

RETURN WITHIN 2 WEEKS TO:  
CITY OF COLORADO SPRINGS  
SUBDIVISION ENGINEERING  
30 SOUTH NEVADA AVE., SUITE 702  
COLORADO SPRINGS, CO 80903  
(719) 385-5979

DRAFT

HYDROLOGY REPORT

East Fork Sand Creek  
Drainage Basin Planning Study

January 1989

Kiowa Engineering Corporation

RECEIVED  
PUBLIC WORKS/ENGINEERING  
COLORADO SPRINGS, COLO.

JAN 17 1989  
7:30 AM  
7.8.9.10.11.12.12.3.4.5.6

DRAFT

HYDROLOGY REPORT

East Fork Sand Creek  
Drainage Basin Planning Study

January 1989

# Kiowa Engineering Corporation

---

January 12, 1989

Mr. Dan Wonders  
Aries Properties, Inc.  
111 S. Tejon  
Colorado Springs, CO 80903

RE: East Fork Sand Creek Drainage Basin Planning Study (KIOWA  
Project No. 88.11.23)

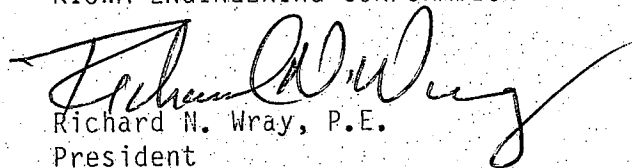
Dear Dan:

Submitted herewith is a brief report and technical data for the base hydrologic analysis. Copies of these materials have been sent to the City for review. We would appreciate your review of the information within the next two week period so that alternative detention pond siting can begin.

Should you have any questions, please do not hesitate to contact us.

Sincerely,

KIOWA ENGINEERING CORPORATION



Richard N. Wray, P.E.  
President

RNW/rms  
LD89.1/0112RNW4

Enclosure

cc: Dave Lethbridge, City Engineering

### III. HYDROLOGIC ANALYSIS

#### Runoff Model

The runoff model used to determine the peak flow and volumes within the study area is the Soil Conservation Service (SCS) Computer Program for the Project Formulation Hydrology (TR-20). The version is available for the IBM personal computer (PC) "XT" and "AT" or a compatible PC. The use of this hydrological model is in compliance with the City of Colorado Springs/El Paso County Drainage Criteria Manual (Manual).

#### Basin Characteristics

The study area includes portions of Banning-Lewis Ranch within the entire East Fork Sand Creek Basin as shown on Figure -- (See Map Pocket). A total of 99 sub-basins were delineated for the study area for the purpose of determining flow rates and volumes at various key locations. The basin characteristics such as basin size, curve numbers (CN), basin slope, flow path, time of concentration ( $T_C$ ), channel type, slope and size, channel routing coefficient "X" and "M" values, and velocity were determined from available topographic mapping, land use map, soil map, field investigation and personal conversations with City and Aries staffs. A summary of time of concentration and "X" and "M" values for both existing and future basin conditions are included in Tables -- and --. Figure -- shows the soil distribution and their types based on the El Paso County soil survey report.

#### Impervious Land Density

Land use for existing and future basin conditions were determined from the available Banning-Lewis Ranch land use map, aerial photo, land use map adopted for the 1984 Sand Creek Master Drainage Planning Study, and conversations with Aries and City staff. Land use density and corresponding curve numbers were determined from the manual and the Banning-Lewis Ranch Master Plan Supplement. Figure -- highlights the land use map within the study area. Table -- summarizes the curve numbers for both the existing and future conditions. Table -- shows the percent of imperviousness assigned for each of the land use categories.

### Design Rainfall

Based on the manual, two types of storm distribution need to be evaluated for the determination of a controlling storm for the sizing of drainage structures. The first type of storm is 24-hour Type II-A storm with antecedent moisture condition (AMC) of two (2). The second type of storm is a 2-hour distribution with an AMC of three (3). The storm events of 10-year and 100-year recurrence intervals are required for this evaluation. Rainfall depths for 24-hour storms are 4.5 inches and 3.0 inches for the 100-year and 10-year, respectively. Rainfall depths for 2-hour storm is 3.0 inches for the 100-year storm, and 2.1 inches for the 10-year storm.

### Results

The results of the hydrological analysis are presented in several formats. A hydrologic basin map which contains the basin boundary, channel routing scheme, sub-basin locations, and design point is shown in Figure --(See Map Pocket). A TR-20 flow diagram for the entire East Fork Sand Creek Basin is shown on Figure --. A summary of flow rates for all the sub-basins and design points for both the 24-hour and 2-hour storm is shown in Table --. Figures -- through -- illustrate the hydrographs for the 100-year storm for both 24-hour and 2-hour storm events. TR-20 input and output are attached as technical addendum.

KIOWA ENGINEERING CORPORATION

TR20 TIME OF CONCENTRATION CALCULATION SPREADSHEET

DATE: 12-Jan-89  
 TIME: 07:27 AM

PROJECT: EAST FORK SAND CREEK TRIBUTARY

CURVE	DESCRIPTION	EQUATION	CONVEYANCE TYPE
E	GRASSED WATERWAY	$VELOCITY = 10^{(0.5 \cdot \log(SLOPE) + 0.18)}$	1
F	PAVED AREA (SHEET FLOW) & SHALLOW GUT. FLOW	$VELOCITY = 10^{(0.5 \cdot \log(SLOPE) + 0.30)}$	2
C	SHORT GRASS PASTURE & LAWNS	$VELOCITY = 10^{(0.5 \cdot \log(SLOPE) - 0.15)}$	3
A	FOREST WITH HEAVY GROUND LITTER & MEADOW	$VELOCITY = 10^{(0.5 \cdot \log(SLOPE) - 0.61)}$	4
B	FALLOW OR WTRTRON TILLAGE CULTIVATION	$VELOCITY = 10^{(0.5 \cdot \log(SLOPE) - 0.32)}$	5
D	NEARLY BARE GROUND	$VELOCITY = 10^{(0.5 \cdot \log(SLOPE))}$	6
N/A	DRAINAGEWAY	$VELOCITY = 1.49 / n \cdot R^{(2/3)} \cdot S^{(1/2)}$	7

BASIN ID	CONDITION	** SLOPE (FT./FT.) **			** LENGTH (FT.) **			** CONVEYANCE TYPE **			** VELOCITY (FT/SEC) **			** TIME OF CONCENTRATION (HR) **			Tc (HR)
		SEGMENT-1	SEGMENT-2	SEGMENT-3	SEGMENT-1	SEGMENT-2	SEGMENT-3	SEGMENT-1	SEGMENT-2	SEGMENT-3	SEGMENT-1	SEGMENT-2	SEGMENT-3	SEGMENT-1	SEGMENT-2	SEGMENT-3	
1	EXISTING	0.0200	0.0061		7234	2112		7	1		21.75	1.18		0.09	0.50		0.59
	FUTURE	0.0030	0.0030		7234	2112		7	1		8.20	0.83		0.25	0.71		0.95
2	EXISTING	0.0122	0.0139		3432	2957		7	1		23.69	1.78		0.04	0.46		0.50
	FUTURE	0.0030	0.0030		3432	2957		7	1		8.20	0.83		0.12	0.99		1.11
3	EXISTING	0.0100	0.0621		2482	1637		7	7		21.81	N/A		0.03			0.03
	FUTURE	0.0030	0.0200		2482	1882		7	2		8.20	2.82		0.08	0.19		0.27
4	EXISTING	0.0049	0.0370		4066	2323		7	2		7.40	3.84		0.15	0.17		0.32
	FUTURE	0.0030	0.0370		4066	2323		7	2		8.20	3.84		0.14	0.17		0.31
5	EXISTING	0.0114			4910			7			9.58			0.14			0.14
	FUTURE	0.0030			4910			7			8.20			0.17			0.17
6	EXISTING	0.0111			8976			7			10.88			0.23			0.23
	FUTURE	0.0030			8976			7			6.70			0.37			0.37
7	EXISTING	0.0190			7339			7			13.17			0.15			0.15
	FUTURE	0.0030			7339			7			4.11			0.50			0.50
8	EXISTING	0.0232			3907			7			16.66			0.07			0.07
	FUTURE	0.0030			3907			7			5.99			0.18			0.18
9	EXISTING	0.0437			2534			2			4.17			0.17			0.17
	FUTURE	0.0437			2534			2			4.17			0.17			0.17
10	EXISTING	0.0324			2376			2			3.59			0.18			0.18
	FUTURE	0.0324			2376			2			3.59			0.18			0.18
11	EXISTING	0.0270			2587			2			3.28			0.22			0.22
	FUTURE	0.0270			2587			2			3.28			0.22			0.22
12	EXISTING	0.0201	0.0618		3221	792		7	2		9.69	4.96		0.09	0.84		0.14
	FUTURE	0.0030	0.0300		3221	792		7	2		5.95	3.46		0.15	0.06		0.21
13	EXISTING	0.0220			4541			7			6.39			0.20			0.20
	FUTURE	0.0158			4541			7			5.27			0.24			0.24
14	EXISTING	0.0193			3326			1			2.10			0.44			0.44
	FUTURE	0.0100			3825			2			2.00			0.53			0.53
15	EXISTING	0.0153	0.0167		2270	2534		7	7		7.73	5.54		0.08	0.13		0.21

	FUTURE	0.0030	0.0167		2270	2534		7	7		4.49	8.49		0.14	0.08		0.22
16	EXISTING	0.0337			4171			3			1.30			0.89			0.89
	FUTURE	0.0340			4797			2			3.68			0.36			0.36
17	EXISTING	0.0138			3274			7			4.16			0.22			0.22
	FUTURE	0.0030			3274			7			4.68			0.19			0.19
18	EXISTING	0.0127	0.0323		3696	3221		7	3		13.29	1.27		0.08	0.70		0.78
	FUTURE	0.0030	0.0280		3696	3704		7	2		7.14	3.34		0.14	0.31		0.45
19	EXISTING	0.0186	0.0326		3802	1901		7	3		10.44	1.28		0.10	0.41		0.51
	FUTURE	0.0030	0.0280		3802	2186		7	2		6.95	3.34		0.15	0.18		0.33
20	EXISTING	0.0165	0.0551		3960	1003		7	3		8.29	1.66		0.13	0.17		0.30
	FUTURE	0.0030	0.0488		3960	1154		7	2		7.19	4.37		0.15	0.07		0.23
21	EXISTING	0.0342			2482			3			1.31			0.53			0.53
	FUTURE	0.0300			2854			2			3.46			0.23			0.23
22	EXISTING	0.0098			3062			7			12.04			0.07			0.07
	FUTURE	0.0030			3062			7			6.95			0.12			0.12
23	EXISTING	0.0247			3643			3			1.11			0.91			0.91
	FUTURE	0.0220			4190			2			2.96			0.39			0.39
24	EXISTING	0.0181			5227			7			9.29			0.16			0.16
	FUTURE	0.0030			5227			7			5.57			0.26			0.26
25	EXISTING	0.0116	0.0571		2323	1478		7	3		12.70	1.69		0.05	0.24		0.29
	FUTURE	0.0030	0.0400		2323	1700		7	2		6.95	3.99		0.09	0.12		0.21
26	EXISTING	0.0499	0.0176		1795	2534		1	3		3.38	0.94		0.15	0.75		0.90
	FUTURE	0.0390	0.0158		2864	2915		2	2		3.94	2.44		0.15	0.33		0.48
27	EXISTING	0.0514			3432			1			3.43			0.28			0.28
	FUTURE	0.0320			3947			2			3.57			0.31			0.31
28	EXISTING	0.0392			3960			1			3.08			0.37			0.37
	FUTURE	0.0340			4554			2			3.68			0.34			0.34
29	EXISTING	0.0317			3326			3			1.26			0.73			0.73
	FUTURE	0.0280			3825			2			3.34			0.32			0.32
30	EXISTING	0.0213			2323			7			7.93			0.08			0.08
	FUTURE	0.0030			2323			7			5.13			0.13			0.13
31	EXISTING	0.0218			3221			7			5.02			0.18			0.18
	FUTURE	0.0030			3221			7			4.77			0.19			0.19
32	EXISTING	0.0247			3643			3			1.11			0.91			0.91
	FUTURE	0.0220			4190			2			2.96			0.39			0.39
33	EXISTING	0.0270			5755			3			1.16			1.37			1.37
	FUTURE	0.0248			6618			2			3.09			0.59			0.59
34	EXISTING	0.0286			5438			1			2.56			0.59			0.59
	FUTURE	0.0250			6254			2			3.15			0.55			0.55
35	EXISTING	0.0342			4118			3			1.31			0.87			0.87
	FUTURE	0.0030			4118			7			4.11			0.28			0.28
36	EXISTING	0.0171	0.0470		2904	3062		1	3		1.98	1.53		0.41	0.55		0.96
	FUTURE	0.0030	0.0400		2904	3522		7	2		4.11	3.99		0.20	0.25		0.44
37	EXISTING	0.0360			3749			3			1.34			0.78			0.78
	FUTURE	0.0310			4311			2			3.51			0.34			0.34
38	EXISTING	0.0335			4171			3			1.30			0.89			0.89
	FUTURE	0.0290			4797			2			3.40			0.39			0.39
39	EXISTING	0.0167	0.0623		4488	1214		7	3		4.73	1.77		0.26	0.19		0.45
	FUTURE	0.0030	0.0400		4488	1397		7	2		5.13	3.99		0.24	0.10		0.34
40	EXISTING	0.0245	0.0217		2218	3907		7	3		9.38	1.04		0.07	1.04		1.11
	FUTURE	0.0030	0.0190		2218	4493		7	2		5.13	2.75		0.12	0.45		0.57
41	EXISTING	0.0260			3862			3			1.14			0.75			0.75
	FUTURE	0.0230			3522			2			3.03			0.32			0.32
42	EXISTING	0.0192	0.0294		2746	1109		7	3		6.46	1.21		0.12	0.25		0.37
	FUTURE	0.0030	0.0260		2746	1275		7	2		5.13	3.22		0.15	0.11		0.26
43	EXISTING	0.0201	0.0558		2218	1083		1	3		2.15	1.67		0.29	0.17		0.45

	FUTURE	0.0830	0.0350	2550	1154	2	2	1.09	3.73	0.65	0.09	0.73
44	EXISTING	0.0130	0.0532	5016	739	7	3	12.35	1.63	0.11	0.13	0.24
	FUTURE	0.0030	0.0350	5016	850	7	2	6.67	3.73	0.21	0.06	0.27
45	EXISTING	0.0145	0.0438	3802	2376	7	1	8.01	3.17	0.13	0.21	0.34
	FUTURE	0.0030	0.0380	3802	2732	7	2	6.67	3.89	0.16	0.20	0.35
46	EXISTING	0.0171		4699		1		1.98		0.66		0.66
	FUTURE	0.0150		5404		2		2.44		0.61		0.61
47	EXISTING	0.0196	0.0164	3802	2429	7	3	6.52	0.91	0.16	0.74	0.91
	FUTURE	0.0030	0.0140	3802	2793	7	2	4.68	2.36	0.23	0.33	0.55
48	EXISTING	0.0030	0.0519	1637	2693	3	1	0.39	3.45	1.17	0.22	1.39
	FUTURE	0.0030	0.0350	1882	3097	2	2	1.09	3.73	0.48	0.23	0.71
49	EXISTING	0.0162		3696		1		1.93		0.53		0.53
	FUTURE	0.0162		4250		2		2.54		0.46		0.46
50	EXISTING	0.0154	0.0338	5544	1056	7	3	5.78	1.30	0.27	0.23	0.49
	FUTURE	0.0030	0.0338	5544	1214	7	2	5.27	3.67	0.29	0.09	0.38



\*\* SEGMENT 1 \*\*

ENTER VALUES INTO CELLS BELOW FOR CONVEYANCE TYPE = 7 ONLY!!

BASIN ID	CONDITON	DEPTH	BOTTOM WIDTH	MANNING'S	SIDESLOPES	AREA	WET. PER.	HYD. RAD.	VELOCITY
NUMBER	FUT./EXIST.	(FT)	(FT)	n	z	(FT^2)	(FT)	(FT)	(FT./SEC.)
1	EXISTING	6.00	100.00	0.030	0.50	618.00	113.42	5.45	21.75
	FUTURE	6.00	150.00	0.030	4.00	1044.00	199.48	5.23	8.20
2	EXISTING	10.00	150.00	0.030	1.00	1600.00	178.28	8.97	23.69
	FUTURE	6.00	150.00	0.030	4.00	1044.00	199.48	5.23	8.20
3	EXISTING	10.00	200.00	0.030	1.00	2100.00	228.28	9.20	21.81
	FUTURE	6.00	150.00	0.030	4.00	1044.00	199.48	5.23	8.20
4	EXISTING	5.00	10.00	0.030	1.00	75.00	24.14	3.11	7.40
	FUTURE	6.00	150.00	0.030	4.00	1044.00	199.48	5.23	8.20
5	EXISTING	5.00	100.00	0.040	10.00	750.00	200.50	3.74	9.58
	FUTURE	6.00	150.00	0.030	4.00	1044.00	199.48	5.23	8.20
6	EXISTING	7.00	20.00	0.040	0.50	164.50	35.65	4.61	10.88
	FUTURE	7.00	40.00	0.035	4.00	476.00	97.72	4.87	6.70
7	EXISTING	6.00	8.00	0.035	1.00	84.00	24.97	3.36	13.17
	FUTURE	4.00	8.00	0.035	4.00	96.00	40.98	2.34	4.11
8	EXISTING	2.00	3.00	0.015	1.00	10.00	8.66	1.16	16.66
	FUTURE	2.00	3.00	0.015	1.00	10.00	8.66	1.16	5.99
9	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
10	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
11	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
12	EXISTING	4.00	8.00	0.040	1.00	48.00	19.31	2.49	9.69
	FUTURE	6.00	30.00	0.035	4.00	324.00	79.48	4.08	5.95
13	EXISTING	2.00	4.00	0.040	1.00	12.00	9.66	1.24	6.39
	FUTURE	2.00	4.00	0.040	1.00	12.00	9.66	1.24	5.27
14	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
15	EXISTING	4.00	8.00	0.040	10.00	192.00	88.40	2.17	7.73
	FUTURE	5.00	20.00	0.040	4.00	200.00	61.23	3.27	4.49
16	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
17	EXISTING	2.00	5.00	0.045	10.00	50.00	45.20	1.11	4.16
	FUTURE	5.00	8.00	0.035	4.00	140.00	49.23	2.84	4.68
18	EXISTING	5.00	100.00	0.035	0.50	512.50	111.18	4.61	13.29
	FUTURE	5.00	100.00	0.030	4.00	600.00	141.23	4.25	7.14
19	EXISTING	3.00	300.00	0.040	1.00	909.00	308.49	2.95	10.44
	FUTURE	5.00	75.00	0.030	4.00	475.00	116.23	4.09	6.95
20	EXISTING	3.00	20.00	0.035	10.00	150.00	80.30	1.87	8.29
	FUTURE	5.00	20.00	0.025	4.00	200.00	61.23	3.27	7.19
21	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
22	EXISTING	5.00	25.00	0.030	1.00	150.00	39.14	3.83	12.04
	FUTURE	5.00	75.00	0.030	4.00	475.00	116.23	4.09	6.95
23	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
24	EXISTING	3.00	10.00	0.035	0.50	34.50	16.71	2.06	9.29

	FUTURE	5.00	10.00	0.030	4.00	150.00	51.23	2.93	5.57
25	EXISTING	5.00	100.00	0.035	0.50	512.50	111.18	4.61	12.70
	FUTURE	5.00	75.00	0.030	4.00	475.00	116.23	4.09	6.95
26	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
27	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
28	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
29	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
30	EXISTING	2.00	8.00	0.035	0.50	18.00	12.47	1.44	7.93
	FUTURE	5.00	20.00	0.035	4.00	200.00	61.23	3.27	5.13
31	EXISTING	1.00	8.00	0.035	5.00	13.00	18.20	0.71	5.02
	FUTURE	5.00	10.00	0.035	4.00	150.00	51.23	2.93	4.77
32	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
33	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
34	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
35	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	4.00	8.00	0.035	4.00	96.00	40.98	2.34	4.11
36	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	4.00	8.00	0.035	4.00	96.00	40.98	2.34	4.11
37	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
38	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
39	EXISTING	2.00	8.00	0.045	10.00	56.00	48.20	1.16	4.73
	FUTURE	5.00	20.00	0.035	4.00	200.00	61.23	3.27	5.13
40	EXISTING	3.00	8.00	0.035	10.00	114.00	68.30	1.67	9.38
	FUTURE	5.00	20.00	0.035	4.00	200.00	61.23	3.27	5.13
41	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
42	EXISTING	3.00	8.00	0.045	10.00	114.00	68.30	1.67	6.46
	FUTURE	5.00	20.00	0.035	4.00	200.00	61.23	3.27	5.13
43	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
44	EXISTING	5.00	35.00	0.035	0.50	187.50	46.18	4.06	12.35
	FUTURE	5.00	50.00	0.030	4.00	350.00	91.23	3.84	6.67
45	EXISTING	3.00	100.00	0.045	1.00	309.00	108.49	2.85	8.01
	FUTURE	5.00	50.00	0.030	4.00	350.00	91.23	3.84	6.67
46	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
47	EXISTING	3.00	8.00	0.045	10.00	114.00	68.30	1.67	6.52
	FUTURE	5.00	8.00	0.035	4.00	140.00	49.23	2.84	4.68
48	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
49	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
50	EXISTING	3.00	8.00	0.045	10.00	114.00	68.30	1.67	5.78
	FUTURE	5.00	25.00	0.035	4.00	225.00	66.23	3.40	5.27

\*\* SEGMENT 2 \*\*

ENTER VALUES INTO CELLS BELOW FOR CONVEYANCE TYPE = 7 ONLY!!

