APPENDIXES

APPENDIX A

Hydrologic Parameters Estimation

Project : Estancia de los Artesanos
Location : Las Piedras, Puerto Rico
REGRESSION CURVES FOR LOW DURATION STORMS

100 -Years				
Duration	Prec.	Intensity (inch/hour)	Regression Parameters	
(Hs)	(inch)	***y=bo/(b1+X)^0.76***	bo	bi
0.083	0.78	**9.38**	6.10	0.485
0.25	1.93	**7.71**	6.10	0.485
1	4.80 **	4.80	R^2= 0.9964	
2	6.40 **	3.20		
3	7.20 **	2.40		
6	9.00 **	1.50		
12	11.00 **	0.92		
24	13.00 **	0.54		

50 -Years				
Duration	Prec.	Intensity (inch/hour)	Regression Parameters	
(Hs)	(inch)	**y=bo/(b1+X)^0.77**	bo	bi
0.083	0.71	**8.50**	5.60	0.499
0.25	1.75	**7.00**	5.60	0.499
1	4.40 **	4.40	R^2= 0.9918	
2	5.60 **	2.80		
3	6.20 **	2.07		
6	7.90 **	1.32		
12	9.80 **	0.82		
24	11.50 **	0.48		

25 -Years				
Duration	Prec.	Intensity (inch/hour)	Regression Parameters	
(Hs)	(inch)	**y=bo/(b1+X)^0.78**	bo	bi
0.083	0.60	**7.28**	5.10	0.551
0.25	1.52	**6.06**	5.10	0.551
1	3.90 **	3.90	R^2= 0.9861	
2	5.00 **	2.50		
3	5.70 **	1.90		
6	7.00 **	1.17		
12	8.20 **	0.68		
24	10.00 **	0.42		

10 -Years				
Duration	Prec.	Intensity (inch/hour)	Regression Parameters	
(Hs)	(inch)	**y=bo/(b1+X)^0.79**	bo	bi
0.083	0.56	**6.72**	4.40	0.502
0.25	1.38	**5.51**	4.40	0.502
1	3.35 **	3.35	R^2= 0.9920	
2	4.40 **	2.20		
3	4.90 **	1.63		
6	5.90 **	0.98		
12	7.00 **	0.58		
24	8.50 **	0.35		

2 -Years				
Duration	Prec.	Intensity (inch/hour)	Regression Parameters	
(Hs)	(inch)	**y=bo/(b1+X)^0.79**	bo	bi
0.083	0.47	**5.70**	2.70	0.305
0.25	1.07	**4.30**	2.70	0.305
1	2.25 **	2.25	R^2= 0.9991	
2	2.80 **	1.40		
3	3.10 **	1.03		
6	3.90 **	0.65		
12	4.50 **	0.38		
24	5.20 **	0.22		

* Bold values were estimated by Regression Analysis from Duration Vs Intensity curve
** Precipitation values from Tech. Paper No.42

CURVE NUMBER ESTIMATION
Project: Estancias de Los Artesanos
Las Piedras, PR

Soil	Description	TYPE	CN
CdB	Candelero Loam, 2 to 5 percent slopes	C	82
CdC2	Candelero Loam, 5 to 12 percent slopes, eroded	C	83
CgC2	Cayagua Sandy Loam, 5 to 12 percent slopes, eroded	C	84
CgD2	Cayagua Sandy Loam, 12 to 20 percent slopes, eroded	C	85
JgE2	Jagueyes Loam, 20 to 40 percent slopes, eroded	B	81
LoC2	Lirios Clay Loam, 3 to 10 percent slopes, eroded	B	80
PaE2	Pandura Loam, 12 to 40 percent slopes, eroded	D	86
PaF2	Pandura Loam, 40 to 60 percent slopes, eroded	D	87
Unsurveyed	Unsurveyed Soil (Usually Developed)	-	95

PHYSIOGRAFIC INFORMATION FOR BASIN 1A

		Existing Condition	
Soil	HSG	Curve Number	Area (acre)
CdB	C	82	
CdC2	C	83	12.90
CgC2	C	84	133.00
CgD2	C	85	4.40
JgE2	B	81	71.50
LoC2	B	80	
PaE2	D	86	83.40
PaF2	D	87	235.40
Unsurveyed	-	95	
Total (acres)			540.60
Total (km2)			2.188
Total (mi2)			**0.8447**
Weighted CN			**85.20**

PHYSIOGRAFIC INFORMATION FOR BASIN 1B

		Existing Condition	
Soil	HSG	Curve Number	Area (acre)
CdB	C	82	31.80
CdC2	C	83	193.20
CgC2	C	84	261.60
CgD2	C	85	
JgE2	B	81	
LoC2	B	80	150.40
PaE2	D	86	24.10
PaF2	D	87	
Unsurveyed	-	95	49.70
Total (acres)			710.80
Total (km2)			2.877
Total (mi2)			**1.1106**
Weighted CN			**83.63**

PHYSIOGRAFIC INFORMATION FOR BASIN 1C

		Existing Condition	
Soil	HSG	Curve Number	Area (acre)
CdB	C	82	
CdC2	C	83	
CgC2	C	84	
CgD2	C	85	
JgE2	B	81	
LoC2	B	80	
PaE2	D	86	
PaF2	D	87	
Unsurveyed	-	95	60.70
Total (acres)			60.70
Total (km2)			0.246
Total (mi2)			**0.0948**
Weighted CN			**95.00**

Project: Estancias de Los Artesanos
Las Piedras, PR

PHYSIOGRAFIC INFORMATION FOR BASIN 2

		Existing Condition	
Soil	HSG	Curve Number	Area (acre)
CdB	C	82	
CdC2	C	83	1.00
CgC2	C	84	191.10
CgD2	C	85	38.40
JgE2	B	81	
LoC2	B	80	22.40
PaE2	D	86	151.90
PaF2	D	87	5.00
Unsurveyed	-	95	
Total (acres)			409.80
Total (km2)			1.658
Total (mi2)			**0.6403**
Weighted CN			**84.65**

PHYSIOGRAFIC INFORMATION FOR OFF 1

		Existing Condition	
Soil	HSG	Curve Number	Area (acre)
CdB	C	82	
CdC2	C	83	12.40
CgC2	C	84	32.40
CgD2	C	85	
JgE2	B	81	
LoC2	B	80	
PaE2	D	86	0.40
PaF2	D	87	
Unsurveyed	-	95	0.00
Total (acres)			45.20
Total (km2)			0.183
Total (mi2)			**0.0706**
Weighted CN			**83.74**

PHYSIOGRAFIC INFORMATION FOR AREA P1

		Existing Condition		Proposed Condition	
Soil	HSG	Curve Number	Area (acre)	Curve Number	Area (acre)
CdB	C	82		82	
CdC2	C	83	6.10	83	
CgC2	C	84	15.80	84	
CgD2	C	85		85	
JgE2	B	81		81	
LoC2	B	80	8.50	80	
PaE2	D	86		86	
PaF2	D	87		87	
Developed	-	95		95	24
Total (acres)			30.40		24.00
Total (km2)			0.123		0.097
Total (mi2)			**0.0475**		**0.0375**
Weighted CN			**82.68**		**95.00**

PHYSIOGRAFIC INFORMATION FOR AREA P2

		Existing Condition		Proposed Condition	
Soil	HSG	Curve Number	Area (acre)	Curve Number	Area (acre)
CdB	C	82		82	
CdC2	C	83	12.00	83	
CgC2	C	84	27.40	84	
CgD2	C	85		85	
JgE2	B	81		81	
LoC2	B	80	1.20	80	
PaE2	D	86		86	
PaF2	D	87		87	
Developed	-	95		95	47
Total (acres)			40.60		47.00
Total (km2)			0.164		0.190
Total (mi2)			**0.0634**		**0.0734**
Weighted CN			**83.59**		**95.00**

Project: Estancias de Los Artesanos
Las Piedras, PR
PHYSIOGRAFIC INFORMATION FOR AREA P3

		Existing Condition		Proposed Condition	
Soil	HSG	Curve Number	Area (acre)	Curve Number	Area (acre)
CdB	C	82		82	
CdC2	C	83	6.20	83	
CgC2	C	84	11.90	84	
CgD2	C	85		85	
JgE2	B	81		81	
LoC2	B	80		80	
PaE2	D	86		86	
PaF2	D	87		87	
Developed	-	95		95	18.1
Total (acres)			18.10		18.10
Total (km2)			0.073		0.073
Total (mi2)			**0.0283**		**0.0283**
Weighted CN			**83.66**		**95.00**

PHYSIOGRAFIC INFORMATION FOR AREA P4

		Existing Condition		Proposed Condition	
Soil	HSG	Curve Number	Area (acre)	Curve Number	Area (acre)
CdB	C	82		82	
CdC2	C	83	9.40	83	
CgC2	C	84	19.50	84	
CgD2	C	85		85	
JgE2	B	81		81	
LoC2	B	80		80	
PaE2	D	86		86	
PaF2	D	87		87	
Developed	-	95		95	28.9
Total (acres)			28.90		28.90
Total (km2)			0.117		0.117
Total (mi2)			**0.0452**		**0.0452**
Weighted CN			**83.67**		**95.00**

Project: Estancia de los Artesanos
COMPUTATIONS FOR TIME OF CONCENTRATION AND LAG TIME - Kirpitch Equation

$Tc = 0.0078L^{0.77}/S^{0.385}$
Where: L in ft, S in ft/ft, Tc in min

Higher Elevation		Lower Elevation		Distance		Time of Concentration		Lag Time
m	ft	m	ft	m	ft	min	hours	hours

EXISTING CONDITION

BASIN 1A

265	869.2	250	820	46	150.88	0.5715	0.00952	0.006
250	820	200	656	170	557.6	1.6270	0.02712	0.016
200	656	190	623.2	62	203.36	0.9430	0.01572	0.009
190	623.2	180	590.4	35	114.8	0.4872	0.00812	0.005
180	590.4	170	557.6	127	416.56	2.1588	0.03598	0.022
170	557.6	160	524.8	180	590.4	3.2297	0.05383	0.032
160	524.8	150	492	355	1164.4	7.0767	0.11795	0.071
150	492	140	459.2	495	1623.6	10.3893	0.17316	0.104
140	459.2	130	426.4	210	688.8	3.8591	0.06432	0.039
130	426.4	120	393.6	420	1377.6	8.5935	0.14323	0.086
120	393.6	110	360.8	615	2017.2	13.3496	0.22249	0.133
110	360.8	106	347.68	1270	4165.6	43.8953	0.73159	0.439
				3985	13070.8	96.1806	1.60301	**0.962**

BASIN 1B

128.2	420.496	120	393.6	155	508.4	2.9331	0.04889	0.029
120	393.6	110	360.8	1430	4690.4	35.3778	0.58963	0.354
110	360.8	106	347.68	2030	6658.4	75.4540	1.25757	0.755
				3615	11857.2	113.7649	1.89608	**1.138**

BASIN 1C

115	377.2	100	328	750	2460	14.3621	0.23937	0.144
				750	2460	14.3621	0.23937	**0.144**

BASIN 2

150	492	140	459.2	60	196.8	0.9080	0.01513	0.009
140	459.2	130	426.4	140	459.2	2.4160	0.04027	0.024
130	426.4	120	393.6	210	688.8	3.8591	0.06432	0.039
120	393.6	110	360.8	760	2492.8	17.0474	0.28412	0.170
110	360.8	107	350.96	1260	4132.8	48.5908	0.80985	0.486
				2430	7970.4	72.8212	1.21369	**0.728**

OFF 1

150	492	109	357.52	845	2771.6	11.1922	0.18654	0.112
				845	2771.6	11.1922	0.18654	**0.112**

P1

115	377.2	105	344.4	415	1361.2	8.4755	0.14126	0.085
				415	1361.2	8.4755	0.14126	**0.085**

P2

114	373.92	98	321.44	590	1935.2	10.6186	0.17698	0.106
				590	1935.2	10.6186	0.17698	**0.106**

P3

112	367.36	98	321.44	320	1049.6	5.5145	0.09191	0.055
				320	1049.6	5.5145	0.09191	**0.055**

P4

122	400.16	105	344.4	490	1607.2	8.3709	0.13951	0.084
				490	1607.2	8.3709	0.13951	**0.084**

Project: Estancia de los Artesanos
COMPUTATIONS FOR TIME OF CONCENTRATION AND LAG TIME - Kirpitch Equation

$Tc = 0.0078L^{0.77}/S^{0.385}$
Where: L in ft, S in ft/ft, Tc in min

Higher Elevation		Lower Elevation		Distance		Time of Concentration		Lag Time
m	ft	m	ft	m	ft	min	hours	hours

PROPOSED CONDITION

P1

115	377.2	108	354.24	445	1459.6	10.5393	0.17565	0.105
				445	1459.6	10.5393	0.17565	**0.105**

P2

114	373.92	102	334.56	620	2033.6	12.5616	0.20936	0.126
				620	2033.6	12.5616	0.20936	**0.126**

P3

112	367.36	105	344.4	330	1082.4	7.4617	0.12436	0.075
				330	1082.4	7.4617	0.12436	**0.075**

P4

122	400.16	110	360.8	520	1705.6	10.2522	0.17087	0.103
				520	1705.6	10.2522	0.17087	**0.103**

APPENDIX B

HEC-1 RESULTS FOR EXISTING CONDITION

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1****************************************                                                    ****************************************
 *                                      *                                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                                    *    U.S. ARMY CORPS OF ENGINEERS      *
 *              JUN   1998              *                                                    *    HYDROLOGIC ENGINEERING CENTER     *
 *           VERSION 4.1                *                                                    *          609 SECOND STREET           *
 *                                      *                                                    *       DAVIS, CALIFORNIA 95616        *
 *  RUN DATE   01JUN05  TIME  10:17:29  *                                                    *           (916) 756-1104             *
 *                                      *                                                    *                                      *
 ****************************************                                                    ****************************************


                                        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


          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

1                                                   HEC-1 INPUT                                                   PAGE  1

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

           1           ID        HYDROLOGIC ANALYSIS
           2           ID        PROJECT: ESTANCIAS DE LOS ARTESANOS, LAS PIEDRAS
           3           ID        TRIANGULAR DISTRIBUTION
           4           ID        FREQUENCY OF OCCURRENCE: 2-, 10-, 25-, 50- & 100-YEARS
           5           ID        EXISTING CONDITION
           6           IT       5                     300
           7           IO       3
           8           JP       5
                       *D

           9           KK      P1
          10           KP       1
          11           BA  0.0475
          12           LS       0   82.68
          13           UD   0.085
          14           IN      15
          15           KM        TRIANGULAR DISTRIBUTION 2-YRS STORM
          16           PH                  0.47    1.07    2.25    2.80    3.10    3.90    4.50    5.20
          17           KP       2
          18           KM        TRIANGULAR DISTRIBUTION 10-YRS STORM
          19           PH                  0.56    1.38    3.35    4.40    4.90    5.90    7.00    8.50
          20           KP       3
          21           KM        TRIANGULAR DISTRIBUTION 25-YRS STORM
          22           PH                  0.60    1.52    3.90    5.00    5.70    7.00    8.20   10.00
          23           KP       4
          24           KM        TRIANGULAR DISTRIBUTION 50-YRS STORM
          25           PH                  0.71    1.75    4.40    5.60    6.20    7.90    9.80   11.50
          26           KP       5
          27           KM        TRIANGULAR DISTRIBUTION 100-YRS STORM
          28           PH                  0.78    1.93    4.80    6.40    7.20    9.00   11.00   13.00

          29           KK      P2
          30           KP       1
          31           BA  0.0634
          32           LS       0   83.59
          33           UD   0.106
          34           IN      15
          35           KM        TRIANGULAR DISTRIBUTION 2-YRS STORM
          36           PH                  0.47    1.07    2.25    2.80    3.10    3.90    4.50    5.20
          37           KP       2
          38           KM        TRIANGULAR DISTRIBUTION 10-YRS STORM
          39           PH                  0.56    1.38    3.35    4.40    4.90    5.90    7.00    8.50
          40           KP       3
          41           KM        TRIANGULAR DISTRIBUTION 25-YRS STORM
          42           PH                  0.60    1.52    3.90    5.00    5.70    7.00    8.20   10.00
          43           KP       4
          44           KM        TRIANGULAR DISTRIBUTION 50-YRS STORM
          45           PH                  0.71    1.75    4.40    5.60    6.20    7.90    9.80   11.50
          46           KP       5
          47           KM        TRIANGULAR DISTRIBUTION 100-YRS STORM
          48           PH                  0.78    1.93    4.80    6.40    7.20    9.00   11.00   13.00
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          LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


            49          KK      P3
            50          KP       1
            51          BA  0.0283
            52          LS       0   83.66
            53          UD   0.055
            54          IN      15
            55          KM        TRIANGULAR DISTRIBUTION 2-YRS STORM
            56          PH                   0.47    1.07    2.25    2.80    3.10    3.90    4.50    5.20
            57          KP       2
            58          KM        TRIANGULAR DISTRIBUTION 10-YRS STORM
            59          PH                   0.56    1.38    3.35    4.40    4.90    5.90    7.00    8.50
            60          KP       3
            61          KM        TRIANGULAR DISTRIBUTION 25-YRS STORM
            62          PH                   0.60    1.52    3.90    5.00    5.70    7.00    8.20   10.00
            63          KP       4
            64          KM        TRIANGULAR DISTRIBUTION 50-YRS STORM
            65          PH                   0.71    1.75    4.40    5.60    6.20    7.90    9.80   11.50
            66          KP       5
            67          KM        TRIANGULAR DISTRIBUTION 100-YRS STORM
            68          PH                   0.78    1.93    4.80    6.40    7.20    9.00   11.00   13.00

            69          KK      P4
            70          KP       1
            71          BA  0.0452
            72          LS       0   83.67
            73          UD   0.084
            74          IN      15
            75          KM        TRIANGULAR DISTRIBUTION 2-YRS STORM
            76          PH                   0.47    1.07    2.25    2.80    3.10    3.90    4.50    5.20
            77          KP       2
            78          KM        TRIANGULAR DISTRIBUTION 10-YRS STORM
            79          PH                   0.56    1.38    3.35    4.40    4.90    5.90    7.00    8.50
            80          KP       3
            81          KM        TRIANGULAR DISTRIBUTION 25-YRS STORM
            82          PH                   0.60    1.52    3.90    5.00    5.70    7.00    8.20   10.00
            83          KP       4
            84          KM        TRIANGULAR DISTRIBUTION 50-YRS STORM
            85          PH                   0.71    1.75    4.40    5.60    6.20    7.90    9.80   11.50
            86          KP       5
            87          KM        TRIANGULAR DISTRIBUTION 100-YRS STORM
            88          PH                   0.78    1.93    4.80    6.40    7.20    9.00   11.00   13.00

            89          KK    COMB
            90          HC       3
            91          ZZ
1
                 SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

   NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

     9          P1
                 .
                 .
    29           .          P2
                 .           .
                 .           .
    49           .           .          P3
                 .           .           .
                 .           .           .
    69           .           .           .          P4
                 .           .           .           .
                 .           .           .           .
    89           .        COMB.......................

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1*****************************************                                    ****************************************
 *                                       *                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                                    *    U.S. ARMY CORPS OF ENGINEERS      *
 *               JUN   1998              *                                    *    HYDROLOGIC ENGINEERING CENTER     *
 *            VERSION 4.1                *                                    *          609 SECOND STREET           *
 *                                       *                                    *       DAVIS, CALIFORNIA 95616        *
 *  RUN DATE   01JUN05  TIME  10:17:29   *                                    *           (916) 756-1104             *
 *                                       *                                    *                                      *
 *****************************************                                    ****************************************

                                  HYDROLOGIC ANALYSIS
                                  PROJECT: ESTANCIAS DE LOS ARTESANOS, LAS PIEDRAS
                                  TRIANGULAR DISTRIBUTION
                                  FREQUENCY OF OCCURRENCE: 2-, 10-, 25-, 50- & 100-YEARS
                                  EXISTING CONDITION

                                                HEC-1 RESULTS FOR EXISTING CONDITION
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```
  7 IO          OUTPUT CONTROL VARIABLES
                      IPRNT           3  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         300  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      2    0  ENDING DATE
                     NDTIME        0055  ENDING TIME
                     ICENT           19  CENTURY MARK

                  COMPUTATION INTERVAL     .08 HOURS
                       TOTAL TIME BASE   24.92 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

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

            **************
            *            *
  9 KK      *        P1  *
            *            *
            **************

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

 10 KP        PLAN  1 FOR STATION       P1
                            TRIANGULAR DISTRIBUTION 2-YRS STORM

              SUBBASIN RUNOFF DATA

 11 BA          SUBBASIN CHARACTERISTICS
                      TAREA         .05  SUBBASIN AREA

                PRECIPITATION DATA

 16 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
                  .47    1.07    2.25    2.80    3.10    3.90    4.50    5.20     .00     .00     .00     .00

                                                   STORM AREA =     .05

 12 LS          SCS LOSS RATE
                      STRTL         .42  INITIAL ABSTRACTION
                     CRVNBR       82.68  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

 13 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .09  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                 7 END-OF-PERIOD ORDINATES
              135.      152.       53.       18.        6.        2.        1.

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

                        HYDROGRAPH AT STATION       P1
                          FOR PLAN 1, RATIO = 1.00

    TOTAL RAINFALL =    5.20, TOTAL LOSS =    1.88, TOTAL EXCESS =    3.32

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+      99.     12.17                  14.          4.          4.           4.
                        (INCHES)     2.758       3.324       3.324        3.324
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                        (AC-FT)        7.          8.          8.           8.

                        CUMULATIVE AREA =     .05 SQ MI

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

                         HYDROGRAPH AT STATION       P1
                           FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+      99.     12.17                  14.          4.          4.           4.
                       (INCHES)     2.758       3.324       3.324        3.324
                        (AC-FT)        7.          8.          8.           8.

                        CUMULATIVE AREA =     .05 SQ MI

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

   17 KP        PLAN  2 FOR STATION       P1
                             TRIANGULAR DISTRIBUTION 10-YRS STORM

                SUBBASIN RUNOFF DATA

   11 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .05  SUBBASIN AREA

                  PRECIPITATION DATA

   19 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
                    .56    1.38    3.35    4.40    4.90    5.90    7.00    8.50     .00     .00     .00     .00

                                                     STORM AREA =     .05

   12 LS          SCS LOSS RATE
                        STRTL         .42  INITIAL ABSTRACTION
                       CRVNBR       82.68  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   13 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .09  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                 7 END-OF-PERIOD ORDINATES
                135.      152.       53.       18.        6.        2.        1.

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

                         HYDROGRAPH AT STATION       P1
                           FOR PLAN 2, RATIO = 1.00

    TOTAL RAINFALL =    8.50, TOTAL LOSS =    2.08, TOTAL EXCESS =    6.42

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     151.     12.08                  25.          8.          8.           8.
                       (INCHES)     4.959       6.417       6.417        6.417
                        (AC-FT)      13.         16.         16.          16.

                        CUMULATIVE AREA =     .05 SQ MI

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

                         HYDROGRAPH AT STATION       P1
                           FOR PLAN 2, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     151.     12.08                  25.          8.          8.           8.
                       (INCHES)     4.959       6.417       6.417        6.417
                        (AC-FT)      13.         16.         16.          16.

                        CUMULATIVE AREA =     .05 SQ MI

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

   20 KP        PLAN  3 FOR STATION       P1
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                                TRIANGULAR DISTRIBUTION 25-YRS STORM

                SUBBASIN RUNOFF DATA

   11 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .05  SUBBASIN AREA

                  PRECIPITATION DATA

   22 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
                    .60    1.52    3.90    5.00    5.70    7.00    8.20   10.00     .00     .00     .00     .00

                                                     STORM AREA =     .05

   12 LS          SCS LOSS RATE
                        STRTL         .42  INITIAL ABSTRACTION
                       CRVNBR       82.68  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   13 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .09  LAG

                                                                 ***

                                                              UNIT HYDROGRAPH
                                                          7 END-OF-PERIOD ORDINATES
                135.      152.       53.       18.        6.        2.        1.

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

                          HYDROGRAPH AT STATION       P1
                            FOR PLAN 3, RATIO = 1.00

     TOTAL RAINFALL =   10.00, TOTAL LOSS =    2.14, TOTAL EXCESS =    7.86

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     173.     12.08                31.         10.         10.          10.
                        (INCHES)    6.060       7.861       7.861        7.861
                         (AC-FT)     15.         20.         20.          20.

                         CUMULATIVE AREA =     .05 SQ MI

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

                          HYDROGRAPH AT STATION       P1
                            FOR PLAN 3, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     173.     12.08                31.         10.         10.          10.
                        (INCHES)    6.060       7.861       7.861        7.861
                         (AC-FT)     15.         20.         20.          20.

                         CUMULATIVE AREA =     .05 SQ MI

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

   23 KP          PLAN  4 FOR STATION       P1
                                TRIANGULAR DISTRIBUTION 50-YRS STORM

                SUBBASIN RUNOFF DATA

   11 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .05  SUBBASIN AREA

                  PRECIPITATION DATA

   25 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
                    .71    1.75    4.40    5.60    6.20    7.90    9.80   11.50     .00     .00     .00     .00

                                                     STORM AREA =     .05

   12 LS          SCS LOSS RATE
                        STRTL         .42  INITIAL ABSTRACTION
                       CRVNBR       82.68  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   13 UD          SCS DIMENSIONLESS UNITGRAPH
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                        TLAG         .09  LAG

                                                                  ***

                                                              UNIT HYDROGRAPH
                                                          7 END-OF-PERIOD ORDINATES
                135.      152.       53.       18.        6.        2.        1.

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

                          HYDROGRAPH AT STATION       P1
                            FOR PLAN 4, RATIO = 1.00

     TOTAL RAINFALL =   11.50, TOTAL LOSS =    2.18, TOTAL EXCESS =    9.32

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                            (CFS)
+     204.     12.08                36.         12.         11.          11.
                         (INCHES)     7.048       9.319       9.319        9.319
                          (AC-FT)       18.         24.         24.          24.

                          CUMULATIVE AREA =     .05 SQ MI

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

                          HYDROGRAPH AT STATION       P1
                            FOR PLAN 4, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                            (CFS)
+     204.     12.08                36.         12.         11.          11.
                         (INCHES)     7.048       9.319       9.319        9.319
                          (AC-FT)       18.         24.         24.          24.

                          CUMULATIVE AREA =     .05 SQ MI

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

   26 KP        PLAN  5 FOR STATION       P1
                                TRIANGULAR DISTRIBUTION 100-YRS STORM

                SUBBASIN RUNOFF DATA

   11 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .05  SUBBASIN AREA

                  PRECIPITATION DATA

   28 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
                    .78    1.93    4.80    6.40    7.20    9.00   11.00   13.00     .00     .00     .00     .00

                                                        STORM AREA =     .05

   12 LS          SCS LOSS RATE
                        STRTL         .42  INITIAL ABSTRACTION
                        CRVNBR       82.68  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   13 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .09  LAG

                                                                  ***

                                                              UNIT HYDROGRAPH
                                                          7 END-OF-PERIOD ORDINATES
                135.      152.       53.       18.        6.        2.        1.

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

                          HYDROGRAPH AT STATION       P1
                            FOR PLAN 5, RATIO = 1.00

     TOTAL RAINFALL =   13.00, TOTAL LOSS =    2.21, TOTAL EXCESS =   10.78

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                            (CFS)
+     228.     12.08                42.         14.         13.          13.
                         (INCHES)     8.172      10.784      10.784       10.784
                          (AC-FT)       21.         27.         27.          27.
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                        CUMULATIVE AREA =     .05 SQ MI

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

                        HYDROGRAPH AT STATION       P1
                          FOR PLAN 5, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     228.     12.08                  42.         14.         13.          13.
                        (INCHES)     8.172      10.784      10.784       10.784
                         (AC-FT)      21.         27.         27.          27.

                        CUMULATIVE AREA =     .05 SQ MI

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

            **************
            *            *
   29 KK    *        P2  *
            *            *
            **************

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

   30 KP        PLAN  1 FOR STATION       P2
                              TRIANGULAR DISTRIBUTION 2-YRS STORM

                SUBBASIN RUNOFF DATA

   31 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .06  SUBBASIN AREA

                  PRECIPITATION DATA

   36 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
                    .47    1.07    2.25    2.80    3.10    3.90    4.50    5.20     .00     .00     .00     .00

                                                   STORM AREA =     .06

   32 LS          SCS LOSS RATE
                        STRTL         .39  INITIAL ABSTRACTION
                       CRVNBR       83.59  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   33 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .11  LAG

                                                          ***
                                                      UNIT HYDROGRAPH
                                                  8 END-OF-PERIOD ORDINATES
                124.      204.       98.       40.       16.        6.        3.        1.

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

                        HYDROGRAPH AT STATION       P2
                          FOR PLAN 1, RATIO = 1.00

    TOTAL RAINFALL =    5.20, TOTAL LOSS =    1.79, TOTAL EXCESS =    3.41

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     135.     12.17                  19.          6.          6.           6.
                        (INCHES)     2.828       3.413       3.413        3.413
                         (AC-FT)      10.         12.         12.          12.

                        CUMULATIVE AREA =     .06 SQ MI

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

                        HYDROGRAPH AT STATION       P2
                          FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     135.     12.17                  19.          6.          6.           6.
                        (INCHES)     2.828       3.413       3.413        3.413
                         (AC-FT)      10.         12.         12.          12.
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                        CUMULATIVE AREA =     .06 SQ MI

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

   37 KP        PLAN  2 FOR STATION       P2
                                TRIANGULAR DISTRIBUTION 10-YRS STORM

                SUBBASIN RUNOFF DATA

   31 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .06  SUBBASIN AREA

                  PRECIPITATION DATA

   39 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
                    .56    1.38    3.35    4.40    4.90    5.90    7.00    8.50     .00     .00     .00     .00

                                                     STORM AREA =     .06

   32 LS          SCS LOSS RATE
                        STRTL         .39  INITIAL ABSTRACTION
                       CRVNBR       83.59  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   33 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .11  LAG

                                                                 ***

                                                          UNIT HYDROGRAPH
                                                     8 END-OF-PERIOD ORDINATES
                124.      204.       98.       40.       16.        6.        3.        1.

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

                         HYDROGRAPH AT STATION       P2
                           FOR PLAN 2, RATIO = 1.00

     TOTAL RAINFALL =    8.50, TOTAL LOSS =    1.97, TOTAL EXCESS =    6.53

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     198.     12.17                   34.         11.         11.          11.
                       (INCHES)     5.031       6.526       6.526        6.526
                        (AC-FT)       17.         22.         22.          22.

                        CUMULATIVE AREA =     .06 SQ MI

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

                         HYDROGRAPH AT STATION       P2
                           FOR PLAN 2, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     198.     12.17                   34.         11.         11.          11.
                       (INCHES)     5.031       6.526       6.526        6.526
                        (AC-FT)       17.         22.         22.          22.

                        CUMULATIVE AREA =     .06 SQ MI

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

   40 KP        PLAN  3 FOR STATION       P2
                                TRIANGULAR DISTRIBUTION 25-YRS STORM

                SUBBASIN RUNOFF DATA

   31 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .06  SUBBASIN AREA

                  PRECIPITATION DATA

   42 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
                    .60    1.52    3.90    5.00    5.70    7.00    8.20   10.00     .00     .00     .00     .00

                                                     STORM AREA =     .06

   32 LS          SCS LOSS RATE
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```
                    STRTL         .39  INITIAL ABSTRACTION
                   CRVNBR       83.59  CURVE NUMBER
                    RTIMP         .00  PERCENT IMPERVIOUS AREA

   33 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG         .11  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                 8 END-OF-PERIOD ORDINATES
              124.      204.       98.       40.       16.        6.        3.        1.

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

                       HYDROGRAPH AT STATION       P2
                         FOR PLAN 3, RATIO = 1.00

    TOTAL RAINFALL =   10.00, TOTAL LOSS =    2.02, TOTAL EXCESS =    7.98

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                       (CFS)
+     224.     12.17                 42.         14.         13.          13.
                     (INCHES)     6.134       7.976       7.976        7.976
                      (AC-FT)       21.         27.         27.          27.

                      CUMULATIVE AREA =     .06 SQ MI

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

                       HYDROGRAPH AT STATION       P2
                         FOR PLAN 3, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                       (CFS)
+     224.     12.17                 42.         14.         13.          13.
                     (INCHES)     6.134       7.976       7.976        7.976
                      (AC-FT)       21.         27.         27.          27.

                      CUMULATIVE AREA =     .06 SQ MI

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

   43 KP        PLAN  4 FOR STATION       P2
                            TRIANGULAR DISTRIBUTION 50-YRS STORM

              SUBBASIN RUNOFF DATA

   31 BA          SUBBASIN CHARACTERISTICS
                     TAREA         .06  SUBBASIN AREA

                  PRECIPITATION DATA

   45 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
                    .71    1.75    4.40    5.60    6.20    7.90    9.80   11.50     .00     .00     .00     .00

                                                   STORM AREA =     .06

   32 LS          SCS LOSS RATE
                     STRTL         .39  INITIAL ABSTRACTION
                   CRVNBR       83.59  CURVE NUMBER
                    RTIMP         .00  PERCENT IMPERVIOUS AREA

   33 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG         .11  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                 8 END-OF-PERIOD ORDINATES
              124.      204.       98.       40.       16.        6.        3.        1.

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

                       HYDROGRAPH AT STATION       P2
                         FOR PLAN 4, RATIO = 1.00

    TOTAL RAINFALL =   11.50, TOTAL LOSS =    2.06, TOTAL EXCESS =    9.44

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
```

```
+   (CFS)       (HR)
                          (CFS)
+     264.     12.17                  49.         16.         15.          15.
                       (INCHES)     7.118       9.438       9.438        9.438
                        (AC-FT)       24.         32.         32.          32.

                        CUMULATIVE AREA =     .06 SQ MI

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

                          HYDROGRAPH AT STATION       P2
                            FOR PLAN 4, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     264.     12.17                  49.         16.         15.          15.
                       (INCHES)     7.118       9.438       9.438        9.438
                        (AC-FT)       24.         32.         32.          32.

                        CUMULATIVE AREA =     .06 SQ MI

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

   46 KP        PLAN  5 FOR STATION       P2
                             TRIANGULAR DISTRIBUTION 100-YRS STORM

                SUBBASIN RUNOFF DATA

   31 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .06  SUBBASIN AREA

                  PRECIPITATION DATA

   48 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
                    .78    1.93    4.80    6.40    7.20    9.00   11.00   13.00     .00     .00     .00     .00

                                                   STORM AREA =     .06

   32 LS          SCS LOSS RATE
                        STRTL         .39  INITIAL ABSTRACTION
                       CRVNBR       83.59  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   33 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .11  LAG

                                                          ***

                                                      UNIT HYDROGRAPH
                                                  8 END-OF-PERIOD ORDINATES
                124.      204.       98.       40.       16.        6.        3.        1.

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

                          HYDROGRAPH AT STATION       P2
                            FOR PLAN 5, RATIO = 1.00

     TOTAL RAINFALL =   13.00, TOTAL LOSS =    2.09, TOTAL EXCESS =   10.91

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     294.     12.17                  56.         19.         18.          18.
                       (INCHES)     8.242      10.908      10.908       10.908
                        (AC-FT)       28.         37.         37.          37.

                        CUMULATIVE AREA =     .06 SQ MI

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

                          HYDROGRAPH AT STATION       P2
                            FOR PLAN 5, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     294.     12.17                  56.         19.         18.          18.
                       (INCHES)     8.242      10.908      10.908       10.908
                        (AC-FT)       28.         37.         37.          37.

                        CUMULATIVE AREA =     .06 SQ MI
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
   49 KK    *        P3  *
            *            *
            **************

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

   50 KP        PLAN  1 FOR STATION       P3
                                TRIANGULAR DISTRIBUTION 2-YRS STORM

                SUBBASIN RUNOFF DATA

   51 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .03  SUBBASIN AREA

                  PRECIPITATION DATA

   56 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
                    .47    1.07    2.25    2.80    3.10    3.90    4.50    5.20     .00     .00     .00     .00

                                                   STORM AREA =     .03

   52 LS          SCS LOSS RATE
                        STRTL         .39  INITIAL ABSTRACTION
                       CRVNBR       83.66  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   53 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .05  LAG

                                                                  ***

                                                              UNIT HYDROGRAPH
                                                          5 END-OF-PERIOD ORDINATES
                136.       62.       15.        4.        1.

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

                          HYDROGRAPH AT STATION       P3
                            FOR PLAN 1, RATIO = 1.00

     TOTAL RAINFALL =    5.20, TOTAL LOSS =    1.78, TOTAL EXCESS =    3.42

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+      70.     12.08                    9.          3.          3.           3.
                         (INCHES)     2.834       3.420       3.420        3.420
                          (AC-FT)        4.          5.          5.           5.

                          CUMULATIVE AREA =     .03 SQ MI


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

                          HYDROGRAPH AT STATION       P3
                            FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+      70.     12.08                    9.          3.          3.           3.
                         (INCHES)     2.834       3.420       3.420        3.420
                          (AC-FT)        4.          5.          5.           5.

                          CUMULATIVE AREA =     .03 SQ MI


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

   57 KP        PLAN  2 FOR STATION       P3
                                TRIANGULAR DISTRIBUTION 10-YRS STORM

                SUBBASIN RUNOFF DATA

   51 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .03  SUBBASIN AREA

                  PRECIPITATION DATA
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  59 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
                   .56    1.38    3.35    4.40    4.90    5.90    7.00    8.50     .00     .00     .00     .00

                                                STORM AREA =     .03

  52 LS          SCS LOSS RATE
                       STRTL         .39  INITIAL ABSTRACTION
                      CRVNBR       83.66  CURVE NUMBER
                       RTIMP         .00  PERCENT IMPERVIOUS AREA

  53 UD          SCS DIMENSIONLESS UNITGRAPH
                        TLAG         .05  LAG

                                                                  ***

                                                            UNIT HYDROGRAPH
                                                     5 END-OF-PERIOD ORDINATES
               136.       62.       15.        4.        1.

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

                        HYDROGRAPH AT STATION       P3
                          FOR PLAN 2, RATIO = 1.00

    TOTAL RAINFALL =    8.50, TOTAL LOSS =    1.96, TOTAL EXCESS =    6.54

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                       6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     100.     12.08                    15.          5.          5.           5.
                        (INCHES)     5.037       6.535       6.535        6.535
                         (AC-FT)        8.         10.         10.          10.

                        CUMULATIVE AREA =     .03 SQ MI


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

                        HYDROGRAPH AT STATION       P3
                          FOR PLAN 2, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                       6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     100.     12.08                    15.          5.          5.           5.
                        (INCHES)     5.037       6.535       6.535        6.535
                         (AC-FT)        8.         10.         10.          10.

                        CUMULATIVE AREA =     .03 SQ MI


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

  60 KP        PLAN  3 FOR STATION       P3
                              TRIANGULAR DISTRIBUTION 25-YRS STORM

               SUBBASIN RUNOFF DATA

  51 BA          SUBBASIN CHARACTERISTICS
                       TAREA         .03  SUBBASIN AREA

                 PRECIPITATION DATA

  62 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
                   .60    1.52    3.90    5.00    5.70    7.00    8.20   10.00     .00     .00     .00     .00

                                                STORM AREA =     .03

  52 LS          SCS LOSS RATE
                       STRTL         .39  INITIAL ABSTRACTION
                      CRVNBR       83.66  CURVE NUMBER
                       RTIMP         .00  PERCENT IMPERVIOUS AREA

  53 UD          SCS DIMENSIONLESS UNITGRAPH
                        TLAG         .05  LAG

                                                                  ***

                                                            UNIT HYDROGRAPH
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                                                    5 END-OF-PERIOD ORDINATES
              136.       62.       15.        4.        1.

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

                        HYDROGRAPH AT STATION       P3
                          FOR PLAN 3, RATIO = 1.00

    TOTAL RAINFALL =   10.00, TOTAL LOSS =    2.01, TOTAL EXCESS =    7.99

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     113.     12.08                  19.          6.          6.           6.
                       (INCHES)     6.141       7.986       7.986        7.986
                        (AC-FT)       9.         12.         12.          12.

                        CUMULATIVE AREA =     .03 SQ MI


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

                        HYDROGRAPH AT STATION       P3
                          FOR PLAN 3, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     113.     12.08                  19.          6.          6.           6.
                       (INCHES)     6.141       7.986       7.986        7.986
                        (AC-FT)       9.         12.         12.          12.

                        CUMULATIVE AREA =     .03 SQ MI


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

   63 KP        PLAN  4 FOR STATION       P3
                                TRIANGULAR DISTRIBUTION 50-YRS STORM

                SUBBASIN RUNOFF DATA

   51 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .03  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
                    .71    1.75    4.40    5.60    6.20    7.90    9.80   11.50     .00     .00     .00     .00

                                                     STORM AREA =     .03

   52 LS          SCS LOSS RATE
                        STRTL         .39  INITIAL ABSTRACTION
                       CRVNBR       83.66  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   53 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .05  LAG

                                                          ***

                                                      UNIT HYDROGRAPH
                                                    5 END-OF-PERIOD ORDINATES
              136.       62.       15.        4.        1.

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

                        HYDROGRAPH AT STATION       P3
                          FOR PLAN 4, RATIO = 1.00

    TOTAL RAINFALL =   11.50, TOTAL LOSS =    2.05, TOTAL EXCESS =    9.45

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     134.     12.08                  22.          7.          7.           7.
                       (INCHES)     7.125       9.448       9.448        9.448
                        (AC-FT)      11.         14.         14.          14.

                        CUMULATIVE AREA =     .03 SQ MI
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      ***            ***            ***            ***            ***

                        HYDROGRAPH AT STATION       P3
                          FOR PLAN 4, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     134.     12.08                  22.          7.          7.           7.
                        (INCHES)     7.125       9.448       9.448        9.448
                         (AC-FT)      11.         14.         14.          14.

                        CUMULATIVE AREA =     .03 SQ MI


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

   66 KP        PLAN  5 FOR STATION       P3
                              TRIANGULAR DISTRIBUTION 100-YRS STORM

                SUBBASIN RUNOFF DATA

   51 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .03  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
                    .78    1.93    4.80    6.40    7.20    9.00   11.00   13.00     .00     .00     .00     .00

                                                     STORM AREA =     .03

   52 LS          SCS LOSS RATE
                        STRTL         .39  INITIAL ABSTRACTION
                       CRVNBR       83.66  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   53 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .05  LAG

                                                            ***

                                                        UNIT HYDROGRAPH
                                                    5 END-OF-PERIOD ORDINATES
                136.       62.       15.        4.        1.

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

                        HYDROGRAPH AT STATION       P3
                          FOR PLAN 5, RATIO = 1.00

    TOTAL RAINFALL =   13.00, TOTAL LOSS =    2.08, TOTAL EXCESS =   10.92

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     149.     12.08                  25.          8.          8.           8.
                        (INCHES)     8.249      10.918      10.918       10.918
                         (AC-FT)      12.         16.         16.          16.

                        CUMULATIVE AREA =     .03 SQ MI


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

                        HYDROGRAPH AT STATION       P3
                          FOR PLAN 5, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     149.     12.08                  25.          8.          8.           8.
                        (INCHES)     8.249      10.918      10.918       10.918
                         (AC-FT)      12.         16.         16.          16.

                        CUMULATIVE AREA =     .03 SQ MI
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
   69 KK    *        P4  *
            *            *
            **************


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

   70 KP        PLAN  1 FOR STATION       P4
                                TRIANGULAR DISTRIBUTION 2-YRS STORM

                SUBBASIN RUNOFF DATA

   71 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .05  SUBBASIN AREA

                  PRECIPITATION DATA

   76 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
                    .47    1.07    2.25    2.80    3.10    3.90    4.50    5.20     .00     .00     .00     .00

                                                     STORM AREA =     .05

   72 LS          SCS LOSS RATE
                        STRTL         .39  INITIAL ABSTRACTION
                       CRVNBR       83.67  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   73 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .08  LAG

                                                                 ***

                                                            UNIT HYDROGRAPH
                                                        7 END-OF-PERIOD ORDINATES
                131.      144.       49.       17.        6.        2.        1.

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

                         HYDROGRAPH AT STATION       P4
                           FOR PLAN 1, RATIO = 1.00

     TOTAL RAINFALL =    5.20, TOTAL LOSS =    1.78, TOTAL EXCESS =    3.42

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+      97.     12.08                   14.          4.          4.           4.
                        (INCHES)     2.834       3.421       3.421        3.421
                         (AC-FT)        7.          8.          8.           8.

                         CUMULATIVE AREA =     .05 SQ MI


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

                         HYDROGRAPH AT STATION       P4
                           FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+      97.     12.08                   14.          4.          4.           4.
                        (INCHES)     2.834       3.421       3.421        3.421
                         (AC-FT)        7.          8.          8.           8.

                         CUMULATIVE AREA =     .05 SQ MI


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

   77 KP        PLAN  2 FOR STATION       P4
                                TRIANGULAR DISTRIBUTION 10-YRS STORM

                SUBBASIN RUNOFF DATA

   71 BA          SUBBASIN CHARACTERISTICS
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                    TAREA         .05  SUBBASIN AREA

                PRECIPITATION DATA

  79 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
                  .56    1.38    3.35    4.40    4.90    5.90    7.00    8.50     .00     .00     .00     .00

                                                   STORM AREA =     .05

  72 LS         SCS LOSS RATE
                      STRTL         .39  INITIAL ABSTRACTION
                     CRVNBR       83.67  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

  73 UD         SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .08  LAG

                                                          ***

                                                      UNIT HYDROGRAPH
                                                  7 END-OF-PERIOD ORDINATES
             131.      144.       49.       17.        6.        2.        1.

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

                       HYDROGRAPH AT STATION       P4
                         FOR PLAN 2, RATIO = 1.00

    TOTAL RAINFALL =    8.50, TOTAL LOSS =    1.96, TOTAL EXCESS =    6.54

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    146.     12.08                   24.          8.          8.           8.
                        (INCHES)     5.037       6.536       6.536        6.536
                         (AC-FT)      12.         16.         16.          16.

                       CUMULATIVE AREA =     .05 SQ MI


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

                       HYDROGRAPH AT STATION       P4
                         FOR PLAN 2, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    146.     12.08                   24.          8.          8.           8.
                        (INCHES)     5.037       6.536       6.536        6.536
                         (AC-FT)      12.         16.         16.          16.

                       CUMULATIVE AREA =     .05 SQ MI


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

  80 KP        PLAN  3 FOR STATION       P4
                            TRIANGULAR DISTRIBUTION 25-YRS STORM

               SUBBASIN RUNOFF DATA

  71 BA         SUBBASIN CHARACTERISTICS
                    TAREA         .05  SUBBASIN AREA

                PRECIPITATION DATA

  82 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
                  .60    1.52    3.90    5.00    5.70    7.00    8.20   10.00     .00     .00     .00     .00

                                                   STORM AREA =     .05

  72 LS         SCS LOSS RATE
                      STRTL         .39  INITIAL ABSTRACTION
                     CRVNBR       83.67  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

  73 UD         SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .08  LAG
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                                                  ***

                                                  UNIT HYDROGRAPH
                                              7 END-OF-PERIOD ORDINATES
              131.      144.       49.       17.        6.        2.        1.

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

                        HYDROGRAPH AT STATION       P4
                          FOR PLAN 3, RATIO = 1.00

    TOTAL RAINFALL =   10.00, TOTAL LOSS =    2.01, TOTAL EXCESS =    7.99

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     167.     12.08                30.         10.          9.           9.
                       (INCHES)    6.141       7.987       7.987        7.987
                        (AC-FT)     15.         19.         19.          19.

                       CUMULATIVE AREA =     .05 SQ MI


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

                        HYDROGRAPH AT STATION       P4
                          FOR PLAN 3, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     167.     12.08                30.         10.          9.           9.
                       (INCHES)    6.141       7.987       7.987        7.987
                        (AC-FT)     15.         19.         19.          19.

                       CUMULATIVE AREA =     .05 SQ MI


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

   83 KP        PLAN  4 FOR STATION       P4
                             TRIANGULAR DISTRIBUTION 50-YRS STORM

                SUBBASIN RUNOFF DATA

   71 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .05  SUBBASIN AREA

                  PRECIPITATION DATA

   85 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
                    .71    1.75    4.40    5.60    6.20    7.90    9.80   11.50     .00     .00     .00     .00

                                                   STORM AREA =     .05

   72 LS          SCS LOSS RATE
                        STRTL         .39  INITIAL ABSTRACTION
                       CRVNBR       83.67  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   73 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .08  LAG

                                                  ***

                                                  UNIT HYDROGRAPH
                                              7 END-OF-PERIOD ORDINATES
              131.      144.       49.       17.        6.        2.        1.

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

                        HYDROGRAPH AT STATION       P4
                          FOR PLAN 4, RATIO = 1.00

    TOTAL RAINFALL =   11.50, TOTAL LOSS =    2.05, TOTAL EXCESS =    9.45

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     197.     12.08                35.         11.         11.          11.
                       (INCHES)    7.125       9.449       9.449        9.449
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                        (AC-FT)       17.         23.         23.          23.

                        CUMULATIVE AREA =     .05 SQ MI


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

                         HYDROGRAPH AT STATION       P4
                           FOR PLAN 4, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     197.     12.08                  35.         11.         11.          11.
                       (INCHES)     7.125       9.449       9.449        9.449
                        (AC-FT)       17.         23.         23.          23.

                        CUMULATIVE AREA =     .05 SQ MI


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

   86 KP        PLAN  5 FOR STATION       P4
                                TRIANGULAR DISTRIBUTION 100-YRS STORM

                SUBBASIN RUNOFF DATA

   71 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .05  SUBBASIN AREA

                  PRECIPITATION DATA

   88 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
                    .78    1.93    4.80    6.40    7.20    9.00   11.00   13.00     .00     .00     .00     .00

                                                     STORM AREA =     .05

   72 LS          SCS LOSS RATE
                        STRTL         .39  INITIAL ABSTRACTION
                       CRVNBR       83.67  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   73 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .08  LAG

                                                                ***

                                                         UNIT HYDROGRAPH
                                                    7 END-OF-PERIOD ORDINATES
                131.      144.       49.       17.        6.        2.        1.

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

                         HYDROGRAPH AT STATION       P4
                           FOR PLAN 5, RATIO = 1.00

     TOTAL RAINFALL =   13.00, TOTAL LOSS =    2.08, TOTAL EXCESS =   10.92

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     219.     12.08                  40.         13.         13.          13.
                       (INCHES)     8.249      10.919      10.919       10.919
                        (AC-FT)       20.         26.         26.          26.

                        CUMULATIVE AREA =     .05 SQ MI


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

                         HYDROGRAPH AT STATION       P4
                           FOR PLAN 5, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     219.     12.08                  40.         13.         13.          13.
                       (INCHES)     8.249      10.919      10.919       10.919
                        (AC-FT)       20.         26.         26.          26.

                        CUMULATIVE AREA =     .05 SQ MI
```

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


            **************
            *            *
   89 KK    *      COMB  *
            *            *
            **************

   90 HC          HYDROGRAPH COMBINATION
                       ICOMP           3  NUMBER OF HYDROGRAPHS TO COMBINE

                                                                  ***

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

                          HYDROGRAPH AT STATION     COMB
                            FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                            (CFS)
+     288.     12.08                42.         13.         12.          12.
                         (INCHES)    2.831       3.417       3.417        3.417
                          (AC-FT)      21.         25.         25.          25.

                          CUMULATIVE AREA =     .14 SQ MI


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

                          HYDROGRAPH AT STATION     COMB
                            FOR PLAN 2, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                            (CFS)
+     436.     12.08                74.         24.         23.          23.
                         (INCHES)    5.034       6.531       6.531        6.531
                          (AC-FT)      37.         48.         48.          48.

                          CUMULATIVE AREA =     .14 SQ MI


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

                          HYDROGRAPH AT STATION     COMB
                            FOR PLAN 3, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                            (CFS)
+     500.     12.08                90.         29.         28.          28.
                         (INCHES)    6.138       7.982       7.982        7.982
                          (AC-FT)      45.         58.         58.          58.

                          CUMULATIVE AREA =     .14 SQ MI


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

                          HYDROGRAPH AT STATION     COMB
                            FOR PLAN 4, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                            (CFS)
+     587.     12.08               105.         35.         33.          33.
                         (INCHES)    7.121       9.444       9.444        9.444
                          (AC-FT)      52.         69.         69.          69.

                          CUMULATIVE AREA =     .14 SQ MI


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

                          HYDROGRAPH AT STATION     COMB
                            FOR PLAN 5, RATIO = 1.00
```

```
  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     655.     12.08                 121.         40.         39.          39.
                        (INCHES)    8.246      10.913      10.913       10.913
                         (AC-FT)     60.         80.         80.          80.

                         CUMULATIVE AREA =     .14 SQ MI


               PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
                                 FLOWS IN CUBIC FEET PER SECOND,  AREA IN SQUARE MILES
                                              TIME TO PEAK IN HOURS


                                                                    RATIOS APPLIED TO FLOWS
 OPERATION       STATION     AREA    PLAN            RATIO 1
                                                        1.00

 HYDROGRAPH AT
+                    P1       .05     1   FLOW          99.
                                          TIME        12.17
                                        2   FLOW         151.
                                          TIME        12.08
                                        3   FLOW         173.
                                          TIME        12.08
                                        4   FLOW         204.
                                          TIME        12.08
                                        5   FLOW         228.
                                          TIME        12.08

 HYDROGRAPH AT
+                    P2       .06     1   FLOW         135.
                                          TIME        12.17
                                        2   FLOW         198.
                                          TIME        12.17
                                        3   FLOW         224.
                                          TIME        12.17
                                        4   FLOW         264.
                                          TIME        12.17
                                        5   FLOW         294.
                                          TIME        12.17

 HYDROGRAPH AT
+                    P3       .03     1   FLOW          70.
                                          TIME        12.08
                                        2   FLOW         100.
                                          TIME        12.08
                                        3   FLOW         113.
                                          TIME        12.08
                                        4   FLOW         134.
                                          TIME        12.08
                                        5   FLOW         149.
                                          TIME        12.08

 HYDROGRAPH AT
+                    P4       .05     1   FLOW          97.
                                          TIME        12.08
                                        2   FLOW         146.
                                          TIME        12.08
                                        3   FLOW         167.
                                          TIME        12.08
                                        4   FLOW         197.
                                          TIME        12.08
                                        5   FLOW         219.
                                          TIME        12.08

  3 COMBINED AT
+                  COMB       .14     1   FLOW         288.
                                          TIME        12.08
                                        2   FLOW         436.
                                          TIME        12.08
                                        3   FLOW         500.
                                          TIME        12.08
                                        4   FLOW         587.
                                          TIME        12.08
                                        5   FLOW         655.
                                          TIME        12.08


 *** NORMAL END OF HEC-1 ***
```

APPENDIX C

HEC-1 RESULTS FOR PROPOSED CONDITION

```
1****************************************                                                    ****************************************
 *                                      *                                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                                    *    U.S. ARMY CORPS OF ENGINEERS      *
 *               JUN   1998             *                                                    *    HYDROLOGIC ENGINEERING CENTER     *
 *            VERSION 4.1               *                                                    *          609 SECOND STREET           *
 *                                      *                                                    *       DAVIS, CALIFORNIA 95616        *
 *  RUN DATE   02JUN05  TIME  09:54:15  *                                                    *           (916) 756-1104             *
 *                                      *                                                    *                                      *
 ****************************************                                                    ****************************************


                                                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


          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

1                                                   HEC-1 INPUT                                                   PAGE  1

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

           1           ID        HYDROLOGIC ANALYSIS
           2           ID        PROJECT: ESTANCIAS DE LOS ARTESANOS, LAS PIEDRAS
           3           ID        TRIANGULAR DISTRIBUTION
           4           ID        FREQUENCY OF OCCURRENCE: 2-, 10- , 25-, 50- & 100-YEARS
           5           ID        PROPOSED CONDITION
           6           IT       5                     300
           7           IO       3
           8           JP       5
                       *D

           9           KK      P1
          10           KP       1
          11           BA  0.0375
          12           LS       0      95
          13           UD   0.105
          14           IN      15
          15           KM        TRIANGULAR DISTRIBUTION 2-YRS STORM
          16           PH                  0.47    1.07    2.25    2.80    3.10    3.90    4.50    5.20
          17           KP       2
          18           KM        TRIANGULAR DISTRIBUTION 10-YRS STORM
          19           PH                  0.56    1.38    3.35    4.40    4.90    5.90    7.00    8.50
          20           KP       3
          21           KM        TRIANGULAR DISTRIBUTION 25-YRS STORM
          22           PH                  0.60    1.52    3.90    5.00    5.70    7.00    8.20   10.00
          23           KP       4
          24           KM        TRIANGULAR DISTRIBUTION 50-YRS STORM
          25           PH                  0.71    1.75    4.40    5.60    6.20    7.90    9.80   11.50
          26           KP       5
          27           KM        TRIANGULAR DISTRIBUTION 100-YRS STORM
          28           PH                  0.78    1.93    4.80    6.40    7.20    9.00   11.00   13.00

          29           KK      P2
          30           KP       1
          31           BA  0.0734
          32           LS       0      95
          33           UD   0.126
          34           IN      15
          35           KM        TRIANGULAR DISTRIBUTION 2-YRS STORM
          36           PH                  0.47    1.07    2.25    2.80    3.10    3.90    4.50    5.20
          37           KP       2
          38           KM        TRIANGULAR DISTRIBUTION 10-YRS STORM
          39           PH                  0.56    1.38    3.35    4.40    4.90    5.90    7.00    8.50
          40           KP       3
          41           KM        TRIANGULAR DISTRIBUTION 25-YRS STORM
          42           PH                  0.60    1.52    3.90    5.00    5.70    7.00    8.20   10.00
          43           KP       4
          44           KM        TRIANGULAR DISTRIBUTION 50-YRS STORM
          45           PH                  0.71    1.75    4.40    5.60    6.20    7.90    9.80   11.50
          46           KP       5
          47           KM        TRIANGULAR DISTRIBUTION 100-YRS STORM
          48           PH                  0.78    1.93    4.80    6.40    7.20    9.00   11.00   13.00
```

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


            49          KK      P3
            50          KP       1
            51          BA  0.0283
            52          LS       0      95
            53          UD   0.075
            54          IN      15
            55          KM        TRIANGULAR DISTRIBUTION 2-YRS STORM
            56          PH                   0.47    1.07    2.25    2.80    3.10    3.90    4.50    5.20
            57          KP       2
            58          KM        TRIANGULAR DISTRIBUTION 10-YRS STORM
            59          PH                   0.56    1.38    3.35    4.40    4.90    5.90    7.00    8.50
            60          KP       3
            61          KM        TRIANGULAR DISTRIBUTION 25-YRS STORM
            62          PH                   0.60    1.52    3.90    5.00    5.70    7.00    8.20   10.00
            63          KP       4
            64          KM        TRIANGULAR DISTRIBUTION 50-YRS STORM
            65          PH                   0.71    1.75    4.40    5.60    6.20    7.90    9.80   11.50
            66          KP       5
            67          KM        TRIANGULAR DISTRIBUTION 100-YRS STORM
            68          PH                   0.78    1.93    4.80    6.40    7.20    9.00   11.00   13.00

            69          KK      P4
            70          KP       1
            71          BA  0.0452
            72          LS       0      95
            73          UD   0.103
            74          IN      15
            75          KM        TRIANGULAR DISTRIBUTION 2-YRS STORM
            76          PH                   0.47    1.07    2.25    2.80    3.10    3.90    4.50    5.20
            77          KP       2
            78          KM        TRIANGULAR DISTRIBUTION 10-YRS STORM
            79          PH                   0.56    1.38    3.35    4.40    4.90    5.90    7.00    8.50
            80          KP       3
            81          KM        TRIANGULAR DISTRIBUTION 25-YRS STORM
            82          PH                   0.60    1.52    3.90    5.00    5.70    7.00    8.20   10.00
            83          KP       4
            84          KM        TRIANGULAR DISTRIBUTION 50-YRS STORM
            85          PH                   0.71    1.75    4.40    5.60    6.20    7.90    9.80   11.50
            86          KP       5
            87          KM        TRIANGULAR DISTRIBUTION 100-YRS STORM
            88          PH                   0.78    1.93    4.80    6.40    7.20    9.00   11.00   13.00

            89          KK    COMB
            90          HC       3
            91          ZZ
1
                 SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

   NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

     9          P1
                 .
                 .
    29           .          P2
                 .           .
                 .           .
    49           .           .          P3
                 .           .           .
                 .           .           .
    69           .           .           .          P4
                 .           .           .           .
                 .           .           .           .
    89           .        COMB.......................

