APACHE JUNCTION FRS

DOWNSTREAM INUNDATION STUDY

FREEBOARD HYDROGRAPH ROUTED DOWNSTREAM

A303.919

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LIST OF COMPUTER PRINTOUTS

No.	Program	Location	Type of Run
A- 1	HEC-2	Spillway	low n-values
B- 2a	HEC-2	Spillway	high n-values
C- 2b	HEC-2	Spillway	high n, additional flows
D- 3	HEC-2	Idaho Rd.	low n-values
E- 4	HEC-2	Idaho Rd.	high n-values
F- 5	HEC-2	Southeast corner	low n-values
G- 6	HEC-2	Southeast corner	high n-values
H- 7	HEC-1	Spillway	FBH, low n-values
I- 8	HEC-1	Spillway	FBH, high n-values
J- 9	HEC-1	Spillway	ESH, low n-values
K- 10	HEC-1	Spillway	ESH, high n-values
L- 11	DAMBREAK*	Either Idaho	PSH
M- 12	DAMBREAK*	or S.E. corner	FBH

N X-SECTION LOCATIONS BELOW EMERGENCY SPILLWAY
O X-SECTION LOCATIONS BELOW IDAHO RD. BREACH SITE
P X-SECTION LOCATIONS BELOW S.E. COR.BREACH SITE

*Use only outflow hydrograph, Q(I) from Reservoir Depletion Table.

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BY DSH DATE 2/11/86 SHEET 1 OF

CHKD. BY DATE OFS NO. 3767.400 DEPT. NO. 930

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PROJECT APACHE JCT. FRS

SUBJECT DAM-BREACH ROUTING BY TR-66

CASE 1: IDAHO ROAD BREACH, HIGH N's

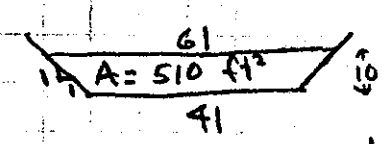
PSH

Procedure of TR-66:

1-3 See HEC-2 run Summary Table. VOL in ac-ft, cumulative from downstream end.

4. Use curvilinear hydrograph from NWS DAMBREAK run, $Q_{max} = 5302$ cfs which satisfies NEM Circular #1.

Check if $\frac{Q_{max}}{Q_{c,d}} < 1$: $Q_{c,d}^2 = \frac{gA^3}{T}$



$\frac{5300}{8368} < 1$ So curvilinear is appropriate.

5. Storage data for the following reaches from HEC-2:

Reach	Q_i	Vol. ac-ft.	$S_{i,j}$ (10^3 ft^3)	Reach	Q_i	Vol	$S_{i,j}$
.29	5300	82	3572	2.44	5300	845	36,808
	4400	72	3136		4400	721	31,407
	3300	59	2570		3300	566	24,655
	2200	44	1917		2200	371	16,161
.83	5300	247	10,759				
	4400	212	9235				
	3300	163	7100				
	2200	110	4792				
1.21	5300	375	16,335				
	4400	323	14,070				
	3300	249	10,846				
	2200	170	7405				
1.77	5300	594	25,875				
	4400	513	22,346				
	3300	401	17,468				
	2200	257	11,195				

581/8-81

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BY [illegible] DATE 2/11/86 SHEET 2 OF

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PROJECT

SUBJECT DAM BREACH, CASE 1

6. APPENDIX B PROCEDURE for m and k

$$m = \frac{(N-n)\sum_{1}^{n} \log Q_i - n\sum_{n+1}^{N} \log Q_i}{(N-n)\sum_{1}^{n} \log S_{i,j} - n\sum_{n+1}^{N} \log S_{i,j}}$$

N=4
n=2

$$K = \log^{-1}\left[\frac{\sum_{1}^{n} \log Q_i - m\sum_{1}^{n} \log S_{i,j}}{n}\right]$$

REACH

0.29

$$m = \frac{2(7.368) - 2(6.861)}{2(13.05) - 2(12.69)} = \frac{1.014}{0.72} = 1.409$$

$$K = \log^{-1}\left[\frac{7.368 - 1.409(13.05)}{2}\right] = 3.12 \times 10^{-6}$$

0.83

$$m = \frac{1.014}{2(14.00) - 2(13.53)} \quad \frac{1.014}{.931} = 1.089$$

$$K = \log^{-1}\left[\frac{7.368 - 1.089(14)}{2}\right] = 1.149 \times 10^{-4}$$

1.21

$$m = \frac{1.014}{2(14.36) - 2(13.905)} = \frac{1.014}{.910} = 1.114$$

$$K = \log^{-1}\left[\frac{7.368 - 1.114(14.36)}{2}\right] = 4.86 \times 10^{-5}$$

1.77

$$m = \frac{1.014}{2(14.76) - 2(14.29)} = \frac{1.014}{.942} = 1.077$$

$$K = \log^{-1}\left[\frac{7.368 - 1.077(14.76)}{2}\right] = 5.44 \times 10^{-5}$$

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PROJECT

SUBJECT DAM BREACH, CASE 1 (HIGH N's)

6 cont'd

Reach 2.44 $m = \frac{1.014}{2(15.06) - 2(14.60)} = \frac{1.014}{.925} = 1.096$

$K = \log^{-1}\left(\frac{7.368 - 1.096(15.06)}{2}\right) = 2.69 \times 10^{-5}$

Step	6	6	7	8	8	9	10	11
Reach	K	m	K^*	t_o^*	Q_o^*	Q	El.	t(sec)
0						5302		0
.29	3.12×10^{-6}	1.409	.074	.23	.81	4295	see next sheet	933
.83	7.149×10^{-4}	1.089	.455	.51	.66	3500		2164
1.21	4.86×10^{-5}	1.114	.704	.72	.58	3075		3056
1.77	5.44×10^{-5}	1.077	1.176	1.07	.48	2545		4541
2.44	2.69×10^{-5}	1.096	1.567	1.40	.41	2175		5941

7: $K^* = \frac{Q_{max}}{K V_I^m}$ $Q_{max} = 5302$

$V_I = 516$ ac-ft. $= 22.5 \times 10^6$ ft^3

8: from Figs. 4 and 5

9: $Q_o = Q^* \times 5302$

10: SEE HEC-2 PROFILES AND NEXT SHEET.

11 $t_o = T_o^* \times \frac{V_I}{Q_I} = t_o^* \times \frac{22.5 \times 10^6 \text{ ft}^3}{5302 \frac{\text{ft}^3}{\text{sec}}} = \text{sec}$

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BY DJA DATE 2/11/86 SHEET 4 OF

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PROJECT

SUBJECT DAM BREACH, CASE 2

CASE 2: IDAHO ROAD BREACH, LOW N'S

PSH

STEPS 1-4: Same as previous case: $Q_{max} = 5302$

5. Storage data by HEC-2: n=.04, .08

Reach	Q_i	VOL, ac-ft.	$S_{i,j}$ (10^3 ft^3)
.29	5300	47	2047
	4400	42	1830
	3300	34	1481
	2200	25	1089
.83	5300	132	5750
	4400	114	4966
	3300	88	3833
	2200	64	2788
1.21	5300	201	8756
	4400	175	7623
	3300	136	5924
	2200	97	4225
1.77	5300	333	14505
	4400	290	12632
	3300	228	9932
	2200	153	6665
2.44	5300	493	21475
	4400	419	18252
	3300	330	14375
	2200	223	9714

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PROJECT

SUBJECT DAM BREACH, CASE 2

6. APPENDIX B PROCEDURE

Reach 0.29: $m = \frac{1.014}{2(12.57) - 2(12.21)} = \frac{1.014}{.732} = 1.385$

$k = \log^{-1}\left(\frac{7.368 - 1.385(12.57)}{2}\right) = 9.44 \times 10^{-6}$

0.83 $m = \frac{1.014}{2(13.46) - 2(13.029)} = \frac{1.014}{.859} = 1.181$

$k = \log^{-1}\left(\frac{7.368 - 1.181(13.46)}{2}\right) = 5.61 \times 10^{-5}$

1.21 $m = \frac{1.014}{2(13.82) - 2(13.40)} = \frac{1.014}{.852} = 1.190$

$k = \log^{-1}\left(\frac{7.368 - 1.190(13.82)}{2}\right) = 2.866 \times 10^{-5}$

1.77 $m = \frac{1.014}{2(14.26) - 2(13.82)} = \frac{1.014}{.884} = 1.147$

$k = \log^{-1}\left(\frac{7.368 - 1.147(14.26)}{2}\right) = 3.211 \times 10^{-5}$

2.44 $m = \frac{1.014}{2(14.59) - 2(14.145)} = \frac{1.014}{.8965} = 1.131$

$k = \log^{-1}\left(\frac{7.368 - 1.131(14.59)}{2}\right) = 2.697 \times 10^{-5}$

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PROJECT

SUBJECT DAM BREACH, CASE 2 (LOW N's)

Step	6	6	7	8	8	9	11
Reach	K	m	K^*	t_0^*	Q_0^*	Q	t (sec.)
0						5302	0
.29	9.42×10^{-6}	1.385	.037	.24	.86	4560	1018
.83	5.61×10^{-5}	1.181	.196	.30	.77	4080	1273
1.21	2.866×10^{-5}	1.19	.330	.42	.70	3710	1782
1.77	3.211×10^{-5}	1.147	.609	.66	.60	3180	2801
2.44	2.697×10^{-5}	1.131	.951	.92	.52	2757	3904

7: $K^* = \frac{Q_{max}}{K V_I^m} = \frac{5302}{K\,(22.5 \times 10^6 (ft^2))^m}$

11: $t_0 = t_0^* \times \frac{22.5 \times 10^6}{5302}$

(4244)

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EBASCO SERVICES INCORPORATED

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CLIENT

PROJECT

SUBJECT DAM BREACH, CASE 3

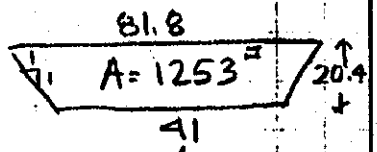
CASE 3: IDAHO ROAD BREACH, LOW N'S
FBH

Procedure of TR-66:

1-3 See HEC-2 Run Summary Table. VOL in ac-ft.

4. Use curvilinear hydrograph from NWS DAMBREAK run, $Q_{max} = 16{,}455$ cfs

Check if $\frac{Q_{max}}{Q_{c,d}} < 1$: $Q_{c,d}^2 = g\frac{A^3}{T}$



$\frac{Q_{max}}{Q_{c,d}} = \frac{16455}{27800} < 1$ So curvilinear is appropriate.

5. Storage data for the following reaches from HEC-2:

Reach	Q_i	VOL	$S_{i,j}$ (10^3 ft^3)	Reach	Q_i	VOL	$S_{i,j}$
1.29	18000	118	5150	1.77	18,000	890	38768
	16000	109	4758		16	815	35501
	14000	98	4278		14	737	32103
	10000	76	3317		10	565	24611
1.83	18000	365	15932	2.44	18,000	1321	57543
	16	334	14579		16	1211	52751
	14	301	13134		14	1097	47785
	10	227	9909		10	845	36808
1.21	18000	551	24051				
	16	504	22000				
	14	454	19776				
	10	344	14984				

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PROJECT

SUBJECT DAM BREACH, CASE 3 - LOWN'S

Step 6: See equations on sheet 2

Reach 0.29: $m = \frac{2(8.459) - 2(8.146)}{2(13.389) - 2(13.152)} = \frac{0.6265}{.4745} = 1.32$

$k = \log^{-1}\left(\frac{(8.459) - m(13.389)}{2}\right) = 2.46 \times 10^{-5}$

Reach 0.83: $m = \frac{0.6265}{2(14.366) - 2(14.115)} = \frac{.6265}{.5028} = 1.246$

$k = \log^{-1}\left(\frac{8.459 - m(14.366)}{2}\right) = 1.903 \times 10^{-5}$

Reach 1.21 $m = \frac{0.6265}{2(14.724) - 2(14.472)} = \frac{.6265}{.5036} = 1.244$

$k = \log^{-1}\left(\frac{8.459 - m(14.724)}{2}\right) = 1.178 \times 10^{-5}$

Reach 1.77 $m = \frac{0.6265}{2(15.139) - 2(14.898)} = \frac{.6265}{.4821} = 1.30$

$k = \log^{-1}\left(\frac{8.459 - m(15.139)}{2}\right) = 2.47 \times 10^{-6}$

Reach 2.44 $m = \frac{0.6265}{2(15.482) - 2(15.245)} = \frac{.6265}{.4740} = 1.322$

$k = \log^{-1}\left(\frac{8.459 - 1.322(15.482)}{2}\right) = 9.94 \times 10^{-7}$

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PROJECT

SUBJECT DAM BREACH, CASE 3 - LOW N's

Step	6	6	7	8	8	9	11
Reach	k	m	k^*	t_0^*	Q_0^*	Q	t(sec)
0						16455	0
.29	2.46×10^{-5}	1.32	.019	0.1	.92	15140	590
.83	1.903×10^{-5}	1.246	.097	.22	.81	13330	1297
1.21	1.178×10^{-5}	1.244	.162	.31	.76	12500	1828
1.77	2.47×10^{-6}	1.30	.276	.46	.67	11625	2713
2.44	9.94×10^{-7}	1.322	.457	.62	.60	9873	3656

7:

$$K^* = \frac{Q_{max}}{k V_I^m}$$

$Q_{max} = 16{,}455$ cfs $V_I = 2228$ ac-ft. $= 97.05 \times 10^6$

11:

$$t_0 = t_0^* \times \frac{V_I}{Q_I} = \frac{97.05 \times 10^6}{16455} \times t_0^* \quad (5900)$$

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PROJECT

SUBJECT DAM BREACH, CASE 4

Case 4: IDAHO ROAD BREACH, FBH, HIGH N's

Steps 1-4: Same as previous case.

5. Storage data by HEC-2 with n=.08, .16

Reach	Qi	VOL, ac-ft.	$S_{i,j}$, $10^3 ft^3$
.29	18000	188	8189
	16000	174	7579
	14000	160	6970
	10000	127	5532
.83	18000	605	26253
	16	554	24132
	14	506	22041
	10	398	17336
1.21	18000	915	39857
	16	838	36503
	14	765	33323
	10	603	26266
1.77	18000	1459	63554
	16	1336	58196
	14	1217	53012
	10	958	41730
2.44	18000	2086	90866
	16	1907	83068
	14	1736	75620
	10	1368	59590

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CLIENT

PROJECT

SUBJECT DAM BREACH, CASE 4 (HIGH N's)

Step 6:

Reach .29 $m = \frac{0.6265}{2(13.79) - 2(13.586)} = \frac{0.6265}{.4135} = 1.52$

$K = \log^{-1}\left(\frac{8.459 - m(13.79)}{2}\right) = 5.6 \times 10^{-7}$

.83 $m = \frac{.6265}{2(14.80) - 2(14.58)} = \frac{.6265}{.4392} = 1.426$

$K = \log^{-1}\left(\frac{8.459 - 1.426(14.80)}{2}\right) = 4.70 \times 10^{-7}$

1.21 $m = \frac{.6265}{2(15.163) - 2(14.942)} = \frac{.6265}{.4419} = 1.419$

$K = \log^{-1}\left(\frac{8.459 - 1.419(15.163)}{2}\right) = 2.94 \times 10^{-7}$

1.77 $m = \frac{.6265}{2(15.568) - 2(15.345)} = \frac{.6265}{.4464} = 1.403$

$K = \log^{-1}\left(\frac{8.459 - 1.403(15.568)}{2}\right) = 2.02 \times 10^{-7}$

2.44 $m = \frac{.6265}{2(15.878) - 2(15.654)} = \frac{.6265}{.4480} = 1.398$

$K = \log^{-1}\left(\frac{8.459 - 1.398(15.878)}{2}\right) = 1.345 \times 10^{-7}$

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CLIENT

PROJECT

SUBJECT

Step 6		6	7	8	8	9	11
Reach	K	m	K^*	t_0^*	Q_0^*	Q, cfs	t (sec)
0						16455	
.29	5.6×10^{-7}	1.52	.021	.1	.92	15140	590
.83	4.7×10^{-7}	1.426	.143	.28	.78	12830	1652
1.21	2.94×10^{-7}	1.419	.260	.41	.70	11520	2419
1.77	2.02×10^{-7}	1.403	.507	.62	.61	10040	3658
2.44	1.34×10^{-7}	1.398	.838	.88	.52	8560	5192

7 $K^* = \dfrac{Q_{max}}{k V_I^m} = \dfrac{16455}{K(97.05 \times 10^6)^m}$

11 $t_0 = t_0^* \times \dfrac{97.05 \times 10^6}{16455}$

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BY K. Romanczyk DATE 2/18/86 SHEET 13 OF

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CLIENT USDA / SCS

PROJECT APACHE JCT. FKS

SUBJECT DAM-BREACH ROUTING [illegible]

CASE 5: SE. COLORADO BRANCH [illegible] FKS

PROCEDURE OF TR-66

1-3 SEE HEC-2 run Summary table. VOL IN ac-ft, Cumulative From FK Downstream End.

5. STORAGE DATA FOR THE FOLLOWING REACHS FROM HEC-2:

REACH	Qi	MEASURED VOLUME (ac-FT)	Si (10^3 ft)
.303	5300	42	
	4400	37	1612
	3800	31	[illegible]
	2200	24	1045
.900	5300	127	[illegible]
	4400	100	5227
	3800	73	4239
	2200	47	[illegible]
1.231	5300	[illegible]	8015 ✓
	4400	[illegible]	[illegible]
	3800	[illegible]	[illegible]
	2200	[illegible]	4812
1.638	5300	255 ✓	[illegible] ✓
	4400	[illegible] ✓	9627
	3800	[illegible] ✓	7797
	2200	[illegible]	5750

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BY Lou Domangelo DATE 2/18/86 SHEET 14 OF ____

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PROJECT ____

SUBJECT Dam Breach, Case 5

6. APPENDIX B PROCEDURES FOR m AND K

$$m = \frac{(N-n)\sum_{1}^{n} \log Q_i - n\sum_{n+1}^{N} \log Q_i}{(N-n)\sum_{1}^{n} \log S_{i,i} - n\sum_{n+1}^{N} \log S_{i,i}}$$

N = 4
n = 2

$$K = \log^{-1}\left[\sum_{1}^{n} \log Q_i - \frac{m}{n}\sum_{1}^{n} \log S_{i,i}\right]$$

Reach

.303

$$m = \frac{2(7.368) - 2(6.861)}{2(12.47) - 2(12.13)} = \frac{1.014}{.64} = 1.584$$

$$K = \log^{-1}\left[\frac{7.368 - 1.584(12.47)}{2}\right] = 6.42 \times 10^{-7}$$

.900

$$m = \frac{1.014}{2(13.494) - 2(13.139)} = \frac{1.014}{.71} = 1.428$$

$$K = \log^{-1}\left[\frac{7.368 - 1.428(13.494)}{2}\right] = 1.120 \times 10^{-6}$$

1.231

$$m = \frac{1.014}{2(13.75) - 2(13.39)} = \frac{1.014}{.72} = 1.409$$

$$K = \log^{-1}\left[\frac{7.368 - 1.409(13.75)}{2}\right] = 9.937 \times 10^{-7}$$

1.638

$$m = \frac{1.014}{2(14.03) - 2(13.65)} = \frac{1.014}{.76} = 1.337$$

$$K = \log^{-1}\left[\frac{7.368 - 1.337(14.03)}{2}\right] = 2.021 \times 10^{-6}$$

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STEPS	6	6	7	8	8	9	10	11
REACH	K	m	K^*	t_o^*	Q_o^*	Q	EL.	t (SEC)
0						5302	SEE NEXT SHEET	0
.303	6.42E-7	1.584	.019	.12	.88	4666		509
.900	1.20E-6	1.428	.140	.35	.74	[illegible]		1485
1.231	[illegible]	1.409	[illegible]	.45	.69	3658		1910
1.638	[illegible]	1.337	.388	.60	.62	3287		2546

[illegible]

7: $K^* = \frac{Q_{MAX}}{K V_I^m}$ $Q_{max} = 5302$

$V_I = 516$ ac-ft $= 22.5E6$ ft³

8: From Figs 4 and 5

9: $Q_o = Q^* \times 5302$

10: SEE HEC-2 PROFILES AND NEXT SHEET

11: $t_o = t_o^* \times \frac{V_I}{Q_I} = t_o^* \times \frac{22.5E6}{5302}$

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BY L. Donnangelo DATE 2/19/86 SHEET 16 OF

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PROJECT

SUBJECT

CASE 6: S.E. CORNER BREACH HIGH n's PSH

5. STORAGE DATA FOR THE FOLLOWING REACHS FROM HEC-2

REACH	Qi	VOL. (ac-ft.)	Si, j (10^3 ft)
.303	5300	65	2831
	4400	57	2483
	3300	47	2047
	2200	36	1568
.900	5300	216	9409
	4400	188	8189
	3300	151	6578
	2200	113	4922
1.231	5300	291	12676
	4400	252	10977
	3300	202	8799
	2200	150	6534
1.638	5300	392	17075
	4400	340	14810
	3300	273	11892
	2200	202	8799

6. APENDIX B PROCEDURE FOR m and K

$$m = (N-n)\frac{\sum_{1}^{n} \log Q_i - n\sum_{n+1}^{N} \log Q_i}{(N-n)\sum_{1}^{n} \log S_{i,j} - n\sum_{n+1}^{N} \log S_{i,j}}$$

$N = 4$
$n = 2$

$$K = \log^{-1}\left[\frac{\sum_{1}^{n} \log Q_i - n\sum_{n+1}^{N} \log S_{i,j}}{n}\right]$$

REACH

.303

$$m = \frac{1.014}{2(12.85) - 2(12.51)} = \frac{1.014}{.68} = 1.491$$

$$K = \log^{-1}\left[\frac{7.368 - 1.491(12.85)}{2}\right] = 2.29\ E^{-6}$$

.900

$$m = \frac{1.014}{2(13.89) - 2(13.51)} = \frac{1.014}{.76} = 1.335$$

$$K = \log^{-1}\left[\frac{7.368 - 1.335(13.89)}{2}\right] = 2.58\ E^{-6}$$

1.231

$$m = \frac{1.014}{2(14.14) - 2(13.76)} = \frac{1.014}{.77} = 1.322$$

$$K = \log^{-1}\left[\frac{7.368 - 1.322(14.14)}{2}\right] = 2.18\ E^{-6}$$

1.638

$$m = \frac{1.014}{2(14.40) - 2(14.02)} = \frac{1.014}{.76} = 1.334$$

$$K = \log^{-1}\left[\frac{7.368 - 1.334(14.40)}{2}\right] = 1.20\ E^{-6}$$

EBASCO SERVICES INCORPORATED

BY [illegible] DATE [illegible] SHEET 18 OF ____

CHKD. BY ____ DATE ____ OFS NO. ____ DEPT. NO. ____

CLIENT ____

PROJECT ____

SUBJECT ____

STEPS	6	6	7	8	9	10	11
REACH	K	M	K*	t_o^*	Q_o^*	Q	t (sec)
0	—	—	—	—	—	—	0
.303	2.29E-6	1.491	.025	.12	.88	5100	509
.900	2.58E-6	1.335	.315	.50	.65	2446	2164
1.231	2.18E-6	1.322	.464	.72	.58	3075	3055
1.638	1.20E-6	1.334	.688	.82	.52	2757	3480

7: $K^* = Q_{max} / K V_I^n$ $Q_{max} = 5302$

$V_I = 516$ acft $= 22.5E6$ ft

8: From Fig 4 and 5

9: $Q_o = Q^* \times Q_{max}$

10: SEE HEC-2 [illegible]

11: $t_o = t_o^* \times \frac{V_I}{Q_o} = 1.[illegible] \times \frac{2.5E6}{5302}$

EBASCO SERVICES INCORPORATED

BY V. Domenico DATE 2/19/86 SHEET 19 OF

CHKD. BY DATE OFS NO. DEPT. NO.

CLIENT

PROJECT

SUBJECT

CASE 7: S.E. CORNER REACH LOW n's FBH

5. STORAGE DATA FOR THE FOLLOWING REACHS FROM HEC-2:

REACH	Qi	VOLUME (ac-ft)	Sai (10³ ft)
.303	18000	92.69	4028
	16000	85.77	3736
	14000	78.47	3418
	10000	62.98	2743
.900	18000	326.43	14219
	16000	300.07	13071
	14000	272.37	11864
	10000	218.84	9533
1.231	18000	427.34	18615
	16000	392.35	17091
	14000	355.85	15501
	10000	306.63	13357
1.698	18000	657.48	28640
	16000	604.93	26351
	14000	549.34	23929
	10000	457.75	19948

6. APPENDIX B PROCEDURES FOR m and K

$$m = \frac{(N-n)\sum_{1}^{n} \log Q_i - n\sum_{n+1}^{N} \log Q_i}{(N-n)\sum_{1}^{n} \log S_{i,j} - n\sum_{n+1}^{N} \log S_{i,j}}$$

$$K = \log^{-1}\left[\frac{\sum \log Q_i - m\sum^{n} \log S_{i,j}}{n}\right]$$

REACH

.303 $$m = \frac{2(8.459) - 2(8.146)}{2(13.18) - 2(12.97)} = \frac{.626}{.416} = 1.505$$

$$K = \log^{-1}\left[\frac{8.459 - 1.505(13.18)}{2}\right] = 2.05\,E^{-6}$$

.900 $$m = \frac{.626}{2(14.27) - 2(14.05)} = \frac{.626}{.433} = 1.445$$

$$K = \log^{-1}\left[\frac{8.459 - 1.445(14.27)}{2}\right] = 8.31\,E^{-7}$$

1.231 $$m = \frac{.626}{2(14.50) - 2(14.32)} = \frac{.626}{.368} = 1.701$$

$$K = \log\left[\frac{8.459 - (1.701)(14.50)}{2}\right] = 7.89\,E^{-9}$$

1.638 $$m = \frac{.626}{2(14.88) - 2(14.68)} = \frac{.626}{.4} = 1.565$$

$$K = \log^{-1}\left[\frac{8.459 - (1.565)(14.88)}{2}\right]$$

$$= 3.85\,E^{-8}$$

EBASCO SERVICES INCORPORATED

BY K. Pavangelo DATE 2/19/86 SHEET 21 OF

CHKD. BY DATE OFS NO. DEPT. NO.

CLIENT

PROJECT

SUBJECT CASE 7

STEPS	6	6	7	8	8	9	10	11
REACH	K	M	K^*	t_0^*	Q^*	Q	[illegible]	t (sec)
0								0
.203	2.05E-6	1.505	.008	.09	.91	14974	[illegible]	531
.900	8.31E-7	1.415	.057	.22	.82	13493	[illegible]	1298
1.281	7.87E-9	1.701	.054	.26	.78	12835	[illegible]	1533
1.638	3.85E-8	1.565	.135	.35	.74	12177	[illegible]	2064

7: $K^* = Q_{MAX} / K V_I^M$ $Q_{max} = 16,455$

$V_I = 2.28$ $97.05 E^6 FT^2$

8: FROM Figs. 4 and 5

9: $Q_0 = Q^* \times Q_{max}$

10: SEE HEC-2 PROFILES AND NEXT SHEET

11: $t_0 = t_0^* \times V_I / Q_I = t_0 \times \frac{97.05 E6}{16,455}$

581/8-81

EBASCO SERVICES INCORPORATED

BY L. Domenzlez DATE 2/19/86 SHEET 22 OF

CHKD. BY DATE OFS NO. DEPT. NO.

CLIENT

PROJECT

SUBJECT

CASE 8: S.E. CORNER Breach High [illegible]

5.) STORAGE DATA FOR THE FOLLOWING REACHES FROM [illegible] 2:

REACH	Qi	VOLUME (acre-ft)	Qi [illegible] (ft²)
.303	18000	143.75	6262
	16000	[illegible]	5811
	14000	122.56	[illegible]
	10000	98.78	[illegible]
.900	18000	549.36	23129
	16000	504.83	21990
	14000	458.2	[illegible]
	10000	350.15	[illegible]
1.231	18000	805.12	[illegible]
	16000	735.95	32058
	14000	663.18	28688
	10000	494.63	21546
1.638	18000	1162.75	[illegible]
	16000	1059.83	[illegible]
	14000	950.8	[illegible]
	10000	702.47	[illegible]

6. APPENDIX B PROCEDURES FOR m and K

$$m = \frac{(N-n)\sum_{i=1}^{n} \log \Omega_i - n\left[\sum_{i=1}^{N} \log \Omega_i\right]}{(N-n)\sum_{i=1}^{n} \log \Omega_i - n\sum_{i=1}^{N} \log \Omega_i}$$

$$K = \log^{-1}\left[\sum \log \Omega_i - m\sum \log \Omega_i\right]$$

REACH

.303

$$m = \frac{2(8.459) - 2(13.36)}{2(13.56) - 2(13.36)} = \frac{.626}{.398} = 1.575$$

$$K = \log^{-1}\left[\frac{(8.459) - (1.575)(13.56)}{2}\right] = 2.56E^{-7}$$

.900

$$m = \frac{.626}{2(14.72) - 2(14.48)} = \frac{.626}{.472} = 1.323$$

$$K = \log^{-1}\left[\frac{(8.459) - (1.323)(14.72)}{2}\right] = 3.11E^{-6}$$

1.231

$$m = \frac{.626}{2(15.05) - 2(14.79)} = \frac{.626}{.512} = 1.223$$

$$K = \log^{-1}\left[\frac{(8.459) - (1.223)(15.05)}{2}\right] = 1.062E^{-5}$$

1.638

$$m = \frac{.626}{2(15.37) - 2(15.15)} = 1.159$$

$$K = \log^{-1}\left[\frac{(8.459) - (1.159)(15.37)}{2}\right] = 2.102E^{-5}$$

EBASCO SERVICES INCORPORATED

BY Louis Ramunyk DATE 2/19/66 SHEET 24 OF

CHKD. BY DATE OFS NO. DEPT. NO.

CLIENT

PROJECT

SUBJECT CASE B

STEPS	6	6	7	8	8	9	10	11
REACH	K	m	K*	t*	Q*	Q		t (sec)
0								
.303	3.56E-7	1.575	.012	.10	.905	14892	SEE NEXT SHEET	590
.900	3.11E-6	1.323	.143	.32	.77	12670		1887
1.231	1.06E-5	1.223	.265	.40	.71	11683		2359
1.638	2.10E-5	1.159	.433	.55	.65	10696		3244

7: $K^* = Q_{max} / K V_I^m$ $Q_{max} = 16,455$

$V_I =$ 97.05 E 6

8: From Figs 4 and 5 (TR-66)

9: $Q_o = Q^* \times Q_{max}$

10: SEE HEC-2 Profiles and Next SHEET

11: $t_o = t_o^* \times V_I / Q_I$: $t_o^* \times$ 97.05 E 6 / 16,455

561/8-61

EBASCO SERVICES INCORPORATED

BY (y) DATE 2/25/86 SHEET 25 OF

CHKD. BY DATE OFS NO. DEPT. NO.

CLIENT

PROJECT

SUBJECT S.E. COR: SPECIAL CASE : PSH, HIGH N'S

High n's For PSH @ SE. CORNER

Reach

$$n = \frac{1.014}{2(12.84) - 2(12.\sim)} = \frac{1.014}{.65} \Rightarrow 1.549$$

.303

$$\text{Log}^{-1}\left[\frac{7.368 - 1.549(12.84)}{2}\right] = 5.488E^{-7}$$

.60

$$\frac{1.014}{2[(13.91) - 13.55]} = \frac{1.014}{.72} \Rightarrow 1.400$$

$$\text{Log}^{-1}\left[\frac{7.368 - 1.4(13.91)}{2}\right] = 8.85E^{-7}$$

1.231

$$\frac{1.014}{2[(14.25) - (13.89)]} = \frac{1.014}{.71} = 1.421$$

$$\text{log}^{-1}\left[\frac{7.368 - 1.42(14.25)}{2}\right] = 3.69E^{-7}$$

1.667

$$\left[\frac{1.014}{2[(14.54) - 14.\sim]}\right] = \frac{1.014}{.72} = 1.407$$

$$\text{Log}^{-1}\left[\frac{7.368 - 1.407(14.54)}{2}\right] = 2.85E^{-7}$$

$$1.014/2[14.73 - 14.\cdot] \qquad \frac{1.014}{.71} = 1.421$$

2.036

$$\text{Log}^{-1}\left[\frac{7.368 - 1.421(14.73)}{2}\right] = 1.65E^{-7}$$

EBASCO SERVICES INCORPORATED

BY (Y) DATE 2/25/85 SHEET 26 OF

CHKD. BY DATE OFS NO. DEPT. NO.

CLIENT

PROJECT

SUBJECT

Reach	Qi	Vol. (ac ft.)	Si ≠ (10^3 Ft)
.303	5300	63.78	2778
	4400	56.7	2470
	3300	47.32	2061
	2200	36.77	1602
.900	5300	222.36	9686
	4400	194.41	8468
	3300	157.97	6881
	2200	118.88	5178
1.231	5300	325.97	14199
	4400	285.91	12454
	3300	233.21	10159
	2200	176.03	7668
1.667	5300	459.05	19996
	4400	401.71	17498
	3300	326.48	14221
	2200	244.13	10634
2.036	5300	568	24742
	4400	498.64	21721
	3300	406.63	17713
	2200	306.14	13335

501/8-81

EBASCO SERVICES INCORPORATED

BY (Y) DATE 2/25/86 SHEET 27 OF

CHKD. BY DJA DATE 2/26/86 OFS NO. DEPT. NO.

CLIENT

PROJECT

SUBJECT

Reach	K	M	K*	E_o*	Q_o*	Q	EL	t
				suspect.				
303	5.49E-7	1.549	.039	.2	.83	4399		STET ~~849~~
.900	8.85E-7	1.400	.305	.58,52	.64	3390		2207 ~~2384~~
1.231	3.69E-7	1.421	.513	.70	.58	3075		2971
1.667	2.85E-7	1.407	.842	~~1~~05.95	.49	2598		4032 ~~4186~~
2.036	1.65E-7	1.421	1.147	1.25	.43	2280		5305

581/8-81

EBASCO SERVICES INCORPORATED

BY DSH DATE 2/26/86 SHEET 28 OF

CHKD. BY DATE OFS NO. DEPT. NO.

CLIENT

PROJECT

SUBJECT S.E. COR, DSH, LIMITED X-SECT. WIDTH, LOW N'S

REACH	Q_i	VOL (AC-FT)	S_i (10^3 ft^3)
.303	5300	41	1786
	4400	37	1611
	3300	31	1350
	2200	22	958
.900	5300	137	5967
	4400	120	5227
	3300	98	4268
	2200	72	3136
1.231	5300	202	8799
	4400	178	7753
	3300	146	6359
	2200	108	4704
1.667	5300	282	12283
	4400	248	10802
	3300	203	8842
	2200	147	6403
2.036	5300	363	15812
	4400	318	13852
	3300	260	11325
	2200	192	8363

EBASCO SERVICES INCORPORATED

BY DJA DATE 2/26/86 SHEET 29 OF

CHKD. BY DATE OFS NO. DEPT. NO.

