Added to: Stream #1	611.3	612.4
129.00	129.00	Zero Out: Stream #2	9.0	0.0
210.00 16.333	221.00	Subarea (UH) Added to Stream #2	0.0	30.7
221.00 16.333	221.00	Flowby Basin Model: Stream #2	30.7	14.0
221.00 17.750	223.00 2.73	Flow-Through Basin: Stream #2	14.0	6.6
221.00 18.333	222.00 2.32	Flow-Through Basin: Stream #5	16.7	4.0
223.00 17.833	222.00	Stream #5 Added to: Stream #2	6.6	10.6
222.00	222.00	Zero Out: Stream #5	4.0	0.0
222.00 21.083	129.00	Stream #2 Added to: Stream #1	612.4	620.3

129.00 21.250	129.00	Zero Out: Stream #2	10.6	0.0
133.00 21.250	133.00	View: Stream #1	619.4	619.4
	673.07	3		

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Ver. 20.0 Release Date: 06/01/2013 License ID 1264

Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 134C *
* 2-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV0234CC.DAT
TIME/DATE OF STUDY: 09:51 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 5.382 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.595; LOW LOSS FRACTION = 0.931
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.17; 30-MINUTE = 0.31; 1-HOUR = 0.43
3-HOUR = 0.81; 6-HOUR = 1.20; 24-HOUR = 2.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.141 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.348; LOW LOSS FRACTION = 0.638
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.51
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	1.520
3	2.00	1.30	3.150
4	3.00	1.60	4.900
5	4.00	1.80	6.790
6	5.00	2.10	8.810
7	6.00	2.30	10.970
8	7.00	47.90	13.270
9	8.00	131.60	15.720
10	9.00	241.70	18.320
11	10.00	372.80	21.060

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.292 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.509; LOW LOSS FRACTION = 0.862
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.51
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

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INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.431 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.587; LOW LOSS FRACTION = 0.979
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.51
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 286.00; DOWNSTREAM ELEVATION(FT) = 258.00
CHANNEL LENGTH(FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.299 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.292; LOW LOSS FRACTION = 0.536
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.51
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 16.600
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

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BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.203 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.517
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.51
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-3

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	5.95	0.280
3	2.00	22.18	1.150
4	3.00	46.43	3.090
5	4.00	75.05	6.150
6	5.00	105.54	10.350
7	6.00	127.29	15.380
8	7.00	138.99	20.860
9	8.00	150.45	26.500
10	9.00	161.55	32.360
11	10.00	697.61	38.410
12	11.00	1666.99	44.700

FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<<

FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<<
=====

FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<<
=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<<
=====

WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.380 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.251; LOW LOSS FRACTION = 0.478
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.51
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<<
=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

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BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	7.430

```

3      2.00      0.02      15.170
4      3.00      2.70      23.230
5      4.00      4.69      31.610
6      5.00      6.04      40.320
7      6.00     10.72     49.360
8      7.00     17.77     58.730
9      8.00     424.53    68.440
10     9.00     1169.03   78.500
11    10.00    2113.61   88.500

```

```

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

```

```

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: Weir to
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN 3C-3
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

```

```

*****
FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

```

```

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.556 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.486; LOW LOSS FRACTION = 0.820
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.51
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

```

```

-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

3C-3

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE: Weir to
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN 3C-5
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

```

```

*****
FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

```

```

*****STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

```

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

```

```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====

WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.541 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.592; LOW LOSS FRACTION = 0.985
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.51
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

```

```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.427 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.434; LOW LOSS FRACTION = 0.737
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.51
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

5-2

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.256 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.553; LOW LOSS FRACTION = 0.923
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.51
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.274 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.253; LOW LOSS FRACTION = 0.494
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.51
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2
-----
>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.
DATA PAIR Qcenter Qpass
NUMBER (CFS) (CFS)
- 0.00 0.00
1 25.00 13.59
2 75.00 16.84
3 100.00 18.46
4 250.00 28.22
5 550.00 47.73
FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5
=====

*****
FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

B Diversion
Structure

3B-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	0.310
3	2.00	0.83	1.240
4	3.00	5.60	2.600
5	4.00	16.88	4.130
6	5.00	23.48	5.790
7	6.00	36.73	7.560
8	7.00	55.95	9.440
9	8.00	78.70	11.430
10	9.00	228.67	12.460

```

*****
FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

3B-4

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	1.84	0.260
3	2.00	3.22	1.160
4	3.00	4.16	2.520
5	4.00	4.94	3.990
6	5.00	5.60	5.550
7	6.00	7.17	7.200
8	7.00	14.13	8.950
9	8.00	18.54	10.800
10	9.00	21.90	12.740
11	10.00	24.73	14.780
12	11.00	37.17	16.920
13	12.00	57.63	19.160
14	13.00	83.32	21.500
15	14.00	112.96	23.940
16	15.00	133.28	26.480
17	16.00	144.34	29.150
18	17.00	154.45	31.950
19	18.00	163.94	34.870
20	19.00	172.92	37.940
21	20.00	181.39	41.140
22	21.00	189.45	44.500
23	22.00	197.22	48.010

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 1.262 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.487; LOW LOSS FRACTION = 0.830
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.51
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: **GBD Side**
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN **Weir**
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8

>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<

```

=====
***STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====

*****
****ERROR-STREAM 4 CONTAINS NO INFORMATION (EMPTY).
      PROCESS IS NEGATED.
*****

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====

*****
****ERROR-STREAM 4 CONTAINS NO INFORMATION (EMPTY).
      PROCESS IS NEGATED.
*****

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01      CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 427.51; DOWNSTREAM ELEVATION(FT) = 315.00
CHANNEL LENGTH(FT) = 9760.05      MANNING'S FACTOR = 0.040

```

```

=====
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE    13305.00 TO NODE    133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01      CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 315.00; DOWNSTREAM ELEVATION(FT) = 212.00
CHANNEL LENGTH(FT) = 6877.24      MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    133.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.947 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.449; LOW LOSS FRACTION = 0.750
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.51
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE    133.00 TO NODE    133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE    133.00 TO NODE    133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE    133.00 TO NODE    133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 212.00; DOWNSTREAM ELEVATION (FT) = 173.00
CHANNEL LENGTH (FT) = 6461.31 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1691.600 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.391 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.487; LOW LOSS FRACTION = 0.818
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.51
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 13500.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 3859.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 2.983 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.567; LOW LOSS FRACTION = 0.908
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.51
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 11
-----
>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<
=====

```

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV0234CC.DAT]

Page: 1 of 1

UPSTREAM TIME (2)	DOWNSTREAM MAX. STORAGE	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)	PROCESS
10100.00	119.00	0.0	528.8	Subarea (UH) Added to Stream #1
20.417				
119.00	12603.00	528.8	527.6	Convex Routing: Stream #1
20.500				
810.00	809.00	0.0	18.1	Subarea (UH) Added to Stream #2
16.250				
809.00	12603.00	18.1	1.7	Flow-Through Basin: Stream #2
23.250	5.40			
12603.00	12603.00	527.6	529.2	Stream #2 Added to: Stream #1
20.500				
12603.00	12603.00	1.7	0.0	Zero Out: Stream #2
12603.00	126.00	529.2	528.4	Convex Routing: Stream #1
20.583				
920.00	905.00	0.0	17.7	Subarea (UH) Added to Stream #2
16.333				
905.00	126.00	17.7	1.6	Flow-Through Basin: Stream #2
24.250	7.30			
126.00	126.00	528.4	529.9	Stream #2 Added to: Stream #1
20.583				
126.00	126.00	1.6	0.0	Zero Out: Stream #2
600.00	126.00	0.0	0.8	Subarea (UH) Added to Stream #2
16.500				
126.00	126.00	529.9	530.0	Stream #2 Added to: Stream #1
20.583				
126.00	126.00	0.8	0.0	Zero Out: Stream #2
126.00	12720.50	530.0	529.3	Convex Routing: Stream #1
20.750				
430.00	420.00	0.0	33.4	Subarea (UH) Added to Stream #2
16.333				
420.00	420.50	33.4	1.4	Flow-Through Basin: Stream #2
24.417	0.44			
420.50	427.00	1.4	0.9	Flow-Through Basin: Stream #2
26.333	0.14			
413.00	425.00	0.0	16.2	Subarea (UH) Added to Stream #3
16.250				

425.00	426.00	Flow-Through Basin:	Stream #3	16.2	1.6
23.500	0.07				
426.00	427.00	Stream #3 Added to:	Stream #2	0.9	1.9
24.167					
427.00	427.00	Zero Out:	Stream #3	1.6	0.0
427.00	12720.50	Stream #2 Added to:	Stream #1	529.3	529.3
20.750					
12720.50	12720.50	Zero Out:	Stream #2	1.9	0.0
12720.50	12741.00	Convex Routing:	Stream #1	529.3	529.1
20.833					
320.00	339.00	Subarea (UH) Added to	Stream #2	0.0	74.0
16.417					
339.00	340.00	Flow-Through Basin:	Stream #2	74.0	0.0
25.333	11.38				
339.00	372.00	Flowby Basin Model:	Stream #2	0.0	0.0
25.333					
390.00	372.00	Subarea (UH) Added to	Stream #4	0.0	6.6
16.583					
372.00	372.00	Stream #4 Added to:	Stream #3	0.0	6.6
16.583					
372.00	372.00	Zero Out:	Stream #4	6.6	0.0
372.00	373.00	Flow-Through Basin:	Stream #3	6.6	1.5
19.833	2.80				
372.00	372.10	Flowby Basin Model:	Stream #3	1.5	1.5
19.833					
373.00	373.00	Zero Out:	Stream #5	0.0	0.0
373.00	340.00	Stream #3 Added to:	Stream #2	0.0	1.5
20.000					
340.00	340.00	Zero Out:	Stream #3	1.5	0.0
340.00	12741.00	Stream #2 Added to:	Stream #1	529.1	530.6
20.833					
12741.00	12741.00	Zero Out:	Stream #2	1.5	0.0
12741.00	127.00	Convex Routing:	Stream #1	530.6	530.4
20.833					
12710.00	127.00	Subarea (UH) Added to	Stream #2	0.0	2.7
16.583					

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV0234CC.DAT ]
Page: 2 of |
-----+-----
|UPSTREAM DOWNSTREAM| | UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE| |
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR) | MODELED (AF)| FOOTNOTES |
-----+-----
| 127.00 127.00| Stream #2 Added to: Stream #1| 530.4 530.9|
20.833 | | |
| 127.00 127.00| Zero Out: Stream #2| 2.7 0.0|
| | | |
| 127.00 12902.00| Convex Routing: Stream #1| 530.9 530.6|
21.000 | | |
| 50220.00 50347.00| Subarea (UH) Added to Stream #2| 0.0 59.9|
16.500 | | |
| 50347.00 50347.00| Flow-Through Basin: Stream #2| 59.9 8.9|
22.250 | 29.48| |
-----+-----
| 50347.00 12902.00| Convex Routing: Stream #2| 8.9 8.9|
22.417 | | |
| 12902.00 12902.00| Stream #2 Added to: Stream #1| 530.6 539.4|
21.000 | | |
| 12902.00 12902.00| Zero Out: Stream #2| 8.9 0.0|
| | | |
| 12902.00 129.00| Convex Routing: Stream #1| 539.4 539.2|
21.083 | | |
| 50400.00 129.00| Subarea (UH) Added to Stream #2| 0.0 7.9|
16.333 | | |
-----+-----
| 129.00 129.00| Stream #2 Added to: Stream #1| 539.2 540.3|
21.083 | | |
| 129.00 129.00| Zero Out: Stream #2| 7.9 0.0|
| | | |
| 210.00 221.00| Subarea (UH) Added to Stream #2| 0.0 26.0|
16.333 | | |
| 221.00 221.00| Flowby Basin Model: Stream #2| 26.0 13.7|
16.333 | | |
| 221.00 223.00| Flow-Through Basin: Stream #2| 13.7 5.6|
18.167 | 2.60| |
-----+-----
| 221.00 222.00| Flow-Through Basin: Stream #5| 12.4 3.9|
18.333 | 2.07| |
| 223.00 222.00| Stream #5 Added to: Stream #2| 5.6 9.5|
18.167 | | |
| 222.00 222.00| Zero Out: Stream #5| 3.9 0.0|
| | | |
| 222.00 129.00| Stream #2 Added to: Stream #1| 540.3 547.8|
21.083 | | |

```

	129.00	129.00	Zero Out:	Stream #2	9.5	0.0
+-----+-----+						
	129.00	133.00	Convex Routing:	Stream #1	547.8	547.5
21.167						
	13010.00	132.00	Subarea (UH) Added to	Stream #2	0.0	138.0
17.333						
	132.00	132.00	Flowby Basin Model:	Stream #2	138.0	138.0
17.333						
	132.00	132.00	Zero Out:	Stream #3	0.0	0.0
	132.00	132.00	Zero Out:	Stream #4	0.0	0.0
+-----+-----+						
	132.00	13305.00	Convex Routing:	Stream #2	138.0	136.6
17.917						
	13305.00	133.00	Convex Routing:	Stream #2	136.6	136.0
18.250						
	132.00	133.00	Subarea (UH) Added to	Stream #3	0.0	73.8
17.000						
	133.00	133.00	Stream #3 Added to:	Stream #2	136.0	199.3
17.167						
	133.00	133.00	Zero Out:	Stream #3	73.8	0.0
+-----+-----+						
	133.00	133.00	Stream #2 Added to:	Stream #1	547.5	624.3
19.167						
	133.00	133.00	Zero Out:	Stream #2	199.3	0.0
	133.00	134.00	Convex Routing:	Stream #1	624.3	624.1
19.417						
	133.00	134.00	Subarea (UH) Added to	Stream #2	0.0	63.6
16.417						
	134.00	134.00	Stream #2 Added to:	Stream #1	624.1	638.0
19.333						
+-----+-----+						
	134.00	134.00	Zero Out:	Stream #2	63.6	0.0
	13500.00	134.00	Subarea (UH) Added to	Stream #2	0.0	50.4
18.500						
	134.00	134.00	Stream #2 Added to:	Stream #1	638.0	687.1
19.000						
	134.00	134.00	Zero Out:	Stream #2	50.4	0.0
	134.00	134.00	View:	Stream #1		687.1
19.000		844.05	3			

[Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL

| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

|INPUT FILENAME: [EV0234CC.DAT]

Page: 3 of |

UPSTREAM	DOWNSTREAM		UPSTREAM	DOWNSTREAM
TIME (2) TO	MAX. STORAGE			
NODE #	NODE #	HYDROLOGIC/HYDRAULIC PROCESS	PEAK (CFS)	PEAK (CFS)
PEAK (HR)	MODELED (AF)	FOOTNOTES		

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Ver. 20.0 Release Date: 06/01/2013 License ID 1264

Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 134U *
* 2-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EVO234UC.DAT
TIME/DATE OF STUDY: 09:57 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 5.382 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.595; LOW LOSS FRACTION = 0.931
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.17; 30-MINUTE = 0.32; 1-HOUR = 0.44
3-HOUR = 0.82; 6-HOUR = 1.23; 24-HOUR = 2.17
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.141 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.348; LOW LOSS FRACTION = 0.638
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.30; 1-HOUR = 0.40
3-HOUR = 0.66; 6-HOUR = 0.91; 24-HOUR = 1.54
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing values for depth, outflow, and storage.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<


```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.292 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.509; LOW LOSS FRACTION = 0.862
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.30; 1-HOUR = 0.40
3-HOUR = 0.66; 6-HOUR = 0.91; 24-HOUR = 1.54
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

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INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.431 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.587; LOW LOSS FRACTION = 0.979
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.30; 1-HOUR = 0.40
3-HOUR = 0.66; 6-HOUR = 0.91; 24-HOUR = 1.54
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 286.00; DOWNSTREAM ELEVATION(FT) = 258.00
CHANNEL LENGTH(FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.299 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.292; LOW LOSS FRACTION = 0.536
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.30; 1-HOUR = 0.40
3-HOUR = 0.66; 6-HOUR = 0.91; 24-HOUR = 1.54
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 16.600
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.203 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.517
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.30; 1-HOUR = 0.40
3-HOUR = 0.66; 6-HOUR = 0.91; 24-HOUR = 1.54
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-3

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	5.95	0.280
3	2.00	22.18	1.150
4	3.00	46.43	3.090
5	4.00	75.05	6.150
6	5.00	105.54	10.350
7	6.00	127.29	15.380
8	7.00	138.99	20.860
9	8.00	150.45	26.500
10	9.00	161.55	32.360
11	10.00	697.61	38.410
12	11.00	1666.99	44.700

FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<<

FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<<
=====

FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<<
=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<<
=====

WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.380 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.251; LOW LOSS FRACTION = 0.478
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.30; 1-HOUR = 0.40
3-HOUR = 0.66; 6-HOUR = 0.91; 24-HOUR = 1.54
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<<
=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3C-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	7.430

3	2.00	0.02	15.170
4	3.00	2.70	23.230
5	4.00	4.69	31.610
6	5.00	6.04	40.320
7	6.00	10.72	49.360
8	7.00	17.77	58.730
9	8.00	424.53	68.440
10	9.00	1169.03	78.500
11	10.00	2113.61	88.500

FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Weir to
3C-3

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.556 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.486; LOW LOSS FRACTION = 0.820
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.30; 1-HOUR = 0.40
3-HOUR = 0.66; 6-HOUR = 0.91; 24-HOUR = 1.54
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3

THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:

3C-3

DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Weir to
3C-5

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

```

```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====

WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.541 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.592; LOW LOSS FRACTION = 0.985
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.30; 1-HOUR = 0.40
3-HOUR = 0.66; 6-HOUR = 0.91; 24-HOUR = 1.54
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

```

```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.427 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.434; LOW LOSS FRACTION = 0.737
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.30; 1-HOUR = 0.40
3-HOUR = 0.66; 6-HOUR = 0.91; 24-HOUR = 1.54
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

5-2

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

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```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.256 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.553; LOW LOSS FRACTION = 0.923
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.30; 1-HOUR = 0.40
3-HOUR = 0.66; 6-HOUR = 0.91; 24-HOUR = 1.54
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.274 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.253; LOW LOSS FRACTION = 0.494
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.30; 1-HOUR = 0.40
3-HOUR = 0.66; 6-HOUR = 0.91; 24-HOUR = 1.54
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Table with 3 columns: DATA PAIR NUMBER, Qcenter (CFS), Qpass (CFS). Includes handwritten blue text 'B Diversion Structure'.

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-10.

FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-4

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-23.

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 1.262 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.487; LOW LOSS FRACTION = 0.830
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.30; 1-HOUR = 0.40
3-HOUR = 0.66; 6-HOUR = 0.91; 24-HOUR = 1.54
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

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DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8

>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<


```

=====
***STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====

*****
****ERROR-STREAM 4 CONTAINS NO INFORMATION (EMPTY).
PROCESS IS NEGATED.
*****

*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====

*****
****ERROR-STREAM 4 CONTAINS NO INFORMATION (EMPTY).
PROCESS IS NEGATED.
*****

*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 132.00 TO NODE 13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 427.51; DOWNSTREAM ELEVATION(FT) = 315.00
CHANNEL LENGTH(FT) = 9760.05 MANNING'S FACTOR = 0.040

```

```

=====
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 13305.00 TO NODE 133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 315.00; DOWNSTREAM ELEVATION(FT) = 212.00
CHANNEL LENGTH(FT) = 6877.24 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 132.00 TO NODE 133.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.947 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.449; LOW LOSS FRACTION = 0.750
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.30; 1-HOUR = 0.40
3-HOUR = 0.66; 6-HOUR = 0.91; 24-HOUR = 1.54
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

```

```
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 212.00; DOWNSTREAM ELEVATION(FT) = 173.00
CHANNEL LENGTH(FT) = 6461.31 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
```

WATERSHED AREA = 1691.600 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.391 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.487; LOW LOSS FRACTION = 0.818
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.30; 1-HOUR = 0.40
3-HOUR = 0.66; 6-HOUR = 0.91; 24-HOUR = 1.54
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

```
*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 11
-----
>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<
=====
```

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV0234UC.DAT]

Page: 1 of 1

UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS FOOTNOTES	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
--	--	---	------------------------	--------------------------

10100.00	119.00	Subarea (UH) Added to Stream #1	0.0	543.6
20.417				
119.00	12603.00	Convex Routing: Stream #1	543.6	542.2
20.500				
810.00	809.00	Subarea (UH) Added to Stream #2	0.0	18.8
16.167				
809.00	12603.00	Flow-Through Basin: Stream #2	18.8	1.7
23.333	5.54			
12603.00	12603.00	Stream #2 Added to: Stream #1	542.2	543.8
20.500				
12603.00	12603.00	Zero Out: Stream #2	1.7	0.0
12603.00	126.00	Convex Routing: Stream #1	543.8	542.9
20.583				
920.00	905.00	Subarea (UH) Added to Stream #2	0.0	18.5
16.333				
905.00	126.00	Flow-Through Basin: Stream #2	18.5	1.6
24.250	7.47			
126.00	126.00	Stream #2 Added to: Stream #1	542.9	544.5
20.583				
126.00	126.00	Zero Out: Stream #2	1.6	0.0
600.00	126.00	Subarea (UH) Added to Stream #2	0.0	0.8
16.500				
126.00	126.00	Stream #2 Added to: Stream #1	544.5	544.6
20.583				
126.00	126.00	Zero Out: Stream #2	0.8	0.0
126.00	12720.50	Convex Routing: Stream #1	544.6	543.9
20.750				
430.00	420.00	Subarea (UH) Added to Stream #2	0.0	35.1
16.333				
420.00	420.50	Flow-Through Basin: Stream #2	35.1	2.0
24.333	0.65			
420.50	427.00	Flow-Through Basin: Stream #2	2.0	1.4
25.917	0.24			
413.00	425.00	Subarea (UH) Added to Stream #3	0.0	16.9
16.250				

425.00	426.00	Flow-Through Basin: Stream #3	16.9	1.7
22.500	0.08			
426.00	427.00	Stream #3 Added to: Stream #2	1.4	2.6
24.167				
427.00	427.00	Zero Out: Stream #3	1.7	0.0
427.00	12720.50	Stream #2 Added to: Stream #1	543.9	543.9
20.750				
12720.50	12720.50	Zero Out: Stream #2	2.6	0.0
12720.50	12741.00	Convex Routing: Stream #1	543.9	543.6
20.833				
320.00	339.00	Subarea (UH) Added to Stream #2	0.0	77.5
16.417				
339.00	340.00	Flow-Through Basin: Stream #2	77.5	0.0
25.333	12.31			
339.00	372.00	Flowby Basin Model: Stream #2	0.0	0.0
25.333				
390.00	372.00	Subarea (UH) Added to Stream #4	0.0	6.9
16.583				
372.00	372.00	Stream #4 Added to: Stream #3	0.0	6.9
16.583				
372.00	372.00	Zero Out: Stream #4	6.9	0.0
372.00	373.00	Flow-Through Basin: Stream #3	6.9	1.5
19.833	2.87			
372.00	372.10	Flowby Basin Model: Stream #3	1.5	1.5
19.833				
373.00	373.00	Zero Out: Stream #5	0.0	0.0
373.00	340.00	Stream #3 Added to: Stream #2	0.0	1.5
20.000				
340.00	340.00	Zero Out: Stream #3	1.5	0.0
340.00	12741.00	Stream #2 Added to: Stream #1	543.6	545.1
20.833				
12741.00	12741.00	Zero Out: Stream #2	1.5	0.0
12741.00	127.00	Convex Routing: Stream #1	545.1	544.9
20.833				
12710.00	127.00	Subarea (UH) Added to Stream #2	0.0	2.8
16.583				

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV0234UC.DAT ]
Page: 2 of |
-----+-----+-----+-----+
|UPSTREAM DOWNSTREAM| | UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE| |
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR) | MODELED (AF)| FOOTNOTES |
-----+-----+-----+-----+
| 127.00 127.00| Stream #2 Added to: Stream #1| 544.9 545.4|
20.833 | | |
| 127.00 127.00| Zero Out: Stream #2| 2.8 0.0|
| | | |
| 127.00 12902.00| Convex Routing: Stream #1| 545.4 545.1|
21.000 | | |
| 50220.00 50347.00| Subarea (UH) Added to Stream #2| 0.0 62.6|
16.500 | | |
| 50347.00 50347.00| Flow-Through Basin: Stream #2| 62.6 9.4|
21.917 | 29.95| |
-----+-----+-----+-----+
| 50347.00 12902.00| Convex Routing: Stream #2| 9.4 9.4|
22.083 | | |
| 12902.00 12902.00| Stream #2 Added to: Stream #1| 545.1 554.4|
21.000 | | |
| 12902.00 12902.00| Zero Out: Stream #2| 9.4 0.0|
| | | |
| 12902.00 129.00| Convex Routing: Stream #1| 554.4 554.2|
21.083 | | |
| 50400.00 129.00| Subarea (UH) Added to Stream #2| 0.0 8.3|
16.333 | | |
-----+-----+-----+-----+
| 129.00 129.00| Stream #2 Added to: Stream #1| 554.2 555.3|
21.083 | | |
| 129.00 129.00| Zero Out: Stream #2| 8.3 0.0|
| | | |
| 210.00 221.00| Subarea (UH) Added to Stream #2| 0.0 27.2|
16.333 | | |
| 221.00 221.00| Flowby Basin Model: Stream #2| 27.2 13.7|
16.333 | | |
| 221.00 223.00| Flow-Through Basin: Stream #2| 13.7 6.0|
18.000 | 2.65| |
-----+-----+-----+-----+
| 221.00 222.00| Flow-Through Basin: Stream #5| 13.5 3.9|
18.333 | 2.16| |
| 223.00 222.00| Stream #5 Added to: Stream #2| 6.0 9.9|
18.083 | | |
| 222.00 222.00| Zero Out: Stream #5| 3.9 0.0|
| | | |
| 222.00 129.00| Stream #2 Added to: Stream #1| 555.3 562.9|
21.083 | | |

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	129.00	129.00	Zero Out:	Stream #2	9.9	0.0
+-----+						
	129.00	133.00	Convex Routing:	Stream #1	562.9	562.6
21.167						
	13010.00	132.00	Subarea (UH) Added to	Stream #2	0.0	143.0
17.333						
	132.00	132.00	Flowby Basin Model:	Stream #2	143.0	143.0
17.333						
	132.00	132.00	Zero Out:	Stream #3	0.0	0.0
	132.00	132.00	Zero Out:	Stream #4	0.0	0.0
+-----+						
	132.00	13305.00	Convex Routing:	Stream #2	143.0	141.5
17.750						
	13305.00	133.00	Convex Routing:	Stream #2	141.5	140.8
18.250						
	132.00	133.00	Subarea (UH) Added to	Stream #3	0.0	76.7
17.000						
	133.00	133.00	Stream #3 Added to:	Stream #2	140.8	205.5
17.167						
	133.00	133.00	Zero Out:	Stream #3	76.7	0.0
+-----+						
	133.00	133.00	Stream #2 Added to:	Stream #1	562.6	640.3
19.167						
	133.00	133.00	Zero Out:	Stream #2	205.5	0.0
	133.00	134.00	Convex Routing:	Stream #1	640.3	640.1
19.417						
	133.00	134.00	Subarea (UH) Added to	Stream #2	0.0	66.6
16.417						
	134.00	134.00	Stream #2 Added to:	Stream #1	640.1	654.3
19.250						
+-----+						
	134.00	134.00	Zero Out:	Stream #2	66.6	0.0
	134.00	134.00	View:	Stream #1		654.3
19.250		822.59	3			
+-----+						
Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL						
3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM						
+-----+						

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 137 *
* 2-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV02137C.DAT
TIME/DATE OF STUDY: 09:50 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 5.382 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.595; LOW LOSS FRACTION = 0.931
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.17; 30-MINUTE = 0.31; 1-HOUR = 0.43
3-HOUR = 0.80; 6-HOUR = 1.20; 24-HOUR = 2.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.141 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.348; LOW LOSS FRACTION = 0.638
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.50
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing values for depth, outflow, and storage.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.292 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.509; LOW LOSS FRACTION = 0.862
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.50
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

4F-1

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.431 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.587; LOW LOSS FRACTION = 0.979
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.50
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 286.00; DOWNSTREAM ELEVATION(FT) = 258.00
CHANNEL LENGTH(FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.299 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.292; LOW LOSS FRACTION = 0.536
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.50
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 16.600
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.203 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.517
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.50
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-3

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	5.95	0.280
3	2.00	22.18	1.150
4	3.00	46.43	3.090
5	4.00	75.05	6.150
6	5.00	105.54	10.350
7	6.00	127.29	15.380
8	7.00	138.99	20.860
9	8.00	150.45	26.500
10	9.00	161.55	32.360
11	10.00	697.61	38.410
12	11.00	1666.99	44.700

FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<<

FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<<
=====

FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<<
=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<<
=====

WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.380 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.251; LOW LOSS FRACTION = 0.478
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.50
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<<
=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3C-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	7.430

```

3      2.00      0.02      15.170
4      3.00      2.70      23.230
5      4.00      4.69      31.610
6      5.00      6.04      40.320
7      6.00     10.72      49.360
8      7.00     17.77      58.730
9      8.00     424.53     68.440
10     9.00     1169.03    78.500
11    10.00     2113.61    88.500

```

```

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

```

```

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: Weir to
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN 3C-3
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

```

```

*****
FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

```

```

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.556 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.486; LOW LOSS FRACTION = 0.820
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.50
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

```

```

-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

3C-3

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-5

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

```

```

*****
FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

```

```

*****STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

```

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

```

```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====

WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.541 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.592; LOW LOSS FRACTION = 0.985
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.50
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

```

```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.427 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.434; LOW LOSS FRACTION = 0.737
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.50
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

5-2

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.256 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.553; LOW LOSS FRACTION = 0.923
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.50
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.274 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.253; LOW LOSS FRACTION = 0.494
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.50
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Table with 3 columns: DATA PAIR NUMBER, Qcenter (CFS), Qpass (CFS). Rows 1-5 showing flow data.

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FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-10 showing basin data.

FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-4

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-23 showing basin data.

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 1.262 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.487; LOW LOSS FRACTION = 0.830
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.50
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

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DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8

>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<

```

=====
***STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE =   6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE =  3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====

*****
****ERROR-STREAM  4 CONTAINS NO INFORMATION (EMPTY).
      PROCESS IS NEGATED.
*****

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE =   7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====

*****
****ERROR-STREAM  4 CONTAINS NO INFORMATION (EMPTY).
      PROCESS IS NEGATED.
*****

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE =   6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) =   0.01      CHANNEL Z =   3.00
UPSTREAM ELEVATION(FT) =   427.51; DOWNSTREAM ELEVATION(FT) =   315.00
CHANNEL LENGTH(FT) =   9760.05      MANNING'S FACTOR = 0.040

```

```

=====
CONSTANT LOSS RATE(CFS) =   0.00
=====

*****
FLOW PROCESS FROM NODE    13305.00 TO NODE    133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) =   0.01      CHANNEL Z =   3.00
UPSTREAM ELEVATION(FT) =   315.00; DOWNSTREAM ELEVATION(FT) =   212.00
CHANNEL LENGTH(FT) =   6877.24      MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE(CFS) =   0.00
=====

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    133.00 IS CODE =   1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA =   1715.900 ACRES; BASEFLOW =   0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME =   0.947 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) =   0.449; LOW LOSS FRACTION = 0.750
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE =   0.14; 30-MINUTE =   0.29; 1-HOUR =   0.39
3-HOUR =   0.65; 6-HOUR =   0.89; 24-HOUR =   1.50
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE    133.00 TO NODE    133.00 IS CODE =   7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE    133.00 TO NODE    133.00 IS CODE =   6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE    133.00 TO NODE    133.00 IS CODE =   7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 212.00; DOWNSTREAM ELEVATION(FT) = 173.00
CHANNEL LENGTH(FT) = 6461.31 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1691.600 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.391 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.487; LOW LOSS FRACTION = 0.818
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.50
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 173.00; DOWNSTREAM ELEVATION(FT) = 133.00
CHANNEL LENGTH(FT) = 6064.09 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1191.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.533 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.474; LOW LOSS FRACTION = 0.781
=====

```

```

*****
FLOW PROCESS FROM NODE 13500.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 3859.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 2.983 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.567; LOW LOSS FRACTION = 0.908
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39
3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.50
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 173.00; DOWNSTREAM ELEVATION(FT) = 133.00
CHANNEL LENGTH(FT) = 6064.09 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1191.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.533 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.474; LOW LOSS FRACTION = 0.781
=====

```


SPECIFIED PEAK RAINFALL DEPTHS(INCH):

5-MINUTE = 0.14; 30-MINUTE = 0.29; 1-HOUR = 0.39

3-HOUR = 0.65; 6-HOUR = 0.89; 24-HOUR = 1.50

*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:

5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394

3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 11

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<<

```
+-----+
|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV02137C.DAT ]
Page: 1 of |
+-----+
|UPSTREAM DOWNSTREAM| | UPSTREAM DOWNSTREAM|
TIME(2) TO | MAX. STORAGE| |
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS) |
PEAK (HR) | MODELED (AF) | FOOTNOTES |
+-----+
| 10100.00 119.00| Subarea (UH) Added to Stream #1| 0.0 525.3|
20.417 | | |
| 119.00 12603.00| Convex Routing: Stream #1| 525.3 524.0|
20.500 | | |
| 810.00 809.00| Subarea (UH) Added to Stream #2| 0.0 17.9|
16.250 | | |
| 809.00 12603.00| Flow-Through Basin: Stream #2| 17.9 1.6|
23.083 | 5.36| |
| 12603.00 12603.00| Stream #2 Added to: Stream #1| 524.0 525.7|
20.500 | | |
+-----+
| 12603.00 12603.00| Zero Out: Stream #2| 1.6 0.0|
|
| 12603.00 126.00| Convex Routing: Stream #1| 525.7 524.9|
20.583 | | |
| 920.00 905.00| Subarea (UH) Added to Stream #2| 0.0 17.6|
16.333 | | |
| 905.00 126.00| Flow-Through Basin: Stream #2| 17.6 1.5|
24.167 | 7.24| |
| 126.00 126.00| Stream #2 Added to: Stream #1| 524.9 526.4|
20.583 | | |
+-----+
| 126.00 126.00| Zero Out: Stream #2| 1.5 0.0|
|
| 600.00 126.00| Subarea (UH) Added to Stream #2| 0.0 0.8|
16.500 | | |
| 126.00 126.00| Stream #2 Added to: Stream #1| 526.4 526.6|
20.583 | | |
| 126.00 126.00| Zero Out: Stream #2| 0.8 0.0|
|
| 126.00 12720.50| Convex Routing: Stream #1| 526.6 525.9|
20.750 | | |
+-----+
| 430.00 420.00| Subarea (UH) Added to Stream #2| 0.0 33.2|
16.333 | | |
| 420.00 420.50| Flow-Through Basin: Stream #2| 33.2 1.1|
24.417 | 0.35| |
| 420.50 427.00| Flow-Through Basin: Stream #2| 1.1 0.7|
26.500 | 0.11| |
| 413.00 425.00| Subarea (UH) Added to Stream #3| 0.0 16.0|
16.250 | | |
```

	425.00	426.00	Flow-Through Basin:	Stream #3	16.0	1.5
23.833		0.07				
+-----+-----+						
	426.00	427.00	Stream #3 Added to:	Stream #2	0.7	1.7
24.167						
	427.00	427.00	Zero Out:	Stream #3	1.5	0.0
	427.00	12720.50	Stream #2 Added to:	Stream #1	525.9	525.9
20.750						
	12720.50	12720.50	Zero Out:	Stream #2	1.7	0.0
	12720.50	12741.00	Convex Routing:	Stream #1	525.9	525.7
20.833						
+-----+-----+						
	320.00	339.00	Subarea (UH) Added to	Stream #2	0.0	73.6
16.417						
	339.00	340.00	Flow-Through Basin:	Stream #2	73.6	0.0
25.333		11.08				
	339.00	372.00	Flowby Basin Model:	Stream #2	0.0	0.0
25.333						
	390.00	372.00	Subarea (UH) Added to	Stream #4	0.0	6.5
16.583						
	372.00	372.00	Stream #4 Added to:	Stream #3	0.0	6.5
16.583						
+-----+-----+						
	372.00	372.00	Zero Out:	Stream #4	6.5	0.0
	372.00	373.00	Flow-Through Basin:	Stream #3	6.5	1.5
19.833		2.79				
	372.00	372.10	Flowby Basin Model:	Stream #3	1.5	1.5
19.833						
	373.00	373.00	Zero Out:	Stream #5	0.0	0.0
	373.00	340.00	Stream #3 Added to:	Stream #2	0.0	1.5
19.917						
+-----+-----+						
	340.00	340.00	Zero Out:	Stream #3	1.5	0.0
	340.00	12741.00	Stream #2 Added to:	Stream #1	525.7	527.2
20.833						
	12741.00	12741.00	Zero Out:	Stream #2	1.5	0.0
	12741.00	127.00	Convex Routing:	Stream #1	527.2	527.0
20.833						
	12710.00	127.00	Subarea (UH) Added to	Stream #2	0.0	2.7
16.583						

[Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL

| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV02137C.DAT]

Page: 2 of 1

UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS FOOTNOTES	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
127.00	127.00	Stream #2 Added to: Stream #1	527.0	527.5
20.833				
127.00	127.00	Zero Out: Stream #2	2.7	0.0
127.00	12902.00	Convex Routing: Stream #1	527.5	527.1
21.000				
50220.00	50347.00	Subarea (UH) Added to Stream #2	0.0	59.5
16.500				
50347.00	50347.00	Flow-Through Basin: Stream #2	59.5	8.7
22.250	29.33			
50347.00	12902.00	Convex Routing: Stream #2	8.7	8.7
22.417				
12902.00	12902.00	Stream #2 Added to: Stream #1	527.1	535.8
21.000				
12902.00	12902.00	Zero Out: Stream #2	8.7	0.0
12902.00	129.00	Convex Routing: Stream #1	535.8	535.6
21.083				
50400.00	129.00	Subarea (UH) Added to Stream #2	0.0	7.9
16.333				
129.00	129.00	Stream #2 Added to: Stream #1	535.6	536.7
21.083				
129.00	129.00	Zero Out: Stream #2	7.9	0.0
210.00	221.00	Subarea (UH) Added to Stream #2	0.0	25.9
16.333				
221.00	221.00	Flowby Basin Model: Stream #2	25.9	13.6
16.333				
221.00	223.00	Flow-Through Basin: Stream #2	13.6	5.6
18.167	2.59			
221.00	222.00	Flow-Through Basin: Stream #5	12.2	3.8
18.333	2.07			
223.00	222.00	Stream #5 Added to: Stream #2	5.6	9.4
18.167				
222.00	222.00	Zero Out: Stream #5	3.8	0.0
222.00	129.00	Stream #2 Added to: Stream #1	536.7	544.1
21.083				

129.00	129.00	Zero Out: Stream #2	9.4	0.0
129.00	133.00	Convex Routing: Stream #1	544.1	543.8
21.167				
13010.00	132.00	Subarea (UH) Added to Stream #2	0.0	137.3
17.333				
132.00	132.00	Flowby Basin Model: Stream #2	137.3	137.3
17.333				
132.00	132.00	Zero Out: Stream #3	0.0	0.0
132.00	132.00	Zero Out: Stream #4	0.0	0.0
132.00	13305.00	Convex Routing: Stream #2	137.3	136.0
17.917				
13305.00	133.00	Convex Routing: Stream #2	136.0	135.4
18.250				
132.00	133.00	Subarea (UH) Added to Stream #3	0.0	73.4
17.000				
133.00	133.00	Stream #3 Added to: Stream #2	135.4	198.5
17.167				
133.00	133.00	Zero Out: Stream #3	73.4	0.0
133.00	133.00	Stream #2 Added to: Stream #1	543.8	621.2
19.167				
133.00	133.00	Zero Out: Stream #2	198.5	0.0
133.00	134.00	Convex Routing: Stream #1	621.2	621.0
19.417				
133.00	134.00	Subarea (UH) Added to Stream #2	0.0	63.2
16.417				
134.00	134.00	Stream #2 Added to: Stream #1	621.0	634.8
19.333				
134.00	134.00	Zero Out: Stream #2	63.2	0.0
13500.00	134.00	Subarea (UH) Added to Stream #2	0.0	50.2
18.000				
134.00	134.00	Stream #2 Added to: Stream #1	634.8	683.7
19.000				
134.00	134.00	Zero Out: Stream #2	50.2	0.0
134.00	137.00	Convex Routing: Stream #1	683.7	683.4
19.167				

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV02137C.DAT ]
Page: 3 of |
-----+-----+
|UPSTREAM DOWNSTREAM| | UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE| |
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR) | MODELED (AF)| FOOTNOTES |
-----+-----+
| 134.00 137.00| Subarea (UH) Added to Stream #2| 0.0 49.3|
16.583 | | |
| 137.00 137.00| Stream #2 Added to: Stream #1| 683.4 698.8|
18.583 | | |
| 137.00 137.00| Zero Out: Stream #2| 49.3 0.0|
| | | |
| 137.00 137.00| View: Stream #1| 698.8|
18.583 | 868.91| 3 |
-----+-----+
|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT
INTERVAL |
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF
THE DESIGN STORM |
-----+

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END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Ver. 20.0 Release Date: 06/01/2013 License ID 1264

Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 138 *
* 2-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EVO2138C.DAT
TIME/DATE OF STUDY: 09:50 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 5.382 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.595; LOW LOSS FRACTION = 0.931
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.16; 30-MINUTE = 0.31; 1-HOUR = 0.42
3-HOUR = 0.79; 6-HOUR = 1.18; 24-HOUR = 2.09
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.141 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.348; LOW LOSS FRACTION = 0.638
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.29; 1-HOUR = 0.38
3-HOUR = 0.64; 6-HOUR = 0.88; 24-HOUR = 1.48
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing values for depth, outflow, and storage.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.292 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.509; LOW LOSS FRACTION = 0.862
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.29; 1-HOUR = 0.38
3-HOUR = 0.64; 6-HOUR = 0.88; 24-HOUR = 1.48
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

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INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.431 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.587; LOW LOSS FRACTION = 0.979
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.29; 1-HOUR = 0.38
3-HOUR = 0.64; 6-HOUR = 0.88; 24-HOUR = 1.48
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 286.00; DOWNSTREAM ELEVATION(FT) = 258.00
CHANNEL LENGTH(FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.299 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.292; LOW LOSS FRACTION = 0.536
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.29; 1-HOUR = 0.38
3-HOUR = 0.64; 6-HOUR = 0.88; 24-HOUR = 1.48
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 16.600
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.203 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.517
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.29; 1-HOUR = 0.38
3-HOUR = 0.64; 6-HOUR = 0.88; 24-HOUR = 1.48
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-3

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	5.95	0.280
3	2.00	22.18	1.150
4	3.00	46.43	3.090
5	4.00	75.05	6.150
6	5.00	105.54	10.350
7	6.00	127.29	15.380
8	7.00	138.99	20.860
9	8.00	150.45	26.500
10	9.00	161.55	32.360
11	10.00	697.61	38.410
12	11.00	1666.99	44.700

FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<<

FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<<
=====

FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<<
=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<<
=====

WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.380 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.251; LOW LOSS FRACTION = 0.478
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.29; 1-HOUR = 0.38
3-HOUR = 0.64; 6-HOUR = 0.88; 24-HOUR = 1.48
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<<
=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3C-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	7.430


```

3      2.00      0.02      15.170
4      3.00      2.70      23.230
5      4.00      4.69      31.610
6      5.00      6.04      40.320
7      6.00     10.72      49.360
8      7.00     17.77      58.730
9      8.00     424.53     68.440
10     9.00     1169.03    78.500
11    10.00     2113.61    88.500

```

```

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

```

```

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-3

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

```

```

*****
FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

```

```

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.556 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.486; LOW LOSS FRACTION = 0.820
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.29; 1-HOUR = 0.38
3-HOUR = 0.64; 6-HOUR = 0.88; 24-HOUR = 1.48
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

```

```

-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

3C-3

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-5

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

```

```

*****
FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

```

```

*****STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

```

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

```

```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====

WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.541 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.592; LOW LOSS FRACTION = 0.985
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.29; 1-HOUR = 0.38
3-HOUR = 0.64; 6-HOUR = 0.88; 24-HOUR = 1.48
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

```

```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.427 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.434; LOW LOSS FRACTION = 0.737
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.29; 1-HOUR = 0.38
3-HOUR = 0.64; 6-HOUR = 0.88; 24-HOUR = 1.48
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

5-2

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.256 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.553; LOW LOSS FRACTION = 0.923
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.29; 1-HOUR = 0.38
3-HOUR = 0.64; 6-HOUR = 0.88; 24-HOUR = 1.48
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.274 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.253; LOW LOSS FRACTION = 0.494
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.29; 1-HOUR = 0.38
3-HOUR = 0.64; 6-HOUR = 0.88; 24-HOUR = 1.48
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2
-----
>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.
DATA PAIR Qenter Qpass
NUMBER (CFS) (CFS)
- 0.00 0.00
1 25.00 13.59
2 75.00 16.84
3 100.00 18.46
4 250.00 28.22
5 550.00 47.73
FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5
=====

*****
FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

B Diversion
Structure

3B-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	0.310
3	2.00	0.83	1.240
4	3.00	5.60	2.600
5	4.00	16.88	4.130
6	5.00	23.48	5.790
7	6.00	36.73	7.560
8	7.00	55.95	9.440
9	8.00	78.70	11.430
10	9.00	228.67	12.460

```

*****
FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

3B-4

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	1.84	0.260
3	2.00	3.22	1.160
4	3.00	4.16	2.520
5	4.00	4.94	3.990
6	5.00	5.60	5.550
7	6.00	7.17	7.200
8	7.00	14.13	8.950
9	8.00	18.54	10.800
10	9.00	21.90	12.740
11	10.00	24.73	14.780
12	11.00	37.17	16.920
13	12.00	57.63	19.160
14	13.00	83.32	21.500
15	14.00	112.96	23.940
16	15.00	133.28	26.480
17	16.00	144.34	29.150
18	17.00	154.45	31.950
19	18.00	163.94	34.870
20	19.00	172.92	37.940
21	20.00	181.39	41.140
22	21.00	189.45	44.500
23	22.00	197.22	48.010

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 1.262 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.487; LOW LOSS FRACTION = 0.830
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.29; 1-HOUR = 0.38
3-HOUR = 0.64; 6-HOUR = 0.88; 24-HOUR = 1.48
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: **GBD Side**
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN **Weir**
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8

>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<

```

=====
***STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE =   6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE =  3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====

*****
****ERROR-STREAM 4 CONTAINS NO INFORMATION (EMPTY).
      PROCESS IS NEGATED.
*****

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE =   7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====

*****
****ERROR-STREAM 4 CONTAINS NO INFORMATION (EMPTY).
      PROCESS IS NEGATED.
*****

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE =   6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) =   0.01      CHANNEL Z =   3.00
UPSTREAM ELEVATION(FT) =   427.51; DOWNSTREAM ELEVATION(FT) =   315.00
CHANNEL LENGTH(FT) =   9760.05      MANNING'S FACTOR = 0.040

```

```

=====
CONSTANT LOSS RATE(CFS) =   0.00
=====

*****
FLOW PROCESS FROM NODE    13305.00 TO NODE    133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) =   0.01      CHANNEL Z =   3.00
UPSTREAM ELEVATION(FT) =   315.00; DOWNSTREAM ELEVATION(FT) =   212.00
CHANNEL LENGTH(FT) =   6877.24      MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE(CFS) =   0.00
=====

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    133.00 IS CODE =   1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA =   1715.900 ACRES; BASEFLOW =   0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME =   0.947 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) =   0.449; LOW LOSS FRACTION = 0.750
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE =   0.13; 30-MINUTE =   0.29; 1-HOUR =   0.38
3-HOUR =   0.64; 6-HOUR =   0.88; 24-HOUR =   1.48
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE    133.00 TO NODE    133.00 IS CODE =   7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE    133.00 TO NODE    133.00 IS CODE =   6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE    133.00 TO NODE    133.00 IS CODE =   7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 212.00; DOWNSTREAM ELEVATION(FT) = 173.00
CHANNEL LENGTH(FT) = 6461.31 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1691.600 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.391 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.487; LOW LOSS FRACTION = 0.818
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.29; 1-HOUR = 0.38
3-HOUR = 0.64; 6-HOUR = 0.88; 24-HOUR = 1.48
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 173.00; DOWNSTREAM ELEVATION(FT) = 133.00
CHANNEL LENGTH(FT) = 6064.09 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1191.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.533 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.474; LOW LOSS FRACTION = 0.781
=====

```

```

*****
FLOW PROCESS FROM NODE 13500.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 3859.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 2.983 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.567; LOW LOSS FRACTION = 0.908
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.29; 1-HOUR = 0.38
3-HOUR = 0.64; 6-HOUR = 0.88; 24-HOUR = 1.48
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 173.00; DOWNSTREAM ELEVATION(FT) = 133.00
CHANNEL LENGTH(FT) = 6064.09 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1191.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.533 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.474; LOW LOSS FRACTION = 0.781
=====

```

SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.29; 1-HOUR = 0.38
3-HOUR = 0.64; 6-HOUR = 0.88; 24-HOUR = 1.48
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<<
=====

FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<<
=====

FLOW PROCESS FROM NODE 137.00 TO NODE 138.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<<
=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 133.00; DOWNSTREAM ELEVATION (FT) = 119.70
CHANNEL LENGTH (FT) = 4643.67 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

FLOW PROCESS FROM NODE 137.00 TO NODE 138.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<<
=====

WATERSHED AREA = 1303.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.923 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.534; LOW LOSS FRACTION = 0.861
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.29; 1-HOUR = 0.38
3-HOUR = 0.64; 6-HOUR = 0.88; 24-HOUR = 1.48
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 138.00 TO NODE 138.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<<
=====

FLOW PROCESS FROM NODE 138.00 TO NODE 138.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<<
=====

FLOW PROCESS FROM NODE 138.00 TO NODE 138.00 IS CODE = 11

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<<<
=====

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

| INPUT FILENAME: [EV02138C.DAT]

Page: 1 of 1

UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS FOOTNOTES	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
--	--	---	------------------------	--------------------------

10100.00	119.00	Subarea (UH) Added to Stream #1	0.0	516.5
20.417				
119.00	12603.00	Convex Routing: Stream #1	516.5	515.4
20.500				
810.00	809.00	Subarea (UH) Added to Stream #2	0.0	17.2
16.167				
809.00	12603.00	Flow-Through Basin: Stream #2	17.2	1.6
22.917	5.28			
12603.00	12603.00	Stream #2 Added to: Stream #1	515.4	517.0
20.500				
12603.00	12603.00	Zero Out: Stream #2	1.6	0.0
12603.00	126.00	Convex Routing: Stream #1	517.0	516.3
20.583				
920.00	905.00	Subarea (UH) Added to Stream #2	0.0	17.1
16.333				
905.00	126.00	Flow-Through Basin: Stream #2	17.1	1.5
24.167	7.13			
126.00	126.00	Stream #2 Added to: Stream #1	516.3	517.9
20.583				
126.00	126.00	Zero Out: Stream #2	1.5	0.0
600.00	126.00	Subarea (UH) Added to Stream #2	0.0	0.8
16.500				
126.00	126.00	Stream #2 Added to: Stream #1	517.9	518.0
20.583				
126.00	126.00	Zero Out: Stream #2	0.8	0.0
126.00	12720.50	Convex Routing: Stream #1	518.0	517.4
20.750				
430.00	420.00	Subarea (UH) Added to Stream #2	0.0	32.4
16.333				
420.00	420.50	Flow-Through Basin: Stream #2	32.4	0.5
24.500	0.17			
420.50	427.00	Flow-Through Basin: Stream #2	0.5	0.3
26.833	0.05			
413.00	425.00	Subarea (UH) Added to Stream #3	0.0	15.5
16.250				

425.00	426.00	Flow-Through Basin: Stream #3	15.5	1.4
24.083	0.06			
426.00	427.00	Stream #3 Added to: Stream #2	0.3	1.4
24.167				
427.00	427.00	Zero Out: Stream #3	1.4	0.0
427.00	12720.50	Stream #2 Added to: Stream #1	517.4	517.4
20.750				
12720.50	12720.50	Zero Out: Stream #2	1.4	0.0
12720.50	12741.00	Convex Routing: Stream #1	517.4	517.2
20.833				
320.00	339.00	Subarea (UH) Added to Stream #2	0.0	71.6
16.417				
339.00	340.00	Flow-Through Basin: Stream #2	71.6	0.0
25.333	10.50			
339.00	372.00	Flowby Basin Model: Stream #2	0.0	0.0
25.333				
390.00	372.00	Subarea (UH) Added to Stream #4	0.0	6.4
16.583				
372.00	372.00	Stream #4 Added to: Stream #3	0.0	6.4
16.583				
372.00	372.00	Zero Out: Stream #4	6.4	0.0
372.00	373.00	Flow-Through Basin: Stream #3	6.4	1.5
19.833	2.75			
372.00	372.10	Flowby Basin Model: Stream #3	1.5	1.5
19.833				
373.00	373.00	Zero Out: Stream #5	0.0	0.0
373.00	340.00	Stream #3 Added to: Stream #2	0.0	1.5
19.917				
340.00	340.00	Zero Out: Stream #3	1.5	0.0
340.00	12741.00	Stream #2 Added to: Stream #1	517.2	518.7
20.833				
12741.00	12741.00	Zero Out: Stream #2	1.5	0.0
12741.00	127.00	Convex Routing: Stream #1	518.7	518.5
20.833				
12710.00	127.00	Subarea (UH) Added to Stream #2	0.0	2.6
16.583				

|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
 | 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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|
|                                     * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV02138C.DAT ]
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-----+-----+-----+-----+
|UPSTREAM  DOWNSTREAM|                                     |UPSTREAM  DOWNSTREAM|
TIME (2) TO | MAX. STORAGE|                                     |
| NODE #     NODE # | HYDROLOGIC/HYDRAULIC PROCESS |PEAK (CFS)  PEAK (CFS)|
PEAK (HR)   | MODELED (AF)| FOOTNOTES |
-----+-----+-----+-----+
| 127.00    127.00| Stream #2 Added to:  Stream #1|    518.5    519.0|
20.833 |          |          |
| 127.00    127.00| Zero Out:           Stream #2|         2.6     0.0|
|          |          |          |
| 127.00    12902.00| Convex Routing:     Stream #1|    519.0    518.7|
20.917 |          |          |
| 50220.00   50347.00| Subarea (UH) Added to Stream #2|         0.0    57.7|
16.500 |          |          |
| 50347.00   50347.00| Flow-Through Basin: Stream #2|         57.7     8.4|
22.417 |          29.04|          |
-----+-----+-----+-----+
| 50347.00   12902.00| Convex Routing:     Stream #2|         8.4     8.4|
22.583 |          |          |
| 12902.00   12902.00| Stream #2 Added to: Stream #1|    518.7    527.0|
20.917 |          |          |
| 12902.00   12902.00| Zero Out:           Stream #2|         8.4     0.0|
|          |          |          |
| 12902.00    129.00| Convex Routing:     Stream #1|    527.0    526.9|
21.083 |          |          |
| 50400.00    129.00| Subarea (UH) Added to Stream #2|         0.0     7.6|
16.333 |          |          |
-----+-----+-----+-----+
| 129.00     129.00| Stream #2 Added to: Stream #1|    526.9    527.9|
21.083 |          |          |
| 129.00     129.00| Zero Out:           Stream #2|         7.6     0.0|
|          |          |          |
| 210.00     221.00| Subarea (UH) Added to Stream #2|         0.0    25.0|
16.333 |          |          |
| 221.00     221.00| Flowby Basin Model: Stream #2|        25.0    13.6|
16.333 |          |          |
| 221.00     223.00| Flow-Through Basin: Stream #2|        13.6     5.4|
18.167 |          2.55|          |
-----+-----+-----+-----+
| 221.00     222.00| Flow-Through Basin: Stream #5|        11.4     3.8|
18.333 |          2.02|          |
| 223.00     222.00| Stream #5 Added to: Stream #2|         5.4     9.2|
18.167 |          |          |
| 222.00     222.00| Zero Out:           Stream #5|         3.8     0.0|
|          |          |          |
| 222.00     129.00| Stream #2 Added to: Stream #1|    527.9    535.3|
21.083 |          |          |

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	129.00	129.00	Zero Out:	Stream #2	9.2	0.0
+-----+						
	129.00	133.00	Convex Routing:	Stream #1	535.3	535.0
21.167						
	13010.00	132.00	Subarea (UH) Added to	Stream #2	0.0	134.2
17.333						
	132.00	132.00	Flowby Basin Model:	Stream #2	134.2	134.2
17.333						
	132.00	132.00	Zero Out:	Stream #3	0.0	0.0
	132.00	132.00	Zero Out:	Stream #4	0.0	0.0
+-----+						
	132.00	13305.00	Convex Routing:	Stream #2	134.2	132.8
17.917						
	13305.00	133.00	Convex Routing:	Stream #2	132.8	132.3
18.250						
	132.00	133.00	Subarea (UH) Added to	Stream #3	0.0	71.6
17.000						
	133.00	133.00	Stream #3 Added to:	Stream #2	132.3	194.2
17.167						
	133.00	133.00	Zero Out:	Stream #3	71.6	0.0
+-----+						
	133.00	133.00	Stream #2 Added to:	Stream #1	535.0	612.3
19.167						
	133.00	133.00	Zero Out:	Stream #2	194.2	0.0
	133.00	134.00	Convex Routing:	Stream #1	612.3	612.1
19.417						
	133.00	134.00	Subarea (UH) Added to	Stream #2	0.0	61.7
16.417						
	134.00	134.00	Stream #2 Added to:	Stream #1	612.1	625.6
19.333						
+-----+						
	134.00	134.00	Zero Out:	Stream #2	61.7	0.0
	13500.00	134.00	Subarea (UH) Added to	Stream #2	0.0	49.4
18.000						
	134.00	134.00	Stream #2 Added to:	Stream #1	625.6	673.3
19.000						
	134.00	134.00	Zero Out:	Stream #2	49.4	0.0
	134.00	137.00	Convex Routing:	Stream #1	673.3	673.0
19.167						

[Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL

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* AES FLOODSCx PROGRAM RESULTS SUMMARY *

| INPUT FILENAME: [EV02138C.DAT]

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UPSTREAM TIME (2) TO	DOWNSTREAM MAX. STORAGE	HYDROLOGIC/HYDRAULIC PROCESS	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
NODE #	NODE #			
PEAK (HR)	MODELED (AF)	FOOTNOTES		

134.00	137.00	Subarea (UH) Added to Stream #2	0.0	48.0
16.583				
137.00	137.00	Stream #2 Added to: Stream #1	673.0	688.1
18.583				
137.00	137.00	Zero Out: Stream #2	48.0	0.0
137.00	138.00	Convex Routing: Stream #1	688.1	687.6
18.833				
137.00	138.00	Subarea (UH) Added to Stream #2	0.0	30.3
17.000				

138.00	138.00	Stream #2 Added to: Stream #1	687.6	703.7
18.750				
138.00	138.00	Zero Out: Stream #2	30.3	0.0
138.00	138.00	View: Stream #1		703.7
18.750	877.58	3		

| Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL

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END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Ver. 20.0 Release Date: 06/01/2013 License ID 1264

Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 139 *
* 2-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EVO2139C.DAT
TIME/DATE OF STUDY: 09:48 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 5.382 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.595; LOW LOSS FRACTION = 0.931
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.16; 30-MINUTE = 0.31; 1-HOUR = 0.42
3-HOUR = 0.79; 6-HOUR = 1.18; 24-HOUR = 2.09
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.141 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.348; LOW LOSS FRACTION = 0.638
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.29; 1-HOUR = 0.38
3-HOUR = 0.64; 6-HOUR = 0.88; 24-HOUR = 1.48
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing values for depth, outflow, and storage.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.292 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.509; LOW LOSS FRACTION = 0.862
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.29; 1-HOUR = 0.38
3-HOUR = 0.64; 6-HOUR = 0.88; 24-HOUR = 1.48
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

4F-1

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.431 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.587; LOW LOSS FRACTION = 0.979
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.29; 1-HOUR = 0.38
3-HOUR = 0.64; 6-HOUR = 0.88; 24-HOUR = 1.48
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 286.00; DOWNSTREAM ELEVATION (FT) = 258.00
CHANNEL LENGTH (FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.299 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.292; LOW LOSS FRACTION = 0.536
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.29; 1-HOUR = 0.38
3-HOUR = 0.64; 6-HOUR = 0.88; 24-HOUR = 1.48
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 16.600
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.203 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.517
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.29; 1-HOUR = 0.38
3-HOUR = 0.64; 6-HOUR = 0.88; 24-HOUR = 1.48
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN. **3D-3**
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	5.95	0.280
3	2.00	22.18	1.150
4	3.00	46.43	3.090
5	4.00	75.05	6.150
6	5.00	105.54	10.350
7	6.00	127.29	15.380
8	7.00	138.99	20.860
9	8.00	150.45	26.500
10	9.00	161.55	32.360
11	10.00	697.61	38.410
12	11.00	1666.99	44.700

FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<<

FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<<
=====

FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<<
=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<<
=====

WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.380 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.251; LOW LOSS FRACTION = 0.478
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.29; 1-HOUR = 0.38
3-HOUR = 0.64; 6-HOUR = 0.88; 24-HOUR = 1.48
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<<
=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN. **3C-1**
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	7.430


```

3      2.00      0.02      15.170
4      3.00      2.70      23.230
5      4.00      4.69      31.610
6      5.00      6.04      40.320
7      6.00     10.72      49.360
8      7.00     17.77      58.730
9      8.00     424.53     68.440
10     9.00     1169.03    78.500
11    10.00     2113.61    88.500

```

```

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

```

```

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-3

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

```

```

*****
FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

```

```

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.556 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.486; LOW LOSS FRACTION = 0.820
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.29; 1-HOUR = 0.38
3-HOUR = 0.64; 6-HOUR = 0.88; 24-HOUR = 1.48
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

```

```

-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

3C-3

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-5

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

```

```

*****
FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

```

```

*****STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

```

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

```

```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====

WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.541 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.592; LOW LOSS FRACTION = 0.985
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.29; 1-HOUR = 0.38
3-HOUR = 0.64; 6-HOUR = 0.88; 24-HOUR = 1.48
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

```

```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.427 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.434; LOW LOSS FRACTION = 0.737
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.29; 1-HOUR = 0.38
3-HOUR = 0.64; 6-HOUR = 0.88; 24-HOUR = 1.48
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

5-2

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.256 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.553; LOW LOSS FRACTION = 0.923
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.29; 1-HOUR = 0.38
3-HOUR = 0.64; 6-HOUR = 0.88; 24-HOUR = 1.48
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

 FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<<
 =====

 FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<<
 =====

WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
 *USER ENTERED "LAG" TIME = 0.274 HOURS
 VALLEY (DEVELOPED) S-GRAPH SELECTED
 MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.253; LOW LOSS FRACTION = 0.494
 SPECIFIED PEAK RAINFALL DEPTHS (INCH):
 5-MINUTE = 0.13; 30-MINUTE = 0.29; 1-HOUR = 0.38
 3-HOUR = 0.64; 6-HOUR = 0.88; 24-HOUR = 1.48
 *USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
 5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
 3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

 FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<<
 =====

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
 FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
 THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	25.00	13.59
2	75.00	16.84
3	100.00	18.46
4	250.00	28.22
5	550.00	47.73

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5
 =====

 FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<<
 =====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
 THROUGH A FLOW-THROUGH DETENTION BASIN. **3B-1**
 SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
 DEAD STORAGE (AF) = 2.070
 SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
 SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
 DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	0.310
3	2.00	0.83	1.240
4	3.00	5.60	2.600
5	4.00	16.88	4.130
6	5.00	23.48	5.790
7	6.00	36.73	7.560
8	7.00	55.95	9.440
9	8.00	78.70	11.430
10	9.00	228.67	12.460

 FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<<
 =====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5
 THROUGH A FLOW-THROUGH DETENTION BASIN. **3B-4**
 SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
 DEAD STORAGE (AF) = 0.000
 SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
 SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
 DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	1.84	0.260
3	2.00	3.22	1.160
4	3.00	4.16	2.520
5	4.00	4.94	3.990
6	5.00	5.60	5.550
7	6.00	7.17	7.200
8	7.00	14.13	8.950
9	8.00	18.54	10.800
10	9.00	21.90	12.740
11	10.00	24.73	14.780
12	11.00	37.17	16.920
13	12.00	57.63	19.160
14	13.00	83.32	21.500
15	14.00	112.96	23.940
16	15.00	133.28	26.480
17	16.00	144.34	29.150
18	17.00	154.45	31.950
19	18.00	163.94	34.870
20	19.00	172.92	37.940
21	20.00	181.39	41.140
22	21.00	189.45	44.500
23	22.00	197.22	48.010

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 1.262 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.487; LOW LOSS FRACTION = 0.830
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.29; 1-HOUR = 0.38
3-HOUR = 0.64; 6-HOUR = 0.88; 24-HOUR = 1.48
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN **GBD Side**
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS. **Weir**

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8

>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<

```

=====
***STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====

*****
****ERROR-STREAM 4 CONTAINS NO INFORMATION (EMPTY).
PROCESS IS NEGATED.
*****

*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====

*****
****ERROR-STREAM 4 CONTAINS NO INFORMATION (EMPTY).
PROCESS IS NEGATED.
*****

*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 132.00 TO NODE 13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 427.51; DOWNSTREAM ELEVATION(FT) = 315.00
CHANNEL LENGTH(FT) = 9760.05 MANNING'S FACTOR = 0.040

```

```

=====
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 13305.00 TO NODE 133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 315.00; DOWNSTREAM ELEVATION(FT) = 212.00
CHANNEL LENGTH(FT) = 6877.24 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 132.00 TO NODE 133.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.947 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.449; LOW LOSS FRACTION = 0.750
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.29; 1-HOUR = 0.38
3-HOUR = 0.64; 6-HOUR = 0.88; 24-HOUR = 1.48
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 212.00; DOWNSTREAM ELEVATION(FT) = 173.00
CHANNEL LENGTH(FT) = 6461.31 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1691.600 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.391 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.487; LOW LOSS FRACTION = 0.818
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.29; 1-HOUR = 0.38
3-HOUR = 0.64; 6-HOUR = 0.88; 24-HOUR = 1.48
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 173.00; DOWNSTREAM ELEVATION(FT) = 133.00
CHANNEL LENGTH(FT) = 6064.09 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1191.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.533 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.474; LOW LOSS FRACTION = 0.781
=====

```

```

*****
FLOW PROCESS FROM NODE 13500.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 3859.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 2.983 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.567; LOW LOSS FRACTION = 0.908
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.29; 1-HOUR = 0.38
3-HOUR = 0.64; 6-HOUR = 0.88; 24-HOUR = 1.48
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 173.00; DOWNSTREAM ELEVATION(FT) = 133.00
CHANNEL LENGTH(FT) = 6064.09 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1191.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.533 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.474; LOW LOSS FRACTION = 0.781
=====

```

SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.29; 1-HOUR = 0.38
3-HOUR = 0.64; 6-HOUR = 0.88; 24-HOUR = 1.48
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<<
=====

FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<<
=====

FLOW PROCESS FROM NODE 137.00 TO NODE 138.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<<
=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 133.00; DOWNSTREAM ELEVATION (FT) = 119.70
CHANNEL LENGTH (FT) = 4643.67 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

FLOW PROCESS FROM NODE 137.00 TO NODE 138.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<<
=====

WATERSHED AREA = 1303.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.923 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.534; LOW LOSS FRACTION = 0.861
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.29; 1-HOUR = 0.38
3-HOUR = 0.64; 6-HOUR = 0.88; 24-HOUR = 1.48
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 138.00 TO NODE 138.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<<
=====

FLOW PROCESS FROM NODE 138.00 TO NODE 138.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<<
=====

FLOW PROCESS FROM NODE 138.00 TO NODE 139.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<<
=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 119.70; DOWNSTREAM ELEVATION (FT) = 100.00
CHANNEL LENGTH (FT) = 3107.78 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

FLOW PROCESS FROM NODE 138.00 TO NODE 139.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<<
=====

WATERSHED AREA = 428.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.288 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.413; LOW LOSS FRACTION = 0.670
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.13; 30-MINUTE = 0.29; 1-HOUR = 0.38
3-HOUR = 0.64; 6-HOUR = 0.88; 24-HOUR = 1.48
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 139.00 TO NODE 139.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<<
=====

FLOW PROCESS FROM NODE 139.00 TO NODE 139.00 IS CODE = 6

	425.00	426.00	Flow-Through Basin:	Stream #3	15.5	1.4
24.083		0.06				
+-----+						
	426.00	427.00	Stream #3 Added to:	Stream #2	0.3	1.4
24.167						
	427.00	427.00	Zero Out:	Stream #3	1.4	0.0
	427.00	12720.50	Stream #2 Added to:	Stream #1	517.2	517.2
20.750						
	12720.50	12720.50	Zero Out:	Stream #2	1.4	0.0
	12720.50	12741.00	Convex Routing:	Stream #1	517.2	517.0
20.833						
+-----+						
	320.00	339.00	Subarea (UH) Added to	Stream #2	0.0	71.5
16.417						
	339.00	340.00	Flow-Through Basin:	Stream #2	71.5	0.0
25.333		10.49				
	339.00	372.00	Flowby Basin Model:	Stream #2	0.0	0.0
25.333						
	390.00	372.00	Subarea (UH) Added to	Stream #4	0.0	6.3
16.583						
	372.00	372.00	Stream #4 Added to:	Stream #3	0.0	6.3
16.583						
+-----+						
	372.00	372.00	Zero Out:	Stream #4	6.3	0.0
	372.00	373.00	Flow-Through Basin:	Stream #3	6.3	1.5
19.833		2.75				
	372.00	372.10	Flowby Basin Model:	Stream #3	1.5	1.5
19.833						
	373.00	373.00	Zero Out:	Stream #5	0.0	0.0
	373.00	340.00	Stream #3 Added to:	Stream #2	0.0	1.5
19.917						
+-----+						
	340.00	340.00	Zero Out:	Stream #3	1.5	0.0
	340.00	12741.00	Stream #2 Added to:	Stream #1	517.0	518.5
20.833						
	12741.00	12741.00	Zero Out:	Stream #2	1.5	0.0
	12741.00	127.00	Convex Routing:	Stream #1	518.5	518.3
20.833						
	12710.00	127.00	Subarea (UH) Added to	Stream #2	0.0	2.6
16.583						

[Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL

| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV02139C.DAT]

Page: 2 of 1

UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS FOOTNOTES	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
127.00	127.00	Stream #2 Added to: Stream #1	518.3	518.8
20.833				
127.00	127.00	Zero Out: Stream #2	2.6	0.0
127.00	12902.00	Convex Routing: Stream #1	518.8	518.5
20.917				
50220.00	50347.00	Subarea (UH) Added to Stream #2	0.0	57.6
16.500				
50347.00	50347.00	Flow-Through Basin: Stream #2	57.6	8.4
22.417	29.04			
50347.00	12902.00	Convex Routing: Stream #2	8.4	8.4
22.583				
12902.00	12902.00	Stream #2 Added to: Stream #1	518.5	526.8
20.917				
12902.00	12902.00	Zero Out: Stream #2	8.4	0.0
12902.00	129.00	Convex Routing: Stream #1	526.8	526.7
21.083				
50400.00	129.00	Subarea (UH) Added to Stream #2	0.0	7.6
16.333				
129.00	129.00	Stream #2 Added to: Stream #1	526.7	527.7
21.083				
129.00	129.00	Zero Out: Stream #2	7.6	0.0
210.00	221.00	Subarea (UH) Added to Stream #2	0.0	25.0
16.333				
221.00	221.00	Flowby Basin Model: Stream #2	25.0	13.6
16.333				
221.00	223.00	Flow-Through Basin: Stream #2	13.6	5.4
18.167	2.55			
221.00	222.00	Flow-Through Basin: Stream #5	11.4	3.8
18.333	2.02			
223.00	222.00	Stream #5 Added to: Stream #2	5.4	9.2
18.167				
222.00	222.00	Zero Out: Stream #5	3.8	0.0
222.00	129.00	Stream #2 Added to: Stream #1	527.7	535.0
21.083				

129.00	129.00	Zero Out: Stream #2	9.2	0.0
129.00	133.00	Convex Routing: Stream #1	535.0	534.8
21.167				
13010.00	132.00	Subarea (UH) Added to Stream #2	0.0	134.0
17.333				
132.00	132.00	Flowby Basin Model: Stream #2	134.0	134.0
17.333				
132.00	132.00	Zero Out: Stream #3	0.0	0.0
132.00	132.00	Zero Out: Stream #4	0.0	0.0
132.00	13305.00	Convex Routing: Stream #2	134.0	132.6
17.917				
13305.00	133.00	Convex Routing: Stream #2	132.6	132.1
18.250				
132.00	133.00	Subarea (UH) Added to Stream #3	0.0	71.5
17.000				
133.00	133.00	Stream #3 Added to: Stream #2	132.1	194.0
17.167				
133.00	133.00	Zero Out: Stream #3	71.5	0.0
133.00	133.00	Stream #2 Added to: Stream #1	534.8	612.2
19.167				
133.00	133.00	Zero Out: Stream #2	194.0	0.0
133.00	134.00	Convex Routing: Stream #1	612.2	612.0
19.417				
133.00	134.00	Subarea (UH) Added to Stream #2	0.0	61.5
16.417				
134.00	134.00	Stream #2 Added to: Stream #1	612.0	625.5
19.333				
134.00	134.00	Zero Out: Stream #2	61.5	0.0
13500.00	134.00	Subarea (UH) Added to Stream #2	0.0	49.3
18.000				
134.00	134.00	Stream #2 Added to: Stream #1	625.5	673.1
19.000				
134.00	134.00	Zero Out: Stream #2	49.3	0.0
134.00	137.00	Convex Routing: Stream #1	673.1	672.8
19.167				

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV02139C.DAT ]
Page: 3 of |
-----+
|UPSTREAM DOWNSTREAM| | UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE|
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR) | MODELED (AF)| FOOTNOTES |
-----+
| 134.00 137.00| Subarea (UH) Added to Stream #2| 0.0 47.9|
16.583 | | |
| 137.00 137.00| Stream #2 Added to: Stream #1| 672.8 687.8|
18.583 | | |
| 137.00 137.00| Zero Out: Stream #2| 47.9 0.0|
| | |
| 137.00 138.00| Convex Routing: Stream #1| 687.8 687.3|
18.833 | | |
| 137.00 138.00| Subarea (UH) Added to Stream #2| 0.0 30.2|
17.000 | | |
-----+
| 138.00 138.00| Stream #2 Added to: Stream #1| 687.3 703.4|
18.750 | | |
| 138.00 138.00| Zero Out: Stream #2| 30.2 0.0|
| | |
| 138.00 139.00| Convex Routing: Stream #1| 703.4 703.1|
18.833 | | |
| 138.00 139.00| Subarea (UH) Added to Stream #2| 0.0 31.8|
16.333 | | |
| 139.00 139.00| Stream #2 Added to: Stream #1| 703.1 709.9|
18.833 | | |
-----+
| 139.00 139.00| Zero Out: Stream #2| 31.8 0.0|
| | |
| 139.00 139.00| View: Stream #1| 709.9|
18.833 | 893.63| 3 |
-----+
|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT
INTERVAL |
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF
THE DESIGN STORM |
-----+

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END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Ver. 20.0 Release Date: 06/01/2013 License ID 1264

Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 126 *
* 5-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV05126C.DAT
TIME/DATE OF STUDY: 13:40 06/12/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 3.308 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.496; LOW LOSS FRACTION = 0.845
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.23; 30-MINUTE = 0.44; 1-HOUR = 0.62
3-HOUR = 1.15; 6-HOUR = 1.71; 24-HOUR = 3.02
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.341; 30-MINUTE = 0.392; 1-HOUR = 0.432
3-HOUR = 0.782; 6-HOUR = 0.902; 24-HOUR = 0.943

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.134 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.290; LOW LOSS FRACTION = 0.598
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.18; 30-MINUTE = 0.41; 1-HOUR = 0.55
3-HOUR = 0.92; 6-HOUR = 1.27; 24-HOUR = 2.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.341; 30-MINUTE = 0.392; 1-HOUR = 0.432
3-HOUR = 0.782; 6-HOUR = 0.902; 24-HOUR = 0.943

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing values for depth, outflow, and storage.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 312.40; DOWNSTREAM ELEVATION (FT) = 286.00
CHANNEL LENGTH (FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.253 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.424; LOW LOSS FRACTION = 0.818
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.18; 30-MINUTE = 0.41; 1-HOUR = 0.55
3-HOUR = 0.92; 6-HOUR = 1.27; 24-HOUR = 2.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.341; 30-MINUTE = 0.392; 1-HOUR = 0.432
3-HOUR = 0.782; 6-HOUR = 0.902; 24-HOUR = 0.943