BASIN ID	CONDITON	DEPTH	BOTTOM	WIDTH	MANNING'S	SIDESLOPE	AREA	WET. PER.	HYD. RAD.	VELOCITY
NUMBER	FUT./EXIST.	(FT)	(FT)	n	z	(FT^2)	(FT)	(FT)	(FT./SEC.)	
1	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
2	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
3	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
4	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
5	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
6	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
7	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
8	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
9	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
10	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
11	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
12	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
13	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
14	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
15	EXISTING	2.00	4.00	0.040	2.00	16.00	12.94	1.24	5.54	
	FUTURE	4.00	8.00	0.040	4.00	96.00	40.98	2.34	8.49	
16	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
17	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
18	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
19	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
20	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
21	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
22	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
23	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
24	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	



KIOWA ENGINEERING CORPORATION

TR20 TIME OF CONCENTRATION CALCULATION SPREADSHEET

DATE: 12-Jan-89  
 TIME: 07:36 AM

PROJECT: EAST FORK SAND CREEK TRIBUTARY

CURVE	DESCRIPTION	EQUATION	CONVEYANCE TYPE
E	GRASSED WATERWAY	$VELOCITY = 10 \wedge (0.5 \wedge LOG(SLOPE) + 0.18)$	1
F	PAVED AREA (SHEET FLOW) & SHALLOW GUT. FLOW	$VELOCITY = 10 \wedge (0.5 \wedge LOG(SLOPE) + 0.30)$	2
C	SHORT GRASS PASTURE & LAWNS	$VELOCITY = 10 \wedge (0.5 \wedge LOG(SLOPE) - 0.15)$	3
A	FOREST WITH HEAVY GROUND LITTER & MEADOW	$VELOCITY = 10 \wedge (0.5 \wedge LOG(SLOPE) - 0.61)$	4
B	FALLOW OR MINIMUM TILLAGE CULTIVATION	$VELOCITY = 10 \wedge (0.5 \wedge LOG(SLOPE) - 0.32)$	5
D	NEARLY BARE GROUND	$VELOCITY = 10 \wedge (0.5 \wedge LOG(SLOPE))$	6
N/A	DRAINAGEWAY	$VELOCITY = 1.49 / n \wedge R \wedge (2/3) \wedge S \wedge (1/2)$	7

BASIN ID	CONDITION	** SLOPE (FT./FT.) **			** LENGTH (FT.) **			** CONVEYANCE TYPE **			** VELOCITY (FT/SEC) **			** TIME OF CONCENTRATION (HR) **			Tc (HR)
		SEGMENT-1	SEGMENT-2	SEGMENT-3	SEGMENT-1	SEGMENT-2	SEGMENT-3	SEGMENT-1	SEGMENT-2	SEGMENT-3	SEGMENT-1	SEGMENT-2	SEGMENT-3	SEGMENT-1	SEGMENT-2	SEGMENT-3	
51	EXISTING	0.016	0.077		1531	211		7	1		5.97	4.21		0.07	0.01		0.09
	FUTURE	0.003	0.040		1531	243		7	2		4.97	3.99		0.09	0.02		0.10
52	EXISTING	0.013	0.022		1584	2323		7	1		5.25	2.22		0.08	0.29		0.37
	FUTURE	0.003	0.022		1584	2672		7	2		5.39	2.93		0.08	0.25		0.34
53	EXISTING	0.021			3538			1			2.20			0.45			0.45
	FUTURE	0.018			4068			2			2.68			0.42			0.42
54	EXISTING	0.019			5438			3			0.98			1.54			1.54
	FUTURE	0.019			6254			2			2.77			0.63			0.63
55	EXISTING	0.025			4013			3			1.12			1.00			1.00
	FUTURE	0.022			4615			2			2.96			0.43			0.43
56	EXISTING	0.037			1901			3			1.35			0.39			0.39
	FUTURE	0.032			2186			2			3.57			0.17			0.17
57	EXISTING	0.007	0.034		1531	2376		3	3		0.58	1.30		0.74	0.51		1.25
	FUTURE	0.003	0.030		1531	2732		7	2		4.11	3.46		0.10	0.22		0.32
58	EXISTING	0.015	0.040		5016	1162		7	3		4.33	1.41		0.32	0.23		0.55
	FUTURE	0.003	0.035		5016	1336		7	2		4.97	3.73		0.28	0.10		0.38
59	EXISTING	0.026			3854			1			2.44			0.44			0.44
	FUTURE	0.026			3854			1			2.44			0.44			0.44
60	EXISTING	0.018	0.029		1373	686		7	3		13.72	1.21		0.03	0.16		0.19
	FUTURE	0.018	0.029		1373	686		7	3		12.89	1.21		0.03	0.16		0.19
61	EXISTING	0.032			4277			1			2.69			0.44			0.44
	FUTURE	0.032			4277			1			2.69			0.44			0.44
62	EXISTING	0.022			3485			7			5.14			0.19			0.19
	FUTURE	0.022			3485			7			5.14			0.19			0.19
63	EXISTING	0.035			3168			3			1.31			0.67			0.67
	FUTURE	0.003			3168			1			0.83			1.06			1.06
64	EXISTING	0.029			2746			3			1.21			0.63			0.63
	FUTURE	0.025			3157			2			3.15			0.28			0.28
65	EXISTING	0.026			2112			3			1.14			0.52			0.52

	FUTURE	0.023		2429				2		3.03			0.22		0.22
66	EXISTING	0.018	0.063	2534	739			7	3	8.94	1.77		0.08	0.12	0.19
	FUTURE	0.003	0.040	2534	850			7	2	5.39	3.99		0.13	0.06	0.19
67	EXISTING	0.022		3379				3		1.06			0.89		0.89
	FUTURE	0.019		3886				2		2.75			0.39		0.39
68	EXISTING	0.018		3643				7		4.67			0.22		0.22
	FUTURE	0.003		3643				7		5.13			0.20		0.20
69	EXISTING	0.022		5333				3		1.04			1.42		1.42
	FUTURE	0.019		6133				2		2.75			0.62		0.62
70	EXISTING	0.019	0.023	2376	2851			7	3	4.80	1.07		0.14	0.74	0.88
	FUTURE	0.003	0.020	2376	3279			7	2	4.68	2.82		0.14	0.32	0.46
71	EXISTING	0.025		3010				3		1.12			0.75		0.75
	FUTURE	0.022		3461				2		2.96			0.32		0.32
72	EXISTING	0.024	0.024	1056	3274			7	3	5.39	1.10		0.05	0.82	0.88
	FUTURE	0.003	0.021	1056	3765			7	2	5.27	2.89		0.06	0.36	0.42
73	EXISTING	0.023		6019				3		1.06			1.57		1.57
	FUTURE	0.020		6922				2		2.82			0.68		0.68
74	EXISTING	0.023		4066				7		5.34			0.21		0.21
	FUTURE	0.003		4066				7		5.48			0.21		0.21
75	EXISTING	0.024	0.012	4013	1320			7	3	5.39	0.76		0.21	0.48	0.69
	FUTURE	0.003	0.012	4013	1320			7	2	5.48	2.14		0.20	0.17	0.37
76	EXISTING	0.020		5702				7		4.66			0.34		0.34
	FUTURE	0.003		5702				7		4.97			0.32		0.32
77	EXISTING	0.022		6203				3		1.04			1.68		1.68
	FUTURE	0.019		7226				2		2.75			0.73		0.73
78	EXISTING	0.020		5280				3		1.00			1.47		1.47
	FUTURE	0.017		6072				2		2.60			0.65		0.65
79	EXISTING	0.016		5597				7		4.44			0.35		0.35
	FUTURE	0.003		5597				7		4.77			0.33		0.33
80	EXISTING	0.026		1690				3		1.14			0.41		0.41
	FUTURE	0.023		1943				2		3.03			0.18		0.18
81	EXISTING	0.017		6309				7		4.56			0.39		0.39
	FUTURE	0.003		6309				7		4.97			0.36		0.36
82	EXISTING	0.022		5808				7		5.19			0.31		0.31
	FUTURE	0.003		5808				7		4.68			0.34		0.34
83	EXISTING	0.021		5597				3		1.03			1.52		1.52
	FUTURE	0.018		6436				2		2.68			0.67		0.67
84	EXISTING	0.023		5491				7		5.31			0.29		0.29
	FUTURE	0.003		5491				7		5.27			0.29		0.29
85	EXISTING	0.019		6178				7		4.82			0.36		0.36
	FUTURE	0.003		6178				7		5.13			0.33		0.33
86	EXISTING	0.024		5861				3		1.10			1.48		1.48
	FUTURE	0.021		6740				2		2.89			0.65		0.65
87	EXISTING	0.024		5333				3		1.10			1.35		1.35
	FUTURE	0.024		6133				2		3.09			0.55		0.55
88	EXISTING	0.024		5597				7		5.42			0.29		0.29
	FUTURE	0.003		5597				7		4.68			0.33		0.33
89	EXISTING	0.034		2165				3		1.31			0.46		0.46
	FUTURE	0.030		2490				2		3.46			0.20		0.20
90	EXISTING	0.028		2693				3		1.18			0.63		0.63
	FUTURE	0.024		3097				2		3.09			0.28		0.28
91	EXISTING	0.025		4594				3		1.12			1.14		1.14
	FUTURE	0.022		5283				2		2.96			0.50		0.50
92	EXISTING	0.026		5650				7		5.64			0.28		0.28
	FUTURE	0.003		5650				7		5.13			0.31		0.31
93	EXISTING	0.032		5122				3		1.27			1.12		1.12

	FUTURE	0.028	5890	2	3.34	0.49	0.49
94	EXISTING	0.024	5914	7	5.42	0.30	0.30
	FUTURE	0.003	5914	7	4.68	0.35	0.35
95	EXISTING	0.020	4963	3	1.00	1.38	1.38
	FUTURE	0.017	5708	2	2.60	0.61	0.61
96	EXISTING	0.027	3696	3	1.16	0.88	0.88
	FUTURE	0.024	4250	2	3.09	0.38	0.38
97	EXISTING	0.045	2323	3	1.50	0.43	0.43
	FUTURE	0.039	2672	2	3.94	0.19	0.19
98	EXISTING	0.057	2640	3	1.69	0.43	0.43
	FUTURE	0.035	3036	2	3.73	0.23	0.23
99	EXISTING	0.036	5491	3	1.34	1.14	1.14
	FUTURE	0.031	6315	2	3.51	0.50	0.50

\*\* SEGMENT 1 \*\*

ENTER VALUES INTO CELLS BELOW FOR CONVEYANCE TYPE = 7 ONLY!!

BASIN ID	CONDITON	DEPTH	BOTTOM WIDTH	MANNING'S	SIDESLOPES	AREA	WET. PER.	HYD. RAD.	VELOCITY
NUMBER	FUT./EXIST.	(FT)	(FT)	n	z	(FT^2)	(FT)	(FT)	(FT./SEC.)
51	EXISTING	3.00	8.00	0.045	10.00	114.00	68.30	1.67	5.97
	FUTURE	5.00	15.00	0.035	4.00	175.00	56.23	3.11	4.97
52	EXISTING	3.00	8.00	0.045	10.00	114.00	68.30	1.67	5.25
	FUTURE	5.00	30.00	0.035	4.00	250.00	71.23	3.51	5.39
53	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
54	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
55	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
56	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
57	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	4.00	8.00	0.035	4.00	96.00	40.98	2.34	4.11
58	EXISTING	2.00	4.00	0.045	10.00	48.00	44.20	1.09	4.33
	FUTURE	5.00	15.00	0.035	4.00	175.00	56.23	3.11	4.97
59	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
60	EXISTING	5.00	20.00	0.035	1.00	125.00	34.14	3.66	13.72
	FUTURE	5.00	20.00	0.035	3.00	175.00	51.62	3.39	12.89
61	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
62	EXISTING	2.00	4.00	0.045	10.00	48.00	44.20	1.09	5.14
	FUTURE	2.00	4.00	0.045	10.00	48.00	44.20	1.09	5.14
63	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
64	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
65	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
66	EXISTING	3.00	10.00	0.035	3.00	57.00	28.97	1.97	8.94
	FUTURE	5.00	30.00	0.035	4.00	250.00	71.23	3.51	5.39
67	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
68	EXISTING	2.00	4.00	0.045	10.00	48.00	44.20	1.09	4.67
	FUTURE	5.00	20.00	0.035	4.00	200.00	61.23	3.27	5.13
69	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
70	EXISTING	2.00	4.00	0.045	10.00	48.00	44.20	1.09	4.80
	FUTURE	5.00	8.00	0.035	4.00	140.00	49.23	2.84	4.68
71	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
72	EXISTING	2.00	4.00	0.045	10.00	48.00	44.20	1.09	5.39
	FUTURE	5.00	25.00	0.035	4.00	225.00	66.23	3.40	5.27
73	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
74	EXISTING	2.00	4.00	0.045	10.00	48.00	44.20	1.09	5.34



	FUTURE	5.00	35.00	0.035	4.00	275.00	76.23	3.61	5.48
75	EXISTING	2.00	4.00	0.045	10.00	48.00	44.20	1.09	5.39
	FUTURE	5.00	35.00	0.035	4.00	275.00	76.23	3.61	5.48
76	EXISTING	2.00	4.00	0.048	10.00	48.00	44.20	1.09	4.66
	FUTURE	5.00	15.00	0.035	4.00	175.00	56.23	3.11	4.97
77	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
78	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
79	EXISTING	2.00	4.00	0.045	10.00	48.00	44.20	1.09	4.44
	FUTURE	5.00	10.00	0.035	4.00	150.00	51.23	2.93	4.77
80	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
81	EXISTING	2.00	4.00	0.045	10.00	48.00	44.20	1.09	4.56
	FUTURE	5.00	15.00	0.035	4.00	175.00	56.23	3.11	4.97
82	EXISTING	2.00	4.00	0.045	10.00	48.00	44.20	1.09	5.19
	FUTURE	5.00	8.00	0.035	4.00	140.00	49.23	2.84	4.68
83	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
84	EXISTING	2.00	4.00	0.045	10.00	48.00	44.20	1.09	5.31
	FUTURE	5.00	25.00	0.035	4.00	225.00	66.23	3.40	5.27
85	EXISTING	2.00	4.00	0.045	10.00	48.00	44.20	1.09	4.82
	FUTURE	5.00	20.00	0.035	4.00	200.00	61.23	3.27	5.13
86	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
87	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
88	EXISTING	2.00	4.00	0.045	10.00	48.00	44.20	1.09	5.42
	FUTURE	5.00	8.00	0.035	4.00	140.00	49.23	2.84	4.68
89	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
90	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
91	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
92	EXISTING	2.00	4.00	0.045	10.00	48.00	44.20	1.09	5.64
	FUTURE	5.00	20.00	0.035	4.00	200.00	61.23	3.27	5.13
93	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
94	EXISTING	2.00	4.00	0.045	10.00	48.00	44.20	1.09	5.42
	FUTURE	5.00	8.00	0.035	4.00	140.00	49.23	2.84	4.68
95	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
96	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
97	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
98	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
99	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A

\*\* SEGMENT 2 \*\*

ENTER VALUES INTO CELLS BELOW FOR CONVEYANCE TYPE = 7 ONLY!!

BASIN ID	CONDITON	DEPTH	BOTTOM	WIDTH	MANNING'S	SIDESLOPE	AREA	WET. PER.	HYD. RAD.	VELOCITY
NUMBER	FUT./EXIST.	(FT)	(FT)	n	z	(FT^2)	(FT)	(FT)	(FT./SEC.)	
51	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
52	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
53	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
54	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
55	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
56	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
57	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
58	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
59	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
60	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
61	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
62	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
63	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
64	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
65	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
66	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
67	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
68	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
69	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
70	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
71	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
72	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
73	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
	FUTURE	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	
74	EXISTING	0.00	0.00	0.000	0.00	0.00	0.00	N/A	N/A	



KIOWA ENGINEERING CORPORATION

TR20 'X' AND 'M' VALUE CALCULATION SPREADSHEET  
 \*\*REACH CARDS\*\*

DATE: 12-Jan-89  
 TIME: 07:38 AM

PROJECT: EAST FORK SAND CREEK TRIBUTARY

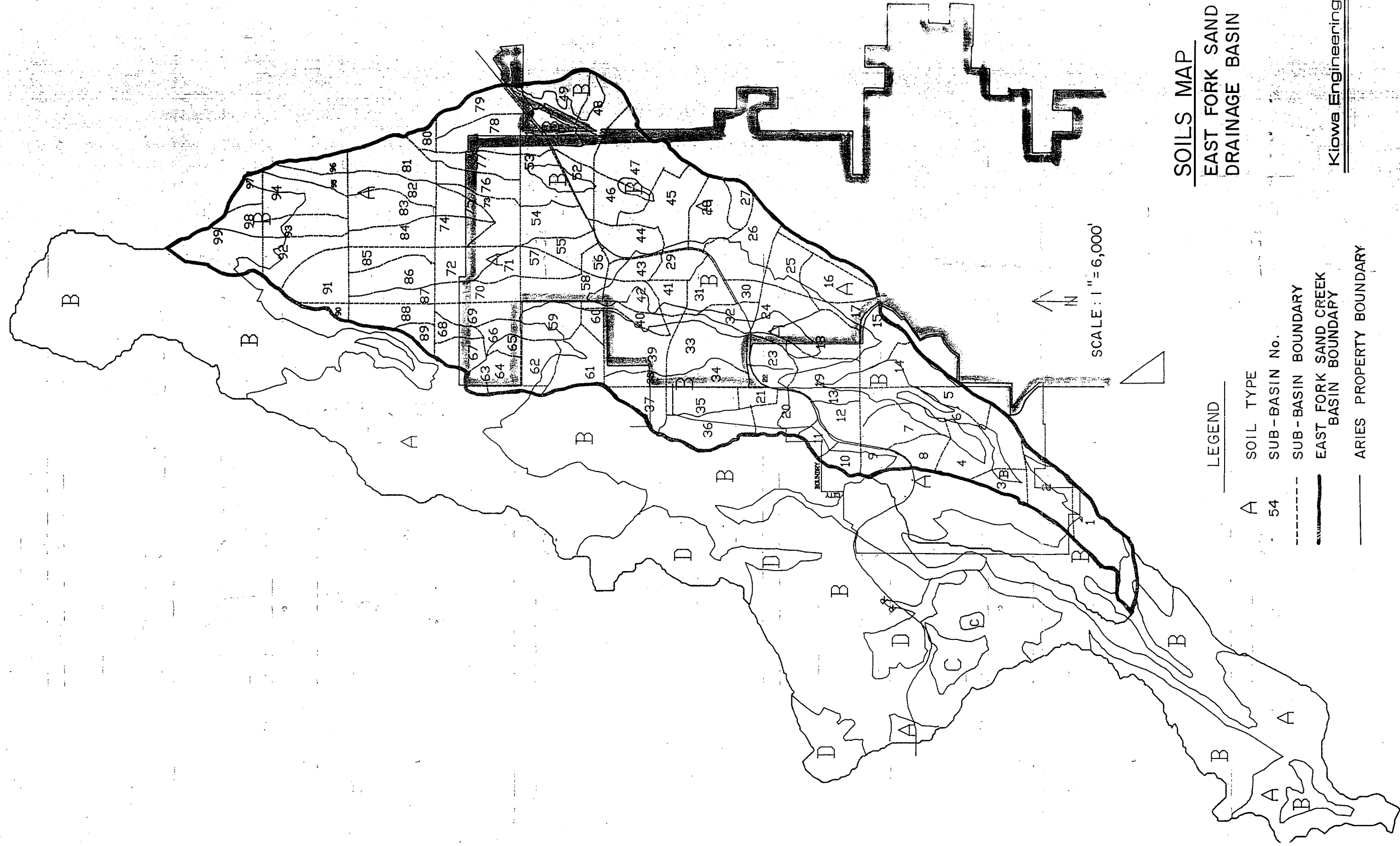
REACH ID	CONDITION	SLOPE	MANNING'S N VALUE	BOTTOM WIDTH FT	SIDE SLOPE Z	DEPTH (FT)	LENGTH (FT)	AREA FT <sup>2</sup>	X VALUE	M VALUE
1	EXISTING	0.020	0.030	100.0	0.5	6.0	7234.0	618.0	0.3	1.65
	FUTURE	0.003	0.030	150.0	4.0	6.0	7234.0	1044.0	0.1	1.64
2	EXISTING	0.012	0.030	150.0	1.0	10.0	3432.0	1600.0	0.2	1.65
	FUTURE	0.003	0.030	150.0	4.0	6.0	3432.0	1044.0	0.1	1.64
3	EXISTING	0.010	0.030	200.0	1.0	10.0	2482.0	2100.0	0.1	1.66
	FUTURE	0.003	0.030	150.0	4.0	6.0	2482.0	1044.0	0.1	1.64
4	EXISTING	0.015	0.040	100.0	10.0	4.0	2851.0	560.0	0.2	1.60
	FUTURE	0.003	0.030	150.0	4.0	6.0	2851.0	1044.0	0.1	1.64
5	EXISTING	0.012	0.040	100.0	10.0	5.0	4910.0	750.0	0.2	1.60
	FUTURE	0.003	0.030	150.0	4.0	6.0	4910.0	1044.0	0.1	1.64
6	EXISTING	0.013	0.040	20.0	0.5	7.0	8976.0	164.5	0.6	1.59
	FUTURE	0.003	0.035	40.0	4.0	7.0	8976.0	476.0	0.2	1.57
8	EXISTING	0.016	0.015	3.0	1.0	2.0	3907.0	10.0	6.0	1.36
	FUTURE	0.016	0.015	3.0	1.0	2.0	3907.0	10.0	6.0	1.36
12	EXISTING	0.020	0.040	8.0	1.0	4.0	3221.0	48.0	1.3	1.51
	FUTURE	0.003	0.035	30.0	4.0	4.0	3221.0	184.0	0.2	1.57
14	EXISTING	0.010	0.035	150.0	5.0	3.0	3448.0	495.0	0.2	1.65
	FUTURE	0.003	0.030	150.0	4.0	6.0	3448.0	1044.0	0.1	1.64
15	EXISTING	0.012	0.035	75.0	5.0	4.0	2571.0	380.0	0.3	1.62
	FUTURE	0.003	0.030	75.0	4.0	5.0	2571.0	475.0	0.2	1.62
17	EXISTING	0.016	0.045	5.0	10.0	2.0	3274.0	50.0	1.4	1.29
	FUTURE	0.003	0.035	8.0	4.0	5.0	3274.0	140.0	0.6	1.42
18	EXISTING	0.012	0.035	100.0	0.5	5.0	3696.0	512.5	0.2	1.66
	FUTURE	0.003	0.030	100.0	4.0	5.0	3696.0	600.0	0.1	1.63
19	EXISTING	0.019	0.040	300.0	1.0	3.0	3802.0	909.0	0.1	1.66
	FUTURE	0.003	0.030	75.0	4.0	5.0	3802.0	475.0	0.2	1.62
20	EXISTING	0.008	0.045	20.0	10.0	3.0	3960.0	150.0	0.4	1.48
	FUTURE	0.003	0.035	20.0	4.0	5.0	3960.0	200.0	0.3	1.53
22	EXISTING	0.010	0.030	25.0	1.0	5.0	3062.0	150.0	0.6	1.61
	FUTURE	0.003	0.030	75.0	4.0	5.0	3062.0	475.0	0.2	1.62
24	EXISTING	0.014	0.035	100.0	0.5	5.0	2524.0	512.5	0.2	1.66
	FUTURE	0.003	0.030	75.0	4.0	5.0	2524.0	475.0	0.2	1.62
25	EXISTING	0.012	0.035	100.0	0.5	5.0	2323.0	512.5	0.2	1.66
	FUTURE	0.003	0.030	75.0	4.0	5.0	2323.0	475.0	0.2	1.62
26	EXISTING	0.012	0.035	100.0	0.5	5.0	3221.0	512.5	0.2	1.66
	FUTURE	0.003	0.030	75.0	4.0	5.0	3221.0	475.0	0.2	1.62
28	EXISTING	0.005	0.035	100.0	0.5	5.0	3168.0	512.5	0.1	1.66
	FUTURE	0.003	0.030	75.0	4.0	5.0	3168.0	475.0	0.2	1.62
30	EXISTING	0.023	0.035	8.0	0.5	2.0	2323.0	18.0	1.6	1.56
	FUTURE	0.003	0.035	20.0	4.0	5.0	2323.0	200.0	0.3	1.53
31	EXISTING	0.010	0.035	8.0	5.0	1.0	3358.0	13.0	1.1	1.45
	FUTURE	0.003	0.035	10.0	4.0	5.0	3358.0	150.0	0.5	1.45
33	EXISTING	0.012	0.045	150.0	0.5	3.0	7445.0	454.5	0.1	1.66
	FUTURE	0.003	0.030	75.0	4.0	5.0	7445.0	475.0	0.2	1.62
34	EXISTING	0.015	0.045	8.0	5.0	2.0	1816.0	36.0	1.0	1.43
	FUTURE	0.003	0.035	15.0	4.0	5.0	1816.0	175.0	0.4	1.50

