APPENDIXES

APPENDIX A

HYDROLOGIC PARAMETERS ESTIMATION

Project: La Sabana
Vega Baja, P.R.

100 Años				
Duracion	Prec.	Intensidad (inch/hour)	Regresion Parameters	
(Hs)	(inch)	**y=bo/(b1+X)**	bo	bi
0.083	0.39	4.66	12.50	2.6
0.25	1.10	4.39	12.50	2.6
1	4.50	4.50		
2	5.65	2.83		
3	6.80	2.27	R^2=	0.8682
6	8.00	1.33		
12	9.80	0.82		
24	11.60	0.48		

50 Años				
Duracion	Prec.	Intensidad (inch/hour)	Regresion Parameters	
(Hs)	(inch)	**y=bo/(b1+X)**	bo	bi
0.083	0.34	4.13	11.5	2.7
0.25	0.97	3.90	11.50	2.7
1	4.00	4.00		
2	5.30	2.65		
3	5.90	1.97	R^2=	0.874287
6	7.50	1.25		
12	8.70	0.73		
24	10.50	0.44		

25 Años				
Duracion	Prec.	Intensidad (inch/hour)	Regresion Parameters	
(Hs)	(inch)	**y=bo/(b1+X)**	bo	bi
0.083	0.32	3.83	9.9	2.5
0.25	0.90	3.60	9.90	2.5
1	3.62	3.62		
2	4.65	2.33		
3	5.25	1.75	R^2=	0.864664
6	6.50	1.08		
12	7.70	0.64		
24	9.20	0.38		

10 Años				
Duracion	Prec.	Intensidad (inch/hour)	Regresion Parameters	
(Hs)	(inch)	**y=bo/(b1+X)**	bo	bi
0.083	0.27	3.21	8.6	2.6
0.25	0.75	3.02	8.60	2.6
1	3.35	3.35		
2	3.95	1.98		
3	4.40	1.47	R^2=	0.757644
6	5.40	0.90		
12	6.60	0.55		
24	7.80	0.33		

2 Años				
Duracion	Prec.	Intensidad (inch/hour)	Regresion Parameters	
(Hs)	(inch)	**y=bo/(b1+X)**	bo	bi
0.083	0.18	2.14	5.1	2.3
0.25	0.50	2.00	5.10	2.3
1	2.40	2.40		
2	2.55	1.28		
3	2.75	0.92	R^2=	0.757644
6	3.30	0.55		
12	4.10	0.34		
24	4.75	0.20		

Project: La Sabana
Vega Baja, Puerto Rico

PHYSIOGRAFIC INFORMATION: PROJECT AREA (P1)

		Existing Conditions		
Soil	HSG	Curve Number	Area (metros^2)	Area (acre)
RtF	D	89	158,365.00	39.13
SmF	B	79	21586	5.33
AnB	B	79	22856.12	5.65
ByB	B	79	15347.60	3.79
AmC	B	79	22239.23	5.50
BcC	B	79	36604.8	9.05
GeC	C	86	750.49	0.19
ArC	B	79	2206.46	0.55
Total (acres)				69.18
Total (km2)				0.280
Total (mi2)				0.108
Weighted CN				84.68

PHYSIOGRAFIC INFORMATION: PROJECT AREA (P2)

		Existing Conditions		
Soil	HSG	Curve Number	Area (metros^2)	Area (acre)
SmF	B	79	14824.97	3.66
RtF	D	89	117896	29.13
AnB	B	79	65561.38	16.20
AmC	B	79	23843.21	5.89
BcC	B	79	27375.42	6.76
AiC	B	79	268789	66.42
ByB	B	79	234508.03	57.95
ArC	B	79	27926.2	6.90
GeC	C	86	14097.17	3.48
AnC	B	79	87681.88	21.67
Total (acres)				218.07
Total (km2)				0.883
Total (mi2)				0.341
Weighted CN				80.45

PHYSIOGRAFIC INFORMATION: BASIN AREA (P3)

		Existing Conditions		
Soil	HSG	Curve Number	Area (metros^2)	Area (acre)
RtF	D	89	95000	23.47
AnB	B	79	18885.7	4.67
ByB	B	79	43989.32	10.87
Total (acres)				39.01
Total (km2)				0.158
Total (mi2)				0.061
Weighted CN				85.02

PHYSIOGRAFIC INFORMATION: BASIN AREA (E1)

		Existing Conditions		
Soil	HSG	Curve Number	Area (metros^2)	Area (acre)
ByB	B	79	9426.73	2.33
GeC	C	86	12027.66	2.97
Total (acres)				5.30
Total (km2)				0.021
Total (mi2)				0.008
Weighted CN				82.92

PHYSIOGRAFIC INFORMATION: PROJECT AREA (P1A)

		Proposed Conditions		
Soil	HSG	Curve Number	Area (metros^2)	Area (acre)
AnB	B	79	51261	12.67
SmF	B	79	37037.41	9.15
ByB	B	79	15347.60	3.79
RtF	D	89	245,240.00	60.60
AmC	B	79	41556.25941	10.27
Total (acres)				96.48
Total (km2)				0.390
Total (mi2)				0.151
Weighted CN				85.28

PHYSIOGRAFIC INFORMATION: PROJECT AREA (P2A)

		Proposed Conditions		
Soil	HSG	Curve Number	Area (metros^2)	Area (acre)
Develop	--	93	68059.84	16.82
Total (acres)				16.82
Total (km2)				0.068
Total (mi2)				0.026
Weighted CN				93.00

PHYSIOGRAFIC INFORMATION: PROJECT AREA (P2B)

		Proposed Conditions		
Soil	HSG	Curve Number	Area (metros^2)	Area (acre)
Develop	--	93	72231.45	17.85
Total (acres)				17.85
Total (km2)				0.072
Total (mi2)				0.028
Weighted CN				93.00

PHYSIOGRAFIC INFORMATION: PROJECT AREA (P2C)

		Proposed Conditions		
Soil	HSG	Curve Number	Area (metros^2)	Area (acre)
Develop	--	93	60307.07	14.90
Total (acres)				14.90
Total (km2)				0.060
Total (mi2)				0.023
Weighted CN				93.00

PHYSIOGRAFIC INFORMATION: PROJECT AREA (P2D)

		Proposed Conditions		
Soil	HSG	Curve Number	Area (metros^2)	Area (acre)
Develop	--	93	74969.33	18.53
Total (acres)				18.53
Total (km2)				0.075
Total (mi2)				0.029
Weighted CN				93.00

PHYSIOGRAFIC INFORMATION: BASIN AREA (E2)

		Existing Conditions		
Soil	HSG	Curve Number	Area (metros^2)	Area (acre)
RtF	D	89	19,458.00	4.81
AnB	B	79	2600.36	0.64
Total (acres)				5.45
Total (km2)				0.022
Total (mi2)				0.009
Weighted CN				87.82

PHYSIOGRAFIC INFORMATION: BASIN AREA (E3)

		Existing Conditions		
Soil	HSG	Curve Number	Area (metros^2)	Area (acre)
RtF	D	89	63,885.00	15.79
AnB	B	79	8014.81	1.98
Total (acres)				17.77
Total (km2)				0.072
Total (mi2)				0.028
Weighted CN				87.89

PHYSIOGRAFIC INFORMATION: BASIN AREA (E4)

		Existing Conditions		
Soil	HSG	Curve Number	Area (metros^2)	Area (acre)
SmF	B	79	50551.57	12.49
AnB	B	79	12276.81	3.03
Total (acres)				15.53
Total (km2)				0.063
Total (mi2)				0.024
Weighted CN				79.00

PHYSIOGRAFIC INFORMATION: BASIN AREA (E5)

		Existing Conditions		
Soil	HSG	Curve Number	Area (metros^2)	Area (acre)
RtF	D	89	66,150.00	16.35
AnB	B	79	18956.59	4.68
Total (acres)				21.03
Total (km2)				0.085
Total (mi2)				0.033
Weighted CN				86.77

PHYSIOGRAFIC INFORMATION: BASIN AREA (E6)

		Existing Conditions		
Soil	HSG	Curve Number	Area (metros^2)	Area (acre)
RtF	D	89	121,820.77	30.10
AnB	B	79	22076.85	5.46
ByB	B	79	17037.36	4.21
Total (acres)				39.77
Total (km2)				0.161
Total (mi2)				0.062
Weighted CN				86.57

PHYSIOGRAFIC INFORMATION: BASIN AREA (E7)

		Existing Conditions		
Soil	HSG	Curve Number	Area (metros^2)	Area (acre)
RtF	D	89	297,316.98	73.47
AnB	B	79	85000	21.00
Total (acres)				94.47
Total (km2)				0.382
Total (mi2)				0.148
Weighted CN				86.78

PHYSIOGRAFIC INFORMATION: BASIN AREA (E)

		Existing Conditions		
Soil	HSG	Curve Number	Area (metros^2)	Area (acre)
ByB	B	79	410069.0	101.33
RtF	D	89	634,689.00	156.83
AnB	B	79	51242.29	12.66
BcC	B	79	31421.59	7.76
GeC	C	86	32348.39	7.99
Total (acres)				286.58
Total (km2)				1.160
Total (mi2)				0.448
Weighted CN				84.67

PHYSIOGRAFIC INFORMATION: PROJECT AREA (P2E)

		Proposed Conditions		
Soil	HSG	Curve Number	Area (metros^2)	Area (acre)
Develop	--	93	198753.79	49.11
Total (acres)				49.11
Total (km2)				0.199
Total (mi2)				0.077
Weighted CN				93.00

PHYSIOGRAFIC INFORMATION: PROJECT AREA (P2F)

		Proposed Conditions		
Soil	HSG	Curve Number	Area (metros^2)	Area (acre)
Develop	--	93	114321.44	28.25
Total (acres)				28.25
Total (km2)				0.114
Total (mi2)				0.044
Weighted CN				93.00

PHYSIOGRAFIC INFORMATION: PROJECT AREA (P2G)

		Proposed Conditions		
Soil	HSG	Curve Number	Area (metros^2)	Area (acre)
Develop	--	93	169587.9	41.91
Total (acres)				41.91
Total (km2)				0.170
Total (mi2)				0.065
Weighted CN				93.00

PHYSIOGRAFIC INFORMATION: PROJECT AREA (P3A)

		Proposed Conditions		
Soil	HSG	Curve Number	Area (metros^2)	Area (acre)
Develop	--	93	54471.97	13.46
Total (acres)				13.46
Total (km2)				0.054
Total (mi2)				0.021
Weighted CN				93.00

PHYSIOGRAFIC INFORMATION: PROJECT AREA (P3B)

		Proposed Conditions		
Soil	HSG	Curve Number	Area (metros^2)	Area (acre)
Develop	--	93	127145.94	31.42
Total (acres)				31.42
Total (km2)				0.127
Total (mi2)				0.049
Weighted CN				93.00

Project: La Sabana, Vega Baja, PR
LAG TIME COMPUTATIONS - SCS

SCS's Method Lag = {L^0.8 * (S+1)^0.7} / (1900 * Y^0.5)

	AREA	Length		High Elevation	Low Elevation	DH		Slope	[L^0.8]	[CN]	[S]	[(S+1)^0.7]	[Y^0.5]	Lag
		[m]	[ft]	[m]	[m]	[m]	[ft]							(hrs)
Existing	P1	746.0	2,448	100.00	75.00	25.0	82.0	0.0335	514.0390	84.68	1.8092	2.0606	1.8306	0.30
	P2	1,339.0	4,393	125.00	60.00	65.0	213.3	0.0485	820.7851	80.45	2.4301	2.3698	2.2033	0.46
	P3	548.0	1,798	80.00	50.00	30.0	98.4	0.0547	401.6330	85.02	1.7619	2.0363	2.3398	0.18
	E	1,763.0	5,784	125.00	65.00	60.0	196.9	0.0340	1022.8380	84.67	1.8106	2.0614	1.8448	0.60
	E1	324.0	1,063	80.00	70.00	10.0	32.8	0.0309	263.7795	82.92	2.0598	2.1877	1.7568	0.17
	E2	366.0	1,201	125.00	95.00	30.0	98.4	0.0820	290.7970	87.82	1.3869	1.8386	2.8630	0.10
	E3	295.0	968	125.00	110.00	15.0	49.2	0.0508	244.7161	87.89	1.3779	1.8337	2.2549	0.10
	E4	287.0	942	110.00	85.00	25.0	82.0	0.0871	239.3925	79.00	2.6582	2.4791	2.9514	0.11
	E5	435.0	1,427	125.00	75.00	50.0	164.1	0.1149	333.8846	86.77	1.5247	1.9123	3.3903	0.10
	E6	410.0	1,345	100.00	65.00	35.0	114.8	0.0854	318.4433	86.57	1.5513	1.9264	2.9217	0.11
	E7	1,104.0	3,622	100.00	75.00	25.0	82.0	0.0226	703.3642	86.78	1.5234	1.9116	1.5048	0.47
Proposed	P1	1,030.0	3,379	100.00	80.00	20.0	65.6	0.0194	665.3877	85.76	1.6604	1.9837	1.3935	0.50
	P2A	530.0	1,739	70.00	60.00	10.0	32.8	0.0189	391.0440	93.00	0.7527	1.4811	1.3736	0.22
	P2B	520.0	1,706	74.00	60.00	14.0	45.9	0.0269	385.1303	93.00	0.7527	1.4811	1.6408	0.18
	P2C	545.0	1,788	78.00	70.00	8.0	26.2	0.0147	399.8731	93.00	0.7527	1.4811	1.2116	0.26
	P2D	530.0	1,739	81.00	72.50	8.5	27.9	0.0160	391.0440	93.00	0.7527	1.4811	1.2664	0.24
	P2E	620.0	2,034	87.00	78.00	9.0	29.5	0.0145	443.3210	93.00	0.7527	1.4811	1.2048	0.29
	P2F	420.0	1,378	64.50	57.30	7.2	23.6	0.0171	324.6418	93.00	0.7527	1.4811	1.3093	0.19
	P2G	580.0	1,903	73.50	61.50	12.0	39.4	0.0207	420.2884	93.00	0.7527	1.4811	1.4384	0.23
	P3A	393.0	1,289	85.00	50.00	35.0	114.8	0.0891	307.8357	93.00	0.7527	1.4811	2.9843	0.08
	P3B	421.0	1,381	85.00	50.00	35.0	114.8	0.0831	325.2600	93.00	0.7527	1.4811	2.8833	0.09

