TABLE OF CONTENTS

I. INTRODUCTION 1
Purpose of Study 1
Approach 2
Authorization 2
II. BACKGROUND INFORMATION 3
Location 3
Topography 3
Water Bodies 3
Field Information 3
Study Level 4
III. HYDROLOGIC ANALYSIS 5
Drainage Areas 5
Curve Numbers 6
Lag Time 6
Rainfall Data 7
Time Distribution of Rainfall 8
Rainfall Extraction 8
Hydrologic Analysis Results 8
IV. RUNOFF MITIGATION ANALYSIS 11
Approach 11
Methodology 11
Depth-Volume Relations 11
Flow Rating 11
Results 12
Mitigation Structure Dimensions and Accessories 15
Pond Discharge 16
V. HYDRAULIC ANALYSIS 17
Roughness 17
Contraction and Expansion Coefficients 17

Starting Water Surface Elevation 18
Hydraulics for Existing Condition 18
Hydraulics for Proposed Condition 19
Results 20
V. CONCLUSIONS AND RECOMMENDATIONS 21
Study Limits 22
BIBLIOGRAPHY 23
LIST OF FIGURES iii
LIST OF APPENDIXES iv

LIST OF FIGURES

FIGURE 1. Location Map

FIGURE 2. Proposed Development Layout

FIGURE 3. Topography for Existing Condition

FIGURE 4. Existing Condition Drainage Areas

FIGURE 5. Proposed Condition Drainage Areas

FIGURE 6. Soils Map

FIGURE 7. FEMA's Flood Map

FIGURE 8. Layout of Proposed Structures

FIGURE 9. Schematics of the Detention Pond P1

FIGURE 10. Schematics of the Detention Pond P2

FIGURE 11. Schematics of the Detention Pond P4

FIGURE 12. Location of Cross Sections

FIGURE 13. 100-year Flood Footprint

FIGURE 14. Proposed Bridge 1

FIGURE 15. Proposed Bridge 2

FIGURE 16. Proposed Bridge 3

FIGURE 17. Proposed Bridge 4

LIST OF APPENDIXES

APPENDIX A. Hydrologic Parameters Estimation

APPENDIX B. HEC-1 Results for Existing Condition

APPENDIX C. HEC-1 Results for Proposed Condition

APPENDIX D. Detention Structure Volume and Discharge to Depth Relations

APPENDIX E. HEC-1 Results for Proposed Condition with Mitigation

APPENDIX F. HECRAS Results for Existing Condition

APPENDIX G. HECRAS Results for Proposed Condition

APPENDIX H. Field Work

HYDROLOGIC-HYDRAULIC STUDY
FOR MONTE ARENAS
VEGA BAJA, PUERTO RICO

Casiano Ancalle, P.E.

January, 2005

I. INTRODUCTION

A housing development project named Monte Arenas is to be constructed in the Municipality of Vega Baja. The site is located at PR-155 and can be accessed from highway PR-645. The project consists on housing units, recreational facilities, and green areas.

According to the regulatory flood maps the area of the project is non-floodable. Three storm runoff watercourses run across the site. The development of the project will not affect neither of these watercourses but for roadway crossings.

It is expected that the development of the site will increase runoff. This increase has to be mitigated in compliance with the requirements of the Puerto Rico Planning Board Regulation No. 3.

Purpose of Study

The purpose of the study is to determine the flood levels and footprint for the watercourses crossing the site, and to size the watercourse crossing structures from which two are located at the project access road. In addition, as the development of the site will increase the peak runoff discharge, the study will quantify the increase and provide means for mitigating it according to the Puerto Rico's Planning Board Regulation No. 3.

Approach

The following steps have been undertaken throughout the study:

Hydrologic Analysis: The following parameters were determined for the hydrologic analysis: drainage areas, average soil curve number and runoff lag time. Based on these parameters, discharge for 100-years frequency storm was determined for existing and proposed condition. HEC-1 model was used. Discharges for more recurrent storm events such as: 2-, 10-, 25-, 50- and 100-years, were also determined.

Hydraulic Analysis: A hydraulic analysis was performed in order to estimate the water surface elevations for the three storm watercourses. Existing condition's water levels were determined first. Water levels considering the crossing structures were determined. Comparison of water elevations for both conditions would fall within the limits established by Regulation No. 13. The US Army Corps of Engineer's HECRAS computer model was used.

Mitigation Analysis: A mitigation analysis was made in order to counteract the impact of the proposed development. A mitigation pond was employed as a detention structure. HEC-1 model was used for the mitigation analysis. 2-, 10-, 25-, 50- and 100 frequency discharges were analyzed for mitigation.

Conclusions and recommendations were elaborated.

Authorization

Eng Luis Franqui on behalf Rio Piedras Housing Corp. authorized this study, under a contract signed with Eng. Casiano Ancalle, principal of CA Engineering.

II. BACKGROUND INFORMATION

Location

The project site is located at both sides of road PR-645 that branches to the south from state road PR-155, in Quebrada Arenas Ward, Municipality of Vega Baja. The approximate total area of the project is 172 acres. Figure 1 illustrates the project site location on the USGS Quadrangle. Figure 2 shows the development layout.

Topography

The topography of the site is uneven; and is characterized by sloping to several directions, mainly to the north and to the east and in direction to the watercourses. The eastern side of the site slopes toward the east. Ground elevations range from 200 to 115 meters (m.s.l.). See Figure 3.

Water Bodies

Two water bodies are related to the site. No flow records are available from them. The majority of the project's runoff discharges to these watercourses. The remaining runoff discharges to the watercourse located at the east of the site

Former Studies

No hydrologic-hydraulic studies for the area of the project have found during the information research. This study is original in its conception, and the results found are correspondent to the parameters adopted during the hydrologic and hydraulic simulation.

Field Information

Field data used in this study was taken from the topographic information provided by Eng. Luis

Franqui. Results obtained in this study are strictly based on this information. The topography is tied to mean sea level reference. This fieldwork is included in the pocket attached to the back cover of this study as Appendix H.

Study Level

This study is intended as an aid to the design engineer in the preparation of the construction drawings for the recommended structures. Figures, schematics and drawings must not be used as construction drawings. The design engineer must elaborate the construction drawings in agreements with the recommendations of this study.

III. HYDROLOGIC ANALYSIS

The computer program entitled Flood Hydrograph Package (HEC-1), developed by the U.S. Army Corps of Engineers [1990], was used for the performance of the hydrologic analysis. Using this program, the Unit Hydrograph method and the Runoff Curve Number (CN) method, both developed by the Soil Conservation Service (SCS), were applied to determine the design hydrograph. This was computed by a process of translating the rainfall excess into a runoff hydrograph known as convolution.

Peak discharges for 2-, 10-, 25-, 50- and 100-year storm frequency were estimated for the existing condition and proposed condition.

Drainage Areas

Seven drainage areas have been identified for the existing condition at the project site; they were labeled P1, P2, P3, P4, P5, P6 and P7, with six offsite areas E1, E2, E3A, E3B E4 and E5 as shown in Figure 4. At proposed condition, the runoff pattern has been kept by maintaining the drainage areas close to that of the existing condition; with the exception of area P4, which has been subdivided in P4A, P4B and P4C, as shown in Figure 5. The total area of the project site is approximately 171.82 acres.

Table 1 shows the drainage areas taken into account for the hydrologic analysis, for both existing and proposed condition.

Table 1
Drainage Areas

	Name	Area, acres	
		Existing	Proposed
Project Areas	P1	51.57	--
	P1A	--	31.63

	P1B	--	19.00
	P2	25.70	30.22
	P3	8.94	6.96
	P4	36.67	--
	P4A	--	14.46
	P4B	--	15.70
	P4C	--	9.50
	P5	14.31	11.36
	P6	16.91	11.57
	P7	17.72	21.41
Offsite Areas	E1	110.13	110.13
	E2	555.45	55.45
	E3A	20.63	20.63
	E3B	15.04	15.04
	E4	9.15	9.15
	E5	14.01	14.01

Curve Numbers

Curve numbers were estimated from the the SCS's Soil Maps, the project area and the offsite basins are mainly classified in 8 types: Colinas clay, Santa Clara clay, Juncal clay, Naranjo clay, Moca clay, Vega Alta sandy clay. Weighted curve numbers were found for each individual drainage area. A CN value of 95 was assumed for the developed project site.

Appendix A includes the Curve Number computations for existing and proposed condition. Figure 6 shows the soil map corresponding to the project site and offsite areas.

Lag Time

The Lag Time (T_{Lag}) was estimated using the SCS method defined as:

$$T_{Lag} = \frac{L^{0.8}(S+1)^{0.7}}{1900\ Y^{0.5}}$$

where : L = channel length (ft)

S = 1000/CN - 10

Y = average watershed slope

Detailed Lag Time calculations are shown in Appendix A.

Rainfall Data

The variation of rainfall volume with time was required as part of the storm input for the SCS Curve Number method. Therefore, the development of a design storm with a rainfall frequency and duration was necessary to compute the design hydrograph for the watershed. Rainfall data used in this study was obtained from the Technical Paper No. 42 (TP-42) [National Weather Service, 1961].

The rainfall event of 100-, 50-, 25-, 10 and 2-years frequency for many durations was used and are shown in Table 2. Rainfall for 5 and 15 minutes were estimated by regression analysis, details of these calculations are shown in Appendix A.

Table 2
Rainfall for 2, 10, 25, 50 y 100 years

Duration *Hrs.*	**Precipitation** *Inches*				
	2-yr	***10-yr***	***25-yr***	***50-yr***	***100-yr***
0.083	0.47	0.55	0.61	0.64	0.99
0.25	1.02	1.26	1.47	1.55	2.15
1	2.10	3.00	3.50	3.80	4.40
2	2.50	3.70	4.50	5.00	5.20
3	2.70	4.10	5.10	5.20	6.10
6	3.30	5.40	6.30	7.00	8.00
12	4.00	6.60	7.70	8.70	9.70
24	4.60	7.60	9.40	10.50	11.50

Depth-Area Adjustment

Point rainfall estimates obtained from the TP-42 represent values for areas up to 10 mi^2; therefore, a depth-area adjustment should be applied to the rainfall data when the watershed area is greater. In this case, the largest watershed consists of 0.868 mi^2. Hence, this adjustment was not applied.

Time Distribution of Rainfall

The triangular type methodology was used to distribute the rainfall depth in time. This method is considered acceptable for small areas.

Rainfall Extraction

Rainfall extraction such as vegetative interception, depressional storage, and infiltration were estimated using the SCS's Runoff Curve Number method. Though this method is used to predict runoff volume directly, the rainfall extraction is incorporated in the model as function of the curve number of the watershed.

Hydrologic Analysis Results

Hydrologic analysis was made for all the drainage areas. Individual and composite runoff hydrographs were obtained using HEC-1 methodology. Table 3 shows the summary of the results for this analysis. Input and output data for the HEC-1 model for existing and proposed condition are included in Appendix B and C, respectively.

Table 3
Peak Discharges

AREA		Peak Discharge, cfs				
		2-yr	10-yr	25-yr	50-yr	100-yr
Existing	EA3	52	87	106	116	165
	P3	31	45	53	57	85
	COMB1	83	132	159	173	250

	E3B	51	76	90	97	144
	COMB2	134	208	249	270	394
	E2	512	965	1231	1382	1607
	P2	67	106	127	138	194
	E1	175	323	404	449	585
	P1	84	147	182	202	253
	P7	48	75	89	97	138
	COMB3	106	189	235	261	320
	P4	94	154	187	204	285
	P5	47	71	85	91	138
	P6	40	66	79	87	119
	E4	23	39	48	52	79
	E5	31	53	65	71	99
Proposed	E3A	52	87	106	116	165
	P3	29	38	43	45	62
	COMB1	81	125	149	161	227
	E3B	51	76	90	97	144
	COMB2	132	201	238	258	371
	E2	512	965	1231	1382	1607
	P2	100	134	154	164	214
	E1	175	323	404	449	585
	P1A	75	106	124	134	161
	P7	77	103	117	125	167
	COMB3	127	178	207	223	275
	P1B	47	67	78	84	102
	COMB4	103	187	224	242	309
	P4A	48	65	74	79	104
	P4B	56	74	85	91	120
	P4C	34	45	51	55	73
	COMB5	94	142	173	189	247
	P5	47	62	70	74	102

P6	39	52	59	63	83
E4	23	39	48	52	79
E5	31	53	65	71	99

IV. RUNOFF MITIGATION ANALYSIS

The development of the site will increase the runoff discharge. The Puerto Rico Planning Board Regulation No. 3 requires a flow mitigation structure wherever an increase in discharge is produced. Therefore, detention structures that will mitigate the overall increase in runoff discharge were used.

Approach

The discharge from areas P1, P2, P4 and P7 has shown increase. They will be provided by detention ponds. These ponds will reduce the combined peak discharge of the project drainage areas to magnitudes below the discharge at existing condition. Three detention ponds were evaluated in the study. Areas P1 and P7 will be combined and mitigated in one single detention pond. Pond-2 will be located to the east of Area P2. Pond-1 which serves P7 and part of P1 will be located to the west of area P7 and Pond-4 to the south east of area P4. See Figure 8.

Methodology

The computer program HEC-1 provides means for routing a hydrograph through detention structures. The purpose of detention is that the proposed condition peak discharge does not exceed the existing condition peak discharge.

Depth-Volume Relations

Volume-depth relations were developed for the ponds. Pond-1 which serves areas P1 and P7 is provided with a 3,010 -square meter base area; Pond-2 with a 1,228-square-meter base area and Pond-4 with a 1124-square-meter base area. Bank slopes for both ponds area 2H:1V. Volume-Depth curve computations are included in Appendix D.

Flow Rating

Flow-Depth relation for the detention Pond-1 was estimated considering the discharge through

two (2) 2.5'-diameter orifices located at the bottom of the pond, two (2) 3.5'- diameter orifice located at the 1.5m above the bottom of the pond, and a 6.10-meter long weir at 2.70 meters above the pond bottom. For the detention Pond-2, flow was estimated considering the discharge through a 3.0' -diameter orifice located at the bottom of the pond and a 9.14-meter long weir at 2.80 meter above the pond bottom . Flow for Pond-4 was rated considering the discharge through one (1) 0.8' -diameter orifice located at the bottom of the pond, one (1) 3'- diameter orifice located at the 1.5 m bottom, and a 7.92-meter long weir at 2.70 meter abover the pond bottom. Flow through the orifices was computed using Torrecelli's formula. Appendix D shows the computations for the flow-depth relationship and the curves.

Results

The results of the detention analysis show that the proposed detention ponds provide appropriate runoff mitigation for the 100-year frequency discharges. Routing the discharge through the detention Pond-1, the 100-year discharge was reduced from 326 cfs to 289 cfs, which is less than the discharge computed for existing condition, 320 cfs. At Pond 2, the 100-year discharge was reduced from 214 cfs to 159 cfs, which is less than the discharge computed for existing condition, 194 cfs. At Pond 4, the 100-year discharge was reduced from 291 cfs to 247 cfs., which is less than the discharge computed for existing condition, 285 cfs; thus complying with the Puerto Rico Planning Board Regulation No.3. Mitigation for more recurrent discharges was also verified.

Input and output data for the HEC-1 mitigation model are included in Appendix E. Table 4 shows the comparison of the discharges for existing, proposed and mitigation condition.

Table 4
Peak Discharges results for Existing, Proposed and Mitigation

	AREA	Peak Discharge, cfs				
		2-yr	10-yr	25-yr	50-yr	100-yr
Existing	EA3	52	87	106	116	165
	P3	31	45	53	57	85
	COMB1	83	132	159	173	250
	E3B	51	76	90	97	144
	COMB2	134	208	249	270	394
	E2	512	965	1231	1382	1607
	P2	67	106	127	138	194
	E1	175	323	404	449	585
	P1	84	147	182	202	253
	P7	48	75	89	97	138
	COMB3	106	189	235	261	320
	P4	94	154	187	204	285
	P5	47	71	85	91	138
	P6	40	66	79	87	119
	E4	23	39	48	52	79
	E5	31	53	65	71	99
Proposed	E3A	52	87	106	116	165
	P3	29	38	43	45	62
	COMB1	81	125	149	161	227
	E3B	51	76	90	97	144
	COMB2	132	201	238	258	371
	E2	512	965	1231	1382	1607
	P2	100	134	154	164	214
	E1	175	323	404	449	585
	P1A	75	106	124	134	161
	P7	77	103	117	125	167
	COMB3	127	178	207	223	275
	P1B	47	67	78	84	102
	COMB4	103	187	224	242	309

	P4A	48	65	74	79	104
	P4B	56	74	85	91	120
	P4C	34	45	51	55	73
	COMB5	94	142	173	189	247
	P5	47	62	70	74	102
	P6	39	52	59	63	83
	E4	23	39	48	52	79
	E5	31	53	65	71	99
Proposed w/ Mitigation	E3A	52	87	106	116	165
	P3	29	38	43	45	62
	COMB1	81	125	149	161	227
	E3B	51	76	90	97	144
	COMB2	132	201	238	258	371
	E2	512	965	1231	1382	1607
	P2	100	134	154	164	214
	POND	66	83	92	113	159
	E1	175	323	404	449	585
	P1A	75	106	124	134	161
	P7	77	103	117	125	167
	COMB3	127	178	207	223	275
	POND	68	127	153	166	214
	P1B	47	67	78	84	102
	COMB4	103	187	224	242	309
	P4A	48	65	74	79	104
	POND	16	42	53	60	76
	P4B	56	74	85	91	120
	P4C	34	45	51	55	73
	COMB4	94	142	173	189	247
	P5	47	62	70	74	102
	P6	39	52	59	63	83
	E4	23	39	48	52	79
	E5	31	53	65	71	99

Mitigation Structure Dimensions and Accessories

Final dimensions for the detention pond will include a minimum free board of 0.60 meters. The detention pond will have the characteristics shown in Table 5.

Table 5
Retention Pond Characteristics

Pond1	Dimensions	Bottom Area	3010 m^2
		Height	3.48 m
	Outlet Control	Orifice @ bottom	Two-2.5'Diameter
		Orifice @ 1.5 m bottom	Two-2.8'Diameter
		Weir Length @ 2.70m	6.09 m
Pond2	Dimensions	Bottom Area	1229 m^2
		Height	3.62 m
	Outlet Control	Orifice @ bottom	One-3.0'Diameter
		Weir Length @ 2.8m	9.14 m
Pond4	Dimensions	Bottom Area	1124 m^2

		Height	3.36 m
	Outlet Control	Orifice @ bottom	One-0.8'Diameter
		Orifice @ 1.50m bottom	One-3.0'Diameter
		Weir Length @ 2.70m	7.92 m

Schematic layout of the detention system is presented in Figures 9, 10 and 11 for Pond 1, Pond 2, and Pond 4, respectively.

Pond Discharge

The pond outlet must be able to take the total discharge from the pond. Two-60"-diameter pipe was estimated for Pond-1, a 66"-diameter pipe for Pond-2, a 48"-diameter pipe for Pond-4. Both ponds will discharge over the 100-year water surface elevation.

V. HYDRAULIC ANALYSIS

A hydraulic analysis was made for the three watercourses running across the site. None of them will be affected by the development except to the extent needed for the road crossing structures. The main watercourse is Quebrada Hicatea (WC-1). The second watercourse (WC-2) is a tributary to the main, to which it merges just at its exit from the site. The third watercourse (WC-3) is located at the west of the site and runs across drainage area P3.

The hydraulic analysis was made in order to find the 100-year water surface elevation; so that the development is constructed above this elevation and outside of the 100-year flood footprint.

The hydraulic analysis was made using the mathematical model HEC-RAS developed by the US Corps of Engineers. For this model, the hydraulic regime is steady, uniform, and one-dimensional. The model accepts changes in the geometry of the watercourse, bank-bed-overbank friction coefficient and shapes of hydraulic structures.

The friction coefficient used in the modeling was obtained from visual inspection of the watercourses bed and banks; and crosschecked with the typical values provided by Barnes (1967) and Chow (1959).

Cross sections for the creek were taken from the fieldwork provided. This fieldwork is shown in Appendix H. Figure 12 depicts the location of the cross sections.

Roughness

Manning coefficients estimated for the model are 0.013 for concrete, 0.045 for the channel. These values reflect the changes in direction and the irregular shape of the channel bed, and the vegetation present in the courses.

Contraction and Expansion Coefficients

Coefficients of contraction and expansion used are those recommended by the HEC-RAS user's manual. Thus, coefficients of 0.1 and 0.3 respectively were used for gradual transitions.

Starting Water Surface Elevation

Slope area method was applied for starting the subcritical run. For the supercritical run, critical depth was adopted.

Hydraulics for Existing Condition

The existing condition corresponds to the water courses as they presently are, without any modification. The location of them is shown in Figure 12, where the cross sections are located.

The hydraulic analysis was based on discharges obtained by the hydrologic analysis. Flow regime at the existing condition as well as for the proposed condition was assumed to be mixed: subcritical in some segments and supercritical in others.

The computer output for the existing condition is included in Appendix F. The following Table 6 includes the summary of the results for watercourse.

Table 6
Existing Condition Hydraulics 100-yr flow

River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
						WC-1					
8.5	100y	45.51	127.50	128.27	128.09	128.42	0.010290	1.75	26.07	38.12	0.67
8	100y	45.51	126.50	127.69		127.79	0.006695	1.40	32.50	47.92	0.54
7.8	100y	45.51	126.50	127.53	127.43	127.70	0.015069	1.84	24.76	44.61	0.79
7	100y	45.51	124.85	125.98	125.96	126.18	0.023509	1.99	22.91	51.35	0.95
6	100y	45.51	123.00	125.33		125.42	0.002262	1.33	34.19	23.59	0.35
5	100y	74.73	122.50	125.16	123.90	125.24	0.001464	1.27	59.58	37.82	0.30
4.8	100y	74.73	122.50	125.14		125.22	0.001498	1.28	59.02	37.59	0.30
4	100y	85.89	122.00	124.74	124.17	124.93	0.005394	1.93	44.49	34.03	0.54
3	100y	87.79	121.50	124.28		124.44	0.003822	1.79	48.99	32.26	0.46
2	100y	90.59	120.91	122.98	122.98	123.53	0.019799	3.29	27.58	25.12	1.00

1	100y	90.59	118.00	121.00	120.45	121.40	0.008005	2.78	32.60	18.49	0.67
						WC-2					
11	100y	16.56	134.50	135.44	135.44	135.70	0.023311	2.30	7.44	14.41	0.98
10	100y	16.56	129.50	130.07	130.17	130.41	0.151544	2.60	6.37	38.64	2.04
9.2	100y	16.56	127.50	128.74	128.47	128.83	0.006755	1.32	12.53	20.19	0.54
9	100y	16.56	127.50	128.47	128.47	128.71	0.025697	2.18	7.59	15.71	1.00
						WC-3					
14	100y	4.67	140.00	140.61	140.61	140.77	0.030972	1.76	2.66	8.68	1.01
13	100y	7.08	134.37	134.64	134.79	135.21	0.255759	3.35	2.12	13.00	2.65
12	100y	7.08	133.00	133.74	133.58	133.80	0.008001	1.09	6.52	16.05	0.54

Hydraulics for Proposed Condition

No major alterations onto the watercourses are projected at proposed condition. The geometry of these watercourses is kept the same as that of the existing condition except at the road crossings, in which minor modifications are necessary for the bridge abutments. Four (4) crossing structures are considered. Bridge-1 and Bridge-2, with 11-meter span each, will be located at the Quebrada Hicatea (WC-1). A 10-meter span Bridge-3 is proposed for WC-2, and 3.65-meter span Bridge-4 for WC-3. Figures 14 to 17 show the dimensions of these bridges.

The computer output for the hydraulics analysis is included in Appendix G. The following Tables 7 include the summary of the results for watercourse

Table 7
Proposed Condition Hydraulics 100-yr

River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
						WC-1					
8.5	100y	45.51	127.50	128.09	128.09	128.37	0.024772	2.32	19.63	36.27	1.01
8	100y	45.51	125.90	127.89	127.20	127.93	0.001576	0.89	51.19	50.23	0.28
7.9		Bridge									
7.8	100y	45.51	125.90	126.90	127.20	127.82	0.070200	4.25	10.70	17.27	1.72
7	100y	45.51	124.85	125.97	125.96	126.18	0.024238	2.01	22.67	51.17	0.96
6	100y	45.51	123.00	125.39		125.47	0.002018	1.28	35.61	23.95	0.33
5	100y	69.46	122.50	125.26	123.85	125.32	0.001073	1.11	63.64	39.46	0.25
4.9		Bridge									
4.8	100y	69.46	122.50	125.08		125.16	0.001425	1.23	56.79	36.65	0.29
4	100y	79.97	122.00	124.71	124.12	124.88	0.004995	1.84	43.42	33.65	0.52
3	100y	85.83	121.50	124.26		124.42	0.003802	1.78	48.27	32.03	0.46
2	100y	88.72	120.91	122.97	122.97	123.51	0.019854	3.27	27.12	24.91	1.00

1	100y	88.72	118.00	120.97	120.43	121.36	0.008006	2.77	32.07	18.31	0.67
						WC-2					
11	100y	16.56	134.50	135.44	135.44	135.73	0.024366	2.36	7.03	12.39	1.00
10	100y	19.45	129.50	130.10	130.20	130.43	0.114553	2.54	7.66	38.94	1.83
9.2	100y	19.45	127.50	128.85	128.53	128.94	0.006015	1.32	14.76	21.91	0.51
9.1		Bridge									
9	100y	19.45	127.50	128.37	128.53	128.87	0.060373	3.13	6.22	14.22	1.51
						WC-3					
14	100y	4.67	140.00	140.61	140.61	140.77	0.030972	1.76	2.66	8.68	1.01
13	100y	6.42	134.37	134.62	134.77	135.21	0.299062	3.41	1.88	12.67	2.82
12.5	100y	6.42	133.00	133.83	133.56	133.86	0.003771	0.81	7.91	17.14	0.38
12.3		Bridge									
12	100y	6.42	133.00	133.38	133.56	134.05	0.240767	3.61	1.78	9.28	2.64

Results

The maximum increase in floodwater levels due to a hydraulic structure allowed by the Puerto Rico Planning Board Regulation No. 13 for rural areas is 0.30 meters. There is no increase in water level at the cross section located in the immediate upstream of the project site. The water level increase caused by the bridges is bellow the limit established by Regulation No. 13.

Using the results of the hydraulics analysis, the 100-year floodplain was delineated, as shown in Figure 13. No construction will take place in the floodplain.

Local Storm Sewer System

The design engineer must convey the discharge form all areas though pipes and surface runoff over the roadways to the watercourses.

V. CONCLUSIONS AND RECOMMENDATIONS

The following are the conclusions of this study:

1. The development of the site increases the peak discharge at drainage areas P1, P2, P4 and P7. Runoff mitigation structures are needed as per the PR Planning Board Regulation No. 3.

2. The proposed mitigation structures reduce the increment in discharge due to the development to levels lower that those of the existing condition.

3. The 100-year floodplain footprint determined for the three storm watercourses will not be affected by the development. The development will be erected outside of this floodplain.

The following are the recommendations of this study:

1. The project site's roadway elevation must be at least 2 ft above the local flood water levels as determined in this study. But the minimum roadway elevation at the road crossing structure will be determined taking into consideration that the bridge low cord will be at least 0.60 meters above the 100-year water elevation. An in the vicinity of the detention ponds, the minimum roadway elevation will be 0.60 meters above the 100-year water elevation at the pond.

2. The size, location and point of discharge of the runoff mitigation structures will be as indicated in this study. The ponds will have an outlet control as described in the Table 5 of this study.

3. The engineer will make sure that the site be graded in a way that the magnitude of the drainage areas be as assumed in this study.

4. Collection discharge pipes for cloistered drainage areas must be designed for a 100-year discharge.

5. The minimum free board for the bridges will be of 0.60 meters.

6. The engineer will include protection from erosion at the discharge of the detention ponds. Protection may be by rip-rap or gabions.

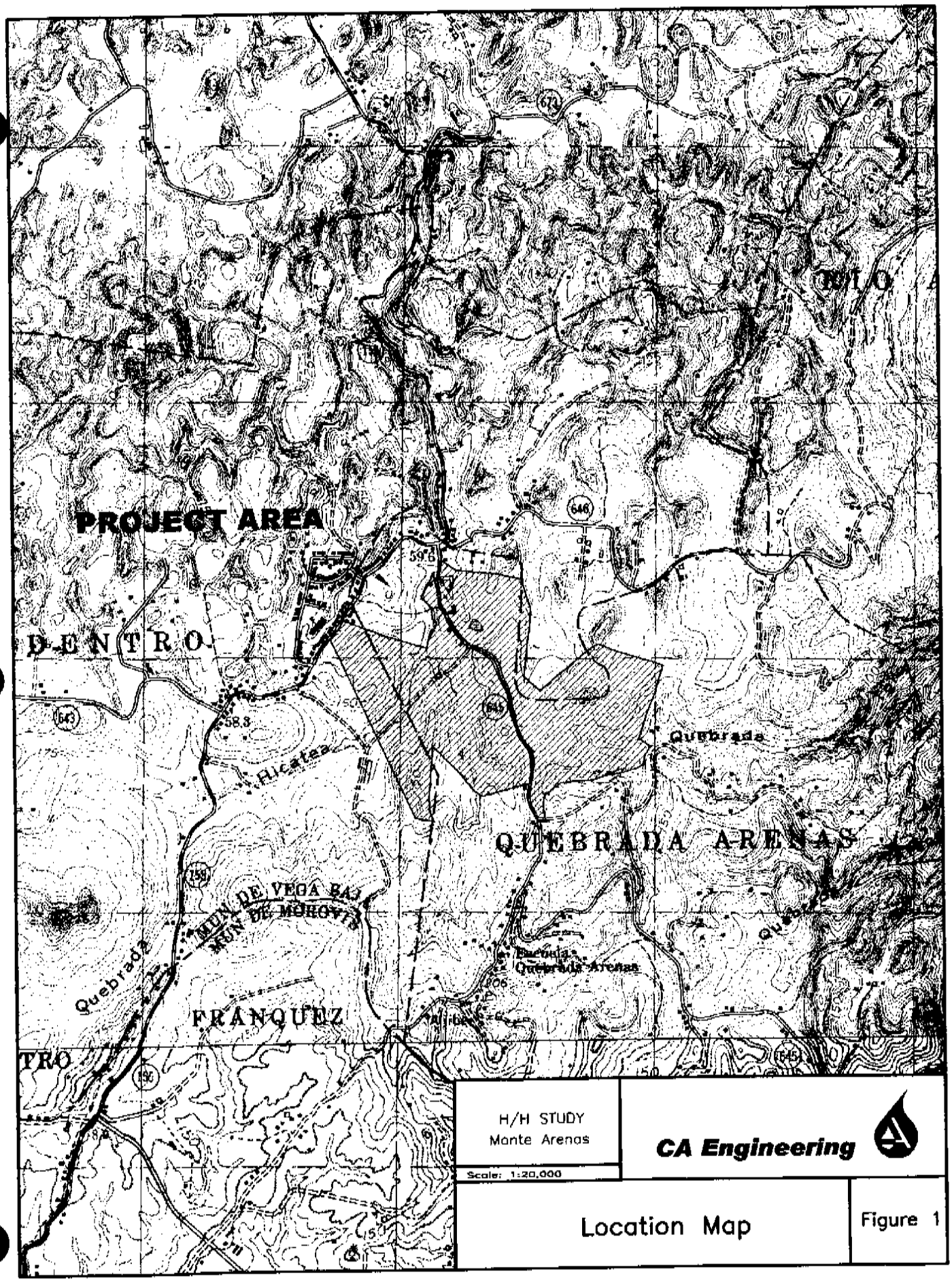
7. Maintenance of the road crossing culverts and mitigation pond outlet is necessary during operation. Maintenance shall consist on keeping the entrance free from clogging debris or vegetation.

Study Limits

All the recommendations specified in this study must be considered to assure the optimum performance of the proposed structures operation. The design engineer will be responsible for elaborating the drawings in conformance with the recommendations of this study.

The results of this study are based on free flow conditions through the hydraulic structures. Proper maintenance must be developed to assure this condition. On the event of the occurrence of any severe obstruction to the flow, the results and recommendations may be impaired. Finally, the design engineer must use results and recommendations included in this report only and exclusively for the intended purposes as indicated in this study.

FIGURES



H/H STUDY
Monte Arenas

Scale: 1:20,000

CA Engineering

Location Map

Figure 1

H/H STUDY
Monte Arenas

Scale: 1:5,000

CA Engineering

Proposed Development Layout

Figure 2

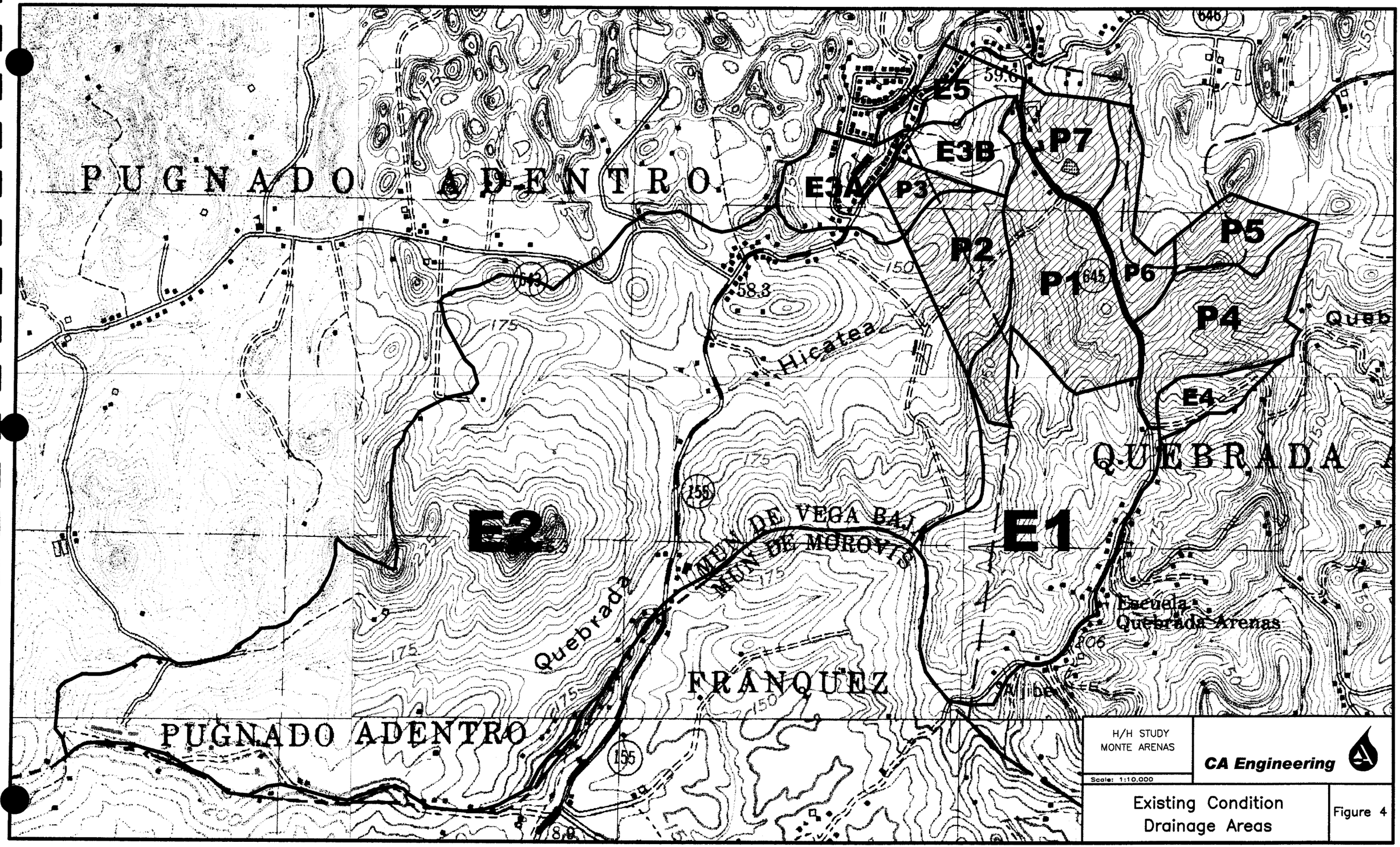
H/H STUDY
MONTE ARENAS

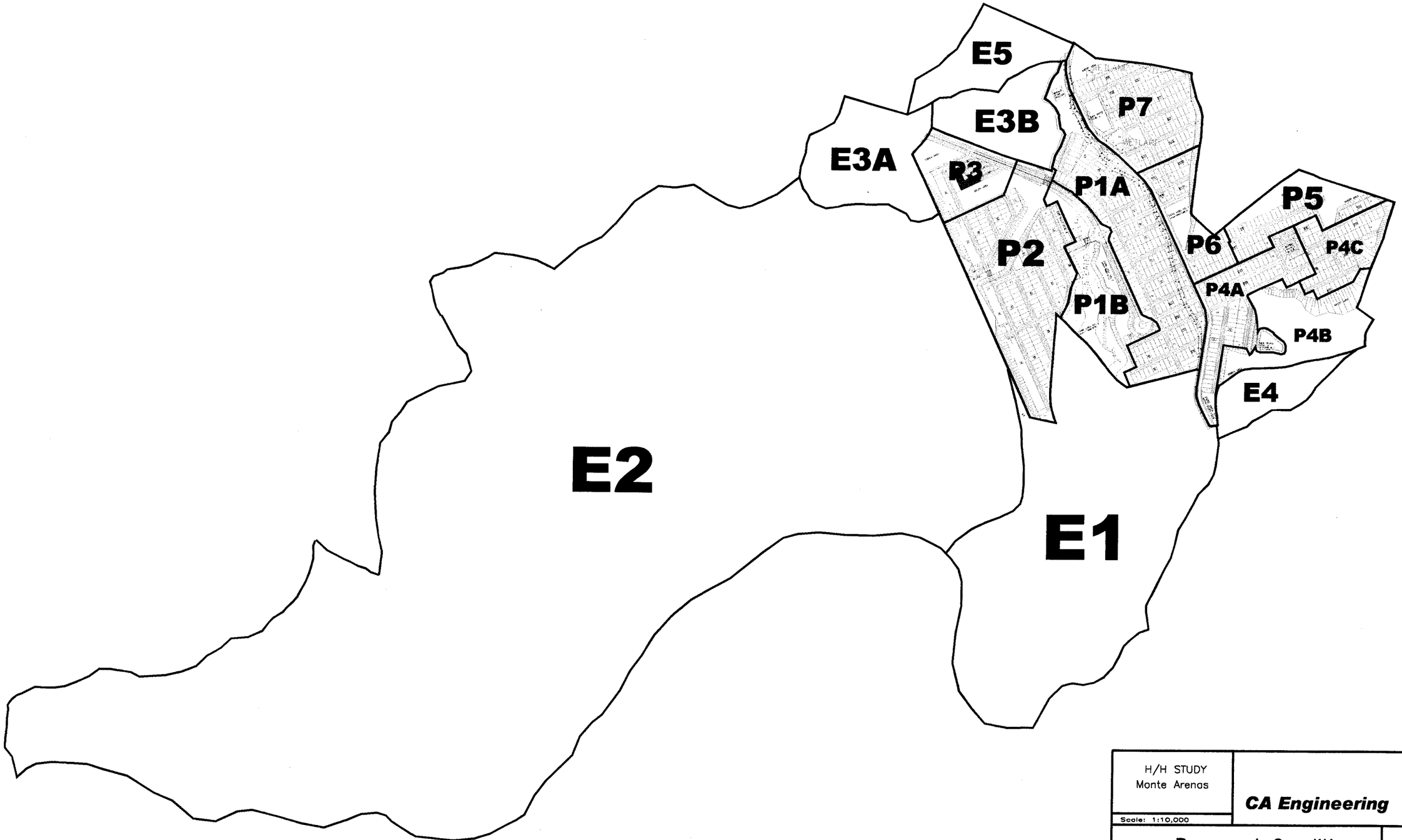
Scale: 1:5,000

CA Engineering

Topography for Existing Condition

Figure 3


PUGNADO ADENTRO
E5
E3B
P7
E3A
P3
P2
P5
P1
P6
P4
E4
Hicatea
Quebrada
QUEBRADA
E2
E1
MUN. DE VEGA BAJA
MUN. DE MOROVIS
Escuela
Quebrada Arenas
FRANQUEZ
PUGNADO ADENTRO
H/H STUDY
MONTE ARENAS
Scale: 1:10,000
CA Engineering
Existing Condition
Drainage Areas
Figure 4



H/H STUDY
Monte Arenas

Scale: 1:10,000

CA Engineering

Proposed Condition
Drainage Areas

Figure 5

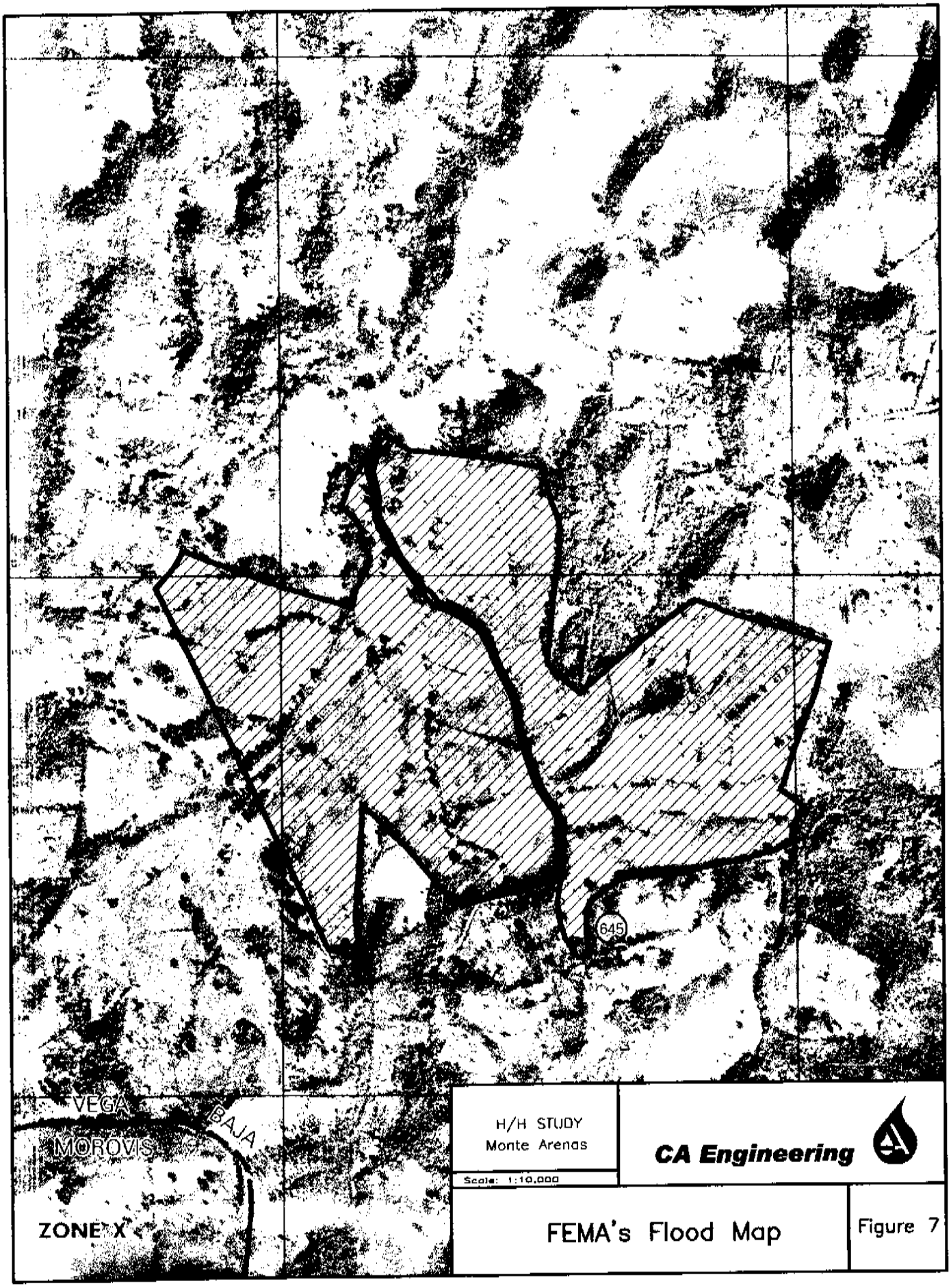
H/H STUDY
MONTE ARENAS

Scale: 1:10,000

CA Engineering

Soils Map

Figure 6



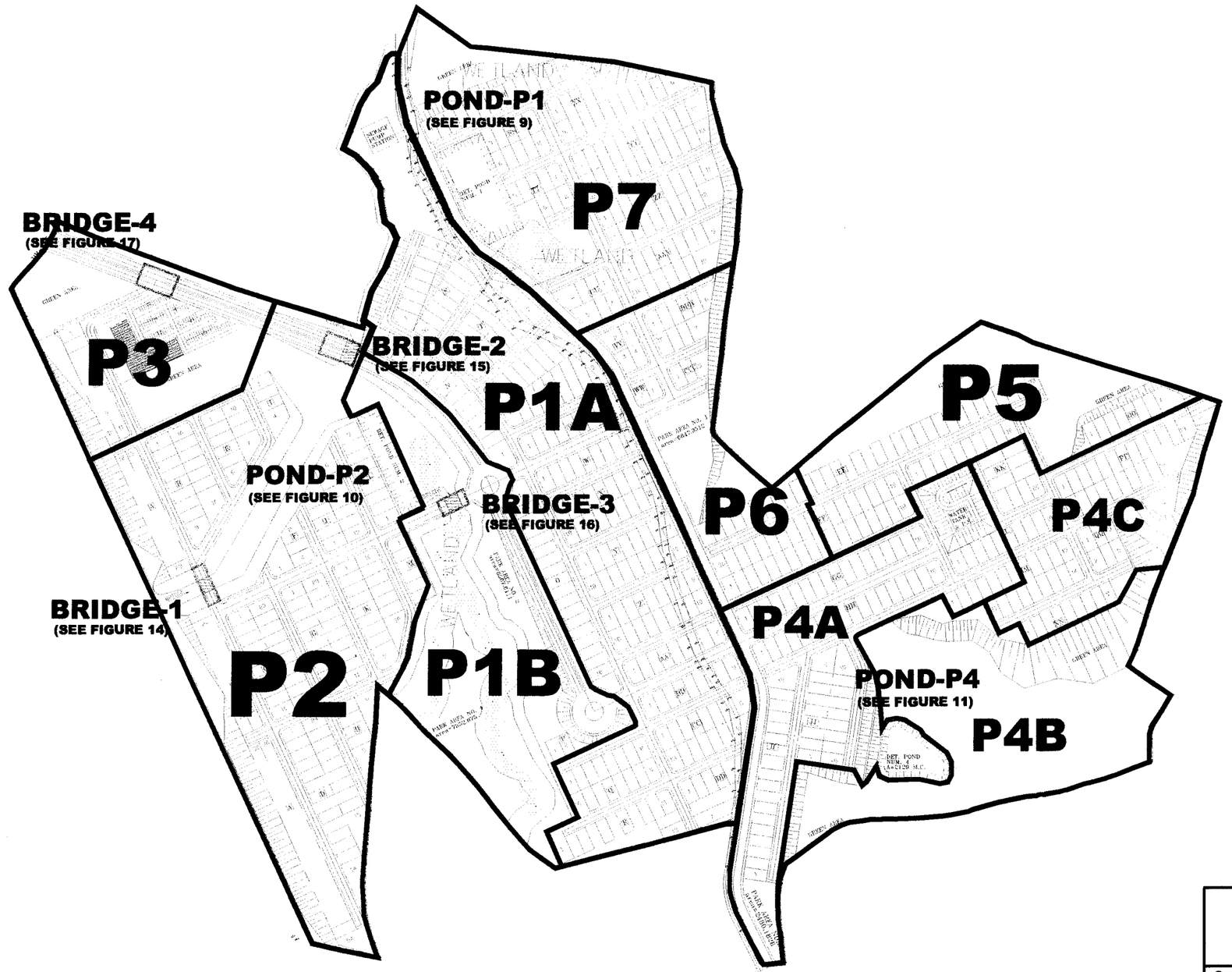
H/H STUDY
Monte Arenas

Scale: 1:10,000

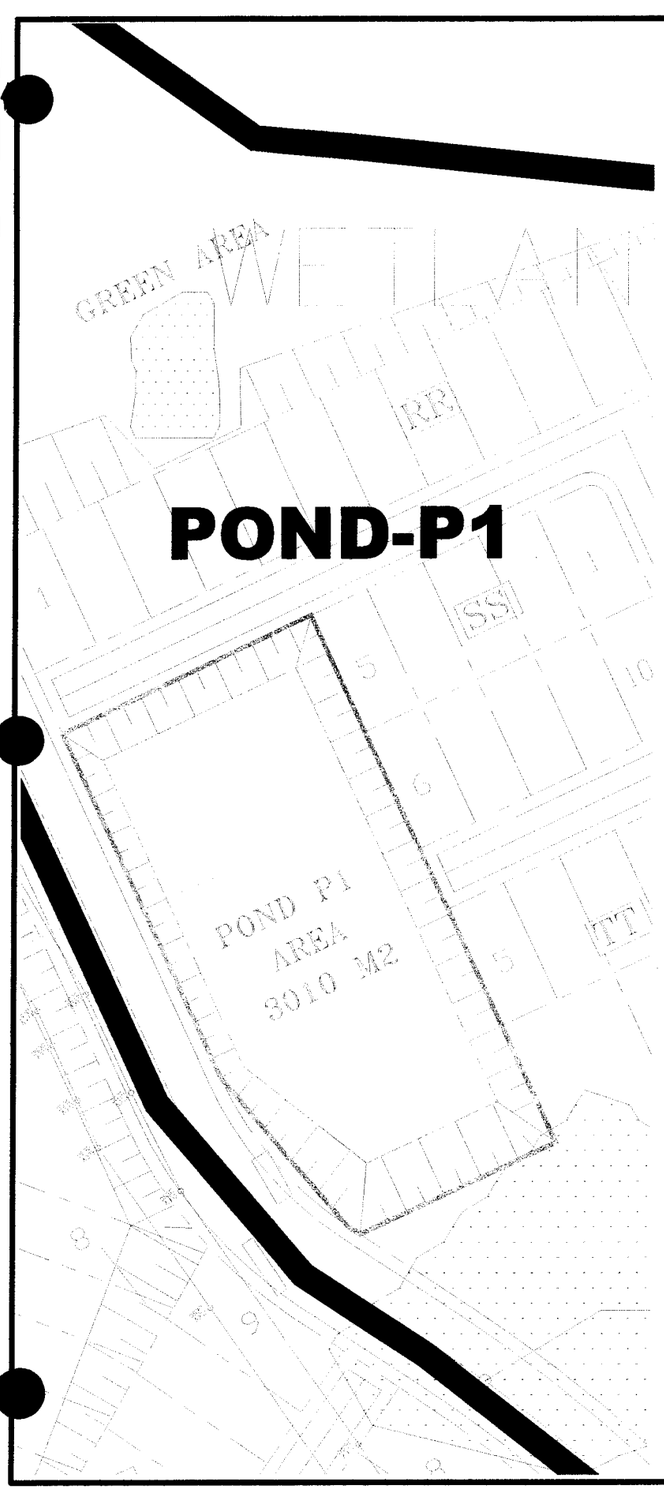
CA Engineering

FEMA's Flood Map

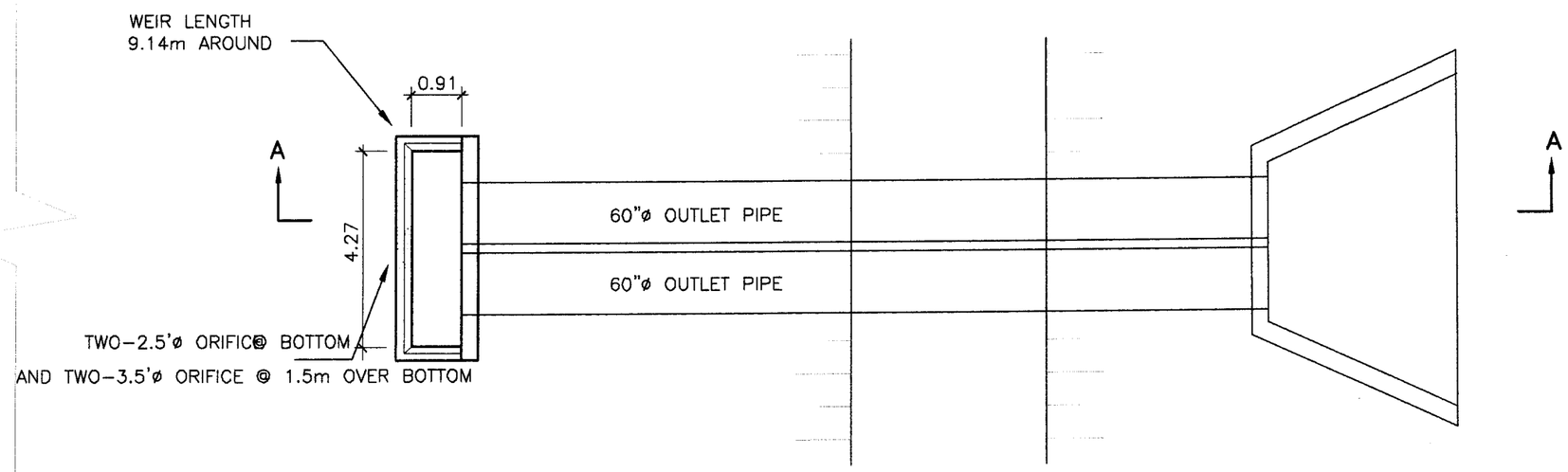
Figure 7



H/H STUDY Monte Arenas	CA Engineering
Scale: 1:5,000	
Layout of Proposed Structures	Figure 8

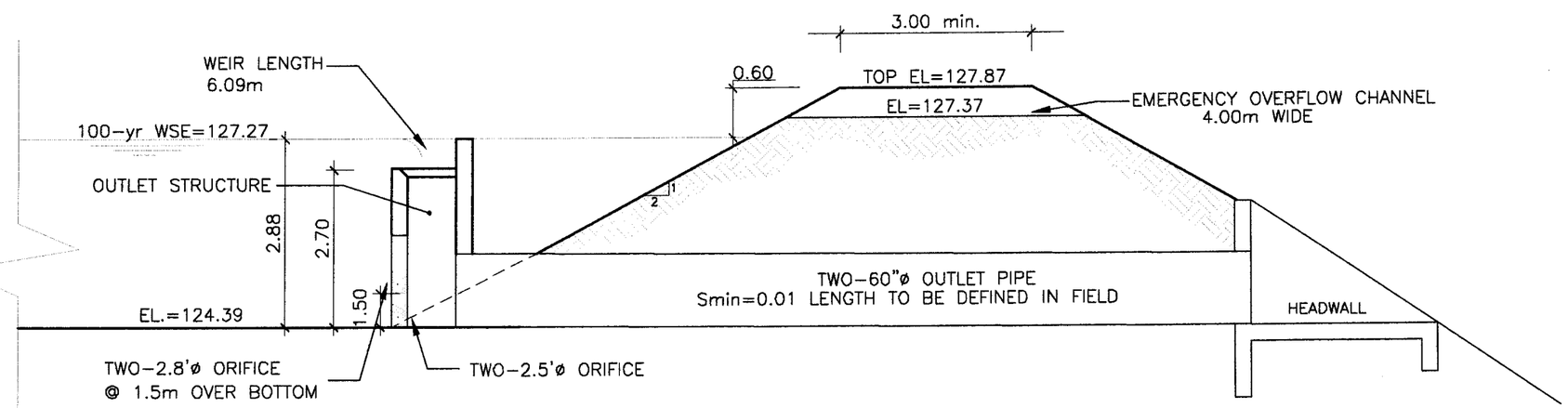


POND-P1



PLAN VIEW

NTS



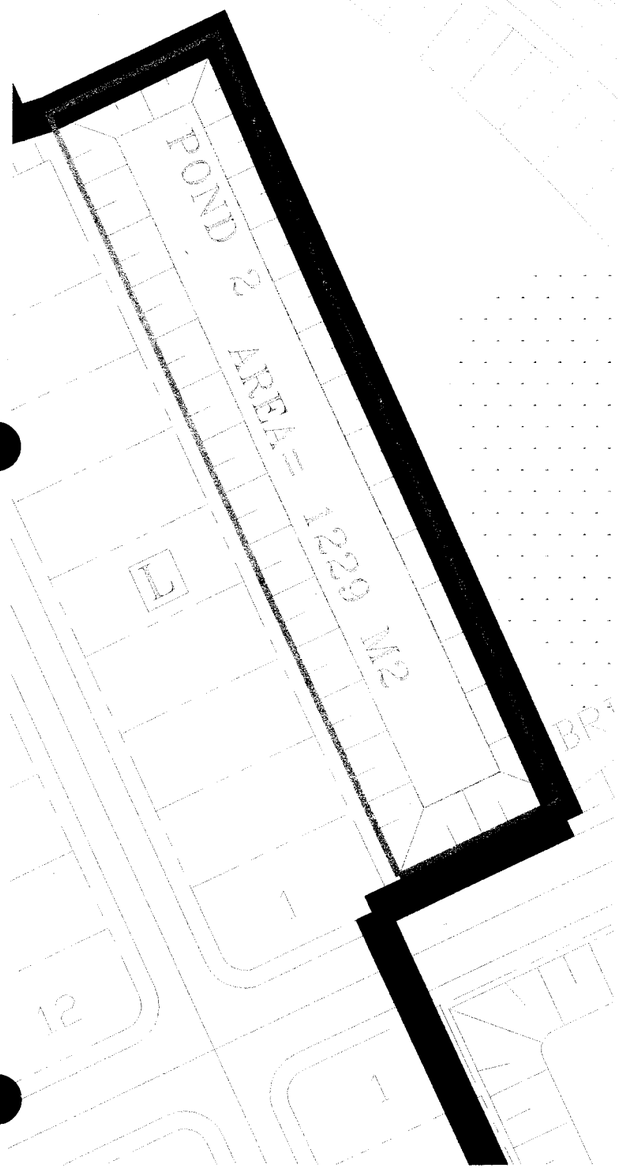
SECTION A–A

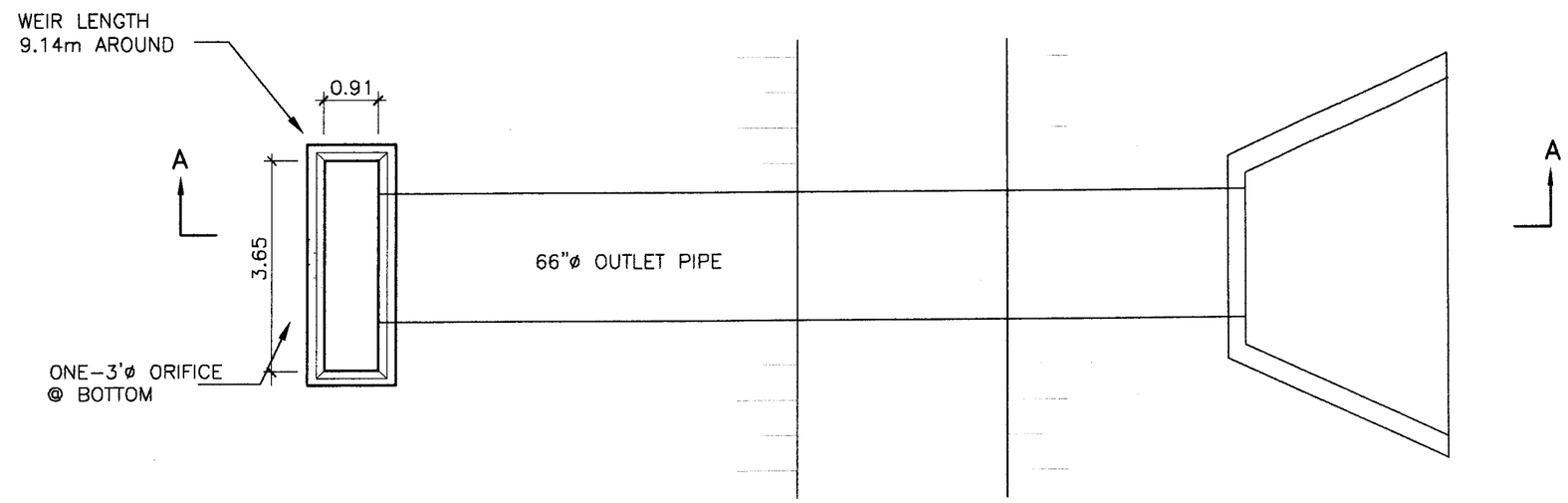
NTS

OUTLET STRUCTURE

H/H STUDY Monte Arenas	CA Engineering
Scale: NTS	
Schematics of the Detention Pond P1	Figure 9

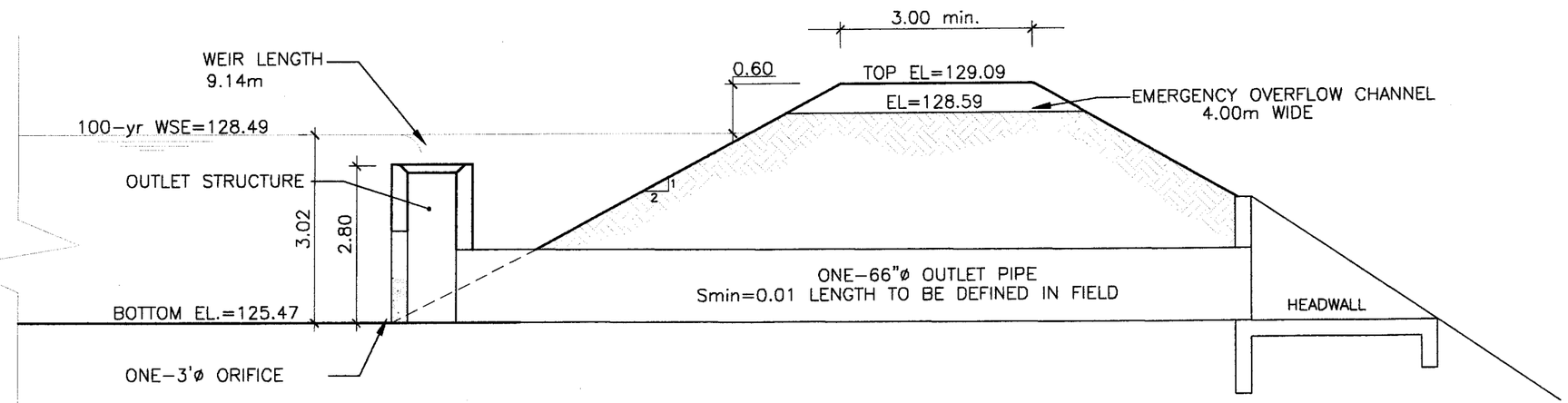
POND-P2





PLAN VIEW

NTS

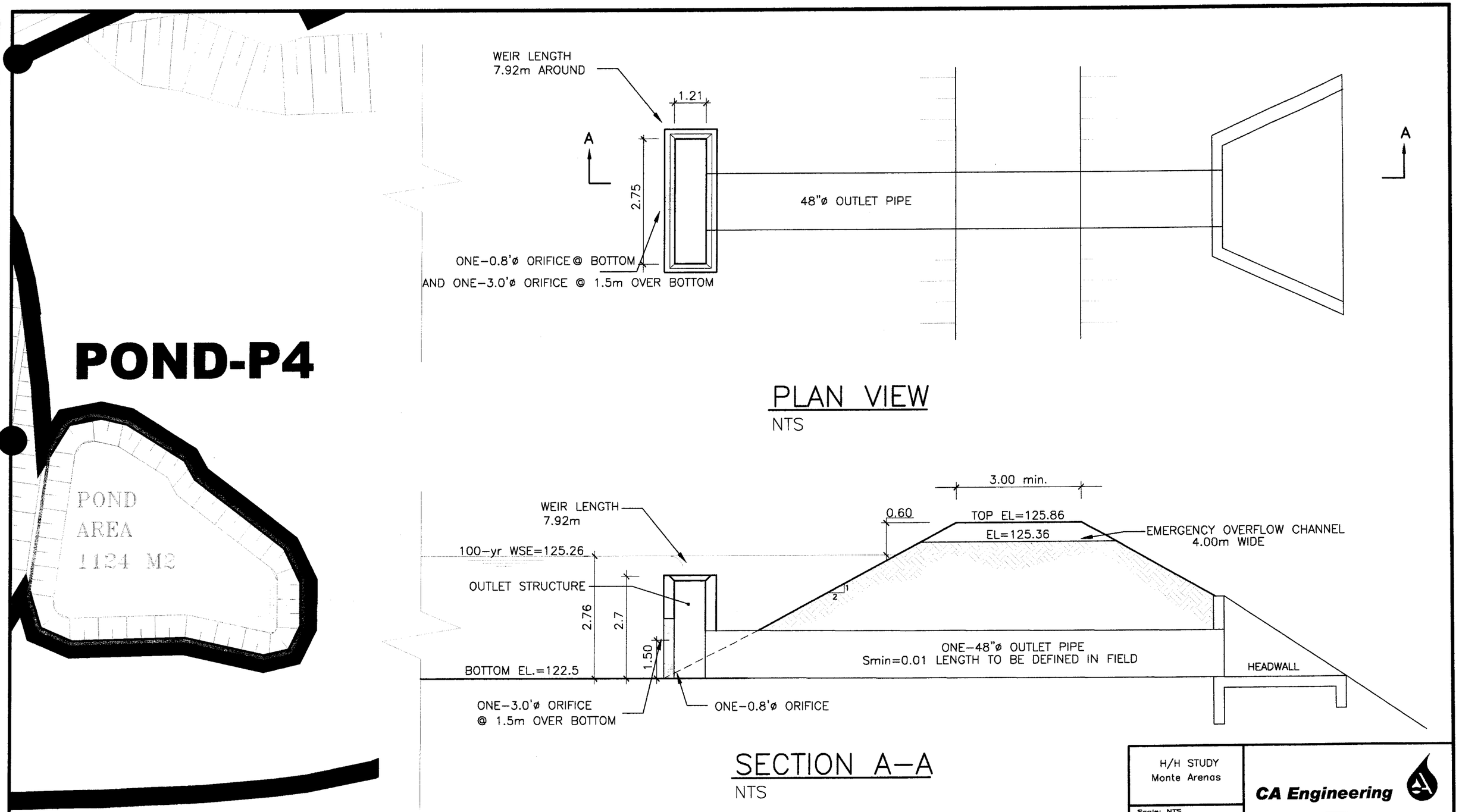


SECTION A-A

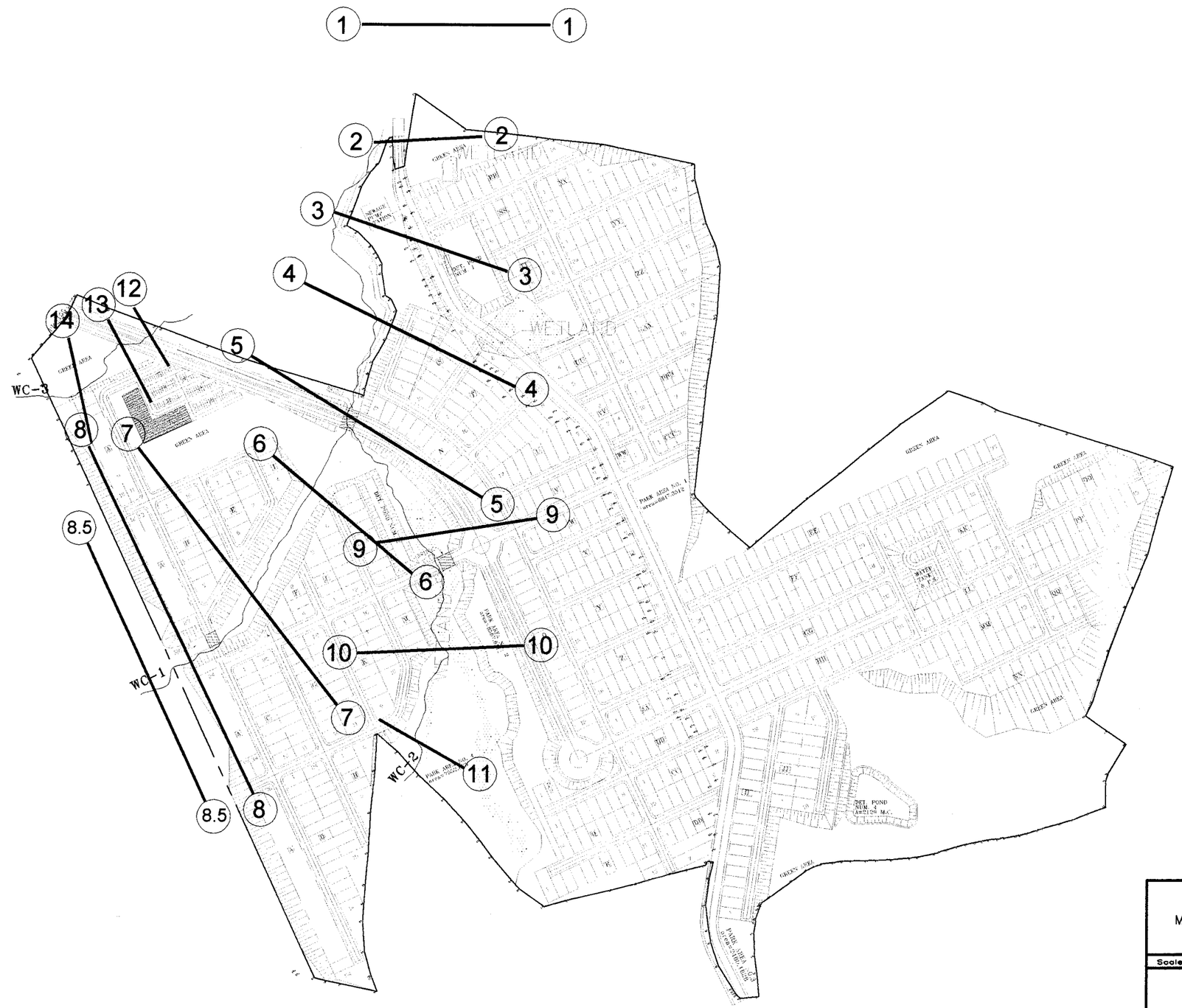
NTS

OUTLET STRUCTURE

H/H STUDY Monte Arenas	CA Engineering
Scale: NTS	
Schematics of the Detention Pond P2	Figure 10



H/H STUDY Monte Arenas	CA Engineering
Scale: NTS	
Schematics of the Detention Pond P4	Figure 11



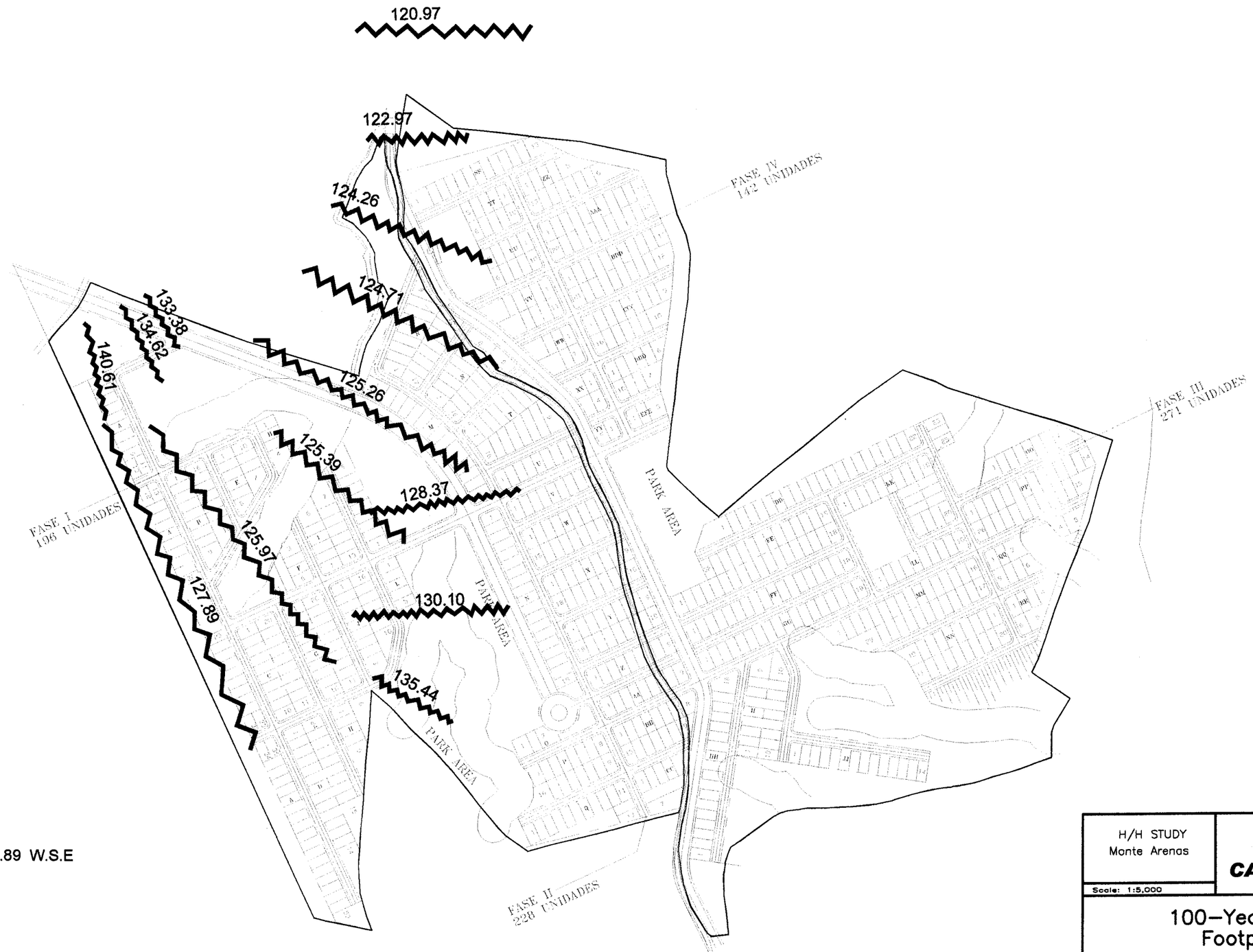
H/H STUDY
Monte Arenas

Scale: 1:5,000

CA Engineering

Location of Cross Sections

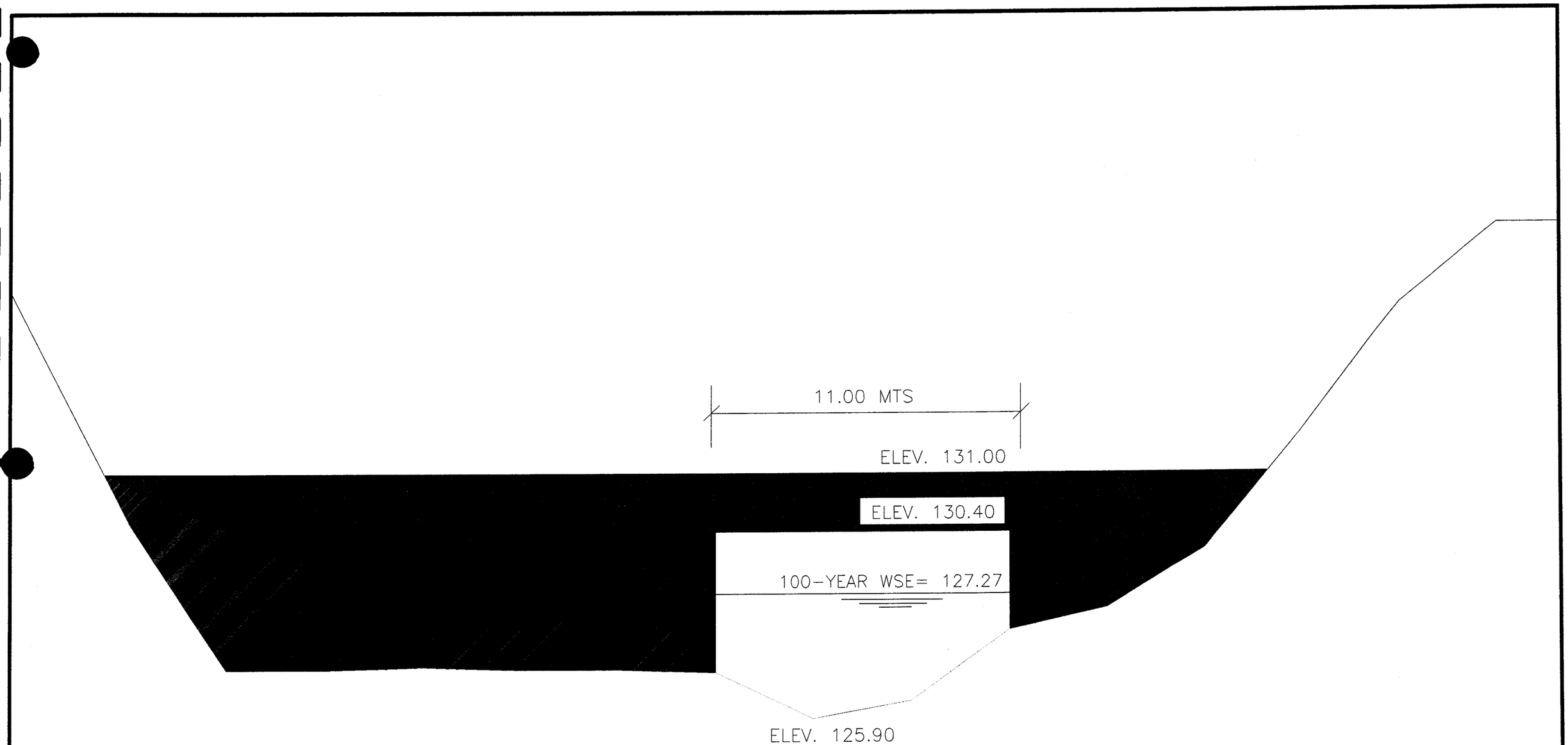
Figure 12



LEGEND

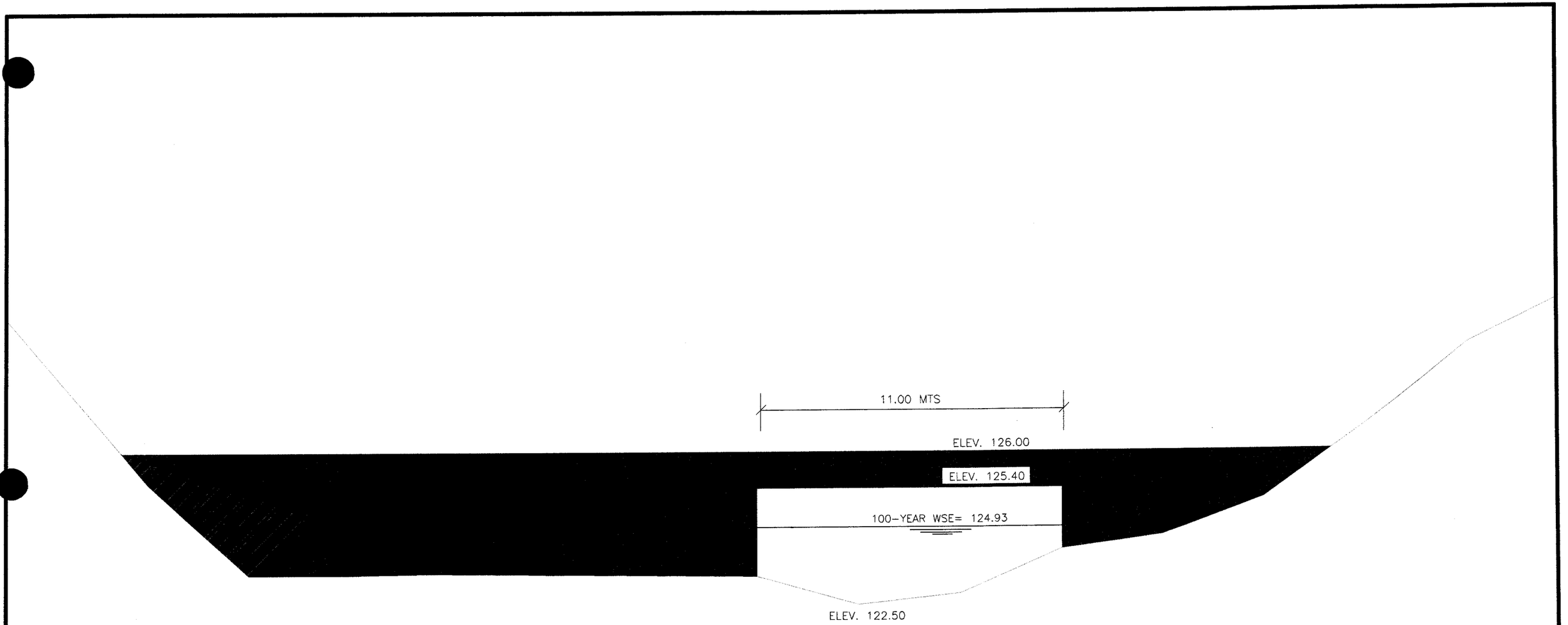
127.89 W.S.E

H/H STUDY Monte Arenas	CA Engineering
Scale: 1:5,000	
100–Year Flood Footprint	Figure 13



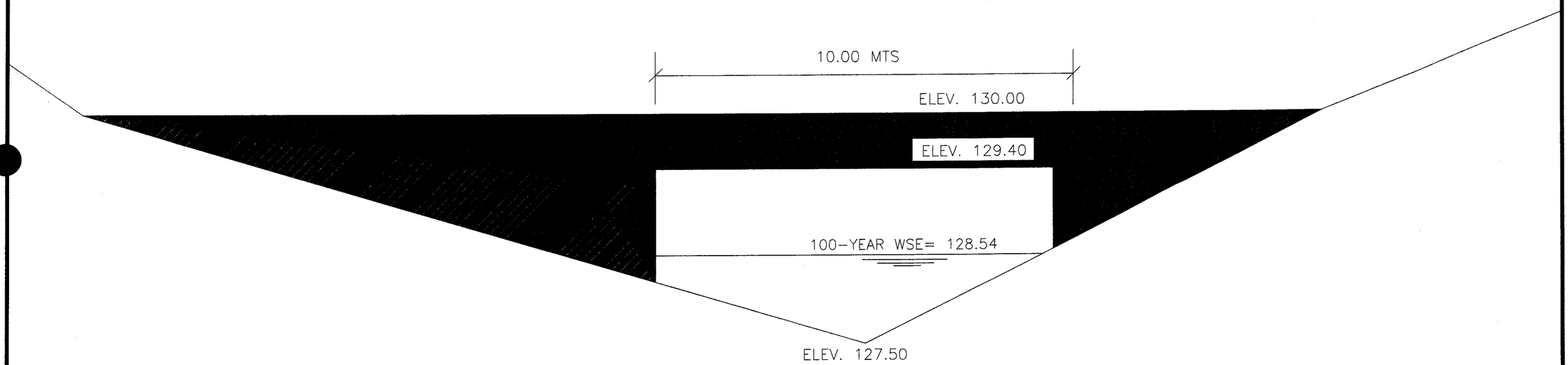
BRIDGE 1

H/H STUDY Monte Arenas	CA Engineering
Scale: NTS	
Proposed Bridge 1	Figure 14



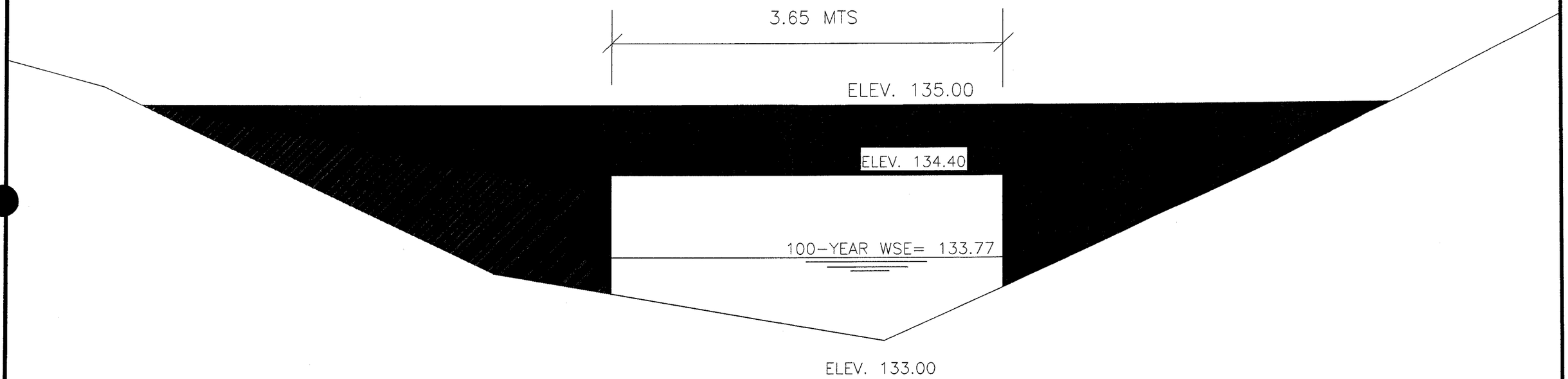
BRIDGE 2

H/H STUDY Monte Arenas	CA Engineering
Scale: NTS	
Proposed Bridge 2	Figure 15



BRIDGE 3

H/H STUDY Monte Arenas	CA Engineering
Scale: NTS	
Proposed Bridge 3	Figure 16



BRIDGE 4

H/H STUDY Monte Arenas	CA Engineering
Scale: NTS	
Proposed Bridge 4	Figure 17

APPENDIXES

APPENDIX A

HYDROLOGIC PARAMETERS ESTIMATION

Project : Monte Arenas Development
Location : Vega Baja, Puerto Rico
REGRESSION CURVES FOR LOW DURATION STORMS

100 -Years				
Duration (Hs)	Prec. (inch)	Intensity (inch/hour) y=bo/(b1+X)^0.73	Regression Parameters	
			bo	bi
0.083	0.99	**11.92**	4.90	0.2128
0.25	2.15	**8.60**	4.90	0.2128
1	4.40 **	4.40	R^2= 0.9954	
2	5.20 **	2.60		
3	6.10 **	2.03		
6	8.00 **	1.33		
12	9.70 **	0.81		
24	11.50 **	0.48		

50 -Years				
Duration (Hs)	Prec. (inch)	Intensity (inch/hour) y=bo/(b1+X)^0.73	Regression Parameters	
			bo	bi
0.083	0.64	**7.74**	4.50	0.393
0.25	1.55	**6.21**	4.50	0.393
1	3.80 **	3.80	R^2= 0.9880	
2	5.00 **	2.50		
3	5.20 **	1.73		
6	7.00 **	1.17		
12	8.70 **	0.73		
24	10.50 **	0.44		

25 -Years				
Duration (Hs)	Prec. (inch)	Intensity (inch/hour) y=bo/(b1+X)^0.75	Regression Parameters	
			bo	bi
0.083	0.61	**7.35**	4.30	0.406
0.25	1.47	**5.90**	4.30	0.406
1	3.50 **	3.50	R^2= 0.9935	
2	4.50 **	2.25		
3	5.10 **	1.70		
6	6.30 **	1.05		
12	7.70 **	0.64		
24	9.40 **	0.39		

10 -Years				
Duration (Hs)	Prec. (inch)	Intensity (inch/hour) y=bo/(b1+X)^0.76	Regression Parameters	
			bo	bi
0.083	0.55	**6.67**	3.60	0.361
0.25	1.31	**5.23**	3.60	0.361
1	3.00 **	3.00	R^2= 0.9950	
2	3.70 **	1.85		
3	4.10 **	1.37		
6	5.40 **	0.90		
12	6.60 **	0.55		
24	7.60 **	0.32		

2 -Years				
Duration (Hs)	Prec. (inch)	Intensity (inch/hour) y=bo/(b1+X)^0.79	Regression Parameters	
			bo	bi
0.083	0.47	**5.71**	2.40	0.251
0.25	1.04	**4.14**	2.40	0.251
1	2.10 **	2.10	R^2= 0.9930	
2	2.50 **	1.25		
3	2.70 **	0.90		
6	3.30 **	0.55		
12	4.00 **	0.33		
24	4.60 **	0.19		

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

Project: Monte Arenas Development.
Vega Baja, Puerto Rico

EXISTING CONDITION

PHYSIOGRAFIC INFORMATION: PROJECT AREA P1

Soil	HSG	Existing Conditions Curve Number	Area (acre)
CiE2	B	69	8.11
SnC	C	79	2.49
JuD2	C	79	15.78
NaD	C	79	10.96
NaE	C	79	8.35
MoC2	D	84	5.88
Total (acres)			51.57
Total (km2)			0.209
Total (mi2)			0.0806
Weighted CN			78.00

PHYSIOGRAFIC INFORMATION: PROJECT AREA P2

Soil	HSG	Existing Conditions Curve Number	Area (acre)
NaE	C	79	5.01
NaD	C	79	5.19
MoC2	D	84	8.01
SnC	C	79	3.57
CiE2	B	69	3.92
Total (acres)			25.70
Total (km2)			0.104
Total (mi2)			0.0402
Weighted CN			79.03

PHYSIOGRAFIC INFORMATION: PROJECT AREA P3

Soil	HSG	Existing Conditions Curve Number	Area (acre)
VaC2	C	79	2.32
MoC2	D	84	3.70
NaD	C	79	1.63
NaE	C	79	1.29
Total (acres)			8.94
Total (km2)			0.036
Total (mi2)			0.0140
Weighted CN			81.07

PHYSIOGRAFIC INFORMATION: PROJECT AREA P4

Soil	HSG	Existing Conditions Curve Number	Area (acre)
NaD	C	79	26.64
CiE2	B	69	6.68
MoC2	D	84	3.35
Total (acres)			36.67
Total (km2)			0.148
Total (mi2)			0.0573
Weighted CN			77.64

PROPOSED CONDITION

PHYSIOGRAFIC INFORMATION: PROJECT AREA P1A

Soil	HSG	Proposed Condition Curve Number	Area (acre)
Development	-	95	31.63
Total (acres)			31.63
Total (km2)			0.128
Total (mi2)			0.0494
Weighted CN			95.00

PHYSIOGRAFIC INFORMATION: PROJECT AREA P1B

Soil	HSG	Proposed Condition Curve Number	Area (acre)
Development	-	95	19.00
Total (acres)			19.00
Total (km2)			0.077
Total (mi2)			0.0297
Weighted CN			95.00

PHYSIOGRAFIC INFORMATION: PROJECT AREA P2

Soil	HSG	Proposed Condition Curve Number	Area (acre)
Development	-	95	30.22
Total (acres)			30.22
Total (km2)			0.122
Total (mi2)			0.0472
Weighted CN			95.00

PHYSIOGRAFIC INFORMATION: PROJECT AREA P3

Soil	HSG	Proposed Condition Curve Number	Area (acre)
Development	-	95	6.96
Total (acres)			6.96
Total (km2)			0.028
Total (mi2)			0.0109
Weighted CN			95.00

PHYSIOGRAFIC INFORMATION: PROJECT AREA P4A

Soil	HSG	Proposed Condition Curve Number	Area (acre)
Development	-	95	14.46
Total (acres)			14.46
Total (km2)			0.059
Total (mi2)			0.0226
Weighted CN			95.00

PHYSIOGRAFIC INFORMATION: PROJECT AREA P4B

Soil	HSG	Proposed Condition Curve Number	Area (acre)
Development	-	95	15.70
Total (acres)			15.70
Total (km2)			0.064
Total (mi2)			0.0245
Weighted CN			95.00

PHYSIOGRAFIC INFORMATION: PROJECT AREA P5

		Existing Conditions	
Soil	HSG	Curve Number	Area (acre)
MoC2	D	84	4.7
VaC2	C	79	1.08
CiE2	B	69	2.80
NaD	C	79	5.73
Total (acres)			14.31
Total (km2)			0.058
Total (mi2)			0.0224
Weighted CN			78.69

PHYSIOGRAFIC INFORMATION: BASIN AREA P6

		Existing Conditions	
Soil	HSG	Curve Number	Area (acre)
CiE2	B	69	0.39
NaD	C	79	7.22
JuD2	C	79	4.81
NaE	C	79	3.44
VaC2	C	79	1.05
Total (acres)			16.91
Total (km2)			0.068
Total (mi2)			0.026
Weighted CN			78.77

PHYSIOGRAFIC INFORMATION: BASIN AREA P7

		Existing Conditions	
Soil	HSG	Curve Number	Area (acre)
VaC2	C	79	2.11
NaE	C	79	4.25
NaD	C	79	5.71
VaC2	C	79	5.65
Total (acres)			17.72
Total (km2)			0.072
Total (mi2)			0.028
Weighted CN			79.00

PHYSIOGRAFIC INFORMATION: BASIN AREA E1

		Existing Conditions	
Soil	HSG	Curve Number	Area (acre)
CiE2	B	69	57.55
SnC	C	79	4.18
NaD	C	79	4.74
JuD2	C	79	4.40
NaE	C	79	39.26
Total (acres)			110.13
Total (km2)			0.446
Total (mi2)			0.172
Weighted CN			73.77

PHYSIOGRAFIC INFORMATION: PROJECT AREA P4C

		Proposed Condition	
Soil	HSG	Curve Number	Area (acre)
Development	-	95	9.50
Total (Acres)			9.50
Total (km2)			0.038
Total (mi2)			0.0148
Weighted CN			95.00

PHYSIOGRAFIC INFORMATION: PROJECT AREA P5

		Proposed Condition	
Soil	HSG	Curve Number	Area (acre)
Development	-	95	11.36
Total (acres)			11.36
Total (km2)			0.046
Total (mi2)			0.0178
Weighted CN			95.00

PHYSIOGRAFIC INFORMATION: BASIN AREA P6

		Existing Conditions	
Soil	HSG	Curve Number	Area (acre)
Development	-	95	11.57
Total (acres)			11.57
Total (km2)			0.047
Total (mi2)			0.018
Weighted CN			95.00

PHYSIOGRAFIC INFORMATION: BASIN AREA P7

		Proposed Condition	
Soil	HSG	Curve Number	Area (acre)
Devepment	-	95	21.41
Total (acres)			21.41
Total (km2)			0.087
Total (mi2)			0.033
Weighted CN			95.00

PHYSIOGRAFIC INFORMATION: BASIN AREA E1

		Existing Conditions	
Soil	HSG	Curve Number	Area (acre)
CiE2	B	69	57.55
SnC	C	79	4.18
NaD	C	79	4.74
JuD2	C	79	4.40
NaE	C	79	39.3
Total (acres)			110.13
Total (km2)			0.446
Total (mi2)			0.172
Weighted CN			0.00

PHYSIOGRAFIC INFORMATION: BASIN AREA E2

Existing Conditions			
Soil	HSG	Curve Number	Area (acre)
CiF2	B	69	39.71
JuD2	C	79	178.44
NaF	C	79	45.54
NaD	C	79	100.51
CmF2	B	69	41.82
VcB	C	79	13.4
MoD2	D	84	5.18
CiD2	B	69	0.85
VcC2	C	79	5.66
SmF	B	69	5.94
Ga	D	84	5.68
NaE	C	79	60.56
VaB	C	79	12.34
VaC2	C	79	1.36
MoC2	D	84	18.14
CiE2	B	69	19.56
SnC	C	79	0.76
Total (acres)			555.45
Total (km2)			2.248
Total (mi2)			0.868
Weighted CN			77.32

PHYSIOGRAFIC INFORMATION: BASIN AREA E3A

Existing Conditions			
Soil	HSG	Curve Number	Area (acre)
SmF	B	69	5.64
VaC2	C	79	11.52
NaD	C	79	1.65
NaE	C	79	1.82
Total (acres)			20.63
Total (km2)			0.083
Total (mi2)			0.032
Weighted CN			76.27

PHYSIOGRAFIC INFORMATION: BASIN AREA E3B

Existing Conditions			
Soil	HSG	Curve Number	Area (acre)
VaC2	C	79	4.79
MoC2	D	84	6.05
NaD	C	79	2.50
CiE2	B	69	1.70
Total (acres)			15.04
Total (km2)			0.061
Total (mi2)			0.024
Weighted CN			79.88

PHYSIOGRAFIC INFORMATION: BASIN AREA E4

Existing Conditions			
Soil	HSG	Curve Number	Area (acre)
NaD	C	79	3.19
CiE2	B	69	5.96
Total (acres)			9.15
Total (km2)			0.037
Total (mi2)			0.014
Weighted CN			72.49

PHYSIOGRAFIC INFORMATION: BASIN AREA E5

Existing Conditions			
Soil	HSG	Curve Number	Area (acre)
SmF	B	69	3.07
VaC2	C	79	6.82
NaD	C	79	2.38
CiD2	B	69	1.19
CiE2	B	69	0.55
Total (acres)			14.01
Total (km2)			0.057
Total (mi2)			0.022
Weighted CN			75.57

PHYSIOGRAFIC INFORMATION: BASIN AREA E2

Existing Conditions			
Soil	HSG	Curve Number	Area (acre)
CiF2	B	69	39.71
JuD2	C	79	178.44
NaF	C	79	45.54
NaD	C	79	100.51
CmF2	B	69	41.82
VcB	C	79	13.4
MoD2	D	84	5.18
CiD2	B	69	0.85
VcC2	C	79	5.66
SmF	B	69	5.94
Ga	D	84	5.68
NaE	C	79	60.56
VaB	C	79	12.34
VaC2	C	79	1.36
MoC2	D	84	18.14
CiE2	B	69	19.56
SnC	C	79	0.76
Total (acres)			555.45
Total (km2)			2.248
Total (mi2)			0.868
Weighted CN			12.11

PHYSIOGRAFIC INFORMATION: BASIN AREA E3A

Existing Conditions			
Soil	HSG	Curve Number	Area (acre)
SmF	B	69	5.64
VaC2	C	79	11.52
NaD	C	79	1.65
NaE	C	79	1.82
Total (acres)			20.63
Total (km2)			0.083
Total (mi2)			0.032
Weighted CN			76.27

PHYSIOGRAFIC INFORMATION: BASIN AREA E3B

Existing Conditions			
Soil	HSG	Curve Number	Area (acre)
VaC2	C	79	4.79
MoC2	D	84	6.05
NaD	C	79	2.50
CiE2	B	69	1.70
Total (acres)			15.04
Total (km2)			0.061
Total (mi2)			0.024
Weighted CN			53.75

PHYSIOGRAFIC INFORMATION: BASIN AREA E4

Existing Conditions			
Soil	HSG	Curve Number	Area (acre)
NaD	C	79	3.19
CiE2	B	69	5.96
Total (acres)			9.15
Total (km2)			0.037
Total (mi2)			0.014
Weighted CN			79.00

PHYSIOGRAFIC INFORMATION: BASIN AREA E5

Existing Conditions			
Soil	HSG	Curve Number	Area (acre)
SmF	B	69	3.07
VaC2	C	79	6.82
NaD	C	79	2.38
CiD2	B	69	1.19
CiE2	B	69	0.55
Total (acres)			14.01
Total (km2)			0.057
Total (mi2)			0.022
Weighted CN			77.48