35	EXISTING	0.017	0.045	4.0	10.0	1.0	3252.0	14.0	1.7	1.21
	FUTURE	0.003	0.035	8.0	4.0	4.0	3252.0	96.0	0.6	1.43
39	EXISTING	0.016	0.040	50.0	0.5	3.0	4963.0	154.5	0.3	1.65
	FUTURE	0.003	0.035	60.0	4.0	5.0	4963.0	400.0	0.2	1.61
40	EXISTING	0.020	0.045	8.0	10.0	3.0	2218.0	114.0	1.2	1.36
	FUTURE	0.003	0.035	20.0	4.0	5.0	2218.0	200.0	0.3	1.53
42	EXISTING	0.020	0.045	8.0	10.0	3.0	2746.0	114.0	1.2	1.36
	FUTURE	0.003	0.035	20.0	4.0	5.0	2746.0	200.0	0.3	1.53
44	EXISTING	0.013	0.035	35.0	0.5	5.0	5016.0	187.5	0.5	1.63
	FUTURE	0.003	0.030	50.0	4.0	5.0	5016.0	350.0	0.2	1.60
45	EXISTING	0.015	0.045	150.0	1.0	3.0	2893.0	459.0	0.1	1.66
	FUTURE	0.003	0.030	50.0	4.0	5.0	2893.0	350.0	0.2	1.60
46	EXISTING	0.016	0.045	50.0	5.0	2.0	3770.0	120.0	0.3	1.62
	FUTURE	0.003	0.035	30.0	4.0	5.0	3770.0	250.0	0.2	1.56
47	EXISTING	0.015	0.045	100.0	1.0	3.0	4678.0	309.0	0.2	1.66
	FUTURE	0.003	0.035	30.0	4.0	5.0	4678.0	250.0	0.2	1.56
50	EXISTING	0.017	0.045	8.0	10.0	3.0	3000.0	114.0	1.1	1.36
	FUTURE	0.003	0.035	25.0	4.0	5.0	3000.0	225.0	0.3	1.55
51	EXISTING	0.014	0.045	8.0	10.0	3.0	1531.0	114.0	1.0	1.36
	FUTURE	0.003	0.035	15.0	4.0	5.0	1531.0	175.0	0.4	1.50
52	EXISTING	0.012	0.035	50.0	5.0	2.0	1584.0	120.0	0.3	1.62
	FUTURE	0.003	0.035	30.0	4.0	5.0	1584.0	250.0	0.2	1.56
53	EXISTING	0.019	0.045	8.0	10.0	2.0	3453.0	56.0	1.1	1.37
	FUTURE	0.003	0.035	20.0	4.0	5.0	3453.0	200.0	0.3	1.53
54	EXISTING	0.014	0.035	30.0	0.5	5.0	4974.0	162.5	0.5	1.63
	FUTURE	0.003	0.035	45.0	4.0	5.0	4974.0	325.0	0.2	1.59
55	EXISTING	0.021	0.030	4.0	1.0	3.0	3000.0	21.0	2.9	1.42
	FUTURE	0.003	0.035	15.0	4.0	5.0	3000.0	175.0	0.4	1.50
57	EXISTING	0.007	0.045	8.0	10.0	2.0	4102.0	56.0	0.7	1.37
	FUTURE	0.003	0.035	8.0	4.0	4.0	4102.0	96.0	0.6	1.43
58	EXISTING	0.015	0.045	4.0	10.0	2.0	5016.0	48.0	1.6	1.25
	FUTURE	0.003	0.035	15.0	4.0	5.0	5016.0	175.0	0.4	1.50
59	EXISTING	0.012	0.035	20.0	1.0	5.0	5158.0	125.0	0.6	1.59
	FUTURE	0.012	0.035	20.0	1.0	5.0	5158.0	125.0	0.6	1.59
60	EXISTING	0.018	0.035	20.0	3.0	5.0	1373.0	175.0	0.8	1.54
	FUTURE	0.018	0.035	20.0	3.0	5.0	1373.0	175.0	0.8	1.54
61	EXISTING	0.016	0.045	4.0	10.0	2.0	3152.0	48.0	1.7	1.25
	FUTURE	0.016	0.045	4.0	10.0	2.0	3152.0	48.0	1.7	1.25
62	EXISTING	0.013	0.045	4.0	10.0	2.0	3432.0	48.0	1.5	1.25
	FUTURE	0.013	0.045	4.0	10.0	2.0	3432.0	48.0	1.5	1.25
66	EXISTING	0.020	0.035	10.0	3.0	3.0	2531.0	57.0	1.3	1.49
	FUTURE	0.003	0.035	30.0	4.0	5.0	2531.0	250.0	0.2	1.56
68	EXISTING	0.017	0.045	4.0	10.0	2.0	3643.0	48.0	1.7	1.25
	FUTURE	0.003	0.035	20.0	4.0	5.0	3643.0	200.0	0.3	1.53
70	EXISTING	0.009	0.045	4.0	10.0	2.0	5613.0	48.0	1.2	1.25
	FUTURE	0.003	0.035	8.0	4.0	5.0	5613.0	140.0	0.6	1.42
72	EXISTING	0.016	0.045	4.0	10.0	2.0	5058.0	48.0	1.7	1.25
	FUTURE	0.003	0.035	25.0	4.0	5.0	5058.0	225.0	0.3	1.55
73	EXISTING	0.017	0.035	20.0	3.0	5.0	1610.0	175.0	0.8	1.54
	FUTURE	0.003	0.035	40.0	4.0	5.0	1610.0	300.0	0.2	1.58
74	EXISTING	0.022	0.045	4.0	10.0	2.0	4066.0	48.0	1.9	1.25
	FUTURE	0.003	0.035	35.0	4.0	5.0	4066.0	275.0	0.2	1.57
75	EXISTING	0.022	0.045	4.0	10.0	2.0	4013.0	48.0	1.9	1.25
	FUTURE	0.003	0.035	35.0	4.0	5.0	4013.0	275.0	0.2	1.57
76	EXISTING	0.020	0.045	4.0	10.0	2.0	5702.0	48.0	1.9	1.25
	FUTURE	0.003	0.035	15.0	4.0	5.0	5702.0	175.0	0.4	1.50

79	EXISTING	0.016	0.045	4.0	10.0	2.0	5597.0	48.0	1.7	1.25
	FUTURE	0.003	0.035	10.0	4.0	5.0	5597.0	150.0	0.5	1.45
81	EXISTING	0.012	0.045	4.0	10.0	2.0	6389.0	48.0	1.4	1.25
	FUTURE	0.003	0.035	15.0	4.0	5.0	6389.0	175.0	0.4	1.50
82	EXISTING	0.012	0.045	4.0	10.0	2.0	5808.0	48.0	1.4	1.25
	FUTURE	0.003	0.035	8.0	4.0	5.0	5808.0	140.0	0.6	1.42
83	EXISTING	0.020	0.045	4.0	10.0	2.0	6124.0	48.0	1.9	1.25
	FUTURE	0.003	0.035	30.0	4.0	5.0	6124.0	250.0	0.2	1.56
84	EXISTING	0.023	0.045	4.0	10.0	2.0	5491.0	48.0	2.0	1.25
	FUTURE	0.003	0.035	25.0	4.0	5.0	5491.0	225.0	0.3	1.55
85	EXISTING	0.011	0.045	4.0	10.0	2.0	6178.0	48.0	1.4	1.25
	FUTURE	0.003	0.035	20.0	4.0	5.0	6178.0	200.0	0.3	1.53
88	EXISTING	0.021	0.045	4.0	10.0	2.0	5597.0	48.0	1.9	1.25
	FUTURE	0.003	0.035	8.0	4.0	5.0	5597.0	140.0	0.6	1.42
92	EXISTING	0.025	0.045	4.0	10.0	2.0	5650.0	48.0	2.1	1.25
	FUTURE	0.003	0.035	20.0	4.0	5.0	5650.0	200.0	0.3	1.53
94	EXISTING	0.017	0.045	4.0	10.0	2.0	5914.0	48.0	1.7	1.25
	FUTURE	0.003	0.035	8.0	4.0	5.0	5914.0	140.0	0.6	1.42
104	EXISTING	0.006	0.030	10.0	1.0	5.0	4066.0	75.0	0.8	1.53
	FUTURE	0.006	0.030	10.0	1.0	5.0	4066.0	75.0	0.8	1.53
112	EXISTING	0.014	0.030	20.0	1.0	5.0	2250.0	125.0	0.8	1.59
	FUTURE	0.003	0.035	20.0	4.0	5.0	2250.0	200.0	0.3	1.53
115	EXISTING	0.016	0.040	8.0	10.0	4.0	2820.0	192.0	1.2	1.36
	FUTURE	0.003	0.040	20.0	4.0	5.0	2820.0	200.0	0.3	1.53
16	EXISTING	0.014	0.035	150.0	5.0	4.0	2260.0	680.0	0.2	1.64
	FUTURE	0.003	0.030	100.0	4.0	5.0	2260.0	600.0	0.1	1.63
122	EXISTING	0.008	0.040	5.0	3.0	2.0	2503.0	22.0	1.1	1.39
	FUTURE	0.003	0.035	8.0	4.0	4.0	2503.0	96.0	0.6	1.43
124	EXISTING	0.022	0.035	30.0	0.5	4.0	4594.0	128.0	0.7	1.63
	FUTURE	0.003	0.035	30.0	4.0	5.0	4594.0	250.0	0.2	1.56
128	EXISTING	0.009	0.040	20.0	5.0	3.0	3131.0	105.0	0.5	1.53
	FUTURE	0.003	0.035	8.0	4.0	5.0	3131.0	140.0	0.6	1.42
139	EXISTING	0.018	0.045	8.0	10.0	2.0	4488.0	56.0	1.1	1.37
	FUTURE	0.003	0.035	20.0	4.0	5.0	4488.0	200.0	0.3	1.53
144	EXISTING	0.011	0.045	8.0	1.0	2.0	4419.0	20.0	0.9	1.55
	FUTURE	0.003	0.035	8.0	4.0	4.0	4419.0	96.0	0.6	1.43
145	EXISTING	0.016	0.045	100.0	1.0	3.0	3802.0	309.0	0.2	1.66
	FUTURE	0.003	0.030	50.0	4.0	5.0	3802.0	350.0	0.2	1.60
146	EXISTING	0.020	0.045	4.0	10.0	3.0	507.0	102.0	1.9	1.27
	FUTURE	0.003	0.035	8.0	4.0	5.0	507.0	140.0	0.6	1.42
147	EXISTING	0.018	0.045	8.0	10.0	3.0	6040.0	114.0	1.1	1.36
	FUTURE	0.003	0.035	8.0	4.0	5.0	6040.0	140.0	0.6	1.42
150	EXISTING	0.018	0.045	8.0	10.0	3.0	6574.0	114.0	1.1	1.36
	FUTURE	0.003	0.035	25.0	4.0	5.0	6574.0	225.0	0.3	1.55
152	EXISTING	0.016	0.045	8.0	10.0	2.0	2682.0	56.0	1.0	1.37
	FUTURE	0.003	0.035	25.0	4.0	5.0	2682.0	225.0	0.3	1.55
153	EXISTING	0.007	0.045	8.0	10.0	2.0	3379.0	56.0	0.7	1.37
	FUTURE	0.003	0.035	15.0	4.0	5.0	3379.0	175.0	0.4	1.50
162	EXISTING	0.020	0.045	4.0	10.0	1.0	2445.0	14.0	1.9	1.21
	FUTURE	0.020	0.045	4.0	10.0	1.0	2445.0	14.0	1.9	1.21
173	EXISTING	0.023	0.045	4.0	10.0	2.0	1864.0	48.0	2.0	1.25
	FUTURE	0.003	0.035	35.0	4.0	5.0	1864.0	275.0	0.2	1.57
194	EXISTING	0.019	0.045	4.0	10.0	2.0	5914.0	48.0	1.8	1.25
	FUTURE	0.003	0.035	8.0	4.0	5.0	5914.0	140.0	0.6	1.42
195	EXISTING	0.022	0.040	8.0	1.0	4.0	2788.0	48.0	1.4	1.51
	FUTURE	0.003	0.035	30.0	4.0	4.0	2788.0	184.0	0.2	1.57

198	EXISTING	0.017	0.035	10.0	0.5	3.0	5227.0	34.5	1.2	1.57
	FUTURE	0.003	0.035	10.0	4.0	5.0	5227.0	150.0	0.5	1.45
199	EXISTING	0.016	0.040	50.0	0.5	5.0	216.0	262.5	0.3	1.64
	FUTURE	0.003	0.035	60.0	4.0	5.0	216.0	400.0	0.2	1.61

---



**SOILS MAP**  
**EAST FORK SAND CREEK**  
**DRAINAGE BASIN PLANNING STUDY**

**LEGEND**

- A SOIL TYPE
- 54 SUB-BASIN No.
- - - SUB-BASIN BOUNDARY
- EAST FORK SAND CREEK BASIN BOUNDARY
- ARIES PROPERTY BOUNDARY

Kiowa Engineering Corporation

JAN, 1989



KTOMA ENGINEERING CORPORATION

TR-20 SOIL CURVE CALCULATION SPREADSHEET

DATE: 12-Jan-89  
TIME: 01:30 PM

NOTE: SOIL GROUP A = 1 SOIL GROUP C = 3  
SOIL GROUP B = 2 SOIL GROUP D = 4

PROJECT: EAST FORK SAND CREEK TRIBUTARY

←----- S-O-I-L G-R-O-U-P I-N-F-O-R-M-A-T-I-O-N ----->										** ANTECEDENT MOISTURE CONDITION = 2 **				** ANC = 3 **					
										EXISTING CONDITIONS				FUTURE CONDITIONS		EXISTING		FUTURE	
** FIRST GROUP **		** SECOND GROUP **		** THIRD GROUP **															
BASIN ID	GROUP	PERCENT OF	GROUP	PERCENT OF	GROUP	PERCENT OF	% IMP.	% IMP.	1ST GROUP	2ND GROUP	3RD GROUP	WEIGHTED	1ST GROUP	2ND GROUP	3RD GROUP	WEIGHTED	COMPUTED	COMPUTED	
NUMBER	NUMBER	GROUP	NUMBER	GROUP	NUMBER	GROUP	EXISTING	FUTURE	CURVE #	CURVE #	CURVE #	CURVE #	CURVE #	CURVE #	CURVE #	CURVE #	CURVE #	CURVE #	
1	1	27	2	73			10	50	12.1	47.2	0.0	59	21.4	57.7	0.0	79	77	90	
2	1	58	2	42			10	72	26.0	27.2	0.0	53	50.5	36.5	0.0	87	72	95	
3	2	20	1	80			20	64	13.7	48.5	0.0	54	16.8	67.3	0.0	84	73	93	
4	2	28	1	72			2	39	17.3	28.8	0.0	46	21.0	54.1	0.0	75	66	88	
5	1	100					2	25	40.0	0.0	0.0	40	70.1	0.0	0.0	70	60	85	
6	2	42	1	58			6	77	26.6	24.6	0.0	51	37.3	51.5	0.0	89	71	96	
7	2	23	1	77			2	60	14.2	38.8	0.0	45	19.0	63.7	0.0	83	65	93	
8	1	100					38	38	61.3	0.0	0.0	61	74.8	0.0	0.0	75	79	88	
9	2	55	1	45			38	38	41.1	27.6	0.0	69	41.1	33.6	0.0	75	84	88	
10	2	22	1	78			38	38	16.4	47.8	0.0	64	16.4	58.3	0.0	75	81	88	
11	2	70	1	30			29	47	50.1	16.8	0.0	67	54.6	23.4	0.0	78	83	90	
12	1	100					2	72	40.0	0.0	0.0	40	87.0	0.0	0.0	87	60	95	
13	2	9	1	91			2	73	5.6	36.4	0.0	42	7.9	79.5	0.0	87	62	95	
14	2	40	1	60			2	55	24.7	24.0	0.0	49	32.4	48.5	0.0	81	69	92	
15	2	16	1	84			2	75	9.9	33.6	0.0	44	14.1	74.0	0.0	88	64	95	
16	2	5	1	95			2	65	3.1	38.0	0.0	41	4.2	80.3	0.0	84	61	93	
17	2	27	1	73			2	72	16.7	29.2	0.0	46	23.5	63.5	0.0	87	66	95	
18	1	24	2	76			2	80	9.6	47.0	0.0	57	21.6	68.3	0.0	90	76	96	
19	2	39	1	61			2	78	24.1	24.4	0.0	49	34.8	54.4	0.0	89	69	96	
20	1	45	2	55			2	66	18.0	34.0	0.0	52	38.2	46.7	0.0	85	72	94	
21	2	100					2	75	61.8	0.0	0.0	62	88.1	0.0	0.0	88	80	95	
22	2	100					2	83	61.8	0.0	0.0	62	91.0	0.0	0.0	91	80	96	
23	1	16	2	84			2	85	6.4	51.9	0.0	58	14.7	77.0	0.0	92	76	97	
24	1	27	2	73			2	80	10.8	45.1	0.0	56	24.3	65.6	0.0	90	75	96	
25	2	26	1	74			2	55	16.1	29.6	0.0	46	21.0	59.9	0.0	81	66	92	
26	2	47	1	53			2	55	29.0	21.2	0.0	50	38.0	42.9	0.0	81	70	92	
27	1	100					2	70	40.0	0.0	0.0	40	86.3	0.0	0.0	86	68	94	
28	2	7	1	93			2	80	4.3	37.2	0.0	42	6.3	83.6	0.0	90	62	96	
29	2	100					2	80	61.8	0.0	0.0	62	89.9	0.0	0.0	90	80	96	
30	2	100					2	60	61.8	0.0	0.0	62	82.8	0.0	0.0	83	80	93	
31	1	4	2	96			2	70	1.6	59.4	0.0	61	3.3	82.8	0.0	86	79	94	
32	1	45	2	55			2	59	18.0	34.0	0.0	52	37.1	45.3	0.0	82	72	92	
33	1	14	2	86			2	60	5.6	53.1	0.0	59	11.6	70.9	0.0	82	77	92	
34	2	100					2	59	61.8	0.0	0.0	62	82.3	0.0	0.0	82	80	92	
35	2	100					2	75	61.8	0.0	0.0	62	88.1	0.0	0.0	88	80	95	
36	2	100					2	46	61.8	0.0	0.0	62	77.6	0.0	0.0	78	80	90	
37	2	100					37	75	74.4	0.0	0.0	74	88.1	0.0	0.0	88	87	95	
38	2	100					2	19	61.8	0.0	0.0	62	67.9	0.0	0.0	68	80	84	
39	1	7	2	93			2	32	2.8	57.5	0.0	60	5.1	67.5	0.0	73	78	87	
40	2	29	1	71			2	30	17.9	28.5	0.0	46	20.7	51.0	0.0	72	66	86	
41	1	22	2	78			2	51	8.8	48.3	0.0	57	17.4	62.2	0.0	80	76	91	
42	1	35	2	65			2	65	14.0	40.1	0.0	54	29.6	54.8	0.0	84	73	93	
43	1	22	2	79			2	70	8.6	48.5	0.0	57	18.6	67.9	0.0	86	76	94	
44	2	5	1	95			2	70	3.1	38.0	0.0	41	4.3	82.0	0.0	86	61	94	

45	2	5	1	95
46	2	11	1	89
47	2	5	1	95
48	2	31	1	69
49	2	75	1	25
50	2	39	1	61
51	2	12	1	89
52	2	25	1	76
53	2	31	1	69
54	1	100		
55	1	100		
56	1	100		
57	1	100		
58	2	7	1	93
59	2	62	1	38
60	1	4	2	96
61	1	10	2	90
62	2	23	1	78
63	1	100		
64	1	100		
65	1	100		
66	1	100		
67	1	100		
68	1	100		
69	1	100		
70	1	100		
71	1	100		
72	1	100		
73	1	100		
74	1	100		
75	1	100		
76	1	100		
77	1	100		
78	1	100		
79	1	100		
80	1	100		
81	1	100		
82	1	100		
83	1	100		
84	1	100		
85	1	100		
86	1	100		
87	1	100		
88	1	100		
89	1	100		
90	1	100		
91	1	100		
92	2	19	1	81
93	2	21	1	79
94	2	31	1	69
95	1	100		
96	1	100		
97	1	21	2	79
98	2	100		
99	1	10	2	90

2	65	3.0	38.1	0.0	41	4.1	80.4	0.0	84	61	93
2	52	7.0	35.5	0.0	42	9.0	71.0	0.0	80	62	91
2	56	2.8	38.2	0.0	41	3.7	77.7	0.0	81	61	92
2	75	19.3	27.5	0.0	47	27.5	60.6	0.0	88	67	95
2	75	46.3	10.1	0.0	56	66.0	22.1	0.0	88	75	95
2	37	24.2	24.4	0.0	49	29.2	45.3	0.0	74	69	87
2	28	7.1	35.4	0.0	43	8.2	63.0	0.0	71	63	86
2	47	15.1	30.2	0.0	45	19.1	59.0	0.0	78	65	90
2	46	18.9	27.8	0.0	47	23.7	53.8	0.0	78	67	90
2	41	40.0	0.0	0.0	40	75.7	0.0	0.0	76	60	89
2	68	40.0	0.0	0.0	40	85.4	0.0	0.0	85	60	94
2	65	40.0	0.0	0.0	40	84.6	0.0	0.0	85	60	94
2	58	40.0	0.0	0.0	40	79.1	0.0	0.0	79	60	90
2	50	4.1	37.3	0.0	41	5.3	73.8	0.0	79	61	90
5	5	38.8	16.0	0.0	55	38.8	24.1	0.0	63	74	80
5	5	1.8	60.2	0.0	62	2.7	60.2	0.0	63	80	80
5	5	4.3	56.3	0.0	61	6.5	56.3	0.0	63	79	80
5	5	14.1	32.4	0.0	47	14.1	48.7	0.0	63	67	80
2	75	40.0	0.0	0.0	40	88.1	0.0	0.0	88	60	95
2	60	40.0	0.0	0.0	40	82.7	0.0	0.0	83	60	93
2	46	40.0	0.0	0.0	40	77.7	0.0	0.0	78	60	90
2	37	40.0	0.0	0.0	40	74.2	0.0	0.0	74	60	87
2	50	40.0	0.0	0.0	40	79.1	0.0	0.0	79	60	90
2	59	40.0	0.0	0.0	40	82.2	0.0	0.0	82	60	92
2	48	40.0	0.0	0.0	40	78.4	0.0	0.0	78	60	90
2	70	40.0	0.0	0.0	40	86.3	0.0	0.0	86	60	94
2	74	40.0	0.0	0.0	40	87.8	0.0	0.0	88	60	95
2	65	40.0	0.0	0.0	40	84.6	0.0	0.0	85	60	94
2	55	40.0	0.0	0.0	40	80.9	0.0	0.0	81	60	92
2	73	40.0	0.0	0.0	40	87.4	0.0	0.0	87	60	95
2	50	40.0	0.0	0.0	40	79.1	0.0	0.0	79	60	90
2	55	40.0	0.0	0.0	40	80.9	0.0	0.0	81	60	92
2	60	40.0	0.0	0.0	40	82.7	0.0	0.0	83	60	93
2	62	40.0	0.0	0.0	40	83.4	0.0	0.0	83	60	93
2	75	40.0	0.0	0.0	40	88.1	0.0	0.0	88	60	95
5	5	41.8	0.0	0.0	42	62.9	0.0	0.0	63	62	80
5	5	41.8	0.0	0.0	42	62.9	0.0	0.0	63	62	80
5	5	41.8	0.0	0.0	42	62.9	0.0	0.0	63	62	80
4	25	41.2	0.0	0.0	41	70.1	0.0	0.0	70	61	85
2	75	40.0	0.0	0.0	40	88.1	0.0	0.0	88	60	95
2	75	40.0	0.0	0.0	40	88.1	0.0	0.0	88	60	95
4	36	41.2	0.0	0.0	41	74.0	0.0	0.0	74	61	87
5	5	41.8	0.0	0.0	42	62.9	0.0	0.0	63	62	80
5	5	41.8	0.0	0.0	42	62.9	0.0	0.0	63	62	80
5	10	41.8	0.0	0.0	42	64.7	0.0	0.0	65	62	82
2	75	40.0	0.0	0.0	40	88.1	0.0	0.0	88	60	95
2	75	40.0	0.0	0.0	40	88.1	0.0	0.0	88	60	95
2	75	11.7	32.4	0.0	44	16.7	71.3	0.0	88	64	95
2	75	13.0	31.6	0.0	45	18.5	69.6	0.0	88	65	95
2	75	19.2	27.6	0.0	47	27.3	60.8	0.0	88	67	95
2	75	40.0	0.0	0.0	40	88.1	0.0	0.0	88	60	95
2	75	40.0	0.0	0.0	40	88.1	0.0	0.0	88	60	95
5	5	8.8	49.7	0.0	58	13.2	49.7	0.0	63	76	80
5	5	62.9	0.0	0.0	63	62.9	0.0	0.0	63	80	80
3	47	4.1	55.9	0.0	60	7.8	70.2	0.0	78	78	90

Table 1. Land Use (Percent of Imperviousness).