APPENDIX B

HEC-1 RESULTS FOR EXISTING CONDITION

```
*                                        *                                                        *                                        *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)    *                                                        *    U.S. ARMY CORPS OF ENGINEERS        *
*               JUN   1998               *                                                        *    HYDROLOGIC ENGINEERING CENTER       *
*            VERSION 4.1                 *                                                        *          609 SECOND STREET             *
*  RGMHEC2000                HEC-1.COM  *                                                        *       DAVIS, CALIFORNIA 95616          *
*  RUN DATE   13AUG07  TIME  09:17:29   *                                                        *           (916) 756-1104               *
*                                        *                                                        *                                        *
******************************************                                                        ******************************************
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X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X               X
X     X  X        X     X         X
X     X  XXXXXXX   XXXXX         XXX
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THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

   1          ID        HYDROLOGIC ANALYSIS
   2          ID        PROJECT: LA SABANA
   3          ID        TRIANGULAR DISTRIBUTION
   4          ID        FREQUENCY OF OCCURRENCE: 2, 10, 25, 50 AND 100 YEARS
   5          ID        CA ENGINEERING, AUGUST 2007
   6          ID        EXISTING CONDITION
   7          IT       5                     289
   8          IO       4
   9          JP       5

  10          KK      E3
  11          KP       1
  12          BA   0.028
  13          LS       0   87.89
  14          UD    0.10
  15          IN      15
  16          KM           RUNOFF COMPUTATION 2-YRS STORM IN BASIN
  17          PH                    0.18    0.50    2.40    2.55    2.75    3.30    4.10    4.75
  18          KP       2
  19          KM           RUNOFF COMPUTATION 10-YRS STORM IN BASIN
  20          PH                    0.27    0.75    3.35    3.95    4.40    5.40    6.60    7.80
  21          KP       3
  22          KM           RUNOFF COMPUTATION 25-YRS STORM IN BASIN
  23          PH                    0.32    0.90    3.62    4.65    5.25    6.50    7.70    9.20
  24          KP       4
  25          KM           RUNOFF COMPUTATION 50-YRS STORM IN BASIN
  26          PH                    0.34    0.97    4.00    5.30    5.90    7.50    8.70   10.50
  27          KP       5
  28          KM           RUNOFF COMPUTATION 100-YRS STORM IN BASIN
  29          PH                    0.39    1.10    4.50    5.65    6.80    8.00    9.80   11.60

  30          KK   CHANN
  31          KO       3                            21
  32          RD    1630   0.005   0.035           CHANN      12    0.75

  33          KK      E4
  34          KP       1
  35          BA   0.024
  36          LS       0      79
  37          UD    0.11
  38          IN      15
  39          KM           RUNOFF COMPUTATION 2-YRS STORM IN BASIN
  40          PH                    0.18    0.50    2.40    2.55    2.75    3.30    4.10    4.75
  41          KP       2
  42          KM           RUNOFF COMPUTATION 10-YRS STORM IN BASIN
  43          PH                    0.27    0.75    3.35    3.95    4.40    5.40    6.60    7.80
  44          KP       3
  45          KM           RUNOFF COMPUTATION 25-YRS STORM IN BASIN
  46          PH                    0.32    0.90    3.62    4.65    5.25    6.50    7.70    9.20
  47          KP       4
  48          KM           RUNOFF COMPUTATION 50-YRS STORM IN BASIN
  49          PH                    0.34    0.97    4.00    5.30    5.90    7.50    8.70   10.50
  50          KP       5
  51          KM           RUNOFF COMPUTATION 100-YRS STORM IN BASIN
  52          PH                    0.39    1.10    4.50    5.65    6.80    8.00    9.80   11.60
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


  53          KK   CHANN
  54          KO       3                            21
  55          RD    2021   0.005   0.035           CHANN      12    0.75

  56          KK  COMB1
  57          HC       2

  58          KK      E2
  59          KP       1
  60          BA   0.009
  61          LS       0   87.82
  62          UD    0.10
  63          IN      15
  64          KM           RUNOFF COMPUTATION 2-YRS STORM IN BASIN
  65          PH                    0.18    0.50    2.40    2.55    2.75    3.30    4.10    4.75
  66          KP       2
  67          KM           RUNOFF COMPUTATION 10-YRS STORM IN BASIN
```

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68          PH                    0.27    0.75    3.35    3.95    4.40    5.40    6.60    7.80
69          KP       3
70          KM          RUNOFF COMPUTATION 25-YRS STORM IN BASIN
71          PH                    0.32    0.90    3.62    4.65    5.25    6.50    7.70    9.20
72          KP       4
73          KM          RUNOFF COMPUTATION 50-YRS STORM IN BASIN
74          PH                    0.34    0.97    4.00    5.30    5.90    7.50    8.70   10.50
75          KP       5
76          KM          RUNOFF COMPUTATION 100-YRS STORM IN BASIN
77          PH                    0.39    1.10    4.50    5.65    6.80    8.00    9.80   11.60

78          KK   COMB2
79          HC       2

80          KK   CHANN
81          KO       3                            21
82          RD    1181   0.005   0.035          CHANN      12    0.75