Project: Monte Arenas Development, Vega Baja, PR
LAG TIME COMPUTATIONS - SCS

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

	AREA	Length		High Elevation	Low Elevation	DH		Slope	[L^0.8]	[CN]	[S]	[(S+1)^0.7]	[Y^0.5]	Lag
		[m]	[ft]	[m]	[m]	[m]	[ft]							[hrs]
Existing	P1	650.0	2,133	135.00	125.00	10.0	32.8	0.0154	460.4004	78.00	1.4706	1.8835	1.2403	0.37
	P2	391.8	1,286	150.00	125.00	25.0	82.0	0.0638	307.1086	79.03	1.4486	1.8718	2.5259	0.12
	P3	175.7	576	150.00	130.00	20.0	65.6	0.1138	161.6674	81.07	1.4071	1.8494	3.3739	0.05
	P4	391.3	1,284	170.00	115.00	55.0	180.5	0.1405	306.7825	77.64	1.4784	1.8877	3.7490	0.08
	P5	165.0	541	180.00	150.00	30.0	98.4	0.1818	153.7419	78.69	1.4556	1.8756	4.2640	0.04
	P6	437.8	1,437	170.00	145.00	25.0	82.0	0.0571	335.6273	78.77	1.4541	1.8747	2.3895	0.14
	P7	351.3	1,153	150.00	125.00	25.0	82.0	0.0712	281.4152	79.00	1.4493	1.8721	2.6677	0.10
	E1	1,004.9	3,297	200.00	140.00	60.0	196.9	0.0597	652.3943	73.77	1.5681	1.9352	2.4435	0.27
	E2	3,201.2	10,503	225.00	125.00	100.0	328.1	0.0312	1648.3679	77.32	1.4854	1.8914	1.7674	0.93
	E3A	292.2	959	175.00	140.00	35.0	114.8	0.1198	242.8628	76.27	1.5090	1.9039	3.4609	0.07
	E3B	201.0	659	150.00	125.00	25.0	82.0	0.1244	180.0370	79.88	1.4310	1.8623	3.5267	0.05
	E4	168.8	554	175.00	130.00	45.0	147.6	0.2666	156.5457	72.49	1.6003	1.9521	5.1637	0.03
	E5	422.0	1,385	150.00	125.00	25.0	82.0	0.0592	325.8841	75.57	1.5251	1.9125	2.4339	0.13
Proposed	P1A	769.0	2,523	145.00	136.50	8.5	27.9	0.0111	526.6791	95.00	1.1765	1.7236	1.0513	0.45
	P1B	605.0	1,985	141.00	135.00	6.0	19.7	0.0099	434.7197	95.00	1.1765	1.7236	0.9959	0.40
	P2	684.7	2,247	160.00	130.00	30.0	98.4	0.0438	479.9714	95.00	1.1765	1.7236	2.0932	0.21
	P3	218.0	709	145.00	135.00	10.0	32.8	0.0463	190.7076	95.00	1.1765	1.7236	2.1517	0.08
	P4A	411.0	1,348	165.00	156.00	9.0	29.5	0.0219	319.0645	95.00	1.1765	1.7236	1.4798	0.20
	P4B	252.0	827	162.00	158.00	4.0	13.1	0.0159	215.7374	95.00	1.1765	1.7236	1.2599	0.16
	P4C	305.0	1,001	149.00	143.00	6.0	19.7	0.0197	251.3303	95.00	1.1765	1.7236	1.4026	0.16
	P5	225.0	738	170.00	160.00	10.0	32.8	0.0444	197.0385	95.00	1.1765	1.7236	2.1082	0.08
	P6	515.1	1,690	160.00	145.00	15.0	49.2	0.0291	382.2361	95.00	1.1765	1.7236	1.7054	0.20
	P7	300.0	984	132.00	125.00	7.0	23.0	0.0233	248.0287	95.00	1.1765	1.7236	1.5275	0.15
	E1	1,004.9	3,297	200.00	140.00	60.0	196.9	0.0597	652.3943	73.77	1.5681	1.9352	2.4435	0.27
	E2	3,201.2	10,503	225.00	125.00	100.0	328.1	0.0312	1648.3679	77.32	1.4854	1.8914	1.7674	0.93
	E3A	292.2	959	175.00	140.00	35.0	114.8	0.1198	242.8628	76.27	1.5090	1.9039	3.4609	0.07
	E3B	201.0	659	150.00	125.00	25.0	82.0	0.1244	180.0370	79.88	1.4310	1.8623	3.5267	0.05
	E4	168.8	554	175.00	130.00	45.0	147.6	0.2666	156.5457	72.49	1.6003	1.9521	5.1637	0.03
	E5	422.0	1,385	150.00	125.00	25.0	82.0	0.0592	325.8841	75.57	1.5251	1.9125	2.4339	0.13

APPENDIX B

HEC-1 RESULTS FOR EXISTING CONDITION

```
*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*             JUN   1998                *
*           VERSION 4.1                 *
*  RGMHEC2000              HEC-1.COM    *
*  RUN DATE   20JAN06  TIME  08:23:08   *
*                                       *
*****************************************
```

```
*****************************************
*                                       *
*   U.S. ARMY CORPS OF ENGINEERS        *
*   HYDROLOGIC ENGINEERING CENTER       *
*         609 SECOND STREET             *
*      DAVIS, CALIFORNIA 95616          *
*          (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

HEC-1 INPUT

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

  1           ID        HYDROLOGIC ANALYSIS
  2           ID        PROJECT:MONTE ARENAS DEVELOPMENT, VEGA BAJA
  3           ID        TRIANGULAR DISTRIBUTION
  4           ID        FREQUENCY OF OCCURRENCE:2-, 10-, 25-, 50- & 100-YEARS
  5           ID        CA ENGINEERING, OCTOBER 2003
  6           ID        EXISTING CONDITION
  7           IT      5                    300
  8           IO      3
  9           JP      5

 10           KK     E3A
 11           KP       1
 12           BA   0.032
 13           LS       0   76.27
 14           UD    0.07
 15           IN      15
 16           KM        TRIANGULAR DISTRIBUTION 2-YRS STORM
 17           PH                  0.47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
 18           KP       2
 19           KM        TRIANGULAR DISTRIBUTION 10-YRS STORM
 20           PH                  0.55    1.31    3.00    3.70    4.10    5.40    6.60    7.60
 21           KP       3
 22           KM        TRIANGULAR DISTRIBUTION 25-YRS STORM
 23           PH                  0.61    1.47    3.50    4.50    5.10    6.30    7.70    9.40
 24           KP       4
 25           KM        TRIANGULAR DISTRIBUTION 50-YRS STORM
 26           PH                  0.64    1.55    3.80    5.00    5.20    7.00    8.70   10.50
 27           KP       5
 28           KM        TRIANGULAR DISTRIBUTION 100-YRS STORM
 29           PH                  0.99    2.15    4.40    5.20    6.10    8.00    9.70   11.50

 30           KK      P3
 31           KP       1
 32           BA  0.0140
 33           LS       0   81.07
 34           UD    0.05
 35           IN      15
 36           KM        TRIANGULAR DISTRIBUTION 2-YRS STORM
 37           PH                  0.47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
 38           KP       2
 39           KM        TRIANGULAR DISTRIBUTION 10-YRS STORM
 40           PH                  0.55    1.31    3.00    3.70    4.10    5.40    6.60    7.60
 41           KP       3
 42           KM        TRIANGULAR DISTRIBUTION 25-YRS STORM
 43           PH                  0.61    1.47    3.50    4.50    5.10    6.30    7.70    9.40
 44           KP       4
 45           KM        TRIANGULAR DISTRIBUTION 50-YRS STORM
 46           PH                  0.64    1.55    3.80    5.00    5.20    7.00    8.70   10.50
 47           KP       5
 48           KM        TRIANGULAR DISTRIBUTION 100-YRS STORM
 49           PH                  0.99    2.15    4.40    5.20    6.10    8.00    9.70   11.50
```


HEC-1 INPUT

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

 50           KK   COMB1
 51           KM  E3A+P3
 52           HC       2

 53           KK     E3B
 54           KP       1
 55           BA   0.024
 56           LS       0   79.88
 57           UD    0.05
 58           IN      15
 59           KM        TRIANGULAR DISTRIBUTION 2-YRS STORM
 60           PH                  0.47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
 61           KP       2
 62           KM        TRIANGULAR DISTRIBUTION 10-YRS STORM
 63           PH                  0.55    1.31    3.00    3.70    4.10    5.40    6.60    7.60
 64           KP       3
 65           KM        TRIANGULAR DISTRIBUTION 25-YRS STORM
 66           PH                  0.61    1.47    3.50    4.50    5.10    6.30    7.70    9.40
 67           KP       4
 68           KM        TRIANGULAR DISTRIBUTION 50-YRS STORM
 69           PH                  0.64    1.55    3.80    5.00    5.20    7.00    8.70   10.50
```

```
70          KP        5
71          KM          TRIANGULAR DISTRIBUTION 100-YRS STORM
72                          0.99     2.15     4.40     5.20     6.10     8.00     9.70    11.50
            PH

73          KK   COMB2
74          KM  E3+P3
75          HC        2

76          KK       E2
77          KP        1
78          BA    0.868
79          LS        0    77.32
80          UD     0.93
81          IN       15
82          KM          TRIANGULAR DISTRIBUTION 2-YRS STORM
83                          0.47     1.04     2.10     2.50     2.70     3.30     4.00     4.60
            PH
84          KP        2
85          KM          TRIANGULAR DISTRIBUTION 10-YRS STORM
86                          0.55     1.31     3.00     3.70     4.10     5.40     6.60     7.60
            PH
87          KP        3
88          KM          TRIANGULAR DISTRIBUTION 25-YRS STORM
89                          0.61     1.47     3.50     4.50     5.10     6.30     7.70     9.40
            PH
90          KP        4
91          KM          TRIANGULAR DISTRIBUTION 50-YRS STORM
92                          0.64     1.55     3.80     5.00     5.20     7.00     8.70    10.50
            PH
93          KP        5
94          KM          TRIANGULAR DISTRIBUTION 100-YRS STORM
95                          0.99     2.15     4.40     5.20     6.10     8.00     9.70    11.50
            PH
```


HEC-1 INPUT

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

96          KK       P2
97          KP        1
98          BA    0.0402
99          LS        0    79.03
100         UD     0.12
101         IN       15
102         KM          TRIANGULAR DISTRIBUTION 2-YRS STORM
103                         0.47     1.04     2.10     2.50     2.70     3.30     4.00     4.60
            PH
104         KP        2
105         KM          TRIANGULAR DISTRIBUTION 10-YRS STORM
106                         0.55     1.31     3.00     3.70     4.10     5.40     6.60     7.60
            PH
107         KP        3
108         KM          TRIANGULAR DISTRIBUTION 25-YRS STORM
109                         0.61     1.47     3.50     4.50     5.10     6.30     7.70     9.40
            PH
110         KP        4
111         KM          TRIANGULAR DISTRIBUTION 50-YRS STORM
112                         0.64     1.55     3.80     5.00     5.20     7.00     8.70    10.50
            PH
113         KP        5
114         KM          TRIANGULAR DISTRIBUTION 100-YRS STORM
115                         0.99     2.15     4.40     5.20     6.10     8.00     9.70    11.50
            PH

116         KK       E1
117         KP        1
118         BA    0.172
119         LS        0    73.77
120         UD     0.27
121         IN       15
122         KM          TRIANGULAR DISTRIBUTION 2-YRS STORM
123                         0.47     1.04     2.10     2.50     2.70     3.30     4.00     4.60
            PH
124         KP        2
125         KM          TRIANGULAR DISTRIBUTION 10-YRS STORM
126                         0.55     1.31     3.00     3.70     4.10     5.40     6.60     7.60
            PH
127         KP        3
128         KM          TRIANGULAR DISTRIBUTION 25-YRS STORM
129                         0.61     1.47     3.50     4.50     5.10     6.30     7.70     9.40
            PH
130         KP        4
131         KM          TRIANGULAR DISTRIBUTION 50-YRS STORM
132                         0.64     1.55     3.80     5.00     5.20     7.00     8.70    10.50
            PH
133         KP        5
134         KM          TRIANGULAR DISTRIBUTION 100-YRS STORM
135                         0.99     2.15     4.40     5.20     6.10     8.00     9.70    11.50
            PH

136         KK       P1
137         KP        1
138         BA    0.0806
139         LS        0       78
140         UD     0.37
141         IN       15
```

```
142   KM      TRIANGULAR DISTRIBUTION 2-YRS STORM
143   PH                0.47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
144   KP      2
145   KM      TRIANGULAR DISTRIBUTION 10-YRS STORM
146   PH                0.55    1.31    3.00    3.70    4.10    5.40    6.60    7.60
147   KP      3
```


HEC-1 INPUT

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

148   KM      TRIANGULAR DISTRIBUTION 25-YRS STORM
149   PH                0.61    1.47    3.50    4.50    5.10    6.30    7.70    9.40
150   KP      4
151   KM      TRIANGULAR DISTRIBUTION 50-YRS STORM
152   PH                0.64    1.55    3.80    5.00    5.20    7.00    8.70   10.50
153   KP      5
154   KM      TRIANGULAR DISTRIBUTION 100-YRS STORM
155   PH                0.99    2.15    4.40    5.20    6.10    8.00    9.70   11.50

156   KK      P7
157   KP       1
158   BA   0.028
159   LS       0   79.00
160   UD    0.10
161   IN      15
162   KM      TRIANGULAR DISTRIBUTION 2-YRS STORM
163   PH                0.47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
164   KP      2
165   KM      TRIANGULAR DISTRIBUTION 10-YRS STORM
166   PH                0.55    1.31    3.00    3.70    4.10    5.40    6.60    7.60
167   KP      3
168   KM      TRIANGULAR DISTRIBUTION 25-YRS STORM
169   PH                0.61    1.47    3.50    4.50    5.10    6.30    7.70    9.40
170   KP      4
171   KM      TRIANGULAR DISTRIBUTION 50-YRS STORM
172   PH                0.64    1.55    3.80    5.00    5.20    7.00    8.70   10.50
173   KP      5
174   KM      TRIANGULAR DISTRIBUTION 100-YRS STORM
175   PH                0.99    2.15    4.40    5.20    6.10    8.00    9.70   11.50

176   KK   COMB3
177   KM   P1+P7
178   HC       2

179   KK      P4
180   KP       1
181   BA   0.0573
182   LS       0   77.64
183   UD    0.08
184   IN      15
185   KM      TRIANGULAR DISTRIBUTION 2-YRS STORM
186   PH                0.47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
187   KP      2
188   KM      TRIANGULAR DISTRIBUTION 10-YRS STORM
189   PH                0.55    1.31    3.00    3.70    4.10    5.40    6.60    7.60
190   KP      3
191   KM      TRIANGULAR DISTRIBUTION 25-YRS STORM
192   PH                0.61    1.47    3.50    4.50    5.10    6.30    7.70    9.40
193   KP      4
194   KM      TRIANGULAR DISTRIBUTION 50-YRS STORM
195   PH                0.64    1.55    3.80    5.00    5.20    7.00    8.70   10.50
196   KP      5
197   KM      TRIANGULAR DISTRIBUTION 100-YRS STORM
198   PH                0.99    2.15    4.40    5.20    6.10    8.00    9.70   11.50
```


HEC-1 INPUT

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

199   KK      P5
200   KP       1
201   BA   0.0224
202   LS       0   78.69
203   UD    0.04
204   IN      15
205   KM      TRIANGULAR DISTRIBUTION 2-YRS STORM
206   PH                0.47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
207   KP      2
208   KM      TRIANGULAR DISTRIBUTION 10-YRS STORM
209   PH                0.55    1.31    3.00    3.70    4.10    5.40    6.60    7.60
210   KP      3
```

```
211   KM      TRIANGULAR DISTRIBUTION 25-YRS STORM
212   PH                0.61    1.47    3.50    4.50    5.10    6.30    7.70    9.40
213   KP      4
214   KM      TRIANGULAR DISTRIBUTION 50-YRS STORM
215   PH                0.64    1.55    3.80    5.00    5.20    7.00    8.70   10.50
216   KP      5
217   KM      TRIANGULAR DISTRIBUTION 100-YRS STORM
218   PH                0.99    2.15    4.40    5.20    6.10    8.00    9.70   11.50

219   KK      F6
220   KP       1
221   BA   0.026
222   LS       0   78.77
223   UD    0.14
224   IN      15
225   KM      TRIANGULAR DISTRIBUTION 2-YRS STORM
226   PH                0.47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
227   KP      2
228   KM      TRIANGULAR DISTRIBUTION 10-YRS STORM
229   PH                0.55    1.31    3.00    3.70    4.10    5.40    6.60    7.60
230   KP      3
231   KM      TRIANGULAR DISTRIBUTION 25-YRS STORM
232   PH                0.61    1.47    3.50    4.50    5.10    6.30    7.70    9.40
233   KP      4
234   KM      TRIANGULAR DISTRIBUTION 50-YRS STORM
235   PH                0.64    1.55    3.80    5.00    5.20    7.00    8.70   10.50
236   KP      5
237   KM      TRIANGULAR DISTRIBUTION 100-YRS STORM
238   PH                0.99    2.15    4.40    5.20    6.10    8.00    9.70   11.50

239   KK      E4
240   KP       1
241   BA   0.014
242   LS       0   72.49
243   UD    0.03
244   IN      15
245   KM      TRIANGULAR DISTRIBUTION 2-YRS STORM
246   PH                0.47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
247   KP      2
248   KM      TRIANGULAR DISTRIBUTION 10-YRS STORM
249   PH                0.55    1.31    3.00    3.70    4.10    5.40    6.60    7.60
250   KP      3
```


HEC-1 INPUT

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

251   KM      TRIANGULAR DISTRIBUTION 25-YRS STORM
252   PH                0.61    1.47    3.50    4.50    5.10    6.30    7.70    9.40
253   KP      4
254   KM      TRIANGULAR DISTRIBUTION 50-YRS STORM
255   PH                0.64    1.55    3.80    5.00    5.20    7.00    8.70   10.50
256   KP      5
257   KM      TRIANGULAR DISTRIBUTION 100-YRS STORM
258   PH                0.99    2.15    4.40    5.20    6.10    8.00    9.70   11.50

259   KK      E5
260   KP       1
261   BA   0.022
262   LS       0   75.57
263   UD    0.13
264   IN      15
265   KM      TRIANGULAR DISTRIBUTION 2-YRS STORM
266   PH                0.47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
267   KP      2
268   KM      TRIANGULAR DISTRIBUTION 10-YRS STORM
269   PH                0.55    1.31    3.00    3.70    4.10    5.40    6.60    7.60
270   KP      3
271   KM      TRIANGULAR DISTRIBUTION 25-YRS STORM
272   PH                0.61    1.47    3.50    4.50    5.10    6.30    7.70    9.40
273   KP      4
274   KM      TRIANGULAR DISTRIBUTION 50-YRS STORM
275   PH                0.64    1.55    3.80    5.00    5.20    7.00    8.70   10.50
276   KP      5
277   KM      TRIANGULAR DISTRIBUTION 100-YRS STORM
278   PH                0.99    2.15    4.40    5.20    6.10    8.00    9.70   11.50
279   ZZ
```

```
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                                    *
*           (916) 756-1104                                         *
*                                                                  *
**********************************************************

* RGMHEC2000                    HEC-1.COM    *
* RUN DATE    20JAN06   TIME  08:23:18         *
*                                              *
************************************************

                    HYDROLOGIC ANALYSIS
                    PROJECT:MONTE ARENAS DEVELOPMENT, VEGA BAJA
                    TRIANGULAR DISTRIBUTION
                    FREQUENCY OF OCCURRENCE:2-, 10-, 25-, 50- & 100-YEARS
                    CA ENGINEERING, OCTOBER 2003
                    EXISTING CONDITION

  8 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

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

            **************
            *            *
 10 KK      *    E3A     *
            *            *
            **************

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

 11 KP        PLAN  1 FOR STATION      E3A
                         TRIANGULAR DISTRIBUTION 2-YRS STORM

              SUBBASIN RUNOFF DATA

 12 BA          SUBBASIN CHARACTERISTICS
                    TAREA          .03  SUBBASIN AREA

                PRECIPITATION DATA
                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                                                          ..... TP-49 .....
 17 PH                                  ..... TP-40 .....
                  ..... HYDRO-35 .....  ..... ..... ..... ..... ..... ..... ..... .....
                  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    1.04   2.10   2.50   2.70   3.30   4.00   4.60    .00    .00    .00    .00

                                                STORM AREA =      .03

 13 LS          SCS LOSS RATE
```

STRTL .62 INITIAL ABSTRACTION
CRVNBR 76.27 CURVE NUMBER
RTIMP .00 PERCENT IMPERVIOUS AREA

14 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .07 LAG

***

UNIT HYDROGRAPH
6 END-OF-PERIOD ORDINATES

118. 93. 26. 8. 2. 1.

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

HYDROGRAPH AT STATION E3A
FOR PLAN 1, RATIO = 1.00

TOTAL RAINFALL = 4.60, TOTAL LOSS = 2.37, TOTAL EXCESS = 2.23

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)	6.	2.	2.	2.
+ 52.	12.08	(INCHES)	1.864	2.232	2.232	2.232
		(AC-FT)	3.	4.	4.	4.

CUMULATIVE AREA = .03 SQ MI

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

HYDROGRAPH AT STATION E3A
FOR PLAN 1, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)	6.	2.	2.	2.
+ 52.	12.08	(INCHES)	1.864	2.232	2.232	2.232
		(AC-FT)	3.	4.	4.	4.

CUMULATIVE AREA = .03 SQ MI

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

18 KP PLAN 2 FOR STATION E3A
TRIANGULAR DISTRIBUTION 10-YRS STORM

SUBBASIN RUNOFF DATA

12 BA SUBBASIN CHARACTERISTICS
TAREA .03 SUBBASIN AREA

PRECIPITATION DATA

20 PH DEPTHS FOR 0-PERCENT HYPOTHETICAL STORM

..... HYDRO-35			.... TP-40					.... TP-49			
5-MIN	15-MIN	60-MIN	2-HR	3-HR	6-HR	12-HR	24-HR	2-DAY	4-DAY	7-DAY	10-DAY
.55	1.31	3.00	3.70	4.10	5.40	6.60	7.60	.00	.00	.00	.00

STORM AREA = .03

13 LS SCS LOSS RATE
STRTL .62 INITIAL ABSTRACTION
CRVNBR 76.27 CURVE NUMBER
RTIMP .00 PERCENT IMPERVIOUS AREA

14 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .07 LAG

***

UNIT HYDROGRAPH
6 END-OF-PERIOD ORDINATES

118. 93. 26. 8. 2. 1.

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

                HYDROGRAPH AT STATION      E3A
                  FOR PLAN 2, RATIO = 1.00

TOTAL RAINFALL =     7.60, TOTAL LOSS =     2.77, TOTAL EXCESS =     4.83

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

+  (CFS)      (HR)      (CFS)       13.         4.         4.         4.
+   87.       12.08   (INCHES)    3.856      4.826      4.826      4.826
                      (AC-FT)       7.          8.         8.         8.

                CUMULATIVE AREA =      .03 SQ MI

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

                HYDROGRAPH AT STATION      E3A
                  FOR PLAN 2, RATIO = 1.00

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

+  (CFS)      (HR)      (CFS)       13.         4.         4.         4.
+   87.       12.08   (INCHES)    3.856      4.826      4.826      4.826
                      (AC-FT)       7.          8.         8.         8.

                CUMULATIVE AREA =      .03 SQ MI

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

21 KP        PLAN  3 FOR STATION      E3A
                  TRIANGULAR DISTRIBUTION 25-YRS STORM

             SUBBASIN RUNOFF DATA

12 BA          SUBBASIN CHARACTERISTICS
                 TAREA          .03  SUBBASIN AREA

               PRECIPITATION DATA

                                DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                                  TP-40                          TP-49
23 PH          ..... HYDRO-35 .....  ..............  ..............  ..........  ..........
               5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                 .61    1.47    3.50   4.50   5.10   6.30    7.70    9.40     .00     .00     .00     .00

                                                STORM AREA =      .03

13 LS          SCS LOSS RATE
                 STRTL          .62  INITIAL ABSTRACTION
                 CRVNBR       76.27  CURVE NUMBER
                 RTIMP          .00  PERCENT IMPERVIOUS AREA

14 UD          SCS DIMENSIONLESS UNITGRAPH
                 TLAG           .07  LAG

                                                                  ***

                                                          UNIT HYDROGRAPH
                                                       6 END-OF-PERIOD ORDINATES
                 118.      93.      26.       8.        2.        1.

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

                HYDROGRAPH AT STATION      E3A
                  FOR PLAN 3, RATIO = 1.00

TOTAL RAINFALL =     9.40, TOTAL LOSS =     2.92, TOTAL EXCESS =     6.48

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

+  (CFS)      (HR)      (CFS)       17.         6.         5.         5.
+   106.      12.08   (INCHES)    4.922      6.480      6.480      6.480
```

```
                    (AC-FT)          8.          11.          11.          11.

                    CUMULATIVE AREA =      .03 SQ MI

                                                  ***          ***
      ***          ***          ***
                    HYDROGRAPH AT STATION        E3A
                      FOR PLAN 3, RATIO = 1.00

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

+   (CFS)        (HR)        (CFS)        17.          6.           5.           5.
+     106.       12.08     (INCHES)     4.922       6.480        6.480        6.480
                           (AC-FT)        8.          11.          11.          11.

                    CUMULATIVE AREA =      .03 SQ MI

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

  24 KP          PLAN  4 FOR STATION        E3A
                          TRIANGULAR DISTRIBUTION 50-YRS STORM

                 SUBBASIN RUNOFF DATA

  12 BA            SUBBASIN CHARACTERISTICS
                        TAREA          .03  SUBBASIN AREA

                   PRECIPITATION DATA
                                        DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
  26 PH                                                  ..... TP-40 .....  ..... TP-49 .....
                   ..... 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
                     .64    1.55   3.80   5.00   5.20   7.00   8.70  10.50    .00    .00    .00    .00
                                                   STORM AREA =      .03

  13 LS            SCS LOSS RATE
                        STRTL          .62  INITIAL ABSTRACTION
                        CRVNBR       76.27  CURVE NUMBER
                        RTIMP          .00  PERCENT IMPERVIOUS AREA

  14 UD            SCS DIMENSIONLESS UNITGRAPH
                        TLAG           .07  LAG
                                                  ***
                                                 UNIT HYDROGRAPH
                                             6 END-OF-PERIOD ORDINATES
                   118.      93.      26.       8.       2.       1.
                                                  ***
      ***          ***          ***
                    HYDROGRAPH AT STATION        E3A
                      FOR PLAN 4, RATIO = 1.00

    TOTAL RAINFALL =   10.50, TOTAL LOSS =    2.99, TOTAL EXCESS =    7.51

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

+   (CFS)        (HR)        (CFS)        19.          6.           6.           6.
+     116.       12.08     (INCHES)     5.607       7.511        7.511        7.511
                           (AC-FT)       10.          13.          13.          13.

                    CUMULATIVE AREA =      .03 SQ MI

                                                  ***          ***
      ***          ***          ***
                    HYDROGRAPH AT STATION        E3A
                      FOR PLAN 4, RATIO = 1.00

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

+   (CFS)        (HR)
```

+ 116.	12.08	(CFS)	19.	6.	6.	6.
		(INCHES)	5.607	7.511	7.511	7.511
		(AC-FT)	10.	13.	13.	13.

CUMULATIVE AREA = .03 SQ MI

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

27 KP PLAN 5 FOR STATION E3A
TRIANGULAR DISTRIBUTION 100-YRS STORM

SUBBASIN RUNOFF DATA

12 BA SUBBASIN CHARACTERISTICS
TAREA .03 SUBBASIN AREA

PRECIPITATION DATA

29 PH DEPTHS FOR 0-PERCENT HYPOTHETICAL STORM

..... HYDRO-35			..... TP-40					..... TP-49			
5-MIN	15-MIN	60-MIN	2-HR	3-HR	6-HR	12-HR	24-HR	2-DAY	4-DAY	7-DAY	10-DAY
.99	2.15	4.40	5.20	6.10	8.00	9.70	11.50	.00	.00	.00	.00

STORM AREA = .03

13 LS SCS LOSS RATE
STRTL .62 INITIAL ABSTRACTION
CRVNBR 76.27 CURVE NUMBER
RTIMP .00 PERCENT IMPERVIOUS AREA

14 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .07 LAG

***

UNIT HYDROGRAPH
6 END-OF-PERIOD ORDINATES

118. 93. 26. 8. 2. 1.

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

HYDROGRAPH AT STATION E3A
FOR PLAN 5, RATIO = 1.00

TOTAL RAINFALL = 11.50, TOTAL LOSS = 3.04, TOTAL EXCESS = 8.46

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 165.	12.08		22.	7.	7.	7.
		(INCHES)	6.534	8.458	8.458	8.458
		(AC-FT)	11.	14.	14.	14.

CUMULATIVE AREA = .03 SQ MI

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

HYDROGRAPH AT STATION E3A
FOR PLAN 5, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 165.	12.08		22.	7.	7.	7.
		(INCHES)	6.534	8.458	8.458	8.458
		(AC-FT)	11.	14.	14.	14.

CUMULATIVE AREA = .03 SQ MI

*** ***

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                **************
                *            *
30 KK           *     P3     *
                *            *
                **************

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

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

             SUBBASIN RUNOFF DATA

32 BA          SUBBASIN CHARACTERISTICS
                    TAREA          .01  SUBBASIN AREA

               PRECIPITATION DATA
                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                                ..............  TP-40 ..............  ........... TP-49 ...........
37 PH          ..... HYDRO-35 ......            2-HR     3-HR     6-HR    12-HR    24-HR    2-DAY    4-DAY    7-DAY   10-DAY
               5-MIN   15-MIN   60-MIN          2.50     2.70     3.30     4.00     4.60      .00      .00      .00      .00
                 .47     1.04     2.10
                                                        STORM AREA =       .01

33 LS          SCS LOSS RATE
                    STRTL           .47  INITIAL ABSTRACTION
                    CRVNBR        81.07  CURVE NUMBER
                    RTIMP           .00  PERCENT IMPERVIOUS AREA

34 UD          SCS DIMENSIONLESS UNITGRAPH
                    TLAG            .05  LAG
                                                                  ***
                                                        UNIT HYDROGRAPH
                                                     5 END-OF-PERIOD ORDINATES
                                                              0.
                 72.       28.       6.        1.
                                                  ***                  ***
                 ***                ***
        ***
                        HYDROGRAPH AT STATION        P3
                          FOR PLAN 1, RATIO = 1.00

        TOTAL RAINFALL =     4.60, TOTAL LOSS =     1.96, TOTAL EXCESS =     2.64

                                                MAXIMUM AVERAGE FLOW
        PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
+       (CFS)         (HR)      (CFS)       3.         1.         1.         1.
+         31.        12.08    (INCHES)   2.181      2.641      2.641      2.641
                              (AC-FT)      2.         2.         2.         2.

                        CUMULATIVE AREA =      .01 SQ MI
                                                  ***                  ***
                 ***                ***
        ***
                        HYDROGRAPH AT STATION        P3
                          FOR PLAN 1, RATIO = 1.00

                                                MAXIMUM AVERAGE FLOW
        PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
+       (CFS)         (HR)      (CFS)       3.         1.         1.         1.
+         31.        12.08    (INCHES)   2.181      2.641      2.641      2.641
                              (AC-FT)      2.         2.         2.         2.

                        CUMULATIVE AREA =      .01 SQ MI

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

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

             SUBBASIN RUNOFF DATA
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```
32 BA          SUBBASIN CHARACTERISTICS
                    TAREA          .01  SUBBASIN AREA

               PRECIPITATION DATA
                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                   ............... TP-40 ...............  ........... TP-49 ...........
40 PH          ..... HYDRO-35 ......  ..............  2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR    .00     .00     .00     .00
                  .55    1.31    3.00   3.70    4.10    5.40    6.60    7.60
                                                STORM AREA =      .01

33 LS          SCS LOSS RATE
                    STRTL          .47  INITIAL ABSTRACTION
                    CRVNBR       81.07  CURVE NUMBER
                    RTIMP          .00  PERCENT IMPERVIOUS AREA

34 UD          SCS DIMENSIONLESS UNITGRAPH
                    TLAG           .05  LAG
                                                    ***
                                                UNIT HYDROGRAPH
                                            5 END-OF-PERIOD ORDINATES
                                                     0.
                 72.      28.      6.       1.
                                                    ***          ***
                 ***      ***      ***      ***
                          HYDROGRAPH AT STATION        P3
                            FOR PLAN 2, RATIO = 1.00

          TOTAL RAINFALL =    7.60, TOTAL LOSS =    2.23, TOTAL EXCESS =    5.37
                                          MAXIMUM AVERAGE FLOW
          PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
            (CFS)       (HR)     (CFS)        6.         2.         2.         2.
+            45.       12.08   (INCHES)     4.253      5.374      5.374      5.374
                                 (AC-FT)       3.         4.         4.         4.
                          CUMULATIVE AREA =      .01 SQ MI
                                                    ***          ***
                 ***      ***      ***      ***
                          HYDROGRAPH AT STATION        P3
                            FOR PLAN 2, RATIO = 1.00
                                          MAXIMUM AVERAGE FLOW
          PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
+           (CFS)       (HR)     (CFS)        6.         2.         2.         2.
+            45.       12.08   (INCHES)     4.253      5.374      5.374      5.374
                                 (AC-FT)       3.         4.         4.         4.
                          CUMULATIVE AREA =      .01 SQ MI

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

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

               SUBBASIN RUNOFF DATA

32 BA          SUBBASIN CHARACTERISTICS
                    TAREA          .01  SUBBASIN AREA

               PRECIPITATION DATA
                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                   ............... TP-40 ...............  ........... TP-49 ...........
43 PH          ..... HYDRO-35 ......  ..............  2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR    .00     .00     .00     .00
                  .61    1.47    3.50   4.50    5.10    6.30    7.70    9.40
                                                STORM AREA =      .01
```

```
33 LS        SCS LOSS RATE
                  STRTL           .47  INITIAL ABSTRACTION
                  CRVNBR        91.07  CURVE NUMBER
                  RTIMP           .00  PERCENT IMPERVIOUS AREA

34 UD        SCS DIMENSIONLESS UNITGRAPH
                  TLAG            .05  LAG

                                  ***

                     UNIT HYDROGRAPH
                5 END-OF-PERIOD ORDINATES
      72.       28.       6.       1.       0.

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

                  HYDROGRAPH AT STATION        P3
                  FOR PLAN 3, RATIO = 1.00

 TOTAL RAINFALL =    9.40, TOTAL LOSS =    2.32, TOTAL EXCESS =    7.08

 PEAK FLOW    TIME                  MAXIMUM AVERAGE FLOW
                              6-HR      24-HR      72-HR    24.92-HR
 + (CFS)      (HR)
                     (CFS)
 +    53.     12.08              8.        3.         3.         3.
                     (INCHES)  5.315     7.082      7.082      7.082
                     (AC-FT)     4.        5.         5.         5.

                  CUMULATIVE AREA =     .01 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)
 +    53.     12.00              8.        3.         3.         3.
                     (INCHES)  5.315     7.082      7.082      7.082
                     (AC-FT)     4.        5.         5.         5.

                  CUMULATIVE AREA =     .01 SQ MI

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

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

             SUBBASIN RUNOFF DATA

32 BA        SUBBASIN CHARACTERISTICS
                  TAREA           .01  SUBBASIN AREA

             PRECIPITATION DATA

46 PH                  DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
                .64    1.55    3.80   5.00   5.20   7.00   8.70  10.50    .00    .00    .00     .00
                                        STORM AREA =       .01

33 LS        SCS LOSS RATE
                  STRTL           .47  INITIAL ABSTRACTION
                  CRVNBR        91.07  CURVE NUMBER
                  RTIMP           .00  PERCENT IMPERVIOUS AREA

34 UD        SCS DIMENSIONLESS UNITGRAPH
                  TLAG            .05  LAG

                                  ***

                     UNIT HYDROGRAPH
                5 END-OF-PERIOD ORDINATES
      72.       28.       6.       1.       0.
```

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

                HYDROGRAPH AT STATION        P3
                  FOR PLAN 4, RATIO = 1.00

TOTAL RAINFALL =   10.50, TOTAL LOSS =    2.36, TOTAL EXCESS =    8.14

                                    MAXIMUM AVERAGE FLOW
PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
+  (CFS)      (HR)     (CFS)        9.         3.         3.         3.
+    57.      12.08    (INCHES)   6.013      8.139      8.139      8.139
                       (AC-FT)      4.         6.         6.         6.

                CUMULATIVE AREA =      .01 SQ MI

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

                HYDROGRAPH AT STATION        P3
                  FOR PLAN 4, RATIO = 1.00

                                    MAXIMUM AVERAGE FLOW
PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
+  (CFS)      (HR)     (CFS)        9.         3.         3.         3.
+    57.      12.08    (INCHES)   6.013      8.139      8.139      8.139
                       (AC-FT)      4.         6.         6.         6.

                CUMULATIVE AREA =      .01 SQ MI

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

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

             SUBBASIN RUNOFF DATA

32 BA        SUBBASIN CHARACTERISTICS
                TAREA          .01  SUBBASIN AREA

             PRECIPITATION DATA
                                DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                                                          TP-49
49 PH        ..... HYDRO-35 .....  ..... TP-40 .....  .....
             5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
              .99    2.15    4.40   5.20   6.10   8.00   9.70  11.50    .00    .00    .00    .00
                                          STORM AREA =      .01

33 LS        SCS LOSS RATE
                STRTL          .47  INITIAL ABSTRACTION
                CRVNBR       81.07  CURVE NUMBER
                RTIMP          .00  PERCENT IMPERVIOUS AREA

34 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG           .05  LAG
                                                                  ***
                                                     UNIT HYDROGRAPH
                                                  5 END-OF-PERIOD ORDINATES
                                                        0.
                72.      28.      6.       1.
***          ***          ***          ***          ***

                HYDROGRAPH AT STATION        P3
                  FOR PLAN 5, RATIO = 1.00

TOTAL RAINFALL =   11.50, TOTAL LOSS =    2.39, TOTAL EXCESS =    9.11

                                    MAXIMUM AVERAGE FLOW
PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
+  (CFS)      (HR)     (CFS)       10.         3.         3.         3.
+    85.      12.08
```

```
                    (INCHES)      6.967       9.106       9.106       9.106
                    (AC-FT)        5.          7.          7.          7.

                    CUMULATIVE AREA =     .01 SQ MI

                                                                  ***
                                                      ***
                                          ***
                              ***
     ***
                    HYDROGRAPH AT STATION        P3
                      FOR PLAN 5, RATIO - 1.00

                                                MAXIMUM AVERAGE FLOW
  PEAK FLOW      TIME                    6-HR       24-HR      72-HR      24.92-HR
+   (CFS)        (HR)        (CFS)                                                 3.
                                          10.         3.         3.         9.106
+     85.        12.08     (INCHES)     6.967      9.106      9.106          7.
                           (AC-FT)       5.          7.         7.

                    CUMULATIVE AREA =     .01 SQ MI

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                  *            *
   50 KK          *    COMB1   *
                  *            *
                  **************
                        E3A+P3

   52 HC                HYDROGRAPH COMBINATION
                          COMP          2  NUMBER OF HYDROGRAPHS TO COMBINE
                                                                  ***
                                                                          ***
                                                      ***
                                          ***
     ***
                              ***
                    HYDROGRAPH AT STATION     COMB1
                      FOR PLAN 1, RATIO - 1.00

                                                MAXIMUM AVERAGE FLOW
  PEAK FLOW      TIME                    6-HR       24-HR      72-HR      24.92-HR
+   (CFS)        (HR)        (CFS)                                                 3.
                                          10.         3.         3.         2.356
+     83.        12.08     (INCHES)     1.960      2.356      2.356          6.
                           (AC-FT)       5.          6.         6.

                    CUMULATIVE AREA =     .05 SQ MI

                                                                  ***
                                                      ***
                                          ***
                              ***
     ***
                    HYDROGRAPH AT STATION     COMB1
                      FOR PLAN 2, RATIO - 1.00

                                                MAXIMUM AVERAGE FLOW
  PEAK FLOW      TIME                    6-HR       24-HR      72-HR      24.92-HR
+   (CFS)        (HR)        (CFS)                                                 6.
                                          20.         6.         6.         4.992
+    132.        12.08     (INCHES)     3.925      4.992      4.992         12.
                           (AC-FT)      10.         12.        12.

                    CUMULATIVE AREA =     .05 SQ MI

                                                                  ***
                                                      ***
                                          ***
                              ***
     ***
                    HYDROGRAPH AT STATION     COMB1
                      FOR PLAN 3, RATIO - 1.00

                                                MAXIMUM AVERAGE FLOW
  PEAK FLOW      TIME                    6-HR       24-HR      72-HR      24.92-HR
+   (CFS)        (HR)        (CFS)                                                 8.
                                          25.         8.         8.
+    159.        12.08
```

	6-HR	24-HR	72-HR	24.92-HR
(INCHES)	5.040	6.663	6.663	6.663
(AC-FT)	12.	16.	16.	16.

CUMULATIVE AREA = .05 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)	28.	10.	9.	9.
+ 173.	12.08					
		(INCHES)	5.729	7.702	7.702	7.702
		(AC-FT)	14.	19.	19.	19.

CUMULATIVE AREA = .05 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)	33.	11.	10.	10.
+ 250.	12.08					
		(INCHES)	6.663	8.655	8.655	8.655
		(AC-FT)	16.	21.	21.	21.

CUMULATIVE AREA = .05 SQ MI

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              *            *
 53 KK        *    E3B     *
              *            *
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54 KP PLAN 1 FOR STATION E3B
TRIANGULAR DISTRIBUTION 2-YRS STORM

SUBBASIN RUNOFF DATA

55 BA SUBBASIN CHARACTERISTICS
TAREA .02 SUBBASIN AREA

PRECIPITATION DATA

60 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	1.04	2.10	2.50	2.70	3.30	4.00	4.60	.00	.00	.00	.00

STORM AREA = .02

56 LS SCS LOSS RATE
STRTL .50 INITIAL ABSTRACTION
CRVNBR 79.88 CURVE NUMBER
RTIMP .00 PERCENT IMPERVIOUS AREA

57 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .05 LAG

***

UNIT HYDROGRAPH
5 END-OF-PERIOD ORDINATES

```
                                                  1.
          124.      48.       11.       2.
                                                                  ***
                                   ***          ***
   ***          ***
                    HYDROGRAPH AT STATION        E3B
                      FOR PLAN 1, RATIO - 1.00

   TOTAL RAINFALL =     4.60, TOTAL LOSS =     2.06, TOTAL EXCESS =     2.54

                                                MAXIMUM AVERAGE FLOW
   PEAK FLOW      TIME                   6-HR       24-HR       72-HR      24.92-HR
                                                                                 2.
+  (CFS)          (HR)        (CFS)        5.          2.          2.        2.536
                                                                                 3.
+     51.       12.08      (INCHES)     2.102       2.536       2.536
                           (AC-FT)        3.          3.          3.

                    CUMULATIVE AREA =      .02 SQ MI

                                                                   ***
                                   ***          ***
   ***          ***
                    HYDROGRAPH AT STATION        E3B
                      FOR PLAN 1, RATIO - 1.00

                                                MAXIMUM AVERAGE FLOW
   PEAK FLOW      TIME                   6-HR       24-HR       72-HR      24.92-HR
                                                                                 2.
+  (CFS)          (HR)        (CFS)        5.          2.          2.        2.536
                                                                                 3.
+     51.       12.08      (INCHES)     2.102       2.536       2.536
                           (AC-FT)        3.          3.          3.

                    CUMULATIVE AREA =      .02 SQ MI

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

61 KP               PLAN  2 FOR STATION        E3B
                              TRIANGULAR DISTRIBUTION 10-YRS STORM

                    SUBBASIN RUNOFF DATA

55 BA                 SUBBASIN CHARACTERISTICS
                          TAREA          .02  SUBBASIN AREA

                    PRECIPITATION DATA
                                                DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                                                                                  TP-49
                                                                TP-40
63 PH                 ..... HYDRO-35 .....      2-HR       3-HR       6-HR      12-HR      24-HR     2-DAY      4-DAY      7-DAY     10-DAY
                      5-MIN    15-MIN    60-MIN    3.70       4.10       5.40       6.60       7.60       .00        .00        .00       .00
                       .55      1.31      3.00
                                                                  STORM AREA =       .02

56 LS                 SCS LOSS RATE
                          STRTL          .50  INITIAL ABSTRACTION
                          CRVNBR       79.88  CURVE NUMBER
                          RTIMP          .00  PERCENT IMPERVIOUS AREA

57 UD                 SCS DIMENSIONLESS UNITGRAPH
                          TLAG           .05  LAG
                                                                   ***
                                                                UNIT HYDROGRAPH
                                                             5 END-OF-PERIOD ORDINATES
                                                                  1.
          124.      48.       11.       2.
                                                                  ***
                                   ***          ***
   ***          ***
                    HYDROGRAPH AT STATION        E3B
                      FOR PLAN 2, RATIO - 1.00

   TOTAL RAINFALL =     4.60, TOTAL LOSS =     2.36, TOTAL EXCESS =     5.24

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

```
                                                         3.            3.            3.
+     76.       12.08                      11.         5.237         5.237         5.237
                         (INCHES)        4.156           7.            7.            7.
                         (AC-FT)           5.

                         CUMULATIVE AREA =      .02 SQ MI

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

                         HYDROGRAPH AT STATION      E3B
                           FOR PLAN 2, RATIO = 1.00

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

+   (CFS)         (HR)       (CFS)
                                                         3.            3.            3.
+     76.        12.08                     11.         5.237         5.237         5.237
                         (INCHES)        4.156           7.            7.            7.
                         (AC-FT)           5.

                         CUMULATIVE AREA =      .02 SQ MI

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

 64 KP          PLAN  3 FOR STATION       E3B
                                TRIANGULAR DISTRIBUTION 25-YRS STORM

                SUBBASIN RUNOFF DATA

 55 BA            SUBBASIN CHARACTERISTICS
                       TAREA            .02   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
                   .61    1.47    3.50     4.50    5.10    6.30    7.70    9.40    .00     .00     .00     .00

                                                  STORM AREA =      .02

 56 LS             SCS LOSS RATE
                       STRTL            .50   INITIAL ABSTRACTION
                       CRVNBR         79.88   CURVE NUMBER
                       RTIMP            .00   PERCENT IMPERVIOUS AREA

 57 UD             SCS DIMENSIONLESS UNITGRAPH
                       TLAG             .05   LAG

                                                              ***

                                                      UNIT HYDROGRAPH
                                                 5 END-OF-PERIOD ORDINATES
               124.          48.          11.          2.           1.

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

                         HYDROGRAPH AT STATION      E3B
                           FOR PLAN 3, RATIO = 1.00

       TOTAL RAINFALL =     9.40, TOTAL LOSS =     2.47, TOTAL EXCESS =     6.93

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

+   (CFS)         (HR)       (CFS)
                                                         4.            4.            4.
+     90.        12.08                     13.         6.933         6.933         6.933
                         (INCHES)        5.220           9.            9.            9.
                         (AC-FT)           7.

                         CUMULATIVE AREA =      .02 SQ MI

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

                         HYDROGRAPH AT STATION      E3B
                           FOR PLAN 3, RATIO = 1.00

                                                    MAXIMUM AVERAGE FLOW

   PEAK FLOW      TIME
```

```
                                  6-HR        24-HR       72-HR      24.92-HR

+   (CFS)        (HR)        (CFS)        13.         4.          4.          4.
+    90.         12.08     (INCHES)     5.220       6.933       6.933       6.933
                           (AC-FT)        7.          9.          9.          9.

                           CUMULATIVE AREA =      .02 SQ MI

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

67 KP        PLAN  4 FOR STATION      E3B
                        TRIANGULAR DISTRIBUTION 50-YRS STORM

             SUBBASIN RUNOFF DATA

55 BA          SUBBASIN CHARACTERISTICS
                    TAREA          .02  SUBBASIN AREA

               PRECIPITATION DATA
                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                  ..............  TP-40  ..............  ........... TP-49 ...........
69 PH          ..... HYDRO-35 ......  ..............  ..............  ..............  ..............  ..............  ..............
                5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                  .64    1.55    3.80   5.00    5.20    7.00    8.70   10.50     .00     .00     .00     .00
                                                   STORM AREA =      .02

56 LS          SCS LOSS RATE
                     STRTL          .50  INITIAL ABSTRACTION
                     CRVNBR       79.08  CURVE NUMBER
                     RTIMP          .00  PERCENT IMPERVIOUS AREA

57 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG           .05  LAG
                                                    ***
                                                   UNIT HYDROGRAPH
                                                 5 END-OF-PERIOD ORDINATES
                                                      1.
                                  2.
                     11.
                48.                                                  ***
             124.                          ***                 ***
                          ***
        ***
                      HYDROGRAPH AT STATION      E3B
                        FOR PLAN 4, RATIO = 1.00

        TOTAL RAINFALL =   10.50, TOTAL LOSS =    2.52, TOTAL EXCESS =    7.98

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

+       (CFS)         (HR)        (CFS)        15.         5.          5.          5.
+        97.          12.08     (INCHES)     5.915       7.984       7.984       7.984
                                (AC-FT)        8.         10.         10.         10.

                                CUMULATIVE AREA =      .02 SQ MI

                                                                   ***
                                                   ***
        ***                   ***
                      HYDROGRAPH AT STATION      E3B
                        FOR PLAN 4, RATIO = 1.00

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

+       (CFS)         (HR)        (CFS)        15.         5.          5.          5.
+        97.          12.08     (INCHES)     5.915       7.984       7.984       7.984
                                (AC-FT)        8.         10.         10.         10.

                                CUMULATIVE AREA =      .02 SQ MI

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
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70 KP      PLAN  5 FOR STATION      E3B
                TRIANGULAR DISTRIBUTION 100-YRS STORM

           SUBBASIN RUNOFF DATA

55 BA        SUBBASIN CHARACTERISTICS
                TAREA              .02  SUBBASIN AREA

             PRECIPITATION DATA
                                     DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
72 PH                                                                            ........... TP-49 ...........
             ..... HYDRO-35 ......  ............... TP-40 ................   2-DAY   4-DAY   7-DAY  10-DAY
             5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR     .00     .00     .00     .00
               .99    2.15    4.40    5.20    6.10    8.00    9.70   11.50
                                                  STORM AREA =       .02

56 LS        SCS LOSS RATE
                STRTL              .50  INITIAL ABSTRACTION
                CRVNBR           79.88  CURVE NUMBER
                RTIMP              .00  PERCENT IMPERVIOUS AREA

57 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG               .05  LAG
                                                            ***

                                                  UNIT HYDROGRAPH
                                               5 END-OF-PERIOD ORDINATES
             124.        48.        11.         2.         1.

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

                      HYDROGRAPH AT STATION       E3B
                        FOR PLAN 5, RATIO = 1.00

   TOTAL RAINFALL =    11.50, TOTAL LOSS =     2.55, TOTAL EXCESS =     8.95

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

 +   (CFS)        (HR)
                               (CFS)
 +      144.      12.08                     18.          6.          6.          6.
                             (INCHES)     6.863       8.947       8.947       8.947
                             (AC-FT)         9.         11.         11.         11.

                      CUMULATIVE AREA =       .02 SQ MI

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

                      HYDROGRAPH AT STATION       E3B
                        FOR PLAN 5, RATIO = 1.00

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

 +   (CFS)        (HR)
                               (CFS)
 +      144.      12.08                     18.          6.          6.          6.
                             (INCHES)     6.863       8.947       8.947       8.947
                             (AC-FT)         9.         11.         11.         11.

                      CUMULATIVE AREA =       .02 SQ MI

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

              **************
              *            *
73 KK         *   COMB2    *
              *            *
              **************
                       E3+P3

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

HYDROGRAPH AT STATION COMB2
FOR PLAN 1, RATIO = 1.00

	PEAK FLOW	TIME		6-HR	MAXIMUM AVERAGE FLOW 24-HR	72-HR	24.92-HR
+	(CFS)	(HR)	(CFS)	15.	5.	4.	4.
+	134.	12.08	(INCHES)	2.008	2.418	2.418	2.418
			(AC-FT)	7.	9.	9.	9.

CUMULATIVE AREA = .07 SQ MI

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

HYDROGRAPH AT STATION COMB2
FOR PLAN 2, RATIO = 1.00

	PEAK FLOW	TIME		6-HR	MAXIMUM AVERAGE FLOW 24-HR	72-HR	24.92-HR
+	(CFS)	(HR)	(CFS)	30.	10.	9.	9.
+	208.	12.08	(INCHES)	4.037	5.076	5.076	5.076
			(AC-FT)	15.	19.	19.	19.

CUMULATIVE AREA = .07 SQ MI

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

HYDROGRAPH AT STATION COMB2
FOR PLAN 3, RATIO = 1.00

	PEAK FLOW	TIME		6-HR	MAXIMUM AVERAGE FLOW 24-HR	72-HR	24.92-HR
+	(CFS)	(HR)	(CFS)	38.	13.	12.	12.
+	249.	12.08	(INCHES)	5.102	6.756	6.756	6.756
			(AC-FT)	19.	25.	25.	25.

CUMULATIVE AREA = .07 SQ MI

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

HYDROGRAPH AT STATION COMB2
FOR PLAN 4, RATIO = 1.00

	PEAK FLOW	TIME		6-HR	MAXIMUM AVERAGE FLOW 24-HR	72-HR	24.92-HR
+	(CFS)	(HR)	(CFS)	44.	15.	14.	14.
+	270.	12.08	(INCHES)	5.792	7.799	7.799	7.799
			(AC-FT)	22.	29.	29.	29.

CUMULATIVE AREA = .07 SQ MI

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

HYDROGRAPH AT STATION COMB2
FOR PLAN 5, RATIO = 1.00

	PEAK FLOW	TIME		6-HR	MAXIMUM AVERAGE FLOW 24-HR	72-HR	24.92-HR
+	(CFS)	(HR)	(CFS)	51.	16.	16.	16.
+	394.	12.08	(INCHES)	6.731	8.755	8.755	8.755
			(AC-FT)	25.	33.	33.	33.

CUMULATIVE AREA = .07 SQ MI

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

             **************
             *            *
  76 KK      *     E2     *
             *            *
             **************

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

  77 KP         PLAN  1 FOR STATION        E2
                              TRIANGULAR DISTRIBUTION 2-YRS STORM

                SUBBASIN RUNOFF DATA

  78 BA           SUBBASIN CHARACTERISTICS
                       TAREA           .87  SUBBASIN AREA

                  PRECIPITATION DATA
                                        DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
  83 PH           ..... 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    1.04    2.10   2.50   2.70   3.30   4.00   4.60     .00     .00     .00     .00
                                                    STORM AREA =       .87

  79 LS           SCS LOSS RATE
                       STRTL            .59  INITIAL ABSTRACTION
                       CRVNBR         77.32  CURVE NUMBER
                       RTIMP            .00  PERCENT IMPERVIOUS AREA

  80 UD           SCS DIMENSIONLESS UNITGRAPH
                       TLAG             .93  LAG
                                                     ***

                                               UNIT HYDROGRAPH
                                       58 END-OF-PERIOD ORDINATES
               11.        35.        65.       104.       154.       215.       285.       344.       388.       416.
              429.       430.       423.       401.       375.       346.       312.       271.       229.       194.
              168.       146.       127.       112.        98.        85.        74.        63.        56.        49.
               42.        37.        32.        28.        24.        21.        18.        16.        14.        12.
               11.         9.         8.         7.         6.         5.         5.         4.         4.         3.
                3.         2.         2.         2.         1.         1.         0.         0.

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

                          HYDROGRAPH AT STATION         E2
                            FOR PLAN 1, RATIO = 1.00

     TOTAL RAINFALL =     4.59, TOTAL LOSS =     2.28, TOTAL EXCESS =     2.31

     PEAK FLOW      TIME                            MAXIMUM AVERAGE FLOW
                                           6-HR         24-HR        72-HR      24.92-HR
 +    (CFS)         (HR)
                                (CFS)
 +      512.       13.08                    178.          54.          52.          52.
                               (INCHES)    1.902        2.301        2.301        2.301
                               (AC-FT)       88.         107.         107.         107.

                               CUMULATIVE AREA =      .87 SQ MI

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

                          HYDROGRAPH AT STATION         E2
                            FOR PLAN 1, RATIO = 1.00

     PEAK FLOW      TIME                            MAXIMUM AVERAGE FLOW
                                           6-HR         24-HR        72-HR      24.92-HR
 +    (CFS)         (HR)
                                (CFS)
 +      512.       13.08                    178.          54.          52.          52.
                               (INCHES)    1.902        2.301        2.301        2.301
                               (AC-FT)       88.         107.         107.         107.
```

CUMULATIVE AREA = .87 SQ MI

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

84 KP PLAN 2 FOR STATION E2
TRIANGULAR DISTRIBUTION 10-YRS STORM

SUBBASIN RUNOFF DATA

78 BA SUBBASIN CHARACTERISTICS
TAREA .87 SUBBASIN AREA

86 PH PRECIPITATION DATA

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
.55	1.31	3.00	3.70	4.10	5.40	6.60	7.60	.00	.00	.00	.00

STORM AREA = .87

79 LS SCS LOSS RATE
STRTL .59 INITIAL ABSTRACTION
CRVNBR 77.32 CURVE NUMBER
RTIMP .00 PERCENT IMPERVIOUS AREA

80 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .93 LAG

***

UNIT HYDROGRAPH
58 END-OF-PERIOD ORDINATES

11.	35.	65.	104.	154.	215.	285.	344.	388.	416.
429.	430.	423.	401.	375.	346.	312.	271.	229.	194.
168.	146.	127.	112.	98.	85.	74.	63.	56.	49.
42.	37.	32.	28.	24.	21.	18.	16.	14.	12.
11.	9.	8.	7.	6.	5.	5.	4.	4.	3.
3.	2.	2.	2.	1.	1.	0.	0.		

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

HYDROGRAPH AT STATION E2
FOR PLAN 2, RATIO = 1.00

TOTAL RAINFALL = 7.59, TOTAL LOSS = 2.65, TOTAL EXCESS = 4.94

	PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+	(CFS)	(HR)	(CFS)			
+	965.	13.00	365.	115.	110.	110.
			(INCHES) 3.906	4.912	4.912	4.912
			(AC-FT) 181.	227.	227.	227.

CUMULATIVE AREA = .87 SQ MI

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

HYDROGRAPH AT STATION E2
FOR PLAN 2, RATIO = 1.00

	PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+	(CFS)	(HR)	(CFS)			
+	965.	13.00	365.	115.	110.	110.
			(INCHES) 3.906	4.912	4.912	4.912
			(AC-FT) 181.	227.	227.	227.

CUMULATIVE AREA = .87 SQ MI

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

87 KP PLAN 3 FOR STATION E2
TRIANGULAR DISTRIBUTION 25-YRS STORM

SUBBASIN RUNOFF DATA

78 BA SUBBASIN CHARACTERISTICS
TAREA .87 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
.61	1.47	3.50	4.50	5.10	6.30	7.70	9.40	.00	.00	.00	.00

STORM AREA = .87

79 LS SCS LOSS RATE
STRTL .59 INITIAL ABSTRACTION
CRVNBR 77.32 CURVE NUMBER
RTIMP .00 PERCENT IMPERVIOUS AREA

80 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .93 LAG

***

UNIT HYDROGRAPH
58 END-OF-PERIOD ORDINATES

11.	35.	65.	104.	154.	215.	285.	344.	388.	416.
429.	430.	423.	401.	375.	346.	312.	271.	229.	194.
168.	146.	127.	112.	98.	85.	74.	63.	56.	49.
42.	37.	32.	28.	24.	21.	18.	16.	14.	12.
11.	9.	8.	7.	6.	5.	5.	4.	4.	3.
3.	2.	2.	2.	1.	1.	0.	0.		

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

HYDROGRAPH AT STATION E2
FOR PLAN 3, RATIO = 1.00

TOTAL RAINFALL = 9.39, TOTAL LOSS = 2.79, TOTAL EXCESS = 6.60

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	464.	153.	147.	147.
+ 1231.	13.00	(INCHES)	4.966	6.558	6.558	6.558
		(AC-FT)	230.	304.	304.	304.

CUMULATIVE AREA = .87 SQ MI

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

HYDROGRAPH AT STATION E2
FOR PLAN 3, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	464.	153.	147.	147.
+ 1231.	13.00	(INCHES)	4.966	6.558	6.558	6.558
		(AC-FT)	230.	304.	304.	304.

CUMULATIVE AREA = .87 SQ MI

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

90 KP PLAN 4 FOR STATION E2
TRIANGULAR DISTRIBUTION 50-YRS STORM

SUBBASIN RUNOFF DATA

78 BA SUBBASIN CHARACTERISTICS
TAREA .87 SUBBASIN AREA

PRECIPITATION DATA

```
                                    DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                    ............... TP-40 ...............   ............ TP-49 ............
92 PH         ..... HYDRO-35 ......    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
              5-MIN  15-MIN  60-MIN    5.00    5.20    7.00    8.70   10.50     .00     .00     .00     .00
                .64    1.55    3.80
                                       STORM AREA =       .87

79 LS          SCS LOSS RATE
                  STRTL          .59  INITIAL ABSTRACTION
                  CRVNBR       77.32  CURVE NUMBER
                  RTIMP          .00  PERCENT IMPERVIOUS AREA

80 UD          SCS DIMENSIONLESS UNITGRAPH
                  TLAG           .93  LAG
                                                 ***

                                        UNIT HYDROGRAPH
                                  58 END-OF-PERIOD ORDINATES
         11.        35.        65.       104.       154.       215.       285.       344.       388.       416.
        429.       430.       423.       401.       375.       346.       312.       271.       229.       194.
        168.       146.       127.       112.        98.        85.        74.        63.        56.        49.
         42.        37.        32.        28.        24.        21.        18.        16.        14.        12.
         11.         9.         8.         7.         6.         5.         5.         4.         4.         3.
          3.         2.         2.         2.         1.         1.         0.         0.

                                                 ***          ***
   ***             ***              ***
                    HYDROGRAPH AT STATION         E2
                      FOR PLAN 4, RATIO = 1.00

     TOTAL RAINFALL =   10.49, TOTAL LOSS =    2.85, TOTAL EXCESS =     7.64

     PEAK FLOW       TIME                   MAXIMUM AVERAGE FLOW
                                        6-HR      24-HR      72-HR    24.92-HR
   + (CFS)          (HR)
                              (CFS)
       1382.       13.00                 526.      177.       171.       171.
                              (INCHES)  5.632     7.591      7.591      7.591
                              (AC-FT)    261.      351.       351.       351.

                          CUMULATIVE AREA =      .87 SQ MI

                                                 ***          ***
   ***             ***              ***
                    HYDROGRAPH AT STATION         E2
                      FOR PLAN 4, RATIO = 1.00

     PEAK FLOW       TIME                   MAXIMUM AVERAGE FLOW
                                        6-HR      24-HR      72-HR    24.92-HR
   + (CFS)          (HR)
                              (CFS)
   +   1382.       13.00                 526.      177.       171.       171.
                              (INCHES)  5.632     7.591      7.591      7.591
                              (AC-FT)    261.      351.       351.       351.

                          CUMULATIVE AREA =      .87 SQ MI

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

93 KP          PLAN  5 FOR STATION        E2
                                TRIANGULAR DISTRIBUTION 100-YRS STORM

               SUBBASIN RUNOFF DATA

78 BA           SUBBASIN CHARACTERISTICS
                   TAREA          .87  SUBBASIN AREA

                PRECIPITATION DATA
                                    DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                    ............... TP-40 ...............   ............ TP-49 ............
95 PH         ..... HYDRO-35 ......    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
              5-MIN  15-MIN  60-MIN    5.20    6.10    8.00    9.70   11.50     .00     .00     .00     .00
                .90    2.15    4.40
                                       STORM AREA =       .87

79 LS          SCS LOSS RATE
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```
     STRTL           .59  INITIAL ABSTRACTION
     CRVNBR        77.32  CURVE NUMBER
     RTIMP           .00  PERCENT IMPERVIOUS AREA

80 UD     SCS DIMENSIONLESS UNITGRAPH
            TLAG             .93  LAG

                                        ***

                                  UNIT HYDROGRAPH
                             58 END-OF-PERIOD ORDINATES
      11.      35.      65.     104.     154.     215.     285.     344.     388.     416.
     429.     430.     423.     401.     375.     346.     312.     271.     229.     194.
     168.     146.     127.     112.      98.      85.      74.      63.      56.      49.
      42.      37.      32.      28.      24.      21.      18.      16.      14.      12.
      11.       9.       8.       7.       6.       5.       5.       4.       4.       3.
       3.       2.       2.       2.       1.       1.       0.       0.

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

                  HYDROGRAPH AT STATION        E2
                    FOR PLAN 5, RATIO = 1.00

  TOTAL RAINFALL =   11.49, TOTAL LOSS =    2.90, TOTAL EXCESS =     8.59

  PEAK FLOW      TIME                      MAXIMUM AVERAGE FLOW
                                   6-HR        24-HR       72-HR      24.92-HR
 +  (CFS)        (HR)
                          (CFS)
 +   1607.       13.00                 612.        199.        192.        192.
                          (INCHES)    6.552       8.542       8.542       8.542
                          (AC-FT)      303.        395.        395.        395.

                  CUMULATIVE AREA =     .87 SQ MI

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

                  HYDROGRAPH AT STATION        E2
                    FOR PLAN 5, RATIO = 1.00

  PEAK FLOW      TIME                      MAXIMUM AVERAGE FLOW
                                   6-HR        24-HR       72-HR      24.92-HR
 +  (CFS)        (HR)
                          (CFS)
 +   1607.       13.00                 612.        199.        192.        192.
                          (INCHES)    6.552       8.542       8.542       8.542
                          (AC-FT)      303.        395.        395.        395.

                  CUMULATIVE AREA =     .87 SQ MI

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

          ***************
          *             *
96 KK     *      P2     *
          *             *
          ***************

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

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

               SUBBASIN RUNOFF DATA

98 BA            SUBBASIN CHARACTERISTICS
                    TAREA           .04  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
                  .47    1.04    2.10    2.50   2.70   3.30   4.00   4.60     .00     .00     .00     .00
```

STORM AREA = .04

99 LS SCS LOSS RATE
STRTL .53 INITIAL ABSTRACTION
CRVNBR 79.03 CURVE NUMBER
RTIMP .00 PERCENT IMPERVIOUS AREA

100 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .12 LAG

***

UNIT HYDROGRAPH
9 END-OF-PERIOD ORDINATES
60. 121. 76. 31. 14. 6. 3. 1. 0.

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

HYDROGRAPH AT STATION P2
FOR PLAN 1, RATIO = 1.00

TOTAL RAINFALL = 4.60, TOTAL LOSS = 2.14, TOTAL EXCESS = 2.46

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 67.	12.17		9.	3.	3.	3.
		(INCHES)	2.045	2.463	2.463	2.463
		(AC-FT)	4.	5.	5.	5.

CUMULATIVE AREA = .04 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)				
+ 67.	12.17		9.	3.	3.	3.
		(INCHES)	2.045	2.463	2.463	2.463
		(AC-FT)	4.	5.	5.	5.

CUMULATIVE AREA = .04 SQ MI

*** ***

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

SUBBASIN RUNOFF DATA

98 BA SUBBASIN CHARACTERISTICS
TAREA .04 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
.55	1.31	3.00	3.70	4.10	5.40	6.60	7.60	.00	.00	.00	.00

STORM AREA = .04

99 LS SCS LOSS RATE
STRTL .53 INITIAL ABSTRACTION
CRVNBR 79.03 CURVE NUMBER
RTIMP .00 PERCENT IMPERVIOUS AREA

100 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .12 LAG

***

UNIT HYDROGRAPH

```
                                                  9 END-OF-PERIOD ORDINATES
                                                    14.        6.        3.        1.        0.
          60.      121.      76.      31.
                                                  ***                  ***
   ***          ***          ***
                    HYDROGRAPH AT STATION        P2
                      FOR PLAN 2, RATIO = 1.00

   TOTAL RAINFALL =    7.60, TOTAL LOSS =    2.46, TOTAL EXCESS =    5.14

                                                MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                   6-HR       24-HR       72-HR     24.92-HR
+  (CFS)        (HR)        (CFS)      18.         6.          5.         5.
+   106.       12.17       (INCHES)   4.085      5.140       5.140      5.140
                           (AC-FT)     9.         11.         11.        11.

                    CUMULATIVE AREA =      .04 SQ MI

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

                                                MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                   6-HR       24-HR       72-HR     24.92-HR
+  (CFS)        (HR)        (CFS)      18.         6.          5.         5.
+   106.       12.17       (INCHES)   4.085      5.140       5.140      5.140
                           (AC-FT)     9.         11.         11.        11.

                    CUMULATIVE AREA =      .04 SQ MI

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

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

                  SUBBASIN RUNOFF DATA

  98 BA             SUBBASIN CHARACTERISTICS
                        TAREA          .04  SUBBASIN AREA

                    PRECIPITATION DATA
                                          DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                                                                          ..........  TP-49  ..........
  109 PH            ..... HYDRO-35 .....  ..............  TP-40  ..............  ..........  ..........  ..........  ..........
                    5-MIN   15-MIN   60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                     .61     1.47     3.50    4.50    5.10    6.30    7.70    9.40     .00     .00     .00     .00
                                                      STORM AREA =      .04

  99 LS             SCS LOSS RATE
                        STRTL          .53  INITIAL ABSTRACTION
                        CRVNBR       79.03  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

  100 UD            SCS DIMENSIONLESS UNITGRAPH
                        TLAG           .12  LAG
                                                  ***
                                                UNIT HYDROGRAPH
                                                  9 END-OF-PERIOD ORDINATES
                                                    14.        6.        3.        1.        0.
          60.      121.      76.      31.
                                                  ***                  ***
   ***          ***          ***
                    HYDROGRAPH AT STATION        P2
                      FOR PLAN 3, RATIO = 1.00

   TOTAL RAINFALL =    9.40, TOTAL LOSS =    2.57, TOTAL EXCESS =    6.83

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

+ 127. 12.17 (CFS) 22. 7. 7. 7.
(INCHES) 5.151 6.826 6.826 6.826
(AC-FT) 11. 15. 15. 15.

CUMULATIVE AREA = .04 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)				
+ 127.	12.17		22.	7.	7.	7.
		(INCHES)	5.151	6.826	6.826	6.826
		(AC-FT)	11.	15.	15.	15.

CUMULATIVE AREA = .04 SQ MI

*** ***

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

SUBBASIN RUNOFF DATA

98 BA SUBBASIN CHARACTERISTICS
TAREA .04 SUBBASIN AREA

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
.64	1.55	3.80	5.00	5.20	7.00	8.70	10.50	.00	.00	.00	.00

STORM AREA = .04

99 LS SCS LOSS RATE
STRTL .53 INITIAL ABSTRACTION
CRVNBR 79.03 CURVE NUMBER
RTIMP .00 PERCENT IMPERVIOUS AREA

100 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .12 LAG

***

UNIT HYDROGRAPH
9 END-OF-PERIOD ORDINATES
60. 121. 76. 31. 14. 6. 3. 1. 0.

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

HYDROGRAPH AT STATION P2
FOR PLAN 4, RATIO = 1.00

TOTAL RAINFALL = 10.50, TOTAL LOSS = 2.63, TOTAL EXCESS = 7.87

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 138.	12.17		25.	9.	8.	8.
		(INCHES)	5.843	7.073	7.873	7.873
		(AC-FT)	13.	17.	17.	17.

CUMULATIVE AREA = .04 SQ MI

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

HYDROGRAPH AT STATION P2
FOR PLAN 4, RATIO = 1.00

```
                                        MAXIMUM AVERAGE FLOW
PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
+  (CFS)      (HR)      (CFS)      25.        9.        8.         8.
+   138.      12.17   (INCHES)    5.843     7.873     7.873      7.873
                      (AC-FT)      13.       17.       17.        17.

                      CUMULATIVE AREA =     .04 SQ MI

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

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

              SUBBASIN RUNOFF DATA

98 BA           SUBBASIN CHARACTERISTICS
                     TAREA        .04  SUBBASIN AREA

                PRECIPITATION DATA
                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                  ..............  TP-40 ..............  ........... TP-49 ...........
115 PH          ..... HYDRO-35 ......  ..............  6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY   10-DAY
                5-MIN  15-MIN  60-MIN   2-HR   3-HR   8.00   9.70   11.50    .00     .00     .00     .00
                 .99    2.15    4.40   5.20   6.10
                                                STORM AREA =     .04

99 LS           SCS LOSS RATE
                     STRTL        .53  INITIAL ABSTRACTION
                    CRVNBR      79.03  CURVE NUMBER
                     RTIMP        .00  PERCENT IMPERVIOUS AREA

100 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG        .12  LAG
                                                    ***
                                                UNIT HYDROGRAPH
                                          9 END-OF-PERIOD ORDINATES
                                                14.       6.       3.       1.       0.
                 60.     121.     76.     31.
                                                    ***
                                   ***
                 ***     ***
                                   HYDROGRAPH AT STATION      P2
                                     FOR PLAN 5, RATIO = 1.00

                TOTAL RAINFALL =   11.50, TOTAL LOSS =    2.67, TOTAL EXCESS =    8.83

                                        MAXIMUM AVERAGE FLOW
PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
+  (CFS)      (HR)      (CFS)      29.       10.        9.         9.
+   194.      12.17   (INCHES)    6.786     8.832     8.832      8.832
                      (AC-FT)      15.       19.       19.        19.

                      CUMULATIVE AREA =     .04 SQ MI
                                                    ***
                                   ***      ***
                 ***     ***
                                   HYDROGRAPH AT STATION      P2
                                     FOR PLAN 5, RATIO = 1.00

                                        MAXIMUM AVERAGE FLOW
PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
+  (CFS)      (HR)      (CFS)      29.       10.        9.         9.
+   194.      12.17   (INCHES)    6.786     8.832     8.832      8.832
                      (AC-FT)      15.       19.       19.        19.

                      CUMULATIVE AREA =     .04 SQ MI
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             *            *
116 KK       *     E1     *
             *            *
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117 KP        PLAN  1 FOR STATION        E1
                              TRIANGULAR DISTRIBUTION 2-YRS STORM

              SUBBASIN RUNOFF DATA

118 BA          SUBBASIN CHARACTERISTICS
                     TAREA           .17  SUBBASIN AREA

                PRECIPITATION DATA
                                       DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                                                                 ........... TP-49 ...........
                                      ............... TP-40 ...............      2-DAY    4-DAY   7-DAY  10-DAY
123 PH            ..... HYDRO-35 .....   2-HR     3-HR     6-HR    12-HR    24-HR     .00      .00     .00     .00
                 5-MIN  15-MIN  60-MIN   2.50     2.70     3.30     4.00     4.60
                   .47    1.04    2.10
                                                     STORM AREA =      .17


119 LS            SCS LOSS RATE          .71  INITIAL ABSTRACTION
                       STRTL           73.77  CURVE NUMBER
                       CRVNBR            .00  PERCENT IMPERVIOUS AREA
                       RTIMP

120 UD            SCS DIMENSIONLESS UNITGRAPH
                       TLAG              .27  LAG
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                                                  UNIT HYDROGRAPH
                                            18 END-OF-PERIOD ORDINATES
               43.       143.       248.       265.       222.       148.        93.        61.        39.        26.
               16.        11.         7.         4.         3.         2.         1.         0.
```

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

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                            HYDROGRAPH AT STATION          E1
                              FOR PLAN 1, RATIO = 1.00

        TOTAL RAINFALL =    4.60, TOTAL LOSS =    2.57, TOTAL EXCESS =    2.03

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

 +    (CFS)         (HR)
                              (CFS)
 +      175.       12.33                       31.          9.          9.          9.
                              (INCHES)       1.699       2.031       2.031       2.031
                              (AC-FT)          16.         19.         19.         19.

                            CUMULATIVE AREA =      .17 SQ MI
```

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


```
                            HYDROGRAPH AT STATION          E1
                              FOR PLAN 1, RATIO = 1.00

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

 +    (CFS)         (HR)
                              (CFS)
 +      175.       12.33                       31.          9.          9.          9.
                              (INCHES)       1.699       2.031       2.031       2.031
                              (AC-FT)          16.         19.         19.         19.

                            CUMULATIVE AREA =      .17 SQ MI
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

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124 KP        PLAN  2 FOR STATION        E1
                        TRIANGULAR DISTRIBUTION 10-YRS STORM

              SUBBASIN RUNOFF DATA

118 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .17  SUBBASIN AREA

                PRECIPITATION DATA
                                         DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                                  ..............  TP-40  ..............  ........... TP-49 ...........
126 PH          ..... 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
                 .55    1.31    3.00    3.70    4.10    5.40    6.60    7.60     .00     .00     .00     .00
                                                  STORM AREA =       .17

119 LS          SCS LOSS RATE
                     STRTL          .71  INITIAL ABSTRACTION
                     CRVNBR       73.77  CURVE NUMBER
                     RTIMP          .00  PERCENT IMPERVIOUS AREA

120 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG           .27  LAG
                                                    ***
                                                UNIT HYDROGRAPH
                                            18 END-OF-PERIOD ORDINATES
                                                                                  61.      39.      26.
                                                                   93.
                                                   222.    148.     1.
                                     265.          3.      2.      0.
                 43.     143.    248.    4.
                 16.     11.      7.
                                                 ***     ***
                         ***     ***
        ***
                        HYDROGRAPH AT STATION        E1
                          FOR PLAN 2, RATIO = 1.00

        TOTAL RAINFALL =     7.60, TOTAL LOSS =     3.06, TOTAL EXCESS =     4.54

                                                MAXIMUM AVERAGE FLOW
        PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
+       (CFS)         (HR)      (CFS)      67.       21.        20.       20.
+       323.          12.33     (INCHES)   3.643     4.542      4.542     4.542
                                (AC-FT)    33.       42.        42.       42.
                        CUMULATIVE AREA =      .17 SQ MI
                                                    ***     ***
        ***             ***     ***
                        HYDROGRAPH AT STATION        E1
                          FOR PLAN 2, RATIO = 1.00

                                                MAXIMUM AVERAGE FLOW
        PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
+       (CFS)         (HR)      (CFS)      67.       21.        20.       20.
+       323.          12.33     (INCHES)   3.643     4.542      4.542     4.542
                                (AC-FT)    33.       42.        42.       42.
                        CUMULATIVE AREA =      .17 SQ MI
                                                                                                                  ***
                                                                                                          ***     ***
                                                                                                  ***     ***     ***
                                                                                          ***     ***     ***     ***
                                                                                  ***     ***     ***     ***     ***
                                                                          ***     ***     ***     ***     ***     ***
                                                                  ***     ***     ***     ***     ***     ***     ***
                                                          ***     ***     ***     ***     ***     ***     ***     ***
                                                  ***     ***     ***     ***     ***     ***     ***     ***     ***
                                          ***     ***     ***     ***     ***     ***     ***     ***     ***     ***
                                  ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***
                          ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***
                  ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***
127 KP          PLAN  3 FOR STATION        E1
                        TRIANGULAR DISTRIBUTION 25-YRS STORM

              SUBBASIN RUNOFF DATA

118 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .17  SUBBASIN AREA

                PRECIPITATION DATA
                                         DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                                  ..............  TP-40  ..............  ........... TP-49 ...........
129 PH          ..... HYDRO-35 ......    ..............  TP-40  ..............  ..........  TP-49 ..........
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                                                                              2-DAY   4-DAY   7-DAY  10-DAY
5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR               .00     .00     .00     .00
  .61    1.47    3.50    4.50    5.10    6.30    7.70    9.40
                                   STORM AREA =       .17

119 LS         SCS LOSS RATE
                 STRTL             .71  INITIAL ABSTRACTION
                 CRVNBR          73.77  CURVE NUMBER
                 RTIMP             .00  PERCENT IMPERVIOUS AREA

120 UD         SCS DIMENSIONLESS UNITGRAPH
                 TLAG              .27  LAG
                                                       ***

                                          UNIT HYDROGRAPH
                                   18 END-OF-PERIOD ORDINATES
         43.      143.      248.      265.      222.      148.       93.       61.       39.       26.
         16.       11.        7.        4.        3.        2.        1.        0.

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

                    HYDROGRAPH AT STATION        E1
                     FOR PLAN 3, RATIO = 1.00

   TOTAL RAINFALL =      9.40, TOTAL LOSS =     3.23, TOTAL EXCESS =     6.16

  PEAK FLOW     TIME                           MAXIMUM AVERAGE FLOW
                                        6-HR        24-HR       72-HR       24.92-HR
+   (CFS)       (HR)
                             (CFS)
+    404.      12.33                     87.         29.         27.         27.
                             (INCHES)   4.703       6.163       6.163       6.163
                             (AC-FT)     43.         57.         57.         57.

                      CUMULATIVE AREA =      .17 SQ MI

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

                    HYDROGRAPH AT STATION        E1
                     FOR PLAN 3, RATIO = 1.00

  PEAK FLOW     TIME                           MAXIMUM AVERAGE FLOW
                                        6-HR        24-HR       72-HR       24.92-HR
+   (CFS)       (HR)
                             (CFS)
+    404.      12.33                     87.         29.         27.         27.
                             (INCHES)   4.703       6.163       6.163       6.163
                             (AC-FT)     43.         57.         57.         57.

                      CUMULATIVE AREA =      .17 SQ MI

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

130 KF         PLAN  4 FOR STATION        E1
                         TRIANGULAR DISTRIBUTION 50-YRS STORM

               SUBBASIN RUNOFF DATA

118 BA           SUBBASIN CHARACTERISTICS
                   TAREA            .17  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
                   .64    1.55    3.80    5.00    5.20    7.00    8.70   10.50     .00     .00     .00     .00
                                          STORM AREA =       .17

119 LS           SCS LOSS RATE
                   STRTL            .71  INITIAL ABSTRACTION
                   CRVNBR         73.77  CURVE NUMBER
                   RTIMP            .00  PERCENT IMPERVIOUS AREA

120 UD           SCS DIMENSIONLESS UNITGRAPH
                   TLAG             .27  LAG
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UNIT HYDROGRAPH
18 END-OF-PERIOD ORDINATES

43.	143.	248.	265.	222.	148.	93.	61.	39.	26.
16.	11.	7.	4.	3.	2.	1.	0.		

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

HYDROGRAPH AT STATION E1
FOR PLAN 4, RATIO = 1.00

TOTAL RAINFALL = 10.50, TOTAL LOSS = 3.32, TOTAL EXCESS = 7.18

	PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
				6-HR	24-HR	72-HR	24.92-HR
+	(CFS)	(HR)					
			(CFS)				
+	449.	12.33		100.	33.	32.	32.
			(INCHES)	5.379	7.178	7.178	7.178
			(AC-FT)	49.	66.	66.	66.

CUMULATIVE AREA = .17 SQ MI

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

HYDROGRAPH AT STATION E1
FOR PLAN 4, RATIO = 1.00

	PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
				6-HR	24-HR	72-HR	24.92-HR
+	(CFS)	(HR)					
			(CFS)				
+	449.	12.33		100.	33.	32.	32.
			(INCHES)	5.379	7.178	7.178	7.178
			(AC-FT)	49.	66.	66.	66.

CUMULATIVE AREA = .17 SQ MI

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

133 KP PLAN 5 FOR STATION E1
TRIANGULAR DISTRIBUTION 100-YRS STORM

SUBBASIN RUNOFF DATA

118 BA SUBBASIN CHARACTERISTICS
TAREA .17 SUBBASIN AREA

PRECIPITATION DATA

135 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
.99	2.15	4.40	5.20	6.10	8.00	9.70	11.50	.00	.00	.00	.00

STORM AREA = .17

119 LS SCS LOSS RATE
STRTL .71 INITIAL ABSTRACTION
CRVNBR 73.77 CURVE NUMBER
RTIMP .00 PERCENT IMPERVIOUS AREA

120 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .27 LAG

***

UNIT HYDROGRAPH
18 END-OF-PERIOD ORDINATES

43.	143.	248.	265.	222.	148.	93.	61.	39.	26.
16.	11.	7.	4.	3.	2.	1.	0.		

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

HYDROGRAPH AT STATION E1
FOR PLAN 5, RATIO = 1.00

TOTAL RAINFALL = 11.50, TOTAL LOSS = 3.39, TOTAL EXCESS = 8.11

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)	116.	38.	36.	36.
+ 585.	12.33					
		(INCHES)	6.288	8.112	8.112	8.112
		(AC-FT)	58.	74.	74.	74.

CUMULATIVE AREA = .17 SQ MI

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

HYDROGRAPH AT STATION E1
FOR PLAN 5, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)	116.	38.	36.	36.
+ 585.	12.33					
		(INCHES)	6.288	8.112	8.112	8.112
		(AC-FT)	58.	74.	74.	74.

CUMULATIVE AREA = .17 SQ MI

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              *            *
136 KK        *     P1     *
              *            *
              **************
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137 KP PLAN 1 FOR STATION P1
TRIANGULAR DISTRIBUTION 2-YRS STORM

SUBBASIN RUNOFF DATA

138 BA SUBBASIN CHARACTERISTICS
TAREA .08 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
.47	1.04	2.10	2.50	2.70	3.30	4.00	4.60	.00	.00	.00	.00

STORM AREA = .08

139 LS SCS LOSS RATE
STRTL .56 INITIAL ABSTRACTION
CRVNBR 78.00 CURVE NUMBER
RTIMP .00 PERCENT IMPERVIOUS AREA

140 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .37 LAG

***

UNIT HYDROGRAPH
24 END-OF-PERIOD ORDINATES

10.	30.	64.	89.	95.	87.	72.	51.	36.	26.
19.	13.	10.	7.	5.	4.	3.	2.	1.	1.
1.	1.	0.	0.						

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

HYDROGRAPH AT STATION P1
FOR PLAN 1, RATIO = 1.00

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TOTAL RAINFALL =    4.60, TOTAL LOSS =    2.22, TOTAL EXCESS =    2.38

                                          MAXIMUM AVERAGE FLOW
PEAK FLOW    TIME                  6-HR      24-HR     72-HR     24.92-HR
+  (CFS)     (HR)     (CFS)        17.        5.        5.         5.
+   84.      12.42    (INCHES)     1.972     2.375     2.375      2.375
                      (AC-FT)      8.        10.       10.        10.

                      CUMULATIVE AREA =    .08 SQ MI

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

                HYDROGRAPH AT STATION      P1
                 FOR PLAN 1, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
PEAK FLOW    TIME                  6-HR      24-HR     72-HR     24.92-HR
+  (CFS)     (HR)     (CFS)        17.        5.        5.         5.
+   84.      12.42    (INCHES)     1.972     2.375     2.375      2.375
                      (AC-FT)      8.        10.       10.        10.

                      CUMULATIVE AREA =    .08 SQ MI

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

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

              SUBBASIN RUNOFF DATA

138 BA          SUBBASIN CHARACTERISTICS
                     TAREA        .08  SUBBASIN AREA

                PRECIPITATION DATA
                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                                TP-40 ..............  ........... TP-49 ...........
146 PH          ..... HYDRO-35 ......  ..............  2-HR   3-HR   6-HR   12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
                5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR   12-HR  24-HR  .00    .00    .00    .00
                 .55    1.31    3.00    3.70   4.10   5.40   6.60   7.60
                                                STORM AREA =    .08

139 LS          SCS LOSS RATE
                     STRTL        .56  INITIAL ABSTRACTION
                    CRVNBR      78.00  CURVE NUMBER
                     RTIMP        .00  PERCENT IMPERVIOUS AREA

140 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG         .37  LAG

                                                    ***

                                                UNIT HYDROGRAPH
                                            24 END-OF-PERIOD ORDINATES
                                   89.      72.      51.      36.      26.
                          64.      7.       3.       2.       1.       1.
                 30.      10.      0.       4.       1.
                 13.      0.       5.
                 1.
                 10.
                 19.
                  1.
                          ***      ***      ***      ***
         ***      ***

                HYDROGRAPH AT STATION      P1
                 FOR PLAN 2, RATIO = 1.00

TOTAL RAINFALL =    7.60, TOTAL LOSS =    2.58, TOTAL EXCESS =    5.02

                                          MAXIMUM AVERAGE FLOW
PEAK FLOW    TIME                  6-HR      24-HR     72-HR     24.92-HR
+  (CFS)     (HR)     (CFS)        35.       11.       10.        10.
+   147.     12.42    (INCHES)     3.994     5.021     5.021      5.021
                      (AC-FT)      17.       22.       22.        22.
```

CUMULATIVE AREA = .08 SQ MI

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

HYDROGRAPH AT STATION P1
FOR PLAN 2, RATIO = 1.00

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
		(CFS)	35.	11.	10.	10.
147.	12.42	(INCHES)	3.994	5.021	5.021	5.021
		(AC-FT)	17.	22.	22.	22.

CUMULATIVE AREA = .08 SQ MI

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

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

SUBBASIN RUNOFF DATA

138 BA SUBBASIN CHARACTERISTICS
TAREA .08 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
.61	1.47	3.50	4.50	5.10	6.30	7.70	9.40	.00	.00	.00	.00

STORM AREA = .08

[illegible]S SCS LOSS RATE
STRTL .56 INITIAL ABSTRACTION
CRVNBR 78.00 CURVE NUMBER
RTIMP .00 PERCENT IMPERVIOUS AREA

140 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .37 LAG

***

UNIT HYDROGRAPH
24 END-OF-PERIOD ORDINATES

10.	30.	64.	89.	95.	87.	72.	51.	36.	26.
19.	13.	10.	7.	5.	4.	3.	2.	1.	1.
1.	1.	0.	0.						

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

HYDROGRAPH AT STATION P1
FOR PLAN 3, RATIO = 1.00

TOTAL RAINFALL = 9.40, TOTAL LOSS = 2.70, TOTAL EXCESS = 6.70

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
		(CFS)	44.	15.	14.	14.
182.	12.42	(INCHES)	5.061	6.695	6.695	6.695
		(AC-FT)	22.	29.	29.	29.

CUMULATIVE AREA = .08 SQ MI

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

HYDROGRAPH AT STATION P1
FOR PLAN 3, RATIO = 1.00

FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR

```
                    (CFS)
+   202.    12.42                  46.        15.        14.        14.
                  (INCHES)        5.061      6.695      6.695      6.695
                   (AC-FT)         22.        29.        29.        29.

                  CUMULATIVE AREA =      .08 SQ MI

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

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

            SUBBASIN RUNOFF DATA

138 BA        SUBBASIN CHARACTERISTICS
                 TAREA          .08  SUBBASIN AREA

              PRECIPITATION DATA

152 PH                                DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                                  TP-40 ...............  ........... TP-49 ...........
              ..... HYDRO-35 ......  ............... 
              5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                .64    1.55    3.80    5.00    5.20    7.00    8.70   10.50     .00     .00     .00     .00

                                                STORM AREA =      .08

139 LS        SCS LOSS RATE
                 STRTL          .56  INITIAL ABSTRACTION
                CRVNBR        78.00  CURVE NUMBER
                 RTIMP          .00  PERCENT IMPERVIOUS AREA

140 UD        SCS DIMENSIONLESS UNITGRAPH
                 TLAG          .37  LAG

                                          ***

                                                UNIT HYDROGRAPH
                                            24 END-OF-PERIOD ORDINATES
                 10.     30.     64.     89.     95.     87.     72.     51.     36.     26.
                 19.     13.     10.      7.      5.      4.      3.      2.      1.      1.
                  1.      1.      0.      0.

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

                  HYDROGRAPH AT STATION       P1
                    FOR PLAN 4, RATIO = 1.00

  TOTAL RAINFALL =   10.50, TOTAL LOSS =    2.76, TOTAL EXCESS =    7.74

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR      72-HR    24.92-HR
+  (CFS)      (HR)
                    (CFS)
   202.      12.42                  50.        17.        16.        16.
                  (INCHES)        5.747      7.736      7.736      7.736
                   (AC-FT)         25.        33.        33.        33.

                  CUMULATIVE AREA =      .08 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)
   202.      12.42                  50.        17.        16.        16.
                  (INCHES)        5.747      7.736      7.736      7.736
                   (AC-FT)         25.        33.        33.        33.

                  CUMULATIVE AREA =      .08 SQ MI

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

              SUBBASIN RUNOFF DATA

138 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .08  SUBBASIN AREA

                PRECIPITATION DATA

155 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
                  .99    2.15    4.40    5.20    6.10    8.00    9.70   11.50     .00     .00     .00     .00

                                                  STORM AREA =      .08

139 LS          SCS LOSS RATE
                     STRTL          .56  INITIAL ABSTRACTION
                    CRVNBR        78.00  CURVE NUMBER
                     RTIMP          .00  PERCENT IMPERVIOUS AREA

140 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .37  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                 24 END-OF-PERIOD ORDINATES
                10.       30.       64.       89.       95.       87.       72.       51.       36.       26.
                19.       13.       10.        7.        5.        4.        3.        2.        1.        1.
                 1.        1.        0.        0.

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

                      HYDROGRAPH AT STATION        P1
                        FOR PLAN 5, RATIO = 1.00

   TOTAL RAINFALL =   11.50, TOTAL LOSS =    2.81, TOTAL EXCESS =    8.69

     FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)      (HR)
                          (CFS)
     253.     12.42                   58.         19.         18.         18.
                        (INCHES)    6.682       8.690       8.690       8.690
                         (AC-FT)      29.         37.         37.         37.

                      CUMULATIVE AREA =      .08 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)
     253.     12.42                   58.         19.         18.         18.
                        (INCHES)    6.682       8.690       8.690       8.690
                         (AC-FT)      29.         37.         37.         37.

                      CUMULATIVE AREA =      .08 SQ MI


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

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              *            *
156 KK        *        P7  *
              *            *
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157 KP        PLAN  1 FOR STATION        P7
                          TRIANGULAR DISTRIBUTION 2-YRS STORM

              SUBBASIN RUNOFF DATA

158 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .03  SUBBASIN AREA

                PRECIPITATION DATA

163 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    1.04    2.10    2.50    2.70    3.30    4.00    4.60     .00     .00     .00     .00

                                                  STORM AREA =      .03

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

160 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .10  LAG

                                                          ***

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

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

                       HYDROGRAPH AT STATION        P7
                         FOR PLAN 1, RATIO = 1.00

   TOTAL RAINFALL =    4.60, TOTAL LOSS =    2.14, TOTAL EXCESS =    2.46

PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR      24.92-HR
  (CFS)        (HR)
                          (CFS)
+     48.     12.17                     6.          2.          2.          2.
                        (INCHES)     2.043       2.460       2.460       2.460
                         (AC-FT)        3.          4.          4.          4.

                       CUMULATIVE AREA =      .03 SQ MI

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

                       HYDROGRAPH AT STATION        P7
                         FOR PLAN 1, RATIO = 1.00

PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR      24.92-HR
  (CFS)        (HR)
                          (CFS)
+     48.     12.17                     6.          2.          2.          2.
                        (INCHES)     2.043       2.460       2.460       2.460
                         (AC-FT)        3.          4.          4.          4.

                       CUMULATIVE AREA =      .03 SQ MI

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

164 KP        PLAN  2 FOR STATION        P7
                          TRIANGULAR DISTRIBUTION 10-YRS STORM

              SUBBASIN RUNOFF DATA

158 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .03  SUBBASIN AREA

                PRECIPITATION DATA

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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                .55    1.31    3.00    3.70    4.10    5.40    6.60    7.60     .00     .00     .00     .00

                                                  STORM AREA =      .03

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

160 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .10  LAG

                                                        ***

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

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

                      HYDROGRAPH AT STATION       P7
                        FOR PLAN 2, RATIO = 1.00

  TOTAL RAINFALL =    7.60, TOTAL LOSS =    2.46, TOTAL EXCESS =    5.14

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                          (CFS)
    75.      12.17                    12.          4.          4.          4.
                       (INCHES)     4.083       5.136       5.136       5.136
                        (AC-FT)        6.          8.          8.          8.

                      CUMULATIVE AREA =      .03 SQ MI

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

                      HYDROGRAPH AT STATION       P7
                        FOR PLAN 2, RATIO = 1.00

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                          (CFS)
    75.      12.17                    12.          4.          4.          4.
                       (INCHES)     4.083       5.136       5.136       5.136
                        (AC-FT)        6.          8.          8.          8.

                      CUMULATIVE AREA =      .03 SQ MI

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

167 KP          PLAN  3 FOR STATION       P7
                              TRIANGULAR DISTRIBUTION 25-YRS STORM

                SUBBASIN RUNOFF DATA

158 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .03  SUBBASIN AREA

                PRECIPITATION DATA

169 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
                  .61    1.47    3.50    4.50    5.10    6.30    7.70    9.40     .00     .00     .00     .00

                                                  STORM AREA =      .03

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

160 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .10  LAG

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

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

                    HYDROGRAPH AT STATION        P7
                      FOR PLAN 3, RATIO = 1.00

  TOTAL RAINFALL =    9.40, TOTAL LOSS =    2.58, TOTAL EXCESS =    6.82

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                          (CFS)
+    89.      12.17                  16.          5.          5.          5.
                       (INCHES)    5.149       6.823       6.823       6.823
                        (AC-FT)      8.         10.         10.         10.

                    CUMULATIVE AREA =      .03 SQ MI

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

                    HYDROGRAPH AT STATION        P7
                      FOR PLAN 3, RATIO = 1.00

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                          (CFS)
+    89.      12.17                  16.          5.          5.          5.
                       (INCHES)    5.149       6.823       6.823       6.823
                        (AC-FT)      8.         10.         10.         10.

                    CUMULATIVE AREA =      .03 SQ MI

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

170 KP        PLAN  4 FOR STATION        P7
                          TRIANGULAR DISTRIBUTION 50-YRS STORM

              SUBBASIN RUNOFF DATA

158 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .03  SUBBASIN AREA

                PRECIPITATION DATA

172 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
                  .64    1.55    3.80   5.00    5.20    7.00    8.70   10.50     .00     .00     .00     .00

                                                STORM AREA =      .03

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

160 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .10  LAG

                                                    ***

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

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

                    HYDROGRAPH AT STATION        P7
                      FOR PLAN 4, RATIO = 1.00

  TOTAL RAINFALL =   10.50, TOTAL LOSS =    2.63, TOTAL EXCESS =    7.87

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
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                                        6-HR        24-HR        72-HR      24.92-HR
+   6)        (HR)
                        (CFS)
                                        18.          6.           6.           6.
+   97.       12.17
                      (INCHES)        5.841        7.869        7.869        7.869
                       (AC-FT)          9.          12.          12.          12.

                      CUMULATIVE AREA =      .03 SQ MI

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

                      HYDROGRAPH AT STATION        P7
                        FOR PLAN 4, RATIO = 1.00

PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR        24-HR        72-HR      24.92-HR
+  (CFS)       (HR)
                        (CFS)
                                        18.          6.           6.           6.
+   97.       12.17
                      (INCHES)        5.841        7.869        7.869        7.869
                       (AC-FT)          9.          12.          12.          12.

                      CUMULATIVE AREA =      .03 SQ MI


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

173 KP        PLAN  5 FOR STATION        P7
                        TRIANGULAR DISTRIBUTION 100-YRS STORM

              SUBBASIN RUNOFF DATA

150 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .03  SUBBASIN AREA

                PRECIPITATION DATA

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
                  .99    2.15    4.40    5.20    6.10    8.00    9.70   11.50     .00     .00     .00     .00

                                                STORM AREA =      .03

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

160 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .10  LAG

                                                  ***

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

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

                      HYDROGRAPH AT STATION        P7
                        FOR PLAN 5, RATIO = 1.00

   TOTAL RAINFALL =   11.50, TOTAL LOSS =    2.67, TOTAL EXCESS =    8.83

PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR        24-HR        72-HR      24.92-HR
+  (CFS)       (HR)
                        (CFS)
                                        20.          7.           6.           6.
+   138.      12.17
                      (INCHES)        6.784        8.828        8.828        8.828
                       (AC-FT)         10.          13.          13.          13.

                      CUMULATIVE AREA =      .03 SQ MI

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

                      HYDROGRAPH AT STATION        P7
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FOR PLAN 5, RATIO = 1.00

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
138.	12.17	(CFS)	20.	7.	6.	6.
		(INCHES)	6.784	8.828	8.828	8.828
		(AC-FT)	10.	13.	13.	13.