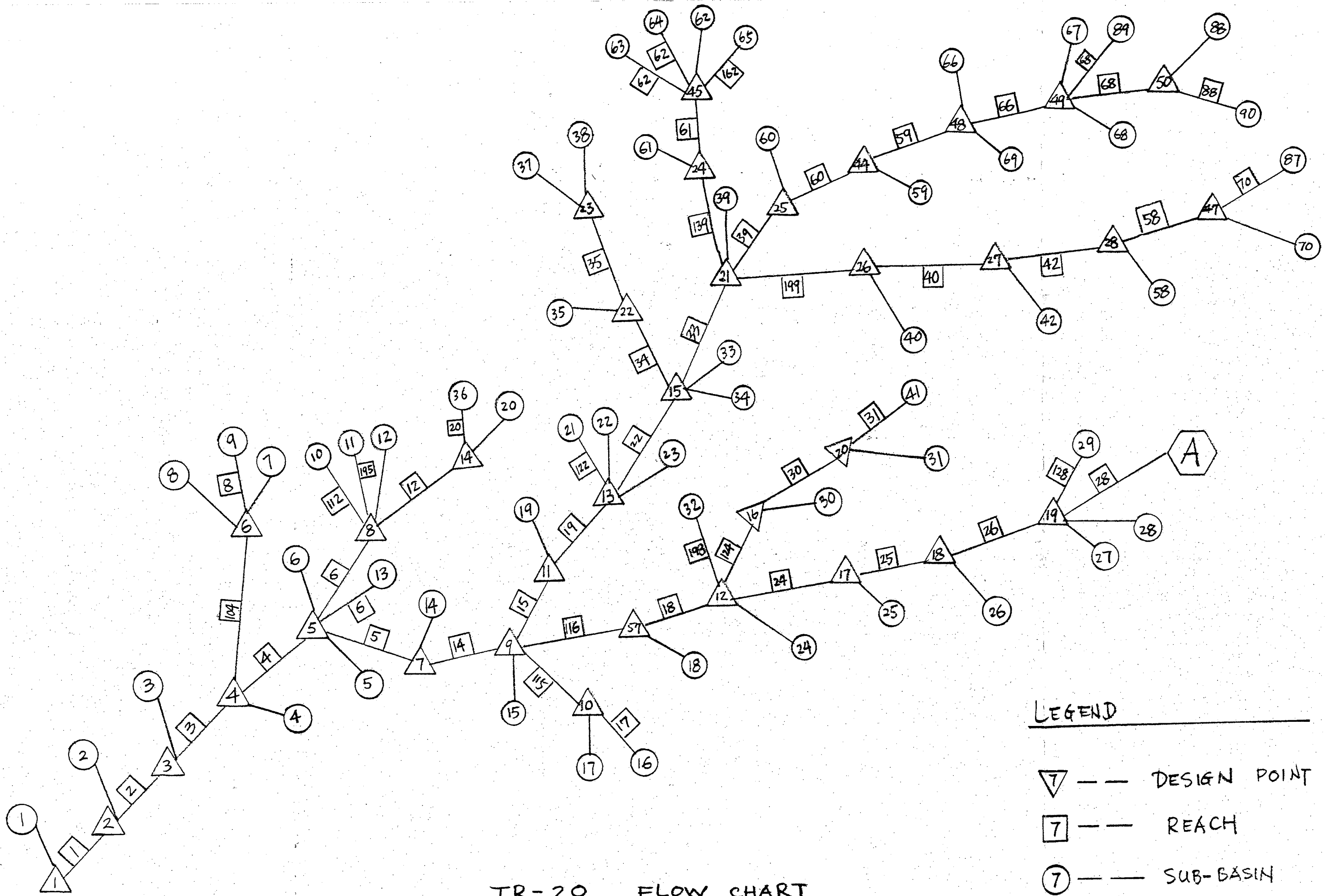
Type	Percent Imperviousness	Description	Remark
RVL	20	Residential very low	Density: < 2
RL	38	Residential low	Density: 2-6
RM	65	Residential medium	Density: 6-10
RMH	70	Residential medium high	Density: 10-14 (05 = 25%)
RH	70	Residential high	Density: 14-24 (05 = 25%)
RVH	70	Residential very high	Density: 24-50
ACL	75	Activity Center low	FAR = 0.3
ACM	80	Activity Center medium	FAR = 0.43
ACH	85	Activity Center high	FAR = 0.85
OL	80	Office low	FAR = 0.24 (10%-landscape)
OM	85	Office high	FAR = 0.34 (10%-landscape)
R&D	80	Research and Development	FAR = 0.2
INST	72	Institutional	FAR = 0.16
R	95	Retail	FAR = 0.2
NR	90	Neighborhood retail	FAR = 0.2
IDP	72	Industrial Park	FAR = 0.34
AI	90	Airport Industrial	FAR = 0.34
ID	85	Industrial	FAR = 0.38
ES	50	Elementary School	from Denver - DCM
MS	50	Middle School	from Denver - DCM
HS	50	High School	from Denver - DCM

Table 1. Land Use (Percent of Imperviousness) (continued).

Type	Percent Imperviousness	Description	Remark
OS	2	Open Space	
P	7	Park	Denver - DCM
PF-PF	90	Public Facilities Police and Fire	
PF-P/F	90	Public Facilities Police/Fire	
PF-PW	85	Public Facilities Public Works	
PF-W	20	Public Facilities Water Storage	
PF-ESS	30	Public Facilities Electrical Sub-Stations	
PF-T	10	Public Facilities Trash	
PF-P&R	90	Public Facilities Park & Ride	
MIX	75	Mixed Land Use	
AA	2	Agriculture (5 Acres)	
AB	5	Agriculture (5 Acres)	
RA	20	Residential A	
RB	38	Residential B	
RD	65	Residential D	
MFA	70	Multi-Family A	
MFB	70	Multi-Family B	
MFD	70	Multi-Family D	
OCA	80	Office-Commercial A	
OCB	85	Office-Commercial B	

Table 1. Land Use (Percent of Imperviousness) (continued).

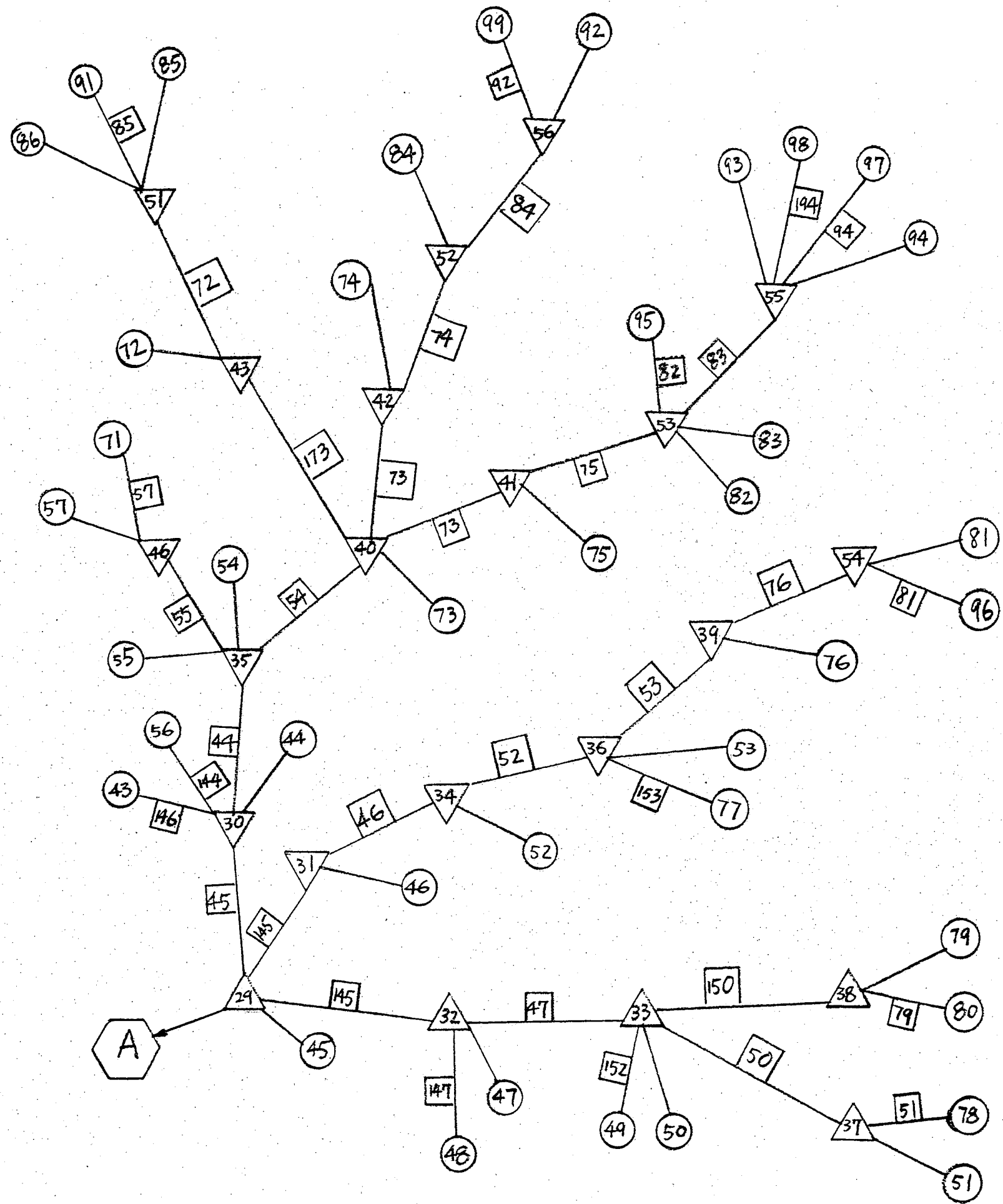
Type	Percent Imperviousness	Description	Remark
OCD	90	Office-Commercial D	
IA	72	Industrial A	
IB	85	Industrial B	
ID	90	Industrial D	
ECA	75	East Corridor A	
PDM	10	Partially Developed Mix	
AP	10	Airport	



TR-20 FLOW CHART

LEGEND

- ▽ — — DESIGN POINT
- — — REACH
- — — SUB-BASIN



TR-20 FLOW CHART (CONT.)

KIOWA ENGINEERING CORPORATION

EAST FORK SAND CREEK TRIBUTARY

DATE: 12-Jan-89

TIME: 11:37 PM

TABLE X  
SUMMARY OF PEAK DISCHARGES (CFS)

DESIGN POINT	DRAINAGE AREA (SQ)	** EXISTING CONDITION **				** FUTURE CONDITION **			
		24 HOUR STORM		2 HOUR STORM		24 HOUR STORM		2 HOUR STORM	
		100 YR.	10 YR.	100 YR.	10 YR.	100 YR.	10 YR.	100 YR.	10 YR.
1	24.32			4770	1047	16452	5851	20470	7607
2	23.84			4696	1049	16582	5895	20581	7679
3	23.48			4639	1048	16413	5871	20328	7622
4	23.32			4632	1049	16389	5869	20289	7626
5	22.02			4462	1039	16181	5814	19852	7513
6	0.71			657	160	1122	502	1115	483
7	20.28			4064	939	15509	5629	18820	7184
8	1.14			543	155	1581	641	1551	656
9	19.93			4014	933	15443	5640	18651	7138
10	0.51			83	18	880	431	839	401
11	5.92			2026	557	4155	1700	5083	1982
12	12.85			2135	389	10892	4390	12749	5027
13	5.63			1986	543	4088	1683	4956	1901
14	0.69			295	105	985	486	908	470
15	5.20			1791	478	3871	1536	4684	1753
16	0.50			437	125	861	421	837	394
17	11.92			1946	379	10188	4222	11844	4745
18	11.66			1921	379	10133	4202	11728	4688
19	11.19			1836	375	9912	4164	11346	4566
20	0.40			304	100	805	420	747	402
21	3.89			1151	257	2848	1003	3599	1349
22	0.58			429	151	959	578	993	494
23	0.32			284	108	622	325	610	306
24	0.93			410	96	903	305	1053	395
25	1.45			315	66	1093	386	1348	500
26	1.03			193	41	1023	440	1082	449
27	0.89			162	33	937	422	958	406
28	0.69			91	16	813	385	798	358



TABLE X (Continued)  
SUMMARY OF PEAK DISCHARGES (CFS)

DESIGN POINT	DRAINAGE AREA (SQ)	** EXISTING CONDITION **		** FUTURE CONDITION **				
		24 HOUR STORM 100 YR.	2 HOUR STORM 10 YR.	24 HOUR STORM 100 YR.	2 HOUR STORM 10 YR.	24 HOUR STORM 100 YR.	2 HOUR STORM 10 YR.	
29	10.55		1745	371	9632	4072	10905	4372
30	5.93		1023	242	5605	2401	6319	2536
31	1.76		307	54	1494	599	1653	647
32	2.36		515	110	2740	1258	2909	1266
33	1.47		391	81	1915	927	1943	881
34	1.50		267	50	1295	538	1405	559
35	5.39		965	246	5416	2357	6008	2388
36	1.31		224	42	1146	480	1232	485
37	0.48		61	10	568	282	638	292
38	0.35		75	12	714	405	682	378
39	0.75		133	24	611	251	650	264
40	4.60		861	234	4819	2155	5274	2136
41	1.84		449	114	1789	804	2041	845
42	1.25		291	93	1240	702	1396	606
43	1.23		145	23	1511	646	1491	615
44	1.37		279	57	1076	382	1294	484
45	0.58		137	25	723	281	767	319
46	0.31		46	7	499	241	525	248
47	0.41		56	10	545	291	543	273
48	1.05		176	32	937	377	1066	427
49	0.71		142	25	638	276	696	283
50	0.32		79	13	260	83	314	104
51	0.94		120	18	1237	527	1215	520
52	1.06		279	96	1206	728	1297	611
53	1.68		432	110	1801	855	1970	853
54	0.51		110	18	430	136	502	184
55	0.95		387	97	1547	866	1550	798
56	0.79		262	92	979	527	979	481

TABLE X (Continued)

BASIN NUMBER	DRAINAGE AREA (SQ)	** EXISTING CONDITION **				** FUTURE CONDITION **			
		24 HOUR STORM		2 HOUR STORM		24 HOUR STORM		2 HOUR STORM	
		100 YR.	10 YR.	100 YR.	10 YR.	100 YR.	10 YR.	100 YR.	10 YR.
1	0.48			335	94	462	213	517	230
2	0.36			198	45	428	230	429	217
3	0.16			180	62	377	204	375	208
4	0.59			242	44	967	432	1026	445
5	0.18			54	8	284	115	320	136
6	0.29			199	35	732	420	674	370
7	0.38			191	29	681	349	675	329
8	0.19			268	112	365	167	391	184
9	0.14			241	100	273	125	289	136
10	0.13			185	69	250	114	267	126
11	0.10			150	61	202	98	214	107
12	0.22			66	9	607	343	605	345
13	0.13			41	7	347	195	345	196
14	0.35			160	33	557	273	554	264
15	0.25			96	17	701	402	692	398
16	0.38			74	14	835	441	809	414
17	0.13			59	10	367	208	363	207
18	0.40			225	61	963	557	856	472
19	0.29			126	27	762	439	706	398
20	0.30			197	37	762	416	778	433
21	0.10			85	26	278	159	274	157
22	0.13			194	84	437	268	441	275
23	0.20			110	32	540	324	476	270
24	0.28			284	73	800	471	762	446
25	0.26			110	20	594	304	618	324
26	0.47			178	44	789	389	792	375
27	0.14			35	5	343	189	331	183
28	0.33			92	16	883	517	805	461
29	0.17			124	38	459	273	424	247
30	0.10			130	61	273	148	279	161
31	0.24			298	100	659	368	660	372
32	0.15			62	16	292	148	288	143
33	0.50			227	75	775	385	771	371
34	0.23			184	57	371	185	370	179
35	0.26			174	55	687	391	656	382
36	0.39			248	80	613	284	630	288
37	0.20			208	85	505	286	471	263
38	0.12			79	25	124	44	151	56
39	0.48			398	116	689	290	751	314
40	0.14			36	9	142	56	164	65
41	0.16			92	25	317	157	318	157
42	0.20			135	29	478	256	475	264
43	0.16			115	29	250	133	242	122
44	0.29			80	13	728	401	712	407
45	0.50			132	21	1098	580	1082	555
46	0.26			62	12	363	173	375	172
47	0.62			119	22	961	470	969	461

48 0.27  
49 0.28  
50 0.36

65 17  
176 44  
158 33

461 254 429 223  
622 347 577 307  
510 218 551 236

TABLE X (Continued)

BASIN NUMBER	DRAINAGE AREA (SQ)	** EXISTING CONDITION **		** FUTURE CONDITION **				
		24 HOUR STORM 100 YR.	2 HOUR STORM 10 YR.	24 HOUR STORM 100 YR.	10 YR.	2 HOUR STORM 100 YR.	10 YR.	
51	0.11		52	7	211	91	218	109
52	0.19		66	13	338	160	347	160
53	0.33		128	26	533	248	548	250
54	0.31		41	7	353	155	387	165
55	0.17		28	5	352	187	342	178
56	0.09		21	3	246	136	246	143
57	0.18		27	5	344	167	347	163
58	0.28		65	11	491	235	498	235
59	0.32		208	49	226	64	307	100
60	0.08		102	36	84	26	107	39
61	0.35		306	93	247	70	336	109
62	0.25		136	22	262	81	334	121
63	0.06		12	2	77	42	75	38
64	0.20		41	7	451	241	453	245
65	0.07		15	2	142	68	150	75
66	0.11		29	4	199	89	217	100
67	0.19		34	6	329	157	334	157
68	0.10		26	4	240	125	247	131
69	0.23		32	6	293	133	310	137
70	0.26		46	8	539	291	517	268
71	0.13		25	4	336	191	314	178
72	0.29		52	9	613	327	588	307
73	0.28		37	7	375	182	389	182
74	0.19		49	8	524	296	523	298
75	0.16		32	5	285	137	287	136
76	0.24		58	9	493	249	491	247
77	0.23		29	5	319	160	323	156
78	0.37		50	9	557	279	557	269
79	0.28		67	10	714	405	670	373
80	0.07		19	3	75	23	95	34
81	0.38		105	18	312	87	408	132
82	0.25		72	12	209	60	273	89
83	0.34		49	10	272	101	343	130
84	0.27		68	10	707	409	673	388
85	0.19		46	7	484	275	455	253
86	0.33		49	9	332	138	381	156
87	0.15		25	5	91	25	131	42
88	0.26		76	13	221	64	288	95
89	0.10		27	5	116	39	144	56
90	0.06		12	2	158	90	151	88
91	0.42		66	12	898	502	835	437
92	0.34		122	22	874	504	832	471
93	0.26		62	14	559	312	516	275
94	0.40		185	33	1000	566	939	509
95	0.14		20	4	267	147	246	129
96	0.13		23	4	315	177	293	159
97	0.13		99	27	136	42	174	63

98 0.16  
99 0.45

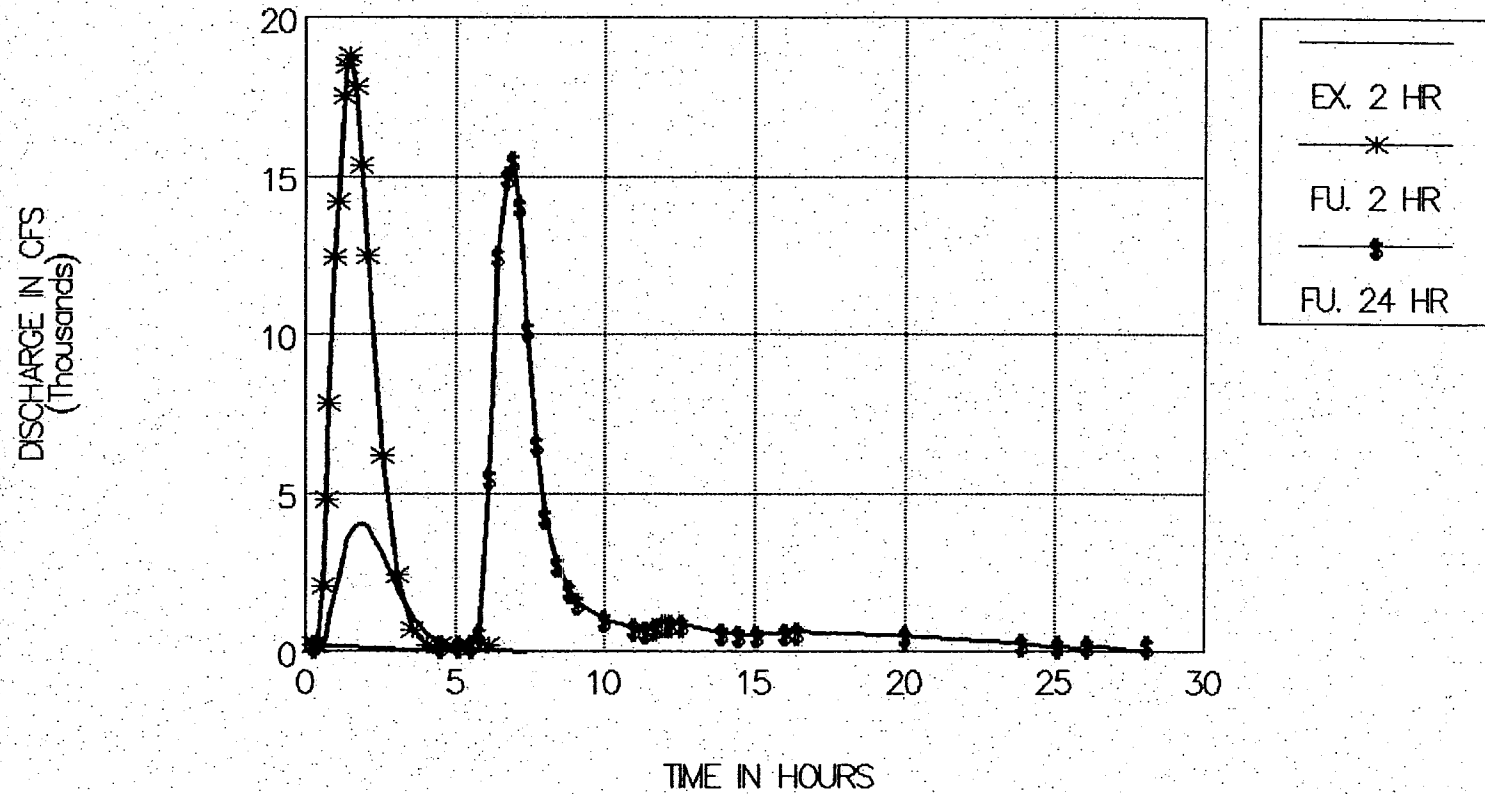
159 51  
239 77

160 49  
661 306

203 71  
689 307

# 100 YEAR RUNOFF HYDROGRAPH

## DESIGN POINT 7





JOB TR-20

NOPLOTS

TITLE 001 EXISTING CONDITION - E. FORK SAND CREEK TRIB. - ARIES PROPERTIES

TITLE 2 HR STORM

5	RAINFL	1								.167										
8										0.000	0.030	0.150	.4800	0.680						
8										0.750	0.840	0.890	0.920	0.940						
8										0.960	0.980	1.000	1.000	1.000						
9	ENDTBL																			
5	RAINFL	2																		
8										0.000	0.050	0.240	.5700	0.660						
8										0.720	0.770	0.830	0.860	0.910						
8										0.940	0.970	1.000	1.000	1.000						
9	ENDTBL																			
6	RUNOFF	1	80								0.07	42.0	0.41	1						
6	REACH	3	79	1	2					5597.0	1.7	1.25								
6	RUNOFF	1	79		1					0.28	40.0	0.35		1						
6	ADDHYD	4		38	1	2	3							1						
6	REACH	3	150		3	1				6574.0	1.1	1.4								
6	RUNOFF	1	78		2					0.37	40.0	1.47		1						
6	REACH	3	51		2	3				1531.0	1.0	1.4								
6	RUNOFF	1	51		4					0.11	43.0	0.09		1						
6	ADDHYD	4		37	3	4	2							1						
6	REACH	3	50		2	3				3000.0	1.1	1.4								
6	RUNOFF	1	50		2					0.36	49.0	0.49		1						
6	RUNOFF	1	49		4					0.28	56.0	0.53		1						
6	REACH	3	152		4	5				2682.0	1.0	1.4								
6	ADDHYD	4		33	2	5	6													
6	ADDHYD	4		33	6	1	5													
6	ADDHYD	4		33	5	3	1													1
6	REACH	3	47		1	2				4678.0	0.2	1.7								
6	RUNOFF	1	48		1					0.27	47.0	1.39		1						
6	REACH	3	147		1	3				6040.0	1.1	1.4								
6	RUNOFF	1	47		1					0.62	41.0	0.91		1						
6	ADDHYD	4		32	1	3	4													
6	ADDHYD	4		32	4	2	1													1
6	REACH	3	145		1	2				3802.0	0.2	1.7								
6	RUNOFF	1	45		1					0.500	41.0	0.34		1						
6	ADDHYD	4		29	1	2	3													1
6	RUNOFF	1	81		1					0.38	42.0	0.39		1						
6	RUNOFF	1	96		2					0.13	40.0	0.88		1						
6	REACH	3	81		2	4				6389.0	1.4	1.3								
6	ADDHYD	4		54	4	1	2													1
6	REACH	3	76		2	1				5702.0	1.9	1.3								
6	RUNOFF	1	76		2					0.24	40.0	0.34		1						
6	ADDHYD	4		39	1	2	4													1
6	REACH	3	53		4	1				3453.0	1.1	1.4								
6	RUNOFF	1	53		2					0.33	47.0	0.45		1						
6	RUNOFF	1	77		4					0.23	40.0	1.68		1						
6	REACH	3	153		4	5				3379.0	.7	1.4								
6	ADDHYD	4		36	1	2	4													
6	ADDHYD	4		36	4	5	1													1
6	REACH	3	52		1	2				1584.0	0.3	1.6								
6	RUNOFF	1	52		1					0.19	45.0	0.37		1						
6	ADDHYD	4		34	2	1	4													1
6	REACH	3	46		4	1				3770.0	0.3	1.6								
6	RUNOFF	1	46		2					0.26	42.0	0.66		1						
6	ADDHYD	4		31	1	2	4													1
6	REACH	3	145		4	1				3802.0	0.2	1.7								
6	ADDHYD	4		29	1	3	2													1
6	RUNOFF	1	93		1					0.26	45.0	1.12		1						