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

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INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.314 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.490; LOW LOSS FRACTION = 0.958
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.18; 30-MINUTE = 0.41; 1-HOUR = 0.55
3-HOUR = 0.92; 6-HOUR = 1.27; 24-HOUR = 2.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.341; 30-MINUTE = 0.392; 1-HOUR = 0.432
3-HOUR = 0.782; 6-HOUR = 0.902; 24-HOUR = 0.943

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 11

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<

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| * AES FLOODSCx PROGRAM RESULTS SUMMARY *

| INPUT FILENAME: [EV05126C.DAT]

Page: 1 of |

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UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS FOOTNOTES	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
--	--	---	------------------------	--------------------------

10100.00	119.00	Subarea (UH) Added to Stream #1	0.0	2391.2
----------	--------	---------------------------------	-----	--------

19.333				
--------	--	--	--	--

119.00	12603.00	Convex Routing: Stream #1	2391.2	2363.2
--------	----------	---------------------------	--------	--------

19.417				
--------	--	--	--	--

810.00	809.00	Subarea (UH) Added to Stream #2	0.0	41.5
--------	--------	---------------------------------	-----	------

16.167				
--------	--	--	--	--

809.00	12603.00	Flow-Through Basin: Stream #2	41.5	2.1
--------	----------	-------------------------------	------	-----

24.083	9.17			
--------	------	--	--	--

12603.00	12603.00	Stream #2 Added to: Stream #1	2363.2	2365.3
----------	----------	-------------------------------	--------	--------

19.417				
--------	--	--	--	--

12603.00	12603.00	Zero Out: Stream #2	2.1	0.0
----------	----------	---------------------	-----	-----

--	--	--	--	--

12603.00	126.00	Convex Routing: Stream #1	2365.3	2344.3
----------	--------	---------------------------	--------	--------

19.250				
--------	--	--	--	--

920.00	905.00	Subarea (UH) Added to Stream #2	0.0	65.4
--------	--------	---------------------------------	-----	------

16.333				
--------	--	--	--	--

905.00	126.00	Flow-Through Basin: Stream #2	65.4	17.8
--------	--------	-------------------------------	------	------

17.417	10.84			
--------	-------	--	--	--

126.00	126.00	Stream #2 Added to: Stream #1	2344.3	2358.3
--------	--------	-------------------------------	--------	--------

19.250				
--------	--	--	--	--

126.00	126.00	Zero Out: Stream #2	17.8	0.0
--------	--------	---------------------	------	-----

--	--	--	--	--

600.00	126.00	Subarea (UH) Added to Stream #2	0.0	11.5
--------	--------	---------------------------------	-----	------

16.417				
--------	--	--	--	--

126.00	126.00	Stream #2 Added to: Stream #1	2358.3	2358.8
--------	--------	-------------------------------	--------	--------

19.250				
--------	--	--	--	--

126.00	126.00	Zero Out: Stream #2	11.5	0.0
--------	--------	---------------------	------	-----

--	--	--	--	--

126.00	126.00	View: Stream #1		2358.8
--------	--------	-----------------	--	--------

19.250	1953.61	3		
--------	---------	---	--	--

|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL

| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
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***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 127 *
* 5-YR JUNE 2019 ROKAMOTO *

FILE NAME: EV05127C.DAT
TIME/DATE OF STUDY: 09:44 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 3.308 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.496; LOW LOSS FRACTION = 0.845
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.23; 30-MINUTE = 0.45; 1-HOUR = 0.63
3-HOUR = 1.17; 6-HOUR = 1.74; 24-HOUR = 3.08
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.134 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.290; LOW LOSS FRACTION = 0.598
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.18; 30-MINUTE = 0.42; 1-HOUR = 0.56
3-HOUR = 0.94; 6-HOUR = 1.30; 24-HOUR = 2.16
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing values for depth, outflow, and storage.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.253 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.424; LOW LOSS FRACTION = 0.818
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.18; 30-MINUTE = 0.42; 1-HOUR = 0.56
3-HOUR = 0.94; 6-HOUR = 1.30; 24-HOUR = 2.16
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

4F-1

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.314 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.490; LOW LOSS FRACTION = 0.958
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.18; 30-MINUTE = 0.42; 1-HOUR = 0.56
3-HOUR = 0.94; 6-HOUR = 1.30; 24-HOUR = 2.16
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 286.00; DOWNSTREAM ELEVATION (FT) = 258.00
CHANNEL LENGTH (FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

=====

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

=====

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.271 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.472
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.18; 30-MINUTE = 0.42; 1-HOUR = 0.56
3-HOUR = 0.94; 6-HOUR = 1.30; 24-HOUR = 2.16
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 16.600
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

=====

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.187 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.230; LOW LOSS FRACTION = 0.459
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.18; 30-MINUTE = 0.42; 1-HOUR = 0.56
3-HOUR = 0.94; 6-HOUR = 1.30; 24-HOUR = 2.16
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-3

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	5.95	0.280
3	2.00	22.18	1.150
4	3.00	46.43	3.090
5	4.00	75.05	6.150
6	5.00	105.54	10.350
7	6.00	127.29	15.380
8	7.00	138.99	20.860
9	8.00	150.45	26.500
10	9.00	161.55	32.360
11	10.00	697.61	38.410
12	11.00	1666.99	44.700

FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<<

FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<<
=====

FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<<
=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<<
=====

WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.351 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.209; LOW LOSS FRACTION = 0.415
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.18; 30-MINUTE = 0.42; 1-HOUR = 0.56
3-HOUR = 0.94; 6-HOUR = 1.30; 24-HOUR = 2.16
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<<
=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3C-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	7.430

```

3      2.00      0.02      15.170
4      3.00      2.70      23.230
5      4.00      4.69      31.610
6      5.00      6.04      40.320
7      6.00     10.72      49.360
8      7.00     17.77      58.730
9      8.00     424.53     68.440
10     9.00     1169.03    78.500
11    10.00     2113.61    88.500

```

```

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

```

```

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-3

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

```

```

*****
FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

```

```

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.433 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.405; LOW LOSS FRACTION = 0.770
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.18; 30-MINUTE = 0.42; 1-HOUR = 0.56
3-HOUR = 0.94; 6-HOUR = 1.30; 24-HOUR = 2.16
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

```

```

-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3

```

```

THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:

```

3C-3

```

DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-5

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

```

```

*****
FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

```

```

*****STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

```

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

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```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.429 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.494; LOW LOSS FRACTION = 0.958
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.18; 30-MINUTE = 0.42; 1-HOUR = 0.56
3-HOUR = 0.94; 6-HOUR = 1.30; 24-HOUR = 2.16
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 11
-----
>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<
=====

```

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV05127C.DAT]

Page: 1 of 1

UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS FOOTNOTES	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
--	--	---	------------------------	--------------------------

10100.00	119.00	Subarea (UH) Added to Stream #1	0.0	2417.5
19.333				
119.00	12603.00	Convex Routing: Stream #1	2417.5	2389.2
19.417				
810.00	809.00	Subarea (UH) Added to Stream #2	0.0	40.6
16.167				
809.00	12603.00	Flow-Through Basin: Stream #2	40.6	2.1
24.083	9.33			
12603.00	12603.00	Stream #2 Added to: Stream #1	2389.2	2391.4
19.417				
12603.00	12603.00	Zero Out: Stream #2	2.1	0.0
12603.00	126.00	Convex Routing: Stream #1	2391.4	2369.7
19.500				
920.00	905.00	Subarea (UH) Added to Stream #2	0.0	63.1
16.333				
905.00	126.00	Flow-Through Basin: Stream #2	63.1	18.0
17.417	10.90			
126.00	126.00	Stream #2 Added to: Stream #1	2369.7	2383.6
19.250				
126.00	126.00	Zero Out: Stream #2	18.0	0.0
600.00	126.00	Subarea (UH) Added to Stream #2	0.0	10.8
16.417				
126.00	126.00	Stream #2 Added to: Stream #1	2383.6	2384.1
19.250				
126.00	126.00	Zero Out: Stream #2	10.8	0.0
126.00	12720.50	Convex Routing: Stream #1	2384.1	2382.0
19.583				
430.00	420.00	Subarea (UH) Added to Stream #2	0.0	69.5
16.333				
420.00	420.50	Flow-Through Basin: Stream #2	69.5	27.9
17.500	3.92			
420.50	427.00	Flow-Through Basin: Stream #2	27.9	17.6
19.250	3.02			
413.00	425.00	Subarea (UH) Added to Stream #3	0.0	33.2
16.250				

425.00	426.00	Flow-Through Basin: Stream #3	33.2	15.8
17.167	0.81			

426.00	427.00	Stream #3 Added to: Stream #2	17.6	26.0
18.250				
427.00	427.00	Zero Out: Stream #3	15.8	0.0
427.00	12720.50	Stream #2 Added to: Stream #1	2382.0	2404.6
19.583				
12720.50	12720.50	Zero Out: Stream #2	26.0	0.0
12720.50	12741.00	Convex Routing: Stream #1	2404.6	2401.7
19.583				

320.00	339.00	Subarea (UH) Added to Stream #2	0.0	145.2
16.417				
339.00	340.00	Flow-Through Basin: Stream #2	145.2	5.2
24.417	34.58			
339.00	372.00	Flowby Basin Model: Stream #2	5.2	5.2
24.417				
390.00	372.00	Subarea (UH) Added to Stream #4	0.0	18.9
16.500				
372.00	372.00	Stream #4 Added to: Stream #3	0.0	18.9
16.500				

372.00	372.00	Zero Out: Stream #4	18.9	0.0
372.00	373.00	Flow-Through Basin: Stream #3	18.9	2.9
19.417	5.40			
372.00	372.10	Flowby Basin Model: Stream #3	2.9	2.9
19.417				
373.00	373.00	Zero Out: Stream #5	0.0	0.0
373.00	340.00	Stream #3 Added to: Stream #2	5.2	7.8
24.333				

340.00	340.00	Zero Out: Stream #3	2.9	0.0
340.00	12741.00	Stream #2 Added to: Stream #1	2401.7	2408.8
19.583				
12741.00	12741.00	Zero Out: Stream #2	7.8	0.0
12741.00	127.00	Convex Routing: Stream #1	2408.8	2408.4
19.583				
12710.00	127.00	Subarea (UH) Added to Stream #2	0.0	43.6
16.500				

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV05127C.DAT ]
Page: 2 of |
-----+-----+
|UPSTREAM DOWNSTREAM| | UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE| |
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR) | MODELED (AF)| FOOTNOTES |
-----+-----+
| 127.00 127.00| Stream #2 Added to: Stream #1| 2408.4 2410.8|
19.583 | | |
| 127.00 127.00| Zero Out: Stream #2| 43.6 0.0|
| | | |
| 127.00 127.00| View: Stream #1| 2410.8|
19.583 | 2041.93| 3 |
-----+-----+
|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT
INTERVAL |
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF
THE DESIGN STORM |
-----+

```

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Ver. 20.0 Release Date: 06/01/2013 License ID 1264

Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 133C *
* 5-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV0533CC.DAT
TIME/DATE OF STUDY: 09:35 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 3.308 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.496; LOW LOSS FRACTION = 0.845
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.24; 30-MINUTE = 0.46; 1-HOUR = 0.65
3-HOUR = 1.21; 6-HOUR = 1.80; 24-HOUR = 3.19
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.134 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.290; LOW LOSS FRACTION = 0.598
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
3-HOUR = 0.97; 6-HOUR = 1.34; 24-HOUR = 2.24
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	1.520
3	2.00	1.30	3.150
4	3.00	1.60	4.900
5	4.00	1.80	6.790
6	5.00	2.10	8.810
7	6.00	2.30	10.970
8	7.00	47.90	13.270
9	8.00	131.60	15.720
10	9.00	241.70	18.320
11	10.00	372.80	21.060

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 312.40; DOWNSTREAM ELEVATION (FT) = 286.00
CHANNEL LENGTH (FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.253 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.424; LOW LOSS FRACTION = 0.818
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
3-HOUR = 0.97; 6-HOUR = 1.34; 24-HOUR = 2.24
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

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INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.314 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.490; LOW LOSS FRACTION = 0.958
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
3-HOUR = 0.97; 6-HOUR = 1.34; 24-HOUR = 2.24
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 286.00; DOWNSTREAM ELEVATION(FT) = 258.00
CHANNEL LENGTH(FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.271 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.472
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
3-HOUR = 0.97; 6-HOUR = 1.34; 24-HOUR = 2.24
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 16.600
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.187 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.230; LOW LOSS FRACTION = 0.459
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
3-HOUR = 0.97; 6-HOUR = 1.34; 24-HOUR = 2.24
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-3

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	5.95	0.280
3	2.00	22.18	1.150
4	3.00	46.43	3.090
5	4.00	75.05	6.150
6	5.00	105.54	10.350
7	6.00	127.29	15.380
8	7.00	138.99	20.860
9	8.00	150.45	26.500
10	9.00	161.55	32.360
11	10.00	697.61	38.410
12	11.00	1666.99	44.700

FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<<

FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<<
=====

FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<<
=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<<
=====

WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.351 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.209; LOW LOSS FRACTION = 0.415
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
3-HOUR = 0.97; 6-HOUR = 1.34; 24-HOUR = 2.24
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<<
=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3C-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	7.430

```

3      2.00      0.02      15.170
4      3.00      2.70      23.230
5      4.00      4.69      31.610
6      5.00      6.04      40.320
7      6.00     10.72      49.360
8      7.00     17.77      58.730
9      8.00     424.53     68.440
10     9.00     1169.03    78.500
11    10.00     2113.61    88.500

```

```

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

```

```

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-3

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

```

```

*****
FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

```

```

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.433 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.405; LOW LOSS FRACTION = 0.770
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
3-HOUR = 0.97; 6-HOUR = 1.34; 24-HOUR = 2.24
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

```

```

-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

3C-3

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-5

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

```

```

*****
FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

```

```

*****STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

```

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

```

```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====

WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.429 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.494; LOW LOSS FRACTION = 0.958
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
3-HOUR = 0.97; 6-HOUR = 1.34; 24-HOUR = 2.24
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

```

```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.453 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.362; LOW LOSS FRACTION = 0.671
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
3-HOUR = 0.97; 6-HOUR = 1.34; 24-HOUR = 2.24
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

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```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

5-2

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.220 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.461; LOW LOSS FRACTION = 0.889
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
3-HOUR = 0.97; 6-HOUR = 1.34; 24-HOUR = 2.24
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

 FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<<
 =====

 FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<<
 =====

WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
 *USER ENTERED "LAG" TIME = 0.257 HOURS
 VALLEY (DEVELOPED) S-GRAPH SELECTED
 MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.211; LOW LOSS FRACTION = 0.441
 SPECIFIED PEAK RAINFALL DEPTHS (INCH):
 5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
 3-HOUR = 0.97; 6-HOUR = 1.34; 24-HOUR = 2.24
 *USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
 5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
 3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

 FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<<
 =====

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
 FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
 THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	25.00	13.59
2	75.00	16.84
3	100.00	18.46
4	250.00	28.22
5	550.00	47.73

B Diversion
 Structure

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5
 =====

 FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<<
 =====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
 THROUGH A FLOW-THROUGH DETENTION BASIN.
 SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
 DEAD STORAGE (AF) = 2.070
 SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
 SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
 DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	0.310
3	2.00	0.83	1.240
4	3.00	5.60	2.600
5	4.00	16.88	4.130
6	5.00	23.48	5.790
7	6.00	36.73	7.560
8	7.00	55.95	9.440
9	8.00	78.70	11.430
10	9.00	228.67	12.460

 FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<<
 =====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5
 THROUGH A FLOW-THROUGH DETENTION BASIN.
 SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
 DEAD STORAGE (AF) = 0.000
 SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
 SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
 DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-4

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	1.84	0.260
3	2.00	3.22	1.160
4	3.00	4.16	2.520
5	4.00	4.94	3.990
6	5.00	5.60	5.550
7	6.00	7.17	7.200
8	7.00	14.13	8.950
9	8.00	18.54	10.800
10	9.00	21.90	12.740
11	10.00	24.73	14.780
12	11.00	37.17	16.920
13	12.00	57.63	19.160
14	13.00	83.32	21.500
15	14.00	112.96	23.940
16	15.00	133.28	26.480
17	16.00	144.34	29.150
18	17.00	154.45	31.950
19	18.00	163.94	34.870
20	19.00	172.92	37.940
21	20.00	181.39	41.140
22	21.00	189.45	44.500
23	22.00	197.22	48.010

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.986 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.406; LOW LOSS FRACTION = 0.789
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
3-HOUR = 0.97; 6-HOUR = 1.34; 24-HOUR = 2.24
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: **GBD Side**
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN **Weir**
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8

>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<

```

=====
***STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE =   6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE =  3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====

*****
****ERROR-STREAM 4 CONTAINS NO INFORMATION (EMPTY).
      PROCESS IS NEGATED.
*****

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE =   7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====

*****
****ERROR-STREAM 4 CONTAINS NO INFORMATION (EMPTY).
      PROCESS IS NEGATED.
*****

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE =   6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) =   0.01      CHANNEL Z =   3.00
UPSTREAM ELEVATION(FT) =   427.51; DOWNSTREAM ELEVATION(FT) =   315.00
CHANNEL LENGTH(FT) =   9760.05      MANNING'S FACTOR = 0.040

```

```

=====
CONSTANT LOSS RATE(CFS) =   0.00
=====

*****
FLOW PROCESS FROM NODE    13305.00 TO NODE    133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) =   0.01      CHANNEL Z =   3.00
UPSTREAM ELEVATION(FT) =   315.00; DOWNSTREAM ELEVATION(FT) =   212.00
CHANNEL LENGTH(FT) =   6877.24      MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE(CFS) =   0.00
=====

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    133.00 IS CODE =   1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA =   1715.900 ACRES; BASEFLOW =   0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME =   0.699 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) =   0.374; LOW LOSS FRACTION = 0.689
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE =   0.19; 30-MINUTE =   0.43; 1-HOUR =   0.58
3-HOUR =   0.97; 6-HOUR =   1.34; 24-HOUR =   2.24
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE    133.00 TO NODE    133.00 IS CODE =   7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE    133.00 TO NODE    133.00 IS CODE =   6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE    133.00 TO NODE    133.00 IS CODE =   7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

```

```
*****
FLOW PROCESS FROM NODE   133.00 TO NODE   133.00 IS CODE =   6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE   133.00 TO NODE   133.00 IS CODE =  11
-----
>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<
=====
```

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-----+-----
|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV0533CC.DAT ]
Page: 1 of |
-----+-----
|UPSTREAM DOWNSTREAM|                                | UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE|                                | PEAK (CFS) PEAK (CFS)|
| NODE #     NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR)   | MODELED (AF)| FOOTNOTES |
-----+-----
```

10100.00	119.00	Subarea (UH) Added to Stream #1	0.0	2400.1
19.333				
119.00	12603.00	Convex Routing: Stream #1	2400.1	2374.6
19.417				
810.00	809.00	Subarea (UH) Added to Stream #2	0.0	39.0
16.167				
809.00	12603.00	Flow-Through Basin: Stream #2	39.0	2.2
24.083	9.64			
12603.00	12603.00	Stream #2 Added to: Stream #1	2374.6	2376.7
19.417				
12603.00	12603.00	Zero Out: Stream #2	2.2	0.0
12603.00	126.00	Convex Routing: Stream #1	2376.7	2360.3
19.250				
920.00	905.00	Subarea (UH) Added to Stream #2	0.0	60.0
16.333				
905.00	126.00	Flow-Through Basin: Stream #2	60.0	18.2
17.417	11.00			
126.00	126.00	Stream #2 Added to: Stream #1	2360.3	2375.3
19.250				
126.00	126.00	Zero Out: Stream #2	18.2	0.0
600.00	126.00	Subarea (UH) Added to Stream #2	0.0	10.0
16.417				
126.00	126.00	Stream #2 Added to: Stream #1	2375.3	2375.8
19.250				
126.00	126.00	Zero Out: Stream #2	10.0	0.0
126.00	12720.50	Convex Routing: Stream #1	2375.8	2370.6
19.583				
430.00	420.00	Subarea (UH) Added to Stream #2	0.0	67.2
16.333				
420.00	420.50	Flow-Through Basin: Stream #2	67.2	29.6
17.500	4.11			
420.50	427.00	Flow-Through Basin: Stream #2	29.6	19.2
19.167	3.28			
413.00	425.00	Subarea (UH) Added to Stream #3	0.0	32.0
16.250				

	425.00	426.00	Flow-Through Basin:	Stream #3	32.0	16.1
17.167		0.83				
+-----+-----+						
	426.00	427.00	Stream #3 Added to:	Stream #2	19.2	28.0
18.250						
	427.00	427.00	Zero Out:	Stream #3	16.1	0.0
	427.00	12720.50	Stream #2 Added to:	Stream #1	2370.6	2394.8
19.583						
	12720.50	12720.50	Zero Out:	Stream #2	28.0	0.0
	12720.50	12741.00	Convex Routing:	Stream #1	2394.8	2393.5
19.583						
+-----+-----+						
	320.00	339.00	Subarea (UH) Added to	Stream #2	0.0	141.0
16.417						
	339.00	340.00	Flow-Through Basin:	Stream #2	141.0	5.4
24.417		36.45				
	339.00	372.00	Flowby Basin Model:	Stream #2	5.4	5.4
24.417						
	390.00	372.00	Subarea (UH) Added to	Stream #4	0.0	18.1
16.500						
	372.00	372.00	Stream #4 Added to:	Stream #3	0.0	18.1
16.500						
+-----+-----+						
	372.00	372.00	Zero Out:	Stream #4	18.1	0.0
	372.00	373.00	Flow-Through Basin:	Stream #3	18.1	2.9
19.417		5.53				
	372.00	372.10	Flowby Basin Model:	Stream #3	2.9	2.9
19.417						
	373.00	373.00	Zero Out:	Stream #5	0.0	0.0
	373.00	340.00	Stream #3 Added to:	Stream #2	5.4	8.2
24.333						
+-----+-----+						
	340.00	340.00	Zero Out:	Stream #3	2.9	0.0
	340.00	12741.00	Stream #2 Added to:	Stream #1	2393.5	2401.1
19.583						
	12741.00	12741.00	Zero Out:	Stream #2	8.2	0.0
	12741.00	127.00	Convex Routing:	Stream #1	2401.1	2401.0
19.583						
	12710.00	127.00	Subarea (UH) Added to	Stream #2	0.0	40.7
16.500						
+-----+-----+						
+-----+-----+						
Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT						
INTERVAL						
3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF						
THE DESIGN STORM						
+-----+-----+						
+-----+-----+						

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV0533CC.DAT]

Page: 2 of

UPSTREAM TIME (2) TO	DOWNSTREAM MAX. STORAGE	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
NODE #	NODE #	HYDROLOGIC/HYDRAULIC PROCESS	PEAK (CFS)
PEAK (HR)	MODELED (AF)	FOOTNOTES	

127.00	127.00	Stream #2 Added to:	Stream #1	2401.0	2403.5
19.583					
127.00	127.00	Zero Out:	Stream #2	40.7	0.0
127.00	12902.00	Convex Routing:	Stream #1	2403.5	2402.4
19.667					
50220.00	50347.00	Subarea (UH) Added to	Stream #2	0.0	130.5
16.500					
50347.00	50347.00	Flow-Through Basin:	Stream #2	130.5	28.3
18.917	49.13				
50347.00	12902.00	Convex Routing:	Stream #2	28.3	28.3
19.083					
12902.00	12902.00	Stream #2 Added to:	Stream #1	2402.4	2430.6
19.667					
12902.00	12902.00	Zero Out:	Stream #2	28.3	0.0
12902.00	129.00	Convex Routing:	Stream #1	2430.6	2428.1
19.750					
50400.00	129.00	Subarea (UH) Added to	Stream #2	0.0	37.2
16.333					
129.00	129.00	Stream #2 Added to:	Stream #1	2428.1	2430.9
19.750					
129.00	129.00	Zero Out:	Stream #2	37.2	0.0
210.00	221.00	Subarea (UH) Added to	Stream #2	0.0	49.8
16.333					
221.00	221.00	Flowby Basin Model:	Stream #2	49.8	15.2
16.333					
221.00	223.00	Flow-Through Basin:	Stream #2	15.2	12.2
17.417	3.49				
221.00	222.00	Flow-Through Basin:	Stream #5	34.6	5.3
18.417	4.89				
223.00	222.00	Stream #5 Added to:	Stream #2	12.2	17.4
17.417					
222.00	222.00	Zero Out:	Stream #5	5.3	0.0
222.00	129.00	Stream #2 Added to:	Stream #1	2430.9	2443.5
19.667					

129.00	129.00	Zero Out:	Stream #2	17.4	0.0
129.00	133.00	Convex Routing:	Stream #1	2443.5	2441.1
19.750					
13010.00	132.00	Subarea (UH) Added to	Stream #2	0.0	326.0
17.000					
132.00	132.00	Flowby Basin Model:	Stream #2	326.0	326.0
17.000					
132.00	132.00	Zero Out:	Stream #3	0.0	0.0
132.00	132.00	Zero Out:	Stream #4	0.0	0.0
132.00	13305.00	Convex Routing:	Stream #2	326.0	317.2
17.500					
13305.00	133.00	Convex Routing:	Stream #2	317.2	315.2
17.833					
132.00	133.00	Subarea (UH) Added to	Stream #3	0.0	166.3
16.750					
133.00	133.00	Stream #3 Added to:	Stream #2	315.2	427.8
17.667					
133.00	133.00	Zero Out:	Stream #3	166.3	0.0
133.00	133.00	Stream #2 Added to:	Stream #1	2441.1	2669.9
18.417					
133.00	133.00	Zero Out:	Stream #2	427.8	0.0
133.00	133.00	View:	Stream #1		2669.9
18.417	2441.73	3			

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Ver. 20.0 Release Date: 06/01/2013 License ID 1264

Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 133T *
* 5-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV0533TC.DAT
TIME/DATE OF STUDY: 13:33 06/12/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.986 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.406; LOW LOSS FRACTION = 0.789
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.18; 30-MINUTE = 0.41; 1-HOUR = 0.55
3-HOUR = 0.92; 6-HOUR = 1.27; 24-HOUR = 2.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.744; 30-MINUTE = 0.744; 1-HOUR = 0.744
3-HOUR = 0.959; 6-HOUR = 0.978; 24-HOUR = 0.986

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN GBD Side
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS. Weir

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00

3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN. GBD Upper
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS: Basin
DEAD STORAGE (AF) = 5.700
SPECIFIED DEAD STORAGE (AF) FILLED = 5.700
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.50	0.01	0.002
3	2.00	0.02	1.900
4	4.00	0.03	16.100
5	4.30	0.05	18.200
6	5.00	314.00	23.200
7	6.00	1306.00	30.300
8	7.00	2847.00	39.100
9	8.00	4942.00	47.800

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8

>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN. GBD Lower
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS: West Basin
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.99	2.90	0.900
3	1.99	11.38	2.900
4	3.99	19.63	10.300
5	5.99	25.19	20.700
6	7.99	29.71	31.700
7	9.99	33.62	43.500
8	10.99	35.49	49.700
9	11.99	313.49	56.400
10	12.99	894.27	63.100
11	13.99	1748.55	69.900
12	15.99	4306.91	84.100

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 4 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

GBD Lower
East Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.48	0.70	0.400
3	1.48	6.50	1.800
4	3.48	18.11	8.500
5	5.48	23.99	17.900
6	7.48	28.68	27.800
7	9.48	32.70	38.300
8	10.48	34.50	43.900
9	11.48	36.29	49.400
10	12.48	314.07	55.900

11	13.48	895.00	62.300
12	15.48	2882.95	74.700

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6

>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 132.00 TO NODE 13305.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 427.51; DOWNSTREAM ELEVATION (FT) = 315.00
CHANNEL LENGTH (FT) = 9760.05 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13305.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 315.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 6877.24 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 132.00 TO NODE 133.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<<

WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.699 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.374; LOW LOSS FRACTION = 0.689
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.18; 30-MINUTE = 0.41; 1-HOUR = 0.55
3-HOUR = 0.92; 6-HOUR = 1.27; 24-HOUR = 2.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.744; 30-MINUTE = 0.744; 1-HOUR = 0.744
3-HOUR = 0.959; 6-HOUR = 0.978; 24-HOUR = 0.986

FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 11

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<<

Table with columns: TIME (2) TO PEAK (HR), NODE #, MODELED (AF), HYDROLOGIC/HYDRAULIC PROCESS, FOOTNOTES, UPSTREAM PEAK (CFS), DOWNSTREAM PEAK (CFS). Rows include entries like 'Subarea (UH) Added to Stream #2', 'Flowby Basin Model: Stream #2', 'Flow-Through Basin: Stream #3', etc.

|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT
INTERVAL |
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF
THE DESIGN STORM |

+-----+
-----+

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
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***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 133U *
* 5-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV0533UC.DAT
TIME/DATE OF STUDY: 09:36 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 3.308 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.496; LOW LOSS FRACTION = 0.845
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.24; 30-MINUTE = 0.47; 1-HOUR = 0.66
3-HOUR = 1.22; 6-HOUR = 1.81; 24-HOUR = 3.20
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.134 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.290; LOW LOSS FRACTION = 0.598
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
3-HOUR = 0.98; 6-HOUR = 1.35; 24-HOUR = 2.25
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing values for depth, outflow, and storage.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.253 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.424; LOW LOSS FRACTION = 0.818
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
3-HOUR = 0.98; 6-HOUR = 1.35; 24-HOUR = 2.25
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

4F-1

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.314 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.490; LOW LOSS FRACTION = 0.958
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
3-HOUR = 0.98; 6-HOUR = 1.35; 24-HOUR = 2.25
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 286.00; DOWNSTREAM ELEVATION (FT) = 258.00
CHANNEL LENGTH (FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

=====

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.271 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.472
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
3-HOUR = 0.98; 6-HOUR = 1.35; 24-HOUR = 2.25
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 16.600
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.187 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.230; LOW LOSS FRACTION = 0.459
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
3-HOUR = 0.98; 6-HOUR = 1.35; 24-HOUR = 2.25
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-3

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	5.95	0.280
3	2.00	22.18	1.150
4	3.00	46.43	3.090
5	4.00	75.05	6.150
6	5.00	105.54	10.350
7	6.00	127.29	15.380
8	7.00	138.99	20.860
9	8.00	150.45	26.500
10	9.00	161.55	32.360
11	10.00	697.61	38.410
12	11.00	1666.99	44.700

FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.351 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.209; LOW LOSS FRACTION = 0.415
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
3-HOUR = 0.98; 6-HOUR = 1.35; 24-HOUR = 2.25
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3C-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	7.430

3	2.00	0.02	15.170
4	3.00	2.70	23.230
5	4.00	4.69	31.610
6	5.00	6.04	40.320
7	6.00	10.72	49.360
8	7.00	17.77	58.730
9	8.00	424.53	68.440
10	9.00	1169.03	78.500
11	10.00	2113.61	88.500

FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: **Weir to**
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN **3C-3**
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.433 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.405; LOW LOSS FRACTION = 0.770
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
3-HOUR = 0.98; 6-HOUR = 1.35; 24-HOUR = 2.25
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN. **3C-3**
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE: **Weir to**
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN **3C-5**
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

```

```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====

WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.429 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.494; LOW LOSS FRACTION = 0.958
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
3-HOUR = 0.98; 6-HOUR = 1.35; 24-HOUR = 2.25
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

```

```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.453 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.362; LOW LOSS FRACTION = 0.671
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
3-HOUR = 0.98; 6-HOUR = 1.35; 24-HOUR = 2.25
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

5-2

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.220 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.461; LOW LOSS FRACTION = 0.889
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
3-HOUR = 0.98; 6-HOUR = 1.35; 24-HOUR = 2.25
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.257 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.211; LOW LOSS FRACTION = 0.441
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
3-HOUR = 0.98; 6-HOUR = 1.35; 24-HOUR = 2.25
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Table with 3 columns: DATA PAIR NUMBER, Qcenter (CFS), Qpass (CFS). Rows 1-5 showing flow data.

B Diversion Structure

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-10 showing basin data.

FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-4

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-23 showing basin data.

```

24      23.00    466.70    51.740
25      24.00    951.81    53.820

```

```

*****
FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<

```

```

*****
FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

```

```

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<

```

```

*****
FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 11

```

```

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<

```

```

+-----+
|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV0533UC.DAT ]
Page: 1 of |
+-----+

```

```

+-----+
|UPSTREAM DOWNSTREAM| UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE|
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS |PEAK (CFS) PEAK (CFS)|
PEAK (HR) | MODELED (AF)| FOOTNOTES |
+-----+

```

10100.00	119.00	Subarea (UH) Added to Stream #1	0.0	2510.9
19.333				
119.00	12603.00	Convex Routing: Stream #1	2510.9	2480.6
19.417				
810.00	809.00	Subarea (UH) Added to Stream #2	0.0	42.4
16.167				
809.00	12603.00	Flow-Through Basin: Stream #2	42.4	2.2
24.083	9.76			
12603.00	12603.00	Stream #2 Added to: Stream #1	2480.6	2482.7
19.417				
12603.00	12603.00	Zero Out: Stream #2	2.2	0.0
12603.00	126.00	Convex Routing: Stream #1	2482.7	2459.5
19.500				
920.00	905.00	Subarea (UH) Added to Stream #2	0.0	67.4
16.333				
905.00	126.00	Flow-Through Basin: Stream #2	67.4	18.7
17.417	11.22			
126.00	126.00	Stream #2 Added to: Stream #1	2459.5	2475.2
19.250				
126.00	126.00	Zero Out: Stream #2	18.7	0.0
600.00	126.00	Subarea (UH) Added to Stream #2	0.0	11.9
16.417				
126.00	126.00	Stream #2 Added to: Stream #1	2475.2	2475.7
19.250				
126.00	126.00	Zero Out: Stream #2	11.9	0.0
126.00	12720.50	Convex Routing: Stream #1	2475.7	2473.5
19.583				
430.00	420.00	Subarea (UH) Added to Stream #2	0.0	71.9
16.333				
420.00	420.50	Flow-Through Basin: Stream #2	71.9	30.8
17.417	4.25			
420.50	427.00	Flow-Through Basin: Stream #2	30.8	19.8
19.167	3.39			
413.00	425.00	Subarea (UH) Added to Stream #3	0.0	34.4
16.250				

	425.00	426.00	Flow-Through Basin:	Stream #3	34.4	16.8
17.083		0.86				
+-----+						
	426.00	427.00	Stream #3 Added to:	Stream #2	19.8	28.8
18.167						
	427.00	427.00	Zero Out:	Stream #3	16.8	0.0
	427.00	12720.50	Stream #2 Added to:	Stream #1	2473.5	2498.3
19.583						
	12720.50	12720.50	Zero Out:	Stream #2	28.8	0.0
	12720.50	12741.00	Convex Routing:	Stream #1	2498.3	2495.9
19.583						
+-----+						
	320.00	339.00	Subarea (UH) Added to	Stream #2	0.0	149.7
16.417						
	339.00	340.00	Flow-Through Basin:	Stream #2	149.7	5.5
24.417		37.03				
	339.00	372.00	Flowby Basin Model:	Stream #2	5.5	5.5
24.417						
	390.00	372.00	Subarea (UH) Added to	Stream #4	0.0	19.9
16.500						
	372.00	372.00	Stream #4 Added to:	Stream #3	0.0	19.9
16.500						
+-----+						
	372.00	372.00	Zero Out:	Stream #4	19.9	0.0
	372.00	373.00	Flow-Through Basin:	Stream #3	19.9	3.0
19.417		5.63				
	372.00	372.10	Flowby Basin Model:	Stream #3	3.0	3.0
19.417						
	373.00	373.00	Zero Out:	Stream #5	0.0	0.0
	373.00	340.00	Stream #3 Added to:	Stream #2	5.5	8.3
24.250						
+-----+						
	340.00	340.00	Zero Out:	Stream #3	3.0	0.0
	340.00	12741.00	Stream #2 Added to:	Stream #1	2495.9	2503.6
19.583						
	12741.00	12741.00	Zero Out:	Stream #2	8.3	0.0
	12741.00	127.00	Convex Routing:	Stream #1	2503.6	2503.2
19.583						
	12710.00	127.00	Subarea (UH) Added to	Stream #2	0.0	48.0
16.500						
+-----+						
+-----+						
Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT						
INTERVAL						
3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF						
THE DESIGN STORM						
+-----+						
+-----+						

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV0533UC.DAT]

Page: 2 of

UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS FOOTNOTES	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
127.00 19.583	127.00	Stream #2 Added to: Stream #1	2503.2	2505.7
127.00	127.00	Zero Out: Stream #2	48.0	0.0
127.00 19.667	12902.00	Convex Routing: Stream #1	2505.7	2504.2
50220.00 16.500	50347.00	Subarea (UH) Added to Stream #2	0.0	140.7
50347.00 18.917	50347.00 49.77	Flow-Through Basin: Stream #2	140.7	28.9
50347.00 19.000	12902.00	Convex Routing: Stream #2	28.9	28.9
12902.00 19.667	12902.00	Stream #2 Added to: Stream #1	2504.2	2533.0
12902.00	12902.00	Zero Out: Stream #2	28.9	0.0
12902.00 19.750	129.00	Convex Routing: Stream #1	2533.0	2530.0
50400.00 16.333	129.00	Subarea (UH) Added to Stream #2	0.0	42.9
129.00 19.750	129.00	Stream #2 Added to: Stream #1	2530.0	2532.7
129.00	129.00	Zero Out: Stream #2	42.9	0.0
210.00 16.333	221.00	Subarea (UH) Added to Stream #2	0.0	53.2
221.00 16.333	221.00	Flowby Basin Model: Stream #2	53.2	15.4
221.00 17.417	223.00 3.50	Flow-Through Basin: Stream #2	15.4	12.2
221.00 18.333	222.00 5.09	Flow-Through Basin: Stream #5	37.8	5.4
223.00 17.417	222.00	Stream #5 Added to: Stream #2	12.2	17.5
222.00	222.00	Zero Out: Stream #5	5.4	0.0
222.00 19.750	129.00	Stream #2 Added to: Stream #1	2532.7	2545.3

129.00 19.750	129.00	Zero Out: Stream #2	17.5	0.0
129.00 19.750	133.00	Convex Routing: Stream #1	2545.3	2541.7
133.00 19.750	133.00 2197.91	View: Stream #1		2541.7

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 134C *
* 5-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV0534CC.DAT
TIME/DATE OF STUDY: 09:33 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 3.308 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.496; LOW LOSS FRACTION = 0.845
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.24; 30-MINUTE = 0.46; 1-HOUR = 0.64
3-HOUR = 1.20; 6-HOUR = 1.78; 24-HOUR = 3.14
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.134 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.290; LOW LOSS FRACTION = 0.598
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.57
3-HOUR = 0.96; 6-HOUR = 1.32; 24-HOUR = 2.20
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	1.520
3	2.00	1.30	3.150
4	3.00	1.60	4.900
5	4.00	1.80	6.790
6	5.00	2.10	8.810
7	6.00	2.30	10.970
8	7.00	47.90	13.270
9	8.00	131.60	15.720
10	9.00	241.70	18.320
11	10.00	372.80	21.060

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.253 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.424; LOW LOSS FRACTION = 0.818
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.57
3-HOUR = 0.96; 6-HOUR = 1.32; 24-HOUR = 2.20
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

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INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.314 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.490; LOW LOSS FRACTION = 0.958
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.57
3-HOUR = 0.96; 6-HOUR = 1.32; 24-HOUR = 2.20
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 286.00; DOWNSTREAM ELEVATION(FT) = 258.00
CHANNEL LENGTH(FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.271 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.472
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.57
3-HOUR = 0.96; 6-HOUR = 1.32; 24-HOUR = 2.20
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 16.600
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

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BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.187 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.230; LOW LOSS FRACTION = 0.459
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.57
3-HOUR = 0.96; 6-HOUR = 1.32; 24-HOUR = 2.20
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

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*****
FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
-----
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 5.95 0.280
3 2.00 22.18 1.150
4 3.00 46.43 3.090
5 4.00 75.05 6.150
6 5.00 105.54 10.350
7 6.00 127.29 15.380
8 7.00 138.99 20.860
9 8.00 150.45 26.500
10 9.00 161.55 32.360
11 10.00 697.61 38.410
12 11.00 1666.99 44.700
-----
*****
FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
-----
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
-----
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
-----
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6
-----

```

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```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
-----
WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.351 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.209; LOW LOSS FRACTION = 0.415
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.57
3-HOUR = 0.96; 6-HOUR = 1.32; 24-HOUR = 2.20
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
-----
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 0.01 7.430

```

3C-1


```

3      2.00      0.02      15.170
4      3.00      2.70      23.230
5      4.00      4.69      31.610
6      5.00      6.04      40.320
7      6.00      10.72     49.360
8      7.00      17.77     58.730
9      8.00      424.53    68.440
10     9.00      1169.03   78.500
11    10.00     2113.61   88.500

```

```

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

```

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MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-3

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

```

```

*****
FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

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```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

```

```

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.433 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.405; LOW LOSS FRACTION = 0.770
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.57
3-HOUR = 0.96; 6-HOUR = 1.32; 24-HOUR = 2.20
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

```

```

-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

```

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>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

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```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-5

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

```

```

*****
FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

```

```

*****STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

```

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

```

```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====

WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.429 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.494; LOW LOSS FRACTION = 0.958
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.57
3-HOUR = 0.96; 6-HOUR = 1.32; 24-HOUR = 2.20
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

```

```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.453 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.362; LOW LOSS FRACTION = 0.671
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.57
3-HOUR = 0.96; 6-HOUR = 1.32; 24-HOUR = 2.20
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

5-2

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.220 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.461; LOW LOSS FRACTION = 0.889
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.57
3-HOUR = 0.96; 6-HOUR = 1.32; 24-HOUR = 2.20
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.257 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.211; LOW LOSS FRACTION = 0.441
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.57
3-HOUR = 0.96; 6-HOUR = 1.32; 24-HOUR = 2.20
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Table with 3 columns: DATA PAIR NUMBER, Qcenter (CFS), Qpass (CFS). Rows 1-5 showing flow data.

B Diversion Structure

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-10 showing basin data.

FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-4

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-23 showing basin data.

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.986 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.406; LOW LOSS FRACTION = 0.789
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.57
3-HOUR = 0.96; 6-HOUR = 1.32; 24-HOUR = 2.20
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: **GBD Side**
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN **Weir**
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8

>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<

```

=====
***STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE =   6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE =  3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====

*****
****ERROR-STREAM 4 CONTAINS NO INFORMATION (EMPTY).
      PROCESS IS NEGATED.
*****

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE =   7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====

*****
****ERROR-STREAM 4 CONTAINS NO INFORMATION (EMPTY).
      PROCESS IS NEGATED.
*****

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE =   6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) =   0.01      CHANNEL Z =   3.00
UPSTREAM ELEVATION(FT) =   427.51; DOWNSTREAM ELEVATION(FT) =   315.00
CHANNEL LENGTH(FT) =   9760.05      MANNING'S FACTOR = 0.040

```

```

=====
CONSTANT LOSS RATE(CFS) =   0.00
=====

*****
FLOW PROCESS FROM NODE    13305.00 TO NODE    133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) =   0.01      CHANNEL Z =   3.00
UPSTREAM ELEVATION(FT) =   315.00; DOWNSTREAM ELEVATION(FT) =   212.00
CHANNEL LENGTH(FT) =   6877.24      MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE(CFS) =   0.00
=====

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    133.00 IS CODE =   1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA =   1715.900 ACRES; BASEFLOW =   0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME =   0.699 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) =   0.374; LOW LOSS FRACTION = 0.689
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE =   0.19; 30-MINUTE =   0.43; 1-HOUR =   0.57
3-HOUR =   0.96; 6-HOUR =   1.32; 24-HOUR =   2.20
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE    133.00 TO NODE    133.00 IS CODE =   7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE    133.00 TO NODE    133.00 IS CODE =   6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE    133.00 TO NODE    133.00 IS CODE =   7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 212.00; DOWNSTREAM ELEVATION (FT) = 173.00
CHANNEL LENGTH (FT) = 6461.31 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1691.600 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.353 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.406; LOW LOSS FRACTION = 0.767
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.57
3-HOUR = 0.96; 6-HOUR = 1.32; 24-HOUR = 2.20
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 13500.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 3859.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 2.180 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.473; LOW LOSS FRACTION = 0.843
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.57
3-HOUR = 0.96; 6-HOUR = 1.32; 24-HOUR = 2.20
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 11
-----
>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<
=====

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* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV0534CC.DAT]

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UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)	FOOTNOTES
10100.00	119.00	Subarea (UH) Added to Stream #1	0.0	2281.1	
19.333					
119.00	12603.00	Convex Routing: Stream #1	2281.1	2260.2	
19.417					
810.00	809.00	Subarea (UH) Added to Stream #2	0.0	36.5	
16.167					
809.00	12603.00	Flow-Through Basin: Stream #2	36.5	2.2	
24.083	9.40				
12603.00	12603.00	Stream #2 Added to: Stream #1	2260.2	2262.3	
19.417					
12603.00	12603.00	Zero Out: Stream #2	2.2	0.0	
12603.00	126.00	Convex Routing: Stream #1	2262.3	2253.2	
19.250					
920.00	905.00	Subarea (UH) Added to Stream #2	0.0	54.3	
16.333					
905.00	126.00	Flow-Through Basin: Stream #2	54.3	17.7	
17.500	10.76				
126.00	126.00	Stream #2 Added to: Stream #1	2253.2	2267.3	
19.250					
126.00	126.00	Zero Out: Stream #2	17.7	0.0	
600.00	126.00	Subarea (UH) Added to Stream #2	0.0	8.6	
16.417					
126.00	126.00	Stream #2 Added to: Stream #1	2267.3	2267.8	
19.250					
126.00	126.00	Zero Out: Stream #2	8.6	0.0	
126.00	12720.50	Convex Routing: Stream #1	2267.8	2260.9	
19.333					
430.00	420.00	Subarea (UH) Added to Stream #2	0.0	63.6	
16.333					
420.00	420.50	Flow-Through Basin: Stream #2	63.6	27.9	
17.583	3.93				
420.50	427.00	Flow-Through Basin: Stream #2	27.9	18.0	
19.250	3.07				
413.00	425.00	Subarea (UH) Added to Stream #3	0.0	30.3	
16.250					

425.00	426.00	Flow-Through Basin: Stream #3	30.3	15.4	
17.167	0.79				
426.00	427.00	Stream #3 Added to: Stream #2	18.0	26.5	
18.250					
427.00	427.00	Zero Out: Stream #3	15.4	0.0	
427.00	12720.50	Stream #2 Added to: Stream #1	2260.9	2284.7	
19.333					
12720.50	12720.50	Zero Out: Stream #2	26.5	0.0	
12720.50	12741.00	Convex Routing: Stream #1	2284.7	2283.6	
19.500					
320.00	339.00	Subarea (UH) Added to Stream #2	0.0	134.1	
16.417					
339.00	340.00	Flow-Through Basin: Stream #2	134.1	5.2	
24.417	35.11				
339.00	372.00	Flowby Basin Model: Stream #2	5.2	5.2	
24.417					
390.00	372.00	Subarea (UH) Added to Stream #4	0.0	16.8	
16.500					
372.00	372.00	Stream #4 Added to: Stream #3	0.0	16.8	
16.500					
372.00	372.00	Zero Out: Stream #4	16.8	0.0	
372.00	373.00	Flow-Through Basin: Stream #3	16.8	2.9	
19.500	5.38				
372.00	372.10	Flowby Basin Model: Stream #3	2.9	2.9	
19.500					
373.00	373.00	Zero Out: Stream #5	0.0	0.0	
373.00	340.00	Stream #3 Added to: Stream #2	5.2	7.9	
24.333					
340.00	340.00	Zero Out: Stream #3	2.9	0.0	
340.00	12741.00	Stream #2 Added to: Stream #1	2283.6	2290.7	
19.500					
12741.00	12741.00	Zero Out: Stream #2	7.9	0.0	
12741.00	127.00	Convex Routing: Stream #1	2290.7	2290.5	
19.500					
12710.00	127.00	Subarea (UH) Added to Stream #2	0.0	35.0	
16.500					

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM


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|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV0534CC.DAT ]
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-----+-----
|UPSTREAM DOWNSTREAM| | UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE| |
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS) |
PEAK (HR) | MODELED (AF) | FOOTNOTES |
-----+-----
| 127.00 127.00| Stream #2 Added to: Stream #1| 2290.5 2293.0|
19.500 | | |
| 127.00 127.00| Zero Out: Stream #2| 35.0 0.0|
| | | |
| 127.00 12902.00| Convex Routing: Stream #1| 2293.0 2292.0|
19.583 | | |
| 50220.00 50347.00| Subarea (UH) Added to Stream #2| 0.0 122.2|
16.500 | | |
| 50347.00 50347.00| Flow-Through Basin: Stream #2| 122.2 27.4|
19.000 | 48.13| |
-----+-----
| 50347.00 12902.00| Convex Routing: Stream #2| 27.4 27.4|
19.083 | | |
| 12902.00 12902.00| Stream #2 Added to: Stream #1| 2292.0 2319.4|
19.583 | | |
| 12902.00 12902.00| Zero Out: Stream #2| 27.4 0.0|
| | | |
| 12902.00 129.00| Convex Routing: Stream #1| 2319.4 2317.6|
19.667 | | |
| 50400.00 129.00| Subarea (UH) Added to Stream #2| 0.0 32.9|
16.333 | | |
-----+-----
| 129.00 129.00| Stream #2 Added to: Stream #1| 2317.6 2320.3|
19.667 | | |
| 129.00 129.00| Zero Out: Stream #2| 32.9 0.0|
| | | |
| 210.00 221.00| Subarea (UH) Added to Stream #2| 0.0 47.2|
16.333 | | |
| 221.00 221.00| Flowby Basin Model: Stream #2| 47.2 15.0|
16.333 | | |
| 221.00 223.00| Flow-Through Basin: Stream #2| 15.0 12.0|
17.417 | 3.47| |
-----+-----
| 221.00 222.00| Flow-Through Basin: Stream #5| 32.2 5.2|
18.417 | 4.68| |
| 223.00 222.00| Stream #5 Added to: Stream #2| 12.0 17.1|
17.417 | | |
| 222.00 222.00| Zero Out: Stream #5| 5.2 0.0|
| | | |
| 222.00 129.00| Stream #2 Added to: Stream #1| 2320.3 2332.8|
19.667 | | |

```

	129.00	129.00	Zero Out:	Stream #2	17.1	0.0
+-----+						
	129.00	133.00	Convex Routing:	Stream #1	2332.8	2330.8
19.750						
	13010.00	132.00	Subarea (UH) Added to	Stream #2	0.0	306.1
17.000						
	132.00	132.00	Flowby Basin Model:	Stream #2	306.1	306.1
17.000						
	132.00	132.00	Zero Out:	Stream #3	0.0	0.0
	132.00	132.00	Zero Out:	Stream #4	0.0	0.0
+-----+						
	132.00	13305.00	Convex Routing:	Stream #2	306.1	298.5
17.500						
	13305.00	133.00	Convex Routing:	Stream #2	298.5	297.0
17.833						
	132.00	133.00	Subarea (UH) Added to	Stream #3	0.0	156.5
16.750						
	133.00	133.00	Stream #3 Added to:	Stream #2	297.0	406.5
17.667						
	133.00	133.00	Zero Out:	Stream #3	156.5	0.0
+-----+						
	133.00	133.00	Stream #2 Added to:	Stream #1	2330.8	2573.4
18.500						
	133.00	133.00	Zero Out:	Stream #2	406.5	0.0
	133.00	134.00	Convex Routing:	Stream #1	2573.4	2572.0
18.667						
	133.00	134.00	Subarea (UH) Added to	Stream #2	0.0	160.6
16.417						
	134.00	134.00	Stream #2 Added to:	Stream #1	2572.0	2603.9
18.667						
+-----+						
	134.00	134.00	Zero Out:	Stream #2	160.6	0.0
	13500.00	134.00	Subarea (UH) Added to	Stream #2	0.0	147.6
18.083						
	134.00	134.00	Stream #2 Added to:	Stream #1	2603.9	2748.1
18.583						
	134.00	134.00	Zero Out:	Stream #2	147.6	0.0
	134.00	134.00	View:	Stream #1		2748.1
18.583		2553.89	3			

[Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL

| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

|INPUT FILENAME: [EV0534CC.DAT]

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UPSTREAM	DOWNSTREAM		UPSTREAM	DOWNSTREAM
TIME (2) TO	MAX. STORAGE			
NODE #	NODE #	HYDROLOGIC/HYDRAULIC PROCESS	PEAK (CFS)	PEAK (CFS)
PEAK (HR)	MODELED (AF)	FOOTNOTES		

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Ver. 20.0 Release Date: 06/01/2013 License ID 1264

Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 134U *
* 5-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV0534UC.DAT
TIME/DATE OF STUDY: 09:42 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 3.308 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.496; LOW LOSS FRACTION = 0.845
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.24; 30-MINUTE = 0.47; 1-HOUR = 0.66
3-HOUR = 1.22; 6-HOUR = 1.81; 24-HOUR = 3.20
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.134 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.290; LOW LOSS FRACTION = 0.598
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
3-HOUR = 0.98; 6-HOUR = 1.35; 24-HOUR = 2.25
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing values for depth, outflow, and storage.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 312.40; DOWNSTREAM ELEVATION (FT) = 286.00
CHANNEL LENGTH (FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.253 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.424; LOW LOSS FRACTION = 0.818
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
3-HOUR = 0.98; 6-HOUR = 1.35; 24-HOUR = 2.25
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

4F-1

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.314 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.490; LOW LOSS FRACTION = 0.958
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
3-HOUR = 0.98; 6-HOUR = 1.35; 24-HOUR = 2.25
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 286.00; DOWNSTREAM ELEVATION (FT) = 258.00
CHANNEL LENGTH (FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.271 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.472
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
3-HOUR = 0.98; 6-HOUR = 1.35; 24-HOUR = 2.25
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 16.600
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.187 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.230; LOW LOSS FRACTION = 0.459
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
3-HOUR = 0.98; 6-HOUR = 1.35; 24-HOUR = 2.25
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-3

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	5.95	0.280
3	2.00	22.18	1.150
4	3.00	46.43	3.090
5	4.00	75.05	6.150
6	5.00	105.54	10.350
7	6.00	127.29	15.380
8	7.00	138.99	20.860
9	8.00	150.45	26.500
10	9.00	161.55	32.360
11	10.00	697.61	38.410
12	11.00	1666.99	44.700

FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<<

FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<<
=====

FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<<
=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<<
=====

WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.351 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.209; LOW LOSS FRACTION = 0.415
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
3-HOUR = 0.98; 6-HOUR = 1.35; 24-HOUR = 2.25
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<<
=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3C-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	7.430

```

3      2.00      0.02      15.170
4      3.00      2.70      23.230
5      4.00      4.69      31.610
6      5.00      6.04      40.320
7      6.00     10.72      49.360
8      7.00     17.77      58.730
9      8.00     424.53     68.440
10     9.00     1169.03    78.500
11    10.00     2113.61    88.500

```

```

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

```

```

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-3

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

```

```

*****
FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

```

```

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.433 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.405; LOW LOSS FRACTION = 0.770
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
3-HOUR = 0.98; 6-HOUR = 1.35; 24-HOUR = 2.25
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

```

```

-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

3C-3

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-5

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

```

```

*****
FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

```

```

*****STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

```



```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

```

```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====

WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.429 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.494; LOW LOSS FRACTION = 0.958
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
3-HOUR = 0.98; 6-HOUR = 1.35; 24-HOUR = 2.25
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

```

```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.453 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.362; LOW LOSS FRACTION = 0.671
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
3-HOUR = 0.98; 6-HOUR = 1.35; 24-HOUR = 2.25
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

5-2

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.220 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.461; LOW LOSS FRACTION = 0.889
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
3-HOUR = 0.98; 6-HOUR = 1.35; 24-HOUR = 2.25
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.257 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.211; LOW LOSS FRACTION = 0.441
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
3-HOUR = 0.98; 6-HOUR = 1.35; 24-HOUR = 2.25
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Table with 3 columns: DATA PAIR NUMBER, Qcenter (CFS), Qpass (CFS). Rows 1-5 showing flow data.

B Diversion Structure

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-10 showing depth vs outflow/storage data.

FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-4

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-23 showing depth vs outflow/storage data.

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.986 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.406; LOW LOSS FRACTION = 0.789
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
3-HOUR = 0.98; 6-HOUR = 1.35; 24-HOUR = 2.25
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: **GBD Side**
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN **Weir**
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8

>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<

```

=====
***STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE =   6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE =  3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====

*****
****ERROR-STREAM 4 CONTAINS NO INFORMATION (EMPTY).
      PROCESS IS NEGATED.
*****

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE =   7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====

*****
****ERROR-STREAM 4 CONTAINS NO INFORMATION (EMPTY).
      PROCESS IS NEGATED.
*****

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE =   6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) =   0.01      CHANNEL Z =   3.00
UPSTREAM ELEVATION(FT) =   427.51; DOWNSTREAM ELEVATION(FT) =   315.00
CHANNEL LENGTH(FT) =   9760.05      MANNING'S FACTOR = 0.040

```

```

=====
CONSTANT LOSS RATE(CFS) =   0.00
=====

*****
FLOW PROCESS FROM NODE    13305.00 TO NODE    133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) =   0.01      CHANNEL Z =   3.00
UPSTREAM ELEVATION(FT) =   315.00; DOWNSTREAM ELEVATION(FT) =   212.00
CHANNEL LENGTH(FT) =   6877.24      MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE(CFS) =   0.00
=====

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    133.00 IS CODE =   1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA =   1715.900 ACRES; BASEFLOW =   0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME =   0.699 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) =   0.374; LOW LOSS FRACTION = 0.689
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE =   0.19; 30-MINUTE =   0.43; 1-HOUR =   0.58
3-HOUR =   0.98; 6-HOUR =   1.35; 24-HOUR =   2.25
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE    133.00 TO NODE    133.00 IS CODE =   7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE    133.00 TO NODE    133.00 IS CODE =   6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE    133.00 TO NODE    133.00 IS CODE =   7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

```

```
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 212.00; DOWNSTREAM ELEVATION(FT) = 173.00
CHANNEL LENGTH(FT) = 6461.31 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
```

WATERSHED AREA = 1691.600 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.353 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.406; LOW LOSS FRACTION = 0.767
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.43; 1-HOUR = 0.58
3-HOUR = 0.98; 6-HOUR = 1.35; 24-HOUR = 2.25
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

```
*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 11
-----
>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<
=====
```

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV0534UC.DAT]

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UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS FOOTNOTES	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
--	--	---	------------------------	--------------------------

10100.00	119.00	Subarea (UH) Added to Stream #1	0.0	2391.2
19.333				
119.00	12603.00	Convex Routing: Stream #1	2391.2	2366.3
19.417				
810.00	809.00	Subarea (UH) Added to Stream #2	0.0	38.1
16.167				
809.00	12603.00	Flow-Through Basin: Stream #2	38.1	2.2
24.083	9.67			
12603.00	12603.00	Stream #2 Added to: Stream #1	2366.3	2368.4
19.417				

12603.00	12603.00	Zero Out: Stream #2	2.2	0.0
12603.00	126.00	Convex Routing: Stream #1	2368.4	2353.5
19.250				
920.00	905.00	Subarea (UH) Added to Stream #2	0.0	58.2
16.333				
905.00	126.00	Flow-Through Basin: Stream #2	58.2	18.2
17.417	10.99			
126.00	126.00	Stream #2 Added to: Stream #1	2353.5	2368.5
19.250				

126.00	126.00	Zero Out: Stream #2	18.2	0.0
600.00	126.00	Subarea (UH) Added to Stream #2	0.0	9.6
16.417				
126.00	126.00	Stream #2 Added to: Stream #1	2368.5	2369.0
19.250				
126.00	126.00	Zero Out: Stream #2	9.6	0.0
126.00	12720.50	Convex Routing: Stream #1	2369.0	2363.2
19.583				

430.00	420.00	Subarea (UH) Added to Stream #2	0.0	66.0
16.333				
420.00	420.50	Flow-Through Basin: Stream #2	66.0	29.9
17.500	4.14			
420.50	427.00	Flow-Through Basin: Stream #2	29.9	19.4
19.167	3.32			
413.00	425.00	Subarea (UH) Added to Stream #3	0.0	31.4
16.250				

425.00	426.00	Flow-Through Basin: Stream #3	31.4	16.2
17.167	0.83			

426.00	427.00	Stream #3 Added to: Stream #2	19.4	28.3
18.167				
427.00	427.00	Zero Out: Stream #3	16.2	0.0
427.00	12720.50	Stream #2 Added to: Stream #1	2363.2	2387.6
19.583				
12720.50	12720.50	Zero Out: Stream #2	28.3	0.0
12720.50	12741.00	Convex Routing: Stream #1	2387.6	2386.6
19.500				

320.00	339.00	Subarea (UH) Added to Stream #2	0.0	138.9
16.417				
339.00	340.00	Flow-Through Basin: Stream #2	138.9	5.5
24.417	36.65			
339.00	372.00	Flowby Basin Model: Stream #2	5.5	5.5
24.417				
390.00	372.00	Subarea (UH) Added to Stream #4	0.0	17.7
16.500				
372.00	372.00	Stream #4 Added to: Stream #3	0.0	17.7
16.500				

372.00	372.00	Zero Out: Stream #4	17.7	0.0
372.00	373.00	Flow-Through Basin: Stream #3	17.7	2.9
19.417	5.54			
372.00	372.10	Flowby Basin Model: Stream #3	2.9	2.9
19.417				
373.00	373.00	Zero Out: Stream #5	0.0	0.0
373.00	340.00	Stream #3 Added to: Stream #2	5.5	8.2
24.333				

340.00	340.00	Zero Out: Stream #3	2.9	0.0
340.00	12741.00	Stream #2 Added to: Stream #1	2386.6	2394.2
19.500				
12741.00	12741.00	Zero Out: Stream #2	8.2	0.0
12741.00	127.00	Convex Routing: Stream #1	2394.2	2394.2
19.583				
12710.00	127.00	Subarea (UH) Added to Stream #2	0.0	38.9
16.500				

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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-----+-----
|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV0534UC.DAT ]
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-----+-----
|UPSTREAM DOWNSTREAM| | UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE| |
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR) | MODELED (AF)| FOOTNOTES |
-----+-----
| 127.00 127.00| Stream #2 Added to: Stream #1| 2394.2 2396.7|
19.583 | | |
| 127.00 127.00| Zero Out: Stream #2| 38.9 0.0|
| | | |
| 127.00 12902.00| Convex Routing: Stream #1| 2396.7 2395.6|
19.667 | | |
| 50220.00 50347.00| Subarea (UH) Added to Stream #2| 0.0 128.0|
16.500 | | |
| 50347.00 50347.00| Flow-Through Basin: Stream #2| 128.0 28.5|
18.917 | 49.26| |
-----+-----
| 50347.00 12902.00| Convex Routing: Stream #2| 28.5 28.4|
19.083 | | |
| 12902.00 12902.00| Stream #2 Added to: Stream #1| 2395.6 2423.9|
19.667 | | |
| 12902.00 12902.00| Zero Out: Stream #2| 28.4 0.0|
| | | |
| 12902.00 129.00| Convex Routing: Stream #1| 2423.9 2421.7|
19.667 | | |
| 50400.00 129.00| Subarea (UH) Added to Stream #2| 0.0 35.8|
16.333 | | |
-----+-----
| 129.00 129.00| Stream #2 Added to: Stream #1| 2421.7 2424.5|
19.667 | | |
| 129.00 129.00| Zero Out: Stream #2| 35.8 0.0|
| | | |
| 210.00 221.00| Subarea (UH) Added to Stream #2| 0.0 49.0|
16.333 | | |
| 221.00 221.00| Flowby Basin Model: Stream #2| 49.0 15.1|
16.333 | | |
| 221.00 223.00| Flow-Through Basin: Stream #2| 15.1 12.2|
17.417 | 3.49| |
-----+-----
| 221.00 222.00| Flow-Through Basin: Stream #5| 33.8 5.3|
18.417 | 4.93| |
| 223.00 222.00| Stream #5 Added to: Stream #2| 12.2 17.4|
17.417 | | |
| 222.00 222.00| Zero Out: Stream #5| 5.3 0.0|
| | | |
| 222.00 129.00| Stream #2 Added to: Stream #1| 2424.5 2437.2|
19.667 | | |

```


	129.00	129.00	Zero Out:	Stream #2	17.4	0.0
+-----+						
	129.00	133.00	Convex Routing:	Stream #1	2437.2	2434.9
19.750						
	13010.00	132.00	Subarea (UH) Added to	Stream #2	0.0	321.6
17.000						
	132.00	132.00	Flowby Basin Model:	Stream #2	321.6	321.6
17.000						
	132.00	132.00	Zero Out:	Stream #3	0.0	0.0
	132.00	132.00	Zero Out:	Stream #4	0.0	0.0
+-----+						
	132.00	13305.00	Convex Routing:	Stream #2	321.6	313.3
17.500						
	13305.00	133.00	Convex Routing:	Stream #2	313.3	311.6
17.833						
	132.00	133.00	Subarea (UH) Added to	Stream #3	0.0	163.9
16.750						
	133.00	133.00	Stream #3 Added to:	Stream #2	311.6	424.8
17.667						
	133.00	133.00	Zero Out:	Stream #3	163.9	0.0
+-----+						
	133.00	133.00	Stream #2 Added to:	Stream #1	2434.9	2669.8
18.417						
	133.00	133.00	Zero Out:	Stream #2	424.8	0.0
	133.00	134.00	Convex Routing:	Stream #1	2669.8	2668.0
18.667						
	133.00	134.00	Subarea (UH) Added to	Stream #2	0.0	170.0
16.417						
	134.00	134.00	Stream #2 Added to:	Stream #1	2668.0	2700.8
18.583						
+-----+						
	134.00	134.00	Zero Out:	Stream #2	170.0	0.0
	134.00	134.00	View:	Stream #1		2700.8
18.583		2517.93	3			
+-----+						
+-----+						
Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT						
INTERVAL						
3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF						
THE DESIGN STORM						
+-----+						
+-----+						

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Analysis prepared by:

Michael Baker International
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***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 137 *
* 5-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV05137C.DAT
TIME/DATE OF STUDY: 09:32 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 3.308 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.496; LOW LOSS FRACTION = 0.845
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.24; 30-MINUTE = 0.46; 1-HOUR = 0.64
3-HOUR = 1.19; 6-HOUR = 1.77; 24-HOUR = 3.13
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.134 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.290; LOW LOSS FRACTION = 0.598
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.19
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

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BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	1.520
3	2.00	1.30	3.150
4	3.00	1.60	4.900
5	4.00	1.80	6.790
6	5.00	2.10	8.810
7	6.00	2.30	10.970
8	7.00	47.90	13.270
9	8.00	131.60	15.720
10	9.00	241.70	18.320
11	10.00	372.80	21.060

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.253 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.424; LOW LOSS FRACTION = 0.818
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.19
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

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INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.314 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.490; LOW LOSS FRACTION = 0.958
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.19
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 286.00; DOWNSTREAM ELEVATION (FT) = 258.00
CHANNEL LENGTH (FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

=====

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.271 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.472
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.19
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 16.600
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.187 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.230; LOW LOSS FRACTION = 0.459
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.19
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-3

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	5.95	0.280
3	2.00	22.18	1.150
4	3.00	46.43	3.090
5	4.00	75.05	6.150
6	5.00	105.54	10.350
7	6.00	127.29	15.380
8	7.00	138.99	20.860
9	8.00	150.45	26.500
10	9.00	161.55	32.360
11	10.00	697.61	38.410
12	11.00	1666.99	44.700

FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<<

FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<<
=====

FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<<
=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<<
=====

WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.351 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.209; LOW LOSS FRACTION = 0.415
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.19
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<<
=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3C-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	7.430

```

3      2.00      0.02      15.170
4      3.00      2.70      23.230
5      4.00      4.69      31.610
6      5.00      6.04      40.320
7      6.00     10.72      49.360
8      7.00     17.77      58.730
9      8.00     424.53     68.440
10     9.00     1169.03    78.500
11    10.00     2113.61    88.500

```

```

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

```

```

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-3

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

```

```

*****
FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

```

```

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.433 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.405; LOW LOSS FRACTION = 0.770
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.19
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

```

```

-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3

```

```

THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:

```

3C-3

```

DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-5

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

```

```

*****
FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

```

```

*****STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

```

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO**

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

```

```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.429 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.494; LOW LOSS FRACTION = 0.958
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.19
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

```

```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.453 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.362; LOW LOSS FRACTION = 0.671
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.19
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

5-2

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.220 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.461; LOW LOSS FRACTION = 0.889
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.19
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.257 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.211; LOW LOSS FRACTION = 0.441
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.19
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Table with 3 columns: DATA PAIR NUMBER, Qcenter (CFS), Qpass (CFS). Rows 1-5 showing flow data.

B Diversion Structure

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-10 showing depth vs outflow/storage data.

FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-4

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-23 showing depth vs outflow/storage data.

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.986 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.406; LOW LOSS FRACTION = 0.789
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.19
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN GBD Side
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS. Weir

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8

>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<

```

=====
***STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====

*****
****ERROR-STREAM 4 CONTAINS NO INFORMATION (EMPTY).
      PROCESS IS NEGATED.
*****

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====

*****
****ERROR-STREAM 4 CONTAINS NO INFORMATION (EMPTY).
      PROCESS IS NEGATED.
*****

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01      CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 427.51; DOWNSTREAM ELEVATION(FT) = 315.00
CHANNEL LENGTH(FT) = 9760.05      MANNING'S FACTOR = 0.040

```

```

=====
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE    13305.00 TO NODE    133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01      CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 315.00; DOWNSTREAM ELEVATION(FT) = 212.00
CHANNEL LENGTH(FT) = 6877.24      MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    133.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.699 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.374; LOW LOSS FRACTION = 0.689
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.19
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE    133.00 TO NODE    133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE    133.00 TO NODE    133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE    133.00 TO NODE    133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 212.00; DOWNSTREAM ELEVATION(FT) = 173.00
CHANNEL LENGTH(FT) = 6461.31 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1691.600 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.353 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.406; LOW LOSS FRACTION = 0.767
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.19
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 13500.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 3859.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 2.180 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.473; LOW LOSS FRACTION = 0.843
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.19
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 173.00; DOWNSTREAM ELEVATION(FT) = 133.00
CHANNEL LENGTH(FT) = 6064.09 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1191.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.438 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.395; LOW LOSS FRACTION = 0.716

```

SPECIFIED PEAK RAINFALL DEPTHS(INCH):

5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57

3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.19

*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:

5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394

3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 11

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<<

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+-----+
+-----+
|                                     * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
|INPUT FILENAME: [EV05137C.DAT ]
Page: 1 of |
+-----+
+-----+
|UPSTREAM DOWNSTREAM|                               | UPSTREAM  DOWNSTREAM|
TIME(2) TO | MAX. STORAGE|                               |
| NODE #     NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS)  PEAK (CFS)|
PEAK (HR)  | MODELED (AF)| FOOTNOTES |
+-----+
+-----+
| 10100.00   119.00| Subarea (UH) Added to Stream #1|      0.0    2252.8|
19.333 |           |                               |
| 119.00     12603.00| Convex Routing:      Stream #1|  2252.8    2232.6|
19.417 |           |                               |
| 810.00     809.00| Subarea (UH) Added to Stream #2|      0.0     35.7|
16.167 |           |                               |
| 809.00     12603.00| Flow-Through Basin:  Stream #2|     35.7     2.1|
24.083 |           |                               |
| 12603.00   12603.00| Stream #2 Added to:  Stream #1|  2232.6    2234.7|
19.417 |           |                               |
+-----+
+-----+
| 12603.00   12603.00| Zero Out:           Stream #2|      2.1     0.0|
|           |           |                               |
| 12603.00   126.00| Convex Routing:     Stream #1|  2234.7    2227.2|
19.250 |           |                               |
| 920.00     905.00| Subarea (UH) Added to Stream #2|      0.0     52.9|
16.333 |           |                               |
| 905.00     126.00| Flow-Through Basin:  Stream #2|     52.9    17.5|
17.500 |           |                               |
| 126.00     126.00| Stream #2 Added to:  Stream #1|  2227.2    2241.1|
19.250 |           |                               |
+-----+
+-----+
| 126.00     126.00| Zero Out:           Stream #2|     17.5     0.0|
|           |           |                               |
| 600.00     126.00| Subarea (UH) Added to Stream #2|      0.0     8.3|
16.417 |           |                               |
| 126.00     126.00| Stream #2 Added to:  Stream #1|  2241.1    2241.6|
19.250 |           |                               |
| 126.00     126.00| Zero Out:           Stream #2|      8.3     0.0|
|           |           |                               |
| 126.00    12720.50| Convex Routing:     Stream #1|  2241.6    2234.9|
19.333 |           |                               |
+-----+
+-----+
| 430.00     420.00| Subarea (UH) Added to Stream #2|      0.0     62.3|
16.333 |           |                               |
| 420.00     420.50| Flow-Through Basin:  Stream #2|     62.3    27.4|
17.583 |           |                               |
| 420.50     427.00| Flow-Through Basin:  Stream #2|     27.4    17.6|
19.250 |           |                               |
| 413.00     425.00| Subarea (UH) Added to Stream #3|      0.0    29.6|
16.250 |           |                               |

```

	425.00	426.00	Flow-Through Basin:	Stream #3	29.6	15.2
17.167		0.77				
+-----+-----+						
	426.00	427.00	Stream #3 Added to:	Stream #2	17.6	26.0
18.250						
	427.00	427.00	Zero Out:	Stream #3	15.2	0.0
	427.00	12720.50	Stream #2 Added to:	Stream #1	2234.9	2258.3
19.333						
	12720.50	12720.50	Zero Out:	Stream #2	26.0	0.0
	12720.50	12741.00	Convex Routing:	Stream #1	2258.3	2257.0
19.500						
+-----+-----+						
	320.00	339.00	Subarea (UH) Added to	Stream #2	0.0	131.6
16.417						
	339.00	340.00	Flow-Through Basin:	Stream #2	131.6	5.2
24.417		34.78				
	339.00	372.00	Flowby Basin Model:	Stream #2	5.2	5.2
24.417						
	390.00	372.00	Subarea (UH) Added to	Stream #4	0.0	16.4
16.500						
	372.00	372.00	Stream #4 Added to:	Stream #3	0.0	16.4
16.500						
+-----+-----+						
	372.00	372.00	Zero Out:	Stream #4	16.4	0.0
	372.00	373.00	Flow-Through Basin:	Stream #3	16.4	2.8
19.500		5.34				
	372.00	372.10	Flowby Basin Model:	Stream #3	2.8	2.8
19.500						
	373.00	373.00	Zero Out:	Stream #5	0.0	0.0
	373.00	340.00	Stream #3 Added to:	Stream #2	5.2	7.9
24.333						
+-----+-----+						
	340.00	340.00	Zero Out:	Stream #3	2.8	0.0
	340.00	12741.00	Stream #2 Added to:	Stream #1	2257.0	2264.0
19.500						
	12741.00	12741.00	Zero Out:	Stream #2	7.9	0.0
	12741.00	127.00	Convex Routing:	Stream #1	2264.0	2263.8
19.500						
	12710.00	127.00	Subarea (UH) Added to	Stream #2	0.0	33.8
16.500						

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
 |
 | 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM
 |

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV05137C.DAT]

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UPSTREAM TIME (2) TO	DOWNSTREAM MAX. STORAGE	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
127.00	127.00	2263.8	2266.3
127.00	127.00	33.8	0.0
127.00	12902.00	2266.3	2265.4
50220.00	50347.00	0.0	119.7
50347.00	50347.00	119.7	27.1
50347.00	12902.00	27.1	27.1
12902.00	12902.00	2265.4	2292.5
12902.00	12902.00	27.1	0.0
12902.00	129.00	2292.5	2290.7
50400.00	129.00	0.0	31.9
129.00	129.00	2290.7	2293.4
129.00	129.00	31.9	0.0
210.00	221.00	0.0	46.3
221.00	221.00	46.3	15.0
221.00	223.00	15.0	12.0
221.00	222.00	31.3	5.2
223.00	222.00	12.0	17.1
222.00	222.00	5.2	0.0
222.00	129.00	2293.4	2305.9

127.00	127.00	Stream #2 Added to: Stream #1	2263.8	2266.3
127.00	127.00	Zero Out: Stream #2	33.8	0.0
127.00	12902.00	Convex Routing: Stream #1	2266.3	2265.4
50220.00	50347.00	Subarea (UH) Added to Stream #2	0.0	119.7
50347.00	50347.00	Flow-Through Basin: Stream #2	119.7	27.1
50347.00	12902.00	Convex Routing: Stream #2	27.1	27.1
12902.00	12902.00	Stream #2 Added to: Stream #1	2265.4	2292.5
12902.00	12902.00	Zero Out: Stream #2	27.1	0.0
12902.00	129.00	Convex Routing: Stream #1	2292.5	2290.7
50400.00	129.00	Subarea (UH) Added to Stream #2	0.0	31.9

129.00	129.00	Stream #2 Added to: Stream #1	2290.7	2293.4
129.00	129.00	Zero Out: Stream #2	31.9	0.0
210.00	221.00	Subarea (UH) Added to Stream #2	0.0	46.3
221.00	221.00	Flowby Basin Model: Stream #2	46.3	15.0
221.00	223.00	Flow-Through Basin: Stream #2	15.0	12.0
221.00	222.00	Flow-Through Basin: Stream #5	31.3	5.2
223.00	222.00	Stream #5 Added to: Stream #2	12.0	17.1
222.00	222.00	Zero Out: Stream #5	5.2	0.0
222.00	129.00	Stream #2 Added to: Stream #1	2293.4	2305.9

221.00	222.00	Flow-Through Basin: Stream #5	31.3	5.2
223.00	222.00	Stream #5 Added to: Stream #2	12.0	17.1
222.00	222.00	Zero Out: Stream #5	5.2	0.0
222.00	129.00	Stream #2 Added to: Stream #1	2293.4	2305.9

221.00	222.00	Flow-Through Basin: Stream #5	31.3	5.2
223.00	222.00	Stream #5 Added to: Stream #2	12.0	17.1
222.00	222.00	Zero Out: Stream #5	5.2	0.0
222.00	129.00	Stream #2 Added to: Stream #1	2293.4	2305.9

129.00	129.00	Zero Out: Stream #2	17.1	0.0
129.00	133.00	Convex Routing: Stream #1	2305.9	2303.9
13010.00	132.00	Subarea (UH) Added to Stream #2	0.0	300.6
132.00	132.00	Flowby Basin Model: Stream #2	300.6	300.6
132.00	132.00	Zero Out: Stream #3	0.0	0.0
132.00	132.00	Zero Out: Stream #4	0.0	0.0

132.00	13305.00	Convex Routing: Stream #2	300.6	293.3
13305.00	133.00	Convex Routing: Stream #2	293.3	291.9
132.00	133.00	Subarea (UH) Added to Stream #3	0.0	153.7
133.00	133.00	Stream #3 Added to: Stream #2	291.9	399.8
133.00	133.00	Zero Out: Stream #3	153.7	0.0

133.00	133.00	Stream #2 Added to: Stream #1	2303.9	2548.1
133.00	133.00	Zero Out: Stream #2	399.8	0.0
133.00	134.00	Convex Routing: Stream #1	2548.1	2546.7
133.00	134.00	Subarea (UH) Added to Stream #2	0.0	156.7
134.00	134.00	Stream #2 Added to: Stream #1	2546.7	2578.5

134.00	134.00	Zero Out: Stream #2	156.7	0.0
13500.00	134.00	Subarea (UH) Added to Stream #2	0.0	145.3
134.00	134.00	Stream #2 Added to: Stream #1	2578.5	2720.4
134.00	134.00	Zero Out: Stream #2	145.3	0.0
134.00	137.00	Convex Routing: Stream #1	2720.4	2717.0

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

```

-----+
|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV05137C.DAT ]
Page: 3 of |
-----+-----+
|UPSTREAM DOWNSTREAM| | UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE| |
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR) | MODELED (AF)| FOOTNOTES |
-----+-----+
| 134.00 137.00| Subarea (UH) Added to Stream #2| 0.0 113.1|
16.500 | | |
| 137.00 137.00| Stream #2 Added to: Stream #1| 2717.0 2745.3|
18.750 | | |
| 137.00 137.00| Zero Out: Stream #2| 113.1 0.0|
| | |
| 137.00 137.00| View: Stream #1| 2745.3|
18.750 | 2593.93| 3 |
-----+-----+
|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT
INTERVAL |
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF
THE DESIGN STORM |
-----+

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END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - FREE DRAINING UH *
* ULTIMATE CONDITION - REGIONAL NODE 138 *
* 5-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV05138C.DAT
TIME/DATE OF STUDY: 09:30 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 3.308 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.496; LOW LOSS FRACTION = 0.845
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.24; 30-MINUTE = 0.46; 1-HOUR = 0.64
3-HOUR = 1.19; 6-HOUR = 1.77; 24-HOUR = 3.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.134 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.290; LOW LOSS FRACTION = 0.598
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.19
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing depth and storage values.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.253 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.424; LOW LOSS FRACTION = 0.818
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.19
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

4F-1

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.314 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.490; LOW LOSS FRACTION = 0.958
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.19
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 286.00; DOWNSTREAM ELEVATION (FT) = 258.00
CHANNEL LENGTH (FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.271 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.472
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.19
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 16.600
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.187 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.230; LOW LOSS FRACTION = 0.459
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.19
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-3

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	5.95	0.280
3	2.00	22.18	1.150
4	3.00	46.43	3.090
5	4.00	75.05	6.150
6	5.00	105.54	10.350
7	6.00	127.29	15.380
8	7.00	138.99	20.860
9	8.00	150.45	26.500
10	9.00	161.55	32.360
11	10.00	697.61	38.410
12	11.00	1666.99	44.700

FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<<

FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<<
=====

FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<<
=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<<
=====

WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.351 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.209; LOW LOSS FRACTION = 0.415
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.19
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<<
=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3C-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	7.430

```

3      2.00      0.02      15.170
4      3.00      2.70      23.230
5      4.00      4.69      31.610
6      5.00      6.04      40.320
7      6.00      10.72     49.360
8      7.00      17.77     58.730
9      8.00      424.53    68.440
10     9.00      1169.03   78.500
11    10.00     2113.61   88.500

```

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*****
FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

```

```

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-3

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

```

```

*****
FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

```

```

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.433 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.405; LOW LOSS FRACTION = 0.770
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.19
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

```

```

-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:

```

3C-3

```

DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-5

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

```

```

*****
FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

```

```

*****STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

```

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

```

```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====

WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.429 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.494; LOW LOSS FRACTION = 0.958
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.19
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

```

```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.453 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.362; LOW LOSS FRACTION = 0.671
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.19
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

5-2

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.220 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.461; LOW LOSS FRACTION = 0.889
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.19
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.257 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.211; LOW LOSS FRACTION = 0.441
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.19
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Table with 3 columns: DATA PAIR NUMBER, Qcenter (CFS), Qpass (CFS). Rows 1-5 showing flow data.