83          KK      P1
84          KP       1
85          BA   0.108
86          LS       0   84.68
87          UD    0.30
88          IN      15
89          KM          RUNOFF COMPUTATION 2-YRS STORM IN BASIN
90          PH                    0.18    0.50    2.40    2.55    2.75    3.30    4.10    4.75
91          KP       2
92          KM          RUNOFF COMPUTATION 10-YRS STORM IN BASIN
93          PH                    0.27    0.75    3.35    3.95    4.40    5.40    6.60    7.80
94          KP       3
95          KM          RUNOFF COMPUTATION 25-YRS STORM IN BASIN
96          PH                    0.32    0.90    3.62    4.65    5.25    6.50    7.70    9.20
97          KP       4
98          KM          RUNOFF COMPUTATION 50-YRS STORM IN BASIN
99          PH                    0.34    0.97    4.00    5.30    5.90    7.50    8.70   10.50
100         KP       5
101         KM          RUNOFF COMPUTATION 100-YRS STORM IN BASIN
```



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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

102         PH                    0.39    1.10    4.50    5.65    6.80    8.00    9.80   11.60

103         KK   COMB3
104         HC       2

105         KK   CHANN
106         KO       3                            21
107         RD    3914   0.005   0.035          CHANN      12    0.75

108         KK      E1
109         KP       1
110         BA   0.008
111         LS       0   82.92
112         UD    0.17
113         IN      15
114         KM          RUNOFF COMPUTATION 2-YRS STORM IN BASIN
115         PH                    0.18    0.50    2.40    2.55    2.75    3.30    4.10    4.75
116         KP       2
117         KM          RUNOFF COMPUTATION 10-YRS STORM IN BASIN
118         PH                    0.27    0.75    3.35    3.95    4.40    5.40    6.60    7.80
119         KP       3
120         KM          RUNOFF COMPUTATION 25-YRS STORM IN BASIN
121         PH                    0.32    0.90    3.62    4.65    5.25    6.50    7.70    9.20
122         KP       4
123         KM          RUNOFF COMPUTATION 50-YRS STORM IN BASIN
124         PH                    0.34    0.97    4.00    5.30    5.90    7.50    8.70   10.50
125         KP       5
126         KM          RUNOFF COMPUTATION 100-YRS STORM IN BASIN
127         PH                    0.39    1.10    4.50    5.65    6.80    8.00    9.80   11.60

128         KK   COMB4
129         HC       2

130         KK       E
131         KP       1
132         BA   0.448
133         LS       0   84.67
134         UD    0.60
135         IN      15
136         KM          RUNOFF COMPUTATION 2-YRS STORM IN BASIN
```

```
 137          PH                    0.18    0.50    2.40    2.55    2.75    3.30    4.10    4.75
 138          KP       2
 139          KM           RUNOFF COMPUTATION 10-YRS STORM IN BASIN
 140          PH                    0.27    0.75    3.35    3.95    4.40    5.40    6.60    7.80
 141          KP       3
 142          KM           RUNOFF COMPUTATION 25-YRS STORM IN BASIN
 143          PH                    0.32    0.90    3.62    4.65    5.25    6.50    7.70    9.20
 144          KP       4
 145          KM           RUNOFF COMPUTATION 50-YRS STORM IN BASIN
 146          PH                    0.34    0.97    4.00    5.30    5.90    7.50    8.70   10.50
 147          KP       5
 148          KM           RUNOFF COMPUTATION 100-YRS STORM IN BASIN
 149          PH                    0.39    1.10    4.50    5.65    6.80    8.00    9.80   11.60
1                                          HEC-1 INPUT                                          PAGE  4

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


 150          KK   COMB5
 151          HC       2

 152          KK   CHANN
 153          KO       3                          21
 154          RD    2920   0.005   0.035          TRAP      12    0.75

 155          KK      E5
 156          KP       1
 157          BA   0.033
 158          LS       0   86.77
 159          UD    0.10
 160          IN      15
 161          KM           RUNOFF COMPUTATION 2-YRS STORM IN BASIN
 162          PH                    0.18    0.50    2.40    2.55    2.75    3.30    4.10    4.75
 163          KP       2
 164          KM           RUNOFF COMPUTATION 10-YRS STORM IN BASIN
 165          PH                    0.27    0.75    3.35    3.95    4.40    5.40    6.60    7.80
 166          KP       3
 167          KM           RUNOFF COMPUTATION 25-YRS STORM IN BASIN
 168          PH                    0.32    0.90    3.62    4.65    5.25    6.50    7.70    9.20
 169          KP       4
 170          KM           RUNOFF COMPUTATION 50-YRS STORM IN BASIN
 171          PH                    0.34    0.97    4.00    5.30    5.90    7.50    8.70   10.50
 172          KP       5
 173          KM           RUNOFF COMPUTATION 100-YRS STORM IN BASIN
 174          PH                    0.39    1.10    4.50    5.65    6.80    8.00    9.80   11.60

 175          KK   CHANN
 176          KO       3                          21
 177          RD    2995   0.005   0.035          CHANN     12    0.75

 178          KK      E6
 179          KP       1
 180          BA   0.062
 181          LS       0   86.57
 182          UD    0.11
 183          IN      15
 184          KM           RUNOFF COMPUTATION 2-YRS STORM IN BASIN
 185          PH                    0.18    0.50    2.40    2.55    2.75    3.30    4.10    4.75
 186          KP       2
 187          KM           RUNOFF COMPUTATION 10-YRS STORM IN BASIN
 188          PH                    0.27    0.75    3.35    3.95    4.40    5.40    6.60    7.80
 189          KP       3
 190          KM           RUNOFF COMPUTATION 25-YRS STORM IN BASIN
 191          PH                    0.32    0.90    3.62    4.65    5.25    6.50    7.70    9.20
 192          KP       4
 193          KM           RUNOFF COMPUTATION 50-YRS STORM IN BASIN
 194          PH                    0.34    0.97    4.00    5.30    5.90    7.50    8.70   10.50
 195          KP       5
 196          KM           RUNOFF COMPUTATION 100-YRS STORM IN BASIN
 197          PH                    0.39    1.10    4.50    5.65    6.80    8.00    9.80   11.60
1                                          HEC-1 INPUT                                          PAGE  5

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


 198          KK   CHANN
 199          KO       3                          21
 200          RD     889   0.005   0.035          CHANN     12    0.75

 201          KK   COMB6
 202          HC       2
```

```
203          KK      P2
204          KP       1
205          BA   0.341
206          LS       0   80.45
207          UD    0.46
208          IN      15
209          KM           RUNOFF COMPUTATION 2-YRS STORM IN BASIN
210          PH                    0.18    0.50    2.40    2.55    2.75    3.30    4.10    4.75
211          KP       2
212          KM           RUNOFF COMPUTATION 10-YRS STORM IN BASIN
213          PH                    0.27    0.75    3.35    3.95    4.40    5.40    6.60    7.80
214          KP       3
215          KM           RUNOFF COMPUTATION 25-YRS STORM IN BASIN
216          PH                    0.32    0.90    3.62    4.65    5.25    6.50    7.70    9.20
217          KP       4
218          KM           RUNOFF COMPUTATION 50-YRS STORM IN BASIN
219          PH                    0.34    0.97    4.00    5.30    5.90    7.50    8.70   10.50
220          KP       5
221          KM           RUNOFF COMPUTATION 100-YRS STORM IN BASIN
222          PH                    0.39    1.10    4.50    5.65    6.80    8.00    9.80   11.60

223          KK   COMB7
224          HC       2

225          KK   CHANN
226          KO       3                            21
227          RD     524   0.005   0.035            TRAP      12    0.75

228          KK   COMB8
229          HC       2

230          KK   CHANN
231          KO       3                            21
232          RD     667   0.005   0.035           CHANN      12    0.75

233          KK      E7
234          KP       1
235          BA   0.148
236          LS       0   86.78
237          UD    0.47
238          IN      15
239          KM           RUNOFF COMPUTATION 2-YRS STORM IN BASIN
240          PH                    0.18    0.50    2.40    2.55    2.75    3.30    4.10    4.75
241          KP       2
242          KM           RUNOFF COMPUTATION 10-YRS STORM IN BASIN
243          PH                    0.27    0.75    3.35    3.95    4.40    5.40    6.60    7.80
244          KP       3
```



```
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

245          KM           RUNOFF COMPUTATION 25-YRS STORM IN BASIN
246          PH                    0.32    0.90    3.62    4.65    5.25    6.50    7.70    9.20
247          KP       4
248          KM           RUNOFF COMPUTATION 50-YRS STORM IN BASIN
249          PH                    0.34    0.97    4.00    5.30    5.90    7.50    8.70   10.50
250          KP       5
251          KM           RUNOFF COMPUTATION 100-YRS STORM IN BASIN
252          PH                    0.39    1.10    4.50    5.65    6.80    8.00    9.80   11.60

253          KK   CHANN
254          KO       3                            21
255          RD    1492   0.005   0.035            TRAP      12    0.75

256          KK      P3
257          KP       1
258          BA   0.061
259          LS       0   85.02
260          UD    0.18
261          IN      15
262          KM           RUNOFF COMPUTATION 2-YRS STORM IN BASIN
263          PH                    0.18    0.50    2.40    2.55    2.75    3.30    4.10    4.75
264          KP       2
265          KM           RUNOFF COMPUTATION 10-YRS STORM IN BASIN
266          PH                    0.27    0.75    3.35    3.95    4.40    5.40    6.60    7.80
267          KP       3
268          KM           RUNOFF COMPUTATION 25-YRS STORM IN BASIN
269          PH                    0.32    0.90    3.62    4.65    5.25    6.50    7.70    9.20
270          KP       4
271          KM           RUNOFF COMPUTATION 50-YRS STORM IN BASIN
```

```
          272          PH                    0.34    0.97    4.00    5.30    5.90    7.50    8.70   10.50
          273          KP       5
          274          KM          RUNOFF COMPUTATION 100-YRS STORM IN BASIN
          275          PH                    0.39    1.10    4.50    5.65    6.80    8.00    9.80   11.60

          276          KK   COMB9
          277          HC       2

          278          KK  COMB10
          279          HC       2
          280          ZZ
1*************************************                                    *************************************
 *                                   *                                    *                                   *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                                    *    U.S. ARMY CORPS OF ENGINEERS     *
 *              JUN   1998             *                                    *    HYDROLOGIC ENGINEERING CENTER    *
 *            VERSION 4.1              *                                    *          609 SECOND STREET          *
 *  RGMHEC2000               HEC-1.COM   *                                    *       DAVIS, CALIFORNIA 95616       *
 *  RUN DATE   13AUG07  TIME  09:17:29   *                                    *           (916) 756-1104            *
 *                                   *                                    *                                   *
 *************************************                                    *************************************


                              HYDROLOGIC ANALYSIS
                              PROJECT: LA SABANA
                              TRIANGULAR DISTRIBUTION
                              FREQUENCY OF OCCURRENCE: 2, 10, 25, 50 AND 100 YEARS
                              CA ENGINEERING, AUGUST 2007
                              EXISTING CONDITION

 8 IO          OUTPUT CONTROL VARIABLES
                     IPRNT           4  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE

  IT           HYDROGRAPH TIME DATA
                      NMIN           5  MINUTES IN COMPUTATION INTERVAL
                     IDATE      1    0  STARTING DATE
                     ITIME        0000  STARTING TIME
                        NQ         289  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE      2    0  ENDING DATE
                    NDTIME        0000  ENDING TIME
                    ICENT          19  CENTURY MARK

                 COMPUTATION INTERVAL     .08 HOURS
                      TOTAL TIME BASE   24.00 HOURS

        ENGLISH UNITS
             DRAINAGE AREA         SQUARE MILES
             PRECIPITATION DEPTH   INCHES
             LENGTH, ELEVATION     FEET
             FLOW                  CUBIC FEET PER SECOND
             STORAGE VOLUME        ACRE-FEET
             SURFACE AREA          ACRES
             TEMPERATURE           DEGREES FAHRENHEIT

     JP          MULTI-PLAN OPTION
                       NPLAN           5  NUMBER OF PLANS

     JR          MULTI-RATIO OPTION
                     RATIOS OF RUNOFF
                    1.00


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
 10 KK      *        E3  *
            *            *
            **************


***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

 11 KP        PLAN  1 FOR STATION       E3
                                RUNOFF COMPUTATION 2-YRS STORM IN BASIN
```

```
            SUBBASIN RUNOFF DATA

12 BA         SUBBASIN CHARACTERISTICS
                    TAREA         .03  SUBBASIN AREA

              PRECIPITATION DATA

17 PH                            DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                .18     .50    2.40    2.55    2.75    3.30    4.10    4.75     .00     .00     .00     .00

                                                STORM AREA =     .03

13 LS         SCS LOSS RATE
                    STRTL         .28  INITIAL ABSTRACTION
                   CRVNBR       87.89  CURVE NUMBER
                    RTIMP         .00  PERCENT IMPERVIOUS AREA

14 UD         SCS DIMENSIONLESS UNITGRAPH
                     TLAG         .10  LAG

                                                  ***

                                                UNIT HYDROGRAPH
                                             8 END-OF-PERIOD ORDINATES
             61.       91.       40.       15.        6.        2.        1.        0.

***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

 18 KP       PLAN  2 FOR STATION       E3
                                RUNOFF COMPUTATION 10-YRS STORM IN BASIN

             SUBBASIN RUNOFF DATA

 12 BA         SUBBASIN CHARACTERISTICS
                    TAREA         .03  SUBBASIN AREA

               PRECIPITATION DATA

 20 PH                           DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
               ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
               5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                 .27     .75    3.35    3.95    4.40    5.40    6.60    7.80     .00     .00     .00     .00

                                                STORM AREA =     .03

 13 LS         SCS LOSS RATE
                    STRTL         .28  INITIAL ABSTRACTION
                   CRVNBR       87.89  CURVE NUMBER
                    RTIMP         .00  PERCENT IMPERVIOUS AREA

 14 UD         SCS DIMENSIONLESS UNITGRAPH
                     TLAG         .10  LAG

                                                  ***

                                                UNIT HYDROGRAPH
                                             8 END-OF-PERIOD ORDINATES
             61.       91.       40.       15.        6.        2.        1.        0.

***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

 21 KP       PLAN  3 FOR STATION       E3
                                RUNOFF COMPUTATION 25-YRS STORM IN BASIN

             SUBBASIN RUNOFF DATA

 12 BA         SUBBASIN CHARACTERISTICS
                    TAREA         .03  SUBBASIN AREA

               PRECIPITATION DATA

 23 PH                           DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
               ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
               5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                 .32     .90    3.62    4.65    5.25    6.50    7.70    9.20     .00     .00     .00     .00
```

```
                                        STORM AREA =     .03

 13 LS          SCS LOSS RATE
                      STRTL         .28  INITIAL ABSTRACTION
                     CRVNBR       87.89  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

 14 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .10  LAG

                                                 ***

                                              UNIT HYDROGRAPH
                                          8 END-OF-PERIOD ORDINATES
              61.       91.       40.       15.        6.        2.        1.        0.

***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

 24 KP        PLAN  4 FOR STATION       E3
                                 RUNOFF COMPUTATION 50-YRS STORM IN BASIN

              SUBBASIN RUNOFF DATA

 12 BA          SUBBASIN CHARACTERISTICS
                      TAREA         .03  SUBBASIN AREA

                PRECIPITATION DATA

 26 PH                                 DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
                5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                  .34     .97    4.00    5.30    5.90    7.50    8.70   10.50     .00     .00     .00     .00

                                        STORM AREA =     .03

 13 LS          SCS LOSS RATE
                      STRTL         .28  INITIAL ABSTRACTION
                     CRVNBR       87.89  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

 14 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .10  LAG

                                                 ***

                                              UNIT HYDROGRAPH
                                          8 END-OF-PERIOD ORDINATES
              61.       91.       40.       15.        6.        2.        1.        0.

***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

 27 KP        PLAN  5 FOR STATION       E3
                                 RUNOFF COMPUTATION 100-YRS STORM IN BASIN

              SUBBASIN RUNOFF DATA

 12 BA          SUBBASIN CHARACTERISTICS
                      TAREA         .03  SUBBASIN AREA

                PRECIPITATION DATA

 29 PH                                 DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
                5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                  .39    1.10    4.50    5.65    6.80    8.00    9.80   11.60     .00     .00     .00     .00

                                        STORM AREA =     .03

 13 LS          SCS LOSS RATE
                      STRTL         .28  INITIAL ABSTRACTION
                     CRVNBR       87.89  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

 14 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .10  LAG

                                                 ***

                                              UNIT HYDROGRAPH
```

```
                                                  8 END-OF-PERIOD ORDINATES
              61.       91.       40.       15.        6.        2.        1.        0.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          **************
          *            *
 30 KK    *     CHANN  *
          *            *
          **************

 31 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           3  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         289  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .083  TIME INTERVAL IN HOURS

             HYDROGRAPH ROUTING DATA

 32 RD          MUSKINGUM-CUNGE CHANNEL ROUTING
                          L       1630.  CHANNEL LENGTH
                          S       .0050  SLOPE
                          N        .035  CHANNEL ROUGHNESS COEFFICIENT
                         CA         .00  CONTRIBUTING AREA
                      SHAPE        TRAP  CHANNEL SHAPE
                         WD       12.00  BOTTOM WIDTH OR DIAMETER
                          Z         .75  SIDE SLOPE

                                                  ***
                              COMPUTED MUSKINGUM-CUNGE PARAMETERS
                                     COMPUTATION TIME STEP
                 ELEMENT    ALPHA       M         DT        DX       PEAK    TIME TO     VOLUME    MAXIMUM
                                                                              PEAK                  CELERITY
                                                (MIN)      (FT)     (CFS)     (MIN)       (IN)      (FPS)

                   MAIN        .72      1.51       5.00    543.33     46.09    725.00      3.40      3.45


                                   INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL


                   MAIN        .72      1.51       5.00               46.09    725.00      3.40

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5102E+01 EXCESS= .0000E+00 OUTFLOW= .5080E+01 BASIN STORAGE= .3786E-01 PERCENT ERROR=   -.3


      ***             ***             ***             ***             ***

                         HYDROGRAPH AT STATION    CHANN
                           FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.00-HR
+   (CFS)       (HR)
                                  (CFS)
+      46.     12.08                  8.          3.          3.           3.
                            (INCHES)     2.708       3.400       3.400        3.400
                             (AC-FT)        4.          5.          5.           5.

                            CUMULATIVE AREA =     .03 SQ MI


 ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

              PLAN  2 INPUT DATA FOR STATION    CHANN ARE SAME AS FOR PLAN  1
                              COMPUTED MUSKINGUM-CUNGE PARAMETERS
                                     COMPUTATION TIME STEP
                 ELEMENT    ALPHA       M         DT        DX       PEAK    TIME TO     VOLUME    MAXIMUM
                                                                              PEAK                  CELERITY
                                                (MIN)      (FT)     (CFS)     (MIN)       (IN)      (FPS)
```

```
                    MAIN        .72      1.51       5.00    815.00     70.71    725.00      6.33      4.02

                                          INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

                    MAIN        .72      1.51       5.00               70.71    725.00      6.33

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .9485E+01 EXCESS= .0000E+00 OUTFLOW= .9456E+01 BASIN STORAGE= .5838E-01 PERCENT ERROR=   -.3


      ***             ***             ***             ***             ***

                        HYDROGRAPH AT STATION    CHANN
                          FOR PLAN 2, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.00-HR
+   (CFS)       (HR)
                          (CFS)
+      71.     12.08                  15.          5.          5.           5.
                        (INCHES)     4.846       6.329       6.329        6.329
                         (AC-FT)       7.          9.          9.           9.

                         CUMULATIVE AREA =     .03 SQ MI


***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

                PLAN  3 INPUT DATA FOR STATION    CHANN ARE SAME AS FOR PLAN  1
                                COMPUTED MUSKINGUM-CUNGE PARAMETERS
                                       COMPUTATION TIME STEP