6	RUNOFF	1	94		3	0.40	47.0	0.30	1
6	RUNOFF	1	98		4	0.16	63.0	0.43	1
6	REACH	3	194	4	5	5914.0	1.8	1.3	
6	RUNOFF	1	97		4	0.13	58.0	0.43	1
6	REACH	3	94	4	6	5914.0	1.7	1.3	
6	ADDHYD	4	55	1	3	7			
6	ADDHYD	4	55	7	5	1			
6	ADDHYD	4	55	1	6	3			1
6	REACH	3	83	3	1	6124.0	1.9	1.3	
6	RUNOFF	1	83		3	0.34	41.0	1.52	1
6	RUNOFF	1	95		4	0.14	40.0	1.38	1
6	REACH	3	82	4	5	5808.0	1.4	1.3	
6	RUNOFF	1	82		4	0.25	42.0	0.31	1
6	ADDHYD	4	53	1	3	6			
6	ADDHYD	4	53	6	5	1			
6	ADDHYD	4	53	1	4	3			1
6	REACH	3	75	3	1	4013.0	1.9	1.3	
6	RUNOFF	1	75		3	0.16	40.0	0.69	1
6	ADDHYD	4	41	1	3	4			1
6	REACH	3	73	4	1	1610.0	0.8	1.5	
6	RUNOFF	1	73		3	0.28	40.0	1.57	1
6	ADDHYD	4	40	1	3	4			1
6	RUNOFF	1	99		1	0.45	60.0	1.14	1
6	REACH	3	92	1	3	5650.0	2.1	1.3	
6	RUNOFF	1	92		5	0.34	44.0	0.28	1
6	ADDHYD	4	56	3	5	1			1
6	REACH	3	84	1	3	5491.0	2.0	1.3	
6	RUNOFF	1	84		5	0.27	40.0	0.29	1
6	ADDHYD	4	52	3	5	1			1
6	REACH	3	74	1	3	4066.0	1.9	1.3	
6	RUNOFF	1	74		1	0.19	40.0	0.21	1
6	ADDHYD	4	42	1	3	5			1
6	REACH	3	73	5	1	1610.0	0.8	1.5	
6	ADDHYD	4	40	1	4	3			
6	RUNOFF	1	91		1	0.42	40.0	1.14	1
6	REACH	3	85	1	4	6178.0	1.4	1.3	
6	RUNOFF	1	86		1	0.33	41.0	1.48	1
6	RUNOFF	1	85		5	0.19	40.0	0.36	1
6	ADDHYD	4	51	1	5	6			
6	ADDHYD	4	51	6	4	1			1
6	REACH	3	72	1	4	5058.0	1.7	1.3	
6	RUNOFF	1	72		1	0.29	40.0	0.88	1
6	ADDHYD	4	43	1	4	5			1
6	REACH	3	173	5	1	1864.0	2.0	1.3	
6	ADDHYD	4	40	1	3	4			1
6	RUNOFF	1	71		1	0.13	40.0	0.75	1
6	REACH	3	57	1	3	4102.0	.7	1.4	
6	RUNOFF	1	57		1	0.18	40.0	1.25	1
6	ADDHYD	4	46	1	3	5			1
6	REACH	3	55	5	1	3000.0	2.9	1.4	
6	RUNOFF	1	55		3	0.17	40.0	1.00	1
6	RUNOFF	1	54		5	0.31	40.0	1.54	1
6	REACH	3	54	4	6	4974.0	0.5	1.6	
6	ADDHYD	4	35	6	1	4			
6	ADDHYD	4	35	4	3	1			
6	ADDHYD	4	35	1	5	3			1
6	REACH	3	44	3	1	5016.0	0.5	1.6	
6	RUNOFF	1	56		3	0.09	40.0	0.39	1
6	REACH	3	144	3	4	4419.0	.9	1.6	
6	RUNOFF	1	43		5	0.16	57.0	0.45	1

6 REACH	3	146	5	3	507.0	1.9	1.3		
6 RUNOFF	1	44		5	0.29	41.0	0.24		1
6 ADDHYD	4	30	3	4	6				
6 ADDHYD	4	30	6	1	3				
6 ADDHYD	4	30	3	5	1				1
6 REACH	3	45	1	3	2893.0	0.1	1.7		
6 ADDHYD	4	29	2	3	1		1 1 1		1
6 REACH	3	28	1	2	3168.0	0.1	1.7		
6 RUNOFF	1	29		3	0.17	62.0	0.73		1
6 REACH	3	128	3	1	3131.0	0.5	1.5		
6 RUNOFF	1	27		3	0.14	40.0	0.28		1
6 RUNOFF	1	28		4	0.33	42.0	0.37		1
6 ADDHYD	4	19	2	1	5				
6 ADDHYD	4	19	5	3	1				
6 ADDHYD	4	19	1	4	2				1
6 REACH	3	26	2	1	3221.0	0.2	1.7		
6 RUNOFF	1	26		2	0.47	50.0	0.90		1
6 ADDHYD	4	18	1	2	3				1
6 REACH	3	25	3	1	2323.0	0.2	1.7		
6 RUNOFF	1	25		2	0.26	46.0	0.29		1
6 ADDHYD	4	17	1	2	3				1
6 REACH	3	24	3	1	2524.0	0.2	1.7		
6 RUNOFF	1	24		2	0.28	56.0	0.16		1
6 ADDHYD	4	12	1	2	3				
6 RUNOFF	1	41		1	0.16	57.0	0.75		1
6 REACH	3	31	1	2	3358.0	1.1	1.5		
6 RUNOFF	1	31		1	0.24	61.0	0.18		1
6 ADDHYD	4	20	1	2	4				1
6 REACH	3	30	4	1	2323.0	1.6	1.6		
6 RUNOFF	1	30		2	0.10	62.0	0.08		1
6 ADDHYD	4	16	1	2	4				1
6 REACH	3	124	4	1	4594.0	0.7	1.6		
6 RUNOFF	1	32		2	0.15	52.0	0.91		1
6 REACH	3	198	2	4	5227.0	1.2	1.6		
6 ADDHYD	4	12	1	4	2				
6 ADDHYD	4	12	2	3	1				1
6 REACH	3	18	1	2	3696.0	0.2	1.7		
6 RUNOFF	1	18		7	0.40	57.0	0.78		1
6 ADDHYD	4	57	2	7	1				
6 RUNOFF	1	87		2	0.15	42.0	1.35		1
6 REACH	3	70	2	3	5613.0	1.2	1.3		
6 RUNOFF	1	70		2	0.26	40.0	0.88		1
6 ADDHYD	4	47	2	3	4				1
6 REACH	3	58	4	2	5016.0	1.6	1.3		
6 RUNOFF	1	58		3	0.28	41.0	0.55		1
6 ADDHYD	4	28	2	3	4				1
6 REACH	3	42	4	2	2746.0	1.2	1.4		
6 RUNOFF	1	42		3	0.20	54.0	0.37		1
6 ADDHYD	4	27	2	3	4				1
6 REACH	3	40	4	2	2218.0	1.2	1.4		
6 RUNOFF	1	40		3	0.14	46.0	1.11		1
6 ADDHYD	4	26	2	3	4				1
6 REACH	3	199	4	2	216.0	.3	1.6		
6 RUNOFF	1	90		3	0.06	40.0	0.63		1
6 REACH	3	88	3	4	5597.0	1.9	1.3		
6 RUNOFF	1	88		3	0.26	42.0	0.29		1
6 ADDHYD	4	50	3	4	5				1
6 REACH	3	68	5	3	3643.0	1.7	1.3		
6 RUNOFF	1	89		4	0.10	42.0	0.46		1
6 REACH	3	68	4	5	3643.0	1.7	1.3		

6	RUNOFF	1	67		6	0.19	40.0	0.89	1
6	RUNOFF	1	68		4	0.10	40.0	0.22	1
6	ADDHYD	4	49	3	5	7			
6	ADDHYD	4	49	7	6	3			
6	ADDHYD	4	49	3	4	5			1
6	REACH	3	66		5	3	2531.0	1.3	1.5
6	RUNOFF	1	66			4	0.11	40.0	0.19
6	RUNOFF	1	69			5	0.23	40.0	1.42
6	ADDHYD	4	48	3	4	6			
6	ADDHYD	4	48	6	5	3			1
6	REACH	3	59		3	4	5158.0	0.6	1.6
6	RUNOFF	1	59			3	0.32	55.0	0.44
6	ADDHYD	4	44	3	4	5			
6	REACH	3	60		5	3	1373.0	0.8	1.5
6	RUNOFF	1	60			4	0.08	62.0	0.19
6	ADDHYD	4	25	3	4	5			
6	REACH	3	39		5	3	4963.0	0.3	1.7
6	RUNOFF	1	39			4	0.48	60.0	0.45
6	ADDHYD	4	21	3	4	5			
6	ADDHYD	4	21	5	2	3			1
6	RUNOFF	1	63			2	0.06	40.0	.67
6	REACH	3	62		2	4	3432.0	1.5	1.3
6	RUNOFF	1	64			2	0.20	40.0	0.63
6	REACH	3	62		2	5	3432.0	1.5	1.3
6	RUNOFF	1	65			2	0.07	40.0	0.52
6	REACH	3	162		2	6	2445.0	1.9	1.2
6	RUNOFF	1	62			2	0.25	47.0	0.19
6	ADDHYD	4	45	4	5	7			
6	ADDHYD	4	45	7	6	4			
6	ADDHYD	4	45	4	2	5			1
6	REACH	3	61		5	2	3152.0	1.7	1.3
6	RUNOFF	1	61			4	0.35	61.0	0.44
6	ADDHYD	4	24	2	4	5			
6	REACH	3	139		5	2	4488.0	1.1	1.4
6	ADDHYD	4	21	2	3	4			
6	REACH	3	33		4	2	7445.0	0.1	1.7
6	RUNOFF	1	33			3	0.50	59.0	1.37
6	RUNOFF	1	34			4	0.23	62.0	0.59
6	ADDHYD	4	15	2	3	5			
6	ADDHYD	4	15	5	4	2			1
6	RUNOFF	1	37			3	0.20	74.0	0.78
6	RUNOFF	1	38			4	0.12	62.0	0.89
6	ADDHYD	4	23	3	4	5			
6	REACH	3	35		5	3	3252.0	1.7	1.2
6	RUNOFF	1	35			4	0.26	62.0	0.87
6	ADDHYD	4	22	3	4	5			
6	REACH	3	34		5	3	1816.0	1.0	1.4
6	ADDHYD	4	15	2	3	4			
6	REACH	3	22		4	2	3062.0	.6	1.6
6	RUNOFF	1	21			3	0.10	62.0	0.53
6	REACH	3	122		3	4	2503.0	1.1	1.4
6	RUNOFF	1	22			3	0.13	62.0	0.07
6	RUNOFF	1	23			5	0.20	58.0	0.91
6	ADDHYD	4	13	2	4	6			
6	ADDHYD	4	13	6	3	2			
6	ADDHYD	4	13	2	5	3			1
6	REACH	3	19		3	2	3802.0	0.1	1.7
6	RUNOFF	1	19			6	0.29	49.0	0.51
6	ADDHYD	4	11	2	6	7			
6	REACH	3	15		7	2	2571.0	0.3	1.6

6	RUNOFF	1	16			3	0.38	41.0	0.89					1
6	REACH	3	17	3		4	3274.0	1.4	1.3					
6	RUNOFF	1	17			3	0.13	46.0	0.22					1
6	ADDHYD	4		10	3	4	5							1
6	REACH	3	115		5	3	2820.0	1.2	1.4					
6	RUNOFF	1	15			4	0.25	44.0	0.21					1
6	REACH	3	116		1	5	2260.0	0.2	1.6					
6	ADDHYD	4		9	2	3	1							
6	ADDHYD	4		9	1	5	2							
6	ADDHYD	4		9	2	4	1							1
6	REACH	3	14		1	2	3448.0	0.2	1.7					
6	RUNOFF	1	14			1	0.35	49.0	0.44					1
6	ADDHYD	4		7	1	2	3			1	1	1		1
6	REACH	3	5		3	1	4910.0	0.2	1.6					
6	RUNOFF	1	5			2	0.18	40.0	0.14					1
6	RUNOFF	1	36			3	0.39	62.0	0.96					1
6	REACH	3	20		3	4	3960.0	.4	1.5					
6	RUNOFF	1	20			3	0.30	52.0	0.30					1
6	ADDHYD	4		14	3	4	5							1
6	REACH	3	12		5	3	3221.0	1.3	1.5					
6	RUNOFF	1	10			4	0.13	64.0	0.18					1
6	REACH	3	112		4	5	2250.0	0.8	1.6					
6	RUNOFF	1	11			4	0.10	67.0	0.22					1
6	REACH	3	195		4	6	2788.0	1.4	1.5					
6	RUNOFF	1	12			4	0.22	40.0	0.14					1
6	ADDHYD	4		8	5	6	7							
6	ADDHYD	4		8	7	4	5							
6	ADDHYD	4		8	5	3	4							1
6	REACH	3	6		4	3	8976.0	0.6	1.6					
6	RUNOFF	1	6			4	0.29	51.0	0.23					1
6	RUNOFF	1	13			5	0.13	42.0	0.20					1
6	REACH	3	6		5	6	8976.0	0.6	1.6					
6	ADDHYD	4		5	1	2	5							
6	ADDHYD	4		5	5	3	1							
6	ADDHYD	4		5	1	6	2							
6	ADDHYD	4		5	2	4	1							1
6	REACH	3	4		1	2	2851.0	0.2	1.6					
6	RUNOFF	1	9			1	0.14	69.0	0.17					1
6	REACH	3	8		1	3	3907.0	6.0	1.4					
6	RUNOFF	1	8			1	0.19	61.0	0.07					1
6	RUNOFF	1	7			4	0.38	45.0	0.15					1
6	ADDHYD	4		6	3	1	5							
6	ADDHYD	4		6	5	4	1							1
6	REACH	3	104		1	3	4066.0	0.8	1.5					
6	RUNOFF	1	4			1	0.59	46.0	0.32					1
6	ADDHYD	4		4	3	1	4							
6	ADDHYD	4		4	4	2	1							1
6	REACH	3	3		1	2	2482.0	0.1	1.7					
6	RUNOFF	1	3			1	0.16	54.0	0.03					1
6	ADDHYD	4		3	1	2	3							1
6	REACH	3	2		3	1	3432.0	0.2	1.7					
6	RUNOFF	1	2			2	0.36	53.0	.50					1
6	ADDHYD	4		2	1	2	3							1
6	REACH	3	1		3	1	7234.0	0.3	1.7					
6	RUNOFF	1	1			2	0.48	59.0	0.59					1
6	ADDHYD	4		1	1	2	3			1	1	1		1
	ENDATA													
7	LIST													
7	INCREM	6					0.1							
7	COMPUT	7	80			1	0.0	3.1	1.01	3	01	01		

ENDCMP 1  
7 COMPUT 7 80 1 0.0 2.0 1.02 3 01 02  
ENDCMP 1  
ENDJOB 2

TR20 XEQ 1/12/89 14:58  
REV PC/09/83

EXISTING CONDITION - E. FORK SAND CREEK TRIB. - ARIES PROPERTIES  
2 HR STORM

JOB 1 SUMMARY  
PAGE 34

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 STRUCTURE 56	.79		
+			
ALTERNATE 1		261.91	91.57
0 STRUCTURE 55	.95		
+			
ALTERNATE 1		386.78	97.45
0 STRUCTURE 54	.51		
+			
ALTERNATE 1		109.59	18.31
0 STRUCTURE 53	1.68		
+			
ALTERNATE 1		431.75	110.28
0 STRUCTURE 52	1.06		
+			
ALTERNATE 1		278.62	95.62
0 STRUCTURE 51	.94		
+			
ALTERNATE 1		119.89	17.89
0 STRUCTURE 50	.32		
+			
ALTERNATE 1		79.47	13.42
0 STRUCTURE 49	.71		
+			
ALTERNATE 1		142.02	25.09
0 STRUCTURE 48	1.05		
+			
ALTERNATE 1		176.06	31.85
0 STRUCTURE 47	.41		
+			
ALTERNATE 1		56.01	9.88
0 STRUCTURE 46	.31		
+			
ALTERNATE 1		45.95	7.27
0 STRUCTURE 45	.58		
+			
ALTERNATE 1		137.37	25.44
0 STRUCTURE 44	1.37		
+			
ALTERNATE 1		279.11	57.06
0 STRUCTURE 43	1.23		
+			
ALTERNATE 1		144.73	23.03

TR20 REQ 1/12/89 14:58  
REV PC/09/83

EXISTING CONDITION - E. FORK SAND CREEK TRIB. - ARIES PROPERTIES  
2 HR STORM

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 STRUCTURE 42	1.25		
+			
ALTERNATE 1		291.33	92.74
0 STRUCTURE 41	1.84		
+			
ALTERNATE 1		449.00	113.62
0 STRUCTURE 40	4.60		
+			
ALTERNATE 1		860.75	233.70
0 STRUCTURE 39	.75		
+			
ALTERNATE 1		132.84	24.32
0 STRUCTURE 38	.35		
+			
ALTERNATE 1		75.09	12.01
0 STRUCTURE 37	.48		
+			
ALTERNATE 1		60.79	10.31
0 STRUCTURE 36	1.31		
+			
ALTERNATE 1		224.41	41.86
0 STRUCTURE 35	5.39		
+			
ALTERNATE 1		965.12	245.76
0 STRUCTURE 34	1.50		
+			
ALTERNATE 1		266.72	49.67
0 STRUCTURE 33	1.47		
+			
ALTERNATE 1		391.48	81.08
0 STRUCTURE 32	2.36		
+			
ALTERNATE 1		515.43	109.83
0 STRUCTURE 31	1.76		
+			
ALTERNATE 1		307.11	53.61
0 STRUCTURE 30	5.93		
+			
ALTERNATE 1		1023.28	242.14
0 STRUCTURE 29	10.55		
+			
ALTERNATE 1		1744.86	370.78

TR20 XEQ 1/12/89 14:58  
REV PC/09/83

EXISTING CONDITION - E. FORK SAND CREEK TRIB. - ARIES PROPERTIES  
2 HR STORM

JOB 1 SUMMARY  
PAGE 36

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 STRUCTURE 28	.69		
+			
ALTERNATE 1		90.84	15.79
0 STRUCTURE 27	.89		
+			
ALTERNATE 1		162.32	33.18
0 STRUCTURE 26	1.03		
+			
ALTERNATE 1		192.65	41.33
0 STRUCTURE 25	1.45		
+			
ALTERNATE 1		315.45	66.16
0 STRUCTURE 24	.93		
+			
ALTERNATE 1		410.46	96.40
0 STRUCTURE 23	.32		
+			
ALTERNATE 1		283.71	107.59
0 STRUCTURE 22	.58		
+			
ALTERNATE 1		428.75	150.99
0 STRUCTURE 21	3.89		
+			
ALTERNATE 1		1151.17	256.62
0 STRUCTURE 20	.40		
+			
ALTERNATE 1		303.57	100.44
0 STRUCTURE 19	11.19		
+			
ALTERNATE 1		1035.82	374.68
0 STRUCTURE 18	11.66		
+			
ALTERNATE 1		1921.47	379.47
0 STRUCTURE 17	11.92		
+			
ALTERNATE 1		1946.40	378.81
0 STRUCTURE 16	.50		
+			
ALTERNATE 1		437.21	125.38
0 STRUCTURE 15	5.20		
+			
ALTERNATE 1		1790.72	478.20



TR20 XEQ 1/12/89 14:58  
REV PC/09/83

EXISTING CONDITION - E. FORK SAND CREEK TRIB. - ARIES PROPERTIES  
2 HR STORM

JOB 1 SUMMARY  
PAGE 37

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 STRUCTURE 14	.69		
+			
ALTERNATE 1		295.23	105.10
0 STRUCTURE 13	5.63		
+			
ALTERNATE 1		1985.78	542.58
0 STRUCTURE 12	12.85		
+			
ALTERNATE 1		2135.01	389.38
0 STRUCTURE 11	5.92		
+			
ALTERNATE 1		2026.34	556.78
0 STRUCTURE 10	.51		
+			
ALTERNATE 1		82.94	18.09
0 STRUCTURE 9	19.93		
+			
ALTERNATE 1		4013.64	932.75
0 STRUCTURE 8	1.14		
+			
ALTERNATE 1		542.53	155.04
0 STRUCTURE 7	20.28		
+			
ALTERNATE 1		4063.99	939.27
0 STRUCTURE 6	.71		
+			
ALTERNATE 1		656.88	160.18
0 STRUCTURE 5	22.02		
+			
ALTERNATE 1		4462.42	1038.99
0 STRUCTURE 4	23.32		
+			
ALTERNATE 1		4631.93	1049.09
0 STRUCTURE 3	23.48		
+			
ALTERNATE 1		4638.91	1047.68
0 STRUCTURE 2	23.84		
+			
ALTERNATE 1		4695.54	1048.61
0 STRUCTURE 1	24.32		
+			
ALTERNATE 1		4770.29	1046.77

TR20 XEQ 1/12/89 14:58  
REV PC/09/83

EXISTING CONDITION - E. FORK SAND CREEK TRIB. - ARIES PROPERTIES  
2 HR STORM

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 XSECTION 1	.48		
+ ALTERNATE 1		335.47	93.77
0 XSECTION 2	.36		
+ ALTERNATE 1		198.43	45.10
0 XSECTION 3	.16		
+ ALTERNATE 1		180.22	61.71
0 XSECTION 4	.59		
+ ALTERNATE 1		241.62	44.48
0 XSECTION 5	.18		
+ ALTERNATE 1		54.09	7.71
0 XSECTION 6	.29		
+ ALTERNATE 1		199.03	35.27
0 XSECTION 7	.38		
+ ALTERNATE 1		190.94	29.12
0 XSECTION 8	.19		
+ ALTERNATE 1		267.91	111.67
0 XSECTION 9	.14		
+ ALTERNATE 1		240.93	100.42
0 XSECTION 10	.13		
+ ALTERNATE 1		184.53	69.35
0 XSECTION 11	.10		
+ ALTERNATE 1		149.75	60.59
0 XSECTION 12	.22		
+ ALTERNATE 1		66.11	9.43
0 XSECTION 13	.13		
+ ALTERNATE 1		40.69	6.91
0 XSECTION 14	.35		
+ ALTERNATE 1		160.38	33.04

TR20 XEQ 1/12/89 14:58  
REV PC/09/83

EXISTING CONDITION - E. FORK SAND CREEK TRIB. - ARIES PROPERTIES  
2 HR STORM

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 XSECTION 15	.25		
+			
ALTERNATE 1		95.50	16.51
0 XSECTION 16	.38		
+			
ALTERNATE 1		73.75	13.71
0 XSECTION 17	.13		
+			
ALTERNATE 1		59.32	10.31
0 XSECTION 18	.40		
+			
ALTERNATE 1		225.38	61.33
0 XSECTION 19	.29		
+			
ALTERNATE 1		126.23	26.71
0 XSECTION 20	.30		
+			
ALTERNATE 1		197.38	37.27
0 XSECTION 21	.10		
+			
ALTERNATE 1		84.57	26.14
0 XSECTION 22	.13		
+			
ALTERNATE 1		193.78	83.51
0 XSECTION 23	.20		
+			
ALTERNATE 1		110.22	31.54
0 XSECTION 24	.28		
+			
ALTERNATE 1		283.55	73.20
0 XSECTION 25	.26		
+			
ALTERNATE 1		110.33	19.95
0 XSECTION 26	.47		
+			
ALTERNATE 1		178.12	44.16
0 XSECTION 27	.14		
+			
ALTERNATE 1		35.29	5.35
0 XSECTION 28	.33		
+			
ALTERNATE 1		91.95	15.90

TR20 XEQ 1/12/89 14:58  
REV PC/09/83

EXISTING CONDITION - E. FORK SAND CREEK TRIB. - ARIES PROPERTIES  
2 HR STORM

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 XSECTION 29	.17		
+			
ALTERNATE 1		123.54	38.41
0 XSECTION 30	.10		
+			
ALTERNATE 1		130.23	60.62
0 XSECTION 31	.24		
+			
ALTERNATE 1		298.01	99.87
0 XSECTION 32	.15		
+			
ALTERNATE 1		62.45	16.04
0 XSECTION 33	.50		
+			
ALTERNATE 1		226.63	75.18
0 XSECTION 34	.23		
+			
ALTERNATE 1		184.04	56.91
0 XSECTION 35	.26		
+			
ALTERNATE 1		173.58	55.04
0 XSECTION 36	.39		
+			
ALTERNATE 1		247.82	80.06
0 XSECTION 37	.20		
+			
ALTERNATE 1		208.44	84.98
0 XSECTION 38	.12		
+			
ALTERNATE 1		79.44	25.19
0 XSECTION 39	.48		
+			
ALTERNATE 1		398.13	115.90
0 XSECTION 40	.14		
+			
ALTERNATE 1		36.11	8.61
0 XSECTION 41	.16		
+			
ALTERNATE 1		92.49	24.63
0 XSECTION 42	.20		
+			
ALTERNATE 1		134.87	29.39