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1*****************************************                                    ****************************************
 *                                       *                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                                    *    U.S. ARMY CORPS OF ENGINEERS      *
 *               JUN   1998              *                                    *    HYDROLOGIC ENGINEERING CENTER     *
 *            VERSION 4.1                *                                    *          609 SECOND STREET           *
 *                                       *                                    *       DAVIS, CALIFORNIA 95616        *
 *  RUN DATE   02JUN05  TIME  09:54:15   *                                    *           (916) 756-1104             *
 *                                       *                                    *                                      *
 *****************************************                                    ****************************************
```

HYDROLOGIC ANALYSIS

HEC-1 RESULTS FOR PROPOSED CONDITION

```
                              PROJECT: ESTANCIAS DE LOS ARTESANOS, LAS PIEDRAS
                              TRIANGULAR DISTRIBUTION
                              FREQUENCY OF OCCURRENCE: 2-, 10- , 25-, 50- & 100-YEARS
                              PROPOSED CONDITION

   7 IO          OUTPUT CONTROL VARIABLES
                       IPRNT           3  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         300  NUMBER OF HYDROGRAPH ORDINATES
                      NDDATE      2    0  ENDING DATE
                      NDTIME        0055  ENDING TIME
                      ICENT           19  CENTURY MARK

                  COMPUTATION INTERVAL     .08 HOURS
                       TOTAL TIME BASE   24.92 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


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


            **************
            *            *
   9 KK     *        P1  *
            *            *
            **************


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

  10 KP        PLAN  1 FOR STATION       P1
                              TRIANGULAR DISTRIBUTION 2-YRS STORM

               SUBBASIN RUNOFF DATA

  11 BA          SUBBASIN CHARACTERISTICS
                       TAREA         .04  SUBBASIN AREA

                 PRECIPITATION DATA

  16 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
                   .47    1.07    2.25    2.80    3.10    3.90    4.50    5.20     .00     .00     .00     .00

                                                   STORM AREA =     .04

  12 LS          SCS LOSS RATE
                       STRTL         .11  INITIAL ABSTRACTION
                      CRVNBR       95.00  CURVE NUMBER
                       RTIMP         .00  PERCENT IMPERVIOUS AREA

  13 UD          SCS DIMENSIONLESS UNITGRAPH
                        TLAG         .10  LAG

                                                                ***

                                                          UNIT HYDROGRAPH
                                                      8 END-OF-PERIOD ORDINATES
                75.      121.       57.       23.        9.        4.        1.        1.

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

                        HYDROGRAPH AT STATION       P1
                          FOR PLAN 1, RATIO = 1.00
```

```
     TOTAL RAINFALL =    5.20, TOTAL LOSS =     .58, TOTAL EXCESS =    4.62

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+      99.     12.17                  15.          5.          4.           4.
                        (INCHES)     3.691       4.617       4.617        4.617
                         (AC-FT)       7.          9.          9.           9.

                         CUMULATIVE AREA =     .04 SQ MI


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

                           HYDROGRAPH AT STATION       P1
                             FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+      99.     12.17                  15.          5.          4.           4.
                        (INCHES)     3.691       4.617       4.617        4.617
                         (AC-FT)       7.          9.          9.           9.

                         CUMULATIVE AREA =     .04 SQ MI


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

   17 KP        PLAN  2 FOR STATION       P1
                                TRIANGULAR DISTRIBUTION 10-YRS STORM

                SUBBASIN RUNOFF DATA

   11 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .04  SUBBASIN AREA

                  PRECIPITATION DATA

   19 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
                    .56    1.38    3.35    4.40    4.90    5.90    7.00    8.50     .00     .00     .00     .00

                                                     STORM AREA =     .04

   12 LS          SCS LOSS RATE
                        STRTL         .11  INITIAL ABSTRACTION
                       CRVNBR       95.00  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   13 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .10  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                 8 END-OF-PERIOD ORDINATES
                75.      121.       57.       23.        9.        4.        1.        1.

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

                           HYDROGRAPH AT STATION       P1
                             FOR PLAN 2, RATIO = 1.00

     TOTAL RAINFALL =    8.50, TOTAL LOSS =     .60, TOTAL EXCESS =    7.90

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     130.     12.17                  23.          8.          8.           8.
                        (INCHES)     5.773       7.899       7.899        7.899
                         (AC-FT)      12.         16.         16.          16.

                         CUMULATIVE AREA =     .04 SQ MI


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

                           HYDROGRAPH AT STATION       P1
                             FOR PLAN 2, RATIO = 1.00
```

```
  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     130.     12.17                  23.          8.          8.           8.
                        (INCHES)     5.773       7.899       7.899        7.899
                         (AC-FT)      12.         16.         16.          16.

                         CUMULATIVE AREA =     .04 SQ MI


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

   20 KP        PLAN  3 FOR STATION       P1
                                TRIANGULAR DISTRIBUTION 25-YRS STORM

                SUBBASIN RUNOFF DATA

   11 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .04  SUBBASIN AREA

                  PRECIPITATION DATA

   22 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
                    .60    1.52    3.90    5.00    5.70    7.00    8.20   10.00     .00     .00     .00     .00

                                                   STORM AREA =     .04

   12 LS          SCS LOSS RATE
                        STRTL         .11  INITIAL ABSTRACTION
                       CRVNBR       95.00  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   13 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .10  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                 8 END-OF-PERIOD ORDINATES
                 75.      121.       57.       23.        9.        4.        1.        1.

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

                        HYDROGRAPH AT STATION       P1
                          FOR PLAN 3, RATIO = 1.00

    TOTAL RAINFALL =   10.00, TOTAL LOSS =     .60, TOTAL EXCESS =    9.39

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     144.     12.17                  28.          9.          9.           9.
                        (INCHES)     6.879       9.395       9.395        9.395
                         (AC-FT)      14.         19.         19.          19.

                         CUMULATIVE AREA =     .04 SQ MI


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

                        HYDROGRAPH AT STATION       P1
                          FOR PLAN 3, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     144.     12.17                  28.          9.          9.           9.
                        (INCHES)     6.879       9.395       9.395        9.395
                         (AC-FT)      14.         19.         19.          19.

                         CUMULATIVE AREA =     .04 SQ MI


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

   23 KP        PLAN  4 FOR STATION       P1
                                TRIANGULAR DISTRIBUTION 50-YRS STORM

                SUBBASIN RUNOFF DATA
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  11 BA          SUBBASIN CHARACTERISTICS
                       TAREA         .04  SUBBASIN AREA

                 PRECIPITATION DATA

  25 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
                   .71    1.75    4.40    5.60    6.20    7.90    9.80   11.50     .00     .00     .00     .00

                                                     STORM AREA =     .04

  12 LS          SCS LOSS RATE
                       STRTL         .11  INITIAL ABSTRACTION
                      CRVNBR       95.00  CURVE NUMBER
                       RTIMP         .00  PERCENT IMPERVIOUS AREA

  13 UD          SCS DIMENSIONLESS UNITGRAPH
                        TLAG         .10  LAG

                                                                  ***

                                                                UNIT HYDROGRAPH
                                                            8 END-OF-PERIOD ORDINATES
                75.      121.       57.       23.        9.        4.        1.        1.

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

                        HYDROGRAPH AT STATION       P1
                          FOR PLAN 4, RATIO = 1.00

    TOTAL RAINFALL =   11.50, TOTAL LOSS =     .61, TOTAL EXCESS =   10.89

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                       6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     167.     12.17                   31.         11.         11.          11.
                        (INCHES)     7.797      10.891      10.891       10.891
                         (AC-FT)      16.         22.         22.          22.

                        CUMULATIVE AREA =     .04 SQ MI


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

                        HYDROGRAPH AT STATION       P1
                          FOR PLAN 4, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                       6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     167.     12.17                   31.         11.         11.          11.
                        (INCHES)     7.797      10.891      10.891       10.891
                         (AC-FT)      16.         22.         22.          22.

                        CUMULATIVE AREA =     .04 SQ MI


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

  26 KP        PLAN  5 FOR STATION       P1
                              TRIANGULAR DISTRIBUTION 100-YRS STORM

               SUBBASIN RUNOFF DATA

  11 BA          SUBBASIN CHARACTERISTICS
                       TAREA         .04  SUBBASIN AREA

                 PRECIPITATION DATA

  28 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
                   .78    1.93    4.80    6.40    7.20    9.00   11.00   13.00     .00     .00     .00     .00

                                                     STORM AREA =     .04

  12 LS          SCS LOSS RATE
                       STRTL         .11  INITIAL ABSTRACTION
                      CRVNBR       95.00  CURVE NUMBER
                       RTIMP         .00  PERCENT IMPERVIOUS AREA

  13 UD          SCS DIMENSIONLESS UNITGRAPH
                        TLAG         .10  LAG
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                                                  ***

                                                UNIT HYDROGRAPH
                                             8 END-OF-PERIOD ORDINATES
                75.      121.       57.       23.        9.        4.        1.        1.

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

                        HYDROGRAPH AT STATION       P1
                          FOR PLAN 5, RATIO = 1.00

    TOTAL RAINFALL =   13.00, TOTAL LOSS =     .61, TOTAL EXCESS =   12.39

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     184.     12.17                 36.         12.         12.          12.
                        (INCHES)    8.904      12.388      12.388       12.388
                         (AC-FT)     18.         25.         25.          25.

                        CUMULATIVE AREA =     .04 SQ MI


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

                        HYDROGRAPH AT STATION       P1
                          FOR PLAN 5, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     184.     12.17                 36.         12.         12.          12.
                        (INCHES)    8.904      12.388      12.388       12.388
                         (AC-FT)     18.         25.         25.          25.

                        CUMULATIVE AREA =     .04 SQ MI


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


            **************
            *            *
   29 KK    *        P2  *
            *            *
            **************


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

   30 KP        PLAN  1 FOR STATION       P2
                                TRIANGULAR DISTRIBUTION 2-YRS STORM

                SUBBASIN RUNOFF DATA

   31 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .07  SUBBASIN AREA

                  PRECIPITATION DATA

   36 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
                    .47    1.07    2.25    2.80    3.10    3.90    4.50    5.20     .00     .00     .00     .00

                                                STORM AREA =     .07

   32 LS          SCS LOSS RATE
                        STRTL         .11  INITIAL ABSTRACTION
                       CRVNBR       95.00  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   33 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .13  LAG

                                                  ***

                                                UNIT HYDROGRAPH
                                            10 END-OF-PERIOD ORDINATES
                99.      213.      147.       61.       28.       12.        6.        2.        1.        0.

      ***             ***             ***             ***             ***
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                         HYDROGRAPH AT STATION       P2
                           FOR PLAN 1, RATIO = 1.00

     TOTAL RAINFALL =    5.20, TOTAL LOSS =     .58, TOTAL EXCESS =    4.62

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     190.     12.17                  29.          9.          9.           9.
                        (INCHES)     3.690       4.617       4.617        4.617
                         (AC-FT)      14.         18.         18.          18.

                         CUMULATIVE AREA =     .07 SQ MI


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

                         HYDROGRAPH AT STATION       P2
                           FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     190.     12.17                  29.          9.          9.           9.
                        (INCHES)     3.690       4.617       4.617        4.617
                         (AC-FT)      14.         18.         18.          18.

                         CUMULATIVE AREA =     .07 SQ MI


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

   37 KP        PLAN  2 FOR STATION       P2
                                TRIANGULAR DISTRIBUTION 10-YRS STORM

                SUBBASIN RUNOFF DATA

   31 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .07  SUBBASIN AREA

                  PRECIPITATION DATA

   39 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
                    .56    1.38    3.35    4.40    4.90    5.90    7.00    8.50     .00     .00     .00     .00

                                                     STORM AREA =     .07

   32 LS          SCS LOSS RATE
                        STRTL         .11  INITIAL ABSTRACTION
                       CRVNBR       95.00  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   33 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .13  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                 10 END-OF-PERIOD ORDINATES
                99.      213.      147.       61.       28.       12.        6.        2.        1.        0.

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

                         HYDROGRAPH AT STATION       P2
                           FOR PLAN 2, RATIO = 1.00

     TOTAL RAINFALL =    8.50, TOTAL LOSS =     .60, TOTAL EXCESS =    7.90

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     253.     12.17                  46.         16.         15.          15.
                        (INCHES)     5.772       7.899       7.899        7.899
                         (AC-FT)      23.         31.         31.          31.

                         CUMULATIVE AREA =     .07 SQ MI


       ***             ***             ***             ***             ***
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                        HYDROGRAPH AT STATION       P2
                          FOR PLAN 2, RATIO = 1.00

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     253.     12.17                46.         16.         15.          15.
                       (INCHES)    5.772       7.899       7.899        7.899
                        (AC-FT)     23.         31.         31.          31.

                       CUMULATIVE AREA =     .07 SQ MI


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

   40 KP        PLAN  3 FOR STATION       P2
                             TRIANGULAR DISTRIBUTION 25-YRS STORM

                SUBBASIN RUNOFF DATA

   31 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .07  SUBBASIN AREA

                  PRECIPITATION DATA

   42 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
                    .60    1.52    3.90    5.00    5.70    7.00    8.20   10.00     .00     .00     .00     .00

                                                   STORM AREA =     .07

   32 LS          SCS LOSS RATE
                        STRTL         .11  INITIAL ABSTRACTION
                       CRVNBR       95.00  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   33 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .13  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                 10 END-OF-PERIOD ORDINATES
                99.      213.      147.       61.       28.       12.        6.        2.        1.        0.

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

                        HYDROGRAPH AT STATION       P2
                          FOR PLAN 3, RATIO = 1.00

    TOTAL RAINFALL =   10.00, TOTAL LOSS =     .60, TOTAL EXCESS =    9.39

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     281.     12.17                54.         19.         18.          18.
                       (INCHES)    6.878       9.394       9.394        9.394
                        (AC-FT)     27.         37.         37.          37.

                       CUMULATIVE AREA =     .07 SQ MI


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

                        HYDROGRAPH AT STATION       P2
                          FOR PLAN 3, RATIO = 1.00

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     281.     12.17                54.         19.         18.          18.
                       (INCHES)    6.878       9.394       9.394        9.394
                        (AC-FT)     27.         37.         37.          37.

                       CUMULATIVE AREA =     .07 SQ MI


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

   43 KP        PLAN  4 FOR STATION       P2
                             TRIANGULAR DISTRIBUTION 50-YRS STORM
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                SUBBASIN RUNOFF DATA

   31 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .07  SUBBASIN AREA

                  PRECIPITATION DATA

   45 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
                    .71    1.75    4.40    5.60    6.20    7.90    9.80   11.50     .00     .00     .00     .00

                                                     STORM AREA =     .07

   32 LS          SCS LOSS RATE
                        STRTL         .11  INITIAL ABSTRACTION
                       CRVNBR       95.00  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   33 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .13  LAG

                                                                 ***

                                                            UNIT HYDROGRAPH
                                                       10 END-OF-PERIOD ORDINATES
                99.      213.      147.       61.       28.       12.        6.        2.        1.        0.

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

                          HYDROGRAPH AT STATION       P2
                            FOR PLAN 4, RATIO = 1.00

     TOTAL RAINFALL =   11.50, TOTAL LOSS =     .61, TOTAL EXCESS =   10.89

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     325.     12.17                  62.         21.         21.         21.
                         (INCHES)     7.795      10.891      10.891      10.891
                          (AC-FT)      31.         43.         43.         43.

                          CUMULATIVE AREA =     .07 SQ MI


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

                          HYDROGRAPH AT STATION       P2
                            FOR PLAN 4, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     325.     12.17                  62.         21.         21.         21.
                         (INCHES)     7.795      10.891      10.891      10.891
                          (AC-FT)      31.         43.         43.         43.

                          CUMULATIVE AREA =     .07 SQ MI


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

   46 KP        PLAN  5 FOR STATION       P2
                                TRIANGULAR DISTRIBUTION 100-YRS STORM

                SUBBASIN RUNOFF DATA

   31 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .07  SUBBASIN AREA

                  PRECIPITATION DATA

   48 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
                    .78    1.93    4.80    6.40    7.20    9.00   11.00   13.00     .00     .00     .00     .00

                                                     STORM AREA =     .07

   32 LS          SCS LOSS RATE
                        STRTL         .11  INITIAL ABSTRACTION
                       CRVNBR       95.00  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA
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  33 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .13  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                 10 END-OF-PERIOD ORDINATES
                99.      213.      147.       61.       28.       12.        6.        2.        1.        0.

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

                         HYDROGRAPH AT STATION       P2
                           FOR PLAN 5, RATIO = 1.00

     TOTAL RAINFALL =   13.00, TOTAL LOSS =     .61, TOTAL EXCESS =   12.39

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                       6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     357.     12.17                   70.         24.         24.          24.
                        (INCHES)     8.902      12.388      12.388       12.388
                         (AC-FT)      35.         48.         48.          48.

                         CUMULATIVE AREA =     .07 SQ MI


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

                         HYDROGRAPH AT STATION       P2
                           FOR PLAN 5, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                       6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     357.     12.17                   70.         24.         24.          24.
                        (INCHES)     8.902      12.388      12.388       12.388
                         (AC-FT)      35.         48.         48.          48.

                         CUMULATIVE AREA =     .07 SQ MI


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


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             *            *
  49 KK      *        P3  *
             *            *
             **************


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

  50 KP        PLAN  1 FOR STATION       P3
                             TRIANGULAR DISTRIBUTION 2-YRS STORM

               SUBBASIN RUNOFF DATA

  51 BA          SUBBASIN CHARACTERISTICS
                       TAREA         .03  SUBBASIN AREA

                 PRECIPITATION DATA

  56 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
                   .47    1.07    2.25    2.80    3.10    3.90    4.50    5.20     .00     .00     .00     .00

                                                     STORM AREA =     .03

  52 LS          SCS LOSS RATE
                       STRTL         .11  INITIAL ABSTRACTION
                      CRVNBR       95.00  CURVE NUMBER
                       RTIMP         .00  PERCENT IMPERVIOUS AREA

  53 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .08  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                  7 END-OF-PERIOD ORDINATES
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                96.       86.       26.        8.        3.        1.        0.

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

                        HYDROGRAPH AT STATION       P3
                          FOR PLAN 1, RATIO = 1.00

    TOTAL RAINFALL =    5.20, TOTAL LOSS =     .58, TOTAL EXCESS =    4.62

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+      80.     12.08                 11.          4.          3.           3.
                       (INCHES)     3.692       4.618       4.618        4.618
                        (AC-FT)       6.          7.          7.           7.

                       CUMULATIVE AREA =     .03 SQ MI


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

                        HYDROGRAPH AT STATION       P3
                          FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+      80.     12.08                 11.          4.          3.           3.
                       (INCHES)     3.692       4.618       4.618        4.618
                        (AC-FT)       6.          7.          7.           7.

                       CUMULATIVE AREA =     .03 SQ MI


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

   57 KP        PLAN  2 FOR STATION       P3
                              TRIANGULAR DISTRIBUTION 10-YRS STORM

                SUBBASIN RUNOFF DATA

   51 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .03  SUBBASIN AREA

                  PRECIPITATION DATA

   59 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
                    .56    1.38    3.35    4.40    4.90    5.90    7.00    8.50     .00     .00     .00     .00

                                                   STORM AREA =     .03

   52 LS          SCS LOSS RATE
                        STRTL         .11  INITIAL ABSTRACTION
                       CRVNBR       95.00  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   53 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .08  LAG

                                                          ***

                                                      UNIT HYDROGRAPH
                                                  7 END-OF-PERIOD ORDINATES
                96.       86.       26.        8.        3.        1.        0.

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

                        HYDROGRAPH AT STATION       P3
                          FOR PLAN 2, RATIO = 1.00

    TOTAL RAINFALL =    8.50, TOTAL LOSS =     .60, TOTAL EXCESS =    7.90

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     106.     12.08                 18.          6.          6.           6.
                       (INCHES)     5.774       7.899       7.899        7.899
                        (AC-FT)       9.         12.         12.          12.

                       CUMULATIVE AREA =     .03 SQ MI
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      ***            ***            ***            ***            ***

                        HYDROGRAPH AT STATION       P3
                          FOR PLAN 2, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     106.     12.08                  18.          6.          6.           6.
                       (INCHES)     5.774       7.899       7.899        7.899
                        (AC-FT)       9.         12.         12.          12.

                        CUMULATIVE AREA =     .03 SQ MI


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

   60 KP        PLAN  3 FOR STATION       P3
                                TRIANGULAR DISTRIBUTION 25-YRS STORM

                SUBBASIN RUNOFF DATA

   51 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .03  SUBBASIN AREA

                  PRECIPITATION DATA

   62 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
                    .60    1.52    3.90    5.00    5.70    7.00    8.20   10.00     .00     .00     .00     .00

                                                     STORM AREA =     .03

   52 LS          SCS LOSS RATE
                        STRTL         .11  INITIAL ABSTRACTION
                       CRVNBR       95.00  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   53 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .08  LAG

                                                                ***

                                                          UNIT HYDROGRAPH
                                                     7 END-OF-PERIOD ORDINATES
                96.       86.       26.        8.        3.        1.        0.

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

                        HYDROGRAPH AT STATION       P3
                          FOR PLAN 3, RATIO = 1.00

    TOTAL RAINFALL =   10.00, TOTAL LOSS =     .60, TOTAL EXCESS =    9.39

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     117.     12.08                  21.          7.          7.           7.
                       (INCHES)     6.880       9.395       9.395        9.395
                        (AC-FT)      10.         14.         14.          14.

                        CUMULATIVE AREA =     .03 SQ MI


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

                        HYDROGRAPH AT STATION       P3
                          FOR PLAN 3, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     117.     12.08                  21.          7.          7.           7.
                       (INCHES)     6.880       9.395       9.395        9.395
                        (AC-FT)      10.         14.         14.          14.

                        CUMULATIVE AREA =     .03 SQ MI


 ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***
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  63 KP        PLAN  4 FOR STATION       P3
                              TRIANGULAR DISTRIBUTION 50-YRS STORM

               SUBBASIN RUNOFF DATA

  51 BA          SUBBASIN CHARACTERISTICS
                       TAREA         .03  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
                   .71    1.75    4.40    5.60    6.20    7.90    9.80   11.50     .00     .00     .00     .00

                                                   STORM AREA =     .03

  52 LS          SCS LOSS RATE
                       STRTL         .11  INITIAL ABSTRACTION
                      CRVNBR       95.00  CURVE NUMBER
                       RTIMP         .00  PERCENT IMPERVIOUS AREA

  53 UD          SCS DIMENSIONLESS UNITGRAPH
                        TLAG         .08  LAG

                                                                 ***

                                                          UNIT HYDROGRAPH
                                                     7 END-OF-PERIOD ORDINATES
                96.       86.       26.        8.        3.        1.        0.

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

                        HYDROGRAPH AT STATION       P3
                          FOR PLAN 4, RATIO = 1.00

     TOTAL RAINFALL =   11.50, TOTAL LOSS =     .61, TOTAL EXCESS =   10.89

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     136.     12.08                24.          8.          8.           8.
                       (INCHES)    7.798      10.891      10.891       10.891
                        (AC-FT)      12.         16.         16.          16.

                        CUMULATIVE AREA =     .03 SQ MI


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

                        HYDROGRAPH AT STATION       P3
                          FOR PLAN 4, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     136.     12.08                24.          8.          8.           8.
                       (INCHES)    7.798      10.891      10.891       10.891
                        (AC-FT)      12.         16.         16.          16.

                        CUMULATIVE AREA =     .03 SQ MI


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

  66 KP        PLAN  5 FOR STATION       P3
                              TRIANGULAR DISTRIBUTION 100-YRS STORM

               SUBBASIN RUNOFF DATA

  51 BA          SUBBASIN CHARACTERISTICS
                       TAREA         .03  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
                   .78    1.93    4.80    6.40    7.20    9.00   11.00   13.00     .00     .00     .00     .00

                                                   STORM AREA =     .03

  52 LS          SCS LOSS RATE
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                      STRTL         .11  INITIAL ABSTRACTION
                     CRVNBR       95.00  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

   53 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .08  LAG

                                                                  ***

                                                          UNIT HYDROGRAPH
                                                       7 END-OF-PERIOD ORDINATES
                96.       86.       26.        8.        3.        1.        0.

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

                        HYDROGRAPH AT STATION       P3
                          FOR PLAN 5, RATIO = 1.00

     TOTAL RAINFALL =   13.00, TOTAL LOSS =     .61, TOTAL EXCESS =   12.39

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     149.     12.08                 27.          9.          9.           9.
                       (INCHES)     8.905      12.389      12.389       12.389
                        (AC-FT)      13.         19.         19.          19.

                        CUMULATIVE AREA =     .03 SQ MI


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

                        HYDROGRAPH AT STATION       P3
                          FOR PLAN 5, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     149.     12.08                 27.          9.          9.           9.
                       (INCHES)     8.905      12.389      12.389       12.389
                        (AC-FT)      13.         19.         19.          19.

                        CUMULATIVE AREA =     .03 SQ MI


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


            **************
            *            *
   69 KK    *        P4  *
            *            *
            **************


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

   70 KP        PLAN  1 FOR STATION       P4
                                TRIANGULAR DISTRIBUTION 2-YRS STORM

                SUBBASIN RUNOFF DATA

   71 BA          SUBBASIN CHARACTERISTICS
                       TAREA         .05  SUBBASIN AREA

                  PRECIPITATION DATA

   76 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
                    .47    1.07    2.25    2.80    3.10    3.90    4.50    5.20     .00     .00     .00     .00

                                                        STORM AREA =     .05

   72 LS          SCS LOSS RATE
                       STRTL         .11  INITIAL ABSTRACTION
                      CRVNBR       95.00  CURVE NUMBER
                       RTIMP         .00  PERCENT IMPERVIOUS AREA

   73 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .10  LAG

                                                                  ***
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                                                    UNIT HYDROGRAPH
                                                 8 END-OF-PERIOD ORDINATES
                94.      146.       67.       27.       10.        4.        2.        1.

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

                        HYDROGRAPH AT STATION       P4
                          FOR PLAN 1, RATIO = 1.00

    TOTAL RAINFALL =    5.20, TOTAL LOSS =     .58, TOTAL EXCESS =    4.62

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     120.     12.17                 18.          6.          5.           5.
                        (INCHES)    3.691       4.617       4.617        4.617
                         (AC-FT)      9.         11.         11.          11.

                        CUMULATIVE AREA =     .05 SQ MI


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

                        HYDROGRAPH AT STATION       P4
                          FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     120.     12.17                 18.          6.          5.           5.
                        (INCHES)    3.691       4.617       4.617        4.617
                         (AC-FT)      9.         11.         11.          11.

                        CUMULATIVE AREA =     .05 SQ MI


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

   77 KP        PLAN  2 FOR STATION       P4
                             TRIANGULAR DISTRIBUTION 10-YRS STORM

                SUBBASIN RUNOFF DATA

   71 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .05  SUBBASIN AREA

                  PRECIPITATION DATA

   79 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
                    .56    1.38    3.35    4.40    4.90    5.90    7.00    8.50     .00     .00     .00     .00

                                                   STORM AREA =     .05

   72 LS          SCS LOSS RATE
                        STRTL         .11  INITIAL ABSTRACTION
                        CRVNBR       95.00  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   73 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .10  LAG

                                                          ***

                                                    UNIT HYDROGRAPH
                                                 8 END-OF-PERIOD ORDINATES
                94.      146.       67.       27.       10.        4.        2.        1.

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

                        HYDROGRAPH AT STATION       P4
                          FOR PLAN 2, RATIO = 1.00

    TOTAL RAINFALL =    8.50, TOTAL LOSS =     .60, TOTAL EXCESS =    7.90

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     157.     12.17                 28.         10.          9.           9.
                        (INCHES)    5.773       7.899       7.899        7.899
                         (AC-FT)     14.         19.         19.          19.
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                        CUMULATIVE AREA =     .05 SQ MI

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

                         HYDROGRAPH AT STATION       P4
                           FOR PLAN 2, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     157.     12.17                  28.         10.          9.           9.
                        (INCHES)     5.773       7.899       7.899        7.899
                         (AC-FT)      14.         19.         19.          19.

                        CUMULATIVE AREA =     .05 SQ MI


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

   80 KP        PLAN  3 FOR STATION       P4
                              TRIANGULAR DISTRIBUTION 25-YRS STORM

                SUBBASIN RUNOFF DATA

   71 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .05  SUBBASIN AREA

                  PRECIPITATION DATA

   82 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
                    .60    1.52    3.90    5.00    5.70    7.00    8.20   10.00     .00     .00     .00     .00

                                                     STORM AREA =     .05

   72 LS          SCS LOSS RATE
                        STRTL         .11  INITIAL ABSTRACTION
                       CRVNBR       95.00  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   73 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .10  LAG

                                                          ***

                                                      UNIT HYDROGRAPH
                                                  8 END-OF-PERIOD ORDINATES
                94.      146.       67.       27.       10.        4.        2.        1.

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

                         HYDROGRAPH AT STATION       P4
                           FOR PLAN 3, RATIO = 1.00

     TOTAL RAINFALL =   10.00, TOTAL LOSS =     .60, TOTAL EXCESS =    9.39

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     174.     12.08                  33.         11.         11.          11.
                        (INCHES)     6.879       9.394       9.394        9.394
                         (AC-FT)      17.         23.         23.          23.

                        CUMULATIVE AREA =     .05 SQ MI


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

                         HYDROGRAPH AT STATION       P4
                           FOR PLAN 3, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     174.     12.08                  33.         11.         11.          11.
                        (INCHES)     6.879       9.394       9.394        9.394
                         (AC-FT)      17.         23.         23.          23.

                        CUMULATIVE AREA =     .05 SQ MI
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***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

  83 KP        PLAN  4 FOR STATION       P4
                                TRIANGULAR DISTRIBUTION 50-YRS STORM

               SUBBASIN RUNOFF DATA

  71 BA          SUBBASIN CHARACTERISTICS
                       TAREA         .05  SUBBASIN AREA

                 PRECIPITATION DATA

  85 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
                   .71    1.75    4.40    5.60    6.20    7.90    9.80   11.50     .00     .00     .00     .00

                                                     STORM AREA =     .05

  72 LS          SCS LOSS RATE
                       STRTL         .11  INITIAL ABSTRACTION
                      CRVNBR       95.00  CURVE NUMBER
                       RTIMP         .00  PERCENT IMPERVIOUS AREA

  73 UD          SCS DIMENSIONLESS UNITGRAPH
                        TLAG         .10  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                 8 END-OF-PERIOD ORDINATES
               94.      146.       67.       27.       10.        4.        2.        1.

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

                        HYDROGRAPH AT STATION       P4
                          FOR PLAN 4, RATIO = 1.00

    TOTAL RAINFALL =   11.50, TOTAL LOSS =     .61, TOTAL EXCESS =   10.89

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     201.     12.17                  38.         13.         13.          13.
                       (INCHES)     7.797      10.891      10.891       10.891
                        (AC-FT)       19.         26.         26.          26.

                        CUMULATIVE AREA =     .05 SQ MI


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

                        HYDROGRAPH AT STATION       P4
                          FOR PLAN 4, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     201.     12.17                  38.         13.         13.          13.
                       (INCHES)     7.797      10.891      10.891       10.891
                        (AC-FT)       19.         26.         26.          26.

                        CUMULATIVE AREA =     .05 SQ MI


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

  86 KP        PLAN  5 FOR STATION       P4
                                TRIANGULAR DISTRIBUTION 100-YRS STORM

               SUBBASIN RUNOFF DATA

  71 BA          SUBBASIN CHARACTERISTICS
                       TAREA         .05  SUBBASIN AREA

                 PRECIPITATION DATA

  88 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
                   .78    1.93    4.80    6.40    7.20    9.00   11.00   13.00     .00     .00     .00     .00
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                                                  STORM AREA =     .05

   72 LS          SCS LOSS RATE
                        STRTL         .11  INITIAL ABSTRACTION
                       CRVNBR       95.00  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   73 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .10  LAG

                                                                  ***

                                                          UNIT HYDROGRAPH
                                                      8 END-OF-PERIOD ORDINATES
                94.      146.       67.       27.       10.        4.        2.        1.

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

                         HYDROGRAPH AT STATION       P4
                           FOR PLAN 5, RATIO = 1.00

     TOTAL RAINFALL =   13.00, TOTAL LOSS =     .61, TOTAL EXCESS =   12.39

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     222.     12.17                43.         15.         15.          15.
                       (INCHES)    8.904      12.388      12.388       12.388
                        (AC-FT)      21.         30.         30.          30.

                        CUMULATIVE AREA =     .05 SQ MI


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

                         HYDROGRAPH AT STATION       P4
                           FOR PLAN 5, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     222.     12.17                43.         15.         15.          15.
                       (INCHES)    8.904      12.388      12.388       12.388
                        (AC-FT)      21.         30.         30.          30.

                        CUMULATIVE AREA =     .05 SQ MI


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


            **************
            *            *
   89 KK    *      COMB  *
            *            *
            **************

   90 HC          HYDROGRAPH COMBINATION
                       ICOMP           3  NUMBER OF HYDROGRAPHS TO COMBINE

                                                                  ***

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

                         HYDROGRAPH AT STATION     COMB
                           FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     383.     12.17                58.         18.         18.          18.
                       (INCHES)    3.690       4.617       4.617        4.617
                        (AC-FT)      29.         36.         36.          36.

                        CUMULATIVE AREA =     .15 SQ MI


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

                         HYDROGRAPH AT STATION     COMB
                           FOR PLAN 2, RATIO = 1.00
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  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     505.     12.17                 91.         31.         30.          30.
                        (INCHES)    5.773       7.899       7.899        7.899
                         (AC-FT)     45.         62.         62.          62.

                         CUMULATIVE AREA =     .15 SQ MI


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

                          HYDROGRAPH AT STATION     COMB
                            FOR PLAN 3, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     560.     12.17                109.         37.         36.          36.
                        (INCHES)    6.879       9.394       9.394        9.394
                         (AC-FT)     54.         74.         74.          74.

                         CUMULATIVE AREA =     .15 SQ MI


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

                          HYDROGRAPH AT STATION     COMB
                            FOR PLAN 4, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     647.     12.17                123.         43.         41.          41.
                        (INCHES)    7.796      10.891      10.891       10.891
                         (AC-FT)     61.         85.         85.          85.

                         CUMULATIVE AREA =     .15 SQ MI


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

                          HYDROGRAPH AT STATION     COMB
                            FOR PLAN 5, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     713.     12.17                141.         49.         47.          47.
                        (INCHES)    8.903      12.388      12.388       12.388
                         (AC-FT)     70.         97.         97.          97.

                         CUMULATIVE AREA =     .15 SQ MI

1
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PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
FLOWS IN CUBIC FEET PER SECOND, AREA IN SQUARE MILES
TIME TO PEAK IN HOURS

OPERATION	STATION	AREA	PLAN		RATIO 1	RATIOS APPLIED TO FLOWS
					1.00	
HYDROGRAPH AT						
+	P1	.04	1	FLOW	99.	
				TIME	12.17	
			2	FLOW	130.	
				TIME	12.17	
			3	FLOW	144.	
				TIME	12.17	
			4	FLOW	167.	
				TIME	12.17	
			5	FLOW	184.	
				TIME	12.17	
HYDROGRAPH AT						
+	P2	.07	1	FLOW	190.	
				TIME	12.17	
			2	FLOW	253.	
				TIME	12.17	
			3	FLOW	281.	
				TIME	12.17	
			4	FLOW	325.	
				TIME	12.17	
			5	FLOW	357.	
				TIME	12.17	
HYDROGRAPH AT						
+	P3	.03	1	FLOW	80.	
				TIME	12.08	
			2	FLOW	106.	
				TIME	12.08	
			3	FLOW	117.	
				TIME	12.08	
			4	FLOW	136.	
				TIME	12.08	
			5	FLOW	149.	
				TIME	12.08	
HYDROGRAPH AT						
+	P4	.05	1	FLOW	120.	
				TIME	12.17	
			2	FLOW	157.	
				TIME	12.17	
			3	FLOW	174.	
				TIME	12.08	
			4	FLOW	201.	
				TIME	12.17	
			5	FLOW	222.	
				TIME	12.17	
3 COMBINED AT						
+	COMB	.15	1	FLOW	383.	
				TIME	12.17	
			2	FLOW	505.	
				TIME	12.17	
			3	FLOW	560.	
				TIME	12.17	
			4	FLOW	647.	
				TIME	12.17	
			5	FLOW	713.	
				TIME	12.17	

*** NORMAL END OF HEC-1 ***

APPENDIX D

FLOW RATING CURVE FOR MITIGATION

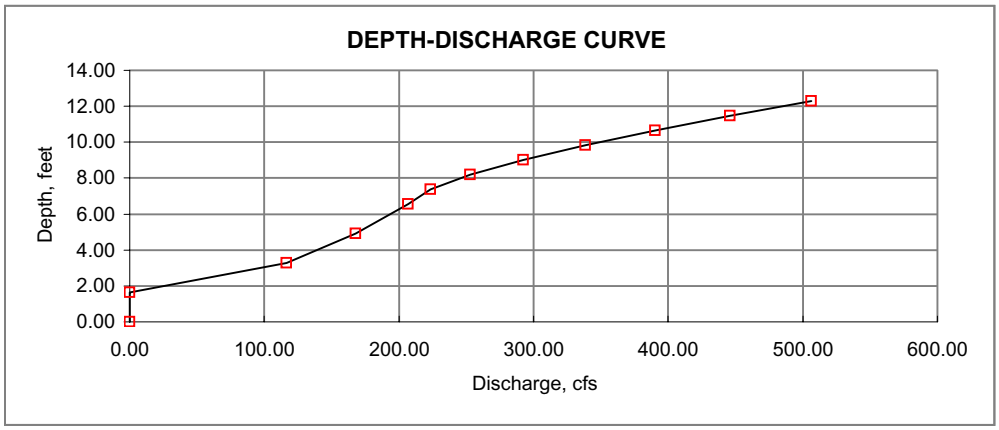
Project: Estancia de Los Artesanos
Location: Las Piedras, Puerto Rico.

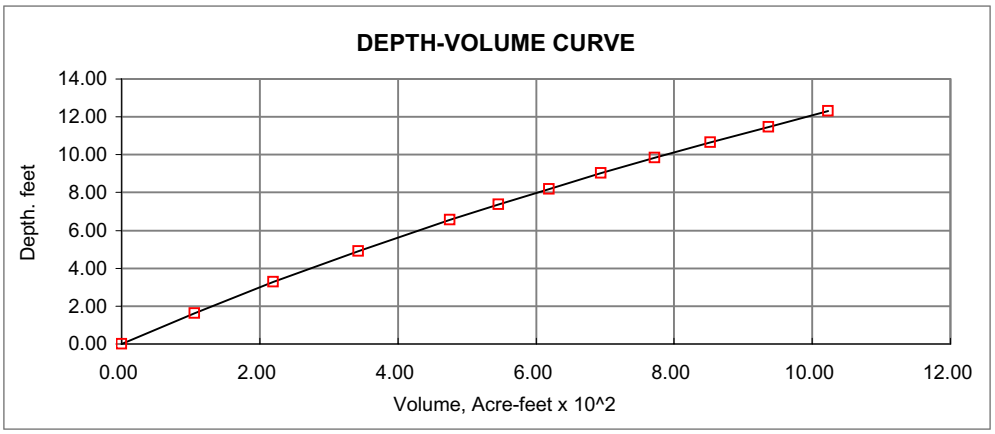
FLOW RATING CURVE FOR AREA P2

Structure	Head	m	0.00	0.50	1.00	1.50	2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75
		ft	0.00	1.64	3.28	4.92	6.56	7.38	8.20	9.02	9.84	10.66	11.48	12.30
	Diameter (inches)		42	42	42	42	42	42	42	42	42	42	42	42
	Diameter (feet)		3.500	3.500	3.500	3.500	3.500	3.500	3.500	3.500	3.500	3.500	3.500	3.500
	Number		2	2	2	2	2	2	2	2	2	2	2	2
	Head over CL (feet)		-1.75	-0.11	1.53	3.17	4.81	5.63	6.45	7.27	8.09	8.91	9.73	10.55
ORIF #1	Discharge Coef		0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61
	Flow (cfs)		0.00	0.00	116.51	167.71	206.59	223.50	239.23	253.98	267.92	281.17	293.82	305.95
	Head over invert (feet)		0.00	1.64	3.28	4.92	6.56	7.38	8.20	9.02	9.84	10.66	11.48	12.30
	Velocity (fps)		0.00	0.00	12.11	17.43	21.47	23.23	24.86	26.40	27.85	29.22	30.54	31.80
	Invert El (m)		2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25
	(feet)		7.38	7.38	7.38	7.38	7.38	7.38	7.38	7.38	7.38	7.38	7.38	7.38
Rect	Width (m)		2	2	2	2	2	2	2	2	2	2	2	2
WEIR	Width (feet)		6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56
	Cc		0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
	Head over weir (feet)		-7.38	-5.74	-4.10	-2.46	-0.82	0.00	0.82	1.64	2.46	3.28	4.10	4.92
	Flow (cfs)		0.00	0.00	0.00	0.00	0.00	0.00	13.63	38.54	70.80	109.01	152.34	200.3
	FLOW SUMMATION (cfs)		**0.00**	**0.00**	**116.51**	**167.71**	**206.59**	**223.50**	**252.85**	**292.52**	**338.72**	**390.17**	**446.16**	**506.2**

RECTANGULAR POND Base Area= 2500 m^2 = 26912 ft^2 = 0.6177 Acres

Lado A de la Base, m	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Lado A de la Base, ft	164.05	164.05	164.05	164.05	164.05	164.05	164.05	164.05	164.05	164.05	164.05	164.05
Lado B de la Base, m	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Lado B de la Base, ft	164.05	164.05	164.05	164.05	164.05	164.05	164.05	164.05	164.05	164.05	164.05	164.05
h (ft)	0	1.64	3.28	4.92	6.56	7.38	8.20	9.02	9.84	10.66	11.48	12.30
Slope 1:	2	2	2	2	2	2	2	2	2	2	2	2
Area (sqft)	26912	29108	31389	33757	36210	37469	38750	40052	41376	42721	44087	45476
(acre)	0.62	0.67	0.72	0.78	0.83	0.86	0.89	0.92	0.95	0.98	1.01	1.04
Volume, acre-ft	0.00	1.06	2.20	3.43	4.76	5.46	6.19	6.94	7.72	8.53	9.36	10.23
Lado A del Tope, ft	164.05	170.61	177.17	183.73	190.29	193.57	196.85	200.13	203.41	206.69	209.97	213.25
Lado A del Tope, m	50.00	52.00	54.00	56.00	58.00	59.00	60.00	61.00	62.00	63.00	64.00	65.00
Lado B del Tope, ft	164.05	170.61	177.17	183.73	190.29	193.57	196.85	200.13	203.41	206.69	209.97	213.25
Lado B del Tope, m	50.00	52.00	54.00	56.00	58.00	59.00	60.00	61.00	62.00	63.00	64.00	65.00





APPENDIX E

HEC-1 RESULTS FOR PROPOSED CONDITION W/MITIGATION

```
1****************************************                                                    ****************************************
 *                                      *                                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                                    *    U.S. ARMY CORPS OF ENGINEERS      *
 *               JUN   1998             *                                                    *    HYDROLOGIC ENGINEERING CENTER     *
 *            VERSION 4.1               *                                                    *          609 SECOND STREET           *
 *                                      *                                                    *       DAVIS, CALIFORNIA 95616        *
 *  RUN DATE   02JUN05  TIME  11:12:37  *                                                    *           (916) 756-1104             *
 *                                      *                                                    *                                      *
 ****************************************                                                    ****************************************


                                                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


          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

1                                                   HEC-1 INPUT                                                   PAGE  1

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

           1           ID        HYDROLOGIC ANALYSIS
           2           ID        PROJECT: ESTANCIAS DE LOS ARTESANOS, LAS PIEDRAS
           3           ID        TRIANGULAR DISTRIBUTION
           4           ID        FREQUENCY OF OCCURRENCE: 2-, 10- , 25-, 50- & 100-YEARS
           5           ID        PROPOSED CONDITION W/MITIGATION
           6           IT       5                     300
           7           IO       3
           8           JP       5
                       *D

           9           KK      P1
          10           KP       1
          11           BA  0.0375
          12           LS       0      95
          13           UD   0.105
          14           IN      15
          15           KM        TRIANGULAR DISTRIBUTION 2-YRS STORM
          16           PH                   0.47    1.07    2.25    2.80    3.10    3.90    4.50    5.20
          17           KP       2
          18           KM        TRIANGULAR DISTRIBUTION 10-YRS STORM
          19           PH                   0.56    1.38    3.35    4.40    4.90    5.90    7.00    8.50
          20           KP       3
          21           KM        TRIANGULAR DISTRIBUTION 25-YRS STORM
          22           PH                   0.60    1.52    3.90    5.00    5.70    7.00    8.20   10.00
          23           KP       4
          24           KM        TRIANGULAR DISTRIBUTION 50-YRS STORM
          25           PH                   0.71    1.75    4.40    5.60    6.20    7.90    9.80   11.50
          26           KP       5
          27           KM        TRIANGULAR DISTRIBUTION 100-YRS STORM
          28           PH                   0.78    1.93    4.80    6.40    7.20    9.00   11.00   13.00

          29           KK      P2
          30           KP       1
          31           BA  0.0734
          32           LS       0      95
          33           UD   0.126
          34           IN      15
          35           KM        TRIANGULAR DISTRIBUTION 2-YRS STORM
          36           PH                   0.47    1.07    2.25    2.80    3.10    3.90    4.50    5.20
          37           KP       2
          38           KM        TRIANGULAR DISTRIBUTION 10-YRS STORM
          39           PH                   0.56    1.38    3.35    4.40    4.90    5.90    7.00    8.50
          40           KP       3
          41           KM        TRIANGULAR DISTRIBUTION 25-YRS STORM
          42           PH                   0.60    1.52    3.90    5.00    5.70    7.00    8.20   10.00
          43           KP       4
          44           KM        TRIANGULAR DISTRIBUTION 50-YRS STORM
          45           PH                   0.71    1.75    4.40    5.60    6.20    7.90    9.80   11.50
          46           KP       5
          47           KM        TRIANGULAR DISTRIBUTION 100-YRS STORM
          48           PH                   0.78    1.93    4.80    6.40    7.20    9.00   11.00   13.00
```

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

  49          KK  PONDP2
  50          KM        DETENTION POND P2   Base= 50.00x50.00
  51          KO       3       1
  52          RS       1    ELEV
  53          SQ    0.00    0.00  116.51  167.71  206.59  223.50  252.85  292.52  338.72  390.17
  54          SV   0.000   1.056   2.197   3.430   4.758   5.459   6.186   6.940   7.721   8.529
  55          SE    0.00    1.64    3.28    4.92    6.56    7.38    8.20    9.02    9.84   10.66

  56          KK      P3
  57          KP       1
  58          BA  0.0283
  59          LS       0      95
  60          UD   0.075
  61          IN      15
  62          KM        TRIANGULAR DISTRIBUTION 2-YRS STORM
  63          PH                   0.47    1.07    2.25    2.80    3.10    3.90    4.50    5.20
  64          KP       2
  65          KM        TRIANGULAR DISTRIBUTION 10-YRS STORM
  66          PH                   0.56    1.38    3.35    4.40    4.90    5.90    7.00    8.50
  67          KP       3
  68          KM        TRIANGULAR DISTRIBUTION 25-YRS STORM
  69          PH                   0.60    1.52    3.90    5.00    5.70    7.00    8.20   10.00
  70          KP       4
  71          KM        TRIANGULAR DISTRIBUTION 50-YRS STORM
  72          PH                   0.71    1.75    4.40    5.60    6.20    7.90    9.80   11.50
  73          KP       5
  74          KM        TRIANGULAR DISTRIBUTION 100-YRS STORM
  75          PH                   0.78    1.93    4.80    6.40    7.20    9.00   11.00   13.00

  76          KK      P4
  77          KP       1
  78          BA  0.0452
  79          LS       0      95
  80          UD   0.103
  81          IN      15
  82          KM        TRIANGULAR DISTRIBUTION 2-YRS STORM
  83          PH                   0.47    1.07    2.25    2.80    3.10    3.90    4.50    5.20
  84          KP       2
  85          KM        TRIANGULAR DISTRIBUTION 10-YRS STORM
  86          PH                   0.56    1.38    3.35    4.40    4.90    5.90    7.00    8.50
  87          KP       3
  88          KM        TRIANGULAR DISTRIBUTION 25-YRS STORM
  89          PH                   0.60    1.52    3.90    5.00    5.70    7.00    8.20   10.00
  90          KP       4
  91          KM        TRIANGULAR DISTRIBUTION 50-YRS STORM
  92          PH                   0.71    1.75    4.40    5.60    6.20    7.90    9.80   11.50
  93          KP       5
  94          KM        TRIANGULAR DISTRIBUTION 100-YRS STORM
  95          PH                   0.78    1.93    4.80    6.40    7.20    9.00   11.00   13.00

  96          KK  PONDP4
  97          KM        DETENTION POND P2  Base= 35.00x35.00
  98          KO       1       1
  99          RS       1    ELEV
 100          SQ    0.00   29.44   78.95   94.42  107.69  119.50  130.24  140.16  190.30  273.77
 101          SV   0.000   0.526   1.114   1.433   1.768   2.122   2.494   2.885   3.296   3.727
 102          SE    0.00    1.64    3.28    4.10    4.92    5.74    6.56    7.38    8.20    9.02

 103          KK    COMB
 104          HC       3
 105          ZZ
```

```
                SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

   NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

     9          P1
                 .
                 .
    29           .          P2
                 .           V
                 .           V
    49           .      PONDP2
                 .           .
                 .           .
    56           .           .          P3
                 .           .           .
                 .           .           .
    76           .           .           .          P4
                 .           .           .           V
                 .           .           .           V
    96           .           .           .      PONDP4
                 .           .           .           .
                 .           .           .           .
   103           .        COMB.......................
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1****************************************                                    ****************************************
 *                                      *                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *    U.S. ARMY CORPS OF ENGINEERS      *
 *               JUN   1998             *                                    *    HYDROLOGIC ENGINEERING CENTER     *
 *            VERSION 4.1               *                                    *          609 SECOND STREET           *
 *                                      *                                    *       DAVIS, CALIFORNIA 95616        *
 *  RUN DATE   02JUN05  TIME  11:12:37  *                                    *           (916) 756-1104             *
 *                                      *                                    *                                      *
 ****************************************                                    ****************************************
```

```
                                HYDROLOGIC ANALYSIS
                                PROJECT: ESTANCIAS DE LOS ARTESANOS, LAS PIEDRAS
                                TRIANGULAR DISTRIBUTION
                                FREQUENCY OF OCCURRENCE: 2-, 10- , 25-, 50- & 100-YEARS
                                PROPOSED CONDITION W/MITIGATION

    7 IO          OUTPUT CONTROL VARIABLES
                        IPRNT           3  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         300  NUMBER OF HYDROGRAPH ORDINATES
                       NDDATE      2    0  ENDING DATE
                       NDTIME        0055  ENDING TIME
                       ICENT          19  CENTURY MARK