B Diversion Structure

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-10 showing depth vs outflow data.

FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-4

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-23 showing depth vs outflow data.

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.986 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.406; LOW LOSS FRACTION = 0.789
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.19
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: **GBD Side**
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN **Weir**
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8

>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<

```

=====
***STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====

*****
****ERROR-STREAM 4 CONTAINS NO INFORMATION (EMPTY).
      PROCESS IS NEGATED.
*****

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====

*****
****ERROR-STREAM 4 CONTAINS NO INFORMATION (EMPTY).
      PROCESS IS NEGATED.
*****

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01      CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 427.51; DOWNSTREAM ELEVATION(FT) = 315.00
CHANNEL LENGTH(FT) = 9760.05      MANNING'S FACTOR = 0.040

```

```

=====
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE    13305.00 TO NODE    133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01      CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 315.00; DOWNSTREAM ELEVATION(FT) = 212.00
CHANNEL LENGTH(FT) = 6877.24      MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    133.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.699 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.374; LOW LOSS FRACTION = 0.689
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.19
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE    133.00 TO NODE    133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE    133.00 TO NODE    133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE    133.00 TO NODE    133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 212.00; DOWNSTREAM ELEVATION(FT) = 173.00
CHANNEL LENGTH(FT) = 6461.31 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1691.600 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.353 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.406; LOW LOSS FRACTION = 0.767
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.19
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 13500.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 3859.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 2.180 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.473; LOW LOSS FRACTION = 0.843
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.19
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 173.00; DOWNSTREAM ELEVATION(FT) = 133.00
CHANNEL LENGTH(FT) = 6064.09 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1191.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.438 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.395; LOW LOSS FRACTION = 0.716

```

SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.19
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<<
=====

FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<<
=====

FLOW PROCESS FROM NODE 137.00 TO NODE 138.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<<
=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 133.00; DOWNSTREAM ELEVATION (FT) = 119.70
CHANNEL LENGTH (FT) = 4643.67 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

FLOW PROCESS FROM NODE 137.00 TO NODE 138.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<<
=====

WATERSHED AREA = 1303.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.607 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.445; LOW LOSS FRACTION = 0.797
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.19
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 138.00 TO NODE 138.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<<
=====

FLOW PROCESS FROM NODE 138.00 TO NODE 138.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<<
=====

FLOW PROCESS FROM NODE 138.00 TO NODE 138.00 IS CODE = 11

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<<<
=====

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

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UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS FOOTNOTES	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
--	--	---	------------------------	--------------------------

10100.00	119.00	Subarea (UH) Added to Stream #1	0.0	2232.3
19.333				
119.00	12603.00	Convex Routing: Stream #1	2232.3	2213.1
19.417				
810.00	809.00	Subarea (UH) Added to Stream #2	0.0	35.2
16.167				
809.00	12603.00	Flow-Through Basin: Stream #2	35.2	2.1
24.083	9.32			
12603.00	12603.00	Stream #2 Added to: Stream #1	2213.1	2215.2
19.417				
12603.00	12603.00	Zero Out: Stream #2	2.1	0.0
12603.00	126.00	Convex Routing: Stream #1	2215.2	2209.1
19.250				
920.00	905.00	Subarea (UH) Added to Stream #2	0.0	51.7
16.333				
905.00	126.00	Flow-Through Basin: Stream #2	51.7	17.4
17.500	10.66			
126.00	126.00	Stream #2 Added to: Stream #1	2209.1	2222.9
19.250				
126.00	126.00	Zero Out: Stream #2	17.4	0.0
600.00	126.00	Subarea (UH) Added to Stream #2	0.0	8.0
16.417				
126.00	126.00	Stream #2 Added to: Stream #1	2222.9	2223.4
19.250				
126.00	126.00	Zero Out: Stream #2	8.0	0.0
126.00	12720.50	Convex Routing: Stream #1	2223.4	2216.8
19.333				
430.00	420.00	Subarea (UH) Added to Stream #2	0.0	61.6
16.333				
420.00	420.50	Flow-Through Basin: Stream #2	61.6	27.3
17.667	3.85			
420.50	427.00	Flow-Through Basin: Stream #2	27.3	17.6
19.250	3.00			
413.00	425.00	Subarea (UH) Added to Stream #3	0.0	29.3
16.250				

425.00	426.00	Flow-Through Basin: Stream #3	29.3	15.1
17.167	0.77			

426.00	427.00	Stream #3 Added to: Stream #2	17.6	26.0
18.250				
427.00	427.00	Zero Out: Stream #3	15.1	0.0
427.00	12720.50	Stream #2 Added to: Stream #1	2216.8	2240.2
19.333				
12720.50	12720.50	Zero Out: Stream #2	26.0	0.0
12720.50	12741.00	Convex Routing: Stream #1	2240.2	2238.6
19.500				

320.00	339.00	Subarea (UH) Added to Stream #2	0.0	130.3
16.417				
339.00	340.00	Flow-Through Basin: Stream #2	130.3	5.2
24.417	34.72			
339.00	372.00	Flowby Basin Model: Stream #2	5.2	5.2
24.417				
390.00	372.00	Subarea (UH) Added to Stream #4	0.0	16.1
16.500				
372.00	372.00	Stream #4 Added to: Stream #3	0.0	16.1
16.500				

372.00	372.00	Zero Out: Stream #4	16.1	0.0
372.00	373.00	Flow-Through Basin: Stream #3	16.1	2.8
19.500	5.33			
372.00	372.10	Flowby Basin Model: Stream #3	2.8	2.8
19.500				
373.00	373.00	Zero Out: Stream #5	0.0	0.0
373.00	340.00	Stream #3 Added to: Stream #2	5.2	7.8
24.333				

340.00	340.00	Zero Out: Stream #3	2.8	0.0
340.00	12741.00	Stream #2 Added to: Stream #1	2238.6	2245.6
19.500				
12741.00	12741.00	Zero Out: Stream #2	7.8	0.0
12741.00	127.00	Convex Routing: Stream #1	2245.6	2245.5
19.500				
12710.00	127.00	Subarea (UH) Added to Stream #2	0.0	32.6
16.500				

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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+-----+
|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV05138C.DAT ]
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+-----+
|UPSTREAM DOWNSTREAM| | UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE| |
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR) | MODELED (AF)| FOOTNOTES |
+-----+
| 127.00 127.00| Stream #2 Added to: Stream #1| 2245.5 2248.0|
19.500 | | |
| 127.00 127.00| Zero Out: Stream #2| 32.6 0.0|
| | | |
| 127.00 12902.00| Convex Routing: Stream #1| 2248.0 2247.1|
19.583 | | |
| 50220.00 50347.00| Subarea (UH) Added to Stream #2| 0.0 118.1|
16.500 | | |
| 50347.00 50347.00| Flow-Through Basin: Stream #2| 118.1 27.1|
19.000 | 47.77| |
+-----+
| 50347.00 12902.00| Convex Routing: Stream #2| 27.1 27.1|
19.167 | | |
| 12902.00 12902.00| Stream #2 Added to: Stream #1| 2247.1 2274.1|
19.583 | | |
| 12902.00 12902.00| Zero Out: Stream #2| 27.1 0.0|
| | | |
| 12902.00 129.00| Convex Routing: Stream #1| 2274.1 2272.3|
19.667 | | |
| 50400.00 129.00| Subarea (UH) Added to Stream #2| 0.0 30.9|
16.333 | | |
+-----+
| 129.00 129.00| Stream #2 Added to: Stream #1| 2272.3 2275.0|
19.667 | | |
| 129.00 129.00| Zero Out: Stream #2| 30.9 0.0|
| | | |
| 210.00 221.00| Subarea (UH) Added to Stream #2| 0.0 45.8|
16.333 | | |
| 221.00 221.00| Flowby Basin Model: Stream #2| 45.8 14.9|
16.333 | | |
| 221.00 223.00| Flow-Through Basin: Stream #2| 14.9 12.0|
17.417 | 3.46| |
+-----+
| 221.00 222.00| Flow-Through Basin: Stream #5| 30.9 5.2|
18.417 | 4.57| |
| 223.00 222.00| Stream #5 Added to: Stream #2| 12.0 17.0|
17.417 | | |
| 222.00 222.00| Zero Out: Stream #5| 5.2 0.0|
| | | |
| 222.00 129.00| Stream #2 Added to: Stream #1| 2275.0 2287.5|
19.667 | | |

```

	129.00	129.00	Zero Out:	Stream #2	17.0	0.0
+-----+						
	129.00	133.00	Convex Routing:	Stream #1	2287.5	2285.6
19.750						
	13010.00	132.00	Subarea (UH) Added to	Stream #2	0.0	297.0
17.000						
	132.00	132.00	Flowby Basin Model:	Stream #2	297.0	297.0
17.000						
	132.00	132.00	Zero Out:	Stream #3	0.0	0.0
	132.00	132.00	Zero Out:	Stream #4	0.0	0.0
+-----+						
	132.00	13305.00	Convex Routing:	Stream #2	297.0	289.9
17.583						
	13305.00	133.00	Convex Routing:	Stream #2	289.9	288.5
17.833						
	132.00	133.00	Subarea (UH) Added to	Stream #3	0.0	151.9
16.750						
	133.00	133.00	Stream #3 Added to:	Stream #2	288.5	396.3
17.667						
	133.00	133.00	Zero Out:	Stream #3	151.9	0.0
+-----+						
	133.00	133.00	Stream #2 Added to:	Stream #1	2285.6	2532.6
18.500						
	133.00	133.00	Zero Out:	Stream #2	396.3	0.0
	133.00	134.00	Convex Routing:	Stream #1	2532.6	2531.3
18.667						
	133.00	134.00	Subarea (UH) Added to	Stream #2	0.0	153.9
16.417						
	134.00	134.00	Stream #2 Added to:	Stream #1	2531.3	2563.1
18.667						
+-----+						
	134.00	134.00	Zero Out:	Stream #2	153.9	0.0
	13500.00	134.00	Subarea (UH) Added to	Stream #2	0.0	144.0
18.083						
	134.00	134.00	Stream #2 Added to:	Stream #1	2563.1	2703.6
18.583						
	134.00	134.00	Zero Out:	Stream #2	144.0	0.0
	134.00	137.00	Convex Routing:	Stream #1	2703.6	2700.4
18.750						

[Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL

| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

| INPUT FILENAME: [EV05138C.DAT]

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UPSTREAM TIME (2) TO	DOWNSTREAM MAX. STORAGE	HYDROLOGIC/HYDRAULIC PROCESS	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
NODE #	NODE #			
PEAK (HR)	MODELED (AF)	FOOTNOTES		

134.00	137.00	Subarea (UH) Added to Stream #2	0.0	111.4
16.500				
137.00	137.00	Stream #2 Added to: Stream #1	2700.4	2728.6
18.750				
137.00	137.00	Zero Out: Stream #2	111.4	0.0
137.00	138.00	Convex Routing: Stream #1	2728.6	2726.6
18.917				
137.00	138.00	Subarea (UH) Added to Stream #2	0.0	82.2
16.667				

138.00	138.00	Stream #2 Added to: Stream #1	2726.6	2750.7
18.833				
138.00	138.00	Zero Out: Stream #2	82.2	0.0
138.00	138.00	View: Stream #1		2750.7
18.833	2630.51	3		

| Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL

| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Ver. 20.0 Release Date: 06/01/2013 License ID 1264

Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 139 *
* 5-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV05139C.DAT
TIME/DATE OF STUDY: 09:29 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 3.308 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.496; LOW LOSS FRACTION = 0.845
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.24; 30-MINUTE = 0.45; 1-HOUR = 0.64
3-HOUR = 1.18; 6-HOUR = 1.76; 24-HOUR = 3.11
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.134 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.290; LOW LOSS FRACTION = 0.598
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.18
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing values for depth, outflow, and storage.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.253 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.424; LOW LOSS FRACTION = 0.818
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.18
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

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INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.314 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.490; LOW LOSS FRACTION = 0.958
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.18
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 286.00; DOWNSTREAM ELEVATION(FT) = 258.00
CHANNEL LENGTH(FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00

=====

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.271 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.472
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.18
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 16.600
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.187 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.230; LOW LOSS FRACTION = 0.459
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.18
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-3

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	5.95	0.280
3	2.00	22.18	1.150
4	3.00	46.43	3.090
5	4.00	75.05	6.150
6	5.00	105.54	10.350
7	6.00	127.29	15.380
8	7.00	138.99	20.860
9	8.00	150.45	26.500
10	9.00	161.55	32.360
11	10.00	697.61	38.410
12	11.00	1666.99	44.700

FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<<

FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<<
=====

FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<<
=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<<
=====

WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.351 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.209; LOW LOSS FRACTION = 0.415
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.18
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<<
=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3C-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	7.430

3	2.00	0.02	15.170
4	3.00	2.70	23.230
5	4.00	4.69	31.610
6	5.00	6.04	40.320
7	6.00	10.72	49.360
8	7.00	17.77	58.730
9	8.00	424.53	68.440
10	9.00	1169.03	78.500
11	10.00	2113.61	88.500

FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Weir to
3C-3

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.433 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.405; LOW LOSS FRACTION = 0.770
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.18
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.

3C-3

SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:

DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Weir to
3C-5

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

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CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====

WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.429 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.494; LOW LOSS FRACTION = 0.958
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.18
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

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=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.453 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.362; LOW LOSS FRACTION = 0.671
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.18
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

5-2

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.220 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.461; LOW LOSS FRACTION = 0.889
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.18
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.257 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.211; LOW LOSS FRACTION = 0.441
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.18
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Table with 3 columns: DATA PAIR NUMBER, Qcenter (CFS), Qpass (CFS). Rows 1-5 showing flow data.

B Diversion Structure

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-10 showing basin data.

FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-4

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-23 showing basin data.

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.986 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.406; LOW LOSS FRACTION = 0.789
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.18
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN **GBD Side**
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS. **Weir**

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8

>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<

```

=====
***STREAM 3 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE =   6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE =  3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====

*****
****ERROR-STREAM 4 CONTAINS NO INFORMATION (EMPTY).
      PROCESS IS NEGATED.
*****

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE =   7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====

*****
****ERROR-STREAM 4 CONTAINS NO INFORMATION (EMPTY).
      PROCESS IS NEGATED.
*****

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    132.00 IS CODE =   6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) =   0.01      CHANNEL Z =   3.00
UPSTREAM ELEVATION(FT) =   427.51; DOWNSTREAM ELEVATION(FT) =   315.00
CHANNEL LENGTH(FT) =   9760.05      MANNING'S FACTOR = 0.040

```

```

=====
CONSTANT LOSS RATE(CFS) =   0.00
=====

*****
FLOW PROCESS FROM NODE    13305.00 TO NODE    133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) =   0.01      CHANNEL Z =   3.00
UPSTREAM ELEVATION(FT) =   315.00; DOWNSTREAM ELEVATION(FT) =   212.00
CHANNEL LENGTH(FT) =   6877.24      MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE(CFS) =   0.00
=====

*****
FLOW PROCESS FROM NODE    132.00 TO NODE    133.00 IS CODE =   1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA =   1715.900 ACRES; BASEFLOW =   0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME =   0.699 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) =   0.374; LOW LOSS FRACTION = 0.689
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE =   0.19; 30-MINUTE =   0.42; 1-HOUR =   0.57
3-HOUR =   0.95; 6-HOUR =   1.31; 24-HOUR =   2.18
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE    133.00 TO NODE    133.00 IS CODE =   7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE    133.00 TO NODE    133.00 IS CODE =   6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE    133.00 TO NODE    133.00 IS CODE =   7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

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*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 212.00; DOWNSTREAM ELEVATION(FT) = 173.00
CHANNEL LENGTH(FT) = 6461.31 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1691.600 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.353 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.406; LOW LOSS FRACTION = 0.767
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.18
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 173.00; DOWNSTREAM ELEVATION(FT) = 133.00
CHANNEL LENGTH(FT) = 6064.09 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1191.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.438 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.395; LOW LOSS FRACTION = 0.716
=====

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*****
FLOW PROCESS FROM NODE 13500.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 3859.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 2.180 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.473; LOW LOSS FRACTION = 0.843
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.18
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 173.00; DOWNSTREAM ELEVATION(FT) = 133.00
CHANNEL LENGTH(FT) = 6064.09 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1191.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.438 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.395; LOW LOSS FRACTION = 0.716
=====

```

SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.18
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

FLOW PROCESS FROM NODE 137.00 TO NODE 138.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 133.00; DOWNSTREAM ELEVATION (FT) = 119.70
CHANNEL LENGTH (FT) = 4643.67 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

FLOW PROCESS FROM NODE 137.00 TO NODE 138.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

WATERSHED AREA = 1303.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.607 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.445; LOW LOSS FRACTION = 0.797
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.18
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 138.00 TO NODE 138.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

FLOW PROCESS FROM NODE 138.00 TO NODE 138.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

FLOW PROCESS FROM NODE 138.00 TO NODE 139.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 0.01 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 119.70; DOWNSTREAM ELEVATION (FT) = 100.00
CHANNEL LENGTH (FT) = 3107.78 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

FLOW PROCESS FROM NODE 138.00 TO NODE 139.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

WATERSHED AREA = 428.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.255 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.345; LOW LOSS FRACTION = 0.606
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.19; 30-MINUTE = 0.42; 1-HOUR = 0.57
3-HOUR = 0.95; 6-HOUR = 1.31; 24-HOUR = 2.18
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 139.00 TO NODE 139.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

FLOW PROCESS FROM NODE 139.00 TO NODE 139.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

FLOW PROCESS FROM NODE 139.00 TO NODE 139.00 IS CODE = 11

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<

```
+-----+
|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV05139C.DAT ]
Page: 1 of |
+-----+
|UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE|
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR) | MODELED (AF)| FOOTNOTES |
+-----+
| 10100.00 119.00| Subarea (UH) Added to Stream #1| 0.0 2218.2|
19.333 |
| 119.00 12603.00| Convex Routing: Stream #1| 2218.2 2199.4|
19.417 |
| 810.00 809.00| Subarea (UH) Added to Stream #2| 0.0 35.0|
16.167 |
| 809.00 12603.00| Flow-Through Basin: Stream #2| 35.0 2.1|
24.083 | 9.27|
| 12603.00 12603.00| Stream #2 Added to: Stream #1| 2199.4 2201.5|
19.417 |
+-----+
| 12603.00 12603.00| Zero Out: Stream #2| 2.1 0.0|
|
| 12603.00 126.00| Convex Routing: Stream #1| 2201.5 2196.0|
19.250 |
| 920.00 905.00| Subarea (UH) Added to Stream #2| 0.0 51.3|
16.333 |
| 905.00 126.00| Flow-Through Basin: Stream #2| 51.3 17.4|
17.500 | 10.64|
| 126.00 126.00| Stream #2 Added to: Stream #1| 2196.0 2209.8|
19.250 |
+-----+
| 126.00 126.00| Zero Out: Stream #2| 17.4 0.0|
|
| 600.00 126.00| Subarea (UH) Added to Stream #2| 0.0 7.9|
16.417 |
| 126.00 126.00| Stream #2 Added to: Stream #1| 2209.8 2210.3|
19.250 |
| 126.00 126.00| Zero Out: Stream #2| 7.9 0.0|
|
| 126.00 12720.50| Convex Routing: Stream #1| 2210.3 2203.9|
19.333 |
+-----+
| 430.00 420.00| Subarea (UH) Added to Stream #2| 0.0 61.3|
16.333 |
| 420.00 420.50| Flow-Through Basin: Stream #2| 61.3 27.0|
17.667 | 3.83|
| 420.50 427.00| Flow-Through Basin: Stream #2| 27.0 17.4|
19.333 | 2.97|
| 413.00 425.00| Subarea (UH) Added to Stream #3| 0.0 29.2|
16.250 |
```

	425.00	426.00	Flow-Through Basin:	Stream #3	29.2	15.0
17.167		0.77				
+-----+-----+						
	426.00	427.00	Stream #3 Added to:	Stream #2	17.4	25.7
18.250						
	427.00	427.00	Zero Out:	Stream #3	15.0	0.0
	427.00	12720.50	Stream #2 Added to:	Stream #1	2203.9	2227.0
19.333						
	12720.50	12720.50	Zero Out:	Stream #2	25.7	0.0
	12720.50	12741.00	Convex Routing:	Stream #1	2227.0	2225.3
19.500						
+-----+-----+						
	320.00	339.00	Subarea (UH) Added to	Stream #2	0.0	129.9
16.417						
	339.00	340.00	Flow-Through Basin:	Stream #2	129.9	5.1
24.417		34.43				
	339.00	372.00	Flowby Basin Model:	Stream #2	5.1	5.1
24.417						
	390.00	372.00	Subarea (UH) Added to	Stream #4	0.0	16.0
16.500						
	372.00	372.00	Stream #4 Added to:	Stream #3	0.0	16.0
16.500						
+-----+-----+						
	372.00	372.00	Zero Out:	Stream #4	16.0	0.0
	372.00	373.00	Flow-Through Basin:	Stream #3	16.0	2.8
19.500		5.31				
	372.00	372.10	Flowby Basin Model:	Stream #3	2.8	2.8
19.500						
	373.00	373.00	Zero Out:	Stream #5	0.0	0.0
	373.00	340.00	Stream #3 Added to:	Stream #2	5.1	7.8
24.333						
+-----+-----+						
	340.00	340.00	Zero Out:	Stream #3	2.8	0.0
	340.00	12741.00	Stream #2 Added to:	Stream #1	2225.3	2232.2
19.500						
	12741.00	12741.00	Zero Out:	Stream #2	7.8	0.0
	12741.00	127.00	Convex Routing:	Stream #1	2232.2	2232.1
19.500						
	12710.00	127.00	Subarea (UH) Added to	Stream #2	0.0	32.2
16.500						

[Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM
|

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV05139C.DAT]

Page: 2 of

UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS FOOTNOTES	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
127.00	127.00	Stream #2 Added to: Stream #1	2232.1	2234.6
19.500				
127.00	127.00	Zero Out: Stream #2	32.2	0.0
127.00	12902.00	Convex Routing: Stream #1	2234.6	2233.7
19.583				
50220.00	50347.00	Subarea (UH) Added to Stream #2	0.0	117.6
16.500				
50347.00	50347.00	Flow-Through Basin: Stream #2	117.6	26.9
19.000	47.62			
50347.00	12902.00	Convex Routing: Stream #2	26.9	26.9
19.083				
12902.00	12902.00	Stream #2 Added to: Stream #1	2233.7	2260.6
19.583				
12902.00	12902.00	Zero Out: Stream #2	26.9	0.0
12902.00	129.00	Convex Routing: Stream #1	2260.6	2258.9
19.667				
50400.00	129.00	Subarea (UH) Added to Stream #2	0.0	30.6
16.333				
129.00	129.00	Stream #2 Added to: Stream #1	2258.9	2261.6
19.667				
129.00	129.00	Zero Out: Stream #2	30.6	0.0
210.00	221.00	Subarea (UH) Added to Stream #2	0.0	45.6
16.333				
221.00	221.00	Flowby Basin Model: Stream #2	45.6	14.9
16.333				
221.00	223.00	Flow-Through Basin: Stream #2	14.9	11.9
17.417	3.46			
221.00	222.00	Flow-Through Basin: Stream #5	30.7	5.2
18.417	4.55			
223.00	222.00	Stream #5 Added to: Stream #2	11.9	17.0
17.417				
222.00	222.00	Zero Out: Stream #5	5.2	0.0
222.00	129.00	Stream #2 Added to: Stream #1	2261.6	2274.0
19.667				

129.00	129.00	Zero Out: Stream #2	17.0	0.0
129.00	133.00	Convex Routing: Stream #1	2274.0	2272.1
19.750				
13010.00	132.00	Subarea (UH) Added to Stream #2	0.0	295.8
17.000				
132.00	132.00	Flowby Basin Model: Stream #2	295.8	295.8
17.000				
132.00	132.00	Zero Out: Stream #3	0.0	0.0
132.00	132.00	Zero Out: Stream #4	0.0	0.0
132.00	13305.00	Convex Routing: Stream #2	295.8	288.9
17.583				
13305.00	133.00	Convex Routing: Stream #2	288.9	287.5
17.833				
132.00	133.00	Subarea (UH) Added to Stream #3	0.0	151.3
16.750				
133.00	133.00	Stream #3 Added to: Stream #2	287.5	395.1
17.667				
133.00	133.00	Zero Out: Stream #3	151.3	0.0
133.00	133.00	Stream #2 Added to: Stream #1	2272.1	2521.1
18.500				
133.00	133.00	Zero Out: Stream #2	395.1	0.0
133.00	134.00	Convex Routing: Stream #1	2521.1	2519.7
18.667				
133.00	134.00	Subarea (UH) Added to Stream #2	0.0	153.0
16.417				
134.00	134.00	Stream #2 Added to: Stream #1	2519.7	2551.3
18.667				
134.00	134.00	Zero Out: Stream #2	153.0	0.0
13500.00	134.00	Subarea (UH) Added to Stream #2	0.0	143.5
18.083				
134.00	134.00	Stream #2 Added to: Stream #1	2551.3	2691.5
18.583				
134.00	134.00	Zero Out: Stream #2	143.5	0.0
134.00	137.00	Convex Routing: Stream #1	2691.5	2688.3
18.750				

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV05139C.DAT ]
Page: 3 of |
-----+-----+
|UPSTREAM DOWNSTREAM| | UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE| |
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR) | MODELED (AF)| FOOTNOTES |
-----+-----+
| 134.00 137.00| Subarea (UH) Added to Stream #2| 0.0 110.8|
16.500 | | |
| 137.00 137.00| Stream #2 Added to: Stream #1| 2688.3 2716.4|
18.750 | | |
| 137.00 137.00| Zero Out: Stream #2| 110.8 0.0|
| | |
| 137.00 138.00| Convex Routing: Stream #1| 2716.4 2714.5|
18.917 | | |
| 137.00 138.00| Subarea (UH) Added to Stream #2| 0.0 81.7|
16.667 | | |
-----+-----+
| 138.00 138.00| Stream #2 Added to: Stream #1| 2714.5 2738.6|
18.833 | | |
| 138.00 138.00| Zero Out: Stream #2| 81.7 0.0|
| | |
| 138.00 139.00| Convex Routing: Stream #1| 2738.6 2738.4|
18.917 | | |
| 138.00 139.00| Subarea (UH) Added to Stream #2| 0.0 63.8|
16.333 | | |
| 139.00 139.00| Stream #2 Added to: Stream #1| 2738.4 2749.9|
18.917 | | |
-----+-----+
| 139.00 139.00| Zero Out: Stream #2| 63.8 0.0|
| | |
| 139.00 139.00| View: Stream #1| 2749.9|
18.917 | 2647.63| 3 |
-----+-----+
|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT
INTERVAL |
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF
THE DESIGN STORM |
-----+

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END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Ver. 20.0 Release Date: 06/01/2013 License ID 1264

Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 126 *
* 10-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV10126C.DAT
TIME/DATE OF STUDY: 12:03 06/12/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 2.320 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.746
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.33; 30-MINUTE = 0.63; 1-HOUR = 0.88
3-HOUR = 1.65; 6-HOUR = 2.45; 24-HOUR = 4.32
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.341; 30-MINUTE = 0.392; 1-HOUR = 0.432
3-HOUR = 0.782; 6-HOUR = 0.902; 24-HOUR = 0.943

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.128 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.548
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.341; 30-MINUTE = 0.392; 1-HOUR = 0.432
3-HOUR = 0.782; 6-HOUR = 0.902; 24-HOUR = 0.943

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing values for depth, outflow, and storage.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.231 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.750
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.341; 30-MINUTE = 0.392; 1-HOUR = 0.432
3-HOUR = 0.782; 6-HOUR = 0.902; 24-HOUR = 0.943

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

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INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.319 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.920
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.341; 30-MINUTE = 0.392; 1-HOUR = 0.432
3-HOUR = 0.782; 6-HOUR = 0.902; 24-HOUR = 0.943

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```


END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 127 *
* 10-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV10127C.DAT
TIME/DATE OF STUDY: 09:23 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 2.320 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.746
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.33; 30-MINUTE = 0.63; 1-HOUR = 0.88
3-HOUR = 1.66; 6-HOUR = 2.46; 24-HOUR = 4.34
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.128 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.548
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.32; 6-HOUR = 1.82; 24-HOUR = 3.04
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing values for depth, outflow, and storage.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.231 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.750
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.32; 6-HOUR = 1.82; 24-HOUR = 3.04
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

4F-1

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.319 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.920
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.32; 6-HOUR = 1.82; 24-HOUR = 3.04
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 286.00; DOWNSTREAM ELEVATION (FT) = 258.00
CHANNEL LENGTH (FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

=====

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

=====

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.252 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.146; LOW LOSS FRACTION = 0.406
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.32; 6-HOUR = 1.82; 24-HOUR = 3.04
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 16.600
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

=====

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.175 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.138; LOW LOSS FRACTION = 0.400
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.32; 6-HOUR = 1.82; 24-HOUR = 3.04
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-3

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	5.95	0.280
3	2.00	22.18	1.150
4	3.00	46.43	3.090
5	4.00	75.05	6.150
6	5.00	105.54	10.350
7	6.00	127.29	15.380
8	7.00	138.99	20.860
9	8.00	150.45	26.500
10	9.00	161.55	32.360
11	10.00	697.61	38.410
12	11.00	1666.99	44.700

FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.326 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.354
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.32; 6-HOUR = 1.82; 24-HOUR = 3.04
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3C-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	7.430


```

3      2.00      0.02      15.170
4      3.00      2.70      23.230
5      4.00      4.69      31.610
6      5.00      6.04      40.320
7      6.00     10.72      49.360
8      7.00     17.77      58.730
9      8.00     424.53     68.440
10     9.00     1169.03    78.500
11    10.00     2113.61    88.500

```

```

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

```

```

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: Weir to
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN 3C-3
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

```

```

*****
FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

```

```

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.381 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.702
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.32; 6-HOUR = 1.82; 24-HOUR = 3.04
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

```

```

-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

3C-3

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-5

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

```

```

*****
FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

```

```

*****STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

```

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

```

```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.449 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.296; LOW LOSS FRACTION = 0.905
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.32; 6-HOUR = 1.82; 24-HOUR = 3.04
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 11
-----
>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<
=====

```

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

| INPUT FILENAME: [EV10127C.DAT]

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UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS 	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
--	--	----------------------------------	------------------------	--------------------------

10100.00	119.00	Subarea (UH) Added to Stream #1	0.0	7099.7
18.333				
119.00	12603.00	Convex Routing: Stream #1	7099.7	7079.3
18.417				
810.00	809.00	Subarea (UH) Added to Stream #2	0.0	85.3
16.167				
809.00	12603.00	Flow-Through Basin: Stream #2	85.3	26.1
17.167	12.18			
12603.00	12603.00	Stream #2 Added to: Stream #1	7079.3	7094.0
18.417				

12603.00	12603.00	Zero Out: Stream #2	26.1	0.0
12603.00	126.00	Convex Routing: Stream #1	7094.0	7074.6
18.500				
920.00	905.00	Subarea (UH) Added to Stream #2	0.0	168.9
16.333				
905.00	126.00	Flow-Through Basin: Stream #2	168.9	87.8
16.500	17.27			
126.00	126.00	Stream #2 Added to: Stream #1	7074.6	7102.7
18.500				

126.00	126.00	Zero Out: Stream #2	87.8	0.0
600.00	126.00	Subarea (UH) Added to Stream #2	0.0	38.9
16.417				
126.00	126.00	Stream #2 Added to: Stream #1	7102.7	7104.5
18.500				
126.00	126.00	Zero Out: Stream #2	38.9	0.0
126.00	12720.50	Convex Routing: Stream #1	7104.5	7073.4
18.583				

430.00	420.00	Subarea (UH) Added to Stream #2	0.0	127.2
16.333				
420.00	420.50	Flow-Through Basin: Stream #2	127.2	63.3
17.167	7.67			
420.50	427.00	Flow-Through Basin: Stream #2	63.3	45.2
18.500	7.82			
413.00	425.00	Subarea (UH) Added to Stream #3	0.0	61.1
16.250				

425.00	426.00	Flow-Through Basin: Stream #3	61.1	29.1
16.417	1.70			

426.00	427.00	Stream #3 Added to: Stream #2	45.2	65.5
17.583				
427.00	427.00	Zero Out: Stream #3	29.1	0.0
427.00	12720.50	Stream #2 Added to: Stream #1	7073.4	7132.6
18.583				
12720.50	12720.50	Zero Out: Stream #2	65.5	0.0
12720.50	12741.00	Convex Routing: Stream #1	7132.6	7114.8
18.667				

320.00	339.00	Subarea (UH) Added to Stream #2	0.0	249.7
16.417				
339.00	340.00	Flow-Through Basin: Stream #2	249.7	37.8
19.417	59.21			
339.00	372.00	Flowby Basin Model: Stream #2	37.8	20.3
19.417				
390.00	372.00	Subarea (UH) Added to Stream #4	0.0	47.0
16.417				
372.00	372.00	Stream #4 Added to: Stream #3	17.6	47.0
16.417				

372.00	372.00	Zero Out: Stream #4	47.0	0.0
372.00	373.00	Flow-Through Basin: Stream #3	47.0	7.0
23.167	13.18			
372.00	372.10	Flowby Basin Model: Stream #3	7.0	7.0
23.167				
373.00	373.00	Zero Out: Stream #5	0.0	0.0
373.00	340.00	Stream #3 Added to: Stream #2	20.3	27.1
22.833				

340.00	340.00	Zero Out: Stream #3	7.0	0.0
340.00	12741.00	Stream #2 Added to: Stream #1	7114.8	7137.9
18.667				
12741.00	12741.00	Zero Out: Stream #2	27.1	0.0
12741.00	127.00	Convex Routing: Stream #1	7137.9	7128.6
18.667				
12710.00	127.00	Subarea (UH) Added to Stream #2	0.0	159.6
16.500				

|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV10127C.DAT ]
Page: 2 of |
-----+-----+
|UPSTREAM DOWNSTREAM| | UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE| |
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR) | MODELED (AF)| FOOTNOTES |
-----+-----+
| 127.00 127.00| Stream #2 Added to: Stream #1| 7128.6 7139.8|
18.667 | | |
| 127.00 127.00| Zero Out: Stream #2| 159.6 0.0|
| | | |
| 127.00 127.00| View: Stream #1| 7139.8|
18.667 | 5073.74| 3 |
-----+-----+
|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT
INTERVAL |
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF
THE DESIGN STORM |
-----+

```

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Ver. 20.0 Release Date: 06/01/2013 License ID 1264

Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 133C *
* 10-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV1033CC.DAT
TIME/DATE OF STUDY: 09:21 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 2.320 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.746
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.33; 30-MINUTE = 0.63; 1-HOUR = 0.88
3-HOUR = 1.65; 6-HOUR = 2.45; 24-HOUR = 4.32
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.128 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.548
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing values for depth, outflow, and storage.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.231 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.750
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

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INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.319 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.920
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 286.00; DOWNSTREAM ELEVATION(FT) = 258.00
CHANNEL LENGTH(FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.252 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.146; LOW LOSS FRACTION = 0.406
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 16.600
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

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BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.175 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.138; LOW LOSS FRACTION = 0.400
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

```

*****
FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
-----
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 5.95 0.280
3 2.00 22.18 1.150
4 3.00 46.43 3.090
5 4.00 75.05 6.150
6 5.00 105.54 10.350
7 6.00 127.29 15.380
8 7.00 138.99 20.860
9 8.00 150.45 26.500
10 9.00 161.55 32.360
11 10.00 697.61 38.410
12 11.00 1666.99 44.700
-----
*****
FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
-----
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
-----
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
-----
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6
-----

```

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```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
-----
WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.326 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.354
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
-----
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 0.01 7.430

```

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```

3      2.00      0.02      15.170
4      3.00      2.70      23.230
5      4.00      4.69      31.610
6      5.00      6.04      40.320
7      6.00     10.72      49.360
8      7.00     17.77      58.730
9      8.00     424.53     68.440
10     9.00     1169.03    78.500
11    10.00     2113.61    88.500

```

```

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

```

```

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: Weir to
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN 3C-3
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

```

```

*****
FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

```

```

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.381 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.702
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

```

```

-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

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```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE: Weir to
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN 3C-5
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

```

```

*****
FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

```

```

*****
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

```

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

```

```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.449 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.296; LOW LOSS FRACTION = 0.905
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

```

```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.324 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.217; LOW LOSS FRACTION = 0.593
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 20.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.213 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.837
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.243 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.386
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Table with 3 columns: DATA PAIR NUMBER, Qcenter (CFS), Qpass (CFS). Includes handwritten blue text 'B Diversion Structure'.

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-10.

FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-4

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-23.

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.938 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.244; LOW LOSS FRACTION = 0.727
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: **GBD Side Weir**
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3 THROUGH A FLOW-THROUGH DETENTION BASIN. **GBD Upper Basin**
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 5.700
SPECIFIED DEAD STORAGE (AF) FILLED = 5.700
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.50	0.01	0.002
3	2.00	0.02	1.900
4	4.00	0.03	16.100
5	4.30	0.05	18.200
6	5.00	314.00	23.200
7	6.00	1306.00	30.300
8	7.00	2847.00	39.100
9	8.00	4942.00	47.800

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8
-----
>>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
=====
```

```
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

GBD Lower
West Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.99	2.90	0.900
3	1.99	11.38	2.900
4	3.99	19.63	10.300
5	5.99	25.19	20.700
6	7.99	29.71	31.700
7	9.99	33.62	43.500
8	10.99	35.49	49.700
9	11.99	313.49	56.400
10	12.99	894.27	63.100
11	13.99	1748.55	69.900
12	15.99	4306.91	84.100

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====
```

```
*****
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 4
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

GBD Lower
East Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.48	0.70	0.400
3	1.48	6.50	1.800
4	3.48	18.11	8.500
5	5.48	23.99	17.900
6	7.48	28.68	27.800
7	9.48	32.70	38.300
8	10.48	34.50	43.900
9	11.48	36.29	49.400
10	12.48	314.07	55.900
11	13.48	895.00	62.300
12	15.48	2882.95	74.700

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 427.51; DOWNSTREAM ELEVATION (FT) = 315.00
CHANNEL LENGTH (FT) = 9760.05 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00

```

*****
FLOW PROCESS FROM NODE 13305.00 TO NODE 133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 315.00; DOWNSTREAM ELEVATION(FT) = 212.00
CHANNEL LENGTH(FT) = 6877.24 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 132.00 TO NODE 133.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.688 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.224; LOW LOSS FRACTION = 0.615
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 11
-----
>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<
=====

```

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV1033CC.DAT]

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UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
10100.00	119.00	Subarea (UH) Added to Stream #1	0.0	6564.8
18.333				
119.00	12603.00	Convex Routing: Stream #1	6564.8	6549.8
18.417				
810.00	809.00	Subarea (UH) Added to Stream #2	0.0	77.7
16.167				
809.00	12603.00	Flow-Through Basin: Stream #2	77.7	23.6
17.167	12.05			
12603.00	12603.00	Stream #2 Added to: Stream #1	6549.8	6564.4
18.417				
12603.00	12603.00	Zero Out: Stream #2	23.6	0.0
12603.00	126.00	Convex Routing: Stream #1	6564.4	6549.3
18.500				
920.00	905.00	Subarea (UH) Added to Stream #2	0.0	152.5
16.333				
905.00	126.00	Flow-Through Basin: Stream #2	152.5	63.5
16.500	16.85			
126.00	126.00	Stream #2 Added to: Stream #1	6549.3	6577.3
18.500				
126.00	126.00	Zero Out: Stream #2	63.5	0.0
600.00	126.00	Subarea (UH) Added to Stream #2	0.0	34.5
16.417				
126.00	126.00	Stream #2 Added to: Stream #1	6577.3	6579.2
18.500				
126.00	126.00	Zero Out: Stream #2	34.5	0.0
126.00	12720.50	Convex Routing: Stream #1	6579.2	6542.9
18.583				
430.00	420.00	Subarea (UH) Added to Stream #2	0.0	117.6
16.333				
420.00	420.50	Flow-Through Basin: Stream #2	117.6	60.6
17.167	7.42			
420.50	427.00	Flow-Through Basin: Stream #2	60.6	44.0
18.583	7.60			
413.00	425.00	Subarea (UH) Added to Stream #3	0.0	56.2
16.250				

425.00	426.00	Flow-Through Basin: Stream #3	56.2	27.7
16.417	1.60			

426.00	427.00	Stream #3 Added to: Stream #2	44.0	63.4
17.667				
427.00	427.00	Zero Out: Stream #3	27.7	0.0
427.00	12720.50	Stream #2 Added to: Stream #1	6542.9	6600.8
18.583				
12720.50	12720.50	Zero Out: Stream #2	63.4	0.0
12720.50	12741.00	Convex Routing: Stream #1	6600.8	6586.5
18.667				

320.00	339.00	Subarea (UH) Added to Stream #2	0.0	232.4
16.417				
339.00	340.00	Flow-Through Basin: Stream #2	232.4	34.6
19.917	59.13			
339.00	372.00	Flowby Basin Model: Stream #2	34.6	20.2
19.917				
390.00	372.00	Subarea (UH) Added to Stream #4	0.0	42.7
16.417				
372.00	372.00	Stream #4 Added to: Stream #3	14.4	42.7
16.417				

372.00	372.00	Zero Out: Stream #4	42.7	0.0
372.00	373.00	Flow-Through Basin: Stream #3	42.7	6.5
23.417	12.30			
372.00	372.10	Flowby Basin Model: Stream #3	6.5	6.5
23.417				
373.00	373.00	Zero Out: Stream #5	0.0	0.0
373.00	340.00	Stream #3 Added to: Stream #2	20.2	26.6
23.083				

340.00	340.00	Zero Out: Stream #3	6.5	0.0
340.00	12741.00	Stream #2 Added to: Stream #1	6586.5	6608.8
18.667				
12741.00	12741.00	Zero Out: Stream #2	26.6	0.0
12741.00	127.00	Convex Routing: Stream #1	6608.8	6597.8
18.667				
12710.00	127.00	Subarea (UH) Added to Stream #2	0.0	141.1
16.500				

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL

3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM


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|
|                                     * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV1033CC.DAT ]
Page: 2 of |
-----+-----+-----+-----+
|UPSTREAM DOWNSTREAM|                                     |UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE|                                     |
| NODE #     NODE # | HYDROLOGIC/HYDRAULIC PROCESS |PEAK (CFS) PEAK (CFS)|
PEAK (HR)   | MODELED (AF)| FOOTNOTES |
-----+-----+-----+-----+
| 127.00    127.00| Stream #2 Added to:  Stream #1| 6597.8    6609.0|
18.667 |          |          |
| 127.00    127.00| Zero Out:           Stream #2| 141.1      0.0|
|          |          |          |
| 127.00    12902.00| Convex Routing:    Stream #1| 6609.0    6595.8|
18.750 |          |          |
| 50220.00   50347.00| Subarea (UH) Added to Stream #2| 0.0        300.9|
16.417 |          |          |
| 50347.00   50347.00| Flow-Through Basin: Stream #2| 300.9      55.5|
18.500 |          77.74|          |
-----+-----+-----+-----+
| 50347.00   12902.00| Convex Routing:    Stream #2| 55.5       55.5|
18.667 |          |          |
| 12902.00   12902.00| Stream #2 Added to: Stream #1| 6595.8    6651.3|
18.750 |          |          |
| 12902.00   12902.00| Zero Out:           Stream #2| 55.5       0.0|
|          |          |          |
| 12902.00    129.00| Convex Routing:    Stream #1| 6651.3    6638.7|
18.833 |          |          |
| 50400.00    129.00| Subarea (UH) Added to Stream #2| 0.0        113.4|
16.250 |          |          |
-----+-----+-----+-----+
| 129.00     129.00| Stream #2 Added to: Stream #1| 6638.7    6645.3|
18.833 |          |          |
| 129.00     129.00| Zero Out:           Stream #2| 113.4      0.0|
|          |          |          |
| 210.00     221.00| Subarea (UH) Added to Stream #2| 0.0        83.5|
16.333 |          |          |
| 221.00     221.00| Flowby Basin Model: Stream #2| 83.5       17.4|
16.333 |          |          |
| 221.00     223.00| Flow-Through Basin: Stream #2| 17.4       14.2|
17.333 |          3.77|          |
-----+-----+-----+-----+
| 221.00     222.00| Flow-Through Basin: Stream #5| 66.1       14.5|
17.750 |          9.10|          |
| 223.00     222.00| Stream #5 Added to: Stream #2| 14.2       28.7|
17.583 |          |          |
| 222.00     222.00| Zero Out:           Stream #5| 14.5       0.0|
|          |          |          |
| 222.00     129.00| Stream #2 Added to: Stream #1| 6645.3    6670.6|
18.833 |          |          |

```

	129.00	129.00	Zero Out:	Stream #2	28.7	0.0
	-----	-----	-----	-----	-----	-----
	129.00	133.00	Convex Routing:	Stream #1	6670.6	6659.6
18.917						
	13010.00	132.00	Subarea (UH) Added to	Stream #2	0.0	692.8
17.000						
	132.00	132.00	Flowby Basin Model:	Stream #2	692.8	639.2
17.000						
	132.00	132.00	Flow-Through Basin:	Stream #3	53.5	0.0
18.000		4.15				
	132.00	132.00	Split Hydrograph:	Stream #3	0.0	0.0
18.000						
	-----	-----	-----	-----	-----	-----
	132.00	132.00	Flow-Through Basin:	Stream #3	0.0	0.0
47.333		0.00				
	132.00	132.00	Stream #3 Added to:	Stream #2	639.2	639.2
17.000						
	132.00	132.00	Zero Out:	Stream #3	0.0	0.0
	132.00	132.00	Flow-Through Basin:	Stream #4	0.0	0.0
69.417		0.01				
	132.00	132.00	Stream #4 Added to:	Stream #2	639.2	639.2
17.000						
	-----	-----	-----	-----	-----	-----
	132.00	132.00	Zero Out:	Stream #4	0.0	0.0
	132.00	13305.00	Convex Routing:	Stream #2	639.2	615.1
17.417						
	13305.00	133.00	Convex Routing:	Stream #2	615.1	609.5
17.833						
	132.00	133.00	Subarea (UH) Added to	Stream #3	0.0	323.3
16.750						
	133.00	133.00	Stream #3 Added to:	Stream #2	609.5	795.0
17.667						
	-----	-----	-----	-----	-----	-----
	133.00	133.00	Zero Out:	Stream #3	323.3	0.0
	133.00	133.00	Stream #2 Added to:	Stream #1	6659.6	7253.5
18.000						
	133.00	133.00	Zero Out:	Stream #2	795.0	0.0
	133.00	133.00	View:	Stream #1		7253.5
18.000		5543.20	3			
	-----	-----	-----	-----	-----	-----
	Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL					
	3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM					

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Analysis prepared by:

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5 Hutton Centre Drive Suite 500
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***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 133T *
* 10-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV1033TC.DAT
TIME/DATE OF STUDY: 12:57 06/18/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.938 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.244; LOW LOSS FRACTION = 0.727
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.744; 30-MINUTE = 0.744; 1-HOUR = 0.744
3-HOUR = 0.959; 6-HOUR = 0.978; 24-HOUR = 0.986

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

GBD Side
Weir

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00

3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 5.700
SPECIFIED DEAD STORAGE (AF) FILLED = 5.700
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

GBD Upper
Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.50	0.01	0.002
3	2.00	0.02	1.900
4	4.00	0.03	16.100
5	4.30	0.05	18.200
6	5.00	314.00	23.200
7	6.00	1306.00	30.300
8	7.00	2847.00	39.100
9	8.00	4942.00	47.800

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8

>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

GBD Lower
West Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.99	2.90	0.900
3	1.99	11.38	2.900
4	3.99	19.63	10.300
5	5.99	25.19	20.700
6	7.99	29.71	31.700
7	9.99	33.62	43.500
8	10.99	35.49	49.700
9	11.99	313.49	56.400
10	12.99	894.27	63.100
11	13.99	1748.55	69.900
12	15.99	4306.91	84.100

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 4 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

GBD Lower East Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.48	0.70	0.400
3	1.48	6.50	1.800
4	3.48	18.11	8.500
5	5.48	23.99	17.900
6	7.48	28.68	27.800
7	9.48	32.70	38.300
8	10.48	34.50	43.900
9	11.48	36.29	49.400
10	12.48	314.07	55.900

11	13.48	895.00	62.300
12	15.48	2882.95	74.700

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6

>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 132.00 TO NODE 13305.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 427.51; DOWNSTREAM ELEVATION (FT) = 315.00
CHANNEL LENGTH (FT) = 9760.05 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13305.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 315.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 6877.24 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 132.00 TO NODE 133.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.688 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.224; LOW LOSS FRACTION = 0.615
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.744; 30-MINUTE = 0.744; 1-HOUR = 0.744
3-HOUR = 0.959; 6-HOUR = 0.978; 24-HOUR = 0.986

FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<

FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<

FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<

FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 11

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<

Table with columns: TIME (2) TO, NODE #, PEAK (CFS), PEAK (CFS). Rows include: 13010.00, 17.000, 17.000, 17.583, 17.583, 18.250, 17.000, 18.250, 17.000, 17.583, 17.500, 17.500, 17.500, 17.500.

|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT
INTERVAL |
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF
THE DESIGN STORM |

+-----+
-----+

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
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***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 133U *
* 10-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV1033UC.DAT
TIME/DATE OF STUDY: 09:22 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 2.320 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.746
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.33; 30-MINUTE = 0.64; 1-HOUR = 0.89
3-HOUR = 1.67; 6-HOUR = 2.47; 24-HOUR = 4.36
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.128 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.548
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.60; 1-HOUR = 0.79
3-HOUR = 1.32; 6-HOUR = 1.83; 24-HOUR = 3.06
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing values for depth, outflow, and storage.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 312.40; DOWNSTREAM ELEVATION (FT) = 286.00
CHANNEL LENGTH (FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.231 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.750
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.60; 1-HOUR = 0.79
3-HOUR = 1.32; 6-HOUR = 1.83; 24-HOUR = 3.06
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

4F-1

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

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*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.319 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.920
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.60; 1-HOUR = 0.79
3-HOUR = 1.32; 6-HOUR = 1.83; 24-HOUR = 3.06
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```


>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 286.00; DOWNSTREAM ELEVATION (FT) = 258.00
CHANNEL LENGTH (FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.252 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.146; LOW LOSS FRACTION = 0.406
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.60; 1-HOUR = 0.79
3-HOUR = 1.32; 6-HOUR = 1.83; 24-HOUR = 3.06
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 16.600
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.175 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.138; LOW LOSS FRACTION = 0.400
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.60; 1-HOUR = 0.79
3-HOUR = 1.32; 6-HOUR = 1.83; 24-HOUR = 3.06
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-3

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	5.95	0.280
3	2.00	22.18	1.150
4	3.00	46.43	3.090
5	4.00	75.05	6.150
6	5.00	105.54	10.350
7	6.00	127.29	15.380
8	7.00	138.99	20.860
9	8.00	150.45	26.500
10	9.00	161.55	32.360
11	10.00	697.61	38.410
12	11.00	1666.99	44.700

FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<<

FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<<
=====

FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<<
=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<<
=====

WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.326 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.354
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.60; 1-HOUR = 0.79
3-HOUR = 1.32; 6-HOUR = 1.83; 24-HOUR = 3.06
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<<
=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3C-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	7.430

3	2.00	0.02	15.170
4	3.00	2.70	23.230
5	4.00	4.69	31.610
6	5.00	6.04	40.320
7	6.00	10.72	49.360
8	7.00	17.77	58.730
9	8.00	424.53	68.440
10	9.00	1169.03	78.500
11	10.00	2113.61	88.500

FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: **Weir to**
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN **3C-3**
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.381 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.702
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.60; 1-HOUR = 0.79
3-HOUR = 1.32; 6-HOUR = 1.83; 24-HOUR = 3.06
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN. **3C-3**
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE: **Weir to**
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN **3C-5**
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

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CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.449 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.296; LOW LOSS FRACTION = 0.905
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.60; 1-HOUR = 0.79
3-HOUR = 1.32; 6-HOUR = 1.83; 24-HOUR = 3.06
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

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=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.324 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.217; LOW LOSS FRACTION = 0.593
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.60; 1-HOUR = 0.79
3-HOUR = 1.32; 6-HOUR = 1.83; 24-HOUR = 3.06
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

5-2

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 20.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.213 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.837
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.60; 1-HOUR = 0.79
3-HOUR = 1.32; 6-HOUR = 1.83; 24-HOUR = 3.06
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.243 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.386
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.60; 1-HOUR = 0.79
3-HOUR = 1.32; 6-HOUR = 1.83; 24-HOUR = 3.06
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Table with 3 columns: DATA PAIR NUMBER, Qcenter (CFS), Qpass (CFS). Rows 1-5 showing flow data.

B Diversion Structure

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-10 showing basin data.

FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-4

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-23 showing basin data.

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 11

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<<

+-----+
+-----+
| | * AES FLOODSCx PROGRAM RESULTS SUMMARY *
| |
| INPUT FILENAME: [EV1033UC.DAT]
Page: 1 of |
+-----+
+-----+
|UPSTREAM DOWNSTREAM| | UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE| |
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS) |
PEAK (HR) | MODELED (AF) | FOOTNOTES |
+-----+
+-----+
| 10100.00 119.00| Subarea (UH) Added to Stream #1| 0.0 7085.9|
18.333 | | |
| 119.00 12603.00| Convex Routing: Stream #1| 7085.9 7065.5|
18.417 | | |
| 810.00 809.00| Subarea (UH) Added to Stream #2| 0.0 84.6|
16.167 | | |
| 809.00 12603.00| Flow-Through Basin: Stream #2| 84.6 25.8|
17.167 | 12.16| |
| 12603.00 12603.00| Stream #2 Added to: Stream #1| 7065.5 7080.4|
18.417 | | |
+-----+
+-----+
12603.00 12603.00	Zero Out: Stream #2	25.8 0.0
12603.00 126.00	Convex Routing: Stream #1	7080.4 7061.2
18.500		
920.00 905.00	Subarea (UH) Added to Stream #2	0.0 167.1
16.333		
905.00 126.00	Flow-Through Basin: Stream #2	167.1 84.0
16.500	17.20	
126.00 126.00	Stream #2 Added to: Stream #1	7061.2 7089.3
18.500		
+-----+		
+-----+		
126.00 126.00	Zero Out: Stream #2	84.0 0.0
600.00 126.00	Subarea (UH) Added to Stream #2	0.0 38.5
16.417		
126.00 126.00	Stream #2 Added to: Stream #1	7089.3 7091.1
18.500		
126.00 126.00	Zero Out: Stream #2	38.5 0.0
126.00 12720.50	Convex Routing: Stream #1	7091.1 7061.4
18.583		
+-----+		
+-----+		
430.00 420.00	Subarea (UH) Added to Stream #2	0.0 126.5
16.333		
420.00 420.50	Flow-Through Basin: Stream #2	126.5 63.1
17.083	7.66	
420.50 427.00	Flow-Through Basin: Stream #2	63.1 45.4
18.500	7.85	
413.00 425.00	Subarea (UH) Added to Stream #3	0.0 60.6
16.250 | | |

425.00	426.00	Flow-Through Basin:	Stream #3	60.6	29.0
16.417	1.70				
+-----+					
426.00	427.00	Stream #3 Added to:	Stream #2	45.4	65.6
17.667					
427.00	427.00	Zero Out:	Stream #3	29.0	0.0
427.00	12720.50	Stream #2 Added to:	Stream #1	7061.4	7120.9
18.583					
12720.50	12720.50	Zero Out:	Stream #2	65.6	0.0
12720.50	12741.00	Convex Routing:	Stream #1	7120.9	7103.3
18.667					
+-----+					
320.00	339.00	Subarea (UH) Added to	Stream #2	0.0	248.9
16.417					
339.00	340.00	Flow-Through Basin:	Stream #2	248.9	39.6
19.250	59.25				
339.00	372.00	Flowby Basin Model:	Stream #2	39.6	20.3
19.250					
390.00	372.00	Subarea (UH) Added to	Stream #4	0.0	46.8
16.417					
372.00	372.00	Stream #4 Added to:	Stream #3	19.3	46.8
16.417					
+-----+					
372.00	372.00	Zero Out:	Stream #4	46.8	0.0
372.00	373.00	Flow-Through Basin:	Stream #3	46.8	7.2
23.250	13.56				
372.00	372.10	Flowby Basin Model:	Stream #3	7.2	7.2
23.250					
373.00	373.00	Zero Out:	Stream #5	0.0	0.0
373.00	340.00	Stream #3 Added to:	Stream #2	20.3	27.3
22.833					
+-----+					
340.00	340.00	Zero Out:	Stream #3	7.2	0.0
340.00	12741.00	Stream #2 Added to:	Stream #1	7103.3	7128.9
18.667					
12741.00	12741.00	Zero Out:	Stream #2	27.3	0.0
12741.00	127.00	Convex Routing:	Stream #1	7128.9	7120.0
18.667					
12710.00	127.00	Subarea (UH) Added to	Stream #2	0.0	158.3
16.500					

[Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM
|

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV1033UC.DAT]

Page: 2 of 1

UPSTREAM TIME (2)	DOWNSTREAM MAX. STORAGE	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
NODE #	NODE #	PEAK (CFS)	PEAK (CFS)
PEAK (HR)	MODELED (AF)	FOOTNOTES	
127.00	127.00	7120.0	7131.3
18.667			
127.00	127.00	158.3	0.0
127.00	12902.00	7131.3	7120.2
18.750			
50220.00	50347.00	0.0	325.7
16.417			
50347.00	50347.00	325.7	56.9
18.500	79.18		
50347.00	12902.00	56.9	56.8
18.667			
12902.00	12902.00	7120.2	7177.1
18.750			
12902.00	12902.00	56.8	0.0
12902.00	129.00	7177.1	7162.7
18.833			
50400.00	129.00	0.0	126.3
16.250			
129.00	129.00	7162.7	7169.4
18.833			
129.00	129.00	126.3	0.0
210.00	221.00	0.0	89.7
16.333			
221.00	221.00	89.7	17.8
16.333			
221.00	223.00	17.8	14.3
17.333	3.79		
221.00	222.00	71.9	15.3
17.583	9.43		
223.00	222.00	14.3	29.6
17.500			
222.00	222.00	15.3	0.0
222.00	129.00	7169.4	7195.8
18.833			

129.00	129.00	Zero Out:	Stream #2	29.6	0.0
129.00	133.00	Convex Routing:	Stream #1	7195.8	7182.8
18.917					
133.00	133.00	View:	Stream #1		7182.8
18.917	5237.54	3			

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 134C *
* 10-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV1034CC.DAT
TIME/DATE OF STUDY: 09:19 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 2.320 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.746
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.33; 30-MINUTE = 0.63; 1-HOUR = 0.88
3-HOUR = 1.65; 6-HOUR = 2.45; 24-HOUR = 4.32
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.128 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.548
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing depth and storage values.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.231 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.750
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

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INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.319 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.920
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 286.00; DOWNSTREAM ELEVATION(FT) = 258.00
CHANNEL LENGTH(FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.252 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.146; LOW LOSS FRACTION = 0.406
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 16.600
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.175 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.138; LOW LOSS FRACTION = 0.400
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-3

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	5.95	0.280
3	2.00	22.18	1.150
4	3.00	46.43	3.090
5	4.00	75.05	6.150
6	5.00	105.54	10.350
7	6.00	127.29	15.380
8	7.00	138.99	20.860
9	8.00	150.45	26.500
10	9.00	161.55	32.360
11	10.00	697.61	38.410
12	11.00	1666.99	44.700

FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<<

FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<<
=====

FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<<
=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<<
=====

WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.326 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.354
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<<
=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3C-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	7.430

```

3      2.00      0.02      15.170
4      3.00      2.70      23.230
5      4.00      4.69      31.610
6      5.00      6.04      40.320
7      6.00      10.72     49.360
8      7.00      17.77     58.730
9      8.00      424.53    68.440
10     9.00      1169.03   78.500
11    10.00     2113.61   88.500

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*****
FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

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>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

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MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-3

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

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*****
FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

```

```

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.381 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.702
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

```

```

-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

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```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-5

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

```

```

*****
FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

```

```

*****STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

```

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

```

```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====

WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.449 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.296; LOW LOSS FRACTION = 0.905
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

```

```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.324 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.217; LOW LOSS FRACTION = 0.593
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

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```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 20.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.213 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.837
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.243 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.386
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Table with 3 columns: DATA PAIR NUMBER, Qcenter (CFS), Qpass (CFS). Includes handwritten note 'B Diversion Structure'.

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-10.

FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

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BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-23.