TR20 XEQ 1/12/89 14:58  
REV PC/09/83

EXISTING CONDITION - E. FORK SAND CREEK TRIB. - ARIES PROPERTIES  
2 HR STORM

JOB 1 SUMMARY  
PAGE 41

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 XSECTION 43	.16		
+			
ALTERNATE 1		114.57	29.22
0 XSECTION 44	.29		
+			
ALTERNATE 1		80.32	13.37
0 XSECTION 45	.50		
+			
ALTERNATE 1		131.52	21.31
0 XSECTION 46	.26		
+			
ALTERNATE 1		62.24	11.51
0 XSECTION 47	.62		
+			
ALTERNATE 1		119.05	22.27
0 XSECTION 48	.27		
+			
ALTERNATE 1		65.41	16.94
0 XSECTION 49	.28		
+			
ALTERNATE 1		175.92	43.53
0 XSECTION 50	.36		
+			
ALTERNATE 1		158.06	33.27
0 XSECTION 51	.11		
+			
ALTERNATE 1		52.36	7.43
0 XSECTION 52	.19		
+			
ALTERNATE 1		66.13	12.73
0 XSECTION 53	.33		
+			
ALTERNATE 1		127.53	26.03
0 XSECTION 54	.31		
+			
ALTERNATE 1		40.88	7.35
0 XSECTION 55	.17		
+			
ALTERNATE 1		28.37	5.08
0 XSECTION 56	.09		
+			
ALTERNATE 1		21.23	3.24

TR20 XEQ 1/12/89 14:58  
REV PC/09/83

EXISTING CONDITION - E. FORK SAND CREEK TRIB. - ARIES PROPERTIES  
2 HR STORM

JOB 1 SUMMARY  
PAGE 42

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 XSECTION 57	.18		
+ ALTERNATE 1		26.70	4.83
0 XSECTION 58	.28		
+ ALTERNATE 1		65.39	11.14
0 XSECTION 59	.32		
+ ALTERNATE 1		207.59	48.74
0 XSECTION 60	.08		
+ ALTERNATE 1		102.23	35.60
0 XSECTION 61	.35		
+ ALTERNATE 1		305.78	92.82
0 XSECTION 62	.25		
+ ALTERNATE 1		135.77	22.36
0 XSECTION 63	.06		
+ ALTERNATE 1		12.03	2.02
0 XSECTION 64	.20		
+ ALTERNATE 1		40.90	6.83
0 XSECTION 65	.07		
+ ALTERNATE 1		15.30	2.45
0 XSECTION 66	.11		
+ ALTERNATE 1		28.62	4.46
0 XSECTION 67	.19		
+ ALTERNATE 1		33.72	5.91
0 XSECTION 68	.10		
+ ALTERNATE 1		25.92	4.01
0 XSECTION 69	.23		
+ ALTERNATE 1		31.81	5.73
0 XSECTION 70	.26		
+ ALTERNATE 1		46.27	8.10

TR20 XEQ 1/12/89 14:58  
REV PC/09/83

EXISTING CONDITION - E. FORK SAND CREEK TRIB. - ARIES PROPERTIES  
2 HR STORM

JOB 1 SUMMARY  
PAGE 43

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 XSECTION 71	.13		
+			
ALTERNATE 1		25.00	4.29
0 XSECTION 72	.29		
+			
ALTERNATE 1		51.61	9.04
0 XSECTION 73	.28		
+			
ALTERNATE 1		36.57	6.57
0 XSECTION 74	.19		
+			
ALTERNATE 1		49.44	7.68
0 XSECTION 75	.16		
+			
ALTERNATE 1		31.80	5.37
0 XSECTION 76	.24		
+			
ALTERNATE 1		58.29	8.84
0 XSECTION 77	.23		
+			
ALTERNATE 1		28.76	5.13
0 XSECTION 78	.37		
+			
ALTERNATE 1		50.10	9.02
0 XSECTION 79	.28		
+			
ALTERNATE 1		67.42	10.27
0 XSECTION 80	.07		
+			
ALTERNATE 1		19.09	3.33
0 XSECTION 81	.38		
+			
ALTERNATE 1		104.67	18.18
0 XSECTION 82	.25		
+			
ALTERNATE 1		72.01	12.45
0 XSECTION 83	.34		
+			
ALTERNATE 1		49.33	9.61
0 XSECTION 84	.27		
+			
ALTERNATE 1		67.74	10.19

TR20 XEQ 1/12/89 14:58  
REV PC/09/83

EXISTING CONDITION - E. FORK SAND CREEK TRIB. - ARIES PROPERTIES  
2 HR STORM

JOB 1 SUMMARY  
PAGE 44

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 XSECTION 85	.19		
+			
ALTERNATE 1		45.58	6.95
0 XSECTION 86	.33		
+			
ALTERNATE 1		48.63	9.47
0 XSECTION 87	.15		
+			
ALTERNATE 1		25.41	5.28
0 XSECTION 88	.26		
+			
ALTERNATE 1		75.77	13.14
0 XSECTION 89	.10		
+			
ALTERNATE 1		26.63	4.64
0 XSECTION 90	.06		
+			
ALTERNATE 1		12.27	2.05
0 XSECTION 91	.42		
+			
ALTERNATE 1		65.59	11.80
0 XSECTION 92	.34		
+			
ALTERNATE 1		121.75	21.71
0 XSECTION 93	.26		
+			
ALTERNATE 1		62.16	14.30
0 XSECTION 94	.40		
+			
ALTERNATE 1		184.53	33.34
0 XSECTION 95	.14		
+			
ALTERNATE 1		19.63	3.54
0 XSECTION 96	.13		
+			
ALTERNATE 1		23.14	4.05
0 XSECTION 97	.13		
+			
ALTERNATE 1		99.11	26.88
0 XSECTION 98	.16		
+			
ALTERNATE 1		158.81	50.80



TR20 XEQ 1/12/89 14:58  
REV PC/09/83

EXISTING CONDITION - E. FORK SAND CREEK TRIB. - ARIES PROPERTIES  
2 HR STORM

JOB 1 SUMMARY  
PAGE 45

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 XSECTION 99	.45		
+ ALTERNATE 1		238.72	76.52

END OF 1 JOBS IN THIS RUN

JOB TR-20

NO PLOTS

TITLE 001 FUTURE CONDITION - E. FORK SAND CREEK TRIB. - ARIES PROPERTIES

TITLE 2 HR STORM

5	RAINFL	1				.167					
8						0.000	0.030	0.150	.4800	0.680	
8						0.750	0.840	0.890	0.920	0.940	
8						0.960	0.980	1.000	1.000	1.000	
9	ENDTBL										
5	RAINFL	2				.167					
8						0.000	0.050	0.240	.5700	0.660	
8						0.720	0.770	0.830	0.860	0.910	
8						0.940	0.970	1.000	1.000	1.000	
9	ENDTBL										
6	RUNOFF	1	80		1	0.07		63.0	0.18	1	
6	REACH	3	79	1	2	5597.0		.5	1.45		
6	RUNOFF	1	79		1	0.28		88.0	0.33	1	
6	ADDHYD	4	38	1	2	3				1	
6	REACH	3	150	3	1	6574.0		.3	1.6		
6	RUNOFF	1	78		2	0.37		83.0	0.65	1	
6	REACH	3	51	2	3	1531.0		.4	1.5		
6	RUNOFF	1	51		4	0.11		71.0	0.10	1	
6	ADDHYD	4	37	3	4	2				1	
6	REACH	3	50	2	3	3000.0		.3	1.6		
6	RUNOFF	1	50		2	0.36		74.0	0.38	1	
6	RUNOFF	1	49		4	0.28		88.0	0.46	1	
6	REACH	3	152	4	5	2682.0		.3	1.6		
6	ADDHYD	4	33	2	5	6				1	
6	ADDHYD	4	33	6	1	5					
6	ADDHYD	4	33	5	3	1					
6	REACH	3	47	1	2	4678.0		0.2	1.6		
6	RUNOFF	1	48		1	0.27		88.0	0.71	1	
6	REACH	3	147	1	3	6040.0		.6	1.4		
6	RUNOFF	1	47		1	0.62		81.0	0.55	1	
6	ADDHYD	4	32	1	3	4				1	
6	ADDHYD	4	32	4	2	1				1	
6	REACH	3	145	1	2	3802.0		0.2	1.6		
6	RUNOFF	1	45		1	0.500		84.0	0.35	1	
6	ADDHYD	4	29	1	2	3				1	
6	RUNOFF	1	81		1	0.38		63.0	0.36	1	
6	RUNOFF	1	96		2	0.13		88.0	0.38	1	
6	REACH	3	81	2	4	6389.0		.4	1.5		
6	ADDHYD	4	54	4	1	2				1	
6	REACH	3	76	2	1	5702.0		.4	1.5		
6	RUNOFF	1	76		2	0.24		81.0	0.32	1	
6	ADDHYD	4	39	1	2	4				1	
6	REACH	3	53	4	1	3453.0		.3	1.5		
6	RUNOFF	1	53		2	0.33		78.0	0.42	1	
6	RUNOFF	1	77		4	0.23		83.0	0.73	1	
6	REACH	3	153	4	5	3379.0		.4	1.5		
6	ADDHYD	4	36	1	2	4				1	
6	ADDHYD	4	36	4	5	1				1	
6	REACH	3	52	1	2	1584.0		0.2	1.6		
6	RUNOFF	1	52		1	0.19		78.0	0.34	1	
6	ADDHYD	4	34	2	1	4				1	
6	REACH	3	46	4	1	3770.0		0.2	1.6		
6	RUNOFF	1	46		2	0.26		80.0	0.61	1	
6	ADDHYD	4	31	1	2	4				1	
6	REACH	3	145	4	1	3802.0		0.2	1.6		
6	ADDHYD	4	29	1	3	2				1	
6	RUNOFF	1	93		1	0.26		88.0	0.49	1	

6	RUNOFF	1	94		3	0.40	88.0	0.35	1
6	RUNOFF	1	98		4	0.16	63.0	0.23	1
6	REACH	3	194	4	5	5914.0	.6	1.4	
6	RUNOFF	1	97		4	0.13	63.0	0.19	1
6	REACH	3	94	4	6	5914.0	.6	1.4	
6	ADDHYD	4	55	1	3	7			
6	ADDHYD	4	55	7	5	1			
6	ADDHYD	4	55	1	6	3			1
6	REACH	3	83	3	1	6124.0	.2	1.6	
6	RUNOFF	1	83		3	0.34	70.0	0.67	1
6	RUNOFF	1	95		4	0.14	88.0	0.61	1
6	REACH	3	82	4	5	5808.0	.6	1.4	
6	RUNOFF	1	82		4	0.25	63.0	0.34	1
6	ADDHYD	4	53	1	3	6			
6	ADDHYD	4	53	6	5	1			
6	ADDHYD	4	53	1	4	3			1
6	REACH	3	75	3	1	4013.0	.2	1.6	
6	RUNOFF	1	75		3	0.16	79.0	0.37	1
6	ADDHYD	4	41	1	3	4			1
6	REACH	3	73	4	1	1610.0	0.2	1.6	
6	RUNOFF	1	73		3	0.28	81.0	0.68	1
6	ADDHYD	4	40	1	3	4			1
6	RUNOFF	1	99		1	0.45	78.0	0.50	1
6	REACH	3	92	1	3	5650.0	.3	1.5	
6	RUNOFF	1	92		5	0.34	88.0	0.31	1
6	ADDHYD	4	56	3	5	1			1
6	REACH	3	84	1	3	5491.0	.3	1.6	
6	RUNOFF	1	84		5	0.27	88.0	0.29	1
6	ADDHYD	4	52	3	5	1			1
6	REACH	3	74	1	3	4066.0	.2	1.6	
6	RUNOFF	1	74		1	0.19	87.0	0.21	1
6	ADDHYD	4	42	1	3	5			1
6	REACH	3	73	5	1	1610.0	0.2	1.6	
6	ADDHYD	4	40	1	4	3			
6	RUNOFF	1	91		1	0.42	88.0	0.50	1
6	REACH	3	85	1	4	6178.0	.3	1.5	
6	RUNOFF	1	86		1	0.33	74.0	0.65	1
6	RUNOFF	1	85		5	0.19	88.0	0.33	1
6	ADDHYD	4	51	1	5	6			
6	ADDHYD	4	51	6	4	1			1
6	REACH	3	72	1	4	5058.0	.3	1.6	
6	RUNOFF	1	72		1	0.29	85.0	0.42	1
6	ADDHYD	4	43	1	4	5			1
6	REACH	3	173	5	1	1864.0	.2	1.6	
6	ADDHYD	4	40	1	3	4			1
6	RUNOFF	1	71		1	0.13	88.0	0.32	1
6	REACH	3	57	1	3	4102.0	.6	1.4	
6	RUNOFF	1	57		1	0.18	79.0	0.32	1
6	ADDHYD	4	46	1	3	5			1
6	REACH	3	55	5	1	3000.0	.4	1.5	
6	RUNOFF	1	55		3	0.17	85.0	0.43	1
6	RUNOFF	1	54		5	0.31	76.0	0.63	1
6	REACH	3	54	4	6	4974.0	0.2	1.6	
6	ADDHYD	4	35	6	1	4			
6	ADDHYD	4	35	4	3	1			
6	ADDHYD	4	35	1	5	3			1
6	REACH	3	44	3	1	5016.0	0.2	1.6	
6	RUNOFF	1	56		3	0.09	85.0	0.17	1
6	REACH	3	144	3	4	4419.0	.6	1.4	
6	RUNOFF	1	43		5	0.16	86.0	0.73	1

6 REACH	3	146	5	3	507.0	.6	1.4		
6 RUNOFF	1	44		5	0.29	86.0	0.27		1
6 ADDHYD	4	30	3	4	6				
6 ADDHYD	4	30	6	1	3				
6 ADDHYD	4	30	3	5	1				1
6 REACH	3	45	1	3	2893.0	0.2	1.6		
6 ADDHYD	4	29	2	3	1			1 1 1	1
6 REACH	3	28	1	2	3168.0	0.2	1.6		
6 RUNOFF	1	29		3	0.17	90.0	0.32		1
6 REACH	3	128	3	1	3131.0	0.6	1.4		
6 RUNOFF	1	27		3	0.14	86.0	0.31		1
6 RUNOFF	1	28		4	0.33	90.0	0.34		1
6 ADDHYD	4	19	2	1	5				
6 ADDHYD	4	19	5	3	1				
6 ADDHYD	4	19	1	4	2				1
6 REACH	3	26	2	1	3221.0	0.2	1.6		
6 RUNOFF	1	26		2	0.47	81.0	0.48		1
6 ADDHYD	4	18	1	2	3				1
6 REACH	3	25	3	1	2323.0	0.2	1.6		
6 RUNOFF	1	25		2	0.26	81.0	0.21		1
6 ADDHYD	4	17	1	2	3				1
6 REACH	3	24	3	1	2524.0	0.2	1.6		
6 RUNOFF	1	24		2	0.28	90.0	0.26		1
6 ADDHYD	4	12	1	2	3				
6 RUNOFF	1	41		1	0.16	80.0	0.32		1
6 REACH	3	31	1	2	3358.0	.5	1.5		
6 RUNOFF	1	31		1	0.24	86.0	0.19		1
6 ADDHYD	4	20	1	2	4				1
6 REACH	3	30	4	1	2323.0	.3	1.5		
6 RUNOFF	1	30		2	0.10	83.0	0.13		1
6 ADDHYD	4	16	1	2	4				1
6 REACH	3	124	4	1	4594.0	0.2	1.6		
6 RUNOFF	1	32		2	0.15	82.0	0.39		1
6 REACH	3	198	2	4	5227.0	.5	1.5		
6 ADDHYD	4	12	1	4	2				
6 ADDHYD	4	12	2	3	1				1
6 REACH	3	18	1	2	3696.0	0.1	1.6		
6 RUNOFF	1	18		7	0.40	90.0	0.45		1
6 ADDHYD	4	57	2	7	1				
6 RUNOFF	1	87		2	0.15	63.0	0.55		1
6 REACH	3	70	2	3	5613.0	.6	1.4		
6 RUNOFF	1	70		2	0.26	86.0	0.46		1
6 ADDHYD	4	47	2	3	4				1
6 REACH	3	58	4	2	5016.0	.4	1.5		
6 RUNOFF	1	58		3	0.28	79.0	0.38		1
6 ADDHYD	4	28	2	3	4				1
6 REACH	3	42	4	2	2746.0	.3	1.5		
6 RUNOFF	1	42		3	0.20	84.0	0.26		1
6 ADDHYD	4	27	2	3	4				1
6 REACH	3	40	4	2	2218.0	.3	1.5		
6 RUNOFF	1	40		3	0.14	72.0	0.57		1
6 ADDHYD	4	26	2	3	4				1
6 REACH	3	199	4	2	216.0	.2	1.6		
6 RUNOFF	1	90		3	0.06	88.0	0.28		1
6 REACH	3	88	3	4	5597.0	.6	1.4		
6 RUNOFF	1	88		3	0.26	63.0	0.33		1
6 ADDHYD	4	50	3	4	5				1
6 REACH	3	68	5	3	3643.0	.3	1.5		
6 RUNOFF	1	89		4	0.10	65.0	0.20		1
6 REACH	3	68	4	5	3643.0	.3	1.5		

6	RUNOFF	1	67		6	0.19	79.0	0.39	1
6	RUNOFF	1	68		4	0.10	82.0	0.20	1
6	ADDHYD	4	49	3	5	7			
6	ADDHYD	4	49	7	6	3			
6	ADDHYD	4	49	3	4	5			1
6	REACH	3	66	5	3		2531.0	0.2	1.6
6	RUNOFF	1	66		4		0.11	74.0	0.19
6	RUNOFF	1	69		5		0.23	78.0	0.62
6	ADDHYD	4	48	3	4	6			
6	ADDHYD	4	48	6	5	3			1
6	REACH	3	59	3	4		5158.0	0.6	1.6
6	RUNOFF	1	59		3		0.32	63.0	0.44
6	ADDHYD	4	44	3	4	5			1
6	REACH	3	60	5	3		1373.0	0.8	1.5
6	RUNOFF	1	60		4		0.08	63.0	0.19
6	ADDHYD	4	25	3	4	5			1
6	REACH	3	39	5	3		4963.0	0.2	1.6
6	RUNOFF	1	39		4		0.48	73.0	0.34
6	ADDHYD	4	21	3	4	5			
6	ADDHYD	4	21	5	2	3			1
6	RUNOFF	1	63		2		0.06	88.0	1.06
6	REACH	3	62	2	4		3432.0	1.5	1.3
6	RUNOFF	1	64		2		0.20	83.0	0.28
6	REACH	3	62	2	5		3432.0	1.5	1.3
6	RUNOFF	1	65		2		0.07	78.0	0.22
6	REACH	3	162	2	6		2445.0	1.9	1.2
6	RUNOFF	1	62		2		0.25	63.0	0.19
6	ADDHYD	4	45	4	5	7			
6	ADDHYD	4	45	7	6	4			
6	ADDHYD	4	45	4	2	5			1
6	REACH	3	61	5	2		3152.0	1.7	1.3
6	RUNOFF	1	61		4		0.35	63.0	0.44
6	ADDHYD	4	24	2	4	5			1
6	REACH	3	139	5	2		4488.0	0.3	1.5
6	ADDHYD	4	21	2	3	4			1
6	REACH	3	33	4	2		7445.0	0.2	1.6
6	RUNOFF	1	33		3		0.50	82.0	0.59
6	RUNOFF	1	34		4		0.23	82.0	0.55
6	ADDHYD	4	15	2	3	5			
6	ADDHYD	4	15	5	4	2			1
6	RUNOFF	1	37		3		0.20	88.0	0.34
6	RUNOFF	1	38		4		0.12	68.0	0.39
6	ADDHYD	4	23	3	4	5			1
6	REACH	3	35	5	3		3252.0	.6	1.4
6	RUNOFF	1	35		4		0.26	88.0	0.28
6	ADDHYD	4	22	3	4	5			1
6	REACH	3	34	5	3		1816.0	.4	1.5
6	ADDHYD	4	15	2	3	4			1
6	REACH	3	22	4	2		3062.0	.2	1.6
6	RUNOFF	1	21		3		0.10	88.0	0.23
6	REACH	3	122	3	4		2503.0	.6	1.4
6	RUNOFF	1	22		3		0.13	91.0	0.12
6	RUNOFF	1	23		5		0.20	92.0	0.39
6	ADDHYD	4	13	2	4	6			
6	ADDHYD	4	13	6	3	2			
6	ADDHYD	4	13	2	5	3			1
6	REACH	3	19	3	2		3802.0	0.2	1.6
6	RUNOFF	1	19		6		0.29	89.0	0.33
6	ADDHYD	4	11	2	6	7			1
6	REACH	3	15	7	2		2571.0	0.2	1.6

6	RUNOFF	1	16		3	0.38	84.0	0.36		1	
6	REACH	3	17	3	4	3274.0	.6	1.4			
6	RUNOFF	1	17		3	0.13	87.0	0.19		1	
6	ADDHYD	4		10	3	4	5			1	
6	REACH	3	115		5	3	2820.0	.3	1.5		
6	RUNOFF	1	15		4	0.25	88.0	0.22		1	
6	REACH	3	116		1	5	2260.0	0.1	1.6		
6	ADDHYD	4		9	2	3	1				
6	ADDHYD	4		9	1	5	2				
6	ADDHYD	4		9	2	4	1			1	
6	REACH	3	14		1	2	3448.0	0.1	1.6		
6	RUNOFF	1	14		1	0.35	81.0	0.53		1	
6	ADDHYD	4		7	1	2	3		1	1	1
6	REACH	3	5		3	1	4910.0	0.1	1.6		
6	RUNOFF	1	5		2	0.18	70.0	0.17		1	
6	RUNOFF	1	36		3	0.39	78.0	0.44		1	
6	REACH	3	20		3	4	3960.0	.3	1.5		
6	RUNOFF	1	20		3	0.30	85.0	0.23		1	
6	ADDHYD	4		14	3	4	5			1	
6	REACH	3	12		5	3	3221.0	.2	1.6		
6	RUNOFF	1	10		4	0.13	75.0	0.18		1	
6	REACH	3	112		4	5	2250.0	0.3	1.5		
6	RUNOFF	1	11		4	0.10	78.0	0.22		1	
6	REACH	3	195		4	6	2788.0	.2	1.6		
6	RUNOFF	1	12		4	0.22	87.0	0.21		1	
6	ADDHYD	4		8	5	6	7				
6	ADDHYD	4		8	7	4	5				
6	ADDHYD	4		8	5	3	4			1	
6	REACH	3	6		4	3	8976.0	0.2	1.6		
6	RUNOFF	1	6		4	0.29	89.0	0.37		1	
6	RUNOFF	1	13		5	0.13	87.0	0.24		1	
6	REACH	3	6		5	6	8976.0	0.2	1.6		
6	ADDHYD	4		5	1	2	5				
6	ADDHYD	4		5	5	3	1				
6	ADDHYD	4		5	1	6	2				
6	ADDHYD	4		5	2	4	1			1	
6	REACH	3	4		1	2	2851.0	0.1	1.6		
6	RUNOFF	1	9		1	0.14	75.0	0.17		1	
6	REACH	3	8		1	3	3907.0	.6	1.4		
6	RUNOFF	1	8		1	0.19	75.0	0.18		1	
6	RUNOFF	1	7		4	0.38	83.0	0.50		1	
6	ADDHYD	4		6	3	1	5				
6	ADDHYD	4		6	5	4	1			1	
6	REACH	3	104		1	3	4066.0	0.8	1.5		
6	RUNOFF	1	4		1	0.59	75.0	0.31		1	
6	ADDHYD	4		4	3	1	4				
6	ADDHYD	4		4	4	2	1			1	
6	REACH	3	3		1	2	2482.0	0.1	1.6		
6	RUNOFF	1	3		1	0.16	84.0	0.27		1	
6	ADDHYD	4		3	1	2	3			1	
6	REACH	3	2		3	1	3432.0	0.1	1.6		
6	RUNOFF	1	2		2	0.36	87.0	1.11		1	
6	ADDHYD	4		2	1	2	3			1	
6	REACH	3	1		3	1	7234.0	0.1	1.6		
6	RUNOFF	1	1		2	0.48	79.0	0.95		1	
6	ADDHYD	4		1	1	2	3		1	1	1
	ENDATA										
7	LIST										
7	INCREM	6				0.1					
7	COMPUT	7	80		1	0.0	3.1	1.01	3	01	01