CLIENT

PROJECT

SUBJECT SE. COR, LOW N, PSH

Reach .303

$$m = \frac{1.014}{2(12.459) - 2(12.112)} = \frac{1.014}{.6946} = 1.460$$

$$K = \log^{-1}\left[\frac{7.368 - 1.46(12.459)}{2}\right] = 3.88 \times 10^{-6}$$

.900

$$m = \frac{1.014}{2(13.494 - 13.127)} = \frac{1.014}{.735} = 1.380$$

$$K = \log^{-1}\left[\frac{7.368 - 1.38(13.494)}{2}\right] = 2.36 \times 10^{-6}$$

1.231

$$m = \frac{1.014}{2(13.834 - 13.476)} = \frac{1.014}{.716} = 1.416$$

$$K = \log^{-1}\left(\frac{7.368 - 1.416(13.834)}{2}\right) = 7.75 \times 10^{-7}$$

1.667

$$m = \frac{1.014}{2(14.123 - 13.753)} = \frac{1.014}{.7398} = 1.371$$

$$K = \log^{-1}\left(\frac{7.368 - 1.371(14.123)}{2}\right) = 1.019 \times 10^{-6}$$

2.036

$$m = \frac{1.014}{2(14.34 - 13.976)} = \frac{1.014}{.7282} = 1.392$$

$$K = \log^{-1}\left(\frac{7.368 - 1.392(14.34)}{2}\right) = 5.01 \times 10^{-7}$$

EBASCO SERVICES INCORPORATED

BY DJM DATE _____ SHEET 30 OF _____

CHKD. BY _____ DATE _____ OFS NO. _____ DEPT. NO. _____

CLIENT _____

PROJECT _____

SUBJECT S.E. COR, LOW N, PSH

Steps	6	6	7	8	8	9	11
Reach	K	m	k^*	t_0^*	Q_0^*	Q	t(sec)
0						5302	0
.303	3.88×10^{-6}	1.46	.025	.13	.88	4666	551
.900	2.36×10^{-6}	1.38	.161	.34	.73	3870	1443
1.231	7.75×10^{-7}	1.416	.266	.49	.66	3500	2079
1.667	1.019×10^{-6}	1.371	.433	.62	.60	3181	2631
2.036	5.01×10^{-7}	1.392	.617	.79	.54	2863	3352

7: $K^* = \frac{Q_{max}}{K V_I^m}$, $V_I = 516 \text{ ac-ft} = 22.5 \times 10^6 \text{ ft}^3$

11: $t_0 = t_0^* \times \frac{V_I}{Q_{max}} = t_0^* \frac{22.5 \times 10^6}{5302}$

S81/9-81

221-7416
530-1734

APEX REMOTE BATCH

DFB0DMV *UNITED INFORMATION SERVICES, INC.* 67. APEX/SL D.4.7.5

15.44.55. 02/04/86.

```
DDDDDDDDDD    FFFFFFFFFFFF  BBBBBBBBBBB     DDDDDDDD    DDDDDDDDDD   MM        MM  VV        VV
DDDDDDDDDDD   FFFFFFFFFFFF  BBBBBBBBBBBB   DD      DD   DDDDDDDDDDD  MMM      MMM  VV        VV
DD        DD  FF            BB        BB  DD      DD   DD        DD MMMM    MMMM  VV        VV
DD        DD  FF            BB        BB  DD      DD   DD        DD MM MM  MM MM   VV      VV
DD        DD  FF            BB        BB  DD      DD   DD        DD MM  MMMM  MM    VV      VV
DD        DD  FF            BB        BB  DD      DD   DD        DD MM   MM   MM    VV      VV
DD        DD  FF            BB        BB  DD      DD   DD        DD MM        MM     VV    VV
DD        DD  FFFFFFFF      BBBBBBBBBBBB  DD      DD   DD        DD MM        MM     VV    VV
DD        DD  FFFFFFFF      BBBBBBBBBBB   DD      DD   DD        DD MM        MM     VV    VV
DD        DD  FF            BB        BB  DD      DD   DD        DD MM        MM      VV  VV
DD        DD  FF            BB        BB  DD      DD   DD        DD MM        MM      VV  VV
DD        DD  FF            BB        BB  DD      DD   DD        DD MM        MM      VV  VV
DD        DD  FF            BB        BB  DD      DD   DD        DD MM        MM       V  V
DD        DD  FF            BB        BB  DD      DD   DD        DD MM        MM       VVVV
DDDDDDDDDDD   FF            BBBBBBBBBBBB   DD      DD   DDDDDDDDDDD  MM        MM       VVVV
DDDDDDDDDD    FF            BBBBBBBBBBB     DDDDDDDD    DDDDDDDDDD   MM        MM        VV
```

#1 APACHE
HEC-2 SUBCRITICAL RUN
FOR SPILLWAY ESH+FBH
n=.04,.08

```
*****************************************************
*  WATER SURFACE PROFILES                           *
*  VERSION OF NOVEMBER 1976                         *
*  UPDATED MARCH 1982                               *
*                                                   *
*  RUN DATE   02/04/86 TIME   15:20:03              *
*****************************************************
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****************************************
*  U.S. ARMY CORPS OF ENGINEERS
*  THE HYDROLOGIC ENGINEERING CENTER
*  609 SECOND STREET, SUITE D
*  DAVIS, CALIFORNIA 95616
*  (916) 440-2105 (FTS) 448-2105
****************************************
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```
X     X  XXXXXXX   XXXXX            XXXXX
X     X  X        X     X          X     X
X     X  X        X                      X
XXXXXXX  XXXX     X          XXXXX    XXXXX
X     X  X        X
X     X  X        X     X            X
X     X  XXXXXXX   XXXXX            XXXXXXX
```

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*************************************************
 HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
 ERROR CORR -  01,02,03,04,05
 MODIFICATION -  50,51,52,53,54,55
*************************************************

T1        APACHE JUNCTION
T2 DOWNSTREAM INUNDATION
T3      ESH -FBH  -- STARTING WITH PEAK OF ESH, Q=1900 CFS

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0.        2.        0.        0. -1.000000     0.00      0.0       3.  1610.000     0.000

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

     38.000    43.000    26.000     1.000     2.000     3.000     4.000    53.000    54.000     6.000

     42.000    25.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

NC      0.080     0.080     0.040     0.100     0.300     0.000     0.000     0.000     0.000     0.000
NH      7.000     0.080   200.000     0.040   630.000     0.080  1300.000     0.040  1500.000     0.080
NH   2140.000     0.040  2200.000     0.080  2600.000     0.000     0.000     0.000     0.000     0.000
QT      8.000  1900.000  1600.000  1300.000  1000.000 10600.000  9300.000  8000.000  6000.000     0.000
X1      3.160    16.000   200.000   630.000     0.000     0.000     0.000     0.000     0.000     0.000
GR   1610.000    60.000  1607.000   200.000  1608.000   400.000  1608.000   630.000  1610.000   720.000
GR   1610.000   820.000  1609.000   860.000  1610.000  1020.000  1610.000  1300.000  1608.000  1360.000
GR   1610.000  1500.000  1610.000  1660.000  1608.000  2140.000  1607.000  2170.000  1608.000  2200.000
GR   1610.000  2600.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

X1      3.170    16.000   200.000   630.000   100.000   100.000   100.000     0.000     0.000     0.000
GR   1610.000    60.000  1607.000   200.000  1608.000   400.000  1608.000   630.000  1610.000   720.000
GR   1610.000   820.000  1609.000   860.000  1610.000  1020.000  1610.000  1300.000  1608.000  1360.000
GR   1610.000  1500.000  1610.000  1660.000  1608.000  2140.000  1607.000  2170.000  1608.000  2200.000
GR   1610.000  2600.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

NH      7.000     0.080   850.000     0.040  1160.000     0.080  1900.000     0.040  2020.000     0.080
NH   2180.000     0.040  2300.000     0.080  2500.000     0.000     0.000     0.000     0.000     0.000
X1      2.960    20.000  1700.000  2300.000  1130.000  1130.000  1130.000     0.000     0.000     0.000
GR   1620.000     0.000  1618.000   100.000  1620.000   140.000  1620.000   340.000  1618.000   500.000
GR   1618.000   850.000  1617.000  1000.000  1618.000  1160.000  1618.000  1350.000  1619.000  1500.000
GR   1618.000  1700.000  1618.000  1900.000  1616.000  1920.000  1616.000  1950.000  1618.000  2020.000
GR   1619.000  2080.000  1618.000  2180.000  1616.000  2240.000  1618.000  2330.000  1620.000  2500.000

NH      3.000     0.080  1700.000     0.040  2060.000     0.080  2400.000     0.000     0.000     0.000
X1      2.717    15.000  1700.000  2220.000  1285.000  1285.000  1285.000     0.000     0.000     0.000
GR   1630.000    40.000  1628.000   150.000  1628.000   320.000  1630.000   660.000  1628.000   740.000
GR   1628.000  1120.000  1630.000  1360.000  1628.000  1700.000  1625.000  1840.000  1628.000  1950.000
GR   1627.000  2000.000  1627.000  2060.000  1629.000  2220.000  1628.000  2350.000  1630.000  2400.000
```

NH	3.000	0.080	2050.000	0.040	2460.000	0.080	2600.000	0.000	0.000	0.000
X1	2.430	15.000	1840.000	2460.000	1515.000	1515.000	1515.000	0.000	0.000	0.000
GR	1644.000	40.000	1642.000	100.000	1644.000	300.000	1642.000	400.000	1644.000	440.000
GR	1644.000	1720.000	1643.000	1840.000	1641.000	1940.000	1642.000	2050.000	1640.000	2140.000
GR	1640.000	2200.000	1641.000	2300.000	1639.000	2360.000	1641.000	2460.000	1644.000	2600.000
NH	9.000	0.080	370.000	0.040	560.000	0.080	870.000	0.040	1000.000	0.080
NH	1290.000	0.040	1330.000	0.080	1650.000	0.040	1690.000	0.080	1800.000	0.000
X1	2.098	19.000	480.000	1690.000	1750.000	1750.000	1750.000	0.000	0.000	0.000
GR	1660.000	0.000	1660.000	40.000	1657.000	140.000	1657.000	370.000	1656.000	480.000
GR	1655.000	530.000	1656.000	560.000	1658.000	700.000	1656.000	870.000	1656.000	1300.000
GR	1658.000	1180.000	1656.000	1290.000	1655.000	1300.000	1656.000	1330.000	1658.000	1550.000
GR	1656.000	1650.000	1655.000	1670.000	1656.000	1690.000	1660.000	1800.000	0.000	0.000
NH	3.000	0.080	180.000	0.040	1480.000	0.080	2200.000	0.000	0.000	0.000
X1	1.682	17.000	180.000	1480.000	2200.000	2200.000	2200.000	0.000	0.000	0.000
GR	1680.000	0.000	1676.000	180.000	1676.000	460.000	1677.000	700.000	1676.000	900.000
GR	1675.000	920.000	1676.000	940.000	1677.000	990.000	1677.000	1150.000	1676.000	1230.000
GR	1675.000	1260.000	1676.000	1300.000	1677.000	1480.000	1677.000	1720.000	1678.000	1900.000
GR	1677.000	2120.000	1680.000	2200.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	3.000	0.080	1700.000	0.040	2180.000	0.080	2300.000	0.000	0.000	0.000
X1	1.300	15.000	1700.000	2180.000	2000.000	2000.000	2000.000	0.000	0.000	0.000
GR	1700.000	0.000	1698.000	210.000	1700.000	500.000	1700.000	620.000	1699.000	840.000
GR	1699.000	1260.000	1698.000	1500.000	1697.000	1700.000	1696.000	1920.000	1698.000	2000.000
GR	1696.000	2100.000	1695.000	2120.000	1696.000	2140.000	1697.000	2180.000	1700.000	2300.000
NH	3.000	0.080	1280.000	0.040	1550.000	0.080	1650.000	0.000	0.000	0.000
X1	0.991	14.000	1280.000	1550.000	1650.000	1650.000	1650.000	0.000	0.000	0.000
GR	1720.000	0.000	1719.000	200.000	1720.000	400.000	1720.000	520.000	1719.000	700.000
GR	1719.000	1100.000	1716.000	1280.000	1716.000	1330.000	1717.000	1420.000	1716.000	1480.000
GR	1715.000	1500.000	1716.000	1520.000	1717.000	1550.000	1720.000	1650.000	0.000	0.000
NH	5.000	0.080	540.000	0.040	740.000	0.080	860.000	0.040	1050.000	0.080
NH	1400.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	0.691	14.000	860.000	1050.000	1580.000	1580.000	1580.000	0.000	0.000	0.000
GR	1740.000	40.000	1739.000	120.000	1738.000	280.000	1739.000	400.000	1736.000	540.000
GR	1735.000	570.000	1739.000	740.000	1736.000	860.000	1736.000	1010.000	1734.000	1030.000
GR	1736.000	1050.000	1738.000	1230.000	1737.000	1300.000	1740.000	1400.000	0.000	0.000
NH	3.000	0.080	1220.000	0.040	1330.000	0.080	1500.000	0.000	0.000	0.000
X1	0.388	13.000	1220.000	1330.000	1600.000	1600.000	1600.000	0.000	0.000	0.000
GR	1760.000	60.000	1759.000	200.000	1759.000	270.000	1756.000	440.000	1758.000	500.000
GR	1756.000	560.000	1756.000	800.000	1758.000	900.000	1756.000	1060.000	1756.000	1220.000
GR	1755.000	1260.000	1759.000	1330.000	1760.000	1500.000	0.000	0.000	0.000	0.000
NH	3.000	0.080	740.000	0.040	1200.000	0.080	1300.000	0.000	0.000	0.000
X1	0.161	9.000	740.000	1200.000	1150.000	1150.000	1150.000	0.000	0.000	0.000
GR	1776.000	0.000	1776.000	240.000	1775.000	320.000	1776.000	420.000	1776.000	740.000
GR	1773.000	860.000	1774.000	1000.000	1776.000	1200.000	1776.000	1300.000	0.000	0.000

NH	5.000	0.080	480.000	0.040	620.000	0.080	1000.000	0.040	1110.000	0.080
NH	1400.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	0.114	10.000	280.000	1200.000	250.000	250.000	250.000	0.000	0.000	0.000
GR	1780.000	0.000	1780.000	280.000	1779.000	480.000	1779.000	620.000	1780.000	715.000
GR	1780.000	1000.000	1777.000	1050.000	1779.000	1110.000	1780.000	1200.000	1780.000	1400.000
X1	0.028	6.000	350.000	670.000	450.000	450.000	450.000	0.000	0.000	0.000
GR	1788.000	0.000	1788.000	350.000	1783.000	360.000	1783.000	660.000	1788.000	670.000
GR	1788.000	1020.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
EJ	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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     SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
     Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
     TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
     SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

*PROF 1

CCHV=   0.100 CEHV=   0.300
1490 NH CARD USED
*SECNO 3.180

3265 DIVIDED FLOW

3720 CRITICAL DEPTH ASSUMED
      3.18      1.46   1608.46   1608.46   1610.00   1608.74      0.28      0.00      0.00   1607.00
     1900.      118.     1372.      410.       50.      300.      121.        0.        0.   1608.00
      0.00      2.37      4.58      3.39     0.080     0.040     0.046     0.000   1607.00    131.68
  0.024610        0.        0.        0.         0         8         0      0.00    829.77   2292.80

*SECNO 3.170

3265 DIVIDED FLOW

      3.17      2.19   1609.19      0.00      0.00   1609.24      0.05      0.48      0.02   1607.00
     1900.       98.     1279.      523.      112.      613.      522.        2.        2.   1608.00
      0.02      0.88      2.09      1.00     0.080     0.040     0.055     0.000   1607.00     97.66
  0.001966      100.      100.      100.         5         0         0      0.00   1328.93   2438.60

1490 NH CARD USED
*SECNO 2.960

3265 DIVIDED FLOW

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
      2.96      2.10   1618.10   1618.10      0.00   1618.33      0.23      4.43      0.05   1618.00
     1900.      550.     1350.        0.      243.      315.        1.       25.       37.   1618.00
      0.10      2.26      4.28      0.27     0.042     0.063     0.080     0.000   1616.00     94.95
  0.011355     1130.     1130.     1130.        20        10         0      0.00   1356.83   2310.11

1490 NH CARD USED
*SECNO 2.717
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*************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
  ERROR CORR -  01,02,03,04,05
  MODIFICATION -  50,51,52,53,54,55
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

SH +FBH -- STARTING WIT

SUMMARY PRINTOUT

	SECNO	Q	VCH	CWSEL	CRIWS	EG	TOPWID	SSTA	ENDST	TIME	ELMIN	AREA
*	3.180	1900.00	4.58	1608.46	1608.46	1608.74	829.77	131.68	2292.80	0.00	1607.00	470.36
*	3.180	1600.00	4.35	1608.38	1608.38	1608.64	779.13	135.42	2276.77	0.00	1607.00	405.87
*	3.180	1300.00	4.06	1608.30	1608.30	1608.54	724.78	139.44	2259.56	0.00	1607.00	341.17
*	3.180	1000.00	3.60	1608.22	1608.22	1608.42	675.49	143.08	2243.95	0.00	1607.00	286.53
*	3.180	10600.00	7.81	1609.72	1609.72	1610.37	1769.54	72.93	2544.58	0.00	1607.00	2067.71
*	3.180	9000.00	7.62	1609.52	1609.52	1610.16	1694.57	82.19	2504.91	0.00	1607.00	1733.08
*	3.180	8000.00	7.39	1609.41	1609.41	1610.02	1508.60	87.57	2481.83	0.00	1607.00	1553.45
*	3.180	6000.00	6.85	1609.15	1609.15	1609.69	1291.16	99.77	2429.54	0.00	1607.00	1187.46
	3.170	1900.00	2.09	1609.19	0.00	1609.24	1328.93	97.66	2438.60	0.02	1607.00	1246.78
	3.170	1600.00	1.93	1609.09	0.00	1609.13	1238.51	102.73	2416.88	0.02	1607.00	1107.38
	3.170	1300.00	1.76	1608.97	0.00	1609.01	1144.64	108.42	2392.50	0.02	1607.00	962.45
	3.170	1000.00	1.55	1608.82	0.00	1608.85	1057.79	114.83	2365.00	0.02	1607.00	811.05
	3.170	10600.00	3.91	1610.82	0.00	1610.96	2540.00	60.00	2600.00	0.01	1607.00	4678.10
	3.170	9000.00	3.69	1610.62	0.00	1610.75	2540.00	60.00	2600.00	0.01	1607.00	4185.16
	3.170	8000.00	3.55	1610.49	0.00	1610.60	2540.00	60.00	2600.00	0.01	1607.00	3836.62
	3.170	6000.00	3.27	1610.18	0.00	1610.28	2540.00	60.00	2600.00	0.01	1607.00	3038.17
*	2.960	1900.00	4.28	1618.10	1618.10	1618.33	1366.83	94.95	2310.11	0.10	1616.00	559.29
*	2.960	1600.00	4.01	1618.05	1618.05	1618.25	1327.44	97.54	2304.93	0.11	1616.00	489.47
*	2.960	1300.00	5.24	1617.77	1617.77	1618.15	455.09	884.30	2293.14	0.08	1616.00	310.07
*	2.960	1000.00	4.99	1617.61	1617.61	1617.96	386.74	909.01	2288.20	0.09	1616.00	240.75
*	2.960	10600.00	6.61	1619.01	1619.01	1619.48	2052.95	49.41	2401.18	0.07	1616.00	2119.21
*	2.960	9000.00	6.32	1618.90	1618.90	1619.33	1972.44	55.10	2389.79	0.07	1616.00	1889.74
*	2.960	8000.00	6.15	1618.82	1618.82	1619.22	1909.93	59.21	2381.57	0.07	1616.00	1730.09
*	2.960	6000.00	5.65	1618.65	1618.65	1618.99	1780.66	67.72	2364.56	0.08	1616.00	1416.21

	SECNO	Q	VCH	CWSEL	CRIWS	EG	TOPWID	SSTA	ENDST	TIME	ELMIN	AREA
	2.717	1900.00	5.41	1627.63	0.00	1628.08	360.65	1717.36	2110.24	0.17	1625.00	351.09
	2.717	1600.00	5.52	1627.45	1627.45	1627.93	322.43	1725.72	2095.91	0.17	1625.00	289.91
*	2.717	1300.00	5.28	1627.31	1627.31	1627.74	292.04	1732.37	2084.51	0.15	1625.00	246.14
*	2.717	1000.00	5.02	1627.14	1627.14	1627.53	255.49	1740.36	2070.81	0.16	1625.00	199.24
	2.717	10600.00	4.67	1629.96	0.00	1630.19	2332.22	42.63	2398.80	0.17	1625.00	3842.63
	2.717	9000.00	4.49	1629.73	0.00	1629.95	2201.11	55.07	2393.15	0.17	1625.00	3330.24
	2.717	8000.00	4.37	1629.58	0.00	1629.79	2114.01	63.33	2389.40	0.18	1625.00	3006.24
	2.717	6000.00	4.11	1629.22	0.00	1629.42	1912.20	82.46	2380.70	0.18	1625.00	2305.79
	2.430	1900.00	4.94	1641.24	0.00	1641.62	424.59	1928.16	2471.65	0.25	1639.00	385.97
*	2.430	1600.00	4.46	1641.17	1641.05	1641.48	408.68	1931.32	2468.10	0.27	1639.00	359.64
*	2.430	1300.00	4.95	1640.92	1640.92	1641.30	346.20	2098.76	2455.82	0.24	1639.00	262.79
*	2.430	1000.00	4.68	1640.77	1640.77	1641.11	312.66	2105.47	2448.37	0.25	1639.00	213.68
*	2.430	10600.00	8.00	1642.89	1642.89	1643.85	880.26	73.34	2548.13	0.22	1639.00	1448.35
*	2.430	9000.00	7.70	1642.66	1642.66	1643.56	811.20	80.33	2537.27	0.23	1639.00	1251.48
*	2.430	8000.00	7.49	1642.50	1642.50	1643.36	764.76	85.02	2529.96	0.23	1639.00	1128.13
*	2.430	6000.00	6.97	1642.16	1642.16	1642.91	664.48	95.16	2514.19	0.25	1639.00	886.58
	2.098	1900.00	2.41	1657.14	0.00	1657.23	1194.14	135.09	1721.55	0.46	1655.00	838.83
	2.098	1600.00	2.44	1657.01	0.00	1657.10	1123.38	139.62	1717.81	0.47	1655.00	681.40
	2.098	1300.00	2.46	1656.86	0.00	1656.95	801.47	385.84	1713.54	0.44	1655.00	547.16
	2.098	1000.00	2.33	1656.72	0.00	1656.80	721.65	400.53	1709.87	0.46	1655.00	445.42
	2.098	10600.00	3.25	1658.82	0.00	1658.97	1688.12	79.39	1767.51	0.38	1655.00	3407.86
	2.098	9000.00	3.09	1658.61	0.00	1658.75	1675.10	86.52	1761.62	0.39	1655.00	3047.94
	2.098	8000.00	2.98	1658.46	0.00	1658.59	1666.49	91.24	1757.73	0.40	1655.00	2811.39
	2.098	6000.00	2.76	1658.15	0.00	1658.26	1647.36	101.72	1749.08	0.43	1655.00	2290.47
*	1.682	1900.00	4.27	1676.62	1676.62	1676.91	884.98	151.98	1412.07	0.60	1675.00	451.91
*	1.682	1600.00	3.87	1676.59	1676.59	1676.82	855.97	153.62	1405.50	0.63	1675.00	420.15
*	1.682	1300.00	3.73	1676.51	1676.51	1676.72	791.91	157.25	1391.00	0.60	1675.00	353.76
*	1.682	1000.00	3.55	1676.41	1676.41	1676.61	719.77	161.33	1374.67	0.63	1675.00	285.17
	1.682	10600.00	5.96	1677.66	1677.65	1678.19	1898.66	105.07	2137.73	0.48	1675.00	2000.84
*	1.682	9000.00	5.61	1677.55	1677.55	1678.02	1843.52	110.34	2134.62	0.50	1675.00	1782.10
	1.682	8000.00	5.42	1677.46	1677.45	1677.93	1801.82	114.31	2132.26	0.52	1675.00	1620.96
	1.682	6000.00	4.90	1677.28	1677.25	1677.65	1719.48	122.17	2127.60	0.56	1675.00	1313.57
*	1.300	1900.00	5.34	1697.30	1697.30	1697.74	487.92	1640.66	2191.87	0.71	1695.00	365.25
*	1.300	1600.00	5.14	1697.19	1697.19	1697.60	452.81	1661.93	2187.61	0.74	1695.00	315.21
*	1.300	1300.00	4.88	1697.08	1697.08	1697.45	416.24	1684.10	2183.18	0.72	1695.00	267.05
*	1.300	1000.00	4.54	1696.96	1696.96	1697.28	376.76	1708.32	2178.49	0.76	1695.00	220.50
	1.300	10600.00	6.32	1699.44	0.00	1699.95	1892.80	59.13	2277.47	0.59	1695.00	2553.22
	1.300	9000.00	5.99	1699.23	0.00	1699.70	1787.95	80.72	2269.25	0.61	1695.00	2174.89
	1.300	8000.00	5.71	1699.10	0.00	1699.54	1721.71	94.35	2264.06	0.63	1695.00	1946.94
	1.300	6000.00	5.12	1698.77	0.00	1699.14	1130.04	128.77	2250.95	0.67	1695.00	1505.64

	SECNO	Q	VCH	CWSEL	CRIWS	EG	TOPWID	SSTA	ENDST	TIME	ELMIN	AREA
	0.991	1900.00	5.17	1717.53	1717.34	1717.91	379.00	1188.50	1567.50	0.80	1715.00	416.13
	0.991	1600.00	4.69	1717.44	0.00	1717.76	370.94	1193.68	1564.62	0.84	1715.00	383.74
	0.991	1300.00	4.19	1717.33	0.00	1717.59	361.28	1199.89	1561.17	0.83	1715.00	345.82
	0.991	1000.00	3.70	1717.20	0.00	1717.40	348.73	1207.96	1556.69	0.89	1715.00	298.11
*	0.991	10600.00	8.84	1719.75	1719.75	1720.72	1375.73	50.30	1641.62	0.65	1715.00	1934.58
*	0.991	9000.00	8.52	1719.48	1719.48	1720.42	1208.36	104.88	1632.52	0.67	1715.00	1581.99
*	0.991	8000.00	8.41	1719.25	1719.25	1720.20	1071.38	149.55	1625.08	0.69	1715.00	1327.42
*	0.991	6000.00	8.49	1718.59	1718.59	1719.60	478.08	1124.81	1602.89	0.73	1715.00	871.04
	0.691	1900.00	4.60	1737.09	0.00	1737.37	511.94	488.95	1303.13	0.91	1734.00	494.97
	0.691	1600.00	4.43	1736.94	0.00	1737.20	468.11	496.22	1134.43	0.95	1734.00	418.95
	0.691	1300.00	4.21	1736.78	0.00	1737.02	432.05	503.90	1119.63	0.94	1734.00	344.91
	0.691	1000.00	3.87	1736.61	1736.44	1736.83	395.52	511.68	1104.62	1.00	1734.00	275.94
	0.691	10600.00	8.98	1738.82	0.00	1739.58	1166.07	149.14	1360.60	0.71	1734.00	1896.93
	0.691	9000.00	8.43	1738.61	0.00	1739.31	1075.98	181.72	1353.81	0.74	1734.00	1668.71
	0.691	8000.00	7.93	1738.50	0.00	1739.13	1027.10	199.39	1350.13	0.76	1734.00	1552.54
	0.691	6000.00	6.56	1738.33	0.00	1738.77	944.68	229.19	1343.92	0.82	1734.00	1368.92
	0.388	1900.00	5.48	1757.12	0.00	1757.32	754.48	376.30	1297.17	1.05	1755.00	710.00
	0.388	1600.00	5.07	1757.04	0.00	1757.21	733.01	380.90	1295.75	1.10	1755.00	649.55
	0.388	1300.00	4.66	1756.94	0.00	1757.09	707.17	386.44	1294.04	1.10	1755.00	579.12
	0.388	1000.00	4.28	1756.82	0.00	1756.94	673.36	393.70	1291.80	1.18	1755.00	490.78
	0.388	10600.00	7.55	1759.07	0.00	1759.42	1151.62	190.24	1341.86	0.81	1755.00	2574.56
	0.388	9000.00	7.39	1758.80	0.00	1759.12	1045.29	281.24	1326.53	0.84	1755.00	2286.24
	0.388	8000.00	7.28	1758.58	0.00	1758.90	1029.66	293.18	1322.84	0.87	1755.00	2067.54
	0.388	6000.00	7.71	1758.06	0.00	1758.41	989.83	323.61	1313.44	0.92	1755.00	1525.34
	0.161	1900.00	5.19	1775.08	0.00	1775.50	345.46	313.64	1107.96	1.11	1773.00	366.47
	0.161	1600.00	5.15	1774.91	0.00	1775.32	306.85	783.76	1090.61	1.16	1773.00	310.56
	0.161	1300.00	5.08	1774.72	0.00	1775.12	280.77	791.21	1071.98	1.17	1773.00	255.82
	0.161	1000.00	4.88	1774.53	0.00	1774.90	254.07	798.84	1052.91	1.24	1773.00	204.83
*	0.161	10600.00	7.61	1776.92	1776.92	1777.67	1300.00	0.00	1300.00	0.86	1773.00	2810.50
*	0.161	9000.00	7.31	1776.71	1776.71	1777.42	1300.00	0.00	1300.00	0.89	1773.00	1736.66
*	0.161	8000.00	7.18	1776.55	1776.55	1777.26	1300.00	0.00	1300.00	0.91	1773.00	1534.12
*	0.161	6000.00	6.57	1776.26	1776.26	1776.89	1300.00	0.00	1300.00	0.97	1773.00	1162.63
	0.114	1900.00	4.66	1779.80	0.00	1780.14	554.02	320.32	1181.85	1.12	1777.00	407.64
	0.114	1600.00	4.46	1779.71	0.00	1780.02	517.24	338.64	1173.61	1.17	1777.00	358.59
	0.114	1300.00	4.26	1779.60	0.00	1779.89	472.58	360.27	1163.61	1.18	1777.00	303.57
	0.114	1000.00	4.18	1779.45	0.00	1779.72	414.31	389.89	1150.55	1.26	1777.00	239.23
	0.114	10600.00	5.86	1781.11	0.00	1781.59	1400.00	0.00	1400.00	0.87	1777.00	2085.01
	0.114	9000.00	5.57	1780.95	0.00	1781.38	1400.00	0.00	1400.00	0.91	1777.00	1866.32
	0.114	8000.00	5.32	1780.87	0.00	1781.26	1400.00	0.00	1400.00	0.93	1777.00	1739.35
	0.114	6000.00	5.04	1780.60	0.00	1780.97	1400.00	0.00	1400.00	0.98	1777.00	1374.71

SECNO	Q	VCH	CWSEL	CRIWS	EG	TOPWID	SSTA	ENDST	TIME	ELMIN	AREA
0.028	1900.00	2.75	1785.27	0.00	1785.39	309.07	355.47	664.53	1.17	1783.00	690.21
0.028	1600.00	2.58	1785.04	0.00	1785.15	308.15	355.93	664.07	1.22	1783.00	619.31
0.028	1300.00	2.39	1784.79	0.00	1784.88	307.18	356.41	663.59	1.24	1783.00	545.02
0.028	1000.00	2.15	1784.53	0.00	1784.61	306.14	356.93	663.07	1.32	1783.00	465.25
0.028	10600.00	6.31	1788.28	0.00	1788.89	1020.00	0.00	1020.00	0.89	1783.00	1833.00
0.028	9000.00	5.91	1787.92	0.00	1788.46	319.68	350.16	669.84	0.93	1783.00	1524.07
0.028	8000.00	5.60	1787.61	0.00	1788.10	318.47	350.77	669.23	0.95	1783.00	1427.83
0.028	6000.00	4.83	1787.04	0.00	1787.40	316.13	351.93	668.07	1.01	1783.00	1242.59

SUMMARY OF ERRORS AND SPECIAL NOTES

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CAUTION  SECNO=   3.180  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   3.180  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   3.180  PROFILE= 3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   3.180  PROFILE= 4  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   3.180  PROFILE= 5  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   3.180  PROFILE= 6  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   3.180  PROFILE= 7  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   3.180  PROFILE= 8  CRITICAL DEPTH ASSUMED

CAUTION  SECNO=   2.960  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   2.960  PROFILE= 1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   2.960  PROFILE= 1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=   2.960  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   2.960  PROFILE= 2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   2.960  PROFILE= 2  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=   2.960  PROFILE= 3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   2.960  PROFILE= 3  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   2.960  PROFILE= 3  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=   2.960  PROFILE= 4  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   2.960  PROFILE= 4  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   2.960  PROFILE= 4  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=   2.960  PROFILE= 5  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   2.960  PROFILE= 5  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   2.960  PROFILE= 5  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=   2.960  PROFILE= 6  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   2.960  PROFILE= 6  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   2.960  PROFILE= 6  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=   2.960  PROFILE= 7  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   2.960  PROFILE= 7  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   2.960  PROFILE= 7  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=   2.960  PROFILE= 8  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   2.960  PROFILE= 8  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   2.960  PROFILE= 8  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION  SECNO=   2.717  PROFILE= 3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   2.717  PROFILE= 3  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   2.717  PROFILE= 4  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   2.717  PROFILE= 4  MINIMUM SPECIFIC ENERGY

CAUTION  SECNO=   2.430  PROFILE= 2  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=   2.430  PROFILE= 3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   2.430  PROFILE= 3  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   2.430  PROFILE= 4  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   2.430  PROFILE= 4  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   2.430  PROFILE= 5  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   2.430  PROFILE= 5  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   2.430  PROFILE= 6  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   2.430  PROFILE= 6  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   2.430  PROFILE= 7  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   2.430  PROFILE= 7  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   2.430  PROFILE= 8  CRITICAL DEPTH ASSUMED
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CAUTION  SECNO=   2.430  PROFILE= 8  MINIMUM SPECIFIC ENERGY

CAUTION  SECNO=   1.682  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   1.682  PROFILE= 1  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   1.682  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   1.682  PROFILE= 2  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   1.682  PROFILE= 3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   1.682  PROFILE= 3  MINIMUM SPECIFIC ENERGY
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CAUTION  SECNO=   1.682  PROFILE= 4  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   1.682  PROFILE= 6  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   1.682  PROFILE= 6  MINIMUM SPECIFIC ENERGY

CAUTION  SECNO=   1.300  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   1.300  PROFILE= 1  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   1.300  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   1.300  PROFILE= 2  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   1.300  PROFILE= 3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   1.300  PROFILE= 3  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   1.300  PROFILE= 4  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   1.300  PROFILE= 4  MINIMUM SPECIFIC ENERGY

CAUTION  SECNO=   0.991  PROFILE= 5  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   0.991  PROFILE= 5  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   0.991  PROFILE= 6  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   0.991  PROFILE= 6  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   0.991  PROFILE= 7  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   0.991  PROFILE= 7  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   0.991  PROFILE= 8  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   0.991  PROFILE= 8  MINIMUM SPECIFIC ENERGY

CAUTION  SECNO=   0.161  PROFILE= 5  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   0.161  PROFILE= 5  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   0.161  PROFILE= 6  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   0.161  PROFILE= 6  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   0.161  PROFILE= 6  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=   0.161  PROFILE= 7  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   0.161  PROFILE= 7  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   0.161  PROFILE= 8  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   0.161  PROFILE= 8  MINIMUM SPECIFIC ENERGY
```

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*****************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
  ERROR CORR -  01,02,03,04,05
  MODIFICATION -  50,51,52,53,54,55
*****************************************************
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15:14:31    0.0009   CSP    UIS COMPANY   KANSAS CITY, MISSOURI  02/04/86
15:14:31    0.0009   CSP                  APEX/CRAY SERVICE
15:14:31    0.0009   CSP    CRAY-1 S/2000   COS LEVEL:  C14 1.12-11/27/85
15:14:31    0.0009   CSP
15:14:31    0.0009   CSP    WANG,T50.
15:14:31    0.0009   CSP    ACCOUNT,E142120 USD3767400
15:14:55    0.0010   CSP    TAPEIN,DN=XX,NT,LB=AU,FI=HEC2SBL,VSN=5012.
15:18:56    0.0013   SCP     15.15.32.VSN,T=5012.
15:18:56    0.0013   SCP     15.15.34.LABEL,T,PO=RU,NT,LB=AU,FI=HEC2SBL.
15:18:56    0.0013   SCP     15.18.56.NT64, ASSIGNED TO T      , VSN=5012  .
15:19:19    0.0013   SCP    DATASET RECEIVED FROM FRONT END.
15:19:21    0.0017   CSP    COPYF,XX,TEMP.
15:19:26    0.1767   USER   IO048 - COPY OF    11349 RECORDS       1 FILES COMPLETED
15:19:34    0.1771   CSP    COPYF,XX,HEC2ABS.
15:19:41    0.1814   USER   IO048 - COPY OF        1 RECORDS       1 FILES COMPLETED
15:19:41    0.1814   CSP    REWIND,HEC2ABS.
15:20:02    0.1819   CSP    HEC2ABS.
15:20:23    2.1438   USER   UT010 -    STOP              IN M2MAIN
15:20:23    2.1439   CSP    END OF JOB
15:20:23    2.1439   CSP
15:20:23    2.1439   CSP
15:20:27    2.1684   PDM    PD000 - PDN = BCTABLE          ID = CRYLBRY   ED =    1  OWN = 0510CRA
15:20:27    2.1684   PDM    PD000 - ACCESS  COMPLETE
15:20:27    2.1685   PDM    PD000 - PDN = BCTABLE          ID = CRYLBRY   ED =    1  OWN = 0510CRA
15:20:27    2.1685   PDM    PD000 - ACCESS  COMPLETE
15:20:30    2.1754   USER        JOBNAME = DFB00MV   USER NUMBER = E142120
15:20:30    2.1754   USER        CP SECONDS        =     2.175
15:20:30    2.1754   USER        AVERAGE MEMORY    =    0.0688
15:20:30    2.1754   USER        IO BLOCKS MOVED   =     779.
15:20:30    2.1754   USER        IO REQUESTS       =     236.
15:20:30    2.1754   USER        MT MOUNTS         =       1.
15:20:30    2.1754   USER        MT BLOCKS STAGED  =     216.
15:20:30    2.1754   USER        I/O/D BLOCKS      =     141.
15:20:30    2.1754   USER
15:20:30    2.1754   USER        CSU-2             =    15.08
15:20:30    2.1754   USER        PRIORITY          =      15
15:20:30    2.1754   USER        COST              =    5.28
```

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*****************************************************
HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
ERROR CORR -  01,02,03,04,05
MODIFICATION -  50,51,52,53,54,55
*****************************************************
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#2a
SPILLWAY

```
T1        APACHE JUNCTION
T2 DOWNSTREAM INUNDATION     --HIGH MANNING COEFFICIENTS
T3     ESH +FBH  -- STARTING WITH PEAK OF ESH, Q=1900 CFS

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
       0.       2.        0.        0.  -1.000000    0.00      0.0       0.   1610.000   0.000

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    38.000    43.000    26.000     1.000     2.000     3.000     4.000    53.000    54.000     6.000

    42.000    25.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

NC      0.080     0.080     0.040     0.100     0.300     0.000     0.000     0.000     0.000     0.000
NH      7.000     0.080   200.000     0.040   630.000     0.080  1300.000     0.040  1500.000     0.080
NH   2140.000     0.040  2200.000     0.080  2600.000     0.000     0.000     0.000     0.000     0.000
QT      7.000  1900.000  1900.000  1600.000 10600.000  9000.000  6000.000  1000.000     0.000     0.000
X1      3.180    16.000   200.000   630.000     0.000     0.000     0.000     0.000     0.000     0.000
GR   1610.000    60.000  1607.000   200.000  1608.000   400.000  1608.000   630.000  1610.000   720.000
GR   1610.000   820.000  1609.000   860.000  1610.000  1020.000  1610.000  1300.000  1608.000  1360.000
GR   1610.000  1500.000  1610.000  1660.000  1608.000  2140.000  1607.000  2170.000  1608.000  2200.000
GR   1610.000  2600.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

X1      3.170    16.000   200.000   630.000   100.000   100.000   100.000     0.000     0.000     0.000
GR   1610.000    60.000  1607.000   200.000  1608.000   400.000  1608.000   630.000  1610.000   720.000
GR   1610.000   820.000  1609.000   860.000  1610.000  1020.000  1610.000  1300.000  1608.000  1360.000
GR   1610.000  1500.000  1610.000  1660.000  1608.000  2140.000  1607.000  2170.000  1608.000  2200.000
GR   1610.000  2600.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

NH      7.000     0.080   850.000     0.040  1160.000     0.080  1900.000     0.040  2020.000     0.080
NH   2180.000     0.040  2300.000     0.080  2500.000     0.000     0.000     0.000     0.000     0.000
X1      2.960    20.000  1700.000  2300.000  1130.000  1130.000  1130.000     0.000     0.000     0.000
GR   1628.000     0.000  1618.000   100.000  1620.000   140.000  1620.000   340.000  1618.000   500.000
GR   1618.000   850.000  1617.000  1000.000  1618.000  1160.000  1618.000  1350.000  1619.000  1500.000
GR   1618.000  1700.000  1618.000  1900.000  1616.000  1920.000  1616.000  1950.000  1618.000  2020.000
GR   1619.000  2080.000  1618.000  2180.000  1616.000  2240.000  1618.000  2300.000  1620.000  2500.000

NH      3.000     0.080  1700.000     0.040  2060.000     0.080  2400.000     0.000     0.000     0.000
X1      2.717    15.000  1700.000  2220.000  1285.000  1285.000  1285.000     0.000     0.000     0.000
GR   1630.000    40.000  1628.000   150.000  1628.000   320.000  1630.000   660.000  1628.000   740.000
GR   1628.000  1120.000  1630.000  1360.000  1628.000  1700.000  1625.000  1840.000  1628.000  1950.000
GR   1627.000  2000.000  1627.000  2060.000  1629.000  2220.000  1628.000  2350.000  1630.000  2400.000
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NH	3.000	0.080	2050.000	0.040	2460.000	0.080	2600.000	0.000	0.000	0.000
X1	2.430	15.000	1840.000	2460.000	1515.000	1515.000	1515.000	0.000	0.000	0.000
GR	1644.000	40.000	1642.000	100.000	1644.000	300.000	1642.000	400.000	1644.000	440.000
GR	1644.000	1720.000	1643.000	1840.000	1641.000	1940.000	1642.000	2050.000	1640.000	2140.000
GR	1640.000	2200.000	1641.000	2300.000	1639.000	2360.000	1641.000	2460.000	1644.000	2600.000
NH	9.000	0.080	370.000	0.040	560.000	0.080	870.000	0.040	1000.000	0.080
NH	1290.000	0.040	1330.000	0.080	1650.000	0.040	1690.000	0.080	1800.000	0.000
X1	2.098	19.000	480.000	1690.000	1750.000	1750.000	1750.000	0.000	0.000	0.000
GR	1660.000	0.000	1660.000	40.000	1657.000	140.000	1657.000	370.000	1656.000	480.000
GR	1655.000	530.000	1656.000	560.000	1658.000	700.000	1656.000	870.000	1656.000	1000.000
GR	1658.000	1180.000	1656.000	1290.000	1655.000	1300.000	1656.000	1330.000	1658.000	1550.000
GR	1656.000	1650.000	1655.000	1670.000	1656.000	1690.000	1660.000	1800.000	0.000	0.000
NH	3.000	0.080	180.000	0.040	1480.000	0.080	2200.000	0.000	0.000	0.000
X1	1.682	17.000	180.000	1480.000	2200.000	2200.000	2200.000	0.000	0.000	0.000
GR	1680.000	0.000	1676.000	180.000	1676.000	460.000	1677.000	700.000	1676.000	900.000
GR	1675.000	920.000	1676.000	940.000	1677.000	990.000	1677.000	1150.000	1676.000	1230.000
GR	1675.000	1260.000	1676.000	1300.000	1677.000	1480.000	1677.000	1720.000	1678.000	1900.000
GR	1677.000	2120.000	1680.000	2200.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	3.000	0.080	1700.000	0.040	2180.000	0.080	2300.000	0.000	0.000	0.000
X1	1.330	15.000	1700.000	2180.000	2000.000	2000.000	2000.000	0.000	0.000	0.000
GR	1700.000	0.000	1698.000	210.000	1700.000	500.000	1700.000	620.000	1699.000	840.000
GR	1699.000	1260.000	1698.000	1500.000	1697.000	1700.000	1696.000	1920.000	1698.000	2000.000
GR	1696.000	2100.000	1695.000	2120.000	1696.000	2140.000	1697.000	2180.000	1700.000	2300.000
NH	3.000	0.080	1280.000	0.040	1550.000	0.080	1650.000	0.000	0.000	0.000
X1	0.991	14.000	1280.000	1550.000	1650.000	1650.000	1650.000	0.000	0.000	0.000
GR	1720.000	0.000	1719.000	200.000	1720.000	400.000	1720.000	520.000	1719.000	700.000
GR	1719.000	1100.000	1716.000	1280.000	1716.000	1330.000	1717.000	1420.000	1716.000	1480.000
GR	1715.000	1500.000	1716.000	1520.000	1717.000	1550.000	1720.000	1650.000	0.000	0.000
NH	5.000	0.080	540.000	0.040	740.000	0.080	860.000	0.040	1050.000	0.080
NH	1400.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	0.691	14.000	860.000	1850.000	1580.000	1580.000	1580.000	0.000	0.000	0.000
GR	1740.000	40.000	1739.000	120.000	1738.000	280.000	1739.000	400.000	1736.000	540.000
GR	1735.000	570.000	1739.000	740.000	1736.000	860.000	1736.000	1010.000	1734.000	1030.000
GR	1736.000	1050.000	1738.000	1230.000	1737.000	1300.000	1740.000	1400.000	0.000	0.000
NH	3.000	0.080	1220.000	0.040	1330.000	0.080	1500.000	0.000	0.000	0.000
X1	0.388	13.000	1220.000	1330.000	1600.000	1600.000	1600.000	0.000	0.000	0.000
GR	1760.000	60.000	1759.000	200.000	1759.000	270.000	1756.000	440.000	1758.000	500.000
GR	1756.000	560.000	1756.000	800.000	1758.000	900.000	1756.000	1060.000	1756.000	1220.000
GR	1755.000	1260.000	1759.000	1330.000	1760.000	1500.000	0.000	0.000	0.000	0.000
NH	3.000	0.080	740.000	0.040	1200.000	0.080	1300.000	0.000	0.000	0.000
X1	0.161	9.000	740.000	1200.000	1150.000	1150.000	1150.000	0.000	0.000	0.000
GR	1776.000	0.000	1776.000	240.000	1775.000	320.000	1776.000	420.000	1776.000	740.000
GR	1773.000	860.000	1774.000	1000.000	1776.000	1200.000	1776.000	1300.000	0.000	0.000

NH	5.000	0.080	480.000	0.040	620.000	0.080	1000.000	0.040	1110.000	0.080
NH	1400.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	0.114	10.000	280.000	1200.000	250.000	250.000	250.000	0.000	0.000	0.000
GR	1780.000	0.000	1780.000	280.000	1779.000	480.000	1779.000	620.000	1780.000	715.000
GR	1780.000	1000.000	1777.000	1050.000	1779.000	1110.000	1780.000	1200.000	1780.000	1400.000
X1	0.028	6.000	350.000	670.000	450.000	450.000	450.000	0.000	0.000	0.000
GR	1788.000	0.000	1788.000	350.000	1783.000	360.000	1783.000	660.000	1788.000	670.000
GR	1788.000	1020.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
EJ	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Note: Job control cards for profiles 2-7 not printed. N= 0.04, 0.08 for 1st profile, N multiplied by 2 for profiles 2 thru 7, using FN on J2 card.