                  COMPUTATION INTERVAL     .08 HOURS
                       TOTAL TIME BASE   24.92 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
```

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


            **************
            *            *
   9 KK     *        P1  *
            *            *
            **************


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

  10 KP        PLAN  1 FOR STATION       P1
                                TRIANGULAR DISTRIBUTION 2-YRS STORM

               SUBBASIN RUNOFF DATA

  11 BA          SUBBASIN CHARACTERISTICS
                       TAREA         .04  SUBBASIN AREA

                 PRECIPITATION DATA

  16 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
                   .47    1.07    2.25    2.80    3.10    3.90    4.50    5.20     .00     .00     .00     .00

                                                     STORM AREA =     .04

  12 LS          SCS LOSS RATE
                       STRTL         .11  INITIAL ABSTRACTION
                      CRVNBR       95.00  CURVE NUMBER
                       RTIMP         .00  PERCENT IMPERVIOUS AREA

  13 UD          SCS DIMENSIONLESS UNITGRAPH
                        TLAG         .10  LAG

                                                                 ***

                                                          UNIT HYDROGRAPH
                                                     8 END-OF-PERIOD ORDINATES
                75.      121.       57.       23.        9.        4.        1.        1.

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

                         HYDROGRAPH AT STATION       P1
                           FOR PLAN 1, RATIO = 1.00

     TOTAL RAINFALL =    5.20, TOTAL LOSS =     .58, TOTAL EXCESS =    4.62

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                       6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+      99.     12.17                    15.          5.          4.           4.
                        (INCHES)     3.691       4.617       4.617        4.617
                         (AC-FT)        7.          9.          9.           9.

                         CUMULATIVE AREA =     .04 SQ MI


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

                         HYDROGRAPH AT STATION       P1
                           FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                       6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+      99.     12.17                    15.          5.          4.           4.
                        (INCHES)     3.691       4.617       4.617        4.617
                         (AC-FT)        7.          9.          9.           9.

                         CUMULATIVE AREA =     .04 SQ MI


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

  17 KP        PLAN  2 FOR STATION       P1
                                TRIANGULAR DISTRIBUTION 10-YRS STORM

               SUBBASIN RUNOFF DATA
```

```
  11 BA          SUBBASIN CHARACTERISTICS
                       TAREA         .04  SUBBASIN AREA

                 PRECIPITATION DATA

  19 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
                   .56    1.38    3.35    4.40    4.90    5.90    7.00    8.50     .00     .00     .00     .00

                                                     STORM AREA =     .04

  12 LS          SCS LOSS RATE
                       STRTL         .11  INITIAL ABSTRACTION
                      CRVNBR       95.00  CURVE NUMBER
                       RTIMP         .00  PERCENT IMPERVIOUS AREA

  13 UD          SCS DIMENSIONLESS UNITGRAPH
                        TLAG         .10  LAG

                                                                  ***

                                                                UNIT HYDROGRAPH
                                                            8 END-OF-PERIOD ORDINATES
                75.      121.       57.       23.        9.        4.        1.        1.

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

                        HYDROGRAPH AT STATION       P1
                          FOR PLAN 2, RATIO = 1.00

    TOTAL RAINFALL =    8.50, TOTAL LOSS =     .60, TOTAL EXCESS =    7.90

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                       6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     130.     12.17                    23.          8.          8.           8.
                       (INCHES)     5.773       7.899       7.899        7.899
                        (AC-FT)       12.         16.         16.          16.

                        CUMULATIVE AREA =     .04 SQ MI


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

                        HYDROGRAPH AT STATION       P1
                          FOR PLAN 2, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                       6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     130.     12.17                    23.          8.          8.           8.
                       (INCHES)     5.773       7.899       7.899        7.899
                        (AC-FT)       12.         16.         16.          16.

                        CUMULATIVE AREA =     .04 SQ MI


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

  20 KP        PLAN  3 FOR STATION       P1
                              TRIANGULAR DISTRIBUTION 25-YRS STORM

               SUBBASIN RUNOFF DATA

  11 BA          SUBBASIN CHARACTERISTICS
                       TAREA         .04  SUBBASIN AREA

                 PRECIPITATION DATA

  22 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
                   .60    1.52    3.90    5.00    5.70    7.00    8.20   10.00     .00     .00     .00     .00

                                                     STORM AREA =     .04

  12 LS          SCS LOSS RATE
                       STRTL         .11  INITIAL ABSTRACTION
                      CRVNBR       95.00  CURVE NUMBER
                       RTIMP         .00  PERCENT IMPERVIOUS AREA
```

```
  13 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .10  LAG

                                                          ***

                                                      UNIT HYDROGRAPH
                                                  8 END-OF-PERIOD ORDINATES
                75.      121.       57.       23.        9.        4.        1.        1.

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

                         HYDROGRAPH AT STATION       P1
                           FOR PLAN 3, RATIO = 1.00

    TOTAL RAINFALL =   10.00, TOTAL LOSS =     .60, TOTAL EXCESS =    9.39

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     144.     12.17                  28.          9.          9.           9.
                       (INCHES)     6.879       9.395       9.395        9.395
                        (AC-FT)      14.         19.         19.          19.

                        CUMULATIVE AREA =     .04 SQ MI


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

                         HYDROGRAPH AT STATION       P1
                           FOR PLAN 3, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     144.     12.17                  28.          9.          9.           9.
                       (INCHES)     6.879       9.395       9.395        9.395
                        (AC-FT)      14.         19.         19.          19.

                        CUMULATIVE AREA =     .04 SQ MI


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

  23 KP        PLAN  4 FOR STATION       P1
                            TRIANGULAR DISTRIBUTION 50-YRS STORM

               SUBBASIN RUNOFF DATA

  11 BA          SUBBASIN CHARACTERISTICS
                       TAREA         .04  SUBBASIN AREA

                 PRECIPITATION DATA

  25 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
                   .71    1.75    4.40    5.60    6.20    7.90    9.80   11.50     .00     .00     .00     .00

                                                     STORM AREA =     .04

  12 LS          SCS LOSS RATE
                       STRTL         .11  INITIAL ABSTRACTION
                      CRVNBR       95.00  CURVE NUMBER
                       RTIMP         .00  PERCENT IMPERVIOUS AREA

  13 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .10  LAG

                                                          ***

                                                      UNIT HYDROGRAPH
                                                  8 END-OF-PERIOD ORDINATES
                75.      121.       57.       23.        9.        4.        1.        1.

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

                         HYDROGRAPH AT STATION       P1
                           FOR PLAN 4, RATIO = 1.00

    TOTAL RAINFALL =   11.50, TOTAL LOSS =     .61, TOTAL EXCESS =   10.89
```

```
  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     167.     12.17                  31.         11.         11.          11.
                        (INCHES)     7.797      10.891      10.891       10.891
                         (AC-FT)      16.         22.         22.          22.

                         CUMULATIVE AREA =     .04 SQ MI


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

                           HYDROGRAPH AT STATION       P1
                             FOR PLAN 4, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     167.     12.17                  31.         11.         11.          11.
                        (INCHES)     7.797      10.891      10.891       10.891
                         (AC-FT)      16.         22.         22.          22.

                         CUMULATIVE AREA =     .04 SQ MI


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

   26 KP        PLAN  5 FOR STATION       P1
                                TRIANGULAR DISTRIBUTION 100-YRS STORM

                SUBBASIN RUNOFF DATA

   11 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .04  SUBBASIN AREA

                  PRECIPITATION DATA

   28 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
                    .78    1.93    4.80    6.40    7.20    9.00   11.00   13.00     .00     .00     .00     .00

                                                   STORM AREA =     .04

   12 LS          SCS LOSS RATE
                        STRTL         .11  INITIAL ABSTRACTION
                       CRVNBR       95.00  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   13 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .10  LAG

                                                                ***

                                                          UNIT HYDROGRAPH
                                                      8 END-OF-PERIOD ORDINATES
                 75.      121.       57.       23.        9.        4.        1.        1.

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

                           HYDROGRAPH AT STATION       P1
                             FOR PLAN 5, RATIO = 1.00

     TOTAL RAINFALL =   13.00, TOTAL LOSS =     .61, TOTAL EXCESS =   12.39

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     184.     12.17                  36.         12.         12.          12.
                        (INCHES)     8.904      12.388      12.388       12.388
                         (AC-FT)      18.         25.         25.          25.

                         CUMULATIVE AREA =     .04 SQ MI


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

                           HYDROGRAPH AT STATION       P1
                             FOR PLAN 5, RATIO = 1.00
```

```
  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     184.     12.17                  36.         12.         12.          12.
                        (INCHES)     8.904      12.388      12.388       12.388
                         (AC-FT)      18.         25.         25.          25.

                         CUMULATIVE AREA =     .04 SQ MI



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


            **************
            *            *
   29 KK    *        P2  *
            *            *
            **************


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

   30 KP        PLAN  1 FOR STATION       P2
                              TRIANGULAR DISTRIBUTION 2-YRS STORM

                SUBBASIN RUNOFF DATA

   31 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .07  SUBBASIN AREA

                  PRECIPITATION DATA

   36 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
                    .47    1.07    2.25    2.80    3.10    3.90    4.50    5.20     .00     .00     .00     .00

                                                     STORM AREA =     .07

   32 LS          SCS LOSS RATE
                        STRTL         .11  INITIAL ABSTRACTION
                       CRVNBR       95.00  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   33 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .13  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                 10 END-OF-PERIOD ORDINATES
                99.      213.      147.       61.       28.       12.        6.        2.        1.        0.

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

                         HYDROGRAPH AT STATION       P2
                           FOR PLAN 1, RATIO = 1.00

     TOTAL RAINFALL =    5.20, TOTAL LOSS =     .58, TOTAL EXCESS =    4.62

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     190.     12.17                  29.          9.          9.           9.
                        (INCHES)     3.690       4.617       4.617        4.617
                         (AC-FT)      14.         18.         18.          18.

                         CUMULATIVE AREA =     .07 SQ MI


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

                         HYDROGRAPH AT STATION       P2
                           FOR PLAN 1, RATIO = 1.00
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```
  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     190.     12.17                  29.          9.          9.           9.
                        (INCHES)     3.690       4.617       4.617        4.617
                         (AC-FT)      14.         18.         18.          18.

                         CUMULATIVE AREA =     .07 SQ MI


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

   37 KP        PLAN  2 FOR STATION       P2
                                TRIANGULAR DISTRIBUTION 10-YRS STORM

                SUBBASIN RUNOFF DATA

   31 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .07  SUBBASIN AREA

                  PRECIPITATION DATA

   39 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
                    .56    1.38    3.35    4.40    4.90    5.90    7.00    8.50     .00     .00     .00     .00

                                                   STORM AREA =     .07

   32 LS          SCS LOSS RATE
                        STRTL         .11  INITIAL ABSTRACTION
                       CRVNBR       95.00  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   33 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .13  LAG

                                                          ***

                                                      UNIT HYDROGRAPH
                                                 10 END-OF-PERIOD ORDINATES
                99.      213.      147.       61.       28.       12.        6.        2.        1.        0.

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

                        HYDROGRAPH AT STATION       P2
                          FOR PLAN 2, RATIO = 1.00

    TOTAL RAINFALL =    8.50, TOTAL LOSS =     .60, TOTAL EXCESS =    7.90

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     253.     12.17                  46.         16.         15.          15.
                        (INCHES)     5.772       7.899       7.899        7.899
                         (AC-FT)      23.         31.         31.          31.

                         CUMULATIVE AREA =     .07 SQ MI


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

                        HYDROGRAPH AT STATION       P2
                          FOR PLAN 2, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     253.     12.17                  46.         16.         15.          15.
                        (INCHES)     5.772       7.899       7.899        7.899
                         (AC-FT)      23.         31.         31.          31.

                         CUMULATIVE AREA =     .07 SQ MI


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

   40 KP        PLAN  3 FOR STATION       P2
                                TRIANGULAR DISTRIBUTION 25-YRS STORM

                SUBBASIN RUNOFF DATA
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  31 BA          SUBBASIN CHARACTERISTICS
                       TAREA         .07  SUBBASIN AREA

                 PRECIPITATION DATA

  42 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
                   .60    1.52    3.90    5.00    5.70    7.00    8.20   10.00     .00     .00     .00     .00

                                                   STORM AREA =     .07

  32 LS          SCS LOSS RATE
                       STRTL         .11  INITIAL ABSTRACTION
                      CRVNBR       95.00  CURVE NUMBER
                       RTIMP         .00  PERCENT IMPERVIOUS AREA

  33 UD          SCS DIMENSIONLESS UNITGRAPH
                        TLAG         .13  LAG

                                                                ***

                                                          UNIT HYDROGRAPH
                                                     10 END-OF-PERIOD ORDINATES
               99.      213.      147.       61.       28.       12.        6.        2.        1.        0.

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

                        HYDROGRAPH AT STATION       P2
                          FOR PLAN 3, RATIO = 1.00

    TOTAL RAINFALL =   10.00, TOTAL LOSS =     .60, TOTAL EXCESS =    9.39

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                       6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     281.     12.17                   54.         19.         18.          18.
                        (INCHES)     6.878       9.394       9.394        9.394
                         (AC-FT)      27.         37.         37.          37.

                        CUMULATIVE AREA =     .07 SQ MI


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

                        HYDROGRAPH AT STATION       P2
                          FOR PLAN 3, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                       6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     281.     12.17                   54.         19.         18.          18.
                        (INCHES)     6.878       9.394       9.394        9.394
                         (AC-FT)      27.         37.         37.          37.

                        CUMULATIVE AREA =     .07 SQ MI


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

  43 KP        PLAN  4 FOR STATION       P2
                              TRIANGULAR DISTRIBUTION 50-YRS STORM

               SUBBASIN RUNOFF DATA

  31 BA          SUBBASIN CHARACTERISTICS
                       TAREA         .07  SUBBASIN AREA

                 PRECIPITATION DATA

  45 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
                   .71    1.75    4.40    5.60    6.20    7.90    9.80   11.50     .00     .00     .00     .00

                                                   STORM AREA =     .07

  32 LS          SCS LOSS RATE
                       STRTL         .11  INITIAL ABSTRACTION
                      CRVNBR       95.00  CURVE NUMBER
                       RTIMP         .00  PERCENT IMPERVIOUS AREA

  33 UD          SCS DIMENSIONLESS UNITGRAPH
                        TLAG         .13  LAG
```

```
                                                  ***

                                                UNIT HYDROGRAPH
                                            10 END-OF-PERIOD ORDINATES
                99.      213.      147.       61.       28.       12.        6.        2.        1.        0.

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

                         HYDROGRAPH AT STATION       P2
                           FOR PLAN 4, RATIO = 1.00

     TOTAL RAINFALL =   11.50, TOTAL LOSS =     .61, TOTAL EXCESS =   10.89

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     325.     12.17                  62.         21.         21.          21.
                        (INCHES)     7.795      10.891      10.891       10.891
                         (AC-FT)      31.         43.         43.          43.

                         CUMULATIVE AREA =     .07 SQ MI


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

                         HYDROGRAPH AT STATION       P2
                           FOR PLAN 4, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     325.     12.17                  62.         21.         21.          21.
                        (INCHES)     7.795      10.891      10.891       10.891
                         (AC-FT)      31.         43.         43.          43.

                         CUMULATIVE AREA =     .07 SQ MI


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

   46 KP        PLAN  5 FOR STATION       P2
                                TRIANGULAR DISTRIBUTION 100-YRS STORM

                SUBBASIN RUNOFF DATA

   31 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .07  SUBBASIN AREA

                  PRECIPITATION DATA

   48 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
                    .78    1.93    4.80    6.40    7.20    9.00   11.00   13.00     .00     .00     .00     .00

                                                     STORM AREA =     .07

   32 LS          SCS LOSS RATE
                        STRTL         .11  INITIAL ABSTRACTION
                       CRVNBR       95.00  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   33 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .13  LAG

                                                  ***

                                                UNIT HYDROGRAPH
                                            10 END-OF-PERIOD ORDINATES
                99.      213.      147.       61.       28.       12.        6.        2.        1.        0.

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

                         HYDROGRAPH AT STATION       P2
                           FOR PLAN 5, RATIO = 1.00

     TOTAL RAINFALL =   13.00, TOTAL LOSS =     .61, TOTAL EXCESS =   12.39

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     357.     12.17                  70.         24.         24.          24.
```

```
                        (INCHES)     8.902      12.388      12.388       12.388
                         (AC-FT)      35.         48.         48.          48.

                         CUMULATIVE AREA =     .07 SQ MI


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

                          HYDROGRAPH AT STATION       P2
                            FOR PLAN 5, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                            (CFS)
+     357.     12.17                70.         24.         24.          24.
                        (INCHES)     8.902      12.388      12.388       12.388
                         (AC-FT)      35.         48.         48.          48.

                         CUMULATIVE AREA =     .07 SQ MI



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


             **************
             *            *
   49 KK     *    PONDP2  *
             *            *
             **************
                                  DETENTION POND P2   Base= 50.00x50.00

   51 KO          OUTPUT CONTROL VARIABLES
                        IPRNT           3  PRINT CONTROL
                        IPLOT           1  PLOT CONTROL
                        QSCAL          0.  HYDROGRAPH PLOT SCALE

                HYDROGRAPH ROUTING DATA

   52 RS          STORAGE ROUTING
                        NSTPS           1  NUMBER OF SUBREACHES
                         ITYP        ELEV  TYPE OF INITIAL CONDITION
                        RSVRIC         .00  INITIAL CONDITION
                             X         .00 WORKING R AND D COEFFICIENT

   54 SV            STORAGE          .0       1.1       2.2       3.4       4.8       5.5       6.2       6.9       7.7       8.5


   55 SE          ELEVATION         .00      1.64      3.28      4.92      6.56      7.38      8.20      9.02      9.84     10.66


   53 SQ          DISCHARGE          0.        0.      117.      168.      207.      224.      253.      293.      339.      390.


                                                                  ***

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

                          HYDROGRAPH AT STATION   PONDP2
                            FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                            (CFS)
+     143.     12.33                29.          9.          8.           8.
                        (INCHES)     3.686       4.347       4.347        4.347
                         (AC-FT)      14.         17.         17.          17.

 PEAK STORAGE   TIME                         MAXIMUM AVERAGE STORAGE
                                     6-HR       24-HR       72-HR     24.92-HR
+  (AC-FT)      (HR)
        3.     12.33                  1.          1.          1.           1.

  PEAK STAGE    TIME                          MAXIMUM AVERAGE STAGE
                                     6-HR       24-HR       72-HR     24.92-HR
+   (FEET)      (HR)
      4.12     12.33                2.07        1.35        1.30         1.30

                         CUMULATIVE AREA =     .07 SQ MI
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***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

                PLAN  2 INPUT DATA FOR STATION   PONDP2 ARE SAME AS FOR PLAN  1

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

                          HYDROGRAPH AT STATION   PONDP2
                            FOR PLAN 2, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     186.     12.33                   46.         15.         15.          15.
                        (INCHES)     5.771       7.629       7.629        7.629
                         (AC-FT)       23.         30.         30.          30.

 PEAK STORAGE   TIME                         MAXIMUM AVERAGE STORAGE
                                      6-HR       24-HR       72-HR     24.92-HR
+  (AC-FT)      (HR)
        4.     12.33                    2.          1.          1.           1.

  PEAK STAGE    TIME                          MAXIMUM AVERAGE STAGE
                                      6-HR       24-HR       72-HR     24.92-HR
+   (FEET)      (HR)
      5.70     12.33                 2.39        1.67        1.61         1.61

                         CUMULATIVE AREA =     .07 SQ MI


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

                PLAN  3 INPUT DATA FOR STATION   PONDP2 ARE SAME AS FOR PLAN  1

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

                          HYDROGRAPH AT STATION   PONDP2
                            FOR PLAN 3, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     206.     12.33                   54.         18.         17.          17.
                        (INCHES)     6.874       9.124       9.124        9.124
                         (AC-FT)       27.         36.         36.          36.

 PEAK STORAGE   TIME                         MAXIMUM AVERAGE STORAGE
                                      6-HR       24-HR       72-HR     24.92-HR
+  (AC-FT)      (HR)
        5.     12.33                    2.          1.          1.           1.

  PEAK STAGE    TIME                          MAXIMUM AVERAGE STAGE
                                      6-HR       24-HR       72-HR     24.92-HR
+   (FEET)      (HR)
      6.54     12.33                 2.59        1.77        1.70         1.70

                         CUMULATIVE AREA =     .07 SQ MI


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

                PLAN  4 INPUT DATA FOR STATION   PONDP2 ARE SAME AS FOR PLAN  1

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

                          HYDROGRAPH AT STATION   PONDP2
                            FOR PLAN 4, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     228.     12.33                   62.         21.         20.          20.
                        (INCHES)     7.792      10.621      10.621       10.621
                         (AC-FT)       31.         42.         42.          42.

 PEAK STORAGE   TIME                         MAXIMUM AVERAGE STORAGE
                                      6-HR       24-HR       72-HR     24.92-HR
+  (AC-FT)      (HR)
        6.     12.33                    2.          1.          1.           1.
```

```
  PEAK STAGE    TIME                          MAXIMUM AVERAGE STAGE
                                     6-HR       24-HR       72-HR     24.92-HR
+   (FEET)      (HR)
      7.49     12.33                  2.77        1.82        1.75         1.75

                        CUMULATIVE AREA =     .07 SQ MI


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

                PLAN  5 INPUT DATA FOR STATION   PONDP2 ARE SAME AS FOR PLAN  1

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

                          HYDROGRAPH AT STATION   PONDP2
                            FOR PLAN 5, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     253.     12.33                   70.         24.         23.          23.
                        (INCHES)     8.899      12.118      12.118       12.118
                         (AC-FT)       35.         47.         47.          47.

 PEAK STORAGE   TIME                         MAXIMUM AVERAGE STORAGE
                                     6-HR       24-HR       72-HR     24.92-HR
+  (AC-FT)      (HR)
        6.     12.33                    2.          1.          1.           1.

  PEAK STAGE    TIME                          MAXIMUM AVERAGE STAGE
                                     6-HR       24-HR       72-HR     24.92-HR
+   (FEET)      (HR)
      8.19     12.33                  2.96        1.91        1.84         1.84

                        CUMULATIVE AREA =     .07 SQ MI


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


            **************
            *            *
   56 KK    *        P3  *
            *            *
            **************


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

   57 KP        PLAN  1 FOR STATION       P3
                              TRIANGULAR DISTRIBUTION 2-YRS STORM

                SUBBASIN RUNOFF DATA

   58 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .03  SUBBASIN AREA

                  PRECIPITATION DATA

   63 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
                    .47    1.07    2.25    2.80    3.10    3.90    4.50    5.20     .00     .00     .00     .00

                                                   STORM AREA =     .03

   59 LS          SCS LOSS RATE
                        STRTL         .11  INITIAL ABSTRACTION
                       CRVNBR       95.00  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   60 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .08  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                 7 END-OF-PERIOD ORDINATES
                96.       86.       26.        8.        3.        1.        0.

       ***             ***             ***             ***             ***
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                        HYDROGRAPH AT STATION       P3
                          FOR PLAN 1, RATIO = 1.00

     TOTAL RAINFALL =    5.20, TOTAL LOSS =     .58, TOTAL EXCESS =    4.62

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+      80.     12.08                  11.          4.          3.           3.
                        (INCHES)     3.692       4.618       4.618        4.618
                         (AC-FT)       6.          7.          7.           7.

                         CUMULATIVE AREA =     .03 SQ MI


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

                        HYDROGRAPH AT STATION       P3
                          FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+      80.     12.08                  11.          4.          3.           3.
                        (INCHES)     3.692       4.618       4.618        4.618
                         (AC-FT)       6.          7.          7.           7.

                         CUMULATIVE AREA =     .03 SQ MI


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

   64 KP        PLAN  2 FOR STATION       P3
                                TRIANGULAR DISTRIBUTION 10-YRS STORM

                SUBBASIN RUNOFF DATA

   58 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .03  SUBBASIN AREA

                  PRECIPITATION DATA

   66 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
                    .56    1.38    3.35    4.40    4.90    5.90    7.00    8.50     .00     .00     .00     .00

                                                     STORM AREA =     .03

   59 LS          SCS LOSS RATE
                        STRTL         .11  INITIAL ABSTRACTION
                       CRVNBR       95.00  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   60 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .08  LAG

                                                                ***

                                                          UNIT HYDROGRAPH
                                                     7 END-OF-PERIOD ORDINATES
                 96.       86.       26.        8.        3.        1.        0.

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

                        HYDROGRAPH AT STATION       P3
                          FOR PLAN 2, RATIO = 1.00

     TOTAL RAINFALL =    8.50, TOTAL LOSS =     .60, TOTAL EXCESS =    7.90

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     106.     12.08                  18.          6.          6.           6.
                        (INCHES)     5.774       7.899       7.899        7.899
                         (AC-FT)       9.         12.         12.          12.

                         CUMULATIVE AREA =     .03 SQ MI
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      ***            ***            ***            ***            ***

                        HYDROGRAPH AT STATION       P3
                          FOR PLAN 2, RATIO = 1.00

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     106.     12.08                  18.          6.          6.           6.
                       (INCHES)     5.774       7.899       7.899        7.899
                        (AC-FT)       9.         12.         12.          12.

                        CUMULATIVE AREA =     .03 SQ MI


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

   67 KP        PLAN  3 FOR STATION       P3
                              TRIANGULAR DISTRIBUTION 25-YRS STORM

                SUBBASIN RUNOFF DATA

   58 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .03  SUBBASIN AREA

                  PRECIPITATION DATA

   69 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
                    .60    1.52    3.90    5.00    5.70    7.00    8.20   10.00     .00     .00     .00     .00

                                                     STORM AREA =     .03

   59 LS          SCS LOSS RATE
                        STRTL         .11  INITIAL ABSTRACTION
                       CRVNBR       95.00  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   60 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .08  LAG

                                                          ***

                                                      UNIT HYDROGRAPH
                                                  7 END-OF-PERIOD ORDINATES
                96.       86.       26.        8.        3.        1.        0.

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

                        HYDROGRAPH AT STATION       P3
                          FOR PLAN 3, RATIO = 1.00

    TOTAL RAINFALL =   10.00, TOTAL LOSS =     .60, TOTAL EXCESS =    9.39

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     117.     12.08                  21.          7.          7.           7.
                       (INCHES)     6.880       9.395       9.395        9.395
                        (AC-FT)      10.         14.         14.          14.

                        CUMULATIVE AREA =     .03 SQ MI


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

                        HYDROGRAPH AT STATION       P3
                          FOR PLAN 3, RATIO = 1.00

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     117.     12.08                  21.          7.          7.           7.
                       (INCHES)     6.880       9.395       9.395        9.395
                        (AC-FT)      10.         14.         14.          14.

                        CUMULATIVE AREA =     .03 SQ MI
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***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

  70 KP        PLAN  4 FOR STATION       P3
                              TRIANGULAR DISTRIBUTION 50-YRS STORM

               SUBBASIN RUNOFF DATA

  58 BA          SUBBASIN CHARACTERISTICS
                       TAREA         .03  SUBBASIN AREA

                 PRECIPITATION DATA

  72 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
                   .71    1.75    4.40    5.60    6.20    7.90    9.80   11.50     .00     .00     .00     .00

                                                     STORM AREA =     .03

  59 LS          SCS LOSS RATE
                       STRTL         .11  INITIAL ABSTRACTION
                      CRVNBR       95.00  CURVE NUMBER
                       RTIMP         .00  PERCENT IMPERVIOUS AREA

  60 UD          SCS DIMENSIONLESS UNITGRAPH
                        TLAG         .08  LAG

                                                          ***

                                                       UNIT HYDROGRAPH
                                                  7 END-OF-PERIOD ORDINATES
                96.       86.       26.        8.        3.        1.        0.

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

                        HYDROGRAPH AT STATION       P3
                          FOR PLAN 4, RATIO = 1.00

    TOTAL RAINFALL =   11.50, TOTAL LOSS =     .61, TOTAL EXCESS =   10.89

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     136.     12.08                24.         8.          8.          8.
                       (INCHES)     7.798      10.891      10.891      10.891
                        (AC-FT)      12.         16.         16.         16.

                        CUMULATIVE AREA =     .03 SQ MI


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

                        HYDROGRAPH AT STATION       P3
                          FOR PLAN 4, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     136.     12.08                24.         8.          8.          8.
                       (INCHES)     7.798      10.891      10.891      10.891
                        (AC-FT)      12.         16.         16.         16.

                        CUMULATIVE AREA =     .03 SQ MI


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

  73 KP        PLAN  5 FOR STATION       P3
                              TRIANGULAR DISTRIBUTION 100-YRS STORM

               SUBBASIN RUNOFF DATA

  58 BA          SUBBASIN CHARACTERISTICS
                       TAREA         .03  SUBBASIN AREA

                 PRECIPITATION DATA

  75 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
                   .78    1.93    4.80    6.40    7.20    9.00   11.00   13.00     .00     .00     .00     .00

                                                     STORM AREA =     .03
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```
  59 LS          SCS LOSS RATE
                      STRTL         .11  INITIAL ABSTRACTION
                     CRVNBR       95.00  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

  60 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .08  LAG

                                                                  ***

                                                          UNIT HYDROGRAPH
                                                     7 END-OF-PERIOD ORDINATES
                96.       86.       26.        8.        3.        1.        0.

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

                        HYDROGRAPH AT STATION       P3
                          FOR PLAN 5, RATIO = 1.00

    TOTAL RAINFALL =   13.00, TOTAL LOSS =     .61, TOTAL EXCESS =   12.39

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                       6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     149.     12.08                    27.          9.          9.           9.
                        (INCHES)     8.905      12.389      12.389       12.389
                         (AC-FT)      13.         19.         19.          19.

                        CUMULATIVE AREA =     .03 SQ MI


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

                        HYDROGRAPH AT STATION       P3
                          FOR PLAN 5, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                       6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     149.     12.08                    27.          9.          9.           9.
                        (INCHES)     8.905      12.389      12.389       12.389
                         (AC-FT)      13.         19.         19.          19.

                        CUMULATIVE AREA =     .03 SQ MI


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


            **************
            *            *
  76 KK     *        P4  *
            *            *
            **************


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

  77 KP        PLAN  1 FOR STATION       P4
                            TRIANGULAR DISTRIBUTION 2-YRS STORM

               SUBBASIN RUNOFF DATA

  78 BA          SUBBASIN CHARACTERISTICS
                      TAREA         .05  SUBBASIN AREA

                 PRECIPITATION DATA

  83 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
                   .47    1.07    2.25    2.80    3.10    3.90    4.50    5.20     .00     .00     .00     .00

                                                     STORM AREA =     .05

  79 LS          SCS LOSS RATE
                      STRTL         .11  INITIAL ABSTRACTION
                     CRVNBR       95.00  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA
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  80 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .10  LAG

                                                          ***

                                                       UNIT HYDROGRAPH
                                                   8 END-OF-PERIOD ORDINATES
                94.      146.       67.       27.       10.        4.        2.        1.

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

                        HYDROGRAPH AT STATION       P4
                          FOR PLAN 1, RATIO = 1.00

    TOTAL RAINFALL =    5.20, TOTAL LOSS =     .58, TOTAL EXCESS =    4.62

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     120.     12.17                18.          6.          5.           5.
                       (INCHES)    3.691       4.617       4.617        4.617
                        (AC-FT)      9.         11.         11.          11.

                        CUMULATIVE AREA =     .05 SQ MI


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

                        HYDROGRAPH AT STATION       P4
                          FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     120.     12.17                18.          6.          5.           5.
                       (INCHES)    3.691       4.617       4.617        4.617
                        (AC-FT)      9.         11.         11.          11.

                        CUMULATIVE AREA =     .05 SQ MI


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

  84 KP        PLAN  2 FOR STATION       P4
                           TRIANGULAR DISTRIBUTION 10-YRS STORM

               SUBBASIN RUNOFF DATA

  78 BA          SUBBASIN CHARACTERISTICS
                       TAREA         .05  SUBBASIN AREA

                 PRECIPITATION DATA

  86 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
                   .56    1.38    3.35    4.40    4.90    5.90    7.00    8.50     .00     .00     .00     .00

                                                   STORM AREA =     .05

  79 LS          SCS LOSS RATE
                       STRTL         .11  INITIAL ABSTRACTION
                      CRVNBR       95.00  CURVE NUMBER
                       RTIMP         .00  PERCENT IMPERVIOUS AREA

  80 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .10  LAG

                                                          ***

                                                       UNIT HYDROGRAPH
                                                   8 END-OF-PERIOD ORDINATES
                94.      146.       67.       27.       10.        4.        2.        1.

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

                        HYDROGRAPH AT STATION       P4
                          FOR PLAN 2, RATIO = 1.00

    TOTAL RAINFALL =    8.50, TOTAL LOSS =     .60, TOTAL EXCESS =    7.90

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
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                          (CFS)
+     157.     12.17                   28.         10.          9.           9.
                        (INCHES)     5.773       7.899       7.899        7.899
                         (AC-FT)      14.         19.         19.          19.

                         CUMULATIVE AREA =     .05 SQ MI


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

                         HYDROGRAPH AT STATION       P4
                           FOR PLAN 2, RATIO = 1.00

  PEAK FLOW     TIME                         MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     157.     12.17                   28.         10.          9.           9.
                        (INCHES)     5.773       7.899       7.899        7.899
                         (AC-FT)      14.         19.         19.          19.

                         CUMULATIVE AREA =     .05 SQ MI


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

   87 KP        PLAN  3 FOR STATION       P4
                              TRIANGULAR DISTRIBUTION 25-YRS STORM

                SUBBASIN RUNOFF DATA

   78 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .05  SUBBASIN AREA

                  PRECIPITATION DATA

   89 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
                    .60    1.52    3.90    5.00    5.70    7.00    8.20   10.00     .00     .00     .00     .00

                                                   STORM AREA =     .05

   79 LS          SCS LOSS RATE
                        STRTL         .11  INITIAL ABSTRACTION
                       CRVNBR       95.00  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   80 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .10  LAG

                                                                 ***

                                                            UNIT HYDROGRAPH
                                                        8 END-OF-PERIOD ORDINATES
                94.      146.       67.       27.       10.        4.        2.        1.

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

                         HYDROGRAPH AT STATION       P4
                           FOR PLAN 3, RATIO = 1.00

     TOTAL RAINFALL =   10.00, TOTAL LOSS =     .60, TOTAL EXCESS =    9.39

  PEAK FLOW     TIME                         MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     174.     12.08                   33.         11.         11.          11.
                        (INCHES)     6.879       9.394       9.394        9.394
                         (AC-FT)      17.         23.         23.          23.

                         CUMULATIVE AREA =     .05 SQ MI


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

                         HYDROGRAPH AT STATION       P4
                           FOR PLAN 3, RATIO = 1.00

  PEAK FLOW     TIME                         MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     174.     12.08                   33.         11.         11.          11.
                        (INCHES)     6.879       9.394       9.394        9.394
```

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                        (AC-FT)       17.         23.         23.          23.

                        CUMULATIVE AREA =     .05 SQ MI


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

   90 KP        PLAN  4 FOR STATION       P4
                                TRIANGULAR DISTRIBUTION 50-YRS STORM

                SUBBASIN RUNOFF DATA

   78 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .05  SUBBASIN AREA

                  PRECIPITATION DATA

   92 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
                    .71    1.75    4.40    5.60    6.20    7.90    9.80   11.50     .00     .00     .00     .00

                                                     STORM AREA =     .05

   79 LS          SCS LOSS RATE
                        STRTL         .11  INITIAL ABSTRACTION
                       CRVNBR       95.00  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   80 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .10  LAG

                                                                 ***

                                                          UNIT HYDROGRAPH
                                                       8 END-OF-PERIOD ORDINATES
                 94.      146.       67.       27.       10.        4.        2.        1.

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

                         HYDROGRAPH AT STATION       P4
                           FOR PLAN 4, RATIO = 1.00

     TOTAL RAINFALL =   11.50, TOTAL LOSS =     .61, TOTAL EXCESS =   10.89

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     201.     12.17                   38.         13.         13.          13.
                        (INCHES)     7.797      10.891      10.891       10.891
                         (AC-FT)       19.         26.         26.          26.

                         CUMULATIVE AREA =     .05 SQ MI


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

                         HYDROGRAPH AT STATION       P4
                           FOR PLAN 4, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     201.     12.17                   38.         13.         13.          13.
                        (INCHES)     7.797      10.891      10.891       10.891
                         (AC-FT)       19.         26.         26.          26.

                         CUMULATIVE AREA =     .05 SQ MI


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

   93 KP        PLAN  5 FOR STATION       P4
                                TRIANGULAR DISTRIBUTION 100-YRS STORM

                SUBBASIN RUNOFF DATA

   78 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .05  SUBBASIN AREA

                  PRECIPITATION DATA

   95 PH                                DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
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                  ..... 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
                    .78    1.93    4.80    6.40    7.20    9.00   11.00   13.00     .00     .00     .00     .00

                                                STORM AREA =     .05

   79 LS          SCS LOSS RATE
                        STRTL         .11  INITIAL ABSTRACTION
                       CRVNBR       95.00  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   80 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .10  LAG

                                                                  ***

                                                              UNIT HYDROGRAPH
                                                          8 END-OF-PERIOD ORDINATES
                 94.      146.       67.       27.       10.        4.        2.        1.

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

                          HYDROGRAPH AT STATION       P4
                            FOR PLAN 5, RATIO = 1.00

     TOTAL RAINFALL =   13.00, TOTAL LOSS =     .61, TOTAL EXCESS =   12.39

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                           (CFS)
+     222.     12.17                43.         15.         15.          15.
                         (INCHES)    8.904      12.388      12.388       12.388
                          (AC-FT)      21.         30.         30.          30.

                          CUMULATIVE AREA =     .05 SQ MI


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

                          HYDROGRAPH AT STATION       P4
                            FOR PLAN 5, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                           (CFS)
+     222.     12.17                43.         15.         15.          15.
                         (INCHES)    8.904      12.388      12.388       12.388
                          (AC-FT)      21.         30.         30.          30.

                          CUMULATIVE AREA =     .05 SQ MI


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


            **************
            *            *
   96 KK    *    PONDP4  *
            *            *
            **************
                                DETENTION POND P2  Base= 35.00x35.00

   98 KO          OUTPUT CONTROL VARIABLES
                       IPRNT           1  PRINT CONTROL
                       IPLOT           1  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE

                HYDROGRAPH ROUTING DATA

   99 RS          STORAGE ROUTING
                       NSTPS           1  NUMBER OF SUBREACHES
                        ITYP        ELEV  TYPE OF INITIAL CONDITION
                      RSVRIC         .00  INITIAL CONDITION
                           X         .00 WORKING R AND D COEFFICIENT

  101 SV            STORAGE          .0        .5       1.1       1.4       1.8       2.1       2.5       2.9       3.3       3.7


  102 SE          ELEVATION         .00      1.64      3.28      4.10      4.92      5.74      6.56      7.38      8.20      9.02


  100 SQ          DISCHARGE          0.       29.       79.       94.      108.      120.      130.      140.      190.      274.
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HYDROGRAPH AT STATION PONDP4
PLAN 1, RATIO = 1.00

DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0000	1	0.	.0	.0	1		0820	101	2.	.0	.1	1		1640	201	3.	.1	.2
1		0005	2	0.	.0	.0	1		0825	102	2.	.0	.1	1		1645	202	3.	.1	.2
1		0010	3	0.	.0	.0	1		0830	103	2.	.0	.1	1		1650	203	3.	.1	.2
1		0015	4	0.	.0	.0	1		0835	104	2.	.0	.1	1		1655	204	3.	.0	.2
1		0020	5	0.	.0	.0	1		0840	105	2.	.0	.1	1		1700	205	3.	.0	.2
1		0025	6	0.	.0	.0	1		0845	106	2.	.0	.1	1		1705	206	3.	.0	.2
1		0030	7	0.	.0	.0	1		0850	107	2.	.0	.1	1		1710	207	3.	.0	.1
1		0035	8	0.	.0	.0	1		0855	108	3.	.0	.1	1		1715	208	3.	.0	.1
1		0040	9	0.	.0	.0	1		0900	109	3.	.0	.1	1		1720	209	3.	.0	.1
1		0045	10	0.	.0	.0	1		0905	110	3.	.0	.2	1		1725	210	3.	.0	.1
1		0050	11	0.	.0	.0	1		0910	111	3.	.1	.2	1		1730	211	3.	.0	.1
1		0055	12	0.	.0	.0	1		0915	112	4.	.1	.2	1		1735	212	3.	.0	.1
1		0100	13	0.	.0	.0	1		0920	113	4.	.1	.2	1		1740	213	2.	.0	.1
1		0105	14	0.	.0	.0	1		0925	114	4.	.1	.2	1		1745	214	2.	.0	.1
1		0110	15	0.	.0	.0	1		0930	115	5.	.1	.3	1		1750	215	2.	.0	.1
1		0115	16	0.	.0	.0	1		0935	116	5.	.1	.3	1		1755	216	2.	.0	.1
1		0120	17	0.	.0	.0	1		0940	117	5.	.1	.3	1		1800	217	2.	.0	.1
1		0125	18	0.	.0	.0	1		0945	118	5.	.1	.3	1		1805	218	2.	.0	.1
1		0130	19	0.	.0	.0	1		0950	119	6.	.1	.3	1		1810	219	2.	.0	.1
1		0135	20	0.	.0	.0	1		0955	120	6.	.1	.3	1		1815	220	2.	.0	.1
1		0140	21	0.	.0	.0	1		1000	121	6.	.1	.3	1		1820	221	2.	.0	.1
1		0145	22	0.	.0	.0	1		1005	122	6.	.1	.3	1		1825	222	2.	.0	.1
1		0150	23	0.	.0	.0	1		1010	123	6.	.1	.4	1		1830	223	2.	.0	.1
1		0155	24	0.	.0	.0	1		1015	124	7.	.1	.4	1		1835	224	2.	.0	.1
1		0200	25	0.	.0	.0	1		1020	125	7.	.1	.4	1		1840	225	2.	.0	.1
1		0205	26	0.	.0	.0	1		1025	126	7.	.1	.4	1		1845	226	2.	.0	.1
1		0210	27	0.	.0	.0	1		1030	127	7.	.1	.4	1		1850	227	2.	.0	.1
1		0215	28	0.	.0	.0	1		1035	128	8.	.1	.4	1		1855	228	2.	.0	.1
1		0220	29	0.	.0	.0	1		1040	129	8.	.1	.4	1		1900	229	2.	.0	.1
1		0225	30	0.	.0	.0	1		1045	130	7.	.1	.4	1		1905	230	2.	.0	.1
1		0230	31	0.	.0	.0	1		1050	131	7.	.1	.4	1		1910	231	2.	.0	.1
1		0235	32	0.	.0	.0	1		1055	132	7.	.1	.4	1		1915	232	2.	.0	.1
1		0240	33	0.	.0	.0	1		1100	133	8.	.1	.4	1		1920	233	2.	.0	.1
1		0245	34	0.	.0	.0	1		1105	134	8.	.1	.4	1		1925	234	2.	.0	.1
1		0250	35	0.	.0	.0	1		1110	135	9.	.2	.5	1		1930	235	2.	.0	.1
1		0255	36	0.	.0	.0	1		1115	136	10.	.2	.5	1		1935	236	2.	.0	.1
1		0300	37	0.	.0	.0	1		1120	137	11.	.2	.6	1		1940	237	2.	.0	.1
1		0305	38	0.	.0	.0	1		1125	138	12.	.2	.6	1		1945	238	2.	.0	.1
1		0310	39	0.	.0	.0	1		1130	139	13.	.2	.7	1		1950	239	2.	.0	.1
1		0315	40	0.	.0	.0	1		1135	140	14.	.3	.8	1		1955	240	2.	.0	.1
1		0320	41	0.	.0	.0	1		1140	141	17.	.3	.9	1		2000	241	2.	.0	.1
1		0325	42	0.	.0	.0	1		1145	142	20.	.4	1.1	1		2005	242	2.	.0	.1
1		0330	43	0.	.0	.0	1		1150	143	25.	.4	1.4	1		2010	243	2.	.0	.1
1		0335	44	0.	.0	.0	1		1155	144	33.	.6	1.8	1		2015	244	2.	.0	.1
1		0340	45	0.	.0	.0	1		1200	145	47.	.7	2.2	1		2020	245	2.	.0	.1
1		0345	46	0.	.0	.0	1		1205	146	68.	1.0	2.9	1		2025	246	2.	.0	.1
1		0350	47	0.	.0	.0	1		1210	147	86.	1.3	3.6	1		2030	247	2.	.0	.1
1		0355	48	0.	.0	.0	1		1215	148	92.	1.4	4.0	1		2035	248	2.	.0	.1
1		0400	49	0.	.0	.0	1		1220	149	90.	1.3	3.8	1		2040	249	2.	.0	.1
1		0405	50	0.	.0	.0	1		1225	150	82.	1.2	3.4	1		2045	250	2.	.0	.1
1		0410	51	0.	.0	.0	1		1230	151	67.	1.0	2.9	1		2050	251	2.	.0	.1
1		0415	52	1.	.0	.0	1		1235	152	53.	.8	2.4	1		2055	252	2.	.0	.1
1		0420	53	1.	.0	.0	1		1240	153	42.	.7	2.1	1		2100	253	2.	.0	.1
1		0425	54	1.	.0	.0	1		1245	154	33.	.6	1.8	1		2105	254	2.	.0	.1
1		0430	55	1.	.0	.0	1		1250	155	27.	.5	1.5	1		2110	255	2.	.0	.1
1		0435	56	1.	.0	.0	1		1255	156	24.	.4	1.3	1		2115	256	2.	.0	.1
1		0440	57	1.	.0	.0	1		1300	157	21.	.4	1.2	1		2120	257	2.	.0	.1
1		0445	58	1.	.0	.0	1		1305	158	19.	.3	1.0	1		2125	258	2.	.0	.1
1		0450	59	1.	.0	.0	1		1310	159	17.	.3	.9	1		2130	259	2.	.0	.1
1		0455	60	1.	.0	.0	1		1315	160	15.	.3	.8	1		2135	260	2.	.0	.1
1		0500	61	1.	.0	.0	1		1320	161	13.	.2	.7	1		2140	261	2.	.0	.1
1		0505	62	1.	.0	.0	1		1325	162	12.	.2	.6	1		2145	262	2.	.0	.1
1		0510	63	1.	.0	.0	1		1330	163	11.	.2	.6	1		2150	263	2.	.0	.1
1		0515	64	1.	.0	.0	1		1335	164	10.	.2	.5	1		2155	264	2.	.0	.1
1		0520	65	1.	.0	.0	1		1340	165	10.	.2	.5	1		2200	265	2.	.0	.1
1		0525	66	1.	.0	.0	1		1345	166	9.	.2	.5	1		2205	266	2.	.0	.1
1		0530	67	1.	.0	.1	1		1350	167	9.	.2	.5	1		2210	267	2.	.0	.1
1		0535	68	1.	.0	.1	1		1355	168	9.	.2	.5	1		2215	268	2.	.0	.1
1		0540	69	1.	.0	.1	1		1400	169	9.	.2	.5	1		2220	269	2.	.0	.1
1		0545	70	1.	.0	.1	1		1405	170	9.	.2	.5	1		2225	270	2.	.0	.1
1		0550	71	1.	.0	.1	1		1410	171	9.	.2	.5	1		2230	271	1.	.0	.1
1		0555	72	1.	.0	.1	1		1415	172	8.	.2	.5	1		2235	272	1.	.0	.1
1		0600	73	1.	.0	.1	1		1420	173	8.	.1	.5	1		2240	273	1.	.0	.1
1		0605	74	1.	.0	.1	1		1425	174	8.	.1	.4	1		2245	274	1.	.0	.1
1		0610	75	1.	.0	.1	1		1430	175	8.	.1	.4	1		2250	275	1.	.0	.1

1	0615	76	1.	.0	.1	*	1	1435	176	8.	.1	.4	*	1	2255	276	1.	.0	.1
1	0620	77	1.	.0	.1	*	1	1440	177	7.	.1	.4	*	1	2300	277	1.	.0	.1
1	0625	78	1.	.0	.1	*	1	1445	178	7.	.1	.4	*	1	2305	278	1.	.0	.1
1	0630	79	1.	.0	.1	*	1	1450	179	7.	.1	.4	*	1	2310	279	1.	.0	.1
1	0635	80	1.	.0	.1	*	1	1455	180	7.	.1	.4	*	1	2315	280	1.	.0	.1
1	0640	81	1.	.0	.1	*	1	1500	181	7.	.1	.4	*	1	2320	281	1.	.0	.1
1	0645	82	1.	.0	.1	*	1	1505	182	7.	.1	.4	*	1	2325	282	1.	.0	.1
1	0650	83	1.	.0	.1	*	1	1510	183	6.	.1	.3	*	1	2330	283	1.	.0	.1
1	0655	84	1.	.0	.1	*	1	1515	184	6.	.1	.3	*	1	2335	284	1.	.0	.1
1	0700	85	1.	.0	.1	*	1	1520	185	5.	.1	.3	*	1	2340	285	1.	.0	.1
1	0705	86	1.	.0	.1	*	1	1525	186	5.	.1	.3	*	1	2345	286	1.	.0	.1
1	0710	87	2.	.0	.1	*	1	1530	187	4.	.1	.2	*	1	2350	287	1.	.0	.1
1	0715	88	2.	.0	.1	*	1	1535	188	4.	.1	.2	*	1	2355	288	1.	.0	.1
1	0720	89	2.	.0	.1	*	1	1540	189	4.	.1	.2	*	2	0000	289	1.	.0	.1
1	0725	90	2.	.0	.1	*	1	1545	190	4.	.1	.2	*	2	0005	290	1.	.0	.1
1	0730	91	2.	.0	.1	*	1	1550	191	4.	.1	.2	*	2	0010	291	1.	.0	.1
1	0735	92	2.	.0	.1	*	1	1555	192	3.	.1	.2	*	2	0015	292	1.	.0	.0
1	0740	93	2.	.0	.1	*	1	1600	193	3.	.1	.2	*	2	0020	293	1.	.0	.0
1	0745	94	2.	.0	.1	*	1	1605	194	3.	.1	.2	*	2	0025	294	0.	.0	.0
1	0750	95	2.	.0	.1	*	1	1610	195	3.	.1	.2	*	2	0030	295	0.	.0	.0
1	0755	96	2.	.0	.1	*	1	1615	196	3.	.1	.2	*	2	0035	296	0.	.0	.0
1	0800	97	2.	.0	.1	*	1	1620	197	3.	.1	.2	*	2	0040	297	0.	.0	.0
1	0805	98	2.	.0	.1	*	1	1625	198	3.	.1	.2	*	2	0045	298	0.	.0	.0
1	0810	99	2.	.0	.1	*	1	1630	199	3.	.1	.2	*	2	0050	299	0.	.0	.0
1	0815	100	2.	.0	.1	*	1	1635	200	3.	.1	.2	*	2	0055	300	0.	.0	.0

****

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 92.	12.25		18.	6.	5.	5.
		(INCHES)	3.682	4.617	4.617	4.617
		(AC-FT)	9.	11.	11.	11.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
1.	12.25	0.	0.	0.	0.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
3.97	12.25	.89	.29	.28	.28

CUMULATIVE AREA = .05 SQ MI

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

PLAN 2 INPUT DATA FOR STATION PONDP4 ARE SAME AS FOR PLAN 1

****

HYDROGRAPH AT STATION PONDP4
PLAN 2, RATIO = 1.00

****

DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0000	1	0.	.0	.0	*	1		0820	101	5.	.1	.3	*	1		1640	201	5.	.1	.3
1		0005	2	0.	.0	.0	*	1		0825	102	5.	.1	.3	*	1		1645	202	5.	.1	.3
1		0010	3	0.	.0	.0	*	1		0830	103	5.	.1	.3	*	1		1650	203	5.	.1	.3
1		0015	4	0.	.0	.0	*	1		0835	104	5.	.1	.3	*	1		1655	204	5.	.1	.3
1		0020	5	0.	.0	.0	*	1		0840	105	5.	.1	.3	*	1		1700	205	5.	.1	.3
1		0025	6	0.	.0	.0	*	1		0845	106	5.	.1	.3	*	1		1705	206	5.	.1	.3
1		0030	7	0.	.0	.0	*	1		0850	107	6.	.1	.3	*	1		1710	207	5.	.1	.3
1		0035	8	0.	.0	.0	*	1		0855	108	6.	.1	.3	*	1		1715	208	5.	.1	.3
1		0040	9	0.	.0	.0	*	1		0900	109	6.	.1	.3	*	1		1720	209	5.	.1	.3
1		0045	10	0.	.0	.0	*	1		0905	110	6.	.1	.3	*	1		1725	210	5.	.1	.3
1		0050	11	0.	.0	.0	*	1		0910	111	6.	.1	.3	*	1		1730	211	5.	.1	.3
1		0055	12	0.	.0	.0	*	1		0915	112	6.	.1	.4	*	1		1735	212	5.	.1	.3
1		0100	13	0.	.0	.0	*	1		0920	113	7.	.1	.4	*	1		1740	213	5.	.1	.3
1		0105	14	0.	.0	.0	*	1		0925	114	7.	.1	.4	*	1		1745	214	5.	.1	.3
1		0110	15	0.	.0	.0	*	1		0930	115	7.	.1	.4	*	1		1750	215	4.	.1	.3
1		0115	16	0.	.0	.0	*	1		0935	116	7.	.1	.4	*	1		1755	216	4.	.1	.2
1		0120	17	0.	.0	.0	*	1		0940	117	8.	.1	.4	*	1		1800	217	4.	.1	.2
1		0125	18	0.	.0	.0	*	1		0945	118	8.	.1	.4	*	1		1805	218	4.	.1	.2
1		0130	19	0.	.0	.0	*	1		0950	119	8.	.1	.4	*	1		1810	219	4.	.1	.2
1		0135	20	0.	.0	.0	*	1		0955	120	8.	.1	.5	*	1		1815	220	4.	.1	.2
1		0140	21	0.	.0	.0	*	1		1000	121	8.	.2	.5	*	1		1820	221	5.	.1	.3
1		0145	22	0.	.0	.0	*	1		1005	122	9.	.2	.5	*	1		1825	222	5.	.1	.3
1		0150	23	1.	.0	.0	*	1		1010	123	9.	.2	.5	*	1		1830	223	5.	.1	.3
1		0155	24	1.	.0	.0	*	1		1015	124	9.	.2	.5	*	1		1835	224	5.	.1	.3