CUMULATIVE AREA = .03 SQ MI

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176 KK

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*************
*           *
*    COMB3  *
*           *
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P1+P7

178 HC HYDROGRAPH COMBINATION
ICOMP I NUMBER OF HYDROGRAPHS TO COMBINE

***

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

HYDROGRAPH AT STATION COMB3
FOR PLAN 1, RATIO = 1.00

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
106.	12.33	(CFS)	23.	7.	7.	7.
		(INCHES)	1.988	2.397	2.397	2.397
		(AC-FT)	12.	14.	14.	14.

CUMULATIVE AREA = .11 SQ MI

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

HYDROGRAPH AT STATION COMB3
FOR PLAN 2, RATIO = 1.00

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
189.	12.33	(CFS)	47.	15.	14.	14.
		(INCHES)	4.015	5.050	5.050	5.050
		(AC-FT)	23.	29.	29.	29.

CUMULATIVE AREA = .11 SQ MI

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

HYDROGRAPH AT STATION COMB3
FOR PLAN 3, RATIO = 1.00

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
235.	12.33	(CFS)	59.	20.	19.	19.
		(INCHES)	5.081	6.728	6.728	6.728
		(AC-FT)	29.	39.	39.	39.

CUMULATIVE AREA = .11 SQ MI

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

HYDROGRAPH AT STATION COMB3

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                    FOR PLAN 4, RATIO = 1.00

 FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                  6-HR       24-HR       72-HR      24.92-HR
+ (CFS)     (HR)
                      (CFS)
+   261.    12.33                  67.         23.         22.          22.
                   (INCHES)       5.768       7.770       7.770        7.770
                    (AC-FT)        33.         45.         45.          45.

                   CUMULATIVE AREA =     .11 SQ MI

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

                    HYDROGRAPH AT STATION    COMB3
                      FOR PLAN 5, RATIO = 1.00

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                  6-HR       24-HR       72-HR      24.92-HR
+ (CFS)     (HR)
                      (CFS)
+   320.    12.33                  78.         25.         25.          25.
                   (INCHES)       6.704       8.726       8.726        8.726
                    (AC-FT)        39.         51.         51.          51.

                   CUMULATIVE AREA =     .11 SQ MI


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


          **************
          *            *
179 KK    *        P4  *
          *            *
          **************

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

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

              SUBBASIN RUNOFF DATA

181 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .06  SUBBASIN AREA

                PRECIPITATION DATA

186 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    1.04    2.10    2.50    2.70    3.30    4.00    4.60     .00     .00     .00     .00

                                                STORM AREA =      .06

182 LS          SCS LOSS RATE
                     STRTL          .58  INITIAL ABSTRACTION
                    CRVNBR        77.64  CURVE NUMBER
                     RTIMP          .00  PERCENT IMPERVIOUS AREA

183 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .08  LAG

                                                  ***

                                                UNIT HYDROGRAPH
                                             7 END-OF-PERIOD ORDINATES
              178.      180.       58.       19.        6.        2.        0.

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

                    HYDROGRAPH AT STATION       P4
                      FOR PLAN 1, RATIO = 1.00

 TOTAL RAINFALL =    4.60, TOTAL LOSS =    2.25, TOTAL EXCESS =    2.35
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PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR        24-HR        72-HR      24.92-HR
+ (CFS)        (HR)
                          (CFS)
+    94.      12.17                  12.          4.           3.           3.
                       (INCHES)    1.953       2.345        2.345        2.345
                        (AC-FT)      6.          7.           7.           7.

                       CUMULATIVE AREA =      .06 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)
+    94.      12.17                  12.          4.           3.           3.
                       (INCHES)    1.953       2.345        2.345        2.345
                        (AC-FT)      6.          7.           7.           7.

                       CUMULATIVE AREA =      .06 SQ MI

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

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

               SUBBASIN RUNOFF DATA

181 BA          SUBBASIN CHARACTERISTICS
                      TAREA          .06  SUBBASIN AREA

                PRECIPITATION DATA

                                  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
                  .55    1.31    3.00    3.70    4.10    5.40    6.60    7.60     .00     .00     .00     .00

                                                STORM AREA =      .06

182 LS          SCS LOSS RATE
                      STRTL          .58  INITIAL ABSTRACTION
                     CRVNBR        77.64  CURVE NUMBER
                      RTIMP          .00  PERCENT IMPERVIOUS AREA

183 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .08  LAG

                                                  ***

                                                UNIT HYDROGRAPH
                                            7 END-OF-PERIOD ORDINATES
               178.      180.       58.       19.        6.        2.        0.

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

                       HYDROGRAPH AT STATION        P4
                         FOR PLAN 2, RATIO = 1.00

  TOTAL RAINFALL =    7.60, TOTAL LOSS =    2.62, TOTAL EXCESS =    4.98

PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR        24-HR        72-HR      24.92-HR
+ (CFS)        (HR)
                          (CFS)
+   154.      12.08                  24.          8.           7.           7.
                       (INCHES)    3.970       4.981        4.981        4.981
                        (AC-FT)     12.         15.          15.          15.

                       CUMULATIVE AREA =      .06 SQ MI

     ***            ***            ***            ***            ***
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HYDROGRAPH AT STATION P4
FOR PLAN 2, RATIO - 1.00

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+		(CFS)	24.	8.	7.	7.
+ 154.	12.08	(INCHES)	3.970	4.981	4.981	4.981
		(AC-FT)	12.	15.	15.	15.

CUMULATIVE AREA = .06 SQ MI

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

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

SUBBASIN RUNOFF DATA

181 BA SUBBASIN CHARACTERISTICS
TAREA .06 SUBBASIN AREA

PRECIPITATION DATA

192 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
.61	1.47	3.50	4.50	5.10	6.30	7.70	9.40	.00	.00	.00	.00

STORM AREA = .06

182 LS SCS LOSS RATE
STRTL .58 INITIAL ABSTRACTION
CRVNBR 77.64 CURVE NUMBER
RTIMP .00 PERCENT IMPERVIOUS AREA

UD SCS DIMENSIONLESS UNITGRAPH
TLAG .08 LAG

***

UNIT HYDROGRAPH
7 END-OF-PERIOD ORDINATES

178. 180. 58. 19. 6. 2. 0.

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

HYDROGRAPH AT STATION P4
FOR PLAN 3, RATIO - 1.00

TOTAL RAINFALL = 9.40, TOTAL LOSS = 2.75, TOTAL EXCESS = 6.65

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+		(CFS)	31.	10.	10.	10.
+ 187.	12.08	(INCHES)	5.037	6.652	6.652	6.652
		(AC-FT)	15.	20.	20.	20.

CUMULATIVE AREA = .06 SQ MI

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

HYDROGRAPH AT STATION P4
FOR PLAN 3, RATIO - 1.00

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+		(CFS)	31.	10.	10.	10.
+ 187.	12.08	(INCHES)	5.037	6.652	6.652	6.652
		(AC-FT)	15.	20.	20.	20.

CUMULATIVE AREA = .06 SQ MI

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

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

              SUBBASIN RUNOFF DATA

181 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .06  SUBBASIN AREA

                PRECIPITATION DATA

195 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
                  .64    1.55    3.80    5.00    5.20    7.00    8.70   10.50     .00     .00     .00     .00

                                                  STORM AREA =      .06

182 LS          SCS LOSS RATE
                     STRTL          .58  INITIAL ABSTRACTION
                    CRVNBR        77.64  CURVE NUMBER
                     RTIMP          .00  PERCENT IMPERVIOUS AREA

183 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .08  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                 7 END-OF-PERIOD ORDINATES
              178.      180.       58.       19.        6.        2.        0.

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

                     HYDROGRAPH AT STATION        P4
                       FOR PLAN 4, RATIO = 1.00

TOTAL RAINFALL =   10.50, TOTAL LOSS =    2.81, TOTAL EXCESS =    7.69

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR     24.92-HR
  (CFS)       (HR)
                          (CFS)
   204.     12.08                    35.         12.         11.         11.
                       (INCHES)    5.726       7.691       7.691       7.691
                        (AC-FT)     17.         24.         24.         24.

                     CUMULATIVE AREA =      .06 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)
   204.     12.08                    35.         12.         11.         11.
                       (INCHES)    5.726       7.691       7.691       7.691
                        (AC-FT)     17.         24.         24.         24.

                     CUMULATIVE AREA =      .06 SQ MI

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

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

              SUBBASIN RUNOFF DATA

181 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .06  SUBBASIN AREA

                PRECIPITATION DATA
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                                    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
            .99    2.15    4.40    5.20    6.10    8.00    9.70   11.50     .00     .00     .00     .00

                                                STORM AREA =      .06

182 LS        SCS LOSS RATE
                  STRTL          .58  INITIAL ABSTRACTION
                 CRVNBR        77.64  CURVE NUMBER
                  RTIMP          .00  PERCENT IMPERVIOUS AREA

183 UD        SCS DIMENSIONLESS UNITGRAPH
                  TLAG          .08  LAG

                                                        ***

                                                   UNIT HYDROGRAPH
                                                7 END-OF-PERIOD ORDINATES
             178.      180.       58.       19.        6.        2.        0.

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

                    HYDROGRAPH AT STATION        P4
                      FOR PLAN 5, RATIO = 1.00

  TOTAL RAINFALL =   11.50, TOTAL LOSS =    2.86, TOTAL EXCESS =    8.64

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                          (CFS)
+    285.     12.08                  41.         13.         13.          13.
                        (INCHES)   6.660       8.644       8.644        8.644
                         (AC-FT)     20.         26.         26.          26.

                    CUMULATIVE AREA =      .06 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)
    285.     12.08                  41.         13.         13.          13.
                        (INCHES)   6.660       8.644       8.644        8.644
                         (AC-FT)     20.         26.         26.          26.

                    CUMULATIVE AREA =      .06 SQ MI


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


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            *            *
199 KK      *      P5    *
            *            *
            **************

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

200 KP        PLAN  1 FOR STATION        P5
                          TRIANGULAR DISTRIBUTION 2-YRS STORM

              SUBBASIN RUNOFF DATA

201 BA          SUBBASIN CHARACTERISTICS
                    TAREA          .02  SUBBASIN AREA

                PRECIPITATION DATA

200 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
                  .47    1.04    2.10    2.50    2.70    3.30    4.00    4.60     .00     .00     .00     .00

                                                  STORM AREA -      .02

202 LS          SCS LOSS RATE
                     STRTL          .54  INITIAL ABSTRACTION
                    CRVNBR        78.69  CURVE NUMBER
                     RTIMP          .00  PERCENT IMPERVIOUS AREA

203 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .04  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                  5 END-OF-PERIOD ORDINATES
                129.       36.        7.        1.        0.

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

                      HYDROGRAPH AT STATION       P5
                        FOR PLAN 1, RATIO = 1.00

   TOTAL RAINFALL -    4.60, TOTAL LOSS =    2.17, TOTAL EXCESS =    2.43

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR      24.92-HR
  (CFS)       (HR)
                          (CFS)
+    47.     12.08                   5.          1.          1.          1.
                        (INCHES)  2.023       2.434       2.434       2.434
                         (AC-FT)     2.          3.          3.          3.

                      CUMULATIVE AREA =      .02 SQ MI

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

                      HYDROGRAPH AT STATION       P5
                        FOR PLAN 1, RATIO = 1.00

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                          (CFS)
+    47.     12.08                   5.          1.          1.          1.
                        (INCHES)  2.023       2.434       2.434       2.434
                         (AC-FT)     2.          3.          3.          3.

                      CUMULATIVE AREA =      .02 SQ MI

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

207 KP          PLAN  2 FOR STATION       P5
                              TRIANGULAR DISTRIBUTION 10-YRS STORM

                SUBBASIN RUNOFF DATA

201 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .02  SUBBASIN AREA

                PRECIPITATION DATA

209 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
                  .55    1.31    3.00    3.70    4.10    5.40    6.60    7.60     .00     .00     .00     .00

                                                  STORM AREA -      .02

202 LS          SCS LOSS RATE
                     STRTL          .54  INITIAL ABSTRACTION
                    CRVNBR        78.69  CURVE NUMBER
                     RTIMP          .00  PERCENT IMPERVIOUS AREA

     UD         SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .04  LAG
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                                                          UNIT HYDROGRAPH
                                                       5 END-OF-PERIOD ORDINATES
          129.       36.        7.        1.        0.

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

                    HYDROGRAPH AT STATION       P5
                      FOR PLAN 2, RATIO = 1.00

  TOTAL RAINFALL =    7.60, TOTAL LOSS =    2.50, TOTAL EXCESS =    5.10

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR      24.92-HR
+  (CFS)      (HR)
                          (CFS)
    71.      12.08                  10.          3.          3.           3.
                       (INCHES)   4.058       5.101       5.101        5.101
                        (AC-FT)      5.          6.          6.           6.

                    CUMULATIVE AREA =     .02 SQ MI

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

                    HYDROGRAPH AT STATION       P5
                      FOR PLAN 2, RATIO = 1.00

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR      24.92-HR
+  (CFS)      (HR)
                          (CFS)
    71.      12.08                  10.          3.          3.           3.
                       (INCHES)   4.058       5.101       5.101        5.101
                        (AC-FT)      5.          6.          6.           6.

                    CUMULATIVE AREA =     .02 SQ MI

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

210 KP        PLAN  3 FOR STATION       P5
                          TRIANGULAR DISTRIBUTION 25-YRS STORM

              SUBBASIN RUNOFF DATA

201 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .02  SUBBASIN AREA

                PRECIPITATION DATA

212 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
                  .61    1.47    3.50    4.50    5.10    6.30    7.70    9.40     .00     .00     .00     .00

                                                  STORM AREA =      .02

202 LS          SCS LOSS RATE
                     STRTL          .54  INITIAL ABSTRACTION
                    CRVNBR        78.69  CURVE NUMBER
                     RTIMP          .00  PERCENT IMPERVIOUS AREA

203 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .04  LAG

                                                                    ***

                                                          UNIT HYDROGRAPH
                                                       5 END-OF-PERIOD ORDINATES
          129.       36.        7.        1.        0.

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

                    HYDROGRAPH AT STATION       P5
                      FOR PLAN 3, RATIO = 1.00

  TOTAL RAINFALL =    9.40, TOTAL LOSS =    2.62, TOTAL EXCESS =    6.78
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 FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                  6-HR       24-HR       72-HR      24.92-HR
+ (CFS)     (HR)
                      (CFS)
+   85.     12.08                  12.         4.          4.          4.
                   (INCHES)       5.124       6.784       6.784       6.784
                    (AC-FT)        6.          8.          8.          8.

                   CUMULATIVE AREA =      .02 SQ MI

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

                    HYDROGRAPH AT STATION        P5
                      FOR PLAN 3, RATIO = 1.00

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                  6-HR       24-HR       72-HR      24.92-HR
+ (CFS)     (HR)
                      (CFS)
+   85.     12.08                  12.         4.          4.          4.
                   (INCHES)       5.124       6.784       6.784       6.784
                    (AC-FT)        6.          8.          8.          8.

                   CUMULATIVE AREA =      .02 SQ MI

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

213 KP        PLAN  4 FOR STATION        P5
                          TRIANGULAR DISTRIBUTION 50-YRS STORM

              SUBBASIN RUNOFF DATA

201 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .02  SUBBASIN AREA

                PRECIPITATION DATA

 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
                  .64    1.55    3.80   5.00    5.20    7.00    8.70   10.50     .00     .00     .00     .00

                                                STORM AREA =      .02

202 LS          SCS LOSS RATE
                     STRTL          .54  INITIAL ABSTRACTION
                    CRVNBR        78.69  CURVE NUMBER
                     RTIMP          .00  PERCENT IMPERVIOUS AREA

203 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .04  LAG

                                                  ***

                                                UNIT HYDROGRAPH
                                             5 END-OF-PERIOD ORDINATES
              129.       36.        7.        1.        0.

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

                    HYDROGRAPH AT STATION        P5
                      FOR PLAN 4, RATIO = 1.00

  TOTAL RAINFALL =   10.50, TOTAL LOSS =    2.67, TOTAL EXCESS =    7.83

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                  6-HR       24-HR       72-HR      24.92-HR
+ (CFS)     (HR)
                      (CFS)
+   91.     12.08                  14.         5.          5.          5.
                   (INCHES)       5.816       7.829       7.829       7.829
                    (AC-FT)        7.          9.          9.          9.

                   CUMULATIVE AREA =      .02 SQ MI

   ***          ***          ***          ***          ***
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                    HYDROGRAPH AT STATION        P5
                      FOR PLAN 4, RATIO = 1.00

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR        24-HR        72-HR      24.92-HR
+  (CFS)        (HR)
                          (CFS)
+     91.      12.08                   14.          5.           5.           5.
                        (INCHES)     5.816       7.829        7.829        7.829
                         (AC-FT)       7.          9.           9.           9.

                    CUMULATIVE AREA =      .02 SQ MI


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

 216 KP        PLAN  5 FOR STATION        P5
                          TRIANGULAR DISTRIBUTION 100-YRS STORM

               SUBBASIN RUNOFF DATA

 201 BA          SUBBASIN CHARACTERISTICS
                      TAREA          .02  SUBBASIN AREA

                 PRECIPITATION DATA

 218 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
                   .99    2.15    4.40    5.20    6.10    8.00    9.70   11.50     .00     .00     .00     .00

                                                  STORM AREA =      .02

 202 LS          SCS LOSS RATE
                      STRTL          .54  INITIAL ABSTRACTION
                     CRVNBR        78.69  CURVE NUMBER
                      RTIMP          .00  PERCENT IMPERVIOUS AREA

     UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .04  LAG

                                                                  ***

                                                          UNIT HYDROGRAPH
                                                       5 END-OF-PERIOD ORDINATES
               129.       36.        7.         1.         0.

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

                    HYDROGRAPH AT STATION        P5
                      FOR PLAN 5, RATIO = 1.00

   TOTAL RAINFALL =   11.50, TOTAL LOSS =    2.71, TOTAL EXCESS =    8.79

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR        24-HR        72-HR      24.92-HR
+  (CFS)        (HR)
                          (CFS)
+    138.      12.08                   16.          5.           5.           5.
                        (INCHES)     6.757       8.787        8.787        8.787
                         (AC-FT)       8.         10.          10.          10.

                    CUMULATIVE AREA =      .02 SQ MI


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

                    HYDROGRAPH AT STATION        P5
                      FOR PLAN 5, RATIO = 1.00

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR        24-HR        72-HR      24.92-HR
+  (CFS)        (HR)
                          (CFS)
+    138.      12.08                   16.          5.           5.           5.
                        (INCHES)     6.757       8.787        8.787        8.787
                         (AC-FT)       8.         10.          10.          10.

                    CUMULATIVE AREA =      .02 SQ MI
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

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          *            *
219 KK    *      P6    *
          *            *
          **************

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

220 KP        PLAN  1 FOR STATION       P6
                          TRIANGULAR DISTRIBUTION 2-YRS STORM

              SUBBASIN RUNOFF DATA

221 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .03  SUBBASIN AREA

                PRECIPITATION DATA

226 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    1.04    2.10    2.50    2.70    3.30    4.00    4.60     .00     .00     .00     .00

                                                  STORM AREA =      .03

222 LS          SCS LOSS RATE
                     STRTL          .54  INITIAL ABSTRACTION
                    CRVNBR        78.77  CURVE NUMBER
                     RTIMP          .00  PERCENT IMPERVIOUS AREA

223 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .14  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                 10 END-OF-PERIOD ORDINATES
              28.      69.      56.      26.      12.       6.       3.       1.       1.       0.

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

                     HYDROGRAPH AT STATION       P6
                       FOR PLAN 1, RATIO = 1.00

   TOTAL RAINFALL =    4.60, TOTAL LOSS =    2.16, TOTAL EXCESS =    2.44

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+  (CFS)       (HR)
                          (CFS)
+     40.     12.17                    6.          2.          2.          2.
                        (INCHES)    2.027       2.441       2.441       2.441
                         (AC-FT)       3.          3.          3.          3.

                     CUMULATIVE AREA =     .03 SQ MI

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

                     HYDROGRAPH AT STATION       P6
                       FOR PLAN 1, RATIO = 1.00

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+  (CFS)       (HR)
                          (CFS)
+     40.     12.17                    6.          2.          2.          2.
                        (INCHES)    2.027       2.441       2.441       2.441
                         (AC-FT)       3.          3.          3.          3.

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

22 KP        PLAN  2 FOR STATION       P6
                          TRIANGULAR DISTRIBUTION 10-YRS STORM

             SUBBASIN RUNOFF DATA

221 BA         SUBBASIN CHARACTERISTICS
                    TAREA          .03  SUBBASIN AREA

               PRECIPITATION DATA

229 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
                 .55    1.31    3.00    3.70    4.10    5.40    6.60    7.60     .00     .00     .00     .00

                                                  STORM AREA -      .03

222 LS         SCS LOSS RATE
                    STRTL          .54  INITIAL ABSTRACTION
                   CRVNBR        78.77  CURVE NUMBER
                    RTIMP          .00  PERCENT IMPERVIOUS AREA

223 UD         SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .14  LAG

                                                        ***

                                                   UNIT HYDROGRAPH
                                              10 END-OF-PERIOD ORDINATES
             28.      69.      56.      26.      12.       6.       3.       1.       1.       0.

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

                     HYDROGRAPH AT STATION       P6
                       FOR PLAN 2, RATIO = 1.00

 OTAL RAINFALL =    7.60, TOTAL LOSS =    2.49, TOTAL EXCESS =     5.11

 K FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR     24.92-HR
+  (CFS)     (HR)
                        (CFS)
     66.    12.17                  11.          4.          3.          3.
                     (INCHES)    4.063       5.110       5.110       5.110
                      (AC-FT)       6.          7.          7.          7.

                     CUMULATIVE AREA =     .03 SQ MI

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

                     HYDROGRAPH AT STATION       P6
                       FOR PLAN 2, RATIO = 1.00

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR     24.92-HR
  (CFS)       (HR)
                        (CFS)
     66.    12.17                  11.          4.          3.          3.
                     (INCHES)    4.063       5.110       5.110       5.110
                      (AC-FT)       6.          7.          7.          7.

                     CUMULATIVE AREA =     .03 SQ MI

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

230 KP        PLAN  3 FOR STATION       P6
                          TRIANGULAR DISTRIBUTION 25-YRS STORM

             SUBBASIN RUNOFF DATA

221 BA         SUBBASIN CHARACTERISTICS
                    TAREA          .03  SUBBASIN AREA

               PRECIPITATION DATA
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232 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
                   .61    1.47    3.50    4.50    5.10    6.30    7.70    9.40     .00     .00     .00     .00

                                                  STORM AREA =      .03

222 LS           SCS LOSS RATE
                      STRTL          .54  INITIAL ABSTRACTION
                     CRVNBR        78.77  CURVE NUMBER
                      RTIMP          .00  PERCENT IMPERVIOUS AREA

223 UD           SCS DIMENSIONLESS UNITGRAPH
                       TLAG          .14  LAG

                                                          ***

                                                    UNIT HYDROGRAPH
                                              10 END-OF-PERIOD ORDINATES
                 28.      69.      56.      26.      12.       6.       3.       1.       1.       0.

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

                       HYDROGRAPH AT STATION       P6
                         FOR PLAN 3, RATIO = 1.00

   TOTAL RAINFALL =    9.40, TOTAL LOSS =    2.61, TOTAL EXCESS =    6.79

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
   (CFS)       (HR)
                          (CFS)
+     79.     12.17                   14.          5.          5.          5.
                       (INCHES)     5.130       6.794       6.794       6.794
                        (AC-FT)        7.          9.          9.          9.

                       CUMULATIVE AREA =      .03 SQ MI

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

                       HYDROGRAPH AT STATION       P6
                         FOR PLAN 3, RATIO = 1.00

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
   (CFS)       (HR)
                          (CFS)
+     79.     12.17                   14.          5.          5.          5.
                       (INCHES)     5.130       6.794       6.794       6.794
                        (AC-FT)        7.          9.          9.          9.

                       CUMULATIVE AREA =      .03 SQ MI

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

233 KP          PLAN  4 FOR STATION       P6
                              TRIANGULAR DISTRIBUTION 50-YRS STORM

                SUBBASIN RUNOFF DATA

221 BA           SUBBASIN CHARACTERISTICS
                      TAREA          .03  SUBBASIN AREA

                 PRECIPITATION DATA

235 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
                   .64    1.55    3.80    5.00    5.20    7.00    8.70   10.50     .00     .00     .00     .00

                                                  STORM AREA =      .03

222 LS           SCS LOSS RATE
                      STRTL          .54  INITIAL ABSTRACTION
                     CRVNBR        78.77  CURVE NUMBER
                      RTIMP          .00  PERCENT IMPERVIOUS AREA

223 UD           SCS DIMENSIONLESS UNITGRAPH
```

```
                TLAG          .14  LAG

                                                    ***

                                                UNIT HYDROGRAPH
                                            10 END-OF-PERIOD ORDINATES
          28.       69.       56.       26.       12.        6.        3.        1.        1.        0.

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

                HYDROGRAPH AT STATION        P6
                  FOR PLAN 4, RATIO = 1.00

  TOTAL RAINFALL =   10.50, TOTAL LOSS =    2.66, TOTAL EXCESS =    7.84

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                          (CFS)
    87.      12.17                   16.          5.          5.           5.
                       (INCHES)    5.821       7.839       7.839        7.839
                        (AC-FT)       8.         11.         11.          11.

                CUMULATIVE AREA =      .03 SQ MI

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

                HYDROGRAPH AT STATION        P6
                  FOR PLAN 4, RATIO = 1.00

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR      24.92-HR
  (CFS)       (HR)
                          (CFS)
    87.      12.17                   16.          5.          5.           5.
                       (INCHES)    5.821       7.839       7.839        7.839
                        (AC-FT)       8.         11.         11.          11.

                CUMULATIVE AREA =      .03 SQ MI

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

236 KP        PLAN  5 FOR STATION        P6
                          TRIANGULAR DISTRIBUTION 100-YRS STORM

              SUBBASIN RUNOFF DATA

221 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .03  SUBBASIN AREA

                PRECIPITATION DATA

238 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
                  .99    2.15    4.40    5.20    6.10    8.00    9.70   11.50     .00     .00     .00     .00

                                                STORM AREA =      .03

222 LS          SCS LOSS RATE
                     STRTL          .54  INITIAL ABSTRACTION
                    CRVNBR        78.77  CURVE NUMBER
                     RTIMP          .00  PERCENT IMPERVIOUS AREA

223 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .14  LAG

                                                    ***

                                                UNIT HYDROGRAPH
                                            10 END-OF-PERIOD ORDINATES
          28.       69.       56.       26.       12.        6.        3.        1.        1.        0.

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

                HYDROGRAPH AT STATION        P6
                  FOR PLAN 5, RATIO = 1.00
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TOTAL RAINFALL =   11.50, TOTAL LOSS =    2.70, TOTAL EXCESS =    8.80

 FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR     24.92-HR
+ (CFS)     (HR)
                        (CFS)
+   119.    12.17                  19.         6.          6.          6.
                      (INCHES)   6.762       8.797       8.797       8.797
                       (AC-FT)      9.         12.         12.         12.

                      CUMULATIVE AREA =     .03 SQ MI

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

                      HYDROGRAPH AT STATION       P6
                        FOR PLAN 5, RATIO = 1.00

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR     24.92-HR
+ (CFS)     (HR)
                        (CFS)
+   119.    12.17                  19.         6.          6.          6.
                      (INCHES)   6.762       8.797       8.797       8.797
                       (AC-FT)      9.         12.         12.         12.

                      CUMULATIVE AREA =     .03 SQ MI


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


          **************
          *            *
239 KK    *      E4    *
          *            *
          **************

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

240 KP        PLAN  1 FOR STATION       E4
                          TRIANGULAR DISTRIBUTION 2-YRS STORM

              SUBBASIN RUNOFF DATA

241 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .01  SUBBASIN AREA

                PRECIPITATION DATA

246 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    1.04    2.10   2.50    2.70    3.30    4.00    4.60     .00     .00     .00     .00

                                                STORM AREA =      .01

242 LS          SCS LOSS RATE
                     STRTL          .76  INITIAL ABSTRACTION
                    CRVNBR        72.49  CURVE NUMBER
                     RTIMP          .00  PERCENT IMPERVIOUS AREA

243 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .03  LAG

                                                        ***

                                                  UNIT HYDROGRAPH
                                              5 END-OF-PERIOD ORDINATES
                81.      23.       4.       1.       0.

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

                      HYDROGRAPH AT STATION       E4
                        FOR PLAN 1, RATIO = 1.00

TOTAL RAINFALL =    4.60, TOTAL LOSS =    2.67, TOTAL EXCESS =    1.93
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PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR      24.92-HR
+ [illegible])      (HR)
                          (CFS)
    23.      12.08                   2.          1.          1.           1.
                       (INCHES)    1.622       1.932       1.932        1.932
                        (AC-FT)      1.          1.          1.           1.

                       CUMULATIVE AREA =      .01 SQ MI

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

                        HYDROGRAPH AT STATION        E4
                          FOR PLAN 1, RATIO = 1.00

PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR      24.92-HR
  (CFS)        (HR)
                          (CFS)
    23.      12.08                   2.          1.          1.           1.
                       (INCHES)    1.622       1.932       1.932        1.932
                        (AC-FT)      1.          1.          1.           1.

                       CUMULATIVE AREA =      .01 SQ MI


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

247 KP         PLAN  2 FOR STATION        E4
                              TRIANGULAR DISTRIBUTION 10-YRS STORM

               SUBBASIN RUNOFF DATA

241 BA           SUBBASIN CHARACTERISTICS
                      TAREA          .01  SUBBASIN AREA

                 PRECIPITATION DATA

                                  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
                   .55    1.31    3.00    3.70    4.10    5.40    6.60    7.60     .00     .00     .00     .00

                                                  STORM AREA =      .01

242 LS           SCS LOSS RATE
                      STRTL          .76  INITIAL ABSTRACTION
                     CRVNBR        72.49  CURVE NUMBER
                      RTIMP          .00  PERCENT IMPERVIOUS AREA

243 UD           SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .03  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                  5 END-OF-PERIOD ORDINATES
                81.       23.        4.        1.        0.

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

                        HYDROGRAPH AT STATION        E4
                          FOR PLAN 2, RATIO = 1.00

  TOTAL RAINFALL =    7.60, TOTAL LOSS =    3.20, TOTAL EXCESS =    4.40

PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR      24.92-HR
  (CFS)        (HR)
                          (CFS)
+   39.      12.08                   5.          2.          2.           2.
                       (INCHES)    3.543       4.400       4.400        4.400
                        (AC-FT)      3.          3.          3.           3.

                       CUMULATIVE AREA =      .01 SQ MI

    ***            ***            ***            ***            ***
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                    HYDROGRAPH AT STATION        E4
                      FOR PLAN 2, RATIO = 1.00

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR      24.92-HR
+  (CFS)      (HR)
                        (CFS)
+     39.     12.08                 5.          2.          2.           2.
                      (INCHES)    3.543       4.400       4.400        4.400
                       (AC-FT)      3.          3.          3.           3.

                    CUMULATIVE AREA =      .01 SQ MI


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

250 KP        PLAN  3 FOR STATION        E4
                          TRIANGULAR DISTRIBUTION 25-YRS STORM

              SUBBASIN RUNOFF DATA

241 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .01  SUBBASIN AREA

                PRECIPITATION DATA

252 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
                  .61    1.47    3.50   4.50    5.10    6.30    7.70    9.40     .00     .00     .00     .00

                                                  STORM AREA =      .01

242 LS          SCS LOSS RATE
                     STRTL          .76  INITIAL ABSTRACTION
                    CRVNBR        72.49  CURVE NUMBER
                     RTIMP          .00  PERCENT IMPERVIOUS AREA

UD              SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .03  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                  5 END-OF-PERIOD ORDINATES
                81.       23.        4.        1.        0.

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

                    HYDROGRAPH AT STATION        E4
                      FOR PLAN 3, RATIO = 1.00

   TOTAL RAINFALL =     9.40, TOTAL LOSS =     3.40, TOTAL EXCESS =     6.00

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR      24.92-HR
+  (CFS)      (HR)
                        (CFS)
+     48.     12.08                 7.          2.          2.           2.
                      (INCHES)    4.596       6.004       6.004        6.004
                       (AC-FT)      3.          4.          4.           4.

                    CUMULATIVE AREA =      .01 SQ MI


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

                    HYDROGRAPH AT STATION        E4
                      FOR PLAN 3, RATIO = 1.00

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR      24.92-HR
+  (CFS)      (HR)
                        (CFS)
+     48.     12.08                 7.          2.          2.           2.
                      (INCHES)    4.596       6.004       6.004        6.004
                       (AC-FT)      3.          4.          4.           4.

                    CUMULATIVE AREA =      .01 SQ MI
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***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***

253 KP        PLAN  4 FOR STATION       E4
                          TRIANGULAR DISTRIBUTION 50-YRS STORM

              SUBBASIN RUNOFF DATA

241 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .01  SUBBASIN AREA

                PRECIPITATION DATA

255 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
                  .64    1.55    3.80    5.00    5.20    7.00    8.70   10.50     .00     .00     .00     .00

                                                  STORM AREA -      .01

242 LS          SCS LOSS RATE
                     STRTL          .76  INITIAL ABSTRACTION
                    CRVNBR        72.49  CURVE NUMBER
                     RTIMP          .00  PERCENT IMPERVIOUS AREA

243 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .03  LAG

                                                          ***

                                                      UNIT HYDROGRAPH
                                                  5 END-OF-PERIOD ORDINATES
                81.       23.        4.        1.        0.

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

                     HYDROGRAPH AT STATION       E4
                       FOR PLAN 4, RATIO = 1.00

 TOTAL RAINFALL =   10.50, TOTAL LOSS =    3.49, TOTAL EXCESS =    7.01

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                          (CFS)
+     52.     12.08                    8.          3.          3.           3.
                        (INCHES)    5.278       7.010       7.010        7.010
                         (AC-FT)       4.          5.          5.           5.

                     CUMULATIVE AREA =      .01 SQ MI

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

                     HYDROGRAPH AT STATION       E4
                       FOR PLAN 4, RATIO = 1.00

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                          (CFS)
+     52.     12.08                    8.          3.          3.           3.
                        (INCHES)    5.278       7.010       7.010        7.010
                         (AC-FT)       4.          5.          5.           5.

                     CUMULATIVE AREA =      .01 SQ MI

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

256 KP        PLAN  5 FOR STATION       E4
                          TRIANGULAR DISTRIBUTION 100-YRS STORM

              SUBBASIN RUNOFF DATA

241 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .01  SUBBASIN AREA

                PRECIPITATION DATA
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                                    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
        .99    2.15    4.40    5.20    6.10    8.00    9.70   11.50     .00     .00     .00     .00

                                          STORM AREA -      .01

242 LS          SCS LOSS RATE
                     STRTL          .76  INITIAL ABSTRACTION
                    CRVNBR        72.49  CURVE NUMBER
                     RTIMP          .00  PERCENT IMPERVIOUS AREA

243 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .03  LAG

                                                  ***

                                                UNIT HYDROGRAPH
                                             5 END-OF-PERIOD ORDINATES
                81.       23.        4.        1.        0.

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

                      HYDROGRAPH AT STATION       E4
                        FOR PLAN 5, RATIO - 1.00

   TOTAL RAINFALL =   11.50, TOTAL LOSS -    3.56, TOTAL EXCESS =    7.94

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                          (CFS)
     79.      12.08                    9.          3.          3.          3.
                        (INCHES)    6.170       7.937       7.937       7.937
                         (AC-FT)       5.          6.          6.          6.

                      CUMULATIVE AREA -      .01 SQ MI

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

                      HYDROGRAPH AT STATION       E4
                        FOR PLAN 5, RATIO - 1.00

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                          (CFS)
     79.      12.08                    9.          3.          3.          3.
                        (INCHES)    6.170       7.937       7.937       7.937
                         (AC-FT)       5.          6.          6.          6.

                      CUMULATIVE AREA -      .01 SQ MI


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


            **************
            *            *
259 KK      *        E5  *
            *            *
            **************


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

260 KP          PLAN  1 FOR STATION       E5
                                TRIANGULAR DISTRIBUTION 2-YRS STORM

                SUBBASIN RUNOFF DATA

261 BA            SUBBASIN CHARACTERISTICS
                     TAREA          .02  SUBBASIN AREA

                  PRECIPITATION DATA

266 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
                  .47    1.04    2.10    2.50    2.70    3.30    4.00    4.60     .00     .00     .00     .00

                                                  STORM AREA =      .02

262 LS          SCS LOSS RATE
                     STRTL          .65  INITIAL ABSTRACTION
                    CRVNBR        75.57  CURVE NUMBER
                     RTIMP          .00  PERCENT IMPERVIOUS AREA

263 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .13  LAG

                                                        ***

                                                  UNIT HYDROGRAPH
                                              10 END-OF-PERIOD ORDINATES
                28.       62.       45.       19.        9.        4.        2.        1.        0.        0.

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

                      HYDROGRAPH AT STATION       E5
                        FOR PLAN 1, RATIO = 1.00

   TOTAL RAINFALL =    4.60, TOTAL LOSS =    2.43, TOTAL EXCESS =    2.17

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+  (CFS)       (HR)
                          (CFS)
+     31.     12.17                     4.          1.          1.          1.
                        (INCHES)     1.818       2.175       2.175       2.175
                         (AC-FT)        2.          3.          3.          3.

                      CUMULATIVE AREA =      .02 SQ MI

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

                      HYDROGRAPH AT STATION       E5
                        FOR PLAN 1, RATIO = 1.00

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+  (CFS)       (HR)
                          (CFS)
+     31.     12.17                     4.          1.          1.          1.
                        (INCHES)     1.818       2.175       2.175       2.175
                         (AC-FT)        2.          3.          3.          3.

                      CUMULATIVE AREA =      .02 SQ MI

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

267 KP          PLAN  2 FOR STATION       E5
                              TRIANGULAR DISTRIBUTION 10-YRS STORM

                SUBBASIN RUNOFF DATA

261 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .02  SUBBASIN AREA

                PRECIPITATION DATA

269 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
                  .55    1.31    3.00    3.70    4.10    5.40    6.60    7.60     .00     .00     .00     .00

                                                  STORM AREA =      .02

262 LS          SCS LOSS RATE
                     STRTL          .65  INITIAL ABSTRACTION
                    CRVNBR        75.57  CURVE NUMBER
                     RTIMP          .00  PERCENT IMPERVIOUS AREA

UD              SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .13  LAG
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                                                                    ***

                                                          UNIT HYDROGRAPH
                                                     10 END-OF-PERIOD ORDINATES
          28.       62.       45.       19.        9.        4.        2.        1.        0.        0.

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

                    HYDROGRAPH AT STATION        E5
                      FOR PLAN 2, RATIO = 1.00

  TOTAL RAINFALL =    7.60, TOTAL LOSS =    2.85, TOTAL EXCESS =    4.75

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                          (CFS)
+    53.      12.17                    9.          3.          3.           3.
                        (INCHES)    3.797       4.746       4.746        4.746
                         (AC-FT)      4.          6.          6.           6.

                    CUMULATIVE AREA =     .02 SQ MI

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

                    HYDROGRAPH AT STATION        E5
                      FOR PLAN 2, RATIO = 1.00

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                          (CFS)
+    53.      12.17                    9.          3.          3.           3.
                        (INCHES)    3.797       4.746       4.746        4.746
                         (AC-FT)      4.          6.          6.           6.

                    CUMULATIVE AREA =     .02 SQ MI

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

270 KP        PLAN  3 FOR STATION        E5
                          TRIANGULAR DISTRIBUTION 25-YRS STORM

              SUBBASIN RUNOFF DATA

261 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .02  SUBBASIN AREA

                PRECIPITATION DATA

272 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
                  .61    1.47    3.50    4.50    5.10    6.30    7.70    9.40     .00     .00     .00     .00

                                                  STORM AREA =      .02

262 LS          SCS LOSS RATE
                     STRTL          .65  INITIAL ABSTRACTION
                    CRVNBR        75.57  CURVE NUMBER
                     RTIMP          .00  PERCENT IMPERVIOUS AREA

263 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .13  LAG

                                                                    ***

                                                          UNIT HYDROGRAPH
                                                     10 END-OF-PERIOD ORDINATES
          28.       62.       45.       19.        9.        4.        2.        1.        0.        0.

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

                    HYDROGRAPH AT STATION        E5
                      FOR PLAN 3, RATIO = 1.00

  TOTAL RAINFALL =    9.40, TOTAL LOSS =    3.01, TOTAL EXCESS =    6.39
```

```
PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR      24.92-HR
  (CFS)       (HR)
                        (CFS)
    65.      12.17                  12.         4.          4.          4.
                     (INCHES)     4.863       6.392       6.392       6.392
                      (AC-FT)        6.          8.          8.          8.

                     CUMULATIVE AREA =      .02 SQ MI

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

                     HYDROGRAPH AT STATION       E5
                       FOR PLAN 3, RATIO = 1.00

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR      24.92-HR
  (CFS)       (HR)
                        (CFS)
    65.      12.17                  12.         4.          4.          4.
                     (INCHES)     4.863       6.392       6.392       6.392
                      (AC-FT)        6.          8.          8.          8.

                     CUMULATIVE AREA =      .02 SQ MI

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

273 KP        PLAN  4 FOR STATION       E5
                          TRIANGULAR DISTRIBUTION 50-YRS STORM

              SUBBASIN RUNOFF DATA

261 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .02  SUBBASIN AREA

                PRECIPITATION DATA

                                  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
                  .64    1.55    3.80    5.00    5.20    7.00    8.70   10.50     .00     .00     .00     .00

                                                STORM AREA =      .02

262 LS          SCS LOSS RATE
                     STRTL          .65  INITIAL ABSTRACTION
                    CRVNBR        75.57  CURVE NUMBER
                     RTIMP          .00  PERCENT IMPERVIOUS AREA

263 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .13  LAG

                                                  ***

                                                UNIT HYDROGRAPH
                                            10 END-OF-PERIOD ORDINATES
              28.       62.       45.       19.        9.        4.        2.        1.        0.        0.

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

                     HYDROGRAPH AT STATION       E5
                       FOR PLAN 4, RATIO = 1.00

  TOTAL RAINFALL =   10.50, TOTAL LOSS =    3.08, TOTAL EXCESS =    7.42

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR      24.92-HR
  (CFS)       (HR)
                        (CFS)
    71.      12.17                  13.         4.          4.          4.
                     (INCHES)     5.545       7.419       7.419       7.419
                      (AC-FT)        7.          9.          9.          9.

                     CUMULATIVE AREA =      .02 SQ MI

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

```
                    HYDROGRAPH AT STATION        E5
                      FOR PLAN 4, RATIO - 1.00

PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                          (CFS)
    71.       12.17                  13.          4.          4.           4.
                       (INCHES)    5.545       7.419       7.419        7.419
                        (AC-FT)       7.          9.          9.           9.

                    CUMULATIVE AREA =      .02 SQ MI


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

276 KP        PLAN  5 FOR STATION        E5
                          TRIANGULAR DISTRIBUTION 100-YRS STORM

              SUBBASIN RUNOFF DATA

261 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .02  SUBBASIN AREA

                PRECIPITATION DATA

278 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
                  .99    2.15    4.40    5.20    6.10    8.00    9.70   11.50     .00     .00     .00     .00

                                                  STORM AREA =      .02

262 LS          SCS LOSS RATE
                     STRTL          .65  INITIAL ABSTRACTION
                    CRVNBR        75.57  CURVE NUMBER
                     RTIMP          .00  PERCENT IMPERVIOUS AREA

D               SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .13  LAG

                                                        ***

                                                  UNIT HYDROGRAPH
                                              10 END-OF-PERIOD ORDINATES
                28.       62.       45.       19.        9.        4.        2.        1.        0.        0.

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

                    HYDROGRAPH AT STATION        E5
                      FOR PLAN 5, RATIO - 1.00

  TOTAL RAINFALL =   11.50, TOTAL LOSS =    3.14, TOTAL EXCESS =    8.36

PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                          (CFS)
    99.       12.17                  15.          5.          5.           5.
                       (INCHES)    6.467       8.362       8.362        8.362
                        (AC-FT)       8.         10.         10.          10.

                    CUMULATIVE AREA =      .02 SQ MI

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

                    HYDROGRAPH AT STATION        E5
                      FOR PLAN 5, 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.          5.           5.
                       (INCHES)    6.467       8.362       8.362        8.362
                        (AC-FT)       8.         10.         10.          10.

                    CUMULATIVE AREA =      .02 SQ MI
```

1

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	E3A	.03	1	FLOW	52.
				TIME	12.08
			2	FLOW	87.
				TIME	12.08
			3	FLOW	106.
				TIME	12.08
			4	FLOW	116.
				TIME	12.08
			5	FLOW	165.
				TIME	12.08
HYDROGRAPH AT	P3	.01	1	FLOW	31.
				TIME	12.08
			2	FLOW	45.
				TIME	12.08
			3	FLOW	53.
				TIME	12.08
			4	FLOW	57.
				TIME	12.08
			5	FLOW	85.
				TIME	12.08
+ 2 COMBINED AT	COMB1	.05	1	FLOW	83.
				TIME	12.08
			2	FLOW	132.
				TIME	12.08
			3	FLOW	159.
				TIME	12.08
			4	FLOW	173.
				TIME	12.08
			5	FLOW	250.
				TIME	12.08
HYDROGRAPH AT	E3B	.02	1	FLOW	51.
				TIME	12.08
			2	FLOW	76.
				TIME	12.08
			3	FLOW	90.
				TIME	12.08
			4	FLOW	97.
				TIME	12.08
			5	FLOW	144.
				TIME	12.08
+ 2 COMBINED AT	COMB2	.07	1	FLOW	134.
				TIME	12.08
			2	FLOW	208.
				TIME	12.08
			3	FLOW	249.
				TIME	12.08
			4	FLOW	270.
				TIME	12.08
			5	FLOW	394.
				TIME	12.08
+ HYDROGRAPH AT	E2	.87	1	FLOW	512.
				TIME	13.08
			2	FLOW	965.
				TIME	13.00
			3	FLOW	1231.
				TIME	13.00
			4	FLOW	1382.
				TIME	13.00

			5	FLOW	1607.
				TIME	13.00
HYDROGRAPH AT +	P2	.04	1	FLOW	67.
				TIME	12.17
			2	FLOW	106.
				TIME	12.17
			3	FLOW	127.
				TIME	12.17
			4	FLOW	138.
				TIME	12.17
			5	FLOW	194.
				TIME	12.17
HYDROGRAPH AT +	E1	.17	1	FLOW	175.
				TIME	12.33
			2	FLOW	323.
				TIME	12.33
			3	FLOW	404.
				TIME	12.33
			4	FLOW	449.
				TIME	12.33
			5	FLOW	585.
				TIME	12.33
HYDROGRAPH AT +	P1	.08	1	FLOW	84.
				TIME	12.42
			2	FLOW	147.
				TIME	12.42
			3	FLOW	182.
				TIME	12.42
			4	FLOW	202.
				TIME	12.42
			5	FLOW	253.
				TIME	12.42
HYDROGRAPH AT +	P7	.03	1	FLOW	48.
				TIME	12.17
			2	FLOW	75.
				TIME	12.17
			3	FLOW	89.
				TIME	12.17
			4	FLOW	97.
				TIME	12.17
			5	FLOW	138.
				TIME	12.17
2 COMBINED AT +	COMB3	.11	1	FLOW	106.
				TIME	12.33
			2	FLOW	189.
				TIME	12.33
			3	FLOW	235.
				TIME	12.33
			4	FLOW	261.
				TIME	12.33
			5	FLOW	320.
				TIME	12.33
HYDROGRAPH AT +	P4	.06	1	FLOW	94.
				TIME	12.17
			2	FLOW	154.
				TIME	12.08
			3	FLOW	187.
				TIME	12.08
			4	FLOW	204.
				TIME	12.08
			5	FLOW	285.
				TIME	12.08
HYDROGRAPH AT	P5	.02	1	FLOW	47.
				TIME	12.08
			2	FLOW	71.
				TIME	12.08
			3	FLOW	85.

				TIME	12.08
			4	FLOW	91.
				TIME	12.08
			5	FLOW	138.
				TIME	12.08
HYDROGRAPH AT +	P6	.03	1	FLOW	40.
				TIME	12.17
			2	FLOW	66.
				TIME	12.17
			3	FLOW	79.
				TIME	12.17
			4	FLOW	87.
				TIME	12.17
			5	FLOW	119.
				TIME	12.17
HYDROGRAPH AT +	E4	.01	1	FLOW	23.
				TIME	12.08
			2	FLOW	39.
				TIME	12.08
			3	FLOW	48.
				TIME	12.08
			4	FLOW	52.
				TIME	12.08
			5	FLOW	79.
				TIME	12.08
HYDROGRAPH AT +	E5	.02	1	FLOW	31.
				TIME	12.17
			2	FLOW	53.
				TIME	12.17
			3	FLOW	65.
				TIME	12.17
			4	FLOW	71.
				TIME	12.17
			5	FLOW	99.
				TIME	12.17

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

APPENDIX C

HEC-1 RESULTS FOR PROPOSED CONDITION

```
*                                        *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)    *
*              JUN   1998                *
*            VERSION 4.1                 *
*  RGMHEC2000                HEC-1.COM  *
*  RUN DATE   27JAN06  TIME  11:12:56   *
*                                        *
******************************************
```

```
*                                        *
*   U.S. ARMY CORPS OF ENGINEERS         *
*   HYDROLOGIC ENGINEERING CENTER        *
*         609 SECOND STREET              *
*      DAVIS, CALIFORNIA 95616           *
*          (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

HEC-1 INPUT

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

  1           ID        HYDROLOGIC ANALYSIS
  2           ID        PROJECT:MONTE ARENAS DEVELOPMENT, VEGA BAJA
  3           ID        TRIANGULAR DISTRIBUTION
  4           ID        FREQUENCY OF OCCURRENCE:2-, 10-, 25-, 50- & 100-YEARS
  5           ID        CA ENGINEERING, JANUARY 2006
  6           ID        PROPOSED  CONDITION
  7           IT      5                    300
  8           IO      3
  9           JP      5

 10           KK     E3A
 11           KP       1
 12           BA   0.032
 13           LS       0   76.27
 14           UD    0.07
 15           IN      15
 16           KM        TRIANGULAR DISTRIBUTION 2-YRS STORM
 17           PH                  0.47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
 18           KP       2
 19           KM        TRIANGULAR DISTRIBUTION 10-YRS STORM
 20           PH                  0.55    1.31    3.00    3.70    4.10    5.40    6.60    7.60
 21           KP       3
 22           KM        TRIANGULAR DISTRIBUTION 25-YRS STORM
 23           PH                  0.61    1.47    3.50    4.50    5.10    6.30    7.70    9.40
 24           KP       4
 25           KM        TRIANGULAR DISTRIBUTION 50-YRS STORM
 26           PH                  0.64    1.55    3.80    5.00    5.20    7.00    8.70   10.50
 27           KP       5
 28           KM        TRIANGULAR DISTRIBUTION 100-YRS STORM
 29           PH                  0.99    2.15    4.40    5.20    6.10    8.00    9.70   11.50

 30           KK      P3
 31           KP       1
 32           BA  0.0109
 33           LS       0       95
 34           UD    0.08
 35           IN      15
 36           KM        TRIANGULAR DISTRIBUTION 2-YRS STORM
 37           PH                  0.47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
 38           KP       2
 39           KM        TRIANGULAR DISTRIBUTION 10-YRS STORM
 40           PH                  0.55    1.31    3.00    3.70    4.10    5.40    6.60    7.60
 41           KP       3
 42           KM        TRIANGULAR DISTRIBUTION 25-YRS STORM
 43           PH                  0.61    1.47    3.50    4.50    5.10    6.30    7.70    9.40
 44           KP       4
 45           KM        TRIANGULAR DISTRIBUTION 50-YRS STORM
 46           PH                  0.64    1.55    3.80    5.00    5.20    7.00    8.70   10.50
 47           KP       5
 48           KM        TRIANGULAR DISTRIBUTION 100-YRS STORM
 49           PH                  0.99    2.15    4.40    5.20    6.10    8.00    9.70   11.50
```


HEC-1 INPUT

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

 50           KK   COMB1
 51           KM  E3A+P3
 52           HC       2

 53           KK     E3B
 54           KP       1
 55           BA   0.024
 56           LS       0   79.88
 57           UD    0.05
 58           IN      15
 59           KM        TRIANGULAR DISTRIBUTION 2-YRS STORM
 60           PH                  0.47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
 61           KP       2
 62           KM        TRIANGULAR DISTRIBUTION 10-YRS STORM
 63           PH                  0.55    1.31    3.00    3.70    4.10    5.40    6.60    7.60
 64           KP       3
 65           KM        TRIANGULAR DISTRIBUTION 25-YRS STORM
 66           PH                  0.61    1.47    3.50    4.50    5.10    6.30    7.70    9.40
 67           KP       4
 68           KM        TRIANGULAR DISTRIBUTION 50-YRS STORM
 69           PH                  0.64    1.55    3.80    5.00    5.20    7.00    8.70   10.50
```

```
70          KP        5
71          KM          TRIANGULAR DISTRIBUTION 100-YRS STORM
72                          0.99     2.15     4.40     5.20     6.10     8.00     9.70    11.50
PH

73          KK    COMB2
74          KM   K3+P3
75          HC        2

76          KK       E2
77          KP        1
78          BA    0.868
79          LS        0    77.32
80          UD     0.93
81          IN       15
82          KM          TRIANGULAR DISTRIBUTION 2-YRS STORM
83                          0.47     1.04     2.10     2.50     2.70     3.30     4.00     4.60
84          PH
85          KP        2
86          KM          TRIANGULAR DISTRIBUTION 10-YRS STORM
87                          0.55     1.31     3.00     3.70     4.10     5.40     6.60     7.60
88          PH
89          KP        3
90          KM          TRIANGULAR DISTRIBUTION 25-YRS STORM
91                          0.61     1.47     3.50     4.50     5.10     6.30     7.70     9.40
92          PH
93          KP        4
94          KM          TRIANGULAR DISTRIBUTION 50-YRS STORM
95                          0.64     1.55     3.80     5.00     5.20     7.00     8.70    10.50
PH
KP        5
KM          TRIANGULAR DISTRIBUTION 100-YRS STORM
                            0.99     2.15     4.40     5.20     6.10     8.00     9.70    11.50
PH                                   HEC-1 INPUT
```


1

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

96          KK       P2
97          KP        1
98          BA    0.0472
99          LS        0       95
100         UD     0.21
101         IN       15
102         KM          TRIANGULAR DISTRIBUTION 2-YRS STORM
103                         0.47     1.04     2.10     2.50     2.70     3.30     4.00     4.60
104         PH
105         KP        2
106         KM          TRIANGULAR DISTRIBUTION 10-YRS STORM
107                         0.55     1.31     3.00     3.70     4.10     5.40     6.60     7.60
108         PH
109         KP        3
110         KM          TRIANGULAR DISTRIBUTION 25-YRS STORM
111                         0.61     1.47     3.50     4.50     5.10     6.30     7.70     9.40
112         PH
113         KP        4
114         KM          TRIANGULAR DISTRIBUTION 50-YRS STORM
115                         0.64     1.55     3.80     5.00     5.20     7.00     8.70    10.50
PH
KP        5
KM          TRIANGULAR DISTRIBUTION 100-YRS STORM
                            0.99     2.15     4.40     5.20     6.10     8.00     9.70    11.50
PH

116         KK       E1
117         KP        1
118         BA    0.172
119         LS        0    73.77
120         UD     0.21
121         IN       15
122         KM          TRIANGULAR DISTRIBUTION 2-YRS STORM
123                         0.47     1.04     2.10     2.50     2.70     3.30     4.00     4.60
124         PH
125         KP        2
126         KM          TRIANGULAR DISTRIBUTION 10-YRS STORM
127                         0.55     1.31     3.00     3.70     4.10     5.40     6.60     7.60
128         PH
129         KP        3
130         KM          TRIANGULAR DISTRIBUTION 25-YRS STORM
131                         0.61     1.47     3.50     4.50     5.10     6.30     7.70     9.40
132         PH
133         KP        4
134         KM          TRIANGULAR DISTRIBUTION 50-YRS STORM
135                         0.64     1.55     3.80     5.00     5.20     7.00     8.70    10.50
PH
KP        5
KM          TRIANGULAR DISTRIBUTION 100-YRS STORM
                            0.99     2.15     4.40     5.20     6.10     8.00     9.70    11.50
PH

136         KK      P1A
137         KP        1
138         BA    0.0494
139         LS        0       95
140         UD     0.45
141         IN       15
```

```
142   KM        TRIANGULAR DISTRIBUTION 2-YRS STORM
143   PH                  0.47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
144   KP        2
145   KM        TRIANGULAR DISTRIBUTION 10-YRS STORM
146   PH                  0.55    1.31    3.00    3.70    4.10    5.40    6.60    7.60
147   KP        3
```


HEC-1 INPUT

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

148   KM        TRIANGULAR DISTRIBUTION 25-YRS STORM
149   PH                  0.61    1.47    3.50    4.50    5.10    6.30    7.70    9.40
150   KP        4
151   KM        TRIANGULAR DISTRIBUTION 50-YRS STORM
152   PH                  0.64    1.55    3.80    5.00    5.20    7.00    8.70   10.50
153   KP        5
154   KM        TRIANGULAR DISTRIBUTION 100-YRS STORM
155   PH                  0.99    2.15    4.40    5.20    6.10    8.00    9.70   11.50

156   KK      P1B
157   KP        1
158   BA   0.0297
159   LS        0       95
160   UD     0.40
161   IN       15
162   KM        TRIANGULAR DISTRIBUTION 2-YRS STORM.
163   PH                  0.47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
164   KP        2
165   KM        TRIANGULAR DISTRIBUTION 10-YRS STORM
166   PH                  0.55    1.31    3.00    3.70    4.10    5.40    6.60    7.60
167   KP        3
168   KM        TRIANGULAR DISTRIBUTION 25-YRS STORM
169   PH                  0.61    1.47    3.50    4.50    5.10    6.30    7.70    9.40
170   KP        4
171   KM        TRIANGULAR DISTRIBUTION 50-YRS STORM
172   PH                  0.64    1.55    3.80    5.00    5.20    7.00    8.70   10.50
173   KP        5
174   KM        TRIANGULAR DISTRIBUTION 100-YRS STORM
175   PH                  0.99    2.15    4.40    5.20    6.10    8.00    9.70   11.50

176   KK       P7
177   KP        1
178   BA    0.033
179   LS        0       95
180   UD     0.15
181   IN       15
182   KM        TRIANGULAR DISTRIBUTION 2-YRS STORM
183   PH                  0.47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
184   KP        2
185   KM        TRIANGULAR DISTRIBUTION 10-YRS STORM
186   PH                  0.55    1.31    3.00    3.70    4.10    5.40    6.60    7.60
187   KP        3
188   KM        TRIANGULAR DISTRIBUTION 25-YRS STORM
189   PH                  0.61    1.47    3.50    4.50    5.10    6.30    7.70    9.40
190   KP        4
191   KM        TRIANGULAR DISTRIBUTION 50-YRS STORM
192   PH                  0.64    1.55    3.80    5.00    5.20    7.00    8.70   10.50
193   KP        5
194   KM        TRIANGULAR DISTRIBUTION 100-YRS STORM
195   PH                  0.99    2.15    4.40    5.20    6.10    8.00    9.70   11.50
```


HEC-1 INPUT

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

196   KK   COMB 3
197   KM   P1+P7
198   HC        3

199   KK      P4A
200   KP        1
201   BA   0.0226
202   LS        0       95
203   UD     0.20
204   IN       15
205   KM        TRIANGULAR DISTRIBUTION 2-YRS STORM
206   PH                  0.47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
207   KP        2
208   KM        TRIANGULAR DISTRIBUTION 10-YRS STORM
209   PH                  0.55    1.31    3.00    3.70    4.10    5.40    6.60    7.60
210   KP        3
```

```
211     KM        TRIANGULAR DISTRIBUTION 25-YRS STORM
212                     0.61    1.47    3.50    4.50    5.10    6.30    7.70    9.40
213     PH
214     KP      4
215     KM        TRIANGULAR DISTRIBUTION 50-YRS STORM
216                     0.64    1.55    3.80    5.00    5.20    7.00    8.70   10.50
217     PH
218     KP      5
219     KM        TRIANGULAR DISTRIBUTION 100-YRS STORM
220                     0.99    2.15    4.40    5.20    6.10    8.00    9.70   11.50
221     PH
222
223     KK     P4B
224     KP       1
225     BA  0.0245
226     LS       0      95
227     UD    0.16
228     IN      15
229     KM        TRIANGULAR DISTRIBUTION 2-YRS STORM
230                     0.47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
231     PH
232     KP      2
233     KM        TRIANGULAR DISTRIBUTION 10-YRS STORM
234                     0.55    1.31    3.00    3.70    4.10    5.40    6.60    7.60
235     PH
236     KP      3
237     KM        TRIANGULAR DISTRIBUTION 25-YRS STORM
238                     0.61    1.47    3.50    4.50    5.10    6.30    7.70    9.40
239     PH
240     KP      4
241     KM        TRIANGULAR DISTRIBUTION 50-YRS STORM
242                     0.64    1.55    3.80    5.00    5.20    7.00    8.70   10.50
243     PH
244     KP      5
245     KM        TRIANGULAR DISTRIBUTION 100-YRS STORM
246                     0.99    2.15    4.40    5.20    6.10    8.00    9.70   11.50
247     PH
248
249     KK     P4C
250     KP       1
251     BA  0.0148
252     LS       0      95
253     UD    0.16
254     IN      15
255     KM        TRIANGULAR DISTRIBUTION 2-YRS STORM
256                     0.47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
257     PH
258
```


HEC-1 INPUT

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

259     KP      2
260     KM        TRIANGULAR DISTRIBUTION 10-YRS STORM
261                     0.55    1.31    3.00    3.70    4.10    5.40    6.60    7.60
262     PH
263     KP      3
264     KM        TRIANGULAR DISTRIBUTION 25-YRS STORM
265                     0.61    1.47    3.50    4.50    5.10    6.30    7.70    9.40
266     PH
267     KP      4
268     KM        TRIANGULAR DISTRIBUTION 50-YRS STORM
269                     0.64    1.55    3.80    5.00    5.20    7.00    8.70   10.50
270     PH
271     KP      5
272     KM        TRIANGULAR DISTRIBUTION 100-YRS STORM
273                     0.99    2.15    4.40    5.20    6.10    8.00    9.70   11.50
274     PH
275
276     KK   COMB4
277     KM   P4A+P4B+P4C
278     HC       3
279
280     KK      P5
281     KP       1
282     BA  0.0178
283     LS       0      95
284     UD    0.08
285     IN      15
286     KM        TRIANGULAR DISTRIBUTION 2-YRS STORM
287                     0.47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
288     PH
289     KP      2
290     KM        TRIANGULAR DISTRIBUTION 10-YRS STORM
291                     0.55    1.31    3.00    3.70    4.10    5.40    6.60    7.60
292     PH
293     KP      3
294     KM        TRIANGULAR DISTRIBUTION 25-YRS STORM
295                     0.61    1.47    3.50    4.50    5.10    6.30    7.70    9.40
296     PH
297     KP      4
298     KM        TRIANGULAR DISTRIBUTION 50-YRS STORM
299                     0.64    1.55    3.80    5.00    5.20    7.00    8.70   10.50
300     PH
301     KP      5
302     KM        TRIANGULAR DISTRIBUTION 100-YRS STORM
303                     0.99    2.15    4.40    5.20    6.10    8.00    9.70   11.50
304     PH
305
306     KK      P6
```

```
283          KP        1
284          BA    0.018
285          LS        0       95
286          UD     0.20
287          IN       15
288          KM          TRIANGULAR DISTRIBUTION 2-YRS STORM
289          PH                     0.47     1.04     2.10     2.50     2.70     3.30     4.00     4.60
290          KP        2
291          KM          TRIANGULAR DISTRIBUTION 10-YRS STORM
292          PH                     0.55     1.31     3.00     3.70     4.10     5.40     6.60     7.60
293          KP        3
294          KM          TRIANGULAR DISTRIBUTION 25-YRS STORM
295          PH                     0.61     1.47     3.50     4.50     5.10     6.30     7.70     9.40
296          KP        4
297          KM          TRIANGULAR DISTRIBUTION 50-YRS STORM
298          PH                     0.64     1.55     3.80     5.00     5.20     7.00     8.70    10.50
```


HEC-1 INPUT

1

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

299          KP        5
300          KM          TRIANGULAR DISTRIBUTION 100-YRS STORM
301          PH                     0.99     2.15     4.40     5.20     6.10     8.00     9.70    11.50

302          KK       E4
303          KP        1
304          BA    0.014
305          LS        0    72.49
306          UD     0.03
307          IN       15
308          KM          TRIANGULAR DISTRIBUTION 2-YRS STORM
309          PH                     0.47     1.04     2.10     2.50     2.70     3.30     4.00     4.60
310          KP        2
311          KM          TRIANGULAR DISTRIBUTION 10-YRS STORM
312          PH                     0.55     1.31     3.00     3.70     4.10     5.40     6.60     7.60
313          KP        3
314          KM          TRIANGULAR DISTRIBUTION 25-YRS STORM
315          PH                     0.61     1.47     3.50     4.50     5.10     6.30     7.70     9.40
316          KP        4
317          KM          TRIANGULAR DISTRIBUTION 50-YRS STORM
318          PH                     0.64     1.55     3.80     5.00     5.20     7.00     8.70    10.50
319          KP        5
320          KM          TRIANGULAR DISTRIBUTION 100-YRS STORM
321          PH                     0.99     2.15     4.40     5.20     6.10     8.00     9.70    11.50

322          KK       E5
323          KP        1
324          BA    0.022
325          LS        0    75.57
326          UD     0.13
327          IN       15
328          KM          TRIANGULAR DISTRIBUTION 2-YRS STORM
329          PH                     0.47     1.04     2.10     2.50     2.70     3.30     4.00     4.60
330          KP        2
331          KM          TRIANGULAR DISTRIBUTION 10-YRS STORM
332          PH                     0.55     1.31     3.00     3.70     4.10     5.40     6.60     7.60
333          KP        3
334          KM          TRIANGULAR DISTRIBUTION 25-YRS STORM
335          PH                     0.61     1.47     3.50     4.50     5.10     6.30     7.70     9.40
336          KP        4
337          KM          TRIANGULAR DISTRIBUTION 50-YRS STORM
338          PH                     0.64     1.55     3.80     5.00     5.20     7.00     8.70    10.50
339          KP        5
340          KM          TRIANGULAR DISTRIBUTION 100-YRS STORM
341          PH                     0.99     2.15     4.40     5.20     6.10     8.00     9.70    11.50
342          ZZ
```

```
*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*              JUN   1998               *
*           VERSION 4.1                 *
*  RGMHEC2000                HEC-1.COM  *
*  RUN DATE   27JAN06  TIME  11:12:56   *
*                                       *
*****************************************
```

```
*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*          609 SECOND STREET            *
*       DAVIS, CALIFORNIA 95616         *
*          (916) 756-1104               *
*                                       *
*****************************************
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                    PROJECT:MONTE ARENAS DEVELOPMENT, VEGA BAJA
                    TRIANGULAR DISTRIBUTION
                    FREQUENCY OF OCCURRENCE:2-, 10-, 25-, 50- & 100-YEARS
                    CA ENGINEERING, JANUARY 2006
                    PROPOSED  CONDITION

8 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

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

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

            **************
            *            *
 10 KK      *    E3A     *
            *            *
            **************

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

 11 KP        PLAN  1 FOR STATION      E3A
                          TRIANGULAR DISTRIBUTION 2-YRS STORM

              SUBBASIN RUNOFF DATA

 12 BA          SUBBASIN CHARACTERISTICS
                     TAREA        .03  SUBBASIN AREA

              PRECIPITATION DATA
                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                  ............... TP-40 ...............  ........... TP-49 ...........
 17 PH          ..... HYDRO-35 ......  ..............  ..............  ..............  ..............  ..............  ..............  ..............
                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     1.24    2.10    2.50    2.70    3.30    4.00    4.60     .00     .00     .00     .00

                                                STORM AREA -      .03

 13 LS          SCS LOSS RATE
                     STRTL        .62  INITIAL ABSTRACTION
                    CRVNBR      76.27  CURVE NUMBER
                     RTIMP        .00  PERCENT IMPERVIOUS AREA

 14 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG         .07  LAG

                                                  ***

                                              UNIT HYDROGRAPH
```

```
                                                    6 END-OF-PERIOD ORDINATES
          118.      93.      26.      8.      2.      1.
                                                                          ***
   ***          ***          ***          ***
                    HYDROGRAPH AT STATION      E3A
                      FOR PLAN 1, RATIO = 1.00

   TOTAL RAINFALL =    4.60, TOTAL LOSS =    2.37, TOTAL EXCESS =    2.23
                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
+  (CFS)        (HR)
                          (CFS)       6.        2.         2.         2.
+    52.       12.08                                                 2.232
                        (INCHES)    1.864     2.232      2.232
                        (AC-FT)      3.        4.         4.         4.
                    CUMULATIVE AREA =     .03 SQ MI

                                                                          ***
   ***          ***          ***          ***
                    HYDROGRAPH AT STATION      E3A
                      FOR PLAN 1, RATIO = 1.00
                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
+  (CFS)        (HR)
                          (CFS)       6.        2.         2.         2.
+    52.       12.08                                                 2.232
                        (INCHES)    1.864     2.232      2.232
                        (AC-FT)      3.        4.         4.         4.
                    CUMULATIVE AREA =     .03 SQ MI

   ***  ***  ***  ***  ***  ***  ***  ***  ***  ***  ***  ***  ***  ***  ***  ***  ***  ***  ***
   18 KP        PLAN  2 FOR STATION      E3A
                          TRIANGULAR DISTRIBUTION 10-YRS STORM

                SUBBASIN RUNOFF DATA

   12 BA          SUBBASIN CHARACTERISTICS
                       TAREA          .03  SUBBASIN AREA

                  PRECIPITATION DATA
                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
   20 PH                                                                          ..........  TP-49  ..........
                                                ..............  TP-40  ..............
                  ..... HYDRO-35 .....
                                                                                  2-DAY    4-DAY    7-DAY   10-DAY
                  5-MIN   15-MIN   60-MIN      2-HR     3-HR     6-HR    12-HR    24-HR
                   .55     1.31     3.00       3.70     4.10     5.40     6.60     7.60      .00      .00      .00      .00
                                                        STORM AREA =      .03

   13 LS          SCS LOSS RATE
                       STRTL          .62  INITIAL ABSTRACTION
                      CRVNBR        76.27  CURVE NUMBER
                       RTIMP          .00  PERCENT IMPERVIOUS AREA

   14 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG          .07  LAG
                                                                          ***
                                                        UNIT HYDROGRAPH
                                                    6 END-OF-PERIOD ORDINATES
          118.      93.      26.      8.      2.      1.
                                                                          ***
   ***          ***          ***          ***
                    HYDROGRAPH AT STATION      E3A
                      FOR PLAN 2, RATIO = 1.00

   TOTAL RAINFALL =    7.60, TOTAL LOSS =    2.77, TOTAL EXCESS =    4.83
                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
+  (CFS)        (HR)
```

```
                    (CFS)          13.          4.          4.          4.
+     87.     12.08  (INCHES)    3.856       4.826       4.826       4.826
                     (AC-FT)       7.          8.          8.          8.

                    CUMULATIVE AREA =     .03 SQ MI

                                                                  ***
                                                       ***
                                            ***
                        ***
   ***
                    HYDROGRAPH AT STATION      E3A
                      FOR PLAN 2, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                 6-HR        24-HR       72-HR     24.92-HR
+   (CFS)       (HR)     (CFS)
                                     13.          4.          4.          4.
+     87.     12.08  (INCHES)    3.856       4.026       4.826       4.826
                     (AC-FT)       7.          8.          8.          8.

                    CUMULATIVE AREA =     .03 SQ MI

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

  21 KP        PLAN  3 FOR STATION      E3A
                         TRIANGULAR DISTRIBUTION 25-YRS STORM

               SUBBASIN RUNOFF DATA

  12 BA          SUBBASIN CHARACTERISTICS
                      TAREA          .03  SUBBASIN AREA

               PRECIPITATION DATA
                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                  ..............  TP-40 ..............  ........... TP-49 ...........
  23 PH        ..... HYDRO-35 ......  ..............  2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
               5-MIN   15-MIN   60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                 .61     1.47     3.50    4.50    5.10    6.30    7.70    9.40     .00     .00     .00     .00
                                                   STORM AREA =     .03

  13 LS          SCS LOSS RATE
                      STRTL          .62  INITIAL ABSTRACTION
                      CRVNBR       76.27  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

  14 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .07  LAG
                                                                  ***
                                                       UNIT HYDROGRAPH
                                                 6 END-OF-PERIOD ORDINATES
                                                      2.          1.
                 118.       93.       26.        8.
                                                       ***
                                            ***
                        ***
   ***
                    HYDROGRAPH AT STATION      E3A
                      FOR PLAN 3, RATIO = 1.00

   TOTAL RAINFALL =    9.40, TOTAL LOSS =    2.92, TOTAL EXCESS =    6.48

                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                 6-HR        24-HR       72-HR     24.92-HR
+   (CFS)       (HR)     (CFS)
                                     17.          6.          5.          5.
+    106.     12.08  (INCHES)    4.922       6.480       6.480       6.480
                     (AC-FT)       8.         11.         11.         11.

                    CUMULATIVE AREA =     .03 SQ MI

                                                       ***
                                            ***
                        ***
   ***
                    HYDROGRAPH AT STATION      E3A
                      FOR PLAN 3, RATIO = 1.00
```

```
                                        MAXIMUM AVERAGE FLOW
PEAK FLOW     TIME                  6-HR      24-HR      72-HR     24.92-HR
+  (CFS)      (HR)      (CFS)
                                    17.        6.         5.         5.
+   106.      12.08     (INCHES)   4.922     6.480      6.480      6.480
                        (AC-FT)     8.        11.        11.        11.

                        CUMULATIVE AREA =     .03 SQ MI

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

24 KP        PLAN  4 FOR STATION      E3A
                        TRIANGULAR DISTRIBUTION 50-YRS STORM

             SUBBASIN RUNOFF DATA

12 BA          SUBBASIN CHARACTERISTICS
                    TAREA          .03  SUBBASIN AREA

               PRECIPITATION DATA
                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                                ..............  TP-40 ..............  ........... TP-49 ...........
26 PH          ..... HYDRO-35 ......  ..............  TP-40 ..............  ..... TP-49 .....
                                                                                  2-DAY    4-DAY    7-DAY   10-DAY
                                                                                  .00      .00      .00      .00
                 5-MIN   15-MIN   60-MIN    2-HR     3-HR     6-HR    12-HR    24-HR
                  .64     1.55     3.60     5.00     5.20     7.00     8.70    10.50
                                                   STORM AREA =      .03

13 LS          SCS LOSS RATE
                    STRTL          .62  INITIAL ABSTRACTION
                    CRVNBR       76.27  CURVE NUMBER
                    RTIMP          .00  PERCENT IMPERVIOUS AREA

14 UD          SCS DIMENSIONLESS UNITGRAPH
                    TLAG           .07  LAG
                                                  ***
                                                UNIT HYDROGRAPH
                                            6 END-OF-PERIOD ORDINATES
                 118.      93.      26.       8.       2.       1.
                                                  ***
                                   ***
                 ***       ***
                                HYDROGRAPH AT STATION      E3A
                                  FOR PLAN 4, RATIO = 1.00

                TOTAL RAINFALL =   10.50, TOTAL LOSS =    2.99, TOTAL EXCESS =    7.51
                                        MAXIMUM AVERAGE FLOW
PEAK FLOW     TIME                  6-HR      24-HR      72-HR     24.92-HR
+  (CFS)      (HR)      (CFS)
                                    19.        6.         6.         6.
+   116.      12.08     (INCHES)   5.607     7.511      7.511      7.511
                        (AC-FT)    10.        13.        13.        13.

                        CUMULATIVE AREA =     .03 SQ MI
                                                  ***
                                   ***      ***
                 ***       ***
                                HYDROGRAPH AT STATION      E3A
                                  FOR PLAN 4, RATIO = 1.00
                                        MAXIMUM AVERAGE FLOW
PEAK FLOW     TIME                  6-HR      24-HR      72-HR     24.92-HR
+  (CFS)      (HR)      (CFS)
                                    19.        6.         6.         6.
+   116.      12.08     (INCHES)   5.607     7.511      7.511      7.511
                        (AC-FT)    10.        13.        13.        13.

                        CUMULATIVE AREA =     .03 SQ MI

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

```
27 KP        PLAN  5 FOR STATION        E3A
                        TRIANGULAR DISTRIBUTION 100-YRS STORM

             SUBBASIN RUNOFF DATA

12 BA          SUBBASIN CHARACTERISTICS
                    TAREA          .03  SUBBASIN AREA

               PRECIPITATION DATA
                                 DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                 ............... TP-40 ...............  ........... TP-49 ...........
29 PH          ..... HYDRO-35 ......  ..............  ..............  ..............  ..............  ..............  ..............  ..............
               5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                 .99    2.15   4.40   5.20   6.10   8.00   9.70  11.50     .00     .00     .00     .00
                                                   STORM AREA =      .03

13 LS          SCS LOSS RATE
                    STRTL          .62  INITIAL ABSTRACTION
                    CRVNBR       76.27  CURVE NUMBER
                    RTIMP          .00  PERCENT IMPERVIOUS AREA

14 UD          SCS DIMENSIONLESS UNITGRAPH
                    TLAG           .07  LAG
                                                    ***
                                                UNIT HYDROGRAPH
                                          6 END-OF-PERIOD ORDINATES
               118.     93.     26.      8.      2.      1.
                  ***     ***     ***     ***     ***     ***
                        HYDROGRAPH AT STATION        E3A
                         FOR PLAN 5, RATIO = 1.00

          TOTAL RAINFALL =   11.50, TOTAL LOSS =    3.04, TOTAL EXCESS =    8.46
                                          MAXIMUM AVERAGE FLOW
          PEAK FLOW     TIME                 6-HR      24-HR      72-HR    24.92-HR
          +   (CFS)     (HR)     (CFS)       22.        7.         7.         7.
          +    165.    12.08   (INCHES)     6.534     8.458      8.458      8.458
                               (AC-FT)      11.        14.        14.        14.
                        CUMULATIVE AREA =      .03 SQ MI
                                                    ***
                        HYDROGRAPH AT STATION        E3A
                         FOR PLAN 5, RATIO = 1.00
                                          MAXIMUM AVERAGE FLOW
          PEAK FLOW     TIME                 6-HR      24-HR      72-HR    24.92-HR
          +   (CFS)     (HR)     (CFS)       22.        7.         7.         7.
          +    165.    12.00   (INCHES)     6.534     8.458      8.458      8.458
                               (AC-FT)      11.        14.        14.        14.
                        CUMULATIVE AREA =      .03 SQ MI

30 KK          **************
               *            *
               *     P3     *
               *            *
               **************

31 KP        PLAN  1 FOR STATION        P3
```

TRIANGULAR DISTRIBUTION 2-YRS STORM

SUBBASIN RUNOFF DATA

32 BA SUBBASIN CHARACTERISTICS
TAREA .01 SUBBASIN AREA

PRECIPITATION DATA

37 PH

HYDRO-35			DEPTHS FOR 0-PERCENT HYPOTHETICAL STORM 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	1.04	2.10	2.50	2.70	3.30	4.00	4.60	.00	.00	.00	.00

STORM AREA = .01

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

34 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .08 LAG

***

UNIT HYDROGRAPH
7 END-OF-PERIOD ORDINATES

34.	34.	11.	4.	1.	0.	0.

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

HYDROGRAPH AT STATION P3
FOR PLAN 1, RATIO = 1.00

TOTAL RAINFALL = 4.60, TOTAL LOSS = .58, TOTAL EXCESS = 4.02

	PEAK FLOW	TIME		6-HR	MAXIMUM AVERAGE FLOW 24-HR	72-HR	24.92-HR
+	(CFS)	(HR)	(CFS)	4.	1.	1.	1.
+	29.	12.08	(INCHES)	3.110	4.024	4.024	4.024
			(AC-FT)	2.	2.	2.	2.

CUMULATIVE AREA = .01 SQ MI

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

HYDROGRAPH AT STATION P3
FOR PLAN 1, RATIO = 1.00

	PEAK FLOW	TIME		6-HR	MAXIMUM AVERAGE FLOW 24-HR	72-HR	24.92-HR
+	(CFS)	(HR)	(CFS)	4.	1.	1.	1.
+	29.	12.08	(INCHES)	3.110	4.024	4.024	4.024
			(AC-FT)	2.	2.	2.	2.

CUMULATIVE AREA = .01 SQ MI

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

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

SUBBASIN RUNOFF DATA

32 BA SUBBASIN CHARACTERISTICS
TAREA .01 SUBBASIN AREA

PRECIPITATION DATA

40 PH

HYDRO-35			DEPTHS FOR 0-PERCENT HYPOTHETICAL STORM 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
.55	1.31	3.00	3.70	4.10	5.40	6.60	7.60	.00	.00	.00	.00

```
                                              STORM AREA =       .01

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

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

                                                        UNIT HYDROGRAPH
                                                    7 END-OF-PERIOD ORDINATES
           34.        34.       11.        4.         1.         0.         0.
                                                                   ***
      ***                 ***           ***          ***

                   HYDROGRAPH AT STATION           P3
                     FOR PLAN 2, RATIO = 1.00

   TOTAL RAINFALL =      7.60, TOTAL LOSS =        .60, TOTAL EXCESS =      7.00

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

 +   (CFS)        (HR)
                                 (CFS)
 +     38.        12.08                        6.           2.           2.           2.
                                 (INCHES)    5.251        7.003        7.003        7.003
                                 (AC-FT)       3.           4.           4.           4.

                   CUMULATIVE AREA =        .01 SQ MI

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

                   HYDROGRAPH AT STATION           P3
                     FOR PLAN 2, RATIO = 1.00

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

 +   (CFS)        (HR)
                                 (CFS)
 +     38.        12.08                        6.           2.           2.           2.
                                 (INCHES)    5.251        7.003        7.003        7.003
                                 (AC-FT)       3.           4.           4.           4.

                   CUMULATIVE AREA =        .01 SQ MI

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

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

               SUBBASIN RUNOFF DATA

32 BA            SUBBASIN CHARACTERISTICS
                     TAREA              .01  SUBBASIN AREA

                 PRECIPITATION DATA
                                    DEPTHS FOR    0-PERCENT HYPOTHETICAL STORM
43 PH                                                                              ........... TP-49 ...........
                 ..... HYDRO-35 ......  ............... TP-40 ...............  2-DAY    4-DAY    7-DAY   10-DAY
                 5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR
                   .61    1.47    3.50    4.50    5.10    6.30    7.70    9.40    .00      .00      .00      .00
                                                  STORM AREA =       .01

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

34 UD            SCS DIMENSIONLESS UNITGRAPH
                     TLAG               .08  LAG
                                                                   ***
```

```
                                                    UNIT HYDROGRAPH
                                                 7 END-OF-PERIOD ORDINATES
          34.       34.       11.       4.        1.        0.        0.
                                                  ***       ***       ***
   ***       ***       ***
                    HYDROGRAPH AT STATION        P3
                      FOR PLAN 3, RATIO = 1.00

   TOTAL RAINFALL =    9.40, TOTAL LOSS =     .60, TOTAL EXCESS =    8.80
                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
+  (CFS)        (HR)      (CFS)       7.        3.         2.         2.
+    43.       12.08    (INCHES)    6.192     8.796      8.796      8.796
                        (AC-FT)      4.        5.         5.         5.

                    CUMULATIVE AREA =     .01 SQ MI

                                                  ***       ***       ***
   ***       ***       ***
                    HYDROGRAPH AT STATION        P3
                      FOR PLAN 3, RATIO = 1.00
                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
+  (CFS)        (HR)      (CFS)       7.        3.         2.         2.
+    43.       12.08    (INCHES)    6.192     8.796      8.796      8.796
                        (AC-FT)      4.        5.         5.         5.

                    CUMULATIVE AREA =     .01 SQ MI

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

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

                SUBBASIN RUNOFF DATA

   32 BA          SUBBASIN CHARACTERISTICS
                       TAREA          .01  SUBBASIN AREA

                  PRECIPITATION DATA
                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
   46 PH                                                                          ........... TP-49 ...........
                  ..... HYDRO-35 .....  ............... TP-40 ...............   2-DAY    4-DAY    7-DAY   10-DAY
                  5-MIN  15-MIN  60-MIN    2-HR     3-HR     6-HR    12-HR    24-HR
                   .64    1.55    3.80    5.00     5.20     7.00     8.70    10.50     .00      .00      .00      .00
                                                   STORM AREA =      .01

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

   34 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG           .08  LAG
                                                  ***
                                                    UNIT HYDROGRAPH
                                                 7 END-OF-PERIOD ORDINATES
          34.       34.       11.       4.        1.        0.        0.
                                                  ***       ***       ***
   ***       ***       ***
                    HYDROGRAPH AT STATION        P3
                      FOR PLAN 4, RATIO = 1.00

   TOTAL RAINFALL =   10.50, TOTAL LOSS =     .61, TOTAL EXCESS =    9.89
                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
```

```
(CFS)        (HR)
                        (CFS)          8.          3.          3.          3.
+     45.    12.08
                      (INCHES)      6.892       9.894       9.894       9.894
                      (AC-FT)          4.          6.          6.          6.

                      CUMULATIVE AREA =      .01 SQ MI

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

                      HYDROGRAPH AT STATION        P3
                        FOR PLAN 4, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
PEAK FLOW     TIME                  6-HR        24-HR       72-HR     24.92-HR
+   (CFS)     (HR)
                        (CFS)          8.          3.          3.          3.
+     45.    12.08
                      (INCHES)      6.892       9.894       9.894       9.894
                      (AC-FT)          4.          6.          6.          6.

                      CUMULATIVE AREA =      .01 SQ MI

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

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

             SUBBASIN RUNOFF DATA

32 BA          SUBBASIN CHARACTERISTICS
                    TAREA          .01  SUBBASIN AREA

               PRECIPITATION DATA

                                DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
49 PH                          ..............  TP-40 ..............  ........... TP-49 ...........
                 ..... HYDRO-35 ......    2-HR    3-HR    6-HR   12-HR   24-HR    2-DAY   4-DAY   7-DAY  10-DAY
                 5-MIN  15-MIN  60-MIN
                   .99    2.15    4.40    5.20    6.10    8.00    9.70   11.50     .00     .00     .00     .00
                                                STORM AREA =      .01

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

34 UD          SCS DIMENSIONLESS UNITGRAPH
                    TLAG          .09  LAG
                                                  ***

                                                UNIT HYDROGRAPH
                                             7 END-OF-PERIOD ORDINATES
                 34.     34.     11.      4.      1.      0.      0.
                                                  ***
***          ***          ***          ***

                      HYDROGRAPH AT STATION        P3
                        FOR PLAN 5, RATIO = 1.00

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

                                          MAXIMUM AVERAGE FLOW
PEAK FLOW     TIME                  6-HR        24-HR       72-HR     24.92-HR
+   (CFS)     (HR)
                        (CFS)          9.          3.          3.          3.
+     62.    12.08
                      (INCHES)      7.808      10.891      10.891      10.891
                      (AC-FT)          5.          6.          6.          6.

                      CUMULATIVE AREA =      .01 SQ MI

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

                      HYDROGRAPH AT STATION        P3
                        FOR PLAN 6, RATIO = 1.00
```

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

+  (CFS)        (HR)
                            (CFS)
+      62.      12.08                          9.            3.             3.             3.
                            (INCHES)        7.888        10.891         10.891         10.891
                            (AC-FT)            5.            6.             6.             6.

                            CUMULATIVE AREA =       .01 SQ MI

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

            **************
            *            *
  50 KK     *    COMB1   *
            *            *
            **************
                  E3A+P3

  52 HC          HYDROGRAPH COMBINATION
                      ICOMP            2  NUMBER OF HYDROGRAPHS TO COMBINE

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

                            HYDROGRAPH AT STATION    COMB1
                              FOR PLAN 1, RATIO = 1.00

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

+  (CFS)        (HR)
                            (CFS)
+      81.      12.08                         10.            3.             3.             3.
                            (INCHES)        2.159         2.687          2.687          2.687
                            (AC-FT)            5.            6.             6.             6.

                            CUMULATIVE AREA =       .04 SQ MI

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

                            HYDROGRAPH AT STATION    COMB1
                              FOR PLAN 2, RATIO = 1.00

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

+  (CFS)        (HR)
                            (CFS)
+     125.      12.08                         19.            6.             6.             6.
                            (INCHES)        4.186         5.379          5.379          5.379
                            (AC-FT)           10.           12.            12.            12.

                            CUMULATIVE AREA =       .04 SQ MI

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

                            HYDROGRAPH AT STATION    COMB1
                              FOR PLAN 3, RATIO = 1.00

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

+  (CFS)        (HR)
                            (CFS)
+     149.      12.08                         24.            8.             8.             8.
                            (INCHES)        5.229         7.069          7.069          7.069
                            (AC-FT)           12.           16.            16.            16.

                            CUMULATIVE AREA =       .04 SQ MI

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

                            HYDROGRAPH AT STATION    COMB1
                              FOR PLAN 4, RATIO = 1.00
```

```
                                          MAXIMUM AVERAGE FLOW
  FLOW      TIME                    6-HR       24-HR       72-HR      24.92-HR
+ (CFS)     (HR)
                          (CFS)      27.         9.          9.          9.
+   161.    12.08
                       (INCHES)    5.921       8.117       8.117       8.117
                        (AC-FT)     14.         19.         19.         19.

                       CUMULATIVE AREA =     .04 SQ MI

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

                       HYDROGRAPH AT STATION    COMB1
                         FOR PLAN 5, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW   TIME                    6-HR       24-HR       72-HR      24.92-HR
+ (CFS)       (HR)
                          (CFS)      32.        10.         10.         10.
+   227.      12.08
                       (INCHES)    6.865       9.076       9.076       9.076
                        (AC-FT)     16.         21.         21.         21.

                       CUMULATIVE AREA =     .04 SQ MI

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

                 **************
                 *            *
  53 KK          *     E3B    *
                 *            *
                 **************

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

  54 KP          PLAN  1 FOR STATION      E3B
                              TRIANGULAR DISTRIBUTION 2-YRS STORM

                 SUBBASIN RUNOFF DATA

  55 BA            SUBBASIN CHARACTERISTICS
                        TAREA          .02  SUBBASIN AREA

                   PRECIPITATION DATA

                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
  60 PH                                                                          ........... TP-49 ...........
                   ..... HYDRO-35 .....   ............... TP-40 ...............   2-DAY    4-DAY    7-DAY   10-DAY
                   5-MIN  15-MIN  60-MIN    2-HR     3-HR     6-HR    12-HR    24-HR
                    .47    1.04    2.10    2.50     2.70     3.30     4.00     4.60     .00      .00      .00      .00

                                                   STORM AREA =      .02

  56 LS            SCS LOSS RATE
                        STRTL          .50  INITIAL ABSTRACTION
                       CRVNBR        79.88  CURVE NUMBER
                        RTIMP          .00  PERCENT IMPERVIOUS AREA

  57 UD            SCS DIMENSIONLESS UNITGRAPH
                        TLAG           .05  LAG

                                                  ***

                                                UNIT HYDROGRAPH
                                             5 END-OF-PERIOD ORDINATES
                 124.      48.       11.        2.        1.

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

                       HYDROGRAPH AT STATION      E3B
                         FOR PLAN 1, RATIO = 1.00

  TOTAL RAINFALL =    4.60, TOTAL LOSS =    2.06, TOTAL EXCESS =    2.54

                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW   TIME
```

```
                                    6-HR        24-HR        72-HR      24.92-HR
+   (CFS)       (HR)
                          (CFS)        5.           2.           2.           2.
+     51.       12.08   (INCHES)   2.102        2.536        2.536        2.536
                          (AC-FT)      3.           3.           3.           3.

                          CUMULATIVE AREA =      .02 SQ MI

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

                        HYDROGRAPH AT STATION      E3B
                          FOR PLAN 1, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
 PEAK FLOW     TIME                   6-HR       24-HR        72-HR      24.92-HR
+   (CFS)       (HR)
                          (CFS)        5.           2.           2.           2.
+     51.       12.08   (INCHES)   2.102        2.536        2.536        2.536
                          (AC-FT)      3.           3.           3.           3.

                          CUMULATIVE AREA =      .02 SQ MI

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

 61 KP          PLAN  2 FOR STATION      E3B
                          TRIANGULAR DISTRIBUTION 10-YRS STORM

                SUBBASIN RUNOFF DATA

 55 BA            SUBBASIN CHARACTERISTICS
                        TAREA          .02  SUBBASIN AREA

                  PRECIPITATION DATA

                                    DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
 3 PH                                                                          ........... TP-49 ...........
                  ..... HYDRO-35 .....   ............... TP-40 ...............
                  5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                   .55    1.31    3.00    3.70    4.10    5.40    6.60    7.60     .00     .00     .00     .00

                                                STORM AREA =      .02

 56 LS            SCS LOSS RATE
                        STRTL          .50  INITIAL ABSTRACTION
                       CRVNBR        79.00  CURVE NUMBER
                        RTIMP          .00  PERCENT IMPERVIOUS AREA

 57 UD            SCS DIMENSIONLESS UNITGRAPH
                        TLAG          .05  LAG

                                                    ***

                                                UNIT HYDROGRAPH
                                            5 END-OF-PERIOD ORDINATES
                 124.      48.       11.        2.        1.

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

                        HYDROGRAPH AT STATION      E3B
                          FOR PLAN 2, RATIO = 1.00

    TOTAL RAINFALL =    7.60, TOTAL LOSS =    2.36, TOTAL EXCESS =    5.24

                                          MAXIMUM AVERAGE FLOW
 PEAK FLOW     TIME                   6-HR       24-HR        72-HR      24.92-HR
+   (CFS)       (HR)
                          (CFS)       11.           3.           3.           3.
+     76.       12.08   (INCHES)   4.156        5.237        5.237        5.237
                          (AC-FT)      5.           7.           7.           7.

                          CUMULATIVE AREA =      .02 SQ MI

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

                        HYDROGRAPH AT STATION      E3B
```

FOR PLAN 2, RATIO = 1.00

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
		(CFS)	11.	3.	3.	3.
76.	12.08	(INCHES)	4.156	5.237	5.237	5.237
		(AC-FT)	5.	7.	7.	7.

CUMULATIVE AREA = .02 SQ MI

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

64 KP PLAN 3 FOR STATION E3B
TRIANGULAR DISTRIBUTION 25-YRS STORM

SUBBASIN RUNOFF DATA

55 BA SUBBASIN CHARACTERISTICS
TAREA .02 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
.61	1.47	3.50	4.50	5.10	6.30	7.70	9.40	.00	.00	.00	.00

STORM AREA = .02

56 LS SCS LOSS RATE
STRTL .50 INITIAL ABSTRACTION
CRVNBR 79.88 CURVE NUMBER
RTIMP .00 PERCENT IMPERVIOUS AREA

57 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .05 LAG

***

UNIT HYDROGRAPH
5 END-OF-PERIOD ORDINATES

124. 48. 11. 2. 1.

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

HYDROGRAPH AT STATION E3B
FOR PLAN 3, RATIO = 1.00

TOTAL RAINFALL = 9.40, TOTAL LOSS = 2.47, TOTAL EXCESS = 6.93

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
		(CFS)	13.	4.	4.	4.
90.	12.08	(INCHES)	5.220	6.933	6.933	6.933
		(AC-FT)	7.	9.	9.	9.

CUMULATIVE AREA = .02 SQ MI

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

HYDROGRAPH AT STATION E3B
FOR PLAN 3, RATIO = 1.00

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
		(CFS)	13.	4.	4.	4.
90.	12.08	(INCHES)	5.220	6.933	6.933	6.933
		(AC-FT)	7.	9.	9.	9.

CUMULATIVE AREA = .02 SQ MI

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

67 KP        PLAN  4 FOR STATION      E3B
                        TRIANGULAR DISTRIBUTION 50-YRS STORM

             SUBBASIN RUNOFF DATA

55 BA          SUBBASIN CHARACTERISTICS
                    TAREA          .02  SUBBASIN AREA

               PRECIPITATION DATA

69 PH                                DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                                  ..... TP-40 .....   ........... TP-49 ...........
               ..... HYDRO-35 .....   ..............
               5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                 .64    1.55    3.80    5.00    5.20    7.00    8.70   10.50     .00     .00     .00     .00

                                                STORM AREA =      .02

56 LS          SCS LOSS RATE
                    STRTL          .50  INITIAL ABSTRACTION
                   CRVNBR        79.88  CURVE NUMBER
                    RTIMP          .00  PERCENT IMPERVIOUS AREA

57 UD          SCS DIMENSIONLESS UNITGRAPH
                    TLAG          .05  LAG

                                                    ***

                                                UNIT HYDROGRAPH
                                            5 END-OF-PERIOD ORDINATES
             124.       48.       11.        2.        1.

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

                     HYDROGRAPH AT STATION      E3B
                       FOR PLAN 4, RATIO - 1.00

 TOTAL RAINFALL =   10.50, TOTAL LOSS =    2.52, TOTAL EXCESS =    7.98

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+  (CFS)       (HR)
                          (CFS)
                                       15.         5.          5.          5.
+    97.      12.08
                        (INCHES)     5.915       7.984       7.984       7.984
                         (AC-FT)        8.         10.         10.         10.

                     CUMULATIVE AREA =     .02 SQ MI

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

                     HYDROGRAPH AT STATION      E3B
                       FOR PLAN 4, RATIO - 1.00

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+  (CFS)       (HR)
                          (CFS)
                                       15.         5.          5.          5.
+    97.      12.08
                        (INCHES)     5.915       7.984       7.984       7.984
                         (AC-FT)        8.         10.         10.         10.

                     CUMULATIVE AREA =     .02 SQ MI

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

 70 KP        PLAN  5 FOR STATION      E3B
                        TRIANGULAR DISTRIBUTION 100-YRS STORM

             SUBBASIN RUNOFF DATA

 55 BA         SUBBASIN CHARACTERISTICS
                    TAREA          .02  SUBBASIN AREA

               PRECIPITATION DATA
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72 PH                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                                                                                  ........... TP-49 ...........
                  ..... HYDRO-35 .....   ............... TP-40 ...............
                  5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                    .99    2.15    4.40    5.20    6.10    8.00    9.70   11.50     .00     .00     .00     .00

                                                   STORM AREA =      .02

56 LS             SCS LOSS RATE
                       STRTL          .50  INITIAL ABSTRACTION
                      CRVNBR        79.88  CURVE NUMBER
                       RTIMP          .00  PERCENT IMPERVIOUS AREA

57 UD             SCS DIMENSIONLESS UNITGRAPH
                        TLAG          .05  LAG

                                                                  ***

                                                              UNIT HYDROGRAPH
                                                           5 END-OF-PERIOD ORDINATES
                 124.       48.       11.        2.        1.

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

                          HYDROGRAPH AT STATION      E3B
                            FOR PLAN 5, RATIO = 1.00

   TOTAL RAINFALL =   11.50, TOTAL LOSS =    2.55, TOTAL EXCESS =    8.95

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                                    (CFS)
                                       18.         6.          6.          6.
+     144.     12.08
                                  (INCHES)     6.863       8.947       8.947       8.947
                                   (AC-FT)        9.         11.         11.         11.

                          CUMULATIVE AREA =      .02 SQ MI

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

                          HYDROGRAPH AT STATION      E3B
                            FOR PLAN 5, RATIO = 1.00

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                                    (CFS)
                                       18.         6.          6.          6.
+     144.     12.08
                                  (INCHES)     6.863       8.947       8.947       8.947
                                   (AC-FT)        9.         11.         11.         11.