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.938 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.244; LOW LOSS FRACTION = 0.727
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: **GBD Side**
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN **Weir**
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN. **GBD Upper Basin**
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 5.700
SPECIFIED DEAD STORAGE (AF) FILLED = 5.700
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.50	0.01	0.002
3	2.00	0.02	1.900
4	4.00	0.03	16.100
5	4.30	0.05	18.200
6	5.00	314.00	23.200
7	6.00	1306.00	30.300
8	7.00	2847.00	39.100
9	8.00	4942.00	47.800

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8
-----
>>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
=====
```

```
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

GBD Lower
West Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.99	2.90	0.900
3	1.99	11.38	2.900
4	3.99	19.63	10.300
5	5.99	25.19	20.700
6	7.99	29.71	31.700
7	9.99	33.62	43.500
8	10.99	35.49	49.700
9	11.99	313.49	56.400
10	12.99	894.27	63.100
11	13.99	1748.55	69.900
12	15.99	4306.91	84.100

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====
```

```
*****
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 4
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
=====
```

GBD Lower
East Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.48	0.70	0.400
3	1.48	6.50	1.800
4	3.48	18.11	8.500
5	5.48	23.99	17.900
6	7.48	28.68	27.800
7	9.48	32.70	38.300
8	10.48	34.50	43.900
9	11.48	36.29	49.400
10	12.48	314.07	55.900
11	13.48	895.00	62.300
12	15.48	2882.95	74.700

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 427.51; DOWNSTREAM ELEVATION (FT) = 315.00
CHANNEL LENGTH (FT) = 9760.05 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00

```

*****
FLOW PROCESS FROM NODE 13305.00 TO NODE 133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 315.00; DOWNSTREAM ELEVATION(FT) = 212.00
CHANNEL LENGTH(FT) = 6877.24 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 133.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.688 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.224; LOW LOSS FRACTION = 0.615
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 212.00; DOWNSTREAM ELEVATION(FT) = 173.00
CHANNEL LENGTH(FT) = 6461.31 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1691.600 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.339 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.699
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====
*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 13500.00 TO NODE 134.00 IS CODE = 1

```

```

=====
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 3859.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 1.489 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.284; LOW LOSS FRACTION = 0.760
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

```

```

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
=====

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
=====

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 11
=====

```

```

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<
=====

```

```

-----+-----+-----+
|                                     * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV1034CC.DAT ]
Page: 1 of 1
-----+-----+-----+
|UPSTREAM DOWNSTREAM|                                     | UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE|                                     |
| NODE #     NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR)   | MODELED (AF)| FOOTNOTES |
-----+-----+-----+
| 10100.00   119.00| Subarea (UH) Added to Stream #1|      0.0   6305.9|
18.333 | |
| 119.00     12603.00| Convex Routing:      Stream #1|  6305.9   6292.6|
18.417 | |
| 810.00     809.00| Subarea (UH) Added to Stream #2|      0.0    73.6|
16.167 | |
| 809.00     12603.00| Flow-Through Basin: Stream #2|    73.6    22.6|
17.167 | 11.99|
| 12603.00   12603.00| Stream #2 Added to:  Stream #1|  6292.6   6307.2|
18.417 | |
-----+-----+-----+
| 12603.00   12603.00| Zero Out:           Stream #2|    22.6    0.0|
|
| 12603.00   126.00| Convex Routing:     Stream #1|  6307.2   6293.8|
18.500 | |
| 920.00     905.00| Subarea (UH) Added to Stream #2|      0.0   143.4|
16.333 | |
| 905.00     126.00| Flow-Through Basin: Stream #2|   143.4    54.9|
16.583 | 16.73|
| 126.00     126.00| Stream #2 Added to:  Stream #1|  6293.8   6321.9|
18.500 | |
-----+-----+-----+
| 126.00     126.00| Zero Out:           Stream #2|    54.9    0.0|
|
| 600.00     126.00| Subarea (UH) Added to Stream #2|      0.0    32.1|
16.417 | |
| 126.00     126.00| Stream #2 Added to:  Stream #1|  6321.9   6323.7|
18.500 | |
| 126.00     126.00| Zero Out:           Stream #2|    32.1    0.0|
|
| 126.00    12720.50| Convex Routing:     Stream #1|  6323.7   6285.7|
18.583 | |
-----+-----+-----+
| 430.00     420.00| Subarea (UH) Added to Stream #2|      0.0   112.3|
16.333 | |
| 420.00     420.50| Flow-Through Basin: Stream #2|   112.3    59.2|
17.167 | 7.29|
| 420.50     427.00| Flow-Through Basin: Stream #2|    59.2    43.4|
18.583 | 7.50|
| 413.00     425.00| Subarea (UH) Added to Stream #3|      0.0    53.5|
16.250 | |

```

425.00	426.00	Flow-Through Basin:	Stream #3	53.5	27.0
16.417	1.54				
+-----+					
426.00	427.00	Stream #3 Added to:	Stream #2	43.4	62.5
17.667					
427.00	427.00	Zero Out:	Stream #3	27.0	0.0
427.00	12720.50	Stream #2 Added to:	Stream #1	6285.7	6343.0
18.583					
12720.50	12720.50	Zero Out:	Stream #2	62.5	0.0
12720.50	12741.00	Convex Routing:	Stream #1	6343.0	6330.4
18.667					
+-----+					
320.00	339.00	Subarea (UH) Added to	Stream #2	0.0	222.9
16.417					
339.00	340.00	Flow-Through Basin:	Stream #2	222.9	33.4
20.167	59.10				
339.00	372.00	Flowby Basin Model:	Stream #2	33.4	20.2
20.167					
390.00	372.00	Subarea (UH) Added to	Stream #4	0.0	40.4
16.417					
372.00	372.00	Stream #4 Added to:	Stream #3	13.2	40.4
16.417					
+-----+					
372.00	372.00	Zero Out:	Stream #4	40.4	0.0
372.00	373.00	Flow-Through Basin:	Stream #3	40.4	6.4
23.500	11.95				
372.00	372.10	Flowby Basin Model:	Stream #3	6.4	6.4
23.500					
373.00	373.00	Zero Out:	Stream #5	0.0	0.0
373.00	340.00	Stream #3 Added to:	Stream #2	20.2	26.4
23.167					
+-----+					
340.00	340.00	Zero Out:	Stream #3	6.4	0.0
340.00	12741.00	Stream #2 Added to:	Stream #1	6330.4	6352.3
18.667					
12741.00	12741.00	Zero Out:	Stream #2	26.4	0.0
12741.00	127.00	Convex Routing:	Stream #1	6352.3	6340.8
18.667					
12710.00	127.00	Subarea (UH) Added to	Stream #2	0.0	131.2
16.500					

[Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL

| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV1034CC.DAT]

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UPSTREAM TIME (2)	DOWNSTREAM MAX. STORAGE	UPSTREAM HYDROLOGIC/HYDRAULIC PROCESS	DOWNSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
PEAK (HR)	MODELED (AF)	FOOTNOTES		
127.00	127.00	Stream #2 Added to:	Stream #1	6340.8
18.667				6352.1
127.00	127.00	Zero Out:	Stream #2	131.2
				0.0
127.00	12902.00	Convex Routing:	Stream #1	6352.1
18.833				6338.8
50220.00	50347.00	Subarea (UH) Added to	Stream #2	0.0
16.417				285.9
50347.00	50347.00	Flow-Through Basin:	Stream #2	285.9
18.583	77.22			55.0
50347.00	12902.00	Convex Routing:	Stream #2	55.0
18.750				55.0
12902.00	12902.00	Stream #2 Added to:	Stream #1	6338.8
18.833				6393.7
12902.00	12902.00	Zero Out:	Stream #2	55.0
				0.0
12902.00	129.00	Convex Routing:	Stream #1	6393.7
18.917				6383.4
50400.00	129.00	Subarea (UH) Added to	Stream #2	0.0
16.250				105.8
129.00	129.00	Stream #2 Added to:	Stream #1	6383.4
18.917				6389.8
129.00	129.00	Zero Out:	Stream #2	105.8
				0.0
210.00	221.00	Subarea (UH) Added to	Stream #2	0.0
16.333				79.8
221.00	221.00	Flowby Basin Model:	Stream #2	79.8
16.333				17.2
221.00	223.00	Flow-Through Basin:	Stream #2	17.2
17.417	3.76			14.2
221.00	222.00	Flow-Through Basin:	Stream #5	62.6
17.833	8.96			14.2
223.00	222.00	Stream #5 Added to:	Stream #2	14.2
17.667				28.3
222.00	222.00	Zero Out:	Stream #5	14.2
				0.0
222.00	129.00	Stream #2 Added to:	Stream #1	6389.8
18.917				6414.3

129.00	129.00	Zero Out:	Stream #2	28.3	0.0
129.00	133.00	Convex Routing:	Stream #1	6414.3	6403.2
19.000					
13010.00	132.00	Subarea (UH) Added to	Stream #2	0.0	661.8
17.000					
132.00	132.00	Flowby Basin Model:	Stream #2	661.8	614.2
17.000					
132.00	132.00	Flow-Through Basin:	Stream #3	47.6	0.0
18.000	3.50				
132.00	132.00	Split Hydrograph:	Stream #3	0.0	0.0
18.000					
132.00	132.00	Flow-Through Basin:	Stream #3	0.0	0.0
47.417	0.00				
132.00	132.00	Stream #3 Added to:	Stream #2	614.2	614.2
17.000					
132.00	132.00	Zero Out:	Stream #3	0.0	0.0
132.00	132.00	Flow-Through Basin:	Stream #4	0.0	0.0
69.417	0.01				
132.00	132.00	Stream #4 Added to:	Stream #2	614.2	614.2
17.000					
132.00	132.00	Zero Out:	Stream #4	0.0	0.0
132.00	13305.00	Convex Routing:	Stream #2	614.2	591.6
17.417					
13305.00	133.00	Convex Routing:	Stream #2	591.6	586.5
17.833					
132.00	133.00	Subarea (UH) Added to	Stream #3	0.0	309.8
16.750					
133.00	133.00	Stream #3 Added to:	Stream #2	586.5	769.3
17.667					
133.00	133.00	Zero Out:	Stream #3	309.8	0.0
133.00	133.00	Stream #2 Added to:	Stream #1	6403.2	7001.2
18.000					
133.00	133.00	Zero Out:	Stream #2	769.3	0.0
133.00	134.00	Convex Routing:	Stream #1	7001.2	6989.2
18.250					
133.00	134.00	Subarea (UH) Added to	Stream #2	0.0	380.6
16.417					

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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-----+
|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV1034CC.DAT ]
Page: 3 of |
-----+-----+
|UPSTREAM DOWNSTREAM| | UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE| |
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR) | MODELED (AF)| FOOTNOTES |
-----+-----+
| 134.00 134.00| Stream #2 Added to: Stream #1| 6989.2 7088.5|
18.167 | | |
| 134.00 134.00| Zero Out: Stream #2| 380.6 0.0|
| | |
| 13500.00 134.00| Subarea (UH) Added to Stream #2| 0.0 394.6|
17.500 | | |
| 134.00 134.00| Stream #2 Added to: Stream #1| 7088.5 7407.1|
18.167 | | |
| 134.00 134.00| Zero Out: Stream #2| 394.6 0.0|
| | |
-----+-----+
| 134.00 134.00| View: Stream #1| 7407.1|
18.167 | 5823.64| 3 |
-----+-----+
|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT
INTERVAL |
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF
THE DESIGN STORM |
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END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Ver. 20.0 Release Date: 06/01/2013 License ID 1264

Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 134U *
* 10-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV1034UC.DAT
TIME/DATE OF STUDY: 09:20 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 2.320 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.746
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.33; 30-MINUTE = 0.63; 1-HOUR = 0.88
3-HOUR = 1.65; 6-HOUR = 2.45; 24-HOUR = 4.32
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.128 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.548
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing values for depth, outflow, and storage.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 312.40; DOWNSTREAM ELEVATION (FT) = 286.00
CHANNEL LENGTH (FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.231 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.750
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

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4F-1

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.319 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.920
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 286.00; DOWNSTREAM ELEVATION (FT) = 258.00
CHANNEL LENGTH (FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

=====

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.252 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.146; LOW LOSS FRACTION = 0.406
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 16.600
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.175 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.138; LOW LOSS FRACTION = 0.400
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN. **3D-3**
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	5.95	0.280
3	2.00	22.18	1.150
4	3.00	46.43	3.090
5	4.00	75.05	6.150
6	5.00	105.54	10.350
7	6.00	127.29	15.380
8	7.00	138.99	20.860
9	8.00	150.45	26.500
10	9.00	161.55	32.360
11	10.00	697.61	38.410
12	11.00	1666.99	44.700

FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<<

FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<<
=====

FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<<
=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<<
=====

WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.326 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.354
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<<
=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN. **3C-1**
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	7.430

```

3      2.00      0.02      15.170
4      3.00      2.70      23.230
5      4.00      4.69      31.610
6      5.00      6.04      40.320
7      6.00      10.72     49.360
8      7.00      17.77     58.730
9      8.00      424.53    68.440
10     9.00      1169.03   78.500
11    10.00     2113.61   88.500

```

```

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

```

```

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-3

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

```

```

*****
FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

```

```

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.381 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.702
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

```

```

-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

3C-3

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-5

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

```

```

*****
FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

```

```

*****STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

```

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

```

```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====

WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.449 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.296; LOW LOSS FRACTION = 0.905
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

```

```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.324 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.217; LOW LOSS FRACTION = 0.593
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

5-2

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 20.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.213 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.837
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.243 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.386
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Table with 3 columns: DATA PAIR NUMBER, Qcenter (CFS), Qpass (CFS). Includes handwritten blue text 'B Diversion Structure'.

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-10.

FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-4

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-23.

24 23.00 466.70 51.740
 25 24.00 951.81 53.820

 FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

 FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

 FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

 FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

 FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
 ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
 (Reference: the National Engineering Handbook, Hydrology,
 Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
 BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
 UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
 CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
 CONSTANT LOSS RATE (CFS) = 0.00

 FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
 *USER ENTERED "LAG" TIME = 0.938 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
 MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.244; LOW LOSS FRACTION = 0.727
 SPECIFIED PEAK RAINFALL DEPTHS (INCH):
 5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
 3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
 *USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
 5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
 3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

 FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
 FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN **GBD Side**
 THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS. **Weir**

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

 FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
 THROUGH A FLOW-THROUGH DETENTION BASIN. **GBD Upper Basin**
 SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
 DEAD STORAGE (AF) = 5.700
 SPECIFIED DEAD STORAGE (AF) FILLED = 5.700
 SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
 DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.50	0.01	0.002
3	2.00	0.02	1.900
4	4.00	0.03	16.100
5	4.30	0.05	18.200
6	5.00	314.00	23.200
7	6.00	1306.00	30.300
8	7.00	2847.00	39.100
9	8.00	4942.00	47.800

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8
-----
>>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
=====
```

```
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

GBD Lower
West Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.99	2.90	0.900
3	1.99	11.38	2.900
4	3.99	19.63	10.300
5	5.99	25.19	20.700
6	7.99	29.71	31.700
7	9.99	33.62	43.500
8	10.99	35.49	49.700
9	11.99	313.49	56.400
10	12.99	894.27	63.100
11	13.99	1748.55	69.900
12	15.99	4306.91	84.100

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====
```

```
*****
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 4
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
=====
```

GBD Lower
East Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.48	0.70	0.400
3	1.48	6.50	1.800
4	3.48	18.11	8.500
5	5.48	23.99	17.900
6	7.48	28.68	27.800
7	9.48	32.70	38.300
8	10.48	34.50	43.900
9	11.48	36.29	49.400
10	12.48	314.07	55.900
11	13.48	895.00	62.300
12	15.48	2882.95	74.700

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 427.51; DOWNSTREAM ELEVATION (FT) = 315.00
CHANNEL LENGTH (FT) = 9760.05 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00

```

*****
FLOW PROCESS FROM NODE 13305.00 TO NODE 133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 315.00; DOWNSTREAM ELEVATION(FT) = 212.00
CHANNEL LENGTH(FT) = 6877.24 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 133.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.688 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.224; LOW LOSS FRACTION = 0.615
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 212.00; DOWNSTREAM ELEVATION(FT) = 173.00
CHANNEL LENGTH(FT) = 6461.31 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1691.600 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.339 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.699
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====
*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 11

```

=====
>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<
=====

```
-----+-----+-----+
|                                     * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV1034UC.DAT ]
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-----+-----+-----+
|UPSTREAM  DOWNSTREAM|                                     | UPSTREAM  DOWNSTREAM|
TIME (2) TO | MAX. STORAGE|                                     |
| NODE #     NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS)  PEAK (CFS)|
PEAK (HR)   | MODELED (AF)| FOOTNOTES |
-----+-----+-----+
| 10100.00   119.00| Subarea (UH) Added to Stream #1|      0.0    6483.9|
18.333 |
| 119.00     12603.00| Convex Routing:      Stream #1|  6483.9    6470.1|
18.417 |
| 810.00     809.00| Subarea (UH) Added to Stream #2|      0.0     76.3|
16.167 |
| 809.00     12603.00| Flow-Through Basin:  Stream #2|    76.3     23.3|
17.167 |      12.03|
| 12603.00   12603.00| Stream #2 Added to:  Stream #1|  6470.1    6484.7|
18.417 |
-----+-----+-----+
| 12603.00   12603.00| Zero Out:      Stream #2|    23.3     0.0|
|
| 12603.00   126.00| Convex Routing:      Stream #1|  6484.7    6469.8|
18.500 |
| 920.00     905.00| Subarea (UH) Added to Stream #2|      0.0    149.3|
16.333 |
| 905.00     126.00| Flow-Through Basin:  Stream #2|    149.3     60.5|
16.500 |      16.82|
| 126.00     126.00| Stream #2 Added to:  Stream #1|  6469.8    6497.9|
18.500 |
-----+-----+-----+
| 126.00     126.00| Zero Out:      Stream #2|    60.5     0.0|
|
| 600.00     126.00| Subarea (UH) Added to Stream #2|      0.0     33.7|
16.417 |
| 126.00     126.00| Stream #2 Added to:  Stream #1|  6497.9    6499.7|
18.500 |
| 126.00     126.00| Zero Out:      Stream #2|    33.7     0.0|
|
| 126.00     12720.50| Convex Routing:      Stream #1|  6499.7    6462.9|
18.583 |
-----+-----+-----+
| 430.00     420.00| Subarea (UH) Added to Stream #2|      0.0    115.7|
16.333 |
| 420.00     420.50| Flow-Through Basin:  Stream #2|    115.7     60.2|
17.167 |      7.38|
| 420.50     427.00| Flow-Through Basin:  Stream #2|    60.2     43.8|
18.583 |      7.57|
| 413.00     425.00| Subarea (UH) Added to Stream #3|      0.0     55.2|
16.250 |
```

425.00	426.00	Flow-Through Basin:	Stream #3	55.2	27.5
16.417	1.58				
+-----+					
426.00	427.00	Stream #3 Added to:	Stream #2	43.8	63.1
17.667					
427.00	427.00	Zero Out:	Stream #3	27.5	0.0
427.00	12720.50	Stream #2 Added to:	Stream #1	6462.9	6520.7
18.583					
12720.50	12720.50	Zero Out:	Stream #2	63.1	0.0
12720.50	12741.00	Convex Routing:	Stream #1	6520.7	6506.9
18.667					
+-----+					
320.00	339.00	Subarea (UH) Added to	Stream #2	0.0	229.1
16.417					
339.00	340.00	Flow-Through Basin:	Stream #2	229.1	34.2
20.000	59.12				
339.00	372.00	Flowby Basin Model:	Stream #2	34.2	20.2
20.000					
390.00	372.00	Subarea (UH) Added to	Stream #4	0.0	41.8
16.417					
372.00	372.00	Stream #4 Added to:	Stream #3	14.0	41.8
16.417					
+-----+					
372.00	372.00	Zero Out:	Stream #4	41.8	0.0
372.00	373.00	Flow-Through Basin:	Stream #3	41.8	6.5
23.417	12.20				
372.00	372.10	Flowby Basin Model:	Stream #3	6.5	6.5
23.417					
373.00	373.00	Zero Out:	Stream #5	0.0	0.0
373.00	340.00	Stream #3 Added to:	Stream #2	20.2	26.5
23.083					
+-----+					
340.00	340.00	Zero Out:	Stream #3	6.5	0.0
340.00	12741.00	Stream #2 Added to:	Stream #1	6506.9	6529.1
18.667					
12741.00	12741.00	Zero Out:	Stream #2	26.5	0.0
12741.00	127.00	Convex Routing:	Stream #1	6529.1	6517.9
18.667					
12710.00	127.00	Subarea (UH) Added to	Stream #2	0.0	137.5
16.500					

[Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

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UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS FOOTNOTES	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
--	--	---	------------------------	--------------------------

127.00	127.00	Stream #2 Added to:	Stream #1	6517.9	6529.1
18.667					
127.00	127.00	Zero Out:	Stream #2	137.5	0.0
127.00	12902.00	Convex Routing:	Stream #1	6529.1	6515.9
18.750					
50220.00	50347.00	Subarea (UH) Added to	Stream #2	0.0	295.8
16.417					
50347.00	50347.00	Flow-Through Basin:	Stream #2	295.8	55.3
18.500	77.58				
50347.00	12902.00	Convex Routing:	Stream #2	55.3	55.3
18.667					
12902.00	12902.00	Stream #2 Added to:	Stream #1	6515.9	6571.2
18.750					
12902.00	12902.00	Zero Out:	Stream #2	55.3	0.0
12902.00	129.00	Convex Routing:	Stream #1	6571.2	6558.9
18.833					
50400.00	129.00	Subarea (UH) Added to	Stream #2	0.0	110.7
16.250					
129.00	129.00	Stream #2 Added to:	Stream #1	6558.9	6565.4
18.833					
129.00	129.00	Zero Out:	Stream #2	110.7	0.0
210.00	221.00	Subarea (UH) Added to	Stream #2	0.0	82.2
16.333					
221.00	221.00	Flowby Basin Model:	Stream #2	82.2	17.3
16.333					
221.00	223.00	Flow-Through Basin:	Stream #2	17.3	14.2
17.333	3.77				
221.00	222.00	Flow-Through Basin:	Stream #5	64.9	14.4
17.750	9.05				
223.00	222.00	Stream #5 Added to:	Stream #2	14.2	28.5
17.583					
222.00	222.00	Zero Out:	Stream #5	14.4	0.0
222.00	129.00	Stream #2 Added to:	Stream #1	6565.4	6590.7
18.833					

129.00	129.00	Zero Out:	Stream #2	28.5	0.0
129.00	133.00	Convex Routing:	Stream #1	6590.7	6580.1
18.917					
13010.00	132.00	Subarea (UH) Added to	Stream #2	0.0	682.1
17.000					
132.00	132.00	Flowby Basin Model:	Stream #2	682.1	630.6
17.000					
132.00	132.00	Flow-Through Basin:	Stream #3	51.5	0.0
18.000	3.92				
132.00	132.00	Split Hydrograph:	Stream #3	0.0	0.0
18.000					
132.00	132.00	Flow-Through Basin:	Stream #3	0.0	0.0
47.417	0.00				
132.00	132.00	Stream #3 Added to:	Stream #2	630.6	630.6
17.000					
132.00	132.00	Zero Out:	Stream #3	0.0	0.0
132.00	132.00	Flow-Through Basin:	Stream #4	0.0	0.0
69.500	0.01				
132.00	132.00	Stream #4 Added to:	Stream #2	630.6	630.6
17.000					
132.00	132.00	Zero Out:	Stream #4	0.0	0.0
132.00	13305.00	Convex Routing:	Stream #2	630.6	606.9
17.417					
13305.00	133.00	Convex Routing:	Stream #2	606.9	601.4
17.833					
132.00	133.00	Subarea (UH) Added to	Stream #3	0.0	318.8
16.750					
133.00	133.00	Stream #3 Added to:	Stream #2	601.4	785.5
17.667					
133.00	133.00	Zero Out:	Stream #3	318.8	0.0
133.00	133.00	Stream #2 Added to:	Stream #1	6580.1	7176.7
18.000					
133.00	133.00	Zero Out:	Stream #2	785.5	0.0
133.00	134.00	Convex Routing:	Stream #1	7176.7	7164.8
18.250					
133.00	134.00	Subarea (UH) Added to	Stream #2	0.0	394.8
16.417					

| Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

```

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-----+
|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV1034UC.DAT ]
Page: 3 of |
-----+-----+
|UPSTREAM DOWNSTREAM| | UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE| |
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR) | MODELED (AF)| FOOTNOTES |
-----+-----+
| 134.00 134.00| Stream #2 Added to: Stream #1| 7164.8 7262.6|
18.167 | | |
| 134.00 134.00| Zero Out: Stream #2| 394.8 0.0|
| | | |
| 134.00 134.00| View: Stream #1| 7262.6|
18.167 | 5646.55| 3 |
-----+-----+
|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT
INTERVAL |
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF
THE DESIGN STORM |
-----+
-----+

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END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Ver. 20.0 Release Date: 06/01/2013 License ID 1264

Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 137 *
* 10-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV10137C.DAT
TIME/DATE OF STUDY: 09:18 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 2.320 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.746
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.33; 30-MINUTE = 0.63; 1-HOUR = 0.88
3-HOUR = 1.65; 6-HOUR = 2.45; 24-HOUR = 4.32
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.128 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.548
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing values for depth, outflow, and storage.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<


```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.231 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.750
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

4F-1

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.319 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.920
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 286.00; DOWNSTREAM ELEVATION(FT) = 258.00
CHANNEL LENGTH(FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.252 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.146; LOW LOSS FRACTION = 0.406
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 16.600
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.175 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.138; LOW LOSS FRACTION = 0.400
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-3

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	5.95	0.280
3	2.00	22.18	1.150
4	3.00	46.43	3.090
5	4.00	75.05	6.150
6	5.00	105.54	10.350
7	6.00	127.29	15.380
8	7.00	138.99	20.860
9	8.00	150.45	26.500
10	9.00	161.55	32.360
11	10.00	697.61	38.410
12	11.00	1666.99	44.700

FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<<

FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<<
=====

FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<<
=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<<
=====

WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.326 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.354
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<<
=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3C-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	7.430

```

3      2.00      0.02      15.170
4      3.00      2.70      23.230
5      4.00      4.69      31.610
6      5.00      6.04      40.320
7      6.00     10.72      49.360
8      7.00     17.77      58.730
9      8.00     424.53     68.440
10     9.00     1169.03    78.500
11    10.00     2113.61    88.500

```

```

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

```

```

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-3

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

```

```

*****
FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

```

```

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.381 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.702
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

```

```

-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

3C-3

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-5

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

```

```

*****
FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

```

```

*****STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

```

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

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CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.449 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.296; LOW LOSS FRACTION = 0.905
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

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```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.324 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.217; LOW LOSS FRACTION = 0.593
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

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```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

5-2

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

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THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 20.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.213 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.837
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.243 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.386
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Table with 3 columns: DATA PAIR NUMBER, Qcenter (CFS), Qpass (CFS). Includes handwritten text 'B Diversion Structure'.

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-10.

FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-4

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-23.

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.938 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.244; LOW LOSS FRACTION = 0.727
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: **GBD Side**
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN **Weir**
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3 THROUGH A FLOW-THROUGH DETENTION BASIN. **GBD Upper Basin**
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 5.700
SPECIFIED DEAD STORAGE (AF) FILLED = 5.700
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.50	0.01	0.002
3	2.00	0.02	1.900
4	4.00	0.03	16.100
5	4.30	0.05	18.200
6	5.00	314.00	23.200
7	6.00	1306.00	30.300
8	7.00	2847.00	39.100
9	8.00	4942.00	47.800


```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8
-----
>>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
=====
```

```
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

GBD Lower
West Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.99	2.90	0.900
3	1.99	11.38	2.900
4	3.99	19.63	10.300
5	5.99	25.19	20.700
6	7.99	29.71	31.700
7	9.99	33.62	43.500
8	10.99	35.49	49.700
9	11.99	313.49	56.400
10	12.99	894.27	63.100
11	13.99	1748.55	69.900
12	15.99	4306.91	84.100

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====
```

```
*****
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 4
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

GBD Lower
East Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.48	0.70	0.400
3	1.48	6.50	1.800
4	3.48	18.11	8.500
5	5.48	23.99	17.900
6	7.48	28.68	27.800
7	9.48	32.70	38.300
8	10.48	34.50	43.900
9	11.48	36.29	49.400
10	12.48	314.07	55.900
11	13.48	895.00	62.300
12	15.48	2882.95	74.700

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 427.51; DOWNSTREAM ELEVATION (FT) = 315.00
CHANNEL LENGTH (FT) = 9760.05 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00

```

*****
FLOW PROCESS FROM NODE 13305.00 TO NODE 133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 315.00; DOWNSTREAM ELEVATION(FT) = 212.00
CHANNEL LENGTH(FT) = 6877.24 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 133.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.688 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.224; LOW LOSS FRACTION = 0.615
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933
-----
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 212.00; DOWNSTREAM ELEVATION(FT) = 173.00
CHANNEL LENGTH(FT) = 6461.31 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1691.600 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.339 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.699
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933
-----
*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====
*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 13500.00 TO NODE 134.00 IS CODE = 1

```

```

-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 3859.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 1.489 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.284; LOW LOSS FRACTION = 0.760
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 4.00
UPSTREAM ELEVATION (FT) = 173.00; DOWNSTREAM ELEVATION (FT) = 133.00
CHANNEL LENGTH (FT) = 6064.09 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1191.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.431 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.237; LOW LOSS FRACTION = 0.639
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78

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3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 11
-----
>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<
=====

```

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV10137C.DAT]

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UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)	FOOTNOTES
--	--	------------------------------	------------------------	--------------------------	-----------

10100.00	119.00	Subarea (UH) Added to Stream #1	0.0	6253.6	
18.333					
119.00	12603.00	Convex Routing: Stream #1	6253.6	6240.5	
18.417					
810.00	809.00	Subarea (UH) Added to Stream #2	0.0	72.9	
16.167					
809.00	12603.00	Flow-Through Basin: Stream #2	72.9	22.3	
17.167	11.98				
12603.00	12603.00	Stream #2 Added to: Stream #1	6240.5	6255.1	
18.417					

12603.00	12603.00	Zero Out: Stream #2	22.3	0.0	
18.500					
12603.00	126.00	Convex Routing: Stream #1	6255.1	6242.2	
18.500					
920.00	905.00	Subarea (UH) Added to Stream #2	0.0	141.7	
16.333					
905.00	126.00	Flow-Through Basin: Stream #2	141.7	53.3	
16.583	16.71				
126.00	126.00	Stream #2 Added to: Stream #1	6242.2	6270.3	
18.500					

126.00	126.00	Zero Out: Stream #2	53.3	0.0	
16.417					
600.00	126.00	Subarea (UH) Added to Stream #2	0.0	31.7	
18.500					
126.00	126.00	Stream #2 Added to: Stream #1	6270.3	6272.1	
18.500					
126.00	126.00	Zero Out: Stream #2	31.7	0.0	
18.583					
126.00	12720.50	Convex Routing: Stream #1	6272.1	6234.0	
18.583					

430.00	420.00	Subarea (UH) Added to Stream #2	0.0	111.3	
16.333					
420.00	420.50	Flow-Through Basin: Stream #2	111.3	58.9	
17.167	7.26				
420.50	427.00	Flow-Through Basin: Stream #2	58.9	43.3	
18.583	7.48				
413.00	425.00	Subarea (UH) Added to Stream #3	0.0	53.0	
16.250					

425.00	426.00	Flow-Through Basin: Stream #3	53.0	26.9	
16.417	1.53				

426.00	427.00	Stream #3 Added to: Stream #2	43.3	62.3	
17.667					
427.00	427.00	Zero Out: Stream #3	26.9	0.0	
18.583					
427.00	12720.50	Stream #2 Added to: Stream #1	6234.0	6291.2	
18.583					
12720.50	12720.50	Zero Out: Stream #2	62.3	0.0	
18.667					
12720.50	12741.00	Convex Routing: Stream #1	6291.2	6278.8	
18.667					

320.00	339.00	Subarea (UH) Added to Stream #2	0.0	221.1	
16.417					
339.00	340.00	Flow-Through Basin: Stream #2	221.1	33.1	
20.167	59.10				
339.00	372.00	Flowby Basin Model: Stream #2	33.1	20.2	
20.167					
390.00	372.00	Subarea (UH) Added to Stream #4	0.0	40.0	
16.417					
372.00	372.00	Stream #4 Added to: Stream #3	12.9	40.0	
16.417					

372.00	372.00	Zero Out: Stream #4	40.0	0.0	
23.500					
372.00	373.00	Flow-Through Basin: Stream #3	40.0	6.3	
23.500	11.87				
372.00	372.10	Flowby Basin Model: Stream #3	6.3	6.3	
23.500					
373.00	373.00	Zero Out: Stream #5	0.0	0.0	
23.167					
373.00	340.00	Stream #3 Added to: Stream #2	20.2	26.4	
23.167					

340.00	340.00	Zero Out: Stream #3	6.3	0.0	
18.667					
340.00	12741.00	Stream #2 Added to: Stream #1	6278.8	6300.6	
18.667					
12741.00	12741.00	Zero Out: Stream #2	26.4	0.0	
18.667					
12741.00	127.00	Convex Routing: Stream #1	6300.6	6289.0	
18.667					
12710.00	127.00	Subarea (UH) Added to Stream #2	0.0	129.5	
16.500					

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV10137C.DAT ]
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-----+-----
|UPSTREAM DOWNSTREAM| | UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE| |
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR) | MODELED (AF)| FOOTNOTES |
-----+-----
| 127.00 127.00| Stream #2 Added to: Stream #1| 6289.0 6300.3|
18.667 | | |
| 127.00 127.00| Zero Out: Stream #2| 129.5 0.0|
| | |
| 127.00 12902.00| Convex Routing: Stream #1| 6300.3 6287.9|
18.833 | | |
| 50220.00 50347.00| Subarea (UH) Added to Stream #2| 0.0 283.2|
16.417 | | |
| 50347.00 50347.00| Flow-Through Basin: Stream #2| 283.2 54.9|
18.583 | 77.11| |
-----+-----
| 50347.00 12902.00| Convex Routing: Stream #2| 54.9 54.9|
18.750 | | |
| 12902.00 12902.00| Stream #2 Added to: Stream #1| 6287.9 6342.7|
18.833 | | |
| 12902.00 12902.00| Zero Out: Stream #2| 54.9 0.0|
| | |
| 12902.00 129.00| Convex Routing: Stream #1| 6342.7 6332.4|
18.917 | | |
| 50400.00 129.00| Subarea (UH) Added to Stream #2| 0.0 104.5|
16.250 | | |
-----+-----
| 129.00 129.00| Stream #2 Added to: Stream #1| 6332.4 6338.8|
18.917 | | |
| 129.00 129.00| Zero Out: Stream #2| 104.5 0.0|
| | |
| 210.00 221.00| Subarea (UH) Added to Stream #2| 0.0 79.1|
16.333 | | |
| 221.00 221.00| Flowby Basin Model: Stream #2| 79.1 17.1|
16.333 | | |
| 221.00 223.00| Flow-Through Basin: Stream #2| 17.1 14.2|
17.417 | 3.76| |
-----+-----
| 221.00 222.00| Flow-Through Basin: Stream #5| 62.0 14.1|
17.917 | 8.94| |
| 223.00 222.00| Stream #5 Added to: Stream #2| 14.2 28.2|
17.750 | | |
| 222.00 222.00| Zero Out: Stream #5| 14.1 0.0|
| | |
| 222.00 129.00| Stream #2 Added to: Stream #1| 6338.8 6363.3|
18.917 | | |

```

	129.00	129.00	Zero Out:	Stream #2	28.2	0.0
+-----+						
	129.00	133.00	Convex Routing:	Stream #1	6363.3	6352.2
19.000						
	13010.00	132.00	Subarea (UH) Added to	Stream #2	0.0	656.2
17.000						
	132.00	132.00	Flowby Basin Model:	Stream #2	656.2	609.7
17.000						
	132.00	132.00	Flow-Through Basin:	Stream #3	46.5	0.0
18.000		3.39				
	132.00	132.00	Split Hydrograph:	Stream #3	0.0	0.0
18.000						
+-----+						
	132.00	132.00	Flow-Through Basin:	Stream #3	0.0	0.0
47.500		0.00				
	132.00	132.00	Stream #3 Added to:	Stream #2	609.7	609.7
17.000						
	132.00	132.00	Zero Out:	Stream #3	0.0	0.0
	132.00	132.00	Flow-Through Basin:	Stream #4	0.0	0.0
69.500		0.01				
	132.00	132.00	Stream #4 Added to:	Stream #2	609.7	609.7
17.000						
+-----+						
	132.00	132.00	Zero Out:	Stream #4	0.0	0.0
	132.00	13305.00	Convex Routing:	Stream #2	609.7	587.3
17.417						
	13305.00	133.00	Convex Routing:	Stream #2	587.3	582.3
17.833						
	132.00	133.00	Subarea (UH) Added to	Stream #3	0.0	307.3
16.750						
	133.00	133.00	Stream #3 Added to:	Stream #2	582.3	764.3
17.667						
+-----+						
	133.00	133.00	Zero Out:	Stream #3	307.3	0.0
	133.00	133.00	Stream #2 Added to:	Stream #1	6352.2	6948.9
18.000						
	133.00	133.00	Zero Out:	Stream #2	764.3	0.0
	133.00	134.00	Convex Routing:	Stream #1	6948.9	6936.9
18.250						
	133.00	134.00	Subarea (UH) Added to	Stream #2	0.0	376.6
16.417						

[Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL

| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

| INPUT FILENAME: [EV10137C.DAT]

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UPSTREAM TIME (2) TO	DOWNSTREAM MAX. STORAGE	HYDROLOGIC/HYDRAULIC PROCESS	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
NODE #	NODE #			
PEAK (HR)	MODELED (AF)	FOOTNOTES		

134.00	134.00	Stream #2 Added to:	Stream #1	6936.9	7037.0
18.167					
134.00	134.00	Zero Out:	Stream #2	376.6	0.0
13500.00	134.00	Subarea (UH) Added to	Stream #2	0.0	391.6
17.500					
134.00	134.00	Stream #2 Added to:	Stream #1	7037.0	7354.1
18.167					
134.00	134.00	Zero Out:	Stream #2	391.6	0.0

134.00	137.00	Convex Routing:	Stream #1	7354.1	7347.1
18.333					
134.00	137.00	Subarea (UH) Added to	Stream #2	0.0	247.6
16.500					
137.00	137.00	Stream #2 Added to:	Stream #1	7347.1	7425.7
18.333					
137.00	137.00	Zero Out:	Stream #2	247.6	0.0
137.00	137.00	View:	Stream #1		7425.7
18.333	5911.79	3			

|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
 | 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Ver. 20.0 Release Date: 06/01/2013 License ID 1264

Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 138 *
* 10-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV10138C.DAT
TIME/DATE OF STUDY: 09:17 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 2.320 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.746
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.33; 30-MINUTE = 0.63; 1-HOUR = 0.88
3-HOUR = 1.65; 6-HOUR = 2.45; 24-HOUR = 4.32
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.128 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.548
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing depth and storage values.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<


```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.231 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.750
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

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INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.319 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.920
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 286.00; DOWNSTREAM ELEVATION (FT) = 258.00
CHANNEL LENGTH (FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.252 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.146; LOW LOSS FRACTION = 0.406
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 16.600
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.175 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.138; LOW LOSS FRACTION = 0.400
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-3

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	5.95	0.280
3	2.00	22.18	1.150
4	3.00	46.43	3.090
5	4.00	75.05	6.150
6	5.00	105.54	10.350
7	6.00	127.29	15.380
8	7.00	138.99	20.860
9	8.00	150.45	26.500
10	9.00	161.55	32.360
11	10.00	697.61	38.410
12	11.00	1666.99	44.700

FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<<

FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<<
=====

FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<<
=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<<
=====

WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.326 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.354
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<<
=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3C-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	7.430

```

3      2.00      0.02      15.170
4      3.00      2.70      23.230
5      4.00      4.69      31.610
6      5.00      6.04      40.320
7      6.00     10.72     49.360
8      7.00     17.77     58.730
9      8.00     424.53    68.440
10     9.00     1169.03   78.500
11    10.00    2113.61   88.500

```

```

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

```

```

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: Weir to
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN 3C-3
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

```

```

*****
FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

```

```

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.381 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.702
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

```

```

-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN. 3C-3
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE: Weir to
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN 3C-5
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

```

```

*****
FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

```

```

*****STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

```

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

```

```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.449 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.296; LOW LOSS FRACTION = 0.905
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

```

```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.324 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.217; LOW LOSS FRACTION = 0.593
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

5-2

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 20.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.213 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.837
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.243 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.386
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Table with 3 columns: DATA PAIR NUMBER, Qcenter (CFS), Qpass (CFS). Includes handwritten blue text 'B Diversion Structure'.

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-10.

FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-4

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-23.

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.938 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.244; LOW LOSS FRACTION = 0.727
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: **GBD Side**
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN **Weir**
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3 THROUGH A FLOW-THROUGH DETENTION BASIN. **GBD Upper Basin**
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 5.700
SPECIFIED DEAD STORAGE (AF) FILLED = 5.700
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.50	0.01	0.002
3	2.00	0.02	1.900
4	4.00	0.03	16.100
5	4.30	0.05	18.200
6	5.00	314.00	23.200
7	6.00	1306.00	30.300
8	7.00	2847.00	39.100
9	8.00	4942.00	47.800


```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8
-----
>>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
=====
```

```
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

GBD Lower
West Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.99	2.90	0.900
3	1.99	11.38	2.900
4	3.99	19.63	10.300
5	5.99	25.19	20.700
6	7.99	29.71	31.700
7	9.99	33.62	43.500
8	10.99	35.49	49.700
9	11.99	313.49	56.400
10	12.99	894.27	63.100
11	13.99	1748.55	69.900
12	15.99	4306.91	84.100

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====
```

```
*****
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 4
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

GBD Lower
East Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.48	0.70	0.400
3	1.48	6.50	1.800
4	3.48	18.11	8.500
5	5.48	23.99	17.900
6	7.48	28.68	27.800
7	9.48	32.70	38.300
8	10.48	34.50	43.900
9	11.48	36.29	49.400
10	12.48	314.07	55.900
11	13.48	895.00	62.300
12	15.48	2882.95	74.700

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 427.51; DOWNSTREAM ELEVATION (FT) = 315.00
CHANNEL LENGTH (FT) = 9760.05 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00

```

*****
FLOW PROCESS FROM NODE 13305.00 TO NODE 133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 315.00; DOWNSTREAM ELEVATION(FT) = 212.00
CHANNEL LENGTH(FT) = 6877.24 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 133.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.688 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.224; LOW LOSS FRACTION = 0.615
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 212.00; DOWNSTREAM ELEVATION(FT) = 173.00
CHANNEL LENGTH(FT) = 6461.31 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1691.600 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.339 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.699
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====
*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 13500.00 TO NODE 134.00 IS CODE = 1

```

```

-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 3859.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 1.489 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.284; LOW LOSS FRACTION = 0.760
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 4.00
UPSTREAM ELEVATION (FT) = 173.00; DOWNSTREAM ELEVATION (FT) = 133.00
CHANNEL LENGTH (FT) = 6064.09 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1191.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.431 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.237; LOW LOSS FRACTION = 0.639
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78

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```

3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 138.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 100.00 CHANNEL Z = 4.00
UPSTREAM ELEVATION (FT) = 133.00; DOWNSTREAM ELEVATION (FT) = 119.70
CHANNEL LENGTH (FT) = 4643.67 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 138.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1303.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.562 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.267; LOW LOSS FRACTION = 0.717
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 138.00 TO NODE 138.00 IS CODE = 7
-----

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 138.00 TO NODE 138.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 138.00 TO NODE 138.00 IS CODE = 11

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<<

```

+-----+
|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV10138C.DAT ]
Page: 1 of 1
+-----+
|UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE|
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR) | MODELED (AF)| FOOTNOTES |
+-----+
| 10100.00 119.00| Subarea (UH) Added to Stream #1| 0.0 6197.3|
18.333 |
| 119.00 12603.00| Convex Routing: Stream #1| 6197.3 6183.9|
18.417 |
| 810.00 809.00| Subarea (UH) Added to Stream #2| 0.0 72.0|
16.167 |
| 809.00 12603.00| Flow-Through Basin: Stream #2| 72.0 22.1|
17.167 | 11.97|
| 12603.00 12603.00| Stream #2 Added to: Stream #1| 6183.9 6198.5|
18.417 |
+-----+
| 12603.00 12603.00| Zero Out: Stream #2| 22.1 0.0|
|
| 12603.00 126.00| Convex Routing: Stream #1| 6198.5 6185.8|
18.500 |
| 920.00 905.00| Subarea (UH) Added to Stream #2| 0.0 139.8|
16.333 |
| 905.00 126.00| Flow-Through Basin: Stream #2| 139.8 51.5|
16.583 | 16.67|
| 126.00 126.00| Stream #2 Added to: Stream #1| 6185.8 6213.9|
18.500 |
+-----+
| 126.00 126.00| Zero Out: Stream #2| 51.5 0.0|
|
| 600.00 126.00| Subarea (UH) Added to Stream #2| 0.0 31.2|
16.417 |
| 126.00 126.00| Stream #2 Added to: Stream #1| 6213.9 6215.7|
18.500 |
| 126.00 126.00| Zero Out: Stream #2| 31.2 0.0|
|
| 126.00 12720.50| Convex Routing: Stream #1| 6215.7 6177.4|
18.583 |
+-----+
| 430.00 420.00| Subarea (UH) Added to Stream #2| 0.0 110.3|
16.333 |
| 420.00 420.50| Flow-Through Basin: Stream #2| 110.3 58.6|
17.167 | 7.23|
| 420.50 427.00| Flow-Through Basin: Stream #2| 58.6 43.2|
18.583 | 7.46|
| 413.00 425.00| Subarea (UH) Added to Stream #3| 0.0 52.5|
16.250 |

```

425.00	426.00	Flow-Through Basin:	Stream #3	52.5	26.7
16.417	1.52				
+-----+					
426.00	427.00	Stream #3 Added to:	Stream #2	43.2	62.0
17.667					
427.00	427.00	Zero Out:	Stream #3	26.7	0.0
427.00	12720.50	Stream #2 Added to:	Stream #1	6177.4	6234.5
18.583					
12720.50	12720.50	Zero Out:	Stream #2	62.0	0.0
12720.50	12741.00	Convex Routing:	Stream #1	6234.5	6222.3
18.667					
+-----+					
320.00	339.00	Subarea (UH) Added to	Stream #2	0.0	219.2
16.417					
339.00	340.00	Flow-Through Basin:	Stream #2	219.2	32.8
20.250	59.09				
339.00	372.00	Flowby Basin Model:	Stream #2	32.8	20.2
20.250					
390.00	372.00	Subarea (UH) Added to	Stream #4	0.0	39.5
16.417					
372.00	372.00	Stream #4 Added to:	Stream #3	12.6	39.5
16.417					
+-----+					
372.00	372.00	Zero Out:	Stream #4	39.5	0.0
372.00	373.00	Flow-Through Basin:	Stream #3	39.5	6.3
23.500	11.79				
372.00	372.10	Flowby Basin Model:	Stream #3	6.3	6.3
23.500					
373.00	373.00	Zero Out:	Stream #5	0.0	0.0
373.00	340.00	Stream #3 Added to:	Stream #2	20.2	26.3
23.167					
+-----+					
340.00	340.00	Zero Out:	Stream #3	6.3	0.0
340.00	12741.00	Stream #2 Added to:	Stream #1	6222.3	6244.1
18.667					
12741.00	12741.00	Zero Out:	Stream #2	26.3	0.0
12741.00	127.00	Convex Routing:	Stream #1	6244.1	6232.4
18.667					
12710.00	127.00	Subarea (UH) Added to	Stream #2	0.0	127.6
16.500					

[Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL

| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV10138C.DAT]

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UPSTREAM TIME (2)	DOWNSTREAM MAX. STORAGE	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
127.00	127.00	6232.4	6243.7
18.667			
127.00	127.00	127.6	0.0
127.00	12902.00	6243.7	6233.0
18.833			
50220.00	50347.00	0.0	280.1
16.417			
50347.00	50347.00	280.1	54.8
18.583	77.00		
50347.00	12902.00	54.8	54.7
18.750			
12902.00	12902.00	6233.0	6287.7
18.833			
12902.00	12902.00	54.7	0.0
12902.00	129.00	6287.7	6277.5
18.917			
50400.00	129.00	0.0	103.0
16.250			
129.00	129.00	6277.5	6284.0
18.917			
129.00	129.00	103.0	0.0
210.00	221.00	0.0	78.4
16.333			
221.00	221.00	78.4	17.1
16.333			
221.00	223.00	17.1	14.1
17.417	3.76		
221.00	222.00	61.3	14.0
17.917	8.91		
223.00	222.00	14.1	28.1
17.833			
222.00	222.00	14.0	0.0
222.00	129.00	6284.0	6308.4
18.917			

129.00	129.00	Zero Out:	Stream #2	28.1	0.0
129.00	133.00	Convex Routing:	Stream #1	6308.4	6297.4
19.000					
13010.00	132.00	Subarea (UH) Added to	Stream #2	0.0	650.0
17.000					
132.00	132.00	Flowby Basin Model:	Stream #2	650.0	604.7
17.000					
132.00	132.00	Flow-Through Basin:	Stream #3	45.4	0.0
18.000	3.27				
132.00	132.00	Split Hydrograph:	Stream #3	0.0	0.0
18.000					
132.00	132.00	Flow-Through Basin:	Stream #3	0.0	0.0
47.417	0.00				
132.00	132.00	Stream #3 Added to:	Stream #2	604.7	604.7
17.000					
132.00	132.00	Zero Out:	Stream #3	0.0	0.0
132.00	132.00	Flow-Through Basin:	Stream #4	0.0	0.0
69.417	0.01				
132.00	132.00	Stream #4 Added to:	Stream #2	604.7	604.7
17.000					
132.00	132.00	Zero Out:	Stream #4	0.0	0.0
132.00	13305.00	Convex Routing:	Stream #2	604.7	582.6
17.417					
13305.00	133.00	Convex Routing:	Stream #2	582.6	577.8
17.833					
132.00	133.00	Subarea (UH) Added to	Stream #3	0.0	304.5
16.750					
133.00	133.00	Stream #3 Added to:	Stream #2	577.8	759.8
17.667					
133.00	133.00	Zero Out:	Stream #3	304.5	0.0
133.00	133.00	Stream #2 Added to:	Stream #1	6297.4	6891.3
18.000					
133.00	133.00	Zero Out:	Stream #2	759.8	0.0
133.00	134.00	Convex Routing:	Stream #1	6891.3	6879.4
18.250					
133.00	134.00	Subarea (UH) Added to	Stream #2	0.0	372.2
16.417					

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV10138C.DAT ]
Page: 3 of |
-----+-----+
|UPSTREAM DOWNSTREAM| | UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE| |
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR) | MODELED (AF)| FOOTNOTES |
-----+-----+
| 134.00 134.00| Stream #2 Added to: Stream #1| 6879.4 6979.8|
18.167 | | |
| 134.00 134.00| Zero Out: Stream #2| 372.2 0.0|
| | |
| 13500.00 134.00| Subarea (UH) Added to Stream #2| 0.0 388.4|
17.500 | | |
| 134.00 134.00| Stream #2 Added to: Stream #1| 6979.8 7295.2|
18.167 | | |
| 134.00 134.00| Zero Out: Stream #2| 388.4 0.0|
| | |
-----+-----+
| 134.00 137.00| Convex Routing: Stream #1| 7295.2 7288.2|
18.333 | | |
| 134.00 137.00| Subarea (UH) Added to Stream #2| 0.0 245.0|
16.500 | | |
| 137.00 137.00| Stream #2 Added to: Stream #1| 7288.2 7367.1|
18.333 | | |
| 137.00 137.00| Zero Out: Stream #2| 245.0 0.0|
| | |
| 137.00 138.00| Convex Routing: Stream #1| 7367.1 7359.1|
18.500 | | |
-----+-----+
| 137.00 138.00| Subarea (UH) Added to Stream #2| 0.0 204.2|
16.583 | | |
| 138.00 138.00| Stream #2 Added to: Stream #1| 7359.1 7423.7|
18.500 | | |
| 138.00 138.00| Zero Out: Stream #2| 204.2 0.0|
| | |
| 138.00 138.00| View: Stream #1| 7423.7|
18.500 | 5984.60| 3 |
-----+-----+
|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT
INTERVAL |
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF
THE DESIGN STORM |
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END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 139 *
* 10-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV10139C.DAT
TIME/DATE OF STUDY: 09:16 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 2.320 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.746
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.33; 30-MINUTE = 0.63; 1-HOUR = 0.88
3-HOUR = 1.65; 6-HOUR = 2.45; 24-HOUR = 4.32
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.128 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.548
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	1.520
3	2.00	1.30	3.150
4	3.00	1.60	4.900
5	4.00	1.80	6.790
6	5.00	2.10	8.810
7	6.00	2.30	10.970
8	7.00	47.90	13.270
9	8.00	131.60	15.720
10	9.00	241.70	18.320
11	10.00	372.80	21.060

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

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*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.231 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.750
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932
=====
*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00
=====
BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

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INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====
*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.319 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.920
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932
=====
*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====
*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 286.00; DOWNSTREAM ELEVATION(FT) = 258.00
CHANNEL LENGTH(FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.252 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.146; LOW LOSS FRACTION = 0.406
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 16.600
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.175 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.138; LOW LOSS FRACTION = 0.400
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-3

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	5.95	0.280
3	2.00	22.18	1.150
4	3.00	46.43	3.090
5	4.00	75.05	6.150
6	5.00	105.54	10.350
7	6.00	127.29	15.380
8	7.00	138.99	20.860
9	8.00	150.45	26.500
10	9.00	161.55	32.360
11	10.00	697.61	38.410
12	11.00	1666.99	44.700

FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<<

FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<<
=====

FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<<
=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<<
=====

WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.326 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.354
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<<
=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3C-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	7.430

3	2.00	0.02	15.170
4	3.00	2.70	23.230
5	4.00	4.69	31.610
6	5.00	6.04	40.320
7	6.00	10.72	49.360
8	7.00	17.77	58.730
9	8.00	424.53	68.440
10	9.00	1169.03	78.500
11	10.00	2113.61	88.500

FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Weir to
3C-3

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.381 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.702
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:

3C-3

DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Weir to
3C-5

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO**

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

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```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.449 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.296; LOW LOSS FRACTION = 0.905
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

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```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.324 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.217; LOW LOSS FRACTION = 0.593
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

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```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

5-2

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

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THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 20.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

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```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.213 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.837
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.243 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.386
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Table with 3 columns: DATA PAIR NUMBER, Qcenter (CFS), Qpass (CFS). Includes handwritten note 'B Diversion Structure'.

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-10.

FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-4

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-23.

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.938 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.244; LOW LOSS FRACTION = 0.727
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: **GBD Side Weir**
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3 THROUGH A FLOW-THROUGH DETENTION BASIN. **GBD Upper Basin**
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 5.700
SPECIFIED DEAD STORAGE (AF) FILLED = 5.700
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.50	0.01	0.002
3	2.00	0.02	1.900
4	4.00	0.03	16.100
5	4.30	0.05	18.200
6	5.00	314.00	23.200
7	6.00	1306.00	30.300
8	7.00	2847.00	39.100
9	8.00	4942.00	47.800


```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8
-----
>>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
```

```
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
=====
```

```
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

GBD Lower
West Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.99	2.90	0.900
3	1.99	11.38	2.900
4	3.99	19.63	10.300
5	5.99	25.19	20.700
6	7.99	29.71	31.700
7	9.99	33.62	43.500
8	10.99	35.49	49.700
9	11.99	313.49	56.400
10	12.99	894.27	63.100
11	13.99	1748.55	69.900
12	15.99	4306.91	84.100

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
```

```
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
```

```
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
```

```
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====
```

```
*****
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 4
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

GBD Lower
East Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.48	0.70	0.400
3	1.48	6.50	1.800
4	3.48	18.11	8.500
5	5.48	23.99	17.900
6	7.48	28.68	27.800
7	9.48	32.70	38.300
8	10.48	34.50	43.900
9	11.48	36.29	49.400
10	12.48	314.07	55.900
11	13.48	895.00	62.300
12	15.48	2882.95	74.700

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
```

```
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
```

```
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 13305.00 IS CODE = 5.2
-----
```

```
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 427.51; DOWNSTREAM ELEVATION (FT) = 315.00
CHANNEL LENGTH (FT) = 9760.05 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00

```

*****
FLOW PROCESS FROM NODE 13305.00 TO NODE 133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 315.00; DOWNSTREAM ELEVATION(FT) = 212.00
CHANNEL LENGTH(FT) = 6877.24 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 133.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.688 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.224; LOW LOSS FRACTION = 0.615
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

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```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 212.00; DOWNSTREAM ELEVATION(FT) = 173.00
CHANNEL LENGTH(FT) = 6461.31 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1691.600 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.339 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.699
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932
*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====
*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 13500.00 TO NODE 134.00 IS CODE = 1

```

```

-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 3859.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 1.489 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.284; LOW LOSS FRACTION = 0.760
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 4.00
UPSTREAM ELEVATION (FT) = 173.00; DOWNSTREAM ELEVATION (FT) = 133.00
CHANNEL LENGTH (FT) = 6064.09 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1191.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.431 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.237; LOW LOSS FRACTION = 0.639
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78

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3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 138.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 100.00 CHANNEL Z = 4.00
UPSTREAM ELEVATION (FT) = 133.00; DOWNSTREAM ELEVATION (FT) = 119.70
CHANNEL LENGTH (FT) = 4643.67 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 138.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1303.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.562 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.267; LOW LOSS FRACTION = 0.717
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 138.00 TO NODE 138.00 IS CODE = 7
-----

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 138.00 TO NODE 138.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 138.00 TO NODE 139.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 100.00 CHANNEL Z = 4.00
UPSTREAM ELEVATION(FT) = 119.70; DOWNSTREAM ELEVATION(FT) = 100.00
CHANNEL LENGTH(FT) = 3107.78 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 138.00 TO NODE 139.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 428.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.258 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.207; LOW LOSS FRACTION = 0.540
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.26; 30-MINUTE = 0.59; 1-HOUR = 0.78
3-HOUR = 1.31; 6-HOUR = 1.81; 24-HOUR = 3.03
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 139.00 TO NODE 139.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 139.00 TO NODE 139.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 139.00 TO NODE 139.00 IS CODE = 11

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<<

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV10139C.DAT]

Page: 1 of 1

UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS FOOTNOTES	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
--	--	---	------------------------	--------------------------

10100.00	119.00	Subarea (UH) Added to Stream #1	0.0	6179.7
18.333				
119.00	12603.00	Convex Routing: Stream #1	6179.7	6166.2
18.417				
810.00	809.00	Subarea (UH) Added to Stream #2	0.0	71.7
16.167				
809.00	12603.00	Flow-Through Basin: Stream #2	71.7	22.0
17.167	11.97			
12603.00	12603.00	Stream #2 Added to: Stream #1	6166.2	6180.8
18.417				
12603.00	12603.00	Zero Out: Stream #2	22.0	0.0
12603.00	126.00	Convex Routing: Stream #1	6180.8	6168.3
18.500				
920.00	905.00	Subarea (UH) Added to Stream #2	0.0	139.2
16.333				
905.00	126.00	Flow-Through Basin: Stream #2	139.2	50.9
16.583	16.66			
126.00	126.00	Stream #2 Added to: Stream #1	6168.3	6196.4
18.500				
126.00	126.00	Zero Out: Stream #2	50.9	0.0
600.00	126.00	Subarea (UH) Added to Stream #2	0.0	31.0
16.417				
126.00	126.00	Stream #2 Added to: Stream #1	6196.4	6198.2
18.500				
126.00	126.00	Zero Out: Stream #2	31.0	0.0
126.00	12720.50	Convex Routing: Stream #1	6198.2	6159.7
18.583				
430.00	420.00	Subarea (UH) Added to Stream #2	0.0	109.9
16.333				
420.00	420.50	Flow-Through Basin: Stream #2	109.9	58.5
17.167	7.23			
420.50	427.00	Flow-Through Basin: Stream #2	58.5	43.1
18.583	7.45			
413.00	425.00	Subarea (UH) Added to Stream #3	0.0	52.3
16.250				

425.00	426.00	Flow-Through Basin: Stream #3	52.3	26.7
16.417	1.51			
426.00	427.00	Stream #3 Added to: Stream #2	43.1	62.0
17.667				
427.00	427.00	Zero Out: Stream #3	26.7	0.0
427.00	12720.50	Stream #2 Added to: Stream #1	6159.7	6216.8
18.583				
12720.50	12720.50	Zero Out: Stream #2	62.0	0.0
12720.50	12741.00	Convex Routing: Stream #1	6216.8	6204.7
18.667				
320.00	339.00	Subarea (UH) Added to Stream #2	0.0	218.5
16.417				
339.00	340.00	Flow-Through Basin: Stream #2	218.5	32.7
20.250	59.09			
339.00	372.00	Flowby Basin Model: Stream #2	32.7	20.2
20.250				
390.00	372.00	Subarea (UH) Added to Stream #4	0.0	39.4
16.417				
372.00	372.00	Stream #4 Added to: Stream #3	12.5	39.4
16.417				
372.00	372.00	Zero Out: Stream #4	39.4	0.0
372.00	373.00	Flow-Through Basin: Stream #3	39.4	6.3
23.500	11.77			
372.00	372.10	Flowby Basin Model: Stream #3	6.3	6.3
23.500				
373.00	373.00	Zero Out: Stream #5	0.0	0.0
373.00	340.00	Stream #3 Added to: Stream #2	20.2	26.3
23.167				
340.00	340.00	Zero Out: Stream #3	6.3	0.0
340.00	12741.00	Stream #2 Added to: Stream #1	6204.7	6226.5
18.667				
12741.00	12741.00	Zero Out: Stream #2	26.3	0.0
12741.00	127.00	Convex Routing: Stream #1	6226.5	6214.8
18.667				
12710.00	127.00	Subarea (UH) Added to Stream #2	0.0	126.9
16.500				

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL

3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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+-----+
|
|                                     * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV10139C.DAT ]
Page: 2 of |
+-----+
|UPSTREAM DOWNSTREAM|                                     | UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE|                                     |
| NODE #     NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR)   | MODELED (AF)| FOOTNOTES |
+-----+
| 127.00    127.00| Stream #2 Added to: Stream #1| 6214.8    6226.1|
18.667 | | |
| 127.00    127.00| Zero Out: Stream #2| 126.9     0.0|
| | |
| 127.00    12902.00| Convex Routing: Stream #1| 6226.1    6215.7|
18.833 | | |
| 50220.00   50347.00| Subarea (UH) Added to Stream #2| 0.0      279.1|
16.417 | | |
| 50347.00   50347.00| Flow-Through Basin: Stream #2| 279.1     54.7|
18.583 | 76.96| |
+-----+
| 50347.00   12902.00| Convex Routing: Stream #2| 54.7      54.7|
18.750 | | |
| 12902.00   12902.00| Stream #2 Added to: Stream #1| 6215.7    6270.4|
18.833 | | |
| 12902.00   12902.00| Zero Out: Stream #2| 54.7      0.0|
| | |
| 12902.00    129.00| Convex Routing: Stream #1| 6270.4    6260.3|
18.917 | | |
| 50400.00    129.00| Subarea (UH) Added to Stream #2| 0.0      102.5|
16.250 | | |
+-----+
| 129.00     129.00| Stream #2 Added to: Stream #1| 6260.3    6266.8|
18.917 | | |
| 129.00     129.00| Zero Out: Stream #2| 102.5     0.0|
| | |
| 210.00     221.00| Subarea (UH) Added to Stream #2| 0.0      78.1|
16.333 | | |
| 221.00     221.00| Flowby Basin Model: Stream #2| 78.1     17.0|
16.333 | | |
| 221.00     223.00| Flow-Through Basin: Stream #2| 17.0     14.1|
17.417 | 3.76| |
+-----+
| 221.00     222.00| Flow-Through Basin: Stream #5| 61.1     14.0|
17.917 | 8.91| |
| 223.00     222.00| Stream #5 Added to: Stream #2| 14.1     28.0|
17.833 | | |
| 222.00     222.00| Zero Out: Stream #5| 14.0     0.0|
| | |
| 222.00     129.00| Stream #2 Added to: Stream #1| 6266.8    6291.1|
18.917 | | |

```

	129.00	129.00	Zero Out:	Stream #2	28.0	0.0
+-----+						
	129.00	133.00	Convex Routing:	Stream #1	6291.1	6280.3
19.000						
	13010.00	132.00	Subarea (UH) Added to	Stream #2	0.0	647.9
17.000						
	132.00	132.00	Flowby Basin Model:	Stream #2	647.9	603.0
17.000						
	132.00	132.00	Flow-Through Basin:	Stream #3	45.0	0.0
18.000		3.23				
	132.00	132.00	Split Hydrograph:	Stream #3	0.0	0.0
18.000						
+-----+						
+-----+						
	132.00	132.00	Flow-Through Basin:	Stream #3	0.0	0.0
47.500		0.00				
	132.00	132.00	Stream #3 Added to:	Stream #2	603.0	603.0
17.000						
	132.00	132.00	Zero Out:	Stream #3	0.0	0.0
	132.00	132.00	Flow-Through Basin:	Stream #4	0.0	0.0
69.500		0.01				
	132.00	132.00	Stream #4 Added to:	Stream #2	603.0	603.0
17.000						
+-----+						
+-----+						
	132.00	132.00	Zero Out:	Stream #4	0.0	0.0
	132.00	13305.00	Convex Routing:	Stream #2	603.0	581.0
17.417						
	13305.00	133.00	Convex Routing:	Stream #2	581.0	576.2
17.833						
	132.00	133.00	Subarea (UH) Added to	Stream #3	0.0	303.6
16.750						
	133.00	133.00	Stream #3 Added to:	Stream #2	576.2	757.7
17.667						
+-----+						
+-----+						
	133.00	133.00	Zero Out:	Stream #3	303.6	0.0
	133.00	133.00	Stream #2 Added to:	Stream #1	6280.3	6873.8
18.000						
	133.00	133.00	Zero Out:	Stream #2	757.7	0.0
	133.00	134.00	Convex Routing:	Stream #1	6873.8	6861.9
18.250						
	133.00	134.00	Subarea (UH) Added to	Stream #2	0.0	370.7
16.417						
+-----+						
+-----+						
Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT						
INTERVAL						
3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF						
THE DESIGN STORM						
+-----+						
+-----+						

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV10139C.DAT]

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UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS FOOTNOTES	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)	
134.00	134.00	Stream #2 Added to:	Stream #1	6861.9	6962.1
18.167					
134.00	134.00	Zero Out:	Stream #2	370.7	0.0
13500.00	134.00	Subarea (UH) Added to	Stream #2	0.0	387.3
17.500					
134.00	134.00	Stream #2 Added to:	Stream #1	6962.1	7277.0
18.167					
134.00	134.00	Zero Out:	Stream #2	387.3	0.0
134.00	137.00	Convex Routing:	Stream #1	7277.0	7269.9
18.333					
134.00	137.00	Subarea (UH) Added to	Stream #2	0.0	244.1
16.500					
137.00	137.00	Stream #2 Added to:	Stream #1	7269.9	7348.8
18.333					
137.00	137.00	Zero Out:	Stream #2	244.1	0.0
137.00	138.00	Convex Routing:	Stream #1	7348.8	7340.9
18.500					
137.00	138.00	Subarea (UH) Added to	Stream #2	0.0	203.5
16.583					
138.00	138.00	Stream #2 Added to:	Stream #1	7340.9	7405.5
18.500					
138.00	138.00	Zero Out:	Stream #2	203.5	0.0
138.00	139.00	Convex Routing:	Stream #1	7405.5	7402.7
18.583					
138.00	139.00	Subarea (UH) Added to	Stream #2	0.0	127.3
16.333					
139.00	139.00	Stream #2 Added to:	Stream #1	7402.7	7423.7
18.583					
139.00	139.00	Zero Out:	Stream #2	127.3	0.0
139.00	139.00	View:	Stream #1		7423.7
18.583	6026.32	3			

[Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
 | 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 126 *
* 25-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV25126C.DAT
TIME/DATE OF STUDY: 11:36 06/12/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 2.119 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.433
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.42; 30-MINUTE = 0.78; 1-HOUR = 1.08
3-HOUR = 2.02; 6-HOUR = 3.00; 24-HOUR = 5.30
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.341; 30-MINUTE = 0.392; 1-HOUR = 0.432
3-HOUR = 0.782; 6-HOUR = 0.902; 24-HOUR = 0.943

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.124 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.412
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.341; 30-MINUTE = 0.392; 1-HOUR = 0.432
3-HOUR = 0.782; 6-HOUR = 0.902; 24-HOUR = 0.943

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing values for depth, outflow, and storage.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.222 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.488
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.341; 30-MINUTE = 0.392; 1-HOUR = 0.432
3-HOUR = 0.782; 6-HOUR = 0.902; 24-HOUR = 0.943

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

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INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.301 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.760
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.341; 30-MINUTE = 0.392; 1-HOUR = 0.432
3-HOUR = 0.782; 6-HOUR = 0.902; 24-HOUR = 0.943

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 11

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<

=====

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| * AES FLOODSCx PROGRAM RESULTS SUMMARY *

| INPUT FILENAME: [EV25126C.DAT]

Page: 1 of |

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UPSTREAM TIME (2) PEAK (HR)	DOWNSTREAM NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS FOOTNOTES	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
--------------------------------	-----------------------------------	---	---------------------	-----------------------

10100.00 18.167	119.00	Subarea (UH) Added to Stream #1	0.0	14853.4
119.00 18.083	12603.00	Convex Routing: Stream #1	14853.4	14762.1
810.00 16.167	809.00	Subarea (UH) Added to Stream #2	0.0	121.9
809.00 16.333	12603.00	Flow-Through Basin: Stream #2	121.9	59.7
12603.00 18.083	12603.00	Stream #2 Added to: Stream #1	14762.1	14791.3
12603.00	12603.00	Zero Out: Stream #2	59.7	0.0
12603.00 18.250	126.00	Convex Routing: Stream #1	14791.3	14768.5
920.00 16.250	905.00	Subarea (UH) Added to Stream #2	0.0	268.5
905.00 16.417	126.00	Flow-Through Basin: Stream #2	268.5	209.8
126.00 18.167	126.00	Stream #2 Added to: Stream #1	14768.5	14834.1
126.00	126.00	Zero Out: Stream #2	209.8	0.0
600.00 16.333	126.00	Subarea (UH) Added to Stream #2	0.0	65.4
126.00 18.167	126.00	Stream #2 Added to: Stream #1	14834.1	14844.2
126.00	126.00	Zero Out: Stream #2	65.4	0.0
126.00 18.167	126.00	View: Stream #1		14844.2
11959.92	3			

| Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 127 *
* 25-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV25127C.DAT
TIME/DATE OF STUDY: 09:10 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 2.119 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.433
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.42; 30-MINUTE = 0.78; 1-HOUR = 1.08
3-HOUR = 2.02; 6-HOUR = 3.00; 24-HOUR = 5.30
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.124 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.412
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	1.520
3	2.00	1.30	3.150
4	3.00	1.60	4.900
5	4.00	1.80	6.790
6	5.00	2.10	8.810
7	6.00	2.30	10.970
8	7.00	47.90	13.270
9	8.00	131.60	15.720
10	9.00	241.70	18.320
11	10.00	372.80	21.060

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.222 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.488
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

4F-1

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.301 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.760
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 286.00; DOWNSTREAM ELEVATION(FT) = 258.00
CHANNEL LENGTH(FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00

=====

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

=====

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.242 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.146; LOW LOSS FRACTION = 0.362
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 16.600
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

=====

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.168 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.138; LOW LOSS FRACTION = 0.368
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-3

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	5.95	0.280
3	2.00	22.18	1.150
4	3.00	46.43	3.090
5	4.00	75.05	6.150
6	5.00	105.54	10.350
7	6.00	127.29	15.380
8	7.00	138.99	20.860
9	8.00	150.45	26.500
10	9.00	161.55	32.360
11	10.00	697.61	38.410
12	11.00	1666.99	44.700

FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.315 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.321
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3C-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	7.430


```

3      2.00      0.02      15.170
4      3.00      2.70      23.230
5      4.00      4.69      31.610
6      5.00      6.04      40.320
7      6.00     10.72      49.360
8      7.00     17.77      58.730
9      8.00     424.53     68.440
10     9.00     1169.03    78.500
11    10.00     2113.61    88.500

```

```

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

```

```

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: Weir to
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN 3C-3
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

```

```

*****
FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

```

```

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.360 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.511
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

```

```

-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN. 3C-3
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:

```

```

DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE: Weir to
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN 3C-5
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

```

```

*****
FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

```

```

*****STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

```

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

```

```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.422 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.296; LOW LOSS FRACTION = 0.648
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 11
-----
>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<
=====

```

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV25127C.DAT]

Page: 1 of 1

UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS FOOTNOTES	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
--	--	---	------------------------	--------------------------

10100.00	119.00	Subarea (UH) Added to Stream #1	0.0	14693.0
18.167				
119.00	12603.00	Convex Routing: Stream #1	14693.0	14604.7
18.083				
810.00	809.00	Subarea (UH) Added to Stream #2	0.0	118.8
16.167				
809.00	12603.00	Flow-Through Basin: Stream #2	118.8	58.1
16.333	13.60			
12603.00	12603.00	Stream #2 Added to: Stream #1	14604.7	14633.9
18.083				
12603.00	12603.00	Zero Out: Stream #2	58.1	0.0
12603.00	126.00	Convex Routing: Stream #1	14633.9	14612.0
18.250				
920.00	905.00	Subarea (UH) Added to Stream #2	0.0	261.5
16.250				
905.00	126.00	Flow-Through Basin: Stream #2	261.5	204.8
16.417	19.09			
126.00	126.00	Stream #2 Added to: Stream #1	14612.0	14677.8
18.167				
126.00	126.00	Zero Out: Stream #2	204.8	0.0
600.00	126.00	Subarea (UH) Added to Stream #2	0.0	63.4
16.333				
126.00	126.00	Stream #2 Added to: Stream #1	14677.8	14687.9
18.167				
126.00	126.00	Zero Out: Stream #2	63.4	0.0
126.00	12720.50	Convex Routing: Stream #1	14687.9	14678.0
18.333				
430.00	420.00	Subarea (UH) Added to Stream #2	0.0	169.9
16.333				
420.00	420.50	Flow-Through Basin: Stream #2	169.9	88.0
16.583	9.97			
420.50	427.00	Flow-Through Basin: Stream #2	88.0	76.7
17.667	10.05			
413.00	425.00	Subarea (UH) Added to Stream #3	0.0	81.9
16.250				

425.00	426.00	Flow-Through Basin: Stream #3	81.9	37.8
16.417	2.41			
426.00	427.00	Stream #3 Added to: Stream #2	76.7	108.0
17.417				
427.00	427.00	Zero Out: Stream #3	37.8	0.0
427.00	12720.50	Stream #2 Added to: Stream #1	14678.0	14773.2
18.333				
12720.50	12720.50	Zero Out: Stream #2	108.0	0.0
12720.50	12741.00	Convex Routing: Stream #1	14773.2	14734.9
18.333				
320.00	339.00	Subarea (UH) Added to Stream #2	0.0	326.8
16.333				
339.00	340.00	Flow-Through Basin: Stream #2	326.8	184.8
17.250	62.73			
339.00	372.00	Flowby Basin Model: Stream #2	184.8	28.1
17.250				
390.00	372.00	Subarea (UH) Added to Stream #4	0.0	74.2
16.417				
372.00	372.00	Stream #4 Added to: Stream #3	156.7	195.9
17.167				
372.00	372.00	Zero Out: Stream #4	74.2	0.0
372.00	373.00	Flow-Through Basin: Stream #3	195.9	31.8
20.333	39.98			
372.00	372.10	Flowby Basin Model: Stream #3	31.8	31.8
20.333				
373.00	373.00	Zero Out: Stream #5	0.0	0.0
373.00	340.00	Stream #3 Added to: Stream #2	28.1	52.9
18.417				
340.00	340.00	Zero Out: Stream #3	31.8	0.0
340.00	12741.00	Stream #2 Added to: Stream #1	14734.9	14787.5
18.333				
12741.00	12741.00	Zero Out: Stream #2	52.9	0.0
12741.00	127.00	Convex Routing: Stream #1	14787.5	14786.5
18.417				
12710.00	127.00	Subarea (UH) Added to Stream #2	0.0	285.6
16.500				

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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-----+
|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV25127C.DAT ]
Page: 2 of |
-----+-----+
|UPSTREAM DOWNSTREAM| | UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE| |
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR) | MODELED (AF)| FOOTNOTES |
-----+-----+
| 127.00 127.00| Stream #2 Added to: Stream #1| 14786.5 14851.3|
18.417 | | |
| 127.00 127.00| Zero Out: Stream #2| 285.6 0.0|
| | | |
| 127.00 127.00| View: Stream #1| 14851.3|
18.417 | 12207.52| 3 |
-----+-----+
|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT
INTERVAL |
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF
THE DESIGN STORM |
-----+
-----+

```

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Ver. 20.0 Release Date: 06/01/2013 License ID 1264

Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 133C *
* 25-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV2533CC.DAT
TIME/DATE OF STUDY: 08:54 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 2.119 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.433
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.42; 30-MINUTE = 0.78; 1-HOUR = 1.08
3-HOUR = 2.02; 6-HOUR = 3.00; 24-HOUR = 5.30
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.124 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.412
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing values for depth, outflow, and storage.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.222 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.488
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

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INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.301 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.760
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 286.00; DOWNSTREAM ELEVATION (FT) = 258.00
CHANNEL LENGTH (FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.242 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.146; LOW LOSS FRACTION = 0.362
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 16.600
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.168 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.138; LOW LOSS FRACTION = 0.368
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-3

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	5.95	0.280
3	2.00	22.18	1.150
4	3.00	46.43	3.090
5	4.00	75.05	6.150
6	5.00	105.54	10.350
7	6.00	127.29	15.380
8	7.00	138.99	20.860
9	8.00	150.45	26.500
10	9.00	161.55	32.360
11	10.00	697.61	38.410
12	11.00	1666.99	44.700

FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<<

FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<<
=====

FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<<
=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<<
=====

WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.315 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.321
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<<
=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3C-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	7.430


```

3      2.00      0.02      15.170
4      3.00      2.70      23.230
5      4.00      4.69      31.610
6      5.00      6.04      40.320
7      6.00     10.72      49.360
8      7.00     17.77      58.730
9      8.00     424.53     68.440
10     9.00     1169.03    78.500
11    10.00     2113.61    88.500

```

```

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

```

```

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: Weir to
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN 3C-3
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

```

```

*****
FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

```

```

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.360 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.511
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

```

```

-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

3C-3

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE: Weir to
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN 3C-5
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

```

```

*****
FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

```

```

*****STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

```

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

```

```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====

WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.422 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.296; LOW LOSS FRACTION = 0.648
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

```

```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.296 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.217; LOW LOSS FRACTION = 0.518
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

5-2

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 20.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.203 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.637
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.236 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.352
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Table with 3 columns: DATA PAIR NUMBER, Qcenter (CFS), Qpass (CFS). Rows 1-5 showing flow data.

B Diversion Structure

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 2.070
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3B-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-10 showing basin data.

FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3B-4

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-23 showing basin data.

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.856 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.244; LOW LOSS FRACTION = 0.567
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN **GBD Side**
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS. **Weir**

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN. **GBD Upper Basin**
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 5.700
SPECIFIED DEAD STORAGE (AF) FILLED = 5.700
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.50	0.01	0.002
3	2.00	0.02	1.900
4	4.00	0.03	16.100
5	4.30	0.05	18.200
6	5.00	314.00	23.200
7	6.00	1306.00	30.300
8	7.00	2847.00	39.100
9	8.00	4942.00	47.800

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8
-----
>>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
=====
```

```
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

GBD Lower
West Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.99	2.90	0.900
3	1.99	11.38	2.900
4	3.99	19.63	10.300
5	5.99	25.19	20.700
6	7.99	29.71	31.700
7	9.99	33.62	43.500
8	10.99	35.49	49.700
9	11.99	313.49	56.400
10	12.99	894.27	63.100
11	13.99	1748.55	69.900
12	15.99	4306.91	84.100

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====
```

```
*****
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 4
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

GBD Lower
East Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.48	0.70	0.400
3	1.48	6.50	1.800
4	3.48	18.11	8.500
5	5.48	23.99	17.900
6	7.48	28.68	27.800
7	9.48	32.70	38.300
8	10.48	34.50	43.900
9	11.48	36.29	49.400
10	12.48	314.07	55.900
11	13.48	895.00	62.300
12	15.48	2882.95	74.700

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 427.51; DOWNSTREAM ELEVATION (FT) = 315.00
CHANNEL LENGTH (FT) = 9760.05 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00

```

*****
FLOW PROCESS FROM NODE 13305.00 TO NODE 133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 315.00; DOWNSTREAM ELEVATION(FT) = 212.00
CHANNEL LENGTH(FT) = 6877.24 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 132.00 TO NODE 133.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.647 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.224; LOW LOSS FRACTION = 0.408
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 11
-----
>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<
=====

```

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

| INPUT FILENAME: [EV2533CC.DAT]

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UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS 	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
--	--	----------------------------------	------------------------	--------------------------

10100.00	119.00	Subarea (UH) Added to Stream #1	0.0	14229.7
18.167				
119.00	12603.00	Convex Routing: Stream #1	14229.7	14153.0
18.083				
810.00	809.00	Subarea (UH) Added to Stream #2	0.0	109.0
16.167				
809.00	12603.00	Flow-Through Basin: Stream #2	109.0	53.3
16.333	13.45			
12603.00	12603.00	Stream #2 Added to: Stream #1	14153.0	14182.4
18.083				
12603.00	12603.00	Zero Out: Stream #2	53.3	0.0
12603.00	126.00	Convex Routing: Stream #1	14182.4	14162.3
18.250				
920.00	905.00	Subarea (UH) Added to Stream #2	0.0	239.3
16.250				
905.00	126.00	Flow-Through Basin: Stream #2	239.3	189.4
16.417	18.84			
126.00	126.00	Stream #2 Added to: Stream #1	14162.3	14229.4
18.167				
126.00	126.00	Zero Out: Stream #2	189.4	0.0
600.00	126.00	Subarea (UH) Added to Stream #2	0.0	57.3
16.333				
126.00	126.00	Stream #2 Added to: Stream #1	14229.4	14239.8
18.167				
126.00	126.00	Zero Out: Stream #2	57.3	0.0
126.00	12720.50	Convex Routing: Stream #1	14239.8	14230.3
18.333				
430.00	420.00	Subarea (UH) Added to Stream #2	0.0	157.5
16.333				
420.00	420.50	Flow-Through Basin: Stream #2	157.5	83.3
16.583	9.60			
420.50	427.00	Flow-Through Basin: Stream #2	83.3	73.6
17.750	9.90			
413.00	425.00	Subarea (UH) Added to Stream #3	0.0	75.6
16.250				

425.00	426.00	Flow-Through Basin: Stream #3	75.6	36.0
16.417	2.27			
426.00	427.00	Stream #3 Added to: Stream #2	73.6	103.5
17.500				
427.00	427.00	Zero Out: Stream #3	36.0	0.0
427.00	12720.50	Stream #2 Added to: Stream #1	14230.3	14323.4
18.333				
12720.50	12720.50	Zero Out: Stream #2	103.5	0.0
12720.50	12741.00	Convex Routing: Stream #1	14323.4	14289.0
18.417				
320.00	339.00	Subarea (UH) Added to Stream #2	0.0	304.7
16.417				
339.00	340.00	Flow-Through Basin: Stream #2	304.7	176.7
17.250	62.53			
339.00	372.00	Flowby Basin Model: Stream #2	176.7	27.8
17.250				
390.00	372.00	Subarea (UH) Added to Stream #4	0.0	68.6
16.417				
372.00	372.00	Stream #4 Added to: Stream #3	148.9	186.4
17.250				
372.00	372.00	Zero Out: Stream #4	68.6	0.0
372.00	373.00	Flow-Through Basin: Stream #3	186.4	30.0
20.500	39.05			
372.00	372.10	Flowby Basin Model: Stream #3	30.0	30.0
20.500				
373.00	373.00	Zero Out: Stream #5	0.0	0.0
373.00	340.00	Stream #3 Added to: Stream #2	27.8	51.7
18.417				
340.00	340.00	Zero Out: Stream #3	30.0	0.0
340.00	12741.00	Stream #2 Added to: Stream #1	14289.0	14340.8
18.417				
12741.00	12741.00	Zero Out: Stream #2	51.7	0.0
12741.00	127.00	Convex Routing: Stream #1	14340.8	14340.2
18.417				
12710.00	127.00	Subarea (UH) Added to Stream #2	0.0	262.4
16.500				

|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM


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+-----+
|
|                                     * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV2533CC.DAT ]
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+-----+
+-----+
|UPSTREAM  DOWNSTREAM|                                     |UPSTREAM  DOWNSTREAM|
TIME (2) TO | MAX. STORAGE|                                     |
| NODE #     NODE # | HYDROLOGIC/HYDRAULIC PROCESS |PEAK (CFS)  PEAK (CFS)|
PEAK (HR)   | MODELED (AF)| FOOTNOTES |
+-----+
+-----+
| 127.00    127.00| Stream #2 Added to:  Stream #1| 14340.2    14406.3|
18.417 | | |
| 127.00    127.00| Zero Out:           Stream #2| 262.4      0.0|
| | |
| 127.00    12902.00| Convex Routing:     Stream #1| 14406.3    14384.2|
18.500 | | |
| 50220.00   50347.00| Subarea (UH) Added to Stream #2| 0.0        438.9|
16.333 | | |
| 50347.00   50347.00| Flow-Through Basin: Stream #2| 438.9      79.3|
18.500 | 106.87| |
+-----+
+-----+
| 50347.00   12902.00| Convex Routing:     Stream #2| 79.3       79.3|
18.667 | | |
| 12902.00   12902.00| Stream #2 Added to: Stream #1| 14384.2    14463.4|
18.500 | | |
| 12902.00   12902.00| Zero Out:           Stream #2| 79.3       0.0|
| | |
| 12902.00   129.00| Convex Routing:     Stream #1| 14463.4    14450.2|
18.500 | | |
| 50400.00   129.00| Subarea (UH) Added to Stream #2| 0.0        180.9|
16.250 | | |
+-----+
+-----+
| 129.00     129.00| Stream #2 Added to: Stream #1| 14450.2    14469.9|
18.500 | | |
| 129.00     129.00| Zero Out:           Stream #2| 180.9      0.0|
| | |
| 210.00     221.00| Subarea (UH) Added to Stream #2| 0.0        110.3|
16.333 | | |
| 221.00     221.00| Flowby Basin Model: Stream #2| 110.3      19.1|
16.333 | | |
| 221.00     223.00| Flow-Through Basin: Stream #2| 19.1       15.3|
17.250 | 3.92| |
+-----+
+-----+
| 221.00     222.00| Flow-Through Basin: Stream #5| 91.1       22.0|
17.750 | 12.82| |
| 223.00     222.00| Stream #5 Added to: Stream #2| 15.3       37.2|
17.500 | | |
| 222.00     222.00| Zero Out:           Stream #5| 22.0       0.0|
| | |
| 222.00     129.00| Stream #2 Added to: Stream #1| 14469.9    14505.8|
18.500 | | |

```

	129.00	129.00	Zero Out:	Stream #2	37.2	0.0
+-----+						
	129.00	133.00	Convex Routing:	Stream #1	14505.8	14492.4
18.583						
	13010.00	132.00	Subarea (UH) Added to	Stream #2	0.0	1167.2
16.917						
	132.00	132.00	Flowby Basin Model:	Stream #2	1167.2	1022.9
16.917						
	132.00	132.00	Flow-Through Basin:	Stream #3	144.3	109.1
17.333		19.94				
	132.00	132.00	Split Hydrograph:	Stream #3	109.1	54.6
17.333						
+-----+						
	132.00	132.00	Flow-Through Basin:	Stream #3	54.6	12.7
18.667		4.07				
	132.00	132.00	Stream #3 Added to:	Stream #2	1022.9	1023.0
16.917						
	132.00	132.00	Zero Out:	Stream #3	12.7	0.0
	132.00	132.00	Flow-Through Basin:	Stream #4	54.6	10.8
18.750		4.30				
	132.00	132.00	Stream #4 Added to:	Stream #2	1023.0	1023.0
16.917						
+-----+						
	132.00	132.00	Zero Out:	Stream #4	10.8	0.0
	132.00	13305.00	Convex Routing:	Stream #2	1023.0	989.7
17.417						
	13305.00	133.00	Convex Routing:	Stream #2	989.7	981.7
17.667						
	132.00	133.00	Subarea (UH) Added to	Stream #3	0.0	517.5
16.667						
	133.00	133.00	Stream #3 Added to:	Stream #2	981.7	1347.1
17.583						
+-----+						
	133.00	133.00	Zero Out:	Stream #3	517.5	0.0
	133.00	133.00	Stream #2 Added to:	Stream #1	14492.4	15717.2
17.667						
	133.00	133.00	Zero Out:	Stream #2	1347.1	0.0
	133.00	133.00	View:	Stream #1		15717.2
17.667		13261.77	3			
+-----+						
Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL						
3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM						
+-----+						

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Ver. 20.0 Release Date: 06/01/2013 License ID 1264

Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - FREE DRAINING UH *
* ULTIMATE CONDITION - REGIONAL NODE 133T *
* 25-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV2533TC.DAT
TIME/DATE OF STUDY: 12:27 06/18/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.856 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.244; LOW LOSS FRACTION = 0.567
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.744; 30-MINUTE = 0.744; 1-HOUR = 0.744
3-HOUR = 0.959; 6-HOUR = 0.978; 24-HOUR = 0.986

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: GBD Side
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN Weir
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Table with 3 columns: DATA PAIR NUMBER, Qenter (CFS), Qpass (CFS). Rows: -, 1, 2.

Table with 3 columns: Node, Value 1, Value 2. Rows: 3, 4, 5.

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 5.700
SPECIFIED DEAD STORAGE (AF) FILLED = 5.700
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

GBD Upper Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows: 1-9.

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8

>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

GBD Lower West Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.99	2.90	0.900
3	1.99	11.38	2.900
4	3.99	19.63	10.300
5	5.99	25.19	20.700
6	7.99	29.71	31.700
7	9.99	33.62	43.500
8	10.99	35.49	49.700
9	11.99	313.49	56.400
10	12.99	894.27	63.100
11	13.99	1748.55	69.900
12	15.99	4306.91	84.100

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 4
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

GBD Lower
East Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.48	0.70	0.400
3	1.48	6.50	1.800
4	3.48	18.11	8.500
5	5.48	23.99	17.900
6	7.48	28.68	27.800
7	9.48	32.70	38.300
8	10.48	34.50	43.900
9	11.48	36.29	49.400
10	12.48	314.07	55.900

11	13.48	895.00	62.300
12	15.48	2882.95	74.700

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6

>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 132.00 TO NODE 13305.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 427.51; DOWNSTREAM ELEVATION (FT) = 315.00
CHANNEL LENGTH (FT) = 9760.05 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13305.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 315.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 6877.24 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 132.00 TO NODE 133.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<<

WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.647 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.224; LOW LOSS FRACTION = 0.408
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.744; 30-MINUTE = 0.744; 1-HOUR = 0.744
3-HOUR = 0.959; 6-HOUR = 0.978; 24-HOUR = 0.986

FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 11

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<<

Table with columns: TIME (2) TO, NODE #, MODELED (AF), HYDROLOGIC/HYDRAULIC PROCESS, FOOTNOTES, PEAK (CFS), PEAK (CFS). Rows include details for Subarea (UH) Added to Stream #2, Flowby Basin Model, Flow-Through Basin, Split Hydrograph, Convex Routing, and Stream #2/3/4 interactions.

|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT
INTERVAL |
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF
THE DESIGN STORM |

+-----+
-----+

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
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***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 133U *
* 25-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV2533UC.DAT
TIME/DATE OF STUDY: 09:08 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 2.119 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.433
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.42; 30-MINUTE = 0.78; 1-HOUR = 1.08
3-HOUR = 2.02; 6-HOUR = 3.00; 24-HOUR = 5.30
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.124 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.412
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing values for depth, outflow, and storage.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.222 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.488
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

4F-1

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.301 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.760
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```


>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 286.00; DOWNSTREAM ELEVATION(FT) = 258.00
CHANNEL LENGTH(FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00

=====

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

=====

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.242 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.146; LOW LOSS FRACTION = 0.362
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 16.600
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

=====

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.168 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.138; LOW LOSS FRACTION = 0.368
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

```

*****
FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
-----
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 5.95 0.280
3 2.00 22.18 1.150
4 3.00 46.43 3.090
5 4.00 75.05 6.150
6 5.00 105.54 10.350
7 6.00 127.29 15.380
8 7.00 138.99 20.860
9 8.00 150.45 26.500
10 9.00 161.55 32.360
11 10.00 697.61 38.410
12 11.00 1666.99 44.700
-----
*****
FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
-----
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
-----
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
-----
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6
-----

```

3D-3

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
-----
WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.315 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.321
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
-----
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 0.01 7.430

```

3C-1

```

3      2.00      0.02      15.170
4      3.00      2.70      23.230
5      4.00      4.69      31.610
6      5.00      6.04      40.320
7      6.00      10.72     49.360
8      7.00      17.77     58.730
9      8.00      424.53    68.440
10     9.00      1169.03   78.500
11    10.00     2113.61   88.500

```

```

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

```

```

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: Weir to
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN 3C-3
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

```

```

*****
FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

```

```

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.360 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.511
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

```

```

-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

3C-3

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE: Weir to
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN 3C-5
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

```

```

*****
FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

```

```

*****STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

```

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

```

```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====

WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.422 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.296; LOW LOSS FRACTION = 0.648
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

```

```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.296 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.217; LOW LOSS FRACTION = 0.518
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

5-2

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 20.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.203 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.637
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.236 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.352
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Table with 3 columns: DATA PAIR NUMBER, Qcenter (CFS), Qpass (CFS). Includes handwritten blue text 'B Diversion Structure'.