1	0200	25	1.	.0	.0 *	1	1020	125	10.	.2	.5 *	1	1840	225	5.	.1	.3
1	0205	26	1.	.0	.0 *	1	1025	126	10.	.2	.5 *	1	1845	226	5.	.1	.3
1	0210	27	1.	.0	.0 *	1	1030	127	10.	.2	.6 *	1	1850	227	4.	.1	.2
1	0215	28	1.	.0	.1 *	1	1035	128	11.	.2	.6 *	1	1855	228	4.	.1	.2
1	0220	29	1.	.0	.1 *	1	1040	129	11.	.2	.6 *	1	1900	229	4.	.1	.2
1	0225	30	1.	.0	.1 *	1	1045	130	11.	.2	.6 *	1	1905	230	4.	.1	.2
1	0230	31	1.	.0	.1 *	1	1050	131	12.	.2	.7 *	1	1910	231	4.	.1	.2
1	0235	32	1.	.0	.1 *	1	1055	132	12.	.2	.7 *	1	1915	232	4.	.1	.2
1	0240	33	1.	.0	.1 *	1	1100	133	13.	.2	.7 *	1	1920	233	4.	.1	.2
1	0245	34	1.	.0	.1 *	1	1105	134	14.	.2	.8 *	1	1925	234	4.	.1	.2
1	0250	35	1.	.0	.1 *	1	1110	135	16.	.3	.9 *	1	1930	235	4.	.1	.2
1	0255	36	1.	.0	.1 *	1	1115	136	18.	.3	1.0 *	1	1935	236	4.	.1	.2
1	0300	37	2.	.0	.1 *	1	1120	137	21.	.4	1.2 *	1	1940	237	4.	.1	.2
1	0305	38	2.	.0	.1 *	1	1125	138	23.	.4	1.3 *	1	1945	238	4.	.1	.2
1	0310	39	2.	.0	.1 *	1	1130	139	25.	.5	1.4 *	1	1950	239	4.	.1	.2
1	0315	40	2.	.0	.1 *	1	1135	140	28.	.5	1.6 *	1	1955	240	4.	.1	.2
1	0320	41	2.	.0	.1 *	1	1140	141	34.	.6	1.8 *	1	2000	241	4.	.1	.2
1	0325	42	2.	.0	.1 *	1	1145	142	41.	.7	2.0 *	1	2005	242	4.	.1	.2
1	0330	43	2.	.0	.1 *	1	1150	143	50.	.8	2.3 *	1	2010	243	4.	.1	.2
1	0335	44	2.	.0	.1 *	1	1155	144	64.	.9	2.8 *	1	2015	244	4.	.1	.2
1	0340	45	2.	.0	.1 *	1	1200	145	82.	1.2	3.4 *	1	2020	245	4.	.1	.2
1	0345	46	2.	.0	.1 *	1	1205	146	97.	1.5	4.3 *	1	2025	246	4.	.1	.2
1	0350	47	2.	.0	.1 *	1	1210	147	111.	1.9	5.1 *	1	2030	247	4.	.1	.2
1	0355	48	2.	.0	.1 *	1	1215	148	118.	2.1	5.6 *	1	2035	248	4.	.1	.2
1	0400	49	2.	.0	.1 *	1	1220	149	118.	2.1	5.7 *	1	2040	249	4.	.1	.2
1	0405	50	2.	.0	.1 *	1	1225	150	114.	1.9	5.3 *	1	2045	250	4.	.1	.2
1	0410	51	2.	.0	.1 *	1	1230	151	105.	1.7	4.8 *	1	2050	251	4.	.1	.2
1	0415	52	2.	.0	.1 *	1	1235	152	95.	1.4	4.1 *	1	2055	252	4.	.1	.2
1	0420	53	2.	.0	.1 *	1	1240	153	82.	1.2	3.4 *	1	2100	253	4.	.1	.2
1	0425	54	3.	.0	.1 *	1	1245	154	64.	.9	2.8 *	1	2105	254	4.	.1	.2
1	0430	55	3.	.0	.1 *	1	1250	155	51.	.8	2.4 *	1	2110	255	4.	.1	.2
1	0435	56	3.	.0	.1 *	1	1255	156	42.	.7	2.1 *	1	2115	256	4.	.1	.2
1	0440	57	3.	.0	.1 *	1	1300	157	37.	.6	1.9 *	1	2120	257	4.	.1	.2
1	0445	58	3.	.0	.2 *	1	1305	158	32.	.6	1.7 *	1	2125	258	4.	.1	.2
1	0450	59	3.	.0	.2 *	1	1310	159	28.	.5	1.6 *	1	2130	259	4.	.1	.2
1	0455	60	3.	.1	.2 *	1	1315	160	25.	.4	1.4 *	1	2135	260	3.	.1	.2
1	0500	61	3.	.1	.2 *	1	1320	161	22.	.4	1.2 *	1	2140	261	3.	.1	.2
1	0505	62	3.	.1	.2 *	1	1325	162	20.	.4	1.1 *	1	2145	262	3.	.1	.2
1	0510	63	3.	.1	.2 *	1	1330	163	18.	.3	1.0 *	1	2150	263	3.	.1	.2
1	0515	64	3.	.1	.2 *	1	1335	164	17.	.3	.9 *	1	2155	264	3.	.1	.2
1	0520	65	3.	.1	.2 *	1	1340	165	15.	.3	.9 *	1	2200	265	3.	.1	.2
1	0525	66	3.	.1	.2 *	1	1345	166	14.	.3	.8 *	1	2205	266	3.	.1	.2
1	0530	67	3.	.1	.2 *	1	1350	167	14.	.2	.8 *	1	2210	267	3.	.1	.2
1	0535	68	3.	.1	.2 *	1	1355	168	13.	.2	.7 *	1	2215	268	3.	.1	.2
1	0540	69	3.	.1	.2 *	1	1400	169	12.	.2	.7 *	1	2220	269	3.	.1	.2
1	0545	70	3.	.1	.2 *	1	1405	170	12.	.2	.7 *	1	2225	270	3.	.1	.2
1	0550	71	3.	.1	.2 *	1	1410	171	11.	.2	.6 *	1	2230	271	3.	.1	.2
1	0555	72	3.	.1	.2 *	1	1415	172	11.	.2	.6 *	1	2235	272	3.	.1	.2
1	0600	73	4.	.1	.2 *	1	1420	173	11.	.2	.6 *	1	2240	273	3.	.1	.2
1	0605	74	4.	.1	.2 *	1	1425	174	10.	.2	.6 *	1	2245	274	3.	.1	.2
1	0610	75	4.	.1	.2 *	1	1430	175	10.	.2	.6 *	1	2250	275	3.	.1	.2
1	0615	76	4.	.1	.2 *	1	1435	176	10.	.2	.5 *	1	2255	276	3.	.1	.2
1	0620	77	4.	.1	.2 *	1	1440	177	9.	.2	.5 *	1	2300	277	3.	.1	.2
1	0625	78	4.	.1	.2 *	1	1445	178	9.	.2	.5 *	1	2305	278	3.	.1	.2
1	0630	79	4.	.1	.2 *	1	1450	179	9.	.2	.5 *	1	2310	279	3.	.1	.2
1	0635	80	4.	.1	.2 *	1	1455	180	9.	.2	.5 *	1	2315	280	3.	.1	.2
1	0640	81	4.	.1	.2 *	1	1500	181	9.	.2	.5 *	1	2320	281	3.	.1	.2
1	0645	82	4.	.1	.2 *	1	1505	182	8.	.1	.5 *	1	2325	282	3.	.1	.2
1	0650	83	4.	.1	.2 *	1	1510	183	8.	.1	.4 *	1	2330	283	3.	.1	.2
1	0655	84	4.	.1	.2 *	1	1515	184	8.	.1	.4 *	1	2335	284	3.	.1	.2
1	0700	85	4.	.1	.2 *	1	1520	185	7.	.1	.4 *	1	2340	285	3.	.1	.2
1	0705	86	4.	.1	.2 *	1	1525	186	7.	.1	.4 *	1	2345	286	3.	.1	.2
1	0710	87	4.	.1	.2 *	1	1530	187	7.	.1	.4 *	1	2350	287	3.	.1	.2
1	0715	88	4.	.1	.2 *	1	1535	188	7.	.1	.4 *	1	2355	288	3.	.1	.2
1	0720	89	4.	.1	.2 *	1	1540	189	7.	.1	.4 *	2	0000	289	3.	.1	.2
1	0725	90	4.	.1	.2 *	1	1545	190	7.	.1	.4 *	2	0005	290	3.	.1	.2
1	0730	91	4.	.1	.2 *	1	1550	191	6.	.1	.4 *	2	0010	291	2.	.0	.1
1	0735	92	4.	.1	.2 *	1	1555	192	6.	.1	.3 *	2	0015	292	2.	.0	.1
1	0740	93	4.	.1	.2 *	1	1600	193	6.	.1	.3 *	2	0020	293	1.	.0	.1
1	0745	94	4.	.1	.2 *	1	1605	194	6.	.1	.3 *	2	0025	294	1.	.0	.1
1	0750	95	4.	.1	.2 *	1	1610	195	6.	.1	.3 *	2	0030	295	1.	.0	.0
1	0755	96	5.	.1	.3 *	1	1615	196	6.	.1	.3 *	2	0035	296	0.	.0	.0
1	0800	97	5.	.1	.3 *	1	1620	197	6.	.1	.3 *	2	0040	297	0.	.0	.0
1	0805	98	5.	.1	.3 *	1	1625	198	6.	.1	.3 *	2	0045	298	0.	.0	.0
1	0810	99	5.	.1	.3 *	1	1630	199	6.	.1	.3 *	2	0050	299	0.	.0	.0
1	0815	100	5.	.1	.3 *	1	1635	200	5.	.1	.3 *	2	0055	300	0.	.0	.0
					*						*						

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	PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
				6-HR	24-HR	72-HR	24.92-HR
+	(CFS)	(HR)					
			(CFS)				
+	118.	12.33		28.	10.	9.	9.
			(INCHES)	5.768	7.898	7.898	7.898
			(AC-FT)	14.	19.	19.	19.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
2.	12.33	0.	0.	0.	0.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
5.66	12.33	1.38	.49	.47	.47

CUMULATIVE AREA = .05 SQ MI

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

PLAN 3 INPUT DATA FOR STATION PONDP4 ARE SAME AS FOR PLAN 1

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HYDROGRAPH AT STATION PONDP4
PLAN 3, RATIO = 1.00

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DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0000	1	0.	.0	.0	1		0820	101	6.	.1	.3	1		1640	201	6.	.1	.3
1		0005	2	0.	.0	.0	1		0825	102	6.	.1	.3	1		1645	202	6.	.1	.3
1		0010	3	0.	.0	.0	1		0830	103	6.	.1	.3	1		1650	203	6.	.1	.3
1		0015	4	0.	.0	.0	1		0835	104	6.	.1	.3	1		1655	204	6.	.1	.3
1		0020	5	0.	.0	.0	1		0840	105	6.	.1	.3	1		1700	205	6.	.1	.3
1		0025	6	0.	.0	.0	1		0845	106	6.	.1	.3	1		1705	206	5.	.1	.3
1		0030	7	0.	.0	.0	1		0850	107	6.	.1	.3	1		1710	207	5.	.1	.3
1		0035	8	0.	.0	.0	1		0855	108	6.	.1	.4	1		1715	208	5.	.1	.3
1		0040	9	0.	.0	.0	1		0900	109	7.	.1	.4	1		1720	209	5.	.1	.3
1		0045	10	0.	.0	.0	1		0905	110	7.	.1	.4	1		1725	210	5.	.1	.3
1		0050	11	0.	.0	.0	1		0910	111	7.	.1	.4	1		1730	211	5.	.1	.3
1		0055	12	0.	.0	.0	1		0915	112	8.	.1	.4	1		1735	212	5.	.1	.3
1		0100	13	0.	.0	.0	1		0920	113	8.	.1	.5	1		1740	213	5.	.1	.3
1		0105	14	0.	.0	.0	1		0925	114	9.	.2	.5	1		1745	214	5.	.1	.3
1		0110	15	0.	.0	.0	1		0930	115	9.	.2	.5	1		1750	215	5.	.1	.3
1		0115	16	0.	.0	.0	1		0935	116	10.	.2	.5	1		1755	216	5.	.1	.3
1		0120	17	0.	.0	.0	1		0940	117	10.	.2	.6	1		1800	217	5.	.1	.3
1		0125	18	0.	.0	.0	1		0945	118	10.	.2	.6	1		1805	218	5.	.1	.3
1		0130	19	0.	.0	.0	1		0950	119	11.	.2	.6	1		1810	219	5.	.1	.3
1		0135	20	1.	.0	.0	1		0955	120	11.	.2	.6	1		1815	220	5.	.1	.3
1		0140	21	1.	.0	.0	1		1000	121	11.	.2	.6	1		1820	221	5.	.1	.3
1		0145	22	1.	.0	.0	1		1005	122	11.	.2	.6	1		1825	222	5.	.1	.3
1		0150	23	1.	.0	.1	1		1010	123	12.	.2	.7	1		1830	223	5.	.1	.3
1		0155	24	1.	.0	.1	1		1015	124	12.	.2	.7	1		1835	224	5.	.1	.3
1		0200	25	1.	.0	.1	1		1020	125	13.	.2	.7	1		1840	225	5.	.1	.3
1		0205	26	1.	.0	.1	1		1025	126	13.	.2	.7	1		1845	226	5.	.1	.3
1		0210	27	1.	.0	.1	1		1030	127	13.	.2	.7	1		1850	227	5.	.1	.3
1		0215	28	1.	.0	.1	1		1035	128	14.	.2	.8	1		1855	228	5.	.1	.3
1		0220	29	2.	.0	.1	1		1040	129	15.	.3	.8	1		1900	229	5.	.1	.3
1		0225	30	2.	.0	.1	1		1045	130	16.	.3	.9	1		1905	230	5.	.1	.3
1		0230	31	2.	.0	.1	1		1050	131	16.	.3	.9	1		1910	231	5.	.1	.3
1		0235	32	2.	.0	.1	1		1055	132	17.	.3	1.0	1		1915	232	5.	.1	.3
1		0240	33	2.	.0	.1	1		1100	133	18.	.3	1.0	1		1920	233	5.	.1	.3
1		0245	34	2.	.0	.1	1		1105	134	19.	.3	1.1	1		1925	234	5.	.1	.3
1		0250	35	2.	.0	.1	1		1110	135	21.	.4	1.1	1		1930	235	5.	.1	.3
1		0255	36	2.	.0	.1	1		1115	136	22.	.4	1.2	1		1935	236	5.	.1	.3
1		0300	37	2.	.0	.1	1		1120	137	24.	.4	1.3	1		1940	237	5.	.1	.3
1		0305	38	2.	.0	.1	1		1125	138	26.	.5	1.4	1		1945	238	5.	.1	.3
1		0310	39	2.	.0	.1	1		1130	139	28.	.5	1.6	1		1950	239	5.	.1	.3
1		0315	40	2.	.0	.1	1		1135	140	32.	.6	1.7	1		1955	240	5.	.1	.3
1		0320	41	2.	.0	.1	1		1140	141	39.	.6	2.0	1		2000	241	5.	.1	.3
1		0325	42	3.	.0	.1	1		1145	142	48.	.7	2.3	1		2005	242	5.	.1	.3
1		0330	43	3.	.0	.1	1		1150	143	60.	.9	2.6	1		2010	243	5.	.1	.3
1		0335	44	3.	.0	.1	1		1155	144	77.	1.1	3.2	1		2015	244	5.	.1	.3
1		0340	45	3.	.0	.2	1		1200	145	92.	1.4	4.0	1		2020	245	5.	.1	.3
1		0345	46	3.	.1	.2	1		1205	146	108.	1.8	5.0	1		2025	246	5.	.1	.3
1		0350	47	3.	.1	.2	1		1210	147	122.	2.2	5.9	1		2030	247	5.	.1	.3
1		0355	48	3.	.1	.2	1		1215	148	129.	2.4	6.5	1		2035	248	5.	.1	.3
1		0400	49	3.	.1	.2	1		1220	149	131.	2.5	6.6	1		2040	249	5.	.1	.3
1		0405	50	3.	.1	.2	1		1225	150	127.	2.4	6.3	1		2045	250	4.	.1	.3
1		0410	51	3.	.1	.2	1		1230	151	120.	2.2	5.8	1		2050	251	4.	.1	.2
1		0415	52	3.	.1	.2	1		1235	152	111.	1.9	5.1	1		2055	252	4.	.1	.2
1		0420	53	3.	.1	.2	1		1240	153	98.	1.5	4.3	1		2100	253	4.	.1	.2
1		0425	54	3.	.1	.2	1		1245	154	84.	1.2	3.5	1		2105	254	4.	.1	.2
1		0430	55	3.	.1	.2	1		1250	155	66.	1.0	2.8	1		2110	255	4.	.1	.2
1		0435	56	3.	.1	.2	1		1255	156	51.	.8	2.4	1		2115	256	4.	.1	.2
1		0440	57	3.	.1	.2	1		1300	157	42.	.7	2.1	1		2120	257	4.	.1	.2
1		0445	58	4.	.1	.2	1		1305	158	36.	.6	1.9	1		2125	258	4.	.1	.2
1		0450	59	4.	.1	.2	1		1310	159	31.	.5	1.7	1		2130	259	4.	.1	.2
1		0455	60	4.	.1	.2	1		1315	160	28.	.5	1.6	1		2135	260	4.	.1	.2

1	0500	61	4.	.1	.2	*	1	1320	161	26.	.5	1.5	*	1	2140	261	4.	.1	.2
1	0505	62	4.	.1	.2	*	1	1325	162	25.	.4	1.4	*	1	2145	262	4.	.1	.2
1	0510	63	4.	.1	.2	*	1	1330	163	23.	.4	1.3	*	1	2150	263	4.	.1	.2
1	0515	64	4.	.1	.2	*	1	1335	164	22.	.4	1.2	*	1	2155	264	4.	.1	.2
1	0520	65	4.	.1	.2	*	1	1340	165	20.	.4	1.1	*	1	2200	265	4.	.1	.2
1	0525	66	4.	.1	.2	*	1	1345	166	19.	.3	1.1	*	1	2205	266	4.	.1	.2
1	0530	67	4.	.1	.2	*	1	1350	167	18.	.3	1.0	*	1	2210	267	4.	.1	.2
1	0535	68	4.	.1	.2	*	1	1355	168	17.	.3	.9	*	1	2215	268	4.	.1	.2
1	0540	69	4.	.1	.2	*	1	1400	169	16.	.3	.9	*	1	2220	269	4.	.1	.2
1	0545	70	4.	.1	.2	*	1	1405	170	15.	.3	.9	*	1	2225	270	4.	.1	.2
1	0550	71	4.	.1	.2	*	1	1410	171	15.	.3	.8	*	1	2230	271	4.	.1	.2
1	0555	72	4.	.1	.2	*	1	1415	172	14.	.3	.8	*	1	2235	272	4.	.1	.2
1	0600	73	4.	.1	.3	*	1	1420	173	14.	.2	.8	*	1	2240	273	4.	.1	.2
1	0605	74	5.	.1	.3	*	1	1425	174	13.	.2	.7	*	1	2245	274	4.	.1	.2
1	0610	75	4.	.1	.2	*	1	1430	175	13.	.2	.7	*	1	2250	275	4.	.1	.2
1	0615	76	4.	.1	.2	*	1	1435	176	13.	.2	.7	*	1	2255	276	4.	.1	.2
1	0620	77	4.	.1	.2	*	1	1440	177	12.	.2	.7	*	1	2300	277	4.	.1	.2
1	0625	78	4.	.1	.2	*	1	1445	178	12.	.2	.7	*	1	2305	278	4.	.1	.2
1	0630	79	4.	.1	.2	*	1	1450	179	12.	.2	.7	*	1	2310	279	4.	.1	.2
1	0635	80	4.	.1	.2	*	1	1455	180	11.	.2	.6	*	1	2315	280	4.	.1	.2
1	0640	81	4.	.1	.2	*	1	1500	181	11.	.2	.6	*	1	2320	281	4.	.1	.2
1	0645	82	4.	.1	.2	*	1	1505	182	11.	.2	.6	*	1	2325	282	4.	.1	.2
1	0650	83	4.	.1	.2	*	1	1510	183	10.	.2	.6	*	1	2330	283	4.	.1	.2
1	0655	84	4.	.1	.2	*	1	1515	184	10.	.2	.5	*	1	2335	284	4.	.1	.2
1	0700	85	4.	.1	.2	*	1	1520	185	9.	.2	.5	*	1	2340	285	4.	.1	.2
1	0705	86	4.	.1	.2	*	1	1525	186	8.	.2	.5	*	1	2345	286	4.	.1	.2
1	0710	87	4.	.1	.2	*	1	1530	187	8.	.1	.4	*	1	2350	287	4.	.1	.2
1	0715	88	4.	.1	.2	*	1	1535	188	8.	.1	.4	*	1	2355	288	4.	.1	.2
1	0720	89	5.	.1	.3	*	1	1540	189	7.	.1	.4	*	2	0000	289	4.	.1	.2
1	0725	90	5.	.1	.3	*	1	1545	190	7.	.1	.4	*	2	0005	290	3.	.1	.2
1	0730	91	5.	.1	.3	*	1	1550	191	7.	.1	.4	*	2	0010	291	3.	.1	.2
1	0735	92	5.	.1	.3	*	1	1555	192	7.	.1	.4	*	2	0015	292	2.	.0	.1
1	0740	93	5.	.1	.3	*	1	1600	193	7.	.1	.4	*	2	0020	293	2.	.0	.1
1	0745	94	5.	.1	.3	*	1	1605	194	7.	.1	.4	*	2	0025	294	1.	.0	.1
1	0750	95	5.	.1	.3	*	1	1610	195	7.	.1	.4	*	2	0030	295	1.	.0	.0
1	0755	96	5.	.1	.3	*	1	1615	196	6.	.1	.4	*	2	0035	296	1.	.0	.0
1	0800	97	5.	.1	.3	*	1	1620	197	6.	.1	.4	*	2	0040	297	0.	.0	.0
1	0805	98	5.	.1	.3	*	1	1625	198	6.	.1	.3	*	2	0045	298	0.	.0	.0
1	0810	99	5.	.1	.3	*	1	1630	199	6.	.1	.3	*	2	0050	299	0.	.0	.0
1	0815	100	5.	.1	.3	*	1	1635	200	6.	.1	.3	*	2	0055	300	0.	.0	.0
						*							*						

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 131.	12.33		33.	11.	11.	11.
		(INCHES)	6.868	9.394	9.394	9.394
		(AC-FT)	17.	23.	23.	23.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
3.	12.33	1.	0.	0.	0.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
6.59	12.33	1.67	.59	.57	.57

CUMULATIVE AREA = .05 SQ MI

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

PLAN 4 INPUT DATA FOR STATION PONDP4 ARE SAME AS FOR PLAN 1

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HYDROGRAPH AT STATION PONDP4
PLAN 4, RATIO = 1.00

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DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
							*								*							
1		0000	1	0.	.0	.0	*	1		0820	101	9.	.2	.5	*	1		1640	201	9.	.2	.5
1		0005	2	0.	.0	.0	*	1		0825	102	9.	.2	.5	*	1		1645	202	9.	.2	.5
1		0010	3	0.	.0	.0	*	1		0830	103	9.	.2	.5	*	1		1650	203	9.	.2	.5
1		0015	4	0.	.0	.0	*	1		0835	104	9.	.2	.5	*	1		1655	204	9.	.2	.5
1		0020	5	0.	.0	.0	*	1		0840	105	10.	.2	.5	*	1		1700	205	9.	.2	.5
1		0025	6	0.	.0	.0	*	1		0845	106	10.	.2	.5	*	1		1705	206	9.	.2	.5
1		0030	7	0.	.0	.0	*	1		0850	107	10.	.2	.6	*	1		1710	207	9.	.2	.5
1		0035	8	0.	.0	.0	*	1		0855	108	10.	.2	.6	*	1		1715	208	9.	.2	.5
1		0040	9	0.	.0	.0	*	1		0900	109	10.	.2	.6	*	1		1720	209	8.	.2	.5

1	0045	10	0.	.0	.0	*	1	0905	110	11.	.2	.6	*	1	1725	210	8.	.1	.5
1	0050	11	0.	.0	.0	*	1	0910	111	11.	.2	.6	*	1	1730	211	8.	.1	.5
1	0055	12	0.	.0	.0	*	1	0915	112	11.	.2	.6	*	1	1735	212	8.	.1	.5
1	0100	13	0.	.0	.0	*	1	0920	113	12.	.2	.7	*	1	1740	213	8.	.1	.4
1	0105	14	0.	.0	.0	*	1	0925	114	12.	.2	.7	*	1	1745	214	8.	.1	.4
1	0110	15	0.	.0	.0	*	1	0930	115	13.	.2	.7	*	1	1750	215	8.	.1	.4
1	0115	16	0.	.0	.0	*	1	0935	116	13.	.2	.7	*	1	1755	216	8.	.1	.4
1	0120	17	0.	.0	.0	*	1	0940	117	14.	.2	.8	*	1	1800	217	8.	.1	.4
1	0125	18	0.	.0	.0	*	1	0945	118	14.	.2	.8	*	1	1805	218	8.	.1	.4
1	0130	19	0.	.0	.0	*	1	0950	119	14.	.3	.8	*	1	1810	219	7.	.1	.4
1	0135	20	0.	.0	.0	*	1	0955	120	15.	.3	.8	*	1	1815	220	7.	.1	.4
1	0140	21	1.	.0	.0	*	1	1000	121	15.	.3	.8	*	1	1820	221	6.	.1	.4
1	0145	22	1.	.0	.0	*	1	1005	122	15.	.3	.9	*	1	1825	222	6.	.1	.3
1	0150	23	1.	.0	.0	*	1	1010	123	16.	.3	.9	*	1	1830	223	6.	.1	.3
1	0155	24	1.	.0	.0	*	1	1015	124	16.	.3	.9	*	1	1835	224	6.	.1	.3
1	0200	25	1.	.0	.1	*	1	1020	125	17.	.3	.9	*	1	1840	225	5.	.1	.3
1	0205	26	1.	.0	.1	*	1	1025	126	17.	.3	1.0	*	1	1845	226	5.	.1	.3
1	0210	27	1.	.0	.1	*	1	1030	127	18.	.3	1.0	*	1	1850	227	5.	.1	.3
1	0215	28	1.	.0	.1	*	1	1035	128	18.	.3	1.0	*	1	1855	228	5.	.1	.3
1	0220	29	1.	.0	.1	*	1	1040	129	18.	.3	1.0	*	1	1900	229	5.	.1	.3
1	0225	30	1.	.0	.1	*	1	1045	130	17.	.3	1.0	*	1	1905	230	5.	.1	.3
1	0230	31	1.	.0	.1	*	1	1050	131	17.	.3	.9	*	1	1910	231	5.	.1	.3
1	0235	32	2.	.0	.1	*	1	1055	132	17.	.3	.9	*	1	1915	232	5.	.1	.3
1	0240	33	2.	.0	.1	*	1	1100	133	17.	.3	1.0	*	1	1920	233	5.	.1	.3
1	0245	34	2.	.0	.1	*	1	1105	134	18.	.3	1.0	*	1	1925	234	5.	.1	.3
1	0250	35	2.	.0	.1	*	1	1110	135	20.	.4	1.1	*	1	1930	235	5.	.1	.3
1	0255	36	2.	.0	.1	*	1	1115	136	22.	.4	1.2	*	1	1935	236	5.	.1	.3
1	0300	37	2.	.0	.1	*	1	1120	137	25.	.4	1.4	*	1	1940	237	5.	.1	.3
1	0305	38	2.	.0	.1	*	1	1125	138	27.	.5	1.5	*	1	1945	238	5.	.1	.3
1	0310	39	2.	.0	.1	*	1	1130	139	30.	.5	1.7	*	1	1950	239	5.	.1	.3
1	0315	40	2.	.0	.1	*	1	1135	140	35.	.6	1.8	*	1	1955	240	5.	.1	.3
1	0320	41	2.	.0	.1	*	1	1140	141	43.	.7	2.1	*	1	2000	241	5.	.1	.3
1	0325	42	2.	.0	.1	*	1	1145	142	54.	.8	2.4	*	1	2005	242	5.	.1	.3
1	0330	43	2.	.0	.1	*	1	1150	143	67.	1.0	2.9	*	1	2010	243	4.	.1	.3
1	0335	44	2.	.0	.1	*	1	1155	144	84.	1.2	3.5	*	1	2015	244	4.	.1	.2
1	0340	45	2.	.0	.1	*	1	1200	145	100.	1.6	4.4	*	1	2020	245	4.	.1	.2
1	0345	46	3.	.0	.1	*	1	1205	146	117.	2.1	5.6	*	1	2025	246	4.	.1	.2
1	0350	47	3.	.0	.1	*	1	1210	147	132.	2.6	6.7	*	1	2030	247	4.	.1	.2
1	0355	48	3.	.0	.1	*	1	1215	148	143.	2.9	7.4	*	1	2035	248	4.	.1	.2
1	0400	49	3.	.0	.2	*	1	1220	149	152.	3.0	7.6	*	1	2040	249	4.	.1	.2
1	0405	50	3.	.0	.2	*	1	1225	150	139.	2.8	7.3	*	1	2045	250	4.	.1	.2
1	0410	51	3.	.1	.2	*	1	1230	151	133.	2.6	6.8	*	1	2050	251	4.	.1	.2
1	0415	52	3.	.1	.2	*	1	1235	152	124.	2.3	6.1	*	1	2055	252	4.	.1	.2
1	0420	53	3.	.1	.2	*	1	1240	153	112.	1.9	5.2	*	1	2100	253	4.	.1	.2
1	0425	54	3.	.1	.2	*	1	1245	154	97.	1.5	4.3	*	1	2105	254	4.	.1	.2
1	0430	55	3.	.1	.2	*	1	1250	155	82.	1.2	3.4	*	1	2110	255	4.	.1	.2
1	0435	56	3.	.1	.2	*	1	1255	156	63.	.9	2.8	*	1	2115	256	4.	.1	.2
1	0440	57	3.	.1	.2	*	1	1300	157	50.	.8	2.3	*	1	2120	257	4.	.1	.2
1	0445	58	3.	.1	.2	*	1	1305	158	41.	.7	2.0	*	1	2125	258	4.	.1	.2
1	0450	59	3.	.1	.2	*	1	1310	159	34.	.6	1.8	*	1	2130	259	4.	.1	.2
1	0455	60	3.	.1	.2	*	1	1315	160	29.	.5	1.6	*	1	2135	260	4.	.1	.2
1	0500	61	3.	.1	.2	*	1	1320	161	26.	.5	1.4	*	1	2140	261	4.	.1	.2
1	0505	62	4.	.1	.2	*	1	1325	162	23.	.4	1.3	*	1	2145	262	4.	.1	.2
1	0510	63	4.	.1	.2	*	1	1330	163	21.	.4	1.2	*	1	2150	263	4.	.1	.2
1	0515	64	4.	.1	.2	*	1	1335	164	20.	.4	1.1	*	1	2155	264	4.	.1	.2
1	0520	65	4.	.1	.2	*	1	1340	165	19.	.3	1.1	*	1	2200	265	4.	.1	.2
1	0525	66	4.	.1	.2	*	1	1345	166	19.	.3	1.1	*	1	2205	266	4.	.1	.2
1	0530	67	4.	.1	.2	*	1	1350	167	19.	.3	1.1	*	1	2210	267	4.	.1	.2
1	0535	68	4.	.1	.2	*	1	1355	168	19.	.3	1.1	*	1	2215	268	4.	.1	.2
1	0540	69	4.	.1	.2	*	1	1400	169	19.	.3	1.1	*	1	2220	269	4.	.1	.2
1	0545	70	4.	.1	.2	*	1	1405	170	19.	.3	1.0	*	1	2225	270	4.	.1	.2
1	0550	71	4.	.1	.2	*	1	1410	171	18.	.3	1.0	*	1	2230	271	4.	.1	.2
1	0555	72	4.	.1	.2	*	1	1415	172	18.	.3	1.0	*	1	2235	272	4.	.1	.2
1	0600	73	4.	.1	.2	*	1	1420	173	18.	.3	1.0	*	1	2240	273	4.	.1	.2
1	0605	74	4.	.1	.2	*	1	1425	174	17.	.3	1.0	*	1	2245	274	4.	.1	.2
1	0610	75	5.	.1	.3	*	1	1430	175	17.	.3	.9	*	1	2250	275	4.	.1	.2
1	0615	76	5.	.1	.3	*	1	1435	176	16.	.3	.9	*	1	2255	276	4.	.1	.2
1	0620	77	5.	.1	.3	*	1	1440	177	16.	.3	.9	*	1	2300	277	4.	.1	.2
1	0625	78	6.	.1	.3	*	1	1445	178	16.	.3	.9	*	1	2305	278	4.	.1	.2
1	0630	79	6.	.1	.3	*	1	1450	179	15.	.3	.9	*	1	2310	279	3.	.1	.2
1	0635	80	6.	.1	.3	*	1	1455	180	15.	.3	.8	*	1	2315	280	3.	.1	.2
1	0640	81	6.	.1	.4	*	1	1500	181	15.	.3	.8	*	1	2320	281	3.	.1	.2
1	0645	82	6.	.1	.4	*	1	1505	182	14.	.3	.8	*	1	2325	282	3.	.1	.2
1	0650	83	7.	.1	.4	*	1	1510	183	14.	.2	.8	*	1	2330	283	3.	.1	.2
1	0655	84	7.	.1	.4	*	1	1515	184	13.	.2	.7	*	1	2335	284	3.	.1	.2
1	0700	85	7.	.1	.4	*	1	1520	185	13.	.2	.7	*	1	2340	285	3.	.1	.2
1	0705	86	7.	.1	.4	*	1	1525	186	12.	.2	.7	*	1	2345	286	3.	.1	.2
1	0710	87	7.	.1	.4	*	1	1530	187	12.	.2	.7	*	1	2350	287	3.	.1	.2
1	0715	88	7.	.1	.4	*	1	1535	188	12.	.2	.6	*	1	2355	288	3.	.1	.2
1	0720	89	7.	.1	.4	*	1	1540	189	11.	.2	.6	*	2	0000	289	3.	.1	.2
1	0725	90	7.	.1	.4	*	1	1545	190	11.	.2	.6	*	2	0005	290	3.	.1	.2
1	0730	91	8.	.1	.4	*	1	1550	191	11.	.2	.6	*	2	0010	291	3.	.0	.1
1	0735	92	8.	.1	.4	*	1	1555	192	11.	.2	.6	*	2	0015	292	2.	.0	.1
1	0740	93	8.	.1	.4	*	1	1600	193	11.	.2	.6	*	2	0020	293	1.	.0	.1
1	0745	94	8.	.1	.4	*	1	1605	194	10.	.2	.6	*	2	0025	294	1.	.0	.1
1	0750	95	8.	.1	.5	*	1	1610	195	10.	.2	.6	*	2	0030	295	1.	.0	.0
1	0755	96	8.	.1	.5	*	1	1615	196	10.	.2	.6	*	2	0035	296	0.	.0	.0

1	0800	97	8.	.1	.5	*	1	1620	197	10.	.2	.6	*	2	0040	297	0.	.0	.0
1	0805	98	8.	.2	.5	*	1	1625	198	10.	.2	.5	*	2	0045	298	0.	.0	.0
1	0810	99	9.	.2	.5	*	1	1630	199	10.	.2	.5	*	2	0050	299	0.	.0	.0
1	0815	100	9.	.2	.5	*	1	1635	200	9.	.2	.5	*	2	0055	300	0.	.0	.0

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 152.	12.33		38.	13.	13.	13.
		(INCHES)	7.787	10.890	10.890	10.890
		(AC-FT)	19.	26.	26.	26.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
3.	12.33	1.	0.	0.	0.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
7.57	12.33	1.92	.69	.66	.66

CUMULATIVE AREA = .05 SQ MI

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

PLAN 5 INPUT DATA FOR STATION PONDP4 ARE SAME AS FOR PLAN 1

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HYDROGRAPH AT STATION PONDP4
PLAN 5, RATIO = 1.00

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DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0000	1	0.	.0	.0	*	1		0820	101	10.	.2	.5	*	1		1640	201	10.	.2	.5
1		0005	2	0.	.0	.0	*	1		0825	102	10.	.2	.5	*	1		1645	202	10.	.2	.5
1		0010	3	0.	.0	.0	*	1		0830	103	10.	.2	.6	*	1		1650	203	10.	.2	.5
1		0015	4	0.	.0	.0	*	1		0835	104	10.	.2	.6	*	1		1655	204	9.	.2	.5
1		0020	5	0.	.0	.0	*	1		0840	105	10.	.2	.6	*	1		1700	205	9.	.2	.5
1		0025	6	0.	.0	.0	*	1		0845	106	10.	.2	.6	*	1		1705	206	9.	.2	.5
1		0030	7	0.	.0	.0	*	1		0850	107	11.	.2	.6	*	1		1710	207	9.	.2	.5
1		0035	8	0.	.0	.0	*	1		0855	108	11.	.2	.6	*	1		1715	208	9.	.2	.5
1		0040	9	0.	.0	.0	*	1		0900	109	11.	.2	.6	*	1		1720	209	9.	.2	.5
1		0045	10	0.	.0	.0	*	1		0905	110	11.	.2	.6	*	1		1725	210	9.	.2	.5
1		0050	11	0.	.0	.0	*	1		0910	111	12.	.2	.7	*	1		1730	211	9.	.2	.5
1		0055	12	0.	.0	.0	*	1		0915	112	12.	.2	.7	*	1		1735	212	9.	.2	.5
1		0100	13	0.	.0	.0	*	1		0920	113	13.	.2	.7	*	1		1740	213	8.	.2	.5
1		0105	14	0.	.0	.0	*	1		0925	114	13.	.2	.7	*	1		1745	214	8.	.1	.5
1		0110	15	0.	.0	.0	*	1		0930	115	14.	.2	.8	*	1		1750	215	8.	.1	.5
1		0115	16	0.	.0	.0	*	1		0935	116	14.	.2	.8	*	1		1755	216	8.	.1	.5
1		0120	17	0.	.0	.0	*	1		0940	117	14.	.3	.8	*	1		1800	217	8.	.1	.5
1		0125	18	1.	.0	.0	*	1		0945	118	15.	.3	.8	*	1		1805	218	8.	.1	.4
1		0130	19	1.	.0	.0	*	1		0950	119	15.	.3	.8	*	1		1810	219	8.	.1	.4
1		0135	20	1.	.0	.0	*	1		0955	120	16.	.3	.9	*	1		1815	220	7.	.1	.4
1		0140	21	1.	.0	.1	*	1		1000	121	16.	.3	.9	*	1		1820	221	7.	.1	.4
1		0145	22	1.	.0	.1	*	1		1005	122	16.	.3	.9	*	1		1825	222	7.	.1	.4
1		0150	23	1.	.0	.1	*	1		1010	123	17.	.3	.9	*	1		1830	223	7.	.1	.4
1		0155	24	1.	.0	.1	*	1		1015	124	17.	.3	1.0	*	1		1835	224	6.	.1	.4
1		0200	25	1.	.0	.1	*	1		1020	125	18.	.3	1.0	*	1		1840	225	6.	.1	.4
1		0205	26	2.	.0	.1	*	1		1025	126	18.	.3	1.0	*	1		1845	226	6.	.1	.3
1		0210	27	2.	.0	.1	*	1		1030	127	19.	.3	1.1	*	1		1850	227	6.	.1	.3
1		0215	28	2.	.0	.1	*	1		1035	128	19.	.3	1.1	*	1		1855	228	6.	.1	.3
1		0220	29	2.	.0	.1	*	1		1040	129	20.	.4	1.1	*	1		1900	229	6.	.1	.3
1		0225	30	2.	.0	.1	*	1		1045	130	20.	.4	1.1	*	1		1905	230	6.	.1	.3
1		0230	31	2.	.0	.1	*	1		1050	131	21.	.4	1.1	*	1		1910	231	6.	.1	.3
1		0235	32	2.	.0	.1	*	1		1055	132	21.	.4	1.2	*	1		1915	232	6.	.1	.3
1		0240	33	2.	.0	.1	*	1		1100	133	22.	.4	1.2	*	1		1920	233	6.	.1	.3
1		0245	34	2.	.0	.1	*	1		1105	134	23.	.4	1.3	*	1		1925	234	6.	.1	.3
1		0250	35	2.	.0	.1	*	1		1110	135	26.	.5	1.4	*	1		1930	235	6.	.1	.3
1		0255	36	3.	.0	.1	*	1		1115	136	29.	.5	1.6	*	1		1935	236	6.	.1	.3
1		0300	37	3.	.0	.1	*	1		1120	137	34.	.6	1.8	*	1		1940	237	6.	.1	.3
1		0305	38	3.	.0	.1	*	1		1125	138	39.	.6	1.9	*	1		1945	238	6.	.1	.3
1		0310	39	3.	.0	.2	*	1		1130	139	42.	.7	2.1	*	1		1950	239	5.	.1	.3
1		0315	40	3.	.1	.2	*	1		1135	140	47.	.7	2.2	*	1		1955	240	5.	.1	.3
1		0320	41	3.	.1	.2	*	1		1140	141	54.	.8	2.5	*	1		2000	241	5.	.1	.3
1		0325	42	3.	.1	.2	*	1		1145	142	63.	.9	2.7	*	1		2005	242	5.	.1	.3
1		0330	43	3.	.1	.2	*	1		1150	143	75.	1.1	3.2	*	1		2010	243	5.	.1	.3
1		0335	44	3.	.1	.2	*	1		1155	144	89.	1.3	3.8	*	1		2015	244	5.	.1	.3
1		0340	45	3.	.1	.2	*	1		1200	145	106.	1.7	4.8	*	1		2020	245	5.	.1	.3

1	0345	46	3.	.1	.2	*	1	1205	146	124.	2.3	6.1	*	1	2025	246	5.	.1	.3
1	0350	47	3.	.1	.2	*	1	1210	147	142.	2.9	7.4	*	1	2030	247	5.	.1	.3
1	0355	48	3.	.1	.2	*	1	1215	148	179.	3.2	8.0	*	1	2035	248	5.	.1	.3
1	0400	49	4.	.1	.2	*	1	1220	149	175.	3.2	8.0	*	1	2040	249	5.	.1	.3
1	0405	50	4.	.1	.2	*	1	1225	150	153.	3.0	7.6	*	1	2045	250	5.	.1	.3
1	0410	51	4.	.1	.2	*	1	1230	151	137.	2.7	7.1	*	1	2050	251	5.	.1	.3
1	0415	52	4.	.1	.2	*	1	1235	152	129.	2.4	6.4	*	1	2055	252	5.	.1	.3
1	0420	53	4.	.1	.2	*	1	1240	153	118.	2.1	5.7	*	1	2100	253	5.	.1	.3
1	0425	54	4.	.1	.2	*	1	1245	154	106.	1.7	4.8	*	1	2105	254	5.	.1	.3
1	0430	55	4.	.1	.2	*	1	1250	155	93.	1.4	4.0	*	1	2110	255	5.	.1	.3
1	0435	56	4.	.1	.2	*	1	1255	156	80.	1.1	3.4	*	1	2115	256	5.	.1	.3
1	0440	57	4.	.1	.2	*	1	1300	157	65.	1.0	2.8	*	1	2120	257	5.	.1	.3
1	0445	58	4.	.1	.2	*	1	1305	158	54.	.8	2.5	*	1	2125	258	5.	.1	.3
1	0450	59	4.	.1	.2	*	1	1310	159	45.	.7	2.2	*	1	2130	259	5.	.1	.3
1	0455	60	4.	.1	.2	*	1	1315	160	38.	.6	1.9	*	1	2135	260	5.	.1	.3
1	0500	61	4.	.1	.2	*	1	1320	161	33.	.6	1.7	*	1	2140	261	5.	.1	.3
1	0505	62	4.	.1	.2	*	1	1325	162	29.	.5	1.6	*	1	2145	262	5.	.1	.3
1	0510	63	4.	.1	.2	*	1	1330	163	27.	.5	1.5	*	1	2150	263	5.	.1	.3
1	0515	64	5.	.1	.3	*	1	1335	164	25.	.5	1.4	*	1	2155	264	5.	.1	.3
1	0520	65	5.	.1	.3	*	1	1340	165	24.	.4	1.3	*	1	2200	265	4.	.1	.3
1	0525	66	5.	.1	.3	*	1	1345	166	23.	.4	1.3	*	1	2205	266	4.	.1	.2
1	0530	67	5.	.1	.3	*	1	1350	167	23.	.4	1.3	*	1	2210	267	4.	.1	.2
1	0535	68	5.	.1	.3	*	1	1355	168	22.	.4	1.2	*	1	2215	268	4.	.1	.2
1	0540	69	5.	.1	.3	*	1	1400	169	21.	.4	1.2	*	1	2220	269	4.	.1	.2
1	0545	70	5.	.1	.3	*	1	1405	170	21.	.4	1.2	*	1	2225	270	4.	.1	.2
1	0550	71	5.	.1	.3	*	1	1410	171	20.	.4	1.1	*	1	2230	271	4.	.1	.2
1	0555	72	5.	.1	.3	*	1	1415	172	19.	.3	1.1	*	1	2235	272	4.	.1	.2
1	0600	73	5.	.1	.3	*	1	1420	173	19.	.3	1.1	*	1	2240	273	4.	.1	.2
1	0605	74	5.	.1	.3	*	1	1425	174	18.	.3	1.0	*	1	2245	274	4.	.1	.2
1	0610	75	6.	.1	.3	*	1	1430	175	18.	.3	1.0	*	1	2250	275	4.	.1	.2
1	0615	76	6.	.1	.3	*	1	1435	176	17.	.3	1.0	*	1	2255	276	4.	.1	.2
1	0620	77	6.	.1	.3	*	1	1440	177	17.	.3	.9	*	1	2300	277	4.	.1	.2
1	0625	78	6.	.1	.4	*	1	1445	178	17.	.3	.9	*	1	2305	278	4.	.1	.2
1	0630	79	7.	.1	.4	*	1	1450	179	16.	.3	.9	*	1	2310	279	4.	.1	.2
1	0635	80	7.	.1	.4	*	1	1455	180	16.	.3	.9	*	1	2315	280	4.	.1	.2
1	0640	81	7.	.1	.4	*	1	1500	181	15.	.3	.9	*	1	2320	281	4.	.1	.2
1	0645	82	7.	.1	.4	*	1	1505	182	15.	.3	.8	*	1	2325	282	4.	.1	.2
1	0650	83	7.	.1	.4	*	1	1510	183	15.	.3	.8	*	1	2330	283	4.	.1	.2
1	0655	84	7.	.1	.4	*	1	1515	184	14.	.3	.8	*	1	2335	284	4.	.1	.2
1	0700	85	7.	.1	.4	*	1	1520	185	14.	.2	.8	*	1	2340	285	4.	.1	.2
1	0705	86	8.	.1	.4	*	1	1525	186	13.	.2	.7	*	1	2345	286	4.	.1	.2
1	0710	87	8.	.1	.4	*	1	1530	187	13.	.2	.7	*	1	2350	287	4.	.1	.2
1	0715	88	8.	.1	.4	*	1	1535	188	12.	.2	.7	*	1	2355	288	4.	.1	.2
1	0720	89	8.	.1	.4	*	1	1540	189	12.	.2	.7	*	2	0000	289	4.	.1	.2
1	0725	90	8.	.1	.4	*	1	1545	190	12.	.2	.7	*	2	0005	290	4.	.1	.2
1	0730	91	8.	.1	.5	*	1	1550	191	12.	.2	.6	*	2	0010	291	3.	.1	.2
1	0735	92	8.	.1	.5	*	1	1555	192	11.	.2	.6	*	2	0015	292	2.	.0	.1
1	0740	93	8.	.2	.5	*	1	1600	193	11.	.2	.6	*	2	0020	293	2.	.0	.1
1	0745	94	9.	.2	.5	*	1	1605	194	11.	.2	.6	*	2	0025	294	1.	.0	.1
1	0750	95	9.	.2	.5	*	1	1610	195	11.	.2	.6	*	2	0030	295	1.	.0	.0
1	0755	96	9.	.2	.5	*	1	1615	196	11.	.2	.6	*	2	0035	296	1.	.0	.0
1	0800	97	9.	.2	.5	*	1	1620	197	10.	.2	.6	*	2	0040	297	0.	.0	.0
1	0805	98	9.	.2	.5	*	1	1625	198	10.	.2	.6	*	2	0045	298	0.	.0	.0
1	0810	99	9.	.2	.5	*	1	1630	199	10.	.2	.6	*	2	0050	299	0.	.0	.0
1	0815	100	9.	.2	.5	*	1	1635	200	10.	.2	.6	*	2	0055	300	0.	.0	.0
						*							*						

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 179.	12.25		43.	15.	15.	15.
		(INCHES)	8.894	12.387	12.387	12.387
		(AC-FT)	21.	30.	30.	30.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
3.	12.25	1.	0.	0.	0.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
8.02	12.25	2.14	.77	.74	.74

CUMULATIVE AREA = .05 SQ MI

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            **************
            *            *
  103 KK    *      COMB  *
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            *           *
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  104 HC          HYDROGRAPH COMBINATION
                        ICOMP           3  NUMBER OF HYDROGRAPHS TO COMBINE

                                                                  ***

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

                          HYDROGRAPH AT STATION     COMB
                            FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                       6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     288.     12.17                    58.         18.         17.          17.
                       (INCHES)     3.684       4.482       4.482        4.482
                        (AC-FT)       29.         35.         35.          35.

                        CUMULATIVE AREA =     .15 SQ MI


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

                          HYDROGRAPH AT STATION     COMB
                            FOR PLAN 2, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                       6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     377.     12.25                    91.         31.         30.          30.
                       (INCHES)     5.770       7.764       7.764        7.764
                        (AC-FT)       45.         61.         61.          61.

                        CUMULATIVE AREA =     .15 SQ MI


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

                          HYDROGRAPH AT STATION     COMB
                            FOR PLAN 3, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                       6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     418.     12.25                   109.         37.         35.          35.
                       (INCHES)     6.871       9.259       9.259        9.259
                        (AC-FT)       54.         73.         73.          73.

                        CUMULATIVE AREA =     .15 SQ MI


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

                          HYDROGRAPH AT STATION     COMB
                            FOR PLAN 4, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                       6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     464.     12.25                   123.         42.         41.          41.
                       (INCHES)     7.790      10.756      10.756       10.756
                        (AC-FT)       61.         84.         84.          84.

                        CUMULATIVE AREA =     .15 SQ MI


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

                          HYDROGRAPH AT STATION     COMB
                            FOR PLAN 5, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                       6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     530.     12.25                   141.         48.         47.          47.
                       (INCHES)     8.897      12.253      12.253       12.253
                        (AC-FT)       70.         96.         96.          96.

                        CUMULATIVE AREA =     .15 SQ MI
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PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
FLOWS IN CUBIC FEET PER SECOND, AREA IN SQUARE MILES
TIME TO PEAK IN HOURS

OPERATION	STATION	AREA	PLAN		RATIOS APPLIED TO FLOWS RATIO 1 1.00
HYDROGRAPH AT					
+	P1	.04	1	FLOW	99.
				TIME	12.17
			2	FLOW	130.
				TIME	12.17
			3	FLOW	144.
				TIME	12.17
			4	FLOW	167.
				TIME	12.17
			5	FLOW	184.
				TIME	12.17
HYDROGRAPH AT					
+	P2	.07	1	FLOW	190.
				TIME	12.17
			2	FLOW	253.
				TIME	12.17
			3	FLOW	281.
				TIME	12.17
			4	FLOW	325.
				TIME	12.17
			5	FLOW	357.
				TIME	12.17
ROUTED TO					
+	PONDP2	.07	1	FLOW	143.
				TIME	12.33
			2	FLOW	186.
				TIME	12.33
			3	FLOW	206.
				TIME	12.33
			4	FLOW	228.
				TIME	12.33
			5	FLOW	253.
				TIME	12.33
			** PEAK STAGES IN FEET **		
			1	STAGE	4.12
				TIME	12.33
			2	STAGE	5.70
				TIME	12.33
			3	STAGE	6.54
				TIME	12.33
			4	STAGE	7.49
				TIME	12.33
			5	STAGE	8.19
				TIME	12.33
HYDROGRAPH AT					
+	P3	.03	1	FLOW	80.
				TIME	12.08
			2	FLOW	106.
				TIME	12.08
			3	FLOW	117.
				TIME	12.08
			4	FLOW	136.
				TIME	12.08
			5	FLOW	149.
				TIME	12.08
HYDROGRAPH AT					
+	P4	.05	1	FLOW	120.
				TIME	12.17
			2	FLOW	157.
				TIME	12.17
			3	FLOW	174.
				TIME	12.08
			4	FLOW	201.
				TIME	12.17
			5	FLOW	222.
				TIME	12.17

```
 ROUTED TO
+                 PONDP4       .05     1   FLOW          92.
                                           TIME        12.25
                                        2   FLOW         118.
                                           TIME        12.33
                                        3   FLOW         131.
                                           TIME        12.33
                                        4   FLOW         152.
                                           TIME        12.33
                                        5   FLOW         179.
                                           TIME        12.25

                                        ** PEAK STAGES IN FEET **
                                        1   STAGE        3.97
                                           TIME        12.25
                                        2   STAGE        5.66
                                           TIME        12.33
                                        3   STAGE        6.59
                                           TIME        12.33
                                        4   STAGE        7.57
                                           TIME        12.33
                                        5   STAGE        8.02
                                           TIME        12.25

  3 COMBINED AT
+                   COMB       .15     1   FLOW         288.
                                           TIME        12.17
                                        2   FLOW         377.
                                           TIME        12.25
                                        3   FLOW         418.
                                           TIME        12.25
                                        4   FLOW         464.
                                           TIME        12.25
                                        5   FLOW         530.
                                           TIME        12.25


 *** NORMAL END OF HEC-1 ***
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APPENDIX F

HEC-1 RESULTS FOR QUEBRADA LOS MUERTOS

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1****************************************                                                    ****************************************
 *                                      *                                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                                    *    U.S. ARMY CORPS OF ENGINEERS      *
 *               JUN   1998             *                                                    *    HYDROLOGIC ENGINEERING CENTER     *
 *            VERSION 4.1               *                                                    *          609 SECOND STREET           *
 *                                      *                                                    *       DAVIS, CALIFORNIA 95616        *
 *  RUN DATE   01JUN05  TIME  13:32:55  *                                                    *           (916) 756-1104             *
 *                                      *                                                    *                                      *
 ****************************************                                                    ****************************************


                                                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


          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

1                                                   HEC-1 INPUT                                                   PAGE  1

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

           1           ID        HYDROLOGIC ANALYSIS
           2           ID        PROJECT: ESTANCIAS DE LOS ARTESANOS, LAS PIEDRAS
           3           ID        TRIANGULAR DISTRIBUTION
           4           ID        FREQUENCY OF OCCURRENCE: 2-, 10-, 25-, 50- & 100-YEARS
           5           ID        EXISTING CONDITION - QUEBRADA LOS MUERTOS
           6           IT       5                     300
           7           IO       3
           8           JP       5
                       *D

           9           KK  BAS-1A
          10           KP       1
          11           BA  0.8447
          12           LS       0   85.20
          13           UD   0.962
          14           IN      15
          15           KM        TRIANGULAR DISTRIBUTION 2-YRS STORM
          16           PH                  0.47    1.07    2.25    2.80    3.10    3.90    4.50    5.20
          17           KP       2
          18           KM        TRIANGULAR DISTRIBUTION 10-YRS STORM
          19           PH                  0.56    1.38    3.35    4.40    4.90    5.90    7.00    8.50
          20           KP       3
          21           KM        TRIANGULAR DISTRIBUTION 25-YRS STORM
          22           PH                  0.60    1.52    3.90    5.00    5.70    7.00    8.20   10.00
          23           KP       4
          24           KM        TRIANGULAR DISTRIBUTION 50-YRS STORM
          25           PH                  0.71    1.75    4.40    5.60    6.20    7.90    9.80   11.50
          26           KP       5
          27           KM        TRIANGULAR DISTRIBUTION 100-YRS STORM
          28           PH                  0.78    1.93    4.80    6.40    7.20    9.00   11.00   13.00

          29           KK  BAS-1B
          30           KP       1
          31           BA  1.1106
          32           LS       0   83.63
          33           UD   1.138
          34           IN      15
          35           KM        TRIANGULAR DISTRIBUTION 2-YRS STORM
          36           PH                  0.47    1.07    2.25    2.80    3.10    3.90    4.50    5.20
          37           KP       2
          38           KM        TRIANGULAR DISTRIBUTION 10-YRS STORM
          39           PH                  0.56    1.38    3.35    4.40    4.90    5.90    7.00    8.50
          40           KP       3
          41           KM        TRIANGULAR DISTRIBUTION 25-YRS STORM
          42           PH                  0.60    1.52    3.90    5.00    5.70    7.00    8.20   10.00
          43           KP       4
          44           KM        TRIANGULAR DISTRIBUTION 50-YRS STORM
          45           PH                  0.71    1.75    4.40    5.60    6.20    7.90    9.80   11.50
          46           KP       5
          47           KM        TRIANGULAR DISTRIBUTION 100-YRS STORM
          48           PH                  0.78    1.93    4.80    6.40    7.20    9.00   11.00   13.00
```

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

  49          KK  BAS-1C
  50          KP       1
  51          BA  0.0948
  52          LS       0   95.00
  53          UD   0.144
  54          IN      15
  55          KM        TRIANGULAR DISTRIBUTION 2-YRS STORM
  56          PH                   0.47    1.07    2.25    2.80    3.10    3.90    4.50    5.20
  57          KP       2
  58          KM        TRIANGULAR DISTRIBUTION 10-YRS STORM
  59          PH                   0.56    1.38    3.35    4.40    4.90    5.90    7.00    8.50
  60          KP       3
  61          KM        TRIANGULAR DISTRIBUTION 25-YRS STORM
  62          PH                   0.60    1.52    3.90    5.00    5.70    7.00    8.20   10.00
  63          KP       4
  64          KM        TRIANGULAR DISTRIBUTION 50-YRS STORM
  65          PH                   0.71    1.75    4.40    5.60    6.20    7.90    9.80   11.50
  66          KP       5
  67          KM        TRIANGULAR DISTRIBUTION 100-YRS STORM
  68          PH                   0.78    1.93    4.80    6.40    7.20    9.00   11.00   13.00

  69          KK  BASIN1
  70          HC       3

  71          KK      P4
  72          KP       1
  73          BA  0.0452
  74          LS       0   83.67
  75          UD   0.084
  76          IN      15
  77          KM        TRIANGULAR DISTRIBUTION 2-YRS STORM
  78          PH                   0.47    1.07    2.25    2.80    3.10    3.90    4.50    5.20
  79          KP       2
  80          KM        TRIANGULAR DISTRIBUTION 10-YRS STORM
  81          PH                   0.56    1.38    3.35    4.40    4.90    5.90    7.00    8.50
  82          KP       3
  83          KM        TRIANGULAR DISTRIBUTION 25-YRS STORM
  84          PH                   0.60    1.52    3.90    5.00    5.70    7.00    8.20   10.00
  85          KP       4
  86          KM        TRIANGULAR DISTRIBUTION 50-YRS STORM
  87          PH                   0.71    1.75    4.40    5.60    6.20    7.90    9.80   11.50
  88          KP       5
  89          KM        TRIANGULAR DISTRIBUTION 100-YRS STORM
  90          PH                   0.78    1.93    4.80    6.40    7.20    9.00   11.00   13.00

  91          KK   COMB1
  92          HC       2

  93          KK  BASIN2
  94          KP       1
  95          BA  0.6403
  96          LS       0   84.65
  97          UD   0.728
  98          IN      15
  99          KM        TRIANGULAR DISTRIBUTION 2-YRS STORM
 100          PH                   0.47    1.07    2.25    2.80    3.10    3.90    4.50    5.20
 101          KP       2
 102          KM        TRIANGULAR DISTRIBUTION 10-YRS STORM
 103          PH                   0.56    1.38    3.35    4.40    4.90    5.90    7.00    8.50
 104          KP       3
 105          KM        TRIANGULAR DISTRIBUTION 25-YRS STORM
 106          PH                   0.60    1.52    3.90    5.00    5.70    7.00    8.20   10.00
 107          KP       4
 108          KM        TRIANGULAR DISTRIBUTION 50-YRS STORM
 109          PH                   0.71    1.75    4.40    5.60    6.20    7.90    9.80   11.50
 110          KP       5
 111          KM        TRIANGULAR DISTRIBUTION 100-YRS STORM
 112          PH                   0.78    1.93    4.80    6.40    7.20    9.00   11.00   13.00

 113          KK      P3
 114          KP       1
 115          BA  0.0283
 116          LS       0   83.66
 117          UD   0.055
 118          IN      15
 119          KM        TRIANGULAR DISTRIBUTION 2-YRS STORM
 120          PH                   0.47    1.07    2.25    2.80    3.10    3.90    4.50    5.20
 121          KP       2
 122          KM        TRIANGULAR DISTRIBUTION 10-YRS STORM
 123          PH                   0.56    1.38    3.35    4.40    4.90    5.90    7.00    8.50
 124          KP       3
 125          KM        TRIANGULAR DISTRIBUTION 25-YRS STORM
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126          PH                    0.60    1.52    3.90    5.00    5.70    7.00    8.20   10.00
127          KP       4
128          KM        TRIANGULAR DISTRIBUTION 50-YRS STORM
129          PH                    0.71    1.75    4.40    5.60    6.20    7.90    9.80   11.50
130          KP       5
131          KM        TRIANGULAR DISTRIBUTION 100-YRS STORM
132          PH                    0.78    1.93    4.80    6.40    7.20    9.00   11.00   13.00

133          KK      P2
134          KP       1
135          BA  0.0634
136          LS       0   83.59
137          UD   0.106
138          IN      15
139          KM        TRIANGULAR DISTRIBUTION 2-YRS STORM
140          PH                    0.47    1.07    2.25    2.80    3.10    3.90    4.50    5.20
141          KP       2
142          KM        TRIANGULAR DISTRIBUTION 10-YRS STORM
143          PH                    0.56    1.38    3.35    4.40    4.90    5.90    7.00    8.50
144          KP       3
145          KM        TRIANGULAR DISTRIBUTION 25-YRS STORM
146          PH                    0.60    1.52    3.90    5.00    5.70    7.00    8.20   10.00
147          KP       4
148          KM        TRIANGULAR DISTRIBUTION 50-YRS STORM
149          PH                    0.71    1.75    4.40    5.60    6.20    7.90    9.80   11.50
150          KP       5
151          KM        TRIANGULAR DISTRIBUTION 100-YRS STORM
152          PH                    0.78    1.93    4.80    6.40    7.20    9.00   11.00   13.00

153          KK   COMB2
154          HC       4
155          ZZ
1
                 SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

   NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

     9      BAS-1A
                 .
                 .
    29           .      BAS-1B
                 .           .
                 .           .
    49           .           .      BAS-1C
                 .           .           .
                 .           .           .
    69      BASIN1.......................
                 .
                 .
    71           .          P4
                 .           .
                 .           .
    91       COMB1............
                 .
                 .
    93           .      BASIN2
                 .           .
                 .           .
   113           .           .          P3
                 .           .           .
                 .           .           .
   133           .           .           .          P2
                 .           .           .           .
                 .           .           .           .
   153       COMB2...................................