ENDCMP 1  
7 COMPUT 7 80 1 0.0 2.0 1.02 3 01 02  
ENDCMP 1  
ENDJOB 2

TR20 XEQ 1/12/89 15:48  
REV PC/09/83

FUTURE CONDITION - E. FORK SAND CREEK TRIB. - ARIES PROPERTIES  
2 HR STORM

JOB 1 SUMMARY  
PAGE 33

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 STRUCTURE 56	.79		
+			
ALTERNATE 1		978.92	480.73
0 STRUCTURE 55	.95		
+			
ALTERNATE 1		1550.29	797.94
0 STRUCTURE 54	.51		
+			
ALTERNATE 1		501.78	183.81
0 STRUCTURE 53	1.68		
+			
ALTERNATE 1		1969.51	853.19
0 STRUCTURE 52	1.06		
+			
ALTERNATE 1		1296.61	611.26
0 STRUCTURE 51	.94		
+			
ALTERNATE 1		1215.04	520.39
0 STRUCTURE 50	.32		
+			
ALTERNATE 1		313.69	103.87
0 STRUCTURE 49	.71		
+			
ALTERNATE 1		695.70	283.24
0 STRUCTURE 48	1.05		
+			
ALTERNATE 1		1065.60	427.26
0 STRUCTURE 47	.41		
+			
ALTERNATE 1		543.38	273.25
0 STRUCTURE 46	.31		
+			
ALTERNATE 1		525.11	248.31
0 STRUCTURE 45	.58		
+			
ALTERNATE 1		767.18	319.49
0 STRUCTURE 44	1.37		
+			
ALTERNATE 1		1293.75	483.82
0 STRUCTURE 43	1.23		
+			
ALTERNATE 1		1490.80	614.77



TR20 XEQ 1/12/89 15:48  
REV PC/09/83

FUTURE CONDITION - E. FORK SAND CREEK TRIB. - ARIES PROPERTIES  
2 HR STORM

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 STRUCTURE 42	1.25		
+			
ALTERNATE 1		1396.25	606.41
0 STRUCTURE 41	1.84		
+			
ALTERNATE 1		2040.50	844.50
0 STRUCTURE 40	4.60		
+			
ALTERNATE 1		5273.99	2135.85
0 STRUCTURE 39	.75		
+			
ALTERNATE 1		649.62	263.86
0 STRUCTURE 38	.35		
+			
ALTERNATE 1		681.64	377.67
0 STRUCTURE 37	.48		
+			
ALTERNATE 1		638.08	291.85
0 STRUCTURE 36	1.31		
+			
ALTERNATE 1		1231.73	484.89
0 STRUCTURE 35	5.39		
+			
ALTERNATE 1		6007.56	2387.77
0 STRUCTURE 34	1.50		
+			
ALTERNATE 1		1405.00	558.88
0 STRUCTURE 33	1.47		
+			
ALTERNATE 1		1943.49	880.82
0 STRUCTURE 32	2.36		
+			
ALTERNATE 1		2909.30	1266.37
0 STRUCTURE 31	1.76		
+			
ALTERNATE 1		1653.14	646.98
0 STRUCTURE 30	5.93		
+			
ALTERNATE 1		6318.52	2535.93
0 STRUCTURE 29	10.55		
+			
ALTERNATE 1		10905.35	4372.30

TR20 XEQ 1/12/89 15:48  
 REV PC/09/83

FUTURE CONDITION - E. FORK SAND CREEK TRIB. - ARIES PROPERTIES  
 2 HR STORM

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 STRUCTURE 28	.69		
+			
ALTERNATE 1		798.26	358.42
0 STRUCTURE 27	.89		
+			
ALTERNATE 1		958.11	406.38
0 STRUCTURE 26	1.03		
+			
ALTERNATE 1		1081.98	448.92
0 STRUCTURE 25	1.45		
+			
ALTERNATE 1		1347.51	500.11
0 STRUCTURE 24	.93		
+			
ALTERNATE 1		1053.48	394.77
0 STRUCTURE 23	.32		
+			
ALTERNATE 1		610.19	306.48
0 STRUCTURE 22	.58		
+			
ALTERNATE 1		992.79	493.64
0 STRUCTURE 21	3.89		
+			
ALTERNATE 1		3598.82	1349.00
0 STRUCTURE 20	.40		
+			
ALTERNATE 1		747.19	402.45
0 STRUCTURE 19	11.19		
+			
ALTERNATE 1		11346.34	4566.46
0 STRUCTURE 18	11.66		
+			
ALTERNATE 1		11727.81	4687.99
0 STRUCTURE 17	11.92		
+			
ALTERNATE 1		11844.49	4744.53
0 STRUCTURE 16	.50		
+			
ALTERNATE 1		837.44	394.31
0 STRUCTURE 15	5.20		
+			
ALTERNATE 1		4684.39	1753.25

TR20 XEQ 1/12/89 15:48  
REV PC/09/83

FUTURE CONDITION - E. FORK SAND CREEK TRIB. - ARIES PROPERTIES  
2 HR STORM

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 STRUCTURE 14	.69		
+ ALTERNATE 1		907.58	470.34
0 STRUCTURE 13	5.63		
+ ALTERNATE 1		4956.04	1901.29
0 STRUCTURE 12	12.85		
+ ALTERNATE 1		12749.20	5027.08
0 STRUCTURE 11	5.92		
+ ALTERNATE 1		5083.19	1981.77
0 STRUCTURE 10	.51		
+ ALTERNATE 1		838.70	400.64
0 STRUCTURE 9	19.93		
+ ALTERNATE 1		18651.27	7138.11
0 STRUCTURE 8	1.14		
+ ALTERNATE 1		1550.52	656.12
0 STRUCTURE 7	20.28		
+ ALTERNATE 1		18820.18	7184.11
0 STRUCTURE 6	.71		
+ ALTERNATE 1		1115.45	483.46
0 STRUCTURE 5	22.02		
+ ALTERNATE 1		19852.09	7513.45
0 STRUCTURE 4	23.32		
+ ALTERNATE 1		20288.60	7625.86
0 STRUCTURE 3	23.48		
+ ALTERNATE 1		20328.09	7621.94
0 STRUCTURE 2	23.84		
+ ALTERNATE 1		20580.72	7678.82
0 STRUCTURE 1	24.32		
+ ALTERNATE 1		20470.14	7607.09

TR20 XEQ 1/12/89 15:48  
REV PC/09/83

FUTURE CONDITION - B. FORK SAND CREEK TRIB. - ARIES PROPERTIES  
2 HR STORM

JOB 1 SUMMARY  
PAGE 37

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 XSECTION 1	.48		
+			
ALTERNATE 1		517.15	230.00
0 XSECTION 2	.36		
+			
ALTERNATE 1		429.06	216.89
0 XSECTION 3	.16		
+			
ALTERNATE 1		375.27	208.45
0 XSECTION 4	.59		
+			
ALTERNATE 1		1026.18	444.83
0 XSECTION 5	.18		
+			
ALTERNATE 1		319.64	136.03
0 XSECTION 6	.29		
+			
ALTERNATE 1		673.73	369.64
0 XSECTION 7	.38		
+			
ALTERNATE 1		675.07	328.92
0 XSECTION 8	.19		
+			
ALTERNATE 1		390.81	184.18
0 XSECTION 9	.14		
+			
ALTERNATE 1		289.36	135.81
0 XSECTION 10	.13		
+			
ALTERNATE 1		267.40	126.02
0 XSECTION 11	.10		
+			
ALTERNATE 1		214.36	106.95
0 XSECTION 12	.22		
+			
ALTERNATE 1		605.34	345.03
0 XSECTION 13	.13		
+			
ALTERNATE 1		345.23	196.34
0 XSECTION 14	.35		
+			
ALTERNATE 1		554.43	263.92

TR20 XEQ 1/12/89 15:48  
REV PC/09/83

FUTURE CONDITION - E. FORK SAND CREEK TRIB. - ARIES PROPERTIES  
2 HR STORM

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 XSECTION 15	.25		
+			
ALTERNATE 1		691.89	398.46
0 XSECTION 16	.38		
+			
ALTERNATE 1		808.72	413.53
0 XSECTION 17	.13		
+			
ALTERNATE 1		363.36	207.34
0 XSECTION 18	.40		
+			
ALTERNATE 1		856.43	471.95
0 XSECTION 19	.29		
+			
ALTERNATE 1		706.25	397.81
0 XSECTION 20	.30		
+			
ALTERNATE 1		777.89	433.17
0 XSECTION 21	.10		
+			
ALTERNATE 1		273.60	157.14
0 XSECTION 22	.13		
+			
ALTERNATE 1		440.66	274.85
0 XSECTION 23	.20		
+			
ALTERNATE 1		476.36	270.02
0 XSECTION 24	.28		
+			
ALTERNATE 1		762.18	446.44
0 XSECTION 25	.26		
+			
ALTERNATE 1		617.71	323.63
0 XSECTION 26	.47		
+			
ALTERNATE 1		792.01	375.34
0 XSECTION 27	.14		
+			
ALTERNATE 1		330.79	182.54
0 XSECTION 28	.33		
+			
ALTERNATE 1		804.89	461.06

TR20 XEQ 1/12/89 15:48  
REV PC/09/83

FUTURE CONDITION - E. FORK SAND CREEK TRIB. - ARIES PROPERTIES  
2 HR STORM

JOB 1 SUMMARY  
PAGE 39

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 XSECTION 29	.17		
+			
ALTERNATE 1		424.21	246.73
0 XSECTION 30	.10		
+			
ALTERNATE 1		279.27	161.29
0 XSECTION 31	.24		
+			
ALTERNATE 1		659.54	372.21
0 XSECTION 32	.15		
+			
ALTERNATE 1		287.59	142.99
0 XSECTION 33	.50		
+			
ALTERNATE 1		770.78	370.80
0 XSECTION 34	.23		
+			
ALTERNATE 1		369.79	179.17
0 XSECTION 35	.26		
+			
ALTERNATE 1		655.84	381.89
0 XSECTION 36	.39		
+			
ALTERNATE 1		629.92	287.69
0 XSECTION 37	.20		
+			
ALTERNATE 1		471.30	262.99
0 XSECTION 38	.12		
+			
ALTERNATE 1		150.55	55.97
0 XSECTION 39	.48		
+			
ALTERNATE 1		750.58	313.61
0 XSECTION 40	.14		
+			
ALTERNATE 1		164.32	64.72
0 XSECTION 41	.16		
+			
ALTERNATE 1		317.75	156.76
0 XSECTION 42	.20		
+			
ALTERNATE 1		475.22	264.23

TR20 XEQ 1/12/89 15:48  
REV PC/09/83

FUTURE CONDITION - E. FORK SAND CREEK TRIB. - ARIES PROPERTIES  
2 HR STORM

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 XSECTION 43	.16		
+ ALTERNATE 1		241.82	122.46
0 XSECTION 44	.29		
+ ALTERNATE 1		711.69	407.21
0 XSECTION 45	.50		
+ ALTERNATE 1		1081.75	555.08
0 XSECTION 46	.26		
+ ALTERNATE 1		374.81	171.69
0 XSECTION 47	.62		
+ ALTERNATE 1		968.53	460.59
0 XSECTION 48	.27		
+ ALTERNATE 1		428.71	223.01
0 XSECTION 49	.28		
+ ALTERNATE 1		576.75	307.46
0 XSECTION 50	.36		
+ ALTERNATE 1		551.46	235.80
0 XSECTION 51	.11		
+ ALTERNATE 1		218.25	109.09
0 XSECTION 52	.19		
+ ALTERNATE 1		346.69	159.62
0 XSECTION 53	.33		
+ ALTERNATE 1		547.64	249.76
0 XSECTION 54	.31		
+ ALTERNATE 1		386.97	165.19
0 XSECTION 55	.17		
+ ALTERNATE 1		341.69	177.86
0 XSECTION 56	.09		
+ ALTERNATE 1		245.66	143.20

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 XSECTION 57	.18		
+ ALTERNATE 1		347.14	163.47
0 XSECTION 58	.28		
+ ALTERNATE 1		498.15	235.32
0 XSECTION 59	.32		
+ ALTERNATE 1		307.12	99.99
0 XSECTION 60	.08		
+ ALTERNATE 1		106.92	38.71
0 XSECTION 61	.35		
+ ALTERNATE 1		335.91	109.36
0 XSECTION 62	.25		
+ ALTERNATE 1		334.11	120.97
0 XSECTION 63	.06		
+ ALTERNATE 1		75.08	38.36
0 XSECTION 64	.20		
+ ALTERNATE 1		452.96	245.14
0 XSECTION 65	.07		
+ ALTERNATE 1		150.05	74.87
0 XSECTION 66	.11		
+ ALTERNATE 1		216.77	100.48
0 XSECTION 67	.19		
+ ALTERNATE 1		334.16	156.90
0 XSECTION 68	.10		
+ ALTERNATE 1		246.89	131.20
0 XSECTION 69	.23		
+ ALTERNATE 1		309.97	136.65
0 XSECTION 70	.26		
+ ALTERNATE 1		516.70	268.40



TR20 XEQ 1/12/89 15:48  
REV PC/09/83

FUTURE CONDITION - E. FORK SAND CREEK TRIB. - ARIES PROPERTIES  
2 HR STORM

JOB 1 SUMMARY  
PAGE 42

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 XSECTION 71	.13		
+			
ALTERNATE 1		313.51	177.73
0 XSECTION 72	.29		
+			
ALTERNATE 1		587.93	307.05
0 XSECTION 73	.28		
+			
ALTERNATE 1		389.05	181.53
0 XSECTION 74	.19		
+			
ALTERNATE 1		522.79	297.98
0 XSECTION 75	.16		
+			
ALTERNATE 1		287.48	136.19
0 XSECTION 76	.24		
+			
ALTERNATE 1		490.63	247.03
0 XSECTION 77	.23		
+			
ALTERNATE 1		323.11	155.59
0 XSECTION 78	.37		
+			
ALTERNATE 1		556.56	269.27
0 XSECTION 79	.28		
+			
ALTERNATE 1		670.31	372.66
0 XSECTION 80	.07		
+			
ALTERNATE 1		95.09	34.47
0 XSECTION 81	.38		
+			
ALTERNATE 1		408.06	132.45
0 XSECTION 82	.25		
+			
ALTERNATE 1		272.96	89.46
0 XSECTION 83	.34		
+			
ALTERNATE 1		343.36	129.54
0 XSECTION 84	.27		
+			
ALTERNATE 1		672.98	388.11

TR20 XEQ 1/12/89 15:48  
 REV PC/09/83

FUTURE CONDITION - E. FORK SAND CREEK TRIB. - ARIES PROPERTIES  
 2 HR STORM

JOB 1 SUMMARY  
 PAGE 43

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 XSECTION 85	.19		
+			
ALTERNATE 1		454.85	252.88
0 XSECTION 86	.33		
+			
ALTERNATE 1		380.56	156.28
0 XSECTION 87	.15		
+			
ALTERNATE 1		130.62	41.81
0 XSECTION 88	.26		
+			
ALTERNATE 1		288.45	94.98
0 XSECTION 89	.10		
+			
ALTERNATE 1		144.23	55.93
0 XSECTION 90	.06		
+			
ALTERNATE 1		151.35	88.13
0 XSECTION 91	.42		
+			
ALTERNATE 1		835.02	436.94
0 XSECTION 92	.34		
+			
ALTERNATE 1		831.85	471.02
0 XSECTION 93	.26		
+			
ALTERNATE 1		516.34	274.97
0 XSECTION 94	.40		
+			
ALTERNATE 1		939.23	509.36
0 XSECTION 95	.14		
+			
ALTERNATE 1		245.93	128.93
0 XSECTION 96	.13		
+			
ALTERNATE 1		293.27	158.83
0 XSECTION 97	.13		
+			
ALTERNATE 1		173.74	62.91
0 XSECTION 98	.16		
+			
ALTERNATE 1		203.33	71.16

TR20 XEQ 1/12/89 15:48  
REV PC/09/83

FUTURE CONDITION - E. FORK SAND CREEK TRIB. - ARIES PROPERTIES  
2 HR STORM

JOB 1 SUMMARY  
PAGE 44

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 XSECTION 99	.45		
+-----			
ALTERNATE 1		688.87	307.18

1END OF 1 JOBS IN THIS RUN

Insert here:  
TR-20 run for 24 Hr.  
existing condition.

JOB TR-20

NO PLOTS

TITLE 001 FUTURE CONDITION - E. FORK SAND CREEK TRIB. - ARIES PROPERTIES

TITLE 24 HR TYPE IIA CURVE

5	RAINFL	1			.50				
8					0.000	.0025	0.005	.0075	0.010
8					0.015	0.020	0.025	0.030	0.050
8					0.060	0.100	0.700	0.750	0.780
8					0.798	0.820	0.830	0.840	0.850
8					0.860	0.865	0.870	0.885	0.890
8					0.900	0.905	0.910	0.915	0.921
8					0.927	0.933	0.940	0.945	0.950
8					0.955	0.960	0.965	0.970	0.975
8					0.980	0.983	0.985	0.988	0.990
8					0.993	0.995	0.998	1.000	1.000
9	ENDTBL								
6	RUNOFF	1	80		1	0.07	63.0	0.18	1
6	REACH	3	79	1	2	5597.0	.5	1.45	
6	RUNOFF	1	79		1	0.28	88.0	0.33	1
6	ADDHYD	4	38	1	2	3			1
6	REACH	3	150	3	1	6574.0	.3	1.6	
6	RUNOFF	1	78		2	0.37	83.0	0.65	1
6	REACH	3	51	2	3	1531.0	.4	1.5	
6	RUNOFF	1	51		4	0.11	71.0	0.10	1
6	ADDHYD	4	37	3	4	2			1
6	REACH	3	50	2	3	3000.0	.3	1.6	
6	RUNOFF	1	50		2	0.36	74.0	0.38	1
6	RUNOFF	1	49		4	0.28	88.0	0.46	1
6	REACH	3	152	4	5	2682.0	.3	1.6	
6	ADDHYD	4	33	2	5	6			
6	ADDHYD	4	33	6	1	5			
6	ADDHYD	4	33	5	3	1			1
6	REACH	3	47	1	2	4678.0	0.2	1.6	
6	RUNOFF	1	48		1	0.27	88.0	0.71	1
6	REACH	3	147	1	3	6040.0	.6	1.4	
6	RUNOFF	1	47		1	0.62	81.0	0.55	1
6	ADDHYD	4	32	1	3	4			
6	ADDHYD	4	32	4	2	1			1
6	REACH	3	145	1	2	3802.0	0.2	1.6	
6	RUNOFF	1	45		1	0.500	84.0	0.35	1
6	ADDHYD	4	29	1	2	3			1
6	RUNOFF	1	81		1	0.38	63.0	0.36	1
6	RUNOFF	1	96		2	0.13	88.0	0.38	1
6	REACH	3	81	2	4	6389.0	.4	1.5	
6	ADDHYD	4	54	4	1	2			1
6	REACH	3	76	2	1	5702.0	.4	1.5	
6	RUNOFF	1	76		2	0.24	81.0	0.32	1
6	ADDHYD	4	39	1	2	4			1
6	REACH	3	53	4	1	3453.0	.3	1.5	
6	RUNOFF	1	53		2	0.33	78.0	0.42	1
6	RUNOFF	1	77		4	0.23	83.0	0.73	1
6	REACH	3	153	4	5	3379.0	.4	1.5	
6	ADDHYD	4	36	1	2	4			
6	ADDHYD	4	36	4	5	1			1
6	REACH	3	52	1	2	1584.0	0.2	1.6	

6	RUNOFF	1	52			1	0.19	78.0	0.34	1
6	ADDHYD	4	34	2	1	4				1
6	REACH	3	46	4		1	3770.0	0.2	1.6	
6	RUNOFF	1	46			2	0.26	80.0	0.61	1
6	ADDHYD	4	31	1	2	4				1
6	REACH	3	145	4		1	3802.0	0.2	1.6	
6	ADDHYD	4	29	1	3	2				1
6	RUNOFF	1	93			1	0.26	88.0	0.49	1
6	RUNOFF	1	94			3	0.40	88.0	0.35	1
6	RUNOFF	1	98			4	0.16	63.0	0.23	1
6	REACH	3	194	4		5	5914.0	.6	1.4	
6	RUNOFF	1	97			4	0.13	63.0	0.19	1
6	REACH	3	94	4		6	5914.0	.6	1.4	
6	ADDHYD	4	55	1	3	7				
6	ADDHYD	4	55	7	5	1				
6	ADDHYD	4	55	1	6	3				1
6	REACH	3	83	3		1	6124.0	.2	1.6	
6	RUNOFF	1	83			3	0.34	70.0	0.67	1
6	RUNOFF	1	95			4	0.14	88.0	0.61	1
6	REACH	3	82	4		5	5808.0	.6	1.4	
6	RUNOFF	1	82			4	0.25	63.0	0.34	1
6	ADDHYD	4	53	1	3	6				
6	ADDHYD	4	53	6	5	1				
6	ADDHYD	4	53	1	4	3				1
6	REACH	3	75	3		1	4013.0	.2	1.6	
6	RUNOFF	1	75			3	0.16	79.0	0.37	1
6	ADDHYD	4	41	1	3	4				1
6	REACH	3	73	4		1	1610.0	0.2	1.6	
6	RUNOFF	1	73			3	0.28	81.0	0.68	1
6	ADDHYD	4	40	1	3	4				1
6	RUNOFF	1	99			1	0.45	78.0	0.50	1
6	REACH	3	92	1		3	5650.0	.3	1.5	
6	RUNOFF	1	92			5	0.34	88.0	0.31	1
6	ADDHYD	4	56	3	5	1				1
6	REACH	3	84	1		3	5491.0	.3	1.6	
6	RUNOFF	1	84			5	0.27	88.0	0.29	1
6	ADDHYD	4	52	3	5	1				1
6	REACH	3	74	1		3	4066.0	.2	1.6	
6	RUNOFF	1	74			1	0.19	87.0	0.21	1
6	ADDHYD	4	42	1	3	5				1
6	REACH	3	73	5		1	1610.0	0.2	1.6	
6	ADDHYD	4	40	1	4	3				
6	RUNOFF	1	91			1	0.42	88.0	0.50	1
6	REACH	3	85	1		4	6178.0	.3	1.5	
6	RUNOFF	1	86			1	0.33	74.0	0.65	1
6	RUNOFF	1	85			5	0.19	88.0	0.33	1
6	ADDHYD	4	51	1	5	6				
6	ADDHYD	4	51	6	4	1				1
6	REACH	3	72	1		4	5058.0	.3	1.6	
6	RUNOFF	1	72			1	0.29	85.0	0.42	1
6	ADDHYD	4	43	1	4	5				1
6	REACH	3	173	5		1	1864.0	.2	1.6	
6	ADDHYD	4	40	1	3	4				1
6	RUNOFF	1	71			1	0.13	88.0	0.32	1

6	REACH	3	57	1	3	4102.0	.6	1.4					
6	RUNOFF	1	57		1	0.18	79.0	0.32					1
6	ADDHYD	4	46	1	3	5							1
6	REACH	3	55	5	1	3000.0	.4	1.5					
6	RUNOFF	1	55		3	0.17	85.0	0.43					1
6	RUNOFF	1	54		5	0.31	76.0	0.63					1
6	REACH	3	54	4	6	4974.0	0.2	1.6					
6	ADDHYD	4	35	6	1	4							
6	ADDHYD	4	35	4	3	1							
6	ADDHYD	4	35	1	5	3							1
6	REACH	3	44	3	1	5016.0	0.2	1.6					
6	RUNOFF	1	56		3	0.09	85.0	0.17					1
6	REACH	3	144	3	4	4419.0	.6	1.4					
6	RUNOFF	1	43		5	0.16	86.0	0.73					1
6	REACH	3	146	5	3	507.0	.6	1.4					
6	RUNOFF	1	44		5	0.29	86.0	0.27					1
6	ADDHYD	4	30	3	4	6							
6	ADDHYD	4	30	6	1	3							
6	ADDHYD	4	30	3	5	1							1
6	REACH	3	45	1	3	2893.0	0.2	1.6					
6	ADDHYD	4	29	2	3	1			1	1	1		1
6	REACH	3	28	1	2	3168.0	0.2	1.6					
6	RUNOFF	1	29		3	0.17	90.0	0.32					1
6	REACH	3	128	3	1	3131.0	0.6	1.4					
6	RUNOFF	1	27		3	0.14	86.0	0.31					1
6	RUNOFF	1	28		4	0.33	90.0	0.34					1
6	ADDHYD	4	19	2	1	5							
6	ADDHYD	4	19	5	3	1							
6	ADDHYD	4	19	1	4	2							1
6	REACH	3	26	2	1	3221.0	0.2	1.6					
6	RUNOFF	1	26		2	0.47	81.0	0.48					1
6	ADDHYD	4	18	1	2	3							1
6	REACH	3	25	3	1	2323.0	0.2	1.6					
6	RUNOFF	1	25		2	0.26	81.0	0.21					1
6	ADDHYD	4	17	1	2	3							1
6	REACH	3	24	3	1	2524.0	0.2	1.6					
6	RUNOFF	1	24		2	0.28	90.0	0.26					1
6	ADDHYD	4	12	1	2	3							
6	RUNOFF	1	41		1	0.16	80.0	0.32					1
6	REACH	3	31	1	2	3358.0	.5	1.5					
6	RUNOFF	1	31		1	0.24	86.0	0.19					1
6	ADDHYD	4	20	1	2	4							1
6	REACH	3	30	4	1	2323.0	.3	1.5					
6	RUNOFF	1	30		2	0.10	83.0	0.13					1
6	ADDHYD	4	16	1	2	4							1
6	REACH	3	124	4	1	4594.0	0.2	1.6					
6	RUNOFF	1	32		2	0.15	82.0	0.39					1
6	REACH	3	198	2	4	5227.0	.5	1.5					
6	ADDHYD	4	12	1	4	2							
6	ADDHYD	4	12	2	3	1							1
6	REACH	3	18	1	2	3696.0	0.1	1.6					
6	RUNOFF	1	18		7	0.40	90.0	0.45					1
6	ADDHYD	4	57	2	7	1							
6	RUNOFF	1	87		2	0.15	63.0	0.55					1