02/06/86 13:34:39

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HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
ERROR CORR - 01,02,03,04,05
MODIFICATION - 50,51,52,53,54,55
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

SH +FBH -- STARTING WIT

SUMMARY PRINTOUT

	SECNO	Q	VCH	CWSEL	CRIWS	EG	TOPWID	SSTA	ENDST	TIME	ELMIN	AREA
*	3.180	1900.00	4.58	1608.46	1608.46	1608.74	829.77	131.68	2292.80	0.00	1607.00	470.36
*	3.180	1900.00	4.58	1608.46	1608.46	1608.74	829.77	131.68	2292.80	0.00	1607.00	470.36
*	3.180	1600.00	4.35	1608.38	1608.38	1608.64	779.13	135.42	2276.77	0.00	1607.00	405.87
*	3.180	10600.00	7.81	1609.72	1609.72	1610.37	1769.54	72.93	2544.58	0.00	1607.00	2067.71
*	3.180	9000.00	7.62	1609.52	1609.52	1610.16	1604.57	82.19	2504.91	0.00	1607.00	1733.08
*	3.180	6000.00	6.85	1609.15	1609.15	1609.69	1291.16	99.77	2429.54	0.00	1607.00	1187.46
*	3.180	1000.00	3.60	1608.22	1608.22	1608.42	675.49	143.08	2243.95	0.00	1607.00	286.53
	3.170	1900.00	2.09	1609.19	0.00	1609.24	1328.83	97.66	2438.60	0.02	1607.00	1246.78
	3.170	1900.00	1.52	1609.61	0.00	1609.63	1672.15	78.40	2521.16	0.02	1607.00	1866.20
	3.170	1600.00	1.40	1609.47	0.00	1609.49	1565.17	84.40	2495.43	0.02	1607.00	1657.98
	3.170	10600.00	2.90	1611.47	0.00	1611.54	2540.00	60.00	2600.00	0.01	1607.00	6316.74
	3.170	9000.00	2.71	1611.24	0.00	1611.30	2540.00	60.00	2600.00	0.01	1607.00	5741.10
	3.170	6000.00	2.34	1610.73	0.00	1610.77	2540.00	60.00	2600.00	0.02	1607.00	4415.93
	3.170	1000.00	1.14	1609.15	0.00	1609.17	1296.62	99.47	2430.85	0.03	1607.00	1195.94
*	2.960	1900.00	4.28	1618.10	1618.10	1618.33	1366.83	94.95	2310.11	0.10	1616.00	559.29
*	2.960	1900.00	4.28	1618.10	1618.10	1618.33	1366.91	94.94	2310.12	0.11	1616.00	559.44
*	2.960	1600.00	3.98	1618.05	1618.05	1618.25	1329.78	97.38	2305.23	0.11	1616.00	493.57
	2.960	10600.00	3.45	1619.87	0.00	1619.99	2266.45	6.71	2486.58	0.13	1616.00	3963.59
	2.960	9000.00	3.44	1619.61	0.00	1619.74	2202.47	19.51	2460.99	0.13	1616.00	3391.72
	2.960	6000.00	3.42	1619.11	0.00	1619.23	2076.56	44.69	2410.62	0.13	1616.00	2314.21
*	2.960	1000.00	4.99	1617.61	1617.61	1617.96	386.77	909.00	2288.20	0.10	1616.00	240.78
	2.717	1900.00	5.41	1627.63	0.00	1628.08	360.65	1717.36	2110.24	0.17	1625.00	351.09
	2.717	1900.00	1.55	1628.98	0.00	1629.01	1762.12	96.24	2374.43	0.38	1625.00	1844.91
	2.717	1600.00	1.51	1628.80	0.00	1628.83	1620.29	106.12	2369.95	0.38	1625.00	1541.30
	2.717	10600.00	2.98	1630.88	0.00	1630.97	2360.00	40.00	2400.00	0.29	1625.00	6033.80
	2.717	9000.00	2.80	1630.64	0.00	1630.72	2360.00	40.00	2400.00	0.30	1625.00	5474.20
	2.717	6000.00	2.43	1630.10	0.00	1630.16	2360.00	40.00	2400.00	0.32	1625.00	4209.20
	2.717	1000.00	2.23	1627.87	0.00	1627.95	413.93	1705.70	2130.22	0.26	1625.00	447.82

	SECNO	Q	VCH	CWSEL	CRIWS	EG	TOPWID	SSTA	ENDST	TIME	ELMIN	AREA
	2.430	1900.00	4.94	1641.24	0.00	1641.62	424.59	1928.16	2471.05	0.25	1639.00	385.97
	2.430	1900.00	4.24	1641.38	0.00	1641.66	461.25	1920.88	2477.85	0.48	1639.00	450.50
	2.430	1600.00	3.91	1641.29	0.00	1641.53	439.00	1925.30	2473.72	0.49	1639.00	410.70
	2.430	10600.00	4.94	1643.99	0.00	1644.34	1276.48	40.29	2599.55	0.38	1639.00	2632.74
	2.430	9000.00	4.81	1643.63	0.00	1643.97	1148.84	59.73	2583.31	0.39	1639.00	2210.59
	2.430	6000.00	4.49	1642.90	0.00	1643.20	885.56	72.81	2548.96	0.42	1639.00	1464.12
	2.430	1000.00	4.40	1640.81	0.00	1641.11	322.40	2103.52	2450.53	0.35	1639.00	227.43
	2.098	1900.00	2.41	1657.14	0.00	1657.23	1194.14	135.09	1721.55	0.46	1655.00	838.83
	2.098	1900.00	1.14	1657.83	0.00	1657.85	1546.72	112.53	1740.16	0.92	1655.00	1766.54
	2.098	1600.00	1.13	1657.66	0.00	1657.68	1460.48	118.05	1735.61	0.94	1655.00	1517.58
	2.098	10600.00	2.07	1659.93	0.00	1659.99	1756.15	42.11	1798.26	0.62	1655.00	5333.78
	2.098	9000.00	1.94	1659.64	0.00	1659.70	1738.60	51.72	1790.33	0.65	1655.00	4829.75
	2.098	6000.00	1.67	1659.02	0.00	1659.06	1700.57	72.57	1773.13	0.72	1655.00	3754.56
	2.098	1000.00	1.04	1657.30	0.00	1657.32	1274.77	129.93	1725.80	0.84	1655.00	1029.94
*	1.682	1900.00	4.27	1676.62	1676.62	1676.91	884.98	151.98	1412.07	0.60	1675.00	451.91
*	1.682	1900.00	4.25	1676.62	1676.62	1676.91	886.77	151.88	1412.48	1.07	1675.00	453.91
*	1.682	1600.00	4.12	1676.56	1676.56	1676.82	831.81	154.99	1400.03	1.09	1675.00	394.50
	1.682	10600.00	3.64	1678.39	0.00	1678.58	2084.64	72.43	2157.08	0.80	1675.00	3471.62
	1.682	9000.00	3.49	1678.18	0.00	1678.36	2069.70	81.82	2151.51	0.84	1675.00	3038.44
	1.682	6000.00	3.14	1677.76	0.00	1677.90	1939.59	101.17	2140.05	0.92	1675.00	2167.35
*	1.682	1000.00	3.68	1676.40	1676.40	1676.61	708.11	161.99	1372.02	1.01	1675.00	274.69
*	1.300	1900.00	5.34	1697.30	1697.30	1697.74	487.92	1640.66	2191.87	0.71	1695.00	365.25
	1.300	1900.00	2.87	1698.37	0.00	1698.43	917.44	170.88	2234.98	1.35	1695.00	1094.99
	1.300	1600.00	1.93	1698.23	0.00	1698.28	839.80	186.27	2229.04	1.39	1695.00	966.29
	1.300	10600.00	4.09	1700.34	0.00	1700.53	2300.00	0.00	2300.00	0.98	1695.00	4490.00
	1.300	9000.00	3.84	1700.12	0.00	1700.29	2300.00	0.00	2300.00	1.02	1695.00	3984.78
	1.300	6000.00	3.27	1699.61	0.00	1699.74	1980.55	41.06	2284.36	1.13	1695.00	2886.44
	1.300	1000.00	2.17	1697.54	0.00	1697.61	565.99	1593.34	2201.33	1.26	1695.00	489.91
	0.991	1900.00	5.17	1717.53	1717.34	1717.91	379.00	1188.50	1567.50	0.80	1715.00	416.13
	0.991	1900.00	4.49	1717.71	0.00	1718.00	395.89	1177.64	1573.53	1.46	1715.00	486.23
	0.991	1600.00	4.29	1717.54	0.00	1717.81	380.72	1187.40	1568.11	1.51	1715.00	423.10
	0.991	10600.00	6.68	1720.36	0.00	1720.86	1650.00	0.00	1650.00	1.06	1715.00	2895.84
	0.991	9000.00	6.54	1720.06	0.00	1720.56	1650.00	0.00	1650.00	1.10	1715.00	2381.46
	0.991	6000.00	6.13	1719.31	0.00	1719.81	1108.63	137.40	1627.10	1.21	1715.00	1393.62
	0.991	1000.00	3.88	1717.16	0.00	1717.38	344.75	1210.52	1555.27	1.39	1715.00	283.33
	0.691	1900.00	4.60	1737.09	0.00	1737.37	511.94	488.95	1303.13	0.91	1734.00	494.97
	0.691	1900.00	2.51	1737.99	0.00	1738.06	799.07	447.40	1332.81	1.67	1734.00	1078.59
	0.691	1600.00	2.35	1737.81	0.00	1737.87	742.79	455.55	1326.99	1.73	1734.00	944.05
	0.691	10600.00	4.70	1740.33	0.00	1740.51	1360.00	40.00	1400.00	1.20	1734.00	3861.00
	0.691	9000.00	4.41	1740.05	0.00	1740.21	1360.00	40.00	1400.00	1.25	1734.00	3484.52
	0.691	6000.00	3.80	1739.42	0.00	1739.54	1294.44	86.28	1380.72	1.38	1734.00	2652.24
	0.691	1000.00	1.92	1737.41	0.00	1737.45	610.80	474.65	1313.35	1.65	1734.00	667.05

SECNO	Q	VCH	CWSEL	CRIWS	EG	TOPWID	SSTA	ENDST	TIME	ELMIN	AREA
0.388	1900.00	5.48	1757.12	0.00	1757.32	754.48	376.30	1297.17	1.05	1755.00	710.00
0.388	1900.00	4.30	1757.36	0.00	1757.48	815.70	363.16	1301.23	1.85	1755.00	891.96
0.388	1600.00	4.23	1757.20	0.00	1757.32	775.23	371.84	1298.55	1.91	1755.00	770.09
0.388	10600.00	5.71	1759.82	0.00	1760.01	1383.95	85.31	1469.26	1.34	1755.00	3524.70
0.388	9000.00	5.48	1759.48	0.00	1759.66	1277.86	133.22	1411.09	1.39	1755.00	3069.24
0.388	6000.00	5.00	1758.75	0.00	1758.90	1041.48	284.15	1325.63	1.53	1755.00	2232.62
0.388	1000.00	4.20	1756.83	0.00	1756.95	676.55	393.01	1292.01	1.83	1755.00	498.92
0.161	1900.00	5.19	1775.08	0.00	1775.50	345.46	313.64	1107.96	1.11	1773.00	366.47
0.161	1900.00	2.52	1776.00	0.00	1776.10	1300.00	0.00	1300.00	1.98	1773.00	825.75
0.161	1600.00	2.39	1775.84	0.00	1775.92	588.09	252.98	1183.78	2.05	1773.00	720.39
0.161	10600.00	4.91	1777.86	0.00	1778.15	1300.00	0.00	1300.00	1.42	1773.00	3242.72
0.161	9000.00	4.59	1777.63	0.00	1777.88	1300.00	0.00	1300.00	1.47	1773.00	2932.04
0.161	6000.00	3.91	1777.09	0.00	1777.29	1300.00	0.00	1300.00	1.62	1773.00	2244.98
0.161	1000.00	2.02	1775.44	0.00	1775.50	459.38	285.15	1143.56	1.99	1773.00	509.74
0.114	1900.00	4.66	1779.80	0.00	1780.14	554.02	320.32	1181.85	1.12	1777.00	407.64
0.114	1900.00	3.01	1780.10	0.00	1780.24	1400.00	0.00	1400.00	2.00	1777.00	674.62
0.114	1600.00	3.16	1779.98	0.00	1780.13	621.12	286.91	1196.89	2.07	1777.00	505.80
0.114	10600.00	3.57	1782.03	0.00	1782.20	1400.00	0.00	1400.00	1.44	1777.00	3372.62
0.114	9000.00	3.45	1781.75	0.00	1781.91	1400.00	0.00	1400.00	1.49	1777.00	2981.34
0.114	6000.00	3.18	1781.18	0.00	1781.31	1400.00	0.00	1400.00	1.64	1777.00	2175.74
0.114	1000.00	3.62	1779.54	0.00	1779.74	448.58	372.82	1158.23	2.01	1777.00	276.05
0.028	1900.00	2.75	1785.27	0.00	1785.39	309.07	355.47	664.53	1.17	1783.00	690.21
0.028	1900.00	1.81	1786.42	0.00	1786.47	313.72	353.14	666.86	2.07	1783.00	1052.47
0.028	1600.00	1.65	1786.18	0.00	1786.22	312.69	353.66	666.34	2.15	1783.00	971.53
0.028	10600.00	3.87	1789.61	0.00	1789.82	1020.00	0.00	1020.00	1.47	1783.00	3194.43
0.028	9000.00	3.66	1789.31	0.00	1789.49	1020.00	0.00	1020.00	1.53	1783.00	2882.12
0.028	6000.00	3.19	1788.59	0.00	1788.74	1020.00	0.00	1020.00	1.69	1783.00	2156.40
0.028	1000.00	1.30	1785.54	0.00	1785.56	310.11	354.95	665.05	2.11	1783.00	770.92

SUMMARY OF ERRORS AND SPECIAL NOTES

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CAUTION  SECNO=    3.180  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    3.180  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    3.180  PROFILE= 3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    3.180  PROFILE= 4  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    3.180  PROFILE= 5  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    3.180  PROFILE= 6  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    3.180  PROFILE= 7  CRITICAL DEPTH ASSUMED

CAUTION  SECNO=    2.960  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.960  PROFILE= 1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    2.960  PROFILE= 1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    2.960  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.960  PROFILE= 2  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    2.960  PROFILE= 3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.960  PROFILE= 3  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    2.960  PROFILE= 7  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.960  PROFILE= 7  MINIMUM SPECIFIC ENERGY

CAUTION  SECNO=    1.682  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    1.682  PROFILE= 1  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    1.682  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    1.682  PROFILE= 2  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    1.682  PROFILE= 3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    1.682  PROFILE= 3  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    1.682  PROFILE= 7  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    1.682  PROFILE= 7  MINIMUM SPECIFIC ENERGY

CAUTION  SECNO=    1.300  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    1.300  PROFILE= 1  MINIMUM SPECIFIC ENERGY
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HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
ERROR CORR - 01,02,03,04,05
MODIFICATION - 50,51,52,53,54,55
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13:29:52    0.0009   CSP    UIS COMPANY   KANSAS CITY, MISSOURI   02/06/86
13:29:52    0.0009   CSP                  APEX/CRAY SERVICE
13:29:52    0.0009   CSP    CRAY-1 S/2000   COS LEVEL:  C14 1.12-11/27/85
13:29:52    0.0009   CSP
13:29:52    0.0009   CSP    WANG,T50.
13:29:52    0.0009   CSP    ACCOUNT,E142120 USD3767400
13:30:09    0.0010   CSP    TAPEIN,DN=XX,NT,LB=AU,FI=HEC2SBL,VSN=5012.
13:34:28    0.0013   SCP     13.30.55.VSN,T=5012.
13:34:28    0.0013   SCP     13.30.56.LABEL,T,PO=RU,NT,LB=AU,FI=HEC2SBL.
13:34:28    0.0013   SCP     13.34.58.NT62, ASSIGNED TO T      , VSN=5012 .
13:34:33    0.0013   SCP    DATASET RECEIVED FROM FRONT END.
13:34:33    0.0017   CSP    COPYF,XX,TEMP.
13:34:35    0.1766   USER   IO048 - COPY OF    11349 RECORDS       1 FILES COMPLETED
13:34:35    0.1770   CSP    COPYF,XX,HEC2ABS.
13:34:39    0.1813   USER   IO048 - COPY OF        1 RECORDS       1 FILES COMPLETED
13:34:39    0.1814   CSP    REWIND,HEC2ABS.
13:34:39    0.1818   CSP    HEC2ABS.
13:34:47    1.7572   USER   UT010 -    STOP                IN H2MAIN
13:34:47    1.7572   CSP    END OF JOB
13:34:47    1.7572   CSP
13:34:47    1.7572   CSP
13:34:48    1.7818   PDM    PD000 - PDN = BCTABLE          ID = CRYLBRY   ED =    1  OWN = 0510CRA
13:34:48    1.7818   PDM    PD000 - ACCESS  COMPLETE
13:34:48    1.7818   PDM    PD000 - PDN = BCTABLE          ID = CRYLBRY   ED =    1  OWN = 0510CRA
13:34:48    1.7818   PDM    PD000 - ACCESS  COMPLETE
13:34:49    1.7887   USER          JOBNAME = DFB2CQZ   USER NUMBER = E142120
13:34:49    1.7887   USER          CP SECONDS        =     1.788
13:34:49    1.7887   USER          AVERAGE MEMORY    =    0.0677
13:34:49    1.7887   USER          IO BLOCKS MOVED   =      761.
13:34:49    1.7887   USER          IO REQUESTS       =      202.
13:34:49    1.7887   USER          MT MOUNTS         =        1.
13:34:49    1.7888   USER          MT BLOCKS STAGED  =      216.
13:34:49    1.7888   USER          I/O/D BLOCKS      =      121.
13:34:49    1.7888   USER
13:34:49    1.7888   USER          CSU-2             =    13.85
13:34:49    1.7888   USER          PRIORITY          =       15
13:34:49    1.7888   USER          COST              =     4.85
```

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*****************************************************
*  WATER SURFACE PROFILES                           *
*  VERSION OF NOVEMEER 1976                         *
*  UPDATED MARCH 1982                               *
*                                                   *
*  RUN DATE    02/05/86 TIME    13:27:21            *
*****************************************************
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*****************************************
*  U.S. ARMY CORPS OF ENGINEERS         *
*  THE HYDROLOGIC ENGINEERING CENTER    *
*  609 SECOND STREET, SUITE D           *
*  DAVIS, CALIFORNIA 95616              *
*  (916) 440-2105 (FTS) 448-2105        *
*****************************************
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```
X      X  XXXXXXX   XXXXX              XXXXX
X      X  X         X     X            X     X
X      X  X         X                  X     X
XXXXXXX   XXXX      X          XXXXX    XXXXX
X      X  X         X
X      X  X         X    X             X
X      X  XXXXXXX   XXXXX              XXXXXXX
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*****************************************
HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
ERROR CORR -  01,02,03,04,05
MODIFICATION -  50,51,52,53,54,55
*****************************************
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#2b

```
T1        APACHE JUNCTION
T2 DOWNSTREAM INUNDATION     --HIGH MANNING COEFFICIENTS
T3      ESH +FBH  -- STARTING WITH PEAK OF ESH, Q=1900 CFS
```

SPILLWAY

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	2.	0.	0.	-1.000000	0.00	0.0	0.	1610.000	0.000

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

38.000	43.000	26.000	1.000	2.000	3.000	4.000	53.000	54.000	6.000
42.000	25.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

NC	0.080	0.080	0.040	0.100	0.300	0.000	0.000	0.000	0.000	0.000
NH	7.000	0.080	200.000	0.040	630.000	0.080	1300.000	0.040	1500.000	0.080
NH	2140.000	0.040	2200.000	0.080	2600.000	0.000	0.000	0.000	0.000	0.000
QT	7.000	1900.000	1900.000	1600.000	10600.000	9000.000	8000.000	1300.000	0.000	0.000
X1	3.180	16.000	200.000	630.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	1610.000	60.000	1607.000	200.000	1608.000	400.000	1608.000	630.000	1610.000	720.000
GR	1610.000	820.000	1609.000	860.000	1610.000	1020.000	1610.000	1300.000	1608.000	1360.000
GR	1610.000	1500.000	1610.000	1660.000	1608.000	2140.000	1607.000	2170.000	1608.000	2200.000
GR	1610.000	2600.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	3.170	16.000	200.000	630.000	100.000	100.000	100.000	0.000	0.000	0.000
GR	1610.000	60.000	1607.000	200.000	1608.000	400.000	1608.000	630.000	1610.000	720.000
GR	1610.000	820.000	1609.000	860.000	1610.000	1020.000	1610.000	1300.000	1608.000	1360.000
GR	1610.000	1500.000	1610.000	1660.000	1608.000	2140.000	1607.000	2170.000	1608.000	2200.000
GR	1610.000	2600.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	7.000	0.080	850.000	0.040	1160.000	0.080	1900.000	0.040	2020.000	0.080
NH	2180.000	0.040	2300.000	0.080	2500.000	0.000	0.000	0.000	0.000	0.000
X1	2.960	20.000	1700.000	2300.000	1130.000	1130.000	1130.000	0.000	0.000	0.000
GR	1620.000	0.000	1618.000	100.000	1620.000	140.000	1620.000	340.000	1618.000	500.000
GR	1618.000	850.000	1617.000	1000.000	1618.000	1160.000	1618.000	1350.000	1619.000	1500.000
GR	1618.000	1700.000	1618.000	1900.000	1616.000	1920.000	1616.000	1950.000	1618.000	2020.000
GR	1619.000	2080.000	1618.000	2180.000	1616.000	2240.000	1618.000	2300.000	1620.000	2500.000
NH	3.000	0.080	1700.000	0.040	2060.000	0.080	2400.000	0.000	0.000	0.000
X1	2.717	15.000	1700.000	2220.000	1285.000	1285.000	1285.000	0.000	0.000	0.000
GR	1630.000	40.000	1628.000	150.000	1628.000	320.000	1630.000	660.000	1628.000	740.000
GR	1628.000	1120.000	1630.000	1360.000	1628.000	1700.000	1625.000	1840.000	1628.000	1950.000
GR	1627.000	2000.000	1627.000	2060.000	1629.000	2220.000	1628.000	2350.000	1630.000	2400.000

NH	3.000	0.080	2050.000	0.040	2460.000	0.080	2600.000	0.000	0.000	0.000
X1	2.430	15.000	1840.000	2460.000	1515.000	1515.000	1515.000	0.000	0.000	0.000
GR	1644.000	40.000	1642.000	100.000	1644.000	300.000	1642.000	400.000	1644.000	440.000
GR	1644.000	1720.000	1643.000	1840.000	1641.000	1940.000	1642.000	2050.000	1640.000	2140.000
GR	1640.000	2200.000	1641.000	2300.000	1639.000	2360.000	1641.000	2460.000	1644.000	2600.000
NH	9.000	0.080	370.000	0.040	560.000	0.080	870.000	0.040	1000.000	0.080
NH	1290.000	0.040	1330.000	0.080	1650.000	0.040	1690.000	0.080	1800.000	0.000
X1	2.098	15.000	480.000	1690.000	1750.000	1750.000	1750.000	0.000	0.000	0.000
GR	1660.000	0.000	1660.000	40.000	1657.000	140.000	1657.000	370.000	1656.000	480.000
GR	1655.000	530.000	1656.000	560.000	1658.000	700.000	1656.000	870.000	1656.000	1000.000
GR	1658.000	1180.000	1656.000	1290.000	1655.000	1300.000	1656.000	1330.000	1658.000	1550.000
GR	1656.000	1650.000	1655.000	1670.000	1656.000	1690.000	1660.000	1800.000	0.000	0.000
NH	3.000	0.080	180.000	0.040	1480.000	0.080	2200.000	0.000	0.000	0.000
X1	1.682	17.000	180.000	1480.000	2200.000	2200.000	2200.000	0.000	0.000	0.000
GR	1680.000	0.000	1676.000	180.000	1676.000	460.000	1677.000	700.000	1676.000	900.000
GR	1675.000	920.000	1676.000	940.000	1677.000	990.000	1677.000	1150.000	1676.000	1230.000
GR	1675.000	1260.000	1676.000	1300.000	1677.000	1480.000	1677.000	1720.000	1678.000	1900.000
GR	1677.000	2120.000	1680.000	2200.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	3.000	0.080	1700.000	0.040	2180.000	0.080	2300.000	0.000	0.000	0.000
X1	1.300	15.000	1700.000	2180.000	2000.000	2000.000	2000.000	0.000	0.000	0.000
GR	1700.000	0.000	1698.000	210.000	1700.000	500.000	1700.000	620.000	1699.000	840.000
GR	1699.000	1260.000	1698.000	1500.000	1697.000	1700.000	1696.000	1920.000	1698.000	2000.000
GR	1696.000	2100.000	1695.000	2120.000	1696.000	2140.000	1697.000	2180.000	1700.000	2300.000
NH	3.000	0.080	1280.000	0.040	1550.000	0.080	1650.000	0.000	0.000	0.000
X1	0.991	14.000	1280.000	1550.000	1650.000	1650.000	1650.000	0.000	0.000	0.000
GR	1720.000	0.000	1719.000	200.000	1720.000	400.000	1720.000	520.000	1719.000	700.000
GR	1719.000	1100.000	1716.000	1280.000	1716.000	1330.000	1717.000	1420.000	1716.000	1480.000
GR	1715.000	1500.000	1716.000	1520.000	1717.000	1550.000	1720.000	1650.000	0.000	0.000
NH	5.000	0.080	540.000	0.040	740.000	0.080	860.000	0.040	1050.000	0.080
NH	1400.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	0.691	14.000	860.000	1050.000	1580.000	1580.000	1580.000	0.000	0.000	0.000
GR	1740.000	40.000	1739.000	120.000	1738.000	280.000	1739.000	400.000	1736.000	540.000
GR	1735.000	570.000	1739.000	740.000	1736.000	860.000	1736.000	1010.000	1734.000	1030.000
GR	1736.000	1050.000	1738.000	1230.000	1737.000	1300.000	1740.000	1400.000	0.000	0.000
NH	3.000	0.080	1220.000	0.040	1330.000	0.080	1500.000	0.000	0.000	0.000
X1	0.388	13.000	1220.000	1330.000	1600.000	1600.000	1600.000	0.000	0.000	0.000
GR	1760.000	60.000	1759.000	200.000	1759.000	270.000	1756.000	440.000	1758.000	500.000
GR	1756.000	560.000	1756.000	800.000	1758.000	900.000	1756.000	1060.000	1756.000	1220.000
GR	1755.000	1260.000	1759.000	1330.000	1760.000	1500.000	0.000	0.000	0.000	0.000
NH	3.000	0.080	740.000	0.040	1200.000	0.080	1300.000	0.000	0.000	0.000
X1	0.161	9.000	740.000	1200.000	1150.000	1150.000	1150.000	0.000	0.000	0.000
GR	1776.000	0.000	1776.000	240.000	1775.000	320.000	1776.000	420.000	1776.000	740.000
GR	1773.000	860.000	1774.000	1000.000	1776.000	1200.000	1776.000	1300.000	0.000	0.000

NH	5.000	0.080	480.000	0.040	620.000	0.080	1000.000	0.040	1110.000	0.080
NH	1400.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	0.114	10.000	280.000	1200.000	250.000	250.000	250.000	0.000	0.000	0.000
GR	1780.000	0.000	1780.000	280.000	1779.000	480.000	1779.000	620.000	1780.000	715.000
GR	1780.000	1000.000	1777.000	1050.000	1779.000	1110.000	1780.000	1200.000	1780.000	1400.000
X1	0.028	6.000	350.000	670.000	450.000	450.000	450.000	0.000	0.000	0.000
GR	1788.000	0.000	1788.000	350.000	1783.000	360.000	1783.000	660.000	1788.000	670.000
GR	1788.000	1020.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
EJ	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
ERROR CORR - 01,02,03,04,05
MODIFICATION - 50,51,52,53,54,55
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

SH *FBH -- STARTING WIT

note: first 1900 line is with n=.04,.08
subsequent profiles, N multiplied by 2 using FN on J2 card

SUMMARY PRINTOUT

	SECNO	Q	VCH	CWSEL	CRIWS	EG	TOPWID	SSTA	ENDST	TIME	ELMIN	AREA
*	3.180	1900.00	4.58	1608.46	1608.46	1608.74	829.77	131.68	2292.80	0.00	1607.00	470.36
*	3.180	1900.00	4.58	1608.46	1608.46	1608.74	829.77	131.68	2292.80	0.00	1607.00	470.36
*	3.180	1600.00	4.35	1608.38	1608.38	1608.64	779.13	135.42	2276.77	0.00	1607.00	405.87
*	3.180	10600.00	7.81	1609.72	1609.72	1610.37	1769.54	72.93	2544.58	0.00	1607.00	2067.71
*	3.180	9000.00	7.62	1609.52	1609.52	1610.16	1604.57	82.19	2504.91	0.00	1607.00	1733.08
*	3.180	8000.00	7.39	1609.41	1609.41	1610.02	1508.60	87.57	2481.83	0.00	1607.00	1553.45
*	3.180	1300.00	4.06	1608.30	1608.30	1608.54	724.78	139.44	2259.56	0.00	1607.00	341.17
	3.170	1900.00	2.09	1609.19	0.00	1609.24	1328.83	97.66	2438.60	0.02	1607.00	1246.78
	3.170	1900.00	1.52	1609.61	0.00	1609.63	1672.15	78.40	2521.16	0.02	1607.00	1866.20
	3.170	1600.00	1.40	1609.47	0.00	1609.49	1565.17	84.40	2495.43	0.02	1607.00	1657.98
	3.170	10600.00	2.90	1611.47	0.00	1611.54	2540.00	60.00	2600.00	0.01	1607.00	6316.74
	3.170	9000.00	2.71	1611.24	0.00	1611.30	2540.00	60.00	2600.00	0.01	1607.00	5741.10
	3.170	8000.00	2.60	1611.08	0.00	1611.14	2540.00	60.00	2600.00	0.02	1607.00	5334.49
	3.170	1300.00	1.28	1609.32	0.00	1609.34	1442.93	91.26	2466.03	0.03	1607.00	1436.92
*	2.960	1900.00	4.28	1618.10	1618.10	1618.33	1366.83	94.95	2310.11	0.10	1616.00	559.29
*	2.960	1900.00	4.28	1618.10	1618.10	1618.33	1366.91	94.94	2310.12	0.11	1616.00	559.44
*	2.960	1600.00	3.98	1618.05	1618.05	1618.25	1329.78	97.38	2305.23	0.11	1616.00	493.57
	2.960	10600.00	3.45	1619.87	0.00	1619.99	2266.45	6.71	2486.58	0.13	1616.00	3963.59
	2.960	9000.00	3.44	1619.61	0.00	1619.74	2202.47	19.51	2460.99	0.13	1616.00	3391.72
	2.960	8000.00	3.43	1619.45	0.00	1619.58	2162.11	27.58	2444.84	0.13	1616.00	3039.46
*	2.960	1300.00	5.22	1617.77	1617.77	1618.15	456.28	883.88	2293.22	0.09	1616.00	311.37
	2.717	1900.00	5.41	1627.63	0.00	1628.08	360.65	1717.36	2110.24	0.17	1625.00	351.09
	2.717	1900.00	1.55	1628.98	0.00	1629.01	1762.12	96.24	2374.43	0.38	1625.00	1844.91
	2.717	1600.00	1.51	1628.80	0.00	1628.83	1620.29	106.12	2369.95	0.38	1625.00	1541.30
	2.717	10600.00	2.98	1630.88	0.00	1630.97	2360.00	40.00	2400.00	0.29	1625.00	6033.80
	2.717	9000.00	2.80	1630.64	0.00	1630.72	2360.00	40.00	2400.00	0.30	1625.00	5474.20
	2.717	8000.00	2.68	1630.48	0.00	1630.55	2360.00	40.00	2400.00	0.31	1625.00	5084.59
*	2.717	1300.00	2.61	1628.00	1627.31	1628.10	439.47	1700.11	2139.80	0.23	1625.00	498.92

SECNO	Q	VCH	CWSEL	CRIWS	EG	TOPWID	SSTA	ENDST	TIME	ELMIN	AREA
2.430	1900.00	4.94	1641.24	0.00	1641.62	424.59	1928.16	2471.05	0.25	1639.00	385.97
2.430	1900.00	4.24	1641.38	0.00	1641.66	461.25	1920.88	2477.85	0.48	1639.00	450.50
2.430	1600.00	3.91	1641.29	0.00	1641.53	439.00	1925.30	2473.72	0.49	1639.00	410.70
2.430	10600.00	4.94	1643.99	0.00	1644.34	1276.48	40.29	2599.55	0.38	1639.00	2632.74
2.430	9000.00	4.61	1643.63	0.00	1643.97	1148.84	50.73	2583.31	0.39	1639.00	2210.59
2.430	8000.00	4.71	1643.41	0.00	1643.74	1064.67	57.62	2572.59	0.40	1639.00	1956.54
2.430	1300.00	2.99	1641.35	1640.91	1641.49	453.91	1922.34	2476.49	0.37	1639.00	437.15
2.098	1900.00	2.41	1657.14	0.00	1657.23	1194.14	135.09	1721.55	0.46	1655.00	838.83
2.098	1900.00	1.14	1657.83	0.00	1657.85	1546.72	112.53	1740.16	0.92	1655.00	1766.54
2.098	1600.00	1.13	1657.66	0.00	1657.68	1460.48	118.05	1735.61	0.94	1655.00	1517.58
2.098	10600.00	2.07	1659.93	0.00	1659.99	1756.15	42.11	1798.26	0.62	1655.00	5333.78
2.098	9000.00	1.94	1659.64	0.00	1659.70	1738.60	51.72	1790.33	0.65	1655.00	4829.75
2.098	8000.00	1.86	1659.45	0.00	1659.50	1726.78	58.20	1784.98	0.67	1655.00	4492.97
2.098	1300.00	1.20	1657.41	0.00	1657.43	1328.94	126.47	1728.66	0.79	1655.00	1165.33
* 1.682	1900.00	4.27	1676.62	1676.62	1676.91	884.98	151.98	1412.07	0.60	1675.00	451.91
* 1.682	1900.00	4.25	1676.62	1676.62	1676.91	886.77	151.88	1412.48	1.07	1675.00	453.91
* 1.682	1600.00	4.12	1676.56	1676.56	1676.82	831.81	154.99	1400.03	1.09	1675.00	394.50
1.682	10600.00	3.64	1678.39	0.00	1678.58	2084.64	72.43	2157.08	0.80	1675.00	3471.62
1.682	9000.00	3.49	1678.18	0.00	1678.36	2069.70	81.82	2151.51	0.84	1675.00	3038.44
1.682	8000.00	3.39	1678.05	0.00	1678.21	2059.93	87.95	2147.88	0.86	1675.00	2757.04
1.682	1300.00	3.48	1676.54	0.00	1676.72	816.41	155.86	1396.55	0.97	1675.00	378.54
* 1.300	1900.00	5.34	1697.30	1697.30	1697.74	487.92	1640.66	2191.87	0.71	1695.00	365.25
1.300	1900.00	2.07	1698.37	0.00	1698.43	917.44	170.88	2234.90	1.35	1695.00	1094.99
1.300	1600.00	1.93	1698.23	0.00	1698.28	839.80	186.27	2229.04	1.39	1695.00	966.29
1.300	10600.00	4.09	1700.34	0.00	1700.53	2300.00	0.00	2300.00	0.98	1695.00	4490.00
1.300	9000.00	3.84	1700.12	0.00	1700.29	2300.00	0.00	2300.00	1.02	1695.00	3984.78
1.300	8000.00	3.67	1699.97	0.00	1700.13	2165.50	2.99	2298.86	1.05	1695.00	3638.22
1.300	1300.00	2.54	1697.65	0.00	1697.75	602.19	1571.40	2205.72	1.19	1695.00	554.00
0.991	1900.00	5.17	1717.53	1717.34	1717.91	379.00	1188.50	1567.50	0.80	1715.00	416.13
0.991	1900.00	4.49	1717.71	0.00	1718.00	395.89	1177.64	1573.53	1.46	1715.00	486.23
0.991	1600.00	4.29	1717.54	0.00	1717.81	380.72	1187.40	1568.11	1.51	1715.00	423.10
0.991	10600.00	6.68	1720.36	0.00	1720.86	1650.00	0.00	1650.00	1.06	1715.00	2895.84
0.991	9000.00	6.54	1720.06	0.00	1720.56	1650.00	0.00	1650.00	1.10	1715.00	2381.46
0.991	8000.00	6.43	1719.83	0.00	1720.34	1425.15	34.19	1644.30	1.13	1715.00	2047.40
0.991	1300.00	3.71	1717.47	0.00	1717.67	373.78	1191.85	1565.64	1.32	1715.00	395.08
0.691	1900.00	4.60	1737.09	0.00	1737.37	511.94	488.95	1303.13	0.91	1734.00	494.97
0.691	1900.00	2.51	1737.99	0.00	1738.06	799.07	447.40	1332.81	1.67	1734.00	1078.59
0.691	1600.00	2.35	1737.81	0.00	1737.87	742.79	455.55	1326.99	1.73	1734.00	944.05
0.691	10600.00	4.70	1740.33	0.00	1740.51	1360.00	40.00	1400.00	1.20	1734.00	3861.00
0.691	9000.00	4.41	1740.05	0.00	1740.21	1360.00	40.00	1400.00	1.25	1734.00	3484.52
0.691	8000.00	4.22	1739.86	0.00	1740.00	1343.55	51.61	1395.16	1.29	1734.00	3223.79
0.691	1300.00	2.24	1737.56	0.00	1737.62	661.41	487.32	1318.58	1.55	1734.00	766.87

note: first 1900 line is with n = .04, .08

SECNO	Q	VCH	CWSEL	CRIWS	EG	TOPWID	SSTA	ENDST	TIME	ELMIN	AREA
0.388	1900.00	5.48	1757.12	0.00	1757.32	754.48	376.30	1297.17	1.05	1755.00	710.00
0.388	1900.00	4.30	1757.36	0.00	1757.48	815.70	363.16	1301.23	1.85	1755.00	891.96
0.388	1600.00	4.23	1757.20	0.00	1757.32	775.23	371.84	1298.55	1.91	1755.00	770.09
0.388	10600.00	5.71	1759.82	0.00	1760.01	1383.95	85.31	1469.26	1.34	1755.00	3524.70
0.388	9000.00	5.48	1759.48	0.00	1759.66	1277.86	133.22	1411.09	1.39	1755.00	3059.24
0.388	8000.00	5.30	1759.25	0.00	1759.42	1208.69	164.46	1373.15	1.43	1755.00	2791.82
0.388	1300.00	3.80	1757.11	0.00	1757.21	751.57	376.92	1296.98	1.75	1755.00	701.71
0.161	1900.00	5.19	1775.08	0.00	1775.50	345.46	313.64	1107.96	1.11	1773.00	366.47
0.161	1900.00	2.52	1776.00	0.00	1776.10	1300.00	0.00	1300.00	1.98	1773.00	825.75
0.161	1600.00	2.39	1775.84	0.00	1775.92	588.09	252.98	1183.78	2.05	1773.00	720.39
0.161	10600.00	4.91	1777.86	0.00	1778.15	1300.00	0.00	1300.00	1.42	1773.00	3242.72
0.161	9000.00	4.59	1777.63	0.00	1777.88	1300.00	0.00	1300.00	1.47	1773.00	2932.04
0.161	8000.00	4.38	1777.46	0.00	1777.70	1300.00	0.00	1300.00	1.51	1773.00	2717.52
0.161	1300.00	2.33	1775.58	0.00	1775.67	507.48	273.13	1158.59	1.89	1773.00	582.40
0.114	1900.00	4.66	1779.80	0.00	1780.14	554.02	320.32	1181.85	1.12	1777.00	407.64
0.114	1900.00	3.01	1780.10	0.00	1780.24	1400.00	0.00	1400.00	2.00	1777.00	674.62
0.114	1600.00	3.16	1779.98	0.00	1780.13	621.12	286.91	1196.89	2.07	1777.00	505.80
0.114	10600.00	3.57	1782.03	0.00	1782.20	1400.00	0.00	1400.00	1.44	1777.00	3372.62
0.114	9000.00	3.45	1781.75	0.00	1781.91	1400.00	0.00	1400.00	1.49	1777.00	2981.34
0.114	8000.00	3.36	1781.57	0.00	1781.72	1400.00	0.00	1400.00	1.54	1777.00	2727.98
0.114	1300.00	3.03	1779.84	0.00	1779.98	569.39	312.67	1185.30	1.92	1777.00	429.14
0.028	1900.00	2.75	1785.27	0.00	1785.39	309.07	355.47	664.53	1.17	1783.00	690.21
0.028	1900.00	1.81	1786.42	0.00	1786.47	313.72	353.14	666.86	2.07	1783.00	1052.47
0.028	1600.00	1.65	1786.18	0.00	1786.22	312.69	353.66	666.34	2.15	1783.00	971.53
0.028	10600.00	3.87	1789.61	0.00	1789.82	1020.00	0.00	1020.00	1.47	1783.00	3194.43
0.028	9000.00	3.66	1789.31	0.00	1789.49	1020.00	0.00	1020.00	1.53	1783.00	2882.12
0.028	8000.00	3.52	1789.09	0.00	1789.26	1020.00	0.00	1020.00	1.58	1783.00	2663.74
0.028	1300.00	1.51	1785.82	0.00	1785.85	311.27	354.37	665.63	2.00	1783.00	861.02

SUMMARY OF ERRORS AND SPECIAL NOTES