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************                                    ****************************************
 *                                      *                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *    U.S. ARMY CORPS OF ENGINEERS      *
 *              JUN   1998              *                                    *    HYDROLOGIC ENGINEERING CENTER     *
 *            VERSION 4.1               *                                    *          609 SECOND STREET           *
 *                                      *                                    *       DAVIS, CALIFORNIA 95616        *
 *  RUN DATE   01JUN05  TIME  13:32:55  *                                    *           (916) 756-1104             *
 *                                      *                                    *                                      *
 ****************************************                                    ****************************************
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HYDROLOGIC ANALYSIS
PROJECT: ESTANCIAS DE LOS ARTESANOS, LAS PIEDRAS
TRIANGULAR DISTRIBUTION
FREQUENCY OF OCCURRENCE: 2-, 10-, 25-, 50- & 100-YEARS

HEC-1 RESULTS FOR QUEBRADA LOS MUERTOS

```
                              EXISTING CONDITION - QUEBRADA LOS MUERTOS

  7 IO          OUTPUT CONTROL VARIABLES
                      IPRNT           3  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         300  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      2    0  ENDING DATE
                     NDTIME        0055  ENDING TIME
                     ICENT          19  CENTURY MARK

                  COMPUTATION INTERVAL     .08 HOURS
                       TOTAL TIME BASE   24.92 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


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


            **************
            *            *
  9 KK      *    BAS-1A  *
            *            *
            **************


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

 10 KP        PLAN  1 FOR STATION   BAS-1A
                              TRIANGULAR DISTRIBUTION 2-YRS STORM

              SUBBASIN RUNOFF DATA

 11 BA          SUBBASIN CHARACTERISTICS
                      TAREA         .84  SUBBASIN AREA

                PRECIPITATION DATA

 16 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
                  .47    1.07    2.25    2.80    3.10    3.90    4.50    5.20     .00     .00     .00     .00

                                                   STORM AREA =     .84

 12 LS          SCS LOSS RATE
                      STRTL         .35  INITIAL ABSTRACTION
                     CRVNBR       85.20  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

 13 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .96  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                 60 END-OF-PERIOD ORDINATES
             10.       31.       59.       93.      136.      190.      254.      310.      355.      386.
            403.      406.      403.      387.      365.      340.      312.      279.      239.      203.
            175.      152.      132.      115.      103.       90.       79.       69.       59.       52.
             46.       40.       35.       30.       27.       23.       20.       18.       15.       14.
             12.       10.        9.        8.        7.        6.        5.        5.        4.        4.
              3.        3.        3.        2.        2.        1.        1.        1.        0.        0.

      ***             ***             ***             ***             ***
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                        HYDROGRAPH AT STATION   BAS-1A
                          FOR PLAN 1, RATIO = 1.00

     TOTAL RAINFALL =    5.19, TOTAL LOSS =    1.63, TOTAL EXCESS =    3.57

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                       6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     728.     13.08                   265.         81.         78.          78.
                        (INCHES)     2.922       3.549       3.549        3.549
                         (AC-FT)      132.        160.        160.         160.

                         CUMULATIVE AREA =     .84 SQ MI


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

                        HYDROGRAPH AT STATION   BAS-1A
                          FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                       6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     728.     13.08                   265.         81.         78.          78.
                        (INCHES)     2.922       3.549       3.549        3.549
                         (AC-FT)      132.        160.        160.         160.

                         CUMULATIVE AREA =     .84 SQ MI


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

   17 KP        PLAN  2 FOR STATION   BAS-1A
                              TRIANGULAR DISTRIBUTION 10-YRS STORM

                SUBBASIN RUNOFF DATA

   11 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .84  SUBBASIN AREA

                  PRECIPITATION DATA

   19 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
                    .56    1.38    3.35    4.40    4.90    5.90    7.00    8.50     .00     .00     .00     .00

                                                   STORM AREA =     .84

   12 LS          SCS LOSS RATE
                        STRTL         .35  INITIAL ABSTRACTION
                       CRVNBR       85.20  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   13 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .96  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                 60 END-OF-PERIOD ORDINATES
                10.       31.       59.       93.      136.      190.      254.      310.      355.      386.
               403.      406.      403.      387.      365.      340.      312.      279.      239.      203.
               175.      152.      132.      115.      103.       90.       79.       69.       59.       52.
                46.       40.       35.       30.       27.       23.       20.       18.       15.       14.
                12.       10.        9.        8.        7.        6.        5.        5.        4.        4.
                 3.        3.        3.        2.        2.        1.        1.        1.        0.        0.

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

                        HYDROGRAPH AT STATION   BAS-1A
                          FOR PLAN 2, RATIO = 1.00

     TOTAL RAINFALL =    8.49, TOTAL LOSS =    1.78, TOTAL EXCESS =    6.71

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                       6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    1244.     13.08                   464.        151.        146.         146.
                        (INCHES)     5.111       6.668       6.668        6.668
                         (AC-FT)      230.        300.        300.         300.

                         CUMULATIVE AREA =     .84 SQ MI
```

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

                        HYDROGRAPH AT STATION   BAS-1A
                          FOR PLAN 2, RATIO = 1.00

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    1244.     13.08                464.        151.        146.         146.
                        (INCHES)    5.111       6.668       6.668        6.668
                         (AC-FT)     230.        300.        300.         300.

                        CUMULATIVE AREA =     .84 SQ MI


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

   20 KP        PLAN  3 FOR STATION   BAS-1A
                             TRIANGULAR DISTRIBUTION 25-YRS STORM

                SUBBASIN RUNOFF DATA

   11 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .84  SUBBASIN AREA

                  PRECIPITATION DATA

   22 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
                    .60    1.52    3.90    5.00    5.70    7.00    8.20   10.00     .00     .00     .00     .00

                                                     STORM AREA =     .84

   12 LS          SCS LOSS RATE
                        STRTL         .35  INITIAL ABSTRACTION
                       CRVNBR       85.20  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   13 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .96  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                 60 END-OF-PERIOD ORDINATES
                 10.       31.       59.       93.      136.      190.      254.      310.      355.      386.
                403.      406.      403.      387.      365.      340.      312.      279.      239.      203.
                175.      152.      132.      115.      103.       90.       79.       69.       59.       52.
                 46.       40.       35.       30.       27.       23.       20.       18.       15.       14.
                 12.       10.        9.        8.        7.        6.        5.        5.        4.        4.
                  3.        3.        3.        2.        2.        1.        1.        1.        0.        0.

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

                        HYDROGRAPH AT STATION   BAS-1A
                          FOR PLAN 3, RATIO = 1.00

    TOTAL RAINFALL =    9.99, TOTAL LOSS =    1.82, TOTAL EXCESS =    8.17

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    1472.     13.00                563.        184.        178.         178.
                        (INCHES)    6.195       8.117       8.117        8.117
                         (AC-FT)     279.        366.        366.         366.

                        CUMULATIVE AREA =     .84 SQ MI


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

                        HYDROGRAPH AT STATION   BAS-1A
                          FOR PLAN 3, RATIO = 1.00

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    1472.     13.00                563.        184.        178.         178.
                        (INCHES)    6.195       8.117       8.117        8.117
                         (AC-FT)     279.        366.        366.         366.
```

```
                        CUMULATIVE AREA =     .84 SQ MI


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

   23 KP        PLAN  4 FOR STATION   BAS-1A
                                TRIANGULAR DISTRIBUTION 50-YRS STORM

                SUBBASIN RUNOFF DATA

   11 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .84  SUBBASIN AREA

                  PRECIPITATION DATA

   25 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
                    .71    1.75    4.40    5.60    6.20    7.90    9.80   11.50     .00     .00     .00     .00

                                                     STORM AREA =     .84

   12 LS          SCS LOSS RATE
                        STRTL         .35  INITIAL ABSTRACTION
                       CRVNBR       85.20  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   13 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .96  LAG

                                                                 ***

                                                          UNIT HYDROGRAPH
                                                   60 END-OF-PERIOD ORDINATES
                 10.       31.       59.       93.      136.      190.      254.      310.      355.      386.
                403.      406.      403.      387.      365.      340.      312.      279.      239.      203.
                175.      152.      132.      115.      103.       90.       79.       69.       59.       52.
                 46.       40.       35.       30.       27.       23.       20.       18.       15.       14.
                 12.       10.        9.        8.        7.        6.        5.        5.        4.        4.
                  3.        3.        3.        2.        2.        1.        1.        1.        0.        0.

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

                         HYDROGRAPH AT STATION   BAS-1A
                           FOR PLAN 4, RATIO = 1.00

     TOTAL RAINFALL =   11.49, TOTAL LOSS =    1.85, TOTAL EXCESS =    9.64

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                       6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    1686.     13.00                   651.        218.        210.         210.
                        (INCHES)     7.165       9.588       9.588        9.588
                         (AC-FT)      323.        432.        432.         432.

                         CUMULATIVE AREA =     .84 SQ MI


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

                         HYDROGRAPH AT STATION   BAS-1A
                           FOR PLAN 4, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                       6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    1686.     13.00                   651.        218.        210.         210.
                        (INCHES)     7.165       9.588       9.588        9.588
                         (AC-FT)      323.        432.        432.         432.

                         CUMULATIVE AREA =     .84 SQ MI


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

   26 KP        PLAN  5 FOR STATION   BAS-1A
                                TRIANGULAR DISTRIBUTION 100-YRS STORM

                SUBBASIN RUNOFF DATA

   11 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .84  SUBBASIN AREA
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                PRECIPITATION DATA

  28 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
                  .78    1.93    4.80    6.40    7.20    9.00   11.00   13.00     .00     .00     .00     .00

                                                   STORM AREA =     .84

  12 LS         SCS LOSS RATE
                      STRTL         .35  INITIAL ABSTRACTION
                     CRVNBR       85.20  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

  13 UD         SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .96  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                 60 END-OF-PERIOD ORDINATES
              10.       31.       59.       93.      136.      190.      254.      310.      355.      386.
             403.      406.      403.      387.      365.      340.      312.      279.      239.      203.
             175.      152.      132.      115.      103.       90.       79.       69.       59.       52.
              46.       40.       35.       30.       27.       23.       20.       18.       15.       14.
              12.       10.        9.        8.        7.        6.        5.        5.        4.        4.
               3.        3.        3.        2.        2.        1.        1.        1.        0.        0.

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

                        HYDROGRAPH AT STATION   BAS-1A
                          FOR PLAN 5, RATIO = 1.00

    TOTAL RAINFALL =   12.99, TOTAL LOSS =    1.87, TOTAL EXCESS =   11.11

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    1904.     13.00                752.        251.        242.         242.
                        (INCHES)     8.280      11.052      11.052       11.052
                         (AC-FT)     373.        498.        498.         498.

                        CUMULATIVE AREA =     .84 SQ MI


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

                        HYDROGRAPH AT STATION   BAS-1A
                          FOR PLAN 5, RATIO = 1.00

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    1904.     13.00                752.        251.        242.         242.
                        (INCHES)     8.280      11.052      11.052       11.052
                         (AC-FT)     373.        498.        498.         498.

                        CUMULATIVE AREA =     .84 SQ MI


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


            **************
            *            *
  29 KK     *    BAS-1B  *
            *            *
            **************


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

  30 KP         PLAN  1 FOR STATION   BAS-1B
                                TRIANGULAR DISTRIBUTION 2-YRS STORM

                SUBBASIN RUNOFF DATA

  31 BA           SUBBASIN CHARACTERISTICS
                       TAREA        1.11  SUBBASIN AREA

                  PRECIPITATION DATA
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  36 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
                    .47    1.07    2.25    2.80    3.10    3.90    4.50    5.20     .00     .00     .00     .00

                                                   STORM AREA =    1.11

  32 LS           SCS LOSS RATE
                        STRTL         .39  INITIAL ABSTRACTION
                       CRVNBR       83.63  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

  33 UD           SCS DIMENSIONLESS UNITGRAPH
                         TLAG        1.14  LAG

                                                                 ***

                                                          UNIT HYDROGRAPH
                                                     70 END-OF-PERIOD ORDINATES
                 10.       27.       50.       79.      115.      158.      210.      270.      326.      376.
                412.      436.      451.      454.      452.      442.      423.      400.      376.      349.
                317.      280.      243.      211.      188.      167.      148.      132.      119.      108.
                 96.       86.       76.       67.       60.       54.       48.       43.       38.       34.
                 30.       27.       24.       21.       19.       17.       15.       13.       12.       11.
                 10.        9.        8.        7.        6.        5.        5.        4.        4.        4.
                  3.        3.        3.        2.        2.        2.        1.        1.        1.        0.

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

                        HYDROGRAPH AT STATION   BAS-1B
                          FOR PLAN 1, RATIO = 1.00

    TOTAL RAINFALL =    5.19, TOTAL LOSS =    1.78, TOTAL EXCESS =    3.41

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                       6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     822.     13.25                   333.        101.         97.         97.
                        (INCHES)     2.791       3.383       3.383       3.383
                         (AC-FT)      165.        200.        200.        200.

                         CUMULATIVE AREA =    1.11 SQ MI


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

                        HYDROGRAPH AT STATION   BAS-1B
                          FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                       6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     822.     13.25                   333.        101.         97.         97.
                        (INCHES)     2.791       3.383       3.383       3.383
                         (AC-FT)      165.        200.        200.        200.

                         CUMULATIVE AREA =    1.11 SQ MI


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

  37 KP        PLAN  2 FOR STATION   BAS-1B
                              TRIANGULAR DISTRIBUTION 10-YRS STORM

               SUBBASIN RUNOFF DATA

  31 BA           SUBBASIN CHARACTERISTICS
                        TAREA        1.11  SUBBASIN AREA

                  PRECIPITATION DATA

  39 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
                    .56    1.38    3.35    4.40    4.90    5.90    7.00    8.50     .00     .00     .00     .00

                                                   STORM AREA =    1.11

  32 LS           SCS LOSS RATE
                        STRTL         .39  INITIAL ABSTRACTION
                       CRVNBR       83.63  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

  33 UD           SCS DIMENSIONLESS UNITGRAPH
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                    TLAG        1.14  LAG

                                                    ***

                                                UNIT HYDROGRAPH
                                            70 END-OF-PERIOD ORDINATES
              10.       27.       50.       79.      115.      158.      210.      270.      326.      376.
             412.      436.      451.      454.      452.      442.      423.      400.      376.      349.
             317.      280.      243.      211.      188.      167.      148.      132.      119.      108.
              96.       86.       76.       67.       60.       54.       48.       43.       38.       34.
              30.       27.       24.       21.       19.       17.       15.       13.       12.       11.
              10.        9.        8.        7.        6.        5.        5.        4.        4.        4.
               3.        3.        3.        2.        2.        2.        1.        1.        1.        0.

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

                      HYDROGRAPH AT STATION   BAS-1B
                        FOR PLAN 2, RATIO = 1.00

    TOTAL RAINFALL =    8.49, TOTAL LOSS =    1.97, TOTAL EXCESS =    6.52

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                        (CFS)
+    1448.     13.25                594.        193.        186.         186.
                      (INCHES)     4.972       6.457       6.457        6.457
                       (AC-FT)      294.        382.        382.         382.

                      CUMULATIVE AREA =    1.11 SQ MI


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

                      HYDROGRAPH AT STATION   BAS-1B
                        FOR PLAN 2, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                        (CFS)
+    1448.     13.25                594.        193.        186.         186.
                      (INCHES)     4.972       6.457       6.457        6.457
                       (AC-FT)      294.        382.        382.         382.

                      CUMULATIVE AREA =    1.11 SQ MI


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

   40 KP        PLAN  3 FOR STATION   BAS-1B
                              TRIANGULAR DISTRIBUTION 25-YRS STORM

                SUBBASIN RUNOFF DATA

   31 BA          SUBBASIN CHARACTERISTICS
                        TAREA        1.11  SUBBASIN AREA

                  PRECIPITATION DATA

   42 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
                    .60    1.52    3.90    5.00    5.70    7.00    8.20   10.00     .00     .00     .00     .00

                                                     STORM AREA =    1.11

   32 LS          SCS LOSS RATE
                        STRTL         .39  INITIAL ABSTRACTION
                       CRVNBR       83.63  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   33 UD          SCS DIMENSIONLESS UNITGRAPH
                        TLAG        1.14  LAG

                                                    ***

                                                UNIT HYDROGRAPH
                                            70 END-OF-PERIOD ORDINATES
              10.       27.       50.       79.      115.      158.      210.      270.      326.      376.
             412.      436.      451.      454.      452.      442.      423.      400.      376.      349.
             317.      280.      243.      211.      188.      167.      148.      132.      119.      108.
              96.       86.       76.       67.       60.       54.       48.       43.       38.       34.
              30.       27.       24.       21.       19.       17.       15.       13.       12.       11.
              10.        9.        8.        7.        6.        5.        5.        4.        4.        4.
               3.        3.        3.        2.        2.        2.        1.        1.        1.        0.
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      ***            ***            ***            ***            ***

                        HYDROGRAPH AT STATION   BAS-1B
                          FOR PLAN 3, RATIO = 1.00

    TOTAL RAINFALL =    9.99, TOTAL LOSS =    2.02, TOTAL EXCESS =    7.97

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    1721.     13.25                722.        236.        227.         227.
                        (INCHES)    6.044       7.891       7.891        7.891
                         (AC-FT)     358.        467.        467.         467.

                        CUMULATIVE AREA =    1.11 SQ MI


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

                        HYDROGRAPH AT STATION   BAS-1B
                          FOR PLAN 3, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    1721.     13.25                722.        236.        227.         227.
                        (INCHES)    6.044       7.891       7.891        7.891
                         (AC-FT)     358.        467.        467.         467.

                        CUMULATIVE AREA =    1.11 SQ MI


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

   43 KP        PLAN  4 FOR STATION   BAS-1B
                              TRIANGULAR DISTRIBUTION 50-YRS STORM

                SUBBASIN RUNOFF DATA

   31 BA          SUBBASIN CHARACTERISTICS
                        TAREA        1.11  SUBBASIN AREA

                  PRECIPITATION DATA

   45 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
                    .71    1.75    4.40    5.60    6.20    7.90    9.80   11.50     .00     .00     .00     .00

                                                   STORM AREA =    1.11

   32 LS          SCS LOSS RATE
                        STRTL         .39  INITIAL ABSTRACTION
                       CRVNBR       83.63  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   33 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG        1.14  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                 70 END-OF-PERIOD ORDINATES
                10.       27.       50.       79.      115.      158.      210.      270.      326.      376.
               412.      436.      451.      454.      452.      442.      423.      400.      376.      349.
               317.      280.      243.      211.      188.      167.      148.      132.      119.      108.
                96.       86.       76.       67.       60.       54.       48.       43.       38.       34.
                30.       27.       24.       21.       19.       17.       15.       13.       12.       11.
                10.        9.        8.        7.        6.        5.        5.        4.        4.        4.
                 3.        3.        3.        2.        2.        2.        1.        1.        1.        0.

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

                        HYDROGRAPH AT STATION   BAS-1B
                          FOR PLAN 4, RATIO = 1.00

    TOTAL RAINFALL =   11.48, TOTAL LOSS =    2.06, TOTAL EXCESS =    9.43

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    1974.     13.25                838.        279.        269.         269.
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                    (INCHES)     7.019       9.356       9.356        9.356
                     (AC-FT)      416.        554.        554.         554.

                     CUMULATIVE AREA =    1.11 SQ MI


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

                       HYDROGRAPH AT STATION   BAS-1B
                         FOR PLAN 4, RATIO = 1.00

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+    1974.     13.25                838.        279.        269.         269.
                    (INCHES)     7.019       9.356       9.356        9.356
                     (AC-FT)      416.        554.        554.         554.

                     CUMULATIVE AREA =    1.11 SQ MI


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

   46 KP        PLAN  5 FOR STATION   BAS-1B
                             TRIANGULAR DISTRIBUTION 100-YRS STORM

                SUBBASIN RUNOFF DATA

   31 BA          SUBBASIN CHARACTERISTICS
                        TAREA        1.11  SUBBASIN AREA

                  PRECIPITATION DATA

   48 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
                    .78    1.93    4.80    6.40    7.20    9.00   11.00   13.00     .00     .00     .00     .00

                                                   STORM AREA =    1.11

   32 LS          SCS LOSS RATE
                        STRTL         .39  INITIAL ABSTRACTION
                       CRVNBR       83.63  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   33 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG        1.14  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                 70 END-OF-PERIOD ORDINATES
                 10.       27.       50.       79.      115.      158.      210.      270.      326.      376.
                412.      436.      451.      454.      452.      442.      423.      400.      376.      349.
                317.      280.      243.      211.      188.      167.      148.      132.      119.      108.
                 96.       86.       76.       67.       60.       54.       48.       43.       38.       34.
                 30.       27.       24.       21.       19.       17.       15.       13.       12.       11.
                 10.        9.        8.        7.        6.        5.        5.        4.        4.        4.
                  3.        3.        3.        2.        2.        2.        1.        1.        1.        0.

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

                       HYDROGRAPH AT STATION   BAS-1B
                         FOR PLAN 5, RATIO = 1.00

    TOTAL RAINFALL =   12.98, TOTAL LOSS =    2.09, TOTAL EXCESS =   10.90

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+    2249.     13.25                971.        323.        311.         311.
                    (INCHES)     8.129      10.810      10.810       10.810
                     (AC-FT)      481.        640.        640.         640.

                     CUMULATIVE AREA =    1.11 SQ MI


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

                       HYDROGRAPH AT STATION   BAS-1B
                         FOR PLAN 5, RATIO = 1.00

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR     24.92-HR
```

```
+   (CFS)       (HR)
                          (CFS)
+    2249.     13.25                971.        323.        311.         311.
                        (INCHES)     8.129      10.810      10.810       10.810
                         (AC-FT)      481.        640.        640.         640.

                         CUMULATIVE AREA =    1.11 SQ MI



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


            **************
            *            *
   49 KK    *    BAS-1C  *
            *            *
            **************


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

   50 KP        PLAN  1 FOR STATION   BAS-1C
                              TRIANGULAR DISTRIBUTION 2-YRS STORM

                SUBBASIN RUNOFF DATA

   51 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .09  SUBBASIN AREA

                  PRECIPITATION DATA

   56 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
                    .47    1.07    2.25    2.80    3.10    3.90    4.50    5.20     .00     .00     .00     .00

                                                   STORM AREA =     .09

   52 LS          SCS LOSS RATE
                        STRTL         .11  INITIAL ABSTRACTION
                       CRVNBR       95.00  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   53 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .14  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                 11 END-OF-PERIOD ORDINATES
                 96.      245.      204.       97.       48.       23.       11.        5.        3.        1.
                  0.

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

                         HYDROGRAPH AT STATION   BAS-1C
                           FOR PLAN 1, RATIO = 1.00

     TOTAL RAINFALL =    5.20, TOTAL LOSS =     .58, TOTAL EXCESS =    4.62

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     236.     12.17                  38.         12.         11.          11.
                        (INCHES)     3.689       4.617       4.617        4.617
                         (AC-FT)      19.         23.         23.          23.

                         CUMULATIVE AREA =     .09 SQ MI


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

                         HYDROGRAPH AT STATION   BAS-1C
                           FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     236.     12.17                  38.         12.         11.          11.
                        (INCHES)     3.689       4.617       4.617        4.617
                         (AC-FT)      19.         23.         23.          23.

                         CUMULATIVE AREA =     .09 SQ MI
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***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

  57 KP        PLAN  2 FOR STATION   BAS-1C
                            TRIANGULAR DISTRIBUTION 10-YRS STORM

               SUBBASIN RUNOFF DATA

  51 BA          SUBBASIN CHARACTERISTICS
                       TAREA         .09  SUBBASIN AREA

                 PRECIPITATION DATA

  59 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
                   .56    1.38    3.35    4.40    4.90    5.90    7.00    8.50     .00     .00     .00     .00

                                                STORM AREA =     .09

  52 LS          SCS LOSS RATE
                       STRTL         .11  INITIAL ABSTRACTION
                      CRVNBR       95.00  CURVE NUMBER
                       RTIMP         .00  PERCENT IMPERVIOUS AREA

  53 UD          SCS DIMENSIONLESS UNITGRAPH
                        TLAG         .14  LAG

                                                                 ***

                                                          UNIT HYDROGRAPH
                                                     11 END-OF-PERIOD ORDINATES
                96.      245.      204.       97.       48.       23.       11.        5.        3.        1.
                 0.

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

                         HYDROGRAPH AT STATION   BAS-1C
                           FOR PLAN 2, RATIO = 1.00

     TOTAL RAINFALL =    8.50, TOTAL LOSS =     .60, TOTAL EXCESS =    7.90

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     318.     12.17                  59.         20.         19.         19.
                        (INCHES)     5.772       7.898       7.898       7.898
                         (AC-FT)      29.         40.         40.         40.

                         CUMULATIVE AREA =     .09 SQ MI


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

                         HYDROGRAPH AT STATION   BAS-1C
                           FOR PLAN 2, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     318.     12.17                  59.         20.         19.         19.
                        (INCHES)     5.772       7.898       7.898       7.898
                         (AC-FT)      29.         40.         40.         40.

                         CUMULATIVE AREA =     .09 SQ MI


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

  60 KP        PLAN  3 FOR STATION   BAS-1C
                            TRIANGULAR DISTRIBUTION 25-YRS STORM

               SUBBASIN RUNOFF DATA

  51 BA          SUBBASIN CHARACTERISTICS
                       TAREA         .09  SUBBASIN AREA

                 PRECIPITATION DATA

  62 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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                .60    1.52    3.90    5.00    5.70    7.00    8.20   10.00     .00     .00     .00     .00

                                                STORM AREA =     .09

  52 LS          SCS LOSS RATE
                      STRTL         .11  INITIAL ABSTRACTION
                     CRVNBR       95.00  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

  53 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .14  LAG

                                                        ***

                                                   UNIT HYDROGRAPH
                                             11 END-OF-PERIOD ORDINATES
              96.      245.      204.       97.       48.       23.       11.        5.        3.        1.
               0.

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

                       HYDROGRAPH AT STATION   BAS-1C
                         FOR PLAN 3, RATIO = 1.00

    TOTAL RAINFALL =   10.00, TOTAL LOSS =     .60, TOTAL EXCESS =    9.39

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                        (CFS)
+     356.     12.17                  70.         24.         23.          23.
                      (INCHES)     6.876       9.394       9.394        9.394
                       (AC-FT)      35.         47.         47.          47.

                       CUMULATIVE AREA =     .09 SQ MI


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

                       HYDROGRAPH AT STATION   BAS-1C
                         FOR PLAN 3, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                        (CFS)
+     356.     12.17                  70.         24.         23.          23.
                      (INCHES)     6.876       9.394       9.394        9.394
                       (AC-FT)      35.         47.         47.          47.

                       CUMULATIVE AREA =     .09 SQ MI


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

  63 KP        PLAN  4 FOR STATION   BAS-1C
                            TRIANGULAR DISTRIBUTION 50-YRS STORM

               SUBBASIN RUNOFF DATA

  51 BA          SUBBASIN CHARACTERISTICS
                       TAREA         .09  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
                   .71    1.75    4.40    5.60    6.20    7.90    9.80   11.50     .00     .00     .00     .00

                                                STORM AREA =     .09

  52 LS          SCS LOSS RATE
                      STRTL         .11  INITIAL ABSTRACTION
                     CRVNBR       95.00  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

  53 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .14  LAG

                                                        ***

                                                   UNIT HYDROGRAPH
                                             11 END-OF-PERIOD ORDINATES
              96.      245.      204.       97.       48.       23.       11.        5.        3.        1.
               0.
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      ***            ***            ***            ***            ***

                        HYDROGRAPH AT STATION   BAS-1C
                          FOR PLAN 4, RATIO = 1.00

    TOTAL RAINFALL =   11.50, TOTAL LOSS =     .61, TOTAL EXCESS =   10.89

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     410.     12.17                  79.         28.         27.          27.
                       (INCHES)     7.794      10.890      10.890       10.890
                        (AC-FT)      39.         55.         55.          55.

                        CUMULATIVE AREA =     .09 SQ MI


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

                        HYDROGRAPH AT STATION   BAS-1C
                          FOR PLAN 4, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     410.     12.17                  79.         28.         27.          27.
                       (INCHES)     7.794      10.890      10.890       10.890
                        (AC-FT)      39.         55.         55.          55.

                        CUMULATIVE AREA =     .09 SQ MI


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

   66 KP        PLAN  5 FOR STATION   BAS-1C
                              TRIANGULAR DISTRIBUTION 100-YRS STORM

                SUBBASIN RUNOFF DATA

   51 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .09  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
                    .78    1.93    4.80    6.40    7.20    9.00   11.00   13.00     .00     .00     .00     .00

                                                   STORM AREA =     .09

   52 LS          SCS LOSS RATE
                        STRTL         .11  INITIAL ABSTRACTION
                       CRVNBR       95.00  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   53 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .14  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                 11 END-OF-PERIOD ORDINATES
                 96.      245.      204.       97.       48.       23.       11.        5.        3.        1.
                  0.

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

                        HYDROGRAPH AT STATION   BAS-1C
                          FOR PLAN 5, RATIO = 1.00

    TOTAL RAINFALL =   13.00, TOTAL LOSS =     .61, TOTAL EXCESS =   12.39

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     452.     12.17                  91.         32.         30.          30.
                       (INCHES)     8.901      12.387      12.387       12.387
                        (AC-FT)      45.         63.         63.          63.

                        CUMULATIVE AREA =     .09 SQ MI
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      ***            ***            ***            ***            ***

                        HYDROGRAPH AT STATION   BAS-1C
                          FOR PLAN 5, RATIO = 1.00

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     452.     12.17                 91.         32.         30.          30.
                       (INCHES)     8.901      12.387      12.387       12.387
                        (AC-FT)      45.         63.         63.          63.

                        CUMULATIVE AREA =     .09 SQ MI



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


            **************
            *            *
   69 KK    *    BASIN1  *
            *            *
            **************

   70 HC          HYDROGRAPH COMBINATION
                       ICOMP           3  NUMBER OF HYDROGRAPHS TO COMBINE

                                                                  ***

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

                        HYDROGRAPH AT STATION   BASIN1
                          FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    1561.     13.17                633.        193.        186.         186.
                       (INCHES)     2.872       3.508       3.508        3.508
                        (AC-FT)     314.        384.        384.         384.

                        CUMULATIVE AREA =    2.05 SQ MI

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

                        HYDROGRAPH AT STATION   BASIN1
                          FOR PLAN 2, RATIO = 1.00

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    2719.     13.08                1114.        364.        351.         351.
                       (INCHES)     5.052       6.610       6.610        6.610
                        (AC-FT)     552.        723.        723.         723.

                        CUMULATIVE AREA =    2.05 SQ MI

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

                        HYDROGRAPH AT STATION   BASIN1
                          FOR PLAN 3, RATIO = 1.00

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    3223.     13.08                1351.        444.        428.         428.
                       (INCHES)     6.126       8.054       8.054        8.054
                        (AC-FT)     670.        881.        881.         881.

                        CUMULATIVE AREA =    2.05 SQ MI

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

                        HYDROGRAPH AT STATION   BASIN1
                          FOR PLAN 4, RATIO = 1.00

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
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                                    6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    3692.     13.08                1565.        525.        506.         506.
                       (INCHES)     7.097       9.522       9.522        9.522
                        (AC-FT)      776.       1041.       1041.        1041.

                        CUMULATIVE AREA =    2.05 SQ MI


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

                         HYDROGRAPH AT STATION   BASIN1
                           FOR PLAN 5, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    4203.     13.08                1810.        605.        583.         583.
                       (INCHES)     8.206      10.983      10.983       10.983
                        (AC-FT)      897.       1201.       1201.        1201.

                        CUMULATIVE AREA =    2.05 SQ MI



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


            **************
            *            *
   71 KK    *        P4  *
            *            *
            **************


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

   72 KP        PLAN  1 FOR STATION       P4
                                TRIANGULAR DISTRIBUTION 2-YRS STORM

                SUBBASIN RUNOFF DATA

   73 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .05  SUBBASIN AREA

                  PRECIPITATION DATA

   78 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
                    .47    1.07    2.25    2.80    3.10    3.90    4.50    5.20     .00     .00     .00     .00

                                                     STORM AREA =     .05

   74 LS          SCS LOSS RATE
                        STRTL         .39  INITIAL ABSTRACTION
                       CRVNBR       83.67  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   75 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .08  LAG

                                                                ***

                                                         UNIT HYDROGRAPH
                                                    7 END-OF-PERIOD ORDINATES
                131.      144.       49.       17.        6.        2.        1.

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

                         HYDROGRAPH AT STATION       P4
                           FOR PLAN 1, RATIO = 1.00

     TOTAL RAINFALL =    5.20, TOTAL LOSS =    1.78, TOTAL EXCESS =    3.42

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+      97.     12.08                  14.          4.          4.           4.
                       (INCHES)     2.834       3.421       3.421        3.421
                        (AC-FT)        7.          8.          8.           8.

                        CUMULATIVE AREA =     .05 SQ MI
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      ***            ***            ***            ***            ***

                        HYDROGRAPH AT STATION       P4
                          FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+      97.     12.08                  14.          4.          4.           4.
                        (INCHES)     2.834       3.421       3.421        3.421
                         (AC-FT)       7.          8.          8.           8.

                        CUMULATIVE AREA =     .05 SQ MI


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

   79 KP        PLAN  2 FOR STATION       P4
                              TRIANGULAR DISTRIBUTION 10-YRS STORM

                SUBBASIN RUNOFF DATA

   73 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .05  SUBBASIN AREA

                  PRECIPITATION DATA

   81 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
                    .56    1.38    3.35    4.40    4.90    5.90    7.00    8.50     .00     .00     .00     .00

                                                   STORM AREA =     .05

   74 LS          SCS LOSS RATE
                        STRTL         .39  INITIAL ABSTRACTION
                       CRVNBR       83.67  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   75 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .08  LAG

                                                                ***

                                                         UNIT HYDROGRAPH
                                                     7 END-OF-PERIOD ORDINATES
                131.      144.       49.       17.        6.        2.        1.

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

                        HYDROGRAPH AT STATION       P4
                          FOR PLAN 2, RATIO = 1.00

    TOTAL RAINFALL =    8.50, TOTAL LOSS =    1.96, TOTAL EXCESS =    6.54

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     146.     12.08                  24.          8.          8.           8.
                        (INCHES)     5.037       6.536       6.536        6.536
                         (AC-FT)      12.         16.         16.          16.

                        CUMULATIVE AREA =     .05 SQ MI


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

                        HYDROGRAPH AT STATION       P4
                          FOR PLAN 2, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     146.     12.08                  24.          8.          8.           8.
                        (INCHES)     5.037       6.536       6.536        6.536
                         (AC-FT)      12.         16.         16.          16.

                        CUMULATIVE AREA =     .05 SQ MI
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***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

  82 KP        PLAN  3 FOR STATION       P4
                                TRIANGULAR DISTRIBUTION 25-YRS STORM

               SUBBASIN RUNOFF DATA

  73 BA          SUBBASIN CHARACTERISTICS
                       TAREA         .05  SUBBASIN AREA

                 PRECIPITATION DATA

  84 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
                   .60    1.52    3.90    5.00    5.70    7.00    8.20   10.00     .00     .00     .00     .00

                                                     STORM AREA =     .05

  74 LS          SCS LOSS RATE
                       STRTL         .39  INITIAL ABSTRACTION
                      CRVNBR       83.67  CURVE NUMBER
                       RTIMP         .00  PERCENT IMPERVIOUS AREA

  75 UD          SCS DIMENSIONLESS UNITGRAPH
                        TLAG         .08  LAG

                                                                 ***

                                                            UNIT HYDROGRAPH
                                                        7 END-OF-PERIOD ORDINATES
               131.      144.       49.       17.        6.        2.        1.

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

                        HYDROGRAPH AT STATION       P4
                          FOR PLAN 3, RATIO = 1.00

    TOTAL RAINFALL =   10.00, TOTAL LOSS =    2.01, TOTAL EXCESS =    7.99

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     167.     12.08                  30.         10.          9.           9.
                       (INCHES)     6.141       7.987       7.987        7.987
                        (AC-FT)      15.         19.         19.          19.

                        CUMULATIVE AREA =     .05 SQ MI


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

                        HYDROGRAPH AT STATION       P4
                          FOR PLAN 3, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     167.     12.08                  30.         10.          9.           9.
                       (INCHES)     6.141       7.987       7.987        7.987
                        (AC-FT)      15.         19.         19.          19.

                        CUMULATIVE AREA =     .05 SQ MI


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

  85 KP        PLAN  4 FOR STATION       P4
                                TRIANGULAR DISTRIBUTION 50-YRS STORM

               SUBBASIN RUNOFF DATA

  73 BA          SUBBASIN CHARACTERISTICS
                       TAREA         .05  SUBBASIN AREA

                 PRECIPITATION DATA

  87 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
                   .71    1.75    4.40    5.60    6.20    7.90    9.80   11.50     .00     .00     .00     .00

                                                     STORM AREA =     .05
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```
  74 LS          SCS LOSS RATE
                      STRTL         .39  INITIAL ABSTRACTION
                     CRVNBR       83.67  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

  75 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .08  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                 7 END-OF-PERIOD ORDINATES
               131.      144.       49.       17.        6.        2.        1.

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

                        HYDROGRAPH AT STATION       P4
                          FOR PLAN 4, RATIO = 1.00

    TOTAL RAINFALL =   11.50, TOTAL LOSS =    2.05, TOTAL EXCESS =    9.45

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     197.     12.08                35.         11.         11.          11.
                       (INCHES)    7.125       9.449       9.449        9.449
                        (AC-FT)     17.         23.         23.          23.

                       CUMULATIVE AREA =     .05 SQ MI


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

                        HYDROGRAPH AT STATION       P4
                          FOR PLAN 4, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     197.     12.08                35.         11.         11.          11.
                       (INCHES)    7.125       9.449       9.449        9.449
                        (AC-FT)     17.         23.         23.          23.

                       CUMULATIVE AREA =     .05 SQ MI


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

  88 KP        PLAN  5 FOR STATION       P4
                            TRIANGULAR DISTRIBUTION 100-YRS STORM

               SUBBASIN RUNOFF DATA

  73 BA          SUBBASIN CHARACTERISTICS
                       TAREA         .05  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
                   .78    1.93    4.80    6.40    7.20    9.00   11.00   13.00     .00     .00     .00     .00

                                                   STORM AREA =     .05

  74 LS          SCS LOSS RATE
                      STRTL         .39  INITIAL ABSTRACTION
                     CRVNBR       83.67  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

  75 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .08  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                 7 END-OF-PERIOD ORDINATES
               131.      144.       49.       17.        6.        2.        1.

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

                        HYDROGRAPH AT STATION       P4
                          FOR PLAN 5, RATIO = 1.00
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     TOTAL RAINFALL =   13.00, TOTAL LOSS =    2.08, TOTAL EXCESS =   10.92

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     219.     12.08                 40.         13.         13.          13.
                        (INCHES)    8.249      10.919      10.919       10.919
                         (AC-FT)     20.         26.         26.          26.

                         CUMULATIVE AREA =     .05 SQ MI


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

                           HYDROGRAPH AT STATION       P4
                             FOR PLAN 5, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     219.     12.08                 40.         13.         13.          13.
                        (INCHES)    8.249      10.919      10.919       10.919
                         (AC-FT)     20.         26.         26.          26.

                         CUMULATIVE AREA =     .05 SQ MI


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


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            *            *
   91 KK    *     COMB1  *
            *            *
            **************

   92 HC          HYDROGRAPH COMBINATION
                        ICOMP           2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                                  ***

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

                           HYDROGRAPH AT STATION    COMB1
                             FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    1570.     13.17                 647.        198.        190.         190.
                        (INCHES)    2.870       3.506       3.506        3.506
                         (AC-FT)     321.        392.        392.         392.

                         CUMULATIVE AREA =    2.10 SQ MI


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

                           HYDROGRAPH AT STATION    COMB1
                             FOR PLAN 2, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    2741.     13.08                1138.        372.        359.         359.
                        (INCHES)    5.049       6.609       6.609        6.609
                         (AC-FT)     564.        739.        739.         739.

                         CUMULATIVE AREA =    2.10 SQ MI


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

                           HYDROGRAPH AT STATION    COMB1
                             FOR PLAN 3, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    3248.     13.08                1380.        454.        437.         437.
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                        (INCHES)     6.123       8.052       8.052        8.052
                         (AC-FT)      684.        900.        900.         900.

                         CUMULATIVE AREA =    2.10 SQ MI


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

                          HYDROGRAPH AT STATION    COMB1
                            FOR PLAN 4, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                            (CFS)
+    3718.     13.08                1599.        536.        517.         517.
                        (INCHES)     7.094       9.521       9.521        9.521
                         (AC-FT)      793.       1064.       1064.        1064.

                         CUMULATIVE AREA =    2.10 SQ MI


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

                          HYDROGRAPH AT STATION    COMB1
                            FOR PLAN 5, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                            (CFS)
+    4238.     13.08                1849.        619.        596.         596.
                        (INCHES)     8.203      10.982      10.982       10.982
                         (AC-FT)      917.       1227.       1227.        1227.

                         CUMULATIVE AREA =    2.10 SQ MI


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


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            *            *
   93 KK    *    BASIN2  *
            *            *
            **************


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

   94 KP        PLAN  1 FOR STATION   BASIN2
                                TRIANGULAR DISTRIBUTION 2-YRS STORM

                SUBBASIN RUNOFF DATA

   95 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .64  SUBBASIN AREA

                  PRECIPITATION DATA

  100 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
                    .47    1.07    2.25    2.80    3.10    3.90    4.50    5.20     .00     .00     .00     .00

                                                     STORM AREA =     .64

   96 LS          SCS LOSS RATE
                        STRTL         .36  INITIAL ABSTRACTION
                       CRVNBR       84.65  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   97 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .73  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                 46 END-OF-PERIOD ORDINATES
                 14.       46.       88.      146.      221.      297.      355.      390.      401.      399.
                376.      346.      311.      266.      215.      176.      147.      123.      104.       88.
                 74.       61.       52.       43.       37.       30.       25.       21.       18.       15.
                 13.       11.        9.        7.        6.        5.        4.        4.        3.        3.
                  2.        2.        1.        1.        1.        0.
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      ***             ***             ***             ***             ***

                        HYDROGRAPH AT STATION   BASIN2
                          FOR PLAN 1, RATIO = 1.00

    TOTAL RAINFALL =    5.20, TOTAL LOSS =    1.68, TOTAL EXCESS =    3.51

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     646.     12.83                199.         60.         58.          58.
                       (INCHES)    2.892       3.505       3.505        3.505
                        (AC-FT)     99.        120.        120.         120.

                        CUMULATIVE AREA =     .64 SQ MI


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

                        HYDROGRAPH AT STATION   BASIN2
                          FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     646.     12.83                199.         60.         58.          58.
                       (INCHES)    2.892       3.505       3.505        3.505
                        (AC-FT)     99.        120.        120.         120.

                        CUMULATIVE AREA =     .64 SQ MI


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

  101 KP        PLAN  2 FOR STATION   BASIN2
                              TRIANGULAR DISTRIBUTION 10-YRS STORM

                SUBBASIN RUNOFF DATA

   95 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .64  SUBBASIN AREA

                  PRECIPITATION DATA

  103 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
                    .56    1.38    3.35    4.40    4.90    5.90    7.00    8.50     .00     .00     .00     .00

                                                   STORM AREA =     .64

   96 LS          SCS LOSS RATE
                        STRTL         .36  INITIAL ABSTRACTION
                       CRVNBR       84.65  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   97 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .73  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                 46 END-OF-PERIOD ORDINATES
                14.       46.       88.      146.      221.      297.      355.      390.      401.      399.
               376.      346.      311.      266.      215.      176.      147.      123.      104.       88.
                74.       61.       52.       43.       37.       30.       25.       21.       18.       15.
                13.       11.        9.        7.        6.        5.        4.        4.        3.        3.
                 2.        2.        1.        1.        1.        0.

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

                        HYDROGRAPH AT STATION   BASIN2
                          FOR PLAN 2, RATIO = 1.00

    TOTAL RAINFALL =    8.49, TOTAL LOSS =    1.85, TOTAL EXCESS =    6.65

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    1090.     12.83                350.        114.        110.         110.
                       (INCHES)    5.087       6.627       6.627        6.627
                        (AC-FT)     174.        226.        226.         226.
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                        CUMULATIVE AREA =     .64 SQ MI

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

                        HYDROGRAPH AT STATION   BASIN2
                          FOR PLAN 2, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    1090.     12.83                 350.        114.        110.         110.
                        (INCHES)     5.087       6.627       6.627        6.627
                         (AC-FT)      174.        226.        226.         226.

                        CUMULATIVE AREA =     .64 SQ MI


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

  104 KP        PLAN  3 FOR STATION   BASIN2
                                TRIANGULAR DISTRIBUTION 25-YRS STORM

                SUBBASIN RUNOFF DATA

   95 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .64  SUBBASIN AREA

                  PRECIPITATION DATA

  106 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
                    .60    1.52    3.90    5.00    5.70    7.00    8.20   10.00     .00     .00     .00     .00

                                                   STORM AREA =     .64

   96 LS          SCS LOSS RATE
                        STRTL         .36  INITIAL ABSTRACTION
                       CRVNBR       84.65  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   97 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .73  LAG

                                                          ***

                                                      UNIT HYDROGRAPH
                                                 46 END-OF-PERIOD ORDINATES
                 14.       46.       88.      146.      221.      297.      355.      390.      401.      399.
                376.      346.      311.      266.      215.      176.      147.      123.      104.       88.
                 74.       61.       52.       43.       37.       30.       25.       21.       18.       15.
                 13.       11.        9.        7.        6.        5.        4.        4.        3.        3.
                  2.        2.        1.        1.        1.        0.

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

                        HYDROGRAPH AT STATION   BASIN2
                          FOR PLAN 3, RATIO = 1.00

    TOTAL RAINFALL =    9.99, TOTAL LOSS =    1.89, TOTAL EXCESS =    8.10

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    1290.     12.83                 426.        139.        134.         134.
                        (INCHES)     6.180       8.078       8.078        8.078
                         (AC-FT)      211.        276.        276.         276.

                        CUMULATIVE AREA =     .64 SQ MI


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

                        HYDROGRAPH AT STATION   BASIN2
                          FOR PLAN 3, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    1290.     12.83                 426.        139.        134.         134.
                        (INCHES)     6.180       8.078       8.078        8.078
                         (AC-FT)      211.        276.        276.         276.
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                        CUMULATIVE AREA =     .64 SQ MI


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

  107 KP        PLAN  4 FOR STATION   BASIN2
                                TRIANGULAR DISTRIBUTION 50-YRS STORM

                SUBBASIN RUNOFF DATA

   95 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .64  SUBBASIN AREA

                  PRECIPITATION DATA

  109 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
                    .71    1.75    4.40    5.60    6.20    7.90    9.80   11.50     .00     .00     .00     .00

                                                     STORM AREA =     .64

   96 LS          SCS LOSS RATE
                        STRTL         .36  INITIAL ABSTRACTION
                       CRVNBR       84.65  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

   97 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .73  LAG

                                                                 ***

                                                          UNIT HYDROGRAPH
                                                     46 END-OF-PERIOD ORDINATES
                 14.       46.       88.      146.      221.      297.      355.      390.      401.      399.
                376.      346.      311.      266.      215.      176.      147.      123.      104.       88.
                 74.       61.       52.       43.       37.       30.       25.       21.       18.       15.
                 13.       11.        9.        7.        6.        5.        4.        4.        3.        3.
                  2.        2.        1.        1.        1.        0.

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

                         HYDROGRAPH AT STATION   BASIN2
                           FOR PLAN 4, RATIO = 1.00

    TOTAL RAINFALL =   11.49, TOTAL LOSS =    1.92, TOTAL EXCESS =    9.57

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    1482.     12.83                 493.        164.        158.         158.
                        (INCHES)     7.154       9.545       9.545        9.545
                         (AC-FT)      244.        326.        326.         326.

                        CUMULATIVE AREA =     .64 SQ MI


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

                         HYDROGRAPH AT STATION   BASIN2
                           FOR PLAN 4, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    1482.     12.83                 493.        164.        158.         158.
                        (INCHES)     7.154       9.545       9.545        9.545
                         (AC-FT)      244.        326.        326.         326.

                        CUMULATIVE AREA =     .64 SQ MI


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

  110 KP        PLAN  5 FOR STATION   BASIN2
                                TRIANGULAR DISTRIBUTION 100-YRS STORM

                SUBBASIN RUNOFF DATA

   95 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .64  SUBBASIN AREA
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                 PRECIPITATION DATA

  112 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
                   .78    1.93    4.80    6.40    7.20    9.00   11.00   13.00     .00     .00     .00     .00

                                                   STORM AREA =     .64

   96 LS         SCS LOSS RATE
                       STRTL         .36  INITIAL ABSTRACTION
                      CRVNBR       84.65  CURVE NUMBER
                       RTIMP         .00  PERCENT IMPERVIOUS AREA

   97 UD         SCS DIMENSIONLESS UNITGRAPH
                        TLAG         .73  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                 46 END-OF-PERIOD ORDINATES
                14.       46.       88.      146.      221.      297.      355.      390.      401.      399.
               376.      346.      311.      266.      215.      176.      147.      123.      104.       88.
                74.       61.       52.       43.       37.       30.       25.       21.       18.       15.
                13.       11.        9.        7.        6.        5.        4.        4.        3.        3.
                 2.        2.        1.        1.        1.        0.

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

                         HYDROGRAPH AT STATION   BASIN2
                           FOR PLAN 5, RATIO = 1.00

     TOTAL RAINFALL =   12.99, TOTAL LOSS =    1.95, TOTAL EXCESS =   11.04

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                       6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                           (CFS)
+    1663.     12.83                   570.        190.        183.         183.
                         (INCHES)     8.274      11.013      11.013       11.013
                          (AC-FT)      283.        376.        376.         376.

                          CUMULATIVE AREA =     .64 SQ MI


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

                         HYDROGRAPH AT STATION   BASIN2
                           FOR PLAN 5, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                       6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                           (CFS)
+    1663.     12.83                   570.        190.        183.         183.
                         (INCHES)     8.274      11.013      11.013       11.013
                          (AC-FT)      283.        376.        376.         376.

                          CUMULATIVE AREA =     .64 SQ MI



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


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             *            *
  113 KK     *        P3  *
             *            *
             **************


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

  114 KP        PLAN  1 FOR STATION       P3
                                TRIANGULAR DISTRIBUTION 2-YRS STORM

                SUBBASIN RUNOFF DATA

  115 BA          SUBBASIN CHARACTERISTICS
                       TAREA         .03  SUBBASIN AREA

                  PRECIPITATION DATA

  120 PH                                DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                 ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
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                 5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                   .47    1.07    2.25    2.80    3.10    3.90    4.50    5.20     .00     .00     .00     .00

                                                STORM AREA =     .03

  116 LS          SCS LOSS RATE
                        STRTL         .39  INITIAL ABSTRACTION
                       CRVNBR       83.66  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

  117 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .05  LAG

                                                                ***

                                                            UNIT HYDROGRAPH
                                                        5 END-OF-PERIOD ORDINATES
                136.       62.       15.        4.        1.

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

                          HYDROGRAPH AT STATION       P3
                            FOR PLAN 1, RATIO = 1.00

     TOTAL RAINFALL =    5.20, TOTAL LOSS =    1.78, TOTAL EXCESS =    3.42

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+      70.     12.08                     9.          3.          3.           3.
                        (INCHES)     2.834       3.420       3.420        3.420
                         (AC-FT)        4.          5.          5.           5.

                         CUMULATIVE AREA =     .03 SQ MI


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

                          HYDROGRAPH AT STATION       P3
                            FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+      70.     12.08                     9.          3.          3.           3.
                        (INCHES)     2.834       3.420       3.420        3.420
                         (AC-FT)        4.          5.          5.           5.

                         CUMULATIVE AREA =     .03 SQ MI


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

  121 KP        PLAN  2 FOR STATION       P3
                                TRIANGULAR DISTRIBUTION 10-YRS STORM

                SUBBASIN RUNOFF DATA

  115 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .03  SUBBASIN AREA

                  PRECIPITATION DATA

  123 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
                   .56    1.38    3.35    4.40    4.90    5.90    7.00    8.50     .00     .00     .00     .00

                                                STORM AREA =     .03

  116 LS          SCS LOSS RATE
                        STRTL         .39  INITIAL ABSTRACTION
                       CRVNBR       83.66  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

  117 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .05  LAG

                                                                ***

                                                            UNIT HYDROGRAPH
                                                        5 END-OF-PERIOD ORDINATES
                136.       62.       15.        4.        1.
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      ***             ***             ***             ***             ***

                        HYDROGRAPH AT STATION       P3
                          FOR PLAN 2, RATIO = 1.00

    TOTAL RAINFALL =    8.50, TOTAL LOSS =    1.96, TOTAL EXCESS =    6.54

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     100.     12.08                  15.          5.          5.           5.
                        (INCHES)     5.037       6.535       6.535        6.535
                         (AC-FT)       8.         10.         10.          10.