                    ELEMENT    ALPHA       M         DT        DX       PEAK    TIME TO     VOLUME    MAXIMUM
                                                                                  PEAK                CELERITY
                                                   (MIN)      (FT)     (CFS)     (MIN)       (IN)      (FPS)

                     MAIN        .72      1.51       5.00    815.00     78.28    725.00      7.69      4.13

                                          INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

                     MAIN        .72      1.51       5.00               78.28    725.00      7.69

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1153E+02 EXCESS= .0000E+00 OUTFLOW= .1150E+02 BASIN STORAGE= .6820E-01 PERCENT ERROR=   -.3


      ***             ***             ***             ***             ***

                        HYDROGRAPH AT STATION    CHANN
                          FOR PLAN 3, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.00-HR
+   (CFS)       (HR)
                          (CFS)
+      78.     12.08                  18.          6.          6.           6.
                        (INCHES)     5.937       7.693       7.693        7.693
                         (AC-FT)       9.         11.         11.          11.

                         CUMULATIVE AREA =     .03 SQ MI


***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

                PLAN  4 INPUT DATA FOR STATION    CHANN ARE SAME AS FOR PLAN  1
                                COMPUTED MUSKINGUM-CUNGE PARAMETERS
                                       COMPUTATION TIME STEP
                    ELEMENT    ALPHA       M         DT        DX       PEAK    TIME TO     VOLUME    MAXIMUM
                                                                                  PEAK                CELERITY
                                                   (MIN)      (FT)     (CFS)     (MIN)       (IN)      (FPS)

                     MAIN        .72      1.51       5.00    815.00     87.70    725.00      8.97      4.29
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```
                                    INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

                    MAIN        .72      1.51       5.00              87.70    725.00      8.97

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1344E+02 EXCESS= .0000E+00 OUTFLOW= .1340E+02 BASIN STORAGE= .7740E-01 PERCENT ERROR=   -.3


     ***             ***             ***             ***             ***

                       HYDROGRAPH AT STATION    CHANN
                         FOR PLAN 4, RATIO = 1.00

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.00-HR
+   (CFS)       (HR)
                          (CFS)
+      88.     12.08                 21.         7.          7.          7.
                       (INCHES)    6.945       8.966       8.966       8.966
                        (AC-FT)     10.         13.         13.         13.

                       CUMULATIVE AREA =     .03 SQ MI


***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

               PLAN  5 INPUT DATA FOR STATION    CHANN ARE SAME AS FOR PLAN  1
                                COMPUTED MUSKINGUM-CUNGE PARAMETERS
                                      COMPUTATION TIME STEP
                    ELEMENT    ALPHA       M         DT        DX       PEAK    TIME TO     VOLUME    MAXIMUM
                                                                                  PEAK                CELERITY
                                                   (MIN)      (FT)     (CFS)     (MIN)       (IN)      (FPS)

                     MAIN        .72      1.51       5.00    815.00     99.20    725.00     10.05      4.48


                                    INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL


                     MAIN        .72      1.51       5.00              99.20    725.00     10.05

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1506E+02 EXCESS= .0000E+00 OUTFLOW= .1502E+02 BASIN STORAGE= .7708E-01 PERCENT ERROR=   -.2


     ***             ***             ***             ***             ***

                       HYDROGRAPH AT STATION    CHANN
                         FOR PLAN 5, RATIO = 1.00

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.00-HR
+   (CFS)       (HR)
                          (CFS)
+      99.     12.08                 23.         8.          8.          8.
                       (INCHES)    7.576      10.051      10.051      10.051
                        (AC-FT)     11.         15.         15.         15.

                       CUMULATIVE AREA =     .03 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


              **************
              *            *
   33 KK      *        E4  *
              *            *
              **************


***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

   34 KP        PLAN  1 FOR STATION       E4
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                          RUNOFF COMPUTATION 2-YRS STORM IN BASIN

            SUBBASIN RUNOFF DATA

35 BA         SUBBASIN CHARACTERISTICS
                    TAREA         .02  SUBBASIN AREA

              PRECIPITATION DATA

40 PH                            DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                .18     .50    2.40    2.55    2.75    3.30    4.10    4.75     .00     .00     .00     .00

                                          STORM AREA =     .02

36 LS         SCS LOSS RATE
                     STRTL         .53  INITIAL ABSTRACTION
                    CRVNBR       79.00  CURVE NUMBER
                     RTIMP         .00  PERCENT IMPERVIOUS AREA

37 UD         SCS DIMENSIONLESS UNITGRAPH
                      TLAG         .11  LAG

                                                 ***

                                              UNIT HYDROGRAPH
                                           9 END-OF-PERIOD ORDINATES
             43.       76.       39.       16.        7.        3.        1.        0.        0.

***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***

 41 KP       PLAN  2 FOR STATION       E4
                          RUNOFF COMPUTATION 10-YRS STORM IN BASIN

             SUBBASIN RUNOFF DATA

 35 BA         SUBBASIN CHARACTERISTICS
                    TAREA         .02  SUBBASIN AREA

               PRECIPITATION DATA

 43 PH                           DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
               ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
               5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                 .27     .75    3.35    3.95    4.40    5.40    6.60    7.80     .00     .00     .00     .00

                                          STORM AREA =     .02

 36 LS         SCS LOSS RATE
                     STRTL         .53  INITIAL ABSTRACTION
                    CRVNBR       79.00  CURVE NUMBER
                     RTIMP         .00  PERCENT IMPERVIOUS AREA

 37 UD         SCS DIMENSIONLESS UNITGRAPH
                      TLAG         .11  LAG

                                                 ***

                                              UNIT HYDROGRAPH
                                           9 END-OF-PERIOD ORDINATES
             43.       76.       39.       16.        7.        3.        1.        0.        0.

***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***

 44 KP       PLAN  3 FOR STATION       E4
                          RUNOFF COMPUTATION 25-YRS STORM IN BASIN

             SUBBASIN RUNOFF DATA

 35 BA         SUBBASIN CHARACTERISTICS
                    TAREA         .02  SUBBASIN AREA

               PRECIPITATION DATA

 46 PH                           DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
               ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
               5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                 .32     .90    3.62    4.65    5.25    6.50    7.70    9.20     .00     .00     .00     .00
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```
                                        STORM AREA =     .02

 36 LS          SCS LOSS RATE
                      STRTL         .53  INITIAL ABSTRACTION
                     CRVNBR       79.00  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

 37 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .11  LAG

                                                 ***

                                              UNIT HYDROGRAPH
                                          9 END-OF-PERIOD ORDINATES
              43.       76.       39.       16.        7.        3.        1.        0.        0.


***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

 47 KP        PLAN  4 FOR STATION       E4
                                 RUNOFF COMPUTATION 50-YRS STORM IN BASIN

              SUBBASIN RUNOFF DATA

 35 BA          SUBBASIN CHARACTERISTICS
                      TAREA         .02  SUBBASIN AREA

                PRECIPITATION DATA

 49 PH                                 DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
                5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                  .34     .97    4.00    5.30    5.90    7.50    8.70   10.50     .00     .00     .00     .00

                                        STORM AREA =     .02

 36 LS          SCS LOSS RATE
                      STRTL         .53  INITIAL ABSTRACTION
                     CRVNBR       79.00  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

 37 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .11  LAG

                                                 ***

                                              UNIT HYDROGRAPH
                                          9 END-OF-PERIOD ORDINATES
              43.       76.       39.       16.        7.        3.        1.        0.        0.


***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

 50 KP        PLAN  5 FOR STATION       E4
                                 RUNOFF COMPUTATION 100-YRS STORM IN BASIN

              SUBBASIN RUNOFF DATA

 35 BA          SUBBASIN CHARACTERISTICS
                      TAREA         .02  SUBBASIN AREA

                PRECIPITATION DATA

 52 PH                                 DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
                5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                  .39    1.10    4.50    5.65    6.80    8.00    9.80   11.60     .00     .00     .00     .00

                                        STORM AREA =     .02

 36 LS          SCS LOSS RATE
                      STRTL         .53  INITIAL ABSTRACTION
                     CRVNBR       79.00  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

 37 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .11  LAG

                                                 ***
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                                                  UNIT HYDROGRAPH
                                              9 END-OF-PERIOD ORDINATES
              43.       76.       39.       16.        7.        3.        1.        0.        0.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


           **************
           *            *
  53 KK    *     CHANN  *
           *            *
           **************

  54 KO          OUTPUT CONTROL VARIABLES
                       IPRNT          3  PRINT CONTROL
                       IPLOT          0  PLOT CONTROL
                       QSCAL         0.  HYDROGRAPH PLOT SCALE
                       IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                        IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2        289  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT       .083  TIME INTERVAL IN HOURS

             HYDROGRAPH ROUTING DATA

  55 RD          MUSKINGUM-CUNGE CHANNEL ROUTING
                           L      2021.  CHANNEL LENGTH
                           S      .0050  SLOPE
                           N       .035  CHANNEL ROUGHNESS COEFFICIENT
                          CA        .00  CONTRIBUTING AREA
                       SHAPE       TRAP  CHANNEL SHAPE
                          WD      12.00  BOTTOM WIDTH OR DIAMETER
                           Z        .75  SIDE SLOPE

                                                  ***
                              COMPUTED MUSKINGUM-CUNGE PARAMETERS
                                    COMPUTATION TIME STEP
                 ELEMENT    ALPHA       M         DT        DX       PEAK    TIME TO     VOLUME    MAXIMUM
                                                                              PEAK                  CELERITY
                                                (MIN)      (FT)     (CFS)     (MIN)       (IN)      (FPS)

                   MAIN       .72      1.51       5.00    505.25     28.43    750.00      2.57      3.00


                                   INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL


                   MAIN       .72      1.51       5.00               28.43    750.00      2.57

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3307E+01 EXCESS= .0000E+00 OUTFLOW= .3286E+01 BASIN STORAGE= .3962E-01 PERCENT ERROR=   -.6


      ***             ***             ***             ***             ***

                         HYDROGRAPH AT STATION    CHANN
                           FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.00-HR
+   (CFS)       (HR)
                          (CFS)
+     28.     12.50                     6.          2.          2.          2.
                        (INCHES)     2.136       2.566       2.566       2.566
                         (AC-FT)        3.          3.          3.          3.

                        CUMULATIVE AREA =     .02 SQ MI


 ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

              PLAN  2 INPUT DATA FOR STATION    CHANN ARE SAME AS FOR PLAN  1
                              COMPUTED MUSKINGUM-CUNGE PARAMETERS
                                    COMPUTATION TIME STEP
                 ELEMENT    ALPHA       M         DT        DX       PEAK    TIME TO     VOLUME    MAXIMUM
                                                                              PEAK                  CELERITY
```

```
                                        (MIN)      (FT)     (CFS)     (MIN)       (IN)      (FPS)
                    MAIN        .72      1.51       5.00    673.67     50.23    725.00      5.28      3.57

                                     INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

                    MAIN        .72      1.51       5.00               50.23    725.00      5.28

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .6801E+01 EXCESS= .0000E+00 OUTFLOW= .6768E+01 BASIN STORAGE= .6335E-01 PERCENT ERROR=   -.4


      ***             ***             ***             ***             ***

                        HYDROGRAPH AT STATION    CHANN
                          FOR PLAN 2, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR       24-HR       72-HR     24.00-HR
+   (CFS)       (HR)
                          (CFS)
+      50.     12.08                    11.         3.          3.          3.
                         (INCHES)     4.172       5.284       5.284       5.284
                          (AC-FT)        5.          7.          7.          7.

                         CUMULATIVE AREA =     .02 SQ MI


 ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

                PLAN  3 INPUT DATA FOR STATION    CHANN ARE SAME AS FOR PLAN  1
                                COMPUTED MUSKINGUM-CUNGE PARAMETERS
                                      COMPUTATION TIME STEP
                     ELEMENT    ALPHA       M         DT        DX       PEAK    TIME TO     VOLUME    MAXIMUM
                                                                                   PEAK                CELERITY
                                                     (MIN)      (FT)     (CFS)     (MIN)       (IN)      (FPS)

                       MAIN        .72      1.51       5.00    673.67     57.07    725.00      6.59      3.74

                                     INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

                       MAIN        .72      1.51       5.00               57.07    725.00      6.59

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .8478E+01 EXCESS= .0000E+00 OUTFLOW= .8437E+01 BASIN STORAGE= .7457E-01 PERCENT ERROR=   -.4


      ***             ***             ***             ***             ***

                        HYDROGRAPH AT STATION    CHANN
                          FOR PLAN 3, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR       24-HR       72-HR     24.00-HR
+   (CFS)       (HR)
                          (CFS)
+      57.     12.08                    13.         4.          4.          4.
                         (INCHES)     5.215       6.587       6.587       6.587
                          (AC-FT)        7.          8.          8.          8.

                         CUMULATIVE AREA =     .02 SQ MI


 ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

                PLAN  4 INPUT DATA FOR STATION    CHANN ARE SAME AS FOR PLAN  1
                                COMPUTED MUSKINGUM-CUNGE PARAMETERS
                                      COMPUTATION TIME STEP
                     ELEMENT    ALPHA       M         DT        DX       PEAK    TIME TO     VOLUME    MAXIMUM
                                                                                   PEAK                CELERITY
                                                     (MIN)      (FT)     (CFS)     (MIN)       (IN)      (FPS)

                       MAIN        .72      1.51       5.00    673.67     66.50    725.00      7.81      3.92
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```
                                    INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

                    MAIN        .72      1.51       5.00                66.50    725.00      7.81

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1006E+02 EXCESS= .0000E+00 OUTFLOW= .1001E+02 BASIN STORAGE= .8505E-01 PERCENT ERROR=   -.4


      ***             ***             ***             ***             ***

                       HYDROGRAPH AT STATION    CHANN
                         FOR PLAN 4, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.00-HR
+   (CFS)       (HR)
                          (CFS)
+      67.     12.08                  16.          5.          5.           5.
                       (INCHES)     6.189       7.814       7.814        7.814
                        (AC-FT)       8.         10.         10.          10.

                       CUMULATIVE AREA =     .02 SQ MI


***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

              PLAN  5 INPUT DATA FOR STATION    CHANN ARE SAME AS FOR PLAN  1
                              COMPUTED MUSKINGUM-CUNGE PARAMETERS
                                     COMPUTATION TIME STEP
                   ELEMENT    ALPHA       M         DT        DX       PEAK    TIME TO     VOLUME    MAXIMUM
                                                                                 PEAK                CELERITY
                                                   (MIN)      (FT)     (CFS)     (MIN)       (IN)      (FPS)

                    MAIN        .72      1.51       5.00    673.67     76.79    725.00      8.87      4.11


                                    INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

                    MAIN        .72      1.51       5.00                76.79    725.00      8.87

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1141E+02 EXCESS= .0000E+00 OUTFLOW= .1136E+02 BASIN STORAGE= .8498E-01 PERCENT ERROR=   -.3


      ***             ***             ***             ***             ***

                       HYDROGRAPH AT STATION    CHANN
                         FOR PLAN 5, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.00-HR
+   (CFS)       (HR)
                          (CFS)
+      77.     12.08                  18.          6.          6.           6.
                       (INCHES)     6.918       8.868       8.868        8.868
                        (AC-FT)       9.         11.         11.          11.

                       CUMULATIVE AREA =     .02 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


              **************
              *            *
   56 KK      *    COMB1   *
              *            *
              **************

   57 HC           HYDROGRAPH COMBINATION
                         ICOMP           2  NUMBER OF HYDROGRAPHS TO COMBINE
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                                                                  ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
  58 KK     *        E2  *
            *            *
            **************

***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

  59 KP        PLAN  1 FOR STATION       E2
                                RUNOFF COMPUTATION 2-YRS STORM IN BASIN

               SUBBASIN RUNOFF DATA

  60 BA          SUBBASIN CHARACTERISTICS
                       TAREA         .01  SUBBASIN AREA

               PRECIPITATION DATA

  65 PH                                DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
               ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
               5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                 .18     .50    2.40    2.55    2.75    3.30    4.10    4.75     .00     .00     .00     .00

                                                STORM AREA =     .01

  61 LS        SCS LOSS RATE
                       STRTL         .28  INITIAL ABSTRACTION
                      CRVNBR       87.82  CURVE NUMBER
                       RTIMP         .00  PERCENT IMPERVIOUS AREA

  62 UD        SCS DIMENSIONLESS UNITGRAPH
                        TLAG         .10  LAG

                                                                  ***

                                                                UNIT HYDROGRAPH
                                                            8 END-OF-PERIOD ORDINATES
               20.       29.       13.        5.        2.        1.        0.        0.

***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

  66 KP        PLAN  2 FOR STATION       E2
                                RUNOFF COMPUTATION 10-YRS STORM IN BASIN

               SUBBASIN RUNOFF DATA

  60 BA          SUBBASIN CHARACTERISTICS
                       TAREA         .01  SUBBASIN AREA

               PRECIPITATION DATA

  68 PH                                DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
               ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
               5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                 .27     .75    3.35    3.95    4.40    5.40    6.60    7.80     .00     .00     .00     .00

                                                STORM AREA =     .01

  61 LS        SCS LOSS RATE
                       STRTL         .28  INITIAL ABSTRACTION
                      CRVNBR       87.82  CURVE NUMBER
                       RTIMP         .00  PERCENT IMPERVIOUS AREA

  62 UD        SCS DIMENSIONLESS UNITGRAPH
                        TLAG         .10  LAG

                                                                  ***

                                                                UNIT HYDROGRAPH
                                                            8 END-OF-PERIOD ORDINATES
               20.       29.       13.        5.        2.        1.        0.        0.
```