                          CUMULATIVE AREA =      .02 SQ MI


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

                 **************
                 *            *
73 KK            *     COMB2  *
                 *            *
                 **************
                        E3+P3

75 HC             HYDROGRAPH COMBINATION
                       ICOMP           2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                                  ***

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

                          HYDROGRAPH AT STATION     COMB2
                            FOR PLAN 1, RATIO = 1.00

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

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+     132.      12.08                    15.          5.          5.          5.
                              (INCHES)  2.138       2.633       2.633       2.633
                               (AC-FT)     8.          9.          9.          9.

                              CUMULATIVE AREA =     .07 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)
                                    30.         10.          9.          9.
+     201.      12.08        (INCHES)  4.175     5.328       5.328       5.328
                               (AC-FT)    15.         19.         19.         19.

                              CUMULATIVE AREA =     .07 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)
                                    38.         13.         12.         12.
+     238.      12.08        (INCHES)  5.226     7.020       7.020       7.020
                               (AC-FT)    19.         25.         25.         25.

                              CUMULATIVE AREA =     .07 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)
                                    43.         15.         14.         14.
+     258.      12.08        (INCHES)  5.919     8.069       8.069       8.069
                               (AC-FT)    21.         29.         29.         29.

                              CUMULATIVE AREA =     .07 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)
                                    49.         16.         16.         16.
+     371.      12.08        (INCHES)  6.864     9.030       9.030       9.030
                               (AC-FT)    24.         32.         32.         32.

                              CUMULATIVE AREA =     .07 SQ MI

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

            **************
            *            *
      KK    *     E2     *
            *            *
            **************
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***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***

77 KP        PLAN  1 FOR STATION        E2
                          TRIANGULAR DISTRIBUTION 2-YRS STORM

             SUBBASIN RUNOFF DATA

78 BA          SUBBASIN CHARACTERISTICS
                    TAREA          .87  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    1.04    2.10    2.50    2.70    3.30    4.00    4.60     .00     .00     .00     .00

                                                  STORM AREA =      .87

79 LS          SCS LOSS RATE
                    STRTL          .59  INITIAL ABSTRACTION
                   CRVNBR        77.32  CURVE NUMBER
                    RTIMP          .00  PERCENT IMPERVIOUS AREA

80 UD          SCS DIMENSIONLESS UNITGRAPH
                    TLAG          .93  LAG

                                                        ***

                                                   UNIT HYDROGRAPH
                                              58 END-OF-PERIOD ORDINATES
              11.      35.      65.     104.     154.     215.     285.     344.     388.     416.
             429.     430.     423.     401.     375.     346.     312.     271.     229.     194.
             168.     146.     127.     112.      98.      85.      74.      63.      56.      49.
              42.      37.      32.      28.      24.      21.      18.      16.      14.      12.
              11.       9.       8.       7.       6.       5.       5.       4.       4.       3.
               3.       2.       2.       2.       1.       1.       0.       0.

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

                    HYDROGRAPH AT STATION        E2
                      FOR PLAN 1, RATIO = 1.00

  TOTAL RAINFALL =    4.59, TOTAL LOSS =    2.28, TOTAL EXCESS =    2.31

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+  (CFS)       (HR)
                          (CFS)
+    512.     13.08                  178.         54.         52.         52.
                        (INCHES)    1.902      2.301       2.301       2.301
                         (AC-FT)     88.        107.        107.        107.

                    CUMULATIVE AREA =      .87 SQ MI

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

                    HYDROGRAPH AT STATION        E2
                      FOR PLAN 1, RATIO = 1.00

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+  (CFS)       (HR)
                          (CFS)
+    512.     13.08                  178.         54.         52.         52.
                        (INCHES)    1.902      2.301       2.301       2.301
                         (AC-FT)     88.        107.        107.        107.

                    CUMULATIVE AREA =      .87 SQ MI

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

84 KP        PLAN  2 FOR STATION        E2
                          TRIANGULAR DISTRIBUTION 10-YRS STORM

             SUBBASIN RUNOFF DATA
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BA SUBBASIN CHARACTERISTICS
TAREA .87 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
.55	1.31	3.00	3.70	4.10	5.40	6.60	7.60	.00	.00	.00	.00

STORM AREA = .87

79 LS SCS LOSS RATE
STRTL .59 INITIAL ABSTRACTION
CRVNBR 77.32 CURVE NUMBER
RTIMP .00 PERCENT IMPERVIOUS AREA

80 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .93 LAG

***

UNIT HYDROGRAPH
58 END-OF-PERIOD ORDINATES

11.	35.	65.	104.	154.	215.	285.	344.	388.	416.
429.	430.	423.	401.	375.	346.	312.	271.	229.	194.
168.	146.	127.	112.	98.	85.	74.	63.	56.	49.
42.	37.	32.	28.	24.	21.	18.	16.	14.	12.
11.	9.	8.	7.	6.	5.	5.	4.	4.	3.
3.	2.	2.	2.	1.	1.	0.	0.		

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

HYDROGRAPH AT STATION E2
FOR PLAN 2, RATIO = 1.00

TOTAL RAINFALL = 7.59, TOTAL LOSS = 2.65, TOTAL EXCESS = 4.94

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
		(CFS)	365.	115.	110.	110.
+ 965.	13.00	(INCHES)	3.906	4.912	4.912	4.912
		(AC-FT)	181.	227.	227.	227.

CUMULATIVE AREA = .87 SQ MI

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

HYDROGRAPH AT STATION E2
FOR PLAN 2, RATIO = 1.00

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
		(CFS)	365.	115.	110.	110.
+ 965.	13.00	(INCHES)	3.906	4.912	4.912	4.912
		(AC-FT)	181.	227.	227.	227.

CUMULATIVE AREA = .87 SQ MI

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

87 KP PLAN 3 FOR STATION E2
TRIANGULAR DISTRIBUTION 25-YRS STORM

SUBBASIN RUNOFF DATA

78 BA SUBBASIN CHARACTERISTICS
TAREA .87 SUBBASIN AREA

PRECIPITATION DATA

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
.61	1.47	3.50	4.50	5.10	6.30	7.70	9.40	.00	.00	.00	.00

STORM AREA = .87

79 LS SCS LOSS RATE
STRTL .59 INITIAL ABSTRACTION
CRVNBR 77.32 CURVE NUMBER
RTIMP .00 PERCENT IMPERVIOUS AREA

80 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .93 LAG

***

UNIT HYDROGRAPH
58 END-OF-PERIOD ORDINATES

11.	35.	65.	104.	154.	215.	285.	344.	388.	416.
429.	430.	423.	401.	375.	346.	312.	271.	229.	194.
168.	146.	127.	112.	98.	85.	74.	63.	56.	49.
42.	37.	32.	28.	24.	21.	18.	16.	14.	12.
11.	9.	8.	7.	6.	5.	5.	4.	4.	3.
3.	2.	2.	2.	1.	1.	0.	0.		

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

HYDROGRAPH AT STATION E2
FOR PLAN 3, RATIO = 1.00

TOTAL RAINFALL = 9.39, TOTAL LOSS = 2.79, TOTAL EXCESS = 6.60

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)				
+ 1231.	13.00		464.	153.	147.	147.
		(INCHES)	4.966	6.558	6.558	6.558
		(AC-FT)	230.	304.	304.	304.

CUMULATIVE AREA = .87 SQ MI

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

HYDROGRAPH AT STATION E2
FOR PLAN 3, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)				
+ 1231.	13.00		464.	153.	147.	147.
		(INCHES)	4.966	6.558	6.558	6.558
		(AC-FT)	230.	304.	304.	304.

CUMULATIVE AREA = .87 SQ MI

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

90 KP PLAN 4 FOR STATION E2
TRIANGULAR DISTRIBUTION 50-YRS STORM

SUBBASIN RUNOFF DATA

78 BA SUBBASIN CHARACTERISTICS
TAREA .87 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
.64	1.55	3.80	5.00	5.20	7.00	8.70	10.50	.00	.00	.00	.00

STORM AREA = .87

LS SCS LOSS RATE
STRTL .59 INITIAL ABSTRACTION
CRVNBR 77.32 CURVE NUMBER

RTIMP .00 PERCENT IMPERVIOUS AREA

D SCS DIMENSIONLESS UNITGRAPH
TLAG .93 LAG

***

UNIT HYDROGRAPH
58 END-OF-PERIOD ORDINATES

11.	35.	65.	104.	154.	215.	285.	344.	388.	416.
429.	430.	423.	401.	375.	346.	312.	271.	229.	194.
168.	146.	127.	112.	98.	85.	74.	63.	56.	49.
42.	37.	32.	28.	24.	21.	18.	16.	14.	12.
11.	9.	8.	7.	6.	5.	5.	4.	4.	3.
3.	2.	2.	2.	1.	1.	0.	0.		

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

HYDROGRAPH AT STATION E2
FOR PLAN 4, RATIO = 1.00

TOTAL RAINFALL = 10.49, TOTAL LOSS = 2.85, TOTAL EXCESS = 7.64

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)				
+ 1382.	13.00		526.	177.	171.	171.
		(INCHES)	5.632	7.591	7.591	7.591
		(AC-FT)	261.	351.	351.	351.

CUMULATIVE AREA = .87 SQ MI

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

HYDROGRAPH AT STATION E2
FOR PLAN 4, RATIO = 1.00

K FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
FS)	(HR)	(CFS)				
+ 1382.	13.00		526.	177.	171.	171.
		(INCHES)	5.632	7.591	7.591	7.591
		(AC-FT)	261.	351.	351.	351.

CUMULATIVE AREA = .87 SQ MI

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

93 KP PLAN 5 FOR STATION E2
TRIANGULAR DISTRIBUTION 100-YRS STORM

SUBBASIN RUNOFF DATA

78 BA SUBBASIN CHARACTERISTICS
TAREA .87 SUBBASIN AREA

PRECIPITATION DATA

95 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
.99	2.15	4.40	5.20	6.10	8.00	9.70	11.50	.00	.00	.00	.00

STORM AREA = .87

79 LS SCS LOSS RATE
STRTL .59 INITIAL ABSTRACTION
CRVNBR 77.32 CURVE NUMBER
RTIMP .00 PERCENT IMPERVIOUS AREA

80 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .93 LAG

***

UNIT HYDROGRAPH

```
                                        58 END-OF-PERIOD ORDINATES
      11.     35.     65.    104.    154.    215.    285.    344.    388.    416.
     429.    430.    423.    401.    375.    346.    312.    271.    229.    194.
     168.    146.    127.    112.     98.     85.     74.     63.     56.     49.
      42.     37.     32.     28.     24.     21.     18.     16.     14.     12.
      11.      9.      8.      7.      6.      5.      5.      4.      4.      3.
       3.      2.      2.      2.      1.      1.      0.      0.

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

                HYDROGRAPH AT STATION        E2
                  FOR PLAN 5, RATIO = 1.00

TOTAL RAINFALL =   11.49, TOTAL LOSS =    2.90, TOTAL EXCESS =    8.59

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR     24.92-HR
+  (CFS)      (HR)
                          (CFS)
                                   612.        199.        192.        192.
+  1607.      13.00
                       (INCHES)   6.552       8.542       8.542       8.542
                        (AC-FT)    303.        395.        395.        395.

                CUMULATIVE AREA =      .87 SQ MI

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

                HYDROGRAPH AT STATION        E2
                  FOR PLAN 5, RATIO = 1.00

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR     24.92-HR
+  (CFS)      (HR)
                          (CFS)
                                   612.        199.        192.        192.
+  1607.      13.00
                       (INCHES)   6.552       8.542       8.542       8.542
                        (AC-FT)    303.        395.        395.        395.

                CUMULATIVE AREA =      .87 SQ MI

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

            **************
            *            *
 96 KK      *     P2     *
            *            *
            **************

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

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

            SUBBASIN RUNOFF DATA

 98 BA        SUBBASIN CHARACTERISTICS
                TAREA          .05  SUBBASIN AREA

              PRECIPITATION DATA

103 PH                          DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                                TP-40                          TP-49
              ..... HYDRO-35 .....   ..............  ..............  ..........  ..........
              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    1.04    2.10    2.50    2.70    3.30    4.00    4.60     .00     .00     .00     .00

                                          STORM AREA =      .05

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

 UD           SCS DIMENSIONLESS UNITGRAPH
                TLAG          .21  LAG
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                                                                    ***

                                                          UNIT HYDROGRAPH
                                                     15 END-OF-PERIOD ORDINATES
          21.       69.       91.       76.       46.       26.       16.        9.        5.        3.
           2.        1.        1.        0.        0.

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

                    HYDROGRAPH AT STATION       P2
                      FOR PLAN 1, RATIO = 1.00

  TOTAL RAINFALL =    4.60, TOTAL LOSS =     .58, TOTAL EXCESS =    4.02

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                          (CFS)
+    100.     12.25                 16.          5.          5.           5.
                       (INCHES)   3.109       4.023       4.023        4.023
                        (AC-FT)      8.         10.         10.          10.

                    CUMULATIVE AREA =     .05 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)
+    100.     12.25                 16.          5.          5.           5.
                       (INCHES)   3.109       4.023       4.023        4.023
                        (AC-FT)      8.         10.         10.          10.

                    CUMULATIVE AREA =     .05 SQ MI

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

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

              SUBBASIN RUNOFF DATA

 98 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .05  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
                  .55    1.31    3.00    3.70    4.10    5.40    6.60    7.60     .00     .00     .00     .00

                                                  STORM AREA =     .05

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

100 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .21  LAG

                                                                    ***

                                                          UNIT HYDROGRAPH
                                                     15 END-OF-PERIOD ORDINATES
          21.       69.       91.       76.       46.       26.       16.        9.        5.        3.
           2.        1.        1.        0.        0.

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

                    HYDROGRAPH AT STATION       P2
                      FOR PLAN 2, RATIO = 1.00
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TOTAL RAINFALL -     7.60, TOTAL LOSS -     .60, TOTAL EXCESS -     7.00

 FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR      24.92-HR
+ (CFS)     (HR)
                        (CFS)
+   134.    12.25                  27.         9.          9.          9.
                      (INCHES)    5.244       7.002       7.002       7.002
                       (AC-FT)     13.         18.         18.         18.

                      CUMULATIVE AREA =     .05 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)
+   134.    12.25                  27.         9.          9.          9.
                      (INCHES)    5.244       7.002       7.002       7.002
                       (AC-FT)     13.         18.         18.         18.

                      CUMULATIVE AREA -     .05 SQ MI

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

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

              SUBBASIN RUNOFF DATA

 98 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .05  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
                  .61    1.47    3.50    4.50    5.10    6.30    7.70    9.40     .00     .00     .00     .00

                                                  STORM AREA =      .05

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

100 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .21  LAG

                                                        ***

                                                  UNIT HYDROGRAPH
                                              15 END-OF-PERIOD ORDINATES
                21.      69.      91.      76.      46.      26.      16.       9.       5.       3.
                 2.       1.       1.       0.       0.

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

                      HYDROGRAPH AT STATION       P2
                        FOR PLAN 3, RATIO = 1.00

TOTAL RAINFALL =     9.40, TOTAL LOSS -     .60, TOTAL EXCESS -     8.80

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR      24.92-HR
+ (CFS)     (HR)
                        (CFS)
+   154.    12.25                  31.         11.         11.         11.
                      (INCHES)    6.189       8.796       8.796       8.796
                       (AC-FT)     16.         22.         22.         22.

                      CUMULATIVE AREA =     .05 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)
+    154.     12.25                 31.         11.         11.          11.
                      (INCHES)    6.109       8.796       8.796        8.796
                       (AC-FT)     16.         22.         22.          22.

                CUMULATIVE AREA =      .05 SQ MI


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

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

              SUBBASIN RUNOFF DATA

 98 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .05  SUBBASIN AREA

                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
                  .64    1.55    3.80    5.00    5.20    7.00    8.70   10.50     .00     .00     .00     .00

                                                STORM AREA =      .05

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

100 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .21  LAG

                                                          ***

                                                    UNIT HYDROGRAPH
                                              15 END-OF-PERIOD ORDINATES
              21.      69.      91.      76.      46.      26.      16.       9.       5.       3.
               2.       1.       1.       0.       0.

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

                HYDROGRAPH AT STATION        P2
                  FOR PLAN 4, RATIO = 1.00

   TOTAL RAINFALL =   10.50, TOTAL LOSS =      .61, TOTAL EXCESS =     9.89

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR      24.92-HR
+  (CFS)      (HR)
                        (CFS)
+    164.     12.25                 35.         13.         12.          12.
                      (INCHES)    6.882       9.893       9.893        9.893
                       (AC-FT)     17.         25.         25.          25.

                CUMULATIVE AREA =      .05 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)
    164.     12.25                 35.         13.         12.          12.
                      (INCHES)    6.882       9.893       9.893        9.893
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                    (AC-FT)        17.         25.         25.         25.

                    CUMULATIVE AREA =      .05 SQ MI

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

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

              SUBBASIN RUNOFF DATA

 98 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .05  SUBBASIN AREA

                PRECIPITATION DATA

115 PH                                DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                                   ..............  TP-40  ..............   ........... TP-49 ...........
                ..... 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
                  .99    2.15    4.40    5.20    6.10    8.00    9.70   11.50     .00     .00     .00     .00

                                                STORM AREA =      .05

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

100 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .21  LAG

                                                  ***

                                                UNIT HYDROGRAPH
                                           15 END-OF-PERIOD ORDINATES
              21.      69.      91.      76.      46.      26.      16.       9.       5.       3.
               2.       1.       1.       0.       0.

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

                    HYDROGRAPH AT STATION        P2
                      FOR PLAN 5, 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)
+     214.       12.25                40.         14.         13.         13.
                                 (INCHES)      7.876      10.891      10.891      10.891
                                  (AC-FT)        20.         27.         27.         27.

                    CUMULATIVE AREA =      .05 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)
+     214.       12.25                40.         14.         13.         13.
                                 (INCHES)      7.876      10.891      10.891      10.891
                                  (AC-FT)        20.         27.         27.         27.

                    CUMULATIVE AREA =      .05 SQ MI

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

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116 KK      *        E1  *
            *            *
            **************

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

117 KP        PLAN  1 FOR STATION       E1
                          TRIANGULAR DISTRIBUTION 2-YRS STORM

              SUBBASIN RUNOFF DATA

118 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .17  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
                  .47    1.04    2.10    2.50    2.70    3.30    4.00    4.60     .00     .00     .00     .00

                                                  STORM AREA =      .17

119 LS          SCS LOSS RATE
                     STRTL          .71  INITIAL ABSTRACTION
                    CRVNBR        73.77  CURVE NUMBER
                     RTIMP          .00  PERCENT IMPERVIOUS AREA

120 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .27  LAG

                                                        ***

                                                   UNIT HYDROGRAPH
                                              18 END-OF-PERIOD ORDINATES
                43.      143.      248.      265.      222.      148.       93.       61.       39.       26.
                16.       11.        7.        4.        3.        2.        1.        0.

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

                     HYDROGRAPH AT STATION       E1
                       FOR PLAN 1, RATIO = 1.00

   TOTAL RAINFALL =    4.60, TOTAL LOSS =    2.57, TOTAL EXCESS =    2.03

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+  (CFS)       (HR)
                          (CFS)
+    175.     12.33                   31.          9.          9.          9.
                        (INCHES)    1.699       2.031       2.031       2.031
                         (AC-FT)      16.         19.         19.         19.

                     CUMULATIVE AREA =      .17 SQ MI

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

                     HYDROGRAPH AT STATION       E1
                       FOR PLAN 1, RATIO = 1.00

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+  (CFS)       (HR)
                          (CFS)
+    175.     12.33                   31.          9.          9.          9.
                        (INCHES)    1.699       2.031       2.031       2.031
                         (AC-FT)      16.         19.         19.         19.

                     CUMULATIVE AREA =      .17 SQ MI

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

124 KP        PLAN  2 FOR STATION       E1
                          TRIANGULAR DISTRIBUTION 10-YRS STORM

              SUBBASIN RUNOFF DATA
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118 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .17  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
                  .55    1.31    3.00   3.70    4.10    5.40    6.60    7.60     .00     .00     .00     .00

                                                  STORM AREA -      .17

119 LS          SCS LOSS RATE
                     STRTL          .71  INITIAL ABSTRACTION
                    CRVNBR        73.77  CURVE NUMBER
                     RTIMP          .00  PERCENT IMPERVIOUS AREA

120 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .27  LAG

                                                        ***

                                                   UNIT HYDROGRAPH
                                              18 END-OF-PERIOD ORDINATES
                43.      143.      248.      265.      222.      148.       93.       61.       39.       26.
                16.       11.        7.        4.        3.        2.        1.        0.

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

                      HYDROGRAPH AT STATION        E1
                        FOR PLAN 2, RATIO = 1.00

   TOTAL RAINFALL =    7.60, TOTAL LOSS =    3.06, TOTAL EXCESS =    4.54

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR       24-HR       72-HR      24.92-HR
+  (CFS)        (HR)
                                (CFS)
+    323.      12.33                    67.         21.         20.          20.
                             (INCHES)  3.643      4.542       4.542        4.542
                              (AC-FT)   33.         42.         42.          42.

                      CUMULATIVE AREA =      .17 SQ MI

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

                      HYDROGRAPH AT STATION        E1
                        FOR PLAN 2, RATIO = 1.00

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR       24-HR       72-HR      24.92-HR
+  (CFS)        (HR)
                                (CFS)
+    323.      12.33                    67.         21.         20.          20.
                             (INCHES)  3.643      4.542       4.542        4.542
                              (AC-FT)   33.         42.         42.          42.

                      CUMULATIVE AREA -      .17 SQ MI

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

127 KP          PLAN  3 FOR STATION        E1
                              TRIANGULAR DISTRIBUTION 25-YRS STORM

                SUBBASIN RUNOFF DATA

118 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .17  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
                  .61    1.47    3.50   4.50    5.10    6.30    7.70    9.40     .00     .00     .00     .00

                                                  STORM AREA =      .17
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119 LS          SCS LOSS RATE
                     STRTL          .71  INITIAL ABSTRACTION
                    CRVNBR        73.77  CURVE NUMBER
                     RTIMP          .00  PERCENT IMPERVIOUS AREA

120 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .27  LAG

                                                    ***

                                                UNIT HYDROGRAPH
                                            18 END-OF-PERIOD ORDINATES
              43.      143.      248.      265.      222.      148.       93.       61.       39.       26.
              16.       11.        7.        4.        3.        2.        1.        0.

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

                      HYDROGRAPH AT STATION       E1
                        FOR PLAN 3, RATIO = 1.00

   TOTAL RAINFALL =    9.40, TOTAL LOSS =    3.23, TOTAL EXCESS =    6.16

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+  (CFS)       (HR)
                          (CFS)
+    404.     12.33                   87.         29.         27.         27.
                        (INCHES)    4.703       6.163       6.163       6.163
                         (AC-FT)     43.         57.         57.         57.

                      CUMULATIVE AREA =     .17 SQ MI

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

                      HYDROGRAPH AT STATION       E1
                        FOR PLAN 3, RATIO = 1.00

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+  (CFS)       (HR)
                          (CFS)
+    404.     12.33                   87.         29.         27.         27.
                        (INCHES)    4.703       6.163       6.163       6.163
                         (AC-FT)     43.         57.         57.         57.

                      CUMULATIVE AREA =     .17 SQ MI

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

130 KP          PLAN  4 FOR STATION       E1
                              TRIANGULAR DISTRIBUTION 50-YRS STORM

                SUBBASIN RUNOFF DATA

118 BA            SUBBASIN CHARACTERISTICS
                      TAREA          .17  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
                    .64    1.55    3.80   5.00    5.20    7.00    8.70   10.50     .00     .00     .00     .00

                                                  STORM AREA =     .17

119 LS          SCS LOSS RATE
                     STRTL          .71  INITIAL ABSTRACTION
                    CRVNBR        73.77  CURVE NUMBER
                     RTIMP          .00  PERCENT IMPERVIOUS AREA

120 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .27  LAG

                                                    ***

                                                UNIT HYDROGRAPH
                                            18 END-OF-PERIOD ORDINATES
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```
                43.      143.      248.      265.      222.      148.       93.       61.       39.       26.
                16.       11.        7.        4.        3.        2.        1.        0.
   ***          ***       ***       ***       ***

                    HYDROGRAPH AT STATION        E1
                      FOR PLAN 4, RATIO = 1.00

   TOTAL RAINFALL =   10.50, TOTAL LOSS =    3.32, TOTAL EXCESS =    7.18

                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                 6-HR      24-HR      72-HR    24.92-HR
+   (CFS)       (HR)
                              (CFS)
                                  100.        33.        32.        32.
-    449.      12.33        (INCHES)   5.379     7.178      7.178      7.178
                            (AC-FT)     49.        66.        66.        66.

                    CUMULATIVE AREA =      .17 SQ MI

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

                    HYDROGRAPH AT STATION        E1
                      FOR PLAN 4, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                 6-HR      24-HR      72-HR    24.92-HR
+   (CFS)       (HR)
                              (CFS)
                                  100.        33.        32.        32.
+    449.      12.33        (INCHES)   5.379     7.178      7.178      7.178
                            (AC-FT)     49.        66.        66.        66.

                    CUMULATIVE AREA =      .17 SQ MI

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

   KP          PLAN  5 FOR STATION        E1
                        TRIANGULAR DISTRIBUTION 100-YRS STORM

               SUBBASIN RUNOFF DATA

 118 BA          SUBBASIN CHARACTERISTICS
                      TAREA          .17  SUBBASIN AREA

                 PRECIPITATION DATA

                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
 135 PH                                   ..............  TP-40  ..............   ........... TP-49 ...........
                 ..... 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
                   .99     2.15     4.40     5.20     6.10     8.00     9.70    11.50      .00      .00      .00      .00

                                                  STORM AREA =       .17

 119 LS          SCS LOSS RATE
                      STRTL          .74  INITIAL ABSTRACTION
                      CRVNBR       73.77  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

 120 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .77  LAG

                                                  ***

                                                UNIT HYDROGRAPH
                                             18 END-OF-PERIOD ORDINATES
                43.      143.      248.      265.      222.      148.       93.       61.       39.       26.
                16.       11.        7.        4.        3.        2.        1.        0.
   ***          ***       ***       ***       ***

                    HYDROGRAPH AT STATION        E1
                      FOR PLAN 5, RATIO = 1.00

   TOTAL RAINFALL =   11.57, TOTAL LOSS =    3.39, TOTAL EXCESS =    8.11

                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                 6-HR      24-HR      72-HR    24.92-HR
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PEAK FLOW     TIME                                  MAXIMUM AVERAGE FLOW
  (CFS)       (HR)          6-HR        24-HR        72-HR       24.92-HR
+  585.      12.33   (CFS)    116.         38.          36.          36.
                     (INCHES) 6.288       8.112        8.112        8.112
                     (AC-FT)   58.         74.          74.          74.

                     CUMULATIVE AREA =      .17 SQ MI

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

                HYDROGRAPH AT STATION        E1
                  FOR PLAN 5, RATIO = 1.00

PEAK FLOW     TIME                                  MAXIMUM AVERAGE FLOW
  (CFS)       (HR)          6-HR        24-HR        72-HR       24.92-HR
+  585.      12.33   (CFS)    116.         38.          36.          36.
                     (INCHES) 6.288       8.112        8.112        8.112
                     (AC-FT)   58.         74.          74.          74.

                     CUMULATIVE AREA =      .17 SQ MI

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

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              *            *
136 KK        *     P1A    *
              *            *
              **************

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

137 KP        PLAN  1 FOR STATION      P1A
                        TRIANGULAR DISTRIBUTION 2-YRS STORM

              SUBBASIN RUNOFF DATA

138 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .05  SUBBASIN AREA

                PRECIPITATION DATA

                                  DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
143 PH                                  ..... TP-40 .....   ..... TP-49 .....
                ..... HYDRO-35 .....
                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    1.04    2.10    2.50    2.70    3.30    4.00    4.60     .00     .00     .00     .00

                                          STORM AREA =      .05

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

140 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG           .45  LAG

                                                 ***

                                              UNIT HYDROGRAPH
                                          29 END-OF-PERIOD ORDINATES
                   4.     12.     24.     38.     47.     49.     46.     40.     32.     23.
                  17.     13.     10.      8.      6.      4.      3.      2.      2.      1.
                   1.      1.      1.      0.      0.      0.      0.      0.      0.

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

                HYDROGRAPH AT STATION      P1A
                  FOR PLAN 1, RATIO = 1.00

TOTAL RAINFALL =    4.60, TOTAL LOSS =      .58, TOTAL EXCESS =    4.02

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

```
(CFS)        (HR)
                        (CFS)
                                    17.        5.        5.        5.
+      75.    12.00
                        (INCHES)   3.106     4.022     4.022     4.022
                        (AC-FT)      8.        11.       11.       11.

                        CUMULATIVE AREA =      .05 SQ MI

                                                  ***
                                        ***
                              ***
                        HYDROGRAPH AT STATION      P1A
                          FOR PLAN 1, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
PEAK FLOW     TIME                  6-HR      24-HR      72-HR     24.92-HR
+   (CFS)     (HR)
                        (CFS)
                                    17.        5.        5.        5.
+      75.    12.50
                        (INCHES)   3.106     4.022     4.022     4.022
                        (AC-FT)      8.        11.       11.       11.

                        CUMULATIVE AREA =      .05 SQ MI

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

144 KP        PLAN  2 FOR STATION      P1A
                        TRIANGULAR DISTRIBUTION 10-YRS STORM

              SUBBASIN RUNOFF DATA

138 BA          SUBBASIN CHARACTERISTICS
                      TAREA        .05  SUBBASIN AREA

                PRECIPITATION DATA
                                  DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                                 ..... TP-40 .....  ..... TP-49 .....
146 PH          ..... HYDRO-35 .....  ..... TP-40 .....  ..... TP-49 .....
                                                                    2-DAY   4-DAY   7-DAY  10-DAY
                                                                    .00     .00     .00     .00
                5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR
                  .55    1.31    3.00    3.70    4.10    5.40    6.60    7.60

                                                STORM AREA =      .05

139 LS          SCS LOSS RATE
                      STRTL        .11  INITIAL ABSTRACTION
                      CRVNBR     99.00  CURVE NUMBER
                      RTIMP        .00  PERCENT IMPERVIOUS AREA

140 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG         .45  LAG
                                                  ***
                                                UNIT HYDROGRAPH
                                          29 END-OF-PERIOD ORDINATES
                                                                                  23.
                                                                                   1.
                                                                    32.
                                                                     2.
                                                                     0.
                                                                    40.
                                                                     3.
                                                                     0.
                                                                    49.
                                                                     4.
                                                                     0.
                                                                    47.
                                                                     6.
                                                                     0.
                                                                    38.
                                                                     8.
                                                                     0.
                                                                    24.
                                                                    10.
                                                                     1.
                                                                    12.
                                                                    13.
                                                                     1.
                                                                     4.
                                                                    17.
                                                                     1.
                                                  ***
                                        ***
                              ***
                        HYDROGRAPH AT STATION      P1A
                          FOR PLAN 2, RATIO = 1.00

TOTAL RAINFALL        .00, TOTAL LOSS =      .60, TOTAL EXCESS =     7.00

                                          MAXIMUM AVERAGE FLOW
PEAK FLOW     TIME                  6-HR      24-HR      72-HR     24.92-HR
+   (CFS)     (HR)
                        (CFS)
                                    28.        9.        9.        9.
+     106.    12.50
                        (INCHES)   5.227     7.000     7.000     7.000
                        (AC-FT)     14.        18.       18.       18.

                        CUMULATIVE AREA =      .05 SQ MI

                                                  ***
                                        ***
                              ***
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                    HYDROGRAPH AT STATION      P1A
                      FOR PLAN 2, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
PEAK FLOW     TIME                   6-HR      24-HR      72-HR     24.92-HR
+  (CFS)      (HR)      (CFS)
                                     28.        9.         9.         9.
+   106.      12.50    (INCHES)     5.227     7.000      7.000      7.000
                       (AC-FT)      14.        18.        18.        18.

                    CUMULATIVE AREA =     .05 SQ MI

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

147 KP        PLAN  3 FOR STATION      P1A
                        TRIANGULAR DISTRIBUTION 25-YRS STORM

              SUBBASIN RUNOFF DATA

138 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .05  SUBBASIN AREA

                PRECIPITATION DATA
                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
149 PH                                                                          ........... TP-49 ...........
                ..... HYDRO-35 ......   ............... TP-40 ...............   2-DAY    4-DAY    7-DAY   10-DAY
                5-MIN   15-MIN   60-MIN    2-HR     3-HR     6-HR    12-HR    24-HR    .00      .00      .00      .00
                 .61     1.47     3.50    4.50     5.10     6.30     7.70     9.40

                                                STORM AREA =     .05

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

140 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .45  LAG
                                                  ***

                                                UNIT HYDROGRAPH
                                          29 END-OF-PERIOD ORDINATES
                                                                                 40.      32.      23.
                                                 38.      47.      49.      46.      2.       2.       1.
                 4.       12.      24.          8.       6.       4.       3.       0.       0.
                17.       13.      10.          0.       0.       0.       0.
                 1.        1.       1.

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

                    HYDROGRAPH AT STATION      P1A
                      FOR PLAN 3, RATIO = 1.00

TOTAL RAINFALL =    9.40, TOTAL LOSS =     .60, TOTAL EXCESS =    8.80

                                          MAXIMUM AVERAGE FLOW
PEAK FLOW     TIME                   6-HR      24-HR      72-HR     24.92-HR
+  (CFS)      (HR)      (CFS)
                                     33.        12.        11.        11.
+   124.      12.50    (INCHES)     6.181     8.791      8.791      8.791
                       (AC-FT)      16.        23.        23.        23.

                    CUMULATIVE AREA =     .05 SQ MI

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

                    HYDROGRAPH AT STATION      P1A
                      FOR PLAN 3, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
PEAK FLOW     TIME                   6-HR      24-HR      72-HR     24.92-HR
+  (CFS)      (HR)      (CFS)
                                     33.        12.        11.        11.
+   124.      12.50    (INCHES)     6.181     8.791      8.791      8.791
                       (AC-FT)      16.        23.        23.        23.
```

CUMULATIVE AREA = .05 SQ MI

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

150 KP PLAN 4 FOR STATION P1A
TRIANGULAR DISTRIBUTION 50-YRS STORM

SUBBASIN RUNOFF DATA

138 UA SUBBASIN CHARACTERISTICS
TAREA .05 SUBBASIN AREA

PRECIPITATION DATA

152 PH

HYDRO-35			DEPTHS FOR 0-PERCENT HYPOTHETICAL STORM 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
.64	1.55	3.80	5.00	5.20	7.00	8.70	10.50	.00	.00	.00	.00

STORM AREA = .05

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

140 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .45 LAG

***

UNIT HYDROGRAPH
29 END-OF-PERIOD ORDINATES

4.	12.	24.	38.	47.	49.	46.	40.	32.	23.
17.	13.	10.	8.	6.	4.	3.	2.	2.	1.
1.	1.	1.	0.	0.	0.	0.	0.	0.	

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

HYDROGRAPH AT STATION P1A
FOR PLAN 4, RATIO = 1.00

TOTAL RAINFALL = 10.50, TOTAL LOSS = .61, TOTAL EXCESS = 9.89

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	36.	13.	13.	13.
+ 134.	12.50	(INCHES)	6.059	9.888	9.888	9.888
		(AC-FT)	18.	26.	26.	26.

CUMULATIVE AREA = .05 SQ MI

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

HYDROGRAPH AT STATION P1A
FOR PLAN 4, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	36.	13.	13.	13.
+ 134.	12.50	(INCHES)	6.059	9.888	9.888	9.888
		(AC-FT)	18.	26.	26.	26.

CUMULATIVE AREA = .05 SQ MI

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

153 KP PLAN 5 FOR STATION P1A
TRIANGULAR DISTRIBUTION 100-YRS STORM

SUBBASIN RUNOFF DATA

```
154 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .05  SUBBASIN AREA

                PRECIPITATION DATA
                                          DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                                                                          ........... TP-49 ...........
155 PH                                    ............... TP-40 ...............
                ..... HYDRO-35 ......     2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                5-MIN  15-MIN  60-MIN     5.20    6.10    8.00    9.70   11.50     .00     .00     .00     .00
                  .99    2.15    4.40
                                                  STORM AREA =       .05

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

140 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .45  LAG
                                                        ***

                                                   UNIT HYDROGRAPH
                                              29 END-OF-PERIOD ORDINATES
                     4.     12.     24.     38.     47.     49.     46.     40.     32.     23.
                    17.     13.     10.      8.      6.      4.      3.      2.      2.      1.
                     1.      1.      1.      0.      0.      0.      0.      0.      0.
                                                                                  ***
                                                          ***
                                     ***
                 ***     ***
                                 HYDROGRAPH AT STATION       P1A
                                  FOR PLAN 5, RATIO = 1.00

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

                                                   MAXIMUM AVERAGE FLOW
                PEAK FLOW     TIME                    6-HR      24-HR     72-HR    24.92-HR
                  (CFS)       (HR)      (CFS)
                                                      42.       14.       14.       14.
                +   161.      12.50     (INCHES)    7.851    10.886    10.886    10.886
                                        (AC-FT)      21.       29.       29.       29.
                                 CUMULATIVE AREA =      .05 SQ MI

                                                                          ***
                                                          ***
                                     ***
                 ***     ***
                                 HYDROGRAPH AT STATION       P1A
                                  FOR PLAN 5, RATIO = 1.00

                                                   MAXIMUM AVERAGE FLOW
                PEAK FLOW     TIME                    6-HR      24-HR     72-HR    24.92-HR
                +  (CFS)      (HR)      (CFS)
                                                      42.       14.       14.       14.
                +   161.      12.50     (INCHES)    7.851    10.886    10.886    10.886
                                        (AC-FT)      21.       29.       29.       29.
                                 CUMULATIVE AREA =      .05 SQ MI

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

                ***************
                *             *
156 KK          *     P1B     *
                *             *
                ***************

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

157 KP          PLAN  1 FOR STATION      P1B
                                   TRIANGULAR DISTRIBUTION 2-YRS STORM

                SUBBASIN RUNOFF DATA
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158 BA        SUBBASIN CHARACTERISTICS
                 TAREA              .03  SUBBASIN AREA

              PRECIPITATION DATA
                                        DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
163 PH                                                                                   ........... TP-49 ...........
              ..... HYDRO-35 ......   ............... TP-40 ...............            2-DAY   4-DAY   7-DAY  10-DAY
              5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR              .00     .00     .00     .00
                .47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
                                                     STORM AREA =       .03

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

160 UD        SCS DIMENSIONLESS UNITGRAPH
                 TLAG                .40  LAG
                                                            ***

                                                      UNIT HYDROGRAPH
                                                 26 END-OF-PERIOD ORDINATES
              3.        9.       19.       29.       32.       32.       27.       22.       15.       11.
              8.        6.        4.        3.        2.        2.        1.        1.        1.        1.
              0.        0.        0.        0.        0.        0.

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

                 HYDROGRAPH AT STATION       P1B
                   FOR PLAN 1, RATIO = 1.00

 TOTAL RAINFALL =     4.60, TOTAL LOSS =      .58, TOTAL EXCESS =     4.02

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

    (CFS)       (HR)
                             (CFS)
 +     47.      12.42                    10.          3.          3.           3.
                             (INCHES)  3.107       4.022       4.022        4.022
                             (AC-FT)      5.          6.          6.           6.

                 CUMULATIVE AREA =      .03 SQ MI

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

                 HYDROGRAPH AT STATION       P1B
                   FOR PLAN 1, RATIO = 1.00

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

    (CFS)       (HR)
                             (CFS)
 +     47.      12.42                    10.          3.          3.           3.
                             (INCHES)  3.107       4.022       4.022        4.022
                             (AC-FT)      5.          6.          6.           6.

                 CUMULATIVE AREA =      .03 SQ MI

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

164 KP        PLAN  2 FOR STATION         P1B
                                  TRIANGULAR DISTRIBUTION 10-YRS STORM

              SUBBASIN RUNOFF DATA

158 BA        SUBBASIN CHARACTERISTICS
                 TAREA              .03  SUBBASIN AREA

              PRECIPITATION DATA
                                        DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
166 PH                                                                                   ........... TP-49 ...........
              ..... HYDRO-35 ......   ............... TP-40 ...............            2-DAY   4-DAY   7-DAY  10-DAY
              5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR              .00     .00     .00     .00
                .55    1.21    3.00    3.70    4.10    5.40    6.60    7.60
                                                     STORM AREA =       .03
```

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

160 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG         .40  LAG
                                                    ***

                                          UNIT HYDROGRAPH
                                     26 END-OF-PERIOD ORDINATES
                 3.     9.    19.    29.    32.    32.    27.    22.    15.    11.
                 8.     6.     4.     3.     2.     2.     1.     1.     1.     1.
                 0.     0.     0.     0.     0.     0.
                                                    ***
                                           ***
                        ***     ***
   ***
                 HYDROGRAPH AT STATION      P1B
                   FOR PLAN 2, RATIO = 1.00

   TOTAL RAINFALL =    7.60, TOTAL LOSS =     .60, TOTAL EXCESS =    7.00

                                     MAXIMUM AVERAGE FLOW
   PEAK FLOW    TIME                 6-HR     24-HR     72-HR    24.92-HR
+   (CFS)       (HR)     (CFS)       17.       6.        5.        5.
+     67.       12.42    (INCHES)    5.231    7.001     7.001     7.001
                         (AC-FT)     8.       11.       11.       11.

                 CUMULATIVE AREA =     .03 SQ MI

                                                    ***
                                           ***
                        ***     ***
   ***
                 HYDROGRAPH AT STATION      P1B
                   FOR PLAN 2, RATIO = 1.00

                                     MAXIMUM AVERAGE FLOW
   PEAK FLOW    TIME                 6-HR     24-HR     72-HR    24.92-HR
+   (CFS)       (HR)     (CFS)       17.       6.        5.        5.
+     67.       12.42    (INCHES)    5.231    7.001     7.001     7.001
                         (AC-FT)     8.       11.       11.       11.

                 CUMULATIVE AREA =     .03 SQ MI

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

167 KP          PLAN  3 FOR STATION      P1B
                          TRIANGULAR DISTRIBUTION 25-YRS STORM

                SUBBASIN RUNOFF DATA

158 BA            SUBBASIN CHARACTERISTICS
                     TAREA        .03  SUBBASIN AREA

                  PRECIPITATION DATA

                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                                  TP-40                          TP-49
169 PH            HYDRO-35      2-HR    3-HR    6-HR    12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                  5-MIN  15-MIN 60-MIN  4.50    5.10    6.30    7.70    9.40    .00     .00     .00     .00
                   .61    1.47   3.50

                                                STORM AREA =      .03

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

160 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG         .40  LAG
                                                    ***
```

UNIT HYDROGRAPH
26 END-OF-PERIOD ORDINATES

3.	9.	19.	29.	32.	32.	27.	22.	15.	11.
8.	6.	4.	3.	2.	2.	1.	1.	1.	1.
0.	0.	0.	0.	0.	0.				

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

HYDROGRAPH AT STATION P1B
FOR PLAN 3, RATIO = 1.00

TOTAL RAINFALL = 9.40, TOTAL LOSS = .60, TOTAL EXCESS = 8.80

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	20.	7.	7.	7.
+ 78.	12.42	(INCHES)	6.183	8.793	8.793	8.793
		(AC-FT)	10.	14.	14.	14.

CUMULATIVE AREA = .03 SQ MI

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

HYDROGRAPH AT STATION P1B
FOR PLAN 3, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	20.	7.	7.	7.
+ 78.	12.42	(INCHES)	6.183	8.793	8.793	8.793
		(AC-FT)	10.	14.	14.	14.

CUMULATIVE AREA = .03 SQ MI

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

170 KP PLAN 4 FOR STATION P1B
TRIANGULAR DISTRIBUTION 50-YRS STORM

SUBBASIN RUNOFF DATA

158 BA SUBBASIN CHARACTERISTICS
TAREA .03 SUBBASIN AREA

PRECIPITATION DATA

172 PH

HYDRO-35 5-MIN	15-MIN	60-MIN	DEPTHS FOR 0-PERCENT HYPOTHETICAL STORM TP-40 2-HR	3-HR	6-HR	12-HR	24-HR	TP-49 2-DAY	4-DAY	7-DAY	10-DAY
.04	1.55	2.80	5.00	5.20	7.00	8.70	10.50	.00	.00	.00	.00

STORM AREA = .03

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

160 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .40 LAG

***

UNIT HYDROGRAPH
26 END-OF-PERIOD ORDINATES

3.	9.	19.	29.	32.	32.	27.	22.	15.	11.
8.	6.	4.	3.	2.	2.	1.	1.	1.	1.
0.	0.	0.	0.	0.	0.				

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

HYDROGRAPH AT STATION P1B
FOR PLAN 4, RATIO = 1.00

TOTAL RAINFALL = 10.50, TOTAL LOSS = .61, TOTAL EXCESS = 9.89

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	22.	8.	8.	8.
+ 84.	12.42	(INCHES)	6.864	9.890	9.890	9.890
		(AC-FT)	11.	16.	16.	16.

CUMULATIVE AREA = .03 SQ MI

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

HYDROGRAPH AT STATION P1B
FOR PLAN 4, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	22.	8.	8.	8.
+ 84.	12.42	(INCHES)	6.864	9.890	9.890	9.890
		(AC-FT)	11.	16.	16.	16.

CUMULATIVE AREA = .03 SQ MI

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

173 KP PLAN 5 FOR STATION P1B
TRIANGULAR DISTRIBUTION 100-YRS STORM

SUBBASIN RUNOFF DATA

158 BA SUBBASIN CHARACTERISTICS
TAREA .03 SUBBASIN AREA

PRECIPITATION DATA

175 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
.99	2.15	4.40	5.20	6.10	8.00	9.70	11.50	.00	.00	.00	.00

STORM AREA = .03

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

160 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .40 LAG

***

UNIT HYDROGRAPH
26 END-OF-PERIOD ORDINATES

3.	9.	19.	29.	32.	32.	27.	22.	15.	11.
8.	6.	4.	3.	2.	2.	1.	1.	1.	1.
0.	0.	0.	0.	0.	0.				

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

HYDROGRAPH AT STATION P1B
FOR PLAN 5, 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)	25.	9.	8.	8.
+ 102.	12.42	(INCHES)	7.857	10.888	10.888	10.888
		(AC-FT)	12.	17.	17.	17.

CUMULATIVE AREA = .03 SQ MI

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

                    HYDROGRAPH AT STATION       P1B
                      FOR PLAN 5, RATIO = 1.00

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR        24-HR        72-HR       24.92-HR
+  (CFS)        (HR)
                          (CFS)
+    102.      12.42                 25.           9.           8.           8.
                       (INCHES)    7.857       10.888       10.888       10.888
                        (AC-FT)      12.          17.          17.          17.

                    CUMULATIVE AREA =      .03 SQ MI


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

            **************
            *            *
176 KK      *      P7    *
            *            *
            **************

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

177 KP        PLAN  1 FOR STATION        P7
                          TRIANGULAR DISTRIBUTION 2-YRS STORM

              SUBBASIN RUNOFF DATA

178 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .03  SUBBASIN AREA

                PRECIPITATION DATA

183 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    1.04    2.10    2.50    2.70    3.30    4.00    4.60     .00     .00     .00     .00

                                                  STORM AREA =      .03

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

180 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .15  LAG

                                                          ***

                                                    UNIT HYDROGRAPH
                                                 11 END-OF-PERIOD ORDINATES
                31.       91.       72.       36.       19.        9.        4.        2.        1.        1.
                 0.

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

                    HYDROGRAPH AT STATION        P7
                      FOR PLAN 1, RATIO = 1.00

   TOTAL RAINFALL =    4.60, TOTAL LOSS =      .58, TOTAL EXCESS =     4.02

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR        24-HR        72-HR       24.92-HR
+  (CFS)        (HR)
                          (CFS)
+     77.      12.17                 11.           4.           3.           3.
                       (INCHES)    3.110        4.023        4.023        4.023
                        (AC-FT)       5.           7.           7.           7.

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

                HYDROGRAPH AT STATION        P7
                  FOR PLAN 1, RATIO = 1.00

                                        MAXIMUM AVERAGE FLOW
 PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
+  (CFS)       (HR)
                          (CFS)
                                    11.        4.         3.          3.
+    77.      12.17                                                  4.023
                         (INCHES)  3.110     4.023      4.023
                         (AC-FT)    5.         7.         7.          7.

                         CUMULATIVE AREA =      .03 SQ MI


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

 184 KP        PLAN  2 FOR STATION        P7
                        TRIANGULAR DISTRIBUTION 10-YRS STORM

               SUBBASIN RUNOFF DATA

 178 BA          SUBBASIN CHARACTERISTICS
                      TAREA          .03  SUBBASIN AREA

                 PRECIPITATION DATA
                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
 186 PH                                                                          ........... TP-49 ...........
                  ..... HYDRO-35 ......   ............... TP-40 ...............
                  5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                   .55    1.31    3.00    3.70    4.10    5.40    6.60    7.60     .00     .00     .00     .00

                                                   STORM AREA =      .03

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

 180 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .15  LAG
                                                   ***

                                                UNIT HYDROGRAPH
                                            11 END-OF-PERIOD ORDINATES
                 31.      81.      72.      36.      18.       9.       4.       2.       1.       1.
                  0.

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

                HYDROGRAPH AT STATION        P7
                  FOR PLAN 2, RATIO = 1.00

   TOTAL RAINFALL =    7.60, TOTAL LOSS =     .60, TOTAL EXCESS =    7.00

                                        MAXIMUM AVERAGE FLOW
 PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
+  (CFS)       (HR)
                          (CFS)
                                    19.        6.         6.          6.
+   103.      12.17                                                  7.003
                         (INCHES)  5.247     7.003      7.003
                         (AC-FT)    9.        12.        12.         12.

                         CUMULATIVE AREA =      .03 SQ MI

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

                HYDROGRAPH AT STATION        P7
                  FOR PLAN 3, RATIO = 1.00

                                        MAXIMUM AVERAGE FLOW
 PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
  (CFS)       (HR)
                          (CFS)
                                    19.        6.         6.          6.
+   103.      12.17                                                  7.003
                         (INCHES)  5.247     7.003      7.003
```

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                    (AC-FT)          9.          12.          12.          12.

                    CUMULATIVE AREA =      .03 SQ MI

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

187 KP          PLAN  3 FOR STATION        P7
                                TRIANGULAR DISTRIBUTION 25-YRS STORM

                SUBBASIN RUNOFF DATA

178 HA            SUBBASIN CHARACTERISTICS
                       TAREA          .03  SUBBASIN AREA

                  PRECIPITATION DATA

                                        DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
189 PH                                                                                  ........... TP-49 ...........
                  ..... HYDRO-35 ......   ............... TP-40 ...............   ...........
                  5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                    .61    1.47    3.50    4.50    5.10    6.30    7.70    9.40     .00     .00     .00     .00

                                                        STORM AREA =      .03

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

180 UD            SCS DIMENSIONLESS UNITGRAPH
                        TLAG          .15  LAG

                                                                  ***

                                                          UNIT HYDROGRAPH
                                                     11 END-OF-PERIOD ORDINATES
                  31.      81.      72.      36.      18.       9.       4.       2.       1.       1.
                   0.

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

                        HYDROGRAPH AT STATION        P7
                          FOR PLAN 3, RATIO = 1.00

    TOTAL RAINFALL =    9.40, TOTAL LOSS =      .60, TOTAL EXCESS =     8.80

  PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR       24-HR       72-HR     24.92-HR
+   (CFS)        (HR)
                                (CFS)
                                         22.          8.          8.          8.
+     117.      12.17          (INCHES)  6.190       8.796       8.796       8.796
                                (AC-FT)   11.         15.         15.         15.

                        CUMULATIVE AREA =      .03 SQ MI

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

                        HYDROGRAPH AT STATION        P7
                          FOR PLAN 3, RATIO = 1.00

  PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR       24-HR       72-HR     24.92-HR
+   (CFS)        (HR)
                                (CFS)
                                         22.          8.          8.          8.
+     117.      12.17          (INCHES)  6.190       8.796       8.796       8.796
                                (AC-FT)   11.         15.         15.         15.

                        CUMULATIVE AREA =      .03 SQ MI

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

190 KP          PLAN  4 FOR STATION        P7
                                TRIANGULAR DISTRIBUTION 50-YRS STORM

                SUBBASIN RUNOFF DATA
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178 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .03  SUBBASIN AREA

                PRECIPITATION DATA

                                    DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
192 PH          ..... 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
                  .64    1.55    3.80   5.00    5.20    7.00    8.70   10.50     .00     .00     .00     .00

                                                STORM AREA =      .03

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

180 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .15  LAG

                                                                  ***

                                                        UNIT HYDROGRAPH
                                                  11 END-OF-PERIOD ORDINATES
                31.      81.      72.      36.      18.       9.       4.       2.       1.       1.
                 0.

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

                     HYDROGRAPH AT STATION        P7
                       FOR PLAN 4, RATIO = 1.00

   TOTAL RAINFALL =   10.50, TOTAL LOSS =     .61, TOTAL EXCESS =    9.89

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

  (CFS)       (HR)          (CFS)
                                    24.         9.         8.         8.
    125.      12.17       (INCHES)  6.887     9.893      9.893      9.893
                          (AC-FT)   12.        17.        17.        17.

                     CUMULATIVE AREA =     .03 SQ MI

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

                     HYDROGRAPH AT STATION        P7
                       FOR PLAN 4, RATIO = 1.00

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

+  (CFS)       (HR)          (CFS)
                                    24.         9.         8.         8.
+    125.      12.17       (INCHES)  6.887     9.893      9.893      9.893
                          (AC-FT)   12.        17.        17.        17.

                     CUMULATIVE AREA =     .03 SQ MI

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

193 KP          PLAN  5 FOR STATION        P7
                                TRIANGULAR DISTRIBUTION 100-YRS STORM

                SUBBASIN RUNOFF DATA

178 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .03  SUBBASIN AREA

                PRECIPITATION DATA

                                    DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
195 PH          ..... 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
                  .99    2.15    4.40   5.20    6.10    8.00    9.70   11.50     .00     .00     .00     .00

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

180 UD      SCS DIMENSIONLESS UNITGRAPH
                TLAG          .15  LAG
                                                    ***

                                                UNIT HYDROGRAPH
                                            11 END-OF-PERIOD ORDINATES
            31.      81.      72.      36.      18.       9.       4.       2.       1.       1.
             0.

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

                    HYDROGRAPH AT STATION       P7
                      FOR PLAN 5, RATIO = 1.00

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

                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                  6-HR      24-HR      72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
                                     28.        10.         9.          9.
+     167.      12.17     (INCHES)   7.882     10.891     10.891      10.891
                          (AC-FT)    14.        19.        19.         19.

                    CUMULATIVE AREA =     .03 SQ MI

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

                    HYDROGRAPH AT STATION       P7
                      FOR PLAN 5, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                  6-HR      24-HR      72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
                                     28.        10.         9.          9.
+     167.      12.17     (INCHES)   7.882     10.891     10.891      10.891
                          (AC-FT)    14.        19.        19.         19.

                    CUMULATIVE AREA =     .03 SQ MI

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

            **************
            *            *
196 KK      *    COMB 3  *
            *            *
            **************
                          P1+P7

198 HC          HYDROGRAPH COMBINATION
                    ICOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE
                                                    ***

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

                    HYDROGRAPH AT STATION   COMB 3
                      FOR PLAN 1, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                  6-HR      24-HR      72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
                                     37.        12.        12.         12.
     167.      12.33     (INCHES)   3.106      4.022      4.022       4.022
                          (AC-FT)    19.        24.        24.         24.

                    CUMULATIVE AREA =     .11 SQ MI
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*** *** *** *** ***

HYDROGRAPH AT STATION COMB 3
FOR PLAN 2, RATIO = 1.00

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 238.	12.33	(CFS)	63.	21.	20.	20.
		(INCHES)	5.228	7.001	7.001	7.001
		(AC-FT)	31.	42.	42.	42.

CUMULATIVE AREA = .11 SQ MI

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

HYDROGRAPH AT STATION COMB 3
FOR PLAN 3, RATIO = 1.00

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 279.	12.33	(CFS)	75.	27.	26.	26.
		(INCHES)	6.182	8.793	8.793	8.793
		(AC-FT)	37.	53.	53.	53.

CUMULATIVE AREA = .11 SQ MI

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

HYDROGRAPH AT STATION COMB 3
FOR PLAN 4, RATIO = 1.00

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 302.	12.33	(CFS)	83.	30.	29.	29.
		(INCHES)	6.860	9.890	9.890	9.890
		(AC-FT)	41.	59.	59.	59.

CUMULATIVE AREA = .11 SQ MI

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

HYDROGRAPH AT STATION COMB 3
FOR PLAN 5, RATIO = 1.00

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 362.	12.33	(CFS)	95.	33.	32.	32.
		(INCHES)	7.852	10.888	10.888	10.888
		(AC-FT)	47.	65.	65.	65.

CUMULATIVE AREA = .11 SQ MI

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199 KK

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*            *
*     P4A    *
*            *
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

200 KK FLAN 1 FOR STATION P4A

TRIANGULAR DISTRIBUTION 2-YRS STORM

SUBBASIN RUNOFF DATA

201 BA SUBBASIN CHARACTERISTICS
TAREA .02 SUBBASIN AREA

PRECIPITATION DATA

206 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	1.04	2.10	2.50	2.70	3.30	4.00	4.60	.00	.00	.00	.00

STORM AREA = .02

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

203 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .20 LAG

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UNIT HYDROGRAPH
14 END-OF-PERIOD ORDINATES

11.	36.	45.	36.	20.	12.	7.	4.	2.	1.
1.	0.	0.	0.						

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

HYDROGRAPH AT STATION P4A
FOR PLAN 1, RATIO = 1.00

TOTAL RAINFALL = 4.60, TOTAL LOSS = .58, TOTAL EXCESS = 4.02

	PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
	(CFS)	(HR)					
			(CFS)	8.	2.	2.	2.
+	48.	12.25	(INCHES)	3.109	4.023	4.023	4.023
			(AC-FT)	4.	5.	5.	5.

CUMULATIVE AREA = .02 SQ MI

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

HYDROGRAPH AT STATION P4A
FOR PLAN 1, RATIO = 1.00

	PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
	(CFS)	(HR)					
			(CFS)	8.	2.	2.	2.
+	48.	12.25	(INCHES)	3.109	4.023	4.023	4.023
			(AC-FT)	4.	5.	5.	5.

CUMULATIVE AREA = .02 SQ MI

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

207 KP PLAN 2 FOR STATION P4A
TRIANGULAR DISTRIBUTION 10-YRS STORM

SUBBASIN RUNOFF DATA

201 BA SUBBASIN CHARACTERISTICS
TAREA .02 SUBBASIN AREA

PRECIPITATION DATA

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

```
                .55    1.31    3.00    3.70    4.10    5.40    6.60    7.60     .00     .00     .00     .00

                                                  STORM AREA =      .02

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

203 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .20  LAG

                                                          ***

                                                   UNIT HYDROGRAPH
                                              14 END-OF-PERIOD ORDINATES
              11.      36.      45.      36.      20.      12.       7.       4.       2.       1.
               1.       0.       0.       0.

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

                      HYDROGRAPH AT STATION      P4A
                        FOR PLAN 2, RATIO = 1.00

   TOTAL RAINFALL =    7.60, TOTAL LOSS =     .60, TOTAL EXCESS =    7.00

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+  (CFS)       (HR)
                          (CFS)
+     65.     12.25                  13.          4.          4.          4.
                       (INCHES)    5.244       7.003       7.003       7.003
                        (AC-FT)      6.          8.          8.          8.

                      CUMULATIVE AREA =      .02 SQ MI

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

                      HYDROGRAPH AT STATION      P4A
                        FOR PLAN 2, RATIO = 1.00

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+  (CFS)       (HR)
                          (CFS)
+     65.     12.25                  13.          4.          4.          4.
                       (INCHES)    5.244       7.003       7.003       7.003
                        (AC-FT)      6.          8.          8.          8.

                      CUMULATIVE AREA =      .02 SQ MI

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

210 KP          PLAN  3 FOR STATION      P4A
                              TRIANGULAR DISTRIBUTION 25-YRS STORM

                SUBBASIN RUNOFF DATA

201 BA            SUBBASIN CHARACTERISTICS
                      TAREA          .02  SUBBASIN AREA

                  PRECIPITATION DATA

212 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
                    .61    1.47    3.50    4.50    5.10    6.30    7.70    9.40     .00     .00     .00     .00

                                                  STORM AREA =      .02

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

    UD            SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .20  LAG
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                                                                    ***

                                                          UNIT HYDROGRAPH
                                                     14 END-OF-PERIOD ORDINATES
          11.       36.       45.       36.       20.       12.        7.        4.        2.        1.
           1.        0.        0.        0.

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

                  HYDROGRAPH AT STATION      P4A
                    FOR PLAN 3, RATIO = 1.00

  TOTAL RAINFALL -    9.40, TOTAL LOSS =     .60, TOTAL EXCESS =    8.80

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                          (CFS)
+    74.      12.25                  15.         5.          5.          5.
                       (INCHES)    6.189       8.796       8.796       8.796
                        (AC-FT)      7.         11.         11.         11.

                  CUMULATIVE AREA -     .02 SQ MI

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

                  HYDROGRAPH AT STATION      P4A
                    FOR PLAN 3, RATIO = 1.00

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                          (CFS)
+    74.      12.25                  15.         5.          5.          5.
                       (INCHES)    6.189       8.796       8.796       8.796
                        (AC-FT)      7.         11.         11.         11.

                  CUMULATIVE AREA -     .02 SQ MI

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

213 KP        PLAN  4 FOR STATION      P4A
                          TRIANGULAR DISTRIBUTION 50-YRS STORM

              SUBBASIN RUNOFF DATA

201 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .02  SUBBASIN AREA

                PRECIPITATION DATA

215 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
                  .64    1.55    3.80    5.00    5.20    7.00    8.70   10.50     .00     .00     .00     .00

                                                  STORM AREA =      .02

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

203 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .20  LAG

                                                                    ***

                                                          UNIT HYDROGRAPH
                                                     14 END-OF-PERIOD ORDINATES
          11.       36.       45.       36.       20.       12.        7.        4.        2.        1.
           1.        0.        0.        0.

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

                  HYDROGRAPH AT STATION      P4A
                    FOR PLAN 4, RATIO = 1.00
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TOTAL RAINFALL -   10.50, TOTAL LOSS -     .61, TOTAL EXCESS -    9.89

 FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR      24.92-HR
+  (CFS)     (HR)
                        (CFS)
+    79.     12.25                  17.          6.          6.           6.
                      (INCHES)    6.883       9.893       9.893        9.893
                       (AC-FT)       8.         12.         12.          12.

                      CUMULATIVE AREA =     .02 SQ MI

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

                     HYDROGRAPH AT STATION      P4A
                       FOR PLAN 4, RATIO - 1.00

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR      24.92-HR
+  (CFS)     (HR)
                        (CFS)
+    79.     12.25                  17.          6.          6.           6.
                      (INCHES)    6.883       9.893       9.893        9.893
                       (AC-FT)       8.         12.         12.          12.

                      CUMULATIVE AREA =     .02 SQ MI

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

216 KP        PLAN  5 FOR STATION      P4A
                          TRIANGULAR DISTRIBUTION 100-YRS STORM

              SUBBASIN RUNOFF DATA

201 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .02  SUBBASIN AREA

                PRECIPITATION DATA

218 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
                  .99    2.15    4.40    5.20    6.10    8.00    9.70   11.50     .00     .00     .00     .00

                                                  STORM AREA =      .02

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

203 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .20  LAG

                                                  ***

                                                UNIT HYDROGRAPH
                                             14 END-OF-PERIOD ORDINATES
                11.      36.      45.      36.      20.      12.       7.       4.       2.       1.
                 1.       0.       0.       0.

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

                     HYDROGRAPH AT STATION      P4A
                       FOR PLAN 5, 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)
+   104.     12.25                  19.          7.          6.           6.
                      (INCHES)    7.878      10.891      10.891       10.891
                       (AC-FT)       9.         13.         13.          13.

                      CUMULATIVE AREA -     .02 SQ MI
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     ***            ***            ***            ***            ***

                    HYDROGRAPH AT STATION      P4A
                      FOR PLAN 5, RATIO = 1.00

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR      24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     104.      12.25                19.         7.          6.           6.
                       (INCHES)     7.878      10.891      10.891       10.891
                        (AC-FT)       9.         13.         13.          13.

                    CUMULATIVE AREA =      .02 SQ MI


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

            **************
            *            *
 219 KK     *      P4B   *
            *            *
            **************

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

 220 KP        PLAN  1 FOR STATION      P4B
                          TRIANGULAR DISTRIBUTION 2-YRS STORM

               SUBBASIN RUNOFF DATA

 221 BA          SUBBASIN CHARACTERISTICS
                      TAREA          .02  SUBBASIN AREA

                 PRECIPITATION DATA

 226 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    1.04    2.10   2.50    2.70    3.30    4.00    4.60     .00     .00     .00     .00

                                                  STORM AREA =      .02

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

 223 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG          .16  LAG

                                                        ***

                                                  UNIT HYDROGRAPH
                                              12 END-OF-PERIOD ORDINATES
                20.       56.       53.       30.       15.        8.        4.        2.        1.        1.
                 0.        0.

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

                    HYDROGRAPH AT STATION      P4B
                      FOR PLAN 1, RATIO = 1.00

   TOTAL RAINFALL =    4.60, TOTAL LOSS =     .58, TOTAL EXCESS =    4.02

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR      24.92-HR
+   (CFS)       (HR)
                          (CFS)
+      56.      12.17                 8.          3.          3.           3.
                       (INCHES)     3.110       4.023       4.023        4.023
                        (AC-FT)       4.          5.          5.           5.

                    CUMULATIVE AREA =      .02 SQ MI
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***          ***          ***          ***          ***

                HYDROGRAPH AT STATION      P4B
                  FOR PLAN 1, RATIO = 1.00

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                          (CFS)
+     56.     12.17                  8.          3.          3.           3.
                       (INCHES)    3.110       4.023       4.023        4.023
                        (AC-FT)      4.          5.          5.           5.

                CUMULATIVE AREA =     .02 SQ MI


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

227 KP        PLAN  2 FOR STATION      P4B
                          TRIANGULAR DISTRIBUTION 10-YRS STORM

              SUBBASIN RUNOFF DATA

221 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .02  SUBBASIN AREA

                PRECIPITATION DATA

229 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
                .55    1.31    3.00    3.70    4.10    5.40    6.60    7.60     .00     .00     .00     .00

                                                STORM AREA =      .02

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

UD              SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .16  LAG

                                                    ***

                                                UNIT HYDROGRAPH
                                            12 END-OF-PERIOD ORDINATES
              20.      56.      53.      30.      15.       8.       4.       2.       1.       1.
               0.       0.

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

                HYDROGRAPH AT STATION      P4B
                  FOR PLAN 2, RATIO = 1.00

   TOTAL RAINFALL =    7.60, TOTAL LOSS =     .60, TOTAL EXCESS =    7.00

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                          (CFS)
+     74.     12.17                 14.          5.          4.           4.
                       (INCHES)    5.247       7.003       7.003        7.003
                        (AC-FT)      7.          9.          9.           9.

                CUMULATIVE AREA =     .02 SQ MI


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

                HYDROGRAPH AT STATION      P4B
                  FOR PLAN 2, RATIO = 1.00

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                          (CFS)
     74.     12.17                 14.          5.          4.           4.
                       (INCHES)    5.247       7.003       7.003        7.003
                        (AC-FT)      7.          9.          9.           9.
```

CUMULATIVE AREA = .02 SQ MI

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

230 KP PLAN 3 FOR STATION P4B
TRIANGULAR DISTRIBUTION 25-YRS STORM

SUBBASIN RUNOFF DATA

221 BA SUBBASIN CHARACTERISTICS
TAREA .02 SUBBASIN AREA

PRECIPITATION DATA

232 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
.61	1.47	3.50	4.50	5.10	6.30	7.70	9.40	.00	.00	.00	.00

STORM AREA = .02

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

223 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .16 LAG

***

UNIT HYDROGRAPH
12 END-OF-PERIOD ORDINATES

20.	56.	53.	30.	15.	8.	4.	2.	1.	1.
0.	0.								

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

HYDROGRAPH AT STATION P4B
FOR PLAN 3, RATIO = 1.00

TOTAL RAINFALL = 9.40, TOTAL LOSS = .60, TOTAL EXCESS = 8.80

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)	16.	6.	6.	6.
+ 85.	12.17	(INCHES)	6.190	8.796	8.796	8.796
		(AC-FT)	8.	11.	11.	11.

CUMULATIVE AREA = .02 SQ MI

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

HYDROGRAPH AT STATION P4B
FOR PLAN 3, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)	16.	6.	6.	6.
+ 85.	12.17	(INCHES)	6.190	8.796	8.796	8.796
		(AC-FT)	8.	11.	11.	11.

CUMULATIVE AREA = .02 SQ MI

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

233 KP PLAN 4 FOR STATION P4B
TRIANGULAR DISTRIBUTION 50-YRS STORM

SUBBASIN RUNOFF DATA

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221 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .02  SUBBASIN AREA

                PRECIPITATION DATA

235 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
                  .64    1.55    3.80    5.00    5.20    7.00    8.70   10.50     .00     .00     .00     .00

                                                  STORM AREA =      .02

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

223 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .16  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                 12 END-OF-PERIOD ORDINATES
                20.       56.       53.       30.       15.        8.        4.        2.        1.        1.
                 0.        0.

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

                       HYDROGRAPH AT STATION      P4B
                         FOR PLAN 4, RATIO = 1.00

   TOTAL RAINFALL =   10.50, TOTAL LOSS =     .61, TOTAL EXCESS =    9.89

  PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)        (HR)
                          (CFS)
+     91.       12.17                  18.          7.          6.          6.
                        (INCHES)     6.887       9.893       9.893       9.893
                         (AC-FT)        9.         13.         13.         13.

                       CUMULATIVE AREA =      .02 SQ MI

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

                       HYDROGRAPH AT STATION      P4B
                         FOR PLAN 4, RATIO = 1.00

  PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)        (HR)
                          (CFS)
+     91.       12.17                  18.          7.          6.          6.
                        (INCHES)     6.887       9.893       9.893       9.893
                         (AC-FT)        9.         13.         13.         13.

                       CUMULATIVE AREA =      .02 SQ MI

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

236 KP          PLAN  5 FOR STATION      P4B
                              TRIANGULAR DISTRIBUTION 100-YRS STORM

                SUBBASIN RUNOFF DATA

221 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .02  SUBBASIN AREA

                PRECIPITATION DATA

238 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
                  .99    2.15    4.40    5.20    6.10    8.00    9.70   11.50     .00     .00     .00     .00

                                                  STORM AREA =      .02
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[illegible] LS          SCS LOSS RATE
                          STRTL          .11  INITIAL ABSTRACTION
                         CRVNBR        95.00  CURVE NUMBER
                          RTIMP          .00  PERCENT IMPERVIOUS AREA

223 UD                  SCS DIMENSIONLESS UNITGRAPH
                          TLAG          .16  LAG

                                                          ***

                                                   UNIT HYDROGRAPH
                                              12 END-OF-PERIOD ORDINATES
                 20.       56.       53.       30.       15.        8.        4.        2.        1.        1.
                  0.        0.

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

                        HYDROGRAPH AT STATION      P4B
                          FOR PLAN 5, 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)
+    120.      12.17                  21.          7.          7.           7.
                           (INCHES)  7.882      10.891      10.891       10.891
                            (AC-FT)  10.         14.         14.          14.

                        CUMULATIVE AREA =     .02 SQ MI

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

                        HYDROGRAPH AT STATION      P4B
                          FOR PLAN 5, RATIO = 1.00

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR      24.92-HR
+  (CFS)        (HR)
                              (CFS)
+    120.      12.17                  21.          7.          7.           7.
                           (INCHES)  7.882      10.891      10.891       10.891
                            (AC-FT)  10.         14.         14.          14.

                        CUMULATIVE AREA =     .02 SQ MI


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

              **************
              *            *
239 KK        *      P4C   *
              *            *
              **************

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

240 KP          PLAN  1 FOR STATION      P4C
                          TRIANGULAR DISTRIBUTION 2-YRS STORM

                SUBBASIN RUNOFF DATA

241 BA            SUBBASIN CHARACTERISTICS
                    TAREA          .01  SUBBASIN AREA

                  PRECIPITATION DATA

246 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    1.04    2.10    2.50    2.70    3.30    4.00    4.60     .00     .00     .00     .00

                                                  STORM AREA =     .01

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

243 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .16  LAG

                                                    ***

                                                UNIT HYDROGRAPH
                                            12 END-OF-PERIOD ORDINATES
              12.       34.       32.       18.        9.        5.        2.        1.        1.        0.
               0.        0.

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

                      HYDROGRAPH AT STATION      P4C
                        FOR PLAN 1, RATIO = 1.00

   TOTAL RAINFALL =    4.60, TOTAL LOSS =     .58, TOTAL EXCESS =    4.02

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+  (CFS)       (HR)
                          (CFS)
+     34.     12.17                     5.          2.          2.          2.
                        (INCHES)     3.110       4.023       4.023       4.023
                         (AC-FT)        2.          3.          3.          3.

                      CUMULATIVE AREA =     .01 SQ MI

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

                      HYDROGRAPH AT STATION      P4C
                        FOR PLAN 1, RATIO = 1.00

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
  (CFS)       (HR)
                          (CFS)
     34.     12.17                     5.          2.          2.          2.
                        (INCHES)     3.110       4.023       4.023       4.023
                         (AC-FT)        2.          3.          3.          3.

                      CUMULATIVE AREA =     .01 SQ MI


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

247 KP          PLAN  2 FOR STATION      P4C
                              TRIANGULAR DISTRIBUTION 10-YRS STORM

                SUBBASIN RUNOFF DATA

241 BA            SUBBASIN CHARACTERISTICS
                      TAREA          .01  SUBBASIN AREA

                  PRECIPITATION DATA

249 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
                  .55    1.31    3.00    3.70    4.10    5.40    6.60    7.60     .00     .00     .00     .00

                                                  STORM AREA =     .01

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

243 UD            SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .16  LAG

                                                    ***

                                                UNIT HYDROGRAPH
                                            12 END-OF-PERIOD ORDINATES
              12.       34.       32.       18.        9.        5.        2.        1.        1.        0.
```

```
                0.        0.
   ***          ***          ***          ***          ***

                    HYDROGRAPH AT STATION      P4C
                      FOR PLAN 2, RATIO = 1.00

   TOTAL RAINFALL =    7.60, TOTAL LOSS =     .60, TOTAL EXCESS =    7.00

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                   6-HR        24-HR        72-HR     24.92-HR
+  (CFS)       (HR)
                          (CFS)
                                    8.           3.           3.           3.
+     45.      12.17
                        (INCHES)  5.247        7.003        7.003        7.003
                        (AC-FT)     4.           6.           6.           6.

                    CUMULATIVE AREA =     .01 SQ MI

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

                    HYDROGRAPH AT STATION      P4C
                      FOR PLAN 2, RATIO = 1.00

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                   6-HR        24-HR        72-HR     24.92-HR
+  (CFS)       (HR)
                          (CFS)
                                    8.           3.           3.           3.
+     45.      12.17
                        (INCHES)  5.247        7.003        7.003        7.003
                        (AC-FT)     4.           6.           6.           6.

                    CUMULATIVE AREA =     .01 SQ MI

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

  0 KP        PLAN  3 FOR STATION      P4C
                        TRIANGULAR DISTRIBUTION 25-YRS STORM

              SUBBASIN RUNOFF DATA

  241 BA        SUBBASIN CHARACTERISTICS
                      TAREA          .01  SUBBASIN AREA

                PRECIPITATION DATA

  252 PH                          DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                  ..... TP-40 .....   ..... TP-49 .....
                ..... HYDRO-35 .....
                5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                  .61    1.47    3.50    4.50    5.10    6.30    7.70    9.40     .00     .00     .00     .00

                                          STORM AREA =     .01

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

  243 UD        SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .16  LAG

                                                  ***

                                              UNIT HYDROGRAPH
                                          12 END-OF-PERIOD ORDINATES
                12.       34.       32.       18.        9.        5.        2.        1.        1.        0.
                 0.        0.
   ***          ***          ***          ***          ***

                    HYDROGRAPH AT STATION      P4C
                      FOR PLAN 3, RATIO = 1.00

   TOTAL RAINFALL =    9.40, TOTAL LOSS =     .60, TOTAL EXCESS =    8.80

  K FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                   6-HR        24-HR        72-HR     24.92-HR
+  (CFS)       (HR)
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```
                    (CFS)
  51.     12.17                  10.          4.          3.          3.
                  (INCHES)      6.190       8.796       8.796       8.796
                   (AC-FT)        5.          7.          7.          7.

                  CUMULATIVE AREA =     .01 SQ MI

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

                  HYDROGRAPH AT STATION      P4C
                   FOR PLAN 3, RATIO = 1.00

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                   6-HR        24-HR       72-HR     24.92-HR
+  (CFS)       (HR)
                    (CFS)
+    51.     12.17                  10.          4.          3.          3.
                  (INCHES)      6.190       8.796       8.796       8.796
                   (AC-FT)        5.          7.          7.          7.

                  CUMULATIVE AREA =     .01 SQ MI


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

 253 KP        PLAN  4 FOR STATION      P4C
                          TRIANGULAR DISTRIBUTION 50-YRS STORM

               SUBBASIN RUNOFF DATA

 241 BA          SUBBASIN CHARACTERISTICS
                      TAREA          .01  SUBBASIN AREA

                 PRECIPITATION DATA

 255 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
                   .64    1.55    3.80    5.00    5.20    7.00    8.70   10.50     .00     .00     .00     .00

                                                STORM AREA =     .01

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

 243 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .16  LAG

                                                  ***

                                              UNIT HYDROGRAPH
                                          12 END-OF-PERIOD ORDINATES
                 12.      34.      32.      18.       9.       5.       2.       1.       1.       0.
                  0.       0.

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

                  HYDROGRAPH AT STATION      P4C
                   FOR PLAN 4, RATIO = 1.00

   TOTAL RAINFALL =   10.50, TOTAL LOSS =     .61, TOTAL EXCESS =    9.89

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                   6-HR        24-HR       72-HR     24.92-HR
+  (CFS)       (HR)
                    (CFS)
+    55.     12.17                  11.          4.          4.          4.
                  (INCHES)      6.887       9.894       9.894       9.894
                   (AC-FT)        5.          8.          8.          8.

                  CUMULATIVE AREA =     .01 SQ MI

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

                  HYDROGRAPH AT STATION      P4C
                   FOR PLAN 4, RATIO = 1.00
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 FLOW      TIME                                MAXIMUM AVERAGE FLOW
                                      6-HR        24-HR        72-HR      24.92-HR
+ (CFS)     (HR)
                          (CFS)
+    55.    12.17                      11.          4.           4.           4.
                        (INCHES)     6.887       9.894        9.894        9.894
                         (AC-FT)       5.          8.           8.           8.

                        CUMULATIVE AREA =      .01 SQ MI


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

256 KP        PLAN  5 FOR STATION      P4C
                          TRIANGULAR DISTRIBUTION 100-YRS STORM

              SUBBASIN RUNOFF DATA

241 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .01  SUBBASIN AREA

                PRECIPITATION DATA

258 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
                  .99    2.15    4.40    5.20    6.10    8.00    9.70   11.50     .00     .00     .00     .00

                                                  STORM AREA =      .01

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

243 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .16  LAG

                                                        ***

                                                  UNIT HYDROGRAPH
                                             12 END-OF-PERIOD ORDINATES
              12.       34.       32.       18.        9.        5.        2.        1.        1.        0.
               0.        0.

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

                      HYDROGRAPH AT STATION      P4C
                        FOR PLAN 5, 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)
+    73.    12.17                      13.          4.           4.           4.
                        (INCHES)     7.882      10.891       10.891       10.891
                         (AC-FT)       6.          9.           9.           9.

                        CUMULATIVE AREA =      .01 SQ MI

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

                      HYDROGRAPH AT STATION      P4C
                        FOR PLAN 5, RATIO = 1.00

 PEAK FLOW     TIME                                MAXIMUM AVERAGE FLOW
                                      6-HR        24-HR        72-HR      24.92-HR
+  (CFS)       (HR)
                          (CFS)
+    73.    12.17                      13.          4.           4.           4.
                        (INCHES)     7.882      10.891       10.891       10.891
                         (AC-FT)       6.          9.           9.           9.

                        CUMULATIVE AREA =      .01 SQ MI
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** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

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          *            *
259 KK    *     COMB4  *
          *            *
          **************
                    P4A+P4B+P4C

261 HC          HYDROGRAPH COMBINATION
                     TCOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE

                                                                  ***

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

                      HYDROGRAPH AT STATION    COMB4
                        FOR PLAN 1, RATIO = 1.00

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR      24.92-HR
+  (CFS)        (HR)
                          (CFS)
+    136.      12.25                 21.         7.          6.           6.
                       (INCHES)    3.110      4.023       4.023        4.023
                        (AC-FT)     10.        13.         13.          13.

                      CUMULATIVE AREA =     .06 SQ MI

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

                      HYDROGRAPH AT STATION    COMB4
                        FOR PLAN 2, RATIO = 1.00

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR      24.92-HR
  (CFS)        (HR)
                          (CFS)
+    181.      12.17                 35.        12.         11.          11.
                       (INCHES)    5.246      7.003       7.003        7.003
                        (AC-FT)     17.        23.         23.          23.

                      CUMULATIVE AREA =     .06 SQ MI

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

                      HYDROGRAPH AT STATION    COMB4
                        FOR PLAN 3, RATIO = 1.00

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR      24.92-HR
+  (CFS)        (HR)
                          (CFS)
+    207.      12.17                 41.        15.         14.          14.
                       (INCHES)    6.190      8.796       8.796        8.796
                        (AC-FT)     20.        29.         29.          29.

                      CUMULATIVE AREA =     .06 SQ MI

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

                      HYDROGRAPH AT STATION    COMB4
                        FOR PLAN 4, RATIO = 1.00

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR      24.92-HR
+  (CFS)        (HR)
                          (CFS)
+    222.      12.17                 46.        16.         16.          16.
                       (INCHES)    6.885      9.893       9.893        9.893
                        (AC-FT)     23.        33.         33.          33.

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

                    HYDROGRAPH AT STATION    COMB4
                      FOR PLAN 5, RATIO = 1.00

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR      24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     291.      12.25                  52.         18.         17.          17.
                        (INCHES)     7.880      10.891      10.891       10.891
                         (AC-FT)      26.         36.         36.          36.

                        CUMULATIVE AREA =      .06 SQ MI


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


            **************
            *            *
 262 KK     *        P5  *
            *            *
            **************


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

 263 KP        PLAN  1 FOR STATION        P5
                          TRIANGULAR DISTRIBUTION 2-YRS STORM

               SUBBASIN RUNOFF DATA

 264 BA          SUBBASIN CHARACTERISTICS
                      TAREA          .02  SUBBASIN AREA

                 PRECIPITATION DATA

     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    1.04    2.10    2.50    2.70    3.30    4.00    4.60     .00     .00     .00     .00

                                                  STORM AREA =      .02

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

 266 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG          .08  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                  7 END-OF-PERIOD ORDINATES
                 55.       56.       18.        6.        2.        1.        0.

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

                    HYDROGRAPH AT STATION        P5
                      FOR PLAN 1, RATIO = 1.00

   TOTAL RAINFALL -    4.60, TOTAL LOSS =      .58, TOTAL EXCESS =     4.02

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR      24.92-HR
+   (CFS)       (HR)
                          (CFS)
+      47.      12.08                   6.          2.          2.           2.
                        (INCHES)     3.110       4.023       4.023        4.023
                         (AC-FT)       3.          4.          4.           4.

                        CUMULATIVE AREA =      .02 SQ MI

     ***            ***            ***            ***            ***
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                    HYDROGRAPH AT STATION        P5
                      FOR PLAN 1, RATIO - 1.00

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR        24-HR        72-HR      24.92-HR
+   (CFS)       (HR)
                          (CFS)
+      47.      12.08                 6.           2.           2.           2.
                        (INCHES)    3.110       4.023        4.023        4.023
                         (AC-FT)      3.           4.           4.           4.

                        CUMULATIVE AREA -      .02 SQ MI


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

270 KP          PLAN  2 FOR STATION        P5
                              TRIANGULAR DISTRIBUTION 10-YRS STORM

                SUBBASIN RUNOFF DATA

264 BA            SUBBASIN CHARACTERISTICS
                       TAREA          .02  SUBBASIN AREA

                  PRECIPITATION DATA

272 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
                    .55    1.31    3.00    3.70    4.10    5.40    6.60    7.60     .00     .00     .00     .00

                                                  STORM AREA -      .02

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

   UD             SCS DIMENSIONLESS UNITGRAPH
                       TLAG          .08  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                  7 END-OF-PERIOD ORDINATES
                 55.       56.       18.        6.         2.         1.         0.

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

                    HYDROGRAPH AT STATION        P5
                      FOR PLAN 2, RATIO = 1.00

   TOTAL RAINFALL -    7.60, TOTAL LOSS =      .60, TOTAL EXCESS =     7.00

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR        24-HR        72-HR      24.92-HR
+   (CFS)       (HR)
                          (CFS)
+      62.      12.08                10.           3.           3.           3.
                        (INCHES)    5.251       7.003        7.003        7.003
                         (AC-FT)      5.           7.           7.           7.

                        CUMULATIVE AREA -      .02 SQ MI

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

                    HYDROGRAPH AT STATION        P5
                      FOR PLAN 2, RATIO = 1.00

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR        24-HR        72-HR      24.92-HR
+   (CFS)       (HR)
                          (CFS)
+      62.      12.08                10.           3.           3.           3.
                        (INCHES)    5.251       7.003        7.003        7.003
                         (AC-FT)      5.           7.           7.           7.

                        CUMULATIVE AREA        .02 SQ MI
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     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***     ***

273 KP        PLAN  3 FOR STATION        P5
                          TRIANGULAR DISTRIBUTION 25-YRS STORM

              SUBBASIN RUNOFF DATA

264 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .02  SUBBASIN AREA

                PRECIPITATION DATA

275 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
                  .61    1.47    3.50   4.50    5.10    6.30    7.70    9.40     .00     .00     .00     .00

                                                  STORM AREA =      .02

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

266 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .08  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                  7 END-OF-PERIOD ORDINATES
                55.       56.       18.        6.        2.        1.        0.

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

                      HYDROGRAPH AT STATION        P5
                        FOR PLAN 3, RATIO = 1.00

 TOTAL RAINFALL =    9.40, TOTAL LOSS =     .60, TOTAL EXCESS =    8.80

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)      (HR)
                          (CFS)
+     70.     12.08                   12.          4.          4.          4.
                        (INCHES)    6.192       8.796       8.796       8.796
                         (AC-FT)       6.          8.          8.          8.

                      CUMULATIVE AREA =      .02 SQ MI

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

                      HYDROGRAPH AT STATION        P5
                        FOR PLAN 3, RATIO = 1.00

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)      (HR)
                          (CFS)
+     70.     12.08                   12.          4.          4.          4.
                        (INCHES)    6.192       8.796       8.796       8.796
                         (AC-FT)       6.          8.          8.          8.

                      CUMULATIVE AREA =      .02 SQ MI

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

276 KP        PLAN  4 FOR STATION        P5
                          TRIANGULAR DISTRIBUTION 50-YRS STORM

              SUBBASIN RUNOFF DATA

264 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .02  SUBBASIN AREA

                PRECIPITATION DATA
```

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
.64	1.55	3.80	5.00	5.20	7.00	8.70	10.50	.00	.00	.00	.00

STORM AREA = .02

265 LS SCS LOSS RATE

STRTL	.11	INITIAL ABSTRACTION
CRVNBR	95.00	CURVE NUMBER
RTIMP	.00	PERCENT IMPERVIOUS AREA

266 UD SCS DIMENSIONLESS UNITGRAPH

TLAG	.08	LAG

***

UNIT HYDROGRAPH
7 END-OF-PERIOD ORDINATES

55. 56. 18. 6. 2. 1. 0.

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

HYDROGRAPH AT STATION P5
FOR PLAN 4, RATIO = 1.00

TOTAL RAINFALL = 10.50, TOTAL LOSS = .61, TOTAL EXCESS = 9.89

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	13.	5.	5.	5.
+ 74.	12.08	(INCHES)	6.892	9.894	9.894	9.894
		(AC-FT)	7.	9.	9.	9.

CUMULATIVE AREA = .02 SQ MI

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

HYDROGRAPH AT STATION P5
FOR PLAN 4, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	13.	5.	5.	5.
+ 74.	12.08	(INCHES)	6.892	9.894	9.894	9.894
		(AC-FT)	7.	9.	9.	9.

CUMULATIVE AREA = .02 SQ MI

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

279 KP PLAN 5 FOR STATION P5
TRIANGULAR DISTRIBUTION 100-YRS STORM

SUBBASIN RUNOFF DATA

264 BA SUBBASIN CHARACTERISTICS

TAREA	.02	SUBBASIN AREA

PRECIPITATION DATA

281 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
.99	2.15	4.40	5.20	6.10	8.00	9.70	11.50	.00	.00	.00	.00

STORM AREA = .02

265 LS SCS LOSS RATE

STRTL	.11	INITIAL ABSTRACTION
CRVNBR	95.00	CURVE NUMBER
RTIMP	.00	PERCENT IMPERVIOUS AREA

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266 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .08  LAG

                                                                  ***

                                                          UNIT HYDROGRAPH
                                                      7 END-OF-PERIOD ORDINATES
                55.       56.       18.        6.        2.        1.        0.

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

                        HYDROGRAPH AT STATION        P5
                          FOR PLAN 5, 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)
+    102.     12.08                    15.          5.          5.           5.
                        (INCHES)     7.888      10.891      10.891       10.891
                         (AC-FT)       7.         10.         10.          10.

                        CUMULATIVE AREA =     .02 SQ MI

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

                        HYDROGRAPH AT STATION        P5
                          FOR PLAN 5, RATIO = 1.00

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                          (CFS)
+    102.     12.08                    15.          5.          5.           5.
                        (INCHES)     7.888      10.891      10.891       10.891
                         (AC-FT)       7.         10.         10.          10.

                        CUMULATIVE AREA =     .02 SQ MI


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


            **************
            *            *
282 KK      *        P6  *
            *            *
            **************


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

283 KP        PLAN  1 FOR STATION        P6
                          TRIANGULAR DISTRIBUTION 2-YRS STORM

              SUBBASIN RUNOFF DATA

284 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .02  SUBBASIN AREA

                PRECIPITATION DATA

289 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    1.04    2.10    2.50    2.70    3.30    4.00    4.60     .00     .00     .00     .00

                                                  STORM AREA =      .02

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

     D          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .20  LAG
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                                                                    ***

                                                          UNIT HYDROGRAPH
                                                     14 END-OF-PERIOD ORDINATES
              9.       29.       36.       29.       16.        9.        5.        3.        2.        1.
              1.        0.        0.        0.

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

                        HYDROGRAPH AT STATION       P6
                          FOR PLAN 1, RATIO - 1.00

   TOTAL RAINFALL -    4.60, TOTAL LOSS -     .58, TOTAL EXCESS -    4.02

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     39.      12.25                    6.          2.          2.          2.
                        (INCHES)     3.109       4.023       4.023       4.023
                         (AC-FT)       3.          4.          4.          4.

                        CUMULATIVE AREA =     .02 SQ MI

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

                        HYDROGRAPH AT STATION       P6
                          FOR PLAN 1, RATIO - 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     39.      12.25                    6.          2.          2.          2.
                        (INCHES)     3.109       4.023       4.023       4.023
                         (AC-FT)       3.          4.          4.          4.

                        CUMULATIVE AREA =     .02 SQ MI

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

290 KP        PLAN  2 FOR STATION       P6
                          TRIANGULAR DISTRIBUTION 10-YRS STORM

              SUBBASIN RUNOFF DATA

284 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .02  SUBBASIN AREA

                PRECIPITATION DATA

292 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
                  .55    1.31    3.00    3.70    4.10    5.40    6.60    7.60     .00     .00     .00     .00

                                                  STORM AREA =     .02

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

286 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .20  LAG

                                                                    ***

                                                          UNIT HYDROGRAPH
                                                     14 END-OF-PERIOD ORDINATES
              9.       29.       36.       29.       16.        9.        5.        3.        2.        1.
              1.        0.        0.        0.

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

                        HYDROGRAPH AT STATION       P6
                          FOR PLAN 2, RATIO - 1.00
```

TOTAL RAINFALL = 7.60, TOTAL LOSS = .60, TOTAL EXCESS = 7.00

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+		(CFS)				
+ 52.	12.25		10.	3.	3.	3.
		(INCHES)	5.245	7.003	7.003	7.003
		(AC-FT)	5.	7.	7.	7.

CUMULATIVE AREA = .02 SQ MI

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

HYDROGRAPH AT STATION P6
FOR PLAN 2, RATIO = 1.00

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+		(CFS)				
+ 52.	12.25		10.	3.	3.	3.
		(INCHES)	5.245	7.003	7.003	7.003
		(AC-FT)	5.	7.	7.	7.

CUMULATIVE AREA = .02 SQ MI

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

293 KP PLAN 3 FOR STATION P6
TRIANGULAR DISTRIBUTION 25-YRS STORM

SUBBASIN RUNOFF DATA

284 BA SUBBASIN CHARACTERISTICS
TAREA .02 SUBBASIN AREA

PRECIPITATION DATA

295 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
.61	1.47	3.50	4.50	5.10	6.30	7.70	9.40	.00	.00	.00	.00

STORM AREA = .02

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

286 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .20 LAG

***

UNIT HYDROGRAPH
14 END-OF-PERIOD ORDINATES

9.	29.	36.	29.	16.	9.	5.	3.	2.	1.
1.	0.	0.	0.						

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

HYDROGRAPH AT STATION P6
FOR PLAN 3, RATIO = 1.00

TOTAL RAINFALL = 9.40, TOTAL LOSS = .60, TOTAL EXCESS = 8.80

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+		(CFS)				
+ 59.	12.25		12.	4.	4.	4.
		(INCHES)	6.189	8.796	8.796	8.796
		(AC-FT)	6.	8.	8.	8.

CUMULATIVE AREA .02 SQ MI

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

                HYDROGRAPH AT STATION       P6
                  FOR PLAN 3, RATIO = 1.00

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                          (CFS)
+     59.     12.25                  12.          4.          4.           4.
                        (INCHES)    6.189       8.796       8.796        8.796
                         (AC-FT)      6.          8.          8.           8.

                        CUMULATIVE AREA =      .02 SQ MI


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

 296 KP        PLAN  4 FOR STATION       P6
                          TRIANGULAR DISTRIBUTION 50-YRS STORM

               SUBBASIN RUNOFF DATA

 284 BA          SUBBASIN CHARACTERISTICS
                      TAREA          .02  SUBBASIN AREA

                 PRECIPITATION DATA

 298 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
                   .64    1.55    3.80   5.00    5.20    7.00    8.70   10.50     .00     .00     .00     .00

                                                  STORM AREA =      .02

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

 286 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .20  LAG

                                                        ***

                                                   UNIT HYDROGRAPH
                                              14 END-OF-PERIOD ORDINATES
                 9.      29.      36.      29.      16.       9.       5.       3.       2.       1.
                 1.       0.       0.       0.

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

                HYDROGRAPH AT STATION       P6
                  FOR PLAN 4, RATIO = 1.00

   TOTAL RAINFALL =   10.50, TOTAL LOSS =     .61, TOTAL EXCESS =     9.89

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                          (CFS)
+     63.     12.25                  13.          5.          5.           5.
                        (INCHES)    6.883       9.893       9.893        9.893
                         (AC-FT)      7.          9.          9.           9.

                        CUMULATIVE AREA =      .02 SQ MI

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

                HYDROGRAPH AT STATION       P6
                  FOR PLAN 4, RATIO = 1.00

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                          (CFS)
+     63.     12.25                  13.          5.          5.           5.
```

```
                    (INCHES)      6.883       9.893       9.893       9.893
                     (AC-FT)         7.          9.          9.          9.

                    CUMULATIVE AREA =      .02 SQ MI

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

299 KP        PLAN  5 FOR STATION       P6
                          TRIANGULAR DISTRIBUTION 100-YRS STORM

              SUBBASIN RUNOFF DATA

284 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .02  SUBBASIN AREA

                PRECIPITATION DATA

301 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
                  .99    2.15    4.40   5.20    6.10    8.00    9.70   11.50     .00     .00     .00     .00

                                                  STORM AREA =      .02

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

286 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .20  LAG

                                                        ***

                                                   UNIT HYDROGRAPH
                                              14 END-OF-PERIOD ORDINATES
                9.       29.       36.       29.       16.        9.        5.        3.        2.        1.
                1.        0.        0.        0.

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

                     HYDROGRAPH AT STATION       P6
                       FOR PLAN 5, 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)
+     83.     12.25                   15.          5.          5.          5.
                        (INCHES)   7.878      10.891      10.891      10.891
                         (AC-FT)      8.         10.         10.         10.

                    CUMULATIVE AREA =      .02 SQ MI

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

                     HYDROGRAPH AT STATION       P6
                       FOR PLAN 5, RATIO = 1.00

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                          (CFS)
+     83.     12.25                   15.          5.          5.          5.
                        (INCHES)   7.878      10.891      10.891      10.891
                         (AC-FT)      8.         10.         10.         10.

                    CUMULATIVE AREA =      .02 SQ MI

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

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          *            *
KK        *      E4    *
          *            *
          **************

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

303 KP        PLAN  1 FOR STATION       E4
                          TRIANGULAR DISTRIBUTION 2-YRS STORM

              SUBBASIN RUNOFF DATA

304 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .01  SUBBASIN AREA

                PRECIPITATION DATA

309 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    1.04    2.10    2.50    2.70    3.30    4.00    4.60     .00     .00     .00     .00

                                                  STORM AREA -      .01

305 LS          SCS LOSS RATE
                     STRTL          .76  INITIAL ABSTRACTION
                    CRVNBR        72.49  CURVE NUMBER
                     RTIMP          .00  PERCENT IMPERVIOUS AREA

306 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .03  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                  5 END-OF-PERIOD ORDINATES
              81.       23.        4.        1.        0.

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

                     HYDROGRAPH AT STATION       E4
                       FOR PLAN 1, RATIO = 1.00

  TOTAL RAINFALL -    4.60, TOTAL LOSS -    2.67, TOTAL EXCESS -    1.93

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                          (CFS)
+    23.      12.08                     2.          1.          1.           1.
                        (INCHES)     1.622       1.932       1.932        1.932
                         (AC-FT)        1.          1.          1.           1.

                     CUMULATIVE AREA -      .01 SQ MI

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

                     HYDROGRAPH AT STATION       E4
                       FOR PLAN 1, RATIO = 1.00

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                          (CFS)
+    23.      12.08                     2.          1.          1.           1.
                        (INCHES)     1.622       1.932       1.932        1.932
                         (AC-FT)        1.          1.          1.           1.

                     CUMULATIVE AREA -      .01 SQ MI

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

310 KP        PLAN  2 FOR STATION       E4
                          TRIANGULAR DISTRIBUTION 10-YRS STORM

              SUBBASIN RUNOFF DATA
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304 DA          SUBBASIN CHARACTERISTICS
                     TAREA          .01  SUBBASIN AREA

                PRECIPITATION DATA

312 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
                  .55    1.31    3.00    3.70    4.10    5.40    6.60    7.60     .00     .00     .00     .00

                                                  STORM AREA =      .01

305 LS          SCS LOSS RATE
                     STRTL          .76  INITIAL ABSTRACTION
                    CRVNBR        72.49  CURVE NUMBER
                     RTIMP          .00  PERCENT IMPERVIOUS AREA

306 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .03  LAG

                                                                  ***

                                                          UNIT HYDROGRAPH
                                                       5 END-OF-PERIOD ORDINATES
                81.       23.        4.        1.        0.

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

                       HYDROGRAPH AT STATION       E4
                         FOR PLAN 2, RATIO = 1.00

   TOTAL RAINFALL =    7.60, TOTAL LOSS =    3.20, TOTAL EXCESS =    4.40

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+  (CFS)       (HR)
                          (CFS)
+     39.     12.08                   5.          2.          2.          2.
                       (INCHES)    3.543       4.400       4.400       4.400
                        (AC-FT)       3.          3.          3.          3.

                       CUMULATIVE AREA =     .01 SQ MI

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

                       HYDROGRAPH AT STATION       E4
                         FOR PLAN 2, RATIO = 1.00

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+  (CFS)       (HR)
                          (CFS)
+     39.     12.08                   5.          2.          2.          2.
                       (INCHES)    3.543       4.400       4.400       4.400
                        (AC-FT)       3.          3.          3.          3.

                       CUMULATIVE AREA =     .01 SQ MI


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

313 KP          PLAN  3 FOR STATION       E4
                                TRIANGULAR DISTRIBUTION 25-YRS STORM

                SUBBASIN RUNOFF DATA

304 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .01  SUBBASIN AREA

                PRECIPITATION DATA

315 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
                  .61    1.47    3.50    4.50    5.10    6.30    7.70    9.40     .00     .00     .00     .00

                                                  STORM AREA =      .01

    LS          SCS LOSS RATE
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```
                STRTL          .76  INITIAL ABSTRACTION
               CRVNBR        72.49  CURVE NUMBER
                RTIMP          .00  PERCENT IMPERVIOUS AREA

306 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG          .03  LAG

                                                    ***

                                                UNIT HYDROGRAPH
                                             5 END-OF-PERIOD ORDINATES
          81.       23.        4.        1.        0.

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

                  HYDROGRAPH AT STATION       E4
                    FOR PLAN 3, RATIO = 1.00

  TOTAL RAINFALL =    9.40, TOTAL LOSS =    3.40, TOTAL EXCESS =    6.00

 PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                         (CFS)
+    48.      12.08                 7.          2.          2.           2.
                       (INCHES)  4.596       6.004       6.004        6.004
                        (AC-FT)     3.          4.          4.           4.

                  CUMULATIVE AREA =     .01 SQ MI

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

                  HYDROGRAPH AT STATION       E4
                    FOR PLAN 3, RATIO = 1.00

 PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                         (CFS)
    48.      12.08                 7.          2.          2.           2.
                       (INCHES)  4.596       6.004       6.004        6.004
                        (AC-FT)     3.          4.          4.           4.

                  CUMULATIVE AREA =     .01 SQ MI

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

316 KP        PLAN  4 FOR STATION       E4
                         TRIANGULAR DISTRIBUTION 50-YRS STORM

              SUBBASIN RUNOFF DATA

304 BA         SUBBASIN CHARACTERISTICS
                TAREA          .01  SUBBASIN AREA

               PRECIPITATION DATA

318 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
                 .64    1.55    3.80    5.00    5.20    7.00    8.70   10.50     .00     .00     .00     .00

                                          STORM AREA =     .01

305 LS         SCS LOSS RATE
                STRTL          .76  INITIAL ABSTRACTION
               CRVNBR        72.49  CURVE NUMBER
                RTIMP          .00  PERCENT IMPERVIOUS AREA

306 UD         SCS DIMENSIONLESS UNITGRAPH
                TLAG          .03  LAG

                                                    ***

                                                UNIT HYDROGRAPH
                                             5 END-OF-PERIOD ORDINATES
          81.       23.        4.        1.        0.
```

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

                        HYDROGRAPH AT STATION        E4
                          FOR PLAN 4, RATIO = 1.00

   TOTAL RAINFALL -   10.50, TOTAL LOSS      3.49, TOTAL EXCESS -     7.01

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR      24.92-HR
+  (CFS)        (HR)
                          (CFS)
+     52.      12.08                    8.          3.          3.           3.
                        (INCHES)     5.278       7.010       7.010        7.010
                         (AC-FT)        4.          5.          5.           5.