                         CUMULATIVE AREA =     .03 SQ MI


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

                        HYDROGRAPH AT STATION       P3
                          FOR PLAN 2, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     100.     12.08                  15.          5.          5.           5.
                        (INCHES)     5.037       6.535       6.535        6.535
                         (AC-FT)       8.         10.         10.          10.

                         CUMULATIVE AREA =     .03 SQ MI


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

  124 KP        PLAN  3 FOR STATION       P3
                                TRIANGULAR DISTRIBUTION 25-YRS STORM

                SUBBASIN RUNOFF DATA

  115 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .03  SUBBASIN AREA

                  PRECIPITATION DATA

  126 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
                    .60    1.52    3.90    5.00    5.70    7.00    8.20   10.00     .00     .00     .00     .00

                                                   STORM AREA =     .03

  116 LS          SCS LOSS RATE
                        STRTL         .39  INITIAL ABSTRACTION
                       CRVNBR       83.66  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

  117 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .05  LAG

                                                          ***

                                                      UNIT HYDROGRAPH
                                                  5 END-OF-PERIOD ORDINATES
                136.       62.       15.        4.        1.

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

                        HYDROGRAPH AT STATION       P3
                          FOR PLAN 3, RATIO = 1.00

    TOTAL RAINFALL =   10.00, TOTAL LOSS =    2.01, TOTAL EXCESS =    7.99

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     113.     12.08                  19.          6.          6.           6.
                        (INCHES)     6.141       7.986       7.986        7.986
                         (AC-FT)       9.         12.         12.          12.

                         CUMULATIVE AREA =     .03 SQ MI


      ***             ***             ***             ***             ***
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                        HYDROGRAPH AT STATION       P3
                          FOR PLAN 3, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     113.     12.08                  19.          6.          6.           6.
                        (INCHES)     6.141       7.986       7.986        7.986
                         (AC-FT)       9.         12.         12.          12.

                        CUMULATIVE AREA =     .03 SQ MI


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

  127 KP        PLAN  4 FOR STATION       P3
                                TRIANGULAR DISTRIBUTION 50-YRS STORM

                SUBBASIN RUNOFF DATA

  115 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .03  SUBBASIN AREA

                  PRECIPITATION DATA

  129 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
                    .71    1.75    4.40    5.60    6.20    7.90    9.80   11.50     .00     .00     .00     .00

                                                   STORM AREA =     .03

  116 LS          SCS LOSS RATE
                        STRTL         .39  INITIAL ABSTRACTION
                       CRVNBR       83.66  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

  117 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .05  LAG

                                                                 ***

                                                            UNIT HYDROGRAPH
                                                        5 END-OF-PERIOD ORDINATES
                136.       62.       15.        4.        1.

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

                        HYDROGRAPH AT STATION       P3
                          FOR PLAN 4, RATIO = 1.00

     TOTAL RAINFALL =   11.50, TOTAL LOSS =    2.05, TOTAL EXCESS =    9.45

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     134.     12.08                  22.          7.          7.           7.
                        (INCHES)     7.125       9.448       9.448        9.448
                         (AC-FT)      11.         14.         14.          14.

                        CUMULATIVE AREA =     .03 SQ MI


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

                        HYDROGRAPH AT STATION       P3
                          FOR PLAN 4, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     134.     12.08                  22.          7.          7.           7.
                        (INCHES)     7.125       9.448       9.448        9.448
                         (AC-FT)      11.         14.         14.          14.

                        CUMULATIVE AREA =     .03 SQ MI


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

  130 KP        PLAN  5 FOR STATION       P3
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                              TRIANGULAR DISTRIBUTION 100-YRS STORM

               SUBBASIN RUNOFF DATA

  115 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .03  SUBBASIN AREA

                  PRECIPITATION DATA

  132 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
                    .78    1.93    4.80    6.40    7.20    9.00   11.00   13.00     .00     .00     .00     .00

                                                   STORM AREA =     .03

  116 LS          SCS LOSS RATE
                        STRTL         .39  INITIAL ABSTRACTION
                       CRVNBR       83.66  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

  117 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .05  LAG

                                                                  ***

                                                              UNIT HYDROGRAPH
                                                          5 END-OF-PERIOD ORDINATES
               136.       62.       15.        4.        1.

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

                         HYDROGRAPH AT STATION       P3
                           FOR PLAN 5, RATIO = 1.00

    TOTAL RAINFALL =   13.00, TOTAL LOSS =    2.08, TOTAL EXCESS =   10.92

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     149.     12.08                  25.          8.          8.           8.
                        (INCHES)     8.249      10.918      10.918       10.918
                         (AC-FT)      12.         16.         16.          16.

                         CUMULATIVE AREA =     .03 SQ MI


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

                         HYDROGRAPH AT STATION       P3
                           FOR PLAN 5, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     149.     12.08                  25.          8.          8.           8.
                        (INCHES)     8.249      10.918      10.918       10.918
                         (AC-FT)      12.         16.         16.          16.

                         CUMULATIVE AREA =     .03 SQ MI


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


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            *            *
  133 KK    *        P2  *
            *            *
            **************


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

  134 KP        PLAN  1 FOR STATION       P2
                              TRIANGULAR DISTRIBUTION 2-YRS STORM

               SUBBASIN RUNOFF DATA

  135 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .06  SUBBASIN AREA

                  PRECIPITATION DATA
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  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
                    .47    1.07    2.25    2.80    3.10    3.90    4.50    5.20     .00     .00     .00     .00

                                                STORM AREA =     .06

  136 LS          SCS LOSS RATE
                        STRTL         .39  INITIAL ABSTRACTION
                       CRVNBR       83.59  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

  137 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .11  LAG

                                                                ***

                                                            UNIT HYDROGRAPH
                                                     8 END-OF-PERIOD ORDINATES
               124.      204.       98.       40.       16.        6.        3.        1.

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

                         HYDROGRAPH AT STATION       P2
                           FOR PLAN 1, RATIO = 1.00

    TOTAL RAINFALL =    5.20, TOTAL LOSS =    1.79, TOTAL EXCESS =    3.41

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                       6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     135.     12.17                    19.          6.          6.           6.
                        (INCHES)     2.828       3.413       3.413        3.413
                         (AC-FT)       10.         12.         12.          12.

                         CUMULATIVE AREA =     .06 SQ MI


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

                         HYDROGRAPH AT STATION       P2
                           FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                       6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     135.     12.17                    19.          6.          6.           6.
                        (INCHES)     2.828       3.413       3.413        3.413
                         (AC-FT)       10.         12.         12.          12.

                         CUMULATIVE AREA =     .06 SQ MI


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

  141 KP        PLAN  2 FOR STATION       P2
                                TRIANGULAR DISTRIBUTION 10-YRS STORM

                SUBBASIN RUNOFF DATA

  135 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .06  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
                    .56    1.38    3.35    4.40    4.90    5.90    7.00    8.50     .00     .00     .00     .00

                                                STORM AREA =     .06

  136 LS          SCS LOSS RATE
                        STRTL         .39  INITIAL ABSTRACTION
                       CRVNBR       83.59  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

  137 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .11  LAG

                                                                ***

                                                            UNIT HYDROGRAPH
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                                                    8 END-OF-PERIOD ORDINATES
              124.      204.       98.       40.       16.        6.        3.        1.

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

                        HYDROGRAPH AT STATION       P2
                          FOR PLAN 2, RATIO = 1.00

    TOTAL RAINFALL =    8.50, TOTAL LOSS =    1.97, TOTAL EXCESS =    6.53

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     198.     12.17                  34.         11.         11.          11.
                       (INCHES)     5.031       6.526       6.526        6.526
                        (AC-FT)      17.         22.         22.          22.

                        CUMULATIVE AREA =     .06 SQ MI


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

                        HYDROGRAPH AT STATION       P2
                          FOR PLAN 2, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     198.     12.17                  34.         11.         11.          11.
                       (INCHES)     5.031       6.526       6.526        6.526
                        (AC-FT)      17.         22.         22.          22.

                        CUMULATIVE AREA =     .06 SQ MI


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

  144 KP        PLAN  3 FOR STATION       P2
                              TRIANGULAR DISTRIBUTION 25-YRS STORM

                SUBBASIN RUNOFF DATA

  135 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .06  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
                    .60    1.52    3.90    5.00    5.70    7.00    8.20   10.00     .00     .00     .00     .00

                                                     STORM AREA =     .06

  136 LS          SCS LOSS RATE
                        STRTL         .39  INITIAL ABSTRACTION
                       CRVNBR       83.59  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

  137 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .11  LAG

                                                          ***

                                                      UNIT HYDROGRAPH
                                                    8 END-OF-PERIOD ORDINATES
              124.      204.       98.       40.       16.        6.        3.        1.

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

                        HYDROGRAPH AT STATION       P2
                          FOR PLAN 3, RATIO = 1.00

    TOTAL RAINFALL =   10.00, TOTAL LOSS =    2.02, TOTAL EXCESS =    7.98

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     224.     12.17                  42.         14.         13.          13.
                       (INCHES)     6.134       7.976       7.976        7.976
                        (AC-FT)      21.         27.         27.          27.

                        CUMULATIVE AREA =     .06 SQ MI
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      ***            ***            ***            ***            ***

                        HYDROGRAPH AT STATION       P2
                          FOR PLAN 3, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     224.     12.17                  42.         14.         13.          13.
                        (INCHES)     6.134       7.976       7.976        7.976
                         (AC-FT)      21.         27.         27.          27.

                        CUMULATIVE AREA =     .06 SQ MI


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

  147 KP        PLAN  4 FOR STATION       P2
                              TRIANGULAR DISTRIBUTION 50-YRS STORM

                SUBBASIN RUNOFF DATA

  135 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .06  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
                    .71    1.75    4.40    5.60    6.20    7.90    9.80   11.50     .00     .00     .00     .00

                                                   STORM AREA =     .06

  136 LS          SCS LOSS RATE
                        STRTL         .39  INITIAL ABSTRACTION
                       CRVNBR       83.59  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

  137 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .11  LAG

                                                                ***

                                                         UNIT HYDROGRAPH
                                                     8 END-OF-PERIOD ORDINATES
                124.      204.       98.       40.       16.        6.        3.        1.

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

                        HYDROGRAPH AT STATION       P2
                          FOR PLAN 4, RATIO = 1.00

    TOTAL RAINFALL =   11.50, TOTAL LOSS =    2.06, TOTAL EXCESS =    9.44

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     264.     12.17                  49.         16.         15.          15.
                        (INCHES)     7.118       9.438       9.438        9.438
                         (AC-FT)      24.         32.         32.          32.

                        CUMULATIVE AREA =     .06 SQ MI


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

                        HYDROGRAPH AT STATION       P2
                          FOR PLAN 4, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     264.     12.17                  49.         16.         15.          15.
                        (INCHES)     7.118       9.438       9.438        9.438
                         (AC-FT)      24.         32.         32.          32.

                        CUMULATIVE AREA =     .06 SQ MI
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***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

  150 KP        PLAN  5 FOR STATION       P2
                                TRIANGULAR DISTRIBUTION 100-YRS STORM

                SUBBASIN RUNOFF DATA

  135 BA          SUBBASIN CHARACTERISTICS
                        TAREA         .06  SUBBASIN AREA

                  PRECIPITATION DATA

  152 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
                    .78    1.93    4.80    6.40    7.20    9.00   11.00   13.00     .00     .00     .00     .00

                                                     STORM AREA =     .06

  136 LS          SCS LOSS RATE
                        STRTL         .39  INITIAL ABSTRACTION
                       CRVNBR       83.59  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

  137 UD          SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .11  LAG

                                                                  ***

                                                              UNIT HYDROGRAPH
                                                          8 END-OF-PERIOD ORDINATES
                124.      204.       98.       40.       16.        6.        3.        1.

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

                          HYDROGRAPH AT STATION       P2
                            FOR PLAN 5, RATIO = 1.00

     TOTAL RAINFALL =   13.00, TOTAL LOSS =    2.09, TOTAL EXCESS =   10.91

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     294.     12.17                  56.         19.         18.         18.
                        (INCHES)     8.242      10.908      10.908      10.908
                         (AC-FT)      28.         37.         37.         37.

                         CUMULATIVE AREA =     .06 SQ MI


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

                          HYDROGRAPH AT STATION       P2
                            FOR PLAN 5, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     294.     12.17                  56.         19.         18.         18.
                        (INCHES)     8.242      10.908      10.908      10.908
                         (AC-FT)      28.         37.         37.         37.

                         CUMULATIVE AREA =     .06 SQ MI


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


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            *            *
  153 KK    *     COMB2  *
            *            *
            **************

  154 HC          HYDROGRAPH COMBINATION
                        ICOMP           4  NUMBER OF HYDROGRAPHS TO COMBINE

                                                                  ***

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

                          HYDROGRAPH AT STATION    COMB2
                            FOR PLAN 1, RATIO = 1.00
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  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                                  (CFS)
+    2176.     13.00                 873.        266.        257.         257.
                              (INCHES)     2.871       3.503       3.503        3.503
                               (AC-FT)      433.        528.        528.         528.

                               CUMULATIVE AREA =    2.83 SQ MI


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

                             HYDROGRAPH AT STATION    COMB2
                               FOR PLAN 2, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                                  (CFS)
+    3789.     13.00                1537.        503.        484.         484.
                              (INCHES)     5.053       6.610       6.610        6.610
                               (AC-FT)      762.        997.        997.         997.

                               CUMULATIVE AREA =    2.83 SQ MI


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

                             HYDROGRAPH AT STATION    COMB2
                               FOR PLAN 3, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                                  (CFS)
+    4477.     13.00                1864.        612.        590.         590.
                              (INCHES)     6.129       8.056       8.056        8.056
                               (AC-FT)      924.       1215.       1215.        1215.

                               CUMULATIVE AREA =    2.83 SQ MI


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

                             HYDROGRAPH AT STATION    COMB2
                               FOR PLAN 4, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                                  (CFS)
+    5128.     13.00                2159.        724.        697.         697.
                              (INCHES)     7.100       9.524       9.524        9.524
                               (AC-FT)     1071.       1436.       1436.        1436.

                               CUMULATIVE AREA =    2.83 SQ MI


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

                             HYDROGRAPH AT STATION    COMB2
                               FOR PLAN 5, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                                  (CFS)
+    5845.     13.00                2497.        835.        804.         804.
                              (INCHES)     8.211      10.986      10.986       10.986
                               (AC-FT)     1238.       1657.       1657.        1657.

                               CUMULATIVE AREA =    2.83 SQ MI

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PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
FLOWS IN CUBIC FEET PER SECOND, AREA IN SQUARE MILES
TIME TO PEAK IN HOURS

OPERATION	STATION	AREA	PLAN		RATIOS APPLIED TO FLOWS RATIO 1 1.00
HYDROGRAPH AT					
+	BAS-1A	.84	1	FLOW	728.
				TIME	13.08
			2	FLOW	1244.
				TIME	13.08
			3	FLOW	1472.
				TIME	13.00
			4	FLOW	1686.
				TIME	13.00
			5	FLOW	1904.
				TIME	13.00
HYDROGRAPH AT					
+	BAS-1B	1.11	1	FLOW	822.
				TIME	13.25
			2	FLOW	1448.
				TIME	13.25
			3	FLOW	1721.
				TIME	13.25
			4	FLOW	1974.
				TIME	13.25
			5	FLOW	2249.
				TIME	13.25
HYDROGRAPH AT					
+	BAS-1C	.09	1	FLOW	236.
				TIME	12.17
			2	FLOW	318.
				TIME	12.17
			3	FLOW	356.
				TIME	12.17
			4	FLOW	410.
				TIME	12.17
			5	FLOW	452.
				TIME	12.17
3 COMBINED AT					
+	BASIN1	2.05	1	FLOW	1561.
				TIME	13.17
			2	FLOW	2719.
				TIME	13.08
			3	FLOW	3223.
				TIME	13.08
			4	FLOW	3692.
				TIME	13.08
			5	FLOW	4203.
				TIME	13.08
HYDROGRAPH AT					
+	P4	.05	1	FLOW	97.
				TIME	12.08
			2	FLOW	146.
				TIME	12.08
			3	FLOW	167.
				TIME	12.08
			4	FLOW	197.
				TIME	12.08
			5	FLOW	219.
				TIME	12.08
2 COMBINED AT					
+	COMB1	2.10	1	FLOW	1570.
				TIME	13.17
			2	FLOW	2741.
				TIME	13.08
			3	FLOW	3248.
				TIME	13.08
			4	FLOW	3718.
				TIME	13.08
			5	FLOW	4238.
				TIME	13.08

```
 HYDROGRAPH AT
+                 BASIN2       .64     1   FLOW         646.
                                           TIME        12.83
                                        2  FLOW        1090.
                                           TIME        12.83
                                        3  FLOW        1290.
                                           TIME        12.83
                                        4  FLOW        1482.
                                           TIME        12.83
                                        5  FLOW        1663.
                                           TIME        12.83

 HYDROGRAPH AT
+                     P3       .03     1   FLOW          70.
                                           TIME        12.08
                                        2  FLOW         100.
                                           TIME        12.08
                                        3  FLOW         113.
                                           TIME        12.08
                                        4  FLOW         134.
                                           TIME        12.08
                                        5  FLOW         149.
                                           TIME        12.08

 HYDROGRAPH AT
+                     P2       .06     1   FLOW         135.
                                           TIME        12.17
                                        2  FLOW         198.
                                           TIME        12.17
                                        3  FLOW         224.
                                           TIME        12.17
                                        4  FLOW         264.
                                           TIME        12.17
                                        5  FLOW         294.
                                           TIME        12.17

  4 COMBINED AT
+                  COMB2      2.83     1   FLOW        2176.
                                           TIME        13.00
                                        2  FLOW        3789.
                                           TIME        13.00
                                        3  FLOW        4477.
                                           TIME        13.00
                                        4  FLOW        5128.
                                           TIME        13.00
                                        5  FLOW        5845.
                                           TIME        13.00


 *** NORMAL END OF HEC-1 ***
```

APPENDIX G

HEC-RAS RESULTS FOR EXISTING CONDITION

```
                    HEC-RAS Version 3.1.3 May 2005
                     U.S. Army Corp of Engineers
                    Hydrologic Engineering Center
                          609 Second Street
                          Davis, California


          X     X  XXXXXX    XXXX        XXXX       XX      XXXX
          X     X  X        X    X       X   X     X  X    X
          X     X  X        X            X   X    X    X   X
          XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
          X     X  X        X            X  X     X    X        X
          X     X  X        X    X       X   X    X    X        X
          X     X  XXXXXX    XXXX        X    X   X    X   XXXXX
```

PROJECT DATA
Project Title: Estancias de Los Artesanos
Project File : EArtesanos.prj
Run Date and Time: 6/8/2005 2:31:54 PM

Project in SI units

PLAN DATA

Plan Title: Existing Condition
Plan File : p:\258-Estancias de los Artesanos\RAS\EArtesanos.p01

Geometry Title: Existing Condition
Geometry File : p:\258-Estancias de los Artesanos\RAS\EArtesanos.g01

Flow Title : Existing Condition
Flow File : p:\258-Estancias de los Artesanos\RAS\EArtesanos.f01

Plan Summary Information:

Number of:	Cross Sections	= 17	Multiple Openings	=	0
	Culverts	= 0	Inline Structures	=	0
	Bridges	= 1	Lateral Structures	=	0

Computational Information

Water surface calculation tolerance	=	0.003
Critical depth calculation tolerance	=	0.003
Maximum number of iterations	=	20
Maximum difference tolerance	=	0.1
Flow tolerance factor	=	0.001

Computation Options

Critical depth computed only where necessary	
Conveyance Calculation Method:	At breaks in n values only
Friction Slope Method:	Average Conveyance
Computational Flow Regime:	Mixed Flow

FLOW DATA

Flow Title: Existing Condition
Flow File : p:\258-Estancias de los Artesanos\RAS\EArtesanos.f01

Flow Data (m3/s)

River	Reach	RS	100-yr
1	1	10	120.1
1	2	7	165.64
2	1	15	47.12

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
1	1	100-yr	Critical	
1	2	100-yr		Known WS = 102.5
2	1	100-yr	Critical	

GEOMETRY DATA

Geometry Title: Existing Condition
Geometry File : p:\258-Estancias de los Artesanos\RAS\EArtesanos.g01

Reach Connection Table

River	Reach	Upstream Boundary	Downstream Boundary
1	1		A
1	2	A	
2	1		A

JUNCTION INFORMATION

Name: A
Description:
Energy computation Method

Length across Junction River	Reach	Tributary River	Reach	Length	Angle
1	1	to 1	2	30	
2	1	to 1	2	25	

CROSS SECTION

RIVER: 1
REACH: 1 RS: 10

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	107.47	.36	107.46	1.41	107.13	1.64	107.07	2.93	106.26
4.93	106.15	7.49	106.01	8.74	105.87	12.13	105.59	13.04	104.85
14.29	104.3	19.23	103.9	21.21	104.01	22.43	103.95	26.35	103.02
28.42	102.9	29.38	102.14	29.67	101.9	32.4	100.33	33.34	100.28
34.2	100.26	34.37	100.25	35.93	100.44	36.13	100.44	36.31	100.65
38.7	102.6	38.98	102.66	40.21	102.71	42.04	103.09	44.21	102.81
45.59	102.99	48.8	103.68	50.13	103.86	53.18	104.19	54.9	104.37
55.39	104.41	58.87	104.68	61.25	104.9	62.73	104.98	63.66	104.92
67.43	104.66	68.47	104.66	69.71	104.63	70.38	104.64	78.38	104.64
81.68	104.63	85.48	104.78	89.92	104.83	131.08	106.36		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	21.21	.05	50.13	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
21.21	50.13	85	85	85	.1	.3

CROSS SECTION OUTPUT Profile #100-yr

E.G. Elev (m)	105.15	Element	Left OB	Channel	Right OB
Vel Head (m)	0.10	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (m)	105.05	Reach Len. (m)	85.00	85.00	85.00
Crit W.S. (m)	103.56	Flow Area (m2)	7.48	74.72	17.29
E.G. Slope (m/m)	0.001585	Area (m2)	7.48	74.72	17.29
Q Total (m3/s)	120.10	Flow (m3/s)	5.42	107.49	7.19
Top Width (m)	83.06	Top Width (m)	8.42	28.92	45.72
Vel Total (m/s)	1.21	Avg. Vel. (m/s)	0.72	1.44	0.42
Max Chl Dpth (m)	4.80	Hydr. Depth (m)	0.89	2.58	0.38
Conv. Total (m3/s)	3017.0	Conv. (m3/s)	136.2	2700.2	180.7
Length Wtd. (m)	85.00	Wetted Per. (m)	8.62	30.77	45.79
Min Ch El (m)	100.25	Shear (N/m2)	13.49	37.74	5.87
Alpha	1.29	Stream Power (N/m s)	9.77	54.29	2.44
Frctn Loss (m)	0.29	Cum Volume (1000 m3)	0.41	10.73	1.12
C & E Loss (m)	0.05	Cum SA (1000 m2)	0.70	3.69	1.94

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 1
REACH: 1 RS: 9

INPUT
Description:
Station Elevation Data num= 37

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	106.86	.31	106.85	.68	106.85	11.22	106.68	15.4	105.47
16.86	105.14	19.48	103.18	23.46	100.24	24.14	100.16	24.84	100.23
25.59	100.18	26.51	100.3	27.08	100.74	28.57	101.64	31.8	103.55
32.34	103.99	33.01	104.04	34.12	104.17	36.05	104.62	38.2	105.12
40.25	105.44	40.57	105.47	40.71	105.49	41.29	105.47	44.54	105.48
48.23	105.7	52.03	105.93	53.84	106.04	56.12	106.08	57.93	105.94
61.06	105.62	63.55	105.65	68.29	106.17	70.28	106.49	72.63	106.85
74.7	106.84	79.8	106.83						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	15.4	.05	40.25	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
15.4	40.25	85	85	85	.1	.3

CROSS SECTION OUTPUT Profile #100-yr

E.G. Elev (m)	104.80	Element	Left OB	Channel	Right OB
Vel Head (m)	0.60	Wt. n-Val.		0.050	
W.S. Elev (m)	104.21	Reach Len. (m)	85.00	85.00	85.00
Crit W.S. (m)		Flow Area (m2)		35.10	
E.G. Slope (m/m)	0.012540	Area (m2)		35.10	
Q Total (m3/s)	120.10	Flow (m3/s)		120.10	
Top Width (m)	16.17	Top Width (m)		16.17	
Vel Total (m/s)	3.42	Avg. Vel. (m/s)		3.42	
Max Chl Dpth (m)	4.05	Hydr. Depth (m)		2.17	
Conv. Total (m3/s)	1072.5	Conv. (m3/s)		1072.5	
Length Wtd. (m)	85.00	Wetted Per. (m)		18.59	
Min Ch El (m)	100.16	Shear (N/m2)		232.22	
Alpha	1.00	Stream Power (N/m s)		794.56	
Frctn Loss (m)	0.45	Cum Volume (1000 m3)	0.10	6.06	0.39
C & E Loss (m)	0.13	Cum SA (1000 m2)	0.35	1.78	

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 1
REACH: 1 RS: 8

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	106.16	5.05	105.97	8.83	105.65	10.2	105.09	11.39	104.6
19.52	104.32	20.9	104.26	22.89	104.22	26.07	104.12	29.55	103.91
32.19	103.78	34.09	103.74	35.31	103.75	36.04	103.49	38.7	102.52
40.66	101.96	42.67	101.83	44.74	101.38	48.79	100.08	49.4	99.43
49.67	99.28	50.2	99.22	51.38	99.26	51.72	99.27	53.03	99.36
53.76	100	57.61	103.04	58.08	103.15	62.18	104.43	62.26	104.45
66.65	105.23	66.68	105.23	69.8	105.28	75.12	105.11	78.27	105.02
80.15	104.93	85.37	104.66	91.27	104.75	92.29	104.76	94.49	104.77
96.02	104.79	99.54	105.44						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	35.31	.05	66.65	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
35.31	66.65	30	30	30	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
69.8	99.54	106	F

CROSS SECTION OUTPUT Profile #100-yr

E.G. Elev (m)	104.23	Element	Left OB	Channel	Right OB
Vel Head (m)	0.18	Wt. n-Val.	0.050	0.050	
W.S. Elev (m)	104.06	Reach Len. (m)	30.00	30.00	30.00
Crit W.S. (m)	102.48	Flow Area (m2)	1.67	64.23	
E.G. Slope (m/m)	0.002858	Area (m2)	1.67	64.23	
Q Total (m3/s)	120.10	Flow (m3/s)	0.62	119.48	
Top Width (m)	33.84	Top Width (m)	8.17	25.67	
Vel Total (m/s)	1.82	Avg. Vel. (m/s)	0.37	1.86	
Max Chl Dpth (m)	4.84	Hydr. Depth (m)	0.20	2.50	
Conv. Total (m3/s)	2246.3	Conv. (m3/s)	11.6	2234.7	
Length Wtd. (m)	30.00	Wetted Per. (m)	8.18	28.00	
Min Ch El (m)	99.22	Shear (N/m2)	5.73	64.32	
Alpha	1.04	Stream Power (N/m s)	2.12	119.63	
Frctn Loss (m)	0.09	Cum Volume (1000 m3)	0.03	1.84	0.39
C & E Loss (m)	0.01	Cum SA (1000 m2)			

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: 1
REACH: 2 RS: 7

INPUT
Description:
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	105.6	2.02	105.55	3.2	105.49	8.21	105.31	12.14	105.04
12.35	105.02	12.4	105.02	12.5	104.97	13.11	104.51	20.29	100.02
21.44	99.2	23.11	99.25	24.83	99.48	25.37	99.38	26.19	99.42
30.09	100.65	31	101.52	31.98	101.77	44.25	103.06	44.69	103.06
45.39	103.09	47.28	103.07	79.98	105.03				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	13.11	.05	31.98	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
13.11	31.98	50	50	50	.1	.3

CROSS SECTION OUTPUT Profile #100-yr

E.G. Elev (m)	104.13	Element	Left OB	Channel	Right OB
Vel Head (m)	0.25	Wt. n-Val.		0.050	0.050
W.S. Elev (m)	103.88	Reach Len. (m)	50.00	50.00	50.00
Crit W.S. (m)		Flow Area (m2)		58.22	25.97
E.G. Slope (m/m)	0.003330	Area (m2)		58.22	25.97
Q Total (m3/s)	165.64	Flow (m3/s)		137.76	27.88
Top Width (m)	46.73	Top Width (m)		17.87	28.86
Vel Total (m/s)	1.97	Avg. Vel. (m/s)		2.37	1.07
Max Chl Dpth (m)	4.68	Hydr. Depth (m)		3.26	0.90
Conv. Total (m3/s)	2870.2	Conv. (m3/s)		2387.2	483.1
Length Wtd. (m)	50.00	Wetted Per. (m)		19.83	28.96
Min Ch El (m)	99.20	Shear (N/m2)		95.87	29.29
Alpha	1.25	Stream Power (N/m s)		226.85	31.44
Frctn Loss (m)	0.18	Cum Volume (1000 m3)	4.78	39.25	5.53
C & E Loss (m)	0.01	Cum SA (1000 m2)	5.50	11.27	6.11

CROSS SECTION

RIVER: 1
REACH: 2 RS: 6

INPUT
Description:
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	105.18	7	105.41	7.04	105.41	7.52	105.37	16.58	104.72
17.59	104.36	20.06	103.38	21.22	102.58	23.08	102.58	24.47	102.09
26.85	99.47	27.79	98.65	28.69	98.64	29.28	98.67	30.36	98.84
31.52	99	34.03	99.51	35.74	100.07	39.01	101.78	40.23	103.05
44.61	102.6	46.55	102.67	47.28	102.66	48.16	102.73	57.37	103.45
58.01	103.53	58.68	103.62	59.62	103.73	69.36	104.94		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	23.08	.05	40.23	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
23.08	40.23	37.5	37.5	37.5	.1	.3

CROSS SECTION OUTPUT Profile #100-yr

E.G. Elev (m)	103.94	Element	Left OB	Channel	Right OB
Vel Head (m)	0.31	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (m)	103.63	Reach Len. (m)	37.50	37.50	37.50
Crit W.S. (m)		Flow Area (m2)	2.79	58.94	12.13
E.G. Slope (m/m)	0.003866	Area (m2)	2.79	58.94	12.13
Q Total (m3/s)	165.64	Flow (m3/s)	2.76	151.55	11.33
Top Width (m)	39.36	Top Width (m)	3.66	17.15	18.55
Vel Total (m/s)	2.24	Avg. Vel. (m/s)	0.99	2.57	0.93
Max Chl Dpth (m)	4.99	Hydr. Depth (m)	0.76	3.44	0.65
Conv. Total (m3/s)	2664.0	Conv. (m3/s)	44.3	2437.4	182.2
Length Wtd. (m)	37.50	Wetted Per. (m)	3.95	19.83	18.62
Min Ch El (m)	98.64	Shear (N/m2)	26.80	112.71	24.69
Alpha	1.22	Stream Power (N/m s)	26.44	289.79	23.07
Frctn Loss (m)	0.13	Cum Volume (1000 m3)	4.71	36.32	4.58
C & E Loss (m)	0.00	Cum SA (1000 m2)	5.41	10.39	4.93

CROSS SECTION

RIVER: 1
REACH: 2 RS: 5.6

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	108.94	3.81	108.76	9.08	108.6	13	108.45	19.18	108.1
27.54	107.86	32.15	107.79	33.29	107.04	35.08	105.78	36.31	105.81
38.65	105.79	39.14	106.19	40.03	106.85	40.86	106.87	42.11	106.86
42.85	106.43	46.04	105.75	48.45	105.25	53.52	104.2	54.51	103.9
56.01	103.59	58.14	103.07	59.17	102.5	60.98	101.68	61.68	101.57
64.12	99.39	65.41	98.3	67.94	98.3	68.91	98.35	70	98.37
71.77	98.42	73.45	100.13	77.06	102.51	89.21	103.41	89.44	103.43
89.46	103.43	89.84	103.44	91.99	103.49	92.5	103.52	99.2	103.99
100.11	104.05	106.89	104.45						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	59.17	.05	77.06	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
59.17	77.06	25	25	25	.1	.3

CROSS SECTION OUTPUT Profile #100-yr

E.G. Elev (m)	103.81	Element	Left OB	Channel	Right OB
Vel Head (m)	0.30	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (m)	103.51	Reach Len. (m)	0.50	0.50	0.50
Crit W.S. (m)	101.75	Flow Area (m2)	1.14	65.16	6.80
E.G. Slope (m/m)	0.003293	Area (m2)	1.14	65.16	6.80
Q Total (m3/s)	165.64	Flow (m3/s)	0.68	160.41	4.55
Top Width (m)	35.94	Top Width (m)	2.82	17.89	15.23
Vel Total (m/s)	2.27	Avg. Vel. (m/s)	0.60	2.46	0.67
Max Chl Dpth (m)	5.21	Hydr. Depth (m)	0.40	3.64	0.45
Conv. Total (m3/s)	2886.5	Conv. (m3/s)	11.8	2795.4	79.3
Length Wtd. (m)	0.50	Wetted Per. (m)	3.02	20.74	15.26
Min Ch El (m)	98.30	Shear (N/m2)	12.14	101.45	14.38
Alpha	1.15	Stream Power (N/m s)	7.26	249.77	9.62
Frctn Loss (m)	0.00	Cum Volume (1000 m3)	4.64	34.00	4.22
C & E Loss (m)	0.00	Cum SA (1000 m2)	5.29	9.73	4.29

BRIDGE

RIVER: 1
REACH: 2 RS: 5.5

INPUT
Description:
Distance from Upstream XS = .5
Deck/Roadway Width = 24
Weir Coefficient = 1.44
Upstream Deck/Roadway Coordinates
num= 6

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
32.15	107.79		42.11	107.79	97	42.11	107.79	106
105.75	107.79	106	105.75	107.79	97	106.89	107.79	

Upstream Bridge Cross Section Data
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	108.94	3.81	108.76	9.08	108.6	13	108.45	19.18	108.1
27.54	107.86	32.15	107.79	33.29	107.04	35.08	105.78	36.31	105.81
38.65	105.79	39.14	106.19	40.03	106.85	40.86	106.87	42.11	106.86
42.85	106.43	46.04	105.75	48.45	105.25	53.52	104.2	54.51	103.9
56.01	103.59	58.14	103.07	59.17	102.5	60.98	101.68	61.68	101.57
64.12	99.39	65.41	98.3	67.94	98.3	68.91	98.35	70	98.37
71.77	98.42	73.45	100.13	77.06	102.51	89.21	103.41	89.44	103.43
89.46	103.43	89.84	103.44	91.99	103.49	92.5	103.52	99.2	103.99
100.11	104.05	106.89	104.45						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	59.17	.05	77.06	.05

Bank Sta: Left	Right	Coeff Contr.	Expan.
59.17	77.06	.1	.3

Downstream Deck/Roadway Coordinates
num= 6

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
32.15	107.79		42.11	107.79	97	42.11	107.79	106
105.75	107.79	106	105.75	107.79	97	106.89	107.79	

Downstream Bridge Cross Section Data
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	108.94	3.81	108.76	9.08	108.6	13	108.45	19.18	108.1
27.54	107.86	32.15	107.79	33.29	107.04	35.08	105.78	36.31	105.81
38.65	105.79	39.14	106.19	40.03	106.85	40.86	106.87	42.11	106.86
42.85	106.43	46.04	105.75	48.45	105.25	53.52	104.2	54.51	103.9
56.01	103.59	58.14	103.07	59.17	102.5	60.98	101.68	61.68	101.57
64.12	99.39	65.41	98.3	67.94	98.3	68.91	98.35	70	98.37
71.77	98.42	73.45	100.13	77.06	102.51	89.21	103.41	89.44	103.43
89.46	103.43	89.84	103.44	91.99	103.49	92.5	103.52	99.2	103.99
100.11	104.05	106.89	104.45						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	59.17	.05	77.06	.05

Bank Sta: Left	Right	Coeff Contr.	Expan.
59.17	77.06	.1	.3

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
Downstream Embankment side slope = 0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .95
Elevation at which weir flow begins = 107.79
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Piers = 2

```
Pier Data
Pier Station     Upstream=   54.43    Downstream=   54.43
Upstream     num=       2
    Width   Elev    Width   Elev
      .9      97      .9     106
Downstream     num=       2
    Width   Elev    Width   Elev
      .9      97      .9     106

Pier Data
Pier Station     Upstream=   79.43    Downstream=   79.43
Upstream     num=       2
    Width   Elev    Width   Elev
      .9      97      .9     106
Downstream     num=       2
    Width   Elev    Width   Elev
      .9      97      .9     106

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Energy Only

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT  Profile #100-yr

  E.G. US. (m)              103.81    Element              Inside BR US  Inside BR DS
  W.S. US. (m)              103.51    E.G. Elev (m)             103.81        103.72
  Q Total (m3/s)            165.64    W.S. Elev (m)             103.50        103.39
  Q Bridge (m3/s)           165.64    Crit W.S. (m)             101.75        101.75
  Q Weir (m3/s)                       Max Chl Dpth (m)            5.20          5.09
  Weir Sta Lft (m)                    Vel Total (m/s)             2.30          2.42
  Weir Sta Rgt (m)                    Flow Area (m2)             72.11         68.40
  Weir Submerg                        Froude # Chl                0.41          0.44
  Weir Max Depth (m)                  Specif Force (m3)         181.27        175.08
  Min El Weir Flow (m)      107.79    Hydr Depth (m)              2.07          2.19
  Min El Prs (m)            106.00    W.P. Total (m)             39.61         35.63
  Delta EG (m)                0.09    Conv. Total (m3/s)        2863.3        2700.4
  Delta WS (m)                0.12    Top Width (m)              34.89         31.16
  BR Open Area (m2)         199.21    Frctn Loss (m)              0.09          0.00
  BR Open Vel (m/s)           2.42    C & E Loss (m)              0.00          0.00
  Coef of Q                           Shear Total (N/m2)         59.75         70.82
  Br Sel Method        Energy only    Power Total (N/m s)       137.25        171.51


CROSS SECTION


RIVER: 1
REACH: 2                  RS: 5.4
```

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	108.94	3.81	108.76	9.08	108.6	13	108.45	19.18	108.1
27.54	107.86	32.15	107.79	33.29	107.04	35.08	105.78	36.31	105.81
38.65	105.79	39.14	106.19	40.03	106.85	40.86	106.87	42.11	106.86
42.85	106.43	46.04	105.75	48.45	105.25	53.52	104.2	54.51	103.9
56.01	103.59	58.14	103.07	59.17	102.5	60.98	101.68	61.68	101.57
64.12	99.39	65.41	98.3	67.94	98.3	68.91	98.35	70	98.37
71.77	98.42	73.45	100.13	77.06	102.51	89.21	103.41	89.44	103.43
89.46	103.43	89.84	103.44	91.99	103.49	92.5	103.52	99.2	103.99
100.11	104.05	106.89	104.45						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	59.17	.05	77.06	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
59.17	77.06	37.5	37.5	37.5	.1	.3

CROSS SECTION OUTPUT Profile #100-yr

E.G. Elev (m)	103.71	Element	Left OB	Channel	Right OB
Vel Head (m)	0.33	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (m)	103.39	Reach Len. (m)	37.50	37.50	37.50
Crit W.S. (m)		Flow Area (m2)	0.83	63.01	5.20
E.G. Slope (m/m)	0.003731	Area (m2)	0.83	63.01	5.20
Q Total (m3/s)	165.64	Flow (m3/s)	0.48	161.50	3.66
Top Width (m)	32.07	Top Width (m)	2.33	17.89	11.85
Vel Total (m/s)	2.40	Avg. Vel. (m/s)	0.58	2.56	0.70
Max Chl Dpth (m)	5.09	Hydr. Depth (m)	0.35	3.52	0.44
Conv. Total (m3/s)	2711.6	Conv. (m3/s)	7.9	2643.8	60.0
Length Wtd. (m)	37.50	Wetted Per. (m)	2.52	20.74	11.88
Min Ch El (m)	98.30	Shear (N/m2)	12.03	111.18	16.02
Alpha	1.11	Stream Power (N/m s)	7.00	284.93	11.28
Frctn Loss (m)	0.16	Cum Volume (1000 m3)	4.61	32.40	4.09
C & E Loss (m)	0.01	Cum SA (1000 m2)	5.23	9.29	3.98

CROSS SECTION

RIVER: 1
REACH: 2 RS: 5

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	108.94	3.81	108.76	9.08	108.6	13	108.45	19.18	108.1
27.54	107.86	32.15	107.79	33.29	107.04	35.08	105.78	36.31	105.81
38.65	105.79	39.14	106.19	40.03	106.85	40.86	106.87	42.11	106.86
42.85	106.43	46.04	105.75	48.45	105.25	53.52	104.2	54.51	103.9
56.01	103.59	58.14	103.07	59.17	102.5	60.98	101.68	61.68	101.57
64.12	99.39	65.41	98.3	67.94	98.3	68.91	98.35	70	98.37
71.77	98.42	73.45	100.13	77.06	102.51	89.21	103.41	89.44	103.43
89.46	103.43	89.84	103.44	91.99	103.49	92.5	103.52	99.2	103.99
100.11	104.05	106.89	104.45						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	59.17	.05	77.06	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
59.17	77.06	90	90	90	.1	.3

CROSS SECTION OUTPUT Profile #100-yr

			Left OB	Channel	Right OB
E.G. Elev (m)	103.55	Element			
Vel Head (m)	0.39	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (m)	103.17	Reach Len. (m)	90.00	90.00	90.00
Crit W.S. (m)		Flow Area (m2)	0.41	59.03	2.90
E.G. Slope (m/m)	0.004756	Area (m2)	0.41	59.03	2.90
Q Total (m3/s)	165.64	Flow (m3/s)	0.23	163.52	1.89
Top Width (m)	28.15	Top Width (m)	1.42	17.89	8.84
Vel Total (m/s)	2.66	Avg. Vel. (m/s)	0.56	2.77	0.65
Max Chl Dpth (m)	4.86	Hydr. Depth (m)	0.29	3.30	0.33
Conv. Total (m3/s)	2401.8	Conv. (m3/s)	3.3	2371.0	27.5
Length Wtd. (m)	90.00	Wetted Per. (m)	1.58	20.74	8.87
Min Ch El (m)	98.30	Shear (N/m2)	12.12	132.75	15.23
Alpha	1.07	Stream Power (N/m s)	6.80	367.72	9.97
Frctn Loss (m)	0.20	Cum Volume (1000 m3)	4.59	30.11	3.94
C & E Loss (m)	0.08	Cum SA (1000 m2)	5.16	8.62	3.59

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 1
REACH: 2 RS: 4

INPUT
Description:
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	105.84	6.68	105.51	11.04	105.31	17.48	105.13	20.8	105.19
22.76	105.18	32.08	104.3	32.39	104.26	35.95	102.39	39.8	100.34
41.4	100.39	42.18	100.46	42.28	100.39	45.85	98.14	49.45	98.16
49.79	98.17	50.05	98.15	53.59	98.38	56.66	100.33	56.9	100.51
57.74	100.58	71.34	101.86	71.63	101.88	74.36	102.13	74.98	102.22
85.47	103.29	87.92	103.62	93.22	104.42	98.38	105	105.45	105.63

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	39.8	.05	56.9	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
39.8	56.9	105	105	105	.1	.3

CROSS SECTION OUTPUT Profile #100-yr

E.G. Elev (m)	103.27	Element	Left OB	Channel	Right OB
Vel Head (m)	0.13	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (m)	103.14	Reach Len. (m)	105.00	105.00	105.00
Crit W.S. (m)		Flow Area (m2)	7.35	71.09	36.42
E.G. Slope (m/m)	0.001323	Area (m2)	7.35	71.09	36.42
Q Total (m3/s)	165.64	Flow (m3/s)	6.15	127.30	32.20
Top Width (m)	49.44	Top Width (m)	5.27	17.10	27.07
Vel Total (m/s)	1.44	Avg. Vel. (m/s)	0.84	1.79	0.88
Max Chl Dpth (m)	5.00	Hydr. Depth (m)	1.39	4.16	1.35
Conv. Total (m3/s)	4553.6	Conv. (m3/s)	169.0	3499.5	885.1
Length Wtd. (m)	105.00	Wetted Per. (m)	5.97	18.41	27.20
Min Ch El (m)	98.14	Shear (N/m2)	15.99	50.10	17.38
Alpha	1.27	Stream Power (N/m s)	13.37	89.71	15.36
Frctn Loss (m)	0.19	Cum Volume (1000 m3)	4.24	24.25	2.17
C & E Loss (m)	0.01	Cum SA (1000 m2)	4.85	7.04	1.98

CROSS SECTION

RIVER: 1
REACH: 2 RS: 3

INPUT
Description:
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	106.08	13.29	105.23	13.79	105.2	18.22	104.69	29.32	103.77
32.92	103.46	40.81	102.62	41.56	102.57	43.21	102.47	47.21	102.32
51.18	102.12	57.14	102.31	59.93	102.29	60.63	102.26	61.95	101.97
63.14	101.33	68.42	97.86	68.92	97.83	71.18	97.99	71.45	98.02
73.81	97.89	75.75	98.5	82.34	101.81	88.62	104.37		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	61.95	.05	82.34	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
61.95	82.34	100	100	100	.1	.3

CROSS SECTION OUTPUT Profile #100-yr

E.G. Elev (m)	103.07	Element	Left OB	Channel	Right OB
Vel Head (m)	0.23	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (m)	102.84	Reach Len. (m)	100.00	100.00	100.00
Crit W.S. (m)		Flow Area (m2)	11.76	71.73	1.30
E.G. Slope (m/m)	0.002559	Area (m2)	11.76	71.73	1.30
Q Total (m3/s)	165.64	Flow (m3/s)	7.55	157.28	0.80
Top Width (m)	46.12	Top Width (m)	23.21	20.39	2.53
Vel Total (m/s)	1.95	Avg. Vel. (m/s)	0.64	2.19	0.62
Max Chl Dpth (m)	5.01	Hydr. Depth (m)	0.51	3.52	0.52
Conv. Total (m3/s)	3274.3	Conv. (m3/s)	149.3	3109.1	15.9
Length Wtd. (m)	100.00	Wetted Per. (m)	23.26	22.48	2.73
Min Ch El (m)	97.83	Shear (N/m2)	12.69	80.08	11.97
Alpha	1.20	Stream Power (N/m s)	8.15	175.59	7.39
Frctn Loss (m)	0.27	Cum Volume (1000 m3)	3.24	16.75	0.19
C & E Loss (m)	0.00	Cum SA (1000 m2)	3.36	5.07	0.42

CROSS SECTION

RIVER: 1
REACH: 2 RS: 2

INPUT
Description:
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	108.53	1.83	108.45	5.21	108.09	12.1	107.22	14.92	107.08
24.66	106.6	29.5	106.31	30.15	106.26	33.32	106.09	41.36	105.57
47.48	104.88	55.91	103.78	57.04	103.64	57.92	103.52	58.7	103.28
69.26	101.35	78.54	100.58	78.86	100.59	79.2	100.43	84.25	97.92
84.81	97.88	87.92	97.8	88.31	97.79	90.5	97.8	91.26	98.3
95.56	101.76	99.09	103.38						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	69.26	.05	95.56	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
69.26	95.56	110	110	110	.1	.3

CROSS SECTION OUTPUT Profile #100-yr

E.G. Elev (m)	102.80	Element	Left OB	Channel	Right OB
Vel Head (m)	0.22	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (m)	102.58	Reach Len. (m)	110.00	110.00	110.00
Crit W.S. (m)		Flow Area (m2)	4.15	77.70	0.74
E.G. Slope (m/m)	0.002833	Area (m2)	4.15	77.70	0.74
Q Total (m3/s)	165.64	Flow (m3/s)	3.17	162.07	0.41
Top Width (m)	34.83	Top Width (m)	6.74	26.30	1.79
Vel Total (m/s)	2.01	Avg. Vel. (m/s)	0.76	2.09	0.55
Max Chl Dpth (m)	4.79	Hydr. Depth (m)	0.62	2.95	0.41
Conv. Total (m3/s)	3111.8	Conv. (m3/s)	59.5	3044.7	7.6
Length Wtd. (m)	110.00	Wetted Per. (m)	6.85	28.33	1.97
Min Ch El (m)	97.79	Shear (N/m2)	16.84	76.21	10.38
Alpha	1.06	Stream Power (N/m s)	12.84	158.96	5.73
Frctn Loss (m)	0.17	Cum Volume (1000 m3)	2.44	9.28	0.09
C & E Loss (m)	0.04	Cum SA (1000 m2)	1.86	2.74	0.21

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 1
REACH: 2 RS: 1

INPUT
Description:
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	108.46	4.41	108.22	7.54	107.72	10.72	107.64	15.34	106.93
17.33	106.76	22.17	106.09	23.7	105.86	24.81	105.68	31.47	104.18
32.3	104.01	35.21	103.07	39.42	101.62	41.21	101.52	51.42	100.76
51.56	100.74	57.12	100.64	57.5	100.64	57.77	100.65	63.97	100.46
67.74	99.17	69.64	97.99	72.73	97.73	73.95	97.68	76.89	97.64
78.88	97.62	81.13	97.76	83.61	98.98	87.45	101.67	90.44	102.94

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	63.97	.05	87.45	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
63.97	87.45	0	0	0	.1	.3

CROSS SECTION OUTPUT Profile #100-yr

E.G. Elev (m)	102.59	Element	Left OB	Channel	Right OB
Vel Head (m)	0.09	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (m)	102.50	Reach Len. (m)			
Crit W.S. (m)	100.19	Flow Area (m2)	40.25	91.09	0.81
E.G. Slope (m/m)	0.000960	Area (m2)	40.25	91.09	0.81
Q Total (m3/s)	165.64	Flow (m3/s)	32.32	133.05	0.26
Top Width (m)	52.54	Top Width (m)	27.10	23.48	1.95
Vel Total (m/s)	1.25	Avg. Vel. (m/s)	0.80	1.46	0.33
Max Chl Dpth (m)	4.88	Hydr. Depth (m)	1.48	3.88	0.41
Conv. Total (m3/s)	5345.1	Conv. (m3/s)	1043.0	4293.5	8.5
Length Wtd. (m)		Wetted Per. (m)	27.29	25.18	2.12
Min Ch El (m)	97.62	Shear (N/m2)	13.89	34.07	3.60
Alpha	1.17	Stream Power (N/m s)	11.15	49.76	1.17
Frctn Loss (m)		Cum Volume (1000 m3)			
C & E Loss (m)		Cum SA (1000 m2)			

CROSS SECTION

RIVER: 2
REACH: 1 RS: 15

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	109.66	4.8	109.46	6.28	109.41	6.47	109.39	10.27	109.16
10.74	109.13	12.06	109.22	13.82	108.64	14.46	108.31	21.69	107.3
22.54	107.15	23.33	107.05	31.47	106.22	32.27	106.15	35.65	106
41.64	105.63	45.48	105.21	47.62	105.09	49.05	104.86	51.19	104.65
60.84	103.55	61.3	103.29	63.13	102.04	63.96	101.91	64.83	101.78
65.25	101.99	66.02	102.21	70.07	104.95	72.2	107.22	75.17	107.97
80.32	109.19								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	23.33	.05	72.2	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
23.33	72.2	105	105	105	.1	.3

CROSS SECTION OUTPUT Profile #100-yr

E.G. Elev (m)	104.86	Element	Left OB	Channel	Right OB
Vel Head (m)	0.26	Wt. n-Val.		0.050	
W.S. Elev (m)	104.60	Reach Len. (m)	105.00	105.00	105.00
Crit W.S. (m)	104.22	Flow Area (m2)		20.74	
E.G. Slope (m/m)	0.011684	Area (m2)		20.74	
Q Total (m3/s)	47.12	Flow (m3/s)		47.12	
Top Width (m)	17.90	Top Width (m)		17.90	
Vel Total (m/s)	2.27	Avg. Vel. (m/s)		2.27	
Max Chl Dpth (m)	2.82	Hydr. Depth (m)		1.16	
Conv. Total (m3/s)	435.9	Conv. (m3/s)		435.9	
Length Wtd. (m)	105.00	Wetted Per. (m)		19.24	
Min Ch El (m)	101.78	Shear (N/m2)		123.47	
Alpha	1.00	Stream Power (N/m s)		280.55	
Frctn Loss (m)	0.17	Cum Volume (1000 m3)	0.06	19.06	0.64
C & E Loss (m)	0.07	Cum SA (1000 m2)	0.16	11.06	0.45

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 2
REACH: 1 RS: 14

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	107	4.07	106.89	6.3	106.87	10.68	106.72	14.06	106.39
19.52	106.07	19.72	106.06	20.51	105.87	24.55	104.9	25.6	104.69
29.27	104.03	30.75	103.91	38.87	103.6	38.97	103.55	39.11	103.46
46.53	101.22	47.27	101.26	48.47	101.21	49.96	101.08	50.54	101.08
52.23	100.96	53.38	100.86	55.67	101.92	60.14	103.67	60.87	104.1
61.05	104.26	67.47	105.44	70.2	105.97	76	106.32	81.93	106.48
82.52	106.66	84.59	106.82	90.33	107.56	96.15	108.18	96.84	108.23
102.04	108.73								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	20.51	.05	70.2	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
20.51	70.2	90	90	90	.1	.3

CROSS SECTION OUTPUT Profile #100-yr

E.G. Elev (m)	104.62	Element	Left OB	Channel	Right OB
Vel Head (m)	0.03	Wt. n-Val.		0.050	
W.S. Elev (m)	104.59	Reach Len. (m)	90.00	90.00	90.00
Crit W.S. (m)		Flow Area (m2)		65.77	
E.G. Slope (m/m)	0.000616	Area (m2)		65.77	
Q Total (m3/s)	47.12	Flow (m3/s)		47.12	
Top Width (m)	36.71	Top Width (m)		36.71	
Vel Total (m/s)	0.72	Avg. Vel. (m/s)		0.72	
Max Chl Dpth (m)	3.73	Hydr. Depth (m)		1.79	
Conv. Total (m3/s)	1898.6	Conv. (m3/s)		1898.6	
Length Wtd. (m)	90.00	Wetted Per. (m)		37.93	
Min Ch El (m)	100.86	Shear (N/m2)		10.47	
Alpha	1.00	Stream Power (N/m s)		7.50	
Frctn Loss (m)	0.12	Cum Volume (1000 m3)	0.06	14.52	0.64
C & E Loss (m)	0.01	Cum SA (1000 m2)	0.16	8.19	0.45

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 2
REACH: 1 RS: 13

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	108.5	8.15	107.66	10.56	107.39	12.31	107.25	19.79	106.22
22.11	105.95	29.8	105.14	30.24	105.06	31.48	104.99	34.34	104.86
39.35	104.43	40.65	104.19	43.95	103.61	47.48	102.94	49.23	101.36
50.01	100.42	50.2	100.38	51.34	100.32	52.8	100.59	52.96	100.59
53.24	100.8	54.13	103.38	57.15	103.58	69.56	104.54	73.51	104.65
78	104.44	84.33	104.5	86.12	104.56	89.63	104.65	94.27	104.86
96.7	104.96	103.44	105.35	107.42	105.78				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	39.35	.05	69.56	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
39.35	69.56	85	85	85	.1	.3

CROSS SECTION OUTPUT Profile #100-yr

E.G. Elev (m)	104.50	Element	Left OB	Channel	Right OB
Vel Head (m)	0.10	Wt. n-Val.		0.050	
W.S. Elev (m)	104.40	Reach Len. (m)	85.00	85.00	85.00
Crit W.S. (m)		Flow Area (m2)		34.38	
E.G. Slope (m/m)	0.004161	Area (m2)		34.38	
Q Total (m3/s)	47.12	Flow (m3/s)		47.12	
Top Width (m)	28.24	Top Width (m)		28.24	
Vel Total (m/s)	1.37	Avg. Vel. (m/s)		1.37	
Max Chl Dpth (m)	4.08	Hydr. Depth (m)		1.22	
Conv. Total (m3/s)	730.4	Conv. (m3/s)		730.4	
Length Wtd. (m)	85.00	Wetted Per. (m)		31.40	
Min Ch El (m)	100.32	Shear (N/m2)		44.68	
Alpha	1.00	Stream Power (N/m s)		61.24	
Frctn Loss (m)	0.19	Cum Volume (1000 m3)	0.06	10.01	0.64
C & E Loss (m)	0.02	Cum SA (1000 m2)	0.16	5.27	0.45