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-10.

FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-4

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-23.

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 11

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<<

+-----+
| | | | | * AES FLOODSCx PROGRAM RESULTS SUMMARY *
| | | | |
| INPUT FILENAME: [EV2533UC.DAT]
Page: 1 of |

+-----+
| UPSTREAM DOWNSTREAM | | UPSTREAM DOWNSTREAM |
TIME (2) TO | MAX. STORAGE | | | |
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS) |
PEAK (HR) | MODELED (AF) | FOOTNOTES |

+-----+
| 10100.00 119.00 | Subarea (UH) Added to Stream #1 | 0.0 14590.2 |
18.167 | | | | |
| 119.00 12603.00 | Convex Routing: Stream #1 | 14590.2 14504.2 |
18.083 | | | | |
| 810.00 809.00 | Subarea (UH) Added to Stream #2 | 0.0 116.6 |
16.167 | | | | |
| 809.00 12603.00 | Flow-Through Basin: Stream #2 | 116.6 57.1 |
16.333 | 13.56 | | | |
| 12603.00 12603.00 | Stream #2 Added to: Stream #1 | 14504.2 14533.5 |
18.083 | | | | |

+-----+
12603.00 12603.00	Zero Out: Stream #2	57.1 0.0	
12603.00 126.00	Convex Routing: Stream #1	14533.5 14512.3	
18.250			
920.00 905.00	Subarea (UH) Added to Stream #2	0.0 256.7	
16.250			
905.00 126.00	Flow-Through Basin: Stream #2	256.7 201.5	
16.417	19.04		
126.00 126.00	Stream #2 Added to: Stream #1	14512.3 14577.9	
18.167 | | | | |

+-----+
126.00 126.00	Zero Out: Stream #2	201.5 0.0	
600.00 126.00	Subarea (UH) Added to Stream #2	0.0 62.1	
16.333			
126.00 126.00	Stream #2 Added to: Stream #1	14577.9 14588.1	
18.167			
126.00 126.00	Zero Out: Stream #2	62.1 0.0	
126.00 12720.50	Convex Routing: Stream #1	14588.1 14578.6	
18.333 | | | | |

+-----+
| 430.00 420.00 | Subarea (UH) Added to Stream #2 | 0.0 167.2 |
16.333 | | | | |
| 420.00 420.50 | Flow-Through Basin: Stream #2 | 167.2 86.4 |
16.583 | 9.89 | | | |
| 420.50 427.00 | Flow-Through Basin: Stream #2 | 86.4 75.9 |
17.667 | 10.02 | | | |
| 413.00 425.00 | Subarea (UH) Added to Stream #3 | 0.0 80.5 |
16.250 | | | | |

	425.00	426.00		Flow-Through Basin:	Stream #3	80.5	37.4
16.417		2.38					
+-----+							
	426.00	427.00		Stream #3 Added to:	Stream #2	75.9	106.9
17.417							
	427.00	427.00		Zero Out:	Stream #3	37.4	0.0
	427.00	12720.50		Stream #2 Added to:	Stream #1	14578.6	14673.3
18.333							
	12720.50	12720.50		Zero Out:	Stream #2	106.9	0.0
	12720.50	12741.00		Convex Routing:	Stream #1	14673.3	14635.2
18.417							
+-----+							
	320.00	339.00		Subarea (UH) Added to	Stream #2	0.0	322.0
16.417							
	339.00	340.00		Flow-Through Basin:	Stream #2	322.0	183.0
17.250		62.69					
	339.00	372.00		Flowby Basin Model:	Stream #2	183.0	28.0
17.250							
	390.00	372.00		Subarea (UH) Added to	Stream #4	0.0	73.0
16.417							
	372.00	372.00		Stream #4 Added to:	Stream #3	155.0	193.7
17.167							
+-----+							
	372.00	372.00		Zero Out:	Stream #4	73.0	0.0
	372.00	373.00		Flow-Through Basin:	Stream #3	193.7	31.4
20.333		39.76					
	372.00	372.10		Flowby Basin Model:	Stream #3	31.4	31.4
20.333							
	373.00	373.00		Zero Out:	Stream #5	0.0	0.0
	373.00	340.00		Stream #3 Added to:	Stream #2	28.0	52.6
18.417							
+-----+							
	340.00	340.00		Zero Out:	Stream #3	31.4	0.0
	340.00	12741.00		Stream #2 Added to:	Stream #1	14635.2	14687.8
18.417							
	12741.00	12741.00		Zero Out:	Stream #2	52.6	0.0
	12741.00	127.00		Convex Routing:	Stream #1	14687.8	14687.6
18.417							
	12710.00	127.00		Subarea (UH) Added to	Stream #2	0.0	280.6
16.500							

[Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL

| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM


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+-----+
|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV2533UC.DAT ]
Page: 2 of
+-----+
|UPSTREAM DOWNSTREAM| UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE|
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR) | MODELED (AF)| FOOTNOTES |
+-----+
| 127.00 127.00| Stream #2 Added to: Stream #1| 14687.6 14752.7|
18.417 | |
| 127.00 127.00| Zero Out: Stream #2| 280.6 0.0|
|
| 127.00 12902.00| Convex Routing: Stream #1| 14752.7 14727.7|
18.500 | |
| 50220.00 50347.00| Subarea (UH) Added to Stream #2| 0.0 468.6|
16.333 | |
| 50347.00 50347.00| Flow-Through Basin: Stream #2| 468.6 79.9|
18.500 | 107.83|
+-----+
| 50347.00 12902.00| Convex Routing: Stream #2| 79.9 79.9|
18.667 | |
| 12902.00 12902.00| Stream #2 Added to: Stream #1| 14727.7 14807.5|
18.500 | |
| 12902.00 12902.00| Zero Out: Stream #2| 79.9 0.0|
|
| 12902.00 129.00| Convex Routing: Stream #1| 14807.5 14795.1|
18.500 | |
| 50400.00 129.00| Subarea (UH) Added to Stream #2| 0.0 194.9|
16.250 | |
+-----+
| 129.00 129.00| Stream #2 Added to: Stream #1| 14795.1 14814.7|
18.500 | |
| 129.00 129.00| Zero Out: Stream #2| 194.9 0.0|
|
| 210.00 221.00| Subarea (UH) Added to Stream #2| 0.0 117.0|
16.333 | |
| 221.00 221.00| Flowby Basin Model: Stream #2| 117.0 19.6|
16.333 | |
| 221.00 223.00| Flow-Through Basin: Stream #2| 19.6 15.4|
17.250 | 3.93|
+-----+
| 221.00 222.00| Flow-Through Basin: Stream #5| 97.4 22.4|
17.667 | 13.09|
| 223.00 222.00| Stream #5 Added to: Stream #2| 15.4 37.7|
17.417 | |
| 222.00 222.00| Zero Out: Stream #5| 22.4 0.0|
|
| 222.00 129.00| Stream #2 Added to: Stream #1| 14814.7 14851.0|
18.500 | |

```

```

| 129.00 129.00| Zero Out: Stream #2| 37.7 0.0|
|
+-----+
| 129.00 133.00| Convex Routing: Stream #1| 14851.0 14835.8|
18.583 | |
| 133.00 133.00| View: Stream #1| 14835.8|
18.583 | 12412.87| 3 |
+-----+
|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT
INTERVAL
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF
THE DESIGN STORM
+-----+

```

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 134C *
* 25-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV2534CC.DAT
TIME/DATE OF STUDY: 08:52 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 2.119 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.433
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.42; 30-MINUTE = 0.78; 1-HOUR = 1.08
3-HOUR = 2.02; 6-HOUR = 3.00; 24-HOUR = 5.30
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.124 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.412
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	1.520
3	2.00	1.30	3.150
4	3.00	1.60	4.900
5	4.00	1.80	6.790
6	5.00	2.10	8.810
7	6.00	2.30	10.970
8	7.00	47.90	13.270
9	8.00	131.60	15.720
10	9.00	241.70	18.320
11	10.00	372.80	21.060

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.222 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.488
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

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INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.301 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.760
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 286.00; DOWNSTREAM ELEVATION(FT) = 258.00
CHANNEL LENGTH(FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00

=====

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

=====

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.242 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.146; LOW LOSS FRACTION = 0.362
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 16.600
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

=====

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.168 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.138; LOW LOSS FRACTION = 0.368
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

```

*****
FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
-----
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 5.95 0.280
3 2.00 22.18 1.150
4 3.00 46.43 3.090
5 4.00 75.05 6.150
6 5.00 105.54 10.350
7 6.00 127.29 15.380
8 7.00 138.99 20.860
9 8.00 150.45 26.500
10 9.00 161.55 32.360
11 10.00 697.61 38.410
12 11.00 1666.99 44.700
-----
*****
FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
-----
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
-----
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
-----
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6
-----

```

3D-3

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
-----
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
-----
WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.315 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.321
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
-----
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 0.01 7.430

```

3C-1

3	2.00	0.02	15.170
4	3.00	2.70	23.230
5	4.00	4.69	31.610
6	5.00	6.04	40.320
7	6.00	10.72	49.360
8	7.00	17.77	58.730
9	8.00	424.53	68.440
10	9.00	1169.03	78.500
11	10.00	2113.61	88.500

FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: **Weir to**
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN **3C-3**
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.360 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.511
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN. **3C-3**
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE: **Weir to**
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN **3C-5**
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO**

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

```

```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====

WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.422 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.296; LOW LOSS FRACTION = 0.648
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

```

```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.296 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.217; LOW LOSS FRACTION = 0.518
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

5-2

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 20.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.203 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.637
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.236 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.352
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Table with 3 columns: DATA PAIR NUMBER, Qcenter (CFS), Qpass (CFS). Rows 1-5 showing flow data.

B Diversion Structure

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-10 showing basin data.

FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-4

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-23 showing basin data.

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.856 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.244; LOW LOSS FRACTION = 0.567
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

GBD Side
Weir

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 5.700
SPECIFIED DEAD STORAGE (AF) FILLED = 5.700
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

GBD Upper
Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.50	0.01	0.002
3	2.00	0.02	1.900
4	4.00	0.03	16.100
5	4.30	0.05	18.200
6	5.00	314.00	23.200
7	6.00	1306.00	30.300
8	7.00	2847.00	39.100
9	8.00	4942.00	47.800

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8
-----
>>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
=====
```

```
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

GBD Lower
West Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.99	2.90	0.900
3	1.99	11.38	2.900
4	3.99	19.63	10.300
5	5.99	25.19	20.700
6	7.99	29.71	31.700
7	9.99	33.62	43.500
8	10.99	35.49	49.700
9	11.99	313.49	56.400
10	12.99	894.27	63.100
11	13.99	1748.55	69.900
12	15.99	4306.91	84.100

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====
```

```
*****
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 4
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

GBD Lower
East Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.48	0.70	0.400
3	1.48	6.50	1.800
4	3.48	18.11	8.500
5	5.48	23.99	17.900
6	7.48	28.68	27.800
7	9.48	32.70	38.300
8	10.48	34.50	43.900
9	11.48	36.29	49.400
10	12.48	314.07	55.900
11	13.48	895.00	62.300
12	15.48	2882.95	74.700

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 427.51; DOWNSTREAM ELEVATION (FT) = 315.00
CHANNEL LENGTH (FT) = 9760.05 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00

```

*****
FLOW PROCESS FROM NODE 13305.00 TO NODE 133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 315.00; DOWNSTREAM ELEVATION(FT) = 212.00
CHANNEL LENGTH(FT) = 6877.24 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 133.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.647 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.224; LOW LOSS FRACTION = 0.408
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 212.00; DOWNSTREAM ELEVATION(FT) = 173.00
CHANNEL LENGTH(FT) = 6461.31 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1691.600 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.323 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.481
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====
*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 13500.00 TO NODE 134.00 IS CODE = 1

```

=====
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====

WATERSHED AREA = 3859.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 1.350 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.284; LOW LOSS FRACTION = 0.463
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7

=====
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6

=====
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 11

=====
>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<
=====

```
-----+-----+-----+
|                                     * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV2534CC.DAT ]
Page: 1 of 1
-----+-----+-----+
|UPSTREAM DOWNSTREAM|                               |UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE|                               |
| NODE #     NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS)  PEAK (CFS) |
PEAK (HR)   | MODELED (AF) | FOOTNOTES |
-----+-----+-----+
| 10100.00   119.00| Subarea (UH) Added to Stream #1|      0.0    13948.3|
18.167 |           |                               |
| 119.00     12603.00| Convex Routing:      Stream #1| 13948.3    13875.3|
18.083 |           |                               |
| 810.00     809.00| Subarea (UH) Added to Stream #2|      0.0    103.6|
16.167 |           |                               |
| 809.00     12603.00| Flow-Through Basin: Stream #2| 103.6     50.6|
16.333 | 13.37|                               |
| 12603.00   12603.00| Stream #2 Added to:  Stream #1| 13875.3    13904.8|
18.083 |           |                               |
-----+-----+-----+
| 12603.00   12603.00| Zero Out:           Stream #2| 50.6     0.0|
|           |                               |
| 12603.00   126.00| Convex Routing:     Stream #1| 13904.8    13888.1|
18.250 |           |                               |
| 920.00     905.00| Subarea (UH) Added to Stream #2|      0.0    227.4|
16.250 |           |                               |
| 905.00     126.00| Flow-Through Basin: Stream #2| 227.4    180.8|
16.417 | 18.71|                               |
| 126.00     126.00| Stream #2 Added to:  Stream #1| 13888.1    13954.5|
18.250 |           |                               |
-----+-----+-----+
| 126.00     126.00| Zero Out:           Stream #2| 180.8     0.0|
|           |                               |
| 600.00     126.00| Subarea (UH) Added to Stream #2|      0.0    54.0|
16.333 |           |                               |
| 126.00     126.00| Stream #2 Added to:  Stream #1| 13954.5    13964.5|
18.167 |           |                               |
| 126.00     126.00| Zero Out:           Stream #2| 54.0     0.0|
|           |                               |
| 126.00    12720.50| Convex Routing:     Stream #1| 13964.5    13957.0|
18.333 |           |                               |
-----+-----+-----+
| 430.00     420.00| Subarea (UH) Added to Stream #2|      0.0    150.6|
16.333 |           |                               |
| 420.00     420.50| Flow-Through Basin: Stream #2| 150.6     81.1|
16.583 | 9.40|                               |
| 420.50     427.00| Flow-Through Basin: Stream #2| 81.1     71.9|
17.750 | 9.82|                               |
| 413.00     425.00| Subarea (UH) Added to Stream #3|      0.0    72.1|
16.250 |           |                               |
```

	425.00	426.00	Flow-Through Basin:	Stream #3	72.1	34.9
16.417		2.18				
+-----+						
	426.00	427.00	Stream #3 Added to:	Stream #2	71.9	101.0
17.500						
	427.00	427.00	Zero Out:	Stream #3	34.9	0.0
	427.00	12720.50	Stream #2 Added to:	Stream #1	13957.0	14049.0
18.333						
	12720.50	12720.50	Zero Out:	Stream #2	101.0	0.0
	12720.50	12741.00	Convex Routing:	Stream #1	14049.0	14018.4
18.417						
+-----+						
	320.00	339.00	Subarea (UH) Added to	Stream #2	0.0	292.3
16.417						
	339.00	340.00	Flow-Through Basin:	Stream #2	292.3	171.6
17.250		62.41				
	339.00	372.00	Flowby Basin Model:	Stream #2	171.6	27.6
17.250						
	390.00	372.00	Subarea (UH) Added to	Stream #4	0.0	65.4
16.417						
	372.00	372.00	Stream #4 Added to:	Stream #3	144.0	181.2
17.250						
+-----+						
	372.00	372.00	Zero Out:	Stream #4	65.4	0.0
	372.00	373.00	Flow-Through Basin:	Stream #3	181.2	29.1
20.667		38.45				
	372.00	372.10	Flowby Basin Model:	Stream #3	29.1	29.1
20.667						
	373.00	373.00	Zero Out:	Stream #5	0.0	0.0
	373.00	340.00	Stream #3 Added to:	Stream #2	27.6	51.0
18.500						
+-----+						
	340.00	340.00	Zero Out:	Stream #3	29.1	0.0
	340.00	12741.00	Stream #2 Added to:	Stream #1	14018.4	14069.4
18.417						
	12741.00	12741.00	Zero Out:	Stream #2	51.0	0.0
	12741.00	127.00	Convex Routing:	Stream #1	14069.4	14068.1
18.417						
	12710.00	127.00	Subarea (UH) Added to	Stream #2	0.0	249.3
16.500						
+-----+						
+-----+						
Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT						
INTERVAL						
3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF						
THE DESIGN STORM						
+-----+						
+-----+						

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV2534CC.DAT]

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UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS FOOTNOTES	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
--	--	---	------------------------	--------------------------

127.00	127.00	Stream #2 Added to:	Stream #1	14068.1	14135.0
18.417					
127.00	127.00	Zero Out:	Stream #2	249.3	0.0
127.00	12902.00	Convex Routing:	Stream #1	14135.0	14115.2
18.500					
50220.00	50347.00	Subarea (UH) Added to	Stream #2	0.0	418.6
16.333					
50347.00	50347.00	Flow-Through Basin:	Stream #2	418.6	78.8
18.500	106.16				
50347.00	12902.00	Convex Routing:	Stream #2	78.8	78.8
18.667					
12902.00	12902.00	Stream #2 Added to:	Stream #1	14115.2	14193.9
18.500					
12902.00	12902.00	Zero Out:	Stream #2	78.8	0.0
12902.00	129.00	Convex Routing:	Stream #1	14193.9	14178.8
18.500					
50400.00	129.00	Subarea (UH) Added to	Stream #2	0.0	171.0
16.250					
129.00	129.00	Stream #2 Added to:	Stream #1	14178.8	14198.4
18.500					
129.00	129.00	Zero Out:	Stream #2	171.0	0.0
210.00	221.00	Subarea (UH) Added to	Stream #2	0.0	105.5
16.333					
221.00	221.00	Flowby Basin Model:	Stream #2	105.5	18.8
16.333					
221.00	223.00	Flow-Through Basin:	Stream #2	18.8	15.2
17.250	3.91				
221.00	222.00	Flow-Through Basin:	Stream #5	86.7	21.7
17.833	12.63				
223.00	222.00	Stream #5 Added to:	Stream #2	15.2	36.8
17.500					
222.00	222.00	Zero Out:	Stream #5	21.7	0.0
222.00	129.00	Stream #2 Added to:	Stream #1	14198.4	14234.0
18.500					

129.00	129.00	Zero Out:	Stream #2	36.8	0.0
129.00	133.00	Convex Routing:	Stream #1	14234.0	14222.4
18.583					
13010.00	132.00	Subarea (UH) Added to	Stream #2	0.0	1124.5
16.917					
132.00	132.00	Flowby Basin Model:	Stream #2	1124.5	988.3
16.917					
132.00	132.00	Flow-Through Basin:	Stream #3	136.2	101.2
17.417	19.82				
132.00	132.00	Split Hydrograph:	Stream #3	101.2	50.6
17.417					
132.00	132.00	Flow-Through Basin:	Stream #3	50.6	12.4
18.750	3.81				
132.00	132.00	Stream #3 Added to:	Stream #2	988.3	988.4
16.917					
132.00	132.00	Zero Out:	Stream #3	12.4	0.0
132.00	132.00	Flow-Through Basin:	Stream #4	50.6	10.4
18.750	4.04				
132.00	132.00	Stream #4 Added to:	Stream #2	988.4	988.4
16.917					
132.00	132.00	Zero Out:	Stream #4	10.4	0.0
132.00	13305.00	Convex Routing:	Stream #2	988.4	957.1
17.417					
13305.00	133.00	Convex Routing:	Stream #2	957.1	949.4
17.667					
132.00	133.00	Subarea (UH) Added to	Stream #3	0.0	499.6
16.667					
133.00	133.00	Stream #3 Added to:	Stream #2	949.4	1311.0
17.583					
133.00	133.00	Zero Out:	Stream #3	499.6	0.0
133.00	133.00	Stream #2 Added to:	Stream #1	14222.4	15457.0
17.667					
133.00	133.00	Zero Out:	Stream #2	1311.0	0.0
133.00	134.00	Convex Routing:	Stream #1	15457.0	15445.7
17.833					
133.00	134.00	Subarea (UH) Added to	Stream #2	0.0	600.8
16.417					

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV2534CC.DAT ]
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-----+-----+
|UPSTREAM DOWNSTREAM| | UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE| |
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR) | MODELED (AF)| FOOTNOTES |
-----+-----+
| 134.00 134.00| Stream #2 Added to: Stream #1| 15445.7 15678.1|
17.833 | | |
| 134.00 134.00| Zero Out: Stream #2| 600.8 0.0|
| | |
| 13500.00 134.00| Subarea (UH) Added to Stream #2| 0.0 892.5|
17.417 | | |
| 134.00 134.00| Stream #2 Added to: Stream #1| 15678.1 16514.2|
17.750 | | |
| 134.00 134.00| Zero Out: Stream #2| 892.5 0.0|
| | |
-----+-----+
| 134.00 134.00| View: Stream #1| 16514.2|
17.750 | 14060.19| 3 |
-----+-----+
|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT
INTERVAL |
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF
THE DESIGN STORM |
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END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Ver. 20.0 Release Date: 06/01/2013 License ID 1264

Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 134U *
* 25-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV2534UC.DAT
TIME/DATE OF STUDY: 08:53 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 2.119 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.433
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.42; 30-MINUTE = 0.78; 1-HOUR = 1.08
3-HOUR = 2.02; 6-HOUR = 3.00; 24-HOUR = 5.30
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.124 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.412
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing values for depth, outflow, and storage.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.222 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.488
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

4F-1

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.301 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.760
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 286.00; DOWNSTREAM ELEVATION (FT) = 258.00
CHANNEL LENGTH (FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.242 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.146; LOW LOSS FRACTION = 0.362
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 16.600
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.168 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.138; LOW LOSS FRACTION = 0.368
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

```

*****
FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
-----
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 5.95 0.280
3 2.00 22.18 1.150
4 3.00 46.43 3.090
5 4.00 75.05 6.150
6 5.00 105.54 10.350
7 6.00 127.29 15.380
8 7.00 138.99 20.860
9 8.00 150.45 26.500
10 9.00 161.55 32.360
11 10.00 697.61 38.410
12 11.00 1666.99 44.700
-----
*****
FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
-----
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
-----
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
-----
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6
-----

```

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```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
-----
WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.315 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.321
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
-----
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 0.01 7.430

```

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```

3      2.00      0.02      15.170
4      3.00      2.70      23.230
5      4.00      4.69      31.610
6      5.00      6.04      40.320
7      6.00      10.72     49.360
8      7.00      17.77     58.730
9      8.00      424.53    68.440
10     9.00      1169.03   78.500
11    10.00     2113.61   88.500

```

```

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

```

```

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: Weir to
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN 3C-3
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

```

```

*****
FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

```

```

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.360 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.511
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

```

```

-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

3C-3

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE: Weir to
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN 3C-5
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

```

```

*****
FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

```

```

*****STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

```

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

```

```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.422 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.296; LOW LOSS FRACTION = 0.648
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

```

```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.296 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.217; LOW LOSS FRACTION = 0.518
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

5-2

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 20.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.203 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.637
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.236 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.352
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Table with 3 columns: DATA PAIR NUMBER, Qcenter (CFS), Qpass (CFS). Rows 1-5 showing flow data.

B Diversion Structure

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-10 showing basin data.

FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-4

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-23 showing basin data.

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.856 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.244; LOW LOSS FRACTION = 0.567
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: **GBD Side Weir**
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3 THROUGH A FLOW-THROUGH DETENTION BASIN. **GBD Upper Basin**
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 5.700
SPECIFIED DEAD STORAGE (AF) FILLED = 5.700
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.50	0.01	0.002
3	2.00	0.02	1.900
4	4.00	0.03	16.100
5	4.30	0.05	18.200
6	5.00	314.00	23.200
7	6.00	1306.00	30.300
8	7.00	2847.00	39.100
9	8.00	4942.00	47.800

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8
-----
>>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
=====
```

```
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

GBD Lower
West Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.99	2.90	0.900
3	1.99	11.38	2.900
4	3.99	19.63	10.300
5	5.99	25.19	20.700
6	7.99	29.71	31.700
7	9.99	33.62	43.500
8	10.99	35.49	49.700
9	11.99	313.49	56.400
10	12.99	894.27	63.100
11	13.99	1748.55	69.900
12	15.99	4306.91	84.100

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====
```

```
*****
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 4
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
=====
```

GBD Lower
East Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.48	0.70	0.400
3	1.48	6.50	1.800
4	3.48	18.11	8.500
5	5.48	23.99	17.900
6	7.48	28.68	27.800
7	9.48	32.70	38.300
8	10.48	34.50	43.900
9	11.48	36.29	49.400
10	12.48	314.07	55.900
11	13.48	895.00	62.300
12	15.48	2882.95	74.700

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 427.51; DOWNSTREAM ELEVATION (FT) = 315.00
CHANNEL LENGTH (FT) = 9760.05 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00

```

*****
FLOW PROCESS FROM NODE 13305.00 TO NODE 133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 315.00; DOWNSTREAM ELEVATION(FT) = 212.00
CHANNEL LENGTH(FT) = 6877.24 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 133.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.647 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.224; LOW LOSS FRACTION = 0.408
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 212.00; DOWNSTREAM ELEVATION(FT) = 173.00
CHANNEL LENGTH(FT) = 6461.31 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1691.600 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.323 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.481
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====
*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 11

```

=====
>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<
=====

```
-----+-----+-----+
|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV2534UC.DAT ]
Page: 1 of 1
-----+-----+-----+
|UPSTREAM DOWNSTREAM|                               |UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE|                               |
| NODE #     NODE # | HYDROLOGIC/HYDRAULIC PROCESS |PEAK (CFS) PEAK (CFS)|
PEAK (HR)   | MODELED (AF)| FOOTNOTES |
-----+-----+-----+
| 10100.00   119.00| Subarea (UH) Added to Stream #1|      0.0   14142.9|
18.167 |           |                               |
| 119.00     12603.00| Convex Routing:      Stream #1| 14142.9   14068.3|
18.083 |           |                               |
| 810.00     809.00| Subarea (UH) Added to Stream #2|      0.0    107.1|
16.167 |           |                               |
| 809.00     12603.00| Flow-Through Basin: Stream #2|    107.1    52.4|
16.333 |      13.42|                               |
| 12603.00   12603.00| Stream #2 Added to: Stream #1| 14068.3   14097.8|
18.083 |           |                               |
-----+-----+-----+
| 12603.00   12603.00| Zero Out:           Stream #2|     52.4     0.0|
|           |           |                               |
| 12603.00   126.00| Convex Routing:      Stream #1| 14097.8   14078.1|
18.250 |           |                               |
| 920.00     905.00| Subarea (UH) Added to Stream #2|      0.0    235.0|
16.250 |           |                               |
| 905.00     126.00| Flow-Through Basin: Stream #2|    235.0    186.4|
16.417 |      18.79|                               |
| 126.00     126.00| Stream #2 Added to: Stream #1| 14078.1   14145.3|
18.167 |           |                               |
-----+-----+-----+
| 126.00     126.00| Zero Out:           Stream #2|    186.4     0.0|
|           |           |                               |
| 600.00     126.00| Subarea (UH) Added to Stream #2|      0.0    56.1|
16.333 |           |                               |
| 126.00     126.00| Stream #2 Added to: Stream #1| 14145.3   14155.8|
18.167 |           |                               |
| 126.00     126.00| Zero Out:           Stream #2|     56.1     0.0|
|           |           |                               |
| 126.00    12720.50| Convex Routing:      Stream #1| 14155.8   14146.5|
18.333 |           |                               |
-----+-----+-----+
| 430.00     420.00| Subarea (UH) Added to Stream #2|      0.0    155.1|
16.333 |           |                               |
| 420.00     420.50| Flow-Through Basin: Stream #2|    155.1     82.6|
16.583 |      9.54|                               |
| 420.50     427.00| Flow-Through Basin: Stream #2|     82.6     73.1|
17.750 |      9.88|                               |
| 413.00     425.00| Subarea (UH) Added to Stream #3|      0.0     74.4|
16.250 |           |                               |
```

	425.00	426.00	Flow-Through Basin:	Stream #3	74.4	35.6
16.417		2.24				
+-----+						
	426.00	427.00	Stream #3 Added to:	Stream #2	73.1	102.7
17.500						
	427.00	427.00	Zero Out:	Stream #3	35.6	0.0
	427.00	12720.50	Stream #2 Added to:	Stream #1	14146.5	14239.2
18.333						
	12720.50	12720.50	Zero Out:	Stream #2	102.7	0.0
	12720.50	12741.00	Convex Routing:	Stream #1	14239.2	14206.0
18.417						
+-----+						
	320.00	339.00	Subarea (UH) Added to	Stream #2	0.0	300.4
16.417						
	339.00	340.00	Flow-Through Basin:	Stream #2	300.4	175.2
17.250		62.49				
	339.00	372.00	Flowby Basin Model:	Stream #2	175.2	27.7
17.250						
	390.00	372.00	Subarea (UH) Added to	Stream #4	0.0	67.5
16.417						
	372.00	372.00	Stream #4 Added to:	Stream #3	147.5	184.9
17.250						
+-----+						
	372.00	372.00	Zero Out:	Stream #4	67.5	0.0
	372.00	373.00	Flow-Through Basin:	Stream #3	184.9	29.7
20.583		38.87				
	372.00	372.10	Flowby Basin Model:	Stream #3	29.7	29.7
20.583						
	373.00	373.00	Zero Out:	Stream #5	0.0	0.0
	373.00	340.00	Stream #3 Added to:	Stream #2	27.7	51.5
18.417						
+-----+						
	340.00	340.00	Zero Out:	Stream #3	29.7	0.0
	340.00	12741.00	Stream #2 Added to:	Stream #1	14206.0	14257.5
18.417						
	12741.00	12741.00	Zero Out:	Stream #2	51.5	0.0
	12741.00	127.00	Convex Routing:	Stream #1	14257.5	14256.8
18.417						
	12710.00	127.00	Subarea (UH) Added to	Stream #2	0.0	257.9
16.500						
+-----+						
+-----+						
Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT						
INTERVAL						
3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF						
THE DESIGN STORM						
+-----+						
+-----+						

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV2534UC.DAT]

Page: 2 of

UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS FOOTNOTES	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)	
127.00	127.00	Stream #2 Added to:	Stream #1	14256.8	14323.1
18.417					
127.00	127.00	Zero Out:	Stream #2	257.9	0.0
127.00	12902.00	Convex Routing:	Stream #1	14323.1	14301.8
18.500					
50220.00	50347.00	Subarea (UH) Added to	Stream #2	0.0	431.7
16.333					
50347.00	50347.00	Flow-Through Basin:	Stream #2	431.7	79.1
18.500	106.65				
50347.00	12902.00	Convex Routing:	Stream #2	79.1	79.1
18.667					
12902.00	12902.00	Stream #2 Added to:	Stream #1	14301.8	14380.9
18.500					
12902.00	12902.00	Zero Out:	Stream #2	79.1	0.0
12902.00	129.00	Convex Routing:	Stream #1	14380.9	14367.2
18.500					
50400.00	129.00	Subarea (UH) Added to	Stream #2	0.0	177.4
16.250					
129.00	129.00	Stream #2 Added to:	Stream #1	14367.2	14386.9
18.500					
129.00	129.00	Zero Out:	Stream #2	177.4	0.0
210.00	221.00	Subarea (UH) Added to	Stream #2	0.0	108.6
16.333					
221.00	221.00	Flowby Basin Model:	Stream #2	108.6	19.0
16.333					
221.00	223.00	Flow-Through Basin:	Stream #2	19.0	15.3
17.250	3.92				
221.00	222.00	Flow-Through Basin:	Stream #5	89.6	21.9
17.750	12.76				
223.00	222.00	Stream #5 Added to:	Stream #2	15.3	37.1
17.500					
222.00	222.00	Zero Out:	Stream #5	21.9	0.0
222.00	129.00	Stream #2 Added to:	Stream #1	14386.9	14422.7
18.500					

129.00	129.00	Zero Out:	Stream #2	37.1	0.0
129.00	133.00	Convex Routing:	Stream #1	14422.7	14409.8
18.583					
13010.00	132.00	Subarea (UH) Added to	Stream #2	0.0	1153.0
16.917					
132.00	132.00	Flowby Basin Model:	Stream #2	1153.0	1011.4
16.917					
132.00	132.00	Flow-Through Basin:	Stream #3	141.6	106.6
17.333	19.90				
132.00	132.00	Split Hydrograph:	Stream #3	106.6	53.3
17.333					
132.00	132.00	Flow-Through Basin:	Stream #3	53.3	12.6
18.667	3.99				
132.00	132.00	Stream #3 Added to:	Stream #2	1011.4	1011.5
16.917					
132.00	132.00	Zero Out:	Stream #3	12.6	0.0
132.00	132.00	Flow-Through Basin:	Stream #4	53.3	10.7
18.750	4.21				
132.00	132.00	Stream #4 Added to:	Stream #2	1011.5	1011.5
16.917					
132.00	132.00	Zero Out:	Stream #4	10.7	0.0
132.00	13305.00	Convex Routing:	Stream #2	1011.5	979.0
17.417					
13305.00	133.00	Convex Routing:	Stream #2	979.0	971.0
17.667					
132.00	133.00	Subarea (UH) Added to	Stream #3	0.0	511.6
16.667					
133.00	133.00	Stream #3 Added to:	Stream #2	971.0	1335.3
17.583					
133.00	133.00	Zero Out:	Stream #3	511.6	0.0
133.00	133.00	Stream #2 Added to:	Stream #1	14409.8	15638.7
17.667					
133.00	133.00	Zero Out:	Stream #2	1335.3	0.0
133.00	134.00	Convex Routing:	Stream #1	15638.7	15626.7
17.833					
133.00	134.00	Subarea (UH) Added to	Stream #2	0.0	620.0
16.417					

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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-----+
|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV2534UC.DAT ]
Page: 3 of |
-----+-----+
|UPSTREAM DOWNSTREAM| | UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE| |
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR) | MODELED (AF)| FOOTNOTES |
-----+-----+
| 134.00 134.00| Stream #2 Added to: Stream #1| 15626.7 15856.8|
17.833 | | |
| 134.00 134.00| Zero Out: Stream #2| 620.0 0.0|
| | | |
| 134.00 134.00| View: Stream #1| 15856.8|
17.833 | 13501.85| 3 |
-----+-----+
|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT
INTERVAL |
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF
THE DESIGN STORM |
-----+

```

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
(c) Copyright 1989-2013 Advanced Engineering Software (aes)
Ver. 20.0 Release Date: 06/01/2013 License ID 1264

Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 137 *
* 25-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV25137C.DAT
TIME/DATE OF STUDY: 09:11 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 2.119 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.433
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.42; 30-MINUTE = 0.78; 1-HOUR = 1.08
3-HOUR = 2.02; 6-HOUR = 3.00; 24-HOUR = 5.30
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.124 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.412
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

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BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing values for depth, outflow, and storage.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<


```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.222 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.488
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.301 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.760
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

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>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 286.00; DOWNSTREAM ELEVATION(FT) = 258.00
CHANNEL LENGTH(FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.242 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.146; LOW LOSS FRACTION = 0.362
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 16.600
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.168 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.138; LOW LOSS FRACTION = 0.368
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

```

*****
FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
-----
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 5.95 0.280
3 2.00 22.18 1.150
4 3.00 46.43 3.090
5 4.00 75.05 6.150
6 5.00 105.54 10.350
7 6.00 127.29 15.380
8 7.00 138.99 20.860
9 8.00 150.45 26.500
10 9.00 161.55 32.360
11 10.00 697.61 38.410
12 11.00 1666.99 44.700
-----
*****
FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
-----
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
-----
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
-----
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6
-----

```

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```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
-----
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
-----
WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.315 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.321
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
-----
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 0.01 7.430

```

3C-1

```

3      2.00      0.02      15.170
4      3.00      2.70      23.230
5      4.00      4.69      31.610
6      5.00      6.04      40.320
7      6.00      10.72     49.360
8      7.00      17.77     58.730
9      8.00      424.53    68.440
10     9.00      1169.03   78.500
11    10.00     2113.61   88.500

```

```

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

```

```

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-3

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

```

```

*****
FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

```

```

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.360 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.511
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

```

```

-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

3C-3

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-5

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

```

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*****
FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

```

```

*****STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

```

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

```

```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====

WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.422 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.296; LOW LOSS FRACTION = 0.648
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

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```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.296 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.217; LOW LOSS FRACTION = 0.518
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

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*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

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>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
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```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

5-2

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

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THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 20.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.203 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.637
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

 FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

 FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
 *USER ENTERED "LAG" TIME = 0.236 HOURS
 VALLEY (DEVELOPED) S-GRAPH SELECTED
 MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.352
 SPECIFIED PEAK RAINFALL DEPTHS (INCH):
 5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
 3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
 *USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
 5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
 3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

 FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
 FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
 THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	25.00	13.59
2	75.00	16.84
3	100.00	18.46
4	250.00	28.22
5	550.00	47.73

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

B Diversion Structure

 FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
 SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
 DEAD STORAGE (AF) = 2.070
 SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
 SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
 DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	0.310
3	2.00	0.83	1.240
4	3.00	5.60	2.600
5	4.00	16.88	4.130
6	5.00	23.48	5.790
7	6.00	36.73	7.560
8	7.00	55.95	9.440
9	8.00	78.70	11.430
10	9.00	228.67	12.460

 FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5 THROUGH A FLOW-THROUGH DETENTION BASIN.
 SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
 DEAD STORAGE (AF) = 0.000
 SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
 SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
 DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-4

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	1.84	0.260
3	2.00	3.22	1.160
4	3.00	4.16	2.520
5	4.00	4.94	3.990
6	5.00	5.60	5.550
7	6.00	7.17	7.200
8	7.00	14.13	8.950
9	8.00	18.54	10.800
10	9.00	21.90	12.740
11	10.00	24.73	14.780
12	11.00	37.17	16.920
13	12.00	57.63	19.160
14	13.00	83.32	21.500
15	14.00	112.96	23.940
16	15.00	133.28	26.480
17	16.00	144.34	29.150
18	17.00	154.45	31.950
19	18.00	163.94	34.870
20	19.00	172.92	37.940
21	20.00	181.39	41.140
22	21.00	189.45	44.500
23	22.00	197.22	48.010

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.856 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.244; LOW LOSS FRACTION = 0.567
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN GBD Side
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS. Weir

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3 THROUGH A FLOW-THROUGH DETENTION BASIN. GBD Upper Basin
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 5.700
SPECIFIED DEAD STORAGE (AF) FILLED = 5.700
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.50	0.01	0.002
3	2.00	0.02	1.900
4	4.00	0.03	16.100
5	4.30	0.05	18.200
6	5.00	314.00	23.200
7	6.00	1306.00	30.300
8	7.00	2847.00	39.100
9	8.00	4942.00	47.800


```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8
-----
>>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
=====
```

```
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

GBD Lower
West Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.99	2.90	0.900
3	1.99	11.38	2.900
4	3.99	19.63	10.300
5	5.99	25.19	20.700
6	7.99	29.71	31.700
7	9.99	33.62	43.500
8	10.99	35.49	49.700
9	11.99	313.49	56.400
10	12.99	894.27	63.100
11	13.99	1748.55	69.900
12	15.99	4306.91	84.100

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====
```

```
*****
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 4
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

GBD Lower
East Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.48	0.70	0.400
3	1.48	6.50	1.800
4	3.48	18.11	8.500
5	5.48	23.99	17.900
6	7.48	28.68	27.800
7	9.48	32.70	38.300
8	10.48	34.50	43.900
9	11.48	36.29	49.400
10	12.48	314.07	55.900
11	13.48	895.00	62.300
12	15.48	2882.95	74.700

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 427.51; DOWNSTREAM ELEVATION (FT) = 315.00
CHANNEL LENGTH (FT) = 9760.05 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00

```

*****
FLOW PROCESS FROM NODE 13305.00 TO NODE 133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 315.00; DOWNSTREAM ELEVATION(FT) = 212.00
CHANNEL LENGTH(FT) = 6877.24 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 133.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.647 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.224; LOW LOSS FRACTION = 0.408
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 212.00; DOWNSTREAM ELEVATION(FT) = 173.00
CHANNEL LENGTH(FT) = 6461.31 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1691.600 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.323 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.481
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====
*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 13500.00 TO NODE 134.00 IS CODE = 1

```

```

-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 3859.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 1.350 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.284; LOW LOSS FRACTION = 0.463
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 4.00
UPSTREAM ELEVATION (FT) = 173.00; DOWNSTREAM ELEVATION (FT) = 133.00
CHANNEL LENGTH (FT) = 6064.09 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1191.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.408 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.237; LOW LOSS FRACTION = 0.467
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95

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3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 11
-----
>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<
=====

```

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV25137C.DAT]

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UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS FOOTNOTES	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
--	--	---	------------------------	--------------------------

10100.00	119.00	Subarea (UH) Added to Stream #1	0.0	13888.7
18.167				
119.00	12603.00	Convex Routing: Stream #1	13888.7	13815.9
18.083				
810.00	809.00	Subarea (UH) Added to Stream #2	0.0	102.7
16.167				
809.00	12603.00	Flow-Through Basin: Stream #2	102.7	50.1
16.333	13.35			
12603.00	12603.00	Stream #2 Added to: Stream #1	13815.9	13845.5
18.083				
12603.00	12603.00	Zero Out: Stream #2	50.1	0.0
12603.00	126.00	Convex Routing: Stream #1	13845.5	13829.5
18.250				
920.00	905.00	Subarea (UH) Added to Stream #2	0.0	225.4
16.250				
905.00	126.00	Flow-Through Basin: Stream #2	225.4	179.3
16.417	18.68			
126.00	126.00	Stream #2 Added to: Stream #1	13829.5	13896.2
18.250				
126.00	126.00	Zero Out: Stream #2	179.3	0.0
600.00	126.00	Subarea (UH) Added to Stream #2	0.0	53.5
16.333				
126.00	126.00	Stream #2 Added to: Stream #1	13896.2	13906.1
18.167				
126.00	126.00	Zero Out: Stream #2	53.5	0.0
126.00	12720.50	Convex Routing: Stream #1	13906.1	13898.7
18.333				
430.00	420.00	Subarea (UH) Added to Stream #2	0.0	149.3
16.333				
420.00	420.50	Flow-Through Basin: Stream #2	149.3	80.7
16.583	9.36			
420.50	427.00	Flow-Through Basin: Stream #2	80.7	71.6
17.833	9.81			
413.00	425.00	Subarea (UH) Added to Stream #3	0.0	71.5
16.250				

425.00	426.00	Flow-Through Basin: Stream #3	71.5	34.7
16.417	2.17			
426.00	427.00	Stream #3 Added to: Stream #2	71.6	100.5
17.583				
427.00	427.00	Zero Out: Stream #3	34.7	0.0
427.00	12720.50	Stream #2 Added to: Stream #1	13898.7	13990.5
18.333				
12720.50	12720.50	Zero Out: Stream #2	100.5	0.0
12720.50	12741.00	Convex Routing: Stream #1	13990.5	13960.1
18.417				
320.00	339.00	Subarea (UH) Added to Stream #2	0.0	290.1
16.417				
339.00	340.00	Flow-Through Basin: Stream #2	290.1	170.5
17.250	62.39			
339.00	372.00	Flowby Basin Model: Stream #2	170.5	27.6
17.250				
390.00	372.00	Subarea (UH) Added to Stream #4	0.0	64.8
16.417				
372.00	372.00	Stream #4 Added to: Stream #3	142.9	180.0
17.250				
372.00	372.00	Zero Out: Stream #4	64.8	0.0
372.00	373.00	Flow-Through Basin: Stream #3	180.0	29.0
20.667	38.32			
372.00	372.10	Flowby Basin Model: Stream #3	29.0	29.0
20.667				
373.00	373.00	Zero Out: Stream #5	0.0	0.0
373.00	340.00	Stream #3 Added to: Stream #2	27.6	50.9
18.500				
340.00	340.00	Zero Out: Stream #3	29.0	0.0
340.00	12741.00	Stream #2 Added to: Stream #1	13960.1	14011.0
18.417				
12741.00	12741.00	Zero Out: Stream #2	50.9	0.0
12741.00	127.00	Convex Routing: Stream #1	14011.0	14009.7
18.417				
12710.00	127.00	Subarea (UH) Added to Stream #2	0.0	246.9
16.500				

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL

3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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|
|                                     * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV25137C.DAT ]
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-----+-----
|UPSTREAM  DOWNSTREAM|                                     | UPSTREAM  DOWNSTREAM|
TIME (2) TO | MAX. STORAGE|                                     |
| NODE #     NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS)  PEAK (CFS)|
PEAK (HR)   | MODELED (AF)| FOOTNOTES |
-----+-----
| 127.00    127.00| Stream #2 Added to:  Stream #1| 14009.7    14076.8|
18.417 | | |
| 127.00    127.00| Zero Out:           Stream #2| 246.9      0.0|
| | |
| 127.00    12902.00| Convex Routing:     Stream #1| 14076.8    14057.3|
18.500 | | |
| 50220.00   50347.00| Subarea (UH) Added to Stream #2| 0.0        415.1|
16.333 | | |
| 50347.00   50347.00| Flow-Through Basin: Stream #2| 415.1      78.7|
18.500 | 106.02| |
-----+-----
| 50347.00   12902.00| Convex Routing:     Stream #2| 78.7       78.7|
18.667 | | |
| 12902.00   12902.00| Stream #2 Added to: Stream #1| 14057.3    14136.0|
18.500 | | |
| 12902.00   12902.00| Zero Out:           Stream #2| 78.7       0.0|
| | |
| 12902.00    129.00| Convex Routing:     Stream #1| 14136.0    14121.0|
18.500 | | |
| 50400.00    129.00| Subarea (UH) Added to Stream #2| 0.0        169.2|
16.250 | | |
-----+-----
| 129.00     129.00| Stream #2 Added to: Stream #1| 14121.0    14140.7|
18.500 | | |
| 129.00     129.00| Zero Out:           Stream #2| 169.2      0.0|
| | |
| 210.00     221.00| Subarea (UH) Added to Stream #2| 0.0        104.7|
16.333 | | |
| 221.00     221.00| Flowby Basin Model: Stream #2| 104.7      18.8|
16.333 | | |
| 221.00     223.00| Flow-Through Basin: Stream #2| 18.8       15.2|
17.250 | 3.91| |
-----+-----
| 221.00     222.00| Flow-Through Basin: Stream #5| 85.9       21.6|
17.833 | 12.59| |
| 223.00     222.00| Stream #5 Added to: Stream #2| 15.2       36.7|
17.583 | | |
| 222.00     222.00| Zero Out:           Stream #5| 21.6       0.0|
| | |
| 222.00     129.00| Stream #2 Added to: Stream #1| 14140.7    14176.2|
18.500 | | |

```

	129.00	129.00	Zero Out:	Stream #2	36.7	0.0
+-----+						
	129.00	133.00	Convex Routing:	Stream #1	14176.2	14164.7
18.583						
	13010.00	132.00	Subarea (UH) Added to	Stream #2	0.0	1116.2
16.917						
	132.00	132.00	Flowby Basin Model:	Stream #2	1116.2	981.6
16.917						
	132.00	132.00	Flow-Through Basin:	Stream #3	134.6	99.9
17.417		19.80				
	132.00	132.00	Split Hydrograph:	Stream #3	99.9	49.9
17.417						
+-----+						
	132.00	132.00	Flow-Through Basin:	Stream #3	49.9	12.3
18.750		3.75				
	132.00	132.00	Stream #3 Added to:	Stream #2	981.6	981.7
16.917						
	132.00	132.00	Zero Out:	Stream #3	12.3	0.0
	132.00	132.00	Flow-Through Basin:	Stream #4	49.9	10.3
18.750		3.98				
	132.00	132.00	Stream #4 Added to:	Stream #2	981.7	981.7
16.917						
+-----+						
	132.00	132.00	Zero Out:	Stream #4	10.3	0.0
	132.00	13305.00	Convex Routing:	Stream #2	981.7	950.8
17.417						
	13305.00	133.00	Convex Routing:	Stream #2	950.8	943.2
17.667						
	132.00	133.00	Subarea (UH) Added to	Stream #3	0.0	496.2
16.667						
	133.00	133.00	Stream #3 Added to:	Stream #2	943.2	1303.8
17.583						
+-----+						
	133.00	133.00	Zero Out:	Stream #3	496.2	0.0
	133.00	133.00	Stream #2 Added to:	Stream #1	14164.7	15400.8
17.667						
	133.00	133.00	Zero Out:	Stream #2	1303.8	0.0
	133.00	134.00	Convex Routing:	Stream #1	15400.8	15389.7
17.833						
	133.00	134.00	Subarea (UH) Added to	Stream #2	0.0	595.4
16.417						

[Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL

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* AES FLOODSCx PROGRAM RESULTS SUMMARY *

| INPUT FILENAME: [EV25137C.DAT]

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UPSTREAM TIME (2) TO	DOWNSTREAM MAX. STORAGE	HYDROLOGIC/HYDRAULIC PROCESS	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
134.00	134.00	Stream #2 Added to:	Stream #1	15389.7
17.833				
134.00	134.00	Zero Out:	Stream #2	595.4
				0.0
13500.00	134.00	Subarea (UH) Added to	Stream #2	0.0
17.417				887.4
134.00	134.00	Stream #2 Added to:	Stream #1	15622.8
17.750				16456.5
134.00	134.00	Zero Out:	Stream #2	887.4
				0.0

134.00	137.00	Convex Routing:	Stream #1	16456.5	16445.6
17.917					
134.00	137.00	Subarea (UH) Added to	Stream #2	0.0	383.2
16.500					
137.00	137.00	Stream #2 Added to:	Stream #1	16445.6	16615.8
17.917					
137.00	137.00	Zero Out:	Stream #2	383.2	0.0
137.00	137.00	View:	Stream #1		16615.8
17.917	14230.18	3			

| Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL

| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Ver. 20.0 Release Date: 06/01/2013 License ID 1264

Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 138 *
* 25-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV25138C.DAT
TIME/DATE OF STUDY: 08:50 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 2.119 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.433
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.42; 30-MINUTE = 0.78; 1-HOUR = 1.08
3-HOUR = 2.02; 6-HOUR = 3.00; 24-HOUR = 5.30
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.124 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.412
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing values for depth, outflow, and storage.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<


```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.222 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.488
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

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INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.301 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.760
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 286.00; DOWNSTREAM ELEVATION (FT) = 258.00
CHANNEL LENGTH (FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.242 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.146; LOW LOSS FRACTION = 0.362
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 16.600
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.168 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.138; LOW LOSS FRACTION = 0.368
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

```

*****
FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
-----
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 5.95 0.280
3 2.00 22.18 1.150
4 3.00 46.43 3.090
5 4.00 75.05 6.150
6 5.00 105.54 10.350
7 6.00 127.29 15.380
8 7.00 138.99 20.860
9 8.00 150.45 26.500
10 9.00 161.55 32.360
11 10.00 697.61 38.410
12 11.00 1666.99 44.700
-----
*****
FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
-----
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
-----
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
-----
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6
-----

```

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```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
-----
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
-----
WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.315 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.321
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
-----
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 0.01 7.430

```

3C-1

```

3      2.00      0.02      15.170
4      3.00      2.70      23.230
5      4.00      4.69      31.610
6      5.00      6.04      40.320
7      6.00     10.72     49.360
8      7.00     17.77     58.730
9      8.00    424.53    68.440
10     9.00    1169.03   78.500
11    10.00   2113.61   88.500

```

```

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

```

```

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-3

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

```

```

*****
FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

```

```

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.360 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.511
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

```

```

-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:

```

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```

DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-5

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

```

```

*****
FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

```

```

*****STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

```

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

```

```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====

WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.422 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.296; LOW LOSS FRACTION = 0.648
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

```

```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.296 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.217; LOW LOSS FRACTION = 0.518
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

5-2

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 20.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.203 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.637
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.236 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.352
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Table with 3 columns: DATA PAIR NUMBER, Qcenter (CFS), Qpass (CFS). Includes handwritten note 'B Diversion Structure'.

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-10.

FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-4

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-23.

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.856 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.244; LOW LOSS FRACTION = 0.567
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: **GBD Side**
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN **Weir**
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3 THROUGH A FLOW-THROUGH DETENTION BASIN. **GBD Upper Basin**
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 5.700
SPECIFIED DEAD STORAGE (AF) FILLED = 5.700
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.50	0.01	0.002
3	2.00	0.02	1.900
4	4.00	0.03	16.100
5	4.30	0.05	18.200
6	5.00	314.00	23.200
7	6.00	1306.00	30.300
8	7.00	2847.00	39.100
9	8.00	4942.00	47.800


```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8
-----
>>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
=====
```

```
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

GBD Lower
West Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.99	2.90	0.900
3	1.99	11.38	2.900
4	3.99	19.63	10.300
5	5.99	25.19	20.700
6	7.99	29.71	31.700
7	9.99	33.62	43.500
8	10.99	35.49	49.700
9	11.99	313.49	56.400
10	12.99	894.27	63.100
11	13.99	1748.55	69.900
12	15.99	4306.91	84.100

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====
```

```
*****
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 4
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
=====
```

GBD Lower
East Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.48	0.70	0.400
3	1.48	6.50	1.800
4	3.48	18.11	8.500
5	5.48	23.99	17.900
6	7.48	28.68	27.800
7	9.48	32.70	38.300
8	10.48	34.50	43.900
9	11.48	36.29	49.400
10	12.48	314.07	55.900
11	13.48	895.00	62.300
12	15.48	2882.95	74.700

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 427.51; DOWNSTREAM ELEVATION (FT) = 315.00
CHANNEL LENGTH (FT) = 9760.05 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00

```

*****
FLOW PROCESS FROM NODE 13305.00 TO NODE 133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 315.00; DOWNSTREAM ELEVATION(FT) = 212.00
CHANNEL LENGTH(FT) = 6877.24 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 133.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.647 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.224; LOW LOSS FRACTION = 0.408
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 212.00; DOWNSTREAM ELEVATION(FT) = 173.00
CHANNEL LENGTH(FT) = 6461.31 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1691.600 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.323 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.481
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====
*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 13500.00 TO NODE 134.00 IS CODE = 1

```

```

-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 3859.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 1.350 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.284; LOW LOSS FRACTION = 0.463
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 4.00
UPSTREAM ELEVATION (FT) = 173.00; DOWNSTREAM ELEVATION (FT) = 133.00
CHANNEL LENGTH (FT) = 6064.09 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1191.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.408 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.237; LOW LOSS FRACTION = 0.467
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95

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3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 138.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 100.00 CHANNEL Z = 4.00
UPSTREAM ELEVATION (FT) = 133.00; DOWNSTREAM ELEVATION (FT) = 119.70
CHANNEL LENGTH (FT) = 4643.67 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 138.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1303.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.528 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.267; LOW LOSS FRACTION = 0.525
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 138.00 TO NODE 138.00 IS CODE = 7
-----

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 138.00 TO NODE 138.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 138.00 TO NODE 138.00 IS CODE = 11

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<<

+-----+
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|

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UPSTREAM TIME (2) TO	DOWNSTREAM MAX. STORAGE	UPSTREAM NODE #	DOWNSTREAM NODE #	HYDROLOGIC/HYDRAULIC PROCESS	PEAK (CFS)	PEAK (CFS)
10100.00	119.00	18.167	18.167	Subarea (UH) Added to Stream #1	0.0	13825.6
119.00	12603.00	18.083	18.083	Convex Routing: Stream #1	13825.6	13753.2
810.00	809.00	16.167	16.167	Subarea (UH) Added to Stream #2	0.0	101.6
809.00	12603.00	16.333	16.333	Flow-Through Basin: Stream #2	101.6	49.6
12603.00	12603.00	18.083	18.083	Stream #2 Added to: Stream #1	13753.2	13782.8
12603.00	12603.00	18.250	18.250	Zero Out: Stream #2	49.6	0.0
12603.00	126.00	16.250	16.250	Convex Routing: Stream #1	13782.8	13767.9
920.00	905.00	16.250	16.250	Subarea (UH) Added to Stream #2	0.0	223.2
905.00	126.00	16.417	16.417	Flow-Through Basin: Stream #2	223.2	177.7
126.00	126.00	18.250	18.250	Stream #2 Added to: Stream #1	13767.9	13834.8
126.00	126.00	16.333	16.333	Zero Out: Stream #2	177.7	0.0
600.00	126.00	16.333	16.333	Subarea (UH) Added to Stream #2	0.0	52.8
126.00	126.00	18.250	18.250	Stream #2 Added to: Stream #1	13834.8	13844.6
126.00	126.00	16.250	16.250	Zero Out: Stream #2	52.8	0.0
126.00	12720.50	18.333	18.333	Convex Routing: Stream #1	13844.6	13837.2
430.00	420.00	16.333	16.333	Subarea (UH) Added to Stream #2	0.0	147.9
420.00	420.50	16.583	16.583	Flow-Through Basin: Stream #2	147.9	80.2
420.50	427.00	17.833	17.833	Flow-Through Basin: Stream #2	80.2	71.2
413.00	425.00	16.250	16.250	Subarea (UH) Added to Stream #3	0.0	70.8

425.00	426.00	Flow-Through Basin:	Stream #3	70.8	34.5
16.417	2.15				
+-----+					
426.00	427.00	Stream #3 Added to:	Stream #2	71.2	100.0
17.583					
427.00	427.00	Zero Out:	Stream #3	34.5	0.0
427.00	12720.50	Stream #2 Added to:	Stream #1	13837.2	13928.8
18.333					
12720.50	12720.50	Zero Out:	Stream #2	100.0	0.0
12720.50	12741.00	Convex Routing:	Stream #1	13928.8	13899.3
18.417					
+-----+					
320.00	339.00	Subarea (UH) Added to	Stream #2	0.0	287.7
16.333					
339.00	340.00	Flow-Through Basin:	Stream #2	287.7	169.3
17.250	62.36				
339.00	372.00	Flowby Basin Model:	Stream #2	169.3	27.5
17.250					
390.00	372.00	Subarea (UH) Added to	Stream #4	0.0	64.2
16.417					
372.00	372.00	Stream #4 Added to:	Stream #3	141.8	178.8
17.250					
+-----+					
372.00	372.00	Zero Out:	Stream #4	64.2	0.0
372.00	373.00	Flow-Through Basin:	Stream #3	178.8	28.9
20.667	38.18				
372.00	372.10	Flowby Basin Model:	Stream #3	28.9	28.9
20.667					
373.00	373.00	Zero Out:	Stream #5	0.0	0.0
373.00	340.00	Stream #3 Added to:	Stream #2	27.5	50.7
18.500					
+-----+					
340.00	340.00	Zero Out:	Stream #3	28.9	0.0
340.00	12741.00	Stream #2 Added to:	Stream #1	13899.3	13950.0
18.417					
12741.00	12741.00	Zero Out:	Stream #2	50.7	0.0
12741.00	127.00	Convex Routing:	Stream #1	13950.0	13948.5
18.417					
12710.00	127.00	Subarea (UH) Added to	Stream #2	0.0	244.2
16.500					

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

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UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS FOOTNOTES	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
127.00	127.00	Stream #2 Added to:	Stream #1	13948.5
18.417				14015.8
127.00	127.00	Zero Out:	Stream #2	244.2
				0.0
127.00	12902.00	Convex Routing:	Stream #1	14015.8
18.500				13996.9
50220.00	50347.00	Subarea (UH) Added to	Stream #2	0.0
16.333				411.1
50347.00	50347.00	Flow-Through Basin:	Stream #2	411.1
18.500	105.86			78.6
50347.00	12902.00	Convex Routing:	Stream #2	78.6
18.667				78.6
12902.00	12902.00	Stream #2 Added to:	Stream #1	13996.9
18.500				14075.4
12902.00	12902.00	Zero Out:	Stream #2	78.6
				0.0
12902.00	129.00	Convex Routing:	Stream #1	14075.4
18.500				14059.9
50400.00	129.00	Subarea (UH) Added to	Stream #2	0.0
16.250				167.2
129.00	129.00	Stream #2 Added to:	Stream #1	14059.9
18.500				14079.5
129.00	129.00	Zero Out:	Stream #2	167.2
				0.0
210.00	221.00	Subarea (UH) Added to	Stream #2	0.0
16.333				103.7
221.00	221.00	Flowby Basin Model:	Stream #2	103.7
16.333				18.7
221.00	223.00	Flow-Through Basin:	Stream #2	18.7
17.250	3.90			15.2
221.00	222.00	Flow-Through Basin:	Stream #5	85.0
17.917	12.55			21.6
223.00	222.00	Stream #5 Added to:	Stream #2	15.2
17.583				36.6
222.00	222.00	Zero Out:	Stream #5	21.6
				0.0
222.00	129.00	Stream #2 Added to:	Stream #1	14079.5
18.500				14115.0

129.00	129.00	Zero Out:	Stream #2	36.6	0.0
129.00	133.00	Convex Routing:	Stream #1	14115.0	14103.9
18.583					
13010.00	132.00	Subarea (UH) Added to	Stream #2	0.0	1107.3
16.917					
132.00	132.00	Flowby Basin Model:	Stream #2	1107.3	974.4
16.917					
132.00	132.00	Flow-Through Basin:	Stream #3	132.9	98.4
17.417	19.77				
132.00	132.00	Split Hydrograph:	Stream #3	98.4	49.2
17.417					
132.00	132.00	Flow-Through Basin:	Stream #3	49.2	12.3
18.750	3.70				
132.00	132.00	Stream #3 Added to:	Stream #2	974.4	974.5
16.917					
132.00	132.00	Zero Out:	Stream #3	12.3	0.0
132.00	132.00	Flow-Through Basin:	Stream #4	49.2	10.2
18.750	3.92				
132.00	132.00	Stream #4 Added to:	Stream #2	974.5	974.5
16.917					
132.00	132.00	Zero Out:	Stream #4	10.2	0.0
132.00	13305.00	Convex Routing:	Stream #2	974.5	944.0
17.417					
13305.00	133.00	Convex Routing:	Stream #2	944.0	936.5
17.667					
132.00	133.00	Subarea (UH) Added to	Stream #3	0.0	492.4
16.667					
133.00	133.00	Stream #3 Added to:	Stream #2	936.5	1296.4
17.583					
133.00	133.00	Zero Out:	Stream #3	492.4	0.0
133.00	133.00	Stream #2 Added to:	Stream #1	14103.9	15341.4
17.667					
133.00	133.00	Zero Out:	Stream #2	1296.4	0.0
133.00	134.00	Convex Routing:	Stream #1	15341.4	15330.6
17.833					
133.00	134.00	Subarea (UH) Added to	Stream #2	0.0	589.5
16.417					

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV25138C.DAT ]
Page: 3 of |
-----+
|UPSTREAM DOWNSTREAM| | UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE| |
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR) | MODELED (AF)| FOOTNOTES |
-----+
| 134.00 134.00| Stream #2 Added to: Stream #1| 15330.6 15564.4|
17.833 | | |
| 134.00 134.00| Zero Out: Stream #2| 589.5 0.0|
| | |
| 13500.00 134.00| Subarea (UH) Added to Stream #2| 0.0 882.0|
17.417 | | |
| 134.00 134.00| Stream #2 Added to: Stream #1| 15564.4 16395.2|
17.750 | | |
| 134.00 134.00| Zero Out: Stream #2| 882.0 0.0|
| | |
-----+
| 134.00 137.00| Convex Routing: Stream #1| 16395.2 16384.2|
17.917 | | |
| 134.00 137.00| Subarea (UH) Added to Stream #2| 0.0 379.6|
16.500 | | |
| 137.00 137.00| Stream #2 Added to: Stream #1| 16384.2 16554.9|
17.917 | | |
| 137.00 137.00| Zero Out: Stream #2| 379.6 0.0|
| | |
| 137.00 138.00| Convex Routing: Stream #1| 16554.9 16540.7|
18.083 | | |
-----+
| 137.00 138.00| Subarea (UH) Added to Stream #2| 0.0 349.3|
16.583 | | |
| 138.00 138.00| Stream #2 Added to: Stream #1| 16540.7 16708.7|
18.000 | | |
| 138.00 138.00| Zero Out: Stream #2| 349.3 0.0|
| | |
| 138.00 138.00| View: Stream #1| 16708.7|
18.000 | 14395.35| 3 |
-----+
|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT
INTERVAL |
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF
THE DESIGN STORM |
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END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Ver. 20.0 Release Date: 06/01/2013 License ID 1264

Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 139 *
* 25-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV25139C.DAT
TIME/DATE OF STUDY: 08:49 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 2.119 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.433
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.42; 30-MINUTE = 0.78; 1-HOUR = 1.08
3-HOUR = 2.02; 6-HOUR = 3.00; 24-HOUR = 5.30
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.124 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.412
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing values for depth, outflow, and storage.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<


```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.222 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.488
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

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INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.301 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.760
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 286.00; DOWNSTREAM ELEVATION (FT) = 258.00
CHANNEL LENGTH (FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.242 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.146; LOW LOSS FRACTION = 0.362
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 16.600
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.168 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.138; LOW LOSS FRACTION = 0.368
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

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*****
FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
-----
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 5.95 0.280
3 2.00 22.18 1.150
4 3.00 46.43 3.090
5 4.00 75.05 6.150
6 5.00 105.54 10.350
7 6.00 127.29 15.380
8 7.00 138.99 20.860
9 8.00 150.45 26.500
10 9.00 161.55 32.360
11 10.00 697.61 38.410
12 11.00 1666.99 44.700
-----
*****
FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
-----
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
-----
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
-----
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6
-----

```

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```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
-----
WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.315 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.321
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
-----
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 0.01 7.430

```

3C-1

```

3      2.00      0.02      15.170
4      3.00      2.70      23.230
5      4.00      4.69      31.610
6      5.00      6.04      40.320
7      6.00     10.72     49.360
8      7.00     17.77     58.730
9      8.00     424.53    68.440
10     9.00     1169.03   78.500
11    10.00    2113.61   88.500

```

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*****
FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

```

```

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-3

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

```

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*****
FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

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>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

```

```

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.360 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.511
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

```

```

-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

3C-3

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-5

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

```

```

*****
FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

```

```

*****STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

```

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

```

```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.422 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.296; LOW LOSS FRACTION = 0.648
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

```

```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.296 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.217; LOW LOSS FRACTION = 0.518
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

5-2

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 20.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.203 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.637
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.236 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.352
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Table with 3 columns: DATA PAIR NUMBER, Qcenter (CFS), Qpass (CFS). Includes handwritten blue text 'B Diversion Structure'.

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-10.

FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-4

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-23.