                        CUMULATIVE AREA =      .01 SQ MI

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

                        HYDROGRAPH AT STATION        E4
                          FOR PLAN 4, RATIO = 1.00

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR      24.92-HR
+  (CFS)        (HR)
                          (CFS)
+     52.      12.08                    8.          3.          3.           3.
                        (INCHES)     5.278       7.010       7.010        7.010
                         (AC-FT)        4.          5.          5.           5.

                        CUMULATIVE AREA -      .01 SQ MI


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

 319 KP        PLAN  5 FOR STATION        E4
                          TRIANGULAR DISTRIBUTION 100-YRS STORM

               SUBBASIN RUNOFF DATA

 304 BA         SUBBASIN CHARACTERISTICS
                     TAREA          .01  SUBBASIN AREA

                PRECIPITATION DATA

 321 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
                  .99    2.15    4.40    5.20    6.10    8.00    9.70   11.50     .00     .00     .00     .00

                                                  STORM AREA =      .01

 305 LS         SCS LOSS RATE
                     STRTL          .76  INITIAL ABSTRACTION
                    CRVNBR        72.49  CURVE NUMBER
                     RTIMP          .00  PERCENT IMPERVIOUS AREA

 306 UD         SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .03  LAG

                                                                  ***

                                                          UNIT HYDROGRAPH
                                                       5 END-OF-PERIOD ORDINATES
                81.       23.        4.        1.        0.

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

                        HYDROGRAPH AT STATION        E4
                          FOR PLAN 5, RATIO = 1.00

   TOTAL RAINFALL -   11.50, TOTAL LOSS -     3.56, TOTAL EXCESS -     7.94

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR      24.92-HR
+  (CFS)        (HR)
                          (CFS)
     79.      12.08                    9.          3.          3.           3.
                        (INCHES)     6.170       7.937       7.937        7.937
```

```
                    (AC-FT)        5.          6.          6.          6.

                    CUMULATIVE AREA =      .01 SQ MI

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

                     HYDROGRAPH AT STATION        E4
                       FOR PLAN 5, RATIO = 1.00

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                         (CFS)
+     79.     12.08                  9.          3.          3.          3.
                       (INCHES)   6.170       7.937       7.937       7.937
                        (AC-FT)      5.          6.          6.          6.

                    CUMULATIVE AREA =      .01 SQ MI


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


           **************
           *            *
 322 KK    *        E5  *
           *            *
           **************


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

 323 KP        PLAN  1 FOR STATION        E5
                          TRIANGULAR DISTRIBUTION 2-YRS STORM

               SUBBASIN RUNOFF DATA

     BA          SUBBASIN CHARACTERISTICS
                      TAREA          .02  SUBBASIN AREA

                 PRECIPITATION DATA

 329 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    1.04    2.10    2.50    2.70    3.30    4.00    4.60     .00     .00     .00     .00

                                                  STORM AREA =      .02

 325 LS          SCS LOSS RATE
                      STRTL          .65  INITIAL ABSTRACTION
                     CRVNBR        75.57  CURVE NUMBER
                      RTIMP          .00  PERCENT IMPERVIOUS AREA

 326 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .13  LAG

                                                        ***

                                                   UNIT HYDROGRAPH
                                              10 END-OF-PERIOD ORDINATES
                28.       62.       45.       19.        9.        4.        2.        1.        0.        0.

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

                     HYDROGRAPH AT STATION        E5
                       FOR PLAN 1, RATIO = 1.00

   TOTAL RAINFALL =    4.60, TOTAL LOSS =    2.43, TOTAL EXCESS =    2.17

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                         (CFS)
+     31.     12.17                  4.          1.          1.          1.
                       (INCHES)   1.818       2.175       2.175       2.175
                        (AC-FT)      2.          3.          3.          3.
```

CUMULATIVE AREA = .02 SQ MI

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

HYDROGRAPH AT STATION E5
FOR PLAN 1, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 31.	12.17		4.	1.	1.	1.
		(INCHES)	1.818	2.175	2.175	2.175
		(AC-FT)	2.	3.	3.	3.

CUMULATIVE AREA = .02 SQ MI

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

330 KP PLAN 2 FOR STATION E5
TRIANGULAR DISTRIBUTION 10-YRS STORM

SUBBASIN RUNOFF DATA

324 BA SUBBASIN CHARACTERISTICS
TAREA .02 SUBBASIN AREA

PRECIPITATION DATA

332 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
.55	1.31	3.00	3.70	4.10	5.40	6.60	7.60	.00	.00	.00	.00

STORM AREA = .02

325 LS SCS LOSS RATE
STRTL .65 INITIAL ABSTRACTION
CRVNBR 75.57 CURVE NUMBER
RTIMP .00 PERCENT IMPERVIOUS AREA

326 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .13 LAG

***

UNIT HYDROGRAPH
10 END-OF-PERIOD ORDINATES

28. 62. 45. 19. 9. 4. 2. 1. 0. 0.

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

HYDROGRAPH AT STATION E5
FOR PLAN 2, RATIO = 1.00

TOTAL RAINFALL = 7.60, TOTAL LOSS = 2.85, TOTAL EXCESS = 4.75

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 53.	12.17		9.	3.	3.	3.
		(INCHES)	3.797	4.746	4.746	4.746
		(AC-FT)	4.	6.	6.	6.

CUMULATIVE AREA = .02 SQ MI

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

HYDROGRAPH AT STATION E5
FOR PLAN 2, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 53.	12.17		9.	3.	3.	3.

```
                    (INCHES)      3.797       4.746       4.746       4.746
                    (AC-FT)        4.          6.          6.          6.

                    CUMULATIVE AREA =      .02 SQ MI

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

333 KP        PLAN  3 FOR STATION        E5
                          TRIANGULAR DISTRIBUTION 25-YRS STORM

              SUBBASIN RUNOFF DATA

324 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .02  SUBBASIN AREA

                PRECIPITATION DATA

                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
335 PH                                  ..............  TP-40  ..............  ........... TP-49 ...........
                ..... 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
                 .61    1.47    3.50    4.50    5.10    6.30    7.70    9.40    .00     .00     .00     .00

                                                STORM AREA =      .02

325 LS          SCS LOSS RATE
                     STRTL          .65  INITIAL ABSTRACTION
                    CRVNBR        75.57  CURVE NUMBER
                     RTIMP          .00  PERCENT IMPERVIOUS AREA

326 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .13  LAG

                                                  ***

                                                UNIT HYDROGRAPH
                                          10 END-OF-PERIOD ORDINATES
                28.     62.     45.     19.      9.      4.      2.      1.      0.      0.

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

                          HYDROGRAPH AT STATION        E5
                            FOR PLAN 3, RATIO = 1.00

     TOTAL RAINFALL =    9.40, TOTAL LOSS =    3.01, TOTAL EXCESS =    6.39

                                          MAXIMUM AVERAGE FLOW
   PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
+   (CFS)        (HR)
                                    (CFS)
                                     12.        4.         4.         4.
+     65.       12.17              (INCHES)   4.863      6.392      6.392      6.392
                                    (AC-FT)     6.         8.         8.         8.

                          CUMULATIVE AREA =      .02 SQ MI

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

                          HYDROGRAPH AT STATION        E5
                            FOR PLAN 3, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
   PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
+   (CFS)        (HR)
                                    (CFS)
                                     12.        4.         4.         4.
+     65.       12.17              (INCHES)   4.863      6.392      6.392      6.392
                                    (AC-FT)     6.         8.         8.         8.

                          CUMULATIVE AREA =      .02 SQ MI

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

336 KP        PLAN  4 FOR STATION        E5
                          TRIANGULAR DISTRIBUTION 50-YRS STORM

              SUBBASIN RUNOFF DATA
```

```
324 BA        SUBBASIN CHARACTERISTICS
                    TAREA              .02  SUBBASIN AREA

              PRECIPITATION DATA
                                       DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
338 PH                                                                               ........... TP-49 ...........
              ..... HYDRO-35 ......  ............... TP-40 ...............          2-DAY    4-DAY    7-DAY  10-DAY
              5-MIN  15-MIN  60-MIN    2-HR     3-HR     6-HR    12-HR    24-HR      .00      .00      .00     .00
                .64    1.55    3.80    5.00     5.20     7.00     8.70    10.50
                                                       STORM AREA =      .02

325 LS        SCS LOSS RATE
                    STRTL              .65  INITIAL ABSTRACTION
                    CRVNBR           75.57  CURVE NUMBER
                    RTIMP              .00  PERCENT IMPERVIOUS AREA

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

                                                         UNIT HYDROGRAPH
                                                   10 END-OF-PERIOD ORDINATES
              28.        62.        45.        19.        9.        4.        2.        1.        0.        0.

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

                        HYDROGRAPH AT STATION         E5
                          FOR PLAN 4, RATIO = 1.00

   TOTAL RAINFALL =   10.50, TOTAL LOSS =    3.08, TOTAL EXCESS =     7.42

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR        24-HR       72-HR      24.92-HR
   (CFS)        (HR)
                          (CFS)
     71.       12.17                  13.           4.          4.          4.
                        (INCHES)     5.545       7.419       7.419       7.419
                        (AC-FT)         7.          9.          9.          9.

                        CUMULATIVE AREA =      .02 SQ MI

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

                        HYDROGRAPH AT STATION         E5
                          FOR PLAN 4, RATIO = 1.00

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR        24-HR       72-HR      24.92-HR
+   (CFS)        (HR)
                          (CFS)
+     71.       12.17                  13.           4.          4.          4.
                        (INCHES)     5.545       7.419       7.419       7.419
                        (AC-FT)         7.          9.          9.          9.

                        CUMULATIVE AREA =      .02 SQ MI

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

339 KP        PLAN  5 FOR STATION        E5
                            TRIANGULAR DISTRIBUTION 100-YRS STORM

              SUBBASIN RUNOFF DATA

324 BA          SUBBASIN CHARACTERISTICS
                      TAREA              .02  SUBBASIN AREA

              PRECIPITATION DATA
                                       DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
341 PH                                                                               ........... TP-49 ...........
              ..... HYDRO-35 ......  ............... TP-40 ...............          2-DAY    4-DAY    7-DAY  10-DAY
              5-MIN  15-MIN  60-MIN    2-HR     3-HR     6-HR    12-HR    24-HR      .00      .00      .00     .00
                .89    2.15    4.40    5.20     6.10     8.00     9.70    11.50
                                                       STORM AREA =      .02
```

```
325 LS          SCS LOSS RATE
                     STRTL        .65  INITIAL ABSTRACTION
                     CRVNBR     75.57  CURVE NUMBER
                     RTIMP        .00  PERCENT IMPERVIOUS AREA

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

                                                UNIT HYDROGRAPH
                                            10 END-OF-PERIOD ORDINATES
                28.      62.      45.      19.      9.       4.       2.       1.       0.       0.
                                                    ***
        ***             ***      ***      ***
                 HYDROGRAPH AT STATION        E5
                   FOR PLAN 5, RATIO = 1.00

   TOTAL RAINFALL =   11.50, TOTAL LOSS =    3.14, TOTAL EXCESS =    8.36

                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
+   (CFS)       (HR)      (CFS)      15.        5.         5.         5.
+     99.       12.17   (INCHES)   6.467     8.362      8.362      8.362
                        (AC-FT)      8.        10.        10.        10.

                 CUMULATIVE AREA =     .02 SQ MI

                                                    ***
        ***             ***      ***      ***
                 HYDROGRAPH AT STATION        E5
                   FOR PLAN 5, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
+   (CFS)       (HR)      (CFS)      15.        5.         5.         5.
+     99.       12.17   (INCHES)   6.467     8.362      8.362      8.362
                        (AC-FT)      8.        10.        10.        10.

                 CUMULATIVE AREA =     .02 SQ MI

1
              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
                                                                  RATIO 1
  OPERATION        STATION     AREA    PLAN                        1.00

  HYDROGRAPH AT     E3A        .03      1     FLOW                 52.
+                                              TIME               12.08
                                           2     FLOW                 87.
                                              TIME               12.08
                                           3     FLOW                106.
                                              TIME               12.08
                                           4     FLOW                116.
                                              TIME               12.08
                                           5     FLOW                165.
                                              TIME               12.08

  HYDROGRAPH AT      D3        .01      1     FLOW                 29.
+                                              TIME               12.08
                                           2     FLOW                 38.
                                              TIME               12.08
                                           3     FLOW                 43.
                                              TIME               12.08
                                           4     FLOW                 45.
                                              TIME               12.08
                                           5     FLOW                 62.
                                              TIME               12.08
```

2 COMBINED AT +	COMB1	.04	1	FLOW	81.
				TIME	12.08
			2	FLOW	125.
				TIME	12.08
			3	FLOW	149.
				TIME	12.08
			4	FLOW	161.
				TIME	12.08
			5	FLOW	227.
				TIME	12.08
HYDROGRAPH AT +	E3B	.02	1	FLOW	51.
				TIME	12.08
			2	FLOW	76.
				TIME	12.08
			3	FLOW	90.
				TIME	12.08
			4	FLOW	97.
				TIME	12.08
			5	FLOW	144.
				TIME	12.08
2 COMBINED AT +	COMB2	.07	1	FLOW	132.
				TIME	12.08
			2	FLOW	201.
				TIME	12.08
			3	FLOW	238.
				TIME	12.08
			4	FLOW	258.
				TIME	12.08
			5	FLOW	371.
				TIME	12.08
YDROGRAPH AT +	E2	.87	1	FLOW	512.
				TIME	13.08
			2	FLOW	965.
				TIME	13.00
			3	FLOW	1231.
				TIME	13.00
			4	FLOW	1382.
				TIME	13.00
			5	FLOW	1607.
				TIME	13.00
HYDROGRAPH AT +	P2	.05	1	FLOW	100.
				TIME	12.25
			2	FLOW	134.
				TIME	12.25
			3	FLOW	154.
				TIME	12.25
			4	FLOW	164.
				TIME	12.25
			5	FLOW	214.
				TIME	12.25
HYDROGRAPH AT +	E1	.17	1	FLOW	175.
				TIME	12.33
			2	FLOW	323.
				TIME	12.33
			3	FLOW	404.
				TIME	12.33
			4	FLOW	449.
				TIME	12.33
			5	FLOW	585.
				TIME	12.33
HYDROGRAPH AT +	P1A	.05	1	FLOW	75.
				TIME	12.50
			2	FLOW	106.
				TIME	12.50
			3	FLOW	124.
				TIME	12.50
			4	FLOW	134.

				TIME	12.50
			5	FLOW	161.
				TIME	12.50
HYDROGRAPH AT +	P1B	.03	1	FLOW	47.
				TIME	12.42
			2	FLOW	67.
				TIME	12.42
			3	FLOW	78.
				TIME	12.42
			4	FLOW	84.
				TIME	12.42
			5	FLOW	102.
				TIME	12.42
HYDROGRAPH AT +	P7	.03	1	FLOW	77.
				TIME	12.17
			2	FLOW	103.
				TIME	12.17
			3	FLOW	117.
				TIME	12.17
			4	FLOW	125.
				TIME	12.17
			5	FLOW	167.
				TIME	12.17
3 COMBINED AT +	COMB 3	.11	1	FLOW	167.
				TIME	12.33
			2	FLOW	238.
				TIME	12.33
			3	FLOW	279.
				TIME	12.33
			4	FLOW	302.
				TIME	12.33
			5	FLOW	362.
				TIME	12.33
HYDROGRAPH AT +	P4A	.02	1	FLOW	48.
				TIME	12.25
			2	FLOW	65.
				TIME	12.25
			3	FLOW	74.
				TIME	12.25
			4	FLOW	79.
				TIME	12.25
			5	FLOW	104.
				TIME	12.25
HYDROGRAPH AT +	P4B	.02	1	FLOW	56.
				TIME	12.17
			2	FLOW	74.
				TIME	12.17
			3	FLOW	85.
				TIME	12.17
			4	FLOW	91.
				TIME	12.17
			5	FLOW	120.
				TIME	12.17
HYDROGRAPH AT +	P4C	.01	1	FLOW	34.
				TIME	12.17
			2	FLOW	45.
				TIME	12.17
			3	FLOW	51.
				TIME	12.17
			4	FLOW	55.
				TIME	12.17
			5	FLOW	73.
				TIME	12.17
3 COMBINED AT +	COMB4	.06	1	FLOW	136.
				TIME	12.25
			2	FLOW	181.
				TIME	12.17

			3	FLOW	207.
				TIME	12.17
			4	FLOW	222.
				TIME	12.17
			5	FLOW	291.
				TIME	12.25
HYDROGRAPH AT +	P5	.02	1	FLOW	47.
				TIME	12.08
			2	FLOW	62.
				TIME	12.08
			3	FLOW	70.
				TIME	12.08
			4	FLOW	74.
				TIME	12.08
			5	FLOW	102.
				TIME	12.08
HYDROGRAPH AT +	P6	.02	1	FLOW	39.
				TIME	12.25
			2	FLOW	52.
				TIME	12.25
			3	FLOW	59.
				TIME	12.25
			4	FLOW	63.
				TIME	12.25
			5	FLOW	83.
				TIME	12.25
HYDROGRAPH AT +	E4	.01	1	FLOW	23.
				TIME	12.08
			2	FLOW	39.
				TIME	12.08
			3	FLOW	48.
				TIME	12.08
			4	FLOW	52.
				TIME	12.08
			5	FLOW	79.
				TIME	12.08
HYDROGRAPH AT +	E5	.02	1	FLOW	31.
				TIME	12.17
			2	FLOW	53.
				TIME	12.17
			3	FLOW	65.
				TIME	12.17
			4	FLOW	71.
				TIME	12.17
			5	FLOW	99.
				TIME	12.17

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

APPENDIX D

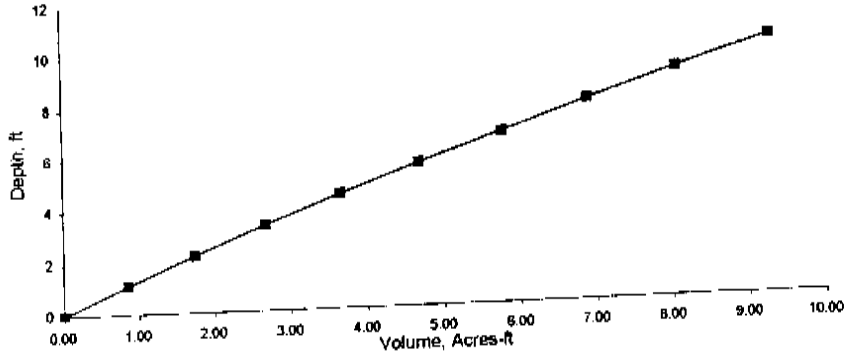
FLOW RATING CURVE FOR MITIGATION STRUCTURE

Project: Monte Verde Development
Vega Baja, Puerto Rico.
Description: Pond P1

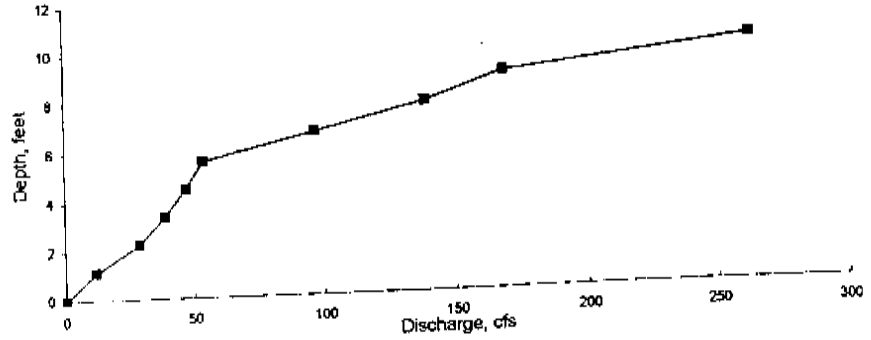
FLOW RATING CURVE

Structure	Head	m	0	0.34	0.68	1.02	1.36	1.7	2.04	2.38	2.72	3.06
		ft	0	1.1152	2.2304	3.3456	4.4608	5.576	6.6912	7.8064	8.9216	10.0368
ORIF #1	Diameter (feet)		2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
	Number		2	2	2	2	2	2	2	2	2	2
	Head over CL (feet)		-1.25	-0.1348	0.9604	2.0956	3.2108	4.326	5.4412	6.5564	7.6716	8.7868
	Discharge Coef		0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61
	Flow (cfs)		0	0	47.5856	69.5709	86.1153	99.8579	112.104	123.057	133.112	142.459
	Head over invert (feet)		0	1.1152	2.2304	3.3456	4.4608	5.576	6.6912	7.8064	8.9216	10.0368
	Velocity (fps)		0	0	9.69403	14.1728	17.5432	20.3632	22.83758	25.0689	27.1173	29.0214
ORIF #2	Invert El (m)		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
	(feet)		4.92	4.92	4.92	4.92	4.92	4.92	4.92	4.92	4.92	4.92
	Diameter (feet)		2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
	Number		2	2	2	2	2	2	2	2	2	2
	Head over CL (feet)		-6.32	-5.2048	-4.0896	-2.9744	-1.8592	-0.744	0.3712	1.4864	2.6016	3.7168
	Discharge Coef		0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61
	Flow (cfs)		0	0	0	0	0	0	36.72939	73.4983	97.2368	118.224
	Velocity (fps)		0	0	0	0	0	0	5.864949	11.9383	15.7915	18.875
Rect WEIR	Invert El (m)		2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
	(feet)		8.856	8.856	8.856	8.856	8.856	8.856	8.856	8.856	8.856	8.856
	Width (feet)		20	20	20	20	20	20	20	20	20	20
	Cc		0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
	Head over weir (feet)		-8.856	-7.7408	-6.6256	-5.5104	-4.3952	-3.28	-2.1648	-1.0496	0.0656	1.1808
	Flow (cfs)		0	0	0	0	0	0	0	0	0.93974	71.7654
	FLOW SUMMATION (cfs)		0	11.5674	28.7382	38.9611	47.0124	53.8736	96.66405	136.972	168.738	263.296
RECTANGULAR LAGOON												
	Lado A de la Base, ft		180	180	180	180	180	180	180	180	180	180
	Lado B de la Base, ft		180	180	180	180	180	180	180	180	180	180
	h (ft)		0	1.1152	2.2304	3.3456	4.4608	5.576	6.6912	7.8064	8.9216	10.0368
	Slope 1:		2	2	2	2	2	2	2	2	2	2
	Area (sqft)		32400	34026	35691	37397	39142	40927	42752	44616	46521	48465
	(acre)		0.74	0.78	0.82	0.86	0.90	0.94	0.98	1.02	1.07	1.11
	Volume, acre-ft		0.00	0.85	1.75	2.68	3.67	4.70	5.78	6.91	8.08	9.33
	Lado A del Tope		180	184.461	188.922	193.382	197.843	202.304	206.7648	211.226	215.686	220.147
	Lado B del Tope		180	184.461	188.922	193.382	197.843	202.304	206.7648	211.226	215.686	220.147

DEPTH-AREA CURVE



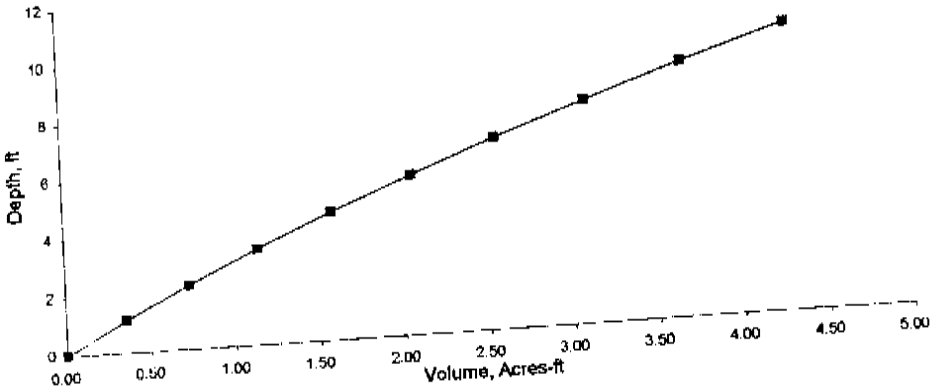
DEPTH-DISCHARGE CURVE



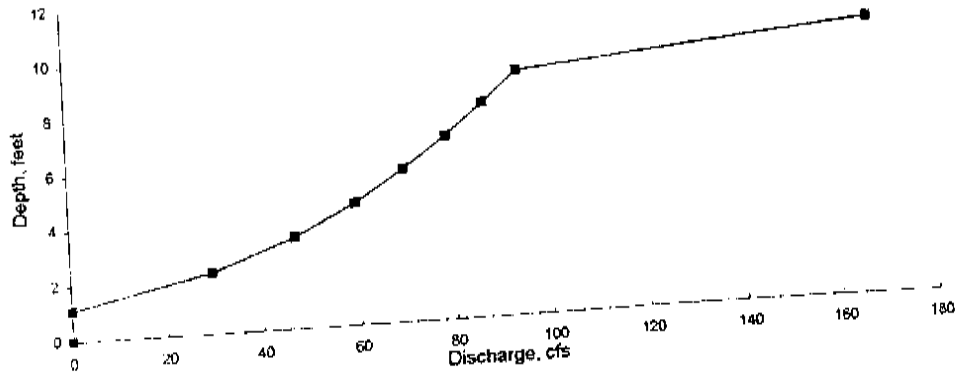
Project: Monte Verde Development
Vega Baja, Puerto Rico.
Description: Pond P2

FLOW RATING CURVE											
Structure	Head	m	0	0.34	0.68	1.02	1.36	1.7	2.04	2.38	2.72	3.06
		ft	0	1.1152	2.2304	3.3456	4.4608	5.576	6.6912	7.8064	8.9216	10.0368
ORIF #1	Diameter (feet)		3	3	3	3	3	3	3	3	3	3
	Number		1	1	1	1	1	1	1	1	1	1
	Head over CL (feet)		-1.5	-0.3848	0.7304	1.8456	2.9608	4.076	5.1912	6.3064	7.4216	8.5368
	Discharge Coef		0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61
	Flow (cfs)		0	0	29.5724	47.0083	59.5403	69.8591	78.83881	86.8954	94.266	101.101
	Head over invert (feet)		0	1.1152	2.2304	3.3456	4.4608	5.576	6.6912	7.8064	8.9216	10.0368
	Velocity (fps)		0	0	4.18363	6.6503	8.4232	9.88302	11.15338	12.2932	13.3359	14.3028
Rect WEIR	Invert El (m)		2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
	(feet)		9.184	9.184	9.184	9.184	9.184	9.184	9.184	9.184	9.184	9.184
	Width (feet)		30	30	30	30	30	30	30	30	30	30
	Cc		0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
	Head over weir (feet)		-9.184	-8.0688	-6.9536	-5.8384	-4.7232	-3.608	-2.4928	-1.3776	-0.2624	0.8528
	Flow (cfs)		0	0	0	0	0	0	0	0	0	66.0713
	FLOW SUMMATION (cfs)		0	0	29.5724	47.0083	59.5403	69.8591	78.83881	86.8954	94.266	167.172
RECTANGULAR LAGOON												
	Lado A de la Base, ft		115	115	115	115	115	115	115	115	115	115
	Lado B de la Base, ft		115	115	115	115	115	115	115	115	115	115
	h (ft)		0	1.1152	2.2304	3.3456	4.4608	5.576	6.6912	7.8064	8.9216	10.0368
	Slope 1:		2	2	2	2	2	2	2	2	2	2
	Area (sqft)		13225	14271	15357	16482	17647	18852	20097	21382	22706	24071
	(acre)		0.30	0.33	0.35	0.38	0.41	0.43	0.46	0.49	0.52	0.55
	Volume, acre-ft		0.00	0.35	0.73	1.14	1.58	2.06	2.56	3.10	3.68	4.30
	Lado A del Tope		115	119.461	123.922	128.382	132.843	137.304	141.7648	146.226	150.686	155.147
	Lado B del Tope		115	119.461	123.922	128.382	132.843	137.304	141.7648	146.226	150.686	155.147

DEPTH-AREA CURVE



DEPTH-DISCHARGE CURVE

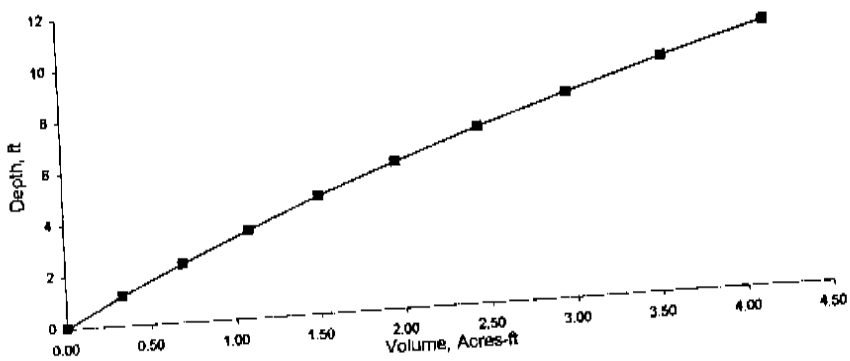


Project: Monte Verde Development
Vega Baja, Puerto Rico.
Description: Pond P4

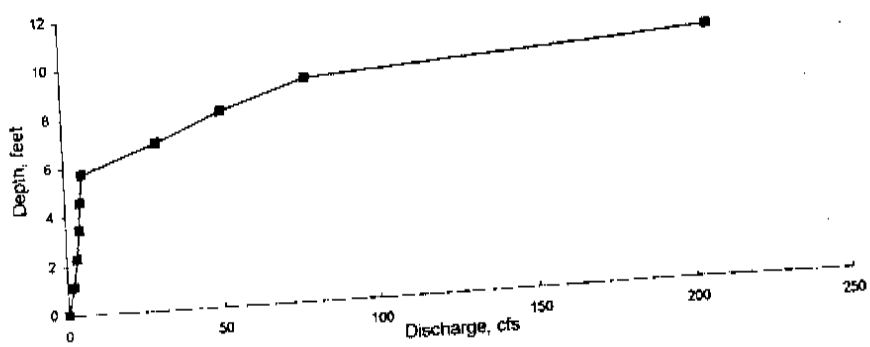
FLOW RATING CURVE

Structure	Head m	0	0.35	0.7	1.05	1.4	1.75	2.1	2.45	2.8	3.15
	ft	0	1.148	2.296	3.444	4.592	5.74	6.888	8.036	9.184	10.332
ORIF #1	Diameter (feet)	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
	Number	1	1	1	1	1	1	1	1	1	1
	Head over CL (feet)	-0.4	0.748	1.896	3.044	4.192	5.34	6.488	7.636	8.784	9.932
	Discharge Coef	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61
	Flow (cfs)	0	2.12811	3.38815	4.29305	5.03795	5.6861	6.267568	6.79949	7.29272	7.75465
	Head over invert (feet)	0	1.148	2.296	3.444	4.592	5.74	6.888	8.036	9.184	10.332
	Velocity (fps)	0	4.23373	6.7405	8.54073	10.0227	11.3121	12.4689	13.5271	14.5084	15.4273
ORIF #2	Invert El (m)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
	(feet)	4.92	4.92	4.92	4.92	4.92	4.92	4.92	4.92	4.92	4.92
	Diameter (feet)	3	3	3	3	3	3	3	3	3	3
	Number	1	1	1	1	1	1	1	1	1	1
	Head over CL (feet)	-8.42	-5.272	-4.124	-2.976	-1.828	-0.68	0.468	1.616	2.764	3.912
	Discharge Coef	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61
	Flow (cfs)	0	0	0	0	0	0	23.67168	43.9873	57.5275	68.4393
	Velocity (fps)	0	0	0	0	0	0	3.34885	6.22291	8.13845	9.68216
Rect WEIR	Invert El (m)	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
	(feet)	8.856	8.856	8.856	8.856	8.856	8.856	8.856	8.856	8.856	8.856
	Width (feet)	26	26	26	26	26	26	26	26	26	26
	Cc	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
	Head over weir (feet)	-8.856	-7.708	-6.56	-5.412	-4.264	-3.116	-1.968	-0.82	0.328	1.476
	Flow (cfs)	0	0	0	0	0	0	0	0	13.6586	130.364
	FLOW SUMMATION (cfs)	0	2.12811	3.38815	4.29305	5.03795	5.6861	29.93925	50.7867	78.4787	206.575
				1124.7							
RECTANGULAR LAGOON	Lado A de la Base, ft	110	110	110	110	110	110	110	110	110	110
	Lado B de la Base, ft	110	110	110	110	110	110	110	110	110	110
	h (ft)	0	1.148	2.296	3.444	4.592	5.74	6.888	8.036	9.184	10.332
	Slope 1:	2	2	2	2	2	2	2	2	2	2
	Area (sqft)	12100	13131	14205	15320	16478	17678	18921	20205	21531	22900
	(acre)	0.28	0.30	0.33	0.35	0.38	0.41	0.43	0.46	0.49	0.53
	Volume, acre-ft	0.00	0.33	0.69	1.09	1.51	1.96	2.45	2.98	3.55	4.15
	Lado A del Tope	110	114.592	119.184	123.776	128.368	132.96	137.552	142.144	146.736	151.328
	Lado B del Tope	110	114.592	119.184	123.776	128.368	132.96	137.552	142.144	146.736	151.328

DEPTH-AREA CURVE



DEPTH-DISCHARGE CURVE



APPENDIX E

HEC-1 RESULTS FOR PROPOSED CONDITION W/MITIGATION

```
*                                          *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)      *
*              JUN   1998                  *
*            VERSION 4.1                   *
*  RGMHEC2000                HEC-1.COM     *
*  RUN DATE   27JAN06  TIME  11:13:45      *
*                                          *
*******************************************
```

```
*                                          *
*    U.S. ARMY CORPS OF ENGINEERS          *
*    HYDROLOGIC ENGINEERING CENTER         *
*          609 SECOND STREET               *
*       DAVIS, CALIFORNIA 95616            *
*          (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

HEC-1 INPUT

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

   1          ID        HYDROLOGIC ANALYSIS
   2          ID        PROJECT:MONTE ARENAS DEVELOPMENT, VEGA BAJA
   3          ID        TRIANGULAR DISTRIBUTION
   4          ID        FREQUENCY OF OCCURRENCE:2-, 10-, 25-, 50- & 100-YEARS
   5          ID        CA ENGINEERING, JANUARY 2006
   6          ID        PROPOSED  CONDITION AND MITIGATION
   7          IT       5                    300
   8          IO       3
   9          JP       5

  10          KK     E3A
  11          KP       1
  12          BA   0.032
  13          LS       0    76.27
  14          UD    0.07
  15          IN      15
  16          KM        TRIANGULAR DISTRIBUTION 2-YRS STORM
  17          PH                  0.47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
  18          KP       2
  19          KM        TRIANGULAR DISTRIBUTION 10-YRS STORM
  20          PH                  0.55    1.31    3.00    3.70    4.10    5.40    6.60    7.60
  21          KP       3
  22          KM        TRIANGULAR DISTRIBUTION 25-YRS STORM
  23          PH                  0.61    1.47    3.50    4.50    5.10    6.30    7.70    9.40
  24          KP       4
  25          KM        TRIANGULAR DISTRIBUTION 50-YRS STORM
  26          PH                  0.64    1.55    3.80    5.00    5.20    7.00    8.70   10.50
  27          KP       5
  28          KM        TRIANGULAR DISTRIBUTION 100-YRS STORM
  29          PH                  0.99    2.15    4.40    5.20    6.10    8.00    9.70   11.50

  30          KK      P3
  31          KP       1
  32          BA  0.0109
  33          LS       0      95
  34          UD    0.08
  35          IN      15
  36          KM        TRIANGULAR DISTRIBUTION 2-YRS STORM
  37          PH                  0.47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
  38          KP       2
  39          KM        TRIANGULAR DISTRIBUTION 10-YRS STORM
  40          PH                  0.55    1.31    3.00    3.70    4.10    5.40    6.60    7.60
  41          KP       3
  42          KM        TRIANGULAR DISTRIBUTION 25-YRS STORM
  43          PH                  0.61    1.47    3.50    4.50    5.10    6.30    7.70    9.40
  44          KP       4
  45          KM        TRIANGULAR DISTRIBUTION 50-YRS STORM
  46          PH                  0.64    1.55    3.80    5.00    5.20    7.00    8.70   10.50
  47          KP       5
  48          KM        TRIANGULAR DISTRIBUTION 100-YRS STORM
  49          PH                  0.99    2.15    4.40    5.20    6.10    8.00    9.70   11.50
```


HEC-1 INPUT

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

  50          KK   COMB1
  51          KM  E3A+P3
  52          HC       2

  53          KK     E3B
  54          KP       1
  55          BA   0.024
  56          LS       0    79.08
  57          UD    0.05
  58          IN      15
  59          KM        TRIANGULAR DISTRIBUTION 2-YRS STORM
  60          PH                  0.47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
  61          KP       2
  62          KM        TRIANGULAR DISTRIBUTION 10-YRS STORM
  63          PH                  0.55    1.31    3.00    3.70    4.10    5.40    6.60    7.60
  64          KP       3
  65          KM        TRIANGULAR DISTRIBUTION 25-YRS STORM
  66          PH                  0.61    1.47    3.50    4.50    5.10    6.30    7.70    9.40
  67          KP       4
  68          KM        TRIANGULAR DISTRIBUTION 50-YRS STORM
  69          PH                  0.64    1.55    3.80    5.00    5.20    7.00    8.70   10.50
```

```
70          KP        5
71          KM          TRIANGULAR DISTRIBUTION 100-YRS STORM
72                          0.99     2.15     4.40     5.20     6.10     8.00     9.70    11.50

73          KK    COMB2
74          KM   E3+P3
75          HC        2

76          KK       E2
77          KP        1
78          BA    0.868
79          LS        0    77.32
80          UD     0.93
81          IN       15
82          KM          TRIANGULAR DISTRIBUTION 2-YRS STORM
83                          0.47     1.04     2.10     2.50     2.70     3.30     4.00     4.60
84          PH
85          KP        2
86          KM          TRIANGULAR DISTRIBUTION 10-YRS STORM
87                          0.55     1.31     3.00     3.70     4.10     5.40     6.60     7.60
88          PH
89          KP        3
90          KM          TRIANGULAR DISTRIBUTION 25-YRS STORM
91                          0.61     1.47     3.50     4.50     5.10     6.30     7.70     9.40
92          PH
93          KP        4
94          KM          TRIANGULAR DISTRIBUTION 50-YRS STORM
95                          0.64     1.55     3.80     5.00     5.20     7.00     8.70    10.50
96          PH
97          KP        5
98          KM          TRIANGULAR DISTRIBUTION 100-YRS STORM
99                          0.99     2.15     4.40     5.20     6.10     8.00     9.70    11.50
100         PH
```


HEC-1 INPUT

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

101         KK       P2
102         KP        1
103         BA    0.0472
104         LS        0       95
105         UD     0.21
106         IN       15
107         KM          TRIANGULAR DISTRIBUTION 2-YRS STORM
108                         0.47     1.04     2.10     2.50     2.70     3.30     4.00     4.60
109         PH
110         KP        2
111         KM          TRIANGULAR DISTRIBUTION 10-YRS STORM
112                         0.55     1.31     3.00     3.70     4.10     5.40     6.60     7.60
113         PH
114         KP        3
115         KM          TRIANGULAR DISTRIBUTION 25-YRS STORM
116                         0.61     1.47     3.50     4.50     5.10     6.30     7.70     9.40
117         PH
118         KP        4
119         KM          TRIANGULAR DISTRIBUTION 50-YRS STORM
120                         0.64     1.55     3.80     5.00     5.20     7.00     8.70    10.50
121         PH
122         KP        5
123         KM          TRIANGULAR DISTRIBUTION 100-YRS STORM
124                         0.99     2.15     4.40     5.20     6.10     8.00     9.70    11.50
125         PH

126         KK     POND       P2
127         KM   RUNOFF MITIGATION POND CALCULATION
128         KO     3.00     1.00
129         RS     1.00     ELEV     0.00
130         SQ     0.00     0.00    29.57    47.01    59.54    69.86    78.84    86.90    94.27   167.17
131         SV    0.000    0.352    0.732    1.142    1.582    2.055    2.562    3.104    3.683    4.301
132         SE     0.00     1.12     2.23     3.35     4.46     5.58     6.69     7.81     8.92    10.04

133         KK       E1
134         KP        1
135         BA    0.172
136         LS        0    73.77
137         UD     0.27
138         IN       15
139         KM          TRIANGULAR DISTRIBUTION 2-YRS STORM
140                         0.47     1.04     2.10     2.50     2.70     3.30     4.00     4.60
141         PH
142         KP        2
143         KM          TRIANGULAR DISTRIBUTION 10-YRS STORM
144                         0.55     1.31     3.00     3.70     4.10     5.40     6.60     7.60
145         PH
146         KP        3
147         KM          TRIANGULAR DISTRIBUTION 25-YRS STORM
148                         0.61     1.47     3.50     4.50     5.10     6.30     7.70     9.40
149         PH
150         KP        4
151         KM          TRIANGULAR DISTRIBUTION 50-YRS STORM
152                         0.64     1.55     3.80     5.00     5.20     7.00     8.70    10.50
153         PH
154         KP        5
155         KM          TRIANGULAR DISTRIBUTION 100-YRS STORM
```

```
                                0.99    2.15    4.40    5.20    6.10    8.00    9.70   11.50
142          PH                                HEC-1 INPUT
                                                                                                  PAGE  4
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

143          KK      P1A
144          KP        1
145          BA   0.0494
146          LS        0       95
147          UD     0.45
148          IN       15
149          KM          TRIANGULAR DISTRIBUTION 2-YRS STORM
150          PH                    0.47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
151          KP        2
152          KM          TRIANGULAR DISTRIBUTION 10-YRS STORM
153          PH                    0.55    1.31    3.00    3.70    4.10    5.40    6.60    7.60
154          KP        3
155          KM          TRIANGULAR DISTRIBUTION 25-YRS STORM
156          PH                    0.61    1.47    3.50    4.50    5.10    6.30    7.70    9.40
157          KP        4
158          KM          TRIANGULAR DISTRIBUTION 50-YRS STORM
159          PH                    0.64    1.55    3.80    5.00    5.20    7.00    8.70   10.50
160          KP        5
161          KM          TRIANGULAR DISTRIBUTION 100-YRS STORM
162          PH                    0.99    2.15    4.40    5.20    6.10    8.00    9.70   11.50

163          KK      P7
164          KP        1
165          BA   0.033
166          LS        0       95
167          UD     0.15
168          IN       15
169          KM          TRIANGULAR DISTRIBUTION 2-YRS STORM
170          PH                    0.47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
171          KP        2
172          KM          TRIANGULAR DISTRIBUTION 10-YRS STORM
173          PH                    0.55    1.31    3.00    3.70    4.10    5.40    6.60    7.60
174          KP        3
175          KM          TRIANGULAR DISTRIBUTION 25-YRS STORM
176          PH                    0.61    1.47    3.50    4.50    5.10    6.30    7.70    9.40
177          KP        4
178          KM          TRIANGULAR DISTRIBUTION 50-YRS STORM
179          PH                    0.64    1.55    3.80    5.00    5.20    7.00    8.70   10.50
180          KP        5
181          KM          TRIANGULAR DISTRIBUTION 100-YRS STORM
182          PH                    0.99    2.15    4.40    5.20    6.10    8.00    9.70   11.50

183          KK   COMB 4
184          KM   P1+P7
185          HC        2

186          KK     POND       P1
187          KM   RUNOFF MITIGATION POND CALCULATION
188          KO     3.00     1.00
189          RS     1.00     ELEV     0.00
190          SQ     0.00    11.56    28.74    38.96    47.01    53.87    96.69   138.97   168.74   263.30
191          SV    0.000    0.851    1.745    2.683    3.667    4.698    5.778    6.908    8.090    9.325
192          SE     0.00     1.12     2.23     3.35     4.46     5.58     6.69     7.81     8.92    10.04
                                                HEC-1 INPUT
                                                                                                  PAGE  5
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

193          KK      P1B
194          KP        1
195          BA   0.0297
196          LS        0       95
197          UD     0.40
198          IN       15
199          KM          TRIANGULAR DISTRIBUTION 2-YRS STORM
200          PH                    0.47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
201          KP        2
202          KM          TRIANGULAR DISTRIBUTION 10-YRS STORM
203          PH                    0.55    1.31    3.00    3.70    4.10    5.40    6.60    7.60
204          KP        3
205          KM          TRIANGULAR DISTRIBUTION 25-YRS STORM
206          PH                    0.61    1.47    3.50    4.50    5.10    6.30    7.70    9.40
207          KP        4
208          KM          TRIANGULAR DISTRIBUTION 50-YRS STORM
209          PH                    0.64    1.55    3.80    5.00    5.20    7.00    8.70   10.50
```

```
KP        5
KM          TRIANGULAR DISTRIBUTION 100-YRS STORM
                0.99    2.15    4.40    5.20    6.10    8.00    9.70   11.50
PH

KK   COMB4
KM  POND+P1B
HC        2

KK      P4A
KP        1
BA  0.0226
LS        0       95
UD     0.20
IN       15
KM          TRIANGULAR DISTRIBUTION 2-YRS STORM
                0.47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
PH
KP        2
KM          TRIANGULAR DISTRIBUTION 10-YRS STORM
                0.55    1.31    3.00    3.70    4.10    5.40    6.60    7.60
PH
KP        3
KM          TRIANGULAR DISTRIBUTION 25-YRS STORM
                0.61    1.47    3.50    4.50    5.10    6.30    7.70    9.40
PH
KP        4
KM          TRIANGULAR DISTRIBUTION 50-YRS STORM
                0.64    1.55    3.80    5.00    5.20    7.00    8.70   10.50
PH
KP        5
KM          TRIANGULAR DISTRIBUTION 100-YRS STORM
                0.99    2.15    4.40    5.20    6.10    8.00    9.70   11.50
PH

KK    POND      P4A
KM   RUNOFF MITIGATION POND CALCULATION
KO    3.00     1.00
RS    1.00     ELEV    0.00
SQ    0.00     2.13    3.39    4.29    5.04    5.69   29.94   50.79   78.48  206.58
SV   0.000    0.333   0.694   1.085   1.508   1.964   2.455   2.983   3.549   4.155
SE    0.00     1.15    2.30    3.44    4.59    5.74    6.89    8.04    9.18   10.33
                                HEC-1 INPUT
```



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

KK      P4B
KP        1
BA  0.0245
LS        0       95
UD     0.16
IN       15
KM          TRIANGULAR DISTRIBUTION 2-YRS STORM
                0.47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
PH
KP        2
KM          TRIANGULAR DISTRIBUTION 10-YRS STORM
                0.55    1.31    3.00    3.70    4.10    5.40    6.60    7.60
PH
KP        3
KM          TRIANGULAR DISTRIBUTION 25-YRS STORM
                0.61    1.47    3.50    4.50    5.10    6.30    7.70    9.40
PH
KP        4
KM          TRIANGULAR DISTRIBUTION 50-YRS STORM
                0.64    1.55    3.80    5.00    5.20    7.00    8.70   10.50
PH
KP        5
KM          TRIANGULAR DISTRIBUTION 100-YRS STORM
                0.99    2.15    4.40    5.20    6.10    8.00    9.70   11.50
PH

KK      P4C
KP        1
BA  0.0148
LS        0       95
UD     0.16
IN       15
KM          TRIANGULAR DISTRIBUTION 2-YRS STORM
                0.47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
PH
KP        2
KM          TRIANGULAR DISTRIBUTION 10-YRS STORM
                0.55    1.31    3.00    3.70    4.10    5.40    6.60    7.60
PH
KP        3
KM          TRIANGULAR DISTRIBUTION 25-YRS STORM
                0.61    1.47    3.50    4.50    5.10    6.30    7.70    9.40
PH
KP        4
KM          TRIANGULAR DISTRIBUTION 50-YRS STORM
                0.64    1.55    3.80    5.00    5.20    7.00    8.70   10.50
PH
KP        5
KM          TRIANGULAR DISTRIBUTION 100-YRS STORM
```

```
                                0.99    2.15    4.40    5.20    6.10    8.00    9.70   11.50
282        PH

283        KK   COMB4
284        KM   P4A+P4B+P4C
285        HC        3

286        KK       P5
287        KP        1
288        BA   0.0178
289        LS        0       95
290        UD     0.08
291        IN       15
292        KM          TRIANGULAR DISTRIBUTION 2-YRS STORM
293        PH                0.47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
                                    HEC-1 INPUT
```



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

294        KP        2
295        KM          TRIANGULAR DISTRIBUTION 10-YRS STORM
296        PH                0.55    1.31    3.00    3.70    4.10    5.40    6.60    7.60
297        KP        3
298        KM          TRIANGULAR DISTRIBUTION 25-YRS STORM
299        PH                0.61    1.47    3.50    4.50    5.10    6.30    7.70    9.40
300        KP        4
301        KM          TRIANGULAR DISTRIBUTION 50-YRS STORM
302        PH                0.64    1.55    3.80    5.00    5.20    7.00    8.70   10.50
303        KP        5
304        KM          TRIANGULAR DISTRIBUTION 100-YRS STORM
305        PH                0.99    2.15    4.40    5.20    6.10    8.00    9.70   11.50

306        KK       P6
307        KP        1
308        BA    0.018
309        LS        0       95
310        UD     0.20
311        IN       15
312        KM          TRIANGULAR DISTRIBUTION 2-YRS STORM
313        PH                0.47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
314        KP        2
315        KM          TRIANGULAR DISTRIBUTION 10-YRS STORM
316        PH                0.55    1.31    3.00    3.70    4.10    5.40    6.60    7.60
317        KP        3
318        KM          TRIANGULAR DISTRIBUTION 25-YRS STORM
319        PH                0.61    1.47    3.50    4.50    5.10    6.30    7.70    9.40
320        KP        4
321        KM          TRIANGULAR DISTRIBUTION 50-YRS STORM
322        PH                0.64    1.55    3.80    5.00    5.20    7.00    8.70   10.50
323        KP        5
324        KM          TRIANGULAR DISTRIBUTION 100-YRS STORM
325        PH                0.99    2.15    4.40    5.20    6.10    8.00    9.70   11.50

326        KK       E4
327        KP        1
328        BA    0.014
329        LS        0    72.49
330        UD     0.03
331        IN       15
332        KM          TRIANGULAR DISTRIBUTION 2-YRS STORM
333        PH                0.47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
334        KP        2
335        KM          TRIANGULAR DISTRIBUTION 10-YRS STORM
336        PH                0.55    1.31    3.00    3.70    4.10    5.40    6.60    7.60
337        KP        3
338        KM          TRIANGULAR DISTRIBUTION 25-YRS STORM
339        PH                0.61    1.47    3.50    4.50    5.10    6.30    7.70    9.40
340        KP        4
341        KM          TRIANGULAR DISTRIBUTION 50-YRS STORM
342        PH                0.64    1.55    3.80    5.00    5.20    7.00    8.70   10.50
343        KP        5
344        KM          TRIANGULAR DISTRIBUTION 100-YRS STORM
345        PH                0.99    2.15    4.40    5.20    6.10    8.00    9.70   11.50
                                    HEC-1 INPUT
```



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

346        KK       E5
347        KP        1
348        BA    0.022
349        LS        0    75.57
```

```
350            UD     0.13
351            IN      15
352            KM       TRIANGULAR DISTRIBUTION 2-YRS STORM
353            PH              0.47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
354            KP      2
355            KM       TRIANGULAR DISTRIBUTION 10-YRS STORM
356            PH              0.55    1.31    3.00    3.70    4.10    5.40    6.60    7.60
357            KP      3
358            KM       TRIANGULAR DISTRIBUTION 25-YRS STORM
359            PH              0.61    1.47    3.50    4.50    5.10    6.30    7.70    9.40
360            KP      4
361            KM       TRIANGULAR DISTRIBUTION 50-YRS STORM
362            PH              0.64    1.55    3.80    5.00    5.20    7.00    8.70   10.50
363            KP      5
364            KM       TRIANGULAR DISTRIBUTION 100-YRS STORM
365            PH              0.99    2.15    4.40    5.20    6.10    8.00    9.70   11.50
366            ZZ

1*****************************************                    ***************************************
*                                        *                    *                                     *
*   FLOOD HYDROGRAPH PACKAGE   (HEC-1)   *                    *   U.S. ARMY CORPS OF ENGINEERS      *
*            JUN   1998                  *                    *   HYDROLOGIC ENGINEERING CENTER     *
*         VERSION 4.1                    *                    *        609 SECOND STREET            *
*                           HEC-1.COM    *                    *    DAVIS, CALIFORNIA 95616          *
*  RGMHEC2000                            *                    *        (916) 756-1104               *
*  RUN DATE   27JAN06  TIME  11:13:45    *                    *                                     *
*                                        *                    ***************************************
******************************************


                    HYDROLOGIC ANALYSIS
                    PROJECT:MONTE ARENAS DEVELOPMENT, VEGA BAJA
                    TRIANGULAR DISTRIBUTION
                    FREQUENCY OF OCCURRENCE:2-, 10-, 25-, 50- & 100-YEARS
                    CA ENGINEERING, JANUARY 2006
                    PROPOSED  CONDITION AND MITIGATION

  8 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

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

              **************
              *            *
   10 KK      *     E3A    *
              *            *
              **************
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

11 KP        PLAN  1 FOR STATION      E3A
                        TRIANGULAR DISTRIBUTION 2-YRS STORM

             SUBBASIN RUNOFF DATA

12 BA          SUBBASIN CHARACTERISTICS
                    TAREA          .03  SUBBASIN AREA

               PRECIPITATION DATA
                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                                                          ........... TP-49 ...........
17 PH                                ..... TP-40 .....
                 ..... HYDRO-35 .....
                 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    1.04    2.10    2.50    2.70    3.30    4.00    4.60     .00     .00     .00     .00
                                                  STORM AREA =       .03

13 LS          SCS LOSS RATE
                    STRTL          .62  INITIAL ABSTRACTION
                    CRVNBR       76.27  CURVE NUMBER
                    RTIMP          .00  PERCENT IMPERVIOUS AREA

14 UD          SCS DIMENSIONLESS UNITGRAPH
                    TLAG           .07  LAG
                                                    ***
                                                 UNIT HYDROGRAPH
                                            6 END-OF-PERIOD ORDINATES
                                                 2.      1.
                 110.     93.     26.      0.
                                  ***      ***          ***
          ***          ***
                        HYDROGRAPH AT STATION      E3A
                          FOR PLAN 1, RATIO = 1.00

        TOTAL RAINFALL =    4.60, TOTAL LOSS =    2.37, TOTAL EXCESS =    2.23

                                          MAXIMUM AVERAGE FLOW
        PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
+         (CFS)       (HR)      (CFS)       6.         2.         2.         2.
+          52.       12.00    (INCHES)    1.864      2.232      2.232      2.232
                              (AC-FT)      3.         4.         4.         4.
                        CUMULATIVE AREA =      .03 SQ MI
                                                    ***
          ***          ***       ***       ***
                        HYDROGRAPH AT STATION      E3A
                          FOR PLAN 1, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
        PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
+         (CFS)       (HR)      (CFS)       6.         2.         2.         2.
+          52.       12.08    (INCHES)    1.864      2.232      2.232      2.232
                              (AC-FT)      3.         4.         4.         4.
                        CUMULATIVE AREA =      .03 SQ MI

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

18 KP        PLAN  2 FOR STATION      E3A
                        TRIANGULAR DISTRIBUTION 10-YRS STORM

             SUBBASIN RUNOFF DATA

12 BA          SUBBASIN CHARACTERISTICS
                    TAREA          .03  SUBBASIN AREA

               PRECIPITATION DATA
```

```
                                       DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                                                          ........... TP-49 ...........
20 PH                                  ............... TP-40 ...............  2-DAY   4-DAY   7-DAY  10-DAY
              ..... HYDRO-35 ......    2-HR    3-HR    6-HR   12-HR   24-HR    .00     .00     .00     .00
              5-MIN  15-MIN  60-MIN    3.70    4.10    5.40    6.60    7.60
               .55    1.31    3.00
                                              STORM AREA =      .03

13 LS         SCS LOSS RATE
                  STRTL          .62  INITIAL ABSTRACTION
                  CRVNBR       76.27  CURVE NUMBER
                  RTIMP          .00  PERCENT IMPERVIOUS AREA

14 UD         SCS DIMENSIONLESS UNITGRAPH
                  TLAG           .07  LAG
                                                           ***

                                                  UNIT HYDROGRAPH
                                             6 END-OF-PERIOD ORDINATES
          118.        93.        26.        8.        2.        1.
                                                            ***
     ***              ***         ***            ***

                 HYDROGRAPH AT STATION        E3A
                   FOR PLAN 2, RATIO = 1.00

   TOTAL RAINFALL =     7.60, TOTAL LOSS =     2.77, TOTAL EXCESS =      4.83

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

+   (CFS)       (HR)
                          (CFS)
+      87.      12.08                  13.          4.           4.           4.
                          (INCHES)   3.856       4.826        4.826        4.826
                          (AC-FT)       7.          8.           8.           8.

                 CUMULATIVE AREA =      .03 SQ MI

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

                 HYDROGRAPH AT STATION        E3A
                   FOR PLAN 2, RATIO = 1.00

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

+   (CFS)       (HR)
                          (CFS)
+      87.      12.08                  13.          4.           4.           4.
                          (INCHES)   3.856       4.826        4.826        4.826
                          (AC-FT)       7.          8.           8.           8.

                 CUMULATIVE AREA =      .03 SQ MI

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

21 KP         PLAN  3 FOR STATION        E3A
                           TRIANGULAR DISTRIBUTION 25-YRS STORM

              SUBBASIN RUNOFF DATA

12 BA           SUBBASIN CHARACTERISTICS
                  TAREA          .03  SUBBASIN AREA

                PRECIPITATION DATA
                                       DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                                                          ........... TP-49 ...........
23 PH                                  ............... TP-40 ...............  2-DAY   4-DAY   7-DAY  10-DAY
              ..... HYDRO-35 ......    2-HR    3-HR    6-HR   12-HR   24-HR    .00     .00     .00     .00
              5-MIN  15-MIN  60-MIN    4.50    5.10    6.30    7.70    9.40
               .61    1.47    3.50
                                              STORM AREA =      .03

13 LS         SCS LOSS RATE
                  STRTL          .62  INITIAL ABSTRACTION
                  CRVNBR       76.27  CURVE NUMBER
                  RTIMP          .00  PERCENT IMPERVIOUS AREA
```

14 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .07 LAG

***

UNIT HYDROGRAPH
6 END-OF-PERIOD ORDINATES

118. 93. 26. 8. 2. 1.

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

HYDROGRAPH AT STATION E3A
FOR PLAN 3, RATIO = 1.00

TOTAL RAINFALL = 9.40, TOTAL LOSS = 2.92, TOTAL EXCESS = 6.48

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)	17.	6.	5.	5.
+ 106.	12.08	(INCHES)	4.922	6.480	6.480	6.480
		(AC-FT)	8.	11.	11.	11.

CUMULATIVE AREA = .03 SQ MI

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

HYDROGRAPH AT STATION E3A
FOR PLAN 3, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)	17.	6.	5.	5.
106.	12.08	(INCHES)	4.922	6.480	6.480	6.400
		(AC-FT)	8.	11.	11.	11.

CUMULATIVE AREA = .03 SQ MI

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

24 KP PLAN 4 FOR STATION E3A
TRIANGULAR DISTRIBUTION 50-YRS STORM

SUBBASIN RUNOFF DATA

12 BA SUBBASIN CHARACTERISTICS
TAREA .03 SUBBASIN AREA

PRECIPITATION DATA

26 PH DEPTHS FOR 0-PERCENT HYPOTHETICAL STORM

..... HYDRO-35			.... TP-40					.... TP-49			
5-MIN	15-MIN	60-MIN	2-HR	3-HR	6-HR	12-HR	24-HR	2-DAY	4-DAY	7-DAY	10-DAY
.64	1.55	3.80	5.00	5.20	7.00	8.70	10.50	.00	.00	.00	.00

STORM AREA = .03

13 LS SCS LOSS RATE
STRTL .62 INITIAL ABSTRACTION
CRVNBR 76.27 CURVE NUMBER
RTIMP .00 PERCENT IMPERVIOUS AREA

14 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .07 LAG

***

UNIT HYDROGRAPH
6 END-OF-PERIOD ORDINATES

118. 93. 26. 8. 2. 1.

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

HYDROGRAPH AT STATION E3A
FOR PLAN 4, RATIO = 1.00

```
TOTAL RAINFALL =   10.50, TOTAL LOSS =    2.99, TOTAL EXCESS =    7.51

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

+  (CFS)      (HR)      (CFS)       19.         6.          6.          6.
+   116.      12.08   (INCHES)    5.607       7.511       7.511       7.511
                      (AC-FT)      10.         13.         13.         13.

                      CUMULATIVE AREA =     .03 SQ MI

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

                HYDROGRAPH AT STATION      E3A
                 FOR PLAN 4, RATIO = 1.00

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

+  (CFS)      (HR)      (CFS)       19.         6.          6.          6.
+   116.      12.08   (INCHES)    5.607       7.511       7.511       7.511
                      (AC-FT)      10.         13.         13.         13.

                      CUMULATIVE AREA =     .03 SQ MI

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

27 KP        PLAN  5 FOR STATION      E3A
                 TRIANGULAR DISTRIBUTION 100-YRS STORM

             SUBBASIN RUNOFF DATA

12 BA          SUBBASIN CHARACTERISTICS
                 TAREA          .03  SUBBASIN AREA

               PRECIPITATION DATA

                                 DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                 ............ TP-40 ............  ........... TP-49 ...........
29 PH          ..... HYDRO-35 ..... 2-HR    3-HR    6-HR    12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
               5-MIN  15-MIN  60-MIN  5.20    6.10    8.00    9.70   11.50    .00     .00     .00     .00
                 .99    2.15    4.40

                                          STORM AREA =     .03

13 LS          SCS LOSS RATE
                 STRTL          .62  INITIAL ABSTRACTION
                 CRVNBR       76.27  CURVE NUMBER
                 RTIMP          .00  PERCENT IMPERVIOUS AREA

14 UD          SCS DIMENSIONLESS UNITGRAPH
                 TLAG           .07  LAG

                                                    ***

                                                UNIT HYDROGRAPH
                                             6 END-OF-PERIOD ORDINATES
                 118.     93.     26.      8.      2.      1.

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

                HYDROGRAPH AT STATION      E3A
                 FOR PLAN 5, RATIO = 1.00

TOTAL RAINFALL =   11.50, TOTAL LOSS =    3.04, TOTAL EXCESS =    8.46

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

+  (CFS)      (HR)      (CFS)       22.         7.          7.          7.
+   165.      12.08   (INCHES)    6.534       8.458       8.458       8.458
                      (AC-FT)      11.         14.         14.         14.

                      CUMULATIVE AREA =     .03 SQ MI
```

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

HYDROGRAPH AT STATION E3A
FOR PLAN 5, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 165.	12.08		22.	7.	7.	7.
		(INCHES)	6.534	8.458	8.458	8.458
		(AC-FT)	11.	14.	14.	14.

CUMULATIVE AREA = .03 SQ MI

*** ***

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              **************
              *            *
30 KK         *     P3     *
              *            *
              **************
```

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

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

SUBBASIN RUNOFF DATA

32 BA SUBBASIN CHARACTERISTICS
TAREA .01 SUBBASIN AREA

PRECIPITATION DATA

37 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	1.04	2.10	2.50	2.70	3.30	4.00	4.60	.00	.00	.00	.00

STORM AREA = .01

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

34 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .08 LAG

***

UNIT HYDROGRAPH
7 END-OF-PERIOD ORDINATES

34.	34.	11.	4.	1.	0.	0.

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

HYDROGRAPH AT STATION P3
FOR PLAN 1, RATIO = 1.00

TOTAL RAINFALL = 4.60, TOTAL LOSS = .58, TOTAL EXCESS = 4.02

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 29.	12.08		4.	1.	1.	1.
		(INCHES)	3.110	4.024	4.024	4.024
		(AC-FT)	2.	2.	2.	2.

CUMULATIVE AREA = .01 SQ MI

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

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

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

+  (CFS)       (HR)      (CFS)        4.         1.         1.         1.
+     29.      12.08   (INCHES)    3.110      4.024      4.024      4.024
                       (AC-FT)       2.         2.         2.         2.

                    CUMULATIVE AREA =      .01 SQ MI

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

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

              SUBBASIN RUNOFF DATA

 32 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .01  SUBBASIN AREA

                PRECIPITATION DATA
                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                                                          ..... TP-49 .....
 40 PH          ..... HYDRO-35 .....  ..... TP-40 .....  .....
                 5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
                  .55    1.31    3.00    3.70   4.10   5.40   6.60   7.60    .00    .00    .00    .00
                                                  STORM AREA =      .01

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

 34 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG           .08  LAG
                                                  ***
                                                UNIT HYDROGRAPH
                                            7 END-OF-PERIOD ORDINATES
                                                 1.         0.         0.
                 34.       34.       11.       4.
                                                  ***
                                   ***
                 ***       ***
                    HYDROGRAPH AT STATION        P3
                      FOR PLAN 2, RATIO = 1.00

 TOTAL RAINFALL =     7.60, TOTAL LOSS =      .60, TOTAL EXCESS =     7.00

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

+  (CFS)       (HR)      (CFS)        6.         2.         2.         2.
+     38.      12.08   (INCHES)    5.251      7.003      7.003      7.003
                       (AC-FT)       3.         4.         4.         4.

                    CUMULATIVE AREA =      .01 SQ MI
                                                  ***
                                   ***
                 ***       ***
                    HYDROGRAPH AT STATION        P3
                      FOR PLAN 2, RATIO = 1.00

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

+  (CFS)       (HR)      (CFS)        6.         2.         2.         2.
+     38.      12.00   (INCHES)    5.251      7.003      7.003      7.003
                       (AC-FT)       3.         4.         4.         4.

                    CUMULATIVE AREA =      .01 SQ MI
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***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***

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

             SUBBASIN RUNOFF DATA

32 BA          SUBBASIN CHARACTERISTICS
                   TAREA          .01  SUBBASIN AREA

               PRECIPITATION DATA
                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
43 PH                                          ..... TP-40 .....  ..... TP-49 .....
                 ..... HYDRO-35 .....  ..... 2-HR    3-HR    6-HR    12-HR   24-HR   2-DAY   4-DAY   7-DAY   10-DAY
                 5-MIN  15-MIN  60-MIN  4.50    5.10    6.30    7.70    9.40    .00     .00     .00     .00
                  .61    1.47    3.50
                                                   STORM AREA =      .01

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

34 UD          SCS DIMENSIONLESS UNITGRAPH
                   TLAG           .08  LAG
                                                  ***
                                                 UNIT HYDROGRAPH
                                              7 END-OF-PERIOD ORDINATES
                                                 1.      0.      0.
                 34.     34.     11.     4.
                 ***     ***     ***     ***     ***
                                 HYDROGRAPH AT STATION        P3
                                   FOR PLAN 3, RATIO = 1.00

                 TOTAL RAINFALL =    9.40, TOTAL LOSS =     .60, TOTAL EXCESS =    8.80
                                                   MAXIMUM AVERAGE FLOW
                 PEAK FLOW     TIME                 6-HR     24-HR    72-HR    24.92-HR
                 +  (CFS)      (HR)     (CFS)       7.       3.       2.       2.
                 +    43.      12.08    (INCHES)    6.192    8.796    8.796    8.796
                                        (AC-FT)     4.       5.       5.       5.
                                   CUMULATIVE AREA =      .01 SQ MI
                 ***     ***     ***     ***     ***
                                 HYDROGRAPH AT STATION        P3
                                   FOR PLAN 3, RATIO = 1.00
                                                   MAXIMUM AVERAGE FLOW
                 PEAK FLOW     TIME                 6-HR     24-HR    72-HR    24.92-HR
                 +  (CFS)      (HR)     (CFS)       7.       3.       2.       2.
                 +    43.      12.08    (INCHES)    6.192    8.796    8.796    8.796
                                        (AC-FT)     4.       5.       5.       5.
                                   CUMULATIVE AREA =      .01 SQ MI

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

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

             SUBBASIN RUNOFF DATA

32 BA          SUBBASIN CHARACTERISTICS
                   TAREA          .01  SUBBASIN AREA
```

PRECIPITATION DATA

46 PH

DEPTHS FOR 0-PERCENT HYPOTHETICAL STORM

HYDRO-35			TP-40					TP-49		
5-MIN	15-MIN	60-MIN	2-HR	3-HR	6-HR	12-HR	24-HR	2-DAY	4-DAY	7-DAY	10-DAY
.64	1.55	3.80	5.00	5.20	7.00	8.70	10.50	.00	.00	.00	.00

STORM AREA = .01

33 LS

SCS LOSS RATE

STRTL	.11	INITIAL ABSTRACTION
CRVNBR	95.00	CURVE NUMBER
RTIMP	.00	PERCENT IMPERVIOUS AREA

34 UD

SCS DIMENSIONLESS UNITGRAPH

TLAG .08 LAG

***

UNIT HYDROGRAPH
7 END-OF-PERIOD ORDINATES

34. 34. 11. 4. 1. 0. 0.

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

HYDROGRAPH AT STATION P3
FOR PLAN 4, RATIO = 1.00

TOTAL RAINFALL = 10.50, TOTAL LOSS = .61, TOTAL EXCESS = 9.89

	PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+	(CFS)	(HR)	(CFS)	8.	3.	3.	3.
+	45.	12.08	(INCHES)	6.892	9.894	9.894	9.894
			(AC-FT)	4.	6.	6.	6.

CUMULATIVE AREA = .01 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)	8.	3.	3.	3.
+	45.	12.08	(INCHES)	6.892	9.894	9.894	9.894
			(AC-FT)	4.	6.	6.	6.

CUMULATIVE AREA = .01 SQ MI

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

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

SUBBASIN RUNOFF DATA

32 BA

SUBBASIN CHARACTERISTICS

TAREA .01 SUBBASIN AREA

PRECIPITATION DATA

49 PH

DEPTHS FOR 0-PERCENT HYPOTHETICAL STORM

HYDRO-35			TP-40					TP-49		
5-MIN	15-MIN	60-MIN	2-HR	3-HR	6-HR	12-HR	24-HR	2-DAY	4-DAY	7-DAY	10-DAY
.99	2.15	4.40	5.20	6.10	8.00	9.70	11.50	.00	.00	.00	.00

STORM AREA = .01

33 LS

SCS LOSS RATE

STRTL	.11	INITIAL ABSTRACTION
CRVNBR	95.00	CURVE NUMBER
RTIMP	.00	PERCENT IMPERVIOUS AREA

```
34 UD          SCS DIMENSIONLESS UNITGRAPH
                   TLAG        .08  LAG
                                                                  ***

                                                        UNIT HYDROGRAPH
                                                   7 END-OF-PERIOD ORDINATES
                34.       34.       11.       4.        1.        0.        0.
                                                  ***       ***       ***
      ***       ***       ***

                    HYDROGRAPH AT STATION        P3
                     FOR PLAN 5, RATIO = 1.00

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

                                          MAXIMUM AVERAGE FLOW
 PEAK FLOW     TIME                  6-HR      24-HR      72-HR     24.92-HR
+  (CFS)       (HR)      (CFS)        9.         3.         3.         3.
+    62.      12.08    (INCHES)    7.888     10.891     10.891     10.891
                       (AC-FT)       5.         6.         6.         6.

                    CUMULATIVE AREA =     .01 SQ MI

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

                    HYDROGRAPH AT STATION        P3
                     FOR PLAN 5, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
 PEAK FLOW     TIME                  6-HR      24-HR      72-HR     24.92-HR
+  (CFS)       (HR)      (CFS)        9.         3.         3.         3.
    62.       12.08    (INCHES)    7.888     10.891     10.891     10.891
                       (AC-FT)       5.         6.         6.         6.

                    CUMULATIVE AREA =     .01 SQ MI

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

            **************
            *            *
   50 KK    *    COMB1   *
            *            *
            **************
                   E3A+F3

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

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

                    HYDROGRAPH AT STATION     COMB1
                     FOR PLAN 1, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
 PEAK FLOW     TIME                  6-HR      24-HR      72-HR     24.92-HR
+  (CFS)       (HR)      (CFS)       10.         3.         3.         3.
+    81.      12.08    (INCHES)    2.159      2.687      2.687      2.687
                       (AC-FT)       5.         6.         6.         6.

                    CUMULATIVE AREA =     .04 SQ MI

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

                    HYDROGRAPH AT STATION     COMB1
                     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)	19.	6.	6.	6.
+ 125.	12.08	(INCHES)	4.186	5.379	5.379	5.379
		(AC-FT)	10.	12.	12.	12.

CUMULATIVE AREA = .04 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)	24.	8.	8.	8.
+ 149.	12.08	(INCHES)	5.229	7.069	7.069	7.069
		(AC-FT)	12.	16.	16.	16.

CUMULATIVE AREA = .04 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)	27.	9.	9.	9.
+ 161.	12.08	(INCHES)	5.921	8.117	8.117	8.117
		(AC-FT)	14.	19.	19.	19.

CUMULATIVE AREA = .04 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)	32.	10.	10.	10.
+ 227.	12.08	(INCHES)	6.865	9.076	9.076	9.076
		(AC-FT)	16.	21.	21.	21.

CUMULATIVE AREA = .04 SQ MI

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              **************
              *            *
53 KK         *     E3B    *
              *            *
              **************
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*** ***

54 KP PLAN 1 FOR STATION E3B
TRIANGULAR DISTRIBUTION 2-YRS STORM

SUBBASIN RUNOFF DATA

55 BA SUBBASIN CHARACTERISTICS
TAREA .02 SUBBASIN AREA

PRECIPITATION DATA

60 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	1.04	2.10	2.50	2.70	3.30	4.00	4.60	.00	.00	.00	.00

STORM AREA = .02

56 LS SCS LOSS RATE

STRTL	.50	INITIAL ABSTRACTION
CRVNBR	79.88	CURVE NUMBER
RTIMP	.00	PERCENT IMPERVIOUS AREA

57 UD SCS DIMENSIONLESS UNITGRAPH

TLAG	.05	LAG

***

UNIT HYDROGRAPH
5 END-OF-PERIOD ORDINATES

124. 48. 11. 2. 1.

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

HYDROGRAPH AT STATION E3B
FOR PLAN 1, RATIO = 1.00

TOTAL RAINFALL = 4.60, TOTAL LOSS = 2.06, TOTAL EXCESS = 2.54

	PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+	(CFS)	(HR)	(CFS)	5.	2.	2.	2.
+	51.	12.08	(INCHES)	2.102	2.536	2.536	2.536
			(AC-FT)	3.	3.	3.	3.

CUMULATIVE AREA = .02 SQ MI

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

HYDROGRAPH AT STATION E3B
FOR PLAN 1, RATIO = 1.00

	PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+	(CFS)	(HR)	(CFS)	5.	2.	2.	2.
+	51.	12.08	(INCHES)	2.102	2.536	2.536	2.536
			(AC-FT)	3.	3.	3.	3.

CUMULATIVE AREA = .02 SQ MI

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

61 KP PLAN 2 FOR STATION E3B
TRIANGULAR DISTRIBUTION 10-YRS STORM

SUBBASIN RUNOFF DATA

55 BA SUBBASIN CHARACTERISTICS

TAREA	.02	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
.55	1.31	3.00	3.70	4.10	5.40	6.60	7.60	.00	.00	.00	.00

STORM AREA = .02

56 LS SCS LOSS RATE

STRTL	.50	INITIAL ABSTRACTION
CRVNBR	79.88	CURVE NUMBER

```
                RTIMP          .00  PERCENT IMPERVIOUS AREA

57 UD           SCS DIMENSIONLESS UNITGRAPH
                  TLAG         .05  LAG
                                                          ***

                                                   UNIT HYDROGRAPH
                                              5 END-OF-PERIOD ORDINATES
                                                     1.
            124.       48.       11.       2.
                                                  ***          ***
   ***          ***          ***
                 HYDROGRAPH AT STATION      E3B
                   FOR PLAN 2, RATIO = 1.00

   TOTAL RAINFALL =   7.60, TOTAL LOSS =    2.36, TOTAL EXCESS =    5.24

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

+   (CFS)       (HR)      (CFS)       11.        3.         3.          3.
+    76.       12.08    (INCHES)    4.156      5.237      5.237       5.237
                        (AC-FT)      5.         7.         7.          7.

                 CUMULATIVE AREA =      .02 SQ MI

                                                  ***
   ***          ***          ***          ***
                 HYDROGRAPH AT STATION      E3B
                   FOR PLAN 2, RATIO = 1.00

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

   (CFS)        (HR)      (CFS)       11.        3.         3.          3.
    76.         12.08    (INCHES)    4.156      5.237      5.237       5.237
                        (AC-FT)      5.         7.         7.          7.

                 CUMULATIVE AREA =      .02 SQ MI

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

64 KP           PLAN  3 FOR STATION      E3B
                          TRIANGULAR DISTRIBUTION 25-YRS STORM

                SUBBASIN RUNOFF DATA

55 BA             SUBBASIN CHARACTERISTICS
                    TAREA        .02  SUBBASIN AREA

                  PRECIPITATION DATA
                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
66 PH                                  ..... TP-40 .....      ..... TP-49 .....
                  ..... HYDRO-35 .....
                  5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
                   .61    1.47    3.50    4.50   5.10   6.30   7.70   9.40    .00    .00    .00    .00
                                                 STORM AREA =      .02

56 LS             SCS LOSS RATE
                     STRTL       .50  INITIAL ABSTRACTION
                    CRVNBR     79.88  CURVE NUMBER
                     RTIMP       .00  PERCENT IMPERVIOUS AREA

57 UD             SCS DIMENSIONLESS UNITGRAPH
                     TLAG        .05  LAG
                                                          ***

                                                   UNIT HYDROGRAPH
                                              5 END-OF-PERIOD ORDINATES
                                                     1.
            124.       48.       11.       2.
                                                  ***          ***
   ***          ***          ***
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                    HYDROGRAPH AT STATION      E3B
                      FOR PLAN 3, RATIO = 1.00

  TOTAL RAINFALL =    9.40, TOTAL LOSS =    2.47, TOTAL EXCESS =    6.93

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

+   (CFS)        (HR)      (CFS)
                                      13.        4.         4.         4.
+     90.        12.08   (INCHES)   5.220      6.933      6.933      6.933
                         (AC-FT)      7.         9.         9.         9.

                    CUMULATIVE AREA =     .02 SQ MI

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

                    HYDROGRAPH AT STATION      E3B
                      FOR PLAN 3, RATIO = 1.00

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

+   (CFS)        (HR)      (CFS)
                                      13.        4.         4.         4.
+     90.        12.08   (INCHES)   5.220      6.933      6.933      6.933
                         (AC-FT)      7.         9.         9.         9.

                    CUMULATIVE AREA =     .02 SQ MI

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

  67 KP        PLAN  4 FOR STATION      E3B
                         TRIANGULAR DISTRIBUTION 50-YRS STORM

               SUBBASIN RUNOFF DATA

  55 BA          SUBBASIN CHARACTERISTICS
                      TAREA          .02  SUBBASIN AREA

                 PRECIPITATION DATA

                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
  69 PH                                  ..... TP-40 .....   ..... TP-49 .....
                 ..... HYDRO-35 .....   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                 5-MIN  15-MIN  60-MIN   5.00    5.20    7.00    8.70   10.50     .00     .00     .00     .00
                   .64    1.55    3.80

                                                STORM AREA =     .02

  56 LS          SCS LOSS RATE
                      STRTL          .50  INITIAL ABSTRACTION
                     CRVNBR        79.88  CURVE NUMBER
                      RTIMP          .00  PERCENT IMPERVIOUS AREA

  57 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .05  LAG

                                                    ***

                                                UNIT HYDROGRAPH
                                             5 END-OF-PERIOD ORDINATES
                 124.      40.      11.       2.       1.

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

                    HYDROGRAPH AT STATION      E3B
                      FOR PLAN 4, RATIO = 1.00

  TOTAL RAINFALL =   10.50, TOTAL LOSS =    2.52, TOTAL EXCESS =    7.98

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

+   (CFS)        (HR)      (CFS)
                                      15.        5.         5.         5.
+     97.        12.08   (INCHES)   5.915      7.984      7.984      7.984
                         (AC-FT)      9.        10.        10.        10.
```

CUMULATIVE AREA = .02 SQ MI

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

HYDROGRAPH AT STATION E3B
FOR PLAN 4, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	15.	5.	5.	5.
+ 97.	12.08	(INCHES)	5.915	7.984	7.984	7.984
		(AC-FT)	8.	10.	10.	10.

CUMULATIVE AREA = .02 SQ MI

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

70 KP PLAN 5 FOR STATION E3B
TRIANGULAR DISTRIBUTION 100-YRS STORM

SUBBASIN RUNOFF DATA

55 BA SUBBASIN CHARACTERISTICS
TAREA .02 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
.99	2.15	4.40	5.20	6.10	8.00	9.70	11.50	.00	.00	.00	.00

STORM AREA = .02

6 LS SCS LOSS RATE
STRTL .50 INITIAL ABSTRACTION
CRVNBR 79.88 CURVE NUMBER
RTIMP .00 PERCENT IMPERVIOUS AREA

57 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .05 LAG

***

UNIT HYDROGRAPH
5 END-OF-PERIOD ORDINATES

124. 48. 11. 2. 1.

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

HYDROGRAPH AT STATION E3B
FOR PLAN 5, RATIO = 1.00

TOTAL RAINFALL = 11.50, TOTAL LOSS = 2.55, TOTAL EXCESS = 8.95

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	18.	6.	6.	6.
+ 144.	12.08	(INCHES)	6.863	8.947	8.947	8.947
		(AC-FT)	9.	11.	11.	11.

CUMULATIVE AREA = .02 SQ MI

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

HYDROGRAPH AT STATION E3B
FOR PLAN 5, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
(CFS)	(HR)	(CFS)	18.	6.	6.	6.
+ 144.	12.08					

(INCHES)	6.863	8.947	8.947	8.947
(AC-FT)	9.	11.	11.	11.

CUMULATIVE AREA = .02 SQ MI

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              **************
              *            *
73 KK         *   COMB2    *
              *            *
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E3+P3

75 HC HYDROGRAPH COMBINATION
ICOMP 2 NUMBER OF HYDROGRAPHS TO COMBINE

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

HYDROGRAPH AT STATION COMB2
FOR PLAN 1, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	15.	5.	5.	5.
+ 132.	12.08	(INCHES)	2.138	2.633	2.633	2.633
		(AC-FT)	8.	9.	9.	9.

CUMULATIVE AREA = .07 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)	30.	10.	9.	9.
+ 201.	12.08	(INCHES)	4.175	5.328	5.328	5.328
		(AC-FT)	15.	19.	19.	19.

CUMULATIVE AREA = .07 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)	38.	13.	12.	12.
+ 238.	12.08	(INCHES)	5.226	7.020	7.020	7.020
		(AC-FT)	19.	25.	25.	25.

CUMULATIVE AREA = .07 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)	43.	15.	14.	14.
+ 258.	12.08					

```
                    (INCHES)      5.919       8.069       8.069       8.069
                    (AC-FT)       21.         29.         29.         29.

                    CUMULATIVE AREA =     .07 SQ MI

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

                    HYDROGRAPH AT STATION     COMB2
                      FOR PLAN 5, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                 6-HR        24-HR       72-HR      24.92-HR
+   (CFS)       (HR)
                              (CFS)
                                   49.         16.         16.         16.
+    371.       12.08
                              (INCHES)     6.864       9.030       9.030       9.030
                              (AC-FT)      24.         32.         32.         32.

                              CUMULATIVE AREA =     .07 SQ MI

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

          **************
          *            *
 76 KK    *     E2     *
          *            *
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***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***

 77 KP        PLAN  1 FOR STATION        E2
                          TRIANGULAR DISTRIBUTION 2-YRS STORM

              SUBBASIN RUNOFF DATA

 78 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .87  SUBBASIN AREA

                PRECIPITATION DATA

                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
 83 PH                                  ..... TP-40 .....          ..... TP-49 .....
                 ..... HYDRO-35 .....
                 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    1.04    2.10    2.50    2.70    3.30    4.00    4.60     .00     .00     .00     .00

                                                STORM AREA =     .87

 79 LS          SCS LOSS RATE
                     STRTL          .59  INITIAL ABSTRACTION
                    CRVNBR        77.32  CURVE NUMBER
                     RTIMP          .00  PERCENT IMPERVIOUS AREA

 80 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .93  LAG

                                                  ***

                                                UNIT HYDROGRAPH
                                          58 END-OF-PERIOD ORDINATES
                 11.     35.     65.    104.    154.    215.    285.    344.    388.    416.
                429.    430.    423.    401.    375.    346.    312.    271.    229.    194.
                168.    146.    127.    112.     98.     85.     74.     63.     56.     49.
                 42.     37.     32.     28.     24.     21.     18.     16.     14.     12.
                 11.      9.      8.      7.      6.      5.      5.      4.      4.      3.
                  3.      2.      2.      2.      1.      1.      0.      0.

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

                    HYDROGRAPH AT STATION        E2
                      FOR PLAN 1, RATIO = 1.00

  TOTAL RAINFALL =    4.59, TOTAL LOSS =    2.28, TOTAL EXCESS =    2.31

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

PEAK FLOW (CFS)	TIME (HR)		6-HR	24-HR	72-HR	24.92-HR
+ 512.	13.08	(CFS)	178.	54.	52.	52.
		(INCHES)	1.902	2.301	2.301	2.301
		(AC-FT)	88.	107.	107.	107.

CUMULATIVE AREA = .87 SQ MI

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

HYDROGRAPH AT STATION E2
FOR PLAN 1, RATIO = 1.00

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 512.	13.08	(CFS)	178.	54.	52.	52.
		(INCHES)	1.902	2.301	2.301	2.301
		(AC-FT)	88.	107.	107.	107.

CUMULATIVE AREA = .87 SQ MI

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

84 KP PLAN 2 FOR STATION E2
TRIANGULAR DISTRIBUTION 10-YR5 STORM

SUBBASIN RUNOFF DATA

78 BA SUBBASIN CHARACTERISTICS
TAREA .87 SUBBASIN AREA

PRECIPITATION DATA

86 PH DEPTHS FOR 0-PERCENT HYPOTHETICAL STORM

HYDRO-35 5-MIN	15-MIN	60-MIN	TP-40 2-HR	3-HR	6-HR	12-HR	24-HR	TP-49 2-DAY	4-DAY	7-DAY	10-DAY
.55	1.31	3.00	3.70	4.10	5.40	6.60	7.60	.00	.00	.00	.00

STORM AREA = .87

79 LS SCS LOSS RATE
STRTL .59 INITIAL ABSTRACTION
CRVNBR 77.32 CURVE NUMBER
RTIMP .00 PERCENT IMPERVIOUS AREA

80 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .93 LAG

***

UNIT HYDROGRAPH
58 END-OF-PERIOD ORDINATES

11.	35.	65.	104.	154.	215.	285.	344.	308.	416.
429.	430.	423.	401.	375.	346.	312.	271.	229.	194.
168.	146.	127.	112.	98.	85.	74.	63.	56.	49.
42.	37.	32.	28.	24.	21.	18.	16.	14.	12.
11.	9.	8.	7.	6.	5.	5.	4.	4.	3.
3.	2.	2.	2.	1.	1.	0.	0.		

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

HYDROGRAPH AT STATION E2
FOR PLAN 2, RATIO = 1.00

TOTAL RAINFALL = 7.59, TOTAL LOSS = 2.65, TOTAL EXCESS = 4.94

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 965.	13.00	(CFS)	365.	115.	110.	110.
		(INCHES)	3.906	4.912	4.912	4.912
		(AC-FT)	181.	227.	227.	227.

CUMULATIVE AREA = .87 SQ MI

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

                HYDROGRAPH AT STATION        E2
                  FOR PLAN 2, RATIO = 1.00

                                        MAXIMUM AVERAGE FLOW
 PEAK FLOW     TIME                 6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)      (CFS)
                                    365.       115.        110.        110.
+   965.      13.00    (INCHES)    3.906      4.912       4.912       4.912
                       (AC-FT)     181.       227.        227.        227.

                CUMULATIVE AREA =      .87 SQ MI

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

 87 KP        PLAN  3 FOR STATION        E2
                  TRIANGULAR DISTRIBUTION 25-YRS STORM

              SUBBASIN RUNOFF DATA

 78 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .87  SUBBASIN AREA

                PRECIPITATION DATA
                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
 89 PH                                                  ..............  ........... TP-49 ...........
                 ..... HYDRO-35 .....  ............... TP-40 ...............
                 5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                  .61    1.47    3.50    4.50    5.10    6.30    7.70    9.40     .00     .00     .00     .00
                                                  STORM AREA =      .87

 79 LS          SCS LOSS RATE
                     STRTL          .59  INITIAL ABSTRACTION
                    CRVNBR        77.32  CURVE NUMBER
                     RTIMP          .00  PERCENT IMPERVIOUS AREA

 80 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .93  LAG
                                                  ***

                                              UNIT HYDROGRAPH
                                         58 END-OF-PERIOD ORDINATES
                   11.     35.     65.    104.    154.    215.    285.    344.    388.    416.
                  429.    430.    423.    401.    375.    346.    312.    271.    229.    194.
                  168.    146.    127.    112.     98.     85.     74.     63.     56.     49.
                   42.     37.     32.     28.     24.     21.     18.     16.     14.     12.
                   11.      9.      8.      7.      6.      5.      5.      4.      4.      3.
                    3.      2.      2.      2.      1.      1.      0.      0.
***          ***          ***          ***          ***

                HYDROGRAPH AT STATION        E2
                  FOR PLAN 3, RATIO = 1.00

 TOTAL RAINFALL =     9.39, TOTAL LOSS =     2.79, TOTAL EXCESS =     6.60

                                        MAXIMUM AVERAGE FLOW
 PEAK FLOW     TIME                 6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)      (CFS)
                                    464.       153.        147.        147.
+   1231.     13.00    (INCHES)    4.966      6.558       6.558       6.558
                       (AC-FT)     230.       304.        304.        304.

                CUMULATIVE AREA =      .87 SQ MI

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

                HYDROGRAPH AT STATION        E2
                  FOR PLAN 3, RATIO = 1.00

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

	PEAK FLOW (CFS)	TIME (HR)		6-HR	24-HR	72-HR	24.92-HR
+	1231.	13.00	(CFS)	464.	153.	147.	147.
			(INCHES)	4.966	6.558	6.558	6.558
			(AC-FT)	230.	304.	304.	304.

CUMULATIVE AREA = .87 SQ MI

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

90 KP PLAN 4 FOR STATION E2
TRIANGULAR DISTRIBUTION 50-YRS STORM

SUBBASIN RUNOFF DATA

78 BA SUBBASIN CHARACTERISTICS
TAREA .87 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
.64	1.55	3.80	5.00	5.20	7.00	8.70	10.50	.00	.00	.00	.00

STORM AREA = .87

79 LS SCS LOSS RATE
STRTL .59 INITIAL ABSTRACTION
CRVNBR 77.32 CURVE NUMBER
RTIMP .00 PERCENT IMPERVIOUS AREA

80 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .93 LAG

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UNIT HYDROGRAPH
58 END-OF-PERIOD ORDINATES

11.	35.	65.	104.	154.	215.	285.	344.	388.	416.
429.	430.	423.	401.	375.	346.	312.	271.	229.	194.
168.	146.	127.	112.	98.	85.	74.	63.	56.	49.
42.	37.	32.	28.	24.	21.	18.	16.	14.	12.
11.	9.	8.	7.	6.	5.	5.	4.	4.	3.
3.	2.	2.	2.	1.	1.	0.	0.		

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

HYDROGRAPH AT STATION E2
FOR PLAN 4, RATIO = 1.00

TOTAL RAINFALL = 10.49, TOTAL LOSS = 2.85, TOTAL EXCESS = 7.64

	PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+	1382.	13.00	(CFS)	526.	177.	171.	171.
			(INCHES)	5.632	7.591	7.591	7.591
			(AC-FT)	261.	351.	351.	351.

CUMULATIVE AREA = .87 SQ MI

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

HYDROGRAPH AT STATION E2
FOR PLAN 4, RATIO = 1.00

	PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+	1382.	13.00	(CFS)	526.	177.	171.	171.
			(INCHES)	5.632	7.591	7.591	7.591
			(AC-FT)	261.	351.	351.	351.

CUMULATIVE AREA .87 SQ MI

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

93 KP        PLAN  5 FOR STATION        E2
                        TRIANGULAR DISTRIBUTION 100-YRS STORM

             SUBBASIN RUNOFF DATA

78 BA          SUBBASIN CHARACTERISTICS
                    TAREA          .87  SUBBASIN AREA

               PRECIPITATION DATA

                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
95 PH                                  ..............  TP-40 ..............  ........... TP-49 ...........
                 ..... HYDRO-35 .....   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                 5-MIN  15-MIN  60-MIN   5.20    6.10    8.00    9.70   11.50     .00     .00     .00     .00
                   .99    2.15    4.40

                                                STORM AREA =       .87

79 LS          SCS LOSS RATE
                    STRTL          .59  INITIAL ABSTRACTION
                   CRVNBR        77.32  CURVE NUMBER
                    RTIMP          .00  PERCENT IMPERVIOUS AREA

80 UD          SCS DIMENSIONLESS UNITGRAPH
                    TLAG          .93  LAG

                                                  ***

                                                UNIT HYDROGRAPH
                                            58 END-OF-PERIOD ORDINATES
                  11.    35.    65.   104.   154.   215.   285.   344.   388.   416.
                 429.   430.   423.   401.   375.   346.   312.   271.   229.   194.
                 168.   146.   127.   112.    98.    85.    74.    63.    56.    49.
                  42.    37.    32.    28.    24.    21.    18.    16.    14.    12.
                  11.     9.     8.     7.     6.     5.     5.     4.     4.     3.
                   3.     2.     2.     2.     1.     1.     0.     0.

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

                 HYDROGRAPH AT STATION        E2
                   FOR PLAN 5, RATIO = 1.00

   TOTAL RAINFALL =   11.49, TOTAL LOSS =    2.90, TOTAL EXCESS =    8.59

                                          MAXIMUM AVERAGE FLOW
   PEAK FLOW     TIME                 6-HR      24-HR      72-HR    24.92-HR
+    (CFS)       (HR)      (CFS)
                                     612.       199.       192.       192.
+    1607.      13.00    (INCHES)   6.552      8.542      8.542      8.542
                         (AC-FT)     303.       395.       395.       395.

                 CUMULATIVE AREA =      .87 SQ MI

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

                 HYDROGRAPH AT STATION        E2
                   FOR PLAN 5, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
   PEAK FLOW     TIME                 6-HR      24-HR      72-HR    24.92-HR
+    (CFS)       (HR)      (CFS)
                                     612.       199.       192.       192.
+    1607.      13.00    (INCHES)   6.552      8.542      8.542      8.542
                         (AC-FT)     303.       395.       395.       395.

                 CUMULATIVE AREA =      .87 SQ MI

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KK        *        P2        *
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97 KP        PLAN  1 FOR STATION        P2
                        TRIANGULAR DISTRIBUTION 2-YRS STORM

             SUBBASIN RUNOFF DATA

98 BA          SUBBASIN CHARACTERISTICS
                    TAREA          .05  SUBBASIN AREA

               PRECIPITATION DATA
                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
103 PH                                                                          ........... TP-49 ...........
                 ..... HYDRO-35 ......   ............... TP-40 ...............   2-DAY   4-DAY   7-DAY  10-DAY
                 5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR    .00     .00     .00     .00
                  .47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
                                                   STORM AREA =      .05

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

100 UD         SCS DIMENSIONLESS UNITGRAPH
                    TLAG           .21  LAG
                                                  ***
                                                UNIT HYDROGRAPH
                                          15 END-OF-PERIOD ORDINATES
                 21.     69.     91.     76.     46.     26.     16.      9.      5.      3.
                  2.      1.      1.      0.      0.
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***      ***      ***      ***      ***
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                HYDROGRAPH AT STATION        P2
                  FOR PLAN 1, RATIO = 1.00

TOTAL RAINFALL -    4.60, TOTAL LOSS =      .58, TOTAL EXCESS =    4.02

                                          MAXIMUM AVERAGE FLOW
PEAK FLOW     TIME                   6-HR      24-HR      72-HR     24.92-HR
+  (CFS)      (HR)      (CFS)
                                     16.        5.         5.         5.
+   100.      12.25    (INCHES)     3.109     4.023      4.023      4.023
                       (AC-FT)       8.        10.        10.        10.