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***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

 69 KP        PLAN  3 FOR STATION       E2
                            RUNOFF COMPUTATION 25-YRS STORM IN BASIN

              SUBBASIN RUNOFF DATA

 60 BA          SUBBASIN CHARACTERISTICS
                      TAREA         .01  SUBBASIN AREA

                PRECIPITATION DATA

 71 PH                                DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
                5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                  .32     .90    3.62    4.65    5.25    6.50    7.70    9.20     .00     .00     .00     .00

                                                STORM AREA =     .01

 61 LS          SCS LOSS RATE
                      STRTL         .28  INITIAL ABSTRACTION
                     CRVNBR       87.82  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

 62 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .10  LAG

                                                        ***

                                                   UNIT HYDROGRAPH
                                             8 END-OF-PERIOD ORDINATES
               20.       29.       13.        5.        2.        1.        0.        0.


***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

 72 KP        PLAN  4 FOR STATION       E2
                            RUNOFF COMPUTATION 50-YRS STORM IN BASIN

              SUBBASIN RUNOFF DATA

 60 BA          SUBBASIN CHARACTERISTICS
                      TAREA         .01  SUBBASIN AREA

                PRECIPITATION DATA

 74 PH                                DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
                5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                  .34     .97    4.00    5.30    5.90    7.50    8.70   10.50     .00     .00     .00     .00

                                                STORM AREA =     .01

 61 LS          SCS LOSS RATE
                      STRTL         .28  INITIAL ABSTRACTION
                     CRVNBR       87.82  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

 62 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .10  LAG

                                                        ***

                                                   UNIT HYDROGRAPH
                                             8 END-OF-PERIOD ORDINATES
               20.       29.       13.        5.        2.        1.        0.        0.


***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

 75 KP        PLAN  5 FOR STATION       E2
                            RUNOFF COMPUTATION 100-YRS STORM IN BASIN

              SUBBASIN RUNOFF DATA

 60 BA          SUBBASIN CHARACTERISTICS
                      TAREA         .01  SUBBASIN AREA

                PRECIPITATION DATA
```

```
77 PH                                DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                  ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
                  5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                    .39    1.10    4.50    5.65    6.80    8.00    9.80   11.60     .00     .00     .00     .00

                                                STORM AREA =     .01

61 LS             SCS LOSS RATE
                        STRTL         .28  INITIAL ABSTRACTION
                       CRVNBR       87.82  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

62 UD             SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .10  LAG

                                                     ***

                                                UNIT HYDROGRAPH
                                             8 END-OF-PERIOD ORDINATES
                 20.       29.       13.        5.        2.        1.        0.        0.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              **************
              *            *
78 KK         *     COMB2  *
              *            *
              **************

79 HC             HYDROGRAPH COMBINATION
                        ICOMP           2  NUMBER OF HYDROGRAPHS TO COMBINE
                                                     ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              **************
              *            *
80 KK         *     CHANN  *
              *            *
              **************

81 KO             OUTPUT CONTROL VARIABLES
                        IPRNT           3  PRINT CONTROL
                        IPLOT           0  PLOT CONTROL
                        QSCAL          0.  HYDROGRAPH PLOT SCALE
                        IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                         IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2         289  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT        .083  TIME INTERVAL IN HOURS

                 HYDROGRAPH ROUTING DATA

82 RD             MUSKINGUM-CUNGE CHANNEL ROUTING
                            L       1181.  CHANNEL LENGTH
                            S       .0050  SLOPE
                            N        .035  CHANNEL ROUGHNESS COEFFICIENT
                           CA         .00  CONTRIBUTING AREA
                        SHAPE        TRAP  CHANNEL SHAPE
                           WD       12.00  BOTTOM WIDTH OR DIAMETER
                            Z         .75  SIDE SLOPE

                                                     ***
                                   COMPUTED MUSKINGUM-CUNGE PARAMETERS
                                         COMPUTATION TIME STEP
                     ELEMENT    ALPHA       M         DT        DX       PEAK    TIME TO      VOLUME    MAXIMUM
                                                                                    PEAK                   CELERITY
                                                    (MIN)      (FT)     (CFS)     (MIN)       (IN)      (FPS)

                       MAIN      .72      1.51       4.65    590.50     82.05    730.09       3.06      4.23

                                         INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL
```

```
                    MAIN        .72      1.51       5.00                81.89    730.00      3.07

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1000E+02 EXCESS= .0000E+00 OUTFLOW= .9974E+01 BASIN STORAGE= .4534E-01 PERCENT ERROR=   -.2


      ***             ***             ***             ***             ***

                        HYDROGRAPH AT STATION    CHANN
                          FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.00-HR
+   (CFS)       (HR)
                          (CFS)
+      82.     12.17                 16.         5.          5.          5.
                       (INCHES)     2.478       3.069       3.069       3.069
                        (AC-FT)       8.         10.         10.         10.

                       CUMULATIVE AREA =     .06 SQ MI


 ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

                PLAN  2 INPUT DATA FOR STATION    CHANN ARE SAME AS FOR PLAN  1
                              COMPUTED MUSKINGUM-CUNGE PARAMETERS
                                    COMPUTATION TIME STEP
                    ELEMENT    ALPHA       M         DT        DX       PEAK    TIME TO     VOLUME    MAXIMUM
                                                                                  PEAK                CELERITY
                                                   (MIN)      (FT)     (CFS)     (MIN)       (IN)      (FPS)

                      MAIN        .72      1.51       3.90    590.50    138.02    728.40      5.90      5.05


                                     INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL


                      MAIN        .72      1.51       5.00              135.25    730.00      5.90

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1925E+02 EXCESS= .0000E+00 OUTFLOW= .1921E+02 BASIN STORAGE= .7068E-01 PERCENT ERROR=   -.1


      ***             ***             ***             ***             ***

                        HYDROGRAPH AT STATION    CHANN
                          FOR PLAN 2, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.00-HR
+   (CFS)       (HR)
                          (CFS)
+     135.     12.17                 30.        10.         10.         10.
                       (INCHES)     4.568       5.903       5.903       5.903
                        (AC-FT)      15.        19.         19.         19.

                       CUMULATIVE AREA =     .06 SQ MI


 ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

                PLAN  3 INPUT DATA FOR STATION    CHANN ARE SAME AS FOR PLAN  1
                              COMPUTED MUSKINGUM-CUNGE PARAMETERS
                                    COMPUTATION TIME STEP
                    ELEMENT    ALPHA       M         DT        DX       PEAK    TIME TO     VOLUME    MAXIMUM
                                                                                  PEAK                CELERITY
                                                   (MIN)      (FT)     (CFS)     (MIN)       (IN)      (FPS)

                      MAIN        .72      1.51       3.74    590.50    154.87    729.76      7.24      5.26


                                     INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL


                      MAIN        .72      1.51       5.00              154.49    730.00      7.24
```

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2361E+02 EXCESS= .0000E+00 OUTFLOW= .2356E+02 BASIN STORAGE= .8280E-01 PERCENT ERROR= -.1

*** *** *** *** ***

HYDROGRAPH AT STATION CHANN
FOR PLAN 3, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.00-HR
+ (CFS)	(HR)					
		(CFS)				
+ 154.	12.17		37.	12.	12.	12.
		(INCHES)	5.641	7.244	7.244	7.244
		(AC-FT)	18.	24.	24.	24.

CUMULATIVE AREA = .06 SQ MI

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

PLAN 4 INPUT DATA FOR STATION CHANN ARE SAME AS FOR PLAN 1
COMPUTED MUSKINGUM-CUNGE PARAMETERS
COMPUTATION TIME STEP

ELEMENT	ALPHA	M	DT (MIN)	DX (FT)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)	MAXIMUM CELERITY (FPS)
MAIN	.72	1.51	3.59	590.50	176.77	728.28	8.50	5.49
INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL								
MAIN	.72	1.51	5.00		173.41	730.00	8.50	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2771E+02 EXCESS= .0000E+00 OUTFLOW= .2765E+02 BASIN STORAGE= .9403E-01 PERCENT ERROR= -.1

*** *** *** *** ***

HYDROGRAPH AT STATION CHANN
FOR PLAN 4, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.00-HR
+ (CFS)	(HR)					
		(CFS)				
+ 173.	12.17		44.	14.	14.	14.
		(INCHES)	6.639	8.499	8.499	8.499
		(AC-FT)	22.	28.	28.	28.

CUMULATIVE AREA = .06 SQ MI

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

PLAN 5 INPUT DATA FOR STATION CHANN ARE SAME AS FOR PLAN 1
COMPUTED MUSKINGUM-CUNGE PARAMETERS
COMPUTATION TIME STEP

ELEMENT	ALPHA	M	DT (MIN)	DX (FT)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)	MAXIMUM CELERITY (FPS)
MAIN	.72	1.51	3.43	590.50	201.27	727.60	9.57	5.74
INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL								
MAIN	.72	1.51	5.00		196.87	730.00	9.57	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3119E+02 EXCESS= .0000E+00 OUTFLOW= .3113E+02 BASIN STORAGE= .9380E-01 PERCENT ERROR= -.1

```
     ***             ***             ***             ***             ***

                        HYDROGRAPH AT STATION    CHANN
                          FOR PLAN 5, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.00-HR
+   (CFS)       (HR)
                          (CFS)
+     197.     12.17                 48.         16.         16.         16.
                        (INCHES)    7.308       9.570       9.570       9.570
                         (AC-FT)     24.         31.         31.         31.

                        CUMULATIVE AREA =     .06 SQ MI


 *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
 83 KK    *        P1  *
          *            *
          **************


***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

 84 KP        PLAN  1 FOR STATION       P1
                            RUNOFF COMPUTATION 2-YRS STORM IN BASIN

              SUBBASIN RUNOFF DATA

 85 BA          SUBBASIN CHARACTERISTICS
                      TAREA         .11  SUBBASIN AREA

                PRECIPITATION DATA

 90 PH                                DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
                5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                  .18     .50    2.40    2.55    2.75    3.30    4.10    4.75     .00     .00     .00     .00

                                              STORM AREA =     .11

 86 LS          SCS LOSS RATE
                      STRTL         .36  INITIAL ABSTRACTION
                     CRVNBR       84.68  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

 87 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .30  LAG

                                     ***

                                                UNIT HYDROGRAPH
                                            20 END-OF-PERIOD ORDINATES
                21.       69.      131.      153.      140.      110.       70.       47.       32.       21.
                14.       10.        6.        4.        3.        2.        1.        1.        1.        0.


***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

 91 KP        PLAN  2 FOR STATION       P1
                            RUNOFF COMPUTATION 10-YRS STORM IN BASIN

              SUBBASIN RUNOFF DATA

 85 BA          SUBBASIN CHARACTERISTICS
                      TAREA         .11  SUBBASIN AREA

                PRECIPITATION DATA

 93 PH                                DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
                5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
```

```
                .27     .75    3.35    3.95    4.40    5.40    6.60    7.80     .00     .00     .00     .00

                                                STORM AREA =     .11

 86 LS          SCS LOSS RATE
                      STRTL         .36  INITIAL ABSTRACTION
                     CRVNBR       84.68  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

 87 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .30  LAG

                                                     ***

                                                UNIT HYDROGRAPH
                                           20 END-OF-PERIOD ORDINATES
              21.       69.      131.      153.      140.      110.       70.       47.       32.       21.
              14.       10.        6.        4.        3.        2.        1.        1.        1.        0.


***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

 94 KP        PLAN  3 FOR STATION       P1
                                RUNOFF COMPUTATION 25-YRS STORM IN BASIN

              SUBBASIN RUNOFF DATA

 85 BA          SUBBASIN CHARACTERISTICS
                      TAREA         .11  SUBBASIN AREA

                PRECIPITATION DATA

 96 PH                                 DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
                5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                  .32     .90    3.62    4.65    5.25    6.50    7.70    9.20     .00     .00     .00     .00

                                                STORM AREA =     .11

 86 LS          SCS LOSS RATE
                      STRTL         .36  INITIAL ABSTRACTION
                     CRVNBR       84.68  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

 87 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .30  LAG

                                                     ***

                                                UNIT HYDROGRAPH
                                           20 END-OF-PERIOD ORDINATES
              21.       69.      131.      153.      140.      110.       70.       47.       32.       21.
              14.       10.        6.        4.        3.        2.        1.        1.        1.        0.


***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

 97 KP        PLAN  4 FOR STATION       P1
                                RUNOFF COMPUTATION 50-YRS STORM IN BASIN

              SUBBASIN RUNOFF DATA

 85 BA          SUBBASIN CHARACTERISTICS
                      TAREA         .11  SUBBASIN AREA

                PRECIPITATION DATA

 99 PH                                 DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
                5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                  .34     .97    4.00    5.30    5.90    7.50    8.70   10.50     .00     .00     .00     .00

                                                STORM AREA =     .11

 86 LS          SCS LOSS RATE
                      STRTL         .36  INITIAL ABSTRACTION
                     CRVNBR       84.68  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

 87 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .30  LAG
```

```
                                                  ***

                                                UNIT HYDROGRAPH
                                           20 END-OF-PERIOD ORDINATES
            21.       69.      131.      153.      140.      110.       70.       47.       32.       21.
            14.       10.        6.        4.        3.        2.        1.        1.        1.        0.


***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***

 100 KP        PLAN  5 FOR STATION       P1
                                RUNOFF COMPUTATION 100-YRS STORM IN BASIN

               SUBBASIN RUNOFF DATA

  85 BA          SUBBASIN CHARACTERISTICS
                       TAREA         .11  SUBBASIN AREA

                 PRECIPITATION DATA

 102 PH                                 DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                 ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
                 5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                   .39    1.10    4.50    5.65    6.80    8.00    9.80   11.60     .00     .00     .00     .00

                                                STORM AREA =     .11

  86 LS          SCS LOSS RATE
                       STRTL         .36  INITIAL ABSTRACTION
                      CRVNBR       84.68  CURVE NUMBER
                       RTIMP         .00  PERCENT IMPERVIOUS AREA

  87 UD          SCS DIMENSIONLESS UNITGRAPH
                        TLAG         .30  LAG

                                                  ***

                                                UNIT HYDROGRAPH
                                           20 END-OF-PERIOD ORDINATES
            21.       69.      131.      153.      140.      110.       70.       47.       32.       21.
            14.       10.        6.        4.        3.        2.        1.        1.        1.        0.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


                 **************
                 *            *
 103 KK          *     COMB3  *
                 *            *
                 **************

 104 HC            HYDROGRAPH COMBINATION
                         ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                  ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


                 **************
                 *            *
 105 KK          *     CHANN  *
                 *            *
                 **************

 106 KO            OUTPUT CONTROL VARIABLES
                        IPRNT          3  PRINT CONTROL
                        IPLOT          0  PLOT CONTROL
                        QSCAL         0.  HYDROGRAPH PLOT SCALE
                        IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                         IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2        289  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT       .083  TIME INTERVAL IN HOURS
```

```
              HYDROGRAPH ROUTING DATA

107 RD          MUSKINGUM-CUNGE CHANNEL ROUTING
                          L       3914.  CHANNEL LENGTH
                          S       .0050  SLOPE
                          N        .035  CHANNEL ROUGHNESS COEFFICIENT
                         CA         .00  CONTRIBUTING AREA
                      SHAPE        TRAP  CHANNEL SHAPE
                         WD       12.00  BOTTOM WIDTH OR DIAMETER
                          Z         .75  SIDE SLOPE

                                                  ***
                          COMPUTED MUSKINGUM-CUNGE PARAMETERS
                                COMPUTATION TIME STEP
          ELEMENT    ALPHA       M         DT        DX       PEAK    TIME TO     VOLUME    MAXIMUM
                                                                          PEAK               CELERITY
                                             (MIN)      (FT)     (CFS)     (MIN)       (IN)      (FPS)

            MAIN        .72      1.51       5.00    978.50    208.10    760.00      3.06      5.79


                                INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

                        MAIN        .72      1.51       5.00              208.10    760.00      3.06

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .2780E+02 EXCESS= .0000E+00 OUTFLOW= .2764E+02 BASIN STORAGE= .2983E+00 PERCENT ERROR=   -.5


      ***             ***             ***             ***             ***

                          HYDROGRAPH AT STATION    CHANN
                            FOR PLAN 1, RATIO = 1.00

   EAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR       24-HR       72-HR     24.00-HR
+   (CFS)       (HR)
                             (CFS)
+     208.     12.67                    45.         14.         14.          14.
                         (INCHES)     2.491       3.065       3.065        3.065
                          (AC-FT)       22.         28.         28.          28.