```
CAUTION  SECNO=    3.180  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    3.180  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    3.180  PROFILE= 3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    3.180  PROFILE= 4  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    3.180  PROFILE= 5  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    3.180  PROFILE= 6  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    3.180  PROFILE= 7  CRITICAL DEPTH ASSUMED

CAUTION  SECNO=    2.960  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.960  PROFILE= 1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    2.960  PROFILE= 1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    2.960  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.960  PROFILE= 2  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    2.960  PROFILE= 3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.960  PROFILE= 3  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    2.960  PROFILE= 7  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.960  PROFILE= 7  MINIMUM SPECIFIC ENERGY

CAUTION  SECNO=    2.717  PROFILE= 7  WSEL ASSUMED BASED ON MIN DIFF
CAUTION  SECNO=    2.717  PROFILE= 7  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION  SECNO=    1.682  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    1.682  PROFILE= 1  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    1.682  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    1.682  PROFILE= 2  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    1.682  PROFILE= 3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    1.682  PROFILE= 3  MINIMUM SPECIFIC ENERGY

CAUTION  SECNO=    1.300  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    1.300  PROFILE= 1  MINIMUM SPECIFIC ENERGY
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*************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
  ERROR CORR -  01,02,03,04,05
  MODIFICATION -  50,51,52,53,54,55
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13:24:12    0.0009   CSP     UIS COMPANY   KANSAS CITY, MISSOURI  02/05/86
13:24:12    0.0009   CSP                   APEX/CRAY SERVICE
13:24:12    0.0009   CSP     CRAY-1 S/2000   COS LEVEL:  C14 1.12-11/27/85
13:24:12    0.0009   CSP
13:24:12    0.0009   CSP     WAN6,T50.
13:24:12    0.0009   CSP     ACCOUNT,E142120 USD3767400
13:24:21    0.0010   CSP     TAPEIN,DN=XX,NT,LB=AU,FI=HEC2SBL,VSN=5012.
13:27:11    0.0013   SCP      13.25.05.VSN,T=5012.
13:27:11    0.0013   SCP      13.25.06.LABEL,T,PO=RU,NT,LB=AU,FI=HEC2SBL.
13:27:11    0.0013   SCP      13.27.43.NT62, ASSIGNED TO T       , VSN=5012  .
13:27:14    0.0013   SCP     DATASET RECEIVED FROM FRONT END.
13:27:15    0.0017   CSP     COPYF,XX,TEMP.
13:27:16    0.1764   USER    IO048 - COPY OF     11349 RECORDS        1 FILES COMPLETED
13:27:16    0.1769   CSP     COPYF,XX,HEC2ABS.
13:27:21    0.1812   USER    IO048 - COPY OF         1 RECORDS        1 FILES COMPLETED
13:27:21    0.1813   CSP     REWIND,HEC2ABS.
13:27:21    0.1817   CSP     HEC2ABS.
13:27:27    1.7569   USER    UT010 -    STOP                IN H2MAIN
13:27:27    1.7570   CSP     END OF JOB
13:27:27    1.7570   CSP
13:27:27    1.7570   CSP
13:27:28    1.7816   PDM     PD000 - PDN = BCTABLE           ID = CRYLBRY   ED =    1  OWN = 0510CRA
13:27:28    1.7816   PDM     PD000 - ACCESS  COMPLETE
13:27:28    1.7816   PDM     PD000 - PDN = BCTABLE           ID = CRYLBRY   ED =    1  OWN = 0510CRA
13:27:28    1.7816   PDM     PD000 - ACCESS  COMPLETE
13:27:28    1.7885   USER          JOBNAME = DFB1C1F   USER NUMBER = E142120
13:27:28    1.7885   USER          CP SECONDS        =      1.768
13:27:28    1.7885   USER          AVERAGE MEMORY    =     0.0677
13:27:28    1.7885   USER          IO BLOCKS MOVED   =      760.
13:27:28    1.7885   USER          IO REQUESTS       =      188.
13:27:28    1.7885   USER          MT MOUNTS         =        1.
13:27:28    1.7885   USER          MT BLOCKS STAGED  =      216.
13:27:28    1.7885   USER          I/O/D BLOCKS      =      118.
13:27:28    1.7885   USER
13:27:28    1.7885   USER          CSU-2             =     13.77
13:27:28    1.7885   USER          PRIORITY          =       15
13:27:28    1.7885   USER          COST              =     4.82
```

THIS RUN EXECUTED 02/10/86 14:39:34

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*********************************************
 HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
 ERROR CORR -  01,02,03,04,05,06
 MODIFICATION -  50,51,52,53,54,55,56
 IBM-PC-XT VERSION
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#3

```
T1     APACHE JUNCTION FRS      PHOENIX SCS
T2     DOWNSTREAM INUNDATION FOR BREACH AT IDAHO ROAD
T3     FBH AND PSH-- FLOWS FROM 18000 TO 2200 CFS, LOW N VALUES

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   NVINS    Q        WSEL     FQ

      0.       2.       0.       0. -1.000000      .00       .0       0.  1640.000     .000

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    38.000   43.000   26.000    1.000    2.000    3.000    4.000   53.000   54.000    6.000

    42.000   25.000     .000     .000     .000     .000     .000     .000     .000     .000

NC      .080     .080     .040     .100     .300     .000     .000     .000     .000     .000
QT     8.000 18000.000 16000.000 14000.000 10000.000  5300.000  4400.000  3300.000  2200.000     .000
X1     2.450    9.000   870.000 -1140.000     .000     .000     .000     .000     .000     .000
GR  1640.000     .000  1638.000   120.000  1638.000   340.000  1636.000   870.000  1635.000   980.000
GR  1636.000  1140.000  1638.000  1530.000  1638.000  2040.000  1640.000  2600.000     .000     .000

X1     2.440     .000     .000     .000   200.000   200.000   200.000     .000     .000     .000

NH     7.000     .080  1700.000     .040  1930.000     .080  2780.000     .040  3350.000     .080
NH  4060.000     .040  4230.000     .080  5450.000     .000     .000     .000     .000     .000
X1     2.090   17.000  2780.000  4230.000  1850.000  1850.000  1850.000     .000     .000     .000
GR  1660.000     .000  1658.000   170.000  1658.000  1490.000  1656.000  1700.000  1656.000  1930.000
GR  1658.000  2190.000  1656.000  2780.000  1654.000  3070.000  1654.000  3240.000  1656.000  3350.000
```

GR	1658.000	3600.000	1656.000	3690.000	1656.000	4060.000	1654.000	4120.000	1656.000	4230.000
GR	1656.000	5350.000	1660.000	5450.000	.000	.000	.000	.000	.000	.000
NH	5.000	.080	2940.000	.040	4450.000	.080	5430.000	.040	5550.000	.080
NH	6230.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
X1	1.770	20.000	2940.000	4450.000	1690.000	1690.000	1690.000	.000	.000	.000
GR	1676.000	.000	1674.000	40.000	1674.000	900.000	1676.000	980.000	1674.000	1160.000
GR	1676.000	2080.000	1674.000	2580.000	1674.000	2940.000	1670.000	3080.000	1672.000	3100.000
GR	1674.000	3300.000	1674.000	3640.000	1672.000	3850.000	1672.000	3860.000	1676.000	4450.000
GR	1672.000	4830.000	1674.000	5120.000	1672.000	5430.000	1672.000	5550.000	1676.000	6230.000
NH	3.000	.080	4530.000	.040	4880.000	.080	4940.000	.000	.000	.000
X1	1.550	13.000	4530.000	4940.000	1160.000	1160.000	1160.000	.000	.000	.000
GR	1688.000	.000	1686.000	160.000	1686.000	700.000	1688.000	810.000	1688.000	1410.000
GR	1686.000	1470.000	1688.000	1940.000	1688.000	2300.000	1686.000	2420.000	1686.000	4530.000
GR	1684.000	4850.000	1684.000	4880.000	1688.000	4940.000	.000	.000	.000	.000

NH	3.000	.080	140.000	.040	430.000	.080	2470.000	.000	.000	.000
X1	1.210	8.000	140.000	430.000	1800.000	1800.000	1800.000	.000	.000	.000
GR	1708.000	.000	1704.000	140.000	1704.000	310.000	1708.000	430.000	1708.000	760.000
GR	1706.000	860.000	1706.000	2370.000	1708.000	2470.000	.000	.000	.000	.000
NH	5.000	.040	400.000	.080	620.000	.040	2400.000	.080	3450.000	.040
NH	4300.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
X1	1.030	12.000	670.000	2400.000	950.000	950.000	950.000	.000	.000	.000
GR	1720.000	.000	1716.000	150.000	1716.000	230.000	1720.000	400.000	1718.000	620.000
GR	1716.000	670.000	1716.000	2400.000	1718.000	2470.000	1718.000	3450.000	1716.000	3600.000
GR	1716.000	3830.000	1720.000	4300.000	.000	.000	.000	.000	.000	.000
NH	4.000	.080	500.000	.040	740.000	.080	3180.000	.040	3600.000	.000
X1	.830	10.000	3180.000	3600.000	1060.000	1060.000	1060.000	.000	.000	.000
GR	1732.000	.000	1728.000	160.000	1730.000	280.000	1730.000	500.000	1728.000	590.000
GR	1728.000	740.000	1730.000	800.000	1730.000	3180.000	1726.000	3330.000	1732.000	3600.000
NH	6.000	.080	730.000	.040	900.000	.080	1160.000	.040	1640.000	.080
NH	2620.000	.040	3350.000	.000	.000	.000	.000	.000	.000	.000
X1	.520	18.000	2620.000	3350.000	1640.000	1640.000	1640.000	.000	.000	.000
GR	1752.000	.000	1750.000	100.000	1750.000	310.000	1752.000	400.000	1750.000	470.000
GR	1750.000	730.000	1748.000	800.000	1750.000	900.000	1750.000	1160.000	1748.000	1300.000
GR	1752.000	1640.000	1752.000	2620.000	1748.000	2930.000	1748.000	2990.000	1750.000	3060.000
GR	1750.000	3250.000	1748.000	3300.000	1752.000	3350.000	.000	.000	.000	.000
NH	9.000	.080	400.000	.040	460.000	.080	820.000	.040	950.000	.080
NH	1200.000	.040	1500.000	.080	2620.000	.040	2740.000	.080	2970.000	.000
X1	.290	15.000	650.000	1860.000	1200.000	1200.000	1200.000	.000	.000	.000
GR	1768.000	.000	1766.000	120.000	1764.000	400.000	1764.000	460.000	1766.000	650.000
GR	1764.000	820.000	1764.000	950.000	1766.000	1200.000	1764.000	1210.000	1764.000	1500.000
GR	1768.000	1860.000	1768.000	2320.000	1764.000	2620.000	1764.000	2740.000	1768.000	2970.000
NH	3.000	.080	300.000	.040	1440.000	.080	2900.000	.000	.000	.000
X1	.180	14.000	300.000	1440.000	580.000	580.000	580.000	.000	.000	.000
GR	1776.000	.000	1774.000	60.000	1772.000	300.000	1771.000	350.000	1773.000	450.000
GR	1772.500	500.000	1772.500	1250.000	1774.000	1350.000	1772.000	1370.000	1772.000	1440.000
GR	1774.000	1550.000	1774.000	2100.000	1776.000	2380.000	1776.000	2900.000	.000	.000

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XI      .100    12.000   370.000  1030.000   120.000   120.000   120.000      .000      .000      .000
GR   1780.000      .000  1776.000   200.000  1778.000   240.000  1780.000   660.000  1780.000   940.000
GR   1776.000   980.000  1780.000  1050.000  1780.000  1200.000  1778.000  1600.000  1777.000  1850.000
GR   1777.000  1850.000  1780.000  2200.000      .000      .000      .000      .000      .000      .000

NC      .060      .060      .060      .100      .300      .000      .000      .000      .000      .000
XI      .000     4.000     1.000   400.000   530.000   530.000   530.000      .000      .000      .000
GR   1796.000      .000  1788.000     1.000  1788.000   400.000  1796.000   401.000      .000      .000
EJ      .000      .000      .000      .000      .000      .000      .000      .000      .000      .000
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  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       DLOSS   BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN     SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST


*PROF 1


CCHV=    .100 CEHV=    .300
*SECNO 2.450
3720 CRITICAL DEPTH ASSUMED
    2.45     4.09  1639.09  1639.09  1640.00  1639.93      .84      .00      .00  1636.00
   18000.    4339.    9437.    4224.    1385.     970.    1539.       0.       0.  1636.00
     .00     3.13     9.73     2.74     .080     .040     .080     .000  1635.00    54.50
  .012474      0.       0.       0.       0       14        0      .00  2291.17  2345.67


*SECNO 2.440
3280 CROSS SECTION      2.44 EXTENDED       .64 FEET
                        :

3301 HV CHANGED MORE THAN HVTMS

    2.44     5.64  1640.64      .00      .00  1640.82      .18      .83      .07  1636.00
   18000.    4998.    6944.    6058.    2709.    1389.    3688.      27.      11.  1636.00
     .02     1.84     5.00     1.64     .080     .040     .080     .000  1635.00      .00
  .002041     200.     200.     200.        3        0        0      .00  2600.00  2600.00


1490 NH CARD USED
*SECNO 2.090

3265 DIVIDED FLOW

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
    2.09     2.95  1656.95  1656.95      .00  1657.54      .58     8.30      .12  1656.00
```

.11	2.99	6.78	2.32	.050	.039	.080	.000	1654.00	1599.83
.016790	1850.	1850.	1850.	20	11	0	.00	3177.79	5373.85

1490 NH CARD USED
*SECNO 1.770

3265 DIVIDED FLOW

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
1.77	4.87	1674.87	.00	.00	1675.07	.19	17.49	.04	1674.00
18000.	1771.	9292.	6937.	1374.	2169.	2548.	458.	288.	1676.00
.24	1.29	4.28	2.72	.080	.040	.068	.000	1670.00	22.73
.007013	1690.	1690.	1690.	8	0	0	.00	4783.84	6036.80

1490 NH CARD USED
*SECNO 1.550

3265 DIVIDED FLOW

1.55	3.25	1687.25	.00	.00	1687.76	.51	12.59	.09	1686.00
18000.	10599.	7401.	0.	3690.	899.	0.	600.	400.	1688.00
.31	2.87	8.23	.00	.080	.043	.068	.000	1684.00	59.55
.019010	1160.	1160.	1160.	4	0	0	.00	3626.42	4928.83

1490 NH CARD USED
*SECNO 1.210
3280 CROSS SECTION 1.21 EXTENDED .22 FEET

1.21	4.21	1708.21	.00	.00	1708.63	.41	20.86	.01	1704.00
18000.	866.	7283.	9851.	311.	984.	3667.	797.	526.	1708.00
.42	2.79	7.40	2.69	.080	.040	.080	.000	1704.00	.00
.007796	1800.	1800.	1800.	6	0	0	.00	2470.00	2470.00

1490 NH CARD USED
*SECNO 1.030

3265 DIVIDED FLOW

1.03	1.50	1717.50	.00	.00	1717.93	.43	9.30	.01	1716.00

```
     .47     4.47     5.48     4.50     .010     .010     .011     .000  1110.00    55.15
  .012665     950.     950.     950.        6        0        0      .00  2538.95  4006.32


1490 NH CARD USED
*SECNO  .830
     .83     4.86  1730.86  1730.74      .00  1731.36      .50    13.40      .02  1730.00
   18000.   10402.    7598.       0.    3338.     961.       0.     983.     654.   1732.00
     .52     3.12     7.90      .00     .062     .040     .041     .000  1726.00    45.51
  .012624     1060.    1060.    1060.       13       23        0      .00  3503.29  3548.80


02/10/86    14:39:32                                                                    PAGE    5


   SECND    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA    LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


1490 NH CARD USED
*SECNO  .520

3265 DIVIDED FLOW

     .52     3.32  1751.32      .00      .00  1751.76      .44    20.40      .01  1752.00
   18000.   10457.    7543.       0.    2266.    1225.       0.    1129.     761.   1752.00
     .61     4.61     6.16      .00     .050     .040     .041     .000  1748.00    33.94
  .012259     1640.    1640.    1640.        4        0        0      .00  2162.96  3341.51


1490 NH CARD USED
*SECNO  .290

3265 DIVIDED FLOW

     .29     2.61  1766.61      .00      .00  1766.98      .37    15.20      .01  1766.00
   18000.    3474.   10863.    3663.     923.    2092.     763.    1230.     820.   1768.00
     .68     3.76     5.19     4.80     .065     .051     .052     .000  1764.00    83.58
  .013103     1200.    1200.    1200.        5        0        0      .00  2116.49  2889.91


1490 NH CARD USED
*SECNO  .180
     .18     3.45  1774.45  1774.38      .00  1775.18      .72     8.10      .11  1772.00
   18000.    1014.   16181.     805.     351.    2261.     421.    1275.     848.   1772.00
     .70     2.89     7.16     1.91     .080     .040     .080     .000  1771.00    46.49
  .014901     580.     580.     580.        8       11        0      .00  2116.53  2163.03


1490 NH CARD USED
*SECNO  .100
3280 CROSS SECTION      .10 EXTENDED      .80 FEET
```

.10	4.79	1780.79	.00	.00	1781.14	.35	5.92	.04	1780.00
18000.	5971.	2616.	9413.	1688.	308.	2465.	1311.	869.	1780.00
.73	3.54	8.50	3.82	.080	.040	.080	.000	1776.00	.00
.013355	420.	420.	420.	4	0	0	.00	2200.00	2200.00

CCHV= .100 CEHV= .300
*SECNO .000

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.00	3.97	1791.97	1791.97	.00	1793.97	2.01	10.64	.50	1788.00
18000.	2.	17996.	2.	1.	1583.	1.	1348.	885.	1788.00
.74	1.78	11.37	1.78	.060	.060	.060	.000	1788.00	.50
.033514	530.	530.	530.	13	15	0	.00	399.99	400.50

PROFILE FOR STREAM FBH AND PSH-- FLOWS FROM

PLOTTED POINTS (BY PRIORITY)-E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA

```
ELEVATION  1620.    1640.    1660.    1680.    1700.    1720.    1740.    1760.    1780.    1800.
   SECNO   CUMDIS

    2.45     0.  .     I E      .        .        .        .        .        .        .        .        .
    2.44   200.  C     I E      .        .        .        .        .        .        .        .        .
           400.  C      I.E     .        .        .        .        .        .        .        .        .
           600.  C       I E    .        .        .        .        .        .        .        .        .
           800.  C       .I E   .        .        .        .        .        .        .        .        .
          1000.  C       . I E  .        .        .        .        .        .        .        .        .
          1200.  C       . I E  .        .        .        .        .        .        .        .        .
          1400.  C       .  I E .        .        .        .        .        .        .        .        .
          1600.  C       .   IWEM.       .        .        .        .        .        .        .        .
          1800.  C       .    IWEM.      .        .        .        .        .        .        .        .
          2000.  C       .     IWEM      .        .        .        .        .        .        .        .
    2.09  2200.  .       .     IWEM      .        .        .        .        .        .        .        .
          2400.  C       .      ILEM     .        .        .        .        .        .        .        .
          2600.  C       .       ILEM    .        .        .        .        .        .        .        .
          2800.  C       .        ILEM   .        .        .        .        .        .        .        .
          3000.  C       .        .ILEM  .        .        .        .        .        .        .        .
          3200.  C       .        . ILEM .        .        .        .        .        .        .        .
          3400.  C       .        .  ILEM .       .        .        .        .        .        .        .
          3600.  C       .        .   ILEM .      .        .        .        .        .        .        .
    1.77  3800.  C       .        .    I WE .     .        .        .        .        .        .        .
          4000.  C       .        .     I WE.     .        .        .        .        .        .        .
          4200.  C       .        .      I LE     .        .        .        .        .        .        .
          4400.  C       .        .       ILE     .        .        .        .        .        .        .
          4600.  C       .        .        ILE    .        .        .        .        .        .        .
          4800.  C       .        .        .ILE   .        .        .        .        .        .        .
    1.55  5000.  C       .        .        . ILE  .        .        .        .        .        .        .
          5200.  C       .        .        .  ILE .        .        .        .        .        .        .
          5400.  C       .        .        .   ILE .       .        .        .        .        .        .
          5600.  C       .        .        .    ILE .      .        .        .        .        .        .
          5800.  C       .        .        .     ILWE.     .        .        .        .        .        .
          6000.  C       .        .        .      IWE      .        .        .        .        .        .
          6200.  C       .        .        .       I.E     .        .        .        .        .        .
```

```
     6600. C     .     .     .    .I E    .     .     .     .     .     .
1.21 6800. C     .     .     .    . I E   .     .     .     .     .     .
     7000. C     .     .     .    . I E   .     .     .     .     .     .
     7200. C     .     .     .    .  IEM  .     .     .     .     .     .
     7400. C     .     .     .    .  IEM  .     .     .     .     .     .
     7600. C     .     .     .    .  IEM. .     .     .     .     .     .
1.03 7800. C     .     .     .    .  IEM  .     .     .     .     .     .
     8000. C     .     .     .    .  IEM  .     .     .     .     .     .
     8200. C     .     .     .    .  IEM  .     .     .     .     .     .
     8400. C     .     .     .    .  .ILE .     .     .     .     .     .
     8600. C     .     .     .    .  . ILEM     .     .     .     .     .
.83  8800. .     .     .     .    .  . I WE     .     .     .     .     .
     9000. C     .     .     .    .  . I LE     .     .     .     .     .
     9200. C     .     .     .    .  .  I E     .     .     .     .     .
     9400. C     .     .     .    .  .  I ER    .     .     .     .     .
     9600. C     .     .     .    .  .  I WE    .     .     .     .     .
     9800. C     .     .     .    .  .   I E    .     .     .     .     .
    10000. C     .     .     .    .  .   .I E   .     .     .     .     .
    10200. C     .     .     .    .  .   . I ER .     .     .     .     .
.52 10400. C     .     .     .    .  .   .  I E .     .     .     .     .
    10600. C     .     .     .    .  .   .  I E .     .     .     .     .
    10800. C     .     .     .    .  .   .   IER.     .     .     .     .
    11000. C     .     .     .    .  .   .   IWE     .     .     .     .
    11200. C     .     .     .    .  .   .   I.E     .     .     .     .
    11400. C     .     .     .    .  .   .    .IER   .     .     .     .
.29 11600. C     .     .     .    .  .   .    . IER  .     .     .     .
    11800. C     .     .     .    .  .   .    .  ILE .     .     .     .
    12000. C     .     .     .    .  .   .    .  ILEM.     .     .     .
.18 12200. .     .     .     .    .  .   .    .   IWE.     .     .     .
    12400. C     .     .     .    .  .   .    .   ILE.     .     .     .
.10 12600. C     .     .     .    .  .   .    .    I WE     .     .     .
    12800. C     .     .     .    .  .   .    .     I LE    .     .     .
    13000. C     .     .     .    .  .   .    .     . I EM  .     .     .
.00 13200. .     .     .     .    .  .   .    .     .  I WEM.     .     .
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THIS RUN EXECUTED 02/10/86 14:43:28

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*********************************************
 HEC2 RELEASE DATED NOV 76 UPDATED MAY 1984
 ERROR CORR - 01,02,03,04,05,06
 MODIFICATION - 50,51,52,53,54,55,56
 IBM-PC-XT VERSION
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```

T1
T2
T3 FBH, Q=16,000

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	NVINS	Q	WSEL	FQ
	0.	3.	0.	0.	-1.000000	.00	.0	0.	1640.000	.000

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	2.000	1.000	.000	1.000	.000	.000	.000	.000	.000	.000

```
  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       DLOSS   BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
  TIME     VLOB     VCH      VROB     XML      XNCH     XNR      WTN      ELMIN     SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST


*PROF 2


CCHV=   .100 CEHV=   .300
*SECNO 2.450
3720 CRITICAL DEPTH ASSUMED
    2.45     3.98  1638.98  1638.98  1640.00  1639.74     .76     .00     .00  1636.00
   16000.    3777.    8626.    3598.    1298.     941.   1412.      0.      0.  1636.00
     .00     2.91     9.17     2.55     .080     .040    .080    .000  1635.00    60.92
  .011528      0.       0.       0.        0       15       0     .00  2254.77  2315.69


*SECNO 2.440
3280 CROSS SECTION      2.44 EXTENDED       .43 FEET


3301 HV CHANGED MORE THAN HVINS

    2.44     5.43  1640.43     .00     .00  1640.60     .17     .79     .86  1636.00
   16000.    4402.    6385.    5213.    2523.    1331.   3376.     25.     11.  1636.00
     .02     1.74     4.80     1.54     .080     .040    .080    .000  1635.00     .00
  .001989     200.     200.     200.        3        0       0     .00  2600.00  2600.00


1490 NH CARD USED
*SECNO 2.090

3265 DIVIDED FLOW

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
    2.09     2.86  1656.86  1656.86     .00  1657.41     .55    0.08     .11  1656.00
```

.11	2.82	6.57	2.13	.030	.030	.000	.000	1031.00	1002.09
.016295	1850.	1850.	1850.	20	11	0	.00	3111.14	5371.47

1490 NH CARD USED
*SECNO 1.770

3265 DIVIDED FLOW

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IOC	ICONT	CORAR	TOPWID	ENDST
1.77	4.74	1674.74	.00	.00	1674.93	.18	17.48	.04	1674.00
16000.	1357.	8314.	6330.	1142.	2007.	2370.	421.	283.	1676.00
.25	1.19	4.14	2.67	.080	.040	.067	.000	1670.00	25.16
.007144	1690.	1690.	1690.	8	0	0	.00	4629.12	6016.13

1490 NH CARD USED
*SECNO 1.550

3265 DIVIDED FLOW

1.55	3.16	1687.16	.00	.00	1687.64	.48	12.63	.09	1686.00
16000.	9164.	6836.	0.	3390.	862.	0.	551.	392.	1688.00
.32	2.70	7.93	.00	.080	.043	.067	.000	1684.00	67.04
.018579	1160.	1160.	1160.	5	0	0	.00	3581.94	4927.43

1490 NH CARD USED
*SECNO 1.210
3280 CROSS SECTION 1.21 EXTENDED .04 FEET

1.21	4.04	1708.04	.00	.00	1708.44	.40	20.79	.01	1704.00
16000.	759.	6696.	8546.	286.	933.	3309.	732.	517.	1708.00
.43	2.65	7.18	2.58	.080	.040	.080	.000	1704.00	.00
.007867	1800.	1800.	1800.	6	0	0	.00	2470.00	2470.00

1490 NH CARD USED
*SECNO 1.030

3265 DIVIDED FLOW

1.03	1.41	1717.41	.00	.00	1717.81	.40	9.37	.00	1716.00

```
     .48     9.31     5.29     9.35     .040     .040     .041     .000  1716.00    97.49
  .012723    950.     950.     950.       5        0        0      .00  2505.55  3994.52


1490 NH CARD USED
*SECNO  .830
     .83     4.74  1730.74  1730.72      .00  1731.22      .49    13.39      .03  1730.00
   16000.    8924.    7076.       0.    2964.     918.       0.     902.     644.  1732.00
     .54     3.01     7.71      .00     .061     .040     .041     .000  1726.00    50.29
  .012539    1060.    1060.    1060.       11       28        0      .00  3493.14  3543.43
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTH      ELMIN     SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IOC      ICONT    CORAR    TOPWID    ENDST


1490 NH CARD USED
*SECNO  .520

3265 DIVIDED FLOW

     .52     3.19  1751.19      .00      .00  1751.60      .41    20.37      .01  1752.00
   16000.    9260.    6740.       0.    2066.    1136.       0.    1035.     750.  1752.00
     .63     4.48     5.93      .00     .049     .040     .041     .000  1748.00    40.69
  .012301    1640.    1640.    1640.       5        0        0      .00  2121.78  3339.83


1490 NH CARD USED
*SECNO  .290

3265 DIVIDED FLOW

     .29     2.46  1766.46      .00      .00  1766.80      .35    15.20      .01  1766.00
   16000.    3019.    9722.    3259.     840.    1933.     696.    1127.     808.  1768.00
     .70     3.59     5.03     4.68     .065     .050     .052     .000  1764.00    92.42
  .013048    1200.    1200.    1200.       5        0        0      .00  2074.87  2881.43


1490 NH CARD USED
*SECNO  .180
     .18     3.33  1774.33  1774.23      .00  1775.01      .67     8.10      .10  1772.00
   16000.     871.   14534.     594.     319.    2116.     331.    1169.     835.  1772.00
     .72     2.73     6.87     1.80     .080     .040     .080     .000  1771.00    50.31
  .014992     580.     580.     580.       8       11        0      .00  2094.93  2145.24


1490 NH CARD USED
*SECNO  .100
3280 CROSS SECTION      .10 EXTENDED      .64 FEET
```

.75	3.39	8.17	3.66	.080	.040	.080	.000	1776.00	.00
.013268	420.	420.	420.	4	0	0	.00	2200.00	2200.00

CCHV= .100 CEHV= .300
*SECNO .000

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.00	3.67	1791.67	1791.67	.00	1793.52	1.85	10.70	.46	1788.00
16000.	1.	15997.	1.	1.	1464.	1.	1236.	872.	1788.00
.76	1.71	10.93	1.71	.060	.060	.060	.000	1788.00	.54
.034377	530.	530.	530.	15	15	0	.00	399.92	400.46

CROSS SECTION 2.45
STREAM Q=16,000
DISCHARGE= 16000.

PLOTTED POINTS (BY PRIORITY)-B=BOTTOM BRIDGE,T=TOP BRIDGE,X=GROUND,W=WATER SUR,E=ENERGY GRADIENT,C=CRITICAL WSEL

```
ELEV 1635.    1636.    1637.    1638.    1639.    1640.    1641.    1642.    1643.    1644.    1645.


   STA-FEET

 2  0. .       .       .       .               X       .       .       .       .       .       .
   50. .       .       .       .         X     E .     .       .       .       .       .       .
 3 100. .      .       .       X       W     E .     .       .       .       .       .       .
  150. .       .       .       X       W     E .     .       .       .       .       .       .
  200. .       .       .       X       W     E .     .       .       .       .       .       .
  250. .       .       .       X       W     E .     .       .       .       .       .       .
  300. .       .       .       X       W     E .     .       .       .       .       .       .
 4 350. .      .       .       X       W     E .     .       .       .       .       .       .
  400. .       .       .     X .       W     E .     .       .       .       .       .       .
  450. .       .       .   X   .       W     E .     .       .       .       .       .       .
  500. .       .       .  X    .       W     E .     .       .       .       .       .       .
  550. .       .       . X     .       W     E .     .       .       .       .       .       .
  600. .       .       .X      .       W     E .     .       .       .       .       .       .
  650. .       .      X.       .       W     E .     .       .       .       .       .       .
  700. .       .     X .       .       W     E .     .       .       .       .       .       .
  750. .       .   X   .       .       W     E .     .       .       .       .       .       .
  800. .       . X     .       .       W     E .     .       .       .       .       .       .
 5 850. .      X       .       .       W     E .     .       .       .       .       .     BANK.
  900. .   X   .       .       .       W     E .     .       .       .       .       .       .
  950. .X      .       .       .       W     E .     .       .       .       .       .       .
 61000. X      .       .       .       W     E .     .       .       .       .       .       .
 1050. .  X    .       .       .       W     E .     .       .       .       .       .       .
 1100. .    X  .       .       .       W     E .     .       .       .       .       .       .
 71150. .      X       .       .       W     E .     .       .       .       .       .     BANK.
 1200. .       . X     .       .       W     E .     .       .       .       .       .       .
 1250. .       .   X   .       .       W     E .     .       .       .       .       .       .
 1300. .       .     X .       .       W     E .     .       .       .       .       .       .
 1350. .       .      X        .       W     E .     .       .       .       .       .       .
 1400. .       .       . X     .       W     E .     .       .       .       .       .       .
 1450. .       .       .   X   .       W     E .     .       .       .       .       .       .
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```
 81550. .     .     .     X     W     E .     .     .     .     .     .     .
  1600. .     .     .     X     W     E .     .     .     .     .     .     .
  1650. .     .     .     X     W     E .     .     .     .     .     .     .
  1700. .     .     .     X     W     E .     .     .     .     .     .     .
  1750. .     .     .     X     W     E .     .     .     .     .     .     .
  1800. .     .     .     X     W     E .     .     .     .     .     .     .
  1850. .     .     .     X     W     E .     .     .     .     .     .     .
  1900. .     .     .     X     W     E .     .     .     .     .     .     .
  1950. .     .     .     X     W     E .     .     .     .     .     .     .
  2000. .     .     .     X     W     E .     .     .     .     .     .     .
 92050. .     .     .     X     W     E .     .     .     .     .     .     .
  2100. .     .     .     . X   W     E .     .     .     .     .     .     .
  2150. .     .     .     .  X  W     E .     .     .     .     .     .     .
  2200. .     .     .     .   X W     E .     .     .     .     .     .     .
  2250. .     .     .     .    XW     E .     .     .     .     .     .     .
  2300. .     .     .     .     XW    E .     .     .     .     .     .     .
  2350. .     .     .     .      X    E .     .     .     .     .     .     .
  2400. .     .     .     .       X   E .     .     .     .     .     .     .
  2450. .     .     .     .        X  E .     .     .     .     .     .     .
  2500. .     .     .     .         XE .     .     .     .     .     .     .
  2550. .     .     .     .          X .     .     .     .     .     .     .
 102600. .    .     .     .           X      .     .     .     .     .     .