                CUMULATIVE AREA =      .05 SQ MI
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***      ***      ***      ***      ***
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                HYDROGRAPH AT STATION        P2
                  FOR PLAN 1, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
PEAK FLOW     TIME                   6-HR      24-HR      72-HR     24.92-HR
+  (CFS)      (HR)      (CFS)
                                     16.        5.         5.         5.
+   100.      12.25    (INCHES)     3.109     4.023      4.023      4.023
                       (AC-FT)       8.        10.        10.        10.

                CUMULATIVE AREA =      .05 SQ MI
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***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***
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104 KP       PLAN  2 FOR STATION        P2
                        TRIANGULAR DISTRIBUTION 10-YRS STORM

             SUBBASIN RUNOFF DATA
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BA          SUBBASIN CHARACTERISTICS
                TAREA          .05  SUBBASIN AREA

            PRECIPITATION DATA

                                  DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
106 PH      ..... 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
              .55    1.31    3.00    3.70    4.10    5.40    6.60    7.60     .00     .00     .00     .00

                                                STORM AREA =      .05

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

100 UD      SCS DIMENSIONLESS UNITGRAPH
                TLAG           .21  LAG
                                                    ***

                                                UNIT HYDROGRAPH
                                            15 END-OF-PERIOD ORDINATES
            21.      69.      91.      76.      46.      26.      16.       9.       5.       3.
             2.       1.       1.       0.       0.

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

                    HYDROGRAPH AT STATION        P2
                      FOR PLAN 2, RATIO = 1.00

  TOTAL RAINFALL =    7.60, TOTAL LOSS =     .60, TOTAL EXCESS =    7.00

                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                  6-HR      24-HR      72-HR     24.92-HR
+  (CFS)       (HR)
                          (CFS)
     134.     12.25                  27.         9.         9.         9.
                        (INCHES)   5.244     7.002      7.002      7.002
                         (AC-FT)     13.        18.        18.        18.

                    CUMULATIVE AREA =     .05 SQ MI

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

                    HYDROGRAPH AT STATION        P2
                      FOR PLAN 2, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                  6-HR      24-HR      72-HR     24.92-HR
+  (CFS)       (HR)
                          (CFS)
+    134.     12.25                  27.         9.         9.         9.
                        (INCHES)   5.244     7.002      7.002      7.002
                         (AC-FT)     13.        18.        18.        18.

                    CUMULATIVE AREA =     .05 SQ MI

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

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

            SUBBASIN RUNOFF DATA

98 BA        SUBBASIN CHARACTERISTICS
                TAREA          .05  SUBBASIN AREA

            PRECIPITATION DATA

                                  DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
109 PH      ..... 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
              .61    1.47    3.50    4.50    5.10    6.30    7.70    9.40     .00     .00     .00     .00

                                                STORM AREA =      .05
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LS          SCS LOSS RATE
                STRTL        .11  INITIAL ABSTRACTION
                CRVNBR     95.00  CURVE NUMBER
                RTIMP        .00  PERCENT IMPERVIOUS AREA

100 UD      SCS DIMENSIONLESS UNITGRAPH
                TLAG         .21  LAG
                                        ***

                                   UNIT HYDROGRAPH
                                15 END-OF-PERIOD ORDINATES
            21.    69.    91.    76.    46.    26.    16.     9.     5.     3.
             2.     1.     1.     0.     0.

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

                HYDROGRAPH AT STATION        P2
                  FOR PLAN 3, RATIO = 1.00

   TOTAL RAINFALL =    9.40, TOTAL LOSS =     .60, TOTAL EXCESS =    8.80

                                   MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
+   (CFS)       (HR)     (CFS)
                                     31.       11.        11.        11.
+    154.      12.25   (INCHES)    6.189     8.796      8.796      8.796
                       (AC-FT)      16.       22.        22.        22.

                CUMULATIVE AREA =     .05 SQ MI

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

                HYDROGRAPH AT STATION        P2
                  FOR PLAN 3, RATIO = 1.00

                                   MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
+   (CFS)       (HR)     (CFS)
                                     31.       11.        11.        11.
+    154.      12.25   (INCHES)    6.189     8.796      8.796      8.796
                       (AC-FT)      16.       22.        22.        22.

                CUMULATIVE AREA =     .05 SQ MI

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

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

            SUBBASIN RUNOFF DATA

98 BA       SUBBASIN CHARACTERISTICS
                TAREA        .05  SUBBASIN AREA

            PRECIPITATION DATA

                                DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
112 PH                                  ..... TP-40 .....  ..... TP-49 .....
            ..... HYDRO-35 .....
            5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
             .64    1.55    3.80    5.00    5.20    7.00    8.70   10.50     .00     .00     .00     .00

                                   STORM AREA =     .05

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

100 UD      SCS DIMENSIONLESS UNITGRAPH
                TLAG         .21  LAG
                                        ***

                                   UNIT HYDROGRAPH
                                15 END-OF-PERIOD ORDINATES
```

```
                                                                                    26.        16.        9.        5.        3.
            21.        69.        91.        76.        46.
             2.         1.         1.         0.         0.

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

                    HYDROGRAPH AT STATION        P2
                      FOR PLAN 4, RATIO = 1.00

  TOTAL RAINFALL =   10.50, TOTAL LOSS =     .61, TOTAL EXCESS =     9.89

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

+   (CFS)        (HR)
                             (CFS)
+    164.       12.25                      35.         13.         12.          12.
                             (INCHES)   6.882       9.893       9.893        9.893
                             (AC-FT)      17.         25.         25.          25.

                    CUMULATIVE AREA =      .05 SQ MI

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

                    HYDROGRAPH AT STATION        P2
                      FOR PLAN 4, RATIO = 1.00

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

+   (CFS)        (HR)
                             (CFS)
+    164.       12.25                      35.         13.         12.          12.
                             (INCHES)   6.882       9.893       9.893        9.893
                             (AC-FT)      17.         25.         25.          25.

                    CUMULATIVE AREA =      .05 SQ MI

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

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

                SUBBASIN RUNOFF DATA

 98 BA           SUBBASIN CHARACTERISTICS
                      TAREA           .05  SUBBASIN AREA

                 PRECIPITATION DATA

115 PH                            DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                                                          ........... TP-49 ...........
                 ..... HYDRO-35 ......  ............... TP-40 ...............
                 5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR    2-DAY   4-DAY   7-DAY  10-DAY
                   .99    2.15    4.40    5.20    6.10    8.00    9.70   11.50      .00     .00     .00     .00

                                             STORM AREA =      .05

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

100 UD           SCS DIMENSIONLESS UNITGRAPH
                      TLAG            .21  LAG
                                                          ***

                                                   UNIT HYDROGRAPH
                                              15 END-OF-PERIOD ORDINATES
            21.        69.        91.        76.        46.        26.        16.        9.        5.        3.
             2.         1.         1.         0.         0.

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

                    HYDROGRAPH AT STATION        P2
                      FOR PLAN 5, RATIO = 1.00

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

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

```
+ (CFS)        (HR)          (CFS)          40.          14.          13.          13.
+    214.      12.25        (INCHES)       7.876       10.891       10.891       10.891
                            (AC-FT)         20.          27.          27.          27.

                          CUMULATIVE AREA =      .05 SQ MI

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

                          HYDROGRAPH AT STATION       P2
                            FOR PLAN 5, RATIO = 1.00

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

+  (CFS)       (HR)          (CFS)          40.          14.          13.          13.
+    214.      12.25        (INCHES)       7.876       10.891       10.891       10.891
                            (AC-FT)         20.          27.          27.          27.

                          CUMULATIVE AREA =      .05 SQ MI


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


            **************
            *            *
 116 KK     *     POND   *          P2
            *            *
            **************
                          RUNOFF MITIGATION POND CALCULATION

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

                HYDROGRAPH ROUTING DATA

 119 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

 121 SV          STORAGE          .0          .4          .7         1.1         1.6         2.1         2.6         3.1         3.7         4.3

 122 SE          ELEVATION        .00        1.12        2.23        3.35        4.46        5.58        6.69        7.81        8.92       10.04

 120 SQ          DISCHARGE        0.          0.         30.         47.         60.         70.         79.         87.         94.        167.

                                                                    ***

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

                          HYDROGRAPH AT STATION      POND
                            FOR PLAN 1, RATIO = 1.00

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

+  (CFS)       (HR)          (CFS)          16.          5.           5.           5.
+     66.      12.50        (INCHES)       3.108       3.883        3.883        3.883
                            (AC-FT)         8.          10.          10.          10.

                                          MAXIMUM AVERAGE STORAGE
 PEAK STORAGE  TIME                     6-HR        24-HR        72-HR       24.92-HR

+  (AC-FT)     (HR)                      1.          0.           0.           0.
      2.      12.50

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

```
 +   EET)      (HR)                     1.86        1.09        1.05        1.05
     5.11     12.50
                        CUMULATIVE AREA =      .05 SQ MI

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

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

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

                        HYDROGRAPH AT STATION       POND
                          FOR PLAN 2, RATIO = 1.00

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

 +    (CFS)       (HR)
                              (CFS)
 +        83.     12.50                        27.          9.          8.          8.
                              (INCHES)        5.238       6.862       6.862       6.862
                              (AC-FT)          13.         17.         17.         17.

                                                    MAXIMUM AVERAGE STORAGE
   PEAK STORAGE   TIME                        6-HR        24-HR       72-HR     24.92-HR

 +  (AC-FT)       (HR)                          1.          0.          0.          0.
        3.        12.50
                                                    MAXIMUM AVERAGE STAGE
   PEAK STAGE     TIME                        6-HR        24-HR       72-HR     24.92-HR

 +    (FEET)      (HR)                         2.52        1.38        1.33        1.33
       7.34       12.50

                        CUMULATIVE AREA =      .05 SQ MI

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

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

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

                        HYDROGRAPH AT STATION       POND
                          FOR PLAN 3, RATIO = 1.00

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

 +    (CFS)       (HR)
                              (CFS)
 +        92.     12.58                        31.         11.         11.         11.
                              (INCHES)        6.186       8.655       8.655       8.655
                              (AC-FT)          16.         22.         22.         22.

                                                    MAXIMUM AVERAGE STORAGE
   PEAK STORAGE   TIME                        6-HR        24-HR       72-HR     24.92-HR

 +  (AC-FT)       (HR)                          1.          1.          1.          1.
        4.        12.58
                                                    MAXIMUM AVERAGE STAGE
   PEAK STAGE     TIME                        6-HR        24-HR       72-HR     24.92-HR

 +    (FEET)      (HR)                         2.92        1.60        1.54        1.54
       8.64       12.58

                        CUMULATIVE AREA =      .05 SQ MI

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

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

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

                        HYDROGRAPH AT STATION       POND
                          FOR PLAN 4, RATIO = 1.00

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

 +    (CFS)       (HR)
```

+ 113.	12.50	(CFS)	35.	12.	12.	12.
		(INCHES)	6.873	9.752	9.752	9.752
		(AC-FT)	17.	25.	25.	25.

MAXIMUM AVERAGE STORAGE

PEAK STORAGE	TIME	6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
4.	12.50	1.	1.	1.	1.

MAXIMUM AVERAGE STAGE

PEAK STAGE	TIME	6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
9.21	12.50	3.14	1.68	1.61	1.61

CUMULATIVE AREA = .05 SQ MI

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

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

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

HYDROGRAPH AT STATION POND
FOR PLAN 5, RATIO = 1.00

MAXIMUM AVERAGE FLOW

PEAK FLOW	TIME		6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
+ 159.	12.42	(CFS)	40.	14.	13.	13.
		(INCHES)	7.867	10.750	10.750	10.750
		(AC-FT)	20.	27.	27.	27.

MAXIMUM AVERAGE STORAGE

PEAK STORAGE	TIME	6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
4.	12.42	1.	1.	1.	1.

MAXIMUM AVERAGE STAGE

PEAK STAGE	TIME	6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
9.91	12.42	3.29	1.71	1.65	1.65

CUMULATIVE AREA = .05 SQ MI

*** ***

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              **************
              *            *
 123 KK       *     E1     *
              *            *
              **************
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

124 KP PLAN 1 FOR STATION E1
TRIANGULAR DISTRIBUTION 2-YRS STORM

SUBBASIN RUNOFF DATA

125 BA SUBBASIN CHARACTERISTICS
TAREA .17 SUBBASIN AREA

PRECIPITATION DATA

130 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	1.04	2.10	2.50	2.70	3.30	4.00	4.60	.00	.00	.00	.00

STORM AREA = .17

126 LS SCS LOSS RATE

```
                STRTL          .71  INITIAL ABSTRACTION
                CRVNBR       73.77  CURVE NUMBER
                RTIMP          .00  PERCENT IMPERVIOUS AREA

127 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG           .27  LAG
                                          ***

                                      UNIT HYDROGRAPH
                                   18 END-OF-PERIOD ORDINATES
        43.     143.     248.     265.     222.     148.      93.      61.      39.      26.
        16.      11.       7.       4.       3.       2.       1.       0.

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

            HYDROGRAPH AT STATION        E1
              FOR PLAN 1, RATIO = 1.00

  TOTAL RAINFALL =    4.60, TOTAL LOSS =    2.57, TOTAL EXCESS =    2.03

                                   MAXIMUM AVERAGE FLOW
 PEAK FLOW    TIME                 6-HR     24-HR     72-HR    24.92-HR
+  (CFS)      (HR)     (CFS)        31.       9.        9.        9.
+   175.     12.33   (INCHES)     1.699     2.031     2.031     2.031
                     (AC-FT)       16.       19.       19.       19.

            CUMULATIVE AREA =     .17 SQ MI

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

            HYDROGRAPH AT STATION        E1
              FOR PLAN 1, RATIO = 1.00

                                   MAXIMUM AVERAGE FLOW
 PEAK FLOW    TIME                 6-HR     24-HR     72-HR    24.92-HR
+  (CFS)      (HR)     (CFS)        31.       9.        9.        9.
+   175.     12.33   (INCHES)     1.699     2.031     2.031     2.031
                     (AC-FT)       16.       19.       19.       19.

            CUMULATIVE AREA =     .17 SQ MI

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

131 KP        PLAN  2 FOR STATION        E1
                      TRIANGULAR DISTRIBUTION 10-YRS STORM

              SUBBASIN RUNOFF DATA

125 BA          SUBBASIN CHARACTERISTICS
                  TAREA          .17  SUBBASIN AREA

                PRECIPITATION DATA
                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
133 PH                                  ..... TP-40 .....   ..... TP-49 .....
                ..... HYDRO-35 .....   2-HR     3-HR     6-HR    12-HR    24-HR   2-DAY    4-DAY    7-DAY   10-DAY
                5-MIN   15-MIN   60-MIN  3.00     4.10     5.40     6.60     7.60     .00      .00      .00      .00
                  .55     1.31     3.00  3.70
                                                STORM AREA =     .17

126 LS          SCS LOSS RATE
                  STRTL          .71  INITIAL ABSTRACTION
                  CRVNBR       73.77  CURVE NUMBER
                  RTIMP          .00  PERCENT IMPERVIOUS AREA

127 UD          SCS DIMENSIONLESS UNITGRAPH
                  TLAG           .27  LAG
                                          ***

                                      UNIT HYDROGRAPH
                                   18 END-OF-PERIOD ORDINATES
        43.     143.     248.     265.     222.     148.      93.      61.      39.      26.
```

```
                                                                                  0.
                                                                          1.
                                                                  2.
                                                          3.
                                                  4.
                                          7.
                          11.
                  16.
                                                                  ***
                                                          ***
                                          ***
                  ***
         ***
                                  E1
                  HYDROGRAPH AT STATION
                    FOR PLAN 2, RATIO = 1.00

TOTAL RAINFALL =     7.60, TOTAL LOSS =     3.06, TOTAL EXCESS =     4.54

                                                MAXIMUM AVERAGE FLOW
PEAK FLOW     TIME                      6-HR       24-HR       72-HR     24.92-HR
+  (CFS)      (HR)        (CFS)                                                20.
                                         67.        21.         20.        4.542
+   323.      12.33      (INCHES)      3.643      4.542       4.542          42.
                         (AC-FT)        33.        42.         42.

                         CUMULATIVE AREA =     .17 SQ MI

                                                                  ***
                                                          ***
                                          ***
         ***
                  ***
                                  E1
                  HYDROGRAPH AT STATION
                    FOR PLAN 2, RATIO = 1.00

                                                MAXIMUM AVERAGE FLOW
PEAK FLOW     TIME                      6-HR       24-HR       72-HR     24.92-HR
+  (CFS)      (HR)        (CFS)                                                20.
                                         67.        21.         20.        4.542
+   323.      12.33      (INCHES)      3.643      4.542       4.542          42.
                         (AC-FT)        33.        42.         42.

                         CUMULATIVE AREA =     .17 SQ MI

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

134 KP        PLAN  3 FOR STATION        E1
                        TRIANGULAR DISTRIBUTION 25-YRS STORM

              SUBBASIN RUNOFF DATA

125 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .17  SUBBASIN AREA

                PRECIPITATION DATA
                                          DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                                                                  TP-49
136 PH                                  TP-40                                  2-DAY   4-DAY   7-DAY  10-DAY
                  HYDRO-35                                                       .00     .00     .00     .00
                 5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR
                  .61    1.47    3.50    4.50    5.10    6.30    7.70    9.40

                                                STORM AREA =     .17

126 LS          SCS LOSS RATE
                     STRTL          .71  INITIAL ABSTRACTION
                     CRVNBR       73.77  CURVE NUMBER
                     RTIMP         .00  PERCENT IMPERVIOUS AREA

127 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .27  LAG
                                                                  ***
                                                UNIT HYDROGRAPH
                                          18 END-OF-PERIOD ORDINATES
                                                                                  61.     39.     26.
                                                                          93.
                                                                  148.
                                                          222.
                                                  265.
                                          246.
                          143.
                  43.
                  16.      11.             7.      4.      3.      2.      1.      0.
                                                                  ***
                                                          ***
                                          ***
                  ***
         ***
                                  E1
                  HYDROGRAPH AT STATION
                    FOR PLAN 3, RATIO = 1.00

TOTAL RAINFALL =     9.40, TOTAL LOSS =     3.23, TOTAL EXCESS =     6.16

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

```
                    (CFS)          87.        29.        27.        27.
+    404.    12.33  (INCHES)     4.703     6.163      6.163      6.163
                    (AC-FT)        43.        57.        57.        57.

                    CUMULATIVE AREA =     .17 SQ MI

                                                                  ***
                                                        ***
                                              ***
                         ***        ***
***
                    HYDROGRAPH AT STATION        E1
                      FOR PLAN 3, RATIO = 1.00

                                         MAXIMUM AVERAGE FLOW
 PEAK FLOW    TIME                 6-HR       24-HR      72-HR     24.92-HR
+  (CFS)      (HR)     (CFS)        87.        29.        27.        27.
+    404.    12.33  (INCHES)     4.703     6.163      6.163      6.163
                    (AC-FT)        43.        57.        57.        57.

                    CUMULATIVE AREA =     .17 SQ MI

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

 137 KP        PLAN  4 FOR STATION        E1
                          TRIANGULAR DISTRIBUTION 50-YRS STORM

               SUBBASIN RUNOFF DATA

 125 BA          SUBBASIN CHARACTERISTICS
                      TAREA          .17  SUBBASIN AREA

                 PRECIPITATION DATA
                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                                                    ..........  TP-49  ..........
 139 PH                  ..... HYDRO-35 ......  ............... TP-40 ...............  2-DAY   4-DAY   7-DAY  10-DAY
                         5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR    .00     .00     .00     .00
                          .64    1.55   3.80    5.00    5.20    7.00    8.70   10.50

                                                   STORM AREA =     .17

 126 LS          SCS LOSS RATE
                      STRTL          .71  INITIAL ABSTRACTION
                      CRVNBR       73.77  CURVE NUMBER
                      RTIMP          .00  PERCENT IMPERVIOUS AREA

 127 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG           .27  LAG
                                                        ***
                                                   UNIT HYDROGRAPH
                                              18 END-OF-PERIOD ORDINATES
                                                                   93.       61.       39.       26.
                                                  222.      148.
                                                    3.        2.        1.        0.
                 43.      143.      248.      265.
                 16.       11.        7.        4.
                                                                  ***
                                                        ***
                         ***        ***
***
                    HYDROGRAPH AT STATION        E1
                      FOR PLAN 4, RATIO = 1.00

 TOTAL RAINFALL =   10.50, TOTAL LOSS =    3.32, TOTAL EXCESS =    7.18

                                         MAXIMUM AVERAGE FLOW
 PEAK FLOW    TIME                 6-HR       24-HR      72-HR     24.92-HR
+  (CFS)      (HR)     (CFS)       100.        33.        32.        32.
+    449.    12.33  (INCHES)     5.379     7.178      7.178      7.178
                    (AC-FT)        49.        66.        66.        66.

                    CUMULATIVE AREA =     .17 SQ MI

                                                                  ***
                                                        ***
                                              ***
                         ***        ***
***
                    HYDROGRAPH AT STATION        E1
                      FOR PLAN 4, RATIO = 1.00
```

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+		(CFS)	100.	33.	32.	32.
+ 449.	12.33	(INCHES)	5.379	7.178	7.178	7.178
		(AC-FT)	49.	66.	66.	66.

CUMULATIVE AREA = .17 SQ MI

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

140 KP PLAN 5 FOR STATION E1
TRIANGULAR DISTRIBUTION 100-YRS STORM

SUBBASIN RUNOFF DATA

125 BA SUBBASIN CHARACTERISTICS
TAREA .17 SUBBASIN AREA

PRECIPITATION DATA

142 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
.99	2.15	4.40	5.20	6.10	8.00	9.70	11.50	.00	.00	.00	.00

STORM AREA = .17

126 LS SCS LOSS RATE
STRTL .71 INITIAL ABSTRACTION
CRVNBR 73.77 CURVE NUMBER
RTIMP .00 PERCENT IMPERVIOUS AREA

127 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .27 LAG

***

UNIT HYDROGRAPH
18 END-OF-PERIOD ORDINATES

43.	143.	248.	265.	222.	140.	93.	61.	39.	26.
16.	11.	7.	4.	3.	2.	1.	0.		

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

HYDROGRAPH AT STATION E1
FOR PLAN 5, RATIO = 1.00

TOTAL RAINFALL = 11.50, TOTAL LOSS = 3.39, TOTAL EXCESS = 8.11

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+		(CFS)	116.	38.	36.	36.
+ 585.	12.33	(INCHES)	6.288	8.112	8.112	8.112
		(AC-FT)	58.	74.	74.	74.

CUMULATIVE AREA = .17 SQ MI

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

HYDROGRAPH AT STATION E1
FOR PLAN 5, RATIO = 1.00

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+		(CFS)	116.	38.	36.	36.
+ 585.	12.33	(INCHES)	6.288	8.112	8.112	8.112
		(AC-FT)	58.	74.	74.	74.

CUMULATIVE AREA = .17 SQ MI

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

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                 *            *
143 KK           *    P1A     *
                 *            *
                 **************

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144 KP        PLAN  1 FOR STATION      P1A
                        TRIANGULAR DISTRIBUTION 2-YRS STORM

              SUBBASIN RUNOFF DATA

145 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .05  SUBBASIN AREA

                PRECIPITATION DATA
                                        DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
150 PH                                  ............... TP-40 ...............  ........... TP-49 ...........
                ..... HYDRO-35 ......   ...............                          ...........
                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    1.04    2.10    2.50    2.70    3.30    4.00    4.60     .00     .00     .00     .00

                                                STORM AREA -      .05

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

147 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .45  LAG
                                                  ***

                                              UNIT HYDROGRAPH
                                          29 END-OF-PERIOD ORDINATES
                                   38.     47.     49.     46.     40.     32.     23.
                 4.     12.     24.      8.      6.      4.      3.      2.      2.      1.
                17.     13.     10.      0.      0.      0.      0.      0.      0.
                 1.      1.      1.

                                                  ***
        ***             ***             ***             ***
                 HYDROGRAPH AT STATION      P1A
                   FOR PLAN 1, RATIO = 1.00

    TOTAL RAINFALL =    4.60, TOTAL LOSS =     .58, TOTAL EXCESS =    4.02

                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
+   (CFS)       (HR)
                              (CFS)   17.        5.         5.          5.
+     75.       12.50       (INCHES) 3.106     4.022      4.022       4.022
                            (AC-FT)    8.        11.        11.         11.

                 CUMULATIVE AREA =     .05 SQ MI

        ***             ***             ***             ***
                 HYDROGRAPH AT STATION      P1A
                   FOR PLAN 1, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
+   (CFS)       (HR)
                              (CFS)   17.        5.         5.          5.
+     75.       12.50       (INCHES) 3.106     4.022      4.022       4.022
                            (AC-FT)    8.        11.        11.         11.

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

151 KP        PLAN  2 FOR STATION      P1A
                          TRIANGULAR DISTRIBUTION 10-YRS STORM

              SUBBASIN RUNOFF DATA

145 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .05  SUBBASIN AREA

                PRECIPITATION DATA

                                  DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
153 PH          ..... 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
                  .55    1.31    3.00    3.70    4.10    5.40    6.60    7.60     .00     .00     .00     .00

                                                STORM AREA =      .05

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

147 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .45  LAG
                                                  ***

                                                UNIT HYDROGRAPH
                                          29 END-OF-PERIOD ORDINATES
                 4.      12.      24.      38.      47.      49.      46.      40.      32.      23.
                17.      13.      10.       8.       6.       4.       3.       2.       2.       1.
                 1.       1.       1.       0.       0.       0.       0.       0.       0.

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

                  HYDROGRAPH AT STATION      P1A
                    FOR PLAN 2, RATIO = 1.00

TOTAL RAINFALL =    7.60, TOTAL LOSS =     .60, TOTAL EXCESS =    7.00

                                          MAXIMUM AVERAGE FLOW
 PEAK FLOW     TIME                  6-HR      24-HR      72-HR     24.92-HR
+  (CFS)       (HR)
                          (CFS)
                                     28.        9.         9.          9.
+    106.     12.50       (INCHES)  5.227     7.000      7.000       7.000
                          (AC-FT)    14.       18.        18.         18.

                  CUMULATIVE AREA =     .05 SQ MI

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

                  HYDROGRAPH AT STATION      P1A
                    FOR PLAN 2, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
 PEAK FLOW     TIME                  6-HR      24-HR      72-HR     24.92-HR
+  (CFS)       (HR)
                          (CFS)
                                     28.        9.         9.          9.
+    106.     12.50       (INCHES)  5.227     7.000      7.000       7.000
                          (AC-FT)    14.       18.        18.         18.

                  CUMULATIVE AREA =     .05 SQ MI

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

154 KP        PLAN  3 FOR STATION      P1A
                          TRIANGULAR DISTRIBUTION 25-YRS STORM

              SUBBASIN RUNOFF DATA

145 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .05  SUBBASIN AREA
```

PRECIPITATION DATA

156 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
.61	1.47	3.50	4.50	5.10	6.30	7.70	9.40	.00	.00	.00	.00

STORM AREA = .05

146 LS

SCS LOSS RATE

STRTL	.11	INITIAL ABSTRACTION
CRVNBR	95.00	CURVE NUMBER
RTIMP	.00	PERCENT IMPERVIOUS AREA

147 UD

SCS DIMENSIONLESS UNITGRAPH

TLAG	.45	LAG

***

UNIT HYDROGRAPH
29 END-OF-PERIOD ORDINATES

4.	12.	24.	38.	47.	49.	46.	40.	32.	23.
17.	13.	10.	8.	6.	4.	3.	2.	2.	1.
1.	1.	1.	0.	0.	0.	0.	0.	0.	

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

HYDROGRAPH AT STATION P1A
FOR PLAN 3, RATIO = 1.00

TOTAL RAINFALL = 9.40, TOTAL LOSS = .60, TOTAL EXCESS = 8.80

	PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+	(CFS)	(HR)	(CFS)	33.	12.	11.	11.
+	124.	12.50	(INCHES)	6.181	8.791	8.791	8.791
			(AC-FT)	16.	23.	23.	23.

CUMULATIVE AREA = .05 SQ MI

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

HYDROGRAPH AT STATION P1A
FOR PLAN 3, RATIO = 1.00

	PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+	(CFS)	(HR)	(CFS)	33.	12.	11.	11.
+	124.	12.50	(INCHES)	6.181	8.791	8.791	8.791
			(AC-FT)	16.	23.	23.	23.

CUMULATIVE AREA = .05 SQ MI

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

157 KP PLAN 4 FOR STATION P1A
TRIANGULAR DISTRIBUTION 50-YRS STORM

SUBBASIN RUNOFF DATA

145 BA

SUBBASIN CHARACTERISTICS

TAREA	.05	SUBBASIN AREA

PRECIPITATION DATA

159 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
.64	1.55	3.80	5.00	5.20	7.00	8.70	10.50	.00	.00	.00	.00

STORM AREA = .05

146 LS

SCS LOSS RATE

STRTL	.11	INITIAL ABSTRACTION

```
                CRVNBR        95.00  CURVE NUMBER
                RTIMP          .00  PERCENT IMPERVIOUS AREA

147 UD          SCS DIMENSIONLESS UNITGRAPH
                  TLAG          .45  LAG
                                          ***

                                        UNIT HYDROGRAPH
                                    29 END-OF-PERIOD ORDINATES
                 4.    12.    24.    38.    47.    49.    46.    40.    32.    23.
                17.    13.    10.     8.     6.     4.     3.     2.     2.     1.
                 1.     1.     1.     0.     0.     0.     0.     0.     0.
                                                                  ***
   ***     ***     ***     ***     ***

                 HYDROGRAPH AT STATION      P1A
                   FOR PLAN 4, RATIO = 1.00

   TOTAL RAINFALL =   10.50, TOTAL LOSS =     .61, TOTAL EXCESS =    9.89

                                   MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
+   (CFS)       (HR)
                              (CFS)   36.       13.        13.        13.
+    134.      12.50        (INCHES) 6.859    9.888      9.888      9.888
                            (AC-FT)  18.       26.        26.        26.

                 CUMULATIVE AREA =     .05 SQ MI

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

                 HYDROGRAPH AT STATION      P1A
                   FOR PLAN 4, RATIO = 1.00

                                   MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
   (CFS)        (HR)
                              (CFS)   36.       13.        13.        13.
+    134.      12.50        (INCHES) 6.859    9.888      9.888      9.888
                            (AC-FT)  18.       26.        26.        26.

                 CUMULATIVE AREA =     .05 SQ MI

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

160 KP          PLAN  5 FOR STATION      P1A
                          TRIANGULAR DISTRIBUTION 100-YRS STORM

                SUBBASIN RUNOFF DATA

145 BA            SUBBASIN CHARACTERISTICS
                    TAREA          .05  SUBBASIN AREA

                  PRECIPITATION DATA

                                  DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
162 PH                                                                          ........... TP-49 ...........
                  ..... HYDRO-35 .....   ............... TP-40 ...............
                  5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                    .99    2.15    4.40    5.20    6.10    8.00    9.70   11.50     .00     .00     .00     .00
                                                   STORM AREA =     .05

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

147 UD            SCS DIMENSIONLESS UNITGRAPH
                    TLAG          .45  LAG
                                          ***

                                        UNIT HYDROGRAPH
                                    29 END-OF-PERIOD ORDINATES
                 4.    12.    24.    38.    47.    49.    46.    40.    32.    23.
```

```
          17.       13.       10.        8.        6.        4.        3.        2.        2.        1.
           1.        1.        1.        0.        0.        0.        0.        0.        0.

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

                    HYDROGRAPH AT STATION      P1A
                      FOR PLAN 5, 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)
+    161.     12.50                  42.         14.         14.          14.
                        (INCHES)   7.851      10.886      10.886       10.886
                         (AC-FT)     21.         29.         29.          29.

                    CUMULATIVE AREA =      .05 SQ MI

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

                    HYDROGRAPH AT STATION      P1A
                      FOR PLAN 5, RATIO = 1.00

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                          (CFS)
+    161.     12.50                  42.         14.         14.          14.
                        (INCHES)   7.851      10.886      10.886       10.886
                         (AC-FT)     21.         29.         29.          29.

                    CUMULATIVE AREA =      .05 SQ MI

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

          **************
          *            *
163 KK    *      P7    *
          *            *
          **************

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

164 KP        PLAN  1 FOR STATION       P7
                          TRIANGULAR DISTRIBUTION 2-YRS STORM

              SUBBASIN RUNOFF DATA

165 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .03  SUBBASIN AREA

                PRECIPITATION DATA

170 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    1.04    2.10    2.50    2.70    3.30    4.00    4.60     .00     .00     .00     .00

                                          STORM AREA =      .03

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

167 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .15  LAG

                                                  ***

                                          UNIT HYDROGRAPH
                                       11 END-OF-PERIOD ORDINATES
                31.       81.       72.       36.       18.        9.        4.        2.        1.        1.
```

```
                0.
     ***          ***          ***          ***          ***

                    HYDROGRAPH AT STATION        P7
                      FOR PLAN 1, RATIO = 1.00

   TOTAL RAINFALL -    4.60, TOTAL LOSS =     .58, TOTAL EXCESS =    4.02

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                          (CFS)
+     77.      12.17                 11.          4.          3.           3.
                        (INCHES)   3.110       4.023       4.023        4.023
                         (AC-FT)     5.          7.          7.           7.

                    CUMULATIVE AREA =     .03 SQ MI

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

                    HYDROGRAPH AT STATION        P7
                      FOR PLAN 1, RATIO = 1.00

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                          (CFS)
+     77.      12.17                 11.          4.          3.           3.
                        (INCHES)   3.110       4.023       4.023        4.023
                         (AC-FT)     5.          7.          7.           7.

                    CUMULATIVE AREA =     .03 SQ MI

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

   KP        PLAN  2 FOR STATION        P7
                          TRIANGULAR DISTRIBUTION 10-YRS STORM

             SUBBASIN RUNOFF DATA

165 BA         SUBBASIN CHARACTERISTICS
                    TAREA          .03  SUBBASIN AREA

               PRECIPITATION DATA

173 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
                .55    1.31    3.00   3.70    4.10    5.40    6.60    7.60     .00     .00     .00     .00

                                          STORM AREA =      .03

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

167 UD         SCS DIMENSIONLESS UNITGRAPH
                    TLAG          .15  LAG

                                                  ***

                                              UNIT HYDROGRAPH
                                          11 END-OF-PERIOD ORDINATES
             31.      81.      72.      36.      18.       9.       4.       2.       1.       1.
              0.

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

                    HYDROGRAPH AT STATION        P7
                      FOR PLAN 2, RATIO = 1.00

   TOTAL RAINFALL -    7.60, TOTAL LOSS =     .60, TOTAL EXCESS =    7.00

 K FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
```

```
                    (CFS)
+   103.    12.17                19.        6.        6.        6.
                    (INCHES)    5.247     7.003     7.003     7.003
                    (AC-FT)      9.        12.       12.       12.

                    CUMULATIVE AREA =     .03 SQ MI

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

                    HYDROGRAPH AT STATION      P7
                      FOR PLAN 2, RATIO = 1.00

 PEAK FLOW    TIME                    MAXIMUM AVERAGE FLOW
                              6-HR      24-HR      72-HR    24.92-HR
+  (CFS)      (HR)
                    (CFS)
+   103.    12.17                19.        6.        6.        6.
                    (INCHES)    5.247     7.003     7.003     7.003
                    (AC-FT)      9.        12.       12.       12.

                    CUMULATIVE AREA =     .03 SQ MI

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

174 KK      PLAN  3 FOR STATION      P7
                    TRIANGULAR DISTRIBUTION 25-YRS STORM

            SUBBASIN RUNOFF DATA

165 BA        SUBBASIN CHARACTERISTICS
                TAREA          .03  SUBBASIN AREA

              PRECIPITATION DATA

[illegible] 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
                   .61    1.47    3.50    4.50    5.10    6.30    7.70    9.40     .00     .00     .00     .00

                                          STORM AREA =     .03

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

167 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG           .15  LAG

                                          ***

                                          UNIT HYDROGRAPH
                                       11 END-OF-PERIOD ORDINATES
            31.     81.     72.     36.     18.      9.      4.      2.      1.      1.
            0.

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

                    HYDROGRAPH AT STATION      P7
                      FOR PLAN 3, RATIO = 1.00

   TOTAL RAINFALL      9.40, TOTAL LOSS =     .60, TOTAL EXCESS =    8.80

 PEAK FLOW    TIME                    MAXIMUM AVERAGE FLOW
                              6-HR      24-HR      72-HR    24.92-HR
+  (CFS)      (HR)
                    (CFS)
+   117.    12.17                22.        8.        8.        8.
                    (INCHES)    6.190     8.796     8.796     8.796
                    (AC-FT)     11.       15.       15.       15.

                    CUMULATIVE AREA =     .03 SQ MI

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

                    HYDROGRAPH AT STATION      P7
                      FOR PLAN 3, RATIO = 1.00
```

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	22.	8.	8.	8.
+ 117.	12.17	(INCHES)	6.190	8.796	8.796	8.796
		(AC-FT)	11.	15.	15.	15.

CUMULATIVE AREA = .03 SQ MI

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

177 KP PLAN 4 FOR STATION P7
TRIANGULAR DISTRIBUTION 50-YRS STORM

SUBBASIN RUNOFF DATA

165 BA SUBBASIN CHARACTERISTICS
TAREA .03 SUBBASIN AREA

PRECIPITATION DATA

179 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
.64	1.55	3.80	5.00	5.20	7.00	8.70	10.50	.00	.00	.00	.00

STORM AREA - .03

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

167 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .15 LAG

***

UNIT HYDROGRAPH
11 END-OF-PERIOD ORDINATES

31. 81. 72. 36. 18. 9. 4. 2. 1. 1.
0.

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

HYDROGRAPH AT STATION P7
FOR PLAN 4, RATIO = 1.00

TOTAL RAINFALL - 10.50, TOTAL LOSS - .61, TOTAL EXCESS = 9.89

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	24.	9.	8.	8.
+ 125.	12.17	(INCHES)	6.887	9.893	9.893	9.893
		(AC-FT)	12.	17.	17.	17.

CUMULATIVE AREA .03 SQ MI

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

HYDROGRAPH AT STATION P7
FOR PLAN 4, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	24.	9.	8.	8.
+ 125.	12.17	(INCHES)	6.887	9.893	9.893	9.893
		(AC-FT)	12.	17.	17.	17.

CUMULATIVE AREA - .03 SQ MI

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

180 KP        PLAN  5 FOR STATION        P7
                          TRIANGULAR DISTRIBUTION 100-YRS STORM

              SUBBASIN RUNOFF DATA

165 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .03  SUBBASIN AREA

                PRECIPITATION DATA

                                  DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
182 PH          ..... 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
                  .99    2.15    4.40    5.20    6.10    8.00    9.70   11.50     .00     .00     .00     .00

                                                STORM AREA =      .03

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

167 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .15  LAG

                                                  ***

                                                UNIT HYDROGRAPH
                                            11 END-OF-PERIOD ORDINATES
                31.      81.      72.      36.      18.       9.       4.       2.       1.       1.
                 0.

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

                  HYDROGRAPH AT STATION        P7
                    FOR PLAN 5, RATIO = 1.00

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

                                          MAXIMUM AVERAGE FLOW
 PEAK FLOW     TIME                   6-HR      24-HR      72-HR     24.92-HR
+  (CFS)       (HR)
                          (CFS)
+    167.     12.17                  28.        10.         9.          9.
                        (INCHES)   7.882     10.891     10.891      10.891
                         (AC-FT)     14.        19.        19.         19.

                  CUMULATIVE AREA =      .03 SQ MI

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

                  HYDROGRAPH AT STATION        P7
                    FOR PLAN 5, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
 PEAK FLOW     TIME                   6-HR      24-HR      72-HR     24.92-HR
+  (CFS)       (HR)
                          (CFS)
+    167.     12.17                  28.        10.         9.          9.
                        (INCHES)   7.882     10.891     10.891      10.891
                         (AC-FT)     14.        19.        19.         19.

                  CUMULATIVE AREA =      .03 SQ MI

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

              **************
              *            *
3 KK          *    COMB 3  *
              *            *
              **************
                          P1+P7
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HC HYDROGRAPH COMBINATION
ICOMP 2 NUMBER OF HYDROGRAPHS TO COMBINE

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***

HYDROGRAPH AT STATION COMB 3
FOR PLAN 1, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	28.	9.	9.	9.
+ 127.	12.25	(INCHES)	3.106	4.022	4.022	4.022
		(AC-FT)	14.	18.	18.	18.

CUMULATIVE AREA = .08 SQ MI

***

HYDROGRAPH AT STATION COMB 3
FOR PLAN 2, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	46.	16.	15.	15.
+ 178.	12.25	(INCHES)	5.227	7.001	7.001	7.001
		(AC-FT)	23.	31.	31.	31.

CUMULATIVE AREA = .08 SQ MI

***

HYDROGRAPH AT STATION COMB 3
FOR PLAN 3, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	55.	19.	19.	19.
+ 207.	12.25	(INCHES)	6.181	8.793	8.793	8.793
		(AC-FT)	27.	39.	39.	39.

CUMULATIVE AREA = .08 SQ MI

***

HYDROGRAPH AT STATION COMB 3
FOR PLAN 4, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	61.	22.	21.	21.
+ 223.	12.25	(INCHES)	6.859	9.890	9.890	9.890
		(AC-FT)	30.	43.	43.	43.

CUMULATIVE AREA = .08 SQ MI

***

HYDROGRAPH AT STATION COMB 3
FOR PLAN 5, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
(CFS)	(HR)	(CFS)	70.	24.	23.	23.
275.	12.25	(INCHES)	7.850	10.888	10.888	10.888
		(AC-FT)	34.	48.	48.	48.

CUMULATIVE AREA = .08 SQ MI

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          *            *
186 KK    *     POND   *          P1
          *            *
          **************
                    RUNOFF MITIGATION POND CALCULATION

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

              HYDROGRAPH ROUTING DATA

189 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

191 SV          STORAGE          .0       .9      1.7      2.7      3.7      4.7      5.8      6.9      8.1      9.3

192 SE          ELEVATION       .00     1.12     2.23     3.35     4.46     5.58     6.69     7.81     8.92    10.04

190 SQ          DISCHARGE        0.      12.      29.      39.      47.      54.      97.     139.     169.     263.
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HYDROGRAPH AT STATION POND
FOR PLAN 1, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	27.	9.	9.	9.
+ 68.	12.83	(INCHES)	3.063	4.001	4.001	4.001
		(AC-FT)	13.	18.	18.	18.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)	2.	1.	1.	1.
5.	12.83				

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)	2.48	.82	.79	.79
5.94	12.83				

CUMULATIVE AREA = .08 SQ MI

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

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

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

HYDROGRAPH AT STATION POND
FOR PLAN 2, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	46.	15.	15.	15.
+ 127.	12.67					

			6-HR	24-HR	72-HR	24.92-HR
		(INCHES)	5.130	6.964	6.964	6.964
		(AC-FT)	23.	31.	31.	31.

MAXIMUM AVERAGE STORAGE

PEAK STORAGE	TIME	6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
7.	12.67	3.	1.	1.	1.

MAXIMUM AVERAGE STAGE

PEAK STAGE	TIME	6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
7.50	12.67	3.61	1.29	1.24	1.24

CUMULATIVE AREA = .08 SQ MI

*** ***

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

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

HYDROGRAPH AT STATION POND
FOR PLAN 3, RATIO = 1.00

MAXIMUM AVERAGE FLOW

PEAK FLOW	TIME		6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)	54.	19.	19.	19.
+ 153.	12.67	(INCHES)	6.109	8.730	8.730	8.730
		(AC-FT)	27.	38.	38.	38.

MAXIMUM AVERAGE STORAGE

PEAK STORAGE	TIME	6-HR	24-HR	72-HR	24.92-HR
(AC-FT)	(HR)				
7.	12.67	3.	1.	1.	1.

MAXIMUM AVERAGE STAGE

PEAK STAGE	TIME	6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
8.34	12.67	4.03	1.56	1.50	1.50

CUMULATIVE AREA = .08 SQ MI

*** ***

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

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

HYDROGRAPH AT STATION POND
FOR PLAN 4, RATIO = 1.00

MAXIMUM AVERAGE FLOW

PEAK FLOW	TIME		6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)	60.	22.	21.	21.
+ 166.	12.67	(INCHES)	6.720	9.823	9.823	9.023
		(AC-FT)	30.	43.	43.	43.

MAXIMUM AVERAGE STORAGE

PEAK STORAGE	TIME	6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
8.	12.67	4.	1.	1.	1.

MAXIMUM AVERAGE STAGE

PEAK STAGE	TIME	6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
8.81	12.67	4.35	1.72	1.66	1.66

CUMULATIVE AREA = .08 SQ MI

*** ***

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

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

HYDROGRAPH AT STATION POND
FOR PLAN 5, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 214.	12.58		68.	24.	23.	23.
		(INCHES)	7.665	10.821	10.821	10.821
		(AC-FT)	34.	48.	48.	48.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
9.	12.58	4.	2.	1.	1.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
9.45	12.58	4.93	1.85	1.78	1.78

CUMULATIVE AREA = .08 SQ MI

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*            *
193 KK   *     P1B    *
*            *
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194 KP PLAN 1 FOR STATION P1B
TRIANGULAR DISTRIBUTION 2-YRS STORM

SUBBASIN RUNOFF DATA

195 BA SUBBASIN CHARACTERISTICS
TAREA .03 SUBBASIN AREA

PRECIPITATION DATA

200 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	1.04	2.10	2.50	2.70	3.30	4.00	4.60	.00	.00	.00	.00

STORM AREA = .03

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

197 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .40 LAG

***

UNIT HYDROGRAPH
26 END-OF-PERIOD ORDINATES

3.	9.	19.	29.	32.	32.	27.	22.	15.	11.
8.	6.	4.	3.	2.	2.	1.	1.	1.	1.
0.	0.	0.	0.	0.	0.				

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

HYDROGRAPH AT STATION P1B
FOR PLAN 1, RATIO = 1.00

TOTAL RAINFALL = 4.60, TOTAL LOSS = .58, TOTAL EXCESS = 4.02

				MAXIMUM AVERAGE FLOW		
PEAK FLOW	TIME		6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)	10.	3.	3.	3.
+ 47.	12.42	(INCHES)	3.107	4.022	4.022	4.022
		(AC-FT)	5.	6.	6.	6.

CUMULATIVE AREA = .03 SQ MI

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

HYDROGRAPH AT STATION P1B
FOR PLAN 1, RATIO = 1.00

				MAXIMUM AVERAGE FLOW		
PEAK FLOW	TIME		6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)	10.	3.	3.	3.
+ 47.	12.42	(INCHES)	3.107	4.022	4.022	4.022
		(AC-FT)	5.	6.	6.	6.

CUMULATIVE AREA = .03 SQ MI

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

201 KP PLAN 2 FOR STATION P1B
TRIANGULAR DISTRIBUTION 10-YRS STORM

SUBBASIN RUNOFF DATA

195 BA SUBBASIN CHARACTERISTICS
TAREA .03 SUBBASIN AREA

PRECIPITATION DATA

203 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
.55	1.31	3.00	3.70	4.10	5.40	6.60	7.60	.00	.00	.00	.00

STORM AREA = .03

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

197 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .40 LAG

***

UNIT HYDROGRAPH
26 END-OF-PERIOD ORDINATES

3.	9.	19.	29.	32.	32.	27.	22.	15.	11.
8.	6.	4.	3.	2.	2.	1.	1.	1.	1.
0.	0.	0.	0.	0.	0.				

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

HYDROGRAPH AT STATION P1B
FOR PLAN 2, RATIO = 1.00

TOTAL RAINFALL = 7.60, TOTAL LOSS = .60, TOTAL EXCESS = 7.00

				MAXIMUM AVERAGE FLOW		
PEAK FLOW	TIME		6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)	17.	6.	5.	5.
+ 67.	12.42	(INCHES)	5.231	7.001	7.001	7.001
		(AC-FT)	8.	11.	11.	11.

CUMULATIVE AREA = .03 SQ MI

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

                HYDROGRAPH AT STATION      P1B
                  FOR PLAN 2, RATIO = 1.00

                                        MAXIMUM AVERAGE FLOW
 PEAK FLOW     TIME                 6-HR       24-HR       72-HR     24.92-HR
+  (CFS)       (HR)
                          (CFS)      17.         6.          5.          5.
+     67.      12.42
                       (INCHES)    5.231       7.001       7.001       7.001
                        (AC-FT)      8.         11.         11.         11.

                CUMULATIVE AREA =      .03 SQ MI

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

 204 KP        PLAN  3 FOR STATION      P1B
                          TRIANGULAR DISTRIBUTION 25-YRS STORM

               SUBBASIN RUNOFF DATA

 195 BA          SUBBASIN CHARACTERISTICS
                      TAREA          .03  SUBBASIN AREA

                 PRECIPITATION DATA
                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
 206 PH                                                                          ........... TP-49 ...........
                  ..... HYDRO-35 ......   ............... TP-40 ...............   2-DAY    4-DAY    7-DAY   10-DAY
                  5-MIN  15-MIN  60-MIN     2-HR     3-HR     6-HR    12-HR    24-HR
                   .61    1.47    3.50     4.50     5.10     6.30     7.70     9.40     .00      .00      .00      .00
                                                   STORM AREA =      .03

 96 LS           SCS LOSS RATE
                      STRTL          .11  INITIAL ABSTRACTION
                      CRVNBR       98.00  CURVE NUMBER
                      RTIMP          .00  PERCENT IMPERVIOUS AREA

 197 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .40  LAG
                                                  ***

                                                UNIT HYDROGRAPH
                                            26 END-OF-PERIOD ORDINATES
                                     29.     32.     32.     27.     22.     15.     11.
                 3.      9.     19.     3.      2.      2.      1.      1.      1.      1.
                 8.      6.      4.     0.      0.      0.
                 0.      0.      0.

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

                HYDROGRAPH AT STATION      P1B
                  FOR PLAN 3, RATIO = 1.00

   TOTAL RAINFALL =     9.40, TOTAL LOSS =      .60, TOTAL EXCESS =     8.80

                                        MAXIMUM AVERAGE FLOW
 PEAK FLOW     TIME                 6-HR       24-HR       72-HR     24.92-HR
+  (CFS)       (HR)
                          (CFS)      20.         7.          7.          7.
+     78.      12.42
                       (INCHES)    6.183       8.793       8.793       8.793
                        (AC-FT)     10.        14.         14.         14.

                CUMULATIVE AREA =      .03 SQ MI

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

                HYDROGRAPH AT STATION      P1B
                  FOR PLAN 3, RATIO = 1.00

                                        MAXIMUM AVERAGE FLOW
 PEAK FLOW     TIME                 6-HR       24-HR       72-HR     24.92-HR
+  (CFS)       (HR)
                          (CFS)      20.         7.          7.          7.
+     78.      12.42
```

```
                (INCHES)     6.183       8.793       8.793       8.793
                (AC-FT)        10.         14.         14.         14.

                CUMULATIVE AREA =    .03 SQ MI

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

207 KP      PLAN  4 FOR STATION       P1B
                   TRIANGULAR DISTRIBUTION 50-YRS STORM

            SUBBASIN RUNOFF DATA

195 BA       SUBBASIN CHARACTERISTICS
               TAREA          .03  SUBBASIN AREA

             PRECIPITATION DATA
                              DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
209 PH                                                                ........... TP-49 ...........
             ..... HYDRO-35 ......  .............. TP-40 ..............   2-DAY   4-DAY   7-DAY  10-DAY
             5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR      .00     .00     .00     .00
              .64    1.55    3.80    5.00   5.20   7.00   8.70  10.50
                                              STORM AREA =     .03

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

197 UD       SCS DIMENSIONLESS UNITGRAPH
               TLAG           .40  LAG
                                                  ***

                                               UNIT HYDROGRAPH
                                          26 END-OF-PERIOD ORDINATES
             3.       9.      19.      29.      32.      32.      27.      22.      15.      11.
             8.       6.       4.       3.       2.       2.       1.       1.       1.       1.
             0.       0.       0.       0.       0.       0.

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

                   HYDROGRAPH AT STATION       P1B
                     FOR PLAN 4, RATIO = 1.00

    TOTAL RAINFALL =   10.50, TOTAL LOSS =     .61, TOTAL EXCESS =     9.89

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

 +    (CFS)       (HR)
                               (CFS)
 +       84.     12.42                       22.          8.          8.          8.
                               (INCHES)    6.864       9.890       9.890       9.890
                               (AC-FT)       11.         16.         16.         16.

                   CUMULATIVE AREA =      .03 SQ MI

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

                   HYDROGRAPH AT STATION       P1B
                     FOR PLAN 4, RATIO = 1.00

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

 +    (CFS)       (HR)
                               (CFS)
 +       84.     12.42                       22.          8.          8.          8.
                               (INCHES)    6.864       9.890       9.890       9.890
                               (AC-FT)       11.         16.         16.         16.

                   CUMULATIVE AREA =      .03 SQ MI

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210 KP      PLAN  5 FOR STATION       P1B
                   TRIANGULAR DISTRIBUTION 100-YRS STORM
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                SUBBASIN RUNOFF DATA

195 BA            SUBBASIN CHARACTERISTICS
                      TAREA          .03  SUBBASIN AREA

                  PRECIPITATION DATA

                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                                  TP-40                          TP-49
212 PH            ..... HYDRO-35 .....  ..............  ..............  ..........  ..........
                  5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY 10-DAY
                   .99    2.15   4.40    5.20   6.10   8.00   9.70  11.50    .00    .00    .00    .00

                                                STORM AREA =      .03


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

197 UD            SCS DIMENSIONLESS UNITGRAPH
                       TLAG           .40  LAG
                                                   ***

                                                UNIT HYDROGRAPH
                                            26 END-OF-PERIOD ORDINATES
                   3.     9.    19.    29.    32.    32.    27.    22.    15.    11.
                   8.     6.     4.     3.     2.     2.     1.     1.     1.     1.
                   0.     0.     0.     0.     0.     0.

                                                   ***
          ***      ***      ***      ***
                 HYDROGRAPH AT STATION       P1B
                   FOR PLAN 5, RATIO = 1.00

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

                                     MAXIMUM AVERAGE FLOW
   PEAK FLOW     TIME                 6-HR      24-HR     72-HR    24.92-HR
+   (CFS)        (HR)     (CFS)       25.        9.        8.        8.
+    102.        12.42   (INCHES)    7.857     10.888    10.888    10.888
                         (AC-FT)      12.        17.       17.       17.

                 CUMULATIVE AREA =     .03 SQ MI

                                                   ***
          ***      ***      ***      ***
                 HYDROGRAPH AT STATION       P1B
                   FOR PLAN 5, RATIO = 1.00

                                     MAXIMUM AVERAGE FLOW
   PEAK FLOW     TIME                 6-HR      24-HR     72-HR    24.92-HR
+   (CFS)        (HR)     (CFS)       25.        9.        8.        8.
+    102.        12.42   (INCHES)    7.857     10.888    10.888    10.888
                         (AC-FT)      12.        17.       17.       17.

                 CUMULATIVE AREA =     .03 SQ MI

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                 *            *
213 KK           *   COMB4    *
                 *            *
                 **************
                        POND+P1B

215 HC            HYDROGRAPH COMBINATION
                       COMP           2  NUMBER OF HYDROGRAPHS TO COMBINE
                                                   ***
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*** *** *** *** ***

HYDROGRAPH AT STATION COMB4
FOR PLAN 1, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	37.	12.	12.	12.
+ 103.	12.67	(INCHES)	3.068	4.006	4.006	4.006
		(AC-FT)	18.	24.	24.	24.

CUMULATIVE AREA = .11 SQ MI

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

HYDROGRAPH AT STATION COMB4
FOR PLAN 2, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	62.	21.	20.	20.
+ 187.	12.58	(INCHES)	5.147	6.974	6.974	6.974
		(AC-FT)	31.	42.	42.	42.

CUMULATIVE AREA = .11 SQ MI

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

HYDROGRAPH AT STATION COMB4
FOR PLAN 3, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	74.	26.	25.	25.
+ 224.	12.58	(INCHES)	6.116	8.747	8.747	8.747
		(AC-FT)	37.	52.	52.	52.

CUMULATIVE AREA = .11 SQ MI

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

HYDROGRAPH AT STATION COMB4
FOR PLAN 4, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	81.	30.	29.	29.
+ 242.	12.58	(INCHES)	6.733	9.841	9.841	9.841
		(AC-FT)	40.	59.	59.	59.

CUMULATIVE AREA = .11 SQ MI

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

HYDROGRAPH AT STATION COMB4
FOR PLAN 5, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	93.	33.	31.	31.
+ 309.	12.50	(INCHES)	7.682	10.839	10.839	10.839
		(AC-FT)	46.	65.	65.	65.

CUMULATIVE AREA = .11 SQ MI

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              *            *
216 KK        *     P4A    *
              *            *
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217 KP PLAN 1 FOR STATION P4A
TRIANGULAR DISTRIBUTION 2-YRS STORM

SUBBASIN RUNOFF DATA

218 BA SUBBASIN CHARACTERISTICS
TAREA .02 SUBBASIN AREA

PRECIPITATION DATA

223 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	1.04	2.10	2.50	2.70	3.30	4.00	4.60	.00	.00	.00	.00

STORM AREA = .02

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

220 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .20 LAG

***

UNIT HYDROGRAPH
14 END-OF-PERIOD ORDINATES

11.	36.	45.	36.	20.	12.	7.	4.	2.	1.
1.	0.	0.	0.						

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

HYDROGRAPH AT STATION P4A
FOR PLAN 1, RATIO = 1.00

TOTAL RAINFALL = 4.60, TOTAL LOSS = .58, TOTAL EXCESS = 4.02

	PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
				6-HR	24-HR	72-HR	24.92-HR
+	(CFS)	(HR)					
			(CFS)				
+	48.	12.25		8.	2.	2.	2.
			(INCHES)	3.109	4.023	4.023	4.023
			(AC-FT)	4.	5.	5.	5.

CUMULATIVE AREA = .02 SQ MI

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

HYDROGRAPH AT STATION P4A
FOR PLAN 1, RATIO = 1.00

	PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
				6-HR	24-HR	72-HR	24.92-HR
+	(CFS)	(HR)					
			(CFS)				
+	48.	12.25		8.	2.	2.	2.
			(INCHES)	3.109	4.023	4.023	4.023
			(AC-FT)	4.	5.	5.	5.

CUMULATIVE AREA = .02 SQ MI

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

224 KP      PLAN  2 FOR STATION      P4A
                      TRIANGULAR DISTRIBUTION 10-YRS STORM

            SUBBASIN RUNOFF DATA

218 BA        SUBBASIN CHARACTERISTICS
                 TAREA          .02  SUBBASIN AREA

              PRECIPITATION DATA
                                 DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
226 PH                                  ..............  TP-40  ..............  ...........  TP-49  ...........
              ..... 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
                .55    1.31    3.00     3.70    4.10    5.40    6.60    7.60     .00     .00     .00     .00

                                                STORM AREA =      .02

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

220 UD        SCS DIMENSIONLESS UNITGRAPH
                 TLAG           .20  LAG
                                          ***

                                                UNIT HYDROGRAPH
                                          14 END-OF-PERIOD ORDINATES
              11.     36.     45.     36.     20.     12.      7.      4.      2.      1.
               1.      0.      0.      0.

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

                 HYDROGRAPH AT STATION      P4A
                   FOR PLAN 2, RATIO = 1.00

   TOTAL RAINFALL =    7.60, TOTAL LOSS =     .60, TOTAL EXCESS =    7.00

                                          MAXIMUM AVERAGE FLOW
   PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
+  (CFS)         (HR)      (CFS)
                                      13.        4.         4.         4.
+     65.        12.25   (INCHES)   5.244     7.003      7.003      7.003
                         (AC-FT)      6.        8.         8.         8.

                 CUMULATIVE AREA =     .02 SQ MI

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

                 HYDROGRAPH AT STATION      P4A
                   FOR PLAN 2, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
   PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
+  (CFS)         (HR)      (CFS)
                                      13.        4.         4.         4.
+     65.        12.25   (INCHES)   5.244     7.003      7.003      7.003
                         (AC-FT)      6.        8.         8.         8.

                 CUMULATIVE AREA =     .02 SQ MI

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

227 KP      PLAN  3 FOR STATION      P4A
                      TRIANGULAR DISTRIBUTION 25-YRS STORM

            SUBBASIN RUNOFF DATA

218 BA        SUBBASIN CHARACTERISTICS
                 TAREA          .02  SUBBASIN AREA

              PRECIPITATION DATA
```

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
.61	1.47	3.50	4.50	5.10	6.30	7.70	9.40	.00	.00	.00	.00

STORM AREA = .02

219 LS SCS LOSS RATE

STRTL	.11	INITIAL ABSTRACTION
CRVNBR	95.00	CURVE NUMBER
RTIMP	.00	PERCENT IMPERVIOUS AREA

220 UD SCS DIMENSIONLESS UNITGRAPH

TLAG	.20	LAG

***

UNIT HYDROGRAPH
14 END-OF-PERIOD ORDINATES

11.	36.	49.	36.	20.	12.	7.	4.	2.	1.
1.	0.	0.	0.						

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

HYDROGRAPH AT STATION P4A
FOR PLAN 3, RATIO = 1.00

TOTAL RAINFALL = 9.40, TOTAL LOSS = .60, TOTAL EXCESS = 8.80

	PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+	(CFS)	(HR)	(CFS)	15.	5.	5.	5.
+	74.	12.25	(INCHES)	6.189	8.796	8.796	8.796
			(AC-FT)	7.	11.	11.	11.

CUMULATIVE AREA = .02 SQ MI

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

HYDROGRAPH AT STATION P4A
FOR PLAN 3, RATIO = 1.00

	PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+	(CFS)	(HR)	(CFS)	15.	5.	5.	5.
+	74.	12.25	(INCHES)	6.189	8.796	8.796	8.796
			(AC-FT)	7.	11.	11.	11.

CUMULATIVE AREA = .02 SQ MI

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230 KP PLAN 4 FOR STATION P4A
TRIANGULAR DISTRIBUTION 50-YRS STORM

SUBBASIN RUNOFF DATA

218 BA SUBBASIN CHARACTERISTICS

TAREA	.02	SUBBASIN AREA

PRECIPITATION DATA

232 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
.64	1.55	3.80	5.00	5.20	7.00	8.70	10.50	.00	.00	.00	.00

STORM AREA = .02

219 LS SCS LOSS RATE

STRTL	.11	INITIAL ABSTRACTION
CRVNBR	95.00	CURVE NUMBER
RTIMP	.00	PERCENT IMPERVIOUS AREA

UD SCS DIMENSIONLESS UNITGRAPH
TLAG .20 LAG

***

UNIT HYDROGRAPH
14 END-OF-PERIOD ORDINATES

11.	36.	45.	36.	20.	12.	7.	4.	2.	1.
1.	0.	0.	0.						

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

HYDROGRAPH AT STATION P4A
FOR PLAN 4, RATIO = 1.00

TOTAL RAINFALL = 10.50, TOTAL LOSS = .61, TOTAL EXCESS = 9.89

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 79.	12.25		17.	6.	6.	6.
		(INCHES)	6.883	9.893	9.893	9.893
		(AC-FT)	8.	12.	12.	12.

CUMULATIVE AREA = .02 SQ MI

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

HYDROGRAPH AT STATION P4A
FOR PLAN 4, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
79.	12.25		17.	6.	6.	6.
		(INCHES)	6.883	9.893	9.893	9.893
		(AC-FT)	8.	12.	12.	12.

CUMULATIVE AREA = .02 SQ MI

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233 KP PLAN 5 FOR STATION P4A
TRIANGULAR DISTRIBUTION 100-YRS STORM

SUBBASIN RUNOFF DATA

218 BA SUBBASIN CHARACTERISTICS
TAREA .02 SUBBASIN AREA

PRECIPITATION DATA

235 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
.99	2.15	4.40	5.20	6.10	8.00	9.70	11.50	.00	.00	.00	.00

STORM AREA = .02

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

220 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .20 LAG

***

UNIT HYDROGRAPH
14 END-OF-PERIOD ORDINATES

11.	36.	45.	36.	20.	12.	7.	4.	2.	1.
1.	0.	0.	0.						

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                              HYDROGRAPH AT STATION        P4A
                                FOR PLAN 5, RATIO = 1.00

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

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

+   (CFS)        (HR)
                                 (CFS)
+     104.       12.25                        19.           7.           6.           6.
                                (INCHES)    7.878       10.891       10.891       10.891
                                (AC-FT)        9.          13.          13.          13.

                              CUMULATIVE AREA =       .02 SQ MI

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

                              HYDROGRAPH AT STATION        P4A
                                FOR PLAN 5, RATIO = 1.00

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

+   (CFS)        (HR)
                                 (CFS)
+     104.       12.25                        19.           7.           6.           6.
                                (INCHES)    7.878       10.891       10.891       10.891
                                (AC-FT)        9.          13.          13.          13.

                              CUMULATIVE AREA =       .02 SQ MI

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                  *            *
 236 KK           *    POND    *            P4A
                  *            *
                  **************     RUNOFF MITIGATION POND CALCULATION

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

                      HYDROGRAPH ROUTING DATA

 239 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

 241 SV              STORAGE       .0      .3      .7     1.1     1.5     2.0     2.5     3.0     3.5     4.2

 242 SE            ELEVATION      .00    1.15    2.30    3.44    4.59    5.74    6.89    8.04    9.18   10.33

 240 SQ            DISCHARGE       0.      2.      3.      4.      5.      6.     30.     51.     78.    207.

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

                              HYDROGRAPH AT STATION       POND
                                FOR PLAN 1, RATIO = 1.00

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

+   (CFS)        (HR)
                                 (CFS)
+      16.       12.67                         6.           2.           2.           2.
                                (INCHES)    2.456        3.937        3.937        3.937
                                (AC-FT)        3.           5.           5.           5.
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STORAGE	TIME	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT) 2.	(HR) 12.67	2.	1.	1.	1.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
+ (FEET) 6.25	(HR) 12.67	4.67	1.71	1.64	1.64

CUMULATIVE AREA = .02 SQ MI

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

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

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

HYDROGRAPH AT STATION POND
FOR PLAN 2, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	10.	4.	4.	4.
+ 42.	12.50	(INCHES)	4.297	6.822	6.822	6.822
		(AC-FT)	5.	8.	8.	8.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT) 3.	(HR) 12.50	2.	1.	1.	1.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
(FEET) 7.54	(HR) 12.50	5.67	2.47	2.38	2.38

CUMULATIVE AREA = .02 SQ MI

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

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

HYDROGRAPH AT STATION POND
FOR PLAN 3, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	13.	5.	5.	5.
+ 53.	12.50	(INCHES)	5.304	8.466	8.466	8.466
		(AC-FT)	6.	10.	10.	10.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT) 3.	(HR) 12.50	2.	1.	1.	1.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
+ (FEET) 8.11	(HR) 12.50	5.86	2.84	2.74	2.74

CUMULATIVE AREA = .02 SQ MI

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

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

HYDROGRAPH AT STATION POND
FOR PLAN 4, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)	15.	6.	6.	6.
+ 60.	12.42	(INCHES)	6.003	9.500	9.500	9.500
		(AC-FT)	7.	11.	11.	11.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
3.	12.42	2.	1.	1.	1.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
8.40	12.42	6.08	3.13	3.01	3.01

CUMULATIVE AREA = .02 SQ MI

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

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

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

HYDROGRAPH AT STATION POND
FOR PLAN 5, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
(CFS)	(HR)					
		(CFS)	17.	6.	6.	6.
+ 76.	12.42	(INCHES)	6.965	10.499	10.499	10.499
		(AC-FT)	8.	13.	13.	13.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
3.	12.42	2.	1.	1.	1.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
9.06	12.42	6.20	3.19	3.07	3.07

CUMULATIVE AREA = .02 SQ MI

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              *            *
243 KK        *     P4B    *
              *            *
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244 KP PLAN 1 FOR STATION P4B
TRIANGULAR DISTRIBUTION 2-YRS STORM

SUBBASIN RUNOFF DATA

245 BA SUBBASIN CHARACTERISTICS
TAREA .02 SUBBASIN AREA

PRECIPITATION DATA
DEPTHS FOR 0-PERCENT HYPOTHETICAL STORM

250 PH

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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
                     .47    1.04    2.10    2.50    2.70    3.30    4.00    4.60      .00     .00     .00     .00

                                                   STORM AREA =       .02

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

247 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG           .16  LAG
                                                  ***

                                                UNIT HYDROGRAPH
                                            12 END-OF-PERIOD ORDINATES
                                                 15.      8.       4.       2.       1.       1.
                    20.      56.      53.      30.
                     0.       0.
                                                  ***
          ***       ***       ***       ***
                    HYDROGRAPH AT STATION      P4B
                      FOR PLAN 1, RATIO = 1.00

     TOTAL RAINFALL =    4.60, TOTAL LOSS =     .58, TOTAL EXCESS =    4.02

                                          MAXIMUM AVERAGE FLOW
   PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
+   (CFS)        (HR)     (CFS)        8.         3.         3.         3.
+     56.       12.17   (INCHES)     3.110      4.023      4.023      4.023
                         (AC-FT)       4.         5.         5.         5.

                      CUMULATIVE AREA =     .02 SQ MI

          ***       ***       ***       ***
                    HYDROGRAPH AT STATION      P4B
                      FOR PLAN 1, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
   PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
+   (CFS)        (HR)     (CFS)        8.         3.         3.         3.
+     56.       12.17   (INCHES)     3.110      4.023      4.023      4.023
                         (AC-FT)       4.         5.         5.         5.

                      CUMULATIVE AREA =     .02 SQ MI

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

251 KP          PLAN  2 FOR STATION      P4B
                          TRIANGULAR DISTRIBUTION 10-YRS STORM

                SUBBASIN RUNOFF DATA

245 BA            SUBBASIN CHARACTERISTICS
                      TAREA          .02  SUBBASIN AREA

                  PRECIPITATION DATA

                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
253 PH                                          ...............   ........... TP-49 ...........
                    ..... HYDRO-35 ......   ...... TP-40 ......
                    5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR    2-DAY   4-DAY   7-DAY  10-DAY
                     .55    1.31    3.00    3.70    4.10    5.40    6.60    7.60      .00     .00     .00     .00

                                                   STORM AREA =       .02

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

247 UD          SCS DIMENSIONLESS UNITGRAPH
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                TLAG          .16  LAG
                                                    ***

                                                UNIT HYDROGRAPH
                                            12 END-OF-PERIOD ORDINATES
                                                15.        8.        4.        2.        1.        1.
            20.       56.       53.       30.
             0.        0.
                                                    ***
                                                    ***
   ***                ***                ***
                 HYDROGRAPH AT STATION       P4B
                   FOR PLAN 2, RATIO = 1.00

   TOTAL RAINFALL -    7.60, TOTAL LOSS -      .60, TOTAL EXCESS -     7.00

                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW      TIME                 6-HR       24-HR      72-HR     24.92-HR
+   (CFS)        (HR)      (CFS)
                                      14.         5.         4.          4.
+     74.       12.17    (INCHES)    5.247       7.003      7.003       7.003
                         (AC-FT)      7.          9.         9.          9.

                 CUMULATIVE AREA -      .02 SQ MI

                                                    ***
   ***                ***                ***
                 HYDROGRAPH AT STATION       P4B
                   FOR PLAN 2, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW      TIME                 6-HR       24-HR      72-HR     24.92-HR
+   (CFS)        (HR)      (CFS)
                                      14.         5.         4.          4.
+     74.       12.17    (INCHES)    5.247       7.003      7.003       7.003
                         (AC-FT)      7.          9.         9.          9.

                 CUMULATIVE AREA =      .02 SQ MI

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

  254 KP        PLAN  3 FOR STATION       P4B
                          TRIANGULAR DISTRIBUTION 25-YRS STORM

                SUBBASIN RUNOFF DATA

  245 BA          SUBBASIN CHARACTERISTICS
                       TAREA          .02  SUBBASIN AREA

                  PRECIPITATION DATA
                                        DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
  256 PH                                ..............  TP-40 ..............  ........... TP-49 ...........
                  ..... 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
                   .61    1.47    3.50    4.50     5.10     6.30     7.70     9.40      .00      .00      .00      .00
                                                   STORM AREA =       .02

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

  247 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG          .16  LAG
                                                    ***

                                                UNIT HYDROGRAPH
                                            12 END-OF-PERIOD ORDINATES
                                                15.        8.        4.        2.        1.        1.
            20.       56.       53.       30.
             0.        0.
                                                    ***
                                                    ***
   ***                ***                ***
                 HYDROGRAPH AT STATION       P4B
```

FOR PLAN 3, RATIO = 1.00

TOTAL RAINFALL = 9.40, TOTAL LOSS = .60, TOTAL EXCESS = 8.80

	PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+	(CFS)	(HR)	(CFS)	16.	6.	6.	6.
+	85.	12.17	(INCHES)	6.190	8.796	8.796	8.796
			(AC-FT)	8.	11.	11.	11.

CUMULATIVE AREA = .02 SQ MI

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

HYDROGRAPH AT STATION P4B
FOR PLAN 3, RATIO = 1.00

	PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+	(CFS)	(HR)	(CFS)	16.	6.	6.	6.
+	85.	12.17	(INCHES)	6.190	8.796	8.796	8.796
			(AC-FT)	8.	11.	11.	11.

CUMULATIVE AREA = .02 SQ MI

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

257 KP PLAN 4 FOR STATION P4B
TRIANGULAR DISTRIBUTION 50-YRS STORM

SUBBASIN RUNOFF DATA

245 BA SUBBASIN CHARACTERISTICS
TAREA .02 SUBBASIN AREA

PRECIPITATION DATA

259 PH

DEPTHS FOR 0-PERCENT HYPOTHETICAL STORM

HYDRO-35 5-MIN	15-MIN	60-MIN	TP-40 2-HR	3-HR	6-HR	12-HR	24-HR	TP-49 2-DAY	4-DAY	7-DAY	10-DAY
.64	1.55	3.80	5.00	5.20	7.00	8.70	10.50	.00	.00	.00	.00

STORM AREA = .02

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

247 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .16 LAG

***

UNIT HYDROGRAPH
12 END-OF-PERIOD ORDINATES

20.	56.	53.	30.	15.	8.	4.	2.	1.	1.
0.	0.								

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

HYDROGRAPH AT STATION P4B
FOR PLAN 4, RATIO = 1.00

TOTAL RAINFALL = 10.50, TOTAL LOSS = .61, TOTAL EXCESS = 9.89

	PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+	(CFS)	(HR)	(CFS)	18.	7.	6.	6.
+	91.	12.17	(INCHES)	6.887	9.893	9.893	9.893
			(AC-FT)	9.	13.	13.	13.

```
                    CUMULATIVE AREA =      .02 SQ MI

                                                                  ***
   ***              ***              ***              ***
                    HYDROGRAPH AT STATION        P4B
                      FOR PLAN 4, RATIO = 1.00

                                                 MAXIMUM AVERAGE FLOW
  PEAK FLOW      TIME                     6-HR       24-HR       72-HR      24.92-HR
+   (CFS)        (HR)        (CFS)
                                           18.         7.          6.          6.
+     91.        12.17                  6.887       9.893       9.893       9.893
                          (INCHES)        9.         13.         13.         13.
                          (AC-FT)

                    CUMULATIVE AREA =      .02 SQ MI

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

 260 KP          PLAN  5 FOR STATION        P4B
                           TRIANGULAR DISTRIBUTION 100-YRS STORM

                 SUBBASIN RUNOFF DATA

 245 BA            SUBBASIN CHARACTERISTICS
                        TAREA          .02  SUBBASIN AREA

                   PRECIPITATION DATA
                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
 262 PH                                                                          ........... TP-49 ...........
                   ..... HYDRO-35 ......  ............... TP-40 ...............   3-DAY   4-DAY   7-DAY  10-DAY
                   5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR    .00     .00     .00     .00
                    .99    2.15   4.40     5.20    6.10    8.00    9.70   11.50
                                                   STORM AREA =      .02

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

 247 UD            SCS DIMENSIONLESS UNITGRAPH
                        TLAG          .16  LAG
                                                          ***
                                                   UNIT HYDROGRAPH
                                              12 END-OF-PERIOD ORDINATES
                                                                                  2.      1.      1.
                                     30.      15.      8.      4.
                   20.     56.     53.
                    0.      0.
                                                                  ***
   ***              ***              ***              ***
                    HYDROGRAPH AT STATION        P4B
                      FOR PLAN 5, RATIO = 1.00

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

                                                 MAXIMUM AVERAGE FLOW
  PEAK FLOW      TIME                     6-HR       24-HR       72-HR      24.92-HR
+   (CFS)        (HR)        (CFS)
                                           21.         7.          7.          7.
+    120.        12.17                  7.882      10.891      10.891      10.891
                          (INCHES)       10.         14.         14.         14.
                          (AC-FT)

                    CUMULATIVE AREA =      .02 SQ MI

                                                                  ***
   ***              ***              ***              ***
                    HYDROGRAPH AT STATION        P4B
                      FOR PLAN 5, RATIO = 1.00

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

```
                                         7.          7.          7.
                              21.        10.891      10.891      10.891
120.     12.17   (INCHES)     7.882      14.         14.         14.
                 (AC-FT)      10.

                 CUMULATIVE AREA =      .02 SQ MI

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

          **************
          *            *
263 KK    *     P4C    *
          *            *
          **************
***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***

264 KP       PLAN 1 FOR STATION       P4C
                  TRIANGULAR DISTRIBUTION 2-YRS STORM

             SUBBASIN RUNOFF DATA

265 BA        SUBBASIN CHARACTERISTICS
                 TAREA           .01  SUBBASIN AREA

              PRECIPITATION DATA
                                    DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                                                               ........... TP-49 ...........
270 PH        ..... HYDRO-35 ......   ............... TP-40 ...............     2-DAY   4-DAY   7-DAY   10-DAY
              5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR     .00     .00     .00     .00
                .47    1.04    2.10    2.50    2.70    3.30    4.00    4.60
                                                 STORM AREA =      .01

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

267 UD        SCS DIMENSIONLESS UNITGRAPH
                 TLAG            .16  LAG
                                                       ***

                                                 UNIT HYDROGRAPH
                                          12 END-OF-PERIOD ORDINATES
                                                 9.        5.        2.        1.        1.        0.
              12.       34.       32.       18.
               0.        0.
      ***          ***          ***          ***          ***

                    HYDROGRAPH AT STATION         P4C
                      FOR PLAN 1, RATIO = 1.00

     TOTAL RAINFALL =    4.60, TOTAL LOSS =     .58, TOTAL EXCESS =    4.02

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

 +   (CFS)       (HR)
                              (CFS)
 +      34.     12.17                     5.          2.          2.          2.
                              (INCHES)    3.110       4.023       4.023       4.023
                              (AC-FT)     2.          3.          3.          3.

                              CUMULATIVE AREA =      .01 SQ MI

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

                    HYDROGRAPH AT STATION         P4C
                      FOR PLAN 1, RATIO = 1.00

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

 +   (CFS)       (HR)
                              (CFS)
 +      34.     12.17                     5.          2.          2.          2.
```

```
                    (INCHES)      3.110       4.023       4.023       4.023
                    (AC-FT)          2.          3.          3.          3.

                    CUMULATIVE AREA =      .01 SQ MI

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

271 KP        PLAN  2 FOR STATION      P4C
                          TRIANGULAR DISTRIBUTION 10-YRS STORM

              SUBBASIN RUNOFF DATA

265 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .01  SUBBASIN AREA

                PRECIPITATION DATA
                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                                                          TP-49
273 PH                                  TP-40                          2-DAY   4-DAY   7-DAY  10-DAY
                ..... HYDRO-35 .....  2-HR    3-HR    6-HR   12-HR   24-HR   .00     .00     .00     .00
                5-MIN  15-MIN  60-MIN  3.70    4.10    5.40    6.60    7.60
                 .55    1.31    3.00

                                          STORM AREA =      .01

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

267 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG           .16  LAG

                                                  ***

                                                UNIT HYDROGRAPH
                                            12 END-OF-PERIOD ORDINATES
                12.     34.     32.     18.     9.      5.      2.      1.      1.      0.
                 0.      0.

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

                HYDROGRAPH AT STATION      P4C
                  FOR PLAN 2, RATIO = 1.00

        TOTAL RAINFALL =    7.60, TOTAL LOSS =     .60, TOTAL EXCESS =    7.00

                                          MAXIMUM AVERAGE FLOW
        PEAK FLOW     TIME                 6-HR      24-HR     72-HR    24.92-HR
+       (CFS)         (HR)     (CFS)
                                           8.         3.        3.        3.
+        45.         12.17    (INCHES)   5.247     7.003     7.003     7.003
                              (AC-FT)      4.         6.        6.        6.

                CUMULATIVE AREA =      .01 SQ MI

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

                HYDROGRAPH AT STATION      P4C
                  FOR PLAN 2, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
        PEAK FLOW     TIME                 6-HR      24-HR     72-HR    24.92-HR
+       (CFS)         (HR)     (CFS)
                                           8.         3.        3.        3.
+        45.         12.17    (INCHES)   5.247     7.003     7.003     7.003
                              (AC-FT)      4.         6.        6.        6.

                CUMULATIVE AREA =      .01 SQ MI

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

274 KP        PLAN  3 FOR STATION      P4C
                          TRIANGULAR DISTRIBUTION 25-YRS STORM
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SUBBASIN RUNOFF DATA

265 BA        SUBBASIN CHARACTERISTICS
                   TAREA          .01  SUBBASIN AREA

              PRECIPITATION DATA
                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                                                          ........... TP-49 ...........
276 PH                                ..... TP-40 .....                   2-DAY    4-DAY    7-DAY   10-DAY
                 ..... HYDRO-35 .....   2-HR     3-HR     6-HR    12-HR    24-HR     .00      .00      .00      .00
                 5-MIN  15-MIN  60-MIN   4.50     5.10     6.30     7.70     9.40
                  .61    1.47    3.50
                                                STORM AREA =      .01

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

267 UD        SCS DIMENSIONLESS UNITGRAPH
                   TLAG           .16  LAG
                                                   ***
                                                UNIT HYDROGRAPH
                                            12 END-OF-PERIOD ORDINATES
                                                                          1.       1.       0.
                 12.      34.      32.      18.      9.       5.       2.
                  0.       0.
                                                   ***      ***      ***
        ***      ***      ***      ***

                 HYDROGRAPH AT STATION      P4C
                   FOR PLAN 3, RATIO = 1.00

        TOTAL RAINFALL =    9.40, TOTAL LOSS =     .60, TOTAL EXCESS =    8.80

                                          MAXIMUM AVERAGE FLOW
        PEAK FLOW     TIME                 6-HR     24-HR     72-HR    24.92-HR
                                                                          3.
          (CFS)       (HR)     (CFS)       10.       4.       3.
                                                                        8.796
        +   51.      12.17    (INCHES)    6.190    8.796    8.796
                              (AC-FT)      5.        7.       7.        7.

                 CUMULATIVE AREA =     .01 SQ MI

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

                 HYDROGRAPH AT STATION      P4C
                   FOR PLAN 3, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
        PEAK FLOW     TIME                 6-HR     24-HR     72-HR    24.92-HR
                                                                          3.
+         (CFS)       (HR)     (CFS)       10.       4.       3.
                                                                        8.796
+       51.      12.17    (INCHES)    6.190    8.796    8.796
                              (AC-FT)      5.        7.       7.        7.

                 CUMULATIVE AREA =     .01 SQ MI

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

277 KP        PLAN  4 FOR STATION      P4C
                         TRIANGULAR DISTRIBUTION 50-YRS STORM

              SUBBASIN RUNOFF DATA

265 BA        SUBBASIN CHARACTERISTICS
                   TAREA          .01  SUBBASIN AREA

              PRECIPITATION DATA
                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                                                          ........... TP-49 ...........
279 PH                                ..... TP-40 .....                   2-DAY    4-DAY    7-DAY   10-DAY
                 ..... HYDRO-35 .....   2-HR     3-HR     6-HR    12-HR    24-HR     .00      .00      .00      .00
                 5-MIN  15-MIN  60-MIN   5.00     5.20     7.00     8.70    10.50
                  .64    1.55    3.80
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                                        STORM AREA =      .01

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

267 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG           .16  LAG
                                                    ***

                                                UNIT HYDROGRAPH
                                          12 END-OF-PERIOD ORDINATES
                 12.      34.      32.      18.      9.       5.       2.       1.       1.       0.
                  0.       0.
                                                                                  ***
        ***              ***              ***              ***
                   HYDROGRAPH AT STATION      P4C
                     FOR PLAN 4, RATIO = 1.00

    TOTAL RAINFALL =   10.50, TOTAL LOSS =     .61, TOTAL EXCESS =    9.89

                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                 6-HR       24-HR      72-HR     24.92-HR
+   (CFS)       (HR)     (CFS)       11.         4.         4.         4.
+     55.      12.17    (INCHES)    6.887      9.894      9.894      9.894
                        (AC-FT)      5.         8.         8.         8.

                   CUMULATIVE AREA =      .01 SQ MI

                                                                       ***
        ***              ***              ***              ***
                   HYDROGRAPH AT STATION      P4C
                     FOR PLAN 4, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                 6-HR       24-HR      72-HR     24.92-HR
+   (CFS)       (HR)     (CFS)       11.         4.         4.         4.
+     55.      12.17    (INCHES)    6.887      9.894      9.894      9.894
                        (AC-FT)      5.         8.         8.         8.

                   CUMULATIVE AREA =      .01 SQ MI

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

280 KP          PLAN  5 FOR STATION      P4C
                          TRIANGULAR DISTRIBUTION 100-YRS STORM

                SUBBASIN RUNOFF DATA

265 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .01  SUBBASIN AREA

                PRECIPITATION DATA
                                        DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                                          TP-40                        TP-49
282 PH          ..... HYDRO-35 .....   ..............  ..............  ...........  ...........
                5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR    12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                  .99    2.15   4.40    5.20    6.10    8.00    9.70   11.50     .00     .00     .00     .00
                                                   STORM AREA =      .01

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

267 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG           .16  LAG
                                                    ***
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                                                    UNIT HYDROGRAPH
                                                 12 END-OF-PERIOD ORDINATES
          12.      34.      32.      18.       9.       5.       2.       1.       1.       0.
           0.       0.

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

                    HYDROGRAPH AT STATION      P4C
                      FOR PLAN 5, RATIO = 1.00

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

                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                  6-HR      24-HR      72-HR     24.92-HR
+   (CFS)       (HR)        (CFS)
                                      13.        4.         4.          4.
+     73.      12.17       (INCHES)  7.882    10.891     10.891      10.891
                           (AC-FT)     6.         9.         9.          9.

                    CUMULATIVE AREA =     .01 SQ MI

   ***          ***          ***          ***          ***

                    HYDROGRAPH AT STATION      P4C
                      FOR PLAN 5, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                  6-HR      24-HR      72-HR     24.92-HR
+   (CFS)       (HR)        (CFS)
                                      13.        4.         4.          4.
+     73.      12.17       (INCHES)  7.882    10.891     10.891      10.891
                           (AC-FT)     6.         9.         9.          9.

                    CUMULATIVE AREA =     .01 SQ MI

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            *            *
  283 KK    *    COMB4   *
            *            *
            **************
                      P4A+P4B+P4C

  285 HC          HYDROGRAPH COMBINATION
                    ICOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE
                                                                  ***

   ***          ***          ***          ***          ***

                    HYDROGRAPH AT STATION    COMB4
                      FOR PLAN 1, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                  6-HR      24-HR      72-HR     24.92-HR
+   (CFS)       (HR)        (CFS)
                                      19.        7.         6.          6.
+     94.      12.17       (INCHES)  2.783     3.992      3.992       3.992
                           (AC-FT)     9.        13.        13.         13.

                    CUMULATIVE AREA =     .06 SQ MI

   ***          ***          ***          ***          ***

                    HYDROGRAPH AT STATION    COMB4
                      FOR PLAN 2, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                  6-HR      24-HR      72-HR     24.92-HR
+   (CFS)       (HR)        (CFS)
```

+ 142.	12.25		32.	12.	11.	11.
		(INCHES)	4.774	6.937	6.937	6.937
		(AC-FT)	16.	23.	23.	23.

CUMULATIVE AREA = .06 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION COMB4
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.	12.25		38.	14.	14.	14.
		(INCHES)	5.773	8.676	8.676	8.676
		(AC-FT)	19.	29.	29.	29.

CUMULATIVE AREA = .06 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION COMB4
FOR PLAN 4, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 189.	12.25		43.	16.	16.	16.
		(INCHES)	6.470	9.750	9.750	9.750
		(AC-FT)	21.	32.	32.	32.

CUMULATIVE AREA = .06 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION COMB4
FOR PLAN 5, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 247.	12.25		50.	18.	17.	17.
		(INCHES)	7.463	10.748	10.748	10.748
		(AC-FT)	25.	35.	35.	35.

CUMULATIVE AREA = .06 SQ MI

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            *            *
286 KK      *     P5     *
            *            *
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287 KP PLAN 1 FOR STATION P5
TRIANGULAR DISTRIBUTION 2-YRS STORM

SUBBASIN RUNOFF DATA

288 BA SUBBASIN CHARACTERISTICS
TAREA .02 SUBBASIN AREA

PRECIPITATION DATA

293 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    1.04    2.10   2.50   2.70   3.30   4.00   4.60    .00    .00    .00     .00
                                                   STORM AREA =      .02

289 LS          SCS LOSS RATE
                      STRTL        .11  INITIAL ABSTRACTION
                     CRVNBR      95.00  CURVE NUMBER
                      RTIMP        .00  PERCENT IMPERVIOUS AREA

290 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG        .08  LAG
                                                  ***
                                                UNIT HYDROGRAPH
                                            7 END-OF-PERIOD ORDINATES
                55.     56.     18.      6.      2.      1.      0.
                                                 ***     ***     ***
     ***        ***     ***     ***
                     HYDROGRAPH AT STATION        P5
                       FOR PLAN 1, RATIO = 1.00

    TOTAL RAINFALL =    4.60, TOTAL LOSS =     .58, TOTAL EXCESS =    4.02
                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                  6-HR      24-HR     72-HR    24.92-HR
+   (CFS)       (HR)      (CFS)        6.         2.        2.         2.
+     47.      12.08    (INCHES)    3.110      4.023     4.023      4.023
                         (AC-FT)      3.         4.        4.         4.
                     CUMULATIVE AREA =      .02 SQ MI
                                                 ***       ***       ***
     ***        ***     ***     ***
                     HYDROGRAPH AT STATION        P5
                       FOR PLAN 1, RATIO = 1.00
                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                  6-HR      24-HR     72-HR    24.92-HR
+   (CFS)       (HR)      (CFS)        6.         2.        2.         2.
+     47.      12.08    (INCHES)    3.110      4.023     4.023      4.023
                         (AC-FT)      3.         4.        4.         4.
                     CUMULATIVE AREA =      .02 SQ MI

***  ***  ***  ***  ***  ***  ***  ***  ***  ***  ***  ***  ***  ***  ***  ***  ***  ***

294 KP          PLAN  2 FOR STATION        P5
                          TRIANGULAR DISTRIBUTION 10-YRS STORM

                SUBBASIN RUNOFF DATA

288 BA          SUBBASIN CHARACTERISTICS
                      TAREA        .02  SUBBASIN AREA

                PRECIPITATION DATA
                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
296 PH                                                                          ........... TP-49 ...........
                ..... HYDRO-35 ......  ............... TP-40 ...............  ...........
                5-MIN  15-MIN  60-MIN    2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
                  .55    1.31    3.00    3.70   4.10   5.40   6.60   7.60    .00    .00    .00     .00
                                                   STORM AREA =      .02

289 LS          SCS LOSS RATE
                      STRTL        .11  INITIAL ABSTRACTION
                     CRVNBR      95.00  CURVE NUMBER
                      RTIMP        .00  PERCENT IMPERVIOUS AREA

290 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG        .08  LAG
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***

UNIT HYDROGRAPH
7 END-OF-PERIOD ORDINATES

55. 56. 18. 6. 2. 1. 0.

*** *** *** *** ***

HYDROGRAPH AT STATION P5
FOR PLAN 2, RATIO = 1.00

TOTAL RAINFALL = 7.60, TOTAL LOSS = .60, TOTAL EXCESS = 7.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 62.	12.08		10.	3.	3.	3.
		(INCHES)	5.251	7.003	7.003	7.003
		(AC-FT)	5.	7.	7.	7.

CUMULATIVE AREA = .02 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION P5
FOR PLAN 2, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 62.	12.08		10.	3.	3.	3.
		(INCHES)	5.251	7.003	7.003	7.003
		(AC-FT)	5.	7.	7.	7.

CUMULATIVE AREA = .02 SQ MI

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

297 KP PLAN 3 FOR STATION P5
TRIANGULAR DISTRIBUTION 25-YRS STORM

SUBBASIN RUNOFF DATA

288 BA SUBBASIN CHARACTERISTICS
TAREA .02 SUBBASIN AREA

PRECIPITATION DATA

299 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
.61	1.47	3.50	4.50	5.10	6.30	7.70	9.40	.00	.00	.00	.00

STORM AREA = .02

289 LS SCS LOSS RATE
STRTL .31 INITIAL ABSTRACTION
CRVNBR 95.00 CURVE NUMBER
RTIMP .00 PERCENT IMPERVIOUS AREA

290 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .08 LAG

***

UNIT HYDROGRAPH
7 END-OF-PERIOD ORDINATES

55. 56. 18. 6. 2. 1. 0.

*** *** *** *** ***

HYDROGRAPH AT STATION P5
FOR PLAN 3, RATIO = 1.00

TOTAL RAINFALL = 9.40, TOTAL LOSS = .60, TOTAL EXCESS = 8.80

```
                                        MAXIMUM AVERAGE FLOW
 PEAK FLOW     TIME                 6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)      (CFS)       12.         4.          4.          4.
+    70.       12.08   (INCHES)    6.192       8.796       8.796       8.796
                       (AC-FT)      6.          8.          8.          8.

                       CUMULATIVE AREA =      .02 SQ MI

***          ***          ***          ***          ***

                    HYDROGRAPH AT STATION        P5
                      FOR PLAN 3, RATIO = 1.00

                                        MAXIMUM AVERAGE FLOW
 PEAK FLOW     TIME                 6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)      (CFS)       12.         4.          4.          4.
+    70.       12.08   (INCHES)    6.192       8.796       8.796       8.796
                       (AC-FT)      6.          8.          8.          8.

                       CUMULATIVE AREA =      .02 SQ MI

***  ***  ***  ***  ***  ***  ***  ***  ***  ***  ***  ***  ***  ***  ***  ***  ***  ***

300 KP          PLAN  4 FOR STATION        P5
                          TRIANGULAR DISTRIBUTION 50-YRS STORM

                SUBBASIN RUNOFF DATA

288 BA            SUBBASIN CHARACTERISTICS
                      TAREA          .02  SUBBASIN AREA

                  PRECIPITATION DATA

                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
302 PH                        ..... TP-40 .....  ..... TP-49 .....
                  ..... HYDRO-35 .....  ..... 2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
                  5-MIN  15-MIN  60-MIN  ..... 5.00  5.20  7.00  8.70  10.50  .00    .00    .00    .00
                   .64    1.55    3.80

                                          STORM AREA =      .02

289 LS            SCS LOSS RATE
                      STRTL          .11  INITIAL ABSTRACTION
                     CRVNBR        95.00  CURVE NUMBER
                      RTIMP          .00  PERCENT IMPERVIOUS AREA

290 UD            SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .08  LAG

                                                  ***

                                              UNIT HYDROGRAPH
                                          7 END-OF-PERIOD ORDINATES
                  55.     56.     18.     6.      2.      1.      0.

                                  ***          ***          ***
***          ***          ***

                    HYDROGRAPH AT STATION        P5
                      FOR PLAN 4, RATIO = 1.00

TOTAL RAINFALL =   10.50, TOTAL LOSS =      .61, TOTAL EXCESS =     9.89

                                        MAXIMUM AVERAGE FLOW
 PEAK FLOW     TIME                 6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)      (CFS)       13.         5.          5.          5.
+    74.       12.08   (INCHES)    6.892       9.894       9.894       9.894
                       (AC-FT)      7.          9.          9.          9.

                       CUMULATIVE AREA =      .02 SQ MI

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                    HYDROGRAPH AT STATION        P5
                      FOR PLAN 4, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
PEAK FLOW     TIME                  6-HR       24-HR       72-HR     24.92-HR

 (CFS)        (HR)      (CFS)        13.         5.          5.          5.
   74.       12.08                  6.892       9.894       9.894       9.894
                       (INCHES)       7.          9.          9.          9.
                       (AC-FT)

                    CUMULATIVE AREA =      .02 SQ MI

***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***

303 KP          PLAN  5 FOR STATION        P5
                          TRIANGULAR DISTRIBUTION 100-YRS STORM

                SUBBASIN RUNOFF DATA

288 BA            SUBBASIN CHARACTERISTICS
                      TAREA          .02  SUBBASIN AREA

                  PRECIPITATION DATA
                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                                TP-40 ..............  ........... TP-49 ...........
305 PH            ..... HYDRO-35 ......  ..............  2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                  5-MIN  15-MIN  60-MIN   5.20    6.10    8.00    9.70   11.50     .00     .00     .00     .00
                   .99    2.15    4.40
                                                STORM AREA =      .02

289 LS            SCS LOSS RATE
                       STRTL        .11  INITIAL ABSTRACTION
                      CRVNBR      95.00  CURVE NUMBER
                       RTIMP        .00  PERCENT IMPERVIOUS AREA

290 UD            SCS DIMENSIONLESS UNITGRAPH
                       TLAG        .08  LAG
                                                  ***

                                                UNIT HYDROGRAPH
                                              7 END-OF-PERIOD ORDINATES
                                                 2.      1.      0.
                  55.     56.     18.      6.
                                                  ***
                  ***     ***     ***      ***

                    HYDROGRAPH AT STATION        P5
                      FOR PLAN 5, RATIO = 1.00

TOTAL RAINFALL =   11.50, TOTAL LOSS =      .61, TOTAL EXCESS =   10.89

                                          MAXIMUM AVERAGE FLOW
PEAK FLOW     TIME                  6-HR       24-HR       72-HR     24.92-HR

+ (CFS)       (HR)      (CFS)        15.         5.          5.          5.
+   102.      12.08                  7.888      10.891      10.891      10.891
                       (INCHES)       7.         10.         10.         10.
                       (AC-FT)

                    CUMULATIVE AREA =      .02 SQ MI

                                                  ***
                  ***     ***     ***      ***

                    HYDROGRAPH AT STATION        P5
                      FOR PLAN 5, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
PEAK FLOW     TIME                  6-HR       24-HR       72-HR     24.92-HR

+ (CFS)       (HR)      (CFS)        15.         5.          5.          5.
+   102.      12.08                  7.888      10.891      10.891      10.891
                       (INCHES)       7.         10.         10.         10.
                       (AC-FT)

                    CUMULATIVE AREA =      .02 SQ MI
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                 **************
                 *            *
306 KK           *      P6    *
                 *            *
                 **************
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

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307 KP        PLAN  1 FOR STATION       P6
                        TRIANGULAR DISTRIBUTION 2-YRS STORM

              SUBBASIN RUNOFF DATA

308 BA          SUBBASIN CHARACTERISTICS
                      TAREA           .02  SUBBASIN AREA

                PRECIPITATION DATA

313 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    1.04    2.10    2.50    2.70    3.30    4.00    4.60     .00     .00     .00     .00

                                                 STORM AREA =      .02

309 LS          SCS LOSS RATE
                     STRTL           .11  INITIAL ABSTRACTION
                    CRVNBR         95.00  CURVE NUMBER
                     RTIMP           .00  PERCENT IMPERVIOUS AREA

310 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG           .20  LAG
                                                         ***

                                                       UNIT HYDROGRAPH
                                                  14 END-OF-PERIOD ORDINATES
                9.        29.        36.        29.        16.         9.         5.         3.         2.         1.
                1.         0.         0.         0.
```

*** *** *** *** ***

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                     HYDROGRAPH AT STATION          P6
                       FOR PLAN 1, RATIO = 1.00

      TOTAL RAINFALL =      4.60, TOTAL LOSS =       .58, TOTAL EXCESS =       4.02

                                                 MAXIMUM AVERAGE FLOW
   PEAK FLOW       TIME                     6-HR        24-HR       72-HR       24.92-HR

 +    (CFS)        (HR)
                               (CFS)
 +      39.       12.25                       6.          2.          2.          2.
                             (INCHES)      3.109       4.023       4.023       4.023
                              (AC-FT)         3.          4.          4.          4.