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.856 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.244; LOW LOSS FRACTION = 0.567
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: **GBD Side**
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN **Weir**
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3 **GBD Upper Basin**
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 5.700
SPECIFIED DEAD STORAGE (AF) FILLED = 5.700
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.50	0.01	0.002
3	2.00	0.02	1.900
4	4.00	0.03	16.100
5	4.30	0.05	18.200
6	5.00	314.00	23.200
7	6.00	1306.00	30.300
8	7.00	2847.00	39.100
9	8.00	4942.00	47.800


```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8
-----
>>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
=====
```

```
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

GBD Lower
West Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.99	2.90	0.900
3	1.99	11.38	2.900
4	3.99	19.63	10.300
5	5.99	25.19	20.700
6	7.99	29.71	31.700
7	9.99	33.62	43.500
8	10.99	35.49	49.700
9	11.99	313.49	56.400
10	12.99	894.27	63.100
11	13.99	1748.55	69.900
12	15.99	4306.91	84.100

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====
```

```
*****
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 4
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

GBD Lower
East Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.48	0.70	0.400
3	1.48	6.50	1.800
4	3.48	18.11	8.500
5	5.48	23.99	17.900
6	7.48	28.68	27.800
7	9.48	32.70	38.300
8	10.48	34.50	43.900
9	11.48	36.29	49.400
10	12.48	314.07	55.900
11	13.48	895.00	62.300
12	15.48	2882.95	74.700

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 427.51; DOWNSTREAM ELEVATION (FT) = 315.00
CHANNEL LENGTH (FT) = 9760.05 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00

```

*****
FLOW PROCESS FROM NODE 13305.00 TO NODE 133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 315.00; DOWNSTREAM ELEVATION(FT) = 212.00
CHANNEL LENGTH(FT) = 6877.24 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 133.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.647 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.224; LOW LOSS FRACTION = 0.408
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

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*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 212.00; DOWNSTREAM ELEVATION(FT) = 173.00
CHANNEL LENGTH(FT) = 6461.31 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1691.600 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.323 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.481
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====
*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 13500.00 TO NODE 134.00 IS CODE = 1

```

```

-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 3859.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 1.350 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.284; LOW LOSS FRACTION = 0.463
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 4.00
UPSTREAM ELEVATION (FT) = 173.00; DOWNSTREAM ELEVATION (FT) = 133.00
CHANNEL LENGTH (FT) = 6064.09 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1191.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.408 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.237; LOW LOSS FRACTION = 0.467
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95

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3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 138.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 100.00 CHANNEL Z = 4.00
UPSTREAM ELEVATION (FT) = 133.00; DOWNSTREAM ELEVATION (FT) = 119.70
CHANNEL LENGTH (FT) = 4643.67 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 138.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1303.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.528 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.267; LOW LOSS FRACTION = 0.525
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 138.00 TO NODE 138.00 IS CODE = 7
-----

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>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 138.00 TO NODE 138.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 138.00 TO NODE 139.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 100.00 CHANNEL Z = 4.00
UPSTREAM ELEVATION(FT) = 119.70; DOWNSTREAM ELEVATION(FT) = 100.00
CHANNEL LENGTH(FT) = 3107.78 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 138.00 TO NODE 139.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 428.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.247 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.207; LOW LOSS FRACTION = 0.508
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.34; 30-MINUTE = 0.72; 1-HOUR = 0.95
3-HOUR = 1.59; 6-HOUR = 2.20; 24-HOUR = 3.68
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 139.00 TO NODE 139.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 139.00 TO NODE 139.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 139.00 TO NODE 139.00 IS CODE = 11

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<<

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV25139C.DAT]

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UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS FOOTNOTES	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
--	--	---	------------------------	--------------------------

10100.00	119.00	Subarea (UH) Added to Stream #1	0.0	13807.2
18.167				
119.00	12603.00	Convex Routing: Stream #1	13807.2	13735.3
18.083				
810.00	809.00	Subarea (UH) Added to Stream #2	0.0	101.2
16.167				
809.00	12603.00	Flow-Through Basin: Stream #2	101.2	49.4
16.333	13.33			
12603.00	12603.00	Stream #2 Added to: Stream #1	13735.3	13764.9
18.083				
12603.00	12603.00	Zero Out: Stream #2	49.4	0.0
12603.00	126.00	Convex Routing: Stream #1	13764.9	13750.2
18.250				
920.00	905.00	Subarea (UH) Added to Stream #2	0.0	222.4
16.250				
905.00	126.00	Flow-Through Basin: Stream #2	222.4	177.1
16.417	18.65			
126.00	126.00	Stream #2 Added to: Stream #1	13750.2	13817.1
18.250				
126.00	126.00	Zero Out: Stream #2	177.1	0.0
600.00	126.00	Subarea (UH) Added to Stream #2	0.0	52.6
16.333				
126.00	126.00	Stream #2 Added to: Stream #1	13817.1	13826.9
18.250				
126.00	126.00	Zero Out: Stream #2	52.6	0.0
126.00	12720.50	Convex Routing: Stream #1	13826.9	13819.5
18.333				
430.00	420.00	Subarea (UH) Added to Stream #2	0.0	147.5
16.333				
420.00	420.50	Flow-Through Basin: Stream #2	147.5	80.1
16.583	9.30			
420.50	427.00	Flow-Through Basin: Stream #2	80.1	71.1
17.833	9.79			
413.00	425.00	Subarea (UH) Added to Stream #3	0.0	70.5
16.250				

425.00	426.00	Flow-Through Basin: Stream #3	70.5	34.4
16.417	2.14			
426.00	427.00	Stream #3 Added to: Stream #2	71.1	99.8
17.583				
427.00	427.00	Zero Out: Stream #3	34.4	0.0
427.00	12720.50	Stream #2 Added to: Stream #1	13819.5	13911.0
18.333				
12720.50	12720.50	Zero Out: Stream #2	99.8	0.0
12720.50	12741.00	Convex Routing: Stream #1	13911.0	13881.8
18.417				
320.00	339.00	Subarea (UH) Added to Stream #2	0.0	286.9
16.333				
339.00	340.00	Flow-Through Basin: Stream #2	286.9	169.0
17.250	62.36			
339.00	372.00	Flowby Basin Model: Stream #2	169.0	27.5
17.250				
390.00	372.00	Subarea (UH) Added to Stream #4	0.0	64.0
16.417				
372.00	372.00	Stream #4 Added to: Stream #3	141.5	178.4
17.250				
372.00	372.00	Zero Out: Stream #4	64.0	0.0
372.00	373.00	Flow-Through Basin: Stream #3	178.4	28.8
20.667	38.14			
372.00	372.10	Flowby Basin Model: Stream #3	28.8	28.8
20.667				
373.00	373.00	Zero Out: Stream #5	0.0	0.0
373.00	340.00	Stream #3 Added to: Stream #2	27.5	50.7
18.500				
340.00	340.00	Zero Out: Stream #3	28.8	0.0
340.00	12741.00	Stream #2 Added to: Stream #1	13881.8	13932.5
18.417				
12741.00	12741.00	Zero Out: Stream #2	50.7	0.0
12741.00	127.00	Convex Routing: Stream #1	13932.5	13930.9
18.417				
12710.00	127.00	Subarea (UH) Added to Stream #2	0.0	243.3
16.500				

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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|
|                                     * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV25139C.DAT ]
Page: 2 of |
+-----+
|UPSTREAM  DOWNSTREAM|                                     | UPSTREAM  DOWNSTREAM|
TIME (2) TO | MAX. STORAGE|                                     |
| NODE #     NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS)  PEAK (CFS) |
PEAK (HR)   | MODELED (AF) | FOOTNOTES |
+-----+
| 127.00    127.00| Stream #2 Added to:  Stream #1| 13930.9    13998.3|
18.417 | | |
| 127.00    127.00| Zero Out:           Stream #2| 243.3      0.0|
| | |
| 127.00    12902.00| Convex Routing:     Stream #1| 13998.3    13979.2|
18.500 | | |
| 50220.00   50347.00| Subarea (UH) Added to Stream #2| 0.0        409.7|
16.333 | | |
| 50347.00   50347.00| Flow-Through Basin: Stream #2| 409.7      78.6|
18.500 | 105.81| |
+-----+
| 50347.00   12902.00| Convex Routing:     Stream #2| 78.6       78.6|
18.667 | | |
| 12902.00   12902.00| Stream #2 Added to: Stream #1| 13979.2    14057.7|
18.500 | | |
| 12902.00   12902.00| Zero Out:           Stream #2| 78.6       0.0|
| | |
| 12902.00   129.00| Convex Routing:     Stream #1| 14057.7    14042.3|
18.500 | | |
| 50400.00   129.00| Subarea (UH) Added to Stream #2| 0.0        166.5|
16.250 | | |
+-----+
| 129.00    129.00| Stream #2 Added to:  Stream #1| 14042.3    14062.0|
18.500 | | |
| 129.00    129.00| Zero Out:           Stream #2| 166.5      0.0|
| | |
| 210.00    221.00| Subarea (UH) Added to Stream #2| 0.0        103.4|
16.333 | | |
| 221.00    221.00| Flowby Basin Model: Stream #2| 103.4      18.7|
16.333 | | |
| 221.00    223.00| Flow-Through Basin: Stream #2| 18.7       15.2|
17.250 | 3.90| |
+-----+
| 221.00    222.00| Flow-Through Basin: Stream #5| 84.7       21.5|
17.917 | 12.53| |
| 223.00    222.00| Stream #5 Added to:  Stream #2| 15.2       36.6|
17.583 | | |
| 222.00    222.00| Zero Out:           Stream #5| 21.5       0.0|
| | |
| 222.00    129.00| Stream #2 Added to:  Stream #1| 14062.0    14097.5|
18.500 | | |

```

	129.00	129.00	Zero Out:	Stream #2	36.6	0.0
+-----+						
	129.00	133.00	Convex Routing:	Stream #1	14097.5	14086.4
18.583						
	13010.00	132.00	Subarea (UH) Added to	Stream #2	0.0	1104.4
16.917						
	132.00	132.00	Flowby Basin Model:	Stream #2	1104.4	972.1
16.917						
	132.00	132.00	Flow-Through Basin:	Stream #3	132.3	97.9
17.417		19.76				
	132.00	132.00	Split Hydrograph:	Stream #3	97.9	49.0
17.417						
+-----+						
	132.00	132.00	Flow-Through Basin:	Stream #3	49.0	12.2
18.750		3.68				
	132.00	132.00	Stream #3 Added to:	Stream #2	972.1	972.1
16.917						
	132.00	132.00	Zero Out:	Stream #3	12.2	0.0
	132.00	132.00	Flow-Through Basin:	Stream #4	49.0	10.1
18.833		3.91				
	132.00	132.00	Stream #4 Added to:	Stream #2	972.1	972.1
16.917						
+-----+						
	132.00	132.00	Zero Out:	Stream #4	10.1	0.0
	132.00	13305.00	Convex Routing:	Stream #2	972.1	941.8
17.417						
	13305.00	133.00	Convex Routing:	Stream #2	941.8	934.4
17.667						
	132.00	133.00	Subarea (UH) Added to	Stream #3	0.0	491.3
16.667						
	133.00	133.00	Stream #3 Added to:	Stream #2	934.4	1294.1
17.583						
+-----+						
	133.00	133.00	Zero Out:	Stream #3	491.3	0.0
	133.00	133.00	Stream #2 Added to:	Stream #1	14086.4	15324.3
17.667						
	133.00	133.00	Zero Out:	Stream #2	1294.1	0.0
	133.00	134.00	Convex Routing:	Stream #1	15324.3	15313.6
17.833						
	133.00	134.00	Subarea (UH) Added to	Stream #2	0.0	587.4
16.417						

[Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL

| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV25139C.DAT]

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UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS FOOTNOTES	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
134.00 17.833	134.00	Stream #2 Added to: Stream #1	15313.6	15547.6
134.00	134.00	Zero Out: Stream #2	587.4	0.0
13500.00 17.417	134.00	Subarea (UH) Added to Stream #2	0.0	880.4
134.00 17.750	134.00	Stream #2 Added to: Stream #1	15547.6	16377.6
134.00	134.00	Zero Out: Stream #2	880.4	0.0
134.00 17.917	137.00	Convex Routing: Stream #1	16377.6	16366.5
134.00 16.500	137.00	Subarea (UH) Added to Stream #2	0.0	378.4
137.00 17.917	137.00	Stream #2 Added to: Stream #1	16366.5	16537.4
137.00	137.00	Zero Out: Stream #2	378.4	0.0
137.00 18.083	138.00	Convex Routing: Stream #1	16537.4	16523.1
137.00 16.583	138.00	Subarea (UH) Added to Stream #2	0.0	348.2
138.00 18.000	138.00	Stream #2 Added to: Stream #1	16523.1	16691.5
138.00	138.00	Zero Out: Stream #2	348.2	0.0
138.00 18.083	139.00	Convex Routing: Stream #1	16691.5	16689.1
138.00 16.333	139.00	Subarea (UH) Added to Stream #2	0.0	176.3
139.00 18.083	139.00	Stream #2 Added to: Stream #1	16689.1	16741.2
139.00	139.00	Zero Out: Stream #2	176.3	0.0
139.00 18.083	139.00	View: Stream #1		16741.2
	14447.31	3		

[Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
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***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 126 *
* 50-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV50126C.DAT
TIME/DATE OF STUDY: 11:15 06/12/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 2.043 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.399
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.46; 30-MINUTE = 0.87; 1-HOUR = 1.21
3-HOUR = 2.28; 6-HOUR = 3.40; 24-HOUR = 5.99
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.341; 30-MINUTE = 0.392; 1-HOUR = 0.432
3-HOUR = 0.782; 6-HOUR = 0.902; 24-HOUR = 0.943

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.123 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.391
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.341; 30-MINUTE = 0.392; 1-HOUR = 0.432
3-HOUR = 0.782; 6-HOUR = 0.902; 24-HOUR = 0.943

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

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BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	1.520
3	2.00	1.30	3.150
4	3.00	1.60	4.900
5	4.00	1.80	6.790
6	5.00	2.10	8.810
7	6.00	2.30	10.970
8	7.00	47.90	13.270
9	8.00	131.60	15.720
10	9.00	241.70	18.320
11	10.00	372.80	21.060

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.219 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.457
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.341; 30-MINUTE = 0.392; 1-HOUR = 0.432
3-HOUR = 0.782; 6-HOUR = 0.902; 24-HOUR = 0.943

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

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INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.295 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.734
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.341; 30-MINUTE = 0.392; 1-HOUR = 0.432
3-HOUR = 0.782; 6-HOUR = 0.902; 24-HOUR = 0.943

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 11

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<

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| * AES FLOODSCx PROGRAM RESULTS SUMMARY *

| INPUT FILENAME: [EV50126C.DAT]

Page: 1 of |

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UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS FOOTNOTES	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
--	--	---	------------------------	--------------------------

10100.00 18.083	119.00 	Subarea (UH) Added to Stream #1	0.0	17772.6
119.00 18.083	12603.00 	Convex Routing: Stream #1	17772.6	17642.2
810.00 16.167	809.00 	Subarea (UH) Added to Stream #2	0.0	137.5
809.00 16.333	12603.00 14.05	Flow-Through Basin: Stream #2	137.5	72.8
12603.00 18.083	12603.00 	Stream #2 Added to: Stream #1	17642.2	17675.9

12603.00 18.167	12603.00 	Zero Out: Stream #2	72.8	0.0
12603.00 18.167	126.00 	Convex Routing: Stream #1	17675.9	17654.8
920.00 16.250	905.00 	Subarea (UH) Added to Stream #2	0.0	310.5
905.00 16.417	126.00 19.64	Flow-Through Basin: Stream #2	310.5	245.0
126.00 18.167	126.00 	Stream #2 Added to: Stream #1	17654.8	17735.1

126.00 16.333	126.00 	Zero Out: Stream #2	245.0	0.0
600.00 18.167	126.00 	Subarea (UH) Added to Stream #2	0.0	77.8
126.00 18.167	126.00 	Stream #2 Added to: Stream #1	17735.1	17747.6
126.00 	126.00 	Zero Out: Stream #2	77.8	0.0
126.00 18.167	126.00 14301.64	View: Stream #1		17747.6
	3			

| Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

-----+-----

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 127 *
* 50-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV50127C.DAT
TIME/DATE OF STUDY: 08:42 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 2.043 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.399
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.46; 30-MINUTE = 0.87; 1-HOUR = 1.21
3-HOUR = 2.28; 6-HOUR = 3.40; 24-HOUR = 5.99
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.123 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.391
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing values for depth, outflow, and storage.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.219 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.457
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

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INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.295 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.734
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 286.00; DOWNSTREAM ELEVATION(FT) = 258.00
CHANNEL LENGTH(FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.239 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.146; LOW LOSS FRACTION = 0.341
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 16.600
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.166 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.138; LOW LOSS FRACTION = 0.349
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

```

*****
FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
-----
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 5.95 0.280
3 2.00 22.18 1.150
4 3.00 46.43 3.090
5 4.00 75.05 6.150
6 5.00 105.54 10.350
7 6.00 127.29 15.380
8 7.00 138.99 20.860
9 8.00 150.45 26.500
10 9.00 161.55 32.360
11 10.00 697.61 38.410
12 11.00 1666.99 44.700
-----
*****
FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
-----
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
-----
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
-----
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6
-----

```

3D-3

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
-----
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
-----
WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.310 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.303
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
-----
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 0.01 7.430

```

3C-1


```

3      2.00      0.02      15.170
4      3.00      2.70      23.230
5      4.00      4.69      31.610
6      5.00      6.04      40.320
7      6.00      10.72     49.360
8      7.00      17.77     58.730
9      8.00      424.53    68.440
10     9.00      1169.03   78.500
11    10.00     2113.61   88.500

```

```

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

```

```

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-3

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

```

```

*****
FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

```

```

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.356 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.486
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

```

```

-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

3C-3

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-5

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

```

```

*****
FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

```

```

*****STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

```

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

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```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.413 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.296; LOW LOSS FRACTION = 0.615
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 11
-----
>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<
=====

```

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV50127C.DAT]

Page: 1 of 1

UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
10100.00 18.083	119.00	Subarea (UH) Added to Stream #1	0.0	17581.4
119.00 18.083	12603.00	Convex Routing: Stream #1	17581.4	17454.4
810.00 16.167	809.00	Subarea (UH) Added to Stream #2	0.0	134.1
809.00 16.333	12603.00 14.00	Flow-Through Basin: Stream #2	134.1	71.0
12603.00 18.083	12603.00	Stream #2 Added to: Stream #1	17454.4	17488.2
12603.00 18.167	12603.00	Zero Out: Stream #2	71.0	0.0
12603.00 18.167	126.00	Convex Routing: Stream #1	17488.2	17468.0
920.00 16.250	905.00	Subarea (UH) Added to Stream #2	0.0	302.7
905.00 16.417	126.00 19.56	Flow-Through Basin: Stream #2	302.7	238.3
126.00 18.167	126.00	Stream #2 Added to: Stream #1	17468.0	17548.8
126.00 16.333	126.00	Zero Out: Stream #2	238.3	0.0
600.00 18.167	126.00	Subarea (UH) Added to Stream #2	0.0	75.5
126.00 18.250	126.00	Stream #2 Added to: Stream #1	17548.8	17561.4
126.00 17.333	126.00	Zero Out: Stream #2	75.5	0.0
126.00 16.250	12720.50	Convex Routing: Stream #1	17561.4	17554.5
430.00 16.333	420.00	Subarea (UH) Added to Stream #2	0.0	191.2
420.00 16.500	420.50 11.19	Flow-Through Basin: Stream #2	191.2	114.7
420.50 17.333	427.00 11.13	Flow-Through Basin: Stream #2	114.7	98.7
413.00 16.250	425.00	Subarea (UH) Added to Stream #3	0.0	91.8

425.00 16.417	426.00 2.87	Flow-Through Basin: Stream #3	91.8	43.5
426.00 17.250	427.00	Stream #3 Added to: Stream #2	98.7	138.9
427.00 18.250	427.00	Zero Out: Stream #3	43.5	0.0
427.00 18.250	12720.50	Stream #2 Added to: Stream #1	17554.5	17667.8
12720.50 18.250	12720.50	Zero Out: Stream #2	138.9	0.0
12720.50 18.250	12741.00	Convex Routing: Stream #1	17667.8	17629.7
320.00 16.333	339.00	Subarea (UH) Added to Stream #2	0.0	373.1
339.00 16.500	340.00 65.12	Flow-Through Basin: Stream #2	373.1	281.9
339.00 16.500	372.00	Flowby Basin Model: Stream #2	281.9	31.6
390.00 16.417	372.00	Subarea (UH) Added to Stream #4	0.0	85.5
372.00 16.500	372.00	Stream #4 Added to: Stream #3	250.3	329.0
372.00 19.083	372.00	Zero Out: Stream #4	85.5	0.0
372.00 19.083	373.00 54.38	Flow-Through Basin: Stream #3	329.0	59.3
372.00 19.083	372.10	Flowby Basin Model: Stream #3	59.3	59.3
373.00 18.583	373.00	Zero Out: Stream #5	0.0	0.0
373.00 18.583	340.00	Stream #3 Added to: Stream #2	31.6	83.2
340.00 18.250	340.00	Zero Out: Stream #3	59.3	0.0
340.00 18.250	12741.00	Stream #2 Added to: Stream #1	17629.7	17711.1
12741.00 18.333	12741.00	Zero Out: Stream #2	83.2	0.0
12741.00 16.500	127.00	Convex Routing: Stream #1	17711.1	17696.1
12710.00 16.500	127.00	Subarea (UH) Added to Stream #2	0.0	333.8

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL

3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV50127C.DAT ]
Page: 2 of |
-----+-----+-----+-----+
|UPSTREAM DOWNSTREAM| | UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE| |
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR) | MODELED (AF)| FOOTNOTES |
-----+-----+-----+-----+
| 127.00 127.00| Stream #2 Added to: Stream #1| 17696.1 17782.4|
18.333 | | |
| 127.00 127.00| Zero Out: Stream #2| 333.8 0.0|
| | | |
| 127.00 127.00| View: Stream #1| 17782.4|
18.333 | 14605.19| 3 |
-----+-----+-----+-----+
|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT
INTERVAL |
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF
THE DESIGN STORM |
-----+-----+-----+

```

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
(c) Copyright 1989-2013 Advanced Engineering Software (aes)
Ver. 20.0 Release Date: 06/01/2013 License ID 1264

Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 133C *
* 50-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV5033CC.DAT
TIME/DATE OF STUDY: 08:46 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 2.043 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.399
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.46; 30-MINUTE = 0.87; 1-HOUR = 1.21
3-HOUR = 2.28; 6-HOUR = 3.40; 24-HOUR = 5.99
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.123 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.391
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

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BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	1.520
3	2.00	1.30	3.150
4	3.00	1.60	4.900
5	4.00	1.80	6.790
6	5.00	2.10	8.810
7	6.00	2.30	10.970
8	7.00	47.90	13.270
9	8.00	131.60	15.720
10	9.00	241.70	18.320
11	10.00	372.80	21.060

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 312.40; DOWNSTREAM ELEVATION (FT) = 286.00
CHANNEL LENGTH (FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.219 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.457
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

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INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.295 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.734
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 286.00; DOWNSTREAM ELEVATION(FT) = 258.00
CHANNEL LENGTH(FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.239 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.146; LOW LOSS FRACTION = 0.341
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 16.600
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.166 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.138; LOW LOSS FRACTION = 0.349
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-3

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	5.95	0.280
3	2.00	22.18	1.150
4	3.00	46.43	3.090
5	4.00	75.05	6.150
6	5.00	105.54	10.350
7	6.00	127.29	15.380
8	7.00	138.99	20.860
9	8.00	150.45	26.500
10	9.00	161.55	32.360
11	10.00	697.61	38.410
12	11.00	1666.99	44.700

FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<<

FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<<
=====

FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<<
=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<<
=====

WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.310 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.303
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<<
=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3C-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	7.430


```

3      2.00      0.02      15.170
4      3.00      2.70      23.230
5      4.00      4.69      31.610
6      5.00      6.04      40.320
7      6.00      10.72     49.360
8      7.00      17.77     58.730
9      8.00      424.53    68.440
10     9.00      1169.03   78.500
11    10.00     2113.61   88.500

```

```

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

```

```

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-3

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

```

```

*****
FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

```

```

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.356 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.486
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

```

```

-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3

```

```

THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:

```

3C-3

```

DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-5

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

```

```

*****
FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

```

```

*****STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

```

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

```

```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====

WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.413 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.296; LOW LOSS FRACTION = 0.615
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

```

```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.304 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.217; LOW LOSS FRACTION = 0.490
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

5-2

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 20.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.200 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.611
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.234 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.333
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Table with 3 columns: DATA PAIR NUMBER, Qcenter (CFS), Qpass (CFS). Rows 1-5 showing flow data.

B Diversion Structure

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-10 showing basin data.

FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-4

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-23 showing basin data.

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.821 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.244; LOW LOSS FRACTION = 0.538
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

GBD Side
Weir

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 5.700
SPECIFIED DEAD STORAGE (AF) FILLED = 5.700
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

GBD Upper
Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.50	0.01	0.002
3	2.00	0.02	1.900
4	4.00	0.03	16.100
5	4.30	0.05	18.200
6	5.00	314.00	23.200
7	6.00	1306.00	30.300
8	7.00	2847.00	39.100
9	8.00	4942.00	47.800

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8
-----
>>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
=====
```

```
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

GBD Lower
West Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.99	2.90	0.900
3	1.99	11.38	2.900
4	3.99	19.63	10.300
5	5.99	25.19	20.700
6	7.99	29.71	31.700
7	9.99	33.62	43.500
8	10.99	35.49	49.700
9	11.99	313.49	56.400
10	12.99	894.27	63.100
11	13.99	1748.55	69.900
12	15.99	4306.91	84.100

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====
```

```
*****
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 4
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

GBD Lower
East Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.48	0.70	0.400
3	1.48	6.50	1.800
4	3.48	18.11	8.500
5	5.48	23.99	17.900
6	7.48	28.68	27.800
7	9.48	32.70	38.300
8	10.48	34.50	43.900
9	11.48	36.29	49.400
10	12.48	314.07	55.900
11	13.48	895.00	62.300
12	15.48	2882.95	74.700

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 427.51; DOWNSTREAM ELEVATION (FT) = 315.00
CHANNEL LENGTH (FT) = 9760.05 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00

```

*****
FLOW PROCESS FROM NODE 13305.00 TO NODE 133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 315.00; DOWNSTREAM ELEVATION(FT) = 212.00
CHANNEL LENGTH(FT) = 6877.24 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 132.00 TO NODE 133.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.625 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.224; LOW LOSS FRACTION = 0.381
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 11
-----
>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<
=====

```

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV5033CC.DAT]

Page: 1 of 1

UPSTREAM TIME (2)	DOWNSTREAM MAX. STORAGE	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
10100.00	119.00	0.0	17029.5
18.083			
119.00	12603.00	17029.5	16914.6
18.083			
810.00	809.00	0.0	123.2
16.167			
809.00	12603.00	123.2	65.5
16.333	13.83		
12603.00	12603.00	16914.6	16948.7
18.083			

12603.00	12603.00	65.5	0.0
18.167			
12603.00	126.00	16948.7	16931.9
18.167			
920.00	905.00	0.0	277.8
16.250			
905.00	126.00	277.8	218.6
16.417	19.31		
126.00	126.00	16931.9	17014.7
18.167			

126.00	126.00	218.6	0.0
16.333			
600.00	126.00	0.0	68.4
18.167			
126.00	126.00	17014.7	17027.6
126.00	126.00	68.4	0.0
18.167			
126.00	12720.50	17027.6	17020.5
18.250			

430.00	420.00	0.0	177.5
16.333			
420.00	420.50	177.5	107.0
16.500	10.83		
420.50	427.00	107.0	94.0
17.417	10.90		
413.00	425.00	0.0	84.7
16.250			

425.00	426.00	Flow-Through Basin:	Stream #3	84.7	41.4
16.417	2.71				

426.00	427.00	Stream #3 Added to:	Stream #2	94.0	132.6
17.250					
427.00	427.00	Zero Out:	Stream #3	41.4	0.0
18.250					
427.00	12720.50	Stream #2 Added to:	Stream #1	17020.5	17132.0
18.250					
12720.50	12720.50	Zero Out:	Stream #2	132.6	0.0
18.250					
12720.50	12741.00	Convex Routing:	Stream #1	17132.0	17094.3
18.250					

320.00	339.00	Subarea (UH) Added to	Stream #2	0.0	347.6
16.333					
339.00	340.00	Flow-Through Basin:	Stream #2	347.6	264.3
16.500	64.69				
339.00	372.00	Flowby Basin Model:	Stream #2	264.3	31.0
16.500					
390.00	372.00	Subarea (UH) Added to	Stream #4	0.0	79.2
16.417					
372.00	372.00	Stream #4 Added to:	Stream #3	233.3	306.5
16.500					

372.00	372.00	Zero Out:	Stream #4	79.2	0.0
19.167					
372.00	373.00	Flow-Through Basin:	Stream #3	306.5	57.2
19.167	53.29				
372.00	372.10	Flowby Basin Model:	Stream #3	57.2	57.2
19.167					
373.00	373.00	Zero Out:	Stream #5	0.0	0.0
18.583					
373.00	340.00	Stream #3 Added to:	Stream #2	31.0	80.9
18.583					

340.00	340.00	Zero Out:	Stream #3	57.2	0.0
18.250					
340.00	12741.00	Stream #2 Added to:	Stream #1	17094.3	17173.2
18.250					
12741.00	12741.00	Zero Out:	Stream #2	80.9	0.0
18.333					
12741.00	127.00	Convex Routing:	Stream #1	17173.2	17164.7
18.333					
12710.00	127.00	Subarea (UH) Added to	Stream #2	0.0	307.6
16.500					

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL

3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM


```

+-----+
|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV5033CC.DAT ]
Page: 2 of |
+-----+
|UPSTREAM DOWNSTREAM| | UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE| |
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR) | MODELED (AF)| FOOTNOTES |
+-----+
| 127.00 127.00| Stream #2 Added to: Stream #1| 17164.7 17253.0|
18.333 | | |
| 127.00 127.00| Zero Out: Stream #2| 307.6 0.0|
| | |
| 127.00 12902.00| Convex Routing: Stream #1| 17253.0 17232.7|
18.333 | | |
| 50220.00 50347.00| Subarea (UH) Added to Stream #2| 0.0 493.7|
16.333 | | |
| 50347.00 50347.00| Flow-Through Basin: Stream #2| 493.7 91.1|
18.500 | 125.82| |
+-----+
| 50347.00 12902.00| Convex Routing: Stream #2| 91.1 91.1|
18.667 | | |
| 12902.00 12902.00| Stream #2 Added to: Stream #1| 17232.7 17323.4|
18.333 | | |
| 12902.00 12902.00| Zero Out: Stream #2| 91.1 0.0|
| | |
| 12902.00 129.00| Convex Routing: Stream #1| 17323.4 17309.7|
18.417 | | |
| 50400.00 129.00| Subarea (UH) Added to Stream #2| 0.0 210.2|
16.250 | | |
+-----+
| 129.00 129.00| Stream #2 Added to: Stream #1| 17309.7 17334.6|
18.417 | | |
| 129.00 129.00| Zero Out: Stream #2| 210.2 0.0|
| | |
| 210.00 221.00| Subarea (UH) Added to Stream #2| 0.0 124.0|
16.333 | | |
| 221.00 221.00| Flowby Basin Model: Stream #2| 124.0 20.0|
16.333 | | |
| 221.00 223.00| Flow-Through Basin: Stream #2| 20.0 16.0|
17.250 | 4.01| |
+-----+
| 221.00 222.00| Flow-Through Basin: Stream #5| 103.9 28.4|
17.667 | 15.41| |
| 223.00 222.00| Stream #5 Added to: Stream #2| 16.0 44.3|
17.583 | | |
| 222.00 222.00| Zero Out: Stream #5| 28.4 0.0|
| | |
| 222.00 129.00| Stream #2 Added to: Stream #1| 17334.6 17376.2|
18.417 | | |

```

	129.00	129.00	Zero Out:	Stream #2	44.3	0.0
+-----+						
	129.00	133.00	Convex Routing:	Stream #1	17376.2	17354.2
18.500						
	13010.00	132.00	Subarea (UH) Added to	Stream #2	0.0	1358.9
16.833						
	132.00	132.00	Flowby Basin Model:	Stream #2	1358.9	1177.9
16.833						
	132.00	132.00	Flow-Through Basin:	Stream #3	181.0	170.5
17.083		20.92				
	132.00	132.00	Split Hydrograph:	Stream #3	170.5	85.3
17.083						
+-----+						
	132.00	132.00	Flow-Through Basin:	Stream #3	85.3	18.4
18.750		9.22				
	132.00	132.00	Stream #3 Added to:	Stream #2	1177.9	1188.5
16.833						
	132.00	132.00	Zero Out:	Stream #3	18.4	0.0
	132.00	132.00	Flow-Through Basin:	Stream #4	85.3	18.6
18.750		9.32				
	132.00	132.00	Stream #4 Added to:	Stream #2	1188.5	1196.7
16.833						
+-----+						
	132.00	132.00	Zero Out:	Stream #4	18.6	0.0
	132.00	13305.00	Convex Routing:	Stream #2	1196.7	1182.1
17.333						
	13305.00	133.00	Convex Routing:	Stream #2	1182.1	1169.5
17.583						
	132.00	133.00	Subarea (UH) Added to	Stream #3	0.0	606.8
16.667						
	133.00	133.00	Stream #3 Added to:	Stream #2	1169.5	1608.9
17.500						
+-----+						
	133.00	133.00	Zero Out:	Stream #3	606.8	0.0
	133.00	133.00	Stream #2 Added to:	Stream #1	17354.2	18855.2
17.583						
	133.00	133.00	Zero Out:	Stream #2	1608.9	0.0
	133.00	133.00	View:	Stream #1		18855.2
17.583		15858.11	3			
+-----+						
-----+						
Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT						
INTERVAL						
3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF						
THE DESIGN STORM						
+-----+						
-----+						

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Ver. 20.0 Release Date: 06/01/2013 License ID 1264

Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 133T *
* 50-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV5033TC.DAT
TIME/DATE OF STUDY: 12:14 06/18/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.821 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.244; LOW LOSS FRACTION = 0.538
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.744; 30-MINUTE = 0.744; 1-HOUR = 0.744
3-HOUR = 0.959; 6-HOUR = 0.978; 24-HOUR = 0.986

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: **GBD Side**
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN **Weir**
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00

3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN. **GBD Upper Basin**
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 5.700
SPECIFIED DEAD STORAGE (AF) FILLED = 5.700
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.50	0.01	0.002
3	2.00	0.02	1.900
4	4.00	0.03	16.100
5	4.30	0.05	18.200
6	5.00	314.00	23.200
7	6.00	1306.00	30.300
8	7.00	2847.00	39.100
9	8.00	4942.00	47.800

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8

>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN. **GBD Lower West Basin**
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.99	2.90	0.900
3	1.99	11.38	2.900
4	3.99	19.63	10.300
5	5.99	25.19	20.700
6	7.99	29.71	31.700
7	9.99	33.62	43.500
8	10.99	35.49	49.700
9	11.99	313.49	56.400
10	12.99	894.27	63.100
11	13.99	1748.55	69.900
12	15.99	4306.91	84.100

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 4 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

GBD Lower
East Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.48	0.70	0.400
3	1.48	6.50	1.800
4	3.48	18.11	8.500
5	5.48	23.99	17.900
6	7.48	28.68	27.800
7	9.48	32.70	38.300
8	10.48	34.50	43.900
9	11.48	36.29	49.400
10	12.48	314.07	55.900

11	13.48	895.00	62.300
12	15.48	2882.95	74.700

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6

>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 132.00 TO NODE 13305.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 427.51; DOWNSTREAM ELEVATION (FT) = 315.00
CHANNEL LENGTH (FT) = 9760.05 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13305.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 315.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 6877.24 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 132.00 TO NODE 133.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<<

WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.625 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.224; LOW LOSS FRACTION = 0.381
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.744; 30-MINUTE = 0.744; 1-HOUR = 0.744
3-HOUR = 0.959; 6-HOUR = 0.978; 24-HOUR = 0.986

FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 11

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<<

Table with columns: TIME (2) TO, NODE #, MODELED (AF), HYDROLOGIC/HYDRAULIC PROCESS, PEAK (CFS), FOOTNOTES. Includes summary of stream additions and clearances.

|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT
INTERVAL |
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF
THE DESIGN STORM |

+-----+
-----+

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 133U *
* 50-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV5033UC.DAT
TIME/DATE OF STUDY: 08:41 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 2.043 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.399
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.46; 30-MINUTE = 0.87; 1-HOUR = 1.21
3-HOUR = 2.28; 6-HOUR = 3.40; 24-HOUR = 5.99
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.123 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.391
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	1.520
3	2.00	1.30	3.150
4	3.00	1.60	4.900
5	4.00	1.80	6.790
6	5.00	2.10	8.810
7	6.00	2.30	10.970
8	7.00	47.90	13.270
9	8.00	131.60	15.720
10	9.00	241.70	18.320
11	10.00	372.80	21.060

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

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*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.219 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.457
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

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INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.295 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.734
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```


>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 286.00; DOWNSTREAM ELEVATION (FT) = 258.00
CHANNEL LENGTH (FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.239 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.146; LOW LOSS FRACTION = 0.341
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 16.600
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.166 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.138; LOW LOSS FRACTION = 0.349
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN. **3D-3**
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	5.95	0.280
3	2.00	22.18	1.150
4	3.00	46.43	3.090
5	4.00	75.05	6.150
6	5.00	105.54	10.350
7	6.00	127.29	15.380
8	7.00	138.99	20.860
9	8.00	150.45	26.500
10	9.00	161.55	32.360
11	10.00	697.61	38.410
12	11.00	1666.99	44.700

FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<<

FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<<
=====

FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<<
=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<<
=====

WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.310 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.303
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<<
=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN. **3C-1**
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	7.430

```

3      2.00      0.02      15.170
4      3.00      2.70      23.230
5      4.00      4.69      31.610
6      5.00      6.04      40.320
7      6.00     10.72      49.360
8      7.00     17.77      58.730
9      8.00     424.53     68.440
10     9.00     1169.03    78.500
11    10.00     2113.61    88.500

```

```

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

```

```

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-3

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

```

```

*****
FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

```

```

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.356 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.486
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

```

```

-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

3C-3

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-5

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

```

```

*****
FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

```

```

*****STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

```

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

```

```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====

WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.413 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.296; LOW LOSS FRACTION = 0.615
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

```

```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.304 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.217; LOW LOSS FRACTION = 0.490
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

5-2

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 20.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.200 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.611
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.234 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.333
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Table with 3 columns: DATA PAIR NUMBER, Qcenter (CFS), Qpass (CFS). Rows 1-5 showing flow data.

B Diversion Structure

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-10 showing basin data.

FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-4

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-23 showing basin data.

	425.00	426.00	Flow-Through Basin:	Stream #3	90.3	43.0
16.417		2.83				
+-----+						
	426.00	427.00	Stream #3 Added to:	Stream #2	97.7	137.5
17.250						
	427.00	427.00	Zero Out:	Stream #3	43.0	0.0
	427.00	12720.50	Stream #2 Added to:	Stream #1	17436.0	17548.9
18.250						
	12720.50	12720.50	Zero Out:	Stream #2	137.5	0.0
	12720.50	12741.00	Convex Routing:	Stream #1	17548.9	17511.0
18.250						
+-----+						
	320.00	339.00	Subarea (UH) Added to	Stream #2	0.0	367.6
16.333						
	339.00	340.00	Flow-Through Basin:	Stream #2	367.6	278.1
16.500		65.02				
	339.00	372.00	Flowby Basin Model:	Stream #2	278.1	31.5
16.500						
	390.00	372.00	Subarea (UH) Added to	Stream #4	0.0	84.1
16.417						
	372.00	372.00	Stream #4 Added to:	Stream #3	246.6	324.1
16.500						
+-----+						
	372.00	372.00	Zero Out:	Stream #4	84.1	0.0
	372.00	373.00	Flow-Through Basin:	Stream #3	324.1	58.8
19.083		54.13				
	372.00	372.10	Flowby Basin Model:	Stream #3	58.8	58.8
19.083						
	373.00	373.00	Zero Out:	Stream #5	0.0	0.0
	373.00	340.00	Stream #3 Added to:	Stream #2	31.5	82.7
18.583						
+-----+						
	340.00	340.00	Zero Out:	Stream #3	58.8	0.0
	340.00	12741.00	Stream #2 Added to:	Stream #1	17511.0	17591.9
18.250						
	12741.00	12741.00	Zero Out:	Stream #2	82.7	0.0
	12741.00	127.00	Convex Routing:	Stream #1	17591.9	17578.0
18.333						
	12710.00	127.00	Subarea (UH) Added to	Stream #2	0.0	327.9
16.500						
+-----+						
+-----+						
Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL						
3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM						
+-----+						
+-----+						

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV5033UC.DAT]

Page: 2 of

UPSTREAM TIME (2) TO	DOWNSTREAM MAX. STORAGE	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
127.00	127.00	17578.0	17664.8
18.333			
127.00	127.00	327.9	0.0
127.00	12902.00	17664.8	17646.7
18.333			
50220.00	50347.00	0.0	526.7
16.333			
50347.00	50347.00	526.7	92.2
18.500	127.56		

50347.00	12902.00	92.2	92.2
18.667			
12902.00	12902.00	17646.7	17738.6
18.333			
12902.00	12902.00	92.2	0.0
12902.00	129.00	17738.6	17722.4
18.417			
50400.00	129.00	0.0	226.5
16.250			

129.00	129.00	17722.4	17747.3
18.417			
129.00	129.00	226.5	0.0
210.00	221.00	0.0	131.6
16.333			
221.00	221.00	131.6	20.5
16.333			
221.00	223.00	20.5	16.1
17.250	4.03		

221.00	222.00	111.1	29.9
17.500	15.67		
223.00	222.00	16.1	45.9
17.500			
222.00	222.00	29.9	0.0
222.00	129.00	17747.3	17789.8
18.417			

129.00	129.00	Zero Out:	Stream #2	45.9	0.0
129.00	133.00	Convex Routing:	Stream #1	17789.8	17764.4
18.500					
133.00	133.00	View:	Stream #1		17764.4
18.500	14854.30	3			

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 134C *
* 50-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV5034CC.DAT
TIME/DATE OF STUDY: 08:38 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 2.043 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.399
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.46; 30-MINUTE = 0.87; 1-HOUR = 1.21
3-HOUR = 2.28; 6-HOUR = 3.40; 24-HOUR = 5.99
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.123 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.391
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

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BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing values for depth, outflow, and storage.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.219 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.457
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933
=====
*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00
=====
BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

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INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====
*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.295 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.734
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933
=====
*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====
*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 286.00; DOWNSTREAM ELEVATION (FT) = 258.00
CHANNEL LENGTH (FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

=====

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

=====

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.239 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.146; LOW LOSS FRACTION = 0.341
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 16.600
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

=====

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.166 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.138; LOW LOSS FRACTION = 0.349
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-3

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	5.95	0.280
3	2.00	22.18	1.150
4	3.00	46.43	3.090
5	4.00	75.05	6.150
6	5.00	105.54	10.350
7	6.00	127.29	15.380
8	7.00	138.99	20.860
9	8.00	150.45	26.500
10	9.00	161.55	32.360
11	10.00	697.61	38.410
12	11.00	1666.99	44.700

FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<<

FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<<
=====

FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<<
=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<<
=====

WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.310 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.303
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<<
=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3C-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	7.430

```

3      2.00      0.02      15.170
4      3.00      2.70      23.230
5      4.00      4.69      31.610
6      5.00      6.04      40.320
7      6.00     10.72      49.360
8      7.00     17.77      58.730
9      8.00     424.53     68.440
10     9.00     1169.03    78.500
11    10.00     2113.61    88.500

```

```

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

```

```

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-3

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

```

```

*****
FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

```

```

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.356 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.486
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

```

```

-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

3C-3

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-5

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

```

```

*****
FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

```

```

*****STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

```

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO**

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

```

```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====

WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.413 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.296; LOW LOSS FRACTION = 0.615
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

```

```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.304 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.217; LOW LOSS FRACTION = 0.490
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

5-2

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 20.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.200 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.611
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.234 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.333
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Table with 3 columns: DATA PAIR NUMBER, Qcenter (CFS), Qpass (CFS). Includes handwritten note 'B Diversion Structure'.

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-10.

FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-4

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-23.

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.821 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.244; LOW LOSS FRACTION = 0.538
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: **GBD Side**
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN **Weir**
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN. **GBD Upper Basin**
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 5.700
SPECIFIED DEAD STORAGE (AF) FILLED = 5.700
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.50	0.01	0.002
3	2.00	0.02	1.900
4	4.00	0.03	16.100
5	4.30	0.05	18.200
6	5.00	314.00	23.200
7	6.00	1306.00	30.300
8	7.00	2847.00	39.100
9	8.00	4942.00	47.800

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8
-----
>>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
=====
```

```
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

GBD Lower
West Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.99	2.90	0.900
3	1.99	11.38	2.900
4	3.99	19.63	10.300
5	5.99	25.19	20.700
6	7.99	29.71	31.700
7	9.99	33.62	43.500
8	10.99	35.49	49.700
9	11.99	313.49	56.400
10	12.99	894.27	63.100
11	13.99	1748.55	69.900
12	15.99	4306.91	84.100

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====
```

```
*****
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 4
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

GBD Lower
East Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.48	0.70	0.400
3	1.48	6.50	1.800
4	3.48	18.11	8.500
5	5.48	23.99	17.900
6	7.48	28.68	27.800
7	9.48	32.70	38.300
8	10.48	34.50	43.900
9	11.48	36.29	49.400
10	12.48	314.07	55.900
11	13.48	895.00	62.300
12	15.48	2882.95	74.700

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 427.51; DOWNSTREAM ELEVATION (FT) = 315.00
CHANNEL LENGTH (FT) = 9760.05 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00

```

*****
FLOW PROCESS FROM NODE 13305.00 TO NODE 133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 315.00; DOWNSTREAM ELEVATION(FT) = 212.00
CHANNEL LENGTH(FT) = 6877.24 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 133.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.625 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.224; LOW LOSS FRACTION = 0.381
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 212.00; DOWNSTREAM ELEVATION(FT) = 173.00
CHANNEL LENGTH(FT) = 6461.31 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1691.600 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.318 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.452
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====
*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 13500.00 TO NODE 134.00 IS CODE = 1

```

```

=====
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 3859.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 1.294 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.284; LOW LOSS FRACTION = 0.431
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

```

```

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<

```

```

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

```

```

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 11

```

```

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<

```

```

-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
|                                                                 * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV5034CC.DAT ]
| Page: 1 of 1
|-----+-----+-----+-----+-----+-----+-----+-----+-----+
| UPSTREAM DOWNSTREAM|                                     | UPSTREAM DOWNSTREAM| |
| TIME (2) TO | MAX. STORAGE|                                     | PEAK (CFS) PEAK (CFS)|
| NODE #     NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
| PEAK (HR)  | MODELED (AF)| FOOTNOTES |
|-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 10100.00   119.00| Subarea (UH) Added to Stream #1|      0.0   16694.0|
| 18.083 | | |
| 119.00     12603.00| Convex Routing:      Stream #1|  16694.0  16584.7|
| 18.083 | | |
| 810.00     809.00| Subarea (UH) Added to Stream #2|      0.0   117.2|
| 16.167 | | |
| 809.00     12603.00| Flow-Through Basin:  Stream #2|  117.2    62.5|
| 16.333 | | 13.73|
| 12603.00   12603.00| Stream #2 Added to:  Stream #1|  16584.7  16619.0|
| 18.083 | | |
|-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 12603.00   12603.00| Zero Out:           Stream #2|      62.5    0.0|
| | | |
| 12603.00   126.00| Convex Routing:     Stream #1|  16619.0  16604.4|
| 18.167 | | |
| 920.00     905.00| Subarea (UH) Added to Stream #2|      0.0   264.3|
| 16.250 | | |
| 905.00     126.00| Flow-Through Basin:  Stream #2|  264.3   209.1|
| 16.417 | | 19.16|
| 126.00     126.00| Stream #2 Added to:  Stream #1|  16604.4  16688.5|
| 18.167 | | |
|-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 126.00     126.00| Zero Out:           Stream #2|  209.1    0.0|
| | | |
| 600.00     126.00| Subarea (UH) Added to Stream #2|      0.0    64.7|
| 16.333 | | |
| 126.00     126.00| Stream #2 Added to:  Stream #1|  16688.5  16701.7|
| 18.167 | | |
| 126.00     126.00| Zero Out:           Stream #2|  64.7     0.0|
| | | |
| 126.00    12720.50| Convex Routing:     Stream #1|  16701.7  16694.1|
| 18.250 | | |
|-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 430.00     420.00| Subarea (UH) Added to Stream #2|      0.0   169.8|
| 16.333 | | |
| 420.00     420.50| Flow-Through Basin:  Stream #2|  169.8   102.6|
| 16.500 | | 10.62|
| 420.50     427.00| Flow-Through Basin:  Stream #2|  102.6    91.2|
| 17.417 | | 10.76|
| 413.00     425.00| Subarea (UH) Added to Stream #3|      0.0    80.9|
| 16.250 | | |

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	425.00	426.00	Flow-Through Basin:	Stream #3	80.9	40.3
16.417		2.61				
+-----+						
	426.00	427.00	Stream #3 Added to:	Stream #2	91.2	128.7
17.250						
	427.00	427.00	Zero Out:	Stream #3	40.3	0.0
	427.00	12720.50	Stream #2 Added to:	Stream #1	16694.1	16804.5
18.250						
	12720.50	12720.50	Zero Out:	Stream #2	128.7	0.0
	12720.50	12741.00	Convex Routing:	Stream #1	16804.5	16766.1
18.250						
+-----+						
	320.00	339.00	Subarea (UH) Added to	Stream #2	0.0	334.0
16.333						
	339.00	340.00	Flow-Through Basin:	Stream #2	334.0	254.4
16.500		64.46				
	339.00	372.00	Flowby Basin Model:	Stream #2	254.4	30.6
16.500						
	390.00	372.00	Subarea (UH) Added to	Stream #4	0.0	75.6
16.417						
	372.00	372.00	Stream #4 Added to:	Stream #3	223.8	293.8
16.500						
+-----+						
	372.00	372.00	Zero Out:	Stream #4	75.6	0.0
	372.00	373.00	Flow-Through Basin:	Stream #3	293.8	56.0
19.250		52.66				
	372.00	372.10	Flowby Basin Model:	Stream #3	56.0	56.0
19.250						
	373.00	373.00	Zero Out:	Stream #5	0.0	0.0
	373.00	340.00	Stream #3 Added to:	Stream #2	30.6	79.6
18.583						
+-----+						
	340.00	340.00	Zero Out:	Stream #3	56.0	0.0
	340.00	12741.00	Stream #2 Added to:	Stream #1	16766.1	16843.6
18.250						
	12741.00	12741.00	Zero Out:	Stream #2	79.6	0.0
	12741.00	127.00	Convex Routing:	Stream #1	16843.6	16839.8
18.333						
	12710.00	127.00	Subarea (UH) Added to	Stream #2	0.0	293.0
16.500						
+-----+						
Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL						
3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM						
+-----+						
+-----+						

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV5034CC.DAT]

Page: 2 of

UPSTREAM TIME (2)	DOWNSTREAM MAX. STORAGE	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
127.00	127.00	16839.8	16929.4
18.333			
127.00	127.00	293.0	0.0
127.00	12902.00	16929.4	16906.6
18.333			
50220.00	50347.00	0.0	471.2
16.333			
50347.00	50347.00	471.2	90.4
18.583	124.56		
50347.00	12902.00	90.4	90.3
18.667			
12902.00	12902.00	16906.6	16996.5
18.333			
12902.00	12902.00	90.3	0.0
12902.00	129.00	16996.5	16984.8
18.417			
50400.00	129.00	0.0	198.8
16.250			
129.00	129.00	16984.8	17009.8
18.417			
129.00	129.00	198.8	0.0
210.00	221.00	0.0	118.6
16.333			
221.00	221.00	118.6	19.7
16.333			
221.00	223.00	19.7	15.9
17.250	4.00		
221.00	222.00	98.9	27.3
17.833	15.23		
223.00	222.00	15.9	43.0
17.667			
222.00	222.00	27.3	0.0
222.00	129.00	17009.8	17050.7
18.417			

129.00	129.00	Zero Out:	Stream #2	43.0	0.0
129.00	133.00	Convex Routing:	Stream #1	17050.7	17031.4
18.500					
13010.00	132.00	Subarea (UH) Added to	Stream #2	0.0	1308.2
16.833					
132.00	132.00	Flowby Basin Model:	Stream #2	1308.2	1136.9
16.833					
132.00	132.00	Flow-Through Basin:	Stream #3	171.3	161.6
17.083	20.78				
132.00	132.00	Split Hydrograph:	Stream #3	161.6	80.8
17.083					
132.00	132.00	Flow-Through Basin:	Stream #3	80.8	18.0
18.833	8.83				
132.00	132.00	Stream #3 Added to:	Stream #2	1136.9	1147.0
16.833					
132.00	132.00	Zero Out:	Stream #3	18.0	0.0
132.00	132.00	Flow-Through Basin:	Stream #4	80.8	18.4
18.833	8.93				
132.00	132.00	Stream #4 Added to:	Stream #2	1147.0	1154.9
16.833					
132.00	132.00	Zero Out:	Stream #4	18.4	0.0
132.00	13305.00	Convex Routing:	Stream #2	1154.9	1141.7
17.333					
13305.00	133.00	Convex Routing:	Stream #2	1141.7	1129.5
17.583					
132.00	133.00	Subarea (UH) Added to	Stream #3	0.0	585.4
16.667					
133.00	133.00	Stream #3 Added to:	Stream #2	1129.5	1562.4
17.500					
133.00	133.00	Zero Out:	Stream #3	585.4	0.0
133.00	133.00	Stream #2 Added to:	Stream #1	17031.4	18536.2
17.583					
133.00	133.00	Zero Out:	Stream #2	1562.4	0.0
133.00	134.00	Convex Routing:	Stream #1	18536.2	18520.4
17.750					
133.00	134.00	Subarea (UH) Added to	Stream #2	0.0	690.8
16.417					

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV5034CC.DAT ]
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-----+-----+
|UPSTREAM DOWNSTREAM| | UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE| |
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR) | MODELED (AF)| FOOTNOTES |
-----+-----+
| 134.00 134.00| Stream #2 Added to: Stream #1| 18520.4 18802.4|
17.750 | | |
| 134.00 134.00| Zero Out: Stream #2| 690.8 0.0|
| | |
| 13500.00 134.00| Subarea (UH) Added to Stream #2| 0.0 1055.7|
17.333 | | |
| 134.00 134.00| Stream #2 Added to: Stream #1| 18802.4 19807.5|
17.667 | | |
| 134.00 134.00| Zero Out: Stream #2| 1055.7 0.0|
| | |
-----+-----+
| 134.00 134.00| View: Stream #1| 19807.5|
17.667 | 16802.79| 3 |
-----+-----+
|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT
INTERVAL |
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF
THE DESIGN STORM |
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END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Ver. 20.0 Release Date: 06/01/2013 License ID 1264

Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 134UC *
* 50-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV5034UC.DAT
TIME/DATE OF STUDY: 08:39 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 2.043 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.399
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.46; 30-MINUTE = 0.87; 1-HOUR = 1.21
3-HOUR = 2.28; 6-HOUR = 3.40; 24-HOUR = 5.99
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.123 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.391
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	1.520
3	2.00	1.30	3.150
4	3.00	1.60	4.900
5	4.00	1.80	6.790
6	5.00	2.10	8.810
7	6.00	2.30	10.970
8	7.00	47.90	13.270
9	8.00	131.60	15.720
10	9.00	241.70	18.320
11	10.00	372.80	21.060

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

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*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.219 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.457
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

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INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.295 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.734
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 286.00; DOWNSTREAM ELEVATION(FT) = 258.00
CHANNEL LENGTH(FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.239 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.146; LOW LOSS FRACTION = 0.341
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 16.600
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.166 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.138; LOW LOSS FRACTION = 0.349
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

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*****
FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
-----
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 5.95 0.280
3 2.00 22.18 1.150
4 3.00 46.43 3.090
5 4.00 75.05 6.150
6 5.00 105.54 10.350
7 6.00 127.29 15.380
8 7.00 138.99 20.860
9 8.00 150.45 26.500
10 9.00 161.55 32.360
11 10.00 697.61 38.410
12 11.00 1666.99 44.700
-----
*****
FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
-----
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
-----
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
-----
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6
-----

```

3D-3

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
-----
WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.310 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.303
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
-----
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 0.01 7.430

```

3C-1

```

3      2.00      0.02      15.170
4      3.00      2.70      23.230
5      4.00      4.69      31.610
6      5.00      6.04      40.320
7      6.00     10.72     49.360
8      7.00     17.77     58.730
9      8.00     424.53    68.440
10     9.00     1169.03   78.500
11    10.00    2113.61   88.500

```

```

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

```

```

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-3

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

```

```

*****
FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

```

```

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.356 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.486
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

```

```

-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

3C-3

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-5

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

```

```

*****
FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

```

```

*****STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

```

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

```

```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====

WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.413 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.296; LOW LOSS FRACTION = 0.615
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

```

```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.304 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.217; LOW LOSS FRACTION = 0.490
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

5-2

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 20.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.200 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.611
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.234 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.333
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Table with 3 columns: DATA PAIR NUMBER, Qcenter (CFS), Qpass (CFS). Includes handwritten blue text 'B Diversion Structure'.

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-10.

FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-4

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-23.

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.821 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.244; LOW LOSS FRACTION = 0.538
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: **GBD Side**
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN **Weir**
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3 THROUGH A FLOW-THROUGH DETENTION BASIN. **GBD Upper Basin**
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 5.700
SPECIFIED DEAD STORAGE (AF) FILLED = 5.700
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.50	0.01	0.002
3	2.00	0.02	1.900
4	4.00	0.03	16.100
5	4.30	0.05	18.200
6	5.00	314.00	23.200
7	6.00	1306.00	30.300
8	7.00	2847.00	39.100
9	8.00	4942.00	47.800

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8
-----
>>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
=====
```

```
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

GBD Lower
West Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.99	2.90	0.900
3	1.99	11.38	2.900
4	3.99	19.63	10.300
5	5.99	25.19	20.700
6	7.99	29.71	31.700
7	9.99	33.62	43.500
8	10.99	35.49	49.700
9	11.99	313.49	56.400
10	12.99	894.27	63.100
11	13.99	1748.55	69.900
12	15.99	4306.91	84.100

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====
```

```
*****
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 4
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

GBD Lower
East Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.48	0.70	0.400
3	1.48	6.50	1.800
4	3.48	18.11	8.500
5	5.48	23.99	17.900
6	7.48	28.68	27.800
7	9.48	32.70	38.300
8	10.48	34.50	43.900
9	11.48	36.29	49.400
10	12.48	314.07	55.900
11	13.48	895.00	62.300
12	15.48	2882.95	74.700

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 427.51; DOWNSTREAM ELEVATION (FT) = 315.00
CHANNEL LENGTH (FT) = 9760.05 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00

```

*****
FLOW PROCESS FROM NODE 13305.00 TO NODE 133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 315.00; DOWNSTREAM ELEVATION(FT) = 212.00
CHANNEL LENGTH(FT) = 6877.24 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 133.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.625 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.224; LOW LOSS FRACTION = 0.381
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 212.00; DOWNSTREAM ELEVATION(FT) = 173.00
CHANNEL LENGTH(FT) = 6461.31 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1691.600 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.318 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.452
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====
*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 11

```

=====
>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<
=====

```
-----+-----+-----+
|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV5034UC.DAT ]
Page: 1 of 1
-----+-----+-----+
|UPSTREAM DOWNSTREAM|                               |UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE|                               |
| NODE #     NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR)   | MODELED (AF)| FOOTNOTES |
-----+-----+-----+
| 10100.00   119.00| Subarea (UH) Added to Stream #1|      0.0   16926.0|
18.083 |           |                               |
| 119.00     12603.00| Convex Routing:      Stream #1| 16926.0   16813.3|
18.083 |           |                               |
| 810.00     809.00| Subarea (UH) Added to Stream #2|      0.0    121.1|
16.167 |           |                               |
| 809.00     12603.00| Flow-Through Basin: Stream #2| 121.1     64.5|
16.333 |           |                               |
| 12603.00   12603.00| Stream #2 Added to: Stream #1| 16813.3   16847.4|
18.083 |           |                               |
-----+-----+-----+
| 12603.00   12603.00| Zero Out:           Stream #2|      64.5     0.0|
|           |                               |
| 12603.00   126.00| Convex Routing:      Stream #1| 16847.4   16831.3|
18.167 |           |                               |
| 920.00     905.00| Subarea (UH) Added to Stream #2|      0.0    273.0|
16.250 |           |                               |
| 905.00     126.00| Flow-Through Basin: Stream #2| 273.0    215.3|
16.417 |           |                               |
| 126.00     126.00| Stream #2 Added to: Stream #1| 16831.3   16914.5|
18.167 |           |                               |
-----+-----+-----+
| 126.00     126.00| Zero Out:           Stream #2| 215.3     0.0|
|           |                               |
| 600.00     126.00| Subarea (UH) Added to Stream #2|      0.0     67.1|
16.333 |           |                               |
| 126.00     126.00| Stream #2 Added to: Stream #1| 16914.5   16927.5|
18.167 |           |                               |
| 126.00     126.00| Zero Out:           Stream #2| 67.1      0.0|
|           |                               |
| 126.00     12720.50| Convex Routing:      Stream #1| 16927.5   16920.3|
18.250 |           |                               |
-----+-----+-----+
| 430.00     420.00| Subarea (UH) Added to Stream #2|      0.0    174.8|
16.333 |           |                               |
| 420.00     420.50| Flow-Through Basin: Stream #2| 174.8    105.6|
16.500 |           |                               |
| 420.50     427.00| Flow-Through Basin: Stream #2| 105.6     93.1|
17.417 |           |                               |
| 413.00     425.00| Subarea (UH) Added to Stream #3|      0.0     83.4|
16.250 |           |                               |
-----+-----+-----+
```

	425.00	426.00	Flow-Through Basin:	Stream #3	83.4	41.0
16.417		2.67				
+-----+						
	426.00	427.00	Stream #3 Added to:	Stream #2	93.1	131.4
17.250						
	427.00	427.00	Zero Out:	Stream #3	41.0	0.0
	427.00	12720.50	Stream #2 Added to:	Stream #1	16920.3	17031.5
18.250						
	12720.50	12720.50	Zero Out:	Stream #2	131.4	0.0
	12720.50	12741.00	Convex Routing:	Stream #1	17031.5	16993.8
18.250						
+-----+						
	320.00	339.00	Subarea (UH) Added to	Stream #2	0.0	342.6
16.333						
	339.00	340.00	Flow-Through Basin:	Stream #2	342.6	260.9
16.500		64.61				
	339.00	372.00	Flowby Basin Model:	Stream #2	260.9	30.8
16.500						
	390.00	372.00	Subarea (UH) Added to	Stream #4	0.0	77.9
16.417						
	372.00	372.00	Stream #4 Added to:	Stream #3	230.0	302.2
16.500						
+-----+						
	372.00	372.00	Zero Out:	Stream #4	77.9	0.0
	372.00	373.00	Flow-Through Basin:	Stream #3	302.2	56.9
19.167		53.11				
	372.00	372.10	Flowby Basin Model:	Stream #3	56.9	56.9
19.167						
	373.00	373.00	Zero Out:	Stream #5	0.0	0.0
	373.00	340.00	Stream #3 Added to:	Stream #2	30.8	80.5
18.583						
+-----+						
	340.00	340.00	Zero Out:	Stream #3	56.9	0.0
	340.00	12741.00	Stream #2 Added to:	Stream #1	16993.8	17072.4
18.250						
	12741.00	12741.00	Zero Out:	Stream #2	80.5	0.0
	12741.00	127.00	Convex Routing:	Stream #1	17072.4	17065.1
18.333						
	12710.00	127.00	Subarea (UH) Added to	Stream #2	0.0	302.6
16.500						
+-----+						
+-----+						
Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL						
3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM						
+-----+						
+-----+						

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV5034UC.DAT]

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UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS FOOTNOTES	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
--	--	---	------------------------	--------------------------

127.00	127.00	Stream #2 Added to:	Stream #1	17065.1	17153.8
18.333					
127.00	127.00	Zero Out:	Stream #2	302.6	0.0
127.00	12902.00	Convex Routing:	Stream #1	17153.8	17132.9
18.333					
50220.00	50347.00	Subarea (UH) Added to	Stream #2	0.0	485.5
16.333					
50347.00	50347.00	Flow-Through Basin:	Stream #2	485.5	90.9
18.500	125.43				
50347.00	12902.00	Convex Routing:	Stream #2	90.9	90.9
18.667					
12902.00	12902.00	Stream #2 Added to:	Stream #1	17132.9	17223.4
18.333					
12902.00	12902.00	Zero Out:	Stream #2	90.9	0.0
12902.00	129.00	Convex Routing:	Stream #1	17223.4	17210.3
18.417					
50400.00	129.00	Subarea (UH) Added to	Stream #2	0.0	206.1
16.250					
129.00	129.00	Stream #2 Added to:	Stream #1	17210.3	17235.2
18.417					
129.00	129.00	Zero Out:	Stream #2	206.1	0.0
210.00	221.00	Subarea (UH) Added to	Stream #2	0.0	122.1
16.333					
221.00	221.00	Flowby Basin Model:	Stream #2	122.1	19.9
16.333					
221.00	223.00	Flow-Through Basin:	Stream #2	19.9	16.0
17.250	4.01				
221.00	222.00	Flow-Through Basin:	Stream #5	102.2	28.1
17.667	15.35				
223.00	222.00	Stream #5 Added to:	Stream #2	16.0	43.9
17.583					
222.00	222.00	Zero Out:	Stream #5	28.1	0.0
222.00	129.00	Stream #2 Added to:	Stream #1	17235.2	17276.7
18.417					

129.00	129.00	Zero Out:	Stream #2	43.9	0.0
129.00	133.00	Convex Routing:	Stream #1	17276.7	17255.5
18.500					
13010.00	132.00	Subarea (UH) Added to	Stream #2	0.0	1341.4
16.833					
132.00	132.00	Flowby Basin Model:	Stream #2	1341.4	1163.7
16.833					
132.00	132.00	Flow-Through Basin:	Stream #3	177.7	167.5
17.083	20.87				
132.00	132.00	Split Hydrograph:	Stream #3	167.5	83.7
17.083					
132.00	132.00	Flow-Through Basin:	Stream #3	83.7	18.3
18.833	9.09				
132.00	132.00	Stream #3 Added to:	Stream #2	1163.7	1174.2
16.833					
132.00	132.00	Zero Out:	Stream #3	18.3	0.0
132.00	132.00	Flow-Through Basin:	Stream #4	83.7	18.5
18.750	9.19				
132.00	132.00	Stream #4 Added to:	Stream #2	1174.2	1182.3
16.833					
132.00	132.00	Zero Out:	Stream #4	18.5	0.0
132.00	13305.00	Convex Routing:	Stream #2	1182.3	1168.4
17.333					
13305.00	133.00	Convex Routing:	Stream #2	1168.4	1155.8
17.583					
132.00	133.00	Subarea (UH) Added to	Stream #3	0.0	599.4
16.667					
133.00	133.00	Stream #3 Added to:	Stream #2	1155.8	1592.9
17.500					
133.00	133.00	Zero Out:	Stream #3	599.4	0.0
133.00	133.00	Stream #2 Added to:	Stream #1	17255.5	18758.6
17.583					
133.00	133.00	Zero Out:	Stream #2	1592.9	0.0
133.00	134.00	Convex Routing:	Stream #1	18758.6	18742.3
17.750					
133.00	134.00	Subarea (UH) Added to	Stream #2	0.0	712.2
16.417					

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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-----+
|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV5034UC.DAT ]
Page: 3 of |
-----+-----+
|UPSTREAM DOWNSTREAM| | UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE| |
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR) | MODELED (AF)| FOOTNOTES |
-----+-----+
| 134.00 134.00| Stream #2 Added to: Stream #1| 18742.3 19021.9|
17.750 | | |
| 134.00 134.00| Zero Out: Stream #2| 712.2 0.0|
| | | |
| 134.00 134.00| View: Stream #1| 19021.9|
17.750 | 16141.37| 3 |
-----+-----+
|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT
INTERVAL |
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF
THE DESIGN STORM |
-----+

```

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Ver. 23.0 Release Date: 07/01/2016 License ID 1264

Analysis prepared by:

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 137 *
* 50-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV50137C.DAT
TIME/DATE OF STUDY: 08:54 06/20/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 2.043 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.399
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.46; 30-MINUTE = 0.87; 1-HOUR = 1.21
3-HOUR = 2.28; 6-HOUR = 3.40; 24-HOUR = 5.99
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.123 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.391
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing values for depth, outflow, and storage.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<


```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.219 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.457
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

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INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.295 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.734
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 286.00; DOWNSTREAM ELEVATION(FT) = 258.00
CHANNEL LENGTH(FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.239 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.146; LOW LOSS FRACTION = 0.341
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 16.600
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

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BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.166 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.138; LOW LOSS FRACTION = 0.349
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

```

*****
FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
-----
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 5.95 0.280
3 2.00 22.18 1.150
4 3.00 46.43 3.090
5 4.00 75.05 6.150
6 5.00 105.54 10.350
7 6.00 127.29 15.380
8 7.00 138.99 20.860
9 8.00 150.45 26.500
10 9.00 161.55 32.360
11 10.00 697.61 38.410
12 11.00 1666.99 44.700
-----
*****
FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
-----
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
-----
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
-----
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6
-----

```

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```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
-----
WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.310 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.303
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
-----
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 0.01 7.430

```

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3	2.00	0.02	15.170
4	3.00	2.70	23.230
5	4.00	4.69	31.610
6	5.00	6.04	40.320
7	6.00	10.72	49.360
8	7.00	17.77	58.730
9	8.00	424.53	68.440
10	9.00	1169.03	78.500
11	10.00	2113.61	88.500

FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: **Weir to**
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN **3C-3**
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.356 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.486
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN. **3C-3**

SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE: **Weir to**
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN **3C-5**
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

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CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====

WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.413 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.296; LOW LOSS FRACTION = 0.615
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

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```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.304 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.217; LOW LOSS FRACTION = 0.490
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

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*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

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>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
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ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

5-2

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BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

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```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 20.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

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CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

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```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

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*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

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>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

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*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

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```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.200 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.611
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.234 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.333
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Table with 3 columns: DATA PAIR NUMBER, Qcenter (CFS), Qpass (CFS). Rows 1-5 showing flow data.

B Diversion Structure

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-10 showing basin data.

FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-4

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-23 showing basin data.