NRD=      0 ELLC=  9999999.00 ELTRD=  9999999.00

 EL(I),STA(I)
   1640.00       .00    1638.00     120.00    1638.00     340.00    1636.00     870.00    1635.00     980.00
   1636.00    1140.00    1638.00    1530.00    1638.00    2040.00    1640.00    2600.00
```

CROSS SECTION 2.44
STREAM Q=16,000
DISCHARGE= 16000.

PLOTTED POINTS (BY PRIORITY)-B=BOTTOM BRIDGE,T=TOP BRIDGE,X=GROUND,W=WATER SUR,E=ENERGY GRADIENT,C=CRITICAL WSEL

```
ELEV 1635.    1636.    1637.    1638.    1639.    1640.    1641.    1642.    1643.    1644.    1645.


   STA-FEET

2   0. .       .       .       .       .       X  W E  .       .       .       .       .       .
   50. .       .       .       .       . X     .  W E  .       .       .       .       .       .
3 100. .       .       .       X       .       .  W E  .       .       .       .       .       .
  150. .       .       .       X       .       .  W E  .       .       .       .       .       .
  200. .       .       .       X       .       .  W E  .       .       .       .       .       .
  250. .       .       .       X       .       .  W E  .       .       .       .       .       .
  300. .       .       .       X       .       .  W E  .       .       .       .       .       .
4 350. .       .       .       X       .       .  W E  .       .       .       .       .       .
  400. .       .       .     X .       .       .  W E  .       .       .       .       .       .
  450. .       .       .   X   .       .       .  W E  .       .       .       .       .       .
  500. .       .       . X     .       .       .  W E  .       .       .       .       .       .
  550. .       .       . X     .       .       .  W E  .       .       .       .       .       .
  600. .       .       .X      .       .       .  W E  .       .       .       .       .       .
  650. .       .      X.       .       .       .  W E  .       .       .       .       .       .
  700. .       .    X  .       .       .       .  W E  .       .       .       .       .       .
  750. .       .  X    .       .       .       .  W E  .       .       .       .       .       .
  800. .       . X     .       .       .       .  W E  .       .       .       .       .       .
5 850. .       X       .       .       .       .  W E  .       .       .       .       .     BANK.
  900. .   X   .       .       .       .       .  W E  .       .       .       .       .       .
  950. .X      .       .       .       .       .  W E  .       .       .       .       .       .
61000. X       .       .       .       .       .  W E  .       .       .       .       .       .
 1050. .  X    .       .       .       .       .  W E  .       .       .       .       .       .
 1100. .    X  .       .       .       .       .  W E  .       .       .       .       .       .
71150. .       X       .       .       .       .  W E  .       .       .       .       .     BANK.
 1200. .       . X     .       .       .       .  W E  .       .       .       .       .       .
 1250. .       .  X    .       .       .       .  W E  .       .       .       .       .       .
 1300. .       .    X  .       .       .       .  W E  .       .       .       .       .       .
 1350. .       .      X       .       .       .  W E  .       .       .       .       .       .
 1400. .       .       . X    .       .       .  W E  .       .       .       .       .       .
 1450                     X                      W E
```

```
81550. .        .        .        X        .        .  W E  .        .        .        .        .        .
 1600. .        .        .        X        .        .  W E  .        .        .        .        .        .
 1650. .        .        .        X        .        .  W E  .        .        .        .        .        .
 1700. .        .        .        X        .        .  W E  .        .        .        .        .        .
 1750. .        .        .        X        .        .  W E  .        .        .        .        .        .
 1800. .        .        .        X        .        .  W E  .        .        .        .        .        .
 1850. .        .        .        X        .        .  W E  .        .        .        .        .        .
 1900. .        .        .        X        .        .  W E  .        .        .        .        .        .
 1950. .        .        .        X        .        .  W E  .        .        .        .        .        .
 2000. .        .        .        X        .        .  W E  .        .        .        .        .        .
92050. .        .        .        X        .        .  W E  .        .        .        .        .        .
 2100. .        .        .        . X      .        .  W E  .        .        .        .        .        .
 2150. .        .        .        .  X     .        .  W E  .        .        .        .        .        .
 2200. .        .        .        .   X    .        .  W E  .        .        .        .        .        .
 2250. .        .        .        .    X   .        .  W E  .        .        .        .        .        .
 2300. .        .        .        .     X  .        .  W E  .        .        .        .        .        .
 2350. .        .        .        .      X .        .  W E  .        .        .        .        .        .
 2400. .        .        .        .       . X       .  W E  .        .        .        .        .        .
 2450. .        .        .        .       .  X      .  W E  .        .        .        .        .        .
 2500. .        .        .        .       .   X     .  W E  .        .        .        .        .        .
 2550. .        .        .        .       .    X    .  W E  .        .        .        .        .        .
102600. .        .        .        .       .     X   W E  .        .        .        .        .        .

NRD=       0 ELLC=  9999999.00 ELTRD=  9999999.00

 EL(I),STA(I)
   1640.00        .00    1638.00     120.00    1638.00     340.00    1636.00     870.00    1635.00     980.00
   1636.00    1140.00    1638.00    1530.00    1638.00    2040.00    1640.00    2600.00
```

CROSS SECTION 2.09
STREAM Q=16,000
DISCHARGE= 16000.

PLOTTED POINTS (BY PRIORITY)-B=BOTTOM BRIDGE,T=TOP BRIDGE,X=GROUND,W=WATER SUR,E=ENERGY GRADIENT,C=CRITICAL WSEL

```
ELEV 1654.    1655.    1656.    1657.    1658.    1659.    1660.    1661.    1662.    1663.    1664.


   STA-FEET

 2   0. .       .        .        .        .        .        X        .        .        .        .        .
    50. .       .        .        .        .        .   X    .        .        .        .        .        .
   100. .       .        .        .        .     X  .        .        .        .        .        .        .
 3 150. .       .        .        .        X        .        .        .        .        .        .        .
   200. .       .        .        .        X        .        .        .        .        .        .        .
   250. .       .        .        .        X        .        .        .        .        .        .        .
   300. .       .        .        .        X        .        .        .        .        .        .        .
   350. .       .        .        .        X        .        .        .        .        .        .        .
   400. .       .        .        .        X        .        .        .        .        .        .        .
   450. .       .        .        .        X        .        .        .        .        .        .        .
   500. .       .        .        .        X        .        .        .        .        .        .        .
   550. .       .        .        .        X        .        .        .        .        .        .        .
   600. .       .        .        .        X        .        .        .        .        .        .        .
   650. .       .        .        .        X        .        .        .        .        .        .        .
   700. .       .        .        .        X        .        .        .        .        .        .        .
   750. .       .        .        .        X        .        .        .        .        .        .        .
   800. .       .        .        .        X        .        .        .        .        .        .        .
   850. .       .        .        .        X        .        .        .        .        .        .        .
   900. .       .        .        .        X        .        .        .        .        .        .        .
   950. .       .        .        .        X        .        .        .        .        .        .        .
  1000. .       .        .        .        X        .        .        .        .        .        .        .
  1050. .       .        .        .        X        .        .        .        .        .        .        .
  1100. .       .        .        .        X        .        .        .        .        .        .        .
  1150. .       .        .        .        X        .        .        .        .        .        .        .
  1200. .       .        .        .        X        .        .        .        .        .        .        .
  1250. .       .        .        .        X        .        .        .        .        .        .        .
  1300. .       .        .        .        X        .        .        .        .        .        .        .
  1350. .       .        .        .        X        .        .        .        .        .        .        .
  1400. .       .        .        .        X        .        .        .        .        .        .        .
  1450. .       .        .        .        X        .        .        .        .        .        .        .
```

```
 1550. .       .       .       .  .  .       .       .       .       .       .       .       .
 1600. .       .       .       X  E  .       .       .       .       .       .       .       .
 1650. .       .       .     X U. E  .       .       .       .       .       .       .       .
51700. .       .       X       U. E  .       .       .       .       .       .       .       .
 1750. .       .       X       U. E  .       .       .       .       .       .       .       .
 1800. .       .       X       U. E  .       .       .       .       .       .       .       .
 1850. .       .       X       U. E  .       .       .       .       .       .       .       .
 1900. .       .       X       U. E  .       .       .       .       .       .       .       .
61950. .       .       X       U. E  .       .       .       .       .       .       .       .
 2000. .       .       .   X   U. E  .       .       .       .       .       .       .       .
 2050. .       .       .       XU. E  .       .       .       .       .       .       .       .
 2100. .       .       .       . X E  .       .       .       .       .       .       .       .
 2150. .       .       .       .   X  .       .       .       .       .       .       .       .
72200. .       .       .       .      X       .       .       .       .       .       .       .
 2250. .       .       .       .     X .      .       .       .       .       .       .       .
 2300. .       .       .       .    X  .      .       .       .       .       .       .       .
 2350. .       .       .       .   X   .      .       .       .       .       .       .       .
 2400. .       .       .       . XE    .      .       .       .       .       .       .       .
 2450. .       .       .       . X E   .      .       .       .       .       .       .       .
 2500. .       .       .       X  E    .      .       .       .       .       .       .       .
 2550. .       .       .       XU. E   .      .       .       .       .       .       .       .
 2600. .       .       .     X U. E    .      .       .       .       .       .       .       .
 2650. .       .       .   X   U. E    .      .       .       .       .       .       .       .
 2700. .       .       . X     U. E    .      .       .       .       .       .       .       .
 2750. .       .       .X      U. E    .      .       .       .       .       .       .       .
82800. .       .       X       U. E    .      .       .       .       .       .       .  BANK.
 2850. .       .     X .       U. E    .      .       .       .       .       .       .       .
 2900. .       . X     .       U. E    .      .       .       .       .       .       .       .
 2950. .       X       .       U. E    .      .       .       .       .       .       .       .
 3000. .     X .       .       U. E    .      .       .       .       .       .       .       .
93050. X       .       .       U. E    .      .       .       .       .       .       .       .
 3100. X       .       .       U. E    .      .       .       .       .       .       .       .
 3150. X       .       .       U. E    .      .       .       .       .       .       .       .
 3200. X       .       .       U. E    .      .       .       .       .       .       .       .
103250. X      .       .       U. E    .      .       .       .       .       .       .       .
 3300. .      X.       .       U. E    .      .       .       .       .       .       .       .
113350. .      .       X       U. E    .      .       .       .       .       .       .       .
 3400. .       .       . X     U. E    .      .       .       .       .       .       .       .
 3450. .       .       .       XU. E   .      .       .       .       .       .       .       .
 3500. .       .       .       . X E   .      .       .       .       .       .       .       .
 3550. .       .       .       .   X   .      .       .       .       .       .       .       .
123600. .      .       .       .      X       .       .       .       .       .       .       .
133650. .      .       X       U. E    .      .       .       .       .       .       .       .
 3700. .       .       X       U. E    .      .       .       .       .       .       .       .
 3750. .       .       X       U. E    .      .       .       .       .       .       .       .
 3800. .       .       X       U. E    .      .       .       .       .       .       .       .
 3850. .       .       X       U. E    .      .       .       .       .       .       .       .
 3900. .       .       X       U. E    .      .       .       .       .       .       .       .
 3950. .       .       X       U. E    .      .       .       .       .       .       .       .
 4000. .       .       X       U. E    .      .       .       .       .       .       .       .
144050. .      .       X       U. E    .      .       .       .       .       .       .       .
154100. X      .       .       U. E    .      .       .       .       .       .       .       .
 4150. .      X.       .       U. E    .      .       .       .       .       .       .       .
 4200. .       .     X .       U. E    .      .       .       .       .       .       .       .
164250. .      .       X       U. E    .      .       .       .       .       .       .  BANK.
 4300. .       .       X       U. E    .      .       .       .       .       .       .       .
 4350. .       .       X       U. E    .      .       .       .       .       .       .       .
 4400. .       .       X       U. E    .      .       .       .       .       .       .       .
 4450. .       .       X       U. E    .      .       .       .       .       .       .       .
 4500. .       .       X       U. E    .      .       .       .       .       .       .       .
 4550. .       .       X       U. E    .      .       .       .       .       .       .       .
 4600. .       .       X       U. E    .      .       .       .       .       .       .       .
 4650. .       .       X       U. E    .      .       .       .       .       .       .       .
 4700. .       .       X       U. E    .      .       .       .       .       .       .       .
 4750. .       .       X       U. E    .      .       .       .       .       .       .       .
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 4850. .      .      X      W. E  .      .      .      .      .      .      .      .
 4900. .      .      X      W. E  .      .      .      .      .      .      .      .
 4950. .      .      X      W. E  .      .      .      .      .      .      .      .
 5000. .      .      X      W. E  .      .      .      .      .      .      .      .
 5050. .      .      X      W. E  .      .      .      .      .      .      .      .
 5100. .      .      X      W. E  .      .      .      .      .      .      .      .
 5150. .      .      X      W. E  .      .      .      .      .      .      .      .
 5200. .      .      X      W. E  .      .      .      .      .      .      .      .
 5250. .      .      X      W. E  .      .      .      .      .      .      .      .
 5300. .      .      X      W. E  .      .      .      .      .      .      .      .
175350. .     .      X      W. E  .      .      .      .      .      .      .      .
 5400. .      .      .      .     X      .      .      .      .      .      .      .
185450. .     .      .      .     .      .      X      .      .      .      .      .

NRD=      0 ELLC=  9999999.00 ELTRD=  9999999.00

 EL(I),STA(I)
   1660.00       .00    1658.00     170.00    1658.00    1490.00    1656.00    1700.00    1656.00    1930.00
   1658.00    2190.00    1656.00    2780.00    1654.00    3070.00    1654.00    3240.00    1656.00    3350.00
   1658.00    3600.00    1656.00    3640.00    1656.00    4060.00    1654.00    4120.00    1656.00    4230.00
   1656.00    5350.00    1660.00    5450.00


CROSS SECTION     1.77
STREAM  Q=16,000
DISCHARGE=   16000.


PLOTTED POINTS (BY PRIORITY)-B=BOTTOM BRIDGE,T=TOP BRIDGE,X=GROUND,W=WATER SUR,E=ENERGY GRADIENT,C=CRITICAL WSEL

ELEV 1670.    1671.    1672.    1673.    1674.    1675.    1676.    1677.    1678.    1679.    1680.


   STA-FEET

 2   0. .      .      .      .      .      .      X      .      .      .      .      .
 3  50. .      .      .      .      X    W E.     .      .      .      .      .      .
   100. .      .      .      .      X    W E.     .      .      .      .      .      .
   150. .      .      .      .      X    W E.     .      .      .      .      .      .
   200. .      .      .      .      X    W E.     .      .      .      .      .      .
   250. .      .      .      .      X    W E.     .      .      .      .      .      .
   300. .      .      .      .      X    W E.     .      .      .      .      .      .
   350. .      .      .      .      X    W E.     .      .      .      .      .      .
   400. .      .      .      .      X    W E.     .      .      .      .      .      .
   450. .      .      .      .      X    W E.     .      .      .      .      .      .
   500. .      .      .      .      X    W E.     .      .      .      .      .      .
   550. .      .      .      .      X    W E.     .      .      .      .      .      .
   600. .      .      .      .      X    W E.     .      .      .      .      .      .
   650. .      .      .      .      X    W E.     .      .      .      .      .      .
   700. .      .      .      .      X    W E.     .      .      .      .      .      .
   750. .      .      .      .      X    W E.     .      .      .      .      .      .
   800. .      .      .      .      X    W E.     .      .      .      .      .      .
   850. .      .      .      .      X    W E.     .      .      .      .      .      .
 4 900. .      .      .      .      X    W E.     .      .      .      .      .      .
   950. .      .      .      .      .      .  X   .      .      .      .      .      .
 51000. .      .      .      .      .      .      X      .      .      .      .      .
  1050. .      .      .      .      .      .   X  .      .      .      .      .      .
  1100. .      .      .      .      .     X.      .      .      .      .      .      .
 61150. .      .      .      .      X    W E.     .      .      .      .      .      .
  1200. .      .      .      .     .X    W E.     .      .      .      .      .      .
  1250. .      .      .      .     . X   W E.     .      .      .      .      .      .
  1300. .      .      .      .     .  X  W E.     .      .      .      .      .      .
  1350. .      .      .      .     .   X W E.     .      .      .      .      .      .
  1400. .      .      .      .     .    X W E.    .      .      .      .      .      .
  1450. .      .      .      .     .     X E.     .      .      .      .      .      .
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```
  1550. .         .         .         .         .         m.        .         .         .         .         .         .
  1600. .         .         .         .         .         X         .         .         .         .         .         .
  1650. .         .         .         .         .         .X        .         .         .         .         .         .
  1700. .         .         .         .         .         . X       .         .         .         .         .         .
  1750. .         .         .         .         .         .  X      .         .         .         .         .         .
  1800. .         .         .         .         .         .   X     .         .         .         .         .         .
  1850. .         .         .         .         .         .    X    .         .         .         .         .         .
  1900. .         .         .         .         .         .     X   .         .         .         .         .         .
  1950. .         .         .         .         .         .      X  .         .         .         .         .         .
  2000. .         .         .         .         .         .       X .         .         .         .         .         .
  2050. .         .         .         .         .         .        X        .         .         .         .         .
 72100. .         .         .         .         .         .        X        .         .         .         .         .
  2150. .         .         .         .         .         .       X .         .         .         .         .         .
  2200. .         .         .         .         .         .     X   .         .         .         .         .         .
  2250. .         .         .         .         .         .   X     .         .         .         .         .         .
  2300. .         .         .         .         .         . X       .         .         .         .         .         .
  2350. .         .         .         .         .         X         .         .         .         .         .         .
  2400. .         .         .         .         .        XE.        .         .         .         .         .         .
  2450. .         .         .         .         .       XW E.       .         .         .         .         .         .
  2500. .         .         .         .         .     X W E.        .         .         .         .         .         .
  2550. .         .         .         .         . X   W E.          .         .         .         .         .         .
 82600. .         .         .         .         X     W E.          .         .         .         .         .         .
  2650. .         .         .         .         X     W E.          .         .         .         .         .         .
  2700. .         .         .         .         X     W E.          .         .         .         .         .         .
  2750. .         .         .         .         X     W E.          .         .         .         .         .         .
  2800. .         .         .         .         X     W E.          .         .         .         .         .         .
  2850. .         .         .         .         X     W E.          .         .         .         .         .         .
  2900. .         .         .         .         X     W E.          .         .         .         .         .         .
 92950. .         .         .         .         X     W E.          .         .         .         .         .      BANK.
  3000. .         .         .   X     .         .     W E.          .         .         .         .         .         .
  3050. .       .X          .         .         .     W E.          .         .         .         .         .         .
113100. XXXXXXXXXXXXXXXXXXXX          .         .     W E.          .         .         .         .         .         .
  3150. .         .         .   X     .         .     W E.          .         .         .         .         .         .
  3200. .         .         .         X         .     W E.          .         .         .         .         .         .
  3250. .         .         .         .   X     .     W E.          .         .         .         .         .         .
123300. .         .         .         .         X     W E.          .         .         .         .         .         .
  3350. .         .         .         .         X     W E.          .         .         .         .         .         .
  3400. .         .         .         .         X     W E.          .         .         .         .         .         .
  3450. .         .         .         .         X     W E.          .         .         .         .         .         .
  3500. .         .         .         .         X     W E.          .         .         .         .         .         .
  3550. .         .         .         .         X     W E.          .         .         .         .         .         .
  3600. .         .         .         .         X     W E.          .         .         .         .         .         .
133650. .         .         .         .         X     W E.          .         .         .         .         .         .
  3700. .         .         .         .   X     .     W E.          .         .         .         .         .         .
  3750. .         .         .         X         .     W E.          .         .         .         .         .         .
  3800. .         .         .   X     .         .     W E.          .         .         .         .         .         .
153850. .         .       X         .         .     W E.          .         .         .         .         .         .
  3900. .         .       . X       .         .     W E.          .         .         .         .         .         .
  3950. .         .         .   X   .         .     W E.          .         .         .         .         .         .
  4000. .         .         .         X         .     W E.          .         .         .         .         .         .
  4050. .         .         .         .   X     .     W E.          .         .         .         .         .         .
  4100. .         .         .         .     X   .     W E.          .         .         .         .         .         .
  4150. .         .         .         .         X     W E.          .         .         .         .         .         .
  4200. .         .         .         .         . X   W E.          .         .         .         .         .         .
  4250. .         .         .         .         .     X E.          .         .         .         .         .         .
  4300. .         .         .         .         .       .X          .         .         .         .         .         .
  4350. .         .         .         .         .         .  X      .         .         .         .         .         .
  4400. .         .         .         .         .         .    X    .         .         .         .         .         .
164450. .         .         .         .         .         .        X         .         .         .         .      BANK.
  4500. .         .         .         .         .         .   X     .         .         .         .         .         .
  4550. .         .         .         .         .        X.         .         .         .         .         .         .
  4600. .         .         .         .         . X   W E.          .         .         .         .         .         .
  4650. .         .         .         .       X.    W E.          .         .         .         .         .         .
  4700. .         .         .         .   X     .     W E.          .         .         .         .         .         .
  4750. .         .         .       X .         .     W E.          .         .         .         .         .         .
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179850. .       .       X       .       .       .       W E.    .       .       .       .       .       .
  4900. .       .       . X     .       .       .       W E.    .       .       .       .       .       .
  4950. .       .       .   X   .       .       .       W E.    .       .       .       .       .       .
  5000. .       .       .     X         .       .       W E.    .       .       .       .       .       .
  5050. .       .       .       .   X   .       .       W E.    .       .       .       .       .       .
185100. .       .       .       .       X       .       W E.    .       .       .       .       .       .
  5150. .       .       .       .     X .       .       W E.    .       .       .       .       .       .
  5200. .       .       .       .   X   .       .       W E.    .       .       .       .       .       .
  5250. .       .       .         X     .       .       W E.    .       .       .       .       .       .
  5300. .       .       .   X   .       .       .       W E.    .       .       .       .       .       .
  5350. .       .       . X     .       .       .       W E.    .       .       .       .       .       .
  5400. .       .       .X      .       .       .       W E.    .       .       .       .       .       .
195450. .       .       X       .       .       .       W E.    .       .       .       .       .       .
  5500. .       .       X       .       .       .       W E.    .       .       .       .       .       .
205550. .       .       X       .       .       .       W E.    .       .       .       .       .       .
  5600. .       .       . X     .       .       .       W E.    .       .       .       .       .       .
  5650. .       .       .   X   .       .       .       W E.    .       .       .       .       .       .
  5700. .       .       .     X.        .       .       W E.    .       .       .       .       .       .
  5750. .       .       .       . X     .       .       W E.    .       .       .       .       .       .
  5800. .       .       .       .   X   .       .       W E.    .       .       .       .       .       .
  5850. .       .       .       .     X .       .       W E.    .       .       .       .       .       .
  5900. .       .       .       .       .X      .       W E.    .       .       .       .       .       .
  5950. .       .       .       .       . X     .       W E.    .       .       .       .       .       .
  6000. .       .       .       .       .       .       XW E.   .       .       .       .       .       .
  6050. .       .       .       .       .       .         X.    .       .       .       .       .       .
  6100. .       .       .       .       .       .         . X   .       .       .       .       .       .
  6150. .       .       .       .       .       .         .   X .       .       .       .       .       .
  6200. .       .       .       .       .       .         .     X.      .       .       .       .       .
216250. .       .       .       .       .       .         .       X     .       .       .       .       .

NRD=      0 ELLC=  9999999.00 ELTRD=  9999999.00
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EL(I),STA(I)

1676.00	.00	1674.00	40.00	1674.00	900.00	1676.00	980.00	1674.00	1160.00
1676.00	2080.00	1674.00	2580.00	1674.00	2940.00	1670.00	3080.00	1672.00	3100.00
1674.00	3300.00	1674.00	3640.00	1672.00	3850.00	1672.00	3860.00	1676.00	4450.00
1672.00	4830.00	1674.00	5120.00	1672.00	5430.00	1672.00	5550.00	1676.00	6230.00

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CROSS SECTION     1.55
STREAM   Q=16,000
DISCHARGE=    16000.

PLOTTED POINTS (BY PRIORITY)-B=BOTTOM BRIDGE,T=TOP BRIDGE,X=GROUND,W=WATER SUR,E=ENERGY GRADIENT,C=CRITICAL WSEL

ELEV 1684.    1685.    1686.    1687.    1688.    1689.    1690.    1691.    1692.    1693.    1694.


   STA-FEET

 2  0. .        .        .        .        X        .        .        .        .        .        .        .
   50. .        .        .        . X E    .        .        .        .        .        .        .        .
  100. .        .        .      X . W  E   .        .        .        .        .        .        .        .
 3 150. .        .        X        . W  E   .        .        .        .        .        .        .        .
  200. .        .        X        . W  E   .        .        .        .        .        .        .        .
  250. .        .        X        . W  E   .        .        .        .        .        .        .        .
  300. .        .        X        . W  E   .        .        .        .        .        .        .        .
  350. .        .        X        . W  E   .        .        .        .        .        .        .        .
  400. .        .        X        . W  E   .        .        .        .        .        .        .        .
  450. .        .        X        . W  E   .        .        .        .        .        .        .        .
  500. .        .        X        . W  E   .        .        .        .        .        .        .        .
  550. .        .        X        . W  E   .        .        .        .        .        .        .        .
  600. .        .        X        . W  E   .        .        .        .        .        .        .        .
  650. .        .        X        . W  E   .        .        .        .        .        .        .        .
 4 700. .        .        X        . W  E   .        .        .        .        .        .        .        .
  750. .        .        .      X. W  E   .        .        .        .        .        .        .        .
 5 800. .        .        .        .        X        .        .        .        .        .        .        .
  850. .        .        .        .        X        .        .        .        .        .        .        .
  900. .        .        .        .        X        .        .        .        .        .        .        .
  950. .        .        .        .        X        .        .        .        .        .        .        .
 1000. .        .        .        .        X        .        .        .        .        .        .        .
 1050. .        .        .        .        X        .        .        .        .        .        .        .
 1100. .        .        .        .        X        .        .        .        .        .        .        .
 1150. .        .        .        .        X        .        .        .        .        .        .        .
 1200. .        .        .        .        X        .        .        .        .        .        .        .
 1250. .        .        .        .        X        .        .        .        .        .        .        .
 1300. .        .        .        .        X        .        .        .        .        .        .        .
 1350. .        .        .        .        X        .        .        .        .        .        .        .
 61400. .        .        .        .        X        .        .        .        .        .        .        .
 71450. .        .        X        . W  E   .        .        .        .        .        .        .        .
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1550. .     .     . X   . W  E .     .     .     .     .     .     .
1600. .     .     .  X  . W  E .     .     .     .     .     .     .
1650. .     .     .    X. W  E .     .     .     .     .     .     .
1700. .     .     .    .XW  E .     .     .     .     .     .     .
1750. .     .     .    . X E .     .     .     .     .     .     .
1800. .     .     .    .  XE .     .     .     .     .     .     .
1850. .     .     .    .   X .     .     .     .     .     .     .
1900. .     .     .    .    X.     .     .     .     .     .     .
81950. .    .     .    .     X     .     .     .     .     .     .
2000. .     .     .    .     X     .     .     .     .     .     .
2050. .     .     .    .     X     .     .     .     .     .     .
2100. .     .     .    .     X     .     .     .     .     .     .
2150. .     .     .    .     X     .     .     .     .     .     .
2200. .     .     .    .     X     .     .     .     .     .     .
2250. .     .     .    .     X     .     .     .     .     .     .
92300. .    .     .    .     X     .     .     .     .     .     .
2350. .     .     .    . X  E .     .     .     .     .     .     .
102400. .   .     X    . W  E .     .     .     .     .     .     .
2450. .     .     X    . W  E .     .     .     .     .     .     .
2500. .     .     X    . W  E .     .     .     .     .     .     .
2550. .     .     X    . W  E .     .     .     .     .     .     .
2600. .     .     X    . W  E .     .     .     .     .     .     .
2650. .     .     X    . W  E .     .     .     .     .     .     .
2700. .     .     X    . W  E .     .     .     .     .     .     .
2750. .     .     X    . W  E .     .     .     .     .     .     .
2800. .     .     X    . W  E .     .     .     .     .     .     .
2850. .     .     X    . W  E .     .     .     .     .     .     .
2900. .     .     X    . W  E .     .     .     .     .     .     .
2950. .     .     X    . W  E .     .     .     .     .     .     .
3000. .     .     X    . W  E .     .     .     .     .     .     .
3050. .     .     X    . W  E .     .     .     .     .     .     .
3100. .     .     X    . W  E .     .     .     .     .     .     .
3150. .     .     X    . W  E .     .     .     .     .     .     .
3200. .     .     X    . W  E .     .     .     .     .     .     .
3250. .     .     X    . W  E .     .     .     .     .     .     .
3300. .     .     X    . W  E .     .     .     .     .     .     .
3350. .     .     X    . W  E .     .     .     .     .     .     .
3400. .     .     X    . W  E .     .     .     .     .     .     .
3450. .     .     X    . W  E .     .     .     .     .     .     .
3500. .     .     X    . W  E .     .     .     .     .     .     .
3550. .     .     X    . W  E .     .     .     .     .     .     .
3600. .     .     X    . W  E .     .     .     .     .     .     .
3650. .     .     X    . W  E .     .     .     .     .     .     .
3700. .     .     X    . W  E .     .     .     .     .     .     .
3750. .     .     X    . W  E .     .     .     .     .     .     .
3800. .     .     X    . W  E .     .     .     .     .     .     .
3850. .     .     X    . W  E .     .     .     .     .     .     .
3900. .     .     X    . W  E .     .     .     .     .     .     .
3950. .     .     X    . W  E .     .     .     .     .     .     .
4000. .     .     X    . W  E .     .     .     .     .     .     .
4050. .     .     X    . W  E .     .     .     .     .     .     .
4100. .     .     X    . W  E .     .     .     .     .     .     .
4150. .     .     X    . W  E .     .     .     .     .     .     .
4200. .     .     X    . W  E .     .     .     .     .     .     .
4250. .     .     X    . W  E .     .     .     .     .     .     .
4300. .     .     X    . W  E .     .     .     .     .     .     .
4350. .     .     X    . W  E .     .     .     .     .     .     .
4400. .     .     X    . W  E .     .     .     .     .     .     .
4450. .     .     X    . W  E .     .     .     .     .     .     .
4500. .     .     X    . W  E .     .     .     .     .     .     .
114550. .   .     X    . W  E .     .     .     .     .     .     BANK.
4600. .     .   X  .    . W  E .     .     .     .     .     .     .
4650. .     . X    .    . W  E .     .     .     .     .     .     .
4700. .    .X      .    . W  E .     .     .     .     .     .     .
4750. .  X .       .    . W  F .     .     .     .     .     .     .
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129850. X        .        .        . W  E  .        .        .        .        .        .        .
134900. X        .        .        . W  E  .        .        .        .        .        .        .
144950. .        .        .        .        X        .        .        .        .        .        .   BANK.

NRD=      0 ELLC=  9999999.00 ELTRD=  9999999.00

 EL(I),STA(I)
   1688.00       .00    1686.00     160.00    1686.00     700.00    1688.00     810.00    1688.00    1410.00
   1686.00    1470.00    1688.00    1940.00    1688.00    2300.00    1686.00    2420.00    1686.00    4530.00
   1684.00    4850.00    1684.00    4880.00    1688.00    4940.00


CROSS SECTION     1.21
STREAM  Q=16,000
DISCHARGE=   16000.

PLOTTED POINTS (BY PRIORITY)-B=BOTTOM BRIDGE,T=TOP BRIDGE,X=GROUND,W=WATER SUR,E=ENERGY GRADIENT,C=CRITICAL WSEL

ELEV 1704.    1705.    1706.    1707.    1708.    1709.    1710.    1711.    1712.    1713.    1714.


   STA-FEET

 2  0. .        .        .        .        X  E  .        .        .        .        .        .        .
   50. .        .        .     X  .        W  E  .        .        .        .        .        .        .
  100. .        .X       .        .        W  E  .        .        .        .        .        .        .
 3 150. X        .        .        .        W  E  .        .        .        .        .        .   BANK.
  200. X        .        .        .        W  E  .        .        .        .        .        .        .
  250. X        .        .        .        W  E  .        .        .        .        .        .        .
 4 300. X        .        .        .        W  E  .        .        .        .        .        .        .
  350. .        .        X  .        .        W  E  .        .        .        .        .        .        .
  400. .        .        .        . X      W  E  .        .        .        .        .        .        .
 5 450. .        .        .        .        X  E  .        .        .        .        .        .   BANK.
  500. .        .        .        .        X  E  .        .        .        .        .        .        .
  550. .        .        .        .        X  E  .        .        .        .        .        .        .
  600. .        .        .        .        X  E  .        .        .        .        .        .        .
  650. .        .        .        .        X  E  .        .        .        .        .        .        .
  700. .        .        .        .        X  E  .        .        .        .        .        .        .
 6 750. .        .        .        .        X  E  .        .        .        .        .        .        .
  800. .        .        .        X        W  E  .        .        .        .        .        .        .
 7 850. .        .        X        .        W  E  .        .        .        .        .        .        .
  900. .        .        X        .        W  E  .        .        .        .        .        .        .
  950. .        .        X        .        W  E  .        .        .        .        .        .        .
 1000. .        .        X        .        W  E  .        .        .        .        .        .        .
 1050. .        .        X        .        W  E  .        .        .        .        .        .        .
 1100. .        .        X        .        W  E  .        .        .        .        .        .        .
 1150. .        .        X        .        W  E  .        .        .        .        .        .        .
 1200. .        .        X        .        W  E  .        .        .        .        .        .        .
 1250. .        .        X        .        W  E  .        .        .        .        .        .        .
 1300. .        .        X        .        W  E  .        .        .        .        .        .        .
 1350. .        .        X        .        W  E  .        .        .        .        .        .        .
 1400. .        .        X        .        W  E  .        .        .        .        .        .        .
 1450. .        .        X        .        W  E  .        .        .        .        .        .        .
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 1550. .     .     X     .     W  E  .     .     .     .     .     .     .
 1600. .     .     X     .     W  E  .     .     .     .     .     .     .
 1650. .     .     X     .     W  E  .     .     .     .     .     .     .
 1700. .     .     X     .     W  E  .     .     .     .     .     .     .
 1750. .     .     X     .     W  E  .     .     .     .     .     .     .
 1800. .     .     X     .     W  E  .     .     .     .     .     .     .
 1850. .     .     X     .     W  E  .     .     .     .     .     .     .
 1900. .     .     X     .     W  E  .     .     .     .     .     .     .
 1950. .     .     X     .     W  E  .     .     .     .     .     .     .
 2000. .     .     X     .     W  E  .     .     .     .     .     .     .
 2050. .     .     X     .     W  E  .     .     .     .     .     .     .
 2100. .     .     X     .     W  E  .     .     .     .     .     .     .
 2150. .     .     X     .     W  E  .     .     .     .     .     .     .
 2200. .     .     X     .     W  E  .     .     .     .     .     .     .
 2250. .     .     X     .     W  E  .     .     .     .     .     .     .
 2300. .     .     X     .     W  E  .     .     .     .     .     .     .
82350. .     .     X     .     W  E  .     .     .     .     .     .     .
 2400. .     .     .     X     W  E  .     .     .     .     .     .     .
92450. .     .     .     .     X  E  .     .     .     .     .     .     .

NRD=      0 ELLC=  9999999.00 ELTRD=  9999999.00

 EL(I),STA(I)
   1708.00       .00    1704.00     140.00    1704.00     310.00    1708.00     430.00    1708.00     760.00
   1706.00    860.00    1706.00    2370.00    1708.00    2470.00
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CROSS SECTION 1.03
STREAM Q=16,000
DISCHARGE= 16000.

PLOTTED POINTS (BY PRIORITY)-B=BOTTOM BRIDGE,T=TOP BRIDGE,X=GROUND,W=WATER SUR,E=ENERGY GRADIENT,C=CRITICAL WSEL

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ELEV 1716.    1717.    1718.    1719.    1720.    1721.    1722.    1723.    1724.    1725.    1726.


   STA-FEET

 2   0. .       .        .        .        X        .        .        .        .        .        .        .
 3 100. X       .  W  E  .        .        .        .        .        .        .        .        .        .
 4 200. X       .  W  E  .        .        .        .        .        .        .        .        .        .
   300. .       .        .  X     .        .        .        .        .        .        .        .        .
 5 400. .       .        .        .        X        .        .        .        .        .        .        .
   500. .       .        .        .X       .        .        .        .        .        .        .        .
 6 600. .       .        X        .        .        .        .        .        .        .        .        .
 7 700. X       .  W  E  .        .        .        .        .        .        .        .        .   BANK.
   800. X       .  W  E  .        .        .        .        .        .        .        .        .        .
   900. X       .  W  E  .        .        .        .        .        .        .        .        .        .
  1000. X       .  W  E  .        .        .        .        .        .        .        .        .        .
  1100. X       .  W  E  .        .        .        .        .        .        .        .        .        .
  1200. X       .  W  E  .        .        .        .        .        .        .        .        .        .
  1300. X       .  W  E  .        .        .        .        .        .        .        .        .        .
  1400. X       .  W  E  .        .        .        .        .        .        .        .        .        .
  1500. X       .  W  E  .        .        .        .        .        .        .        .        .        .
  1600. X       .  W  E  .        .        .        .        .        .        .        .        .        .
  1700. X       .  W  E  .        .        .        .        .        .        .        .        .        .
  1800. X       .  W  E  .        .        .        .        .        .        .        .        .        .
  1900. X       .  W  E  .        .        .        .        .        .        .        .        .        .
  2000. X       .  W  E  .        .        .        .        .        .        .        .        .        .
  2100. X       .  W  E  .        .        .        .        .        .        .        .        .        .
  2200. X       .  W  E  .        .        .        .        .        .        .        .        .        .
  2300. X       .  W  E  .        .        .        .        .        .        .        .        .        .
 82400. X       .  W  E  .        .        .        .        .        .        .        .        .   BANK.
 92500. .       .        X        .        .        .        .        .        .        .        .        .
  2600. .       .        X        .        .        .        .        .        .        .        .        .
  2700. .       .        X        .        .        .        .        .        .        .        .        .
  2800. .       .        X        .        .        .        .        .        .        .        .        .
  2900.                  X
```

```
  3100. .       .       X       .       .       .       .       .       .       .       .       .
  3200. .       .       X       .       .       .       .       .       .       .       .       .
  3300. .       .       X       .       .       .       .       .       .       .       .       .
103400. .       .       X       .       .       .       .       .       .       .       .       .
  3500. .     X .   W   E .     .       .       .       .       .       .       .       .       .
113600. X       .   W   E .     .       .       .       .       .       .       .       .       .
  3700. X       .   W   E .     .       .       .       .       .       .       .       .       .
123800. X       .   W   E .     .       .       .       .       .       .       .       .       .
  3900. .       X.  W   E .     .       .       .       .       .       .       .       .       .
  4000. .       .     XE .     .       .       .       .       .       .       .       .       .
  4100. .       .       .   X .       .       .       .       .       .       .       .       .
  4200. .       .       .     .   X   .       .       .       .       .       .       .       .
134300. .       .       .     .       X       .       .       .       .       .       .       .