                          CUMULATIVE AREA =       .02 SQ MI
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*** *** *** *** ***


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                     HYDROGRAPH AT STATION          P6
                       FOR PLAN 1, RATIO = 1.00

                                                 MAXIMUM AVERAGE FLOW
   PEAK FLOW       TIME                     6-HR        24-HR       72-HR       24.92-HR

 +    (CFS)        (HR)
                               (CFS)
 +      39.       12.25                       6.          2.          2.          2.
                             (INCHES)      3.109       4.023       4.023       4.023
                              (AC-FT)         3.          4.          4.          4.

                          CUMULATIVE AREA =       .02 SQ MI
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***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***

314 KP      PLAN  2 FOR STATION        P6
                        TRIANGULAR DISTRIBUTION 10-YRS STORM

            SUBBASIN RUNOFF DATA

308 BA        SUBBASIN CHARACTERISTICS
                TAREA          .02  SUBBASIN AREA

              PRECIPITATION DATA

                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
316 PH                                  ..............  TP-40  ..............  ........... TP-49 ...........
              ..... HYDRO-35 ......    2-HR     3-HR     6-HR    12-HR    24-HR    2-DAY    4-DAY    7-DAY   10-DAY
              5-MIN   15-MIN  60-MIN
                .55     1.31    3.00    3.70     4.10     5.40     6.60     7.60      .00      .00      .00      .00

                                              STORM AREA =       .02

309 LS        SCS LOSS RATE
                STRTL          .11  INITIAL ABSTRACTION
                CRVNBR       95.00  CURVE NUMBER
                RTIMP          .00  PERCENT IMPERVIOUS AREA

310 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG           .20  LAG

                                                  ***

                                                UNIT HYDROGRAPH
                                            14 END-OF-PERIOD ORDINATES
                9.      29.     36.     29.     16.      9.      5.      3.      2.      1.
                1.       0.      0.      0.

   ***      ***      ***      ***      ***

                HYDROGRAPH AT STATION        P6
                  FOR PLAN 2, RATIO = 1.00

   TOTAL RAINFALL =    7.60, TOTAL LOSS =      .60, TOTAL EXCESS =     7.00

                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
+   (CFS)       (HR)
                              (CFS)   10.        3.         3.         3.
+     52.       12.25                5.245     7.003      7.003      7.003
                              (INCHES)
                              (AC-FT)  5.        7.         7.         7.

                CUMULATIVE AREA =      .02 SQ MI

   ***      ***      ***      ***      ***

                HYDROGRAPH AT STATION        P6
                  FOR PLAN 2, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                 6-HR      24-HR      72-HR     24.92-HR
+   (CFS)       (HR)
                              (CFS)   10.        3.         3.         3.
+     52.       12.25                5.245     7.003      7.003      7.003
                              (INCHES)
                              (AC-FT)  5.        7.         7.         7.

                CUMULATIVE AREA =      .02 SQ MI

***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***

317 KP      PLAN  3 FOR STATION        P6
                        TRIANGULAR DISTRIBUTION 25-YRS STORM

            SUBBASIN RUNOFF DATA

308 BA        SUBBASIN CHARACTERISTICS
                TAREA          .02  SUBBASIN AREA

              PRECIPITATION DATA
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PH                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                                  ..............  TP-40  ..............   ........... TP-49 ...........
                  ..... 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
                   .61    1.47    3.50    4.50    5.10    6.30    7.70    9.40     .00     .00     .00     .00

                                                  STORM AREA =      .02

309 LS            SCS LOSS RATE
                       STRTL          .11  INITIAL ABSTRACTION
                      CRVNBR        95.00  CURVE NUMBER
                       RTIMP          .00  PERCENT IMPERVIOUS AREA

310 UD            SCS DIMENSIONLESS UNITGRAPH
                       TLAG          .20  LAG

                                                  ***

                                                  UNIT HYDROGRAPH
                                              14 END-OF-PERIOD ORDINATES
                                                 16.      9.      5.      3.      2.      1.
                   9.     29.     36.     29.
                   1.      0.      0.      0.

   ***      ***      ***      ***      ***

                  HYDROGRAPH AT STATION        P6
                    FOR PLAN 3, RATIO = 1.00

   TOTAL RAINFALL =    9.40, TOTAL LOSS =     .60, TOTAL EXCESS =    8.80

                                          MAXIMUM AVERAGE FLOW
   PEAK FLOW     TIME                 6-HR      24-HR      72-HR    24.92-HR
+   (CFS)        (HR)
                              (CFS)    12.        4.         4.        4.
+     59.       12.25        (INCHES) 6.189     8.796      8.796     8.796
                              (AC-FT)   6.        8.         8.        8.

                  CUMULATIVE AREA =      .02 SQ MI

   ***      ***      ***      ***      ***

                  HYDROGRAPH AT STATION        P6
                    FOR PLAN 3, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
   PEAK FLOW     TIME                 6-HR      24-HR      72-HR    24.92-HR
+   (CFS)        (HR)
                              (CFS)    12.        4.         4.        4.
+     59.       12.25        (INCHES) 6.189     8.796      8.796     8.796
                              (AC-FT)   6.        8.         8.        8.

                  CUMULATIVE AREA =      .02 SQ MI

   ***      ***      ***      ***      ***      ***      ***      ***      ***      ***      ***      ***      ***      ***      ***      ***      ***      ***

320 KP            PLAN  4 FOR STATION        P6
                          TRIANGULAR DISTRIBUTION 50-YRS STORM

                  SUBBASIN RUNOFF DATA

308 BA              SUBBASIN CHARACTERISTICS
                       TAREA          .02  SUBBASIN AREA

                    PRECIPITATION DATA

                                     DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                                  ..............  TP-40  ..............   ........... TP-49 ...........
322 PH            ..... 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
                   .64    1.55    3.80    5.00    5.20    7.00    8.70   10.50     .00     .00     .00     .00

                                                  STORM AREA =      .02

309 LS              SCS LOSS RATE
                       STRTL          .11  INITIAL ABSTRACTION
                      CRVNBR        95.00  CURVE NUMBER
                       RTIMP          .00  PERCENT IMPERVIOUS AREA
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310 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .20  LAG
                                                    ***

                                                UNIT HYDROGRAPH
                                          14 END-OF-PERIOD ORDINATES
                                                16.        9.        5.        3.        2.        1.
                 9.        29.       36.       29.
                 1.         0.        0.        0.
                                                    ***
      ***                ***                ***                ***
                          HYDROGRAPH AT STATION        P6
                            FOR PLAN 4, RATIO = 1.00

     TOTAL RAINFALL =   10.50, TOTAL LOSS =      .61, TOTAL EXCESS =     9.89

                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW      TIME                  6-HR       24-HR       72-HR     24.92-HR
+   (CFS)        (HR)        (CFS)
                                        13.         5.          5.          5.
+     63.        12.25     (INCHES)   6.883       9.893       9.893       9.893
                           (AC-FT)      7.          9.          9.          9.

                          CUMULATIVE AREA =      .02 SQ MI

      ***                ***                ***                ***
                          HYDROGRAPH AT STATION        P6
                            FOR PLAN 4, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW      TIME                  6-HR       24-HR       72-HR     24.92-HR
+   (CFS)        (HR)        (CFS)
                                        13.         5.          5.          5.
      63.        12.25     (INCHES)   6.883       9.893       9.893       9.893
                           (AC-FT)      7.          9.          9.          9.

                          CUMULATIVE AREA =      .02 SQ MI

***  ***  ***  ***  ***  ***  ***  ***  ***  ***  ***  ***  ***  ***  ***  ***  ***  ***

323 KP          PLAN  5 FOR STATION        P6
                          TRIANGULAR DISTRIBUTION 100-YRS STORM

                SUBBASIN RUNOFF DATA

308 BA            SUBBASIN CHARACTERISTICS
                       TAREA          .02  SUBBASIN AREA

                  PRECIPITATION DATA

                                     DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
325 PH                                                                          ........... TP-49 ...........
                  ..... HYDRO-35 .....  ............... TP-40 ...............   2-DAY   4-DAY   7-DAY  10-DAY
                  5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR    .00     .00     .00     .00
                   .99    2.15   4.40     5.20    6.10    8.00    9.70   11.50
                                                   STORM AREA =      .02

309 LS            SCS LOSS RATE
                       STRTL          .11  INITIAL ABSTRACTION
                      CRVNBR        95.00  CURVE NUMBER
                       RTIMP          .00  PERCENT IMPERVIOUS AREA

310 UD            SCS DIMENSIONLESS UNITGRAPH
                       TLAG          .20  LAG
                                                    ***

                                                UNIT HYDROGRAPH
                                          14 END-OF-PERIOD ORDINATES
                                                16.        9.        5.        3.        2.        1.
                 9.        29.       36.       29.
                 1.         0.        0.        0.
                                                    ***
      ***                ***                ***                ***
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                    HYDROGRAPH AT STATION        P6
                      FOR PLAN 5, RATIO = 1.00

 TOTAL RAINFALL =   11.50, TOTAL LOSS =     .61, TOTAL EXCESS =   10.89

                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                 6-HR      24-HR       72-HR      24.92-HR

+   (CFS)       (HR)
                          (CFS)
+      83.      12.25                 15.        5.          5.           5.
                        (INCHES)    7.878    10.891      10.891       10.891
                         (AC-FT)       8.       10.         10.          10.

                    CUMULATIVE AREA =     .02 SQ MI

     ***                  ***           ***          ***          ***

                    HYDROGRAPH AT STATION        P6
                      FOR PLAN 5, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
  PEAK FLOW     TIME                 6-HR      24-HR       72-HR      24.92-HR

+   (CFS)       (HR)
                          (CFS)
+      83.      12.25                 15.        5.          5.           5.
                        (INCHES)    7.878    10.891      10.891       10.891
                         (AC-FT)       8.       10.         10.          10.

                    CUMULATIVE AREA =     .02 SQ MI

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           **************
           *            *
 326 KK    *     E4     *
           *            *
           **************

 ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***

 327 KP        PLAN  1 FOR STATION        E4
                         TRIANGULAR DISTRIBUTION 2-YRS STORM

               SUBBASIN RUNOFF DATA

 328 BA         SUBBASIN CHARACTERISTICS
                    TAREA            .01  SUBBASIN AREA

               PRECIPITATION DATA

                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
 333 PH                                                                        ........... TP-49 ...........
               ..... HYDRO-35 ......  ............... TP-40 ................  2-DAY   4-DAY   7-DAY   10-DAY
               5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR    .00     .00     .00      .00
                 .47    1.04    2.10   2.50   2.70   3.30   4.00   4.60

                                          STORM AREA =       .01

 329 LS         SCS LOSS RATE
                    STRTL          .76  INITIAL ABSTRACTION
                    CRVNBR       72.49  CURVE NUMBER
                    RTIMP          .00  PERCENT IMPERVIOUS AREA

 330 UD         SCS DIMENSIONLESS UNITGRAPH
                    TLAG           .03  LAG
                                                        ***

                                              UNIT HYDROGRAPH
                                          5 END-OF-PERIOD ORDINATES
                 81.        23.         4.         1.         0.

        ***          ***          ***          ***          ***

                    HYDROGRAPH AT STATION        E4
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                    FOR PLAN 1, RATIO = 1.00

  TOTAL RAINFALL =    4.60, TOTAL LOSS =    2.67, TOTAL EXCESS =    1.93

                                          MAXIMUM AVERAGE FLOW
 PEAK FLOW     TIME                  6-HR       24-HR       72-HR      24.92-HR

+  (CFS)       (HR)        (CFS)
                                     2.          1.          1.          1.
+     23.      12.08      (INCHES)  1.622       1.932       1.932       1.932
                          (AC-FT)    1.          1.          1.          1.

                    CUMULATIVE AREA =     .01 SQ MI

     ***          ***          ***          ***          ***

                    HYDROGRAPH AT STATION        E4
                      FOR PLAN 1, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
 PEAK FLOW     TIME                  6-HR       24-HR       72-HR      24.92-HR

+  (CFS)       (HR)        (CFS)
                                     2.          1.          1.          1.
+     23.      12.08      (INCHES)  1.622       1.932       1.932       1.932
                          (AC-FT)    1.          1.          1.          1.

                    CUMULATIVE AREA =     .01 SQ MI

***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***

 334 KP        PLAN  2 FOR STATION        E4
                          TRIANGULAR DISTRIBUTION 10-YRS STORM

               SUBBASIN RUNOFF DATA

 328 BA          SUBBASIN CHARACTERISTICS
                      TAREA          .01  SUBBASIN AREA

                 PRECIPITATION DATA

                                  DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
 336 PH                                                                                  ........... TP-49 ...........
                 ..... HYDRO-35 ......  ............... TP-40 ...............  ...........
                 5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                   .55    1.31    3.00   3.70    4.10    5.40    6.60    7.60     .00     .00     .00     .00

                                          STORM AREA =      .01

 329 LS          SCS LOSS RATE
                      STRTL          .76  INITIAL ABSTRACTION
                     CRVNBR        72.49  CURVE NUMBER
                      RTIMP          .00  PERCENT IMPERVIOUS AREA

 330 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .03  LAG

                                                          ***

                                                    UNIT HYDROGRAPH
                                                 5 END-OF-PERIOD ORDINATES
                 81.       23.        4.        1.        0.

     ***          ***          ***          ***          ***

                    HYDROGRAPH AT STATION        E4
                      FOR PLAN 2, RATIO = 1.00

  TOTAL RAINFALL =    7.60, TOTAL LOSS =    3.20, TOTAL EXCESS =    4.40

                                          MAXIMUM AVERAGE FLOW
 PEAK FLOW     TIME                  6-HR       24-HR       72-HR      24.92-HR

+  (CFS)       (HR)        (CFS)
                                     5.          2.          2.          2.
+     39.      12.08      (INCHES)  3.543       4.400       4.400       4.400
                          (AC-FT)    3.          3.          3.          3.

                    CUMULATIVE AREA =     .01 SQ MI
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     ***            ***            ***            ***            ***

                    HYDROGRAPH AT STATION        E4
                      FOR PLAN 2, RATIO = 1.00

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR      24.92-HR
+   (CFS)       (HR)
                          (CFS)
+      39.      12.08                  5.          2.          2.          2.
                        (INCHES)     3.543       4.400       4.400       4.400
                         (AC-FT)       3.          3.          3.          3.

                    CUMULATIVE AREA =      .01 SQ MI


***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***

 337 KP        PLAN  3 FOR STATION        E4
                          TRIANGULAR DISTRIBUTION 25-YRS STORM

               SUBBASIN RUNOFF DATA

 328 BA          SUBBASIN CHARACTERISTICS
                      TAREA          .01  SUBBASIN AREA

                 PRECIPITATION DATA

 339 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
                   .61    1.47    3.50   4.50    5.10    6.30    7.70    9.40     .00     .00     .00     .00

                                                  STORM AREA =      .01

 9 LS            SCS LOSS RATE
                      STRTL          .76  INITIAL ABSTRACTION
                     CRVNBR        72.49  CURVE NUMBER
                      RTIMP          .00  PERCENT IMPERVIOUS AREA

 330 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG          .03  LAG

                                                                  ***

                                                          UNIT HYDROGRAPH
                                                       5 END-OF-PERIOD ORDINATES
                 81.       23.        4.        1.        0.

     ***            ***            ***            ***            ***

                    HYDROGRAPH AT STATION        E4
                      FOR PLAN 3, RATIO = 1.00

   TOTAL RAINFALL =     9.40, TOTAL LOSS =     3.40, TOTAL EXCESS =     6.00

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR      24.92-HR
+   (CFS)       (HR)
                          (CFS)
+      48.      12.08                  7.          2.          2.          2.
                        (INCHES)     4.596       6.004       6.004       6.004
                         (AC-FT)       3.          4.          4.          4.

                    CUMULATIVE AREA =      .01 SQ MI


     ***            ***            ***            ***            ***

                    HYDROGRAPH AT STATION        E4
                      FOR PLAN 3, RATIO = 1.00

 EAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR      24.92-HR
   (CFS)       (HR)
                          (CFS)
+      48.      12.08                  7.          2.          2.          2.
                        (INCHES)     4.596       6.004       6.004       6.004
```

```
                    (AC-FT)          3.          4.          4.          4.

                    CUMULATIVE AREA =      .01 SQ MI

***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***

340 KP        PLAN  4 FOR STATION        E4
                          TRIANGULAR DISTRIBUTION 50-YRS STORM

              SUBBASIN RUNOFF DATA

328 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .01  SUBBASIN AREA

                PRECIPITATION DATA

342 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
                  .64    1.55    3.80    5.00    5.20    7.00    8.70   10.50     .00     .00     .00     .00

                                                  STORM AREA =      .01

329 LS          SCS LOSS RATE
                     STRTL          .76  INITIAL ABSTRACTION
                    CRVNBR        72.49  CURVE NUMBER
                     RTIMP          .00  PERCENT IMPERVIOUS AREA

330 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .03  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                  5 END-OF-PERIOD ORDINATES
                81.       23.        4.        1.        0.

     ***            ***            ***            ***            ***

                      HYDROGRAPH AT STATION        E4
                        FOR PLAN 4, RATIO = 1.00

   TOTAL RAINFALL =   10.50, TOTAL LOSS =    3.49, TOTAL EXCESS =    7.01

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR      24.92-HR
+  (CFS)        (HR)
                          (CFS)
+     52.      12.08                   8.          3.          3.          3.
                        (INCHES)    5.278       7.010       7.010       7.010
                         (AC-FT)       4.          5.          5.          5.

                      CUMULATIVE AREA =      .01 SQ MI

     ***            ***            ***            ***            ***

                      HYDROGRAPH AT STATION        E4
                        FOR PLAN 4, RATIO = 1.00

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR      24.92-HR
+  (CFS)        (HR)
                          (CFS)
+     52.      12.08                   8.          3.          3.          3.
                        (INCHES)    5.278       7.010       7.010       7.010
                         (AC-FT)       4.          5.          5.          5.

                      CUMULATIVE AREA =      .01 SQ MI

***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***

343 KP        PLAN  5 FOR STATION        E4
                          TRIANGULAR DISTRIBUTION 100-YRS STORM

              SUBBASIN RUNOFF DATA
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328 BA          SUBBASIN CHARACTERISTICS
                     TAREA          .01  SUBBASIN AREA

                PRECIPITATION DATA

345 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
                  .99    2.15    4.40    5.20    6.10    8.00    9.70   11.50     .00     .00     .00     .00

                                                  STORM AREA =      .01

329 LS          SCS LOSS RATE
                     STRTL          .76  INITIAL ABSTRACTION
                    CRVNBR        72.49  CURVE NUMBER
                     RTIMP          .00  PERCENT IMPERVIOUS AREA

330 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .03  LAG

                                                                  ***

                                                          UNIT HYDROGRAPH
                                                       5 END-OF-PERIOD ORDINATES
                81.       23.        4.        1.        0.

     ***            ***            ***            ***            ***

                      HYDROGRAPH AT STATION        E4
                        FOR PLAN 5, RATIO = 1.00

   TOTAL RAINFALL =   11.50, TOTAL LOSS =    3.56, TOTAL EXCESS =    7.94

  PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)        (HR)
                          (CFS)
+     79.       12.08                  9.          3.          3.          3.
                        (INCHES)    6.170       7.937       7.937       7.937
                         (AC-FT)       5.          6.          6.          6.

                      CUMULATIVE AREA =      .01 SQ MI

     ***            ***            ***            ***            ***

                      HYDROGRAPH AT STATION        E4
                        FOR PLAN 5, RATIO = 1.00

  PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)        (HR)
                          (CFS)
+     79.       12.08                  9.          3.          3.          3.
                        (INCHES)    6.170       7.937       7.937       7.937
                         (AC-FT)       5.          6.          6.          6.

                      CUMULATIVE AREA =      .01 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              **************
              *            *
346 KK        *      E5    *
              *            *
              **************

***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***

347 KP          PLAN  1 FOR STATION        E5
                              TRIANGULAR DISTRIBUTION 2-YRS STORM

                SUBBASIN RUNOFF DATA

    BA            SUBBASIN CHARACTERISTICS
                     TAREA          .02  SUBBASIN AREA
```

PRECIPITATION DATA

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	1.04	2.10	2.50	2.70	3.30	4.00	4.60	.00	.00	.00	.00

STORM AREA = .02

349 LS SCS LOSS RATE

STRTL	.65	INITIAL ABSTRACTION
CRVNBR	75.57	CURVE NUMBER
RTIMP	.00	PERCENT IMPERVIOUS AREA

350 UD SCS DIMENSIONLESS UNITGRAPH

TLAG	.13	LAG

***

UNIT HYDROGRAPH
10 END-OF-PERIOD ORDINATES

28.	62.	45.	19.	9.	4.	2.	1.	0.	0.

*** *** *** *** ***

HYDROGRAPH AT STATION E5
FOR PLAN 1, RATIO = 1.00

TOTAL RAINFALL = 4.60, TOTAL LOSS = 2.43, TOTAL EXCESS = 2.17

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)	4.	1.	1.	1.
+ 31.	12.17	(INCHES)	1.818	2.175	2.175	2.175
		(AC-FT)	2.	3.	3.	3.

CUMULATIVE AREA = .02 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION E5
FOR PLAN 1, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)	4.	1.	1.	1.
+ 31.	12.17	(INCHES)	1.818	2.175	2.175	2.175
		(AC-FT)	2.	3.	3.	3.

CUMULATIVE AREA = .02 SQ MI

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

354 KP PLAN 2 FOR STATION E5
TRIANGULAR DISTRIBUTION 10-YRS STORM

SUBBASIN RUNOFF DATA

348 BA SUBBASIN CHARACTERISTICS

TAREA	.02	SUBBASIN AREA

PRECIPITATION DATA

356 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
.55	1.31	3.00	3.70	4.10	5.40	6.60	7.60	.00	.00	.00	.00

STORM AREA = .02

LS SCS LOSS RATE

STRTL	.65	INITIAL ABSTRACTION
CRVNBR	75.57	CURVE NUMBER

```
                RTIMP          .00  PERCENT IMPERVIOUS AREA

UD          SCS DIMENSIONLESS UNITGRAPH
                TLAG           .13  LAG

                                                    ***

                                                UNIT HYDROGRAPH
                                            10 END-OF-PERIOD ORDINATES
          20.       62.       45.       19.        9.        4.        2.        1.        0.        0.

   ***          ***          ***          ***          ***

                  HYDROGRAPH AT STATION        E5
                    FOR PLAN 2, RATIO = 1.00

  TOTAL RAINFALL -    7.60, TOTAL LOSS =    2.85, TOTAL EXCESS =    4.75

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                          (CFS)
+     53.     12.17                 9.          3.          3.          3.
                        (INCHES)  3.797       4.746       4.746       4.746
                         (AC-FT)    4.          6.          6.          6.

                  CUMULATIVE AREA =     .02 SQ MI

   ***          ***          ***          ***          ***

                  HYDROGRAPH AT STATION        E5
                    FOR PLAN 2, RATIO = 1.00

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                          (CFS)
+     53.     12.17                 9.          3.          3.          3.
                        (INCHES)  3.797       4.746       4.746       4.746
                         (AC-FT)    4.          6.          6.          6.

                  CUMULATIVE AREA =     .02 SQ MI

***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***    ***

357 KP        PLAN  3 FOR STATION        E5
                          TRIANGULAR DISTRIBUTION 25-YRS STORM

              SUBBASIN RUNOFF DATA

348 BA          SUBBASIN CHARACTERISTICS
                    TAREA          .02  SUBBASIN AREA

                PRECIPITATION DATA

                                  DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
359 PH          ..... 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
                  .61    1.47    3.50   4.50    5.10    6.30    7.70    9.40     .00     .00     .00     .00

                                          STORM AREA =      .02

349 LS          SCS LOSS RATE
                    STRTL          .65  INITIAL ABSTRACTION
                   CRVNBR        75.57  CURVE NUMBER
                    RTIMP          .00  PERCENT IMPERVIOUS AREA

350 UD          SCS DIMENSIONLESS UNITGRAPH
                    TLAG           .13  LAG

                                                    ***

                                                UNIT HYDROGRAPH
                                            10 END-OF-PERIOD ORDINATES
          20.       62.       45.       19.        9.        4.        2.        1.        0.        0.

   ***          ***          ***          ***          ***
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                    HYDROGRAPH AT STATION        E5
                      FOR PLAN 3, RATIO = 1.00

  TOTAL RAINFALL =    9.40, TOTAL LOSS =    3.01, TOTAL EXCESS =    6.39

                                          MAXIMUM AVERAGE FLOW
 PEAK FLOW      TIME                 6-HR       24-HR       72-HR     24.92-HR
+  (CFS)        (HR)
                              (CFS)
+    65.        12.17                12.         4.          4.          4.
                              (INCHES)         4.863       6.392       6.392       6.392
                              (AC-FT)           6.          8.          8.          8.

                    CUMULATIVE AREA =     .02 SQ MI

    ***            ***            ***         ***         ***

                    HYDROGRAPH AT STATION        E5
                      FOR PLAN 3, RATIO = 1.00

                                          MAXIMUM AVERAGE FLOW
 PEAK FLOW      TIME                 6-HR       24-HR       72-HR     24.92-HR
+  (CFS)        (HR)
                              (CFS)
+    65.        12.17                12.         4.          4.          4.
                              (INCHES)         4.863       6.392       6.392       6.392
                              (AC-FT)           6.          8.          8.          8.

                    CUMULATIVE AREA =     .02 SQ MI

***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***   ***

360 KP        PLAN  4 FOR STATION        E5
                        TRIANGULAR DISTRIBUTION 50-YRS STORM

              SUBBASIN RUNOFF DATA

 BA             SUBBASIN CHARACTERISTICS
                     TAREA          .02  SUBBASIN AREA

                PRECIPITATION DATA

 362 PH                          DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                                              TP-40                          TP-49
                  HYDRO-35                                                
                 5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                   .64    1.55    3.80    5.00    5.20    7.00    8.70   10.50     .00     .00     .00     .00

                                                STORM AREA =      .02

 349 LS         SCS LOSS RATE
                     STRTL          .65  INITIAL ABSTRACTION
                    CRVNBR        75.57  CURVE NUMBER
                     RTIMP          .00  PERCENT IMPERVIOUS AREA

 350 UD         SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .13  LAG

                                                  ***

                                                UNIT HYDROGRAPH
                                          10 END-OF-PERIOD ORDINATES
              28.       62.       45.       19.        9.        4.        2.        1.        0.        0.

    ***            ***            ***         ***         ***

                    HYDROGRAPH AT STATION        E5
                      FOR PLAN 4, RATIO = 1.00

  TOTAL RAINFALL =   10.50, TOTAL LOSS =    3.08, TOTAL EXCESS =    7.42

                                          MAXIMUM AVERAGE FLOW
 PEAK FLOW      TIME                 6-HR       24-HR       72-HR     24.92-HR
+  (CFS)        (HR)
                              (CFS)
+    71.        12.17                13.         4.          4.          4.
                              (INCHES)         5.545       7.419       7.419       7.419
                              (AC-FT)           7.          9.          9.          9.
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CUMULATIVE AREA = .02 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION E5
FOR PLAN 4, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	13.	4.	4.	4.
+ 71.	12.17	(INCHES)	5.545	7.419	7.419	7.419
		(AC-FT)	7.	9.	9.	9.

CUMULATIVE AREA = .02 SQ MI

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

363 KP PLAN 5 FOR STATION E5
TRIANGULAR DISTRIBUTION 100-YRS STORM

SUBBASIN RUNOFF DATA

348 BA SUBBASIN CHARACTERISTICS
TAREA .02 SUBBASIN AREA

PRECIPITATION DATA

365 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
.99	2.15	4.40	5.20	6.10	8.00	9.70	11.50	.00	.00	.00	.00

STORM AREA = .02

49 LS SCS LOSS RATE
STRTL .65 INITIAL ABSTRACTION
CRVNBR 75.57 CURVE NUMBER
RTIMP .00 PERCENT IMPERVIOUS AREA

350 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .13 LAG

***

UNIT HYDROGRAPH
10 END-OF-PERIOD ORDINATES

28.	62.	45.	19.	9.	4.	2.	1.	0.	0.

*** *** *** *** ***

HYDROGRAPH AT STATION E5
FOR PLAN 5, RATIO = 1.00

TOTAL RAINFALL = 11.50, TOTAL LOSS = 3.14, TOTAL EXCESS = 8.36

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	15.	5.	5.	5.
+ 99.	12.17	(INCHES)	6.467	8.362	8.362	8.362
		(AC-FT)	8.	10.	10.	10.

CUMULATIVE AREA = .02 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION E5
FOR PLAN 5, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
(CFS)	(HR)	(CFS)	15.	5.	5.	5.
+ 99.	12.17					

(INCHES)	6.467	8.362	8.362	8.362
(AC-FT)	8.	10.	10.	10.

CUMULATIVE AREA = .02 SQ MI

1

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 +	E3A	.03	1	FLOW	52.
				TIME	12.08
			2	FLOW	87.
				TIME	12.08
			3	FLOW	106.
				TIME	12.08
			4	FLOW	116.
				TIME	12.08
			5	FLOW	165.
				TIME	12.08
HYDROGRAPH AT +	P3	.01	1	FLOW	29.
				TIME	12.08
			2	FLOW	38.
				TIME	12.08
			3	FLOW	43.
				TIME	12.08
			4	FLOW	45.
				TIME	12.08
			5	FLOW	62.
				TIME	12.08
COMBINED AT +	COMB1	.04	1	FLOW	81.
				TIME	12.08
			2	FLOW	125.
				TIME	12.08
			3	FLOW	149.
				TIME	12.08
			4	FLOW	161.
				TIME	12.08
			5	FLOW	227.
				TIME	12.08
HYDROGRAPH AT +	E3B	.02	1	FLOW	51.
				TIME	12.08
			2	FLOW	76.
				TIME	12.08
			3	FLOW	90.
				TIME	12.08
			4	FLOW	97.
				TIME	12.08
			5	FLOW	144.
				TIME	12.08
2 COMBINED AT +	COMB2	.07	1	FLOW	132.
				TIME	12.08
			2	FLOW	201.
				TIME	12.08
			3	FLOW	238.
				TIME	12.08
			4	FLOW	258.
				TIME	12.08
			5	FLOW	371.
				TIME	12.08
HYDROGRAPH AT	E2	.87	1	FLOW	512.
				TIME	13.08
			2	FLOW	965.
				TIME	13.00

			3	FLOW	1231.
				TIME	13.00
			4	FLOW	1382.
				TIME	13.00
			5	FLOW	1607.
				TIME	13.00
HYDROGRAPH AT +	P2	.05	1	FLOW	100.
				TIME	12.25
			2	FLOW	134.
				TIME	12.25
			3	FLOW	154.
				TIME	12.25
			4	FLOW	164.
				TIME	12.25
			5	FLOW	214.
				TIME	12.25
ROUTED TO +	POND	.05	1	FLOW	66.
				TIME	12.50
			2	FLOW	83.
				TIME	12.50
			3	FLOW	92.
				TIME	12.58
			4	FLOW	113.
				TIME	12.50
			5	FLOW	159.
				TIME	12.42
			** PEAK STAGES IN FEET **		
			1	STAGE	5.11
				TIME	12.50
			2	STAGE	7.34
				TIME	12.50
			3	STAGE	8.64
				TIME	12.58
			4	STAGE	9.21
				TIME	12.50
			5	STAGE	9.91
				TIME	12.42
HYDROGRAPH AT +	E1	.17	1	FLOW	175.
				TIME	12.33
			2	FLOW	323.
				TIME	12.33
			3	FLOW	404.
				TIME	12.33
			4	FLOW	449.
				TIME	12.33
			5	FLOW	585.
				TIME	12.33
HYDROGRAPH AT +	P1A	.05	1	FLOW	75.
				TIME	12.50
			2	FLOW	106.
				TIME	12.50
			3	FLOW	124.
				TIME	12.50
			4	FLOW	134.
				TIME	12.50
			5	FLOW	161.
				TIME	12.50
HYDROGRAPH AT +	P7	.03	1	FLOW	77.
				TIME	12.17
			2	FLOW	103.
				TIME	12.17
			3	FLOW	117.
				TIME	12.17
			4	FLOW	125.
				TIME	12.17
			5	FLOW	167.
				TIME	12.17
COMBINED AT +	COMB 3	.08	1	FLOW	127.

				TIME	12.25
			2	FLOW	178.
				TIME	12.25
			3	FLOW	207.
				TIME	12.25
			4	FLOW	223.
				TIME	12.25
			5	FLOW	275.
				TIME	12.25
ROUTED TO +	POND	.08	1	FLOW	68.
				TIME	12.83
			2	FLOW	127.
				TIME	12.67
			3	FLOW	153.
				TIME	12.67
			4	FLOW	166.
				TIME	12.67
			5	FLOW	214.
				TIME	12.58
			** PEAK STAGES IN FEET **		
			1	STAGE	5.94
				TIME	12.83
			2	STAGE	7.50
				TIME	12.67
			3	STAGE	8.34
				TIME	12.67
			4	STAGE	8.81
				TIME	12.67
			5	STAGE	9.45
				TIME	12.58
HYDROGRAPH AT +	P1B	.03	1	FLOW	47.
				TIME	12.42
			2	FLOW	67.
				TIME	12.42
			3	FLOW	78.
				TIME	12.42
			4	FLOW	84.
				TIME	12.42
			5	FLOW	102.
				TIME	12.42
2 COMBINED AT +	COMB4	.11	1	FLOW	103.
				TIME	12.67
			2	FLOW	187.
				TIME	12.58
			3	FLOW	224.
				TIME	12.58
			4	FLOW	242.
				TIME	12.58
			5	FLOW	309.
				TIME	12.50
HYDROGRAPH AT +	P4A	.02	1	FLOW	48.
				TIME	12.25
			2	FLOW	65.
				TIME	12.25
			3	FLOW	74.
				TIME	12.25
			4	FLOW	79.
				TIME	12.25
			5	FLOW	104.
				TIME	12.25
ROUTED TO +	POND	.02	1	FLOW	16.
				TIME	12.67
			2	FLOW	42.
				TIME	12.50
			3	FLOW	53.
				TIME	12.50
			4	FLOW	60.
				TIME	12.42
			5	FLOW	76.
				TIME	12.42

```
                                    ** PEAK STAGES IN FEET **
                                    1   STAGE        6.25
                                        TIME        12.67
                                    2   STAGE        7.54
                                        TIME        12.50
                                    3   STAGE        8.11
                                        TIME        12.50
                                    4   STAGE        8.40
                                        TIME        12.42
                                    5   STAGE        9.06
                                        TIME        12.42

 HYDROGRAPH AT
+                  P4B       .02    1   FLOW          56.
                                        TIME        12.17
                                    2   FLOW          74.
                                        TIME        12.17
                                    3   FLOW          85.
                                        TIME        12.17
                                    4   FLOW          91.
                                        TIME        12.17
                                    5   FLOW         120.
                                        TIME        12.17

 HYDROGRAPH AT
+                  P4C       .01    1   FLOW          34.
                                        TIME        12.17
                                    2   FLOW          45.
                                        TIME        12.17
                                    3   FLOW          51.
                                        TIME        12.17
                                    4   FLOW          55.
                                        TIME        12.17
                                    5   FLOW          73.
                                        TIME        12.17

  3 COMBINED AT
+                  COMB4     .06    1   FLOW          94.
                                        TIME        12.17
                                    2   FLOW         142.
                                        TIME        12.25
                                    3   FLOW         173.
                                        TIME        12.25
                                    4   FLOW         189.
                                        TIME        12.25
                                    5   FLOW         247.
                                        TIME        12.25

 HYDROGRAPH AT
+                  P5        .02    1   FLOW          47.
                                        TIME        12.08
                                    2   FLOW          62.
                                        TIME        12.08
                                    3   FLOW          70.
                                        TIME        12.08
                                    4   FLOW          74.
                                        TIME        12.08
                                    5   FLOW         102.
                                        TIME        12.08

 HYDROGRAPH AT
+                  P6        .02    1   FLOW          39.
                                        TIME        12.25
                                    2   FLOW          52.
                                        TIME        12.25
                                    3   FLOW          59.
                                        TIME        12.25
                                    4   FLOW          63.
                                        TIME        12.25
                                    5   FLOW          83.
                                        TIME        12.25

 HYDROGRAPH AT
+                  E4        .01    1   FLOW          23.
                                        TIME        12.08
                                    2   FLOW          39.
                                        TIME        12.08
                                    3   FLOW          48.
                                        TIME        12.08
                                    4   FLOW          52.
```

```
                                        TIME        12.08
                                    5   FLOW         79.
                                        TIME        12.08

HYDROGRAPH AT
+                E5        .02      1   FLOW         31.
                                        TIME        12.17
                                    2   FLOW         53.
                                        TIME        12.17
                                    3   FLOW         65.
                                        TIME        12.17
                                    4   FLOW         71.
                                        TIME        12.17
                                    5   FLOW         99.
                                        TIME        12.17


*** NORMAL END OF HEC-1 ***
```

APPENDIX F

HEC-RAS RESULTS FOR EXISTING 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: Monte Arenas Development
Project File : MonteArenas.prj
Run Date and Time: 1/28/2006 4:52:27 PM

Project in SI units

PLAN DATA

Plan Title: existing-condition
Plan File : p:\297-Monte Areas Development\hec-ras\MonteArenas.p01

Geometry Title: existing-condition
Geometry File : p:\297-Monte Areas Development\hec-ras\MonteArenas.g01

Flow Title : existing-condition
Flow File : p:\297-Monte Areas Development\hec-ras\MonteArenas.f01

Plan Summary Information:

Number of:	Cross Sections	= 15	Multiple Openings	=	0
	Culverts	= 0	Inline Structures	=	0
	Bridges	= 0	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:\297-Monte Areas Development\hec-ras\MonteArenas.f01

Flow Data (m3/s)

River	Reach	RS	100y	50y	25y	10y	2y
creek2	one	11	16.56	12.71	11.44	9.14	4.95
creek1	two	9.5	45.51	39.13	34.86	27.32	14.5
creek1	one	5	74.73	61.48	55.05	43.64	23.73
creek1	one	4	85.89	69.12	62.1	49.53	27.52
creek1	one	3	87.79	70.8	63.6	50.72	28.15
creek1	one	2	90.59	72.81	65.44	52.22	29.02

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
creek2	one	100y	Critical	
creek2	one	50y	Critical	
creek2	one	25y	Critical	
creek2	one	10y	Critical	
creek2	one	2y	Critical	
creek1	two	100y	Critical	
creek1	two	50y	Critical	
creek1	two	25y	Critical	

creek1	two	10y	Critical	
creek1	two	2y	Critical	
creek1	one	100y		Normal S = 0.008
creek1	one	50y		Normal S = 0.008
creek1	one	25y		Normal S = 0.008
creek1	one	10y		Normal S = 0.008
creek1	one	2y		Normal S = 0.008

GEOMETRY DATA

Geometry Title: existing-condition
Geometry File : p:\297-Monte Areas Development\hec-ras\MonteArenas.g01

Reach Connection Table

River	Reach	Upstream Boundary	Downstream Boundary
creek2	one		A
creek1	two		A
creek1	one	A	

JUNCTION INFORMATION

Name: A
Description:
Energy computation Method

Length across Junction River	Reach	Tributary River	Reach	Length	Angle
creek1	two	to creek1	one	103.23	
creek2	one	to creek1	one	156.56	
creek2	one	to creek1	one	0	

CROSS SECTION

RIVER: creek2
REACH: one RS: 11

INPUT
Description:

tion Elevation Data			num=	14					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	145	7.29	142.5	17.55	140	32.92	137.5	43.24	135
47.62	134.5	52.32	135	60.66	137.5	71.12	140	77.49	140.5
85.55	140.5	91.59	140	102	137.5	113.6	135		

Manning's n Values			num=	3	
Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	77.49	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	77.49	79.55	109.12	154.55	.1	.3

CROSS SECTION OUTPUT Profile #100y

		Element	Left OB	Channel	Right OB
E.G. Elev (m)	135.70	Wt. n-Val.		0.045	0.045
Vel Head (m)	0.26	Reach Len. (m)	79.55	109.12	154.55
W.S. Elev (m)	135.44	Flow Area (m2)		6.99	0.45
Crit W.S. (m)	135.44	Area (m2)		6.99	0.45
E.G. Slope (m/m)	0.023311	Flow (m3/s)		16.08	0.48
Q Total (m3/s)	16.56	Top Width (m)		12.37	2.04
Top Width (m)	14.41	Avg. Vel. (m/s)		2.30	1.07
Vel Total (m/s)	2.22	Hydr. Depth (m)		0.57	0.22
Max Chl Dpth (m)	0.94	Conv. (m3/s)		105.3	3.2
Conv. Total (m3/s)	108.5	Wetted Per. (m)		12.54	2.53
Length Wtd. (m)	109.78	Shear (N/m2)		127.49	40.66
Min Ch El (m)	134.50	Stream Power (N/m s)		293.06	43.62
Alpha	1.04	Cum Volume (1000 m3)		2.02	0.03
Frctn Loss (m)	2.61	Cum SA (1000 m2)		6.68	0.16
C & E Loss (m)	0.05				

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The cross-section end points had to be extended vertically for the computed water surface.
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.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: creek2
REACH: one RS: 10

INPUT
Description:
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	145	26.45	145	36.1	142.5	43.4	140	50.73	137.5
60.33	135	70.49	132.5	80.26	130	86.77	130	103.51	130
113.06	129.5	118.26	130	131.31	132.5	145	133.743	158.84	135
168.35	137.5	175.37	140	183.35	142.5	190.74	145		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	190.74	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	190.74	117.92	126.97	136.17	.1	.3

CROSS SECTION OUTPUT Profile #100y

		Element	Left OB	Channel	Right OB
E.G. Elev (m)	130.41	Wt. n-Val.		0.045	
Vel Head (m)	0.34	Reach Len. (m)	117.92	126.97	136.17
W.S. Elev (m)	130.07	Flow Area (m2)		6.37	
Crit W.S. (m)	130.17	Area (m2)		6.37	
E.G. Slope (m/m)	0.151544	Flow (m3/s)		16.56	
Q Total (m3/s)	16.56	Top Width (m)		38.64	
Top Width (m)	38.64	Avg. Vel. (m/s)		2.60	
Vel Total (m/s)	2.60	Hydr. Depth (m)		0.16	
Max Chl Dpth (m)	0.57	Conv. (m3/s)		42.5	
Conv. Total (m3/s)	42.5	Wetted Per. (m)		38.69	
Length Wtd. (m)	126.97	Shear (N/m2)		244.73	
Min Ch El (m)	129.50	Stream Power (N/m s)		636.05	
Alpha	1.00	Cum Volume (1000 m3)		1.29	
Frctn Loss (m)	5.28	Cum SA (1000 m2)		3.90	
C & E Loss (m)	0.01				

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: creek2
REACH: one RS: 9.2

INPUT
Description:
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	140	10.99	137.5	21.07	135	30.4	132.5	41.2	130
66.9	127.5	81.86	130	100.67	132.5	125.67	135	143.18	137.5
168.98	140	177.97	142.5	186	145				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	186	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	186	9	9	9	.1	.3

CROSS SECTION OUTPUT Profile #100y

		Element	Left OB	Channel	Right OB
E.G. Elev (m)	128.83	Wt. n-Val.		0.045	
Vel Head (m)	0.09	Reach Len. (m)	9.00	9.00	9.00
W.S. Elev (m)	128.74	Flow Area (m2)		12.53	
Crit W.S. (m)	128.47	Area (m2)		12.53	
E.G. Slope (m/m)	0.006755	Flow (m3/s)		16.56	
Q Total (m3/s)	16.56	Top Width (m)		20.19	
Top Width (m)	20.19	Avg. Vel. (m/s)		1.32	
Vel Total (m/s)	1.32	Hydr. Depth (m)		0.62	
Max Chl Dpth (m)	1.24	Conv. (m3/s)		201.5	
Conv. Total (m3/s)	201.5	Wetted Per. (m)		20.35	
Length Wtd. (m)	9.00	Shear (N/m2)		40.78	
Min Ch El (m)	127.50	Stream Power (N/m s)		53.91	
Alpha	1.00	Cum Volume (1000 m3)		0.09	
Frctn Loss (m)	0.11	Cum SA (1000 m2)		0.16	
C & E Loss (m)	0.02				

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.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION

RIVER: creek2
REACH: one RS: 9

INPUT
Description:
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	140	10.99	137.5	21.07	135	30.4	132.5	41.2	130
66.9	127.5	81.86	130	100.67	132.5	125.67	135	143.18	137.5
168.98	140	177.97	142.5	186	145				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	186	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	186	0	0	0	.1	.3

CROSS SECTION OUTPUT Profile #100y

			Left OB	Channel	Right OB
E.G. Elev (m)	128.71	Element			
Vel Head (m)	0.24	Wt. n-Val.		0.045	
W.S. Elev (m)	128.47	Reach Len. (m)	0.00	0.00	0.00
Crit W.S. (m)	128.47	Flow Area (m2)		7.59	
E.G. Slope (m/m)	0.025697	Area (m2)		7.59	
Q Total (m3/s)	16.56	Flow (m3/s)		16.56	
Top Width (m)	15.71	Top Width (m)		15.71	
Vel Total (m/s)	2.18	Avg. Vel. (m/s)		2.18	
Max Chl Dpth (m)	0.97	Hydr. Depth (m)		0.48	
Conv. Total (m3/s)	103.3	Conv. (m3/s)		103.3	
Length Wtd. (m)	0.00	Wetted Per. (m)		15.84	
Min Ch El (m)	127.50	Shear (N/m2)		120.76	
Alpha	1.00	Stream Power (N/m s)		263.43	
Frctn Loss (m)	0.00	Cum Volume (1000 m3)			
C & E Loss (m)	0.05	Cum SA (1000 m2)			

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
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 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.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: creek1
REACH: two RS: 8.5

INPUT
Description:
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	155	25.4	155	42.87	152.5	51.81	150	60.18	147.5
69.06	145	77.68	143	87.92	140	100.82	137.5	117.82	135
128.49	132.5	136.05	130	147.75	127.5	177.66	127.5	192.75	130
284.26	132.5	309.8	135						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	309.8	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	309.8	110.28	74.79	54.48	.1	.3

CROSS SECTION OUTPUT Profile #100y

			Left OB	Channel	Right OB
E.G. Elev (m)	128.42	Element			
Vel Head (m)	0.16	Wt. n-Val.		0.045	
W.S. Elev (m)	128.27	Reach Len. (m)	110.28	74.79	54.48
Crit W.S. (m)	128.09	Flow Area (m2)		26.07	
E.G. Slope (m/m)	0.010290	Area (m2)		26.07	
Q Total (m3/s)	45.51	Flow (m3/s)		45.51	
Top Width (m)	38.12	Top Width (m)		38.12	
Vel Total (m/s)	1.75	Avg. Vel. (m/s)		1.75	
Max Chl Dpth (m)	0.77	Hydr. Depth (m)		0.68	
Conv. Total (m3/s)	448.6	Conv. (m3/s)		448.6	
Length Wtd. (m)	74.79	Wetted Per. (m)		38.27	
Min Ch El (m)	127.50	Shear (N/m2)		68.75	
Alpha	1.00	Stream Power (N/m s)		120.01	
Frctn Loss (m)	0.61	Cum Volume (1000 m3)		13.14	0.04

C & E Loss (m) 0.02 Cum SA (1000 m2) 12.72

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.

S SECTION

RIVER: creek1
REACH: two RS: 8

INPUT
Description:
Station Elevation Data num= 54

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	154.84	5	154.09	10	153.14	15	151.47	20	149.83
25	148.36	30	146.78	35	145.2	40	143.8	45	142.17
50	141.13	55	140.04	60	138.82	65	137.84	70	136.97
75	136.21	80	135.29	85	134.28	90	132.35	95	130.42
100	128.49	105	127	110	127	115	127.03	120	127
125	127	130	126.97	135	126.5	140	126.68	145	127.4
150	127.62	155	128.22	160	129.4	165	130.7	170	131.5
175	131.5	180	131	185	131	190	131	195	131
200	131.08	205	131.5	210	130.84	215	130.03	220	130.19
225	131.09	230	132.11	235	132.83	240	133.12	245	134.03
250	134.77	255	135.32	260	135.94	265	136.65		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	170	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	170	9	9	9	.1	.3

CROSS SECTION OUTPUT Profile #100y

			Left OB	Channel	Right OB
E.G. Elev (m)	127.79	Element			
Vel Head (m)	0.10	Wt. n-Val.		0.045	
W.S. Elev (m)	127.69	Reach Len. (m)	9.00	9.00	9.00
Crit W.S. (m)		Flow Area (m2)		32.50	
E.G. Slope (m/m)	0.006695	Area (m2)		32.50	
Q Total (m3/s)	45.51	Flow (m3/s)		45.51	
Top Width (m)	47.92	Top Width (m)		47.92	
el Total (m/s)	1.40	Avg. Vel. (m/s)		1.40	
ax Chl Dpth (m)	1.19	Hydr. Depth (m)		0.68	
Conv. Total (m3/s)	556.2	Conv. (m3/s)		556.2	
Length Wtd. (m)	9.00	Wetted Per. (m)		48.11	
Min Ch El (m)	126.50	Shear (N/m2)		44.36	
Alpha	1.00	Stream Power (N/m s)		62.11	
Frctn Loss (m)	0.09	Cum Volume (1000 m3)		10.95	0.04
C & E Loss (m)	0.01	Cum SA (1000 m2)		9.51	

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: creek1
REACH: two RS: 7.8

INPUT
Description:
Station Elevation Data num= 54

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	154.84	5	154.09	10	153.14	15	151.47	20	149.83
25	148.36	30	146.78	35	145.2	40	143.8	45	142.17
50	141.13	55	140.04	60	138.82	65	137.84	70	136.97
75	136.21	80	135.29	85	134.28	90	132.35	95	130.42
100	128.49	105	127	110	127	115	127.03	120	127
125	127	130	126.97	135	126.5	140	126.68	145	127.4
150	127.62	155	128.22	160	129.4	165	130.7	170	131.5
175	131.5	180	131	185	131	190	131	195	131
200	131.08	205	131.5	210	130.84	215	130.03	220	130.19
225	131.09	230	132.11	235	132.83	240	133.12	245	134.03
250	134.77	255	135.32	260	135.94	265	136.65		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	170	.045

Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	170	47.49	81.51	129.5	.1	.3

CROSS SECTION OUTPUT Profile #100y

			Left OB	Channel	Right OB
E.G. Elev (m)	127.70	Element			

Vel Head (m)	0.17	Wt. n-Val.			0.045	
W.S. Elev (m)	127.53	Reach Len. (m)		47.49	81.51	129.50
Crit W.S. (m)	127.43	Flow Area (m2)			24.76	
E.G. Slope (m/m)	0.015069	Area (m2)			24.76	
Q Total (m3/s)	45.51	Flow (m3/s)			45.51	
Top Width (m)	44.61	Top Width (m)			44.61	
Vel Total (m/s)	1.04	Avg. Vel. (m/s)			1.84	
Max Chl Dpth (m)	1.03	Hydr. Depth (m)			0.55	
Conv. Total (m3/s)	370.7	Conv. (m3/s)			370.7	
Length Wtd. (m)	81.51	Wetted Per. (m)			44.77	
Min Ch El (m)	126.50	Shear (N/m2)			81.73	
Alpha	1.00	Stream Power (N/m s)			150.21	
Frctn Loss (m)	1.52	Cum Volume (1000 m3)			10.69	0.04
C & E Loss (m)	0.00	Cum SA (1000 m2)			9.09	

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: creek1
REACH: two RS: 7

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	153.29	5	152.38	10	151.16	15	149.77	20	148.3
25	146.83	30	145.38	35	143.87	40	142.34	45	140.86
50	139.23	55	137.37	60	135.52	65	133.63	70	131.2
75	128.62	80	126.62	85	126.26	90	125.96	95	125.67
100	125.03	105	124.85	110	125.5	115	125.32	120	125.5
125	125.69	130	125.81	135	125.88	140	125.93	145	126.15
150	127.64	155	129.58	160	130.85	165	131.45	170	132.07
175	132.69	180	133.23	185	133.71	190	134.24	195	134.91
200	135.92	205	136.58	210	137.12	215	137.5		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	215	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	215	153.21	138.19	171.85	.1	.3

CROSS SECTION OUTPUT Profile #100y

			Left OB	Channel	Right OB
E.G. Elev (m)	126.18	Element			
Vel Head (m)	0.20	Wt. n-Val.		0.045	
W.S. Elev (m)	125.98	Reach Len. (m)	153.21	138.19	171.85
Crit W.S. (m)	125.96	Flow Area (m2)		22.91	
E.G. Slope (m/m)	0.023509	Area (m2)		22.91	
Q Total (m3/s)	45.51	Flow (m3/s)		45.51	
Top Width (m)	51.35	Top Width (m)		51.35	
Vel Total (m/s)	1.99	Avg. Vel. (m/s)		1.99	
Max Chl Dpth (m)	1.13	Hydr. Depth (m)		0.45	
Conv. Total (m3/s)	296.8	Conv. (m3/s)		296.8	
Length Wtd. (m)	138.19	Wetted Per. (m)		51.46	
Min Ch El (m)	124.85	Shear (N/m2)		102.63	
Alpha	1.00	Stream Power (N/m s)		203.87	
Frctn Loss (m)	0.73	Cum Volume (1000 m3)		8.75	0.04
C & E Loss (m)	0.03	Cum SA (1000 m2)		5.18	

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: creek1
REACH: two RS: 8

INPUT
Description:
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	134.56	5	133.54	10	132	15	132.29	20	131.73
25	131.5	30	131.25	35	130.87	40	130.24	45	129.34
50	127.94	55	126.31	60	124.94	65	124	70	123.04
75	123	80	124.42	85	126.5	90	127.25	95	128.07
100	128.82	105	129.2	110	129.5	115	129.76	120	130.02
125	130.45	130	130.94	135	131.47				

Manning's n Values num= 2

Sta	n Val	Sta	n Val	Sta	n Val

0	.045	0	.045	135	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	135	0	0	0	.1	.3

CROSS SECTION OUTPUT Profile #100y

			Left OB	Channel	Right OB
E.G. Elev (m)	125.42	Element			
Vel Head (m)	0.09	Wt. n-Val.		0.045	
W.S. Elev (m)	125.33	Reach Len. (m)	103.23	103.23	103.23
Crit W.S. (m)		Flow Area (m2)		34.19	
E.G. Slope (m/m)	0.002262	Area (m2)		34.19	
Q Total (m3/s)	45.51	Flow (m3/s)		45.51	
Top Width (m)	23.59	Top Width (m)		23.59	
Vel Total (m/s)	1.33	Avg. Vel. (m/s)		1.33	
Max Chl Dpth (m)	2.33	Hydr. Depth (m)		1.45	
Conv. Total (m3/s)	956.8	Conv. (m3/s)		956.8	
Length Wtd. (m)	103.23	Wetted Per. (m)		24.20	
Min Ch El (m)	123.00	Shear (N/m2)		31.35	
Alpha	1.00	Stream Power (N/m s)		41.72	
Frctn Loss (m)	0.18	Cum Volume (1000 m3)		4.80	0.04
C & E Loss (m)	0.00	Cum SA (1000 m2)			

CROSS SECTION

RIVER: creek1
REACH: one RS: 5

INPUT
Description:
Station Elevation Data num= 53

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	136.28	5	136.1	10	135.9	15	135.7	20	135.36
25	135.04	30	134.63	35	134.2	40	133.74	45	133.6
50	133.42	55	133.1	60	132.85	65	132.58	70	132.26
75	131.91	80	131.19	85	130.27	90	129.53	95	128.99
100	128.36	105	127.63	110	127	115	126.74	120	126.5
125	125.95	130	125.4	135	124.22	140	123.23	145	122.74
150	122.51	155	122.5	160	123.449	165	126.78	170	128.03
175	128.5	180	128.65	185	128.68	190	128.63	195	128.61
200	128.78	205	128.79	210	128.75	215	128.25	220	126.73
225	125.06	230	125.01	235	125.74	240	126.42	245	127.04
250	127.7	255	130.35	260	130.22				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	200	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	200	9	9	9	.1	.3

CROSS SECTION OUTPUT Profile #100y

			Left OB	Channel	Right OB
E.G. Elev (m)	125.24	Element			
Vel Head (m)	0.08	Wt. n-Val.		0.045	0.045
W.S. Elev (m)	125.16	Reach Len. (m)	9.00	9.00	9.00
Crit W.S. (m)	123.90	Flow Area (m2)		58.88	0.69
E.G. Slope (m/m)	0.001464	Area (m2)		58.88	0.69
Q Total (m3/s)	74.73	Flow (m3/s)		74.59	0.14
Top Width (m)	37.82	Top Width (m)		31.53	6.29
Vel Total (m/s)	1.25	Avg. Vel. (m/s)		1.27	0.20
Max Chl Dpth (m)	2.66	Hydr. Depth (m)		1.87	0.11
Conv. Total (m3/s)	1953.4	Conv. (m3/s)		1949.9	3.5
Length Wtd. (m)	9.00	Wetted Per. (m)		32.37	6.32
Min Ch El (m)	122.50	Shear (N/m2)		26.11	1.58
Alpha	1.02	Stream Power (N/m s)		33.07	0.31
Frctn Loss (m)	0.01	Cum Volume (1000 m3)		19.45	0.04
C & E Loss (m)	0.00	Cum SA (1000 m2)		13.55	0.43

Warning: Divided flow computed for this cross-section.

CROSS SECTION

RIVER: creek1
REACH: one RS: 4.8

INPUT
Description:
Station Elevation Data num= 53

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	136.28	5	136.1	10	135.9	15	135.7	20	135.36
25	135.04	30	134.63	35	134.2	40	133.74	45	133.6
50	133.42	55	133.1	60	132.85	65	132.58	70	132.26
75	131.91	80	131.19	85	130.27	90	129.53	95	128.99
100	128.36	105	127.63	110	127	115	126.74	120	126.5

125	125.95	130	125.4	135	124.22	140	123.23	145	122.74
150	122.51	155	122.5	160	123.449	165	126.78	170	128.03
175	128.5	180	128.65	185	128.68	190	128.63	195	128.61
200	128.70	205	128.79	210	128.75	215	128.25	220	126.73
225	125.06	230	125.01	235	125.74	240	126.42	245	127.04
250	127.7	255	130.35	260	130.22				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	200	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	200	93.32	105.94	121.87	.1	.3

CROSS SECTION OUTPUT Profile #100y

		Element	Left OB	Channel	Right OB
E.G. Elev (m)	125.22	Wt. n-Val.		0.045	0.045
Vel Head (m)	0.08	Reach Len. (m)	93.32	105.94	121.87
W.S. Elev (m)	125.14	Flow Area (m2)		58.42	0.60
Crit W.S. (m)		Area (m2)		58.42	0.60
E.G. Slope (m/m)	0.001498	Flow (m3/s)		74.62	0.11
Q Total (m3/s)	74.73	Top Width (m)		31.45	6.14
Top Width (m)	37.59	Avg. Vel. (m/s)		1.28	0.18
Vel Total (m/s)	1.27	Hydr. Depth (m)		1.86	0.10
Max Chl Dpth (m)	2.64	Conv. (m3/s)		1927.8	2.8
Conv. Total (m3/s)	1930.6	Wetted Per. (m)		32.28	6.17
Length Wtd. (m)	105.95	Shear (N/m2)		26.59	1.43
Min Ch El (m)	122.50	Stream Power (N/m s)		33.96	0.26
Alpha	1.02	Cum Volume (1000 m3)		18.92	0.04
Frctn Loss (m)	0.28	Cum SA (1000 m2)		13.26	0.37
C & E Loss (m)	0.01				

Warning: Divided flow computed for this cross-section.
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: creek1
REACH: one RS: 4

INPUT
Description:
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	133.5	5	132.68	10	131.86	15	131.04	20	130.18
25	129.39	30	128.59	35	127.43	40	126.18	45	125.08
50	124.01	55	123.5	60	123.77	65	124.75	70	126
75	126.56	80	126.72	85	126.61	90	126.14	95	126.5
100	124.92	105	124.41	110	123.93	115	123.45	120	123
125	122	130	122.9	135	124.38	140	126.64	145	128.89
150	130.4	155	131.67	160	131.9	165	132.15	170	132.7
175	133.37	180	134.17	185	134.91	190	135.3	195	135.27
200	135.09	205	134.94	210	135.18	215	135.54	220	135.94
225	136.47	230	137.2	235	137.93				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	95	.045	155	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
95	155	87.19	106.29	131.2	.1	.3

Left Levee Station= 95 Elevation= 126.5

CROSS SECTION OUTPUT Profile #100y

		Element	Left OB	Channel	Right OB
E.G. Elev (m)	124.93	Wt. n-Val.		0.045	
Vel Head (m)	0.19	Reach Len. (m)	87.19	106.29	131.20
W.S. Elev (m)	124.74	Flow Area (m2)		44.49	
Crit W.S. (m)	124.17	Area (m2)		44.49	
E.G. Slope (m/m)	0.005394	Flow (m3/s)		85.89	
Q Total (m3/s)	85.89	Top Width (m)		34.03	
Top Width (m)	34.03	Avg. Vel. (m/s)		1.93	
Vel Total (m/s)	1.93	Hydr. Depth (m)		1.31	
Max Chl Dpth (m)	2.74	Conv. (m3/s)		1169.5	
Conv. Total (m3/s)	1169.5	Wetted Per. (m)		34.58	
Length Wtd. (m)	106.29	Shear (N/m2)		68.05	
Min Ch El (m)	122.00	Stream Power (N/m s)		131.37	
Alpha	1.00	Cum Volume (1000 m3)		13.47	
Frctn Loss (m)	0.48	Cum SA (1000 m2)		9.79	
C & E Loss (m)	0.01				

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: creek1
REACH: one RS: 3

INPUT
Description:
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	133.74	5	132.5	10	131.24	15	129.95	20	128.17
25	126.21	30	124.15	35	122.19	40	121.5	45	122
50	122.69	55	123.46	60	124.03	65	124.67	70	125.34
75	126.09	80	126.62	85	127.27	90	127.5	95	127.52
100	127.59	105	127.77	110	128.09	115	128.46	120	128.94
125	129.47	130	129.83	135	130	140	130.46	145	132.1
150	133.5	155	133.69	160	133.9	165	133.96	170	133.77

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	90	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	90	91.02	116.63	156.32	.1	.3

CROSS SECTION OUTPUT Profile #100y

		Element	Left OB	Channel	Right OB
E.G. Elev (m)	124.44				
Vel Head (m)	0.16	Wt. n-Val.		0.045	
W.S. Elev (m)	124.28	Reach Len. (m)	91.02	116.63	156.32
Crit W.S. (m)		Flow Area (m2)		48.99	
E.G. Slope (m/m)	0.003822	Area (m2)		48.99	
Q Total (m3/s)	87.79	Flow (m3/s)		87.79	
Top Width (m)	32.26	Top Width (m)		32.26	
Vel Total (m/s)	1.79	Avg. Vel. (m/s)		1.79	
Max Chl Dpth (m)	2.78	Hydr. Depth (m)		1.52	
Conv. Total (m3/s)	1420.1	Conv. (m3/s)		1420.1	
Length Wtd. (m)	116.63	Wetted Per. (m)		32.88	
Min Ch El (m)	121.50	Shear (N/m2)		55.83	
Alpha	1.00	Stream Power (N/m s)		100.05	
Frctn Loss (m)	0.87	Cum Volume (1000 m3)		8.50	
C & E Loss (m)	0.04	Cum SA (1000 m2)		6.27	

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: creek1
REACH: one RS: 2

INPUT
Description:
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	125.78	5	125.2	10	124.57	15	123.85	20	123.13
25	122.48	30	122.11	35	121.08	40	120.91	45	122.64
50	124.03	55	124.35	60	124.6	65	124.6	70	124.5
75	124.5	80	124.16	85	124.22	90	124.27	95	124.31
100	124.28	105	124.14	110	123.88	115	123.48		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	60	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	60	134.42	134.19	149.09	.1	.3

CROSS SECTION OUTPUT Profile #100y

		Element	Left OB	Channel	Right OB
E.G. Elev (m)	123.53				
Vel Head (m)	0.55	Wt. n-Val.		0.045	
W.S. Elev (m)	122.98	Reach Len. (m)	134.42	134.19	149.09
Crit W.S. (m)	122.98	Flow Area (m2)		27.58	
E.G. Slope (m/m)	0.019799	Area (m2)		27.58	
Q Total (m3/s)	90.59	Flow (m3/s)		90.59	
Top Width (m)	25.12	Top Width (m)		25.12	
Vel Total (m/s)	3.29	Avg. Vel. (m/s)		3.29	
Max Chl Dpth (m)	2.07	Hydr. Depth (m)		1.10	
Conv. Total (m3/s)	643.8	Conv. (m3/s)		643.8	
Length Wtd. (m)	134.19	Wetted Per. (m)		25.61	
Min Ch El (m)	120.92	Shear (N/m2)		209.08	

Alpha	1.00	Stream Power (N/m s)	686.83
Frctn Loss (m)	1.61	Cum Volume (1000 m3)	4.04
C & E Loss (m)	0.05	Cum SA (1000 m2)	2.73

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
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.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: creek1
REACH: one RS: 1

INPUT
Description:
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	127.92	5	126.38	10	126.06	15	126	20	125.94
25	125.81	30	125.66	35	124.46	40	124.39	45	124.5
50	124.5	55	124.12	60	123.34	65	122.58	70	121.53
75	120.22	80	118	85	118.23	90	120.79	95	122.93
100	123.87	105	124.46	110	124.85	115	125		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	50	.045	115	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
50	115	0	0	0	.1	.3

CROSS SECTION OUTPUT Profile #100y

			Left OB	Channel	Right OB
E.G. Elev (m)	121.40	Element			
Vel Head (m)	0.39	Wt. n-Val.		0.045	
W.S. Elev (m)	121.00	Reach Len. (m)			
Crit W.S. (m)	120.45	Flow Area (m2)		32.60	
E.G. Slope (m/m)	0.008005	Area (m2)		32.60	
Q Total (m3/s)	90.59	Flow (m3/s)		90.59	
Top Width (m)	18.49	Top Width (m)		18.49	
Vel Total (m/s)	2.78	Avg. Vel. (m/s)		2.78	
Max Chl Dpth (m)	3.00	Hydr. Depth (m)		1.76	
Conv. Total (m3/s)	1012.5	Conv. (m3/s)		1012.5	
Length Wtd. (m)		Wetted Per. (m)		19.73	
Min Ch El (m)	118.00	Shear (N/m2)		129.73	
Alpha	1.00	Stream Power (N/m s)		360.53	
Frctn Loss (m)		Cum Volume (1000 m3)			
C & E Loss (m)		Cum SA (1000 m2)			

SUMMARY OF MANNING'S N VALUES

River:creek2

Reach	River Sta.	n1	n2	n3
one	11	.045	.045	.045
one	10	.045	.045	.045
one	9.2	.045	.045	.045
one	9	.045	.045	.045

River:creek1

Reach	River Sta.	n1	n2	n3
two	8.5	.045	.045	.045
two	8	.045	.045	.045
two	7.8	.045	.045	.045
two	7	.045	.045	.045
two	6	.045	.045	.045
one	5	.045	.045	.045
one	4.8	.045	.045	.045
one	4	.045	.045	.045
one	3	.045	.045	.045
one	2	.045	.045	.045
one	1	.045	.045	.045

SUMMARY OF REACH LENGTHS

River: creek2

Reach	River Sta.	Left	Channel	Right
one	11	79.55	109.12	154.55
one	10	117.92	126.97	136.17
one	9.2	9	9	9
one	9	0	0	0

River: creek1

Reach	River Sta.	Left	Channel	Right
two	8.5	110.28	74.79	54.48
two	8	9	9	9
two	7.8	47.49	81.51	129.5
two	7	153.21	138.19	171.85
two	6	0	0	0
one	5	9	9	9
one	4.8	93.32	105.94	121.87
one	4	87.19	106.29	131.2
one	3	91.02	116.63	156.32
one	2	134.42	134.19	149.09
one	1	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS

River: creek2

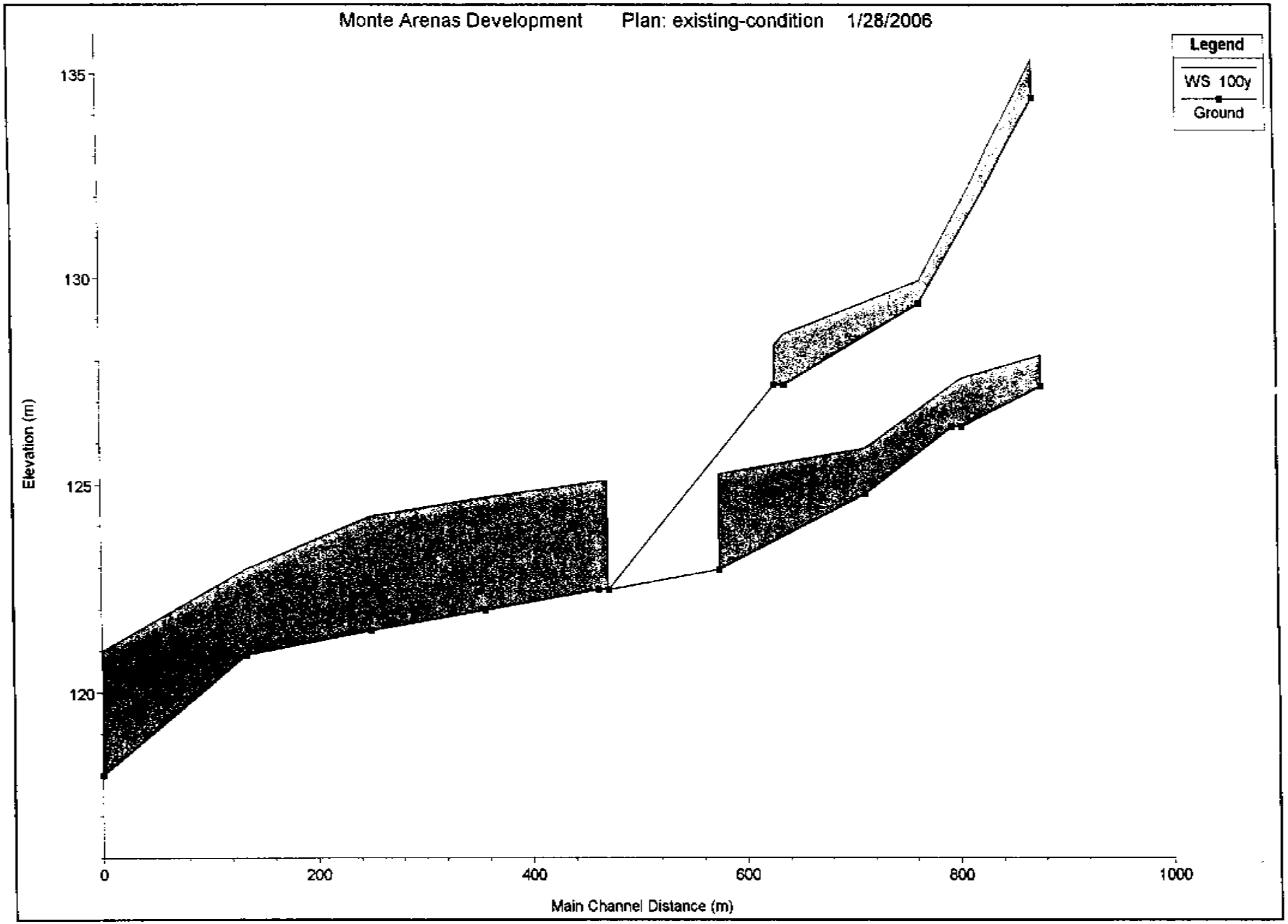
Reach	River Sta.	Contr.	Expan.
one	11	.1	.3
one	10	.1	.3
one	9.2	.1	.3
one	9	.1	.3

River: creek1

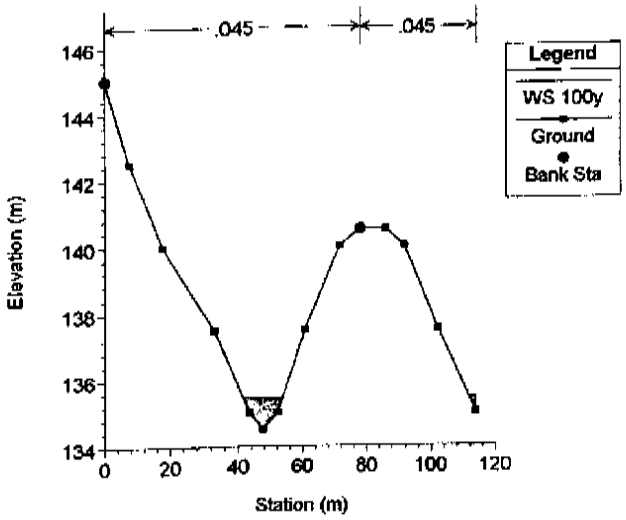
Reach	River Sta.	Contr.	Expan.
two	8.5	.1	.3
two	8	.1	.3
two	7.8	.1	.3
two	7	.1	.3
two	6	.1	.3
one	5	.1	.3
one	4.8	.1	.3
one	4	.1	.3
one	3	.1	.3
one	2	.1	.3
one	1	.1	.3

Profile Output Table - Standard Table 1

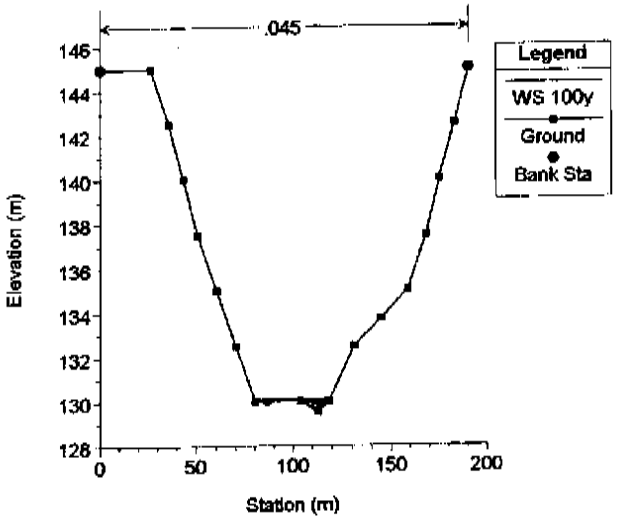
River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
8.5	100y	45.51	127.50	128.27	128.09	128.42	0.010290	1.75	26.07	38.12	0.67
8	100y	45.51	126.50	127.69		127.79	0.006695	1.40	32.50	47.92	0.54
7.8	100y	45.51	126.50	127.53	127.43	127.70	0.015069	1.84	24.76	44.61	0.79
7	100y	45.51	124.85	125.98	125.96	126.18	0.023509	1.99	22.91	51.35	0.95
5	100y	74.73	122.50	125.16	123.90	125.24	0.001464	1.27	59.58	37.82	0.30
4.8	100y	74.73	122.50	125.14		125.22	0.001498	1.28	59.02	37.59	0.30
4	100y	85.89	122.00	124.74	124.17	124.93	0.005394	1.93	44.49	34.03	0.54
3	100y	87.79	121.50	124.28		124.44	0.003822	1.79	48.99	32.26	0.46
2	100y	90.59	120.91	122.98	122.98	123.53	0.019799	3.29	27.58	25.12	1.00
1	100y	90.59	118.00	121.00	120.45	121.40	0.008005	2.78	32.60	18.49	0.67
11	100y	16.56	134.50	135.44	135.44	135.70	0.023311	2.30	7.44	14.41	0.98
10	100y	16.56	129.50	130.07	130.17	130.41	0.151544	2.60	6.37	38.64	2.04
9.2	100y	16.56	127.50	128.74	128.47	128.83	0.006755	1.32	12.53	20.19	0.54
9	100y	16.56	127.50	128.47	128.47	128.71	0.025697	2.18	7.59	15.71	1.00


Monte Arenas Development Plan: existing-condition 1/28/2006
Legend
WS 100y
Ground
Elevation (m)
135
130
125
120
0
200
400
600
800
1000
Main Channel Distance (m)

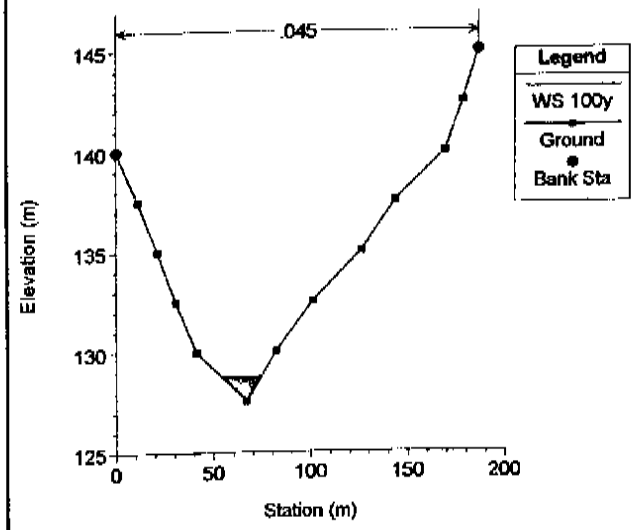
Monte Arenas Development Plan: existing-condition 1/28/2006



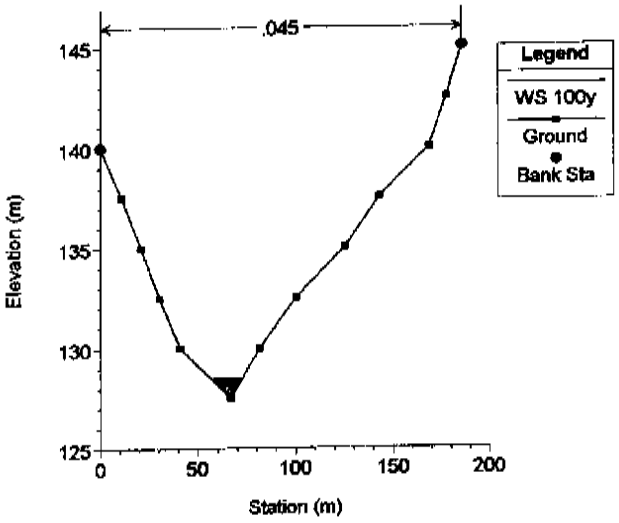
Monte Arenas Development Plan: existing-condition 1/28/2006



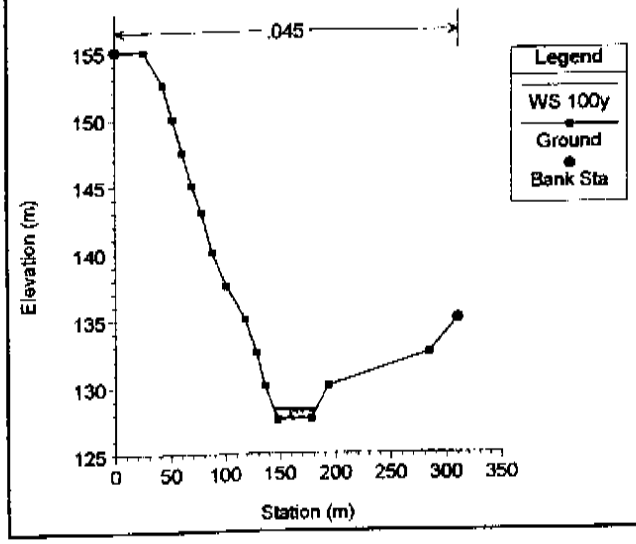
Monte Arenas Development Plan: existing-condition 1/28/2006



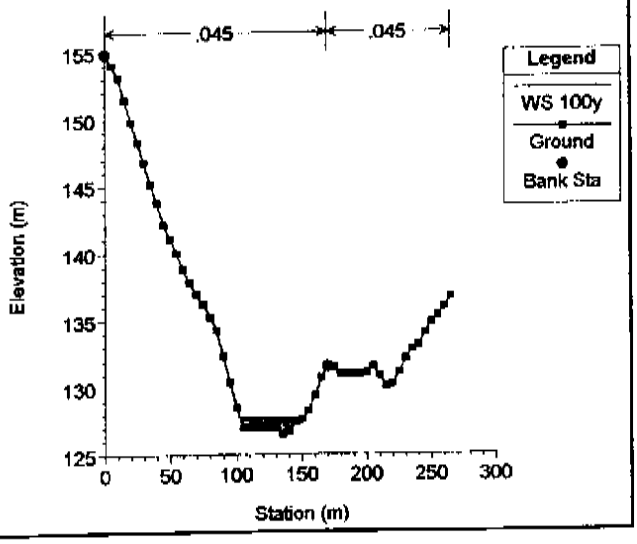
Monte Arenas Development Plan: existing-condition 1/28/2006



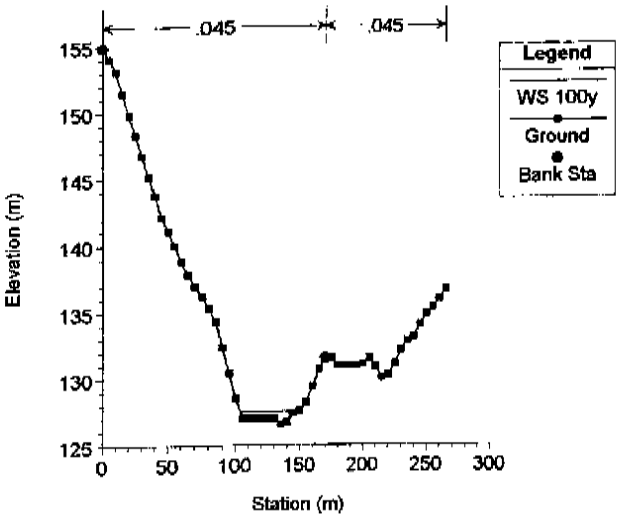
Monte Arenas Development Plan: existing-condition 1/28/2006



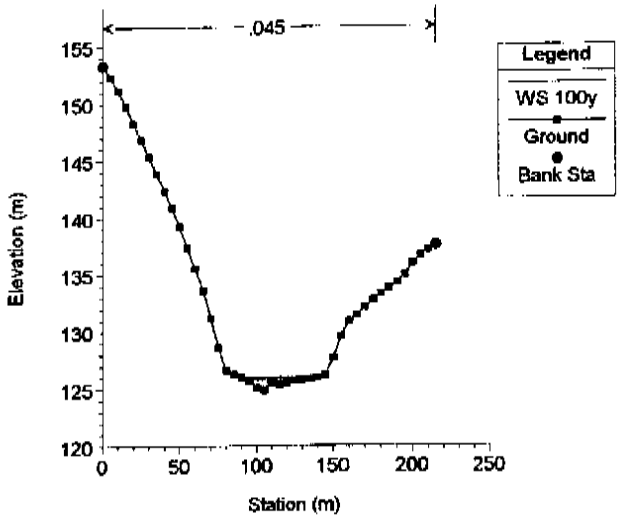
Monte Arenas Development Plan: existing-condition 1/28/2006



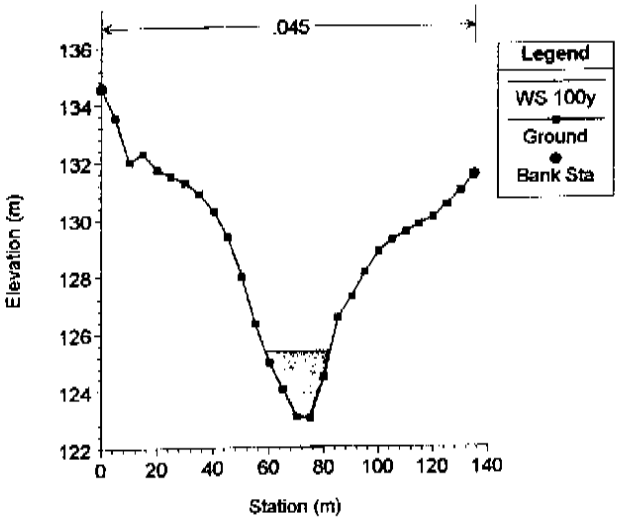
Monte Arenas Development Plan: existing-condition 1/28/2006



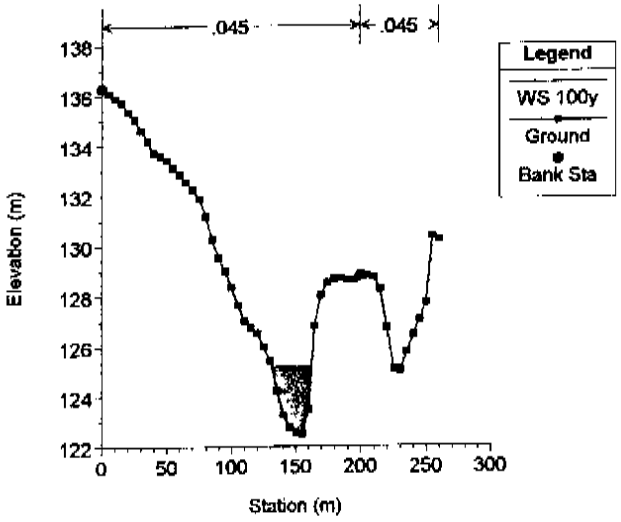
Monte Arenas Development Plan: existing-condition 1/28/2006



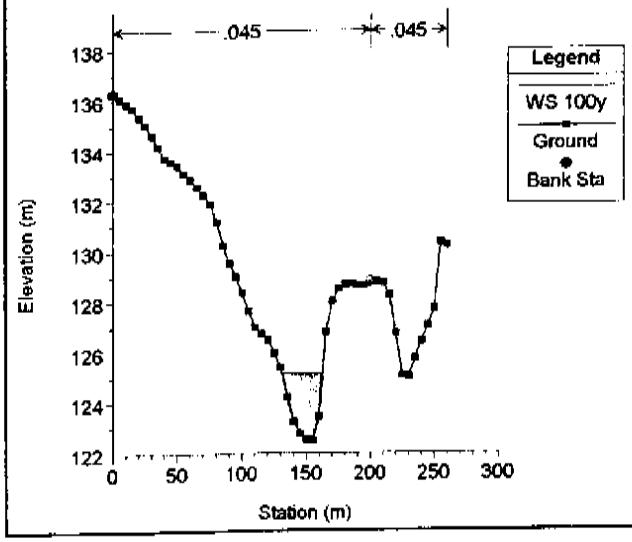
Monte Arenas Development Plan: existing-condition 1/28/2006

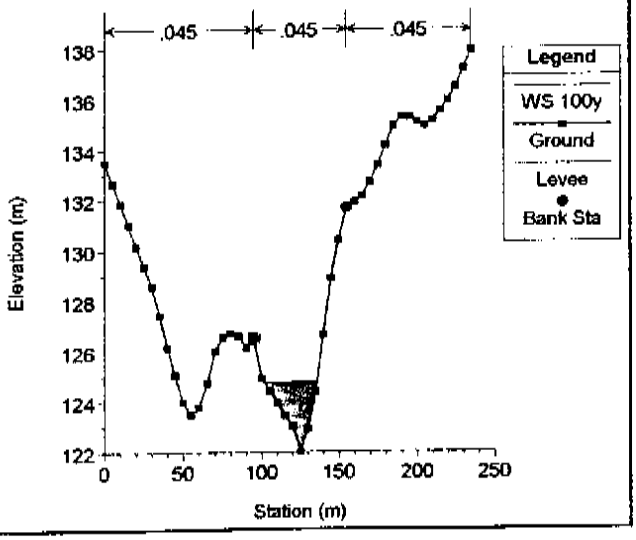


Monte Arenas Development Plan: existing-condition 1/28/2006

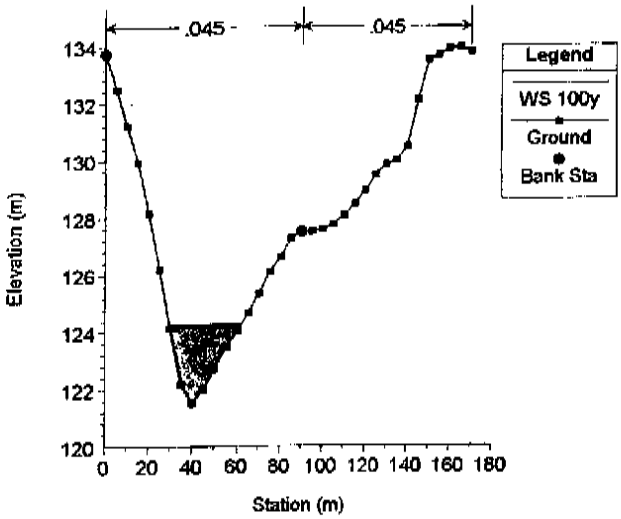


Monte Arenas Development Plan: existing-condition 1/28/2006

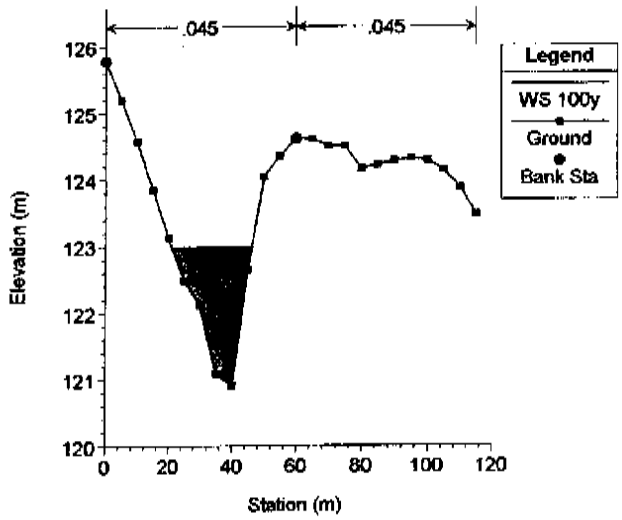




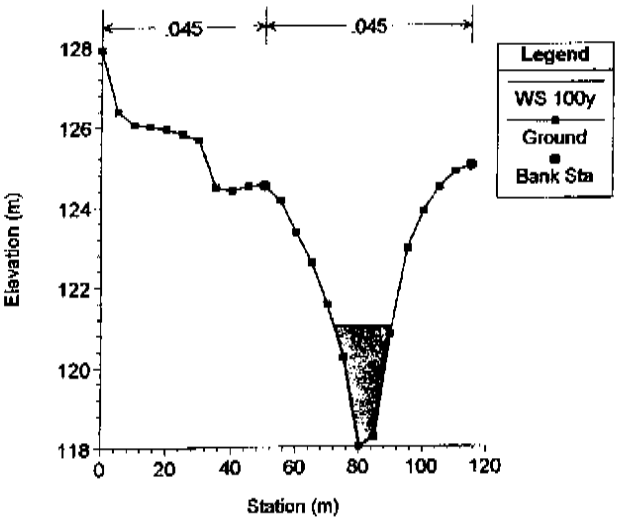
Monte Arenas Development Plan: existing-condition 1/28/2006



Monte Arenas Development Plan: existing-condition 1/28/2006



Monte Arenas Development Plan: existing-condition 1/28/2006



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
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PROJECT DATA
Project Title: Monte Arenas Development
Project File : MonteArenas.prj
Run Date and Time: 1/28/2006 4:57:13 PM

Project in SI units

PLAN DATA

Plan Title: existing-condition-creek2
Plan File : p:\297-Monte Areas Development\hec-ras\MonteArenas.p03

Geometry Title: existing-condition-creek2
Geometry File : p:\297-Monte Areas Development\hec-ras\MonteArenas.g03

Flow Title : existing-condition-creek2
Flow File : p:\297-Monte Areas Development\hec-ras\MonteArenas.f03

Plan Summary Information:

Number of:	Cross Sections	= 3	Mulitple Openings	=	0
	Culverts	= 0	Inline Structures	=	0
	Bridges	= 0	Lateral Structures	=	0

putational 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-creek2
Flow File : p:\297-Monte Areas Development\hec-ras\MonteArenas.f03

Flow Data (m3/s)

River	Reach	RS	100y	50y	25y	10y	2y
creek2	one	14	4.67	3.28	3	2.46	1.47
creek2	one	13	7.08	4.89	4.5	3.73	2.35

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
creek2	one	100y	Critical	Normal S = 0.008
creek2	one	50y	Critical	Normal S = 0.008
creek2	one	25y	Critical	Normal S = 0.008
creek2	one	10y	Critical	Normal S = 0.008
creek2	one	2y	Critical	Normal S = 0.008

GEOMETRY DATA

Geometry Title: existing-condition-creek2

Geometry File : p:\297-Monte Areas Development\hec-ras\MonteArenas.g03

CROSS SECTION

RIVER: creek2
REACH: one RS: 14

INPUT
Description:
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	144.5	10	143.5	20	142.38	30	141.43	40	140.89
50	140	60	143.38	70	145.32	80	144.7	90	143.17
100	144.51	110	145.88	112.72	146.42				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	70	.0456

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	70	49.86	65.72	47.05	.1	.3

CROSS SECTION OUTPUT Profile #100y

			Left OB	Channel	Right OB
E.G. Elev (m)	140.77	Element			
Vel Head (m)	0.16	Wt. n-Val.		0.045	
W.S. Elev (m)	140.61	Reach Len. (m)	49.86	65.72	47.05
Crit W.S. (m)	140.61	Flow Area (m2)		2.66	
E.G. Slope (m/m)	0.030972	Area (m2)		2.66	
Q Total (m3/s)	4.67	Flow (m3/s)		4.67	
Top Width (m)	8.68	Top Width (m)		8.68	
Vel Total (m/s)	1.76	Avg. Vel. (m/s)		1.76	
Max Chl Dpth (m)	0.61	Hydr. Depth (m)		0.31	
Conv. Total (m3/s)	26.5	Conv. (m3/s)		26.5	
Length Wtd. (m)	65.72	Wetted Per. (m)		8.81	
Min Ch El (m)	140.00	Shear (N/m2)		91.56	
Alpha	1.00	Stream Power (N/m s)		160.98	
Frctn Loss (m)	2.05	Cum Volume (1000 m3)		0.32	
C & E Loss (m)	0.01	Cum SA (1000 m2)		1.25	

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
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.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: creek2
REACH: one RS: 13

INPUT
Description:
Station Elevation Data num= 7

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	137.6	10	136.21	20	135.48	30	134.54	40	134.37
50	135.71	58.95	137						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	58.95	.0456

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	58.95	32.29	36.72	45.53	.1	.3

CROSS SECTION OUTPUT Profile #100y

			Left OB	Channel	Right OB
E.G. Elev (m)	135.21	Element			
Vel Head (m)	0.57	Wt. n-Val.		0.045	
W.S. Elev (m)	134.64	Reach Len. (m)	32.29	36.72	45.53
Crit W.S. (m)	134.79	Flow Area (m2)		2.12	
E.G. Slope (m/m)	0.255759	Area (m2)		2.12	
Q Total (m3/s)	7.08	Flow (m3/s)		7.08	
Top Width (m)	13.00	Top Width (m)		13.00	
Vel Total (m/s)	3.35	Avg. Vel. (m/s)		3.35	
Max Chl Dpth (m)	0.27	Hydr. Depth (m)		0.16	
Conv. Total (m3/s)	14.0	Conv. (m3/s)		14.0	
Length Wtd. (m)	36.72	Wetted Per. (m)		13.02	
Min Ch El (m)	134.37	Shear (N/m2)		407.56	
Alpha	1.00	Stream Power (N/m s)		1363.92	
Frctn Loss (m)	5.52	Cum Volume (1000 m3)		0.16	
C & E Loss (m)	0.04	Cum SA (1000 m2)		0.53	

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: creek2
REACH: one RS: 12

INPUT
Description:
Station Elevation Data num= 7

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	136.92	10	136.08	20	135.15	30	133.57	40	133
50	134.5	60	136.19						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	60	.0456

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	60	0	0	0	.1	.3

CROSS SECTION OUTPUT Profile #100y

			Left OB	Channel	Right OB
E.G. Elev (m)	133.80	Element			
Vel Head (m)	0.06	Wt. n-Val.		0.045	
W.S. Elev (m)	133.74	Reach Len. (m)			
Crit W.S. (m)	133.58	Flow Area (m2)		6.52	
E.G. Slope (m/m)	0.008001	Area (m2)		6.52	
Q Total (m3/s)	7.08	Flow (m3/s)		7.08	
Top Width (m)	16.05	Top Width (m)		16.05	
Vel Total (m/s)	1.09	Avg. Vel. (m/s)		1.09	
Max Chl Dpth (m)	0.74	Hydr. Depth (m)		0.41	
Conv. Total (m3/s)	79.2	Conv. (m3/s)		79.2	
Length Wtd. (m)		Wetted Per. (m)		16.14	
Min Ch El (m)	133.00	Shear (N/m2)		31.69	
Alpha	1.00	Stream Power (N/m s)		34.42	
Frctn Loss (m)		Cum Volume (1000 m3)			
C & E Loss (m)		Cum SA (1000 m2)			

Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

SUMMARY OF MANNING'S N VALUES

River:creek2

Reach	River Sta.	n1	n2	n3
one	14	.045	.045	.0456
one	13	.045	.045	.0456
one	12	.045	.045	.0456