                          CUMULATIVE AREA =     .17 SQ MI


 ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

              PLAN  2 INPUT DATA FOR STATION    CHANN ARE SAME AS FOR PLAN  1
                          COMPUTED MUSKINGUM-CUNGE PARAMETERS
                                COMPUTATION TIME STEP
          ELEMENT    ALPHA       M         DT        DX       PEAK    TIME TO     VOLUME    MAXIMUM
                                                                          PEAK               CELERITY
                                             (MIN)      (FT)     (CFS)     (MIN)       (IN)      (FPS)
                        MAIN        .72      1.51       5.00   1304.67    337.63    740.00      5.91      6.78

                                INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

                        MAIN        .72      1.51       5.00              337.63    740.00      5.91

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .5351E+02 EXCESS= .0000E+00 OUTFLOW= .5326E+02 BASIN STORAGE= .4646E+00 PERCENT ERROR=   -.4


      ***             ***             ***             ***             ***

                          HYDROGRAPH AT STATION    CHANN
                            FOR PLAN 2, RATIO = 1.00

   EAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR       24-HR       72-HR     24.00-HR
+   (CFS)       (HR)
                             (CFS)
+     338.     12.33                    84.         27.         27.          27.
                         (INCHES)     4.594       5.906       5.906        5.906
```

(AC-FT) 41. 53. 53. 53.

CUMULATIVE AREA = .17 SQ MI

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

PLAN 3 INPUT DATA FOR STATION CHANN ARE SAME AS FOR PLAN 1

COMPUTED MUSKINGUM-CUNGE PARAMETERS

COMPUTATION TIME STEP

ELEMENT	ALPHA	M	DT (MIN)	DX (FT)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)	MAXIMUM CELERITY (FPS)
MAIN	.72	1.51	5.00	1304.67	388.07	740.00	7.24	7.10

INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

MAIN	.72	1.51	5.00		388.07	740.00	7.24

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6563E+02 EXCESS= .0000E+00 OUTFLOW= .6533E+02 BASIN STORAGE= .5439E+00 PERCENT ERROR= -.4

*** *** *** *** ***

HYDROGRAPH AT STATION CHANN
FOR PLAN 3, RATIO = 1.00

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.00-HR
+		(CFS)				
388.	12.33		103.	33.	33.	33.
		(INCHES)	5.669	7.244	7.244	7.244
		(AC-FT)	51.	65.	65.	65.

CUMULATIVE AREA = .17 SQ MI

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

PLAN 4 INPUT DATA FOR STATION CHANN ARE SAME AS FOR PLAN 1

COMPUTED MUSKINGUM-CUNGE PARAMETERS

COMPUTATION TIME STEP

ELEMENT	ALPHA	M	DT (MIN)	DX (FT)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)	MAXIMUM CELERITY (FPS)
MAIN	.72	1.51	5.00	1304.67	436.09	740.00	8.49	7.39

INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

MAIN	.72	1.51	5.00		436.09	740.00	8.49

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7697E+02 EXCESS= .0000E+00 OUTFLOW= .7661E+02 BASIN STORAGE= .6180E+00 PERCENT ERROR= -.3

*** *** *** *** ***

HYDROGRAPH AT STATION CHANN
FOR PLAN 4, RATIO = 1.00

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.00-HR
+		(CFS)				
436.	12.33		121.	39.	39.	39.
		(INCHES)	6.663	8.495	8.495	8.495
		(AC-FT)	60.	77.	77.	77.

CUMULATIVE AREA = .17 SQ MI

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***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

              PLAN  5 INPUT DATA FOR STATION    CHANN ARE SAME AS FOR PLAN  1
                                COMPUTED MUSKINGUM-CUNGE PARAMETERS
                                      COMPUTATION TIME STEP
                  ELEMENT    ALPHA       M         DT        DX       PEAK    TIME TO     VOLUME    MAXIMUM
                                                                               PEAK                CELERITY
                                                  (MIN)      (FT)     (CFS)    (MIN)       (IN)      (FPS)

                    MAIN        .72      1.51       5.00   1304.67    495.37   740.00       9.57      7.71

                                      INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

                    MAIN        .72      1.51       5.00              495.37   740.00       9.57

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8665E+02 EXCESS= .0000E+00 OUTFLOW= .8629E+02 BASIN STORAGE= .6164E+00 PERCENT ERROR=   -.3

      ***             ***             ***             ***             ***

                        HYDROGRAPH AT STATION    CHANN
                          FOR PLAN 5, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.00-HR
+   (CFS)       (HR)
                          (CFS)
+     495.     12.33                133.         43.         43.          43.
                        (INCHES)    7.338       9.569       9.569        9.569
                         (AC-FT)     66.         86.         86.          86.

                        CUMULATIVE AREA =     .17 SQ MI


 *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
  108 KK    *        E1  *
            *            *
            **************


 ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

  109 KP        PLAN  1 FOR STATION       E1
                          RUNOFF COMPUTATION 2-YRS STORM IN BASIN

              SUBBASIN RUNOFF DATA

110 BA          SUBBASIN CHARACTERISTICS
                      TAREA         .01  SUBBASIN AREA

                PRECIPITATION DATA

115 PH                                DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
                5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                  .18     .50    2.40    2.55    2.75    3.30    4.10    4.75     .00     .00     .00     .00

                                                STORM AREA =     .01

111 LS          SCS LOSS RATE
                      STRTL         .41  INITIAL ABSTRACTION
                     CRVNBR       82.92  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

112 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .17  LAG

                                                        ***
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```
                                        UNIT HYDROGRAPH
                                   12 END-OF-PERIOD ORDINATES
          6.       17.       17.       11.        5.        3.        2.        1.        0.        0.
          0.        0.

***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***

116 KP       PLAN  2 FOR STATION       E1
                          RUNOFF COMPUTATION 10-YRS STORM IN BASIN

             SUBBASIN RUNOFF DATA

110 BA         SUBBASIN CHARACTERISTICS
                     TAREA         .01  SUBBASIN AREA

               PRECIPITATION DATA

118 PH                                 DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
               ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
               5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                 .27     .75    3.35    3.95    4.40    5.40    6.60    7.80     .00     .00     .00     .00

                                          STORM AREA =     .01

111 LS         SCS LOSS RATE
                     STRTL         .41  INITIAL ABSTRACTION
                    CRVNBR       82.92  CURVE NUMBER
                     RTIMP         .00  PERCENT IMPERVIOUS AREA

112 UD         SCS DIMENSIONLESS UNITGRAPH
                      TLAG         .17  LAG

                                                 ***

                                        UNIT HYDROGRAPH
                                   12 END-OF-PERIOD ORDINATES
          6.       17.       17.       11.        5.        3.        2.        1.        0.        0.
          0.        0.

***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***

119 KP       PLAN  3 FOR STATION       E1
                          RUNOFF COMPUTATION 25-YRS STORM IN BASIN

             SUBBASIN RUNOFF DATA

110 BA         SUBBASIN CHARACTERISTICS
                     TAREA         .01  SUBBASIN AREA

               PRECIPITATION DATA

121 PH                                 DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
               ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
               5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                 .32     .90    3.62    4.65    5.25    6.50    7.70    9.20     .00     .00     .00     .00

                                          STORM AREA =     .01

111 LS         SCS LOSS RATE
                     STRTL         .41  INITIAL ABSTRACTION
                    CRVNBR       82.92  CURVE NUMBER
                     RTIMP         .00  PERCENT IMPERVIOUS AREA

112 UD         SCS DIMENSIONLESS UNITGRAPH
                      TLAG         .17  LAG

                                                 ***

                                        UNIT HYDROGRAPH
                                   12 END-OF-PERIOD ORDINATES
          6.       17.       17.       11.        5.        3.        2.        1.        0.        0.
          0.        0.

***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***

122 KP       PLAN  4 FOR STATION       E1
                          RUNOFF COMPUTATION 50-YRS STORM IN BASIN
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            SUBBASIN RUNOFF DATA

110 BA        SUBBASIN CHARACTERISTICS
                    TAREA         .01  SUBBASIN AREA

              PRECIPITATION DATA

124 PH                                DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                .34     .97    4.00    5.30    5.90    7.50    8.70   10.50     .00     .00     .00     .00

                                                STORM AREA =     .01

111 LS        SCS LOSS RATE
                    STRTL         .41  INITIAL ABSTRACTION
                   CRVNBR       82.92  CURVE NUMBER
                    RTIMP         .00  PERCENT IMPERVIOUS AREA

112 UD        SCS DIMENSIONLESS UNITGRAPH
                     TLAG         .17  LAG

                                                     ***

                                                UNIT HYDROGRAPH
                                            12 END-OF-PERIOD ORDINATES
              6.       17.       17.       11.        5.        3.        2.        1.        0.        0.
              0.        0.


***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***

125 KP      PLAN  5 FOR STATION       E1
                            RUNOFF COMPUTATION 100-YRS STORM IN BASIN

            SUBBASIN RUNOFF DATA

110 BA        SUBBASIN CHARACTERISTICS
                    TAREA         .01  SUBBASIN AREA

              PRECIPITATION DATA

127 PH                                DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                .39    1.10    4.50    5.65    6.80    8.00    9.80   11.60     .00     .00     .00     .00

                                                STORM AREA =     .01

111 LS        SCS LOSS RATE
                    STRTL         .41  INITIAL ABSTRACTION
                   CRVNBR       82.92  CURVE NUMBER
                    RTIMP         .00  PERCENT IMPERVIOUS AREA

112 UD        SCS DIMENSIONLESS UNITGRAPH
                     TLAG         .17  LAG

                                                     ***

                                                UNIT HYDROGRAPH
                                            12 END-OF-PERIOD ORDINATES
              6.       17.       17.       11.        5.        3.        2.        1.        0.        0.
              0.        0.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
128 KK      *     COMB4  *
            *            *
            **************

 29 HC        HYDROGRAPH COMBINATION
                   ICOMP           2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                     ***
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
 130 KK     *         E  *
            *            *
            **************


***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

 131 KP        PLAN  1 FOR STATION        E
                                RUNOFF COMPUTATION 2-YRS STORM IN BASIN

               SUBBASIN RUNOFF DATA

 132 BA          SUBBASIN CHARACTERISTICS
                       TAREA         .45  SUBBASIN AREA

                 PRECIPITATION DATA

 137 PH                                DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                 ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
                 5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                   .18     .50    2.40    2.55    2.75    3.30    4.10    4.75     .00     .00     .00     .00

                                                STORM AREA =     .45

 133 LS          SCS LOSS RATE
                       STRTL         .36  INITIAL ABSTRACTION
                      CRVNBR       84.67  CURVE NUMBER
                       RTIMP         .00  PERCENT IMPERVIOUS AREA

  34 UD          SCS DIMENSIONLESS UNITGRAPH
                        TLAG         .60  LAG

                                                     ***

                                                UNIT HYDROGRAPH
                                           38 END-OF-PERIOD ORDINATES
                 17.       52.      100.      171.      249.      306.      334.      336.      320.      291.
                254.      206.      159.      128.      103.       85.       69.       56.       45.       36.
                 30.       24.       19.       16.       13.       10.        8.        7.        5.        4.
                  4.        3.        3.        2.        2.        1.        1.        0.


***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

 138 KP        PLAN  2 FOR STATION        E
                                RUNOFF COMPUTATION 10-YRS STORM IN BASIN

               SUBBASIN RUNOFF DATA

 132 BA          SUBBASIN CHARACTERISTICS
                       TAREA         .45  SUBBASIN AREA

                 PRECIPITATION DATA

 140 PH                                DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                 ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
                 5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                   .27     .75    3.35    3.95    4.40    5.40    6.60    7.80     .00     .00     .00     .00

                                                STORM AREA =     .45

 133 LS          SCS LOSS RATE
                       STRTL         .36  INITIAL ABSTRACTION
                      CRVNBR       84.67  CURVE NUMBER
                       RTIMP         .00  PERCENT IMPERVIOUS AREA

 134 UD          SCS DIMENSIONLESS UNITGRAPH
                        TLAG         .60  LAG

                                                     ***

                                                UNIT HYDROGRAPH
                                           38 END-OF-PERIOD ORDINATES
                 17.       52.      100.      171.      249.      306.      334.      336.      320.      291.
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              254.      206.      159.      128.      103.       85.       69.       56.       45.       36.
               30.       24.       19.       16.       13.       10.        8.        7.        5.        4.
                4.        3.        3.        2.        2.        1.        1.        0.

***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

 141 KP       PLAN  3 FOR STATION        E
                                RUNOFF COMPUTATION 25-YRS STORM IN BASIN

              SUBBASIN RUNOFF DATA

 132 BA         SUBBASIN CHARACTERISTICS
                      TAREA         .45  SUBBASIN AREA

                PRECIPITATION DATA

 143 PH                                DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
                5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                  .32     .90    3.62    4.65    5.25    6.50    7.70    9.20     .00     .00     .00     .00

                                                STORM AREA =     .45

 133 LS         SCS LOSS RATE
                      STRTL         .36  INITIAL ABSTRACTION
                     CRVNBR       84.67  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

 134 UD         SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .60  LAG

                                                        ***

                                                   UNIT HYDROGRAPH
                                              38 END-OF-PERIOD ORDINATES
               17.       52.      100.      171.      249.      306.      334.      336.      320.      291.
              254.      206.      159.      128.      103.       85.       69.       56.       45.       36.
               30.       24.       19.       16.       13.       10.        8.        7.        5.        4.
                4.        3.        3.        2.        2.        1.        1.        0.

***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

 144 KP       PLAN  4 FOR STATION        E
                                RUNOFF COMPUTATION 50-YRS STORM IN BASIN

              SUBBASIN RUNOFF DATA

 132 BA         SUBBASIN CHARACTERISTICS
                      TAREA         .45  SUBBASIN AREA

                PRECIPITATION DATA

 146 PH                                DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
                5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                  .34     .97    4.00    5.30    5.90    7.50    8.70   10.50     .00     .00     .00     .00

                                                STORM AREA =     .45

 133 LS         SCS LOSS RATE
                      STRTL         .36  INITIAL ABSTRACTION
                     CRVNBR       84.67  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

 134 UD         SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .60  LAG

                                                        ***

                                                   UNIT HYDROGRAPH
                                              38 END-OF-PERIOD ORDINATES
               17.       52.      100.      171.      249.      306.      334.      336.      320.      291.
              254.      206.      159.      128.      103.       85.       69.       56.       45.       36.
               30.       24.       19.       16.       13.       10.        8.        7.        5.        4.
                4.        3.        3.        2.        2.        1.        1.        0.

***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***
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147 KP        PLAN  5 FOR STATION        E
                          RUNOFF COMPUTATION 100-YRS STORM IN BASIN

              SUBBASIN RUNOFF DATA

132 BA          SUBBASIN CHARACTERISTICS
                      TAREA         .45  SUBBASIN AREA

                PRECIPITATION DATA

149 PH                                DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
                5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                  .39    1.10    4.50    5.65    6.80    8.00    9.80   11.60     .00     .00     .00     .00

                                                STORM AREA =     .45

133 LS          SCS LOSS RATE
                      STRTL         .36  INITIAL ABSTRACTION
                     CRVNBR       84.67  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

134 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .60  LAG

                                                 ***

                                                UNIT HYDROGRAPH
                                           38 END-OF-PERIOD ORDINATES
                  17.      52.     100.     171.     249.     306.     334.     336.     320.     291.
                 254.     206.     159.     128.     103.      85.      69.      56.      45.      36.
                  30.      24.      19.      16.      13.      10.       8.       7.       5.       4.
                   4.       3.       3.       2.       2.       1.       1.       0.

 * *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              **************
              *            *
150 KK        *     COMB5  *
              *            *
              **************

151 HC          HYDROGRAPH COMBINATION
                      ICOMP           2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                 ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              **************
              *            *
152 KK        *     CHANN  *
              *            *
              **************

153 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           3  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         289  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .083  TIME INTERVAL IN HOURS

                HYDROGRAPH ROUTING DATA

154 RD          MUSKINGUM-CUNGE CHANNEL ROUTING
                          L       2920.  CHANNEL LENGTH
                          S       .0050  SLOPE
                          N        .035  CHANNEL ROUGHNESS COEFFICIENT
                         CA         .00  CONTRIBUTING AREA
                      SHAPE        TRAP  CHANNEL SHAPE
                         WD       12.00  BOTTOM WIDTH OR DIAMETER
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Z          .75  SIDE SLOPE

                                        ***
                    COMPUTED MUSKINGUM-CUNGE PARAMETERS
                          COMPUTATION TIME STEP
ELEMENT    ALPHA       M         DT        DX       PEAK    TIME TO     VOLUME    MAXIMUM
                                                              PEAK                  CELERITY
                                (MIN)      (FT)     (CFS)     (MIN)       (IN)      (FPS)

 MAIN        .72      1.51       5.00   1460.00    665.93    765.00      3.06      8.53

                         INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

 MAIN        .72      1.51       5.00              665.93    765.00      3.06

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1023E+03 EXCESS= .0000E+00 OUTFLOW= .1020E+03 BASIN STORAGE= .5371E+00 PERCENT ERROR=   -.2

   ***          ***          ***          ***          ***

                     HYDROGRAPH AT STATION    CHANN
                       FOR PLAN 1, RATIO = 1.00

 PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR     24.00-HR
+  (CFS)       (HR)
                          (CFS)
+    666.     12.75                167.        51.         51.         51.
                       (INCHES)   2.487       3.059       3.059       3.059
                        (AC-FT)     83.        102.        102.        102.

                      CUMULATIVE AREA =     .63 SQ MI

 ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***

                PLAN  2 INPUT DATA FOR STATION    CHANN ARE SAME AS FOR PLAN  1
                    COMPUTED MUSKINGUM-CUNGE PARAMETERS
                          COMPUTATION TIME STEP
ELEMENT    ALPHA       M         DT        DX       PEAK    TIME TO     VOLUME    MAXIMUM
                                                              PEAK                  CELERITY
                                (MIN)      (FT)     (CFS)     (MIN)       (IN)      (FPS)

 MAIN        .72      1.51       4.84   1460.00   1081.73    760.45      5.90     10.05

                         INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

 MAIN        .72      1.51       5.00             1079.45    765.00      5.90

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1972E+03 EXCESS= .0000E+00 OUTFLOW= .1966E+03 BASIN STORAGE= .8381E+00 PERCENT ERROR=   -.2

   ***          ***          ***          ***          ***

                     HYDROGRAPH AT STATION    CHANN
                       FOR PLAN 2, RATIO = 1.00

 PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR     24.00-HR
+  (CFS)       (HR)
                          (CFS)
+   1079.     12.75                309.        99.         99.         99.
                       (INCHES)   4.600       5.900       5.900       5.900
                        (AC-FT)    153.        197.        197.        197.

                      CUMULATIVE AREA =     .63 SQ MI

 ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***

                PLAN  3 INPUT DATA FOR STATION    CHANN ARE SAME AS FOR PLAN  1
```