6 REACH	3	70	2	3	5613.0	.6	1.4	
6 RUNOFF	1	70		2	0.26	86.0	0.46	1
6 ADDHYD	4	47	2	3				1
6 REACH	3	58	4	2	5016.0	.4	1.5	
6 RUNOFF	1	58		3	0.28	79.0	0.38	1
6 ADDHYD	4	28	2	3				1
6 REACH	3	42	4	2	2746.0	.3	1.5	
6 RUNOFF	1	42		3	0.20	84.0	0.26	1
6 ADDHYD	4	27	2	3				1
6 REACH	3	40	4	2	2218.0	.3	1.5	
6 RUNOFF	1	40		3	0.14	72.0	0.57	1
6 ADDHYD	4	26	2	3				1
6 REACH	3	199	4	2	216.0	.2	1.6	
6 RUNOFF	1	90		3	0.06	88.0	0.28	1
6 REACH	3	88	3	4	5597.0	.6	1.4	
6 RUNOFF	1	88		3	0.26	63.0	0.33	1
6 ADDHYD	4	50	3	4				1
6 REACH	3	68	5	3	3643.0	.3	1.5	
6 RUNOFF	1	89		4	0.10	65.0	0.20	1
6 REACH	3	68	4	5	3643.0	.3	1.5	
6 RUNOFF	1	67		6	0.19	79.0	0.39	1
6 RUNOFF	1	68		4	0.10	82.0	0.20	1
6 ADDHYD	4	49	3	5				
6 ADDHYD	4	49	7	6				
6 ADDHYD	4	49	3	4				1
6 REACH	3	66	5	3	2531.0	0.2	1.6	
6 RUNOFF	1	66		4	0.11	74.0	0.19	1
6 RUNOFF	1	69		5	0.23	78.0	0.62	1
6 ADDHYD	4	48	3	4				
6 ADDHYD	4	48	6	5				1
6 REACH	3	59	3	4	5158.0	0.6	1.6	
6 RUNOFF	1	59		3	0.32	63.0	0.44	1
6 ADDHYD	4	44	3	4				1
6 REACH	3	60	5	3	1373.0	0.8	1.5	
6 RUNOFF	1	60		4	0.08	63.0	0.19	1
6 ADDHYD	4	25	3	4				1
6 REACH	3	39	5	3	4963.0	0.2	1.6	
6 RUNOFF	1	39		4	0.48	73.0	0.34	1
6 ADDHYD	4	21	3	4				
6 ADDHYD	4	21	5	2				1
6 RUNOFF	1	63		2	0.06	88.0	1.06	1
6 REACH	3	62	2	4	3432.0	1.5	1.3	
6 RUNOFF	1	64		2	0.20	83.0	0.28	1
6 REACH	3	62	2	5	3432.0	1.5	1.3	
6 RUNOFF	1	65		2	0.07	78.0	0.22	1
6 REACH	3	162	2	6	2445.0	1.9	1.2	
6 RUNOFF	1	62		2	0.25	63.0	0.19	1
6 ADDHYD	4	45	4	5				
6 ADDHYD	4	45	7	6				
6 ADDHYD	4	45	4	2				1
6 REACH	3	61	5	2	3152.0	1.7	1.3	
6 RUNOFF	1	61		4	0.35	63.0	0.44	1
6 ADDHYD	4	24	2	4				1
6 REACH	3	139	5	2	4488.0	0.3	1.5	



6	ADDHYD	4	21	2	3	4							1
6	REACH	3	33	4		2	7445.0	0.2	1.6				1
6	RUNOFF	1	33			3	0.50	82.0	0.59				1
6	RUNOFF	1	34			4	0.23	82.0	0.55				1
6	ADDHYD	4	15	2	3	5							1
6	ADDHYD	4	15	5	4	2							1
6	RUNOFF	1	37			3	0.20	88.0	0.34				1
6	RUNOFF	1	38			4	0.12	68.0	0.39				1
6	ADDHYD	4	23	3	4	5							1
6	REACH	3	35	5		3	3252.0	.6	1.4				1
6	RUNOFF	1	35			4	0.26	88.0	0.28				1
6	ADDHYD	4	22	3	4	5							1
6	REACH	3	34	5		3	1816.0	.4	1.5				1
6	ADDHYD	4	15	2	3	4							1
6	REACH	3	22	4		2	3062.0	.2	1.6				1
6	RUNOFF	1	21			3	0.10	88.0	0.23				1
6	REACH	3	122	3		4	2503.0	.6	1.4				1
6	RUNOFF	1	22			3	0.13	91.0	0.12				1
6	RUNOFF	1	23			5	0.20	92.0	0.39				1
6	ADDHYD	4	13	2	4	6							1
6	ADDHYD	4	13	6	3	2							1
6	ADDHYD	4	13	2	5	3							1
6	REACH	3	19	3		2	3802.0	0.2	1.6				1
6	RUNOFF	1	19			6	0.29	89.0	0.33				1
6	ADDHYD	4	11	2	6	7							1
6	REACH	3	15	7		2	2571.0	0.2	1.6				1
6	RUNOFF	1	16			3	0.38	84.0	0.36				1
6	REACH	3	17	3		4	3274.0	.6	1.4				1
6	RUNOFF	1	17			3	0.13	87.0	0.19				1
6	ADDHYD	4	10	3	4	5							1
6	REACH	3	115	5		3	2820.0	.3	1.5				1
6	RUNOFF	1	15			4	0.25	88.0	0.22				1
6	REACH	3	116	1		5	2260.0	0.1	1.6				1
6	ADDHYD	4	9	2	3	1							1
6	ADDHYD	4	9	1	5	2							1
6	ADDHYD	4	9	2	4	1							1
6	REACH	3	14	1		2	3448.0	0.1	1.6				1
6	RUNOFF	1	14			1	0.35	81.0	0.53				1
6	ADDHYD	4	7	1	2	3				1	1	1	1
6	REACH	3	5	3		1	4910.0	0.1	1.6				1
6	RUNOFF	1	5			2	0.18	70.0	0.17				1
6	RUNOFF	1	36			3	0.39	78.0	0.44				1
6	REACH	3	20	3		4	3960.0	.3	1.5				1
6	RUNOFF	1	20			3	0.30	85.0	0.23				1
6	ADDHYD	4	14	3	4	5							1
6	REACH	3	12	5		3	3221.0	.2	1.6				1
6	RUNOFF	1	10			4	0.13	75.0	0.18				1
6	REACH	3	112	4		5	2250.0	0.3	1.5				1
6	RUNOFF	1	11			4	0.10	78.0	0.22				1
6	REACH	3	195	4		6	2788.0	.2	1.6				1
6	RUNOFF	1	12			4	0.22	87.0	0.21				1
6	ADDHYD	4	8	5	6	7							1
6	ADDHYD	4	8	7	4	5							1
6	ADDHYD	4	8	5	3	4							1



TR20 XEQ 1/12/89 16: 6  
REV PC/09/83

FUTURE CONDITION - E. FORK SAND CREEK TRIB. - ARIES PROPERTIES  
24 HR TYPE IIA CURVE

JOB 1 SUMMARY  
PAGE 37

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 STRUCTURE 56	.79		
+			
ALTERNATE 1		978.76	527.14
0 STRUCTURE 55	.95		
+			
ALTERNATE 1		1547.34	866.10
0 STRUCTURE 54	.51		
+			
ALTERNATE 1		430.45	136.40
0 STRUCTURE 53	1.68		
+			
ALTERNATE 1		1800.84	854.69
0 STRUCTURE 52	1.06		
+			
ALTERNATE 1		1206.39	728.15
0 STRUCTURE 51	.94		
+			
ALTERNATE 1		1237.30	527.14
0 STRUCTURE 50	.32		
+			
ALTERNATE 1		260.06	82.65
0 STRUCTURE 49	.71		
+			
ALTERNATE 1		637.77	275.99
0 STRUCTURE 48	1.05		
+			
ALTERNATE 1		937.26	376.69
0 STRUCTURE 47	.41		
+			
ALTERNATE 1		545.45	291.03
0 STRUCTURE 46	.31		
+			
ALTERNATE 1		499.08	240.86
0 STRUCTURE 45	.58		
+			
ALTERNATE 1		723.10	281.18
0 STRUCTURE 44	1.37		
+			
ALTERNATE 1		1076.10	381.59
0 STRUCTURE 43	1.23		
+			
ALTERNATE 1		1510.98	646.22

TR20 XEQ 1/12/89 16: 6  
REV PC/09/83

FUTURE CONDITION - E. FORK SAND CREEK TRIB. - ARIES PROPERTIES  
24 HR TYPE IIA CURVE

JOB 1 SUMMARY  
PAGE 38

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 STRUCTURE 42	1.25		
+			
ALTERNATE 1		1239.71	702.37
0 STRUCTURE 41	1.84		
+			
ALTERNATE 1		1788.61	803.58
0 STRUCTURE 40	4.60		
+			
ALTERNATE 1		4819.17	2154.72
0 STRUCTURE 39	.75		
+			
ALTERNATE 1		611.43	250.84
0 STRUCTURE 38	.35		
+			
ALTERNATE 1		713.68	404.89
0 STRUCTURE 37	.48		
+			
ALTERNATE 1		568.12	281.82
0 STRUCTURE 36	1.31		
+			
ALTERNATE 1		1146.23	479.50
0 STRUCTURE 35	5.39		
+			
ALTERNATE 1		5415.88	2356.50
0 STRUCTURE 34	1.50		
+			
ALTERNATE 1		1295.29	538.33
0 STRUCTURE 33	1.47		
+			
ALTERNATE 1		1915.38	926.80
0 STRUCTURE 32	2.36		
+			
ALTERNATE 1		2740.43	1257.63
0 STRUCTURE 31	1.76		
+			
ALTERNATE 1		1493.54	599.46
0 STRUCTURE 30	5.93		
+			
ALTERNATE 1		5604.85	2400.99
0 STRUCTURE 29	10.55		
+			
ALTERNATE 1		9631.57	4071.79

TR20 XEQ 1/12/89 16: 6  
REV PC/09/83

FUTURE CONDITION - B. FORK SAND CREEK TRIB. - ARIES PROPERTIES  
24 HR TYPE IIA CURVE

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 STRUCTURE 28	.69		
+			
ALTERNATE 1		813.19	385.01
0 STRUCTURE 27	.89		
+			
ALTERNATE 1		937.06	421.81
0 STRUCTURE 26	1.03		
+			
ALTERNATE 1		1023.15	440.15
0 STRUCTURE 25	1.45		
+			
ALTERNATE 1		1092.89	386.06
0 STRUCTURE 24	.93		
+			
ALTERNATE 1		903.17	305.05
0 STRUCTURE 23	.32		
+			
ALTERNATE 1		621.76	325.49
0 STRUCTURE 22	.58		
+			
ALTERNATE 1		959.44	578.26
0 STRUCTURE 21	3.89		
+			
ALTERNATE 1		2847.59	1002.66
0 STRUCTURE 20	.40		
+			
ALTERNATE 1		805.02	419.66
0 STRUCTURE 19	11.19		
+			
ALTERNATE 1		9912.18	4164.06
0 STRUCTURE 18	11.66		
+			
ALTERNATE 1		10133.28	4201.54
0 STRUCTURE 17	11.92		
+			
ALTERNATE 1		10188.45	4222.45
0 STRUCTURE 16	.50		
+			
ALTERNATE 1		860.73	421.48
0 STRUCTURE 15	5.20		
+			
ALTERNATE 1		3870.85	1535.97

TR20 XEQ 1/12/89 16: 6  
REV PC/09/83

FUTURE CONDITION - E. FORK SAND CREEK TRIB. - ARIES PROPERTIES  
24 HR TYPE IIA CURVE

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 STRUCTURE 14	.69		
+			
ALTERNATE 1		984.50	486.10
0 STRUCTURE 13	5.63		
+			
ALTERNATE 1	5.63	4088.04	1683.38
0 STRUCTURE 12	12.85		
+			
ALTERNATE 1		10891.64	4390.16
0 STRUCTURE 11	5.92		
+			
ALTERNATE 1		4155.23	1699.84
0 STRUCTURE 10	.51		
+			
ALTERNATE 1		880.12	431.12
0 STRUCTURE 9	19.93		
+			
ALTERNATE 1		15442.75	5639.94
0 STRUCTURE 8	1.14		
+			
ALTERNATE 1		1581.02	641.17
0 STRUCTURE 7	20.28		
+			
ALTERNATE 1		15508.72	5629.07
0 STRUCTURE 6	.71		
+			
ALTERNATE 1		1122.07	502.48
0 STRUCTURE 5	22.02		
+			
ALTERNATE 1		16180.76	5814.19
0 STRUCTURE 4	23.32		
+			
ALTERNATE 1		16389.05	5868.93
0 STRUCTURE 3	23.48		
+			
ALTERNATE 1		16412.54	5871.40
0 STRUCTURE 2	23.84		
+			
ALTERNATE 1		16581.54	5895.07
0 STRUCTURE 1	24.32		
+			
ALTERNATE 1		16452.04	5850.92

TR20 XEQ 1/12/89 16: 6  
REV PC/09/83

FUTURE CONDITION - E. FORK SAND CREEK TRIB. - ARIES PROPERTIES  
24 HR TYPE IIA CURVE

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 XSECTION 1	.48		
+			
ALTERNATE 1		461.85	212.91
0 XSECTION 2	.36		
+			
ALTERNATE 1		428.39	229.84
0 XSECTION 3	.16		
+			
ALTERNATE 1		376.54	204.42
0 XSECTION 4	.59		
+			
ALTERNATE 1		967.13	432.02
0 XSECTION 5	.18		
+			
ALTERNATE 1		283.89	114.69
0 XSECTION 6	.29		
+			
ALTERNATE 1		731.84	419.69
0 XSECTION 7	.38		
+			
ALTERNATE 1		681.27	348.51
0 XSECTION 8	.19		
+			
ALTERNATE 1		365.33	167.14
0 XSECTION 9	.14		
+			
ALTERNATE 1		272.80	125.18
0 XSECTION 10	.13		
+			
ALTERNATE 1		249.97	114.36
0 XSECTION 11	.10		
+			
ALTERNATE 1		202.35	97.66
0 XSECTION 12	.22		
+			
ALTERNATE 1		606.81	343.01
0 XSECTION 13	.13		
+			
ALTERNATE 1		346.80	195.08
0 XSECTION 14	.35		
+			
ALTERNATE 1		556.73	273.02

TR20 XEQ 1/12/89 16: 6  
REV PC/09/83

FUTURE CONDITION - E. PORK SAND CREEK TRIB. - ARIES PROPERTIES  
24 HR TYPE IIA CURVE

JOB 1 SUMMARY  
PAGE 42

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 XSECTION 15	.25		
+			
ALTERNATE 1		701.08	401.94
0 XSECTION 16	.38		
+			
ALTERNATE 1		835.03	441.19
0 XSECTION 17	.13		
+			
ALTERNATE 1		367.23	208.43
0 XSECTION 18	.40		
+			
ALTERNATE 1		963.00	556.91
0 XSECTION 19	.29		
+			
ALTERNATE 1		761.64	439.01
0 XSECTION 20	.30		
+			
ALTERNATE 1		761.94	415.75
0 XSECTION 21	.10		
+			
ALTERNATE 1		277.60	158.93
0 XSECTION 22	.13		
+			
ALTERNATE 1		437.27	267.62
0 XSECTION 23	.20		
+			
ALTERNATE 1		539.58	324.17
0 XSECTION 24	.28		
+			
ALTERNATE 1		799.73	470.89
0 XSECTION 25	.26		
+			
ALTERNATE 1		594.01	303.68
0 XSECTION 26	.47		
+			
ALTERNATE 1		789.15	388.66
0 XSECTION 27	.14		
+			
ALTERNATE 1		343.12	188.94
0 XSECTION 28	.33		
+			
ALTERNATE 1		883.13	516.63



TR20 XEQ 1/12/89 16: 6  
REV PC/09/83

FUTURE CONDITION - E. FORK SAND CREEK TRIB. - ARIES PROPERTIES  
24 HR TYPE IIA CURVE

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 XSECTION 29	.17		
+ ALTERNATE 1		458.78	273.39
0 XSECTION 30	.10		
+ ALTERNATE 1		272.98	147.79
0 XSECTION 31	.24		
+ ALTERNATE 1		659.10	368.20
0 XSECTION 32	.15		
+ ALTERNATE 1		292.08	147.89
0 XSECTION 33	.50		
+ ALTERNATE 1		774.76	384.93
0 XSECTION 34	.23		
+ ALTERNATE 1		371.07	184.99
0 XSECTION 35	.26		
+ ALTERNATE 1		686.51	390.78
0 XSECTION 36	.39		
+ ALTERNATE 1		613.00	284.18
0 XSECTION 37	.20		
+ ALTERNATE 1		504.70	285.83
0 XSECTION 38	.12		
+ ALTERNATE 1		124.29	43.77
0 XSECTION 39	.48		
+ ALTERNATE 1		689.21	290.40
0 XSECTION 40	.14		
+ ALTERNATE 1		141.51	56.00
0 XSECTION 41	.16		
+ ALTERNATE 1		317.12	157.05
0 XSECTION 42	.20		
+ ALTERNATE 1		477.80	255.77

TR20 XEQ 1/12/89 16: 6  
REV PC/09/83

FUTURE CONDITION - E. FORK SAND CREEK TRIB. - ARIES PROPERTIES  
24 HR TYPE IIA CURVE

JOB 1 SUMMARY  
PAGE 44

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 XSECTION 43	.16		
+			
ALTERNATE 1		249.68	132.65
0 XSECTION 44	.29		
+			
ALTERNATE 1		727.64	401.48
0 XSECTION 45	.50		
+			
ALTERNATE 1		1097.52	580.15
0 XSECTION 46	.26		
+			
ALTERNATE 1		362.75	172.70
0 XSECTION 47	.62		
+			
ALTERNATE 1		960.80	469.96
0 XSECTION 48	.27		
+			
ALTERNATE 1		460.97	253.74
0 XSECTION 49	.28		
+			
ALTERNATE 1		621.94	347.40
0 XSECTION 50	.36		
+			
ALTERNATE 1		510.34	218.24
0 XSECTION 51	.11		
+			
ALTERNATE 1		210.80	91.36
0 XSECTION 52	.19		
+			
ALTERNATE 1		337.62	159.70
0 XSECTION 53	.33		
+			
ALTERNATE 1		533.39	248.26
0 XSECTION 54	.31		
+			
ALTERNATE 1		353.31	154.77
0 XSECTION 55	.17		
+			
ALTERNATE 1		351.57	186.85
0 XSECTION 56	.09		
+			
ALTERNATE 1		245.89	135.81

TR20 XEQ 1/12/89 16: 6  
REV PC/09/83

FUTURE CONDITION - E. FORK SAND CREEK TRIB. - ARIES PROPERTIES  
24 HR TYPE IIA CURVE

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 XSECTION 57	.18		
+			
ALTERNATE 1		343.63	166.92
0 XSECTION 58	.28		
+			
ALTERNATE 1		491.20	235.08
0 XSECTION 59	.32		
+			
ALTERNATE 1		225.55	63.70
0 XSECTION 60	.08		
+			
ALTERNATE 1		83.98	25.84
0 XSECTION 61	.35		
+			
ALTERNATE 1		246.70	69.67
0 XSECTION 62	.25		
+			
ALTERNATE 1		262.45	80.75
0 XSECTION 63	.06		
+			
ALTERNATE 1		76.78	42.00
0 XSECTION 64	.20		
+			
ALTERNATE 1		450.61	240.72
0 XSECTION 65	.07		
+			
ALTERNATE 1		141.65	68.36
0 XSECTION 66	.11		
+			
ALTERNATE 1		199.40	88.88
0 XSECTION 67	.19		
+			
ALTERNATE 1		329.38	157.37
0 XSECTION 68	.10		
+			
ALTERNATE 1		240.25	125.32
0 XSECTION 69	.23		
+			
ALTERNATE 1		293.10	132.51
0 XSECTION 70	.26		
+			
ALTERNATE 1		539.38	291.03

TR20 XEQ 1/12/89 16: 6  
REV PC/09/83

FUTURE CONDITION - E. FORK SAND CREEK TRIB. - ARIES PROPERTIES  
24 HR TYPE IIA CURVE

JOB 1 SUMMARY  
PAGE 46

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 XSECTION 71	.13		
+			
ALTERNATE 1		336.35	191.28
0 XSECTION 72	.29		
+			
ALTERNATE 1		613.49	326.59
0 XSECTION 73	.28		
+			
ALTERNATE 1		375.34	181.83
0 XSECTION 74	.19		
+			
ALTERNATE 1		524.06	296.24
0 XSECTION 75	.16		
+			
ALTERNATE 1		284.67	136.54
0 XSECTION 76	.24		
+			
ALTERNATE 1		493.39	248.97
0 XSECTION 77	.23		
+			
ALTERNATE 1		319.06	160.43
0 XSECTION 78	.37		
+			
ALTERNATE 1		556.95	279.49
0 XSECTION 79	.28		
+			
ALTERNATE 1		713.93	404.89
0 XSECTION 80	.07		
+			
ALTERNATE 1		75.20	22.83
0 XSECTION 81	.38		
+			
ALTERNATE 1		311.62	86.90
0 XSECTION 82	.25		
+			
ALTERNATE 1		208.68	59.81
0 XSECTION 83	.34		
+			
ALTERNATE 1		272.42	100.79
0 XSECTION 84	.27		
+			
ALTERNATE 1		707.25	408.82

TR20 XEQ 1/12/89 16: 6  
REV PC/09/83

FUTURE CONDITION - E. FORK SAND CREEK TRIB. - ARIES PROPERTIES  
24 HR TYPE IIA CURVE

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 XSECTION 85	.19		
+ ALTERNATE 1		484.45	274.75
0 XSECTION 86	.33		
+ ALTERNATE 1		332.05	138.15
0 XSECTION 87	.15		
+ ALTERNATE 1		91.12	25.19
0 XSECTION 88	.26		
+ ALTERNATE 1		221.14	63.76
0 XSECTION 89	.10		
+ ALTERNATE 1		116.10	39.43
0 XSECTION 90	.06		
+ ALTERNATE 1		158.43	90.18
0 XSECTION 91	.42		
+ ALTERNATE 1		898.10	502.34
0 XSECTION 92	.34		
+ ALTERNATE 1		873.80	503.83
0 XSECTION 93	.26		
+ ALTERNATE 1		559.38	311.84
0 XSECTION 94	.40		
+ ALTERNATE 1		1000.08	565.66
0 XSECTION 95	.14		
+ ALTERNATE 1		266.63	147.42
0 XSECTION 96	.13		
+ ALTERNATE 1		314.53	177.14
0 XSECTION 97	.13		
+ ALTERNATE 1		136.47	41.99
0 XSECTION 98	.16		
+ ALTERNATE 1		160.06	49.26

TR20 XEQ 1/12/89 16: 6  
REV PC/09/83

FUTURE CONDITION - E. FORK SAND CREEK TRIB. - ARIES PROPERTIES  
24 HR TYPE IIA CURVE

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	
		1	2
0 XSECTION 99	.45		
+-----			
ALTERNATE 1		660.52	306.48
END OF 1 JOBS IN THIS RUN			