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 2
REACH: 1 RS: 12

INPUT
Description:
Station Elevation Data num= 40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	109.74	5.68	109.56	11.44	109.29	14.3	109.06	19.72	108.7
26.24	107.97	33.45	107.05	40.73	105.79	44.68	105.14	46.62	104.84
49.34	104.46	51.89	104.03	53.82	103.84	60.99	102.99	62.33	102.81
65.06	101.31	66.59	100.29	66.99	100.23	68.16	100.12	69.18	99.96
69.76	99.99	70.61	100.82	72.42	102.3	78.12	103.51	80.06	103.94
86.24	104.39	90.67	104.78	99.22	104.52	102.81	104.5	109.89	104.76
111.44	104.79	112.52	104.8	120.41	105.31	120.5	105.3	123.52	105.63
128.43	106.12	128.92	106.19	130.16	106.3	136.47	106.72	139.93	107.02

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	46.62	.05	90.67	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
46.62	90.67	100	100	100	.1	.3

CROSS SECTION OUTPUT Profile #100-yr

E.G. Elev (m)	104.29	Element	Left OB	Channel	Right OB
Vel Head (m)	0.04	Wt. n-Val.		0.050	
W.S. Elev (m)	104.25	Reach Len. (m)	100.00	100.00	100.00
Crit W.S. (m)		Flow Area (m2)		50.32	
E.G. Slope (m/m)	0.001378	Area (m2)		50.32	
Q Total (m3/s)	47.12	Flow (m3/s)		47.12	
Top Width (m)	33.67	Top Width (m)		33.67	
Vel Total (m/s)	0.94	Avg. Vel. (m/s)		0.94	
Max Chl Dpth (m)	4.29	Hydr. Depth (m)		1.49	
Conv. Total (m3/s)	1269.3	Conv. (m3/s)		1269.3	
Length Wtd. (m)	100.00	Wetted Per. (m)		35.53	
Min Ch El (m)	99.96	Shear (N/m2)		19.14	
Alpha	1.00	Stream Power (N/m s)		17.92	
Frctn Loss (m)	0.09	Cum Volume (1000 m3)	0.06	6.41	0.64
C & E Loss (m)	0.00	Cum SA (1000 m2)	0.16	2.64	0.45

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 2
REACH: 1 RS: 11

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	105.8	5.37	105.84	9.16	105.78	12.24	105.85	15.02	105.87
19.73	105.97	21.2	106.01	30.39	106.1	30.51	106.1	36.16	105.73
37.36	105.83	40.18	105.75	40.9	105.72	41.32	105.68	49.91	104.92
50.15	104.88	55.74	103.76	56.91	103.51	59.7	102.35	60.68	101.54
62.34	99.62	62.89	99.55	64.1	99.58	64.69	99.54	65.42	99.51
65.91	99.89	68.64	101.39	70.18	102.04	75.97	103.06	76.65	103.11
95.56	105.51								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	56.91	.05	75.97	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
56.91	75.97	0	0	0	.1	.3

CROSS SECTION OUTPUT Profile #100-yr

E.G. Elev (m)	104.20	Element	Left OB	Channel	Right OB
Vel Head (m)	0.04	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (m)	104.16	Reach Len. (m)	25.00	25.00	25.00
Crit W.S. (m)		Flow Area (m2)	1.02	50.64	5.09
E.G. Slope (m/m)	0.000623	Area (m2)	1.02	50.64	5.09
Q Total (m3/s)	47.12	Flow (m3/s)	0.24	45.15	1.73
Top Width (m)	31.20	Top Width (m)	3.18	19.06	8.97
Vel Total (m/s)	0.83	Avg. Vel. (m/s)	0.23	0.89	0.34
Max Chl Dpth (m)	4.65	Hydr. Depth (m)	0.32	2.66	0.57
Conv. Total (m3/s)	1888.2	Conv. (m3/s)	9.4	1809.3	69.5
Length Wtd. (m)	25.00	Wetted Per. (m)	3.24	21.20	9.04
Min Ch El (m)	99.51	Shear (N/m2)	1.92	14.58	3.44
Alpha	1.11	Stream Power (N/m s)	0.44	13.00	1.17
Frctn Loss (m)	0.05	Cum Volume (1000 m3)	0.01	1.36	0.39
C & E Loss (m)	0.02	Cum SA (1000 m2)			

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

SUMMARY OF MANNING'S N VALUES

River:1

Reach	River Sta.	n1	n2	n3
1	10	.05	.05	.05
1	9	.05	.05	.05
1	8	.05	.05	.05
2	7	.05	.05	.05
2	6	.05	.05	.05
2	5.6	.05	.05	.05
2	5.5	Bridge		
2	5.4	.05	.05	.05
2	5	.05	.05	.05
2	4	.05	.05	.05
2	3	.05	.05	.05
2	2	.05	.05	.05
2	1	.05	.05	.05

River:2

Reach	River Sta.	n1	n2	n3
1	15	.05	.05	.05
1	14	.05	.05	.05
1	13	.05	.05	.05
1	12	.05	.05	.05
1	11	.05	.05	.05

SUMMARY OF REACH LENGTHS

River: 1

Reach	River Sta.	Left	Channel	Right
1	10	85	85	85
1	9	85	85	85
1	8	30	30	30
2	7	50	50	50
2	6	37.5	37.5	37.5
2	5.6	25	25	25
2	5.5	Bridge		
2	5.4	37.5	37.5	37.5
2	5	90	90	90
2	4	105	105	105
2	3	100	100	100
2	2	110	110	110
2	1	0	0	0

River: 2

Reach	River Sta.	Left	Channel	Right
1	15	105	105	105
1	14	90	90	90
1	13	85	85	85
1	12	100	100	100
1	11	0	0	0

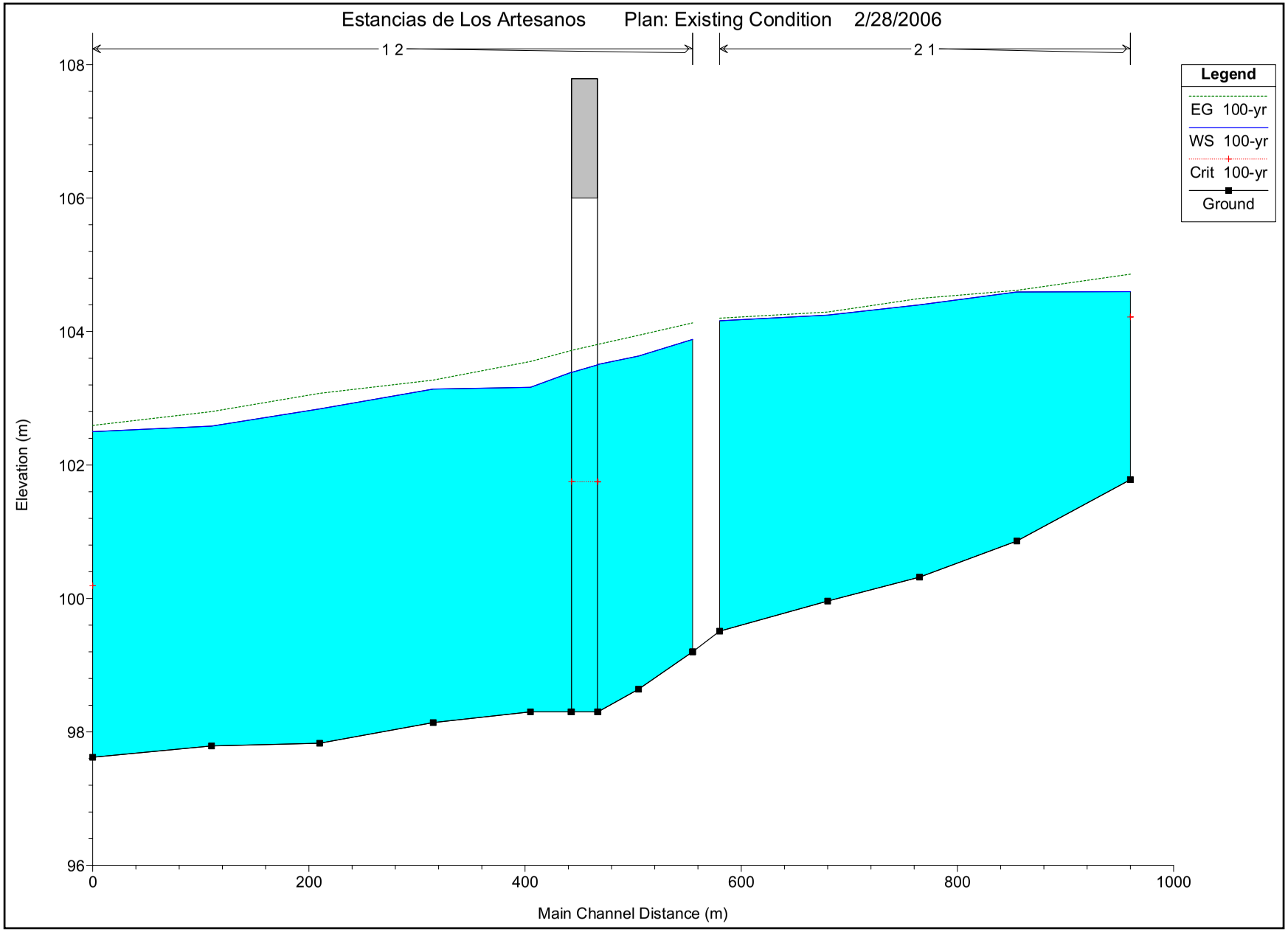
SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS

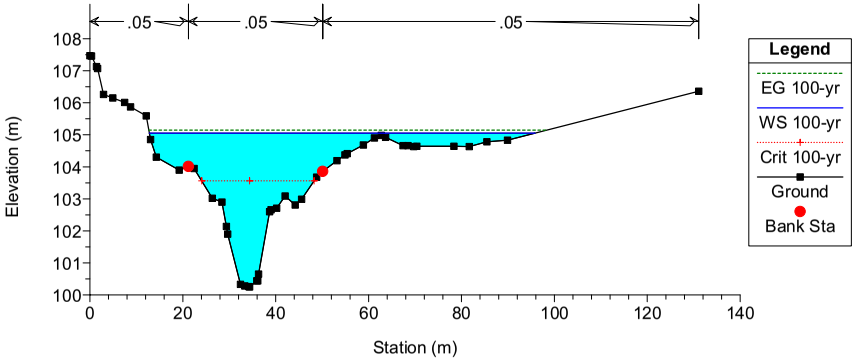
River: 1

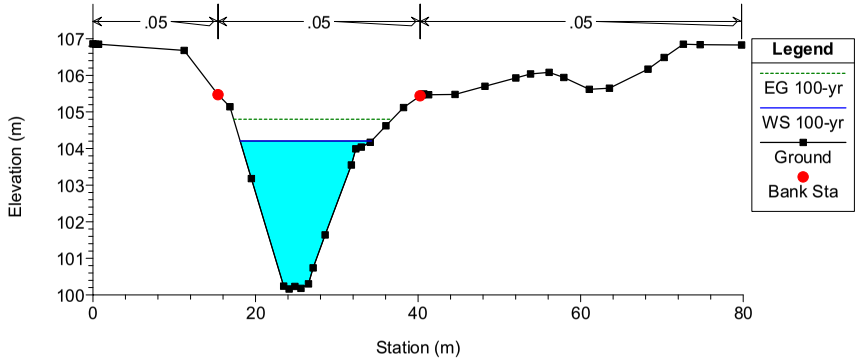
Reach	River Sta.	Contr.	Expan.
1	10	.1	.3
1	9	.1	.3
1	8	.1	.3
2	7	.1	.3
2	6	.1	.3
2	5.6	.1	.3
2	5.5	Bridge	
2	5.4	.1	.3
2	5	.1	.3
2	4	.1	.3
2	3	.1	.3
2	2	.1	.3
2	1	.1	.3

River: 2

Reach	River Sta.	Contr.	Expan.
1	15	.1	.3
1	14	.1	.3
1	13	.1	.3
1	12	.1	.3
1	11	.1	.3


Estancias de Los Artesanos Plan: Existing Condition 2/28/2006
1 2
2 1
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Elevation (m)
108
106
104
102
100
98
96
0
200
400
600
800
1000
Main Channel Distance (m)


Estancias de Los Artesanos Plan: Existing Condition 2/28/2006
.05
.05
.05
Elevation (m)
Station (m)
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Bank Sta


Estancias de Los Artesanos Plan: Existing Condition 2/28/2006
.05
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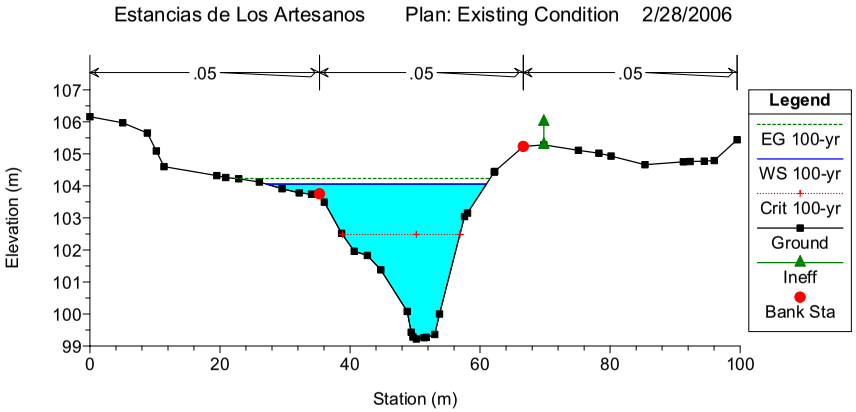
Elevation (m)
Station (m)
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta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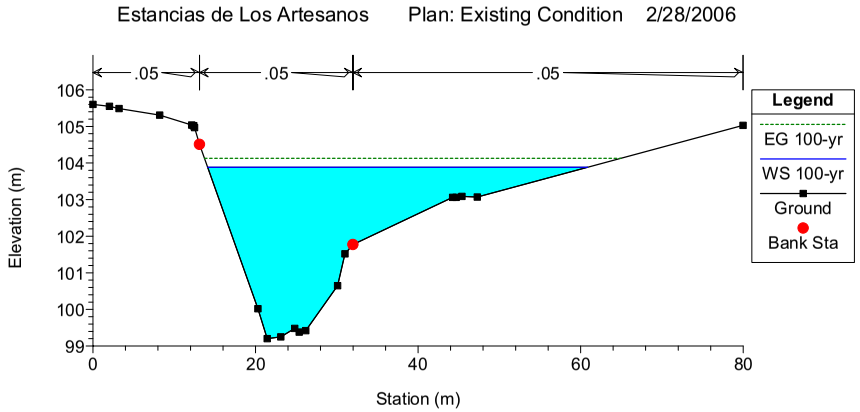
Elevation (m)
Station (m)
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta


Estancias de Los Artesanos Plan: Existing Condition 2/28/2006
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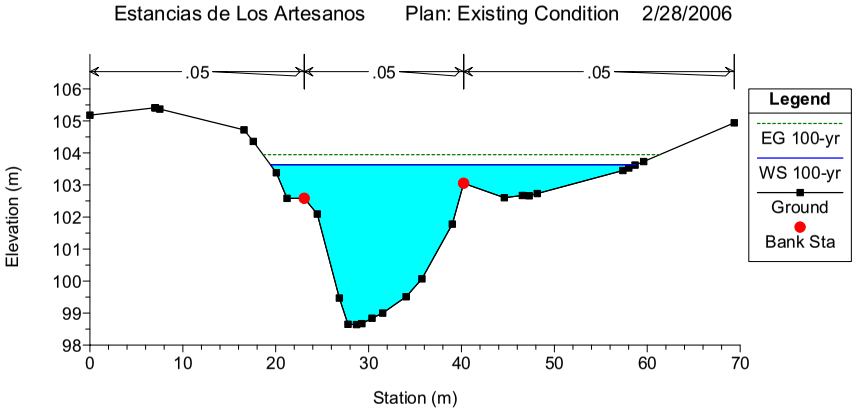
Elevation (m)
Station (m)
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta


Estancias de Los Artesanos Plan: Existing Condition 2/28/2006
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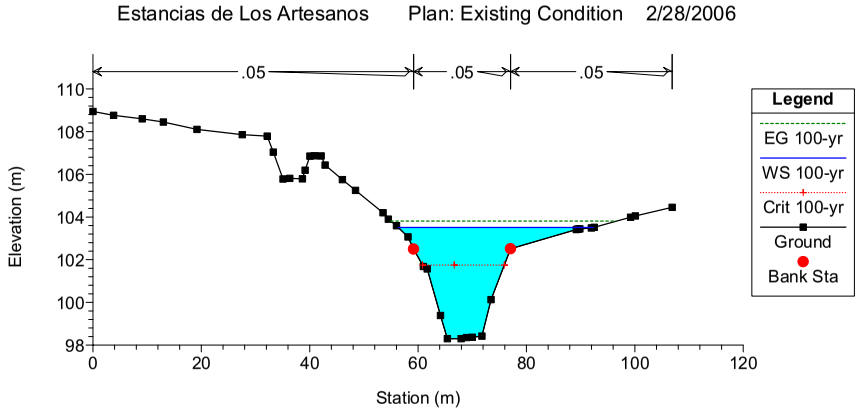
Elevation (m)
Station (m)
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta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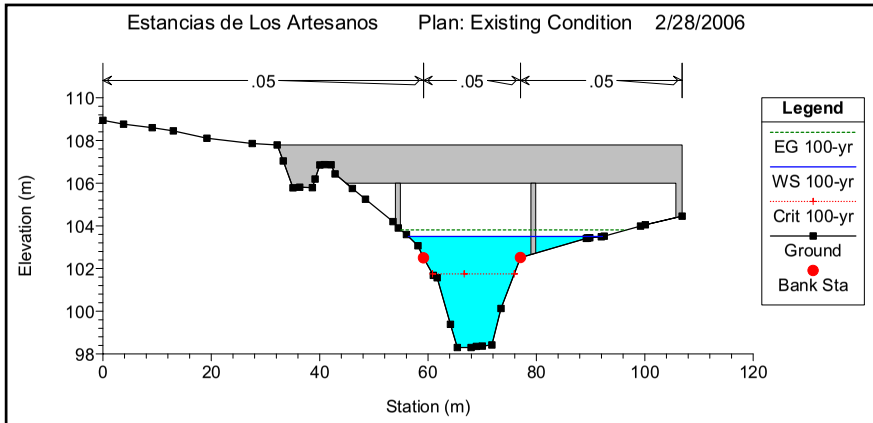
Elevation (m)
Station (m)
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Bank Sta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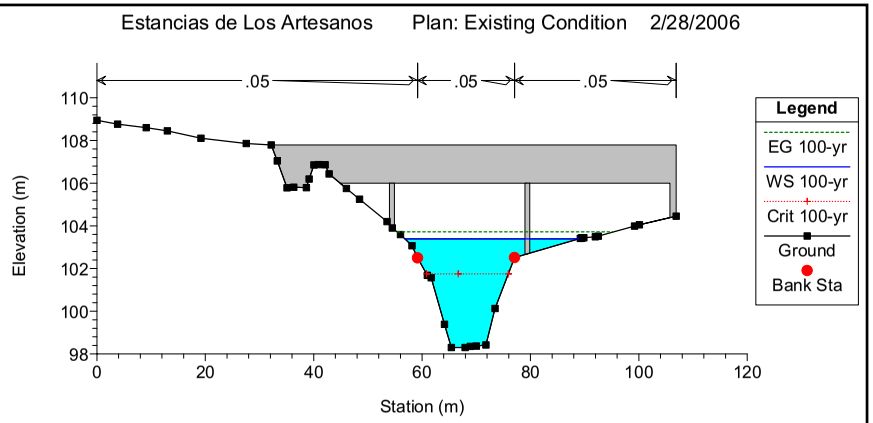
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)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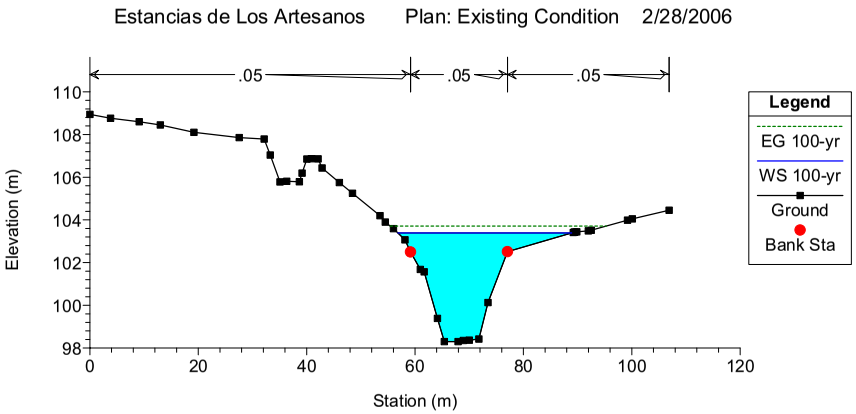
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)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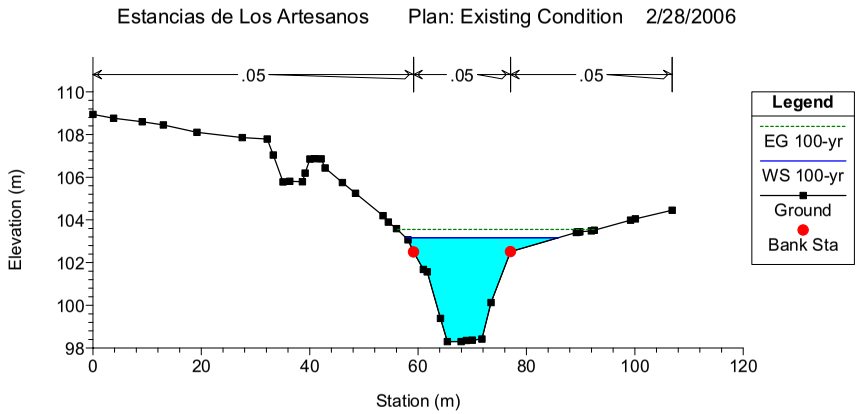
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)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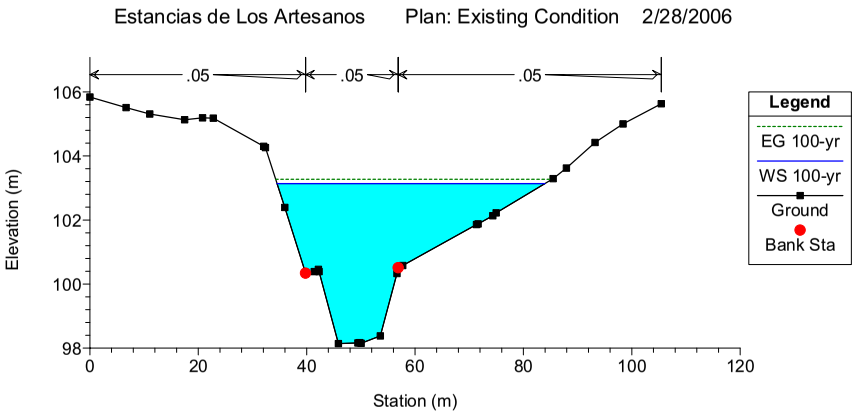
.05
.05
.05
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)


Estancias de Los Artesanos Plan: Existing Condition 2/28/2006
.05
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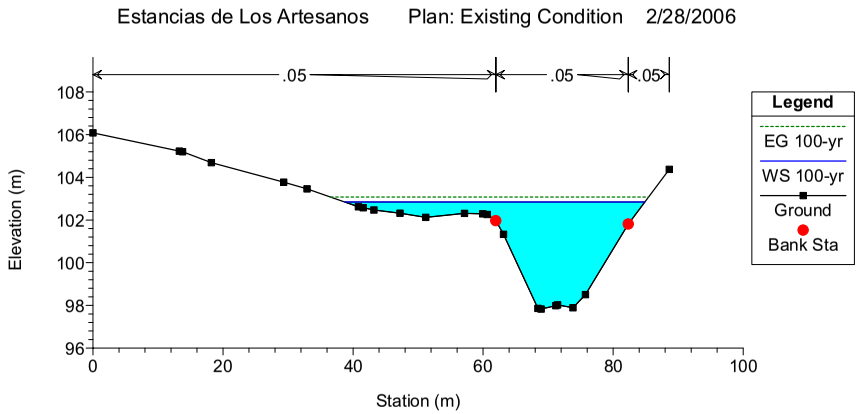
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)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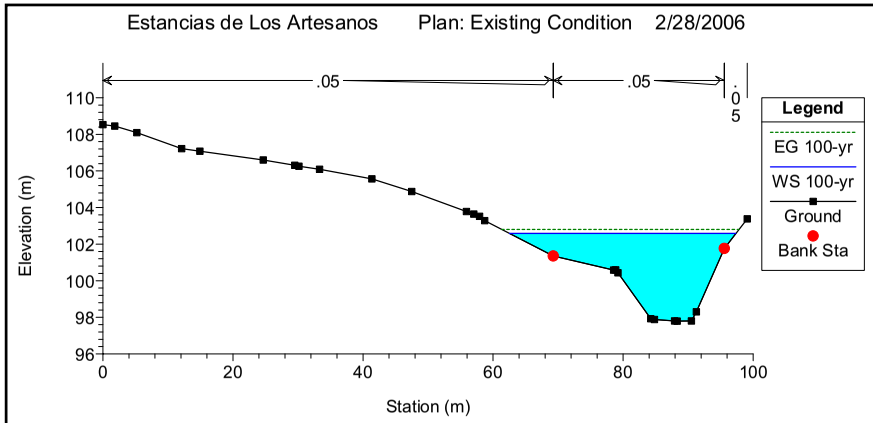
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)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.05
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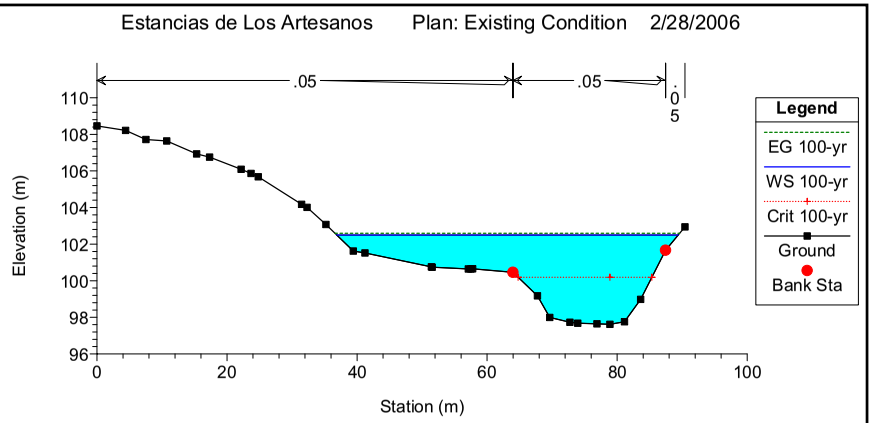
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)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.05
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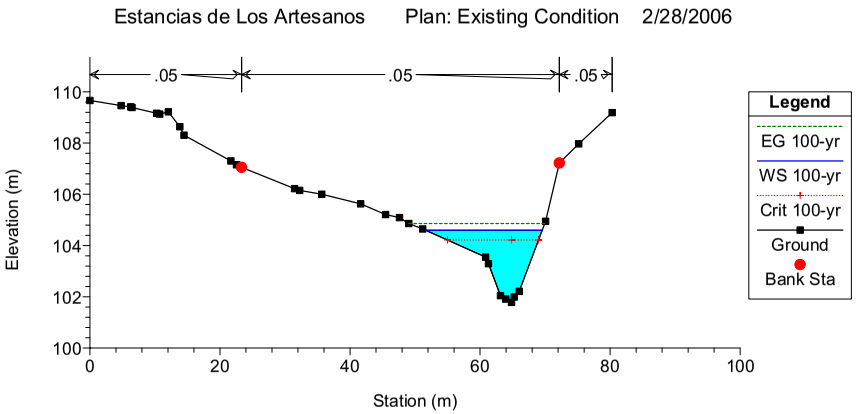
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)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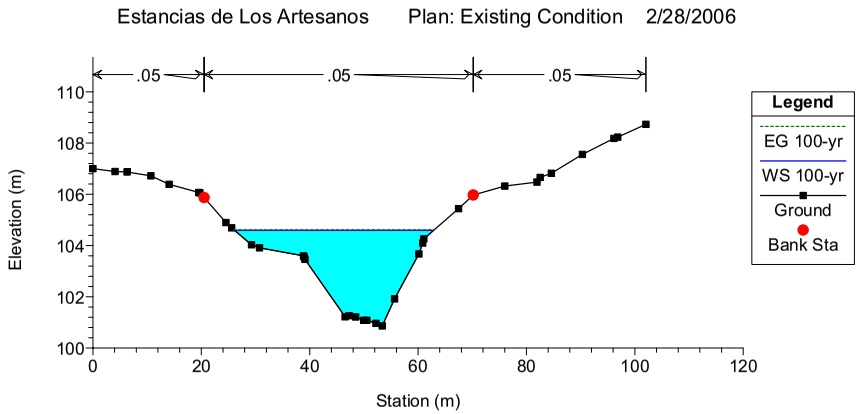
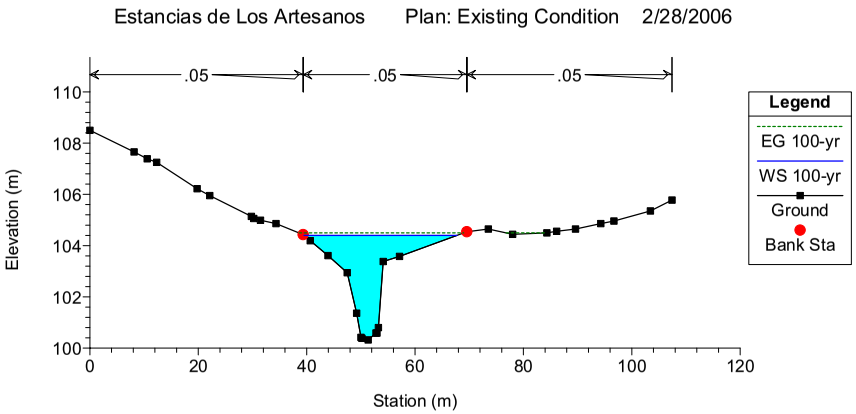
.05
.05
.05
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)


Estancias de Los Artesanos Plan: Existing Condition 2/28/2006
.05
.05
.05
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)


Estancias de Los Artesanos Plan: Existing Condition 2/28/2006
.05
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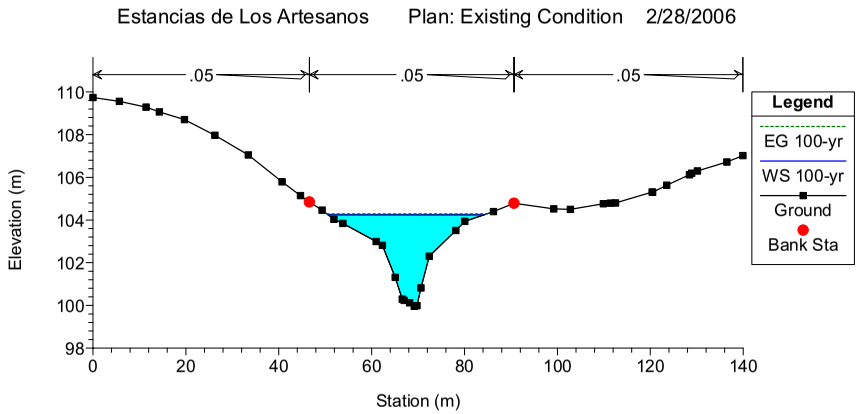
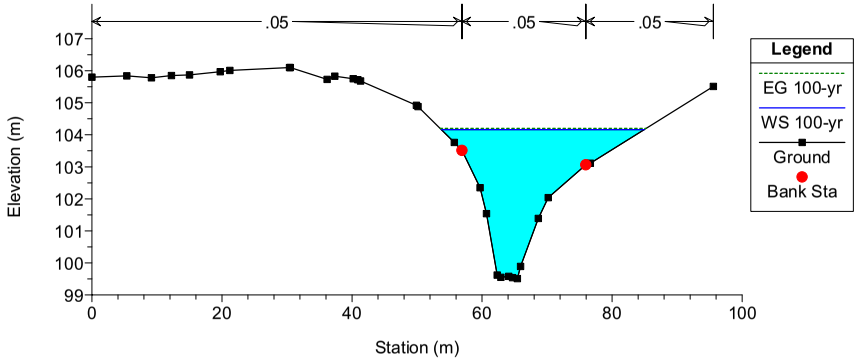
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)


Estancias de Los Artesanos Plan: Existing Condition 2/28/2006
.05
.05
.05
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)

Estancias de Los Artesanos Plan: Existing Condition 2/28/2006



APPENDIX H

HEC-RAS RESULTS FOR PROPOSED CONDITION

HEC-RAS Version 3.1.1 May 2003
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street, Suite D
Davis, California 95616-4687
(916) 756-1104

```
X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X       X   X     X  X    X
X     X  X        X            X   X    X    X   X
XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
X     X  X        X            X  X     X    X        X
X     X  X        X    X       X   X    X    X        X
X     X  XXXXXX    XXXX        X    X   X    X   XXXXX
```

PROJECT DATA
Project Title: Estancias de Los Artesanos
Project File : Artesanos.prj
Run Date and Time: 3/1/2006 11:18:47 AM

Project in SI units

PLAN DATA

Plan Title: Proposed Condition
Plan File : p:\258-Estancias de los Artesanos\RAS\Artesanos.p02

Geometry Title: Proposed Condition
Geometry File : p:\258-Estancias de los Artesanos\RAS\Artesanos.g02

Flow Title : Existing Condition
Flow File : p:\258-Estancias de los Artesanos\RAS\Artesanos.f01

Plan Summary Information:

Number of:	Cross Sections	= 19	Mulitple Openings	=	0
	Culverts	= 0	Inline Structures	=	0
	Bridges	= 2	Lateral Structures	=	0

Computational Information

Water surface calculation tolerance	=	0.003
Critical depth calculaton tolerance	=	0.003
Maximum number of interations	=	20
Maximum difference tolerance	=	0.1
Flow tolerance factor	=	0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Mixed Flow

FLOW DATA

Flow Title: Existing Condition
Flow File : p:\258-Estancias de los Artesanos\RAS\Artesanos.f01

Flow Data (m3/s)

River	Reach	RS	100-yr
1	1	10	120.1
1	2	7	165.64
2	1	15	47.12

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
1	1	100-yr	Critical	
1	2	100-yr		Known WS = 102.5
2	1	100-yr	Critical	

GEOMETRY DATA

Geometry Title: Proposed Condition
Geometry File : p:\258-Estancias de los Artesanos\RAS\Artesanos.g02

Reach Connection Table

River	Reach	Upstream Boundary	Downstream Boundary
1	1		A
1	2	A	
2	1		A

JUNCTION INFORMATION

Name: A
Description:
Energy computation Method

Length across Junction River	Reach		Tributary River	Reach	Length
Angle					
1	1	to 1	2		30
2	1	to 1	2		25

CROSS SECTION

RIVER: 1
REACH: 1 RS: 10

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	107.47	.36	107.46	1.41	107.13	1.64	107.07	2.93	106.26
4.93	106.15	7.49	106.01	8.74	105.87	12.13	105.59	13.04	104.85
14.29	104.3	19.23	103.9	21.21	104.01	22.43	103.95	26.35	103.02
28.42	102.9	29.38	102.14	29.67	101.9	32.4	100.33	33.34	100.28
34.2	100.26	34.37	100.25	35.93	100.44	36.13	100.44	36.31	100.65
38.7	102.6	38.98	102.66	40.21	102.71	42.04	103.09	44.21	102.81
45.59	102.99	48.8	103.68	50.13	103.86	53.18	104.19	54.9	104.37
55.39	104.41	58.87	104.68	61.25	104.9	62.73	104.98	63.66	104.92
67.43	104.66	68.47	104.66	69.71	104.63	70.38	104.64	78.38	104.64
81.68	104.63	85.48	104.78	89.92	104.83	131.08	106.36		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	21.21	.05	50.13	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
21.21	50.13	85	85	85	.1	.3

CROSS SECTION OUTPUT Profile #100-yr

E.G. Elev (m)	105.15	Element	Left OB	Channel	Right OB
Vel Head (m)	0.10	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (m)	105.05	Reach Len. (m)	85.00	85.00	85.00
Crit W.S. (m)	103.56	Flow Area (m2)	7.48	74.72	17.29
E.G. Slope (m/m)	0.001585	Area (m2)	7.48	74.72	17.29
Q Total (m3/s)	120.10	Flow (m3/s)	5.42	107.49	7.19
Top Width (m)	83.06	Top Width (m)	8.42	28.92	45.72
Vel Total (m/s)	1.21	Avg. Vel. (m/s)	0.72	1.44	0.42
Max Chl Dpth (m)	4.80	Hydr. Depth (m)	0.89	2.58	0.38
Conv. Total (m3/s)	3017.0	Conv. (m3/s)	136.2	2700.2	180.7
Length Wtd. (m)	85.00	Wetted Per. (m)	8.62	30.77	45.79
Min Ch El (m)	100.25	Shear (N/m2)	13.49	37.74	5.87
Alpha	1.29	Stream Power (N/m s)	9.77	54.29	2.44
Frctn Loss (m)	0.29	Cum Volume (1000 m3)	0.41	10.73	1.12
C & E Loss (m)	0.05	Cum SA (1000 m2)	0.70	3.69	1.94

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 1
REACH: 1 RS: 9

INPUT
Description:
Station Elevation Data num= 37

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	106.86	.31	106.85	.68	106.85	11.22	106.68	15.4	105.47
16.86	105.14	19.48	103.18	23.46	100.24	24.14	100.16	24.84	100.23
25.59	100.18	26.51	100.3	27.08	100.74	28.57	101.64	31.8	103.55
32.34	103.99	33.01	104.04	34.12	104.17	36.05	104.62	38.2	105.12
40.25	105.44	40.57	105.47	40.71	105.49	41.29	105.47	44.54	105.48
48.23	105.7	52.03	105.93	53.84	106.04	56.12	106.08	57.93	105.94
61.06	105.62	63.55	105.65	68.29	106.17	70.28	106.49	72.63	106.85
74.7	106.84	79.8	106.83						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	15.4	.05	40.25	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
15.4	40.25	85	85	85	.1	.3

CROSS SECTION OUTPUT Profile #100-yr

E.G. Elev (m)	104.80	Element	Left OB	Channel	Right OB
Vel Head (m)	0.60	Wt. n-Val.		0.050	
W.S. Elev (m)	104.21	Reach Len. (m)	85.00	85.00	85.00
Crit W.S. (m)		Flow Area (m2)		35.10	
E.G. Slope (m/m)	0.012540	Area (m2)		35.10	
Q Total (m3/s)	120.10	Flow (m3/s)		120.10	
Top Width (m)	16.17	Top Width (m)		16.17	
Vel Total (m/s)	3.42	Avg. Vel. (m/s)		3.42	
Max Chl Dpth (m)	4.05	Hydr. Depth (m)		2.17	
Conv. Total (m3/s)	1072.5	Conv. (m3/s)		1072.5	
Length Wtd. (m)	85.00	Wetted Per. (m)		18.59	
Min Ch El (m)	100.16	Shear (N/m2)		232.22	
Alpha	1.00	Stream Power (N/m s)		794.56	
Frctn Loss (m)	0.45	Cum Volume (1000 m3)	0.10	6.06	0.39
C & E Loss (m)	0.13	Cum SA (1000 m2)	0.35	1.78	

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 1
REACH: 1 RS: 8

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	106.16	5.05	105.97	8.83	105.65	10.2	105.09	11.39	104.6
19.52	104.32	20.9	104.26	22.89	104.22	26.07	104.12	29.55	103.91
32.19	103.78	34.09	103.74	35.31	103.75	36.04	103.49	38.7	102.52
40.66	101.96	42.67	101.83	44.74	101.38	48.79	100.08	49.4	99.43
49.67	99.28	50.2	99.22	51.38	99.26	51.72	99.27	53.03	99.36
53.76	100	57.61	103.04	58.08	103.15	62.18	104.43	62.26	104.45
66.65	105.23	66.68	105.23	69.8	105.28	75.12	105.11	78.27	105.02
80.15	104.93	85.37	104.66	91.27	104.75	92.29	104.76	94.49	104.77
96.02	104.79	99.54	105.44						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	35.31	.05	66.65	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
35.31	66.65	30	30	30	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
69.8	99.54	106	F

CROSS SECTION OUTPUT Profile #100-yr

E.G. Elev (m)	104.23	Element	Left OB	Channel	Right OB
Vel Head (m)	0.18	Wt. n-Val.	0.050	0.050	
W.S. Elev (m)	104.06	Reach Len. (m)	30.00	30.00	30.00
Crit W.S. (m)	102.48	Flow Area (m2)	1.67	64.23	
E.G. Slope (m/m)	0.002858	Area (m2)	1.67	64.23	
Q Total (m3/s)	120.10	Flow (m3/s)	0.62	119.48	
Top Width (m)	33.84	Top Width (m)	8.17	25.67	
Vel Total (m/s)	1.82	Avg. Vel. (m/s)	0.37	1.86	
Max Chl Dpth (m)	4.84	Hydr. Depth (m)	0.20	2.50	
Conv. Total (m3/s)	2246.3	Conv. (m3/s)	11.6	2234.7	
Length Wtd. (m)	30.00	Wetted Per. (m)	8.18	28.00	
Min Ch El (m)	99.22	Shear (N/m2)	5.73	64.32	
Alpha	1.04	Stream Power (N/m s)	2.12	119.63	
Frctn Loss (m)	0.09	Cum Volume (1000 m3)	0.03	1.84	0.39
C & E Loss (m)	0.01	Cum SA (1000 m2)			

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: 1
REACH: 2 RS: 7

INPUT
Description:
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	105.6	2.02	105.55	3.2	105.49	8.21	105.31	12.14	105.04
12.35	105.02	12.4	105.02	12.5	104.97	13.11	104.51	20.29	100.02
21.44	99.2	23.11	99.25	24.83	99.48	25.37	99.38	26.19	99.42
30.09	100.65	31	101.52	31.98	101.77	44.25	103.06	44.69	103.06
45.39	103.09	47.28	103.07	79.98	105.03				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	13.11	.05	31.98	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
13.11	31.98	50	50	50	.1	.3

CROSS SECTION OUTPUT Profile #100-yr

E.G. Elev (m)	104.13	Element	Left OB	Channel	Right OB
Vel Head (m)	0.25	Wt. n-Val.		0.050	0.050
W.S. Elev (m)	103.88	Reach Len. (m)	50.00	50.00	50.00
Crit W.S. (m)		Flow Area (m2)		58.22	25.97
E.G. Slope (m/m)	0.003330	Area (m2)		58.22	25.97
Q Total (m3/s)	165.64	Flow (m3/s)		137.76	27.88
Top Width (m)	46.73	Top Width (m)		17.87	28.86
Vel Total (m/s)	1.97	Avg. Vel. (m/s)		2.37	1.07
Max Chl Dpth (m)	4.68	Hydr. Depth (m)		3.26	0.90
Conv. Total (m3/s)	2870.2	Conv. (m3/s)		2387.2	483.1
Length Wtd. (m)	50.00	Wetted Per. (m)		19.83	28.96
Min Ch El (m)	99.20	Shear (N/m2)		95.87	29.29
Alpha	1.25	Stream Power (N/m s)		226.85	31.44
Frctn Loss (m)	0.18	Cum Volume (1000 m3)	4.78	39.25	5.53
C & E Loss (m)	0.01	Cum SA (1000 m2)	5.50	11.27	6.11

CROSS SECTION

RIVER: 1
REACH: 2 RS: 6

INPUT
Description:
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	105.18	7	105.41	7.04	105.41	7.52	105.37	16.58	104.72
17.59	104.36	20.06	103.38	21.22	102.58	23.08	102.58	24.47	102.09
26.85	99.47	27.79	98.65	28.69	98.64	29.28	98.67	30.36	98.84
31.52	99	34.03	99.51	35.74	100.07	39.01	101.78	40.23	103.05
44.61	102.6	46.55	102.67	47.28	102.66	48.16	102.73	57.37	103.45
58.01	103.53	58.68	103.62	59.62	103.73	69.36	104.94		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	23.08	.05	40.23	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
23.08	40.23	37.5	37.5	37.5	.1	.3

CROSS SECTION OUTPUT Profile #100-yr

E.G. Elev (m)	103.94	Element	Left OB	Channel	Right OB
Vel Head (m)	0.31	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (m)	103.63	Reach Len. (m)	37.50	37.50	37.50
Crit W.S. (m)		Flow Area (m2)	2.79	58.94	12.13
E.G. Slope (m/m)	0.003866	Area (m2)	2.79	58.94	12.13
Q Total (m3/s)	165.64	Flow (m3/s)	2.76	151.55	11.33
Top Width (m)	39.36	Top Width (m)	3.66	17.15	18.55
Vel Total (m/s)	2.24	Avg. Vel. (m/s)	0.99	2.57	0.93
Max Chl Dpth (m)	4.99	Hydr. Depth (m)	0.76	3.44	0.65
Conv. Total (m3/s)	2664.0	Conv. (m3/s)	44.3	2437.4	182.2
Length Wtd. (m)	37.50	Wetted Per. (m)	3.95	19.83	18.62
Min Ch El (m)	98.64	Shear (N/m2)	26.80	112.71	24.69
Alpha	1.22	Stream Power (N/m s)	26.44	289.79	23.07
Frctn Loss (m)	0.13	Cum Volume (1000 m3)	4.71	36.32	4.58
C & E Loss (m)	0.00	Cum SA (1000 m2)	5.41	10.39	4.93

CROSS SECTION

RIVER: 1
REACH: 2 RS: 5.6

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	108.94	3.81	108.76	9.08	108.6	13	108.45	19.18	108.1
27.54	107.86	32.15	107.79	33.29	107.04	35.08	105.78	36.31	105.81
38.65	105.79	39.14	106.19	40.03	106.85	40.86	106.87	42.11	106.86
42.85	106.43	46.04	105.75	48.45	105.25	53.52	104.2	54.51	103.9
56.01	103.59	58.14	103.07	59.17	102.5	60.98	101.68	61.68	101.57
64.12	99.39	65.41	98.3	67.94	98.3	68.91	98.35	70	98.37
71.77	98.42	73.45	100.13	77.06	102.51	89.21	103.41	89.44	103.43
89.46	103.43	89.84	103.44	91.99	103.49	92.5	103.52	99.2	103.99
100.11	104.05	106.89	104.45						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	59.17	.05	77.06	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
59.17	77.06	25	25	25	.1	.3

CROSS SECTION OUTPUT Profile #100-yr

E.G. Elev (m)	103.81	Element	Left OB	Channel	Right OB
Vel Head (m)	0.30	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (m)	103.51	Reach Len. (m)	0.50	0.50	0.50
Crit W.S. (m)	101.75	Flow Area (m2)	1.14	65.16	6.80
E.G. Slope (m/m)	0.003293	Area (m2)	1.14	65.16	6.80
Q Total (m3/s)	165.64	Flow (m3/s)	0.68	160.41	4.55
Top Width (m)	35.94	Top Width (m)	2.82	17.89	15.23
Vel Total (m/s)	2.27	Avg. Vel. (m/s)	0.60	2.46	0.67
Max Chl Dpth (m)	5.21	Hydr. Depth (m)	0.40	3.64	0.45
Conv. Total (m3/s)	2886.5	Conv. (m3/s)	11.8	2795.4	79.3
Length Wtd. (m)	0.50	Wetted Per. (m)	3.02	20.74	15.26
Min Ch El (m)	98.30	Shear (N/m2)	12.14	101.45	14.38
Alpha	1.15	Stream Power (N/m s)	7.26	249.77	9.62
Frctn Loss (m)	0.00	Cum Volume (1000 m3)	4.64	34.00	4.22
C & E Loss (m)	0.00	Cum SA (1000 m2)	5.29	9.73	4.29

BRIDGE

RIVER: 1
REACH: 2 RS: 5.5

INPUT
Description:
Distance from Upstream XS = .5
Deck/Roadway Width = 24
Weir Coefficient = 1.44
Upstream Deck/Roadway Coordinates
num= 6

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
32.15	107.79		42.11	107.79	97	42.11	107.79	106
105.75	107.79	106	105.75	107.79	97	106.89	107.79	

Upstream Bridge Cross Section Data
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	108.94	3.81	108.76	9.08	108.6	13	108.45	19.18	108.1
27.54	107.86	32.15	107.79	33.29	107.04	35.08	105.78	36.31	105.81
38.65	105.79	39.14	106.19	40.03	106.85	40.86	106.87	42.11	106.86
42.85	106.43	46.04	105.75	48.45	105.25	53.52	104.2	54.51	103.9
56.01	103.59	58.14	103.07	59.17	102.5	60.98	101.68	61.68	101.57
64.12	99.39	65.41	98.3	67.94	98.3	68.91	98.35	70	98.37
71.77	98.42	73.45	100.13	77.06	102.51	89.21	103.41	89.44	103.43
89.46	103.43	89.84	103.44	91.99	103.49	92.5	103.52	99.2	103.99
100.11	104.05	106.89	104.45						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	59.17	.05	77.06	.05

Bank Sta: Left	Right	Coeff Contr.	Expan.
59.17	77.06	.1	.3

Downstream Deck/Roadway Coordinates
num= 6

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
32.15	107.79		42.11	107.79	97	42.11	107.79	106
105.75	107.79	106	105.75	107.79	97	106.89	107.79	

Downstream Bridge Cross Section Data
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	108.94	3.81	108.76	9.08	108.6	13	108.45	19.18	108.1
27.54	107.86	32.15	107.79	33.29	107.04	35.08	105.78	36.31	105.81
38.65	105.79	39.14	106.19	40.03	106.85	40.86	106.87	42.11	106.86
42.85	106.43	46.04	105.75	48.45	105.25	53.52	104.2	54.51	103.9
56.01	103.59	58.14	103.07	59.17	102.5	60.98	101.68	61.68	101.57
64.12	99.39	65.41	98.3	67.94	98.3	68.91	98.35	70	98.37
71.77	98.42	73.45	100.13	77.06	102.51	89.21	103.41	89.44	103.43
89.46	103.43	89.84	103.44	91.99	103.49	92.5	103.52	99.2	103.99
100.11	104.05	106.89	104.45						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	59.17	.05	77.06	.05

Bank Sta: Left	Right	Coeff Contr.	Expan.
59.17	77.06	.1	.3

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
Downstream Embankment side slope = 0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .95
Elevation at which weir flow begins = 107.79
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Piers = 2

```
Pier Data
Pier Station     Upstream=   54.43    Downstream=   54.43
Upstream     num=       2
    Width   Elev    Width   Elev
      .9      97      .9     106
Downstream     num=       2
    Width   Elev    Width   Elev
      .9      97      .9     106

Pier Data
Pier Station     Upstream=   79.43    Downstream=   79.43
Upstream     num=       2
    Width   Elev    Width   Elev
      .9      97      .9     106
Downstream     num=       2
    Width   Elev    Width   Elev
      .9      97      .9     106

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Energy Only

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT  Profile #100-yr

  E.G. US. (m)              103.81    Element               Inside BR US  Inside BR DS
  W.S. US. (m)              103.51    E.G. Elev (m)              103.81        103.72
  Q Total (m3/s)            165.64    W.S. Elev (m)              103.50        103.39
  Q Bridge (m3/s)           165.64    Crit W.S. (m)              101.75        101.75
  Q Weir (m3/s)                       Max Chl Dpth (m)             5.20          5.09
  Weir Sta Lft (m)                    Vel Total (m/s)              2.30          2.42
  Weir Sta Rgt (m)                    Flow Area (m2)              72.11         68.40
  Weir Submerg                        Froude # Chl                 0.41          0.44
  Weir Max Depth (m)                  Specif Force (m3)          181.27        175.08
  Min El Weir Flow (m)      107.79    Hydr Depth (m)               2.07          2.19
  Min El Prs (m)            106.00    W.P. Total (m)              39.61         35.63
  Delta EG (m)                0.09    Conv. Total (m3/s)         2863.3        2700.4
  Delta WS (m)                0.12    Top Width (m)               34.89         31.16
  BR Open Area (m2)         199.21    Frctn Loss (m)               0.09          0.00
  BR Open Vel (m/s)           2.42    C & E Loss (m)               0.00          0.00
  Coef of Q                           Shear Total (N/m2)          59.75         70.82
  Br Sel Method        Energy only    Power Total (N/m s)        137.25        171.51

CROSS SECTION

RIVER: 1
REACH: 2                  RS: 5.4
```

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	108.94	3.81	108.76	9.08	108.6	13	108.45	19.18	108.1
27.54	107.86	32.15	107.79	33.29	107.04	35.08	105.78	36.31	105.81
38.65	105.79	39.14	106.19	40.03	106.85	40.86	106.87	42.11	106.86
42.85	106.43	46.04	105.75	48.45	105.25	53.52	104.2	54.51	103.9
56.01	103.59	58.14	103.07	59.17	102.5	60.98	101.68	61.68	101.57
64.12	99.39	65.41	98.3	67.94	98.3	68.91	98.35	70	98.37
71.77	98.42	73.45	100.13	77.06	102.51	89.21	103.41	89.44	103.43
89.46	103.43	89.84	103.44	91.99	103.49	92.5	103.52	99.2	103.99
100.11	104.05	106.89	104.45						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	59.17	.05	77.06	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
59.17	77.06	37.5	37.5	37.5	.1	.3

CROSS SECTION OUTPUT Profile #100-yr

E.G. Elev (m)	103.71	Element	Left OB	Channel	Right OB
Vel Head (m)	0.33	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (m)	103.39	Reach Len. (m)	37.50	37.50	37.50
Crit W.S. (m)		Flow Area (m2)	0.83	63.01	5.20
E.G. Slope (m/m)	0.003731	Area (m2)	0.83	63.01	5.20
Q Total (m3/s)	165.64	Flow (m3/s)	0.48	161.50	3.66
Top Width (m)	32.07	Top Width (m)	2.33	17.89	11.85
Vel Total (m/s)	2.40	Avg. Vel. (m/s)	0.58	2.56	0.70
Max Chl Dpth (m)	5.09	Hydr. Depth (m)	0.35	3.52	0.44
Conv. Total (m3/s)	2711.6	Conv. (m3/s)	7.9	2643.8	60.0
Length Wtd. (m)	37.50	Wetted Per. (m)	2.52	20.74	11.88
Min Ch El (m)	98.30	Shear (N/m2)	12.03	111.18	16.02
Alpha	1.11	Stream Power (N/m s)	7.00	284.93	11.28
Frctn Loss (m)	0.16	Cum Volume (1000 m3)	4.61	32.40	4.09
C & E Loss (m)	0.01	Cum SA (1000 m2)	5.23	9.29	3.98

CROSS SECTION

RIVER: 1
REACH: 2 RS: 5

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	108.94	3.81	108.76	9.08	108.6	13	108.45	19.18	108.1
27.54	107.86	32.15	107.79	33.29	107.04	35.08	105.78	36.31	105.81
38.65	105.79	39.14	106.19	40.03	106.85	40.86	106.87	42.11	106.86
42.85	106.43	46.04	105.75	48.45	105.25	53.52	104.2	54.51	103.9
56.01	103.59	58.14	103.07	59.17	102.5	60.98	101.68	61.68	101.57
64.12	99.39	65.41	98.3	67.94	98.3	68.91	98.35	70	98.37
71.77	98.42	73.45	100.13	77.06	102.51	89.21	103.41	89.44	103.43
89.46	103.43	89.84	103.44	91.99	103.49	92.5	103.52	99.2	103.99
100.11	104.05	106.89	104.45						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	59.17	.05	77.06	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
59.17	77.06	90	90	90	.1	.3