SUMMARY OF REACH LENGTHS

River: creek2

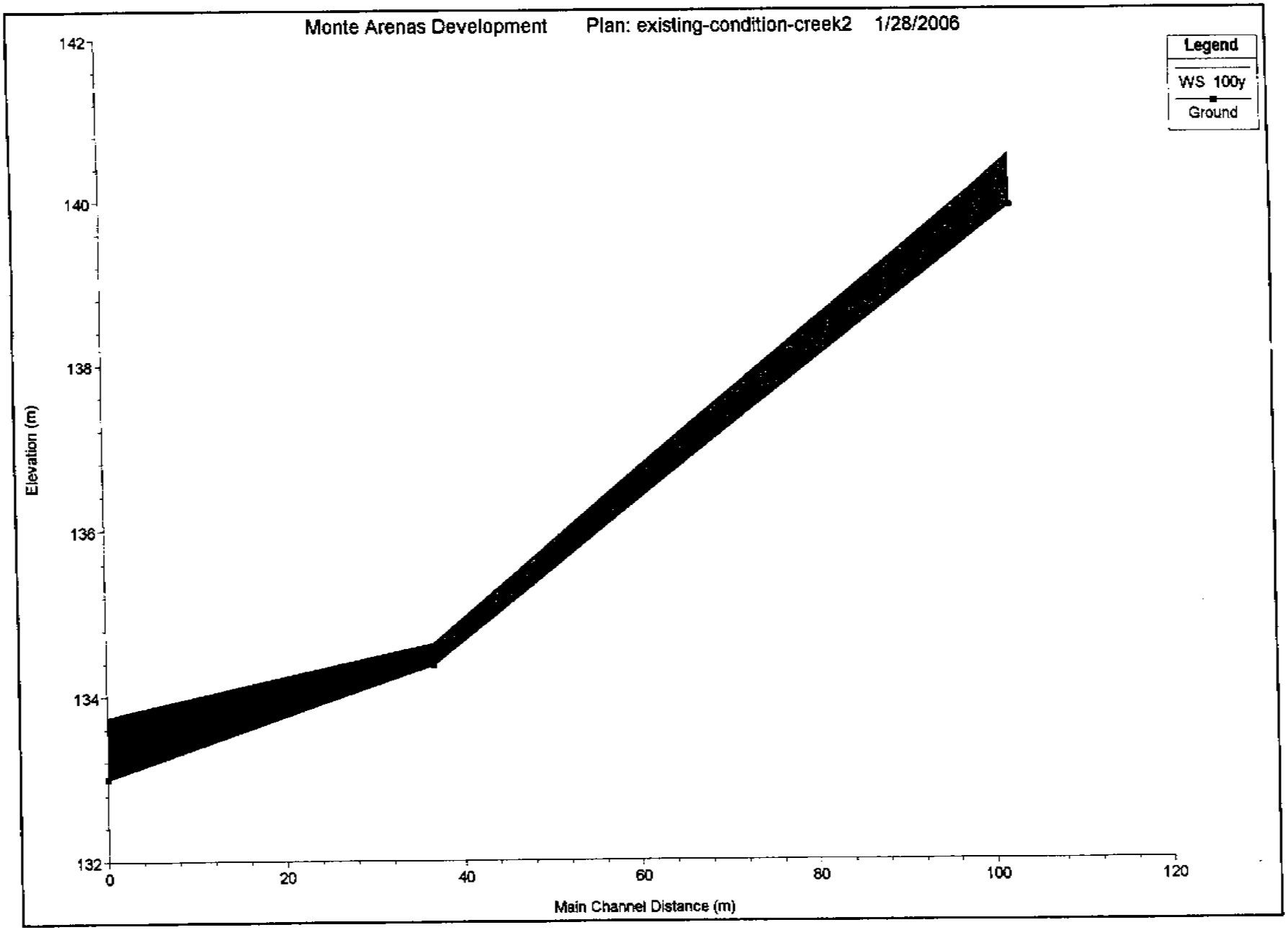
Reach	River Sta.	Left	Channel	Right
one	14	49.86	65.72	47.05
one	13	32.29	36.72	45.53
one	12	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: creek2

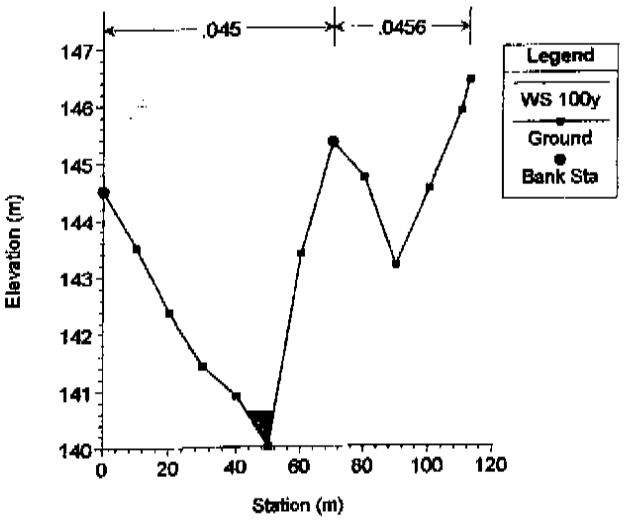
Reach	River Sta.	Contr.	Expan.
one	14	.1	.3
one	13	.1	.3
one	12	.1	.3

Profile Output Table - Standard Table 1

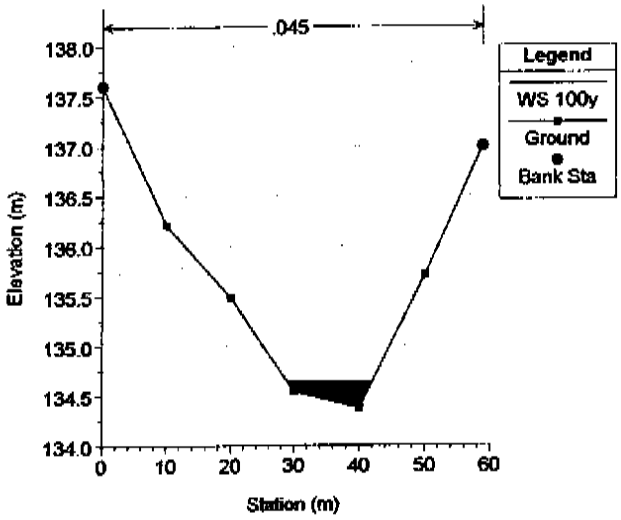
Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
[illegible]	14	100y	4.67	140.00	140.61	140.61	140.77	0.030972	1.76	2.66	8.68	1.01
[illegible]	13	100y	7.08	134.37	134.64	134.79	135.21	0.255759	3.35	2.12	13.00	2.65
[illegible]	12	100y	7.08	133.00	133.74	133.58	133.80	0.008001	1.09	6.52	16.05	0.54


Monte Arenas Development
Plan: existing-condition-creek2
1/28/2006
Legend
WS 100y
Ground
Elevation (m)
142
140
138
136
134
132
0
20
40
60
80
100
120
Main Channel Distance (m)

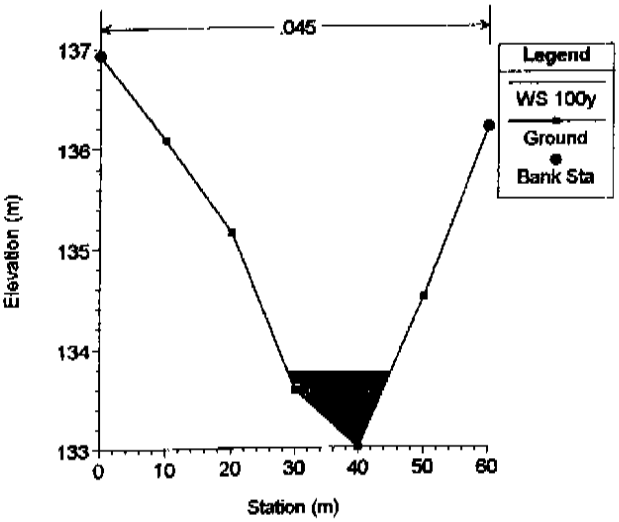
Monte Arenas Development Plan: existing-condition-creek2 1/28/2006



Monte Arenas Development Plan: existing-condition-creek2 1/28/2006



Monte Arenas Development Plan: existing-condition-creek2 1/28/2006



APPENDIX G

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: Monte Arenas Development
Project File : MonteArenas.prj
Run Date and Time: 1/28/2006 4:15:39 PM

Project in SI units

PLAN DATA

Plan Title: proposed-condition
Plan File : p:\297-Monte Areas Development\hec-ras\MonteArenas.p02

Geometry Title: proposed-condition
Geometry File : p:\297-Monte Areas Development\hec-ras\MonteArenas.g02

Flow Title : proposed-condition
Flow File : p:\297-Monte Areas Development\hec-ras\MonteArenas.f02

Plan Summary Information:

Number of:	Cross Sections	= 15	Multiple Openings	=	0
	Culverts	= 0	Inline Structures	=	0
	Bridges	= 3	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: proposed-condition
Flow File : p:\297-Monte Areas Development\hec-ras\MonteArenas.f02

Flow Data (m3/s)

River	Reach	RS	100y	50y	25y	10y	2y
creek2	one	11	16.56	12.71	11.44	9.14	4.95
creek2	one	10	19.45	15.09	13.65	11.04	6.28
creek1	two	8.5	45.51	39.13	34.86	27.32	14.5
creek1	one	5	69.46	57.43	51.11	40.72	22.65
creek1	one	4	79.97	64.73	57.85	46.41	26.39
creek1	one	3	85.83	69.21	61.99	49.81	27.98
creek1	one	2	88.72	71.3	63.97	51.57	29.31

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
creek2	one	100y	Critical	
creek2	one	50y	Critical	
creek2	one	25y	Critical	
creek2	one	10y	Critical	
creek2	one	2y	Critical	
creek1	two	100y	Critical	
creek1	two	50y	Critical	

creek1	two	25y	Critical	
creek1	two	10y	Critical	
creek1	two	2y	Critical	
creek1	one	100y		Normal S = 0.008
creek1	one	50y		Normal S = 0.008
creek1	one	25y		Normal S = 0.008
creek1	one	10y		Normal S = 0.008
creek1	one	2y		Normal S = 0.008

GEOMETRY DATA

Geometry Title: proposed-condition
Geometry File : p:\297-Monte Areas Development\hec-ras\MonteArenas.g02

Reach Connection Table

River	Reach	Upstream Boundary	Downstream Boundary
creek2	one		A
creek1	two		A
creek1	one	A	

JUNCTION INFORMATION

Name: A
Description:
Energy computation Method

Length Across Junction River	Reach	Tributary River	Reach	Length	Angle
creek1	two	to creek1	one	103.23	
creek2	one	to creek1	one	156.56	
creek2	one	to creek1	one	0	

CROSS SECTION

RIVER: creek2
REACH: one RS: 11

[illegible]UT
[illegible]cription:
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	145	7.29	142.5	17.55	140	32.92	137.5	43.24	135
47.62	134.5	52.32	135	60.66	137.5	71.12	140	77.49	140.5
85.55	140.5	91.59	140	102	137.5	113.6	135		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	77.49	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	77.49	79.55	109.12	154.55	.1	.3

Right Levee Station= 77.49 Elevation= 140.5

CROSS SECTION OUTPUT Profile #100y

		Element	Left OB	Channel	Right OB
E.G. Elev (m)	135.73	Wt. n-Val.		0.045	
Vel Head (m)	0.28	Reach Len. (m)	79.55	109.12	154.55
W.S. Elev (m)	135.44	Flow Area (m2)		7.03	
Crit W.S. (m)	135.44	Area (m2)		7.03	
E.G. Slope (m/m)	0.024366	Flow (m3/s)		16.56	
Q Total (m3/s)	16.56	Top Width (m)		12.39	
Top Width (m)	12.39	Avg. Vel. (m/s)		2.36	
Vel Total (m/s)	2.36	Hydr. Depth (m)		0.57	
Max Chl Dpth (m)	0.94	Conv. (m3/s)		106.1	
Conv. Total (m3/s)	106.1	Wetted Per. (m)		12.56	
Length Wtd. (m)	109.12	Shear (N/m2)		133.71	
Min Ch El (m)	134.50	Stream Power (N/m s)		314.96	
Alpha	1.00	Cum Volume (1000 m3)		2.34	
Frctn Loss (m)	2.77	Cum SA (1000 m2)		6.85	
C & E Loss (m)	0.04				

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
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.
[illegible]ing: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: creek2
REACH: one RS: 10

INPUT
Description:
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	145	26.45	145	36.1	142.5	43.4	140	50.73	137.5
60.33	135	70.49	132.5	80.26	130	86.77	130	103.51	130
113.06	129.5	118.26	130	131.31	132.5	158.84	135	168.35	137.5
175.37	140	183.35	142.5	190.74	145				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	190.74	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	190.74	117.92	126.97	136.17	.1	.3

CROSS SECTION OUTPUT Profile #100y

		Element	Left OB	Channel	Right OB
E.G. Elev (m)	130.43				
Vel Head (m)	0.33	Wt. n-Val.		0.045	
W.S. Elev (m)	130.10	Reach Len. (m)	117.92	126.97	136.17
Crit W.S. (m)	130.20	Flow Area (m2)		7.66	
E.G. Slope (m/m)	0.114553	Area (m2)		7.66	
Q Total (m3/s)	19.45	Flow (m3/s)		19.45	
Top Width (m)	38.94	Top Width (m)		38.94	
Vel Total (m/s)	2.54	Avg. Vel. (m/s)		2.54	
Max Chl Dpth (m)	0.60	Hydr. Depth (m)		0.20	
Conv. Total (m3/s)	57.5	Conv. (m3/s)		57.5	
Length Wtd. (m)	126.97	Wetted Per. (m)		39.00	
Min Ch El (m)	129.50	Shear (N/m2)		220.52	
Alpha	1.00	Stream Power (N/m s)		560.21	
Frctn Loss (m)	5.29	Cum Volume (1000 m3)		1.54	
C & E Loss (m)	0.00	Cum SA (1000 m2)		4.05	

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: creek2
REACH: one RS: 9.2

INPUT
Description:
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	140	10.99	137.5	21.07	135	30.4	132.5	41.2	130
66.9	127.5	81.86	130	100.67	132.5	125.67	135	143.18	137.5
168.98	140	177.97	142.5	186	145				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	186	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	186	9	9	9	.1	.3

CROSS SECTION OUTPUT Profile #100y

		Element	Left OB	Channel	Right OB
E.G. Elev (m)	128.94				
Vel Head (m)	0.09	Wt. n-Val.		0.045	
W.S. Elev (m)	128.85	Reach Len. (m)	0.50	0.50	0.50
Crit W.S. (m)	128.53	Flow Area (m2)		14.76	
E.G. Slope (m/m)	0.006015	Area (m2)		14.76	
Q Total (m3/s)	19.45	Flow (m3/s)		19.45	
Top Width (m)	21.91	Top Width (m)		21.91	
Vel Total (m/s)	1.32	Avg. Vel. (m/s)		1.32	
Max Chl Dpth (m)	1.35	Hydr. Depth (m)		0.67	
Conv. Total (m3/s)	250.8	Conv. (m3/s)		250.8	
Length Wtd. (m)	0.50	Wetted Per. (m)		22.09	
Min Ch El (m)	127.50	Shear (N/m2)		39.42	
Alpha	1.00	Stream Power (N/m s)		51.93	
Frctn Loss (m)	0.01	Cum Volume (1000 m3)		0.12	
C & E Loss (m)	0.03	Cum SA (1000 m2)		0.18	

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.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

BRIDGE

R: creek2
H: one RS: 9.1

INPUT
Description:
Distance from Upstream XS = .5
Deck/Roadway Width = 8
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	130	127.5	60	130	127.5	60	130	129.4
70	130	129.4	70	130	127.5	186	130	127.5

Upstream Bridge Cross Section Data
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	140	10.99	137.5	21.07	135	30.4	132.5	41.2	130
66.9	127.5	81.86	130	100.67	132.5	125.67	135	143.18	137.5
168.98	140	177.97	142.5	186	145				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	186	.045

Bank Sta: Left	Right	Coeff Contr.	Expan.
0	186	.1	.3

Downstream Deck/Roadway Coordinates
num= 6

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	130	127.5	60	130	127.5	60	130	129.4
70	130	129.4	70	130	127.5	186	130	127.5

Downstream Bridge Cross Section Data
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	140	10.99	137.5	21.07	135	30.4	132.5	41.2	130
66.9	127.5	81.86	130	100.67	132.5	125.67	135	143.18	137.5
168.98	140	177.97	142.5	186	145				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	186	.045

Bank Sta: Left	Right	Coeff Contr.	Expan.
0	186	.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 = 130
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 #100y

		Element	Inside BR US	Inside BR DS
E.G. US. (m)	128.94	E.G. Elev (m)	128.90	128.90
W.S. US. (m)	128.85	W.S. Elev (m)	128.54	128.54
Total (m3/s)	19.45	Crit W.S. (m)	128.54	128.54
Bridge (m3/s)	19.45	Max Chl Dpth (m)	1.04	1.04
Weir (m3/s)		Vel Total (m/s)	2.67	2.67
Weir Sta Lft (m)		Flow Area (m2)	7.28	7.28
Weir Sta Rgt (m)		Froude # Chl	1.00	1.00
Weir Submerg		Specif Force (m3)	8.11	8.11
Weir Max Depth (m)				

Min El Weir Flow (m)	130.00	Hydr Depth (m)	0.73	0.73
Min El Prs (m)	129.40	W.P. Total (m)	10.08	10.08
Delta EG (m)	0.06	Conv. Total (m3/s)	130.3	130.3
Delta WS (m)	0.47	Top Width (m)	10.00	10.00
BR Open Area (m2)	15.88	Frctn Loss (m)		0.18
BR Open Vel (m/s)	2.67	C & E Loss (m)		0.00
Coef of Q		Shear Total (N/m2)	157.84	157.84
Br Sel Method	Energy only	Power Total (N/m s)	421.56	421.56

Warning: For the final momentum answer at the bridge, the upstream energy was computed lower than the downstream energy. This is not physically possible, the momentum answer has been disregarded.
Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.

CROSS SECTION

RIVER: creek2
REACH: one RS: 9

INPUT
Description:
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	140	10.99	137.5	21.07	135	30.4	132.5	41.2	130
66.9	127.5	81.86	130	100.67	132.5	125.67	135	143.18	137.5
168.98	140	177.97	142.5	186	145				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	186	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	186	0	0	0	.1	.3

CROSS SECTION OUTPUT Profile #100y

			Left OB	Channel	Right OB
E.G. Elev (m)	128.87	Element			
Vel Head (m)	0.50	Wt. n-Val.		0.045	
W.S. Elev (m)	128.37	Reach Len. (m)	0.00	0.00	0.00
Crit W.S. (m)	128.53	Flow Area (m2)		6.22	
E.G. Slope (m/m)	0.060373	Area (m2)		6.22	
Q Total (m3/s)	19.45	Flow (m3/s)		19.45	
Top Width (m)	14.22	Top Width (m)		14.22	
Vel Total (m/s)	3.13	Avg. Vel. (m/s)		3.13	
Max Chl Dpth (m)	0.87	Hydr. Depth (m)		0.44	
Conv. Total (m3/s)	79.2	Conv. (m3/s)		79.2	
Length Wtd. (m)	0.00	Wetted Per. (m)		14.34	
Min Ch El (m)	127.50	Shear (N/m2)		256.76	
Alpha	1.00	Stream Power (N/m s)		803.24	
Frctn Loss (m)	0.02	Cum Volume (1000 m3)			
C & E Loss (m)	0.01	Cum SA (1000 m2)			

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.
Note: The energy method has computed a class B profile.

CROSS SECTION

RIVER: creek1
REACH: two RS: 8.5

INPUT
Description:
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	155	25.4	155	42.87	152.5	51.81	150	60.18	147.5
69.06	145	77.68	143	87.92	140	100.82	137.5	117.82	135
128.49	132.5	136.05	130	147.75	127.5	177.66	127.5	192.75	130
284.26	132.5	309.8	135						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	309.8	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	309.8	110.28	74.79	54.48	.1	.3

CROSS SECTION OUTPUT Profile #100y

			Left OB	Channel	Right OB
E.G. Elev (m)	128.37	Element			
Vel Head (m)	0.27	Wt. n-Val.		0.045	
W.S. Elev (m)	128.09	Reach Len. (m)	110.28	74.79	54.48
Crit W.S. (m)	128.09	Flow Area (m2)		19.63	
E.G. Slope (m/m)	0.024772	Area (m2)		19.63	
Q Total (m3/s)	45.51	Flow (m3/s)		45.51	

Top Width (m)	36.27	Top Width (m)	36.27	
Vel Total (m/s)	2.32	Avg. Vel. (m/s)	2.32	
Max Chl Dpth (m)	0.59	Hydr. Depth (m)	0.54	
Conv. Total (m3/s)	289.2	Conv. (m3/s)	289.2	
Length Wtd. (m)	74.79	Wetted Per. (m)	36.38	
Min Ch El (m)	127.50	Shear (N/m2)	131.09	
Alpha	1.00	Stream Power (N/m s)	303.90	
Frctn Loss (m)		Cum Volume (1000 m3)	13.22	0.07
C & E Loss (m)		Cum SA (1000 m2)	11.25	

CROSS SECTION

RIVER: creek1
REACH: two RS: 8

INPUT
Description:
Station Elevation Data num= 54

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	154.84	5	154.09	10	153.14	15	151.47	20	149.83
25	148.36	30	146.78	35	145.2	40	143.8	45	142.17
50	141.13	55	140.04	60	138.82	65	137.84	70	136.97
75	136.21	80	135.29	85	134.28	90	132.35	95	130.42
100	128.49	105	127	110	127	115	127.03	120	127
125	127	130	126.37	135	125.9	140	126.08	145	127.4
150	127.62	155	128.22	160	129.4	165	130.7	170	131.5
175	131.5	180	131	185	131	190	131	195	131
200	131.08	205	131.5	210	130.84	215	130.03	220	130.19
225	131.09	230	132.11	235	132.83	240	133.12	245	134.03
250	134.77	255	135.32	260	135.94	265	136.65		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	170	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	170	9	9	9	.1	.3

CROSS SECTION OUTPUT Profile #100y

			Left OB	Channel	Right OB
E.G. Elev (m)	127.93	Element			
Vel Head (m)	0.04	Wt. n-Val.		0.045	
W.S. Elev (m)	127.89	Reach Len. (m)	0.50	0.50	0.50
Crit W.S. (m)	127.20	Flow Area (m2)		51.19	
E.G. Slope (m/m)	0.001576	Area (m2)		51.19	
Q Total (m3/s)	45.51	Flow (m3/s)		45.51	
Top Width (m)	50.23	Top Width (m)		50.23	
Vel Total (m/s)	0.89	Avg. Vel. (m/s)		0.89	
Max Chl Dpth (m)	1.99	Hydr. Depth (m)		1.02	
Conv. Total (m3/s)	1146.3	Conv. (m3/s)		1146.3	
Length Wtd. (m)	0.50	Wetted Per. (m)		50.61	
Min Ch El (m)	125.90	Shear (N/m2)		15.63	
Alpha	1.00	Stream Power (N/m s)		13.90	
Frctn Loss (m)	0.00	Cum Volume (1000 m3)		10.58	0.07
C & E Loss (m)	0.06	Cum SA (1000 m2)		8.02	

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.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

BRIDGE

RIVER: creek1
REACH: two RS: 7.9

INPUT
Description:
Distance from Upstream XS = .5
Deck/Roadway Width = 8
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	131	126.5	130	131	126.5	130	131	130.4
141	131	130.4	141	131	126.5	265	131	126.5

Upstream Bridge Cross Section Data
Station Elevation Data num= 54

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	154.84	5	154.09	10	153.14	15	151.47	20	149.83
25	148.36	30	146.78	35	145.2	40	143.8	45	142.17
50	141.13	55	140.04	60	138.82	65	137.84	70	136.97
75	136.21	80	135.29	85	134.28	90	132.35	95	130.42

100	128.49	105	127	110	127	115	127.03	120	127
125	127	130	126.37	135	125.9	140	126.08	145	127.4
150	127.62	155	128.22	160	129.4	165	130.7	170	131.5
175	131.5	180	131	185	131	190	131	195	131
200	131.08	205	131.5	210	130.84	215	130.03	220	130.19
225	131.09	230	132.11	235	132.83	240	133.12	245	134.03
250	134.77	255	135.32	260	135.94	265	136.65		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	170	.045

Bank Sta: Left	Right	Coeff Contr.	Expan.
0	170	.1	.3

Downstream Deck/Roadway Coordinates

num= 6

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	131	126.5	130	131	126.5	130	131	130.4
141	131	130.4	141	131	126.5	265	131	126.5

Downstream Bridge Cross Section Data

Station Elevation Data num= 54

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	154.84	5	154.09	10	153.14	15	151.47	20	149.83
25	148.36	30	146.78	35	145.2	40	143.8	45	142.17
50	141.13	55	140.04	60	138.82	65	137.84	70	136.97
75	136.21	80	135.29	85	134.28	90	132.35	95	130.42
100	128.49	105	127	110	127	115	127.03	120	127
125	127	130	126.37	135	125.9	140	125.08	145	127.4
150	127.62	155	128.22	160	129.4	165	130.7	170	131.5
175	131.5	180	131	185	131	190	131	195	131
200	131.08	205	131.5	210	130.84	215	130.03	220	130.19
225	131.09	230	132.11	235	132.83	240	133.12	245	134.03
250	134.77	255	135.32	260	135.94	265	136.65		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	170	.045

Bank Sta: Left	Right	Coeff Contr.	Expan.
0	170	.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 = 131
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 #100y

		Element	Inside BR US	Inside BR DS
E.G. US. (m)	127.93	E.G. Elev (m)	127.87	127.52
W.S. US. (m)	127.89	W.S. Elev (m)	127.27	126.71
Q Total (m3/s)	45.51	Crit W.S. (m)	127.27	126.88
Q Bridge (m3/s)	45.51	Max Chl Dpth (m)	1.37	1.63
Q Weir (m3/s)		Vel Total (m/s)	3.43	4.00
Weir Sta Lft (m)		Flow Area (m2)	13.25	11.39
Weir Sta Rgt (m)		Froude # Chl	1.02	1.38
Weir Submerg		Specif Force (m3)	23.96	24.75
Weir Max Depth (m)		Hydr Depth (m)	1.20	1.04
Min El Weir Flow (m)	131.00	W.P. Total (m)	15.87	18.01
Min El Prs (m)	130.40	Conv. Total (m3/s)	261.2	186.5
Delta EG (m)	0.44	Top Width (m)	11.00	11.00
Delta WS (m)	1.25	Frctn Loss (m)	0.22	0.33
BR Open Area (m2)	47.68	C & E Loss (m)	0.04	0.02
BR Open Vel (m/s)	4.00	Shear Total (N/m2)	248.66	369.30
Coef of Q		Power Total (N/m s)	853.84	1475.55
Br Sol Method	Energy only			

Warning: For the final momentum answer at the bridge, the upstream energy was computed lower than the

downstream energy. This is not physically possible, the momentum answer has been disregarded.
Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
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.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
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.
Note: The energy method has computed a class B profile.

CROSS SECTION

RIVER: creek1
REACH: two RS: 7.8

INPUT
Description:
Station Elevation Data num= 54

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	154.84	5	154.09	10	153.14	15	151.47	20	149.83
25	148.36	30	146.78	35	145.2	40	143.8	45	142.17
50	141.13	55	140.04	60	138.82	65	137.84	70	136.97
75	136.21	80	135.29	85	134.28	90	132.35	95	130.42
100	128.49	105	127	110	127	115	127.03	120	127
125	127	130	126.37	135	125.9	140	125.08	145	127.4
150	127.62	155	128.22	160	129.4	165	130.7	170	131.5
175	131.5	180	131	185	131	190	131	195	131
200	131.08	205	131.5	210	130.84	215	130.03	220	130.19
225	131.09	230	132.11	235	132.83	240	133.12	245	134.03
250	134.77	255	135.32	260	135.94	265	136.65		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	170	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	170	47.49	81.51	129.5	.1	.3

CROSS SECTION OUTPUT Profile #100y

		Element	Left OB	Channel	Right OB
E.G. Elev (m)	127.49	Wt. n-Val.		0.045	
Vel Head (m)	0.85	Reach Len. (m)	47.49	81.51	129.50
W.S. Elev (m)	126.64	Flow Area (m2)		11.16	
Crit W.S. (m)	126.90	Area (m2)		11.16	
E.G. Slope (m/m)	0.054186	Flow (m3/s)		45.51	
Q Total (m3/s)	45.51	Top Width (m)		15.49	
Top Width (m)	15.49	Avg. Vel. (m/s)		4.08	
Vel Total (m/s)	4.08	Hydr. Depth (m)		0.72	
Max Chl Dpth (m)	1.56	Conv. (m3/s)		195.5	
Conv. Total (m3/s)	195.5	Wetted Per. (m)		15.93	
Length Wtd. (m)	81.51	Shear (N/m2)		372.06	
Min Ch El (m)	125.08	Stream Power (N/m s)		1517.58	
Alpha	1.00	Cum Volume (1000 m3)		10.45	0.07
Frctn Loss (m)	0.03	Cum SA (1000 m2)		7.91	
C & E Loss (m)	0.00				

Note: The energy method has computed a class B profile.

CROSS SECTION

RIVER: creek1
REACH: two RS: 7

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	153.29	5	152.38	10	151.16	15	149.77	20	148.3
25	146.83	30	145.38	35	143.87	40	142.34	45	140.86
50	139.23	55	137.37	60	135.52	65	133.63	70	131.2
75	128.62	80	126.62	85	126.26	90	125.96	95	125.67
100	125.03	105	124.85	110	125.5	115	125.32	120	125.5
125	125.69	130	125.81	135	125.88	140	125.93	145	126.15
150	127.64	155	129.58	160	130.85	165	131.45	170	132.07
175	132.69	180	133.23	185	133.71	190	134.24	195	134.91
200	135.92	205	136.58	210	137.12	215	137.5		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	215	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	215	153.21	138.19	171.85	.1	.3

CROSS SECTION OUTPUT Profile #100y

E.G. Elev (m)	126.18	Element	Left OB	Channel	Right OB
Vel Head (m)	0.21	Wt. n-Val.		0.045	
W.S. Elev (m)	125.97	Reach Len. (m)	153.21	138.19	171.85
Crit W.S. (m)	125.96	Flow Area (m2)		22.67	
E.G. Slope (m/m)	0.024238	Area (m2)		22.67	
Q Total (m3/s)	45.51	Flow (m3/s)		45.51	
Top Width (m)	51.17	Top Width (m)		51.17	
Vel Total (m/s)	2.01	Avg. Vel. (m/s)		2.01	
Max Chl Dpth (m)	1.12	Hydr. Depth (m)		0.44	
Conv. Total (m3/s)	292.3	Conv. (m3/s)		292.3	
Length Wtd. (m)	138.19	Wetted Per. (m)		51.28	
Min Ch El (m)	124.85	Shear (N/m2)		105.07	
Alpha	1.00	Stream Power (N/m s)		210.96	
Frctn Loss (m)	0.67	Cum Volume (1000 m3)		9.08	0.07
C & E Loss (m)	0.04	Cum SA (1000 m2)		5.19	

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: creek1
REACH: two RS: 6

INPUT
Description:
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	134.56	5	133.54	10	132	15	132.29	20	131.73
25	131.5	30	131.25	35	130.87	40	130.24	45	129.34
50	127.94	55	126.31	60	124.94	65	124	70	123.04
75	123	80	124.42	85	126.5	90	127.25	95	128.07
100	128.82	105	129.2	110	129.5	115	129.76	120	130.02
125	130.45	130	130.94	135	131.47				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	135	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	135	0	0	0	.1	.3

CROSS SECTION OUTPUT Profile #100y

E.G. Elev (m)	125.47	Element	Left OB	Channel	Right OB
Vel Head (m)	0.08	Wt. n-Val.		0.045	
W.S. Elev (m)	125.39	Reach Len. (m)	103.23	103.23	103.23
Crit W.S. (m)		Flow Area (m2)		35.61	
E.G. Slope (m/m)	0.002018	Area (m2)		35.61	
Q Total (m3/s)	45.51	Flow (m3/s)		45.51	
Top Width (m)	23.95	Top Width (m)		23.95	
Vel Total (m/s)	1.28	Avg. Vel. (m/s)		1.28	
Max Chl Dpth (m)	2.39	Hydr. Depth (m)		1.49	
Conv. Total (m3/s)	1013.0	Conv. (m3/s)		1013.0	
Length Wtd. (m)	103.23	Wetted Per. (m)		24.58	
Min Ch El (m)	123.00	Shear (N/m2)		28.67	
Alpha	1.00	Stream Power (N/m s)		36.65	
Frctn Loss (m)	0.14	Cum Volume (1000 m3)		5.05	0.07
C & E Loss (m)	0.01	Cum SA (1000 m2)			

CROSS SECTION

RIVER: creek1
REACH: one RS: 5

INPUT
Description:
Station Elevation Data num= 53

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	136.28	5	136.1	10	135.9	15	135.7	20	135.36
25	135.04	30	134.63	35	134.2	40	133.74	45	133.6
50	133.42	55	133.1	60	132.85	65	132.58	70	132.26
75	131.91	80	131.19	85	130.27	90	129.53	95	128.99
100	128.36	105	127.63	110	127	115	126.74	120	126.5
125	125.95	130	125.4	135	124.22	140	123.23	145	122.74
150	122.51	155	122.5	160	123.449	165	126.78	170	128.03
175	128.5	180	128.65	185	128.68	190	128.63	195	128.61

200	128.78	205	128.79	210	128.75	215	128.25	220	126.73
225	125.06	230	125.01	235	125.74	240	126.42	245	127.04
250	127.7	255	130.35	260	130.22				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	200	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	200	9	9	9	.1	.3

CROSS SECTION OUTPUT Profile #100y

			Left OB	Channel	Right OB
E.G. Elev (m)	125.32	Element			
Vel Head (m)	0.06	Wt. n-Val.		0.045	0.045
W.S. Elev (m)	125.26	Reach Len. (m)	0.50	0.50	0.50
Crit W.S. (m)	123.85	Flow Area (m2)		62.23	1.41
E.G. Slope (m/m)	0.001073	Area (m2)		62.23	1.41
Q Total (m3/s)	69.46	Flow (m3/s)		69.12	0.34
Top Width (m)	39.46	Top Width (m)		32.13	7.33
Vel Total (m/s)	1.09	Avg. Vel. (m/s)		1.11	0.24
Max Chl Dpth (m)	2.76	Hydr. Depth (m)		1.94	0.19
Conv. Total (m3/s)	2120.4	Conv. (m3/s)		2110.0	10.4
Length Wtd. (m)	0.50	Wetted Per. (m)		33.02	7.38
Min Ch El (m)	122.50	Shear (N/m2)		19.83	2.01
Alpha	1.03	Stream Power (N/m s)		22.03	0.49
Frctn Loss (m)	0.00	Cum Volume (1000 m3)		18.78	0.02
C & E Loss (m)	0.03	Cum SA (1000 m2)		13.25	0.34

Warning: Divided flow computed for this cross-section.
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.

BRIDGE

RIVER: creek1
REACH: one RS: 4.9

INPUT
Description:
Distance from Upstream XS = .5
Deck/Roadway Width = 8
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	126	122.5	145	126	125.4	145	126	125.4
156	126	125.4	156	126	122.5	260	126	122.5

Upstream Bridge Cross Section Data
Station Elevation Data num= 53

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	136.28	5	136.1	10	135.9	15	135.7	20	135.36
25	135.04	30	134.63	35	134.2	40	133.74	45	133.6
50	133.42	55	133.1	60	132.85	65	132.58	70	132.26
75	131.91	80	131.19	85	130.27	90	129.53	95	128.99
100	128.36	105	127.63	110	127	115	126.74	120	126.5
125	125.95	130	125.4	135	124.22	140	123.23	145	122.74
150	122.51	155	122.5	160	123.449	165	126.78	170	128.03
175	128.5	180	128.65	185	128.68	190	128.63	195	128.61
200	128.78	205	128.79	210	128.75	215	128.25	220	126.73
225	125.06	230	125.01	235	125.74	240	126.42	245	127.04
250	127.7	255	130.35	260	130.22				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	200	.045

Bank Sta: Left	Right	Coeff Contr.	Expan.
0	200	.1	.3

Downstream Deck/Roadway Coordinates
num= 6

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	126	122.5	145	126	122.5	145	126	125.4
156	126	125.4	156	126	122.5	260	126	122.5

Downstream Bridge Cross Section Data
Station Elevation Data num= 53

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	136.28	5	136.1	10	135.9	15	135.7	20	135.36
25	135.04	30	134.63	35	134.2	40	133.74	45	133.6
50	133.42	55	133.1	60	132.85	65	132.58	70	132.26
75	131.91	80	131.19	85	130.27	90	129.53	95	128.99
100	128.36	105	127.63	110	127	115	126.74	120	126.5

125	125.95	130	125.4	135	124.22	140	123.23	145	122.74
150	122.51	155	122.5	160	123.449	165	126.78	170	128.03
17.	128.5	180	128.65	185	128.68	190	128.63	195	128.61
200	128.78	205	128.79	210	128.75	215	128.25	220	126.73
225	125.06	230	125.01	235	125.74	240	126.42	245	127.04
250	127.7	255	130.35	260	130.22				

ing's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	200	.045

Bank Sta: Left	Right	Coeff Contr.	Expan.
0	200	.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 - 126
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 #100y

		Element	Inside BR US	Inside BR DS
E.G. US. (m)	125.32	E.G. Elev (m)	125.29	125.25
W.S. US. (m)	125.26	W.S. Elev (m)	124.93	124.87
Q Total (m3/s)	69.46	Crit W.S. (m)	124.16	124.16
Q Bridge (m3/s)	69.46	Max Chl Dpth (m)	2.43	2.37
Q Weir (m3/s)		Vel Total (m/s)	2.68	2.74
Weir Sta Lft (m)		Flow Area (m2)	25.96	25.31
Weir Sta Rgt (m)		Froude # Chl	0.56	0.58
Weir Submerg		Specif Force (m3)	49.61	48.57
Weir Max Depth (m)		Hydr Depth (m)	2.36	2.30
Min El Weir Flow (m)	126.00	W.P. Total (m)	11.02	11.02
Min El Prs (m)	125.40	Conv. Total (m3/s)	1021.4	978.7
Delta EG (m)	0.17	Top Width (m)	11.00	11.00
Delta WS (m)	0.18	Frctn Loss (m)	0.04	0.00
BR Open Area (m2)	31.15	C & E Loss (m)	0.00	0.09
BR Open Vel (m/s)	2.74	Shear Total (N/m2)	106.82	113.40
Coef of Q		Power Total (N/m s)	285.75	311.25
Br Sel Method	Energy only			

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: creek1
REACH: one RS: 4.8

INPUT
Description:
Station Elevation Data num= 53

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	136.28	5	136.1	10	135.9	15	135.7	20	135.36
25	135.04	30	134.63	35	134.2	40	133.74	45	133.6
50	133.42	55	133.1	60	132.85	65	132.58	70	132.26
75	131.91	80	131.19	85	130.27	90	129.53	95	128.99
100	128.36	105	127.63	110	127	115	126.74	120	126.5
125	125.95	130	125.4	135	124.22	140	123.23	145	122.74
150	122.51	155	122.5	160	123.449	165	126.78	170	128.03
175	128.5	180	128.65	185	128.68	190	128.63	195	128.61
200	128.78	205	128.79	210	128.75	215	128.25	220	126.73
225	125.06	230	125.01	235	125.74	240	126.42	245	127.04
250	127.7	255	130.35	260	130.22				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	200	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	200	93.32	105.94	121.87	.1	.3

CROSS SECTION OUTPUT Profile #100y

E.G. Elev (m)	125.16	Element	Left OB	Channel	Right OB
Vel Head (m)	0.08	Wt. n-Val.		0.045	0.045
W.S. Elev (m)	125.08	Reach Len. (m)	93.32	105.94	121.87
Crit W.S. (m)		Flow Area (m2)		56.54	0.25
E.G. Slope (m/m)	0.001425	Area (m2)		56.54	0.25
Q Total (m3/s)	69.46	Flow (m3/s)		69.43	0.03
Top Width (m)	36.65	Top Width (m)		31.10	5.55
Vel Total (m/s)	1.22	Avg. Vel. (m/s)		1.23	0.11
Max Chl Dpth (m)	2.58	Hydr. Depth (m)		1.82	0.05
Conv. Total (m3/s)	1840.3	Conv. (m3/s)		1839.6	0.7
Length Wtd. (m)	105.94	Wetted Per. (m)		31.91	5.56
Min Ch El (m)	122.50	Shear (N/m2)		24.75	0.63
Alpha	1.01	Stream Power (N/m s)		30.40	0.07
Frctn Loss (m)	0.27	Cum Volumo (1000 m3)		18.54	0.02
C & E Loss (m)	0.01	Cum SA (1000 m2)		13.14	0.34

Warning: Divided flow computed for this cross-section.
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: creek1
REACH: one RS: 4

INPUT
Description:
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	133.5	5	132.68	10	131.86	15	131.04	20	130.18
25	129.39	30	128.59	35	127.43	40	126.18	45	125.08
50	124.01	55	123.5	60	123.77	65	124.75	70	126
75	126.56	80	126.72	85	126.61	90	126.14	95	126.5
100	124.92	105	124.41	110	123.93	115	123.45	120	123
125	122	130	122.9	135	124.38	140	126.64	145	128.89
150	130.4	155	131.67	160	131.9	165	132.15	170	132.7
175	133.37	180	134.17	185	134.91	190	135.3	195	135.27
200	135.09	205	134.94	210	135.18	215	135.54	220	135.94
225	136.47	230	137.2	235	137.93				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	95	.045	155	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
95	155	87.19	106.29	131.2	.1	.3

Left Levee Station= 95 Elevation= 126.5

CROSS SECTION OUTPUT Profile #100y

E.G. Elev (m)	124.88	Element	Left OB	Channel	Right OB
Vel Head (m)	0.17	Wt. n-Val.		0.045	
W.S. Elev (m)	124.71	Reach Len. (m)	87.19	106.29	131.20
Crit W.S. (m)	124.12	Flow Area (m2)		43.42	
E.G. Slope (m/m)	0.004995	Area (m2)		43.42	
Q Total (m3/s)	79.97	Flow (m3/s)		79.97	
Top Width (m)	33.65	Top Width (m)		33.65	
Vel Total (m/s)	1.84	Avg. Vel. (m/s)		1.84	
Max Chl Dpth (m)	2.71	Hydr. Depth (m)		1.29	
Conv. Total (m3/s)	1131.6	Conv. (m3/s)		1131.6	
Length Wtd. (m)	106.29	Wetted Per. (m)		34.19	
Min Ch El (m)	122.00	Shear (N/m2)		62.20	
Alpha	1.00	Stream Power (N/m s)		114.55	
Frctn Loss (m)	0.46	Cum Volume (1000 m3)		13.24	
C & E Loss (m)	0.00	Cum SA (1000 m2)		9.71	

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: creek1
REACH: one RS: 3

INPUT
Description:
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	133.74	5	132.5	10	131.24	15	129.95	20	128.17
25	126.21	30	124.15	35	122.19	40	121.5	45	122
50	122.69	55	123.46	60	124.03	65	124.67	70	125.34
75	126.09	80	126.62	85	127.27	90	127.5	95	127.52
100	127.59	105	127.77	110	128.09	115	128.46	120	128.94
125	129.47	130	129.83	135	130	140	130.46	145	132.1
150	133.5	155	133.69	160	133.9	165	133.96	170	133.77

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	90	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	90	91.02	116.63	156.32	.1	.3

CROSS SECTION OUTPUT Profile #100y

			Left OB	Channel	Right OB
E.G. Elev (m)	124.42	Element		Left OB	Channel	Right OB
Vel Head (m)	0.16	Wt. n-Val.		0.045	
W.S. Elev (m)	124.26	Reach Len. (m)	91.02	116.63	156.32
Crit W.S. (m)		Flow Area (m2)		48.27	
E.G. Slope (m/m)	0.003802	Area (m2)		48.27	
Q Total (m3/s)	85.83	Flow (m3/s)		85.83	
Top Width (m)	32.03	Top Width (m)		32.03	
Vel Total (m/s)	1.78	Avg. Vel. (m/s)		1.78	
Max Chl Dpth (m)	2.76	Hydr. Depth (m)		1.51	
Conv. Total (m3/s)	1392.0	Conv. (m3/s)		1392.0	
Length Wtd. (m)	116.63	Wetted Per. (m)		32.65	
Min Ch El (m)	121.50	Shear (N/m2)		55.12	
Alpha	1.00	Stream Power (N/m s)		98.01	
Frctn Loss (m)	0.87	Cum Volume (1000 m3)		8.37	
C & E Loss (m)	0.04	Cum SA (1000 m2)		6.22	

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

ER: creekl
REACH: one RS: 2

INPUT
Description:
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	125.78	5	125.2	10	124.57	15	123.85	20	123.13
25	122.48	30	122.11	35	121.08	40	120.91	45	122.64
50	124.03	55	124.35	60	124.6	65	124.6	70	124.5
75	124.5	80	124.16	85	124.22	90	124.27	95	124.31
100	124.28	105	124.14	110	123.88	115	123.48		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	60	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	60	134.42	134.19	149.09	.1	.3

CROSS SECTION OUTPUT Profile #100y

			Left OB	Channel	Right OB
E.G. Elev (m)	123.51	Element		Left OB	Channel	Right OB
Vel Head (m)	0.55	Wt. n-Val.		0.045	
W.S. Elev (m)	122.97	Reach Len. (m)	134.42	134.19	149.09
Crit W.S. (m)	122.97	Flow Area (m2)		27.12	
E.G. Slope (m/m)	0.019654	Area (m2)		27.12	
Q Total (m3/s)	88.72	Flow (m3/s)		88.72	
Top Width (m)	24.91	Top Width (m)		24.91	
Vel Total (m/s)	3.27	Avg. Vel. (m/s)		3.27	
Max Chl Dpth (m)	2.06	Hydr. Depth (m)		1.09	
Conv. Total (m3/s)	629.7	Conv. (m3/s)		629.7	
Length Wtd. (m)	134.19	Wetted Per. (m)		25.40	
Min Ch El (m)	120.91	Shear (N/m2)		207.90	
Alpha	1.00	Stream Power (N/m s)		680.07	
Frctn Loss (m)	1.61	Cum Volume (1000 m3)		3.97	
C & E Loss (m)	0.05	Cum SA (1000 m2)		2.90	

ning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
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.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

S SECTION

RIVER: creek1
REACH: one RS: 1

INPUT
Description:
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	127.92	5	126.38	10	126.06	15	126	20	125.94
25	125.81	30	125.66	35	124.46	40	124.39	45	124.5
50	124.5	55	124.12	60	123.34	65	122.58	70	121.53
75	120.22	80	118	85	118.23	90	120.79	95	122.93
100	123.87	105	124.46	110	124.85	115	125		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	50	.045	115	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
50	115	0	0	0	.1	.3

CROSS SECTION OUTPUT Profile #100y

		Element	Left OB	Channel	Right OB
E.G. Elev (m)	121.36	Wt. n-Val.		0.045	
Vel Head (m)	0.39	Reach Len. (m)			
W.S. Elev (m)	120.97	Flow Area (m2)		32.07	
Crit W.S. (m)	120.43	Area (m2)		32.07	
E.G. Slope (m/m)	0.008006	Flow (m3/s)		88.72	
Q Total (m3/s)	88.72	Top Width (m)		18.31	
Top Width (m)	18.31	Avg. Vel. (m/s)		2.77	
Vel Total (m/s)	2.77	Hydr. Depth (m)		1.75	
Max Chl Dpth (m)	2.97	Conv. (m3/s)		991.6	
Conv. Total (m3/s)	991.6	Wetted Per. (m)		19.54	
Length Wtd. (m)		Shear (N/m2)		128.85	
Min Ch El (m)	118.00	Stream Power (N/m s)		356.47	
lpha	1.00	Cum Volume (1000 m3)			
rctn Loss (m)		Cum SA (1000 m2)			
C & E Loss (m)					

Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

SUMMARY OF MANNING'S N VALUES

River:creek2

Reach	River Sta.	n1	n2	n3
one	11	.045	.045	.045
one	10	.045	.045	.045
one	9.2	.045	.045	.045
one	9.1	Bridge		
one	9	.045	.045	.045

River:creek1

Reach	River Sta.	n1	n2	n3
two	8.5	.045	.045	.045
two	8	.045	.045	.045
two	7.9	Bridge		
two	7.8	.045	.045	.045
two	7	.045	.045	.045
two	6	.045	.045	.045
one	5	.045	.045	.045
one	4.9	Bridge		
one	4.8	.045	.045	.045
one	4	.045	.045	.045
one	3	.045	.045	.045
one	2	.045	.045	.045
one	1	.045	.045	.045

SUMMARY OF REACH LENGTHS

River: creek2

Reach	River Sta.	Left	Channel	Right
one	11	79.55	109.12	154.55
one	10	117.92	126.97	136.17
one	9.2	9	9	9
one	9.1	Bridge		
one	9	0	0	0

River: creek1

Reach	River Sta.	Left	Channel	Right
two	8.5	110.28	74.79	54.48
two	8	9	9	9
two	7.9	Bridge		
two	7.8	47.49	81.51	129.5
two	7	153.21	138.19	171.85
two	6	0	0	0
one	5	9	9	9
one	4.9	Bridge		
one	4.8	93.32	105.94	121.07
one	4	87.19	106.29	131.2
one	3	91.02	116.63	156.32
one	2	134.42	134.19	149.09
one	1	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: creek2

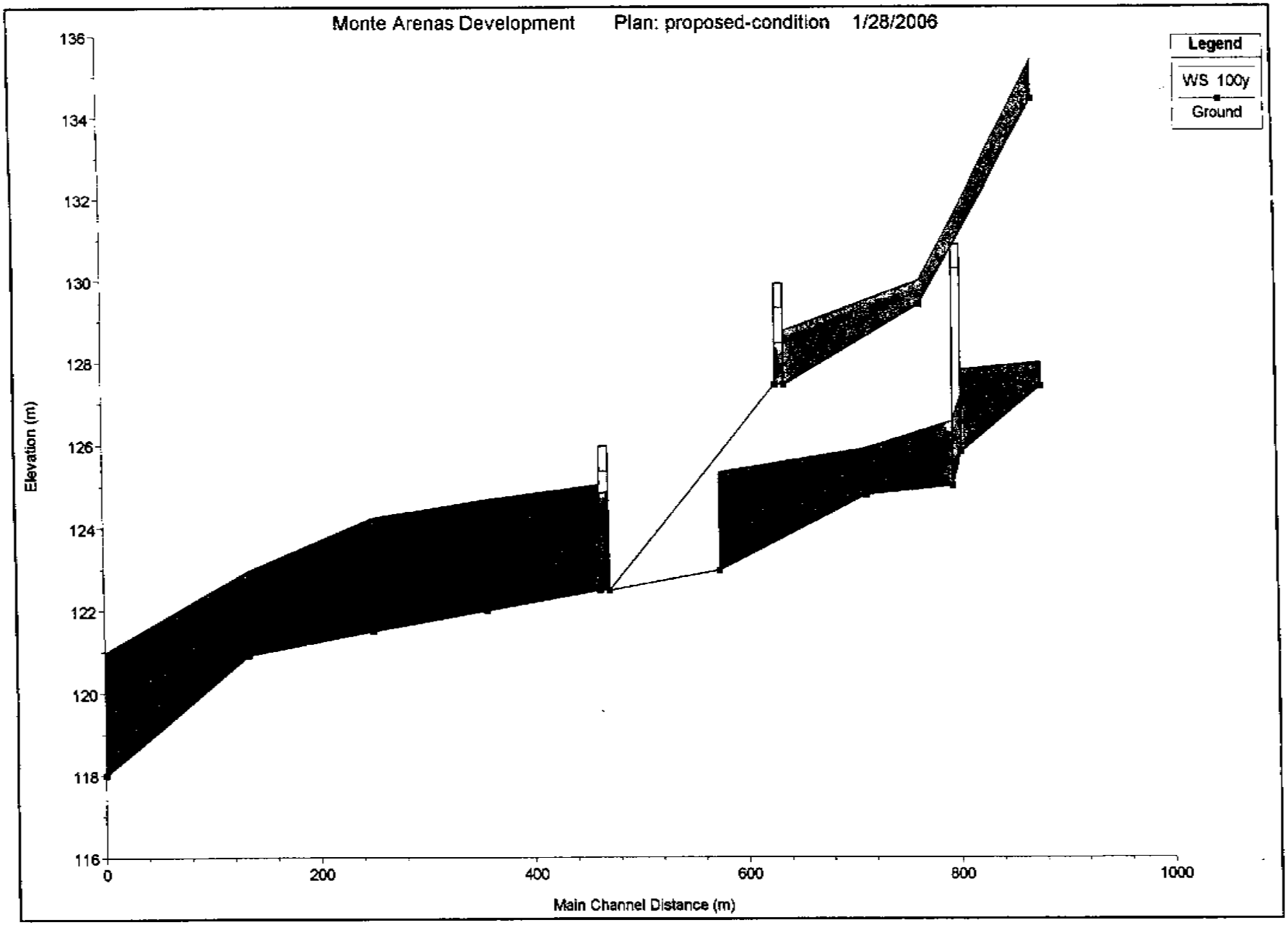
Reach	River Sta.	Contr.	Expan.
one	11	.1	.3
one	10	.1	.3
one	9.2	.1	.3
one	9.1	Bridge	
one	9	.1	.3

River: creek1

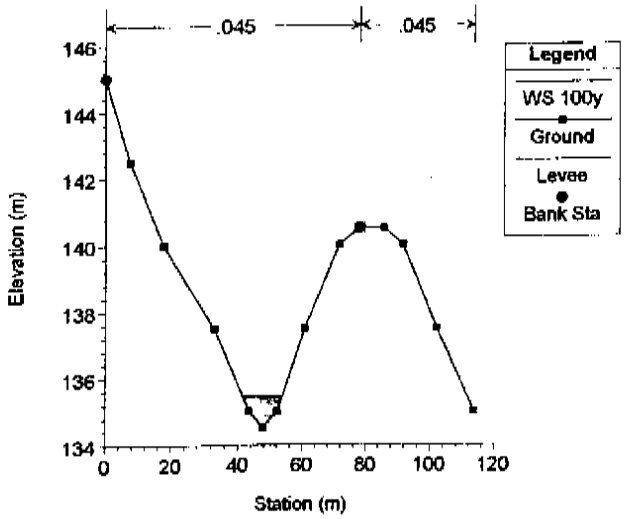
Reach	River Sta.	Contr.	Expan.
two	8.5	.1	.3
two	8	.1	.3
two	7.9	Bridge	
two	7.8	.1	.3
two	7	.1	.3
two	6	.1	.3
one	5	.1	.3
one	4.9	Bridge	
one	4.8	.1	.3
one	4	.1	.3
one	3	.1	.3
one	2	.1	.3
one	1	.1	.3

Profile Output Table - Standard Table 1

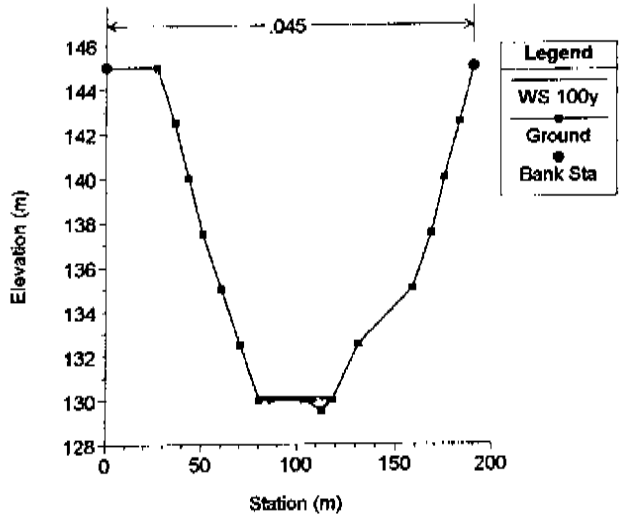
River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
8.5	100y	45.51	127.50	128.09	128.09	128.37	0.024772	2.32	19.63	36.27	1.01
8	100y	45.51	125.90	127.89	127.20	127.93	0.001576	0.89	51.19	50.23	0.28
7.9		Bridge									
7.8	100y	45.51	125.08	126.64	126.90	127.49	0.054186	4.08	11.16	15.49	1.53
7	100y	45.51	124.85	125.97	125.96	126.18	0.024238	2.01	22.67	51.17	0.96
6	100y	45.51	123.00	125.39		125.47	0.002018	1.28	35.61	23.95	0.33
5	100y	69.46	122.50	125.26	123.85	125.32	0.001073	1.11	63.64	39.46	0.25
4.9		Bridge									
4.8	100y	69.46	122.50	125.08		125.16	0.001425	1.23	56.79	36.65	0.29
4	100y	79.97	122.00	124.71	124.13	124.88	0.004995	1.84	43.42	33.65	0.52
3	100y	85.83	121.50	124.26		124.42	0.003802	1.78	48.27	32.03	0.46
2	100y	88.72	120.91	122.97	122.97	123.51	0.019854	3.27	27.12	24.91	1.00
1	100y	88.72	118.00	120.97	120.43	121.36	0.008006	2.77	32.07	18.31	0.67
[illegible]	100y	16.56	134.50	135.44	135.44	135.73	0.024366	2.36	7.03	12.39	1.00
[illegible]	100y	19.45	129.50	130.10	130.20	130.43	0.114553	2.54	7.66	38.94	1.83
[illegible]	100y	19.45	127.50	128.85	128.53	128.94	0.006015	1.32	14.76	21.91	0.51
9.1		Bridge									
9	100y	19.45	127.50	128.37	128.53	128.87	0.060373	3.13	6.22	14.22	1.51


Monte Arenas Development Plan: proposed-condition 1/28/2006
Legend
WS 100y
Ground
Elevation (m)
136
134
132
130
128
126
124
122
120
118
116
0
200
400
600
800
1000
Main Channel Distance (m)

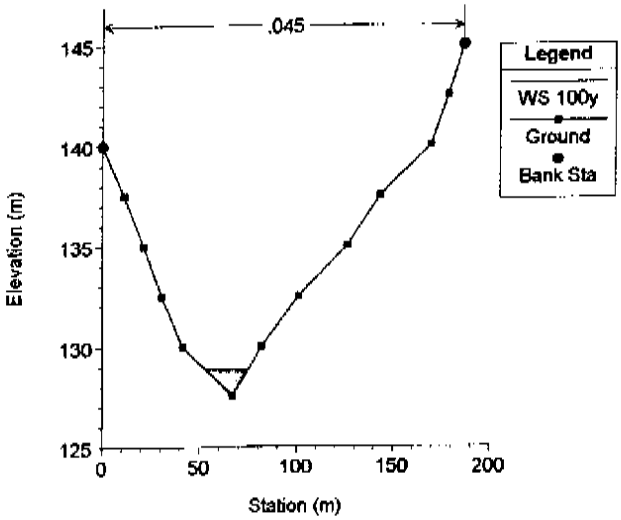
Monte Arenas Development Plan: proposed-condition 1/28/2006



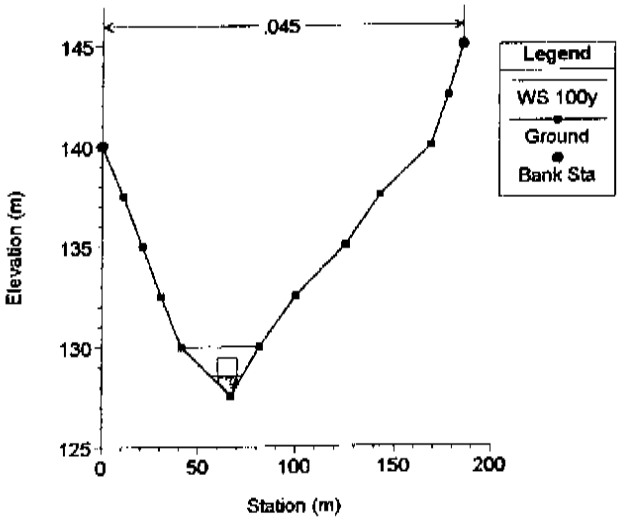
Monte Arenas Development Plan: proposed-condition 1/28/2006



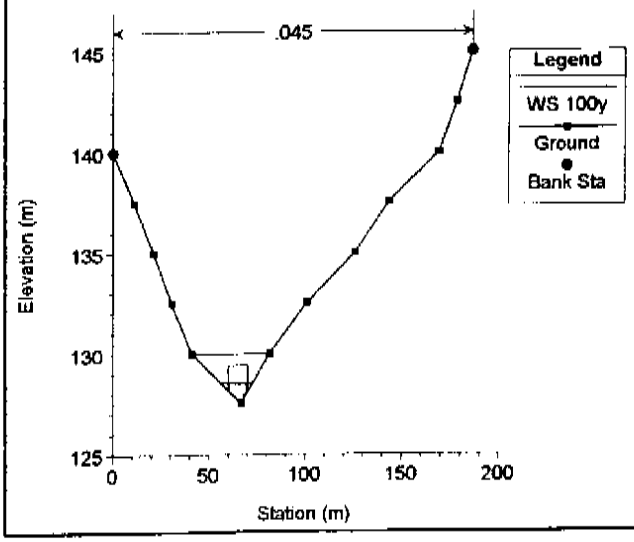
Monte Arenas Development Plan: proposed-condition 1/28/2006



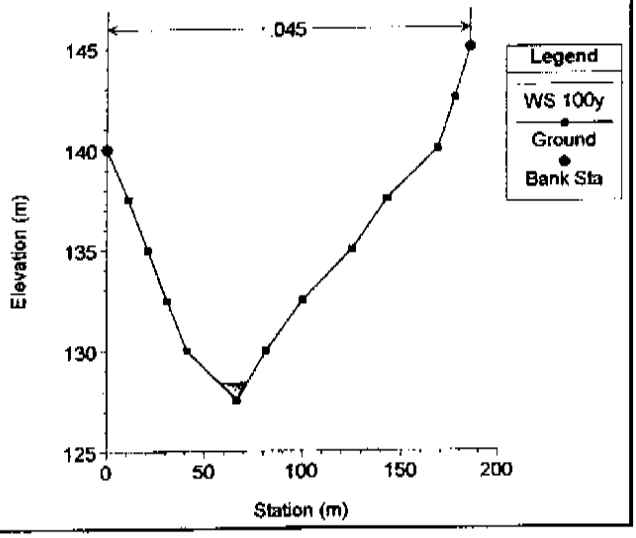
Monte Arenas Development Plan: proposed-condition 1/28/2006



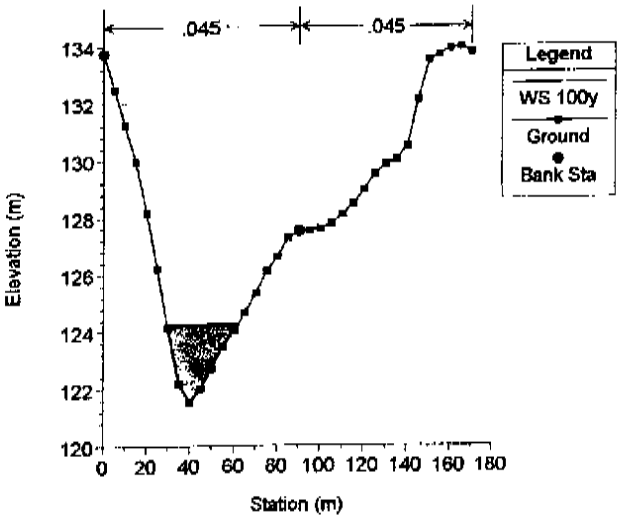
Monte Arenas Development Plan: proposed-condition 1/28/2006



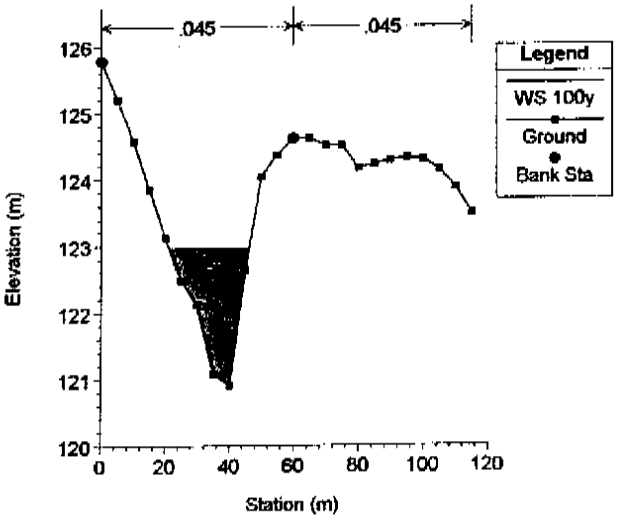
Monte Arenas Development Plan: proposed-condition 1/28/2006



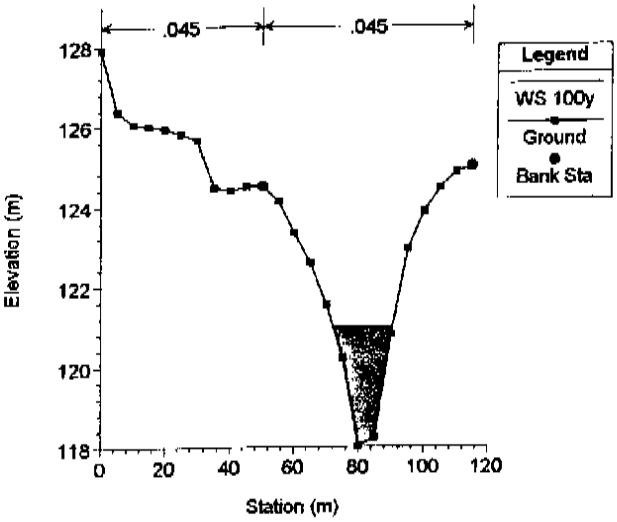
Monte Arenas Development Plan: proposed-condition 1/28/2006



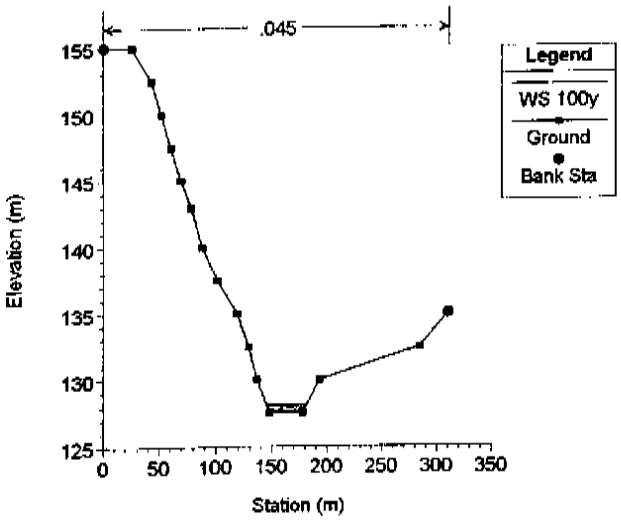
Monte Arenas Development Plan: proposed-condition 1/28/2006



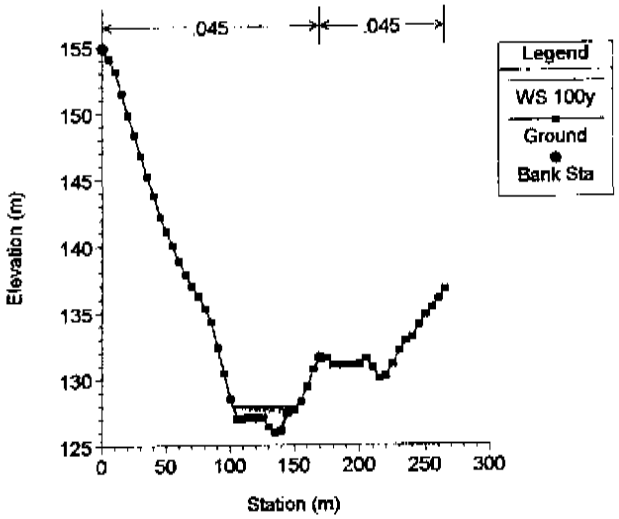
Monte Arenas Development Plan: proposed-condition 1/28/2006



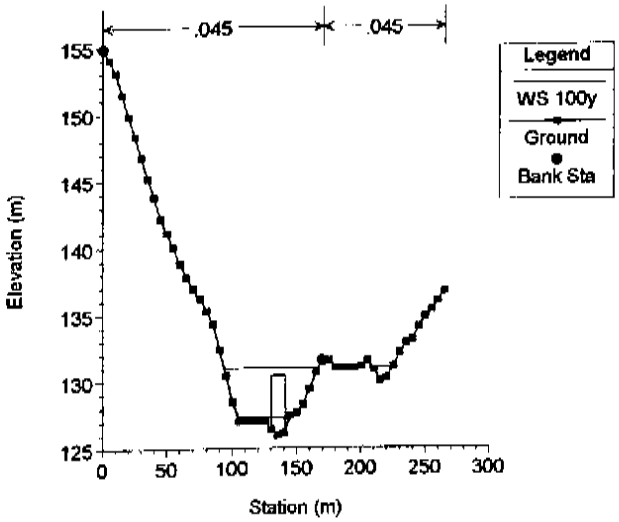
Monte Arenas Development Plan: proposed-condition 1/28/2006



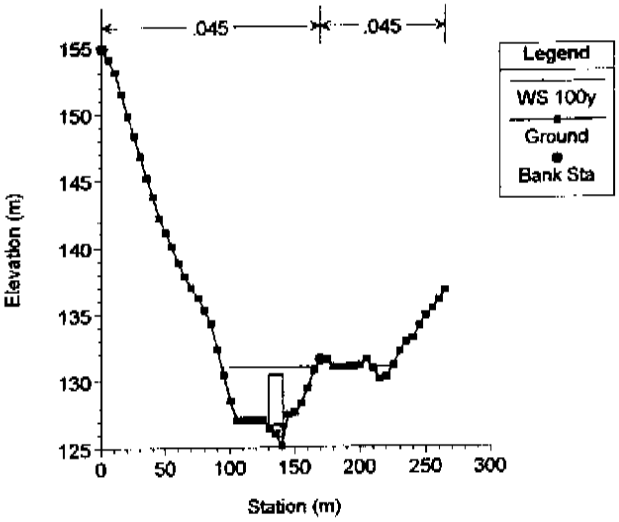
Monte Arenas Development Plan: proposed-condition 1/28/2006



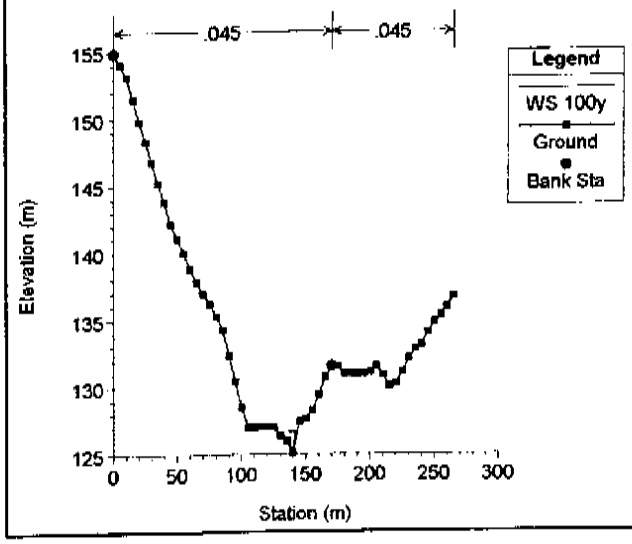
Monte Arenas Development Plan: proposed-condition 1/28/2006



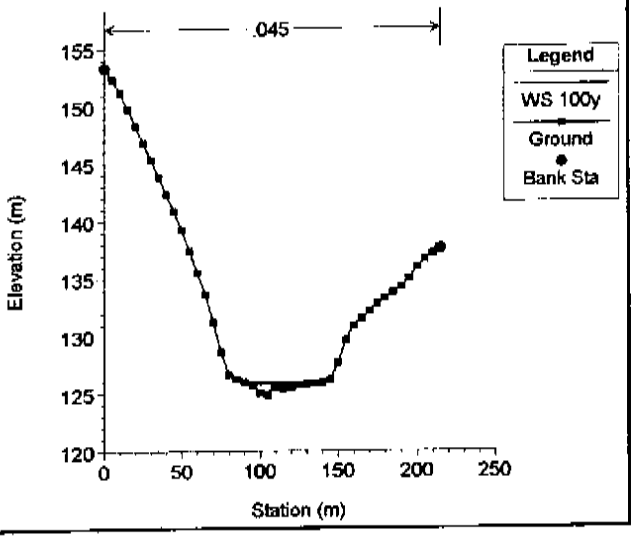
Monte Arenas Development Plan: proposed-condition 1/28/2006



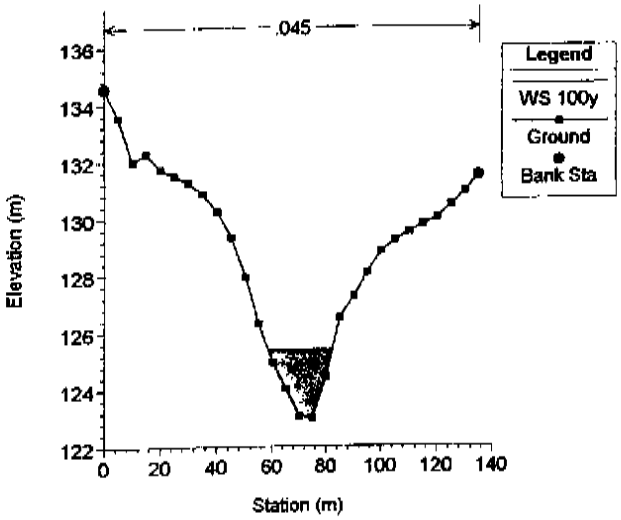
Monte Arenas Development Plan: proposed-condition 1/28/2006



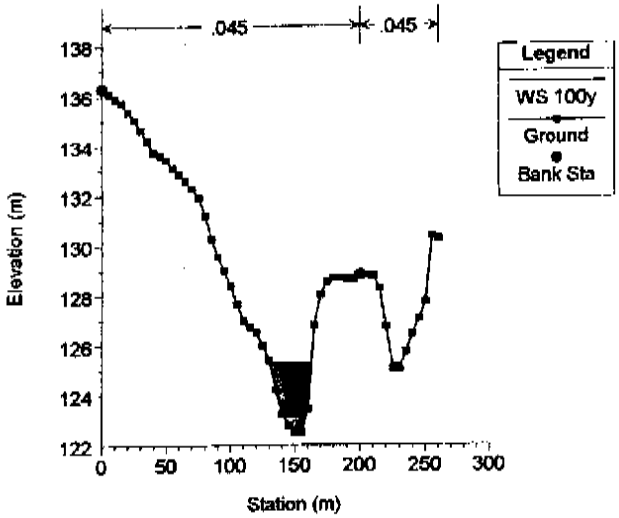
Monte Arenas Development Plan: proposed-condition 1/28/2006



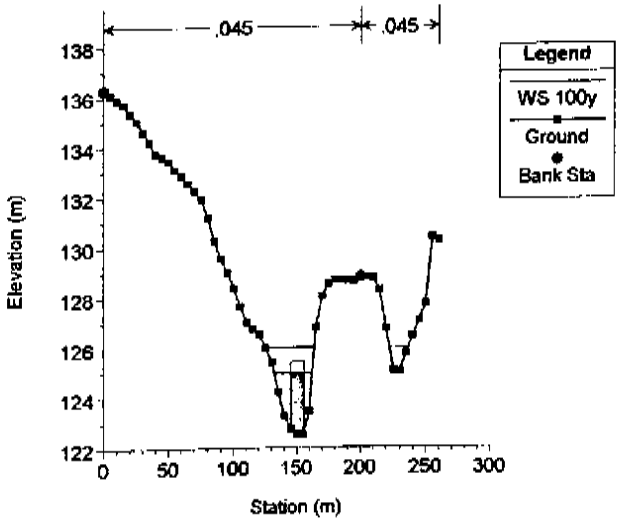
Monte Arenas Development Plan: proposed-condition 1/28/2006



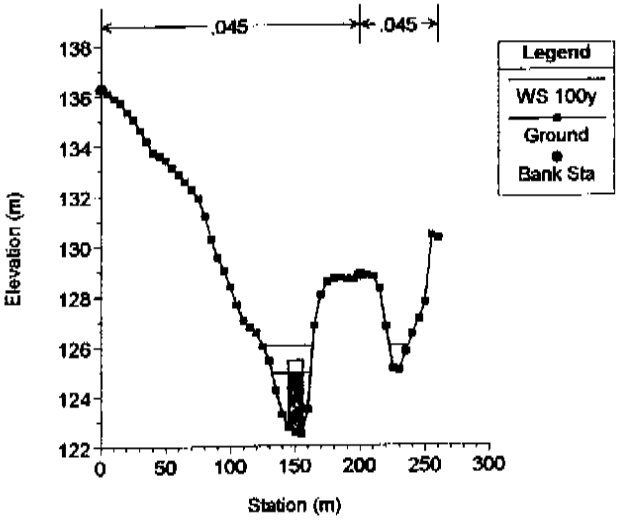
Monte Arenas Development Plan: proposed-condition 1/28/2006



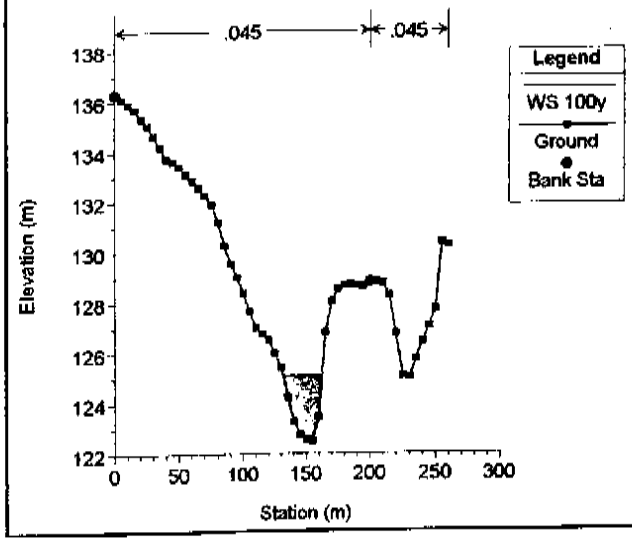
Monte Arenas Development Plan: proposed-condition 1/28/2006



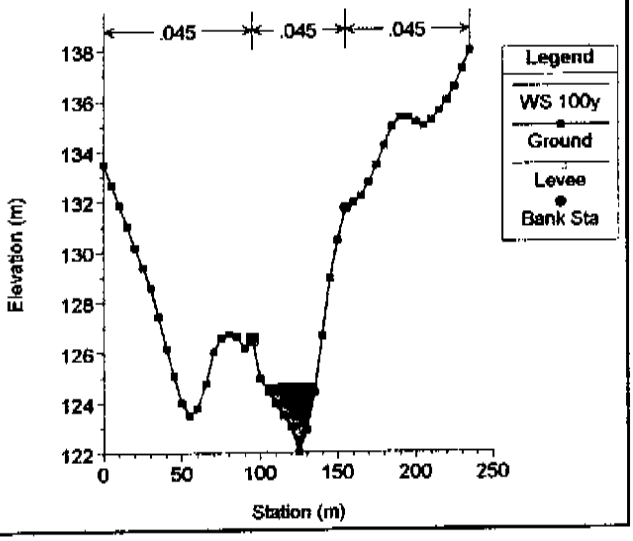
Monte Arenas Development Plan: proposed-condition 1/28/2006



Monte Arenas Development Plan: proposed-condition 1/28/2006



Monte Arenas Development Plan: proposed-condition 1/28/2006



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

```
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PROJECT DATA
Project Title: Monte Arenas Development
Project File : MonteArenas.prj
Run Date and Time: 1/20/2006 4:57:48 PM

Project in SI units

PLAN DATA

Plan Title: proposed-condition-creek2
Plan File : p:\297-Monte Areas Development\hec-ras\MonteArenas.p04

Geometry Title: proposed-condition-creek2
Geometry File : p:\297-Monte Areas Development\hec-ras\MonteArenas.g04

Flow Title : proposed-condition-creek2
Flow File : p:\297-Monte Areas Development\hec-ras\MonteArenas.f04

Plan Summary Information:

Number of:	Cross Sections =	4	Mulitple Openings =	0
	Culverts =	0	Inline Structures =	0
	Bridges =	1	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: proposed-condition-creek2
Flow File : p:\297-Monte Areas Development\hec-ras\MonteArenas.f04

Flow Data (m3/s)

River	Reach	RS	100y	50y	25y	10y	2y
creek2	one	14	4.67	3.28	3	2.46	1.47
creek2	one	13	6.42	4.55	4.21	3.54	2.29

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
creek2	one	100y	Critical	Normal S = 0.008
creek2	one	50y	Critical	Normal S = 0.008
creek2	one	25y	Critical	Normal S = 0.008
creek2	one	10y	Critical	Normal S = 0.008
creek2	one	2y	Critical	Normal S = 0.008

GEOMETRY DATA

Geometry Title: proposed-condition-creek2

Geometry File : p:\297-Monte Areas Development\hec-ras\MonteArenas.g04

CROSS SECTION

RIVER: creek2
REACH: one RS: 14

INPUT
Description:
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	144.5	10	143.5	20	142.38	30	141.43	40	140.89
50	140	60	143.38	70	145.32	80	144.7	90	143.17
100	144.51	110	145.88	112.72	146.42				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	70	.0456

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	70	49.86	65.72	47.05	.1	.3

CROSS SECTION OUTPUT Profile #100y

			Left OB	Channel	Right OB
E.G. Elev (m)	140.77	Element			
Vel Head (m)	0.16	Wt. n-Val.		0.045	
W.S. Elev (m)	140.61	Reach Len. (m)	49.86	65.72	47.05
Crit W.S. (m)	140.61	Flow Area (m2)		2.66	
E.G. Slope (m/m)	0.030972	Area (m2)		2.66	
Q Total (m3/s)	4.67	Flow (m3/s)		4.67	
Top Width (m)	8.68	Top Width (m)		8.68	
Vel Total (m/s)	1.76	Avg. Vel. (m/s)		1.76	
Max Chl Dpth (m)	0.61	Hydr. Depth (m)		0.31	
Conv. Total (m3/s)	26.5	Conv. (m3/s)		26.5	
Length Wtd. (m)	65.72	Wetted Per. (m)		8.81	
Min Ch El (m)	140.00	Shear (N/m2)		91.56	
Alpha	1.00	Stream Power (N/m s)		160.98	
Frctn Loss (m)	2.07	Cum Volume (1000 m3)		0.44	
C & E Loss (m)	0.01	Cum SA (1000 m2)		1.26	

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
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.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: creek2
REACH: one RS: 13

INPUT
Description:
Station Elevation Data num= 7

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	137.6	10	136.21	20	135.48	30	134.54	40	134.37
50	135.71	58.95	137						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	58.95	.0456

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	58.95	19.29	23.72	32.53	.1	.3

CROSS SECTION OUTPUT Profile #100y

			Left OB	Channel	Right OB
E.G. Elev (m)	135.21	Element			
Vel Head (m)	0.59	Wt. n-Val.		0.045	
W.S. Elev (m)	134.62	Reach Len. (m)	19.29	23.72	32.53
Crit W.S. (m)	134.77	Flow Area (m2)		1.88	
E.G. Slope (m/m)	0.299062	Area (m2)		1.88	
Q Total (m3/s)	6.42	Flow (m3/s)		6.42	
Top Width (m)	12.67	Top Width (m)		12.67	
Vel Total (m/s)	3.41	Avg. Vel. (m/s)		3.41	
Max Chl Dpth (m)	0.25	Hydr. Depth (m)		0.15	
Conv. Total (m3/s)	11.7	Conv. (m3/s)		11.7	
Length Wtd. (m)	23.72	Wetted Per. (m)		12.69	
Min Ch El (m)	134.37	Shear (N/m2)		435.41	
Alpha	1.00	Stream Power (N/m s)		1483.61	
Frctn Loss (m)	5.52	Cum Volume (1000 m3)		0.29	
C & E Loss (m)	0.04	Cum SA (1000 m2)		0.56	

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: creek2
REACH: one RS: 12.5

INPUT
Description:
Station Elevation Data num= 7

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	136.92	10	136.08	20	135.15	30	133.57	40	133
50	134.5	60	136.19						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	60	.0456

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	60	13	13	13	.1	.3

CROSS SECTION OUTPUT Profile #100y

			Left OB	Channel	Right OB
E.G. Elev (m)	134.17	Element			
Vel Head (m)	0.01	Wt. n-Val.		0.045	
W.S. Elev (m)	134.16	Reach Len. (m)	12.00	12.00	12.00
Crit W.S. (m)	133.56	Flow Area (m2)		14.24	
E.G. Slope (m/m)	0.000716	Area (m2)		14.24	
Q Total (m3/s)	6.42	Flow (m3/s)		6.42	
Top Width (m)	21.41	Top Width (m)		21.41	
Vel Total (m/s)	0.45	Avg. Vel. (m/s)		0.45	
Max Chl Dpth (m)	1.16	Hydr. Depth (m)		0.67	
Conv. Total (m3/s)	240.0	Conv. (m3/s)		240.0	
Length Wtd. (m)	12.00	Wetted Per. (m)		21.56	
Min Ch El (m)	133.00	Shear (N/m2)		4.63	
Alpha	1.00	Stream Power (N/m s)		2.09	
Frctn Loss (m)	0.02	Cum Volume (1000 m3)		0.10	
C & E Loss (m)	0.03	Cum SA (1000 m2)		0.16	

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.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

BRIDGE

RIVER: creek2
REACH: one RS: 12.3

INPUT
Description:
Distance from Upstream XS = 12
Deck/Roadway Width = .5
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	135	133	38	135	133	38	135	134.4
41.65	135	134.4	41.65	135	133	60	135	133

Upstream Bridge Cross Section Data
Station Elevation Data num= 7

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	136.92	10	136.08	20	135.15	30	133.57	40	133
50	134.5	60	136.19						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	60	.0456

Bank Sta: Left	Right	Coeff Contr.	Expan.
0	60	.1	.3

Downstream Deck/Roadway Coordinates
num= 6

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	135	133	38	135	133	38	135	134.4
41.65	135	134.4	41.65	135	133	60	135	133

Downstream Bridge Cross Section Data

Station Elevation Data num= 7

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	136.92	10	136.08	20	135.15	30	133.57	40	133
50	134.5	60	136.19						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	60	.0456

Bank Sta: Left	Right	Coeff Contr.	Expan.
0	60	.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 = 134.5
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 #100y

		Element	Inside BR US	Inside BR DS
E.G. US. (m)	134.17	E.G. Elev (m)	134.11	134.11
W.S. US. (m)	134.16	W.S. Elev (m)	133.77	133.77
Q Total (m3/s)	6.42	Crit W.S. (m)	133.77	133.77
Q Bridge (m3/s)	6.42	Max Chl Dpth (m)	0.77	0.77
Q Weir (m3/s)		Vel Total (m/s)	2.58	2.58
Weir Sta Lft (m)		Flow Area (m2)	2.49	2.49
Weir Sta Rgt (m)		Froude # Chl	1.00	1.00
Weir Submerg		Specif Force (m3)	2.54	2.54
Weir Max Depth (m)		Hydr Depth (m)	0.68	0.68
Min El Weir Flow (m)	135.00	W.P. Total (m)	3.67	3.67
Min El Prs (m)	134.40	Conv. Total (m3/s)	42.7	42.7
Delta EG (m)	0.12	Top Width (m)	3.65	3.65
Delta WS (m)	0.77	Frctn Loss (m)		0.01
BR Open Area (m2)	4.79	C & E Loss (m)		0.00
BR Open Vel (m/s)	2.58	Shear Total (N/m2)	150.49	150.49
Coef of Q		Power Total (N/m s)	388.26	388.26
Br Sel Method	Energy only			

Warning: For the final momentum answer at the bridge, the upstream energy was computed lower than the downstream energy. This is not physically possible, the momentum answer has been disregarded.
Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.

CROSS SECTION

RIVER: creek2
REACH: one RS: 12

INPUT
Description:
Station Elevation Data num= 7

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	136.92	10	136.08	20	135.15	30	133.57	40	133
50	134.5	60	136.19						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.045	60	.0456

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	60	0	0	0	.1	.3

CROSS SECTION OUTPUT Profile #100y

		Element	Left OB	Channel	Right OB
E.G. Elev (m)	134.05	Wt. n-Val.		0.045	
Vel Head (m)	0.67	Reach Len. (m)			
W.S. Elev (m)	133.38	Flow Area (m2)		1.78	
Crit W.S. (m)	133.56	Area (m2)		1.78	
E.G. Slope (m/m)	0.240767				

Q Total (m3/s)	6.42	Flow (m3/s)	6.42
Top Width (m)	9.28	Top Width (m)	9.28
Vel Total (m/s)	3.61	Avg. Vel. (m/s)	3.61
Max Chl Dpth (m)	0.38	Hydr. Depth (m)	0.19
Conv. Total (m3/s)	13.1	Conv. (m3/s)	13.1
ngth Wtd. (m)		Wetted Per. (m)	9.32
n Ch El (m)	133.00	Shear (N/m2)	450.36
lpha	1.00	Stream Power (N/m s)	1627.22
Frctn Loss (m)	0.03	Cum Volume (1000 m3)	
C & E Loss (m)	0.03	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.
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.
Note: The energy method has computed a class B profile.

SUMMARY OF MANNING'S N VALUES

River:creek2

Reach	River Sta.	n1	n2	n3
one	14	.045	.045	.0456
one	13	.045	.045	.0456
one	12.5	.045	.045	.0456
one	12.3	Bridge		
one	12	.045	.045	.0456

SUMMARY OF REACH LENGTHS

River: creek2

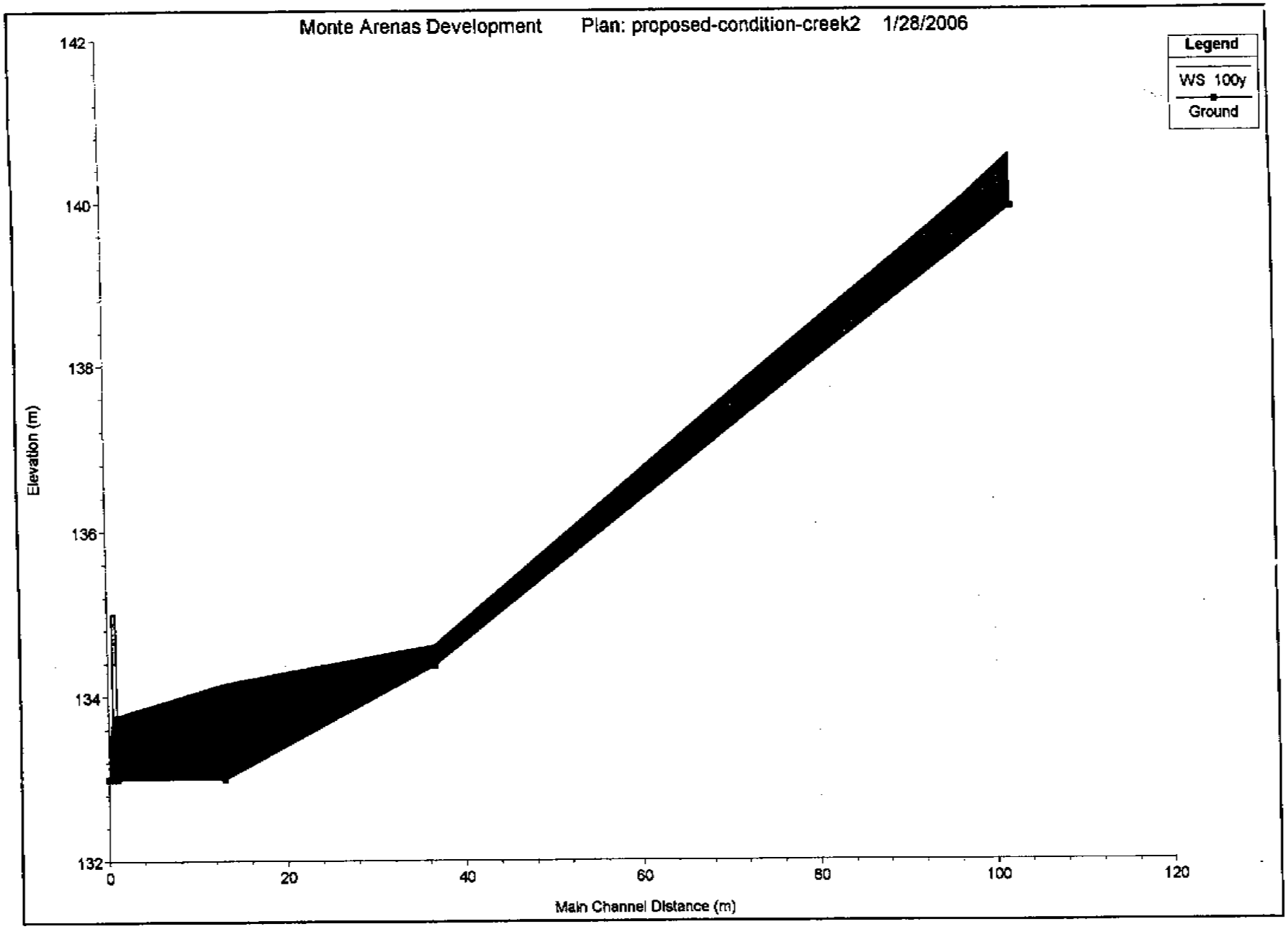
Reach	River Sta.	Left	Channel	Right
one	14	49.86	65.72	47.05
one	13	19.29	23.72	32.53
ne	12.5	13	13	13
e	12.3	Bridge		
ne	12	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: creek2

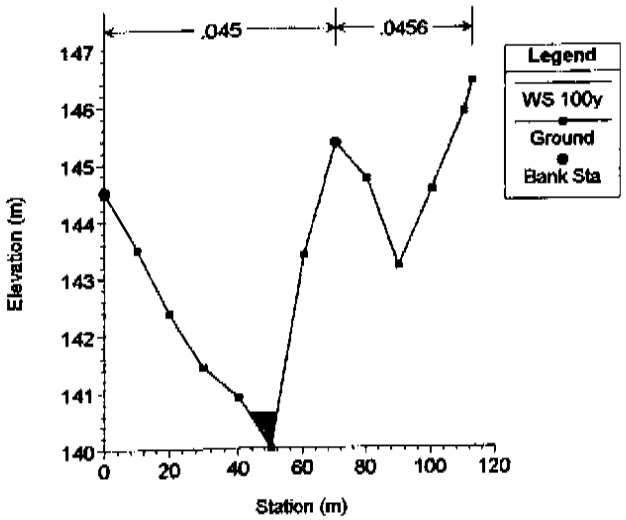
Reach	River Sta.	Contr.	Expan.
one	14	.1	.3
one	13	.1	.3
one	12.5	.1	.3
one	12.3	Bridge	
one	12	.1	.3

Profile Output Table - Standard Table 1

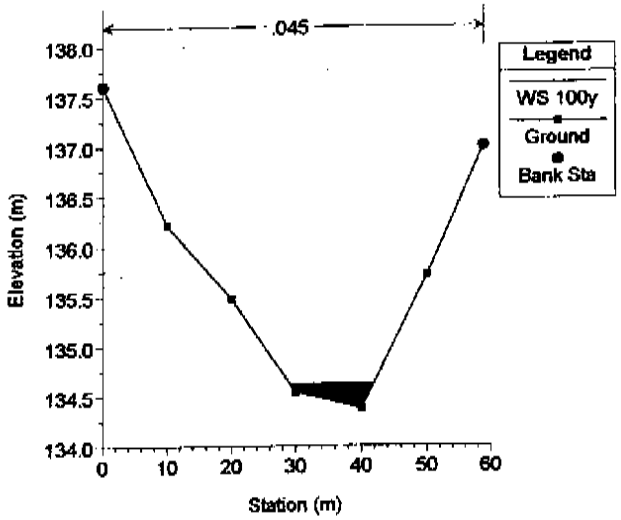
Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
one	14	100y	4.67	140.00	140.61	140.61	140.77	0.030972	1.76	2.66	8.68	1.01
one	13	100y	6.42	134.37	134.62	134.77	135.21	0.299062	3.41	1.88	12.67	2.82
one	12.5	100y	6.42	133.00	134.16	133.56	134.17	0.000716	0.45	14.24	21.41	0.18
one	12.3		Bridge									
one	12	100y	6.42	133.00	133.38	133.56	134.05	0.240767	3.61	1.78	9.28	2.64


Monte Arenas Development
Plan: proposed-condition-creek2
1/28/2006
Legend
WS 100y
Ground
Elevation (m)
142
140
138
136
134
132
0
20
40
60
80
100
120
Main Channel Distance (m)

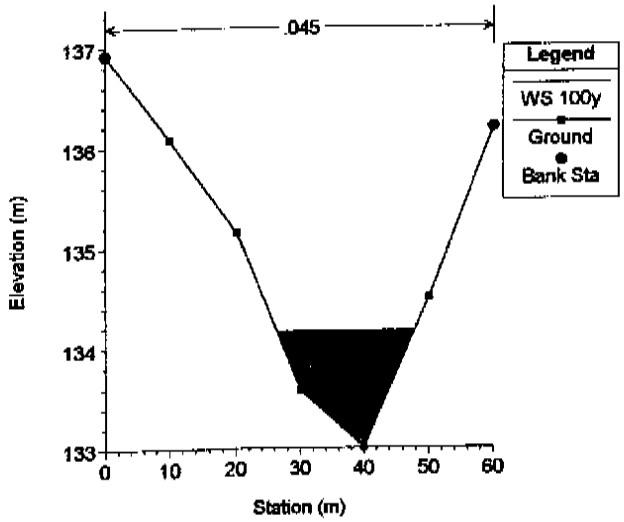
Monte Arenas Development Plan: proposed-condition-creek2 1/28/2006



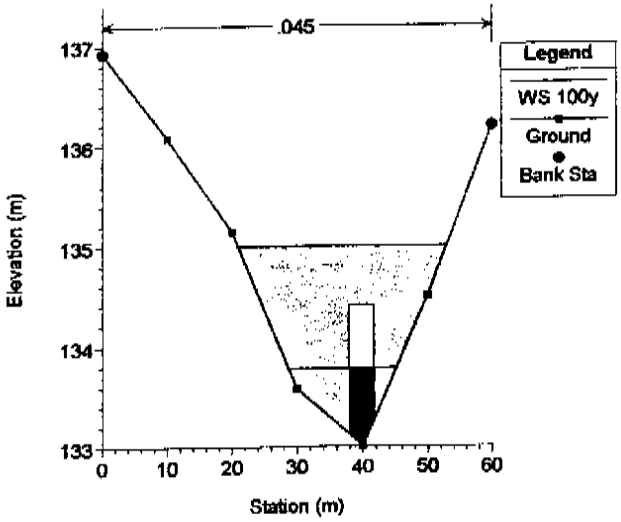
Monte Arenas Development Plan: proposed-condition-creek2 1/28/2006



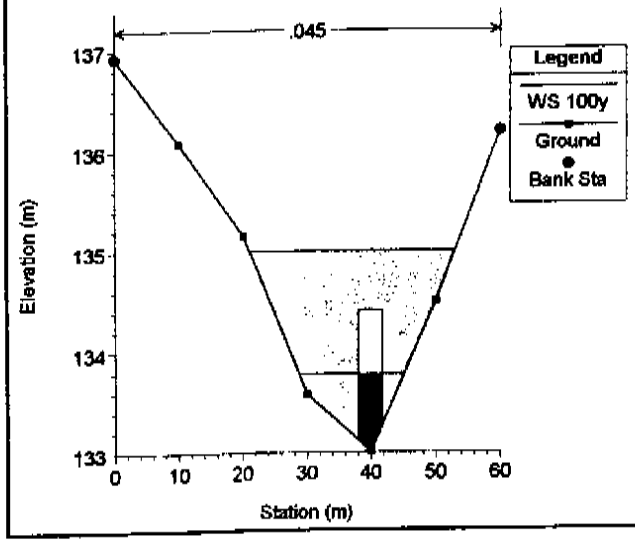
Monte Arenas Development Plan: proposed-condition-creek2 1/28/2006



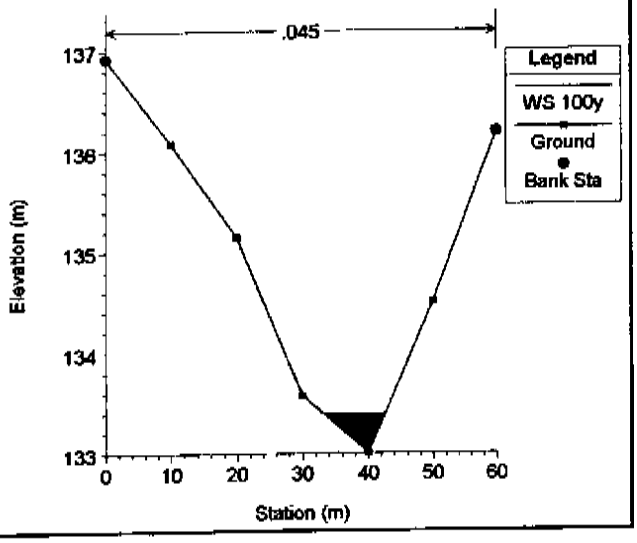
Monte Arenas Development Plan: proposed-condition-creek2 1/28/2006



Monte Arenas Development Plan: proposed-condition-creek2 1/28/2006



Monte Arenas Development Plan: proposed-condition-creek2 1/28/2006



APPENDIX H

FIELD WORK