24 23.00 466.70 51.740
 25 24.00 951.81 53.820

 FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

 FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

 FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

 FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

 FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
 ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
 (Reference: the National Engineering Handbook, Hydrology,
 Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
 BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
 UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
 CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
 CONSTANT LOSS RATE (CFS) = 0.00

 FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
 *USER ENTERED "LAG" TIME = 0.821 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
 MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.244; LOW LOSS FRACTION = 0.538
 SPECIFIED PEAK RAINFALL DEPTHS (INCH):
 5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
 3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
 *USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
 5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
 3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

 FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: **GBD Side**
 FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN **Weir**
 THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

 FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3 **GBD Upper**
 THROUGH A FLOW-THROUGH DETENTION BASIN. **Basin**
 SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
 DEAD STORAGE (AF) = 5.700
 SPECIFIED DEAD STORAGE (AF) FILLED = 5.700
 SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
 DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.50	0.01	0.002
3	2.00	0.02	1.900
4	4.00	0.03	16.100
5	4.30	0.05	18.200
6	5.00	314.00	23.200
7	6.00	1306.00	30.300
8	7.00	2847.00	39.100
9	8.00	4942.00	47.800


```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8
-----
>>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
```

```
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
=====
```

```
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

GBD Lower
West Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.99	2.90	0.900
3	1.99	11.38	2.900
4	3.99	19.63	10.300
5	5.99	25.19	20.700
6	7.99	29.71	31.700
7	9.99	33.62	43.500
8	10.99	35.49	49.700
9	11.99	313.49	56.400
10	12.99	894.27	63.100
11	13.99	1748.55	69.900
12	15.99	4306.91	84.100

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====
```

```
*****
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 4
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
=====
```

GBD Lower
East Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.48	0.70	0.400
3	1.48	6.50	1.800
4	3.48	18.11	8.500
5	5.48	23.99	17.900
6	7.48	28.68	27.800
7	9.48	32.70	38.300
8	10.48	34.50	43.900
9	11.48	36.29	49.400
10	12.48	314.07	55.900
11	13.48	895.00	62.300
12	15.48	2882.95	74.700

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 427.51; DOWNSTREAM ELEVATION (FT) = 315.00
CHANNEL LENGTH (FT) = 9760.05 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00

```

*****
FLOW PROCESS FROM NODE 13305.00 TO NODE 133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 315.00; DOWNSTREAM ELEVATION(FT) = 212.00
CHANNEL LENGTH(FT) = 6877.24 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 133.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.625 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.224; LOW LOSS FRACTION = 0.381
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 212.00; DOWNSTREAM ELEVATION(FT) = 173.00
CHANNEL LENGTH(FT) = 6461.31 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1691.600 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.318 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.452
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====
*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 13500.00 TO NODE 134.00 IS CODE = 1

```

```

-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 3859.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 1.294 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.284; LOW LOSS FRACTION = 0.431
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 4.00
UPSTREAM ELEVATION (FT) = 173.00; DOWNSTREAM ELEVATION (FT) = 133.00
CHANNEL LENGTH (FT) = 6064.09 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1191.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.400 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.237; LOW LOSS FRACTION = 0.440
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06

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3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 11
-----
>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<
=====

```

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV50137C.DAT]

Page: 1 of 1

UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS FOOTNOTES	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
--	--	---	------------------------	--------------------------

10100.00 18.083	119.00	Subarea (UH) Added to Stream #1	0.0	16623.0
119.00 18.083	12603.00	Convex Routing: Stream #1	16623.0	16514.4
810.00 16.167	809.00	Subarea (UH) Added to Stream #2	0.0	116.1
809.00 16.333	12603.00 13.72	Flow-Through Basin: Stream #2	116.1	61.9
12603.00 18.083	12603.00	Stream #2 Added to: Stream #1	16514.4	16548.7
12603.00 18.167	12603.00	Zero Out: Stream #2	61.9	0.0
12603.00 18.167	126.00	Convex Routing: Stream #1	16548.7	16534.7
920.00 16.250	905.00	Subarea (UH) Added to Stream #2	0.0	262.0
905.00 16.417	126.00 19.13	Flow-Through Basin: Stream #2	262.0	207.3
126.00 18.167	126.00	Stream #2 Added to: Stream #1	16534.7	16619.1
126.00 16.333	126.00	Zero Out: Stream #2	207.3	0.0
600.00 18.167	126.00	Subarea (UH) Added to Stream #2	0.0	64.0
126.00 18.167	126.00	Stream #2 Added to: Stream #1	16619.1	16632.3
126.00 18.250	126.00	Zero Out: Stream #2	64.0	0.0
126.00 18.250	12720.50	Convex Routing: Stream #1	16632.3	16624.4
430.00 16.333	420.00	Subarea (UH) Added to Stream #2	0.0	168.4
420.00 16.500	420.50 10.58	Flow-Through Basin: Stream #2	168.4	101.6
420.50 17.417	427.00 10.73	Flow-Through Basin: Stream #2	101.6	90.6
413.00 16.250	425.00	Subarea (UH) Added to Stream #3	0.0	80.2

425.00 16.417	426.00 2.59	Flow-Through Basin: Stream #3	80.2	40.0
426.00 17.250	427.00	Stream #3 Added to: Stream #2	90.6	127.9
427.00 18.250	427.00	Zero Out: Stream #3	40.0	0.0
427.00 18.250	12720.50	Stream #2 Added to: Stream #1	16624.4	16734.7
12720.50 18.250	12720.50	Zero Out: Stream #2	127.9	0.0
12720.50 18.250	12741.00	Convex Routing: Stream #1	16734.7	16695.3
320.00 16.333	339.00	Subarea (UH) Added to Stream #2	0.0	331.7
339.00 16.500	340.00 64.41	Flow-Through Basin: Stream #2	331.7	252.6
339.00 16.500	372.00	Flowby Basin Model: Stream #2	252.6	30.5
390.00 16.417	372.00	Subarea (UH) Added to Stream #4	0.0	75.0
372.00 16.500	372.00	Stream #4 Added to: Stream #3	222.0	291.5
372.00 19.250	372.00	Zero Out: Stream #4	75.0	0.0
372.00 19.250	373.00 52.52	Flow-Through Basin: Stream #3	291.5	55.7
372.00 19.250	372.10	Flowby Basin Model: Stream #3	55.7	55.7
373.00 18.583	373.00	Zero Out: Stream #5	0.0	0.0
373.00 18.583	340.00	Stream #3 Added to: Stream #2	30.5	79.3
340.00 18.250	340.00	Zero Out: Stream #3	55.7	0.0
340.00 18.250	12741.00	Stream #2 Added to: Stream #1	16695.3	16772.5
12741.00 18.250	12741.00	Zero Out: Stream #2	79.3	0.0
12741.00 18.333	127.00	Convex Routing: Stream #1	16772.5	16770.5
12710.00 16.500	127.00	Subarea (UH) Added to Stream #2	0.0	290.3

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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|
|                                     * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV50137C.DAT ]
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-----+-----+-----+-----+
|UPSTREAM DOWNSTREAM|                                     |UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE|                                     |
| NODE #     NODE # | HYDROLOGIC/HYDRAULIC PROCESS |PEAK (CFS) PEAK (CFS)|
PEAK (HR)   | MODELED (AF)| FOOTNOTES |
-----+-----+-----+-----+
| 127.00    127.00| Stream #2 Added to:  Stream #1| 16770.5    16860.4|
18.333 |          |          |
| 127.00    127.00| Zero Out:           Stream #2| 290.3       0.0|
|          |          |          |
| 127.00    12902.00| Convex Routing:    Stream #1| 16860.4    16836.5|
18.333 |          |          |
| 50220.00   50347.00| Subarea (UH) Added to Stream #2| 0.0         467.4|
16.333 |          |          |
| 50347.00   50347.00| Flow-Through Basin: Stream #2| 467.4       90.2|
18.583 | 124.31|          |
-----+-----+-----+-----+
| 50347.00   12902.00| Convex Routing:    Stream #2| 90.2        90.2|
18.667 |          |          |
| 12902.00   12902.00| Stream #2 Added to: Stream #1| 16836.5    16926.2|
18.333 |          |          |
| 12902.00   12902.00| Zero Out:           Stream #2| 90.2        0.0|
|          |          |          |
| 12902.00    129.00| Convex Routing:    Stream #1| 16926.2    16915.1|
18.417 |          |          |
| 50400.00    129.00| Subarea (UH) Added to Stream #2| 0.0         196.8|
16.250 |          |          |
-----+-----+-----+-----+
| 129.00     129.00| Stream #2 Added to: Stream #1| 16915.1    16940.1|
18.417 |          |          |
| 129.00     129.00| Zero Out:           Stream #2| 196.8       0.0|
|          |          |          |
| 210.00     221.00| Subarea (UH) Added to Stream #2| 0.0         117.7|
16.333 |          |          |
| 221.00     221.00| Flowby Basin Model: Stream #2| 117.7       19.6|
16.333 |          |          |
| 221.00     223.00| Flow-Through Basin: Stream #2| 19.6        15.9|
17.250 | 4.00|          |
-----+-----+-----+-----+
| 221.00     222.00| Flow-Through Basin: Stream #5| 98.1        27.1|
17.833 | 15.19|          |
| 223.00     222.00| Stream #5 Added to: Stream #2| 15.9        42.8|
17.667 |          |          |
| 222.00     222.00| Zero Out:           Stream #5| 27.1        0.0|
|          |          |          |
| 222.00     129.00| Stream #2 Added to: Stream #1| 16940.1    16980.9|
18.417 |          |          |

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	129.00	129.00	Zero Out:	Stream #2	42.8	0.0
+-----+						
	129.00	133.00	Convex Routing:	Stream #1	16980.9	16962.3
18.500						
	13010.00	132.00	Subarea (UH) Added to	Stream #2	0.0	1298.9
16.833						
	132.00	132.00	Flowby Basin Model:	Stream #2	1298.9	1129.4
16.833						
	132.00	132.00	Flow-Through Basin:	Stream #3	169.5	160.0
17.083		20.75				
	132.00	132.00	Split Hydrograph:	Stream #3	160.0	80.0
17.083						
+-----+						
	132.00	132.00	Flow-Through Basin:	Stream #3	80.0	17.9
18.833		8.75				
	132.00	132.00	Stream #3 Added to:	Stream #2	1129.4	1139.4
16.833						
	132.00	132.00	Zero Out:	Stream #3	17.9	0.0
	132.00	132.00	Flow-Through Basin:	Stream #4	80.0	18.3
18.833		8.86				
	132.00	132.00	Stream #4 Added to:	Stream #2	1139.4	1147.3
16.833						
+-----+						
	132.00	132.00	Zero Out:	Stream #4	18.3	0.0
	132.00	13305.00	Convex Routing:	Stream #2	1147.3	1134.4
17.333						
	13305.00	133.00	Convex Routing:	Stream #2	1134.4	1122.2
17.583						
	132.00	133.00	Subarea (UH) Added to	Stream #3	0.0	581.3
16.667						
	133.00	133.00	Stream #3 Added to:	Stream #2	1122.2	1553.7
17.500						
+-----+						
	133.00	133.00	Zero Out:	Stream #3	581.3	0.0
	133.00	133.00	Stream #2 Added to:	Stream #1	16962.3	18467.2
17.583						
	133.00	133.00	Zero Out:	Stream #2	1553.7	0.0
	133.00	134.00	Convex Routing:	Stream #1	18467.2	18451.6
17.750						
	133.00	134.00	Subarea (UH) Added to	Stream #2	0.0	684.8
16.417						

[Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL

| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

| INPUT FILENAME: [EV50137C.DAT]

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UPSTREAM TIME (2) TO	DOWNSTREAM MAX. STORAGE	HYDROLOGIC/HYDRAULIC PROCESS	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
134.00	134.00	Stream #2 Added to:	Stream #1	18451.6
17.750				
134.00	134.00	Zero Out:	Stream #2	684.8
				0.0
13500.00	134.00	Subarea (UH) Added to	Stream #2	0.0
17.333				1049.7
134.00	134.00	Stream #2 Added to:	Stream #1	18734.4
17.667				19736.0
134.00	134.00	Zero Out:	Stream #2	1049.7
				0.0

134.00	137.00	Convex Routing:	Stream #1	19736.0
17.833				19723.1
134.00	137.00	Subarea (UH) Added to	Stream #2	0.0
16.500				441.8
137.00	137.00	Stream #2 Added to:	Stream #1	19723.1
17.833				19929.0
137.00	137.00	Zero Out:	Stream #2	441.8
				0.0
137.00	137.00	View:	Stream #1	19929.0
17.833	17002.47	3		

|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
 | 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 138 *
* 50-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV50138C.DAT
TIME/DATE OF STUDY: 08:35 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 2.043 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.399
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.46; 30-MINUTE = 0.87; 1-HOUR = 1.21
3-HOUR = 2.28; 6-HOUR = 3.40; 24-HOUR = 5.99
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.123 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.391
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing depth and storage values.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<


```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.219 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.457
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

4F-1

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.295 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.734
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 286.00; DOWNSTREAM ELEVATION(FT) = 258.00
CHANNEL LENGTH(FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00

=====

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

=====

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.239 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.146; LOW LOSS FRACTION = 0.341
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 16.600
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

=====

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.166 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.138; LOW LOSS FRACTION = 0.349
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-3

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	5.95	0.280
3	2.00	22.18	1.150
4	3.00	46.43	3.090
5	4.00	75.05	6.150
6	5.00	105.54	10.350
7	6.00	127.29	15.380
8	7.00	138.99	20.860
9	8.00	150.45	26.500
10	9.00	161.55	32.360
11	10.00	697.61	38.410
12	11.00	1666.99	44.700

FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<<

FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<<
=====

FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<<
=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<<
=====

WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.310 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.303
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<<
=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3C-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	7.430

```

3      2.00      0.02      15.170
4      3.00      2.70      23.230
5      4.00      4.69      31.610
6      5.00      6.04      40.320
7      6.00     10.72      49.360
8      7.00     17.77      58.730
9      8.00     424.53     68.440
10     9.00     1169.03    78.500
11    10.00     2113.61    88.500

```

```

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

```

```

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-3

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

```

```

*****
FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

```

```

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.356 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.486
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

```

```

-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

3C-3

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-5

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

```

```

*****
FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

```

```

*****STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

```

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO**

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

```

```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.413 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.296; LOW LOSS FRACTION = 0.615
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

```

```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.304 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.217; LOW LOSS FRACTION = 0.490
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 20.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.200 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.611
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.234 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.333
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Table with 3 columns: DATA PAIR NUMBER, Qcenter (CFS), Qpass (CFS). Rows 1-5 showing flow data.

B Diversion Structure

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-10 showing basin data.

FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3B-4

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-23 showing basin data.

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.821 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.244; LOW LOSS FRACTION = 0.538
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: **GBD Side**
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN **Weir**
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3 **GBD Upper**
THROUGH A FLOW-THROUGH DETENTION BASIN. **Basin**
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 5.700
SPECIFIED DEAD STORAGE (AF) FILLED = 5.700
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.50	0.01	0.002
3	2.00	0.02	1.900
4	4.00	0.03	16.100
5	4.30	0.05	18.200
6	5.00	314.00	23.200
7	6.00	1306.00	30.300
8	7.00	2847.00	39.100
9	8.00	4942.00	47.800


```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8
-----
>>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
=====
```

```
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

GBD Lower
West Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.99	2.90	0.900
3	1.99	11.38	2.900
4	3.99	19.63	10.300
5	5.99	25.19	20.700
6	7.99	29.71	31.700
7	9.99	33.62	43.500
8	10.99	35.49	49.700
9	11.99	313.49	56.400
10	12.99	894.27	63.100
11	13.99	1748.55	69.900
12	15.99	4306.91	84.100

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====
```

```
*****
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 4
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

GBD Lower
East Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.48	0.70	0.400
3	1.48	6.50	1.800
4	3.48	18.11	8.500
5	5.48	23.99	17.900
6	7.48	28.68	27.800
7	9.48	32.70	38.300
8	10.48	34.50	43.900
9	11.48	36.29	49.400
10	12.48	314.07	55.900
11	13.48	895.00	62.300
12	15.48	2882.95	74.700

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 427.51; DOWNSTREAM ELEVATION (FT) = 315.00
CHANNEL LENGTH (FT) = 9760.05 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00

```

*****
FLOW PROCESS FROM NODE 13305.00 TO NODE 133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 315.00; DOWNSTREAM ELEVATION(FT) = 212.00
CHANNEL LENGTH(FT) = 6877.24 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 133.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.625 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.224; LOW LOSS FRACTION = 0.381
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 212.00; DOWNSTREAM ELEVATION(FT) = 173.00
CHANNEL LENGTH(FT) = 6461.31 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1691.600 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.318 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.452
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====
*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 13500.00 TO NODE 134.00 IS CODE = 1

```

```

-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 3859.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 1.294 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.284; LOW LOSS FRACTION = 0.431
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 4.00
UPSTREAM ELEVATION (FT) = 173.00; DOWNSTREAM ELEVATION (FT) = 133.00
CHANNEL LENGTH (FT) = 6064.09 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1191.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.400 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.237; LOW LOSS FRACTION = 0.440
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06

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3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 138.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 100.00 CHANNEL Z = 4.00
UPSTREAM ELEVATION (FT) = 133.00; DOWNSTREAM ELEVATION (FT) = 119.70
CHANNEL LENGTH (FT) = 4643.67 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 138.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1303.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.515 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.267; LOW LOSS FRACTION = 0.495
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 138.00 TO NODE 138.00 IS CODE = 7
-----

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 138.00 TO NODE 138.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 138.00 TO NODE 138.00 IS CODE = 11

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<<

```

+-----+
|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV50138C.DAT ]
Page: 1 of 1
+-----+
|UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE|
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR) | MODELED (AF)| FOOTNOTES |
+-----+
| 10100.00 119.00| Subarea (UH) Added to Stream #1| 0.0 16547.9|
18.083 |
| 119.00 12603.00| Convex Routing: Stream #1| 16547.9 16440.3|
18.083 |
| 810.00 809.00| Subarea (UH) Added to Stream #2| 0.0 114.9|
16.167 |
| 809.00 12603.00| Flow-Through Basin: Stream #2| 114.9 61.3|
16.333 | 13.70|
| 12603.00 12603.00| Stream #2 Added to: Stream #1| 16440.3 16474.7|
18.083 |
+-----+
| 12603.00 12603.00| Zero Out: Stream #2| 61.3 0.0|
|
| 12603.00 126.00| Convex Routing: Stream #1| 16474.7 16461.1|
18.167 |
| 920.00 905.00| Subarea (UH) Added to Stream #2| 0.0 259.4|
16.250 |
| 905.00 126.00| Flow-Through Basin: Stream #2| 259.4 205.4|
16.417 | 19.10|
| 126.00 126.00| Stream #2 Added to: Stream #1| 16461.1 16545.8|
18.167 |
+-----+
| 126.00 126.00| Zero Out: Stream #2| 205.4 0.0|
|
| 600.00 126.00| Subarea (UH) Added to Stream #2| 0.0 63.3|
16.333 |
| 126.00 126.00| Stream #2 Added to: Stream #1| 16545.8 16559.1|
18.167 |
| 126.00 126.00| Zero Out: Stream #2| 63.3 0.0|
|
| 126.00 12720.50| Convex Routing: Stream #1| 16559.1 16551.3|
18.250 |
+-----+
| 430.00 420.00| Subarea (UH) Added to Stream #2| 0.0 166.9|
16.333 |
| 420.00 420.50| Flow-Through Basin: Stream #2| 166.9 100.6|
16.500 | 10.53|
| 420.50 427.00| Flow-Through Basin: Stream #2| 100.6 90.0|
17.417 | 10.70|
| 413.00 425.00| Subarea (UH) Added to Stream #3| 0.0 79.4|
16.250 |

```

	425.00	426.00	Flow-Through Basin:	Stream #3	79.4	39.8
16.417		2.57				
+-----+						
	426.00	427.00	Stream #3 Added to:	Stream #2	90.0	127.1
17.250						
	427.00	427.00	Zero Out:	Stream #3	39.8	0.0
	427.00	12720.50	Stream #2 Added to:	Stream #1	16551.3	16661.2
18.250						
	12720.50	12720.50	Zero Out:	Stream #2	127.1	0.0
	12720.50	12741.00	Convex Routing:	Stream #1	16661.2	16622.1
18.250						
+-----+						
	320.00	339.00	Subarea (UH) Added to	Stream #2	0.0	329.1
16.333						
	339.00	340.00	Flow-Through Basin:	Stream #2	329.1	250.6
16.500		64.36				
	339.00	372.00	Flowby Basin Model:	Stream #2	250.6	30.5
16.500						
	390.00	372.00	Subarea (UH) Added to	Stream #4	0.0	74.3
16.417						
	372.00	372.00	Stream #4 Added to:	Stream #3	220.1	288.9
16.500						
+-----+						
	372.00	372.00	Zero Out:	Stream #4	74.3	0.0
	372.00	373.00	Flow-Through Basin:	Stream #3	288.9	55.4
19.250		52.37				
	372.00	372.10	Flowby Basin Model:	Stream #3	55.4	55.4
19.250						
	373.00	373.00	Zero Out:	Stream #5	0.0	0.0
	373.00	340.00	Stream #3 Added to:	Stream #2	30.5	79.0
18.583						
+-----+						
	340.00	340.00	Zero Out:	Stream #3	55.4	0.0
	340.00	12741.00	Stream #2 Added to:	Stream #1	16622.1	16698.9
18.250						
	12741.00	12741.00	Zero Out:	Stream #2	79.0	0.0
	12741.00	127.00	Convex Routing:	Stream #1	16698.9	16697.4
18.333						
	12710.00	127.00	Subarea (UH) Added to	Stream #2	0.0	287.3
16.500						

[Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM
|

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV50138C.DAT]

Page: 2 of

UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS FOOTNOTES	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
127.00	127.00	Stream #2 Added to: Stream #1	16697.4	16787.6
18.333				
127.00	127.00	Zero Out: Stream #2	287.3	0.0
127.00	12902.00	Convex Routing: Stream #1	16787.6	16763.7
18.333				
50220.00	50347.00	Subarea (UH) Added to Stream #2	0.0	463.0
16.333				
50347.00	50347.00	Flow-Through Basin: Stream #2	463.0	90.0
18.583	124.05			
50347.00	12902.00	Convex Routing: Stream #2	90.0	90.0
18.667				
12902.00	12902.00	Stream #2 Added to: Stream #1	16763.7	16853.3
18.333				
12902.00	12902.00	Zero Out: Stream #2	90.0	0.0
12902.00	129.00	Convex Routing: Stream #1	16853.3	16842.4
18.417				
50400.00	129.00	Subarea (UH) Added to Stream #2	0.0	194.6
16.250				
129.00	129.00	Stream #2 Added to: Stream #1	16842.4	16867.3
18.417				
129.00	129.00	Zero Out: Stream #2	194.6	0.0
210.00	221.00	Subarea (UH) Added to Stream #2	0.0	116.6
16.333				
221.00	221.00	Flowby Basin Model: Stream #2	116.6	19.5
16.333				
221.00	223.00	Flow-Through Basin: Stream #2	19.5	15.9
17.250	3.99			
221.00	222.00	Flow-Through Basin: Stream #5	97.1	26.9
17.917	15.15			
223.00	222.00	Stream #5 Added to: Stream #2	15.9	42.5
17.750				
222.00	222.00	Zero Out: Stream #5	26.9	0.0
222.00	129.00	Stream #2 Added to: Stream #1	16867.3	16908.0
18.417				

129.00	129.00	Zero Out: Stream #2	42.5	0.0
129.00	133.00	Convex Routing: Stream #1	16908.0	16889.8
18.500				
13010.00	132.00	Subarea (UH) Added to Stream #2	0.0	1288.9
16.833				
132.00	132.00	Flowby Basin Model: Stream #2	1288.9	1121.3
16.833				
132.00	132.00	Flow-Through Basin: Stream #3	167.6	158.2
17.083	20.72			
132.00	132.00	Split Hydrograph: Stream #3	158.2	79.1
17.083				
132.00	132.00	Flow-Through Basin: Stream #3	79.1	17.8
18.833	8.68			
132.00	132.00	Stream #3 Added to: Stream #2	1121.3	1131.2
16.833				
132.00	132.00	Zero Out: Stream #3	17.8	0.0
132.00	132.00	Flow-Through Basin: Stream #4	79.1	18.3
18.833	8.79			
132.00	132.00	Stream #4 Added to: Stream #2	1131.2	1139.0
16.833				
132.00	132.00	Zero Out: Stream #4	18.3	0.0
132.00	13305.00	Convex Routing: Stream #2	1139.0	1126.0
17.333				
13305.00	133.00	Convex Routing: Stream #2	1126.0	1113.9
17.583				
132.00	133.00	Subarea (UH) Added to Stream #3	0.0	577.0
16.667				
133.00	133.00	Stream #3 Added to: Stream #2	1113.9	1543.8
17.500				
133.00	133.00	Zero Out: Stream #3	577.0	0.0
133.00	133.00	Stream #2 Added to: Stream #1	16889.8	18394.6
17.583				
133.00	133.00	Zero Out: Stream #2	1543.8	0.0
133.00	134.00	Convex Routing: Stream #1	18394.6	18379.1
17.750				
133.00	134.00	Subarea (UH) Added to Stream #2	0.0	678.2
16.417				

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV50138C.DAT ]
Page: 3 of |
-----+-----+
|UPSTREAM DOWNSTREAM| | UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE| |
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR) | MODELED (AF)| FOOTNOTES |
-----+-----+
| 134.00 134.00| Stream #2 Added to: Stream #1| 18379.1 18662.7|
17.750 | | |
| 134.00 134.00| Zero Out: Stream #2| 678.2 0.0|
| | |
| 13500.00 134.00| Subarea (UH) Added to Stream #2| 0.0 1043.3|
17.333 | | |
| 134.00 134.00| Stream #2 Added to: Stream #1| 18662.7 19660.7|
17.667 | | |
| 134.00 134.00| Zero Out: Stream #2| 1043.3 0.0|
| | |
-----+-----+
| 134.00 137.00| Convex Routing: Stream #1| 19660.7 19647.5|
17.833 | | |
| 134.00 137.00| Subarea (UH) Added to Stream #2| 0.0 437.8|
16.500 | | |
| 137.00 137.00| Stream #2 Added to: Stream #1| 19647.5 19854.0|
17.833 | | |
| 137.00 137.00| Zero Out: Stream #2| 437.8 0.0|
| | |
| 137.00 138.00| Convex Routing: Stream #1| 19854.0 19846.1|
17.917 | | |
-----+-----+
| 137.00 138.00| Subarea (UH) Added to Stream #2| 0.0 410.2|
16.583 | | |
| 138.00 138.00| Stream #2 Added to: Stream #1| 19846.1 20054.7|
17.917 | | |
| 138.00 138.00| Zero Out: Stream #2| 410.2 0.0|
| | |
| 138.00 138.00| View: Stream #1| 20054.7|
17.917 | 17199.49| 3 |
-----+-----+
|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT
INTERVAL |
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF
THE DESIGN STORM |
-----+

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END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Ver. 20.0 Release Date: 06/01/2013 License ID 1264

Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 139 *
* 50-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV50139C.DAT
TIME/DATE OF STUDY: 08:33 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 2.043 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.399
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.46; 30-MINUTE = 0.87; 1-HOUR = 1.21
3-HOUR = 2.28; 6-HOUR = 3.40; 24-HOUR = 5.99
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.123 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.391
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

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BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	1.520
3	2.00	1.30	3.150
4	3.00	1.60	4.900
5	4.00	1.80	6.790
6	5.00	2.10	8.810
7	6.00	2.30	10.970
8	7.00	47.90	13.270
9	8.00	131.60	15.720
10	9.00	241.70	18.320
11	10.00	372.80	21.060

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<


```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.219 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.457
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

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INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.295 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.734
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 286.00; DOWNSTREAM ELEVATION (FT) = 258.00
CHANNEL LENGTH (FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.239 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.146; LOW LOSS FRACTION = 0.341
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 16.600
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

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BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.166 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.138; LOW LOSS FRACTION = 0.349
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

```

*****
FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
-----
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 5.95 0.280
3 2.00 22.18 1.150
4 3.00 46.43 3.090
5 4.00 75.05 6.150
6 5.00 105.54 10.350
7 6.00 127.29 15.380
8 7.00 138.99 20.860
9 8.00 150.45 26.500
10 9.00 161.55 32.360
11 10.00 697.61 38.410
12 11.00 1666.99 44.700
-----
*****
FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
-----
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
-----
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
-----
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6
-----

```

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```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
-----
WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.310 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.303
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
-----
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 0.01 7.430

```

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```

3      2.00      0.02      15.170
4      3.00      2.70      23.230
5      4.00      4.69      31.610
6      5.00      6.04      40.320
7      6.00     10.72     49.360
8      7.00     17.77     58.730
9      8.00     424.53    68.440
10     9.00     1169.03   78.500
11    10.00    2113.61   88.500

```

```

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

```

```

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE: Weir to
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN 3C-3
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

```

```

*****
FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

```

```

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.356 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.486
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

```

```

-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

3C-3

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-5

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

```

```

*****
FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

```

```

*****
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

```

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO**

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

```

```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====

WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.413 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.296; LOW LOSS FRACTION = 0.615
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

```

```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.304 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.217; LOW LOSS FRACTION = 0.490
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

5-2

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 20.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.200 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.611
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.234 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.333
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2
-----
>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.
DATA PAIR Qcenter Qpass
NUMBER (CFS) (CFS)
- 0.00 0.00
1 25.00 13.59
2 75.00 16.84
3 100.00 18.46
4 250.00 28.22
5 550.00 47.73
FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5
=====

*****
FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

B Diversion
Structure

3B-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	0.310
3	2.00	0.83	1.240
4	3.00	5.60	2.600
5	4.00	16.88	4.130
6	5.00	23.48	5.790
7	6.00	36.73	7.560
8	7.00	55.95	9.440
9	8.00	78.70	11.430
10	9.00	228.67	12.460

```

*****
FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

3B-4

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	1.84	0.260
3	2.00	3.22	1.160
4	3.00	4.16	2.520
5	4.00	4.94	3.990
6	5.00	5.60	5.550
7	6.00	7.17	7.200
8	7.00	14.13	8.950
9	8.00	18.54	10.800
10	9.00	21.90	12.740
11	10.00	24.73	14.780
12	11.00	37.17	16.920
13	12.00	57.63	19.160
14	13.00	83.32	21.500
15	14.00	112.96	23.940
16	15.00	133.28	26.480
17	16.00	144.34	29.150
18	17.00	154.45	31.950
19	18.00	163.94	34.870
20	19.00	172.92	37.940
21	20.00	181.39	41.140
22	21.00	189.45	44.500
23	22.00	197.22	48.010

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.821 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.244; LOW LOSS FRACTION = 0.538
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

GBD Side
Weir

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 5.700
SPECIFIED DEAD STORAGE (AF) FILLED = 5.700
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

GBD Upper
Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.50	0.01	0.002
3	2.00	0.02	1.900
4	4.00	0.03	16.100
5	4.30	0.05	18.200
6	5.00	314.00	23.200
7	6.00	1306.00	30.300
8	7.00	2847.00	39.100
9	8.00	4942.00	47.800


```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8
-----
>>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
=====
```

```
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

GBD Lower
West Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.99	2.90	0.900
3	1.99	11.38	2.900
4	3.99	19.63	10.300
5	5.99	25.19	20.700
6	7.99	29.71	31.700
7	9.99	33.62	43.500
8	10.99	35.49	49.700
9	11.99	313.49	56.400
10	12.99	894.27	63.100
11	13.99	1748.55	69.900
12	15.99	4306.91	84.100

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====
```

```
*****
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 4
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

GBD Lower
East Basin

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.48	0.70	0.400
3	1.48	6.50	1.800
4	3.48	18.11	8.500
5	5.48	23.99	17.900
6	7.48	28.68	27.800
7	9.48	32.70	38.300
8	10.48	34.50	43.900
9	11.48	36.29	49.400
10	12.48	314.07	55.900
11	13.48	895.00	62.300
12	15.48	2882.95	74.700

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 427.51; DOWNSTREAM ELEVATION (FT) = 315.00
CHANNEL LENGTH (FT) = 9760.05 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00

```

*****
FLOW PROCESS FROM NODE 13305.00 TO NODE 133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 315.00; DOWNSTREAM ELEVATION(FT) = 212.00
CHANNEL LENGTH(FT) = 6877.24 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 133.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.625 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.224; LOW LOSS FRACTION = 0.381
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 212.00; DOWNSTREAM ELEVATION(FT) = 173.00
CHANNEL LENGTH(FT) = 6461.31 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1691.600 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.318 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.452
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====
*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 13500.00 TO NODE 134.00 IS CODE = 1

```

```

-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 3859.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 1.294 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.284; LOW LOSS FRACTION = 0.431
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 4.00
UPSTREAM ELEVATION (FT) = 173.00; DOWNSTREAM ELEVATION (FT) = 133.00
CHANNEL LENGTH (FT) = 6064.09 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1191.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.400 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.237; LOW LOSS FRACTION = 0.440
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06

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```

3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 138.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 100.00 CHANNEL Z = 4.00
UPSTREAM ELEVATION (FT) = 133.00; DOWNSTREAM ELEVATION (FT) = 119.70
CHANNEL LENGTH (FT) = 4643.67 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 138.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1303.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.515 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.267; LOW LOSS FRACTION = 0.495
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 138.00 TO NODE 138.00 IS CODE = 7
-----

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 138.00 TO NODE 138.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 138.00 TO NODE 139.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 100.00 CHANNEL Z = 4.00
UPSTREAM ELEVATION(FT) = 119.70; DOWNSTREAM ELEVATION(FT) = 100.00
CHANNEL LENGTH(FT) = 3107.78 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 138.00 TO NODE 139.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 428.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.245 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.207; LOW LOSS FRACTION = 0.487
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.37; 30-MINUTE = 0.80; 1-HOUR = 1.06
3-HOUR = 1.78; 6-HOUR = 2.47; 24-HOUR = 4.12
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 139.00 TO NODE 139.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 139.00 TO NODE 139.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 139.00 TO NODE 139.00 IS CODE = 11

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<<

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV50139C.DAT]

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UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
--	--	------------------------------	------------------------	--------------------------

10100.00 18.083	119.00	Subarea (UH) Added to Stream #1	0.0	16526.1
119.00 18.083	12603.00	Convex Routing: Stream #1	16526.1	16419.0
810.00 16.167	809.00	Subarea (UH) Added to Stream #2	0.0	114.5
809.00 16.333	12603.00 13.69	Flow-Through Basin: Stream #2	114.5	61.1
12603.00 18.083	12603.00	Stream #2 Added to: Stream #1	16419.0	16453.4
12603.00 18.167	12603.00	Zero Out: Stream #2	61.1	0.0
12603.00 18.167	126.00	Convex Routing: Stream #1	16453.4	16439.9
920.00 16.250	905.00	Subarea (UH) Added to Stream #2	0.0	258.4
905.00 16.417	126.00 19.09	Flow-Through Basin: Stream #2	258.4	204.8
126.00 18.167	126.00	Stream #2 Added to: Stream #1	16439.9	16524.8
126.00 16.333	126.00	Zero Out: Stream #2	204.8	0.0
600.00 18.167	126.00	Subarea (UH) Added to Stream #2	0.0	63.0
126.00 18.250	126.00	Stream #2 Added to: Stream #1	16524.8	16538.0
126.00 18.250	126.00	Zero Out: Stream #2	63.0	0.0
126.00 18.250	12720.50	Convex Routing: Stream #1	16538.0	16530.2
430.00 16.333	420.00	Subarea (UH) Added to Stream #2	0.0	166.4
420.00 16.500	420.50 10.52	Flow-Through Basin: Stream #2	166.4	100.3
420.50 17.417	427.00 10.69	Flow-Through Basin: Stream #2	100.3	89.8
413.00 16.250	425.00	Subarea (UH) Added to Stream #3	0.0	79.1

425.00 16.417	426.00 2.57	Flow-Through Basin: Stream #3	79.1	39.7
426.00 17.250	427.00	Stream #3 Added to: Stream #2	89.8	126.8
427.00 18.250	427.00	Zero Out: Stream #3	39.7	0.0
427.00 18.250	12720.50	Stream #2 Added to: Stream #1	16530.2	16640.1
12720.50 18.250	12720.50	Zero Out: Stream #2	126.8	0.0
12720.50 18.250	12741.00	Convex Routing: Stream #1	16640.1	16601.0
320.00 16.333	339.00	Subarea (UH) Added to Stream #2	0.0	328.1
339.00 16.500	340.00 64.35	Flow-Through Basin: Stream #2	328.1	249.9
339.00 16.500	372.00	Flowby Basin Model: Stream #2	249.9	30.5
390.00 16.417	372.00	Subarea (UH) Added to Stream #4	0.0	74.0
372.00 16.500	372.00	Stream #4 Added to: Stream #3	219.4	288.0
372.00 19.250	372.00	Zero Out: Stream #4	74.0	0.0
372.00 19.250	373.00 52.33	Flow-Through Basin: Stream #3	288.0	55.4
372.00 19.250	372.10	Flowby Basin Model: Stream #3	55.4	55.4
373.00 18.583	373.00	Zero Out: Stream #5	0.0	0.0
373.00 18.583	340.00	Stream #3 Added to: Stream #2	30.5	78.9
340.00 18.250	340.00	Zero Out: Stream #3	55.4	0.0
340.00 18.250	12741.00	Stream #2 Added to: Stream #1	16601.0	16677.7
12741.00 18.250	12741.00	Zero Out: Stream #2	78.9	0.0
12741.00 18.333	127.00	Convex Routing: Stream #1	16677.7	16676.5
12710.00 16.500	127.00	Subarea (UH) Added to Stream #2	0.0	286.3

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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+-----+
|
|                                     * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV50139C.DAT ]
Page: 2 of |
+-----+
|UPSTREAM  DOWNSTREAM|                                     | UPSTREAM  DOWNSTREAM|
TIME (2) TO | MAX. STORAGE|                                     |
| NODE #     NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS)  PEAK (CFS) |
PEAK (HR)   | MODELED (AF) | FOOTNOTES |
+-----+
| 127.00    127.00| Stream #2 Added to:  Stream #1| 16676.5    16766.7|
18.333 | | |
| 127.00    127.00| Zero Out:           Stream #2| 286.3      0.0|
| | |
| 127.00    12902.00| Convex Routing:     Stream #1| 16766.7    16742.8|
18.333 | | |
| 50220.00   50347.00| Subarea (UH) Added to Stream #2| 0.0        461.4|
16.333 | | |
| 50347.00   50347.00| Flow-Through Basin: Stream #2| 461.4      90.0|
18.583 | 123.97| |
+-----+
| 50347.00   12902.00| Convex Routing:     Stream #2| 90.0       90.0|
18.667 | | |
| 12902.00   12902.00| Stream #2 Added to: Stream #1| 16742.8    16832.2|
18.333 | | |
| 12902.00   12902.00| Zero Out:           Stream #2| 90.0       0.0|
| | |
| 12902.00   129.00| Convex Routing:     Stream #1| 16832.2    16821.5|
18.417 | | |
| 50400.00   129.00| Subarea (UH) Added to Stream #2| 0.0        193.8|
16.250 | | |
+-----+
| 129.00     129.00| Stream #2 Added to: Stream #1| 16821.5    16846.4|
18.417 | | |
| 129.00     129.00| Zero Out:           Stream #2| 193.8      0.0|
| | |
| 210.00     221.00| Subarea (UH) Added to Stream #2| 0.0        116.2|
16.333 | | |
| 221.00     221.00| Flowby Basin Model: Stream #2| 116.2      19.5|
16.333 | | |
| 221.00     223.00| Flow-Through Basin: Stream #2| 19.5       15.9|
17.250 | 3.99| |
+-----+
| 221.00     222.00| Flow-Through Basin: Stream #5| 96.7       26.8|
17.917 | 15.14| |
| 223.00     222.00| Stream #5 Added to: Stream #2| 15.9       42.4|
17.750 | | |
| 222.00     222.00| Zero Out:           Stream #5| 26.8       0.0|
| | |
| 222.00     129.00| Stream #2 Added to: Stream #1| 16846.4    16887.1|
18.417 | | |

```

	129.00	129.00	Zero Out:	Stream #2	42.4	0.0
+-----+						
	129.00	133.00	Convex Routing:	Stream #1	16887.1	16869.0
18.500						
	13010.00	132.00	Subarea (UH) Added to	Stream #2	0.0	1285.6
16.833						
	132.00	132.00	Flowby Basin Model:	Stream #2	1285.6	1118.6
16.833						
	132.00	132.00	Flow-Through Basin:	Stream #3	167.0	157.6
17.083		20.71				
	132.00	132.00	Split Hydrograph:	Stream #3	157.6	78.8
17.083						
+-----+						
	132.00	132.00	Flow-Through Basin:	Stream #3	78.8	17.8
18.833		8.66				
	132.00	132.00	Stream #3 Added to:	Stream #2	1118.6	1128.5
16.833						
	132.00	132.00	Zero Out:	Stream #3	17.8	0.0
	132.00	132.00	Flow-Through Basin:	Stream #4	78.8	18.3
18.833		8.77				
	132.00	132.00	Stream #4 Added to:	Stream #2	1128.5	1136.3
16.833						
+-----+						
	132.00	132.00	Zero Out:	Stream #4	18.3	0.0
	132.00	13305.00	Convex Routing:	Stream #2	1136.3	1123.8
17.333						
	13305.00	133.00	Convex Routing:	Stream #2	1123.8	1111.8
17.583						
	132.00	133.00	Subarea (UH) Added to	Stream #3	0.0	575.6
16.667						
	133.00	133.00	Stream #3 Added to:	Stream #2	1111.8	1541.7
17.500						
+-----+						
	133.00	133.00	Zero Out:	Stream #3	575.6	0.0
	133.00	133.00	Stream #2 Added to:	Stream #1	16869.0	18374.2
17.583						
	133.00	133.00	Zero Out:	Stream #2	1541.7	0.0
	133.00	134.00	Convex Routing:	Stream #1	18374.2	18358.8
17.750						
	133.00	134.00	Subarea (UH) Added to	Stream #2	0.0	675.9
16.417						

[Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL

| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV50139C.DAT]

Page: 3 of 1

UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS FOOTNOTES	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
134.00 17.667	134.00	Stream #2 Added to:	Stream #1 18358.8	18643.3
134.00	134.00	Zero Out:	Stream #2 675.9	0.0
13500.00 17.333	134.00	Subarea (UH) Added to	Stream #2 0.0	1041.4
134.00 17.667	134.00	Stream #2 Added to:	Stream #1 18643.3	19639.9
134.00	134.00	Zero Out:	Stream #2 1041.4	0.0
134.00 17.833	137.00	Convex Routing:	Stream #1 19639.9	19626.5
134.00 16.500	137.00	Subarea (UH) Added to	Stream #2 0.0	436.5
137.00 17.833	137.00	Stream #2 Added to:	Stream #1 19626.5	19833.2
137.00	137.00	Zero Out:	Stream #2 436.5	0.0
137.00 17.917	138.00	Convex Routing:	Stream #1 19833.2	19825.6
137.00 16.583	138.00	Subarea (UH) Added to	Stream #2 0.0	409.0
138.00 17.917	138.00	Stream #2 Added to:	Stream #1 19825.6	20034.3
138.00	138.00	Zero Out:	Stream #2 409.0	0.0
138.00 18.000	139.00	Convex Routing:	Stream #1 20034.3	20025.7
138.00 16.333	139.00	Subarea (UH) Added to	Stream #2 0.0	200.8
139.00 18.000	139.00	Stream #2 Added to:	Stream #1 20025.7	20088.4
139.00	139.00	Zero Out:	Stream #2 200.8	0.0
139.00 18.000	139.00	View:	Stream #1 20088.4	
	17267.45	3		

[Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Ver. 20.0 Release Date: 06/01/2013 License ID 1264

Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 126 *
* 100-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV00126C.DAT
TIME/DATE OF STUDY: 10:10 06/12/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 1.964 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.376
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.51; 30-MINUTE = 0.95; 1-HOUR = 1.32
3-HOUR = 2.49; 6-HOUR = 3.72; 24-HOUR = 6.54
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.341; 30-MINUTE = 0.392; 1-HOUR = 0.432
3-HOUR = 0.782; 6-HOUR = 0.902; 24-HOUR = 0.943

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.121 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.374
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.341; 30-MINUTE = 0.392; 1-HOUR = 0.432
3-HOUR = 0.782; 6-HOUR = 0.902; 24-HOUR = 0.943

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing values for depth, outflow, and storage.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 312.40; DOWNSTREAM ELEVATION (FT) = 286.00
CHANNEL LENGTH (FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.215 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.434
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.341; 30-MINUTE = 0.392; 1-HOUR = 0.432
3-HOUR = 0.782; 6-HOUR = 0.902; 24-HOUR = 0.943
=====
*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
=====
BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

4F-1

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

=====
*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====
*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.290 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.713
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.341; 30-MINUTE = 0.392; 1-HOUR = 0.432
3-HOUR = 0.782; 6-HOUR = 0.902; 24-HOUR = 0.943
=====
*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====
*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 11

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<

=====

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

| INPUT FILENAME: [EV00126C.DAT]

Page: 1 of |

UPSTREAM TIME (2) PEAK (HR)	DOWNSTREAM TIME (2) PEAK (HR)	MAX. STORAGE NODE #	HYDROLOGIC/HYDRAULIC PROCESS MODELED (AF) FOOTNOTES	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
--------------------------------	----------------------------------	------------------------	--	---------------------	-----------------------

10100.00	119.00	18.000	Subarea (UH) Added to Stream #1	0.0	20232.3
119.00	12603.00	18.000	Convex Routing: Stream #1	20232.3	20078.0
810.00	809.00	16.167	Subarea (UH) Added to Stream #2	0.0	153.2
809.00	12603.00	16.333	Flow-Through Basin: Stream #2	153.2	82.8
12603.00	12603.00	18.000	Stream #2 Added to: Stream #1	20078.0	20116.6
12603.00	12603.00	18.083	Zero Out: Stream #2	82.8	0.0
12603.00	126.00	18.083	Convex Routing: Stream #1	20116.6	20092.4
920.00	905.00	16.250	Subarea (UH) Added to Stream #2	0.0	351.4
905.00	126.00	16.333	Flow-Through Basin: Stream #2	351.4	281.1
126.00	126.00	18.083	Stream #2 Added to: Stream #1	20092.4	20188.3
126.00	126.00	18.083	Zero Out: Stream #2	281.1	0.0
600.00	126.00	16.333	Subarea (UH) Added to Stream #2	0.0	89.7
126.00	126.00	18.083	Stream #2 Added to: Stream #1	20188.3	20204.0
126.00	126.00	18.083	Zero Out: Stream #2	89.7	0.0
126.00	126.00	18.083	View: Stream #1		20204.0
16208.33	3				

| Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Analysis prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 127 *
* 100-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV00127C.DAT
TIME/DATE OF STUDY: 08:19 06/19/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 1.964 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.376
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.51; 30-MINUTE = 0.95; 1-HOUR = 1.32
3-HOUR = 2.49; 6-HOUR = 3.72; 24-HOUR = 6.54
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.121 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.374
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

4E-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing values for depth, outflow, and storage.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.215 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.434
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

4F-1

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.290 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.713
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 286.00; DOWNSTREAM ELEVATION(FT) = 258.00
CHANNEL LENGTH(FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.236 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.146; LOW LOSS FRACTION = 0.325
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 16.600
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

3D-2

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.164 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.138; LOW LOSS FRACTION = 0.335
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3D-3

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	5.95	0.280
3	2.00	22.18	1.150
4	3.00	46.43	3.090
5	4.00	75.05	6.150
6	5.00	105.54	10.350
7	6.00	127.29	15.380
8	7.00	138.99	20.860
9	8.00	150.45	26.500
10	9.00	161.55	32.360
11	10.00	697.61	38.410
12	11.00	1666.99	44.700

FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.305 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.288
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

3C-1

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	7.430


```

3      2.00      0.02      15.170
4      3.00      2.70      23.230
5      4.00      4.69      31.610
6      5.00      6.04      40.320
7      6.00     10.72     49.360
8      7.00     17.77     58.730
9      8.00     424.53    68.440
10     9.00     1169.03   78.500
11    10.00    2113.61   88.500

```

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*****
FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

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>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

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MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-3

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

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*****
FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

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>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

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WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.348 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.466
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

```

```

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

```

```

-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

3C-3

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

```

*****
FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

```

```

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

```

```

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

```

Weir to
3C-5

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

```

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

```

```

*****
FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

```

```

*****
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

```

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

```

```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.404 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.296; LOW LOSS FRACTION = 0.590
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.333; 30-MINUTE = 0.385; 1-HOUR = 0.425
3-HOUR = 0.775; 6-HOUR = 0.899; 24-HOUR = 0.941

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 11
-----
>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<
=====

```

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

| INPUT FILENAME: [EV00127C.DAT]

Page: 1 of 1

UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)	FOOTNOTES
--	--	------------------------------	------------------------	--------------------------	-----------

10100.00	119.00	Subarea (UH) Added to Stream #1	0.0	20012.1	
18.000					
119.00	12603.00	Convex Routing: Stream #1	20012.1	19861.1	
18.000					
810.00	809.00	Subarea (UH) Added to Stream #2	0.0	149.5	
16.167					
809.00	12603.00	Flow-Through Basin: Stream #2	149.5	81.0	
16.333	14.31				
12603.00	12603.00	Stream #2 Added to: Stream #1	19861.1	19899.8	
18.000					
12603.00	12603.00	Zero Out: Stream #2	81.0	0.0	
12603.00	126.00	Convex Routing: Stream #1	19899.8	19877.0	
18.083					
920.00	905.00	Subarea (UH) Added to Stream #2	0.0	342.7	
16.250					
905.00	126.00	Flow-Through Basin: Stream #2	342.7	273.5	
16.417	19.92				
126.00	126.00	Stream #2 Added to: Stream #1	19877.0	19973.4	
18.083					
126.00	126.00	Zero Out: Stream #2	273.5	0.0	
600.00	126.00	Subarea (UH) Added to Stream #2	0.0	87.1	
16.333					
126.00	126.00	Stream #2 Added to: Stream #1	19973.4	19989.2	
18.083					
126.00	126.00	Zero Out: Stream #2	87.1	0.0	
126.00	12720.50	Convex Routing: Stream #1	19989.2	19976.6	
18.167					
430.00	420.00	Subarea (UH) Added to Stream #2	0.0	210.6	
16.333					
420.00	420.50	Flow-Through Basin: Stream #2	210.6	132.5	
16.500	12.02				
420.50	427.00	Flow-Through Basin: Stream #2	132.5	114.8	
17.250	11.91				
413.00	425.00	Subarea (UH) Added to Stream #3	0.0	101.2	
16.250					

425.00	426.00	Flow-Through Basin: Stream #3	101.2	48.0	
16.417	3.27				
426.00	427.00	Stream #3 Added to: Stream #2	114.8	160.7	
17.167					
427.00	427.00	Zero Out: Stream #3	48.0	0.0	
427.00	12720.50	Stream #2 Added to: Stream #1	19976.6	20106.0	
18.167					
12720.50	12720.50	Zero Out: Stream #2	160.7	0.0	
12720.50	12741.00	Convex Routing: Stream #1	20106.0	20060.1	
18.167					
320.00	339.00	Subarea (UH) Added to Stream #2	0.0	416.0	
16.333					
339.00	340.00	Flow-Through Basin: Stream #2	416.0	324.7	
16.500	66.08				
339.00	372.00	Flowby Basin Model: Stream #2	324.7	33.2	
16.500					
390.00	372.00	Subarea (UH) Added to Stream #4	0.0	96.5	
16.417					
372.00	372.00	Stream #4 Added to: Stream #3	291.5	378.3	
16.500					
372.00	372.00	Zero Out: Stream #4	96.5	0.0	
372.00	373.00	Flow-Through Basin: Stream #3	378.3	82.7	
18.833	66.90				
372.00	372.10	Flowby Basin Model: Stream #3	82.7	82.7	
18.833					
373.00	373.00	Zero Out: Stream #5	0.0	0.0	
373.00	340.00	Stream #3 Added to: Stream #2	33.2	107.7	
18.583					
340.00	340.00	Zero Out: Stream #3	82.7	0.0	
340.00	12741.00	Stream #2 Added to: Stream #1	20060.1	20166.0	
18.167					
12741.00	12741.00	Zero Out: Stream #2	107.7	0.0	
12741.00	127.00	Convex Routing: Stream #1	20166.0	20147.8	
18.250					
12710.00	127.00	Subarea (UH) Added to Stream #2	0.0	378.7	
16.500					

|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
 | 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV00127C.DAT ]
Page: 2 of |
-----+-----+-----+-----+
|UPSTREAM DOWNSTREAM| | UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE| |
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR) | MODELED (AF)| FOOTNOTES |
-----+-----+-----+-----+
| 127.00 127.00| Stream #2 Added to: Stream #1| 20147.8 20256.7|
18.250 | | |
| 127.00 127.00| Zero Out: Stream #2| 378.7 0.0|
| | | |
| 127.00 127.00| View: Stream #1| 20256.7|
18.250 | 16561.54| 3 |
-----+-----+-----+-----+
|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT
INTERVAL |
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF
THE DESIGN STORM |
-----+-----+-----+

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END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
(c) Copyright 1989-2016 Advanced Engineering Software (aes)
Ver. 23.0 Release Date: 07/01/2016 License ID 1264

Analysis prepared by:

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 133T *
* 100-YR EV JULY 2019 ROKAMOTO *

FILE NAME: EV0033TC.DAT
TIME/DATE OF STUDY: 13:39 07/17/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.795 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.244; LOW LOSS FRACTION = 0.515
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.744; 30-MINUTE = 0.744; 1-HOUR = 0.744
3-HOUR = 0.959; 6-HOUR = 0.978; 24-HOUR = 0.986

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Table with 3 columns: DATA PAIR NUMBER, Qenter (CFS), Qpass (CFS). Rows include values for 1 and 2.

Table with 3 columns: Node, Value 1, Value 2. Rows 3, 4, 5.

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 5.700
SPECIFIED DEAD STORAGE (AF) FILLED = 5.700
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-9.

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8

>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.99	2.90	0.900
3	1.99	11.38	2.900
4	3.99	19.63	10.300
5	5.99	25.19	20.700
6	7.99	29.71	31.700
7	9.99	33.62	43.500
8	10.99	35.49	49.700
9	11.99	313.49	56.400
10	12.99	894.27	63.100
11	13.99	1748.55	69.900
12	15.99	4306.91	84.100

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 4 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.48	0.70	0.400
3	1.48	6.50	1.800
4	3.48	18.11	8.500
5	5.48	23.99	17.900
6	7.48	28.68	27.800
7	9.48	32.70	38.300
8	10.48	34.50	43.900
9	11.48	36.29	49.400
10	12.48	314.07	55.900

11	13.48	895.00	62.300
12	15.48	2882.95	74.700

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6

>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 132.00 TO NODE 13305.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 427.51; DOWNSTREAM ELEVATION (FT) = 315.00
CHANNEL LENGTH (FT) = 9760.05 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13305.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 315.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 6877.24 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 132.00 TO NODE 133.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.610 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.224; LOW LOSS FRACTION = 0.362
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.744; 30-MINUTE = 0.744; 1-HOUR = 0.744
3-HOUR = 0.959; 6-HOUR = 0.978; 24-HOUR = 0.986

FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7

>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<

FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6

>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<

FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<

FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 11

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<

Table with columns: TIME (2) TO, NODE #, PEAK (HR), UPSTREAM, DOWNSTREAM, MAX. STORAGE, HYDROLOGIC/HYDRAULIC PROCESS, PEAK (CFS), FOOTNOTES. Includes summary of stream operations and peak flow data.

|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT
INTERVAL |
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF
THE DESIGN STORM |

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END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Analysis prepared by:

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 133U *
* 100-YR EV JULY 2019 ROKAMOTO *

FILE NAME: EV0033UC.DAT
TIME/DATE OF STUDY: 07:15 07/16/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 1.964 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.376
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.51; 30-MINUTE = 0.95; 1-HOUR = 1.32
3-HOUR = 2.49; 6-HOUR = 3.72; 24-HOUR = 6.54
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.121 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.374
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	1.520
3	2.00	1.30	3.150
4	3.00	1.60	4.900
5	4.00	1.80	6.790
6	5.00	2.10	8.810
7	6.00	2.30	10.970
8	7.00	47.90	13.270
9	8.00	131.60	15.720
10	9.00	241.70	18.320
11	10.00	372.80	21.060

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.215 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.434
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.290 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.713
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 286.00; DOWNSTREAM ELEVATION(FT) = 258.00
CHANNEL LENGTH(FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00

=====

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

=====

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.236 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.146; LOW LOSS FRACTION = 0.325
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 16.600
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

=====

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.164 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.138; LOW LOSS FRACTION = 0.335
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

```

*****
FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 5.95 0.280
3 2.00 22.18 1.150
4 3.00 46.43 3.090
5 4.00 75.05 6.150
6 5.00 105.54 10.350
7 6.00 127.29 15.380
8 7.00 138.99 20.860
9 8.00 150.45 26.500
10 9.00 161.55 32.360
11 10.00 697.61 38.410
12 11.00 1666.99 44.700
=====
*****
FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.305 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.288
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 0.01 7.430

```

3	2.00	0.02	15.170
4	3.00	2.70	23.230
5	4.00	4.69	31.610
6	5.00	6.04	40.320
7	6.00	10.72	49.360
8	7.00	17.77	58.730
9	8.00	424.53	68.440
10	9.00	1169.03	78.500
11	10.00	2113.61	88.500

FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.348 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.466
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

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```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====

WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.404 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.296; LOW LOSS FRACTION = 0.590
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

```

```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.305 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.217; LOW LOSS FRACTION = 0.469
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

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*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

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>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

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ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 20.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.197 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.591
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.231 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.319
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.328; 30-MINUTE = 0.381; 1-HOUR = 0.422
3-HOUR = 0.771; 6-HOUR = 0.897; 24-HOUR = 0.940

*****
FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2
-----
>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.
DATA PAIR Qenter Qpass
NUMBER (CFS) (CFS)
- 0.00 0.00
1 25.00 13.59
2 75.00 16.84
3 100.00 18.46
4 250.00 28.22
5 550.00 47.73
FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5
=====

*****
FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	0.310
3	2.00	0.83	1.240
4	3.00	5.60	2.600
5	4.00	16.88	4.130
6	5.00	23.48	5.790
7	6.00	36.73	7.560
8	7.00	55.95	9.440
9	8.00	78.70	11.430
10	9.00	228.67	12.460

```

*****
FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	1.84	0.260
3	2.00	3.22	1.160
4	3.00	4.16	2.520
5	4.00	4.94	3.990
6	5.00	5.60	5.550
7	6.00	7.17	7.200
8	7.00	14.13	8.950
9	8.00	18.54	10.800
10	9.00	21.90	12.740
11	10.00	24.73	14.780
12	11.00	37.17	16.920
13	12.00	57.63	19.160
14	13.00	83.32	21.500
15	14.00	112.96	23.940
16	15.00	133.28	26.480
17	16.00	144.34	29.150
18	17.00	154.45	31.950
19	18.00	163.94	34.870
20	19.00	172.92	37.940
21	20.00	181.39	41.140
22	21.00	189.45	44.500
23	22.00	197.22	48.010


```

24      23.00      466.70      51.740
25      24.00      951.81      53.820
=====

```

```

*****
FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00      CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52      MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 11
-----

```

```

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<
=====

```

```

+-----+
|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
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+-----+

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```

+-----+
|UPSTREAM DOWNSTREAM| |UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE| |
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS |PEAK (CFS) PEAK (CFS)|
PEAK (HR) | MODELED (AF)| FOOTNOTES |
+-----+

```

```

+-----+
| 10100.00 119.00| Subarea (UH) Added to Stream #1| 0.0 19871.2|
18.000 | | |
| 119.00 12603.00| Convex Routing: Stream #1| 19871.2 19722.8|
18.000 | | |
| 810.00 809.00| Subarea (UH) Added to Stream #2| 0.0 146.9|
16.167 | | |
| 809.00 12603.00| Flow-Through Basin: Stream #2| 146.9 79.8|
16.333 | 14.27| |
| 12603.00 12603.00| Stream #2 Added to: Stream #1| 19722.8 19761.5|
18.000 | | |
+-----+

```

```

+-----+
| 12603.00 12603.00| Zero Out: Stream #2| 79.8 0.0|
| | |
| 12603.00 126.00| Convex Routing: Stream #1| 19761.5 19739.8|
18.083 | | |
| 920.00 905.00| Subarea (UH) Added to Stream #2| 0.0 336.7|
16.250 | | |
| 905.00 126.00| Flow-Through Basin: Stream #2| 336.7 268.6|
16.417 | 19.88| |
| 126.00 126.00| Stream #2 Added to: Stream #1| 19739.8 19836.8|
18.083 | | |
+-----+

```

```

+-----+
| 126.00 126.00| Zero Out: Stream #2| 268.6 0.0|
| | |
| 600.00 126.00| Subarea (UH) Added to Stream #2| 0.0 85.4|
16.333 | | |
| 126.00 126.00| Stream #2 Added to: Stream #1| 19836.8 19852.7|
18.083 | | |
| 126.00 126.00| Zero Out: Stream #2| 85.4 0.0|
| | |
| 126.00 12720.50| Convex Routing: Stream #1| 19852.7 19840.3|
18.167 | | |
+-----+

```

```

+-----+
| 430.00 420.00| Subarea (UH) Added to Stream #2| 0.0 207.4|
16.333 | | |
| 420.00 420.50| Flow-Through Basin: Stream #2| 207.4 130.9|
16.500 | 11.95| |
| 420.50 427.00| Flow-Through Basin: Stream #2| 130.9 113.8|
17.250 | 11.86| |
| 413.00 425.00| Subarea (UH) Added to Stream #3| 0.0 99.5|
16.250 | | |
+-----+

```

425.00	426.00	Flow-Through Basin:	Stream #3	99.5	47.6
16.417	3.23				
+-----+					
426.00	427.00	Stream #3 Added to:	Stream #2	113.8	159.2
17.167					
427.00	427.00	Zero Out:	Stream #3	47.6	0.0
427.00	12720.50	Stream #2 Added to:	Stream #1	19840.3	19969.3
18.167					
12720.50	12720.50	Zero Out:	Stream #2	159.2	0.0
12720.50	12741.00	Convex Routing:	Stream #1	19969.3	19923.3
18.167					
+-----+					
320.00	339.00	Subarea (UH) Added to	Stream #2	0.0	409.8
16.333					
339.00	340.00	Flow-Through Basin:	Stream #2	409.8	320.5
16.500	65.98				
339.00	372.00	Flowby Basin Model:	Stream #2	320.5	33.0
16.500					
390.00	372.00	Subarea (UH) Added to	Stream #4	0.0	94.9
16.417					
372.00	372.00	Stream #4 Added to:	Stream #3	287.5	373.0
16.500					
+-----+					
372.00	372.00	Zero Out:	Stream #4	94.9	0.0
372.00	373.00	Flow-Through Basin:	Stream #3	373.0	82.1
18.833	66.61				
372.00	372.10	Flowby Basin Model:	Stream #3	82.1	82.1
18.833					
373.00	373.00	Zero Out:	Stream #5	0.0	0.0
373.00	340.00	Stream #3 Added to:	Stream #2	33.0	107.2
18.583					
+-----+					
340.00	340.00	Zero Out:	Stream #3	82.1	0.0
340.00	12741.00	Stream #2 Added to:	Stream #1	19923.3	20028.6
18.167					
12741.00	12741.00	Zero Out:	Stream #2	107.2	0.0
12741.00	127.00	Convex Routing:	Stream #1	20028.6	20012.4
18.250					
12710.00	127.00	Subarea (UH) Added to	Stream #2	0.0	372.3
16.500					
+-----+					
Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL					
3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM					
+-----+					

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV0033UC.DAT]

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UPSTREAM TIME (2) TO	DOWNSTREAM MAX. STORAGE	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
127.00	127.00	20012.4	20121.9
18.250			
127.00	127.00	372.3	0.0
127.00	12902.00	20121.9	20104.3
18.250			
50220.00	50347.00	0.0	586.3
16.333			
50347.00	50347.00	586.3	102.0
18.583	145.56		

50347.00	12902.00	102.0	102.0
18.667			
12902.00	12902.00	20104.3	20205.6
18.250			
12902.00	12902.00	102.0	0.0
12902.00	129.00	20205.6	20185.8
18.333			
50400.00	129.00	0.0	256.5
16.250			

129.00	129.00	20185.8	20217.3
18.333			
129.00	129.00	256.5	0.0
210.00	221.00	0.0	145.2
16.250			
221.00	221.00	145.2	21.4
16.250			
221.00	223.00	21.4	16.7
17.250	4.10		

221.00	222.00	123.8	42.0
17.333	17.45		
223.00	222.00	16.7	58.6
17.333			
222.00	222.00	42.0	0.0
222.00	129.00	20217.3	20269.0
18.333			

129.00	129.00	58.6	0.0
18.417			
133.00	133.00	20269.0	20237.2
18.417			
133.00	133.00	20237.2	
18.417	16849.62	3	

129.00	133.00	20269.0	20237.2
18.417			
133.00	133.00	20237.2	
18.417			
133.00	133.00	20237.2	
18.417	16849.62	3	

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Ver. 23.0 Release Date: 07/01/2016 License ID 1264

Analysis prepared by:

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 133C *
* 100-YR EV JULY 2019 ROKAMOTO *

FILE NAME: EV0033CC.DAT
TIME/DATE OF STUDY: 13:39 07/17/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 1.964 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.376
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.51; 30-MINUTE = 0.95; 1-HOUR = 1.32
3-HOUR = 2.49; 6-HOUR = 3.72; 24-HOUR = 6.54
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.121 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.374
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing values for depth, outflow, and storage.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.215 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.434
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.290 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.713
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 286.00; DOWNSTREAM ELEVATION(FT) = 258.00
CHANNEL LENGTH(FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00

=====

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

=====

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.236 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.146; LOW LOSS FRACTION = 0.325
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 16.600
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

=====

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.164 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.138; LOW LOSS FRACTION = 0.335
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

```

*****
FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 5.95 0.280
3 2.00 22.18 1.150
4 3.00 46.43 3.090
5 4.00 75.05 6.150
6 5.00 105.54 10.350
7 6.00 127.29 15.380
8 7.00 138.99 20.860
9 8.00 150.45 26.500
10 9.00 161.55 32.360
11 10.00 697.61 38.410
12 11.00 1666.99 44.700
=====
*****
FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.305 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.288
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 0.01 7.430

```

3	2.00	0.02	15.170
4	3.00	2.70	23.230
5	4.00	4.69	31.610
6	5.00	6.04	40.320
7	6.00	10.72	49.360
8	7.00	17.77	58.730
9	8.00	424.53	68.440
10	9.00	1169.03	78.500
11	10.00	2113.61	88.500

FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.348 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.466
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO


```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO**

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

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CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====

WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.404 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.296; LOW LOSS FRACTION = 0.590
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

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=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.305 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.217; LOW LOSS FRACTION = 0.469
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

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```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

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```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 20.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

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```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

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```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.197 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.591
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.231 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.319
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936
*****
FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2
-----
>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.
DATA PAIR Qenter Qpass
NUMBER (CFS) (CFS)
- 0.00 0.00
1 25.00 13.59
2 75.00 16.84
3 100.00 18.46
4 250.00 28.22
5 550.00 47.73
FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5
=====
*****
FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 2.070
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	0.310
3	2.00	0.83	1.240
4	3.00	5.60	2.600
5	4.00	16.88	4.130
6	5.00	23.48	5.790
7	6.00	36.73	7.560
8	7.00	55.95	9.440
9	8.00	78.70	11.430
10	9.00	228.67	12.460

```

*****
FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	1.84	0.260
3	2.00	3.22	1.160
4	3.00	4.16	2.520
5	4.00	4.94	3.990
6	5.00	5.60	5.550
7	6.00	7.17	7.200
8	7.00	14.13	8.950
9	8.00	18.54	10.800
10	9.00	21.90	12.740
11	10.00	24.73	14.780
12	11.00	37.17	16.920
13	12.00	57.63	19.160
14	13.00	83.32	21.500
15	14.00	112.96	23.940
16	15.00	133.28	26.480
17	16.00	144.34	29.150
18	17.00	154.45	31.950
19	18.00	163.94	34.870
20	19.00	172.92	37.940
21	20.00	181.39	41.140
22	21.00	189.45	44.500
23	22.00	197.22	48.010

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.795 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.244; LOW LOSS FRACTION = 0.515
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 5.700
SPECIFIED DEAD STORAGE (AF) FILLED = 5.700
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.50	0.01	0.002
3	2.00	0.02	1.900
4	4.00	0.03	16.100
5	4.30	0.05	18.200
6	5.00	314.00	23.200
7	6.00	1306.00	30.300
8	7.00	2847.00	39.100
9	8.00	4942.00	47.800

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8
-----
>>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
=====
```

```
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.99	2.90	0.900
3	1.99	11.38	2.900
4	3.99	19.63	10.300
5	5.99	25.19	20.700
6	7.99	29.71	31.700
7	9.99	33.62	43.500
8	10.99	35.49	49.700
9	11.99	313.49	56.400
10	12.99	894.27	63.100
11	13.99	1748.55	69.900
12	15.99	4306.91	84.100

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====
```

```
*****
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 4
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
=====
```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.48	0.70	0.400
3	1.48	6.50	1.800
4	3.48	18.11	8.500
5	5.48	23.99	17.900
6	7.48	28.68	27.800
7	9.48	32.70	38.300
8	10.48	34.50	43.900
9	11.48	36.29	49.400
10	12.48	314.07	55.900
11	13.48	895.00	62.300
12	15.48	2882.95	74.700

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```
ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 427.51; DOWNSTREAM ELEVATION (FT) = 315.00
CHANNEL LENGTH (FT) = 9760.05 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00
=====
```

```

*****
FLOW PROCESS FROM NODE 13305.00 TO NODE 133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 315.00; DOWNSTREAM ELEVATION(FT) = 212.00
CHANNEL LENGTH(FT) = 6877.24 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 132.00 TO NODE 133.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.610 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.224; LOW LOSS FRACTION = 0.362
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.308; 30-MINUTE = 0.363; 1-HOUR = 0.408
3-HOUR = 0.754; 6-HOUR = 0.891; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 11
-----
>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<
=====

```

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV0033CC.DAT]

Page: 1 of 1

UPSTREAM TIME (2) PEAK (HR)	DOWNSTREAM TIME (2) MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS FOOTNOTES	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
10100.00 18.000	119.00	Subarea (UH) Added to Stream #1	0.0	19376.4
119.00 18.000	12603.00	Convex Routing: Stream #1	19376.4	19237.4
810.00 16.167	809.00	Subarea (UH) Added to Stream #2	0.0	137.5
809.00 16.333	12603.00 14.13	Flow-Through Basin: Stream #2	137.5	75.4
12603.00 18.000	12603.00	Stream #2 Added to: Stream #1	19237.4	19276.4
12603.00 18.083	12603.00	Zero Out: Stream #2	75.4	0.0
12603.00 16.250	126.00	Convex Routing: Stream #1	19276.4	19258.3
920.00 16.417	905.00 19.70	Subarea (UH) Added to Stream #2	0.0	315.1
905.00 18.083	126.00	Flow-Through Basin: Stream #2	315.1	249.7
126.00 18.083	126.00	Stream #2 Added to: Stream #1	19258.3	19357.0
126.00 16.333	126.00	Zero Out: Stream #2	249.7	0.0
600.00 18.083	126.00	Subarea (UH) Added to Stream #2	0.0	79.1
126.00 17.333	126.00	Stream #2 Added to: Stream #1	19357.0	19373.2
126.00 16.250	126.00	Zero Out: Stream #2	79.1	0.0
126.00 18.167	12720.50	Convex Routing: Stream #1	19373.2	19362.2
430.00 16.333	420.00	Subarea (UH) Added to Stream #2	0.0	195.7
420.00 17.333	420.50 11.68	Flow-Through Basin: Stream #2	195.7	125.2
420.50 16.500	427.00	Flow-Through Basin: Stream #2	125.2	110.0
413.00 16.250	425.00	Subarea (UH) Added to Stream #3	0.0	93.4

425.00 16.417	426.00 3.09	Flow-Through Basin: Stream #3	93.4	46.2
426.00 17.167	427.00	Stream #3 Added to: Stream #2	110.0	153.9
427.00 18.167	427.00	Zero Out: Stream #3	46.2	0.0
427.00 18.167	12720.50	Stream #2 Added to: Stream #1	19362.2	19489.4
12720.50 18.167	12720.50	Zero Out: Stream #2	153.9	0.0
12720.50 18.167	12741.00	Convex Routing: Stream #1	19489.4	19443.1
320.00 16.333	339.00	Subarea (UH) Added to Stream #2	0.0	387.4
339.00 16.500	340.00 65.62	Flow-Through Basin: Stream #2	387.4	305.5
339.00 16.500	372.00	Flowby Basin Model: Stream #2	305.5	32.5
390.00 16.417	372.00	Subarea (UH) Added to Stream #4	0.0	89.4
372.00 16.500	372.00	Stream #4 Added to: Stream #3	273.0	353.9
372.00 18.833	372.00	Zero Out: Stream #4	89.4	0.0
372.00 18.833	373.00 65.67	Flow-Through Basin: Stream #3	353.9	80.4
372.00 18.833	372.10	Flowby Basin Model: Stream #3	80.4	80.4
373.00 18.583	373.00	Zero Out: Stream #5	0.0	0.0
373.00 16.500	340.00	Stream #3 Added to: Stream #2	32.5	105.4
340.00 18.167	340.00	Zero Out: Stream #3	80.4	0.0
340.00 18.167	12741.00	Stream #2 Added to: Stream #1	19443.1	19546.5
12741.00 18.250	12741.00	Zero Out: Stream #2	105.4	0.0
12741.00 16.500	127.00	Convex Routing: Stream #1	19546.5	19537.6
12710.00 16.500	127.00	Subarea (UH) Added to Stream #2	0.0	348.9

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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-----+-----
|
|                                     * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV0033CC.DAT ]
Page: 2 of |
-----+-----+-----+-----+
|UPSTREAM DOWNSTREAM|                                     |UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE|                                     |
| NODE #     NODE # | HYDROLOGIC/HYDRAULIC PROCESS |PEAK (CFS) PEAK (CFS)|
PEAK (HR)   | MODELED (AF)| FOOTNOTES |
-----+-----+-----+-----+
| 127.00    127.00| Stream #2 Added to: Stream #1| 19537.6 19649.0|
18.250 | | |
| 127.00    127.00| Zero Out: Stream #2| 348.9 0.0|
| | |
| 127.00    12902.00| Convex Routing: Stream #1| 19649.0 19627.2|
18.250 | | |
| 50220.00  50347.00| Subarea (UH) Added to Stream #2| 0.0 550.5|
16.333 | | |
| 50347.00  50347.00| Flow-Through Basin: Stream #2| 550.5 101.0|
18.583 | 143.65| |
-----+-----+-----+-----+
| 50347.00  12902.00| Convex Routing: Stream #2| 101.0 101.0|
18.667 | | |
| 12902.00  12902.00| Stream #2 Added to: Stream #1| 19627.2 19727.4|
18.250 | | |
| 12902.00  12902.00| Zero Out: Stream #2| 101.0 0.0|
| | |
| 12902.00  129.00| Convex Routing: Stream #1| 19727.4 19711.0|
18.333 | | |
| 50400.00  129.00| Subarea (UH) Added to Stream #2| 0.0 238.5|
16.250 | | |
-----+-----+-----+-----+
| 129.00    129.00| Stream #2 Added to: Stream #1| 19711.0 19742.7|
18.333 | | |
| 129.00    129.00| Zero Out: Stream #2| 238.5 0.0|
| | |
| 210.00    221.00| Subarea (UH) Added to Stream #2| 0.0 136.8|
16.250 | | |
| 221.00    221.00| Flowby Basin Model: Stream #2| 136.8 20.9|
16.250 | | |
| 221.00    223.00| Flow-Through Basin: Stream #2| 20.9 16.6|
17.250 | 4.09| |
-----+-----+-----+-----+
| 221.00    222.00| Flow-Through Basin: Stream #5| 115.9 39.7|
17.417 | 17.20| |
| 223.00    222.00| Stream #5 Added to: Stream #2| 16.6 56.2|
17.417 | | |
| 222.00    222.00| Zero Out: Stream #5| 39.7 0.0|
| | |
| 222.00    129.00| Stream #2 Added to: Stream #1| 19742.7 19793.9|
18.333 | | |

```


	129.00	129.00	Zero Out:	Stream #2	56.2	0.0
	-----	-----		-----	-----	-----
	129.00	133.00	Convex Routing:	Stream #1	19793.9	19766.6
18.417						
	13010.00	132.00	Subarea (UH) Added to	Stream #2	0.0	1582.0
16.833						
	132.00	132.00	Flowby Basin Model:	Stream #2	1582.0	1358.3
16.833						
	132.00	132.00	Flow-Through Basin:	Stream #3	223.7	208.3
17.083		21.54				
	132.00	132.00	Split Hydrograph:	Stream #3	208.3	104.2
17.083						
	-----	-----		-----	-----	-----
	132.00	132.00	Flow-Through Basin:	Stream #3	104.2	22.0
18.917		14.71				
	132.00	132.00	Stream #3 Added to:	Stream #2	1358.3	1373.7
16.833						
	132.00	132.00	Zero Out:	Stream #3	22.0	0.0
	132.00	132.00	Flow-Through Basin:	Stream #4	104.2	22.1
18.917		14.85				
	132.00	132.00	Stream #4 Added to:	Stream #2	1373.7	1388.6
16.833						
	-----	-----		-----	-----	-----
	132.00	132.00	Zero Out:	Stream #4	22.1	0.0
	132.00	13305.00	Convex Routing:	Stream #2	1388.6	1352.0
17.333						
	13305.00	133.00	Convex Routing:	Stream #2	1352.0	1339.6
17.500						
	132.00	133.00	Subarea (UH) Added to	Stream #3	0.0	683.0
16.667						
	133.00	133.00	Stream #3 Added to:	Stream #2	1339.6	1841.4
17.500						
	-----	-----		-----	-----	-----
	133.00	133.00	Zero Out:	Stream #3	683.0	0.0
	133.00	133.00	Stream #2 Added to:	Stream #1	19766.6	21485.7
17.500						
	133.00	133.00	Zero Out:	Stream #2	1841.4	0.0
	133.00	133.00	View:	Stream #1		21485.7
17.500		18002.57	3			
	-----	-----		-----	-----	-----

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Ver. 23.0 Release Date: 07/01/2016 License ID 1264

Analysis prepared by:

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 134U *
* 100-YR EV JULY 2019 ROKAMOTO *

FILE NAME: EV0034UC.DAT
TIME/DATE OF STUDY: 13:38 07/17/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 1.964 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.376
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.51; 30-MINUTE = 0.95; 1-HOUR = 1.32
3-HOUR = 2.49; 6-HOUR = 3.72; 24-HOUR = 6.54
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.121 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.374
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing depth and storage values.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<

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*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
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>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
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*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
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FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
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>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.215 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.434
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

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INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

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*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
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>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
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*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
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*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.290 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.713
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
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*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
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>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

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FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

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THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 286.00; DOWNSTREAM ELEVATION(FT) = 258.00
CHANNEL LENGTH(FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00

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FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

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WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.236 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.146; LOW LOSS FRACTION = 0.325
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

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ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 16.600
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

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FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

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ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

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FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

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WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.164 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.138; LOW LOSS FRACTION = 0.335
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

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FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1
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>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
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ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 5.95 0.280
3 2.00 22.18 1.150
4 3.00 46.43 3.090
5 4.00 75.05 6.150
6 5.00 105.54 10.350
7 6.00 127.29 15.380
8 7.00 138.99 20.860
9 8.00 150.45 26.500
10 9.00 161.55 32.360
11 10.00 697.61 38.410
12 11.00 1666.99 44.700
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FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7
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>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
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*****
FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
-----
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
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*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6
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>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
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*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2
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>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
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THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
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*****
FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
-----
WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.305 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.288
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
-----
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 0.01 7.430

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3	2.00	0.02	15.170
4	3.00	2.70	23.230
5	4.00	4.69	31.610
6	5.00	6.04	40.320
7	6.00	10.72	49.360
8	7.00	17.77	58.730
9	8.00	424.53	68.440
10	9.00	1169.03	78.500
11	10.00	2113.61	88.500

FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.348 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.466
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO

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*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

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CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
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*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
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WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.404 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.296; LOW LOSS FRACTION = 0.590
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

```

```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.305 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.217; LOW LOSS FRACTION = 0.469
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 20.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.197 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.591
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.231 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.319
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Table with 3 columns: DATA PAIR NUMBER, Qcenter (CFS), Qpass (CFS). Rows 1-5 showing flow data.

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-10 showing basin data.

FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-23 showing basin data.

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.795 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.244; LOW LOSS FRACTION = 0.515
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 5.700
SPECIFIED DEAD STORAGE (AF) FILLED = 5.700
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.50	0.01	0.002
3	2.00	0.02	1.900
4	4.00	0.03	16.100
5	4.30	0.05	18.200
6	5.00	314.00	23.200
7	6.00	1306.00	30.300
8	7.00	2847.00	39.100
9	8.00	4942.00	47.800

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8
-----
>>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
=====
```

```
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.99	2.90	0.900
3	1.99	11.38	2.900
4	3.99	19.63	10.300
5	5.99	25.19	20.700
6	7.99	29.71	31.700
7	9.99	33.62	43.500
8	10.99	35.49	49.700
9	11.99	313.49	56.400
10	12.99	894.27	63.100
11	13.99	1748.55	69.900
12	15.99	4306.91	84.100

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====
```

```
*****
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 4
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
=====
```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.48	0.70	0.400
3	1.48	6.50	1.800
4	3.48	18.11	8.500
5	5.48	23.99	17.900
6	7.48	28.68	27.800
7	9.48	32.70	38.300
8	10.48	34.50	43.900
9	11.48	36.29	49.400
10	12.48	314.07	55.900
11	13.48	895.00	62.300
12	15.48	2882.95	74.700

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

```
ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 427.51; DOWNSTREAM ELEVATION (FT) = 315.00
CHANNEL LENGTH (FT) = 9760.05 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00
=====
```

```

*****
FLOW PROCESS FROM NODE 13305.00 TO NODE 133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 315.00; DOWNSTREAM ELEVATION(FT) = 212.00
CHANNEL LENGTH(FT) = 6877.24 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 133.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.610 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.224; LOW LOSS FRACTION = 0.362
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 212.00; DOWNSTREAM ELEVATION(FT) = 173.00
CHANNEL LENGTH(FT) = 6461.31 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1691.600 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.312 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.431
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.304; 30-MINUTE = 0.358; 1-HOUR = 0.405
3-HOUR = 0.750; 6-HOUR = 0.890; 24-HOUR = 0.936

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====
*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 11

```

=====
>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<
=====

```
-----+-----+-----+
|                                     * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV0034UC.DAT ]
Page: 1 of 1
-----+-----+-----+
|UPSTREAM DOWNSTREAM|                                     |UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE|                                     |
| NODE #     NODE # | HYDROLOGIC/HYDRAULIC PROCESS |PEAK (CFS) PEAK (CFS)|
PEAK (HR)   | MODELED (AF)| FOOTNOTES |
-----+-----+-----+
| 10100.00   119.00| Subarea (UH) Added to Stream #1|      0.0   19257.0|
18.000 |                                     |
| 119.00     12603.00| Convex Routing:      Stream #1| 19257.0   19120.2|
18.000 |                                     |
| 810.00     809.00| Subarea (UH) Added to Stream #2|      0.0    135.2|
16.167 |                                     |
| 809.00     12603.00| Flow-Through Basin: Stream #2|    135.2    74.4|
16.333 | 14.10|                                     |
| 12603.00   12603.00| Stream #2 Added to: Stream #1| 19120.2   19159.3|
18.000 |                                     |
-----+-----+-----+
| 12603.00   12603.00| Zero Out:      Stream #2|      74.4    0.0|
|                                     |
| 12603.00   126.00| Convex Routing:      Stream #1| 19159.3   19142.1|
18.083 |                                     |
| 920.00     905.00| Subarea (UH) Added to Stream #2|      0.0    309.7|
16.250 |                                     |
| 905.00     126.00| Flow-Through Basin: Stream #2|    309.7    245.0|
16.417 | 19.64|                                     |
| 126.00     126.00| Stream #2 Added to: Stream #1| 19142.1   19241.2|
18.083 |                                     |
-----+-----+-----+
| 126.00     126.00| Zero Out:      Stream #2|    245.0    0.0|
|                                     |
| 600.00     126.00| Subarea (UH) Added to Stream #2|      0.0    77.5|
16.333 |                                     |
| 126.00     126.00| Stream #2 Added to: Stream #1| 19241.2   19257.5|
18.083 |                                     |
| 126.00     126.00| Zero Out:      Stream #2|      77.5    0.0|
|                                     |
| 126.00    12720.50| Convex Routing:      Stream #1| 19257.5   19246.8|
18.167 |                                     |
-----+-----+-----+
| 430.00     420.00| Subarea (UH) Added to Stream #2|      0.0    192.8|
16.333 |                                     |
| 420.00     420.50| Flow-Through Basin: Stream #2|    192.8    123.8|
16.500 | 11.62|                                     |
| 420.50     427.00| Flow-Through Basin: Stream #2|    123.8    109.1|
17.333 | 11.63|                                     |
| 413.00     425.00| Subarea (UH) Added to Stream #3|      0.0    91.9|
16.250 |                                     |
```