NRD=      0 ELLC=  9999999.00 ELTRD=  9999999.00

  EL(I),STA(I)
    1720.00       .00    1716.00     150.00    1716.00     230.00    1720.00     400.00    1718.00     620.00
    1716.00     670.00    1716.00    2400.00    1718.00    2470.00    1718.00    3450.00    1716.00    3600.00
    1716.00    3830.00    1720.00    4300.00


CROSS SECTION      .03
STREAM   Q=16,000
DISCHARGE=    16000.


PLOTTED POINTS (BY PRIORITY)-B=BOTTOM BRIDGE,T=TOP BRIDGE,X=GROUND,W=WATER SUR,E=ENERGY GRADIENT,C=CRITICAL WSEL

ELEV 1726.    1727.    1728.    1729.    1730.    1731.    1732.    1733.    1734.    1735.    1736.


   STA-FEET

 2   0. .       .       .       .       .       .       X       .       .       .       .       .
    50. .       .       .       .       .     X . E     .       .       .       .       .
   100. .       .       .       .   X   .   W . E     .       .       .       .       .
 3 150. .       .       X       .       .   W . E     .       .       .       .       .
   200. .       .       .     X .       .   W . E     .       .       .       .       .
   250. .       .       .       .   X   .   W . E     .       .       .       .       .
 4 300. .       .       .       .       X   W . E     .       .       .       .       .
   350. .       .       .       .       X   W . E     .       .       .       .       .
   400. .       .       .       .       X   W . E     .       .       .       .       .
   450. .       .       .       .       X   W . E     .       .       .       .       .
 5 500. .       .       .       .       X   W . E     .       .       .       .       .
   550. .       .       .     X.        .   W . E     .       .       .       .       .
 6 600. .       .       X       .       .   W . E     .       .       .       .       .
   650. .       .       X       .       .   W . E     .       .       .       .       .
   700. .       .       X       .       .   W . E     .       .       .       .       .
 7 750. .       .       X       .       .   W . E     .       .       .       .       .
 8 800. .       .       .       .       X   W . E     .       .       .       .       .
   850. .       .       .       .       X   W . E     .       .       .       .       .
   900. .       .       .       .       X   W . E     .       .       .       .       .
   950. .       .       .       .       X   W . E     .       .       .       .       .
  1000. .       .       .       .       X   W . E     .       .       .       .       .
  1050. .       .       .       .       X   W . E     .       .       .       .       .
  1100. .       .       .       .       X   W . E     .       .       .       .       .
  1150. .       .       .       .       X   W . E     .       .       .       .       .
  1200. .       .       .       .       X   W . E     .       .       .       .       .
  1250. .       .       .       .       X   W . E     .       .       .       .       .
  1300. .       .       .       .       X   W . E     .       .       .       .       .
  1350. .       .       .       .       X   W . E     .       .       .       .       .
  1400. .       .       .       .       X   W . E     .       .       .       .       .
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```
 1550. .       .       .       .       X       W . E       .       .       .       .       .       .
 1600. .       .       .       .       X       W . E       .       .       .       .       .       .
 1650. .       .       .       .       X       W . E       .       .       .       .       .       .
 1700. .       .       .       .       X       W . E       .       .       .       .       .       .
 1750. .       .       .       .       X       W . E       .       .       .       .       .       .
 1800. .       .       .       .       X       W . E       .       .       .       .       .       .
 1850. .       .       .       .       X       W . E       .       .       .       .       .       .
 1900. .       .       .       .       X       W . E       .       .       .       .       .       .
 1950. .       .       .       .       X       W . E       .       .       .       .       .       .
 2000. .       .       .       .       X       W . E       .       .       .       .       .       .
 2050. .       .       .       .       X       W . E       .       .       .       .       .       .
 2100. .       .       .       .       X       W . E       .       .       .       .       .       .
 2150. .       .       .       .       X       W . E       .       .       .       .       .       .
 2200. .       .       .       .       X       W . E       .       .       .       .       .       .
 2250. .       .       .       .       X       W . E       .       .       .       .       .       .
 2300. .       .       .       .       X       W . E       .       .       .       .       .       .
 2350. .       .       .       .       X       W . E       .       .       .       .       .       .
 2400. .       .       .       .       X       W . E       .       .       .       .       .       .
 2450. .       .       .       .       X       W . E       .       .       .       .       .       .
 2500. .       .       .       .       X       W . E       .       .       .       .       .       .
 2550. .       .       .       .       X       W . E       .       .       .       .       .       .
 2600. .       .       .       .       X       W . E       .       .       .       .       .       .
 2650. .       .       .       .       X       W . E       .       .       .       .       .       .
 2700. .       .       .       .       X       W . E       .       .       .       .       .       .
 2750. .       .       .       .       X       W . E       .       .       .       .       .       .
 2800. .       .       .       .       X       W . E       .       .       .       .       .       .
 2850. .       .       .       .       X       W . E       .       .       .       .       .       .
 2900. .       .       .       .       X       W . E       .       .       .       .       .       .
 2950. .       .       .       .       X       W . E       .       .       .       .       .       .
 3000. .       .       .       .       X       W . E       .       .       .       .       .       .
 3050. .       .       .       .       X       W . E       .       .       .       .       .       .
 3100. .       .       .       .       X       W . E       .       .       .       .       .       .
 3150. .       .       .       .       X       W . E       .       .       .       .       .       .
93200. .       .       .       .       X       W . E       .       .       .       .       .    BANK.
 3250. .       .       .     X .       .       W . E       .       .       .       .       .       .
 3300. .       . X     .       .       .       W . E       .       .       .       .       .       .
103350. X      .       .       .       .       W . E       .       .       .       .       .       .
 3400. .      .X       .       .       .       W . E       .       .       .       .       .       .
 3450. .       .       . X     .       .       W . E       .       .       .       .       .       .
 3500. .       .       .       . X     .       W . E       .       .       .       .       .       .
 3550. .       .       .       .       . X W . E       .       .       .       .       .       .
113600. .      .       .       .       .       .       X       .       .       .       .    BANK.

NRD=      0 ELLC=  9999999.00 ELTRD=  9999999.00

 EL(I),STA(I)
   1732.00       .00   1728.00     160.00    1730.00     280.00    1730.00     500.00    1728.00     590.00
   1728.00    740.00   1730.00     800.00    1730.00    3180.00    1726.00    3330.00    1732.00    3600.00
```

CROSS SECTION .52
STREAM Q=16,000
DISCHARGE= 16000.

PLOTTED POINTS (BY PRIORITY)-B=BOTTOM BRIDGE,T=TOP BRIDGE,X=GROUND,W=WATER SUR,E=ENERGY GRADIENT,C=CRITICAL WSEL

```
ELEV 1748.    1749.    1750.    1751.    1752.    1753.    1754.    1755.    1756.    1757.    1758.


   STA-FEET

 2  0. .       .        .        .        X        .        .        .        .        .        .        .
   50. .       .        .        X W  E   .        .        .        .        .        .        .        .
 3 100. .      .        X        . W  E   .        .        .        .        .        .        .        .
  150. .       .        X        . W  E   .        .        .        .        .        .        .        .
  200. .       .        X        . W  E   .        .        .        .        .        .        .        .
  250. .       .        X        . W  E   .        .        .        .        .        .        .        .
 4 300. .      .        X        . W  E   .        .        .        .        .        .        .        .
  350. .       .        .        .XW  E   .        .        .        .        .        .        .        .
 5 400. .      .        .        .        X        .        .        .        .        .        .        .
 6 450. .      .        X        . W  E   .        .        .        .        .        .        .        .
  500. .       .      : X        . W . E  .        .        .        .        .        .        .        .
  550. .       .        X        . W  E   .        .        .        .        .        .        .        .
  600. .       .        X        . W  E   .        .        .        .        .        .        .        .
  650. .       .        X        . W  E   .        .        .        .        .        .        .        .
  700. .       .        X        . W  E   .        .        .        .        .        .        .        .
 7 750. .      .        X        . W  E   .        .        .        .        .        .        .        .
 8 800. X      .        .        . W  E   .        .        .        .        .        .        .        .
  850. .       X        .        . W  E   .        .        .        .        .        .        .        .
 9 900. .      .        X        . W  E   .        .        .        .        .        .        .        .
  950. .       .        X        . W  E   .        .        .        .        .        .        .        .
 1000. .       .        X        . W  E   .        .        .        .        .        .        .        .
 1050. .       .        X        . W  E   .        .        .        .        .        .        .        .
 1100. .       .        X        . W  E   .        .        .        .        .        .        .        .
101150. .      .        X        . W  E   .        .        .        .        .        .        .        .
 1200. .       . X      .        . W  E   .        .        .        .        .        .        .        .
 1250. .    X  .        .        . W  E   .        .        .        .        .        .        .        .
111300. X      .        .        . W  E   .        .        .        .        .        .        .        .
 1350. .    X  .        .        . W  E   .        .        .        .        .        .        .        .
 1400. .       . X      .        . W  E   .        .        .        .        .        .        .        .
```

```
  1550. .       .       .     .W  E .       .       .       .       .       .       .
  1600. .       .       .     .   XE .       .       .       .       .       .       .
121650. .       .       .     .      X       .       .       .       .       .       .
  1700. .       .       .     .      X       .       .       .       .       .       .
  1750. .       .       .     .      X       .       .       .       .       .       .
  1800. .       .       .     .      X       .       .       .       .       .       .
  1850. .       .       .     .      X       .       .       .       .       .       .
  1900. .       .       .     .      X       .       .       .       .       .       .
  1950. .       .       .     .      X       .       .       .       .       .       .
  2000. .       .       .     .      X       .       .       .       .       .       .
  2050. .       .       .     .      X       .       .       .       .       .       .
  2100. .       .       .     .      X       .       .       .       .       .       .
  2150. .       .       .     .      X       .       .       .       .       .       .
  2200. .       .       .     .      X       .       .       .       .       .       .
  2250. .       .       .     .      X       .       .       .       .       .       .
  2300. .       .       .     .      X       .       .       .       .       .       .
  2350. .       .       .     .      X       .       .       .       .       .       .
  2400. .       .       .     .      X       .       .       .       .       .       .
  2450. .       .       .     .      X       .       .       .       .       .       .
  2500. .       .       .     .      X       .       .       .       .       .       .
  2550. .       .       .     .      X       .       .       .       .       .       .
132600. .       .       .     .      X       .       .       .       .       .     BANK.
  2650. .       .       .     .   X E .       .       .       .       .       .       .
  2700. .       .       .   X .W  E .       .       .       .       .       .       .
  2750. .       .     .X      .W  E .       .       .       .       .       .       .
  2800. .       . X   .       .W  E .       .       .       .       .       .       .
  2850. .     X .     .       .W  E .       .       .       .       .       .       .
  2900. .X      .     .       .W  E .       .       .       .       .       .       .
142950. X       .     .       .W  E .       .       .       .       .       .       .
153000. X       .     .       .W  E .       .       .       .       .       .       .
163050. .       .     X       .W  E .       .       .       .       .       .       .
  3100. .       .     X       .W  E .       .       .       .       .       .       .
  3150. .       .     X       .W  E .       .       .       .       .       .       .
  3200. .       .     X       .W  E .       .       .       .       .       .       .
173250. .       .     X       .W  E .       .       .       .       .       .       .
183300. X       .     .       .W  E .       .       .       .       .       .       .
193350. .       .     .       .      X       .       .       .       .       .     BANK.

NRD=      0 ELLC=  9999999.00 ELTRD=  9999999.00

 EL(I),STA(I)
   1752.00       .00    1750.00     100.00    1750.00     310.00    1752.00     400.00    1750.00     470.00
   1750.00    730.00    1748.00     800.00    1750.00     900.00    1750.00    1160.00    1748.00    1300.00
   1752.00   1640.00    1752.00    2620.00    1748.00    2930.00    1748.00    2990.00    1750.00    3060.00
   1750.00   3250.00    1748.00    3300.00    1752.00    3350.00
```

CROSS SECTION .29
STREAM Q=16,000
DISCHARGE= 16000.

PLOTTED POINTS (BY PRIORITY)-B=BOTTOM BRIDGE,T=TOP BRIDGE,X=GROUND,W=WATER SUR,E=ENERGY GRADIENT,C=CRITICAL WSEL

```
ELEV 1764.    1765.    1766.    1767.    1768.    1769.    1770.    1771.    1772.    1773.    1774.


   STA-FEET

 2  0. .       .       .       .       X       .       .       .       .       .       .       .
   50. .       .       .       . X     .       .       .       .       .       .       .       .
 3 100. .       .       X   W E.       .       .       .       .       .       .       .       .
  150. .       .   X   .   W E.       .       .       .       .       .       .       .       .
  200. .       . X     .   W E.       .       .       .       .       .       .       .       .
  250. .     X.        .   W E.       .       .       .       .       .       .       .       .
  300. .   X   .       .   W E.       .       .       .       .       .       .       .       .
  350. . X     .       .   W E.       .       .       .       .       .       .       .       .
 4 400. X       .       .   W E.       .       .       .       .       .       .       .       .
 5 450. X       .       .   W E.       .       .       .       .       .       .       .       .
  500. .   X   .       .   W E.       .       .       .       .       .       .       .       .
  550. .       .X      .   W E.       .       .       .       .       .       .       .       .
  600. .       .   X   .   W E.       .       .       .       .       .       .       .       .
 6 650. .       .       X   W E.       .       .       .       .       .       .       .  BANK.
  700. .       . X     .   W E.       .       .       .       .       .       .       .       .
  750. .     X .       .   W E.       .       .       .       .       .       .       .       .
 7 800. X       .       .   W E.       .       .       .       .       .       .       .       .
  850. X       .       .   W E.       .       .       .       .       .       .       .       .
  900. X       .       .   W E.       .       .       .       .       .       .       .       .
 8 950. X       .       .   W E.       .       .       .       .       .       .       .       .
 1000. .   X   .       .   W E.       .       .       .       .       .       .       .       .
 1050. .     X .       .   W E.       .       .       .       .       .       .       .       .
 1100. .       . X     .   W E.       .       .       .       .       .       .       .       .
 1150. .       .   X   .   W E.       .       .       .       .       .       .       .       .
101200. XXXXXXXXXXXXXXXXXXXX   W E.       .       .       .       .       .       .       .       .
 1250. X       .       .   W E.       .       .       .       .       .       .       .       .
 1300. X       .       .   W E.       .       .       .       .       .       .       .       .
 1350. X       .       .   W E.       .       .       .       .       .       .       .       .
 1400. X       .       .   W E.       .       .       .       .       .       .       .       .
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  1650. .       .     X .   W E .       .       .       .       .       .       .       .
  1700. .       .       . X W E .       .       .       .       .       .       .       .
  1750. .       .       .     X .       .       .       .       .       .       .       .
  1800. .       .       .       . X     .       .       .       .       .       .       .
121850. .       .       .       .       X       .       .       .       .       .       .    BANK.
  1900. .       .       .       .       X       .       .       .       .       .       .       .
  1950. .       .       .       .       X       .       .       .       .       .       .       .
  2000. .       .       .       .       X       .       .       .       .       .       .       .
  2050. .       .       .       .       X       .       .       .       .       .       .       .
  2100. .       .       .       .       X       .       .       .       .       .       .       .
  2150. .       .       .       .       X       .       .       .       .       .       .       .
  2200. .       .       .       .       X       .       .       .       .       .       .       .
  2250. .       .       .       .       X       .       .       .       .       .       .       .
132300. .       .       .       .       X       .       .       .       .       .       .       .
  2350. .       .       .       . X     .       .       .       .       .       .       .       .
  2400. .       .       .     XE .      .       .       .       .       .       .       .       .
  2450. .       .       X   W E .       .       .       .       .       .       .       .       .
  2500. .       . X     .   W E .       .       .       .       .       .       .       .       .
  2550. .     X .       .   W E .       .       .       .       .       .       .       .       .
142600. X       .       .   W E .       .       .       .       .       .       .       .       .
  2650. X       .       .   W E .       .       .       .       .       .       .       .       .
  2700. X       .       .   W E .       .       .       .       .       .       .       .       .
152750. X       .       .   W E .       .       .       .       .       .       .       .       .
  2800. .       X.      .   W E .       .       .       .       .       .       .       .       .
  2850. .       .     X .   W E .       .       .       .       .       .       .       .       .
  2900. .       .       .    X E .      .       .       .       .       .       .       .       .
162950. .       .       .       .       X       .       .       .       .       .       .       .

NRD=      0 ELLC=  9999999.00 ELTRD=  9999999.00

 EL(I),STA(I)
   1768.00       .00    1766.00     120.00    1764.00     400.00    1764.00     460.00    1766.00     650.00
   1764.00    820.00    1764.00     950.00    1766.00    1200.00    1764.00    1210.00    1764.00    1500.00
   1768.00   1860.00    1768.00    2320.00    1764.00    2620.00    1764.00    2740.00    1768.00    2970.00
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```
CROSS SECTION      .18
STREAM  Q=16,000
DISCHARGE=   16000.


PLOTTED POINTS (BY PRIORITY)-B=BOTTOM BRIDGE,T=TOP BRIDGE,X=GROUND,W=WATER SUR,E=ENERGY GRADIENT,C=CRITICAL WSEL

ELEV 1771.    1772.    1773.    1774.    1775.    1776.    1777.    1778.    1779.    1780.    1781.


   STA-FEET

 2  0. .       .       .       .               X       .       .       .       .       .       .
 3 50. .       .       .       X CW    E       .       .       .       .       .       .       .
   100. .      .       .   X   . CW    E       .       .       .       .       .       .       .
   150. .      .       . X     . CW    E       .       .       .       .       .       .       .
   200. .      .     X .       . CW    E       .       .       .       .       .       .       .
   250. .      . X     .       . CW    E       .       .       .       .       .       .       .
 4 300. .      X       .       . CW    E       .       .       .       .       .       .    BANK.
 5 350. X      .       .       . CW    E       .       .       .       .       .       .       .
   400. .      X       .       . CW    E       .       .       .       .       .       .       .
 6 450. .      .       X       . CW    E       .       .       .       .       .       .       .
 7 500. .      .   X   .       . CW    E       .       .       .       .       .       .       .
   550. .      .   X   .       . CW    E       .       .       .       .       .       .       .
   600. .      .   X   .       . CW    E       .       .       .       .       .       .       .
   650. .      .   X   .       . CW    E       .       .       .       .       .       .       .
   700. .      .   X   .       . CW    E       .       .       .       .       .       .       .
   750. .      .   X   .       . CW    E       .       .       .       .       .       .       .
   800. .      .   X   .       . CW    E       .       .       .       .       .       .       .
   850. .      .   X   .       . CW    E       .       .       .       .       .       .       .
   900. .      .   X   .       . CW    E       .       .       .       .       .       .       .
   950. .      .   X   .       . CW    E       .       .       .       .       .       .       .
  1000. .      .   X   .       . CW    E       .       .       .       .       .       .       .
  1050. .      .   X   .       . CW    E       .       .       .       .       .       .       .
  1100. .      .   X   .       . CW    E       .       .       .       .       .       .       .
  1150. .      .   X   .       . CW    E       .       .       .       .       .       .       .
  1200. .      .   X   .       . CW    E       .       .       .       .       .       .       .
 81250. .      .   X   .       . CW    E       .       .       .       .       .       .       .
  1300. .      .       . X     . CW    E       .       .       .       .       .       .       .
101350. .      XXXXXXXXXXXXXXXXXXXX CW    E       .       .       .       .       .       .       .
  1400. .      X       .       . CW    E       .       .       .       .       .       .       .
111450. .      X       .       . CW    E       .       .       .       .       .       .    BANK.
  1500. .      .     X.        . CW    E       .       .       .       .       .       .       .
```

```
  1600. .        .        .        X CW     E        .        .        .        .        .        .        .
  1650. .        .        .        X CW     E        .        .        .        .        .        .        .
  1700. .        .        .        X CW     E        .        .        .        .        .        .        .
  1750. .        .        .        X CW     E        .        .        .        .        .        .        .
  1800. .        .        .        X CW     E        .        .        .        .        .        .        .
  1850. .        .        .        X CW     E        .        .        .        .        .        .        .
  1900. .        .        .        X CW     E        .        .        .        .        .        .        .
  1950. .        .        .        X CW     E        .        .        .        .        .        .        .
  2000. .        .        .        X CW     E        .        .        .        .        .        .        .
  2050. .        .        .        X CW     E        .        .        .        .        .        .        .
132100. .        .        .        X CW     E        .        .        .        .        .        .        .
  2150. .        .        .        .  X     E        .        .        .        .        .        .        .
  2200. .        .        .        .    X E        .        .        .        .        .        .        .
  2250. .        .        .        .      X        .        .        .        .        .        .        .
  2300. .        .        .        .        X      .        .        .        .        .        .        .
  2350. .        .        .        .          X    .        .        .        .        .        .        .
142400. .        .        .        .               X        .        .        .        .        .        .
  2450. .        .        .        .               X        .        .        .        .        .        .
  2500. .        .        .        .               X        .        .        .        .        .        .
  2550. .        .        .        .               X        .        .        .        .        .        .
  2600. .        .        .        .               X        .        .        .        .        .        .
  2650. .        .        .        .               X        .        .        .        .        .        .
  2700. .        .        .        .               X        .        .        .        .        .        .
  2750. .        .        .        .               X        .        .        .        .        .        .
  2800. .        .        .        .               X        .        .        .        .        .        .
  2850. .        .        .        .               X        .        .        .        .        .        .
152900. .        .        .        .               X        .        .        .        .        .        .

NRD=      0 ELLC=  9999999.00 ELTRD=  9999999.00

 EL(I),STA(I)
   1776.00       .00    1774.00     60.00    1772.00    300.00    1771.00    350.00    1773.00    450.00
   1772.50    500.00    1772.50   1250.00    1774.00   1350.00    1772.00   1370.00    1772.00   1440.00
   1774.00   1550.00    1774.00   2100.00    1776.00   2380.00    1776.00   2900.00
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CROSS SECTION .10
STREAM Q=16,000
DISCHARGE= 16000.

PLOTTED POINTS (BY PRIORITY)-B=BOTTOM BRIDGE,T=TOP BRIDGE,X=GROUND,W=WATER SUR,E=ENERGY GRADIENT,C=CRITICAL WSEL

```
ELEV 1776.    1777.    1778.    1779.    1780.    1781.    1782.    1783.    1784.    1785.    1786.


   STA-FEET

2   0. .       .       .       .       X   W   E       .       .       .       .       .       .
   20. .       .       .       .   X   .   W   E       .       .       .       .       .       .
   40. .       .       .     X .       .   W   E       .       .       .       .       .       .
   60. .       .       .   X .         .   W   E       .       .       .       .       .       .
   80. .       .       . X   .         .   W   E       .       .       .       .       .       .
  100. .       .       X     .         .   W   E       .       .       .       .       .       .
  120. .       .     X .     .         .   W   E       .       .       .       .       .       .
  140. .       . X     .     .         .   W   E       .       .       .       .       .       .
  160. .     X .       .     .         .   W   E       .       .       .       .       .       .
  180. .   X   .       .     .         .   W   E       .       .       .       .       .       .
3 200. X       .       .     .         .   W   E       .       .       .       .       .       .
  220. .       X       .     .         .   W   E       .       .       .       .       .       .
4 240. .       .     . X     .         .   W   E       .       .       .       .       .       .
  260. .       .     .X      .         .   W   E       .       .       .       .       .       .
  280. .       .     . X     .         .   W   E       .       .       .       .       .       .
  300. .       .     . X     .         .   W   E       .       .       .       .       .       .
  320. .       .     . X     .         .   W   E       .       .       .       .       .       .
  340. .       .     .  X    .         .   W   E       .       .       .       .       .       .
  360. .       .     .   X   .         .   W   E       .       .       .       .       .       .
  380. .       .     .    X  .         .   W   E       .       .       .       .       .       .
  400. .       .     .     X .         .   W   E       .       .       .       .       .       .
  420. .       .     .      X.         .   W   E       .       .       .       .       .       .
  440. .       .     .       X         .   W   E       .       .       .       .       .       .
  460. .       .     .       X         .   W   E       .       .       .       .       .       .
  480. .       .     .       .X        .   W   E       .       .       .       .       .       .
  500. .       .     .       . X       .   W   E       .       .       .       .       .       .
  520. .       .     .       .  X      .   W   E       .       .       .       .       .       .
  540. .       .     .       .   X     .   W   E       .       .       .       .       .       .
  560. .       .     .       .    X    .   W   E       .       .       .       .       .       .
  580. .       .     .       .     X   .   W   E       .       .       .       .       .       .
  600. .       .     .       .      X  .   W   E       .       .       .       .       .       .
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```
  640. .     .     .     .    X. W E .     .     .     .     .     .
5 660. .     .     .     .     X W E .     .     .     .     .     .
  680. .     .     .     .     X W E .     .     .     .     .     .
  700. .     .     .     .     X W E .     .     .     .     .     .
  720. .     .     .     .     X W E .     .     .     .     .     .
  740. .     .     .     .     X W E .     .     .     .     .     .
  760. .     .     .     .     X W E .     .     .     .     .     .
  780. .     .     .     .     X W E .     .     .     .     .     .
  800. .     .     .     .     X W E .     .     .     .     .     .
  820. .     .     .     .     X W E .     .     .     .     .     .
  840. .     .     .     .     X W E .     .     .     .     .     .
  860. .     .     .     .     X W E .     .     .     .     .     .
  880. .     .     .     .     X W E .     .     .     .     .     .
  900. .     .     .     .     X W E .     .     .     .     .     .
  920. .     .     .     .     X W E .     .     .     .     .     .
6 940. .     .     .     .     X W E .     .     .     .     .  BANK.
  960. .     .     X     .     . W E .     .     .     .     .     .
7 980. X     .     .     .     . W E .     .     .     .     .     .
 1000. .     .X    .     .     . W E .     .     .     .     .     .
 1020. .     .     . X   .     . W E .     .     .     .     .     .
81040. .     .     .     .     X W E .     .     .     .     .  BANK.
 1060. .     .     .     .     X W E .     .     .     .     .     .
 1080. .     .     .     .     X W E .     .     .     .     .     .
 1100. .     .     .     .     X W E .     .     .     .     .     .
 1120. .     .     .     .     X W E .     .     .     .     .     .
 1140. .     .     .     .     X W E .     .     .     .     .     .
 1160. .     .     .     .     X W E .     .     .     .     .     .
 1180. .     .     .     .     X W E .     .     .     .     .     .
91200. .     .     .     .     X W E .     .     .     .     .     .
 1220. .     .     .     .    X. W E .     .     .     .     .     .
 1240. .     .     .     .   X . W E .     .     .     .     .     .
 1260. .     .     .     .  X . W E .     .     .     .     .     .
 1280. .     .     .     . X . W E .     .     .     .     .     .
 1300. .     .     .     .X . W E .     .     .     .     .     .
 1320. .     .     .     X . W E .     .     .     .     .     .
 1340. .     .     .    X . W E .     .     .     .     .     .
 1360. .     .     .   X . W E .     .     .     .     .     .
 1380. .     .     .  X . W E .     .     .     .     .     .
 1400. .     .     . X . W E .     .     .     .     .     .
 1420. .     .     X. . W E .     .     .     .     .     .
 1440. .     .    X . . W E .     .     .     .     .     .
 1460. .     .   X . . W E .     .     .     .     .     .
 1480. .     .  X . . W E .     .     .     .     .     .
 1500. .     . X . . W E .     .     .     .     .     .
 1520. .     . X . . W E .     .     .     .     .     .
 1540. .     . X . . W E .     .     .     .     .     .
 1560. .     . X . . W E .     .     .     .     .     .
 1580. .     . X . . W E .     .     .     .     .     .
101600. .    . X . . W E .     .     .     .     .     .
 1620. .    X. . . W E .     .     .     .     .     .
 1640. .    X . . . W E .     .     .     .     .     .
 1660. .    X . . . W E .     .     .     .     .     .
 1680. .    X . . . W E .     .     .     .     .     .
 1700. .   X . . . W E .     .     .     .     .     .
 1720. .   X . . . W E .     .     .     .     .     .
 1740. .  X . . . W E .     .     .     .     .     .
 1760. .  X . . . W E .     .     .     .     .     .
 1780. . X . . . W E .     .     .     .     .     .
 1800. .X . . . W E .     .     .     .     .     .
 1820. X . . . W E .     .     .     .     .     .
121840. X . . . W E .     .     .     .     .     .
 1860. .X . . . W E .     .     .     .     .     .
 1880. . X . . . W E .     .     .     .     .     .
 1900. .  X . . . W E .     .     .     .     .     .
 1920. .   X . . . W E .     .     .     .     .     .
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 1960. .        .        X        .        .     W  E      .        .        .        .        .        .
 1980. .        .       . X       .        .     W  E      .        .        .        .        .        .
 2000. .        .       .  X      .        .     W  E      .        .        .        .        .        .
 2020. .        .       .   X     .        .     W  E      .        .        .        .        .        .
 2040. .        .       .     X   .        .     W  E      .        .        .        .        .        .
 2060. .        .       .       X.         .     W  E      .        .        .        .        .        .
 2080. .        .       .        .X        .     W  E      .        .        .        .        .        .
 2100. .        .       .        . X       .     W  E      .        .        .        .        .        .
 2120. .        .       .        .   X     .     W  E      .        .        .        .        .        .
 2140. .        .       .        .     X   .     W  E      .        .        .        .        .        .
 2160. .        .       .        .      X  .     W  E      .        .        .        .        .        .
 2180. .        .       .        .        X.     W  E      .        .        .        .        .        .
132200. .       .       .        .         X     W  E      .        .        .        .        .        .

NRD=       0 ELLC=  9999999.00 ELTRD=  9999999.00

  EL(I),STA(I)
    1780.00       .00   1776.00    200.00   1778.00    240.00   1780.00    660.00   1780.00    940.00
    1776.00    980.00   1780.00   1050.00   1780.00   1200.00   1778.00   1600.00   1777.00   1850.00
    1777.00   1850.00   1780.00   2200.00


CROSS SECTION       .00
STREAM  Q=16,000
DISCHARGE=   16000.


PLOTTED POINTS (BY PRIORITY)-B=BOTTOM BRIDGE,T=TOP BRIDGE,X=GROUND,W=WATER SUR,E=ENERGY GRADIENT,C=CRITICAL WSEL

ELEV 1788.    1789.    1790.    1791.    1792.    1793.    1794.    1795.    1796.    1797.    1798.


    STA-FEET

3   0. XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX        .        .     BANK.
   10. X        .        .        .     W .       .    E    .        .        .        .        .        .
   20. X        .        .        .     W .       .    E    .        .        .        .        .        .
   30. X        .        .        .     W .       .    E    .        .        .        .        .        .
   40. X        .        .        .     W .       .    E    .        .        .        .        .        .
   50. X        .        .        .     W .       .    E    .        .        .        .        .        .
   60. X        .        .        .     W .       .    E    .        .        .        .        .        .
   70. X        .        .        .     W .       .    E    .        .        .        .        .        .
   80. X        .        .        .     W .       .    E    .        .        .        .        .        .
   90. X        .        .        .     W .       .    E    .        .        .        .        .        .
  100. X        .        .        .     W .       .    E    .        .        .        .        .        .
  110. X        .        .        .     W .       .    E    .        .        .        .        .        .
  120. X        .        .        .     W .       .    E    .        .        .        .        .        .
  130. X        .        .        .     W .       .    E    .        .        .        .        .        .
  140. X        .        .        .     W .       .    E    .        .        .        .        .        .
  150. X        .        .        .     W .       .    E    .        .        .        .        .        .
  160. X        .        .        .     W .       .    E    .        .        .        .        .        .
  170. X        .        .        .     W .       .    E    .        .        .        .        .        .
  180. X        .        .        .     W .       .    E    .        .        .        .        .        .
  190. X        .        .        .     W .       .    E    .        .        .        .        .        .
  200. X        .        .        .     W .       .    E    .        .        .        .        .        .
  210. X        .        .        .     W .       .    E    .        .        .        .        .        .
  220. X        .        .        .     W .       .    E    .        .        .        .        .        .
  230. X        .        .        .     W .       .    E    .        .        .        .        .        .
  240. X        .        .        .     W .       .    E    .        .        .        .        .        .
  250. X        .        .        .     W .       .    E    .        .        .        .        .        .
  260. X        .        .        .     W .       .    E    .        .        .        .        .        .
  270. X        .        .        .     W .       .    E    .        .        .        .        .        .
  280. X        .        .        .     W .       .    E    .        .        .        .        .        .
  290. X        .        .        .     W .       .    E    .        .        .        .        .        .
  300. X        .        .        .     W .       .    E    .        .        .        .        .        .
  310. X                                W              E
```

```
  320. X        .         .        .     W .      .  E  .        .        .        .        .        .
  330. X        .         .        .     W .      .  E  .        .        .        .        .        .
  340. X        .         .        .     W .      .  E  .        .        .        .        .        .
  350. X        .         .        .     W .      .  E  .        .        .        .        .        .
  360. X        .         .        .     W .      .  E  .        .        .        .        .        .
  370. X        .         .        .     W .      .  E  .        .        .        .        .        .
  380. X        .         .        .     W .      .  E  .        .        .        .        .        .
  390. X        .         .        .     W .      .  E  .        .        .        .        .        .
S 400. XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX        .        .     BANK.

NRD=      0 ELLC=  9999999.00 ELTRD=  9999999.00

 EL(I),STA(I)
   1796.00         .00     1788.00       1.00     1788.00     400.00     1796.00     401.00




PROFILE FOR STREAM   Q=16,000



PLOTTED POINTS (BY PRIORITY)-E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA


ELEVATION  1620.     1640.     1660.     1680.     1700.     1720.     1740.     1760.     1780.     1800.
   SECNO   CUMDIS

    2.45     0. .        IWE       .         .         .         .         .         .         .         .
    2.44   200. C        I E       .         .         .         .         .         .         .         .
           400. C         I.E      .         .         .         .         .         .         .         .
           600. C          I E     .         .         .         .         .         .         .         .
           800. C         .I E     .         .         .         .         .         .         .         .
          1000. C         . I E    .         .         .         .         .         .         .         .
          1200. C         .  I E   .         .         .         .         .         .         .         .
          1400. C         .   I E  .         .         .         .         .         .         .         .
          1600. C         .    IWEM .        .         .         .         .         .         .         .
          1800. C         .     IWEM.        .         .         .         .         .         .         .
          2000. C         .      IE M        .         .         .         .         .         .         .
    2.09  2200. .         .      IWEM        .         .         .         .         .         .         .
          2400. C         .       IWEM       .         .         .         .         .         .         .
          2600. C         .        ILEM      .         .         .         .         .         .         .
          2800. C         .         ILEM     .         .         .         .         .         .         .
          3000. C       : .        .ILEM     .         .         .         .         .         .         .
          3200. C         .        . ILEM    .         .         .         .         .         .         .
          3400. C         .        .  ILEM   .         .         .         .         .         .         .
          3600. C         .        .   ILEM  .         .         .         .         .         .         .
    1.77  3800. C         .        .    I ER .         .         .         .         .         .         .
          4000. C         .        .     I WE.         .         .         .         .         .         .
          4200. C         .        .      I LE         .         .         .         .         .         .
          4400. C         .        .         ILE       .         .         .         .         .         .
          4600. C         .        .          ILE      .         .         .         .         .         .
          4800. C         .        .         .ILE      .         .         .         .         .         .
    1.55  5000. C         .        .         . ILE     .         .         .         .         .         .
          5200. C         .        .         .  ILE    .         .         .         .         .         .
          5400. C         .        .         .   ILE   .         .         .         .         .         .
          5600. C         .        .         .    ILE  .         .         .         .         .         .
          5800. C         .        .         .     ILE .         .         .         .         .         .
          6000. C         .        .         .        IWE      .         .         .         .         .
          6200. C         .        .         .         I.E     .         .         .         .         .
          6400. C         .        .         .          I E    .         .         .         .         .
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```
1.21  6800.  C     .     .     .     .I E   .     .     .     .     .     .
      7000.  C     .     .     .     . I E  .     .     .     .     .     .
      7200.  C     .     .     .     .  IEM .     .     .     .     .     .
      7400.  C     .     .     .     .  IEM .     .     .     .     .     .
      7600.  C     .     .     .     .  IEM.      .     .     .     .     .
1.03  7800.  C     .     .     .     .   IEM      .     .     .     .     .
      8000.  C     .     .     .     .   IEM      .     .     .     .     .
      8200.  C     .     .     .     .    IEM     .     .     .     .     .
      8400.  C     .     .     .     .    .IWE    .     .     .     .     .
      8600.  C     .     .     .     .    . ILEM  .     .     .     .     .
.83   8800.  .     .     .     .     .    . I WE  .     .     .     .     .
      9000.  C     .     .     .     .    . I LE  .     .     .     .     .
      9200.  C     .     .     .     .    .  I E  .     .     .     .     .
      9400.  C     .     .     .     .    .  I ER       .     .     .     .
      9600.  C     .     .     .     .    .   I WE      .     .     .     .
      9800.  C     .     .     .     .    .    I E      .     .     .     .
     10000.  C     .     .     .     .    .    .I E     .     .     .     .
     10200.  C     .     .     .     .    .    . I ER   .     .     .     .
.52 10400.  C     .     .     .     .    .    .  I E   .     .     .     .
     10600.  C     .     .     .     .    .    .  I E   .     .     .     .
     10800.  C     .     .     .     .    .    .   IER.      .     .     .
     11000.  C     .     .     .     .    .    .   IWE      .     .     .
     11200.  C     .     .     .     .    .    .    I.E     .     .     .
     11400.  C     .     .     .     .    .    .     .IER   .     .     .
.29 11600.  C     .     .     .     .    .    .     . IER  .     .     .
     11800.  C     .     .     .     .    .    .     .  ILE .     .     .
     12000.  C     .     .     .     .    .    .     .  ILEM.     .     .
.10 12200.  .     .     .     .     .    .    .     .   IWE.     .     .
     12400.  C     .     .     .     .    .    .     .   ILE.     .     .
.10 12600.  C     .     .     .     .    .    .     .    I E     .     .
     12800.  C     .     .     .     .    .    .     .     I WE   .     .
     13000.  C     .     .     .     .    .    .     .      . IWEM .     .
.00 13200.  .     .     .     .     .    .    .     .      .  I WEM.     .
```

THIS RUN EXECUTED 02/10/86 15:03:16

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*********************************************
 HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
 ERROR CORR -  01,02,03,04,05,06
 MODIFICATION -  50,51,52,53,54,55,56
 IBM-PC-XT VERSION
*********************************************
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T1
T2
T3 FBH, Q=14,000

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	4.	0.	0.	-1.000000	.00	.0	0.	1640.000	.000
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLOC	IBW	CHNIM	ITRACE
	3.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

```
  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN     SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST


*PROF 3


ECHV=    .100 CEHV=    .300
*SECNO 2.450
3720 CRITICAL DEPTH ASSUMED
    2.45     3.80  1638.80  1638.80  1640.00  1639.55      .75      .00      .00  1636.00
   14000.    3161.    7952.    2887.    1146.     890.    1195.       0.       0.  1636.00
     .00     2.76     8.94     2.42     .080     .040     .080     .000  1635.00    72.25
  .011796      0.       0.       0.        0       18        0      .00  2190.56  2262.82


*SECNO 2.440
3280 CROSS SECTION      2.44 EXTENDED       .22 FEET


3301 HV CHANGED MORE THAN HVINS

    2.44     5.22  1640.22      .00      .00  1640.37      .15      .77      .06  1636.00
   14000.    3812.    5789.    4399.    2344.    1275.    3075.      23.      11.  1636.00
     .02     1.63     4.54     1.43     .080     .040     .080     .000  1635.00      .00
  .001885     200.     200.     200.        3        0        0      .00  2600.00  2600.00


1490 NH CARD USED
*SECNO 2.090

3265 DIVIDED FLOW

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
    2.09     2.76  1656.76  1656.76      .00  1657.27      .52     7.70      .11  1656.00
   14000.     858.   11494.    1648.     326.    1829.     854.     229.     131.  1656.00
     .11     2.64     6.20     1.82     .040     .070     .080     .000  1654.00  1620.52
```