CROSS SECTION OUTPUT Profile #100-yr

			Left OB	Channel	Right OB
E.G. Elev (m)	103.55	Element			
Vel Head (m)	0.39	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (m)	103.17	Reach Len. (m)	90.00	90.00	90.00
Crit W.S. (m)		Flow Area (m2)	0.41	59.03	2.90
E.G. Slope (m/m)	0.004756	Area (m2)	0.41	59.03	2.90
Q Total (m3/s)	165.64	Flow (m3/s)	0.23	163.52	1.89
Top Width (m)	28.15	Top Width (m)	1.42	17.89	8.84
Vel Total (m/s)	2.66	Avg. Vel. (m/s)	0.56	2.77	0.65
Max Chl Dpth (m)	4.86	Hydr. Depth (m)	0.29	3.30	0.33
Conv. Total (m3/s)	2401.8	Conv. (m3/s)	3.3	2371.0	27.5
Length Wtd. (m)	90.00	Wetted Per. (m)	1.58	20.74	8.87
Min Ch El (m)	98.30	Shear (N/m2)	12.12	132.75	15.23
Alpha	1.07	Stream Power (N/m s)	6.80	367.72	9.97
Frctn Loss (m)	0.20	Cum Volume (1000 m3)	4.59	30.11	3.94
C & E Loss (m)	0.08	Cum SA (1000 m2)	5.16	8.62	3.59

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 1
REACH: 2 RS: 4

INPUT
Description:
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	105.84	6.68	105.51	11.04	105.31	17.48	105.13	20.8	105.19
22.76	105.18	32.08	104.3	32.39	104.26	35.95	102.39	39.8	100.34
41.4	100.39	42.18	100.46	42.28	100.39	45.85	98.14	49.45	98.16
49.79	98.17	50.05	98.15	53.59	98.38	56.66	100.33	56.9	100.51
57.74	100.58	71.34	101.86	71.63	101.88	74.36	102.13	74.98	102.22
85.47	103.29	87.92	103.62	93.22	104.42	98.38	105	105.45	105.63

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	39.8	.05	56.9	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
39.8	56.9	105	105	105	.1	.3

CROSS SECTION OUTPUT Profile #100-yr

E.G. Elev (m)	103.27	Element	Left OB	Channel	Right OB
Vel Head (m)	0.13	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (m)	103.14	Reach Len. (m)	105.00	105.00	105.00
Crit W.S. (m)		Flow Area (m2)	7.35	71.09	36.42
E.G. Slope (m/m)	0.001323	Area (m2)	7.35	71.09	36.42
Q Total (m3/s)	165.64	Flow (m3/s)	6.15	127.30	32.20
Top Width (m)	49.44	Top Width (m)	5.27	17.10	27.07
Vel Total (m/s)	1.44	Avg. Vel. (m/s)	0.84	1.79	0.88
Max Chl Dpth (m)	5.00	Hydr. Depth (m)	1.39	4.16	1.35
Conv. Total (m3/s)	4553.6	Conv. (m3/s)	169.0	3499.5	885.1
Length Wtd. (m)	105.00	Wetted Per. (m)	5.97	18.41	27.20
Min Ch El (m)	98.14	Shear (N/m2)	15.99	50.10	17.38
Alpha	1.27	Stream Power (N/m s)	13.37	89.71	15.36
Frctn Loss (m)	0.19	Cum Volume (1000 m3)	4.24	24.25	2.17
C & E Loss (m)	0.01	Cum SA (1000 m2)	4.85	7.04	1.98

CROSS SECTION

RIVER: 1
REACH: 2 RS: 3

INPUT
Description:
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	106.08	13.29	105.23	13.79	105.2	18.22	104.69	29.32	103.77
32.92	103.46	40.81	102.62	41.56	102.57	43.21	102.47	47.21	102.32
51.18	102.12	57.14	102.31	59.93	102.29	60.63	102.26	61.95	101.97
63.14	101.33	68.42	97.86	68.92	97.83	71.18	97.99	71.45	98.02
73.81	97.89	75.75	98.5	82.34	101.81	88.62	104.37		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	61.95	.05	82.34	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
61.95	82.34	100	100	100	.1	.3

CROSS SECTION OUTPUT Profile #100-yr

E.G. Elev (m)	103.07	Element	Left OB	Channel	Right OB
Vel Head (m)	0.23	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (m)	102.84	Reach Len. (m)	100.00	100.00	100.00
Crit W.S. (m)		Flow Area (m2)	11.76	71.73	1.30
E.G. Slope (m/m)	0.002559	Area (m2)	11.76	71.73	1.30
Q Total (m3/s)	165.64	Flow (m3/s)	7.55	157.28	0.80
Top Width (m)	46.12	Top Width (m)	23.21	20.39	2.53
Vel Total (m/s)	1.95	Avg. Vel. (m/s)	0.64	2.19	0.62
Max Chl Dpth (m)	5.01	Hydr. Depth (m)	0.51	3.52	0.52
Conv. Total (m3/s)	3274.3	Conv. (m3/s)	149.3	3109.1	15.9
Length Wtd. (m)	100.00	Wetted Per. (m)	23.26	22.48	2.73
Min Ch El (m)	97.83	Shear (N/m2)	12.69	80.08	11.97
Alpha	1.20	Stream Power (N/m s)	8.15	175.59	7.39
Frctn Loss (m)	0.27	Cum Volume (1000 m3)	3.24	16.75	0.19
C & E Loss (m)	0.00	Cum SA (1000 m2)	3.36	5.07	0.42

CROSS SECTION

RIVER: 1
REACH: 2 RS: 2

INPUT
Description:
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	108.53	1.83	108.45	5.21	108.09	12.1	107.22	14.92	107.08
24.66	106.6	29.5	106.31	30.15	106.26	33.32	106.09	41.36	105.57
47.48	104.88	55.91	103.78	57.04	103.64	57.92	103.52	58.7	103.28
69.26	101.35	78.54	100.58	78.86	100.59	79.2	100.43	84.25	97.92
84.81	97.88	87.92	97.8	88.31	97.79	90.5	97.8	91.26	98.3
95.56	101.76	99.09	103.38						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	69.26	.05	95.56	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
69.26	95.56	110	110	110	.1	.3

CROSS SECTION OUTPUT Profile #100-yr

E.G. Elev (m)	102.80	Element	Left OB	Channel	Right OB
Vel Head (m)	0.22	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (m)	102.58	Reach Len. (m)	110.00	110.00	110.00
Crit W.S. (m)		Flow Area (m2)	4.15	77.70	0.74
E.G. Slope (m/m)	0.002833	Area (m2)	4.15	77.70	0.74
Q Total (m3/s)	165.64	Flow (m3/s)	3.17	162.07	0.41
Top Width (m)	34.83	Top Width (m)	6.74	26.30	1.79
Vel Total (m/s)	2.01	Avg. Vel. (m/s)	0.76	2.09	0.55
Max Chl Dpth (m)	4.79	Hydr. Depth (m)	0.62	2.95	0.41
Conv. Total (m3/s)	3111.8	Conv. (m3/s)	59.5	3044.7	7.6
Length Wtd. (m)	110.00	Wetted Per. (m)	6.85	28.33	1.97
Min Ch El (m)	97.79	Shear (N/m2)	16.84	76.21	10.38
Alpha	1.06	Stream Power (N/m s)	12.84	158.96	5.73
Frctn Loss (m)	0.17	Cum Volume (1000 m3)	2.44	9.28	0.09
C & E Loss (m)	0.04	Cum SA (1000 m2)	1.86	2.74	0.21

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 1
REACH: 2 RS: 1

INPUT
Description:
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	108.46	4.41	108.22	7.54	107.72	10.72	107.64	15.34	106.93
17.33	106.76	22.17	106.09	23.7	105.86	24.81	105.68	31.47	104.18
32.3	104.01	35.21	103.07	39.42	101.62	41.21	101.52	51.42	100.76
51.56	100.74	57.12	100.64	57.5	100.64	57.77	100.65	63.97	100.46
67.74	99.17	69.64	97.99	72.73	97.73	73.95	97.68	76.89	97.64
78.88	97.62	81.13	97.76	83.61	98.98	87.45	101.67	90.44	102.94

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	63.97	.05	87.45	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
63.97	87.45	0	0	0	.1	.3

CROSS SECTION OUTPUT Profile #100-yr

E.G. Elev (m)	102.59	Element	Left OB	Channel	Right OB
Vel Head (m)	0.09	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (m)	102.50	Reach Len. (m)			
Crit W.S. (m)	100.19	Flow Area (m2)	40.25	91.09	0.81
E.G. Slope (m/m)	0.000960	Area (m2)	40.25	91.09	0.81
Q Total (m3/s)	165.64	Flow (m3/s)	32.32	133.05	0.26
Top Width (m)	52.54	Top Width (m)	27.10	23.48	1.95
Vel Total (m/s)	1.25	Avg. Vel. (m/s)	0.80	1.46	0.33
Max Chl Dpth (m)	4.88	Hydr. Depth (m)	1.48	3.88	0.41
Conv. Total (m3/s)	5345.1	Conv. (m3/s)	1043.0	4293.5	8.5
Length Wtd. (m)		Wetted Per. (m)	27.29	25.18	2.12
Min Ch El (m)	97.62	Shear (N/m2)	13.89	34.07	3.60
Alpha	1.17	Stream Power (N/m s)	11.15	49.76	1.17
Frctn Loss (m)		Cum Volume (1000 m3)			
C & E Loss (m)		Cum SA (1000 m2)			

CROSS SECTION

RIVER: 2
REACH: 1 RS: 15

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	109.66	4.8	109.46	6.28	109.41	6.47	109.39	10.27	109.16
10.74	109.13	12.06	109.22	13.82	108.64	14.46	108.31	21.69	107.3
22.54	107.15	23.33	107.05	31.47	106.22	32.27	106.15	35.65	106
41.64	105.63	45.48	105.21	47.62	105.09	49.05	104.86	51.19	104.65
60.84	103.55	61.3	103.29	63.13	102.04	63.96	101.91	64.83	101.78
65.25	101.99	66.02	102.21	70.07	104.95	72.2	107.22	75.17	107.97
80.32	109.19								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	23.33	.05	72.2	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
23.33	72.2	45	45	45	.1	.3

CROSS SECTION OUTPUT Profile #100-yr

E.G. Elev (m)	104.82	Element	Left OB	Channel	Right OB
Vel Head (m)	0.30	Wt. n-Val.		0.050	
W.S. Elev (m)	104.52	Reach Len. (m)	45.00	45.00	45.00
Crit W.S. (m)	104.22	Flow Area (m2)		19.33	
E.G. Slope (m/m)	0.013901	Area (m2)		19.33	
Q Total (m3/s)	47.12	Flow (m3/s)		47.12	
Top Width (m)	17.07	Top Width (m)		17.07	
Vel Total (m/s)	2.44	Avg. Vel. (m/s)		2.44	
Max Chl Dpth (m)	2.74	Hydr. Depth (m)		1.13	
Conv. Total (m3/s)	399.7	Conv. (m3/s)		399.7	
Length Wtd. (m)	45.00	Wetted Per. (m)		18.39	
Min Ch El (m)	101.78	Shear (N/m2)		143.29	
Alpha	1.00	Stream Power (N/m s)		349.30	
Frctn Loss (m)	0.07	Cum Volume (1000 m3)	0.06	20.18	0.64
C & E Loss (m)	0.08	Cum SA (1000 m2)	0.16	11.32	0.45

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 2
REACH: 1 RS: 14.6

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	107	4.07	106.89	6.3	106.87	10.68	106.72	14.06	106.39
19.52	106.07	19.72	106.06	20.51	105.87	24.55	104.9	25.6	104.69
29.27	104.03	30.75	103.91	38.87	103.6	38.97	103.55	39.11	103.46
46.53	101.22	47.27	101.26	48.47	101.21	49.96	101.08	50.54	101.08
52.23	100.96	53.38	100.86	55.67	101.92	60.14	103.67	60.87	104.1
61.05	104.26	67.47	105.44	70.2	105.97	76	106.32	81.93	106.48
82.52	106.66	84.59	106.82	90.33	107.56	96.15	108.18	96.84	108.23
102.04	108.73								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	20.51	.05	70.2	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
20.51	70.2	15	15	15	.1	.3

CROSS SECTION OUTPUT Profile #100-yr

E.G. Elev (m)	104.66	Element	Left OB	Channel	Right OB
Vel Head (m)	0.02	Wt. n-Val.		0.050	
W.S. Elev (m)	104.64	Reach Len. (m)	0.50	0.50	0.50
Crit W.S. (m)	102.47	Flow Area (m2)		67.54	
E.G. Slope (m/m)	0.000574	Area (m2)		67.54	
Q Total (m3/s)	47.12	Flow (m3/s)		47.12	
Top Width (m)	37.24	Top Width (m)		37.24	
Vel Total (m/s)	0.70	Avg. Vel. (m/s)		0.70	
Max Chl Dpth (m)	3.78	Hydr. Depth (m)		1.81	
Conv. Total (m3/s)	1966.1	Conv. (m3/s)		1966.1	
Length Wtd. (m)	0.50	Wetted Per. (m)		38.47	
Min Ch El (m)	100.86	Shear (N/m2)		9.89	
Alpha	1.00	Stream Power (N/m s)		6.90	
Frctn Loss (m)	0.00	Cum Volume (1000 m3)	0.06	18.22	0.64
C & E Loss (m)	0.00	Cum SA (1000 m2)	0.16	10.10	0.45

BRIDGE

RIVER: 2
REACH: 1 RS: 14.5

INPUT
Description:
Distance from Upstream XS = .5

```
Deck/Roadway Width        =      13
Weir Coefficient          =    1.44
Upstream  Deck/Roadway Coordinates
    num=       6
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0   106.5            42.5   106.5     100    42.5   106.5   105.5
    57.5   106.5   105.5    57.5   106.5     100     100   106.5

Upstream Bridge Cross Section Data
Station Elevation Data    num=      36
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     107    4.07  106.89     6.3  106.87   10.68  106.72   14.06  106.39
   19.52  106.07   19.72  106.06   20.51  105.87   24.55   104.9    25.6  104.69
   29.27  104.03   30.75  103.91   38.87   103.6   38.97  103.55   39.11  103.46
   46.53  101.22   47.27  101.26   48.47  101.21   49.96  101.08   50.54  101.08
   52.23  100.96   53.38  100.86   55.67  101.92   60.14  103.67   60.87   104.1
   61.05  104.26   67.47  105.44    70.2  105.97      76  106.32   81.93  106.48
   82.52  106.66   84.59  106.82   90.33  107.56   96.15  108.18   96.84  108.23
  102.04  108.73

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .05   20.51     .05    70.2     .05

Bank Sta: Left   Right    Coeff Contr.   Expan.
         20.51    70.2             .1       .3

Downstream  Deck/Roadway Coordinates
    num=       6
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0   106.5            42.5   106.5     100    42.5   106.5   105.5
    57.5   106.5   105.5    57.5   106.5     100     100   106.5

Downstream Bridge Cross Section Data
Station Elevation Data    num=      36
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     107    4.07  106.89     6.3  106.87   10.68  106.72   14.06  106.39
   19.52  106.07   19.72  106.06   20.51  105.87   24.55   104.9    25.6  104.69
   29.27  104.03   30.75  103.91   38.87   103.6   38.97  103.55   39.11  103.46
   46.53  101.22   47.27  101.26   48.47  101.21   49.96  101.08   50.54  101.08
   52.23  100.96   53.38  100.86   55.67  101.92   60.14  103.67   60.87   104.1
   61.05  104.26   67.47  105.44    70.2  105.97      76  106.32   81.93  106.48
   82.52  106.66   84.59  106.82   90.33  107.56   96.15  108.18   96.84  108.23
  102.04  108.73

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .05   20.51     .05    70.2     .05

Bank Sta: Left   Right    Coeff Contr.   Expan.
         20.51    70.2             .1       .3

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =  105.85
Energy head used in spillway design         =
```

Spillway height used in design =
Weir crest shape = Broad Crested

Number of Bridge Coefficient Sets = 1

Low Flow Methods and Data
Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
Energy Only

Additional Bridge Parameters
Add Friction component to Momentum
Do not add Weight component to Momentum
Class B flow critical depth computations use critical depth inside the bridge at the upstream end
Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT Profile #100-yr

E.G. US. (m)	104.66	Element	Inside BR US	Inside BR DS
W.S. US. (m)	104.64	E.G. Elev (m)	104.66	104.65
Q Total (m3/s)	47.12	W.S. Elev (m)	104.61	104.60
Q Bridge (m3/s)	47.12	Crit W.S. (m)	102.47	102.47
Q Weir (m3/s)		Max Chl Dpth (m)	3.75	3.74
Weir Sta Lft (m)		Vel Total (m/s)	1.00	1.01
Weir Sta Rgt (m)		Flow Area (m2)	46.93	46.82
Weir Submerg		Froude # Chl	0.18	0.18
Weir Max Depth (m)		Specif Force (m3)	80.04	79.68
Min El Weir Flow (m)	106.50	Hydr Depth (m)	3.13	3.12
Min El Prs (m)	105.50	W.P. Total (m)	15.56	15.56
Delta EG (m)	0.02	Conv. Total (m3/s)	1959.3	1951.1
Delta WS (m)	0.02	Top Width (m)	15.00	15.00
BR Open Area (m2)	60.28	Frctn Loss (m)	0.01	0.00
BR Open Vel (m/s)	1.01	C & E Loss (m)	0.00	0.01
Coef of Q		Shear Total (N/m2)	17.10	17.20
Br Sel Method	Energy only	Power Total (N/m s)	17.17	17.32

CROSS SECTION

RIVER: 2
REACH: 1 RS: 14.4

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	107	4.07	106.89	6.3	106.87	10.68	106.72	14.06	106.39
19.52	106.07	19.72	106.06	20.51	105.87	24.55	104.9	25.6	104.69
29.27	104.03	30.75	103.91	38.87	103.6	38.97	103.55	39.11	103.46
46.53	101.22	47.27	101.26	48.47	101.21	49.96	101.08	50.54	101.08
52.23	100.96	53.38	100.86	55.67	101.92	60.14	103.67	60.87	104.1
61.05	104.26	67.47	105.44	70.2	105.97	76	106.32	81.93	106.48
82.52	106.66	84.59	106.82	90.33	107.56	96.15	108.18	96.84	108.23
102.04	108.73								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	20.51	.05	70.2	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
20.51	70.2	45	45	45	.1	.3

CROSS SECTION OUTPUT Profile #100-yr

E.G. Elev (m)	104.65	Element	Left OB	Channel	Right OB
Vel Head (m)	0.03	Wt. n-Val.		0.050	
W.S. Elev (m)	104.62	Reach Len. (m)	45.00	45.00	45.00
Crit W.S. (m)		Flow Area (m2)		66.81	
E.G. Slope (m/m)	0.000591	Area (m2)		66.81	
Q Total (m3/s)	47.12	Flow (m3/s)		47.12	
Top Width (m)	37.02	Top Width (m)		37.02	
Vel Total (m/s)	0.71	Avg. Vel. (m/s)		0.71	
Max Chl Dpth (m)	3.76	Hydr. Depth (m)		1.80	
Conv. Total (m3/s)	1938.0	Conv. (m3/s)		1938.0	
Length Wtd. (m)	45.00	Wetted Per. (m)		38.25	
Min Ch El (m)	100.86	Shear (N/m2)		10.13	
Alpha	1.00	Stream Power (N/m s)		7.14	
Frctn Loss (m)	0.03	Cum Volume (1000 m3)	0.06	17.50	0.64
C & E Loss (m)	0.00	Cum SA (1000 m2)	0.16	9.85	0.45

CROSS SECTION

RIVER: 2
REACH: 1 RS: 14

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	107	4.07	106.89	6.3	106.87	10.68	106.72	14.06	106.39
19.52	106.07	19.72	106.06	20.51	105.87	24.55	104.9	25.6	104.69
29.27	104.03	30.75	103.91	38.87	103.6	38.97	103.55	39.11	103.46
46.53	101.22	47.27	101.26	48.47	101.21	49.96	101.08	50.54	101.08
52.23	100.96	53.38	100.86	55.67	101.92	60.14	103.67	60.87	104.1
61.05	104.26	67.47	105.44	70.2	105.97	76	106.32	81.93	106.48
82.52	106.66	84.59	106.82	90.33	107.56	96.15	108.18	96.84	108.23
102.04	108.73								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	20.51	.05	70.2	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
20.51	70.2	90	90	90	.1	.3

CROSS SECTION OUTPUT Profile #100-yr

E.G. Elev (m)	104.62	Element	Left OB	Channel	Right OB
Vel Head (m)	0.03	Wt. n-Val.		0.050	
W.S. Elev (m)	104.59	Reach Len. (m)	90.00	90.00	90.00
Crit W.S. (m)		Flow Area (m2)		65.77	
E.G. Slope (m/m)	0.000616	Area (m2)		65.77	
Q Total (m3/s)	47.12	Flow (m3/s)		47.12	
Top Width (m)	36.71	Top Width (m)		36.71	
Vel Total (m/s)	0.72	Avg. Vel. (m/s)		0.72	
Max Chl Dpth (m)	3.73	Hydr. Depth (m)		1.79	
Conv. Total (m3/s)	1898.6	Conv. (m3/s)		1898.6	
Length Wtd. (m)	90.00	Wetted Per. (m)		37.93	
Min Ch El (m)	100.86	Shear (N/m2)		10.47	
Alpha	1.00	Stream Power (N/m s)		7.50	
Frctn Loss (m)	0.12	Cum Volume (1000 m3)	0.06	14.52	0.64
C & E Loss (m)	0.01	Cum SA (1000 m2)	0.16	8.19	0.45

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 2
REACH: 1 RS: 13

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	108.5	8.15	107.66	10.56	107.39	12.31	107.25	19.79	106.22
22.11	105.95	29.8	105.14	30.24	105.06	31.48	104.99	34.34	104.86
39.35	104.43	40.65	104.19	43.95	103.61	47.48	102.94	49.23	101.36
50.01	100.42	50.2	100.38	51.34	100.32	52.8	100.59	52.96	100.59
53.24	100.8	54.13	103.38	57.15	103.58	69.56	104.54	73.51	104.65
78	104.44	84.33	104.5	86.12	104.56	89.63	104.65	94.27	104.86
96.7	104.96	103.44	105.35	107.42	105.78				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	39.35	.05	69.56	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
39.35	69.56	85	85	85	.1	.3

CROSS SECTION OUTPUT Profile #100-yr

E.G. Elev (m)	104.50	Element	Left OB	Channel	Right OB
Vel Head (m)	0.10	Wt. n-Val.		0.050	
W.S. Elev (m)	104.40	Reach Len. (m)	85.00	85.00	85.00
Crit W.S. (m)		Flow Area (m2)		34.38	
E.G. Slope (m/m)	0.004161	Area (m2)		34.38	
Q Total (m3/s)	47.12	Flow (m3/s)		47.12	
Top Width (m)	28.24	Top Width (m)		28.24	
Vel Total (m/s)	1.37	Avg. Vel. (m/s)		1.37	
Max Chl Dpth (m)	4.08	Hydr. Depth (m)		1.22	
Conv. Total (m3/s)	730.4	Conv. (m3/s)		730.4	
Length Wtd. (m)	85.00	Wetted Per. (m)		31.40	
Min Ch El (m)	100.32	Shear (N/m2)		44.68	
Alpha	1.00	Stream Power (N/m s)		61.24	
Frctn Loss (m)	0.19	Cum Volume (1000 m3)	0.06	10.01	0.64
C & E Loss (m)	0.02	Cum SA (1000 m2)	0.16	5.27	0.45

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 2
REACH: 1 RS: 12

INPUT
Description:
Station Elevation Data num= 40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	109.74	5.68	109.56	11.44	109.29	14.3	109.06	19.72	108.7
26.24	107.97	33.45	107.05	40.73	105.79	44.68	105.14	46.62	104.84
49.34	104.46	51.89	104.03	53.82	103.84	60.99	102.99	62.33	102.81
65.06	101.31	66.59	100.29	66.99	100.23	68.16	100.12	69.18	99.96
69.76	99.99	70.61	100.82	72.42	102.3	78.12	103.51	80.06	103.94
86.24	104.39	90.67	104.78	99.22	104.52	102.81	104.5	109.89	104.76
111.44	104.79	112.52	104.8	120.41	105.31	120.5	105.3	123.52	105.63
128.43	106.12	128.92	106.19	130.16	106.3	136.47	106.72	139.93	107.02

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	46.62	.05	90.67	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
46.62	90.67	100	100	100	.1	.3

CROSS SECTION OUTPUT Profile #100-yr

E.G. Elev (m)	104.29	Element	Left OB	Channel	Right OB
Vel Head (m)	0.04	Wt. n-Val.		0.050	
W.S. Elev (m)	104.25	Reach Len. (m)	100.00	100.00	100.00
Crit W.S. (m)		Flow Area (m2)		50.32	
E.G. Slope (m/m)	0.001378	Area (m2)		50.32	
Q Total (m3/s)	47.12	Flow (m3/s)		47.12	
Top Width (m)	33.67	Top Width (m)		33.67	
Vel Total (m/s)	0.94	Avg. Vel. (m/s)		0.94	
Max Chl Dpth (m)	4.29	Hydr. Depth (m)		1.49	
Conv. Total (m3/s)	1269.3	Conv. (m3/s)		1269.3	
Length Wtd. (m)	100.00	Wetted Per. (m)		35.53	
Min Ch El (m)	99.96	Shear (N/m2)		19.14	
Alpha	1.00	Stream Power (N/m s)		17.92	
Frctn Loss (m)	0.09	Cum Volume (1000 m3)	0.06	6.41	0.64
C & E Loss (m)	0.00	Cum SA (1000 m2)	0.16	2.64	0.45

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 2
REACH: 1 RS: 11

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	105.8	5.37	105.84	9.16	105.78	12.24	105.85	15.02	105.87
19.73	105.97	21.2	106.01	30.39	106.1	30.51	106.1	36.16	105.73
37.36	105.83	40.18	105.75	40.9	105.72	41.32	105.68	49.91	104.92
50.15	104.88	55.74	103.76	56.91	103.51	59.7	102.35	60.68	101.54
62.34	99.62	62.89	99.55	64.1	99.58	64.69	99.54	65.42	99.51
65.91	99.89	68.64	101.39	70.18	102.04	75.97	103.06	76.65	103.11
95.56	105.51								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	56.91	.05	75.97	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
56.91	75.97	0	0	0	.1	.3

CROSS SECTION OUTPUT Profile #100-yr

E.G. Elev (m)	104.20	Element	Left OB	Channel	Right OB
Vel Head (m)	0.04	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (m)	104.16	Reach Len. (m)	25.00	25.00	25.00
Crit W.S. (m)		Flow Area (m2)	1.02	50.64	5.09
E.G. Slope (m/m)	0.000623	Area (m2)	1.02	50.64	5.09
Q Total (m3/s)	47.12	Flow (m3/s)	0.24	45.15	1.73
Top Width (m)	31.20	Top Width (m)	3.18	19.06	8.97
Vel Total (m/s)	0.83	Avg. Vel. (m/s)	0.23	0.89	0.34
Max Chl Dpth (m)	4.65	Hydr. Depth (m)	0.32	2.66	0.57
Conv. Total (m3/s)	1888.2	Conv. (m3/s)	9.4	1809.3	69.5
Length Wtd. (m)	25.00	Wetted Per. (m)	3.24	21.20	9.04
Min Ch El (m)	99.51	Shear (N/m2)	1.92	14.58	3.44
Alpha	1.11	Stream Power (N/m s)	0.44	13.00	1.17
Frctn Loss (m)	0.05	Cum Volume (1000 m3)	0.01	1.36	0.39
C & E Loss (m)	0.02	Cum SA (1000 m2)			

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

SUMMARY OF MANNING'S N VALUES

River:1

Reach	River Sta.	n1	n2	n3
1	10	.05	.05	.05
1	9	.05	.05	.05
1	8	.05	.05	.05
2	7	.05	.05	.05
2	6	.05	.05	.05
2	5.6	.05	.05	.05
2	5.5	Bridge		
2	5.4	.05	.05	.05
2	5	.05	.05	.05
2	4	.05	.05	.05
2	3	.05	.05	.05
2	2	.05	.05	.05
2	1	.05	.05	.05

River:2

Reach	River Sta.	n1	n2	n3
1	15	.05	.05	.05
1	14.6	.05	.05	.05
1	14.5	Bridge		
1	14.4	.05	.05	.05
1	14	.05	.05	.05
1	13	.05	.05	.05
1	12	.05	.05	.05
1	11	.05	.05	.05

SUMMARY OF REACH LENGTHS

River: 1

Reach	River Sta.	Left	Channel	Right
1	10	85	85	85
1	9	85	85	85
1	8	30	30	30
2	7	50	50	50
2	6	37.5	37.5	37.5
2	5.6	25	25	25
2	5.5	Bridge		
2	5.4	37.5	37.5	37.5
2	5	90	90	90
2	4	105	105	105
2	3	100	100	100
2	2	110	110	110
2	1	0	0	0

River: 2

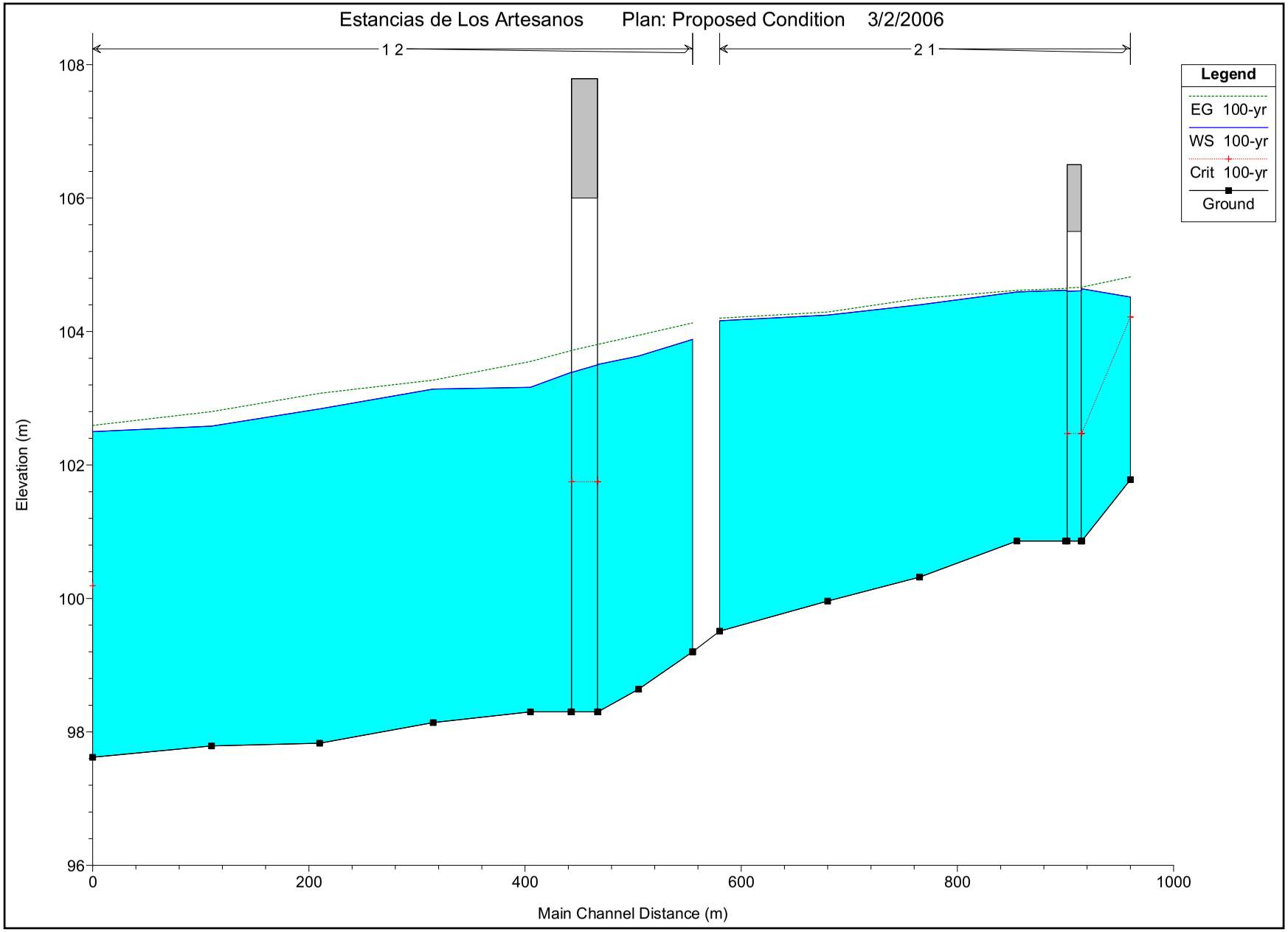
Reach	River Sta.	Left	Channel	Right
1	15	45	45	45
1	14.6	15	15	15
1	14.5	Bridge		
1	14.4	45	45	45
1	14	90	90	90
1	13	85	85	85
1	12	100	100	100
1	11	0	0	0

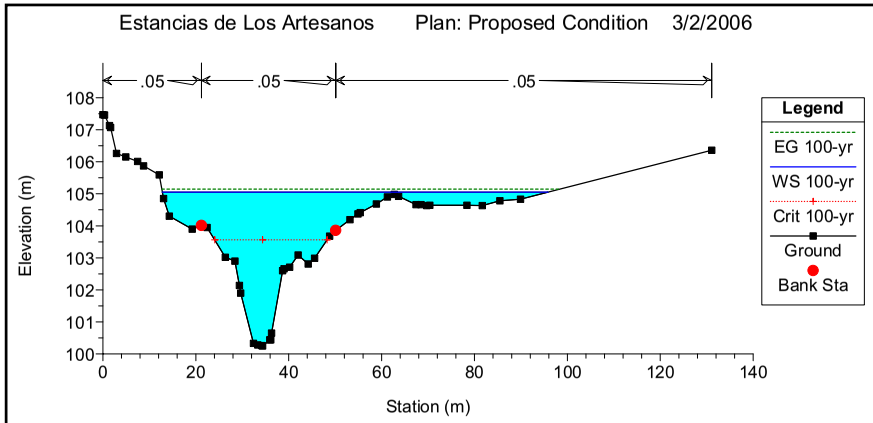
SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: 1

Reach	River Sta.	Contr.	Expan.
1	10	.1	.3
1	9	.1	.3
1	8	.1	.3
2	7	.1	.3
2	6	.1	.3
2	5.6	.1	.3
2	5.5	Bridge	
2	5.4	.1	.3
2	5	.1	.3
2	4	.1	.3
2	3	.1	.3
2	2	.1	.3
2	1	.1	.3

River: 2

Reach	River Sta.		Contr.	Expan.
1	15		.1	.3
1	14.6		.1	.3
1	14.5	Bridge		
1	14.4		.1	.3
1	14		.1	.3
1	13		.1	.3
1	12		.1	.3
1	11		.1	.3


Estancias de Los Artesanos Plan: Proposed Condition 3/2/2006
1 2
2 1
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Elevation (m)
108
106
104
102
100
98
96
0
200
400
600
800
1000
Main Channel Distance (m)


Estancias de Los Artesanos Plan: Proposed Condition 3/2/2006
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Elevation (m)
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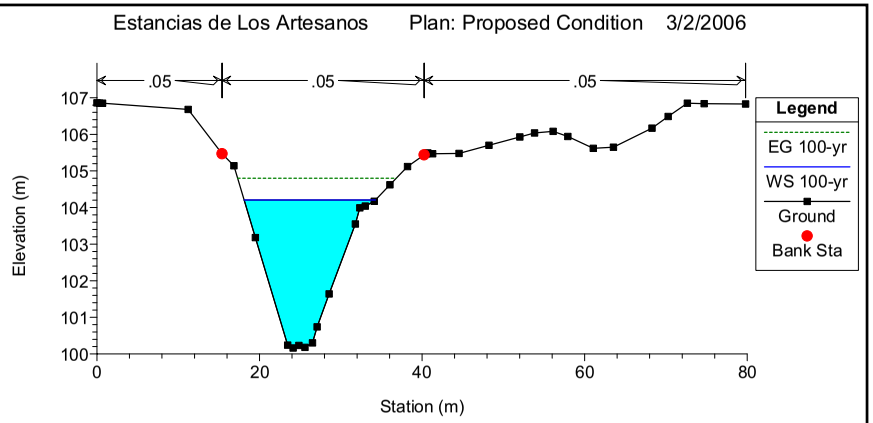
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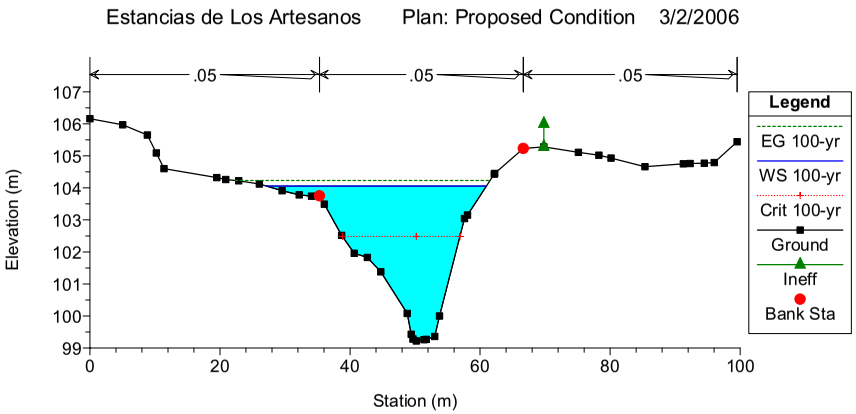
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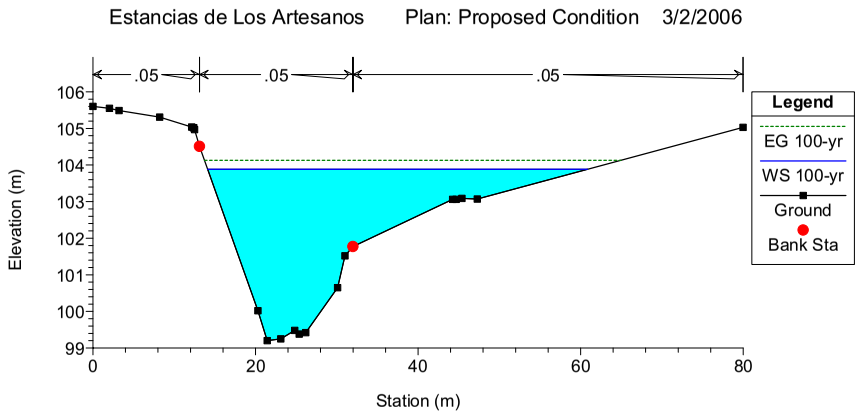
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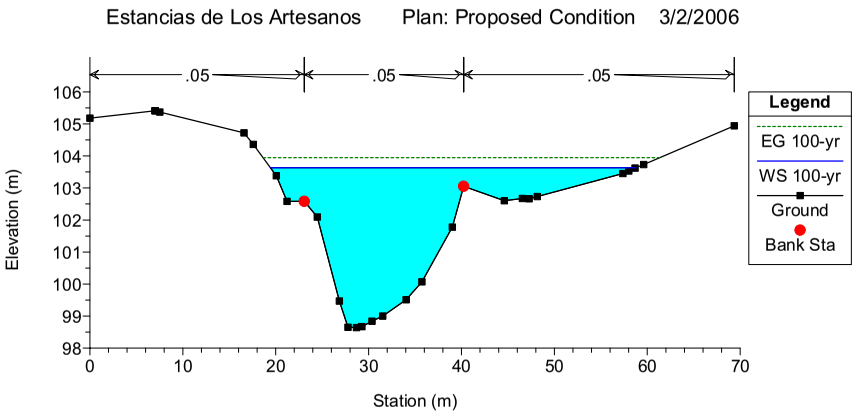
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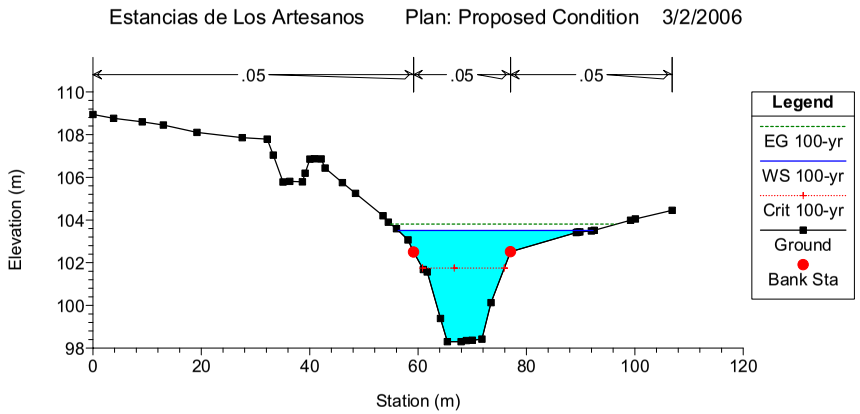
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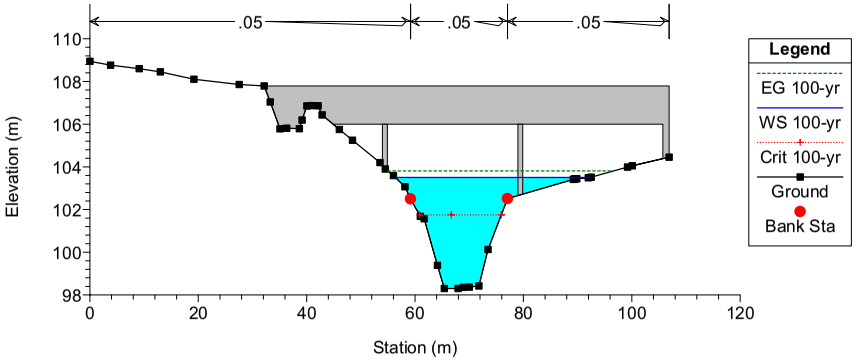
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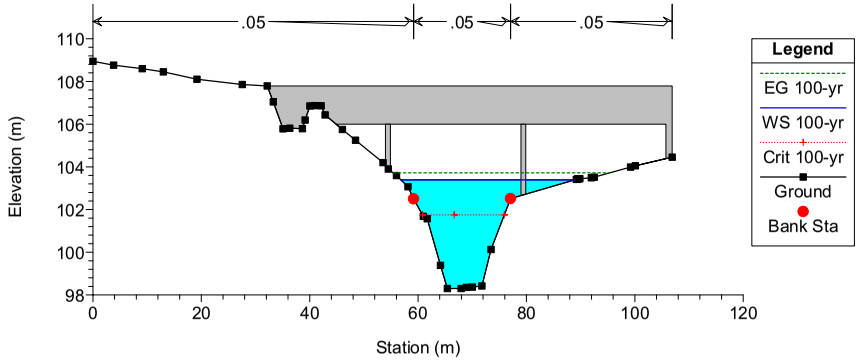
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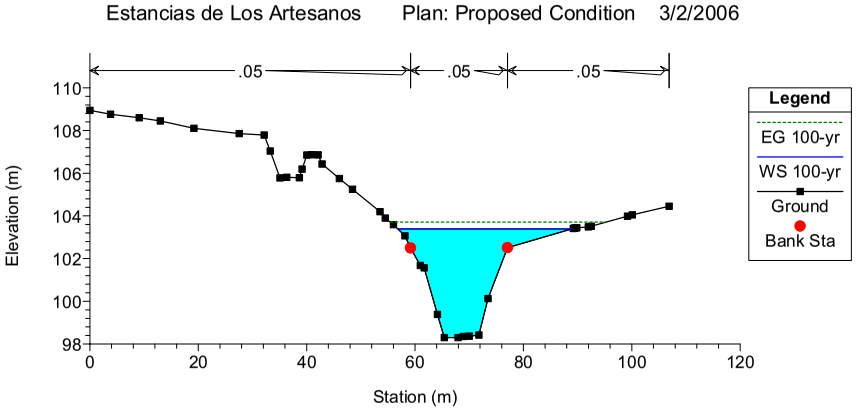
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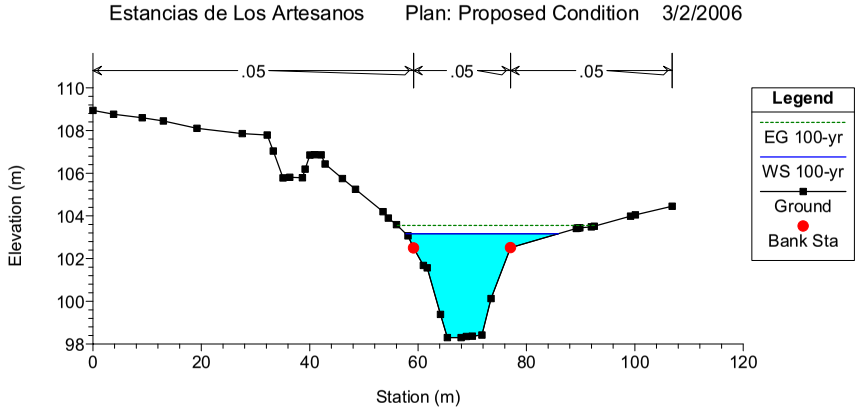
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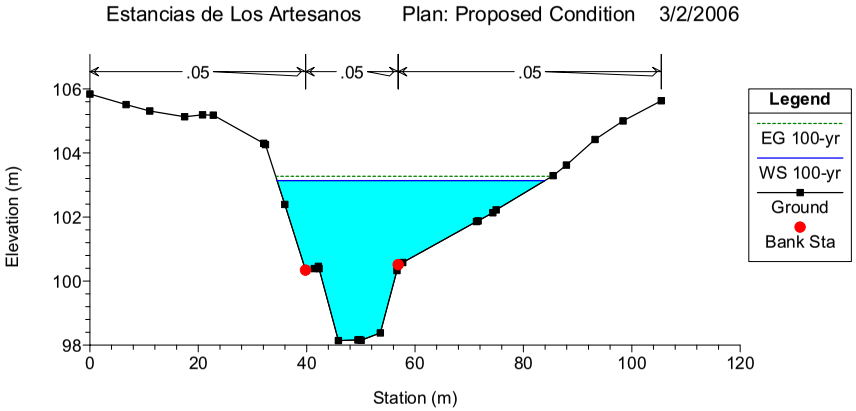
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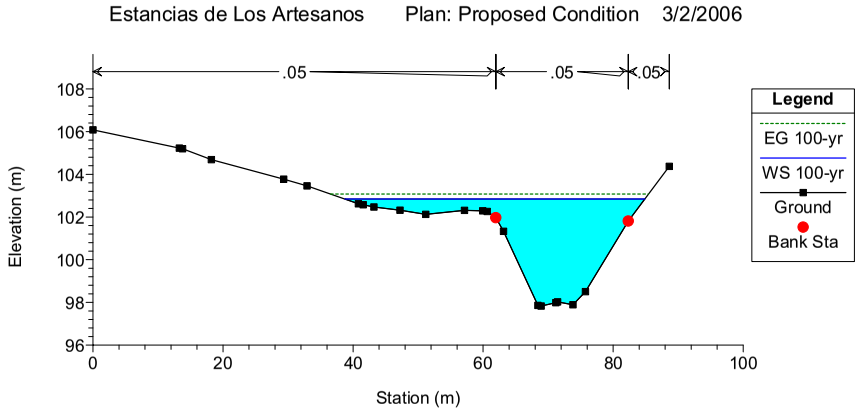
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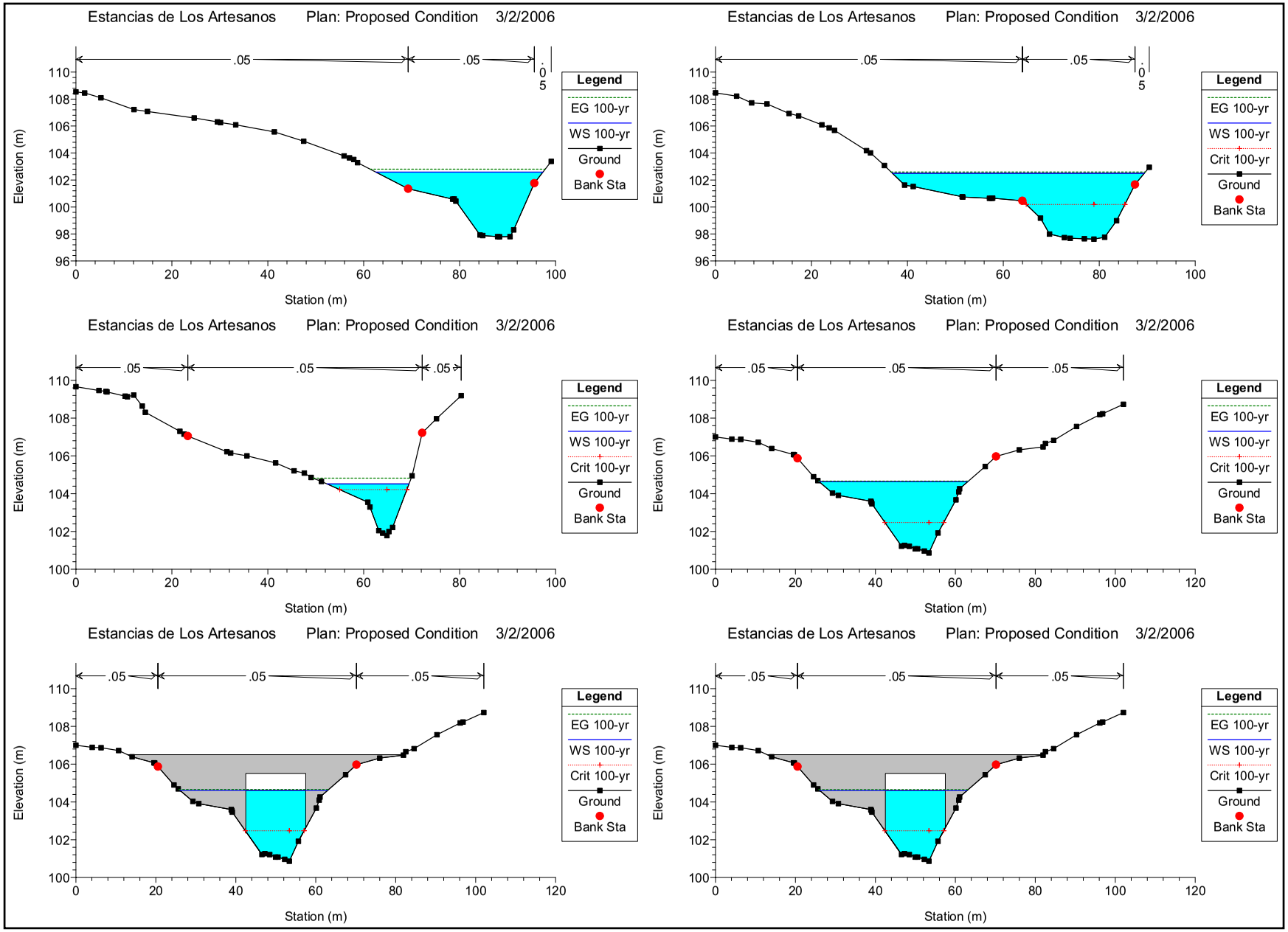
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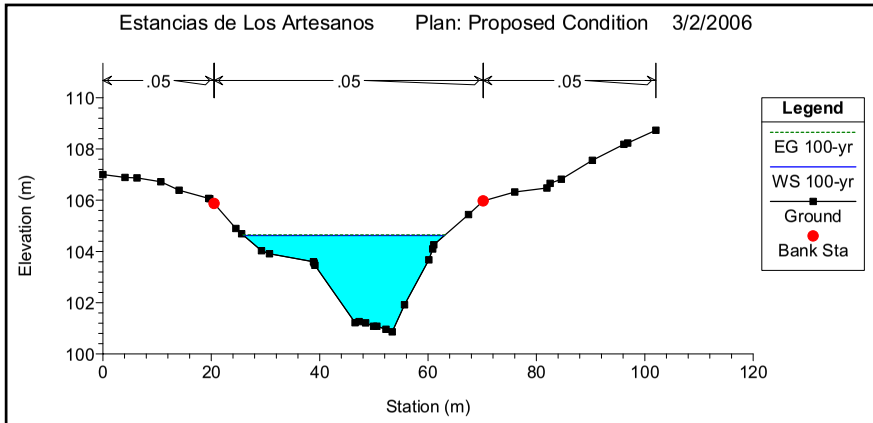
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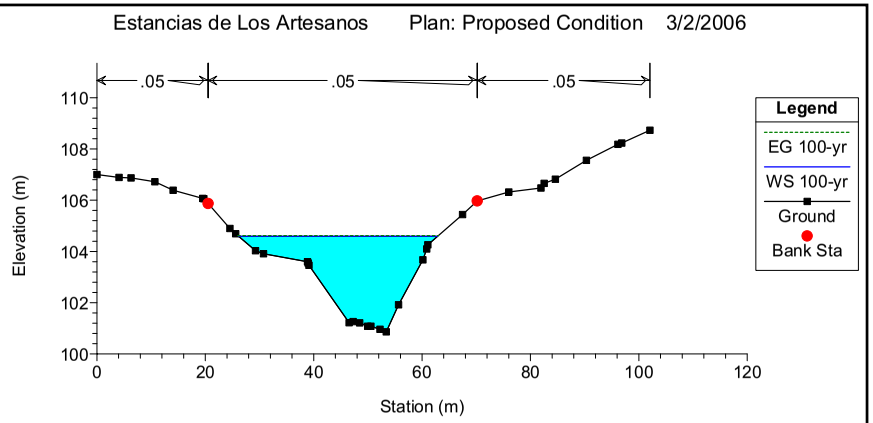
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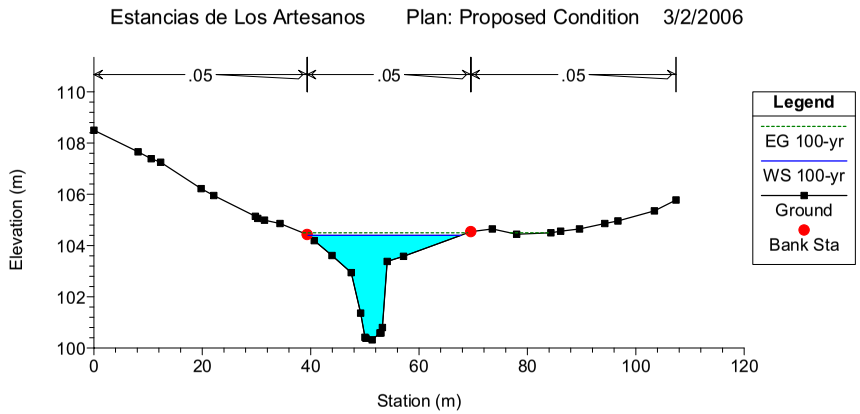
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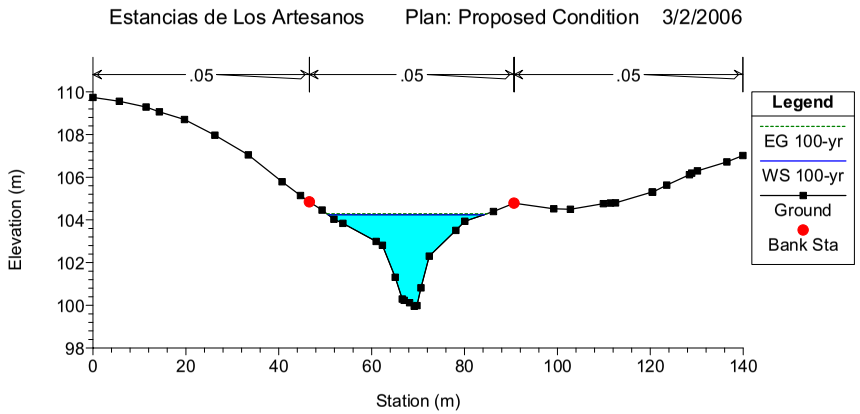
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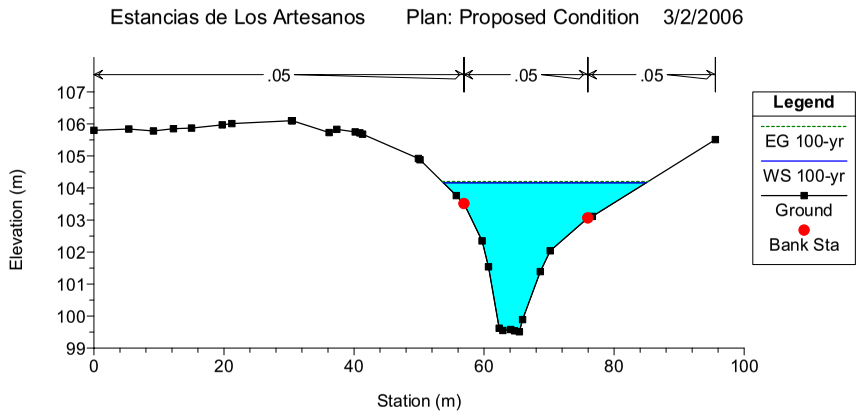
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