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                    COMPUTED MUSKINGUM-CUNGE PARAMETERS
                          COMPUTATION TIME STEP
          ELEMENT    ALPHA       M         DT        DX       PEAK    TIME TO     VOLUME    MAXIMUM
                                                                        PEAK                CELERITY
                                          (MIN)      (FT)     (CFS)     (MIN)       (IN)      (FPS)

            MAIN        .72      1.51       4.64   1460.00   1235.08    760.88      7.22     10.49

                         INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

            MAIN        .72      1.51       5.00             1232.26    760.00      7.23

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2416E+03 EXCESS= .0000E+00 OUTFLOW= .2409E+03 BASIN STORAGE= .9808E+00 PERCENT ERROR=   -.1

      ***             ***             ***             ***             ***

                     HYDROGRAPH AT STATION    CHANN
                       FOR PLAN 3, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.00-HR
+   (CFS)       (HR)
                            (CFS)
+    1232.     12.67                381.        121.        121.         121.
                        (INCHES)    5.664       7.226       7.226        7.226
                         (AC-FT)     189.        241.        241.         241.

                        CUMULATIVE AREA =     .63 SQ MI

  *     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

                PLAN  4 INPUT DATA FOR STATION    CHANN ARE SAME AS FOR PLAN  1
                    COMPUTED MUSKINGUM-CUNGE PARAMETERS
                          COMPUTATION TIME STEP
          ELEMENT    ALPHA       M         DT        DX       PEAK    TIME TO     VOLUME    MAXIMUM
                                                                        PEAK                CELERITY
                                          (MIN)      (FT)     (CFS)     (MIN)       (IN)      (FPS)

            MAIN        .72      1.51       4.46   1460.00   1390.43    761.90      8.47     10.92

                         INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

            MAIN        .72      1.51       5.00             1387.93    760.00      8.48

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2834E+03 EXCESS= .0000E+00 OUTFLOW= .2826E+03 BASIN STORAGE= .1113E+01 PERCENT ERROR=   -.1

      ***             ***             ***             ***             ***

                     HYDROGRAPH AT STATION    CHANN
                       FOR PLAN 4, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.00-HR
+   (CFS)       (HR)
                            (CFS)
+    1388.     12.67                447.        142.        142.         142.
                        (INCHES)    6.650       8.477       8.477        8.477
                         (AC-FT)     222.        283.        283.         283.

                        CUMULATIVE AREA =     .63 SQ MI

  +     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

                PLAN  5 INPUT DATA FOR STATION    CHANN ARE SAME AS FOR PLAN  1
                    COMPUTED MUSKINGUM-CUNGE PARAMETERS
                          COMPUTATION TIME STEP
          ELEMENT    ALPHA       M         DT        DX       PEAK    TIME TO     VOLUME    MAXIMUM
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                                                                                PEAK                CELERITY
                                                  (MIN)      (FT)      (CFS)     (MIN)       (IN)      (FPS)

                    MAIN        .72      1.51       4.27   1460.00   1578.09    760.34      9.55     11.39

                                          INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

                    MAIN        .72      1.51       5.00             1576.91    760.00      9.55

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3193E+03 EXCESS= .0000E+00 OUTFLOW= .3185E+03 BASIN STORAGE= .1111E+01 PERCENT ERROR=   -.1


     ***             ***             ***             ***             ***

                        HYDROGRAPH AT STATION    CHANN
                          FOR PLAN 5, RATIO = 1.00

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.00-HR
+   (CFS)       (HR)
                                    (CFS)
+    1577.     12.67                 493.        161.        161.         161.
                              (INCHES)      7.340       9.554       9.554        9.554
                               (AC-FT)       245.        318.        318.         318.

                               CUMULATIVE AREA =     .63 SQ MI


 *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
 155 KK     *        E5  *
            *            *
            **************


 ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

 156 KP        PLAN  1 FOR STATION       E5
                                  RUNOFF COMPUTATION 2-YRS STORM IN BASIN

               SUBBASIN RUNOFF DATA

 157 BA          SUBBASIN CHARACTERISTICS
                       TAREA         .03  SUBBASIN AREA

                 PRECIPITATION DATA

 162 PH                            DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                 ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
                 5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                   .18     .50    2.40    2.55    2.75    3.30    4.10    4.75     .00     .00     .00     .00

                                                STORM AREA =     .03

 158 LS          SCS LOSS RATE
                       STRTL         .30  INITIAL ABSTRACTION
                      CRVNBR       86.77  CURVE NUMBER
                       RTIMP         .00  PERCENT IMPERVIOUS AREA

 159 UD          SCS DIMENSIONLESS UNITGRAPH
                        TLAG         .10  LAG

                                                     ***

                                                UNIT HYDROGRAPH
                                            8 END-OF-PERIOD ORDINATES
               72.      107.       47.       18.        7.        3.        1.        0.


***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

 163 KP        PLAN  2 FOR STATION       E5
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                                RUNOFF COMPUTATION 10-YRS STORM IN BASIN

             SUBBASIN RUNOFF DATA

157 BA         SUBBASIN CHARACTERISTICS
                     TAREA         .03  SUBBASIN AREA

               PRECIPITATION DATA

165 PH                                DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
               ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
               5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                 .27     .75    3.35    3.95    4.40    5.40    6.60    7.80     .00     .00     .00     .00

                                                STORM AREA =     .03

158 LS         SCS LOSS RATE
                     STRTL         .30  INITIAL ABSTRACTION
                    CRVNBR       86.77  CURVE NUMBER
                     RTIMP         .00  PERCENT IMPERVIOUS AREA

159 UD         SCS DIMENSIONLESS UNITGRAPH
                      TLAG         .10  LAG

                                                  ***

                                                UNIT HYDROGRAPH
                                            8 END-OF-PERIOD ORDINATES
              72.      107.       47.       18.        7.        3.        1.        0.


***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***

166 KP       PLAN  3 FOR STATION       E5
                                RUNOFF COMPUTATION 25-YRS STORM IN BASIN

             SUBBASIN RUNOFF DATA

157 BA         SUBBASIN CHARACTERISTICS
                     TAREA         .03  SUBBASIN AREA

               PRECIPITATION DATA

168 PH                                DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
               ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
               5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                 .32     .90    3.62    4.65    5.25    6.50    7.70    9.20     .00     .00     .00     .00

                                                STORM AREA =     .03

158 LS         SCS LOSS RATE
                     STRTL         .30  INITIAL ABSTRACTION
                    CRVNBR       86.77  CURVE NUMBER
                     RTIMP         .00  PERCENT IMPERVIOUS AREA

159 UD         SCS DIMENSIONLESS UNITGRAPH
                      TLAG         .10  LAG

                                                  ***

                                                UNIT HYDROGRAPH
                                            8 END-OF-PERIOD ORDINATES
              72.      107.       47.       18.        7.        3.        1.        0.


***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***

169 KP       PLAN  4 FOR STATION       E5
                                RUNOFF COMPUTATION 50-YRS STORM IN BASIN

             SUBBASIN RUNOFF DATA

157 BA         SUBBASIN CHARACTERISTICS
                     TAREA         .03  SUBBASIN AREA

               PRECIPITATION DATA

171 PH                                DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
               ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
               5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                 .34     .97    4.00    5.30    5.90    7.50    8.70   10.50     .00     .00     .00     .00
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                                        STORM AREA =     .03

158 LS          SCS LOSS RATE
                     STRTL         .30  INITIAL ABSTRACTION
                    CRVNBR       86.77  CURVE NUMBER
                     RTIMP         .00  PERCENT IMPERVIOUS AREA

159 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG         .10  LAG

                                                 ***

                                            UNIT HYDROGRAPH
                                        8 END-OF-PERIOD ORDINATES
              72.      107.       47.       18.        7.        3.        1.        0.