.015740	1850.	1850.	1850.	20	11	0	.00	3039.53	5368.91

1490 NH CARD USED
*SECNO 1.770

3265 DIVIDED FLOW

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
1.77	4.61	1674.61	.00	.00	1674.78	.17	17.47	.03	1674.00
14000.	970.	7318.	5713.	907.	1836.	2184.	383.	276.	1676.00
.26	1.07	3.99	2.62	.080	.040	.067	.000	1670.00	27.77
.007307	1690.	1690.	1690.	7	0	0	.00	4463.38	5993.99

1490 NH CARD USED
*SECNO 1.550

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.55	3.07	1687.07	1687.07	.00	1687.52	.44	12.53	.08	1686.00
14000.	7782.	6218.	0.	3113.	827.	0.	501.	383.	1688.00
.33	2.50	7.52	.00	.080	.043	.067	.000	1684.00	74.04
.017550	1160.	1160.	1160.	9	18	0	.00	3540.37	4926.12

1490 NH CARD USED
*SECNO 1.210

3265 DIVIDED FLOW

1.21	3.83	1707.83	.00	.00	1708.22	.39	20.70	.01	1704.00
14000.	663.	6145.	7192.	257.	872.	2933.	666.	500.	1708.00
.44	2.58	7.05	2.45	.080	.040	.080	.000	1704.00	5.90
.008114	1800.	1800.	1800.	6	0	0	.00	2112.20	2461.58

1490 NH CARD USED
*SECNO 1.030

3265 DIVIDED FLOW

```
  14000.    795.   11164.    2041.    194.    2257.    494.    743.    550.   1716.00
     .49    4.10    4.95    4.13    .040     .040    .041    .000  1716.00   101.07
 .012430    950.    950.    950.       6        0       0     .00  2473.85  3983.32


1490 NH CARD USED
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```
   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN     SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST


*SECNO  .830
     .83    4.60  1730.60  1730.55     .00  1731.10     .49    13.40     .04  1730.00
   14000.   7422.   6578.      0.    2512.    865.      0.     819.    622.   1732.00
     .55    2.95    7.60     .00     .059    .040    .041    .000  1726.00    56.07
 .012851   1060.   1060.   1060.      12       26       0     .00  3480.85  3536.92


1490 NH CARD USED
*SECNO  .520

3265 DIVIDED FLOW

     .52    3.06  1751.06     .00     .00  1751.43     .37    20.32     .01  1752.00
   14000.   8071.   5929.      0.    1882.   1053.      0.     938.    727.   1752.00
     .64    4.29    5.63     .00     .049    .040    .041    .000  1748.00    47.03
 .011957   1640.   1640.   1640.       5        0       0     .00  2083.09  3338.24


1490 NH CARD USED
*SECNO  .290

3265 DIVIDED FLOW

     .29    2.29  1766.29     .00     .00  1766.62     .33    15.18     .00  1766.00
   14000.   2561.   8580.   2860.    744.   1748.    620.    1022.    783.   1768.00
     .72    3.44    4.91    4.61    .064    .049    .051    .000  1764.00   102.88
 .013402   1200.   1200.   1200.       5        0       0     .00  2025.63  2871.41


1490 NH CARD USED
*SECNO  .180
     .18    3.20  1774.20  1774.09     .00  1774.81     .61     8.11     .08  1772.00
   14000.    734.  12841.    425.    290.   1980.    247.    1059.    811.   1772.00
     .74    2.54    6.49    1.72    .080    .040    .080    .000  1771.00    53.89
 .014005     500     500     500       0       14       0      00  2074.64  2120.52
```

1490 NH CARD USED
*SECNO .100
3280 CROSS SECTION .10 EXTENDED .46 FEET

.10	4.46	1780.46	.00	.00	1780.76	.30	5.92	.03	1780.00
14000.	4507.	2135.	7358.	1374.	271.	2080.	1089.	831.	1780.00
.77	3.28	7.89	3.54	.080	.040	.080	.000	1776.00	.00
.013610	420.	420.	420.	4	0	0	.00	2200.00	2200.00

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

CCHV= .100 CEHV= .300
*SECNO .000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.00	3.36	1791.36	1791.36	.00	1793.05	1.70	10.99	.42	1788.00
14000.	1.	13998.	1.	1.	1340.	1.	1120.	847.	1788.00
.79	1.64	10.45	1.64	.060	.060	.060	.000	1788.00	.58
.035412	530.	530.	530.	7	15	0	.00	399.84	400.42

PROFILE FOR STREAM , Q=14,000

PLOTTED POINTS (BY PRIORITY)-E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA

```
ELEVATION 1620.    1640.    1660.    1680.    1700.    1720.    1740.    1760.    1780.    1800.
   SECNO  CUMDIS

    2.45     0. .     IWE      .        .        .        .        .        .        .        .
    2.44   200. C     I E      .        .        .        .        .        .        .        .
           400. C      I.E     .        .        .        .        .        .        .        .
           600. C       I E    .        .        .        .        .        .        .        .
           800. C       .I E   .        .        .        .        .        .        .        .
          1000. C       . I E  .        .        .        .        .        .        .        .
          1200. C       . I E  .        .        .        .        .        .        .        .
          1400. C       .  IWE .        .        .        .        .        .        .        .
          1600. C       .  IWEM.        .        .        .        .        .        .        .
          1800. C       .   IE M.       .        .        .        .        .        .        .
          2000. C       .    IE M       .        .        .        .        .        .        .
    2.09  2200. .       .    IWEM       .        .        .        .        .        .        .
          2400. C       .     IWEM      .        .        .        .        .        .        .
          2600. C       .      IWEM     .        .        .        .        .        .        .
          2800. C       .       ILEM    .        .        .        .        .        .        .
          3000. C       .       .ILEM   .        .        .        .        .        .        .
          3200. C       .       . ILEM  .        .        .        .        .        .        .
          3400. C       .       . ILEM  .        .        .        .        .        .        .
          3600. C       .       .  ILEM .        .        .        .        .        .        .
    1.77  3800. C       .       .  I ER .        .        .        .        .        .        .
          4000. C       .       .  I ER.        .        .        .        .        .        .
          4200. C       .       .   I WE        .        .        .        .        .        .
          4400. C       .       .    ILE        .        .        .        .        .        .
          4600. C       .       .     ILE       .        .        .        .        .        .
          4800. C       .       .     .ILE      .        .        .        .        .        .
    1.55  5000. .       .       .     . ILE     .        .        .        .        .        .
          5200. C       .       .     . ILE     .        .        .        .        .        .
          5400. C       .       .     .  ILE    .        .        .        .        .        .
          5600. C       .       .     .   ILE   .        .        .        .        .        .
          5800. C       .       .     .    ILE  .        .        .        .        .        .
          6000. C       .       .     .     IWE        .        .        .        .        .
          6200. C       .       .     .      IWE       .        .        .        .        .
          6400. C       .       .     .       I E      .        .        .        .        .
          6600. C                                I E
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```
1.21  6800.  C      .      .      .      . I E  .      .      .      .      .      .
      7000.  C      .      .      .      . I E  .      .      .      .      .      .
      7200.  C      .      .      .      .  IEM .      .      .      .      .      .
      7400.  C      .      .      .      .  IEM .      .      .      .      .      .
      7600.  C      .      .      .      .  IEM.       .      .      .      .      .
1.03  7800.  C      .      .      .      .  IEM        .      .      .      .      .
      8000.  C      .      .      .      .  IEM        .      .      .      .      .
      8200.  C      .      .      .      .  IEM        .      .      .      .      .
      8400.  C      .      .      .      .  .IWE       .      .      .      .      .
      8600.  C      .      .      .      .  . ILEM     .      .      .      .      .
.83   8800.  .      .      .      .      .  . I WE     .      .      .      .      .
      9000.  C      .      .      .      .  .  I LE    .      .      .      .      .
      9200.  C      .      .      .      .  .   I E    .      .      .      .      .
      9400.  C      .      .      .      .  .   I ER   .      .      .      .      .
      9600.  C      .      .      .      .  .   I WE   .      .      .      .      .
      9800.  C      .      .      .      .  .    I E   .      .      .      .      .
     10000.  C      .      .      .      .  .    .I E  .      .      .      .      .
     10200.  C      .      .      .      .  .    . I ER .      .      .      .      .
.52 10400.  C      .      .      .      .  .    .  I E .      .      .      .      .
     10600.  C      .      .      .      .  .    .  I E .      .      .      .      .
     10800.  C      .      .      .      .  .    .   IER.      .      .      .      .
     11000.  C      .      .      .      .  .    .   IWE      .      .      .      .
     11200.  C      .      .      .      .  .    .   I.E      .      .      .      .
     11400.  C      .      .      .      .  .    .    .IER    .      .      .      .
.29 11600.  C      .      .      .      .  .    .    . IER   .      .      .      .
     11800.  C      .      .      .      .  .    .    . ILE  .      .      .      .
     12000.  C      .      .      .      .  .    .    . ILEM .      .      .      .
.18 12200.  .      .      .      .      .  .    .    .  IEM .      .      .      .
     12400.  C      .      .      .      .  .    .    .  ILE.      .      .      .
.10 12600.  C      .      .      .      .  .    .    .   I E      .      .      .
     12800.  C      .      .      .      .  .    .    .    I WE   .      .      .
     13000.  C      .      .      .      .  .    .    .    . IWEM .      .      .
.00 13200.  .      .      .      .      .  .    .    .    .  I WEM .      .      .
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THIS RUN EXECUTED 02/10/86 15:06:01

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*********************************************
 HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
 ERROR CORR -  01,02,03,04,05,06
 MODIFICATION -  50,51,52,53,54,55,56
 IBM-PC-XT VERSION
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T1
T2
T3 FBH, Q=10,000

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	5.	0.	0.	-1.000000	.00	.0	0.	1640.000	.000

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	4.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

```
  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTH      ELMIN     SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST


*PROF 4


CCHV=    .100 CEHV=    .300
*SECNO 2.450
3720 CRITICAL DEPTH ASSUMED
    2.45     3.44  1638.44  1638.44  1640.00  1639.09      .66      .00      .00  1636.00
   10000.    2001.    6340.    1659.     863.     793.     809.       0.       0.  1636.00
     .00     2.32     8.00     2.05     .080     .040     .080     .000  1635.00    93.82
  .011018      0.       0.       0.        0       18        0      .00  2068.38  2162.19


*SECNO 2.440

3301 HV CHANGED MORE THAN HVINS

    2.44     4.72  1639.72      .00      .00  1639.85      .13      .70      .05  1636.00
   10000.    2624.    4548.    2829.    1909.    1140.    2353.      18.      10.  1636.00
     .02     1.37     3.99     1.20     .080     .040     .080     .000  1635.00    16.77
  .001692    200.     200.     200.        3        0        0      .00  2504.96  2521.73


1490 NH CARD USED
*SECNO 2.090

3265 DIVIDED FLOW

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
    2.09     2.53  1656.53  1656.53      .00  1656.97      .44     6.93      .09  1656.00
   10000.     415.    8732.     852.     194.    1539.     592.     182.     125.  1656.00
     .12     2.14     5.67     1.44     .046     .036     .080     .000  1654.00  1644.85
  .014249   1850.    1850.    1850.       20       11        0      .00  2877.69  5363.13
```

1490 NH CARD USED
*SECNO 1.770

3265 DIVIDED FLOW

1.77	4.32	1674.32	.00	.00	1674.47	.15	17.47	.03	1674.00
10000.	310.	5253.	4437.	425.	1453.	1775.	298.	260.	1676.00
.28	.73	3.61	2.50	.080	.040	.066	.000	1670.00	33.73
.007839	1690.	1690.	1690.	7	0	0	.00	4083.90	5943.29

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTM	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

1490 NH CARD USED
*SECNO 1.550

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.55	2.86	1686.86	1686.86	.00	1687.24	.38	12.57	.07	1686.00
10000.	5033.	4967.	0.	2440.	741.	0.	389.	360.	1688.00
.35	2.06	6.70	.00	.080	.043	.066	.000	1684.00	91.44
.015951	1160.	1160.	1160.	10	18	0	.00	3437.10	4922.86

1490 NH CARD USED
*SECNO 1.210

3265 DIVIDED FLOW

1.21	3.37	1707.37	.00	.00	1707.76	.39	20.52	.00	1704.00
10000.	484.	5003.	4513.	199.	744.	2164.	519.	473.	1708.00
.46	2.43	6.73	2.09	.080	.040	.080	.000	1704.00	22.02
.008549	1800.	1800.	1800.	7	0	0	.00	2036.21	2438.55

1490 NH CARD USED
*SECNO 1.030

3265 DIVIDED FLOW

1.03	1.09	1717.09	.00	.00	1717.36	.27	9.59	.01	1716.00
10000.	539.	8057.	1404.	148.	1871.	382.	579.	521.	1716.00
.53	3.64	4.31	3.68	.040	.040	.041	.000	1716.00	109.45
.012106	950.	950.	950.	5	0	0	.00	2399.57	3957.07

```
*SECNO  .830
      .83     4.28  1730.28  1730.27     .00  1730.78     .50    13.35     .07  1730.00
    10000.    4574.    5426.      0.    1517.     754.      0.     636.     593.   1732.00
      .58     3.02     7.20     .00     .053     .040     .041     .000  1726.00    68.84
   .013120    1060.    1060.    1060.      10       29       0      .00  3453.72  3522.56
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN     SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST

1490 NH CARD USED
*SECNO  .520

3265 DIVIDED FLOW

      .52     2.75  1750.75     .00      .00  1751.05     .30    20.25     .02  1752.00
    10000.    5709.    4291.      0.    1451.     859.      0.     722.     695.   1752.00
      .69     3.94     4.99     .00     .047     .040     .041     .000  1748.00    62.40
   .011646    1640.    1640.    1640.       6        0       0      .00  1989.30  3334.40

1490 NH CARD USED
*SECNO  .290

3265 DIVIDED FLOW

      .29     1.91  1765.91     .00      .00  1766.20     .29    15.15     .00  1766.00
    10000.    1688.    6250.    2062.     547.    1367.    474.     787.     749.   1768.00
      .76     3.08     4.57     4.35     .062     .047     .050     .000  1764.00   131.47
   .013724    1200.    1200.    1200.       4        0       0      .00  1889.92  2850.29

1490 NH CARD USED
*SECNO  .180

3265 DIVIDED FLOW

      .18     2.91  1773.91     .00      .00  1774.38     .47     8.12     .06  1772.00
    10000.     468.    9317.     215.     218.    1640.    100.     816.     771.   1772.00
      .79     2.15     5.68     2.15     .080     .040     .080     .000  1771.00    71.37
   .014285     580.     580.     580.       5        0       0      .00  1466.16  1544.79

1490 NH CARD USED
```

.10	4.07	1780.07	.00	.00	1780.33	.26	5.93	.02	1780.00
10000.	3095.	1625.	5280.	1009.	228.	1634.	839.	789.	1780.00
.82	3.07	7.13	3.23	.080	.040	.080	.000	1776.00	.00
.013971	420.	420.	420.	4	0	0	.00	2200.00	2200.00

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

CCHV= .100 CEHV= .300
*SECNO .000

3301 HV CHANGED MORE THAN HVINS

.00	2.70	1790.70	1790.68	.00	1792.04	1.33	11.38	.32	1788.00
10000.	1.	9999.	1.	0.	1079.	0.	863.	804.	1788.00
.84	1.45	9.27	1.45	.060	.060	.060	.000	1788.00	.66
.037168	530.	530.	530.	6	14	0	.00	399.68	400.34

PROFILE FOR STREAM , Q=10,000

PLOTTED POINTS (BY PRIORITY)-E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA

```
ELEVATION  1620.    1640.    1660.    1680.    1700.    1720.    1740.    1760.    1780.    1800.
   SECNO   CUMDIS

    2.45     0. .     IWE       .        .        .        .        .        .        .        .        .
    2.44   200. C     I E       .        .        .        .        .        .        .        .        .
           400. C      I.E      .        .        .        .        .        .        .        .        .
           600. C       I E     .        .        .        .        .        .        .        .        .
           800. C       .I E    .        .        .        .        .        .        .        .        .
          1000. C       . IWE   .        .        .        .        .        .        .        .        .
          1200. C       .  IWE  .        .        .        .        .        .        .        .        .
          1400. C       .   IEM .        .        .        .        .        .        .        .        .
          1600. C       .    IE M.       .        .        .        .        .        .        .        .
          1800. C       .     IE M.      .        .        .        .        .        .        .        .
          2000. C       .      IE M      .        .        .        .        .        .        .        .
    2.09  2200. .       .      IE M      .        .        .        .        .        .        .        .
          2400. C       .       IWEM     .        .        .        .        .        .        .        .
          2600. C       .        IWEM    .        .        .        .        .        .        .        .
          2800. C       .         IWEM   .        .        .        .        .        .        .        .
          3000. C       .         .IWEM  .        .        .        .        .        .        .        .
          3200. C       .         . ILEM .        .        .        .        .        .        .        .
          3400. C       .         .  ILEM .       .        .        .        .        .        .        .
          3600. C       .         .   ILEM .      .        .        .        .        .        .        .
    1.77  3800. C       .         .    I ER .     .        .        .        .        .        .        .
          4000. C       .         .     I ER.     .        .        .        .        .        .        .
          4200. C       .         .      I ER     .        .        .        .        .        .        .
          4400. C       .         .       IWE     .        .        .        .        .        .        .
          4600. C       .         .        IWE    .        .        .        .        .        .        .
          4800. C       .         .        .ILE   .        .        .        .        .        .        .
    1.55  5000. .       .         .        . IWE  .        .        .        .        .        .        .
          5200. C       .         .        .  ILE .        .        .        .        .        .        .
          5400. C       .         .        .   ILE .       .        .        .        .        .        .
          5600. C       .         .        .    ILE .      .        .        .        .        .        .
          5800. C       .         .        .     ILE .     .        .        .        .        .        .
          6000. C       .         .        .      IER      .        .        .        .        .        .
          6200. C       .         .        .       IER     .        .        .        .        .        .
          6400. C       .         .        .        IWE    .        .        .        .        .        .
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1.21  6800.  C   .   .   .  .I E  .   .   .   .   .   .
      7000.  C   .   .   .  . I E .   .   .   .   .   .
      7200.  C   .   .   .  .  IEM .   .   .   .   .   .
      7400.  C   .   .   .  .  IEM .   .   .   .   .   .
      7600.  C   .   .   .  .  IEM.    .   .   .   .   .
1.03  7800.  C   .   .   .  .  IEM    .   .   .   .   .
      8000.  C   .   .   .  .  IEM    .   .   .   .   .
      8200.  C   .   .   .  .   IEM   .   .   .   .   .
      8400.  C   .   .   .  .   .IER  .   .   .   .   .
      8600.  C   .   .   .  .   . ILEM .   .   .   .   .
 .83  8800.  .   .   .   .  .   . I ER .   .   .   .   .
      9000.  C   .   .   .  .   .  I WE .   .   .   .   .
      9200.  C   .   .   .  .   .   I E .   .   .   .   .
      9400.  C   .   .   .  .   .   I ER    .   .   .   .
      9600.  C   .   .   .  .   .   I ER    .   .   .   .
      9800.  C   .   .   .  .   .    IWE    .   .   .   .
     10000.  C   .   .   .  .   .    .I E   .   .   .   .
     10200.  C   .   .   .  .   .    . I ER .   .   .   .
 .52 10400.  C   .   .   .  .   .    .  IWE .   .   .   .
     10600.  C   .   .   .  .   .    .   I E .   .   .   .
     10800.  C   .   .   .  .   .    .    IER.   .   .   .
     11000.  C   .   .   .  .   .    .    IEL    .   .   .
     11200.  C   .   .   .  .   .    .     IWE   .   .   .
     11400.  C   .   .   .  .   .    .     .IER  .   .   .
 .29 11600.  C   .   .   .  .   .    .     . IER .   .   .
     11800.  C   .   .   .  .   .    .     . IWE .   .   .
     12000.  C   .   .   .  .   .    .     .  ILEM .   .   .
 .18 12200.  C   .   .   .  .   .    .     .   IEM .   .   .
     12400.  C   .   .   .  .   .    .     .   IWE.   .   .
 .10 12600.  C   .   .   .  .   .    .     .    I E   .   .
     12800.  C   .   .   .  .   .    .     .     I EM .   .
     13000.  C   .   .   .  .   .    .     .      . IWEM .   .
 .00 13200.  .   .   .   .  .   .    .     .      .  IWE M .   .
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THIS RUN EXECUTED 02/10/86 15:08:42

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*********************************************
 HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
 ERROR CORR -  01,02,03,04,05,06
 MODIFICATION -  50,51,52,53,54,55,56
 IBM-PC-XT VERSION
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T1
T2
T3 PSH, Q=5300

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	6.	0.	0.	-1.000000	.00	.0	0.	1639.000	.000

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	5.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

```
  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN     SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST


*PROF 5


CCHV=    .100 CEHV=    .300
*SECNO 2.450
3720 CRITICAL DEPTH ASSUMED
    2.45     2.59  1637.59  1637.59  1639.00  1638.27     .68      .00      .00  1636.00
   5300.     650.    4172.     478.     335.     564.    246.       0.       0.  1636.00
     .00     1.94     7.40     1.94     .080     .040    .080     .000  1635.00   448.82
  .014838      0.       0.       0.        0       13       0      .00  1001.10  1449.92


*SECNO 2.440

3301 HV CHANGED MORE THAN HVINS

    2.44     3.90  1638.90      .00      .00  1639.00     .09      .67      .06  1636.00
   5300.    1229.    2921.    1151.    1232.     919.   1318.      11.       7.  1636.00
     .03     1.00     3.18      .87     .080     .040    .080     .000  1635.00    65.79
  .001429    200.     200.     200.        4        0       0      .00  2227.21  2293.00


1490 NH CARD USED
*SECNO 2.090

3265 DIVIDED FLOW

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
    2.09     2.14  1656.14  1656.14      .00  1656.49     .35     5.87      .08  1656.00
   5300.      37.    5177.      86.      37.    1073.    156.     111.     110.  1656.00
     .13     1.00     4.83      .55     .042     .032    .080     .000  1654.00  1685.39
  .012182   1850.    1850.    1850.       20       18       0      .00  2607.41  5353.48
```

1490 NH CARD USED
*SECNO 1.770

3265 DIVIDED FLOW

1.77	3.70	1673.70	.00	.00	1673.85	.15	17.33	.02	1674.00
5300.	0.	3010.	2290.	0.	822.	1023.	171.	196.	1676.00
.29	.00	3.66	2.24	.080	.040	.062	.000	1670.00	2950.42
.008755	1690.	1690.	1690.	6	0	0	.00	1841.53	5839.41

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

1490 NH CARD USED
*SECNO 1.550

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.55	2.54	1686.54	1686.54	.00	1686.82	.28	12.12	.04	1686.00
5300.	2020.	3280.	0.	1487.	616.	0.	224.	265.	1688.00
.37	1.36	5.32	.00	.080	.043	.062	.000	1684.00	117.10
.012691	1160.	1160.	1160.	4	18	0	.00	3284.72	4918.04

1490 NH CARD USED
*SECNO 1.210

3265 DIVIDED FLOW

1.21	2.67	1706.67	1706.66	.00	1707.10	.44	20.24	.05	1704.00
5300.	281.	3568.	1451.	125.	560.	1030.	303.	372.	1708.00
.48	2.25	6.37	1.41	.080	.040	.080	.000	1704.00	46.64
.010029	1800.	1800.	1800.	7	8	0	.00	1920.11	2403.37

1490 NH CARD USED
*SECNO 1.030

3265 DIVIDED FLOW

1.03	.78	1716.78	.00	.00	1716.93	.16	9.80	.03	1716.00
5300.	264.	4331.	704.	94.	1341.	247.	340.	418.	1716.00
.56	2.83	3.23	2.86	.040	.040	.041	.000	1716.00	120.94
.010622	950.	950.	950.	4	0	0	.00	2297.70	3921.07

1490 NH CARD USED
*SECNO .830

3265 DIVIDED FLOW

.03	3.55	1729.55	1729.41	.00	1730.08	.53	13.04	.11	1730.00
5300.	1894.	3406.	0.	444.	521.	0.	372.	455.	1732.00
.61	4.26	6.54	.00	.046	.040	.041	.000	1726.00	97.86
.014406	1060.	1060.	1060.	13	26	0	.00	715.02	3489.91

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IOC	ICONT	CORAR	TOPWID	ENDST

1490 NH CARD USED
*SECNO .520

3265 DIVIDED FLOW

.52	2.30	1750.30	.00	.00	1750.51	.21	20.40	.03	1752.00
5300.	2996.	2304.	0.	850.	588.	0.	417.	503.	1752.00
.74	3.52	3.92	.00	.043	.040	.041	.000	1748.00	85.10
.010848	1640.	1640.	1640.	6	0	0	.00	1850.92	3328.73

1490 NH CARD USED
*SECNO .290

3265 DIVIDED FLOW

.29	1.35	1765.35	.00	.00	1765.58	.23	15.06	.01	1766.00
5300.	803.	3412.	1085.	291.	836.	280.	457.	549.	1768.00
.82	2.76	4.08	3.88	.058	.044	.048	.000	1764.00	212.42
.014688	1200.	1200.	1200.	5	0	0	.00	1501.04	2817.04

1490 NH CARD USED
*SECNO .180

3265 DIVIDED FLOW

.18	2.44	1773.44	.00	.00	1773.73	.28	8.13	.02	1772.00
5300.	219.	4980.	101.	126.	1134.	58.	475.	568.	1772.00
.86	1.74	4.39	1.74	.080	.040	.080	.000	1771.00	125.84
.013405	580.	580.	580.	4	0	0	.00	1351.91	1519.82

1490 NH CARD USED
*SECNO .100

3265 DIVIDED FLOW

.10	3.36	1779.36	.00	.00	1779.57	.21	5.84	.01	1780.00
5300.	1606.	981.	2713.	573.	156.	979.	489.	581.	1780.00
.89	2.80	6.30	2.77	.080	.040	.080	.000	1776.00	31.76
.014434	420.	420.	420.	2	0	0	.00	1386.27	2125.90

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

CCHV= .100 CEHV= .300
*SECNO .000

3301 HV CHANGED MORE THAN HVINS

.00	1.93	1789.93	.00	.00	1790.67	.73	10.94	.16	1788.00
5300.	0.	5299.	0.	0.	772.	0.	504.	592.	1788.00
.92	1.08	6.87	1.08	.060	.060	.060	.000	1788.00	.76
.031891	530.	530.	530.	4	0	0	.00	399.48	400.24

PROFILE FOR STREAM , Q=5300

PLOTTED POINTS (BY PRIORITY)-E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA

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ELEVATION 1620.    1640.    1660.    1680.    1700.    1720.    1740.    1760.    1780.    1800.
   SECNO  CUMDIS

    2.45     0. .     IEM      .        .        .        .        .        .        .        .        .
    2.44   200. C     IWE      .        .        .        .        .        .        .        .        .
           400. C      IEM     .        .        .        .        .        .        .        .        .
           600. C       IEM    .        .        .        .        .        .        .        .        .
           800. C       .IEM   .        .        .        .        .        .        .        .        .
          1000. C       . IEM  .        .        .        .        .        .        .        .        .
          1200. C       . IEM  .        .        .        .        .        .        .        .        .
          1400. C       .  IEM .        .        .        .        .        .        .        .        .
          1600. C       .  IE M.        .        .        .        .        .        .        .        .
          1800. C       .   IE M.       .        .        .        .        .        .        .        .
          2000. C       .    IE M       .        .        .        .        .        .        .        .
    2.09  2200. .       .    IE M       .        .        .        .        .        .        .        .
          2400. C       .     IE.M      .        .        .        .        .        .        .        .
          2600. C       .      IE M     .        .        .        .        .        .        .        .
          2800. C       .       IERM    .        .        .        .        .        .        .        .
          3000. C       .       .IERM   .        .        .        .        .        .        .        .
          3200. C       .       . IERM  .        .        .        .        .        .        .        .
          3400. C       .       .  IERM .        .        .        .        .        .        .        .
          3600. C       .       .   IERM.        .        .        .        .        .        .        .
    1.77  3800. C       .       .    I ER.       .        .        .        .        .        .        .
          4000. C       .       .     I ER.      .        .        .        .        .        .        .
          4200. C       .       .      I ER      .        .        .        .        .        .        .
          4400. C       .       .       IER      .        .        .        .        .        .        .
          4600. C       .       .        IER     .        .        .        .        .        .        .
          4800. C       .       .        .IWE    .        .        .        .        .        .        .
    1.55  5000. .       .       .        . IER   .        .        .        .        .        .        .
          5200. .       .       .        .  IWE  .        .        .        .        .        .        .
          5400. .       .       .        .   ILE .        .        .        .        .        .        .
          5600. .       .       .        .    ILE.        .        .        .        .        .        .
          5800. .       .       .        .     ILE.       .        .        .        .        .        .
          6000. .       .       .        .      IER       .        .        .        .        .        .
          6200. .       .       .        .       IER      .        .        .        .        .        .
          6400. .       .       .        .        IER     .        .        .        .        .        .
          6600.                                     IER
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1.21  6800.  .        .        .        .        .IWE     .        .        .        .        .        .
      7000.  C        .        .        .        . IWE    .        .        .        .        .        .
      7200.  C        .        .        .        .  WEM   .        .        .        .        .        .
      7400.  C        .        .        .        .   IEM  .        .        .        .        .        .
      7600.  C        .        .        .        .   IEM. .        .        .        .        .        .
1.03  7800.  C        .        .        .        .    E M .        .        .        .        .        .
      8000.  C        .        .        .        .     IEM .        .        .        .        .        .
      8200.  C        .        .        .        .      IEM .        .        .        .        .        .
      8400.  C        .        .        .        .      .IER .        .        .        .        .        .
      8600.  C        .        .        .        .      . IERM .        .        .        .        .        .
 .83  8800.  .        .        .        .        .      . I ER .        .        .        .        .        .
      9000.  C        .        .        .        .      . I ER .        .        .        .        .        .
      9200.  C        .        .        .        .      .  IWE .        .        .        .        .        .
      9400.  C        .        .        .        .      .   I ER .        .        .        .        .        .
      9600.  C        .        .        .        .      .   I ER .        .        .        .        .        .
      9800.  C        .        .        .        .      .     IEL .        .        .        .        .        .
     10000.  C        .        .        .        .      .     .IWE .        .        .        .        .        .
     10200.  C        .        .        .        .      .     . I ER .        .        .        .        .        .
 .52 10400.  C        .        .        .        .      .     .  IEL .        .        .        .        .        .
     10600.  C        .        .        .        .      .     .   IWE .        .        .        .        .        .
     10800.  C        .        .        .        .      .     .    IER. .        .        .        .        .        .
     11000.  C        .        .        .        .      .     .    IEL .        .        .        .        .        .
     11200.  C        .        .        .        .      .     .     IEL .        .        .        .        .        .
     11400.  C        .        .        .        .      .     .      .WER .        .        .        .        .        .
 .29 11600.  C        .        .        .        .      .     .      . IER .        .        .        .        .        .
     11800.  C        .        .        .        .      .     .      .  IER .        .        .        .        .        .
     12000.  C        .        .        .        .      .     .      .   IWEM .        .        .        .        .        .
 .18 12200.  C        .        .        .        .      .     .      .    IEM .        .        .        .        .        .
     12400.  C        .        .        .        .      .     .      .    IEM. .        .        .        .        .        .
 .10 12600.  C        .        .        .        .      .     .      .     I E .        .        .        .        .        .
     12800.  C        .        .        .        .      .     .      .      I EM .        .        .        .        .        .
     13000.  C        .        .        .        .      .     .      .      . IE M .        .        .        .        .        .
 .00 13200.  C        .        .        .        .      .     .      .      .  IE  M .        .        .        .        .        .
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THIS RUN EXECUTED 02/10/86 15:11:23

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*********************************************
 HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
 ERROR CORR -  01,02,03,04,05,06
 MODIFICATION -  50,51,52,53,54,55,56
 IBM-PC-XT VERSION
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T1
T2
T3 PSH, Q=4400

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	7.	0.	0.	-1.000000	.00	.0	0.	1639.000	.000
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	6.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

```
  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTH      ELMIN     SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST


*PROF 6


CCHV=    .100 CEHV=    .300
*SECNO 2.450
3720 CRITICAL DEPTH ASSUMED
    2.45     2.39  1637.39  1637.39  1639.00  1638.03     .64     .00     .00  1636.00
   4400.     463.    3596.     341.     256.     510.     188.      0.      0.  1636.00
     .00     1.81     7.05     1.81     .080     .040     .080    .000  1635.00   501.68
  .015404      0.       0.       0.        0       13        0     .00   909.35  1411.03


*SECNO 2.440

3301 HV CHANGED MORE THAN HVINS

    2.44     3.67  1638.67     .00     .00  1638.76     .09     .67     .06  1636.00
   4400.     958.    2593.     848.   1046.     856.    1056.      9.      7.  1636.00
     .03      .92     3.03     .80     .080     .040     .080    .000  1635.00    79.80
  .001428    200.     200.     200.       4        0        0     .00  2147.77  2227.58


1490 NH CARD USED
*SECNO 2.090

3265 DIVIDED FLOW

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
    2.09     1.75  1655.75  1655.75     .00  1656.31     .56    6.75     .14  1656.00
   4400.       0.    4400.       0.       0.     735.       0.     87.     67.  1656.00
     .11      .00     5.98     .00     .040     .040     .080    .000  1654.00  2815.93
  .022585   1850.    1850.    1850.      20       12        0     .00   669.38  4216.37
```

```
1490 NH CARD USED
*SECNO 1.770

3265 DIVIDED FLOW

    1.77     3.71  1673.71      .00      .00  1673.82      .10    17.46      .05  1674.00
   4400.       0.    2497.    1903.       0.     829.    1033.     138.     116.   1676.00
     .30      .00     3.01     1.84     .080     .040     .062     .000  1670.00  2950.10
 .005898    1690.    1690.    1690.        9        0        0      .00  1850.25  5840.96
```



```
  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN     SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST

1490 NH CARD USED
*SECNO 1.550

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
    1.55     2.44  1686.44  1686.44      .00  1686.72      .28     9.68      .05  1686.00
   4400.     1440.    2960.       0.    1207.     578.       0.     186.     183.   1688.00
     .38     1.19     5.12      .00     .080     .043     .062     .000  1684.00   124.89
 .012708    1160.    1160.    1160.        6       17        0      .00  3238.45  4916.58

1490 NH CARD USED
*SECNO 1.210

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
    1.21     2.53  1706.53  1706.53      .00  1706.95      .42    19.75      .04  1704.00
   4400.      239.    3184.     977.     112.     527.     821.     253.     290.   1708.00
     .49     2.13     6.04     1.19     .080     .040     .080     .000  1704.00    51.29
 .009568    1800.    1800.    1800.        5        8        0      .00  1898.20  2396.73

1490 NH CARD USED
*SECNO 1.030

3265 DIVIDED FLOW

    1.03      .68  1716.68      .00      .00  1716.82      .14     9.84      .03  1716.00
   4400.      214.    3611.     574.      79.    1182.     210.     285.     335.   1716.00
     .58     2.71     3.06     2.73     .040     .040     .041     .000  1716.00   124.39
 [illegible]  [illegible]  [illegible]  [illegible]  [illegible]  [illegible]  [illegible]  [illegible]  [illegible]  [illegible]
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 .011254    950.    950.    950.      5       0       0     .00  2207.03  3970.23
```

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1490 NH CARD USED
*SECNO  .830

3265 DIVIDED FLOW

     .83     3.39  1729.39     .00     .00  1729.85     .46    12.93     .10  1730.00
    4400.    1491.    2909.      0.    382.     477.      0.     314.     371.  1732.00
     .63     3.90     6.10     .00    .046     .040    .041     .000  1726.00   103.96
  .013274    1060.    1060.   1060.       5       0       0      .00   675.79  3483.05
```



```
  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN     SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST

1490 NH CARD USED
*SECNO  .520

3265 DIVIDED FLOW

     .52     2.16  1750.16     .00     .00  1750.37     .22    20.49     .02  1752.00
    4400.    2497.    1903.      0.    671.     507.      0.     352.     418.  1752.00
     .75     3.72     3.76     .00    .041     .040    .041     .000  1748.00    92.20
  .011786    1640.    1640.   1640.       4       0       0      .00  1807.58  3326.95

1490 NH CARD USED
*SECNO  .290

3265 DIVIDED FLOW

     .29     1.24  1765.24     .00     .00  1765.44     .20    15.06     .00  1766.00
    4400.     653.    2848.    899.    255.     756.    251.     386.     462.  1768.00
     .85     2.56     3.77    3.58    .057     .044    .047     .000  1764.00   226.23
  .013395    1200.    1200.   1200.       4       0       0      .00  1434.71  2811.37

1490 NH CARD USED
*SECNO  .180

3265 DIVIDED FLOW

     .18     2.31  1773.31     .00     .00  1773.58     .26     8.12     .02  1772.00
    4400.     176.    4143.     81.    104.     985.     48.     402.     481.  1772.00
     .89     1.70     4.21    1.70    .080     .040    .080     .000  1771.00   142.21
  .014651     580.     580.    580.       3       0       0      .00  1317.59  1512.32

1490 NH CARD USED
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*SECNO .100

3265 DIVIDED FLOW

.10	3.23	1779.23	.00	.00	1779.41	.18	5.83	.01	1780.00
4400.	1334.	840.	2226.	509.	143.	874.	415.	493.	1780.00
.92	2.62	5.85	2.55	.080	.040	.080	.000	1776.00	38.49
.013155	420.	420.	420.	2	0	0	.00	1304.93	2110.19

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTH	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

CCHV= .100 CEHV= .300

*SECNO .000

.00	1.68	1789.68	.00	.00	1790.36	.67	10.80	.15	1788.00
4400.	0.	4400.	0.	0.	667.	0.	428.	504.	1788.00
.95	1.03	6.59	1.03	.060	.060	.060	.000	1788.00	.79
.035694	530.	530.	530.	3	0	0	.00	399.42	400.21