	425.00	426.00	Flow-Through Basin:	Stream #3	91.9	45.7
16.417		3.06				
+-----+						
	426.00	427.00	Stream #3 Added to:	Stream #2	109.1	152.7
17.167						
	427.00	427.00	Zero Out:	Stream #3	45.7	0.0
	427.00	12720.50	Stream #2 Added to:	Stream #1	19246.8	19373.7
18.167						
	12720.50	12720.50	Zero Out:	Stream #2	152.7	0.0
	12720.50	12741.00	Convex Routing:	Stream #1	19373.7	19327.4
18.167						
+-----+						
	320.00	339.00	Subarea (UH) Added to	Stream #2	0.0	381.9
16.333						
	339.00	340.00	Flow-Through Basin:	Stream #2	381.9	301.8
16.500		65.54				
	339.00	372.00	Flowby Basin Model:	Stream #2	301.8	32.3
16.500						
	390.00	372.00	Subarea (UH) Added to	Stream #4	0.0	88.0
16.417						
	372.00	372.00	Stream #4 Added to:	Stream #3	269.5	349.2
16.500						
+-----+						
	372.00	372.00	Zero Out:	Stream #4	88.0	0.0
	372.00	373.00	Flow-Through Basin:	Stream #3	349.2	80.0
18.833		65.46				
	372.00	372.10	Flowby Basin Model:	Stream #3	80.0	80.0
18.833						
	373.00	373.00	Zero Out:	Stream #5	0.0	0.0
	373.00	340.00	Stream #3 Added to:	Stream #2	32.3	105.0
18.583						
+-----+						
	340.00	340.00	Zero Out:	Stream #3	80.0	0.0
	340.00	12741.00	Stream #2 Added to:	Stream #1	19327.4	19430.3
18.167						
	12741.00	12741.00	Zero Out:	Stream #2	105.0	0.0
	12741.00	127.00	Convex Routing:	Stream #1	19430.3	19423.0
18.250						
	12710.00	127.00	Subarea (UH) Added to	Stream #2	0.0	343.3
16.500						
+-----+						
+-----+						
Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT						
INTERVAL						
3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF						
THE DESIGN STORM						
+-----+						
+-----+						

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV0034UC.DAT]

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UPSTREAM TIME (2)	DOWNSTREAM MAX. STORAGE	UPSTREAM HYDROLOGIC/HYDRAULIC PROCESS	DOWNSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
PEAK (HR)	MODELED (AF)	FOOTNOTES		
127.00	127.00	Stream #2 Added to: Stream #1	19423.0	19534.9
18.250				
127.00	127.00	Zero Out: Stream #2	343.3	0.0
127.00	12902.00	Convex Routing: Stream #1	19534.9	19512.3
18.250				
50220.00	50347.00	Subarea (UH) Added to Stream #2	0.0	541.6
16.333				
50347.00	50347.00	Flow-Through Basin: Stream #2	541.6	100.8
18.583	143.22			
50347.00	12902.00	Convex Routing: Stream #2	100.8	100.7
18.667				
12902.00	12902.00	Stream #2 Added to: Stream #1	19512.3	19612.3
18.250				
12902.00	12902.00	Zero Out: Stream #2	100.7	0.0
12902.00	129.00	Convex Routing: Stream #1	19612.3	19596.6
18.333				
50400.00	129.00	Subarea (UH) Added to Stream #2	0.0	234.1
16.250				
129.00	129.00	Stream #2 Added to: Stream #1	19596.6	19628.4
18.333				
129.00	129.00	Zero Out: Stream #2	234.1	0.0
210.00	221.00	Subarea (UH) Added to Stream #2	0.0	134.7
16.250				
221.00	221.00	Flowby Basin Model: Stream #2	134.7	20.7
16.250				
221.00	223.00	Flow-Through Basin: Stream #2	20.7	16.5
17.250	4.08			
221.00	222.00	Flow-Through Basin: Stream #5	114.0	39.2
17.417	17.15			
223.00	222.00	Stream #5 Added to: Stream #2	16.5	55.7
17.417				
222.00	222.00	Zero Out: Stream #5	39.2	0.0
222.00	129.00	Stream #2 Added to: Stream #1	19628.4	19679.4
18.333				

129.00	129.00	Zero Out: Stream #2	55.7	0.0
129.00	133.00	Convex Routing: Stream #1	19679.4	19653.1
18.417				
13010.00	132.00	Subarea (UH) Added to Stream #2	0.0	1560.8
16.833				
132.00	132.00	Flowby Basin Model: Stream #2	1560.8	1341.1
16.833				
132.00	132.00	Flow-Through Basin: Stream #3	219.7	204.7
17.083	21.48			
132.00	132.00	Split Hydrograph: Stream #3	204.7	102.3
17.083				
132.00	132.00	Flow-Through Basin: Stream #3	102.3	21.9
18.917	14.52			
132.00	132.00	Stream #3 Added to: Stream #2	1341.1	1356.4
16.833				
132.00	132.00	Zero Out: Stream #3	21.9	0.0
132.00	132.00	Flow-Through Basin: Stream #4	102.3	22.0
18.917	14.67			
132.00	132.00	Stream #4 Added to: Stream #2	1356.4	1371.2
16.833				
132.00	132.00	Zero Out: Stream #4	22.0	0.0
132.00	13305.00	Convex Routing: Stream #2	1371.2	1336.6
17.333				
13305.00	133.00	Convex Routing: Stream #2	1336.6	1322.8
17.500				
132.00	133.00	Subarea (UH) Added to Stream #3	0.0	674.7
16.667				
133.00	133.00	Stream #3 Added to: Stream #2	1322.8	1823.3
17.500				
133.00	133.00	Zero Out: Stream #3	674.7	0.0
133.00	133.00	Stream #2 Added to: Stream #1	19653.1	21372.9
17.500				
133.00	133.00	Zero Out: Stream #2	1823.3	0.0
133.00	134.00	Convex Routing: Stream #1	21372.9	21352.8
17.667				
133.00	134.00	Subarea (UH) Added to Stream #2	0.0	795.7
16.417				

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV0034UC.DAT ]
Page: 3 of |
-----+-----+
|UPSTREAM DOWNSTREAM| | UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE| |
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR) | MODELED (AF)| FOOTNOTES |
-----+-----+
| 134.00 134.00| Stream #2 Added to: Stream #1| 21352.8 21682.2|
17.667 | | |
| 134.00 134.00| Zero Out: Stream #2| 795.7 0.0|
| | | |
| 134.00 134.00| View: Stream #1| 21682.2|
17.667 | 18323.19| 3 |
-----+-----+
|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT
INTERVAL |
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF
THE DESIGN STORM |
-----+

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END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Ver. 23.0 Release Date: 07/01/2016 License ID 1264

Analysis prepared by:

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 134C *
* 100-YR EV JULY 2019 ROKAMOTO *

FILE NAME: EV0034CC.DAT
TIME/DATE OF STUDY: 13:38 07/17/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 1.964 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.376
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.51; 30-MINUTE = 0.95; 1-HOUR = 1.32
3-HOUR = 2.49; 6-HOUR = 3.72; 24-HOUR = 6.54
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.121 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.374
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing depth and storage values.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<

```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.215 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.434
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.290 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.713
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 286.00; DOWNSTREAM ELEVATION(FT) = 258.00
CHANNEL LENGTH(FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00

=====

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

=====

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.236 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.146; LOW LOSS FRACTION = 0.325
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 16.600
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

=====

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.164 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.138; LOW LOSS FRACTION = 0.335
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

```

*****
FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
-----
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 5.95 0.280
3 2.00 22.18 1.150
4 3.00 46.43 3.090
5 4.00 75.05 6.150
6 5.00 105.54 10.350
7 6.00 127.29 15.380
8 7.00 138.99 20.860
9 8.00 150.45 26.500
10 9.00 161.55 32.360
11 10.00 697.61 38.410
12 11.00 1666.99 44.700
-----
*****
FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
-----
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
-----
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
-----
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6
-----

```

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>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
-----
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
-----
WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.305 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.288
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
-----
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 0.01 7.430

```

3	2.00	0.02	15.170
4	3.00	2.70	23.230
5	4.00	4.69	31.610
6	5.00	6.04	40.320
7	6.00	10.72	49.360
8	7.00	17.77	58.730
9	8.00	424.53	68.440
10	9.00	1169.03	78.500
11	10.00	2113.61	88.500

FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.348 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.466
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

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```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====

WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.404 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.296; LOW LOSS FRACTION = 0.590
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

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```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.305 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.217; LOW LOSS FRACTION = 0.469
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 20.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.197 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.591
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.231 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.319
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933
*****
FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2
-----
>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.
DATA PAIR Qenter Qpass
NUMBER (CFS) (CFS)
- 0.00 0.00
1 25.00 13.59
2 75.00 16.84
3 100.00 18.46
4 250.00 28.22
5 550.00 47.73
FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5
=====
*****
FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	0.310
3	2.00	0.83	1.240
4	3.00	5.60	2.600
5	4.00	16.88	4.130
6	5.00	23.48	5.790
7	6.00	36.73	7.560
8	7.00	55.95	9.440
9	8.00	78.70	11.430
10	9.00	228.67	12.460

```

*****
FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	1.84	0.260
3	2.00	3.22	1.160
4	3.00	4.16	2.520
5	4.00	4.94	3.990
6	5.00	5.60	5.550
7	6.00	7.17	7.200
8	7.00	14.13	8.950
9	8.00	18.54	10.800
10	9.00	21.90	12.740
11	10.00	24.73	14.780
12	11.00	37.17	16.920
13	12.00	57.63	19.160
14	13.00	83.32	21.500
15	14.00	112.96	23.940
16	15.00	133.28	26.480
17	16.00	144.34	29.150
18	17.00	154.45	31.950
19	18.00	163.94	34.870
20	19.00	172.92	37.940
21	20.00	181.39	41.140
22	21.00	189.45	44.500
23	22.00	197.22	48.010

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.795 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.244; LOW LOSS FRACTION = 0.515
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 5.700
SPECIFIED DEAD STORAGE (AF) FILLED = 5.700
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.50	0.01	0.002
3	2.00	0.02	1.900
4	4.00	0.03	16.100
5	4.30	0.05	18.200
6	5.00	314.00	23.200
7	6.00	1306.00	30.300
8	7.00	2847.00	39.100
9	8.00	4942.00	47.800

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8
-----
>>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
=====
```

```
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.99	2.90	0.900
3	1.99	11.38	2.900
4	3.99	19.63	10.300
5	5.99	25.19	20.700
6	7.99	29.71	31.700
7	9.99	33.62	43.500
8	10.99	35.49	49.700
9	11.99	313.49	56.400
10	12.99	894.27	63.100
11	13.99	1748.55	69.900
12	15.99	4306.91	84.100

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====
```

```
*****
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 4
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
=====
```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.48	0.70	0.400
3	1.48	6.50	1.800
4	3.48	18.11	8.500
5	5.48	23.99	17.900
6	7.48	28.68	27.800
7	8.48	32.70	38.300
8	10.48	34.50	43.900
9	11.48	36.29	49.400
10	12.48	314.07	55.900
11	13.48	895.00	62.300
12	15.48	2882.95	74.700

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```
ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 427.51; DOWNSTREAM ELEVATION (FT) = 315.00
CHANNEL LENGTH (FT) = 9760.05 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00
=====
```

```

*****
FLOW PROCESS FROM NODE 13305.00 TO NODE 133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 315.00; DOWNSTREAM ELEVATION(FT) = 212.00
CHANNEL LENGTH(FT) = 6877.24 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 133.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.610 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.224; LOW LOSS FRACTION = 0.362
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 212.00; DOWNSTREAM ELEVATION(FT) = 173.00
CHANNEL LENGTH(FT) = 6461.31 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1691.600 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.312 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.431
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.293; 30-MINUTE = 0.352; 1-HOUR = 0.397
3-HOUR = 0.740; 6-HOUR = 0.887; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====
*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 13500.00 TO NODE 134.00 IS CODE = 1

```


	425.00	426.00	Flow-Through Basin:	Stream #3	89.1	44.9
16.417		2.99				
+-----+						
	426.00	427.00	Stream #3 Added to:	Stream #2	107.1	149.9
17.167						
	427.00	427.00	Zero Out:	Stream #3	44.9	0.0
	427.00	12720.50	Stream #2 Added to:	Stream #1	18986.5	19112.5
18.167						
	12720.50	12720.50	Zero Out:	Stream #2	149.9	0.0
	12720.50	12741.00	Convex Routing:	Stream #1	19112.5	19064.8
18.167						
+-----+						
	320.00	339.00	Subarea (UH) Added to	Stream #2	0.0	372.3
16.333						
	339.00	340.00	Flow-Through Basin:	Stream #2	372.3	294.9
16.500		65.37				
	339.00	372.00	Flowby Basin Model:	Stream #2	294.9	32.1
16.500						
	390.00	372.00	Subarea (UH) Added to	Stream #4	0.0	85.5
16.417						
	372.00	372.00	Stream #4 Added to:	Stream #3	262.8	340.2
16.500						
+-----+						
	372.00	372.00	Zero Out:	Stream #4	85.5	0.0
	372.00	373.00	Flow-Through Basin:	Stream #3	340.2	79.1
18.917		64.96				
	372.00	372.10	Flowby Basin Model:	Stream #3	79.1	79.1
18.917						
	373.00	373.00	Zero Out:	Stream #5	0.0	0.0
	373.00	340.00	Stream #3 Added to:	Stream #2	32.1	104.0
18.583						
+-----+						
	340.00	340.00	Zero Out:	Stream #3	79.1	0.0
	340.00	12741.00	Stream #2 Added to:	Stream #1	19064.8	19166.5
18.167						
	12741.00	12741.00	Zero Out:	Stream #2	104.0	0.0
	12741.00	127.00	Convex Routing:	Stream #1	19166.5	19164.3
18.250						
	12710.00	127.00	Subarea (UH) Added to	Stream #2	0.0	332.7
16.500						
+-----+						
+-----+						
Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT						
INTERVAL						
3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF						
THE DESIGN STORM						
+-----+						
+-----+						

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV0034CC.DAT]

Page: 2 of 1

UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS FOOTNOTES	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
--	--	---	------------------------	--------------------------

127.00	127.00	Stream #2 Added to:	Stream #1	19164.3	19277.5
18.250					
127.00	127.00	Zero Out:	Stream #2	332.7	0.0
127.00	12902.00	Convex Routing:	Stream #1	19277.5	19251.5
18.250					
50220.00	50347.00	Subarea (UH) Added to	Stream #2	0.0	526.0
16.333					
50347.00	50347.00	Flow-Through Basin:	Stream #2	526.0	100.2
18.583	142.22				
50347.00	12902.00	Convex Routing:	Stream #2	100.2	100.2
18.750					
12902.00	12902.00	Stream #2 Added to:	Stream #1	19251.5	19350.9
18.250					
12902.00	12902.00	Zero Out:	Stream #2	100.2	0.0
12902.00	129.00	Convex Routing:	Stream #1	19350.9	19337.3
18.333					
50400.00	129.00	Subarea (UH) Added to	Stream #2	0.0	226.0
16.250					
129.00	129.00	Stream #2 Added to:	Stream #1	19337.3	19369.2
18.333					
129.00	129.00	Zero Out:	Stream #2	226.0	0.0
210.00	221.00	Subarea (UH) Added to	Stream #2	0.0	131.2
16.250					
221.00	221.00	Flowby Basin Model:	Stream #2	131.2	20.5
16.250					
221.00	223.00	Flow-Through Basin:	Stream #2	20.5	16.5
17.250	4.07				
221.00	222.00	Flow-Through Basin:	Stream #5	110.7	38.0
17.417	17.02				
223.00	222.00	Stream #5 Added to:	Stream #2	16.5	54.4
17.417					
222.00	222.00	Zero Out:	Stream #5	38.0	0.0
222.00	129.00	Stream #2 Added to:	Stream #1	19369.2	19419.9
18.333					

129.00	129.00	Zero Out:	Stream #2	54.4	0.0
129.00	133.00	Convex Routing:	Stream #1	19419.9	19396.1
18.417					
13010.00	132.00	Subarea (UH) Added to	Stream #2	0.0	1519.1
16.833					
132.00	132.00	Flowby Basin Model:	Stream #2	1519.1	1307.4
16.833					
132.00	132.00	Flow-Through Basin:	Stream #3	211.7	197.4
17.083	21.36				
132.00	132.00	Split Hydrograph:	Stream #3	197.4	98.7
17.083					
132.00	132.00	Flow-Through Basin:	Stream #3	98.7	21.7
18.917	14.10				
132.00	132.00	Stream #3 Added to:	Stream #2	1307.4	1322.5
16.833					
132.00	132.00	Zero Out:	Stream #3	21.7	0.0
132.00	132.00	Flow-Through Basin:	Stream #4	98.7	21.7
18.917	14.25				
132.00	132.00	Stream #4 Added to:	Stream #2	1322.5	1336.9
16.833					
132.00	132.00	Zero Out:	Stream #4	21.7	0.0
132.00	13305.00	Convex Routing:	Stream #2	1336.9	1304.4
17.333					
13305.00	133.00	Convex Routing:	Stream #2	1304.4	1290.6
17.583					
132.00	133.00	Subarea (UH) Added to	Stream #3	0.0	658.5
16.667					
133.00	133.00	Stream #3 Added to:	Stream #2	1290.6	1787.3
17.500					
133.00	133.00	Zero Out:	Stream #3	658.5	0.0
133.00	133.00	Stream #2 Added to:	Stream #1	19396.1	21113.0
17.500					
133.00	133.00	Zero Out:	Stream #2	1787.3	0.0
133.00	134.00	Convex Routing:	Stream #1	21113.0	21092.8
17.667					
133.00	134.00	Subarea (UH) Added to	Stream #2	0.0	773.1
16.333					

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV0034CC.DAT ]
Page: 3 of |
-----+-----+-----+
|UPSTREAM DOWNSTREAM| | UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE| |
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR) | MODELED (AF)| FOOTNOTES |
-----+-----+-----+
| 134.00 134.00| Stream #2 Added to: Stream #1| 21092.8 21424.6|
17.667 | | |
| 134.00 134.00| Zero Out: Stream #2| 773.1 0.0|
| | |
| 13500.00 134.00| Subarea (UH) Added to Stream #2| 0.0 1192.1|
17.250 | | |
| 134.00 134.00| Stream #2 Added to: Stream #1| 21424.6 22574.1|
17.583 | | |
| 134.00 134.00| Zero Out: Stream #2| 1192.1 0.0|
| | |
-----+-----+-----+
| 134.00 134.00| View: Stream #1| 22574.1|
17.583 | 19071.33| 3 |
-----+-----+-----+
|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT
INTERVAL |
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF
THE DESIGN STORM |
-----+

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END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Ver. 23.0 Release Date: 07/01/2016 License ID 1264

Analysis prepared by:

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 137 *
* 100-YR EV JUNE 2019 ROKAMOTO *

FILE NAME: EV00137C.DAT
TIME/DATE OF STUDY: 13:35 07/17/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 1.964 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.376
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.51; 30-MINUTE = 0.95; 1-HOUR = 1.32
3-HOUR = 2.49; 6-HOUR = 3.72; 24-HOUR = 6.54
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.121 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.374
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing values for depth, outflow, and storage.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<


```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.215 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.434
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.290 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.713
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 286.00; DOWNSTREAM ELEVATION(FT) = 258.00
CHANNEL LENGTH(FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00

=====

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

=====

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.236 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.146; LOW LOSS FRACTION = 0.325
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 16.600
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

=====

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.164 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.138; LOW LOSS FRACTION = 0.335
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

```

*****
FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
-----
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 5.95 0.280
3 2.00 22.18 1.150
4 3.00 46.43 3.090
5 4.00 75.05 6.150
6 5.00 105.54 10.350
7 6.00 127.29 15.380
8 7.00 138.99 20.860
9 8.00 150.45 26.500
10 9.00 161.55 32.360
11 10.00 697.61 38.410
12 11.00 1666.99 44.700
-----
*****
FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
-----
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
-----
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
-----
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
-----
WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.305 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.288
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
-----
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 0.01 7.430

```

3	2.00	0.02	15.170
4	3.00	2.70	23.230
5	4.00	4.69	31.610
6	5.00	6.04	40.320
7	6.00	10.72	49.360
8	7.00	17.77	58.730
9	8.00	424.53	68.440
10	9.00	1169.03	78.500
11	10.00	2113.61	88.500

 FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
 FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
 THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

 FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
 *USER ENTERED "LAG" TIME = 0.348 HOURS
 VALLEY(DEVELOPED) S-GRAPH SELECTED
 MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.466
 SPECIFIED PEAK RAINFALL DEPTHS(INCH):
 5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
 3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
 *USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
 5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
 3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

 FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

 FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

 >>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<

 FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
 THROUGH A FLOW-THROUGH DETENTION BASIN.
 SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
 DEAD STORAGE (AF) = 0.000
 SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
 SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
 DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

 FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
 FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN
 THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

 FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

 STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

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CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====

WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.404 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.296; LOW LOSS FRACTION = 0.590
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

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=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.305 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.217; LOW LOSS FRACTION = 0.469
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

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```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

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```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 20.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

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```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

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```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.197 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.591
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.231 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.319
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2
-----
>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.
DATA PAIR Qenter Qpass
NUMBER (CFS) (CFS)
- 0.00 0.00
1 25.00 13.59
2 75.00 16.84
3 100.00 18.46
4 250.00 28.22
5 550.00 47.73
FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5
=====

*****
FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	0.310
3	2.00	0.83	1.240
4	3.00	5.60	2.600
5	4.00	16.88	4.130
6	5.00	23.48	5.790
7	6.00	36.73	7.560
8	7.00	55.95	9.440
9	8.00	78.70	11.430
10	9.00	228.67	12.460

```

*****
FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	1.84	0.260
3	2.00	3.22	1.160
4	3.00	4.16	2.520
5	4.00	4.94	3.990
6	5.00	5.60	5.550
7	6.00	7.17	7.200
8	7.00	14.13	8.950
9	8.00	18.54	10.800
10	9.00	21.90	12.740
11	10.00	24.73	14.780
12	11.00	37.17	16.920
13	12.00	57.63	19.160
14	13.00	83.32	21.500
15	14.00	112.96	23.940
16	15.00	133.28	26.480
17	16.00	144.34	29.150
18	17.00	154.45	31.950
19	18.00	163.94	34.870
20	19.00	172.92	37.940
21	20.00	181.39	41.140
22	21.00	189.45	44.500
23	22.00	197.22	48.010

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.795 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.244; LOW LOSS FRACTION = 0.515
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 5.700
SPECIFIED DEAD STORAGE (AF) FILLED = 5.700
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.50	0.01	0.002
3	2.00	0.02	1.900
4	4.00	0.03	16.100
5	4.30	0.05	18.200
6	5.00	314.00	23.200
7	6.00	1306.00	30.300
8	7.00	2847.00	39.100
9	8.00	4942.00	47.800


```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8
-----
>>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
=====
```

```
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.99	2.90	0.900
3	1.99	11.38	2.900
4	3.99	19.63	10.300
5	5.99	25.19	20.700
6	7.99	29.71	31.700
7	9.99	33.62	43.500
8	10.99	35.49	49.700
9	11.99	313.49	56.400
10	12.99	894.27	63.100
11	13.99	1748.55	69.900
12	15.99	4306.91	84.100

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====
```

```
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 4
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.48	0.70	0.400
3	1.48	6.50	1.800
4	3.48	18.11	8.500
5	5.48	23.99	17.900
6	7.48	28.68	27.800
7	9.48	32.70	38.300
8	10.48	34.50	43.900
9	11.48	36.29	49.400
10	12.48	314.07	55.900
11	13.48	895.00	62.300
12	15.48	2882.95	74.700

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

```
BASEWIDTH (FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 427.51; DOWNSTREAM ELEVATION (FT) = 315.00
CHANNEL LENGTH (FT) = 9760.05 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00
=====
```

```

*****
FLOW PROCESS FROM NODE 13305.00 TO NODE 133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 315.00; DOWNSTREAM ELEVATION(FT) = 212.00
CHANNEL LENGTH(FT) = 6877.24 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 133.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.610 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.224; LOW LOSS FRACTION = 0.362
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 212.00; DOWNSTREAM ELEVATION(FT) = 173.00
CHANNEL LENGTH(FT) = 6461.31 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1691.600 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.312 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.431
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====
*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 13500.00 TO NODE 134.00 IS CODE = 1

```

```

-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 3859.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 1.252 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.284; LOW LOSS FRACTION = 0.408
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 4.00
UPSTREAM ELEVATION (FT) = 173.00; DOWNSTREAM ELEVATION (FT) = 133.00
CHANNEL LENGTH (FT) = 6064.09 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1191.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.391 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.237; LOW LOSS FRACTION = 0.420
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15

```

```

3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.291; 30-MINUTE = 0.350; 1-HOUR = 0.394
3-HOUR = 0.738; 6-HOUR = 0.886; 24-HOUR = 0.933

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 11
-----
>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<
=====

```

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

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UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS FOOTNOTES	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
--	--	---	------------------------	--------------------------

10100.00	119.00	Subarea (UH) Added to Stream #1	0.0	18908.1
18.000				
119.00	12603.00	Convex Routing: Stream #1	18908.1	18774.8
18.000				
810.00	809.00	Subarea (UH) Added to Stream #2	0.0	129.7
16.167				
809.00	12603.00	Flow-Through Basin: Stream #2	129.7	71.7
16.333	14.02			
12603.00	12603.00	Stream #2 Added to: Stream #1	18774.8	18814.1
18.000				
12603.00	12603.00	Zero Out: Stream #2	71.7	0.0
12603.00	126.00	Convex Routing: Stream #1	18814.1	18799.8
18.083				
920.00	905.00	Subarea (UH) Added to Stream #2	0.0	297.5
16.250				
905.00	126.00	Flow-Through Basin: Stream #2	297.5	234.5
16.417	19.53			
126.00	126.00	Stream #2 Added to: Stream #1	18799.8	18900.3
18.083				
126.00	126.00	Zero Out: Stream #2	234.5	0.0
600.00	126.00	Subarea (UH) Added to Stream #2	0.0	74.1
16.333				
126.00	126.00	Stream #2 Added to: Stream #1	18900.3	18916.9
18.083				
126.00	126.00	Zero Out: Stream #2	74.1	0.0
126.00	12720.50	Convex Routing: Stream #1	18916.9	18906.5
18.167				
430.00	420.00	Subarea (UH) Added to Stream #2	0.0	185.9
16.333				
420.00	420.50	Flow-Through Basin: Stream #2	185.9	120.1
16.500	11.45			
420.50	427.00	Flow-Through Basin: Stream #2	120.1	106.5
17.333	11.50			
413.00	425.00	Subarea (UH) Added to Stream #3	0.0	88.4
16.250				

425.00	426.00	Flow-Through Basin: Stream #3	88.4	44.6
16.417	2.97			
426.00	427.00	Stream #3 Added to: Stream #2	106.5	149.0
17.167				
427.00	427.00	Zero Out: Stream #3	44.6	0.0
427.00	12720.50	Stream #2 Added to: Stream #1	18906.5	19032.3
18.167				
12720.50	12720.50	Zero Out: Stream #2	149.0	0.0
12720.50	12741.00	Convex Routing: Stream #1	19032.3	18983.5
18.167				
320.00	339.00	Subarea (UH) Added to Stream #2	0.0	369.8
16.333				
339.00	340.00	Flow-Through Basin: Stream #2	369.8	293.0
16.500	65.32			
339.00	372.00	Flowby Basin Model: Stream #2	293.0	32.0
16.500				
390.00	372.00	Subarea (UH) Added to Stream #4	0.0	84.8
16.417				
372.00	372.00	Stream #4 Added to: Stream #3	260.9	337.7
16.500				
372.00	372.00	Zero Out: Stream #4	84.8	0.0
372.00	373.00	Flow-Through Basin: Stream #3	337.7	78.8
18.917	64.80			
372.00	372.10	Flowby Basin Model: Stream #3	78.8	78.8
18.917				
373.00	373.00	Zero Out: Stream #5	0.0	0.0
373.00	340.00	Stream #3 Added to: Stream #2	32.0	103.7
18.583				
340.00	340.00	Zero Out: Stream #3	78.8	0.0
340.00	12741.00	Stream #2 Added to: Stream #1	18983.5	19085.1
18.250				
12741.00	12741.00	Zero Out: Stream #2	103.7	0.0
12741.00	127.00	Convex Routing: Stream #1	19085.1	19085.1
18.250				
12710.00	127.00	Subarea (UH) Added to Stream #2	0.0	329.7
16.500				

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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|
|                                     * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV00137C.DAT ]
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+-----+
+-----+
|UPSTREAM DOWNSTREAM|                                     | UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE|                                     |
| NODE #     NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR)   | MODELED (AF)| FOOTNOTES |
+-----+
+-----+
| 127.00    127.00| Stream #2 Added to: Stream #1| 19085.1    19198.6|
18.250 |          |
| 127.00    127.00| Zero Out: Stream #2| 329.7      0.0|
|
| 127.00    12902.00| Convex Routing: Stream #1| 19198.6    19170.9|
18.250 |          |
| 50220.00   50347.00| Subarea (UH) Added to Stream #2| 0.0        521.9|
16.333 |          |
| 50347.00   50347.00| Flow-Through Basin: Stream #2| 521.9      100.0|
18.583 | 141.91|
+-----+
+-----+
| 50347.00   12902.00| Convex Routing: Stream #2| 100.0      100.0|
18.750 |          |
| 12902.00   12902.00| Stream #2 Added to: Stream #1| 19170.9    19270.2|
18.250 |          |
| 12902.00   12902.00| Zero Out: Stream #2| 100.0      0.0|
|
| 12902.00    129.00| Convex Routing: Stream #1| 19270.2    19257.3|
18.333 |          |
| 50400.00    129.00| Subarea (UH) Added to Stream #2| 0.0        223.8|
16.250 |          |
+-----+
+-----+
| 129.00     129.00| Stream #2 Added to: Stream #1| 19257.3    19289.2|
18.333 |          |
| 129.00     129.00| Zero Out: Stream #2| 223.8      0.0|
|
| 210.00     221.00| Subarea (UH) Added to Stream #2| 0.0        130.2|
16.250 |          |
| 221.00     221.00| Flowby Basin Model: Stream #2| 130.2      20.4|
16.250 |          |
| 221.00     223.00| Flow-Through Basin: Stream #2| 20.4       16.4|
17.250 | 4.07|
+-----+
+-----+
| 221.00     222.00| Flow-Through Basin: Stream #5| 109.8      37.6|
17.500 | 16.97|
| 223.00     222.00| Stream #5 Added to: Stream #2| 16.4       54.0|
17.417 |          |
| 222.00     222.00| Zero Out: Stream #5| 37.6       0.0|
|
| 222.00     129.00| Stream #2 Added to: Stream #1| 19289.2    19339.8|
18.333 |          |

```

	129.00	129.00	Zero Out:	Stream #2	54.0	0.0
+-----+						
	129.00	133.00	Convex Routing:	Stream #1	19339.8	19317.0
18.417						
	13010.00	132.00	Subarea (UH) Added to	Stream #2	0.0	1507.2
16.833						
	132.00	132.00	Flowby Basin Model:	Stream #2	1507.2	1297.8
16.833						
	132.00	132.00	Flow-Through Basin:	Stream #3	209.4	195.2
17.083		21.33				
	132.00	132.00	Split Hydrograph:	Stream #3	195.2	97.6
17.083						
+-----+						
	132.00	132.00	Flow-Through Basin:	Stream #3	97.6	21.6
18.917		13.98				
	132.00	132.00	Stream #3 Added to:	Stream #2	1297.8	1312.8
16.833						
	132.00	132.00	Zero Out:	Stream #3	21.6	0.0
	132.00	132.00	Flow-Through Basin:	Stream #4	97.6	21.6
18.917		14.13				
	132.00	132.00	Stream #4 Added to:	Stream #2	1312.8	1327.2
16.833						
+-----+						
	132.00	132.00	Zero Out:	Stream #4	21.6	0.0
	132.00	13305.00	Convex Routing:	Stream #2	1327.2	1295.0
17.333						
	13305.00	133.00	Convex Routing:	Stream #2	1295.0	1281.6
17.583						
	132.00	133.00	Subarea (UH) Added to	Stream #3	0.0	653.9
16.667						
	133.00	133.00	Stream #3 Added to:	Stream #2	1281.6	1776.5
17.500						
+-----+						
	133.00	133.00	Zero Out:	Stream #3	653.9	0.0
	133.00	133.00	Stream #2 Added to:	Stream #1	19317.0	21031.9
17.500						
	133.00	133.00	Zero Out:	Stream #2	1776.5	0.0
	133.00	134.00	Convex Routing:	Stream #1	21031.9	21011.7
17.667						
	133.00	134.00	Subarea (UH) Added to	Stream #2	0.0	767.1
16.333						

[Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL

| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

| INPUT FILENAME: [EV00137C.DAT]

Page: 3 of |

UPSTREAM TIME (2) TO	DOWNSTREAM MAX. STORAGE	HYDROLOGIC/HYDRAULIC PROCESS	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
NODE #	NODE #			
PEAK (HR)	MODELED (AF)	FOOTNOTES		

134.00	134.00	Stream #2 Added to:	Stream #1	21011.7	21344.3
17.667					
134.00	134.00	Zero Out:	Stream #2	767.1	0.0
13500.00	134.00	Subarea (UH) Added to	Stream #2	0.0	1185.3
17.250					
134.00	134.00	Stream #2 Added to:	Stream #1	21344.3	22489.7
17.583					
134.00	134.00	Zero Out:	Stream #2	1185.3	0.0

134.00	137.00	Convex Routing:	Stream #1	22489.7	22477.8
17.750					
134.00	137.00	Subarea (UH) Added to	Stream #2	0.0	497.5
16.417					
137.00	137.00	Stream #2 Added to:	Stream #1	22477.8	22719.5
17.750					
137.00	137.00	Zero Out:	Stream #2	497.5	0.0
137.00	137.00	View:	Stream #1		22719.5
17.750	19296.78	3			

|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
 | 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Analysis prepared by:

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 138 *
* 100-YR EV JULY 2019 ROKAMOTO *

FILE NAME: EV00138C.DAT
TIME/DATE OF STUDY: 13:35 07/17/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 1.964 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.376
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.51; 30-MINUTE = 0.95; 1-HOUR = 1.32
3-HOUR = 2.49; 6-HOUR = 3.72; 24-HOUR = 6.54
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.121 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.374
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing depth and storage values.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<


```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.215 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.434
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.290 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.713
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 286.00; DOWNSTREAM ELEVATION(FT) = 258.00
CHANNEL LENGTH(FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

=====

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

=====

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.236 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.146; LOW LOSS FRACTION = 0.325
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 16.600
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

=====

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.164 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.138; LOW LOSS FRACTION = 0.335
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

```

*****
FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
-----
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 5.95 0.280
3 2.00 22.18 1.150
4 3.00 46.43 3.090
5 4.00 75.05 6.150
6 5.00 105.54 10.350
7 6.00 127.29 15.380
8 7.00 138.99 20.860
9 8.00 150.45 26.500
10 9.00 161.55 32.360
11 10.00 697.61 38.410
12 11.00 1666.99 44.700
-----
*****
FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
-----
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
-----
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
-----
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
-----
WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.305 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.288
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
-----
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 0.01 7.430

```

3	2.00	0.02	15.170
4	3.00	2.70	23.230
5	4.00	4.69	31.610
6	5.00	6.04	40.320
7	6.00	10.72	49.360
8	7.00	17.77	58.730
9	8.00	424.53	68.440
10	9.00	1169.03	78.500
11	10.00	2113.61	88.500

FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.348 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.466
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

```

```

CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====

WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.404 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.296; LOW LOSS FRACTION = 0.590
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

```

```

=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.305 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.217; LOW LOSS FRACTION = 0.469
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

```

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
-----

```

```

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
=====

```

```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 20.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.197 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.591
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.231 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.319
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932
*****
FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2
-----
>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.
DATA PAIR Qenter Qpass
NUMBER (CFS) (CFS)
- 0.00 0.00
1 25.00 13.59
2 75.00 16.84
3 100.00 18.46
4 250.00 28.22
5 550.00 47.73
FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5
=====
*****
FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	0.310
3	2.00	0.83	1.240
4	3.00	5.60	2.600
5	4.00	16.88	4.130
6	5.00	23.48	5.790
7	6.00	36.73	7.560
8	7.00	55.95	9.440
9	8.00	78.70	11.430
10	9.00	228.67	12.460

```

*****
FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	1.84	0.260
3	2.00	3.22	1.160
4	3.00	4.16	2.520
5	4.00	4.94	3.990
6	5.00	5.60	5.550
7	6.00	7.17	7.200
8	7.00	14.13	8.950
9	8.00	18.54	10.800
10	9.00	21.90	12.740
11	10.00	24.73	14.780
12	11.00	37.17	16.920
13	12.00	57.63	19.160
14	13.00	83.32	21.500
15	14.00	112.96	23.940
16	15.00	133.28	26.480
17	16.00	144.34	29.150
18	17.00	154.45	31.950
19	18.00	163.94	34.870
20	19.00	172.92	37.940
21	20.00	181.39	41.140
22	21.00	189.45	44.500
23	22.00	197.22	48.010

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.795 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.244; LOW LOSS FRACTION = 0.515
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 5.700
SPECIFIED DEAD STORAGE (AF) FILLED = 5.700
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.50	0.01	0.002
3	2.00	0.02	1.900
4	4.00	0.03	16.100
5	4.30	0.05	18.200
6	5.00	314.00	23.200
7	6.00	1306.00	30.300
8	7.00	2847.00	39.100
9	8.00	4942.00	47.800


```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8
-----
>>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
=====
```

```
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.99	2.90	0.900
3	1.99	11.38	2.900
4	3.99	19.63	10.300
5	5.99	25.19	20.700
6	7.99	29.71	31.700
7	9.99	33.62	43.500
8	10.99	35.49	49.700
9	11.99	313.49	56.400
10	12.99	894.27	63.100
11	13.99	1748.55	69.900
12	15.99	4306.91	84.100

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====
```

```
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 4
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.48	0.70	0.400
3	1.48	6.50	1.800
4	3.48	18.11	8.500
5	5.48	23.99	17.900
6	7.48	28.68	27.800
7	9.48	32.70	38.300
8	10.48	34.50	43.900
9	11.48	36.29	49.400
10	12.48	314.07	55.900
11	13.48	895.00	62.300
12	15.48	2882.95	74.700

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```
ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 427.51; DOWNSTREAM ELEVATION (FT) = 315.00
CHANNEL LENGTH (FT) = 9760.05 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00
=====
```

```

*****
FLOW PROCESS FROM NODE 13305.00 TO NODE 133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 315.00; DOWNSTREAM ELEVATION(FT) = 212.00
CHANNEL LENGTH(FT) = 6877.24 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 133.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.610 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.224; LOW LOSS FRACTION = 0.362
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 212.00; DOWNSTREAM ELEVATION(FT) = 173.00
CHANNEL LENGTH(FT) = 6461.31 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1691.600 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.312 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.431
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====
*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 13500.00 TO NODE 134.00 IS CODE = 1

```

```

-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 3859.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 1.252 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.284; LOW LOSS FRACTION = 0.408
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 4.00
UPSTREAM ELEVATION (FT) = 173.00; DOWNSTREAM ELEVATION (FT) = 133.00
CHANNEL LENGTH (FT) = 6064.09 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1191.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.391 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.237; LOW LOSS FRACTION = 0.420
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15

```

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3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 138.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 100.00 CHANNEL Z = 4.00
UPSTREAM ELEVATION (FT) = 133.00; DOWNSTREAM ELEVATION (FT) = 119.70
CHANNEL LENGTH (FT) = 4643.67 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 138.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1303.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.503 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.267; LOW LOSS FRACTION = 0.450
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.287; 30-MINUTE = 0.348; 1-HOUR = 0.392
3-HOUR = 0.734; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 138.00 TO NODE 138.00 IS CODE = 7
-----

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 138.00 TO NODE 138.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 138.00 TO NODE 138.00 IS CODE = 11

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<<

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+-----+
|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV00138C.DAT ]
Page: 1 of 1
+-----+
|UPSTREAM DOWNSTREAM| UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE|
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS |PEAK (CFS) PEAK (CFS)|
PEAK (HR) | MODELED (AF)| FOOTNOTES |
+-----+
| 10100.00 119.00| Subarea (UH) Added to Stream #1| 0.0 18821.7|
18.000 |
| 119.00 12603.00| Convex Routing: Stream #1| 18821.7 18689.6|
18.000 |
| 810.00 809.00| Subarea (UH) Added to Stream #2| 0.0 128.3|
16.167 |
| 809.00 12603.00| Flow-Through Basin: Stream #2| 128.3 71.0|
16.333 | 14.00|
| 12603.00 12603.00| Stream #2 Added to: Stream #1| 18689.6 18728.9|
18.000 |
+-----+
| 12603.00 12603.00| Zero Out: Stream #2| 71.0 0.0|
|
| 12603.00 126.00| Convex Routing: Stream #1| 18728.9 18714.9|
18.083 |
| 920.00 905.00| Subarea (UH) Added to Stream #2| 0.0 294.6|
16.250 |
| 905.00 126.00| Flow-Through Basin: Stream #2| 294.6 232.0|
16.417 | 19.50|
| 126.00 126.00| Stream #2 Added to: Stream #1| 18714.9 18815.8|
18.083 |
+-----+
| 126.00 126.00| Zero Out: Stream #2| 232.0 0.0|
|
| 600.00 126.00| Subarea (UH) Added to Stream #2| 0.0 73.3|
16.333 |
| 126.00 126.00| Stream #2 Added to: Stream #1| 18815.8 18832.5|
18.083 |
| 126.00 126.00| Zero Out: Stream #2| 73.3 0.0|
|
| 126.00 12720.50| Convex Routing: Stream #1| 18832.5 18822.1|
18.167 |
+-----+
| 430.00 420.00| Subarea (UH) Added to Stream #2| 0.0 184.2|
16.333 |
| 420.00 420.50| Flow-Through Basin: Stream #2| 184.2 119.2|
16.500 | 11.41|
| 420.50 427.00| Flow-Through Basin: Stream #2| 119.2 105.8|
17.333 | 11.47|
| 413.00 425.00| Subarea (UH) Added to Stream #3| 0.0 87.5|
16.250 |

```

425.00	426.00	Flow-Through Basin:	Stream #3	87.5	44.4
16.417	2.95				
+-----+					
426.00	427.00	Stream #3 Added to:	Stream #2	105.8	148.1
17.167					
427.00	427.00	Zero Out:	Stream #3	44.4	0.0
427.00	12720.50	Stream #2 Added to:	Stream #1	18822.1	18947.6
18.167					
12720.50	12720.50	Zero Out:	Stream #2	148.1	0.0
12720.50	12741.00	Convex Routing:	Stream #1	18947.6	18898.9
18.250					
+-----+					
320.00	339.00	Subarea (UH) Added to	Stream #2	0.0	366.9
16.333					
339.00	340.00	Flow-Through Basin:	Stream #2	366.9	290.8
16.500	65.27				
339.00	372.00	Flowby Basin Model:	Stream #2	290.8	31.9
16.500					
390.00	372.00	Subarea (UH) Added to	Stream #4	0.0	84.0
16.417					
372.00	372.00	Stream #4 Added to:	Stream #3	258.9	335.0
16.500					
+-----+					
372.00	372.00	Zero Out:	Stream #4	84.0	0.0
372.00	373.00	Flow-Through Basin:	Stream #3	335.0	78.5
18.917	64.64				
372.00	372.10	Flowby Basin Model:	Stream #3	78.5	78.5
18.917					
373.00	373.00	Zero Out:	Stream #5	0.0	0.0
373.00	340.00	Stream #3 Added to:	Stream #2	31.9	103.4
18.583					
+-----+					
340.00	340.00	Zero Out:	Stream #3	78.5	0.0
340.00	12741.00	Stream #2 Added to:	Stream #1	18898.9	19000.9
18.250					
12741.00	12741.00	Zero Out:	Stream #2	103.4	0.0
12741.00	127.00	Convex Routing:	Stream #1	19000.9	19000.7
18.250					
12710.00	127.00	Subarea (UH) Added to	Stream #2	0.0	326.5
16.500					

[Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

INPUT FILENAME: [EV00138C.DAT]

Page: 2 of

UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS FOOTNOTES	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
127.00	127.00	Stream #2 Added to:	Stream #1	19000.7
18.250				19114.7
127.00	127.00	Zero Out:	Stream #2	326.5
				0.0
127.00	12902.00	Convex Routing:	Stream #1	19114.7
18.250				19086.8
50220.00	50347.00	Subarea (UH) Added to	Stream #2	0.0
16.333				517.2
50347.00	50347.00	Flow-Through Basin:	Stream #2	517.2
18.583	141.58			99.9
50347.00	12902.00	Convex Routing:	Stream #2	99.9
18.750				99.9
12902.00	12902.00	Stream #2 Added to:	Stream #1	19086.8
18.250				19185.9
12902.00	12902.00	Zero Out:	Stream #2	99.9
				0.0
12902.00	129.00	Convex Routing:	Stream #1	19185.9
18.333				19173.5
50400.00	129.00	Subarea (UH) Added to	Stream #2	0.0
16.250				221.4
129.00	129.00	Stream #2 Added to:	Stream #1	19173.5
18.333				19205.4
129.00	129.00	Zero Out:	Stream #2	221.4
				0.0
210.00	221.00	Subarea (UH) Added to	Stream #2	0.0
16.250				129.2
221.00	221.00	Flowby Basin Model:	Stream #2	129.2
16.250				20.4
221.00	223.00	Flow-Through Basin:	Stream #2	20.4
17.250	4.07			16.4
221.00	222.00	Flow-Through Basin:	Stream #5	108.8
17.500	16.93			37.2
223.00	222.00	Stream #5 Added to:	Stream #2	16.4
17.417				53.6
222.00	222.00	Zero Out:	Stream #5	37.2
				0.0
222.00	129.00	Stream #2 Added to:	Stream #1	19205.4
18.333				19255.9

129.00	129.00	Zero Out:	Stream #2	53.6	0.0
129.00	133.00	Convex Routing:	Stream #1	19255.9	19233.7
18.417					
13010.00	132.00	Subarea (UH) Added to	Stream #2	0.0	1494.3
16.833					
132.00	132.00	Flowby Basin Model:	Stream #2	1494.3	1287.4
16.833					
132.00	132.00	Flow-Through Basin:	Stream #3	206.9	193.0
17.083	21.29				
132.00	132.00	Split Hydrograph:	Stream #3	193.0	96.5
17.083					
132.00	132.00	Flow-Through Basin:	Stream #3	96.5	21.5
18.917	13.84				
132.00	132.00	Stream #3 Added to:	Stream #2	1287.4	1302.3
16.833					
132.00	132.00	Zero Out:	Stream #3	21.5	0.0
132.00	132.00	Flow-Through Basin:	Stream #4	96.5	21.5
18.917	13.99				
132.00	132.00	Stream #4 Added to:	Stream #2	1302.3	1316.6
16.833					
132.00	132.00	Zero Out:	Stream #4	21.5	0.0
132.00	13305.00	Convex Routing:	Stream #2	1316.6	1285.4
17.333					
13305.00	133.00	Convex Routing:	Stream #2	1285.4	1272.0
17.583					
132.00	133.00	Subarea (UH) Added to	Stream #3	0.0	648.9
16.667					
133.00	133.00	Stream #3 Added to:	Stream #2	1272.0	1765.0
17.500					
133.00	133.00	Zero Out:	Stream #3	648.9	0.0
133.00	133.00	Stream #2 Added to:	Stream #1	19233.7	20946.8
17.500					
133.00	133.00	Zero Out:	Stream #2	1765.0	0.0
133.00	134.00	Convex Routing:	Stream #1	20946.8	20926.7
17.667					
133.00	134.00	Subarea (UH) Added to	Stream #2	0.0	760.3
16.333					

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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|
| * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV00138C.DAT ]
Page: 3 of |
-----+-----+
|UPSTREAM DOWNSTREAM| | UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE| |
| NODE # NODE # | HYDROLOGIC/HYDRAULIC PROCESS | PEAK (CFS) PEAK (CFS)|
PEAK (HR) | MODELED (AF)| FOOTNOTES |
-----+-----+
| 134.00 134.00| Stream #2 Added to: Stream #1| 20926.7 21260.1|
17.667 | | |
| 134.00 134.00| Zero Out: Stream #2| 760.3 0.0|
| | |
| 13500.00 134.00| Subarea (UH) Added to Stream #2| 0.0 1178.1|
17.250 | | |
| 134.00 134.00| Stream #2 Added to: Stream #1| 21260.1 22401.3|
17.583 | | |
| 134.00 134.00| Zero Out: Stream #2| 1178.1 0.0|
| | |
-----+-----+
| 134.00 137.00| Convex Routing: Stream #1| 22401.3 22388.9|
17.750 | | |
| 134.00 137.00| Subarea (UH) Added to Stream #2| 0.0 493.3|
16.417 | | |
| 137.00 137.00| Stream #2 Added to: Stream #1| 22388.9 22631.1|
17.750 | | |
| 137.00 137.00| Zero Out: Stream #2| 493.3 0.0|
| | |
| 137.00 138.00| Convex Routing: Stream #1| 22631.1 22624.6|
17.833 | | |
-----+-----+
| 137.00 138.00| Subarea (UH) Added to Stream #2| 0.0 473.1|
16.583 | | |
| 138.00 138.00| Stream #2 Added to: Stream #1| 22624.6 22882.4|
17.833 | | |
| 138.00 138.00| Zero Out: Stream #2| 473.1 0.0|
| | |
| 138.00 138.00| View: Stream #1| 22882.4|
17.833 | 19529.72| 3 |
-----+-----+
|Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT
INTERVAL
| 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF
THE DESIGN STORM
-----+

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END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE (1986)
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Ver. 23.0 Release Date: 07/01/2016 License ID 1264

Analysis prepared by:

***** DESCRIPTION OF STUDY *****
* RANCHO MISSION VIEJO - COMPLEX UH *
* ULTIMATE CONDITION - REGIONAL NODE 139 *
* 100-YR EV JULY 2019 ROKAMOTO *

FILE NAME: EV00139C.DAT
TIME/DATE OF STUDY: 13:33 07/17/2019

** INPUT SUMMARY **

FLOW PROCESS FROM NODE 10100.00 TO NODE 119.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #1<<<<

WATERSHED AREA = 49495.699 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 1.964 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.298; LOW LOSS FRACTION = 0.376
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.51; 30-MINUTE = 0.95; 1-HOUR = 1.32
3-HOUR = 2.49; 6-HOUR = 3.72; 24-HOUR = 6.54
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 119.00 TO NODE 12603.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 341.63; DOWNSTREAM ELEVATION (FT) = 312.40

CHANNEL LENGTH (FT) = 3157.79 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 810.00 TO NODE 809.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

WATERSHED AREA = 171.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.121 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.174; LOW LOSS FRACTION = 0.374
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 809.00 TO NODE 12603.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-11 showing increasing depth and storage values.

FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<


```

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 12603.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12603.00 TO NODE 126.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 312.40; DOWNSTREAM ELEVATION(FT) = 286.00
CHANNEL LENGTH(FT) = 3046.70 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 920.00 TO NODE 905.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 553.800 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.215 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.254; LOW LOSS FRACTION = 0.434
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 905.00 TO NODE 126.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

```

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.80	2.460
3	2.00	1.30	5.020
4	3.00	1.60	7.690
5	4.00	17.00	10.460
6	5.00	23.40	13.330
7	6.00	28.50	16.310
8	7.00	230.70	19.400
9	8.00	625.80	22.600
10	9.00	1142.40	25.910
11	10.00	1723.00	29.340

```

=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 600.00 TO NODE 126.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 185.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.290 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.294; LOW LOSS FRACTION = 0.713
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 126.00 TO NODE 126.00 IS CODE = 6
-----

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<

=====

FLOW PROCESS FROM NODE 126.00 TO NODE 12720.50 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<

=====

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 286.00; DOWNSTREAM ELEVATION(FT) = 258.00
CHANNEL LENGTH(FT) = 4077.05 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

=====

FLOW PROCESS FROM NODE 430.00 TO NODE 420.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

=====

WATERSHED AREA = 315.200 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.236 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.146; LOW LOSS FRACTION = 0.325
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 420.00 TO NODE 420.50 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 16.600
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.57	2.090

3	2.00	24.47	3.540
4	3.00	50.89	6.490
5	4.00	86.23	9.870
6	5.00	165.68	13.480
7	6.00	215.80	17.240
8	7.00	254.44	21.170
9	8.00	279.62	25.270
10	9.00	298.60	29.530
11	10.00	316.33	33.960
12	11.00	990.19	54.910

=====

FLOW PROCESS FROM NODE 420.50 TO NODE 427.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<

=====

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2 THROUGH A FLOW-THROUGH DETENTION BASIN. SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	6.56	1.100
3	2.00	24.47	4.200
4	3.00	50.88	8.800
5	4.00	151.67	13.700
6	5.00	183.65	18.800
7	6.00	225.86	24.000
8	7.00	245.89	29.400
9	8.00	258.65	34.900
10	9.00	926.24	40.500

=====

FLOW PROCESS FROM NODE 413.00 TO NODE 425.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<

=====

WATERSHED AREA = 124.300 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.164 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.138; LOW LOSS FRACTION = 0.335
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

```

*****
FLOW PROCESS FROM NODE 425.00 TO NODE 426.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
-----
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 6.700
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 5.95 0.280
3 2.00 22.18 1.150
4 3.00 46.43 3.090
5 4.00 75.05 6.150
6 5.00 105.54 10.350
7 6.00 127.29 15.380
8 7.00 138.99 20.860
9 8.00 150.45 26.500
10 9.00 161.55 32.360
11 10.00 697.61 38.410
12 11.00 1666.99 44.700
-----
*****
FLOW PROCESS FROM NODE 426.00 TO NODE 427.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
-----
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 427.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
-----
*****
FLOW PROCESS FROM NODE 427.00 TO NODE 12720.50 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
-----
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12720.50 IS CODE = 6
-----

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```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
-----
*****
FLOW PROCESS FROM NODE 12720.50 TO NODE 12741.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
-----
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 258.00; DOWNSTREAM ELEVATION (FT) = 247.00
CHANNEL LENGTH (FT) = 2294.66 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
-----
*****
FLOW PROCESS FROM NODE 320.00 TO NODE 339.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
-----
WATERSHED AREA = 675.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.305 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.288
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 339.00 TO NODE 340.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<
-----
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 30.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL DEPTH OUTFLOW STORAGE
NUMBER (FT) (CFS) (AF)
1 0.00 0.00 0.000
2 1.00 0.01 7.430

```

3	2.00	0.02	15.170
4	3.00	2.70	23.230
5	4.00	4.69	31.610
6	5.00	6.04	40.320
7	6.00	10.72	49.360
8	7.00	17.77	58.730
9	8.00	424.53	68.440
10	9.00	1169.03	78.500
11	10.00	2113.61	88.500

FLOW PROCESS FROM NODE 339.00 TO NODE 372.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	10.00	10.00
2	20.00	20.00
3	50.00	20.50
4	100.00	25.00
5	1200.00	65.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 390.00 TO NODE 372.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #4<<<<<

WATERSHED AREA = 195.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.348 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.466
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 7

>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 3<<<<<

FLOW PROCESS FROM NODE 372.00 TO NODE 372.00 IS CODE = 6

>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<<
=====

FLOW PROCESS FROM NODE 372.00 TO NODE 373.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	10.23	19.250
3	2.00	29.46	38.770
4	3.00	67.29	58.560
5	4.00	104.29	78.630
6	5.00	658.55	98.970
7	6.00	1642.50	119.590

FLOW PROCESS FROM NODE 372.00 TO NODE 372.10 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #3<<<<<

MODEL STREAM NUMBER 3 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 3 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qcenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	50.00	50.00
2	100.00	100.00
3	300.00	120.00
4	750.00	135.00
5	850.00	140.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 372.10 TO NODE 372.20 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO

```

*****
FLOW PROCESS FROM NODE 372.20 TO NODE 373.00 IS CODE = 7
-----
>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 3<<<<
=====
***STREAM 5 IS ZERO...STREAM NOW DEFINED AS ZERO***

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 373.00 IS CODE = 6
-----
>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 373.00 TO NODE 340.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 340.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 340.00 TO NODE 12741.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 12741.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 12741.00 TO NODE 127.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 247.00; DOWNSTREAM ELEVATION(FT) = 240.00

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CHANNEL LENGTH(FT) = 819.00 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 12710.00 TO NODE 127.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====

WATERSHED AREA = 944.100 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.404 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.296; LOW LOSS FRACTION = 0.590
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 127.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 127.00 TO NODE 12902.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 240.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 3242.32 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 50220.00 TO NODE 50347.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<

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=====
WATERSHED AREA = 1120.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.305 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.217; LOW LOSS FRACTION = 0.469
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

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*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 50347.00 IS CODE = 3.1
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>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<
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ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE(AF) = 0.000
SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.00	0.01	20.810
3	2.00	21.50	41.790
4	3.00	41.20	62.950
5	4.00	61.80	84.280
6	5.00	78.60	105.800
7	6.00	92.20	127.490
8	7.00	104.10	149.370
9	8.00	114.70	171.430
10	9.00	124.40	193.670
11	10.00	133.40	216.090

```

*****
FLOW PROCESS FROM NODE 50347.00 TO NODE 12902.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 20.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 313.00; DOWNSTREAM ELEVATION(FT) = 215.00
CHANNEL LENGTH(FT) = 2700.00 MANNING'S FACTOR = 0.030

```

```

CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 12902.00 IS CODE = 6
-----

```

```

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 12902.00 TO NODE 129.00 IS CODE = 5.2
-----

```

```

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<
=====

```

```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

```

```

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 215.00; DOWNSTREAM ELEVATION(FT) = 213.00
CHANNEL LENGTH(FT) = 1663.10 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE(CFS) = 0.00
=====

```

```

*****
FLOW PROCESS FROM NODE 50400.00 TO NODE 129.00 IS CODE = 1
-----

```

```

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<
=====

```

```

WATERSHED AREA = 420.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.197 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.276; LOW LOSS FRACTION = 0.591
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

```

```

*****
FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 7
-----

```

```

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
=====

```

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 210.00 TO NODE 221.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 214.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.231 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.126; LOW LOSS FRACTION = 0.319
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 221.00 TO NODE 221.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

Table with 3 columns: DATA PAIR NUMBER, Qcenter (CFS), Qpass (CFS). Rows 1-5 showing flow data.

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 5

FLOW PROCESS FROM NODE 221.00 TO NODE 223.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #2<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 2
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 2.070
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-10 showing basin data.

FLOW PROCESS FROM NODE 221.00 TO NODE 222.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #5<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 5
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

Table with 4 columns: INTERVAL NUMBER, DEPTH (FT), OUTFLOW (CFS), STORAGE (AF). Rows 1-23 showing basin data.

24 23.00 466.70 51.740
25 24.00 951.81 53.820

FLOW PROCESS FROM NODE 223.00 TO NODE 222.00 IS CODE = 7

>>>>STREAM NUMBER 5 ADDED TO STREAM NUMBER 2<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 222.00 IS CODE = 6

>>>>STREAM NUMBER 5 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 222.00 TO NODE 129.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 129.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 129.00 TO NODE 133.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August, 1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION (FT) = 213.00; DOWNSTREAM ELEVATION (FT) = 212.00
CHANNEL LENGTH (FT) = 1389.52 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 13010.00 TO NODE 132.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 4924.400 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.795 HOURS

VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.244; LOW LOSS FRACTION = 0.515
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 2

>>>>FLOWBY STRUCTURE ROUTING MODEL APPLIED TO STREAM #2<<<<<

MODEL STREAM NUMBER 2 FLOWING PAST A FLOWBY STRUCTURE:
FLOWRATES IN STREAM # 2 WHICH ARE GREATER THAN Qpass IN
THE FOLLOWING RELATIONSHIPS ARE ASSUMED TO BE EXCESS FLOWS.

DATA PAIR NUMBER	Qenter (CFS)	Qpass (CFS)
-	0.00	0.00
1	413.00	413.00
2	1897.00	1613.00
3	4682.00	3013.00
4	6819.00	4013.00
5	8100.00	4613.00

FLOW EXCESS IS ASSUMED TO BE ADDED TO STREAM NUMBER 3

FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<<

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 5.700
SPECIFIED DEAD STORAGE (AF) FILLED = 5.700
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	1.50	0.01	0.002
3	2.00	0.02	1.900
4	4.00	0.03	16.100
5	4.30	0.05	18.200
6	5.00	314.00	23.200
7	6.00	1306.00	30.300
8	7.00	2847.00	39.100
9	8.00	4942.00	47.800


```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 8
-----
>>>>MODEL STREAM SPLITFLOW WHERE 0.50 OF STREAM 3 IS ADDED TO STREAM 4<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #3<<<<
=====
```

```
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 3
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.99	2.90	0.900
3	1.99	11.38	2.900
4	3.99	19.63	10.300
5	5.99	25.19	20.700
6	7.99	29.71	31.700
7	9.99	33.62	43.500
8	10.99	35.49	49.700
9	11.99	313.49	56.400
10	12.99	894.27	63.100
11	13.99	1748.55	69.900
12	15.99	4306.91	84.100

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 3.1
-----
>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #4<<<<
=====
```

```
=====
ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 4
THROUGH A FLOW-THROUGH DETENTION BASIN.
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
DEAD STORAGE (AF) = 0.000
SPECIFIED DEAD STORAGE (AF) FILLED = 0.000
SPECIFIED EFFECTIVE VOLUME (AF) FILLED ABOVE OUTLET = 0.000
DETENTION BASIN CONSTANT LOSS RATE (CFS) = 0.00
```

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.48	0.70	0.400
3	1.48	6.50	1.800
4	3.48	18.11	8.500
5	5.48	23.99	17.900
6	7.48	28.68	27.800
7	9.48	32.70	38.300
8	10.48	34.50	43.900
9	11.48	36.29	49.400
10	12.48	314.07	55.900
11	13.48	895.00	62.300
12	15.48	2882.95	74.700

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 7
-----
>>>>STREAM NUMBER 4 ADDED TO STREAM NUMBER 2<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 132.00 IS CODE = 6
-----
>>>>STREAM NUMBER 4 CLEARED AND SET TO ZERO<<<<
=====
```

```
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 13305.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
```

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS (Reference: the National Engineering Handbook, Hydrology, Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:

```
BASEWIDTH (FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION (FT) = 427.51; DOWNSTREAM ELEVATION (FT) = 315.00
CHANNEL LENGTH (FT) = 9760.05 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00
=====
```

```

*****
FLOW PROCESS FROM NODE 13305.00 TO NODE 133.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #2 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 2 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 50.00 CHANNEL Z = 3.00
UPSTREAM ELEVATION(FT) = 315.00; DOWNSTREAM ELEVATION(FT) = 212.00
CHANNEL LENGTH(FT) = 6877.24 MANNING'S FACTOR = 0.040
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 132.00 TO NODE 133.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #3<<<<
=====
WATERSHED AREA = 1715.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.610 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.224; LOW LOSS FRACTION = 0.362
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 3 ADDED TO STREAM NUMBER 2<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 3 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

```

```

*****
FLOW PROCESS FROM NODE 133.00 TO NODE 133.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 200.00 CHANNEL Z = 5.00
UPSTREAM ELEVATION(FT) = 212.00; DOWNSTREAM ELEVATION(FT) = 173.00
CHANNEL LENGTH(FT) = 6461.31 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====
*****
FLOW PROCESS FROM NODE 133.00 TO NODE 134.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1691.600 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.312 HOURS
VALLEY(DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) = 0.243; LOW LOSS FRACTION = 0.431
SPECIFIED PEAK RAINFALL DEPTHS(INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====
*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====
*****
FLOW PROCESS FROM NODE 13500.00 TO NODE 134.00 IS CODE = 1

```

```

-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 3859.700 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 1.252 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.284; LOW LOSS FRACTION = 0.408
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 134.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 200.00 CHANNEL Z = 4.00
UPSTREAM ELEVATION (FT) = 173.00; DOWNSTREAM ELEVATION (FT) = 133.00
CHANNEL LENGTH (FT) = 6064.09 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 134.00 TO NODE 137.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1191.900 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.391 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.237; LOW LOSS FRACTION = 0.420
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15

```

```

3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 7
-----
>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<
=====

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 137.00 IS CODE = 6
-----
>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<
=====

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 138.00 IS CODE = 5.2
-----
>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<
=====
THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH (FT) = 100.00 CHANNEL Z = 4.00
UPSTREAM ELEVATION (FT) = 133.00; DOWNSTREAM ELEVATION (FT) = 119.70
CHANNEL LENGTH (FT) = 4643.67 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00
=====

*****
FLOW PROCESS FROM NODE 137.00 TO NODE 138.00 IS CODE = 1
-----
>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<
=====
WATERSHED AREA = 1303.500 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.503 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.267; LOW LOSS FRACTION = 0.450
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

*****
FLOW PROCESS FROM NODE 138.00 TO NODE 138.00 IS CODE = 7
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>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 138.00 TO NODE 138.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 138.00 TO NODE 139.00 IS CODE = 5.2

>>>>MODEL CHANNEL ROUTING OF STREAM #1 BY THE CONVEX METHOD<<<<<

THE MODIFIED C-ROUTING COEFFICIENT IS ESTIMATED IN ORDER TO
ROUTE THE STREAM 1 INFLOW HYDROGRAPH BY 5-MINUTE INTERVALS
(Reference: the National Engineering Handbook, Hydrology,
Chapter 17, page 17-52, August,1972, U.S. Department of Commerce).

ASSUMED REGULAR CHANNEL INFORMATION:
BASEWIDTH(FT) = 100.00 CHANNEL Z = 4.00
UPSTREAM ELEVATION(FT) = 119.70; DOWNSTREAM ELEVATION(FT) = 100.00
CHANNEL LENGTH(FT) = 3107.78 MANNING'S FACTOR = 0.030
CONSTANT LOSS RATE (CFS) = 0.00

FLOW PROCESS FROM NODE 138.00 TO NODE 139.00 IS CODE = 1

>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS) ADDED TO STREAM #2<<<<<

WATERSHED AREA = 428.000 ACRES; BASEFLOW = 0.000 CFS/SQUARE-MILE
*USER ENTERED "LAG" TIME = 0.241 HOURS
VALLEY (DEVELOPED) S-GRAPH SELECTED
MAXIMUM WATERSHED LOSS RATE (INCH/HOUR) = 0.207; LOW LOSS FRACTION = 0.422
SPECIFIED PEAK RAINFALL DEPTHS (INCH):
5-MINUTE = 0.40; 30-MINUTE = 0.87; 1-HOUR = 1.15
3-HOUR = 1.94; 6-HOUR = 2.71; 24-HOUR = 4.49
*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE = 0.286; 30-MINUTE = 0.348; 1-HOUR = 0.391
3-HOUR = 0.733; 6-HOUR = 0.885; 24-HOUR = 0.932

FLOW PROCESS FROM NODE 139.00 TO NODE 139.00 IS CODE = 7

>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<

FLOW PROCESS FROM NODE 139.00 TO NODE 139.00 IS CODE = 6

>>>>STREAM NUMBER 2 CLEARED AND SET TO ZERO<<<<<

FLOW PROCESS FROM NODE 139.00 TO NODE 139.00 IS CODE = 11

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<<

* AES FLOODSCx PROGRAM RESULTS SUMMARY *

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UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS FOOTNOTES	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
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10100.00	119.00	Subarea (UH) Added to Stream #1	0.0	18796.6
18.000				
119.00	12603.00	Convex Routing: Stream #1	18796.6	18665.0
18.000				
810.00	809.00	Subarea (UH) Added to Stream #2	0.0	127.9
16.167				
809.00	12603.00	Flow-Through Basin: Stream #2	127.9	70.8
16.333	13.99			
12603.00	12603.00	Stream #2 Added to: Stream #1	18665.0	18704.3
18.000				
12603.00	12603.00	Zero Out: Stream #2	70.8	0.0
12603.00	126.00	Convex Routing: Stream #1	18704.3	18690.5
18.083				
920.00	905.00	Subarea (UH) Added to Stream #2	0.0	293.5
16.250				
905.00	126.00	Flow-Through Basin: Stream #2	293.5	231.2
16.417	19.49			
126.00	126.00	Stream #2 Added to: Stream #1	18690.5	18791.6
18.083				
126.00	126.00	Zero Out: Stream #2	231.2	0.0
600.00	126.00	Subarea (UH) Added to Stream #2	0.0	73.0
16.333				
126.00	126.00	Stream #2 Added to: Stream #1	18791.6	18808.2
18.083				
126.00	126.00	Zero Out: Stream #2	73.0	0.0
126.00	12720.50	Convex Routing: Stream #1	18808.2	18797.9
18.167				
430.00	420.00	Subarea (UH) Added to Stream #2	0.0	183.6
16.333				
420.00	420.50	Flow-Through Basin: Stream #2	183.6	118.9
16.500	11.40			
420.50	427.00	Flow-Through Basin: Stream #2	118.9	105.6
17.333	11.46			
413.00	425.00	Subarea (UH) Added to Stream #3	0.0	87.2
16.250				

425.00	426.00	Flow-Through Basin: Stream #3	87.2	44.3
16.417	2.94			
426.00	427.00	Stream #3 Added to: Stream #2	105.6	147.8
17.167				
427.00	427.00	Zero Out: Stream #3	44.3	0.0
427.00	12720.50	Stream #2 Added to: Stream #1	18797.9	18923.3
18.167				
12720.50	12720.50	Zero Out: Stream #2	147.8	0.0
12720.50	12741.00	Convex Routing: Stream #1	18923.3	18875.2
18.250				
320.00	339.00	Subarea (UH) Added to Stream #2	0.0	365.9
16.333				
339.00	340.00	Flow-Through Basin: Stream #2	365.9	290.1
16.500	65.25			
339.00	372.00	Flowby Basin Model: Stream #2	290.1	31.9
16.500				
390.00	372.00	Subarea (UH) Added to Stream #4	0.0	83.7
16.417				
372.00	372.00	Stream #4 Added to: Stream #3	258.2	334.1
16.500				
372.00	372.00	Zero Out: Stream #4	83.7	0.0
372.00	373.00	Flow-Through Basin: Stream #3	334.1	78.4
18.917	64.59			
372.00	372.10	Flowby Basin Model: Stream #3	78.4	78.4
18.917				
373.00	373.00	Zero Out: Stream #5	0.0	0.0
373.00	340.00	Stream #3 Added to: Stream #2	31.9	103.3
18.583				
340.00	340.00	Zero Out: Stream #3	78.4	0.0
340.00	12741.00	Stream #2 Added to: Stream #1	18875.2	18977.1
18.250				
12741.00	12741.00	Zero Out: Stream #2	103.3	0.0
12741.00	127.00	Convex Routing: Stream #1	18977.1	18976.8
18.250				
12710.00	127.00	Subarea (UH) Added to Stream #2	0.0	325.3
16.500				

Notes: 1 = BASIN MODEL VOLUME EXCEEDED; 2 = TIME IS AT END OF 5-MINUTE UNIT INTERVAL
 3 = RUNOFF ESTIMATES DO NOT EXTEND PAST 2 DAYS AFTER THE PEAK DAY OF THE DESIGN STORM

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|
|                                     * AES FLOODSCx PROGRAM RESULTS SUMMARY *
|
| INPUT FILENAME: [EV00139C.DAT ]
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-----+-----+-----+-----+
|UPSTREAM DOWNSTREAM|                                     |UPSTREAM DOWNSTREAM|
TIME (2) TO | MAX. STORAGE|                                     |
| NODE #     NODE # | HYDROLOGIC/HYDRAULIC PROCESS |PEAK (CFS) PEAK (CFS)|
PEAK (HR)   | MODELED (AF)| FOOTNOTES |
-----+-----+-----+-----+
| 127.00    127.00| Stream #2 Added to: Stream #1| 18976.8    19090.8|
18.250 |          |          |
| 127.00    127.00| Zero Out: Stream #2| 325.3      0.0|
|          |          |          |
| 127.00    12902.00| Convex Routing: Stream #1| 19090.8    19062.6|
18.250 |          |          |
| 50220.00   50347.00| Subarea (UH) Added to Stream #2| 0.0        515.5|
16.333 |          |          |
| 50347.00   50347.00| Flow-Through Basin: Stream #2| 515.5      99.8|
18.583 | 141.49|          |
-----+-----+-----+-----+
| 50347.00   12902.00| Convex Routing: Stream #2| 99.8        99.8|
18.750 |          |          |
| 12902.00   12902.00| Stream #2 Added to: Stream #1| 19062.6    19161.6|
18.250 |          |          |
| 12902.00   12902.00| Zero Out: Stream #2| 99.8        0.0|
|          |          |          |
| 12902.00    129.00| Convex Routing: Stream #1| 19161.6    19149.4|
18.333 |          |          |
| 50400.00    129.00| Subarea (UH) Added to Stream #2| 0.0        220.5|
16.250 |          |          |
-----+-----+-----+-----+
| 129.00     129.00| Stream #2 Added to: Stream #1| 19149.4    19181.3|
18.333 |          |          |
| 129.00     129.00| Zero Out: Stream #2| 220.5      0.0|
|          |          |          |
| 210.00     221.00| Subarea (UH) Added to Stream #2| 0.0        128.8|
16.250 |          |          |
| 221.00     221.00| Flowby Basin Model: Stream #2| 128.8      20.3|
16.250 |          |          |
| 221.00     223.00| Flow-Through Basin: Stream #2| 20.3       16.4|
17.250 | 4.07|          |
-----+-----+-----+-----+
| 221.00     222.00| Flow-Through Basin: Stream #5| 108.5      37.1|
17.500 | 16.92|          |
| 223.00     222.00| Stream #5 Added to: Stream #2| 16.4       53.5|
17.417 |          |          |
| 222.00     222.00| Zero Out: Stream #5| 37.1       0.0|
|          |          |          |
| 222.00     129.00| Stream #2 Added to: Stream #1| 19181.3    19231.8|
18.333 |          |          |

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	129.00	129.00	Zero Out:	Stream #2	53.5	0.0
+-----+						
	129.00	133.00	Convex Routing:	Stream #1	19231.8	19209.8
18.417						
	13010.00	132.00	Subarea (UH) Added to	Stream #2	0.0	1490.2
16.833						
	132.00	132.00	Flowby Basin Model:	Stream #2	1490.2	1284.0
16.833						
	132.00	132.00	Flow-Through Basin:	Stream #3	206.1	192.3
17.083		21.28				
	132.00	132.00	Split Hydrograph:	Stream #3	192.3	96.1
17.083						
+-----+						
	132.00	132.00	Flow-Through Basin:	Stream #3	96.1	21.5
18.917		13.80				
	132.00	132.00	Stream #3 Added to:	Stream #2	1284.0	1299.0
16.833						
	132.00	132.00	Zero Out:	Stream #3	21.5	0.0
	132.00	132.00	Flow-Through Basin:	Stream #4	96.1	21.5
18.917		13.95				
	132.00	132.00	Stream #4 Added to:	Stream #2	1299.0	1313.2
16.833						
+-----+						
	132.00	132.00	Zero Out:	Stream #4	21.5	0.0
	132.00	13305.00	Convex Routing:	Stream #2	1313.2	1282.1
17.333						
	13305.00	133.00	Convex Routing:	Stream #2	1282.1	1268.8
17.583						
	132.00	133.00	Subarea (UH) Added to	Stream #3	0.0	647.3
16.667						
	133.00	133.00	Stream #3 Added to:	Stream #2	1268.8	1761.5
17.500						
+-----+						
	133.00	133.00	Zero Out:	Stream #3	647.3	0.0
	133.00	133.00	Stream #2 Added to:	Stream #1	19209.8	20922.5
17.500						
	133.00	133.00	Zero Out:	Stream #2	1761.5	0.0
	133.00	134.00	Convex Routing:	Stream #1	20922.5	20902.4
17.667						
	133.00	134.00	Subarea (UH) Added to	Stream #2	0.0	757.8
16.333						

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* AES FLOODSCx PROGRAM RESULTS SUMMARY *

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UPSTREAM TIME (2) TO NODE # PEAK (HR)	DOWNSTREAM MAX. STORAGE NODE # MODELED (AF)	HYDROLOGIC/HYDRAULIC PROCESS FOOTNOTES	UPSTREAM PEAK (CFS)	DOWNSTREAM PEAK (CFS)
134.00 17.667	134.00	Stream #2 Added to:	Stream #1	20902.4 21236.0
134.00	134.00	Zero Out:	Stream #2	757.8 0.0
13500.00 17.250	134.00	Subarea (UH) Added to	Stream #2	0.0 1176.0
134.00 17.583	134.00	Stream #2 Added to:	Stream #1	21236.0 22376.2
134.00	134.00	Zero Out:	Stream #2	1176.0 0.0
134.00 17.750	137.00	Convex Routing:	Stream #1	22376.2 22363.6
134.00 16.417	137.00	Subarea (UH) Added to	Stream #2	0.0 491.8
137.00 17.750	137.00	Stream #2 Added to:	Stream #1	22363.6 22606.0
137.00	137.00	Zero Out:	Stream #2	491.8 0.0
137.00 17.833	138.00	Convex Routing:	Stream #1	22606.0 22599.8
137.00 16.583	138.00	Subarea (UH) Added to	Stream #2	0.0 471.8
138.00 17.833	138.00	Stream #2 Added to:	Stream #1	22599.8 22857.7
138.00	138.00	Zero Out:	Stream #2	471.8 0.0
138.00 17.833	139.00	Convex Routing:	Stream #1	22857.7 22847.2
138.00 16.333	139.00	Subarea (UH) Added to	Stream #2	0.0 227.2
139.00 17.833	139.00	Stream #2 Added to:	Stream #1	22847.2 22927.8
139.00	139.00	Zero Out:	Stream #2	227.2 0.0
139.00 17.833	139.00	View:	Stream #1	22927.8
	19612.06	3		

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END OF FLOODSCx ROUTING ANALYSIS