***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***

172 KP        PLAN  5 FOR STATION       E5
                                RUNOFF COMPUTATION 100-YRS STORM IN BASIN

              SUBBASIN RUNOFF DATA

157 BA          SUBBASIN CHARACTERISTICS
                     TAREA         .03  SUBBASIN AREA

                PRECIPITATION DATA

174 PH                                DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
                5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                  .39    1.10    4.50    5.65    6.80    8.00    9.80   11.60     .00     .00     .00     .00

                                        STORM AREA =     .03

 58 LS          SCS LOSS RATE
                     STRTL         .30  INITIAL ABSTRACTION
                    CRVNBR       86.77  CURVE NUMBER
                     RTIMP         .00  PERCENT IMPERVIOUS AREA

159 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG         .10  LAG

                                                 ***

                                            UNIT HYDROGRAPH
                                        8 END-OF-PERIOD ORDINATES
              72.      107.       47.       18.        7.        3.        1.        0.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
175 KK      *     CHANN  *
            *            *
            **************

176 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           3  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
                     IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                      IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2         289  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT        .083  TIME INTERVAL IN HOURS


              HYDROGRAPH ROUTING DATA

 77 RD          MUSKINGUM-CUNGE CHANNEL ROUTING
                          L       2995.  CHANNEL LENGTH
                          S       .0050  SLOPE
                          N        .035  CHANNEL ROUGHNESS COEFFICIENT
                         CA         .00  CONTRIBUTING AREA
                      SHAPE        TRAP  CHANNEL SHAPE
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WD        12.00  BOTTOM WIDTH OR DIAMETER
 Z          .75  SIDE SLOPE

                                        ***
                 COMPUTED MUSKINGUM-CUNGE PARAMETERS
                        COMPUTATION TIME STEP
ELEMENT    ALPHA       M         DT        DX       PEAK    TIME TO     VOLUME    MAXIMUM
                                                             PEAK                  CELERITY
                                (MIN)      (FT)     (CFS)    (MIN)       (IN)      (FPS)

 MAIN        .72      1.51       5.00    599.00     51.43   730.00      3.28      3.60

                       INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

 MAIN        .72      1.51       5.00               51.43   730.00      3.28

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5818E+01 EXCESS= .0000E+00 OUTFLOW= .5776E+01 BASIN STORAGE= .7739E-01 PERCENT ERROR=   -.6

   ***          ***          ***          ***          ***

                     HYDROGRAPH AT STATION    CHANN
                       FOR PLAN 1, RATIO = 1.00

 PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR     24.00-HR
+  (CFS)       (HR)
                            (CFS)
+     51.     12.17            9.          3.          3.          3.
                        (INCHES)     2.637       3.280       3.280       3.280
                         (AC-FT)        5.          6.          6.          6.

                      CUMULATIVE AREA =     .03 SQ MI

 ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***

                PLAN  2 INPUT DATA FOR STATION    CHANN ARE SAME AS FOR PLAN  1
                        COMPUTED MUSKINGUM-CUNGE PARAMETERS
                               COMPUTATION TIME STEP
ELEMENT    ALPHA       M         DT        DX       PEAK    TIME TO     VOLUME    MAXIMUM
                                                             PEAK                  CELERITY
                                (MIN)      (FT)     (CFS)    (MIN)       (IN)      (FPS)

 MAIN        .72      1.51       5.00    748.75     81.69   730.00      6.18      4.22

                       INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

 MAIN        .72      1.51       5.00               81.69   730.00      6.18

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1095E+02 EXCESS= .0000E+00 OUTFLOW= .1088E+02 BASIN STORAGE= .1197E+00 PERCENT ERROR=   -.5

   ***          ***          ***          ***          ***

                     HYDROGRAPH AT STATION    CHANN
                       FOR PLAN 2, RATIO = 1.00

 PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR     24.00-HR
+  (CFS)       (HR)
                            (CFS)
+     82.     12.17           17.          5.          5.          5.
                        (INCHES)     4.765       6.179       6.179       6.179
                         (AC-FT)        8.         11.         11.         11.

                      CUMULATIVE AREA =     .03 SQ MI

 ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***
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PLAN  3 INPUT DATA FOR STATION    CHANN ARE SAME AS FOR PLAN  1
                    COMPUTED MUSKINGUM-CUNGE PARAMETERS
                          COMPUTATION TIME STEP
     ELEMENT    ALPHA       M         DT        DX       PEAK    TIME TO     VOLUME    MAXIMUM
                                                                    PEAK                CELERITY
                                     (MIN)      (FT)     (CFS)     (MIN)       (IN)      (FPS)

       MAIN        .72      1.51       5.00    748.75     91.00    730.00      7.53      4.34

                         INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

       MAIN        .72      1.51       5.00               91.00    730.00      7.53

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1335E+02 EXCESS= .0000E+00 OUTFLOW= .1327E+02 BASIN STORAGE= .1400E+00 PERCENT ERROR=   -.5

   ***          ***          ***          ***          ***

                HYDROGRAPH AT STATION    CHANN
                 FOR PLAN 3, RATIO = 1.00

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.00-HR
+   (CFS)       (HR)
                            (CFS)
+     91.      12.17                 21.         7.          7.          7.
                         (INCHES)   5.852       7.535       7.535       7.535
                          (AC-FT)    10.         13.         13.         13.

                         CUMULATIVE AREA =     .03 SQ MI

 *    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***

PLAN  4 INPUT DATA FOR STATION    CHANN ARE SAME AS FOR PLAN  1
                    COMPUTED MUSKINGUM-CUNGE PARAMETERS
                          COMPUTATION TIME STEP
     ELEMENT    ALPHA       M         DT        DX       PEAK    TIME TO     VOLUME    MAXIMUM
                                                                    PEAK                CELERITY
                                     (MIN)      (FT)     (CFS)     (MIN)       (IN)      (FPS)

       MAIN        .72      1.51       5.00    748.75    101.62    730.00      8.80      4.52

                         INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

       MAIN        .72      1.51       5.00              101.62    730.00      8.80

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1559E+02 EXCESS= .0000E+00 OUTFLOW= .1549E+02 BASIN STORAGE= .1589E+00 PERCENT ERROR=   -.4

   ***          ***          ***          ***          ***

                HYDROGRAPH AT STATION    CHANN
                 FOR PLAN 4, RATIO = 1.00

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.00-HR
+   (CFS)       (HR)
                            (CFS)
+    102.      12.17                 24.         8.          8.          8.
                         (INCHES)   6.858       8.799       8.799       8.799
                          (AC-FT)    12.         15.         15.         15.

                         CUMULATIVE AREA =     .03 SQ MI

 .    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***

PLAN  5 INPUT DATA FOR STATION    CHANN ARE SAME AS FOR PLAN  1
                    COMPUTED MUSKINGUM-CUNGE PARAMETERS
                          COMPUTATION TIME STEP
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                ELEMENT    ALPHA       M        DT        DX       PEAK    TIME TO     VOLUME    MAXIMUM
                                                                           PEAK                  CELERITY
                                            (MIN)      (FT)     (CFS)     (MIN)       (IN)      (FPS)

                  MAIN       .72      1.51      5.00    748.75    114.82    730.00      9.88      4.71

                                   INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

                  MAIN       .72      1.51      5.00              114.82    730.00      9.88

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1749E+02 EXCESS= .0000E+00 OUTFLOW= .1740E+02 BASIN STORAGE= .1584E+00 PERCENT ERROR=   -.4

     ***            ***            ***            ***            ***

                     HYDROGRAPH AT STATION    CHANN
                       FOR PLAN 5, RATIO = 1.00

 PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR     24.00-HR
 +   (CFS)       (HR)
                            (CFS)
 +     115.     12.17                27.          9.          9.          9.
                         (INCHES)   7.502       9.880       9.880       9.880
                          (AC-FT)     13.         17.         17.         17.

                          CUMULATIVE AREA =     .03 SQ MI


 *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
 178 KK     *        E6  *
            *            *
            **************


 ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

 179 KP        PLAN  1 FOR STATION       E6
                                RUNOFF COMPUTATION 2-YRS STORM IN BASIN

               SUBBASIN RUNOFF DATA

 180 BA          SUBBASIN CHARACTERISTICS
                       TAREA         .06  SUBBASIN AREA

                 PRECIPITATION DATA

 185 PH                            DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                 ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
                 5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                   .18     .50    2.40    2.55    2.75    3.30    4.10    4.75     .00     .00     .00     .00

                                                STORM AREA =     .06

 181 LS          SCS LOSS RATE
                       STRTL         .31  INITIAL ABSTRACTION
                      CRVNBR       86.57  CURVE NUMBER
                       RTIMP         .00  PERCENT IMPERVIOUS AREA

 182 UD          SCS DIMENSIONLESS UNITGRAPH
                        TLAG         .11  LAG

                                                     ***

                                                UNIT HYDROGRAPH
                                            9 END-OF-PERIOD ORDINATES
              112.      197.      102.       41.       17.        7.        3.        1.        0.

 ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***
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186 KP        PLAN  2 FOR STATION       E6
                          RUNOFF COMPUTATION 10-YRS STORM IN BASIN

              SUBBASIN RUNOFF DATA

180 BA          SUBBASIN CHARACTERISTICS
                      TAREA         .06  SUBBASIN AREA

                PRECIPITATION DATA

188 PH                                DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
                5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                  .27     .75    3.35    3.95    4.40    5.40    6.60    7.80     .00     .00     .00     .00

                                                STORM AREA =     .06

181 LS          SCS LOSS RATE
                      STRTL         .31  INITIAL ABSTRACTION
                     CRVNBR       86.57  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

182 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG         .11  LAG

                                                  ***

                                                UNIT HYDROGRAPH
                                            9 END-OF-PERIOD ORDINATES
              112.      197.      102.       41.       17.        7.        3.        1.        0.

***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

189 KP        PLAN  3 FOR STATION       E6
                          RUNOFF COMPUTATION 25-YRS STORM IN BASIN

              SUBBASIN RUNOFF DATA

180 BA          SUBBASIN CHARACTERISTICS
                      TAREA         .06  SUBBASIN AREA

                PRECIPITATION DATA

191 PH                                DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
                5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                  .32     .90    3.62    4.65    5.25    6.50    7.70    9.20     .00     .00     .00     .00

                                                STORM AREA =     .06

181 LS          SCS LOSS RATE
                      STRTL         .31  INITIAL ABSTRACTION
                     CRVNBR       86.57  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

182 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG         .11  LAG

                                                  ***

                                                UNIT HYDROGRAPH
                                            9 END-OF-PERIOD ORDINATES
              112.      197.      102.       41.       17.        7.        3.        1.        0.

***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

192 KP        PLAN  4 FOR STATION       E6
                          RUNOFF COMPUTATION 50-YRS STORM IN BASIN

              SUBBASIN RUNOFF DATA

180 BA          SUBBASIN CHARACTERISTICS
                      TAREA         .06  SUBBASIN AREA

                PRECIPITATION DATA

194 PH                                DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
                5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
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                .34     .97    4.00    5.30    5.90    7.50    8.70   10.50     .00     .00     .00     .00

                                                STORM AREA =     .06

181 LS          SCS LOSS RATE
                     STRTL         .31  INITIAL ABSTRACTION
                    CRVNBR       86.57  CURVE NUMBER
                     RTIMP         .00  PERCENT IMPERVIOUS AREA

182 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG         .11  LAG

                                                  ***

                                                UNIT HYDROGRAPH
                                            9 END-OF-PERIOD ORDINATES
             112.      197.      102.       41.       17.        7.        3.        1.        0.


***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

195 KP        PLAN  5 FOR STATION       E6
                                RUNOFF COMPUTATION 100-YRS STORM IN BASIN

             SUBBASIN RUNOFF DATA

180 BA         SUBBASIN CHARACTERISTICS
                     TAREA         .06  SUBBASIN AREA

               PRECIPITATION DATA

197 PH                                DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
               ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
               5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                 .39    1.10    4.50    5.65    6.80    8.00    9.80   11.60     .00     .00     .00     .00

                                                STORM AREA =     .06

181 LS         SCS LOSS RATE
                     STRTL         .31  INITIAL ABSTRACTION
                    CRVNBR       86.57  CURVE NUMBER
                     RTIMP         .00  PERCENT IMPERVIOUS AREA

182 UD         SCS DIMENSIONLESS UNITGRAPH
                      TLAG         .11  LAG

                                                  ***

                                                UNIT HYDROGRAPH
                                            9 END-OF-PERIOD ORDINATES
             112.      197.      102.       41.       17.        7.        3.        1.        0.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

             **************
             *            *
198 KK       *     CHANN  *
             *            *
             **************

199 KO         OUTPUT CONTROL VARIABLES
                    IPRNT           3  PRINT CONTROL
                    IPLOT           0  PLOT CONTROL
                    QSCAL          0.  HYDROGRAPH PLOT SCALE
                    IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                     IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2         289  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT        .083  TIME INTERVAL IN HOURS


             HYDROGRAPH ROUTING DATA

 )0 RD         MUSKINGUM-CUNGE CHANNEL ROUTING
                        L        889.  CHANNEL LENGTH
                        S       .0050  SLOPE
                        N        .035  CHANNEL ROUGHNESS COEFFICIENT
                       CA         .00  CONTRIBUTING AREA
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   SHAPE        TRAP  CHANNEL SHAPE
      WD       12.00  BOTTOM WIDTH OR DIAMETER
       Z         .75  SIDE SLOPE

                                        ***
                 COMPUTED MUSKINGUM-CUNGE PARAMETERS
                        COMPUTATION TIME STEP
ELEMENT    ALPHA       M         DT        DX       PEAK    TIME TO     VOLUME    MAXIMUM
                                                             PEAK                  CELERITY
                                (MIN)      (FT)     (CFS)     (MIN)       (IN)      (FPS)

 MAIN        .72      1.51       3.37    444.50     93.16    720.95      3.28      4.40


                       INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL


 MAIN        .72      1.51       5.00               91.79    720.00      3.28

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1086E+02 EXCESS= .0000E+00 OUTFLOW= .1083E+02 BASIN STORAGE= .3463E-01 PERCENT ERROR=   -.1

     ***            ***            ***            ***            ***

                       HYDROGRAPH AT STATION    CHANN
                         FOR PLAN 1, RATIO = 1.00

 PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR     24.00-HR
+  (CFS)       (HR)
                          (CFS)
+     92.     12.00                18.         5.          5.          5.
                       (INCHES)   2.627       3.277       3.277       3.277
                        (AC-FT)     9.         11.         11.         11.

                       CUMULATIVE AREA =     .06 SQ MI


 ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***

                 PLAN  2 INPUT DATA FOR STATION    CHANN ARE SAME AS FOR PLAN  1
                        COMPUTED MUSKINGUM-CUNGE PARAMETERS
                        COMPUTATION TIME STEP
ELEMENT    ALPHA       M         DT        DX       PEAK    TIME TO     VOLUME    MAXIMUM
                                                             PEAK                  CELERITY
                                (MIN)      (FT)     (CFS)     (MIN)       (IN)      (FPS)

 MAIN        .72      1.51       2.87    444.50    150.11    720.52      6.18      5.16


                       INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL


 MAIN        .72      1.51       5.00               149.38    720.00      6.18

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2048E+02 EXCESS= .0000E+00 OUTFLOW= .2045E+02 BASIN STORAGE= .5373E-01 PERCENT ERROR=   -.1

     ***            ***            ***            ***            ***

                       HYDROGRAPH AT STATION    CHANN
                         FOR PLAN 2, RATIO = 1.00

 PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR     24.00-HR
+  (CFS)       (HR)
                          (CFS)
+    149.     12.00                32.        10.         10.         10.
                       (INCHES)   4.755       6.183       6.183       6.183
                        (AC-FT)    16.        20.         20.         20.

                       CUMULATIVE AREA =     .06 SQ MI


 ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***
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