PROFILE FOR STREAM , Q=4400

PLOTTED POINTS (BY PRIORITY)-E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STR

```
ELEVATION  1620.    1640.    1660.    1680.    1700.    1720.    1740.    1760.    1780.    1800.
   SECNO   CUMDIS

    2.45     0.  .     IEM      .        .        .        .        .        .        .        .
    2.44   200.  C     IEM      .        .        .        .        .        .        .        .
           400.  C      IEM     .        .        .        .        .        .        .        .
           600.  C       IEM    .        .        .        .        .        .        .        .
           800.  C       .IEM   .        .        .        .        .        .        .        .
          1000.  C       . IEM  .        .        .        .        .        .        .        .
          1200.  C       . IEM  .        .        .        .        .        .        .        .
          1400.  C       .  IEM .        .        .        .        .        .        .        .
          1600.  C       .   IE M.       .        .        .        .        .        .        .
          1800.  C       .    IE M.      .        .        .        .        .        .        .
          2000.  C       .     IE M      .        .        .        .        .        .        .
    2.09  2200.  .       .     IE M      .        .        .        .        .        .        .
          2400.  C       .      IE.M     .        .        .        .        .        .        .
          2600.  C       .       IE M    .        .        .        .        .        .        .
          2800.  C       .        IERM   .        .        .        .        .        .        .
          3000.  C       .        .IERM  .        .        .        .        .        .        .
          3200.  C       .        . IERM .        .        .        .        .        .        .
          3400.  C       .        .  IERM.        .        .        .        .        .        .
          3600.  C       .        .   IERM        .        .        .        .        .        .
    1.77  3800.  C       .        .    I ER       .        .        .        .        .        .
          4000.  C       .        .    I ER.      .        .        .        .        .        .
          4200.  C       .        .     I ER      .        .        .        .        .        .
          4400.  C       .        .      IER      .        .        .        .        .        .
          4600.  C       .        .       IER     .        .        .        .        .        .
          4800.  C       .        .       .IER    .        .        .        .        .        .
    1.55  5000.  .       .        .       . IER   .        .        .        .        .        .
          5200.  .       .        .       .  IER  .        .        .        .        .        .
          5400.  .       .        .       .   IWE .        .        .        .        .        .
          5600.  .       .        .       .    ILE.        .        .        .        .        .
          5800.  .       .        .       .     ILE.       .        .        .        .        .
          6000.  .       .        .       .      IER       .        .        .        .        .
          6200.  .       .        .       .       IER      .        .        .        .        .
          6400.  .       .        .       .        IER     .        .        .        .        .
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1.21  6800.  .         .         .         .         . IER     .         .         .         .         .         .
      7000.  C         .         .         .         .  IWE    .         .         .         .         .         .
      7200.  C         .         .         .         .   WEM   .         .         .         .         .         .
      7400.  C         .         .         .         .   WEM   .         .         .         .         .         .
      7600.  C         .         .         .         .    IEM. .         .         .         .         .         .
1.03  7800.  C         .         .         .         .     E M .         .         .         .         .         .
      8000.  C         .         .         .         .      IEM .         .         .         .         .         .
      8200.  C         .         .         .         .       IEM .         .         .         .         .         .
      8400.  C         .         .         .         .       .IER .         .         .         .         .         .
      8600.  C         .         .         .         .       . IERM .         .         .         .         .         .
 .83  8800.  C         .         .         .         .       . I ER .         .         .         .         .         .
      9000.  C         .         .         .         .       . I ER .         .         .         .         .         .
      9200.  C         .         .         .         .       . IEL .         .         .         .         .         .
      9400.  C         .         .         .         .       . IWER .         .         .         .         .         .
      9600.  C         .         .         .         .       . I ER .         .         .         .         .         .
      9800.  C         .         .         .         .       . IEL .         .         .         .         .         .
     10000.  C         .         .         .         .       . .IEL .         .         .         .         .         .
     10200.  C         .         .         .         .       . . I ER .         .         .         .         .         .
 .52 10400.  C         .         .         .         .       . . IEL .         .         .         .         .         .
     10600.  C         .         .         .         .       . . IEL .         .         .         .         .         .
     10800.  C         .         .         .         .       . . IER. .         .         .         .         .         .
     11000.  C         .         .         .         .       . . IEL .         .         .         .         .         .
     11200.  C         .         .         .         .       . . IEL .         .         .         .         .         .
     11400.  C         .         .         .         .       . . .ELR .         .         .         .         .         .
 .29 11600.  C         .         .         .         .       . . . IER .         .         .         .         .         .
     11800.  C         .         .         .         .       . . . IER .         .         .         .         .         .
     12000.  C         .         .         .         .       . . . IWEM .         .         .         .         .         .
 .18 12200.  C         .         .         .         .       . . . IEM .         .         .         .         .         .
     12400.  C         .         .         .         .       . . . IEM. .         .         .         .         .         .
 .10 12600.  C         .         .         .         .       . . . I E .         .         .         .         .         .
     12800.  C         .         .         .         .       . . . I EM .         .         .         .         .         .
     13000.  C         .         .         .         .       . . . . IE M .         .         .         .         .         .
 .00 13200.  C         .         .         .         .       . . . . IE  M .         .         .         .         .         .
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THIS RUN EXECUTED 02/10/86 15:13:58

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*********************************************
 HEC2 RELEASE DATED NOV 76 UPDATED MAY 1984
 ERROR CORR - 01,02,03,04,05,06
 MODIFICATION - 50,51,52,53,54,55,56
 IBM-PC-XT VERSION
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T1
T2
T3 PSH, Q=3300

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	0.	0.	0.	-1.000000	.00	.0	0.	1639.000	.000

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	7.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

```
  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWR    LEFT/RIGHT
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IOC      ICONT    CORRR    TOPWID     ENDST


*PROF 7


CCHV=    .100 CEHV=    .300
*SECNO 2.450
3720 CRITICAL DEPTH ASSUMED
    2.45     2.11  1637.11  1637.11  1639.00  1637.69      .57      .00      .00  1636.00
   3300.     264.    2842.     194.     165.     436.     121.       0.       0.  1636.00
     .00     1.60     6.52     1.60     .080     .040     .080     .000  1635.00   574.62
  .016254      0.       0.       0.        0       10        0      .00   782.73  1357.35


*SECNO 2.440
    2.44     3.33  1638.33      .00      .00  1638.42      .08      .68      .05  1636.00
   3300.     632.    2159.     509.     789.     767.     713.       7.       6.  1636.00
     .03      .80     2.82      .71     .080     .040     .080     .000  1635.00    99.58
  .001427    200.     200.     200.        4        0        0      .00  2035.71  2135.29


1490 NH CARD USED
*SECNO 2.090

3265 DIVIDED FLOW

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
    2.09     1.52  1655.52  1655.52      .00  1656.01      .49     6.81      .12  1656.00
   3300.       0.    3300.       0.       0.     585.       0.      67.      62.  1656.00
     .12      .00     5.64      .00     .055     .040     .080     .000  1654.00  2850.27
  .023617   1850.    1850.    1850.       20       14        0      .00   601.88  4203.35


1490 NH CARD USED
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3265 DIVIDED FLOW

1.77	3.50	1673.50	.00	.00	1673.59	.09	17.54	.04	1674.00
3300.	0.	1896.	1404.	0.	674.	813.	108.	106.	1676.00
.32	.00	2.81	1.73	.080	.040	.061	.000	1670.00	2957.60
.005804	1690.	1690.	1690.	10	0	0	.00	1646.08	5804.52

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

1490 NH CARD USED
*SECNO 1.550

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.55	2.33	1686.33	1686.33	.00	1686.58	.24	9.05	.05	1686.00
3300.	848.	2452.	0.	911.	538.	0.	147.	170.	1688.00
.41	.93	4.56	.00	.080	.043	.061	.000	1684.00	133.27
.011056	1160.	1160.	1160.	5	14	0	.00	3188.70	4915.01

1490 NH CARD USED
*SECNO 1.210

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.21	2.36	1706.36	1706.36	.00	1706.73	.37	17.34	.04	1704.00
3300.	186.	2641.	473.	97.	485.	549.	200.	275.	1708.00
.51	1.91	5.45	.86	.080	.040	.080	.000	1704.00	57.42
.008472	1800.	1800.	1800.	3	5	0	.00	1869.32	2387.97

1490 NH CARD USED
*SECNO 1.030

3265 DIVIDED FLOW

1.03	.55	1716.55	.00	.00	1716.68	.12	9.92	.03	1716.00
3300.	155.	2726.	420.	60.	952.	161.	225.	320.	1716.00
.61	2.58	2.86	2.61	.040	.040	.040	.000	1716.00	129.37

1490 NH CARD USED
*SECNO .830

3265 DIVIDED FLOW

.83	3.21	1729.21	.00	.00	1729.57	.36	12.82	.07	1730.00
3300.	1026.	2274.	0.	308.	424.	0.	248.	354.	1732.00
.67	3.33	5.37	.00	.045	.040	.040	.000	1726.00	111.80
.011137	1060.	1060.	1060.	4	0	0	.00	625.28	3474.22

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XML	XMCH	XMR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

1490 NH CARD USED
*SECNO .520

3265 DIVIDED FLOW

.52	1.82	1749.82	.00	.00	1750.12	.30	20.55	.01	1752.00
3300.	1646.	1654.	0.	396.	357.	0.	276.	380.	1752.00
.77	4.15	4.64	.00	.040	.040	.040	.000	1748.00	736.39
.014197	1640.	1640.	1640.	4	0	0	.00	768.78	3322.72

1490 NH CARD USED
*SECNO .290

3265 DIVIDED FLOW

.29	1.11	1765.11	.00	.00	1765.26	.15	15.13	.01	1766.00
3300.	475.	2151.	673.	212.	655.	215.	302.	410.	1768.00
.88	2.25	3.28	3.13	.056	.044	.046	.000	1764.00	244.43
.011269	1200.	1200.	1200.	5	0	0	.00	1347.29	2803.89

1490 NH CARD USED
*SECNO .180

3265 DIVIDED FLOW

.18	2.13	1773.13	.00	.00	1773.36	.24	8.07	.03	1772.00
3300.	128.	3113.	59.	76.	780.	35.	315.	427.	1772.00
.92	1.68	3.99	1.68	.080	.040	.080	.000	1771.00	164.88
.017635	580.	580.	580.	4	0	0	.00	1270.04	1501.93

1490 NH CARD USED
*SECNO .100

3265 DIVIDED FLOW

.10	3.04	1779.04	.00	.00	1779.19	.15	5.82	.01	1780.00
3300.	1005.	660.	1635.	427.	127.	738.	325.	439.	1780.00
.96	2.35	5.19	2.22	.080	.040	.080	.000	1776.00	47.85
.011178	420.	420.	420.	4	0	0	.00	1191.79	2088.35

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	QLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

CCHV= .100 CEHV= .300

*SECNO .000

.00	1.31	1789.31	1789.28	.00	1789.93	.62	10.60	.14	1788.00
3300.	0.	3300.	0.	0.	522.	0.	336.	449.	1788.00
.99	.99	6.32	.99	.060	.060	.060	.000	1788.00	.84
.045520	530.	530.	530.	6	14	0	.00	399.33	400.16

PROFILE FOR STREAM , Q=3300

PLOTTED POINTS (BY PRIORITY)-E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA

```
ELEVATION 1620.    1640.    1660.    1680.    1700.    1720.    1740.    1760.    1780.    1800.
   SECNO  CUMDIS

    2.45     0. .     IEM      .        .        .        .        .        .        .        .
    2.44   200. C     IEM      .        .        .        .        .        .        .        .
           400. C      IEM     .        .        .        .        .        .        .        .
           600. C       IEM    .        .        .        .        .        .        .        .
           800. C       .IEM   .        .        .        .        .        .        .        .
          1000. C       . IEM  .        .        .        .        .        .        .        .
          1200. C       . IEM  .        .        .        .        .        .        .        .
          1400. C       .  IEM .        .        .        .        .        .        .        .
          1600. C       .  IE M.        .        .        .        .        .        .        .
          1800. C       .   IE M.       .        .        .        .        .        .        .
          2000. C       .    IE M       .        .        .        .        .        .        .
    2.09  2200. .       .    IE M       .        .        .        .        .        .        .
          2400. C       .     IE.M      .        .        .        .        .        .        .
          2600. C       .      IE M     .        .        .        .        .        .        .
          2800. C       .       IERM    .        .        .        .        .        .        .
          3000. C       .       .IERM   .        .        .        .        .        .        .
          3200. C       .       . IERM  .        .        .        .        .        .        .
          3400. C       .       . IERM  .        .        .        .        .        .        .
          3600. C       .       .  IERM .        .        .        .        .        .        .
    1.77  3800. C       .       .   I ER.        .        .        .        .        .        .
          4000. C       .       .    I ER.       .        .        .        .        .        .
          4200. C       .       .     I ER       .        .        .        .        .        .
          4400. C       .       .      IER       .        .        .        .        .        .
          4600. C       .       .       IER      .        .        .        .        .        .
          4800. C       .       .       .IER     .        .        .        .        .        .
    1.55  5000. .       .       .       . IER    .        .        .        .        .        .
          5200. .       .       .       .  IER   .        .        .        .        .        .
          5400. .       .       .       .   IWE  .        .        .        .        .        .
          5600. .       .       .       .    ILE .        .        .        .        .        .
          5800. .       .       .       .    ILE .        .        .        .        .        .
          6000. .       .       .       .      IER        .        .        .        .        .
          6200. .       .       .       .      IER        .        .        .        .        .
          6400          .       .       .      IER        .        .        .        .        .
                                                 IER
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1.21  6800.  .        .        .        .  IER    .        .        .        .        .        .
      7000.  C        .        .        .  IER    .        .        .        .        .        .
      7200.  C        .        .        .   ERM   .        .        .        .        .        .
      7400.  C        .        .        .   WEM   .        .        .        .        .        .
      7600.  C        .        .        .   WEM.  .        .        .        .        .        .
1.03  7800.  C        .        .        .    E M  .        .        .        .        .        .
      8000.  C        .        .        .    WEM  .        .        .        .        .        .
      8200.  C        .        .        .     IEM .        .        .        .        .        .
      8400.  C        .        .        .    .IER .        .        .        .        .        .
      8600.  C        .        .        .    . IERM        .        .        .        .        .
.83   8800.  C        .        .        .    . I ER        .        .        .        .        .
      9000.  C        .        .        .    . I ER        .        .        .        .        .
      9200.  C        .        .        .    .  IEL        .        .        .        .        .
      9400.  C        .        .        .    .   IWER      .        .        .        .        .
      9600.  C        .        .        .    .   I ER      .        .        .        .        .
      9800.  C        .        .        .    .     IEL     .        .        .        .        .
     10000.  C        .        .        .    .     .IEL    .        .        .        .        .
     10200.  C        .        .        .    .     . IWER  .        .        .        .        .
.52 10400.  C        .        .        .    .     .  IEL  .        .        .        .        .
     10600.  C        .        .        .    .     .   IEL .        .        .        .        .
     10800.  C        .        .        .    .     .    WER.        .        .        .        .
     11000.  C        .        .        .    .     .     IEL        .        .        .        .
     11200.  C        .        .        .    .     .      IEL       .        .        .        .
     11400.  C        .        .        .    .     .       .ELR     .        .        .        .
.29 11600.  C        .        .        .    .     .       . IER    .        .        .        .
     11800.  C        .        .        .    .     .       .  IER   .        .        .        .
     12000.  C        .        .        .    .     .       .   IE M .        .        .        .
.18 12200.  C        .        .        .    .     .       .    IEM .        .        .        .
     12400.  C        .        .        .    .     .       .     IEM.        .        .        .
.10 12600.  C        .        .        .    .     .       .      I E        .        .        .
     12800.  C        .        .        .    .     .       .        IWEM     .        .        .
     13000.  C        .        .        .    .     .       .        . WE M   .        .        .
.00 13200.  .        .        .        .    .     .       .        .  IE  M .        .        .
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THIS RUN EXECUTED 02/10/86 15:16:34

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*********************************************
 NEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
 ERROR CORR -  01,02,03,04,05,06
 MODIFICATION - 50,51,52,53,54,55,56
 IBM-PC-XT VERSION
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T1
T2
T3 PSH, Q=2200

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	9.	0.	0.	-1.000000	.00	.0	0.	1639.000	.000
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNNM	ITRACE
	15.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

```
  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN     SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST


*PROF 8


CCHV=   .100 CENV=   .300
*SECNO 2.450
3720 CRITICAL DEPTH ASSUMED
    2.45     1.77  1636.77  1636.77  1639.00  1637.27     .49     .00     .00  1636.00
   2200.     105.    2017.     78.     80.     344.     59.      0.      0.  1636.00
     .00     1.32     5.86    1.32    .080     .040    .080    .000  1635.00   664.68
  .018005      0.       0.      0.       0       17       0     .00   626.40  1291.08


*SECNO 2.440
    2.44     2.92  1637.92     .00     .00  1637.99     .07     .68     .04  1636.00
   2200.     328.    1630.    241.    487.     652.    358.      5.      4.  1636.00
     .03      .67     2.50     .67    .080     .040    .080    .000  1635.00   362.13
  .001395    200.     200.    200.       5        0       0     .00  1151.59  1513.72


1490 NH CARD USED
*SECNO 2.090

3265 DIVIDED FLOW

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
    2.09     1.23  1655.23  1655.23     .00  1655.65     .41    6.75     .10  1656.00
   2200.       0.    2200.      0.      0.     426.      0.     45.     40.  1656.00
     .13      .00     5.17     .00    .052     .040    .080    .000  1654.00  2891.41
  .024932   1850.    1850.   1850.      20       18       0     .00   521.03  4187.74


1490 NH CARD USED
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3265 DIVIDED FLOW

1.77	3.23	1673.23	.00	.00	1673.30	.08	17.62	.03	1674.00	
2200.	0.	1296.	904.	0.	505.	573.	75.	77.	1676.00	
.34	.00	2.57	1.58	.080	.040	.059	.000	1670.00	2967.04	
.005693	1690.	1690.	1690.	9	0	0	.00	1389.23	5758.68	

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

1490 NH CARD USED
*SECNO 1.550

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.55	2.18	1686.18	1686.18	.00	1686.40	.22	8.52	.04	1686.00
2200.	287.	1913.	0.	489.	479.	0.	102.	137.	1688.00
.43	.59	3.99	.00	.080	.043	.059	.000	1684.00	145.47
.009826	1160.	1160.	1160.	4	15	0	.00	3116.28	4912.72

1490 NH CARD USED
*SECNO 1.210

1.21	1.85	1705.85	.00	.00	1706.34	.48	19.86	.08	1704.00
2200.	117.	2083.	0.	59.	364.	0.	131.	207.	1708.00
.53	1.96	5.72	.00	.080	.040	.059	.000	1704.00	75.47
.012475	1800.	1800.	1800.	4	0	0	.00	289.84	365.31

1490 NH CARD USED
*SECNO 1.030

3265 DIVIDED FLOW

1.03	.47	1716.47	.00	.00	1716.55	.07	10.17	.04	1716.00
2200.	101.	1823.	276.	51.	831.	137.	146.	234.	1716.00
.65	2.00	2.20	2.02	.040	.040	.040	.000	1716.00	132.00
.009287	950.	950.	950.	4	0	0	.00	2199.63	3886.41

1490 NH CARD USED
*SECNO .830

.83	2.72	1728.72	.00	.00	1729.14	.42	12.49	.11	1730.00
2200.	469.	1731.	0.	154.	305.	0.	164.	267.	1732.00
.71	3.05	5.67	.00	.043	.040	.040	.000	1726.00	131.15
.015447	1060.	1060.	1060.	4	0	0	.00	500.71	3452.45

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTH	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

1490 NH CARD USED
*SECNO .520

3265 DIVIDED FLOW

.52	1.65	1749.65	.00	.00	1749.84	.20	20.67	.02	1752.00
2200.	1074.	1126.	0.	323.	300.	0.	185.	290.	1752.00
.83	3.33	3.75	.00	.040	.040	.040	.000	1748.00	742.62
.010483	1640.	1640.	1640.	4	0	0	.00	699.37	3320.49

1490 NH CARD USED
*SECNO .290

3265 DIVIDED FLOW

.29	.81	1764.81	.00	.00	1764.97	.16	15.12	.00	1766.00
2200.	294.	1460.	447.	126.	442.	141.	203.	315.	1768.00
.94	2.33	3.31	3.17	.053	.042	.045	.000	1764.00	286.32
.015433	1200.	1200.	1200.	5	0	0	.00	1146.08	2786.69

1490 NH CARD USED
*SECNO .180

3265 DIVIDED FLOW

.18	2.02	1773.02	.00	.00	1773.16	.14	8.19	.00	1772.00
2200.	85.	2076.	39.	63.	669.	29.	213.	331.	1772.00
.99	1.35	3.10	1.35	.080	.040	.080	.000	1771.00	177.39
.012980	580.	580.	580.	3	0	0	.00	1243.80	1496.20

1490 NH CARD USED

3265 DIVIDED FLOW

.10	2.63	1778.63	.00	.00	1778.79	.16	5.62	.00	1780.00
2200.	694.	499.	1008.	280.	95.	478.	220.	341.	1780.00
1.03	2.47	5.23	2.11	.080	.040	.080	.000	1776.00	68.41
.013819	420.	420.	420.	4	0	0	.00	943.40	2040.38

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

CCHV= .100 CEHV= .300

*SECNO .000

.00	1.14	1789.14	.00	.00	1789.50	.36	10.65	.06	1788.00
2200.	0.	2200.	0.	0.	455.	0.	228.	350.	1788.00
1.06	.04	4.83	.04	.060	.060	.060	.000	1788.00	.86
.031874	530.	530.	530.	4	0	0	.00	399.29	400.14

PROFILE FOR STREAM , Q=2200

PLOTTED POINTS (BY PRIORITY)-E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA

```
ELEVATION  1620.    1640.    1660.    1680.    1700.    1720.    1740.    1760.    1780.    1800.
   SECNO   CUMDIS

    2.45     0. .     WEM      .        .        .        .        .        .        .        .
    2.44   200. C     IEM      .        .        .        .        .        .        .        .
           400. C      IEM     .        .        .        .        .        .        .        .
           600. C       IEM    .        .        .        .        .        .        .        .
           800. C       .IEM   .        .        .        .        .        .        .        .
          1000. C       . IEM  .        .        .        .        .        .        .        .
          1200. C       . IEM  .        .        .        .        .        .        .        .
          1400. C       .  IEM .        .        .        .        .        .        .        .
          1600. C       .   IE M.       .        .        .        .        .        .        .
          1800. C       .    WE M.      .        .        .        .        .        .        .
          2000. C       .     WE M      .        .        .        .        .        .        .
    2.09  2200. .       .     IE M      .        .        .        .        .        .        .
          2400. C       .      IE.M     .        .        .        .        .        .        .
          2600. C       .       IE M    .        .        .        .        .        .        .
          2800. C       .        IERM   .        .        .        .        .        .        .
          3000. C       .        .IERM  .        .        .        .        .        .        .
          3200. C       .        . IERM .        .        .        .        .        .        .
          3400. C       .        .  IERM .       .        .        .        .        .        .
          3600. C       .        .   IERM .      .        .        .        .        .        .
    1.77  3800. C       .        .    I ER .     .        .        .        .        .        .
          4000. C       .        .     I ER.     .        .        .        .        .        .
          4200. C       .        .      I ER     .        .        .        .        .        .
          4400. C       .        .       IER     .        .        .        .        .        .
          4600. C       .        .        IER    .        .        .        .        .        .
          4800. C       .        .        .IER   .        .        .        .        .        .
    1.55  5000. .       .        .        . IER  .        .        .        .        .        .
          5200. C       .        .        .  IER .        .        .        .        .        .
          5400. C       .        .        .   IER .       .        .        .        .        .
          5600. C       .        .        .    IWE .      .        .        .        .        .
          5800. C       .        .        .     IWE .     .        .        .        .        .
          6000. C       .        .        .      IER      .        .        .        .        .
          6200. C       .        .        .       IER     .        .        .        .        .
          6400. C       .        .        .        IER    .        .        .        .        .
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      6600.  C     .     .     .    .IER   .     .     .     .     .     .
 1.21 6800.  C     .     .     .    . IER  .     .     .     .     .     .
      7000.  C     .     .     .    . IER  .     .     .     .     .     .
      7200.  C     .     .     .    .  ERM .     .     .     .     .     .
      7400.  C     .     .     .    .  ERM .     .     .     .     .     .
      7600.  C     .     .     .    .  E M.      .     .     .     .     .
 1.03 7800.  C     .     .     .    .  E M       .     .     .     .     .
      8000.  C     .     .     .    .  ERM       .     .     .     .     .
      8200.  C     .     .     .    .  IEM       .     .     .     .     .
      8400.  C     .     .     .    .  .IER      .     .     .     .     .
      8600.  C     .     .     .    .  . IERM    .     .     .     .     .
  .83 8800.  C     .     .     .    .  . IWER    .     .     .     .     .
      9000.  C     .     .     .    .  . I ER    .     .     .     .     .
      9200.  C     .     .     .    .  .  IEL    .     .     .     .     .
      9400.  C     .     .     .    .  .  IELR   .     .     .     .     .
      9600.  C     .     .     .    .  .  IWER   .     .     .     .     .
      9800.  C     .     .     .    .  .   IEL   .     .     .     .     .
     10000.  C     .     .     .    .  .   .IEL  .     .     .     .     .
     10200.  C     .     .     .    .  .   . IELR .     .     .     .     .
  .52 10400. C     .     .     .    .  .   .  IEL .     .     .     .     .
     10600.  C     .     .     .    .  .   .  IEL .     .     .     .     .
     10800.  C     .     .     .    .  .   .   ELR.     .     .     .     .
     11000.  C     .     .     .    .  .   .   IEL      .     .     .     .
     11200.  C     .     .     .    .  .   .   IEL      .     .     .     .
     11400.  C     .     .     .    .  .   .   .ELR     .     .     .     .
  .29 11600. C     .     .     .    .  .   .   . ELR    .     .     .     .
     11800.  C     .     .     .    .  .   .   .  IER   .     .     .     .
     12000.  C     .     .     .    .  .   .   .  IE M  .     .     .     .
  .18 12200. C     .     .     .    .  .   .   .   IEM .     .     .     .
     12400.  C     .     .     .    .  .   .   .   IEM.      .     .     .
  .10 12600. C     .     .     .    .  .   .   .   IEL      .     .     .
     12800.  C     .     .     .    .  .   .   .     IELM   .     .     .
     13000.  C     .     .     .    .  .   .   .     . E M  .     .     .
  .00 13200. C     .     .     .    .  .   .   .     .  IE M.     .     .
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THIS RUN EXECUTED 02/10/86 15:19:08

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 HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
 ERROR CORR -  01,02,03,04,05,06
 MODIFICATION -  50,51,52,53,54,55,56
 IBM-PC-XT VERSION
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

FBH AND PSH-- FLOWS FROM

SUMMARY PRINTOUT

	SECNO	Q	VCH	CWSEL	CRIWS	EG	TOPWID	SSTA	ENDST	TIME	ELMIN	AREA	VOL
*	2.450	18000.00	9.73	1639.09	1639.09	1639.93	2291.17	54.50	2345.67	.00	1635.00	3893.61	
*	2.450	16000.00	9.17	1638.98	1638.98	1639.74	2254.77	60.92	2315.69	.00	1635.00	3650.28	
*	2.450	14000.00	8.94	1638.80	1638.80	1639.55	2190.56	72.25	2262.82	.00	1635.00	3230.54	
*	2.450	10000.00	8.00	1638.44	1638.44	1639.09	2068.38	93.82	2162.19	.00	1635.00	2465.27	
*	2.450	5300.00	7.40	1637.59	1637.59	1638.27	1001.10	448.82	1449.92	.00	1635.00	1145.12	
*	2.450	4400.00	7.05	1637.39	1637.39	1638.03	909.35	501.68	1411.03	.00	1635.00	954.59	
*	2.450	3300.00	6.52	1637.11	1637.11	1637.69	782.73	574.62	1357.35	.00	1635.00	721.70	
*	2.450	2200.00	5.86	1636.77	1636.77	1637.27	626.40	664.68	1291.08	.00	1635.00	482.26	
	2.440	18000.00	5.00	1640.64	.00	1640.82	2600.00	.00	2600.00	.02	1635.00	7786.02	27
	2.440	16000.00	4.80	1640.43	.00	1640.60	2600.00	.00	2600.00	.02	1635.00	7229.01	25
	2.440	14000.00	4.54	1640.22	.00	1640.37	2600.00	.00	2600.00	.02	1635.00	6693.91	23
	2.440	10000.00	3.99	1639.72	.00	1639.85	2504.96	16.77	2521.73	.02	1635.00	5401.48	18
	2.440	5300.00	3.18	1638.90	.00	1639.00	2227.21	65.79	2293.00	.03	1635.00	3468.64	11
	2.440	4400.00	3.03	1638.67	.00	1638.76	2147.77	79.80	2227.58	.03	1635.00	2957.55	9
	2.440	3300.00	2.82	1638.33	.00	1638.42	2035.71	99.58	2135.29	.03	1635.00	2268.13	6
	2.440	2200.00	2.50	1637.92	.00	1637.99	1151.59	362.13	1513.72	.03	1635.00	1497.24	5
*	2.090	18000.00	6.78	1656.95	1656.95	1657.54	3177.79	1599.83	5373.85	.11	1654.00	3623.02	269

*	2.090	14000.00	6.28	1656.76	1656.76	1657.27	3039.53	1620.57	5368.91	.11	1654.00	3009.03	229
*	2.090	10000.00	5.67	1656.53	1656.53	1656.97	2877.69	1644.85	5363.13	.12	1654.00	2324.99	182
*	2.090	5300.00	4.83	1656.14	1656.14	1656.49	2607.41	1685.39	5353.48	.13	1654.00	1266.07	111
*	2.090	4400.00	5.98	1655.75	1655.75	1656.31	669.38	2815.93	4216.37	.11	1654.00	735.38	87
*	2.090	3300.00	5.64	1655.52	1655.52	1656.01	601.88	2850.27	4203.35	.12	1654.00	584.85	62
*	2.090	2200.00	5.17	1655.23	1655.23	1655.65	521.03	2891.41	4187.74	.13	1654.00	425.57	45

	SECND	Q	VCH	CWSEL	CRIWS	EG	TOPWID	SSTA	ENDST	TIME	ELMIN	AREA	
	1.770	18000.00	4.28	1674.87	.00	1675.07	4783.84	22.73	6036.80	.24	1670.00	6091.53	458
	1.770	16000.00	4.14	1674.74	.00	1674.93	4629.12	25.16	6016.13	.25	1670.00	5519.30	421
	1.770	14000.00	3.99	1674.61	.00	1674.78	4463.38	27.77	5993.99	.26	1670.00	4927.16	383
	1.770	10000.00	3.61	1674.32	.00	1674.47	4083.90	33.73	5943.29	.28	1670.00	3652.68	298
	1.770	5300.00	3.66	1673.70	.00	1673.85	1841.53	2950.42	5839.41	.29	1670.00	1844.77	171
	1.770	4400.00	3.01	1673.71	.00	1673.82	1850.25	2950.10	5840.96	.30	1670.00	1861.67	138
	1.770	3300.00	2.81	1673.50	.00	1673.59	1646.08	2957.60	5804.52	.32	1670.00	1486.94	108
	1.770	2200.00	2.57	1673.23	.00	1673.30	1389.23	2967.04	5758.68	.34	1670.00	1077.70	75
	1.550	18000.00	8.23	1687.25	.00	1687.76	3626.42	59.55	4928.83	.31	1684.00	4588.95	600
	1.550	16000.00	7.93	1687.16	.00	1687.64	3581.94	67.04	4927.43	.32	1684.00	4251.50	551
*	1.550	14000.00	7.52	1687.07	1687.07	1687.52	3540.37	74.04	4926.12	.33	1684.00	3939.81	501
*	1.550	10000.00	6.70	1686.86	1686.86	1687.24	3437.10	91.44	4922.86	.35	1684.00	3181.33	389
*	1.550	5300.00	5.32	1686.54	1686.54	1686.82	3284.72	117.10	4918.04	.37	1684.00	2103.15	224
*	1.550	4400.00	5.12	1686.44	1686.44	1686.72	3238.45	124.89	4916.58	.38	1684.00	1785.43	186
*	1.550	3300.00	4.56	1686.33	1686.33	1686.58	3188.70	133.27	4915.01	.41	1684.00	1448.85	147
*	1.550	2200.00	3.99	1686.18	1686.18	1686.40	3116.28	145.47	4912.72	.43	1684.00	968.21	102
	1.210	18000.00	7.40	1708.21	.00	1708.63	2470.00	.00	2470.00	.42	1704.00	4961.82	797
	1.210	16000.00	7.18	1708.04	.00	1708.44	2470.00	.00	2470.00	.43	1704.00	4528.24	732
	1.210	14000.00	7.05	1707.83	.00	1708.22	2112.20	5.90	2461.58	.44	1704.00	4061.84	666
	1.210	10000.00	6.73	1707.37	.00	1707.76	2036.21	22.02	2438.55	.46	1704.00	3106.52	579
	1.210	5300.00	6.37	1706.67	1706.66	1707.10	1920.11	46.64	2403.37	.48	1704.00	1714.66	303
*	1.210	4400.00	6.04	1706.53	1706.53	1706.95	1898.20	51.29	2396.73	.49	1704.00	1461.10	253
*	1.210	3300.00	5.45	1706.36	1706.36	1706.73	1869.32	57.42	2387.97	.51	1704.00	1131.35	200
	1.210	2200.00	5.72	1705.85	.00	1706.34	289.84	75.47	365.31	.53	1704.00	423.88	131
	1.030	18000.00	5.48	1717.50	.00	1717.93	2538.95	93.73	4006.32	.47	1716.00	3435.61	889
	1.030	16000.00	5.24	1717.41	.00	1717.81	2505.55	97.49	3994.52	.48	1716.00	3182.22	816
	1.030	14000.00	4.95	1717.30	.00	1717.66	2473.85	101.07	3983.32	.49	1716.00	2944.86	743
	1.030	10000.00	4.31	1717.09	.00	1717.36	2399.57	109.45	3957.07	.53	1716.00	2400.52	579
	1.030	5300.00	3.23	1716.78	.00	1716.93	2297.70	120.94	3921.07	.56	1716.00	1680.91	340
	1.030	4400.00	3.06	1716.68	.00	1716.82	2267.09	124.39	3910.25	.58	1716.00	1470.84	285
	1.030	3300.00	2.86	1716.55	.00	1716.68	2222.93	129.37	3894.65	.61	1716.00	1172.67	225
	1.030	2200.00	2.20	1716.47	.00	1716.55	2199.63	132.00	3886.41	.65	1716.00	1017.73	146
	.830	18000.00	7.90	1730.86	1730.74	1731.36	3503.29	45.51	3548.80	.52	1726.00	4298.88	983
	.830	16000.00	7.71	1730.74	1730.72	1731.22	3493.14	50.29	3543.43	.54	1726.00	3881.25	902
	.830	14000.00	7.50	1730.60	1730.55	1731.10	3480.95	56.07	3536.02	.55	1726.00	3322.22	810

.830	5300.00	6.54	1729.55	1729.41	1730.08	715.02	97.86	3489.91	.61	1726.00	965.05	372
.830	4400.00	6.10	1729.39	.00	1729.85	675.79	103.96	3483.05	.63	1726.00	859.11	314
.830	3300.00	5.37	1729.21	.00	1729.57	625.28	111.80	3474.22	.67	1726.00	731.50	248
.830	2200.00	5.67	1728.72	.00	1729.14	500.71	131.15	3452.45	.71	1726.00	459.14	164

SECNO	Q	VCH	CWSEL	CRIWS	EG	TOPWID	SSTA	ENDST	TIME	ELMIN	AREA	VOL
.520	18000.00	6.16	1751.32	.00	1751.76	2162.96	33.94	3341.51	.61	1748.00	3491.44	1129
.520	16000.00	5.93	1751.19	.00	1751.60	2121.78	40.69	3339.83	.63	1748.00	3202.20	1035
.520	14000.00	5.63	1751.06	.00	1751.43	2083.09	47.03	3338.24	.64	1748.00	2935.55	938
.520	10000.00	4.99	1750.75	.00	1751.05	1989.38	62.40	3334.40	.69	1748.00	2309.91	722
.520	5300.00	3.92	1750.30	.00	1750.51	1850.92	85.10	3328.73	.74	1748.00	1438.20	417
.520	4400.00	3.76	1750.16	.00	1750.37	1807.58	92.20	3326.95	.75	1748.00	1178.28	352
.520	3300.00	4.64	1749.82	.00	1750.12	768.78	736.39	3322.72	.77	1748.00	753.10	276
.520	2200.00	3.75	1749.65	.00	1749.84	699.37	742.62	3320.49	.83	1748.00	622.46	185
.290	18000.00	5.19	1766.61	.00	1766.98	2116.49	83.58	2889.91	.68	1764.00	3777.78	1230
.290	16000.00	5.03	1766.46	.00	1766.80	2074.87	92.42	2881.43	.70	1764.00	3469.00	1127
.290	14000.00	4.91	1766.29	.00	1766.62	2025.63	102.88	2871.41	.72	1764.00	3111.61	1022
.290	10000.00	4.57	1765.91	.00	1766.20	1889.92	131.47	2850.29	.76	1764.00	2387.94	787
.290	5300.00	4.08	1765.35	.00	1765.58	1501.04	212.42	2817.04	.82	1764.00	1407.54	457
.290	4400.00	3.77	1765.24	.00	1765.44	1434.71	226.23	2811.37	.85	1764.00	1262.75	386
.290	3300.00	3.28	1765.11	.00	1765.26	1347.29	244.43	2803.89	.88	1764.00	1081.92	302
.290	2200.00	3.31	1764.81	.00	1764.97	1146.08	286.32	2786.69	.94	1764.00	708.92	203
.180	18000.00	7.16	1774.45	1774.38	1775.18	2116.53	46.49	2163.03	.70	1771.00	3033.13	1275
.180	16000.00	6.87	1774.33	1774.23	1775.01	2094.93	50.31	2145.24	.72	1771.00	2765.54	1164
.180	14000.00	6.49	1774.20	1774.09	1774.81	2074.64	53.89	2128.52	.74	1771.00	2516.65	1059
.180	10000.00	5.68	1773.91	.00	1774.38	1466.16	71.37	1544.79	.79	1771.00	1957.49	816
.180	5300.00	4.39	1773.44	.00	1773.73	1351.91	125.84	1519.82	.86	1771.00	1317.81	475
.180	4400.00	4.21	1773.31	.00	1773.58	1317.59	142.21	1512.32	.89	1771.00	1135.82	402
.180	3300.00	3.99	1773.13	.00	1773.36	1270.04	164.88	1501.93	.92	1771.00	891.33	315
.180	2200.00	3.10	1773.02	.00	1773.16	1243.80	177.39	1496.20	.99	1771.00	760.30	213
.100	18000.00	8.50	1780.79	.00	1781.14	2200.00	.00	2200.00	.73	1776.00	4460.98	1311
.100	16000.00	8.17	1780.64	.00	1780.96	2200.00	.00	2200.00	.75	1776.00	4125.55	1202
.100	14000.00	7.89	1780.46	.00	1780.76	2200.00	.00	2200.00	.77	1776.00	3724.87	1089
.100	10000.00	7.13	1780.07	.00	1780.33	2200.00	.00	2200.00	.82	1776.00	2871.13	839
.100	5300.00	6.30	1779.36	.00	1779.57	1386.27	31.76	2125.90	.89	1776.00	1707.68	489
.100	4400.00	5.85	1779.23	.00	1779.41	1304.93	38.49	2110.19	.92	1776.00	1526.50	415
.100	3300.00	5.19	1779.04	.00	1779.19	1191.79	47.85	2088.35	.96	1776.00	1292.74	325
.100	2200.00	5.23	1778.63	.00	1778.79	943.40	68.41	2040.30	1.03	1776.00	853.81	220
* .000	18000.00	11.37	1791.97	1791.97	1793.97	399.99	.50	400.50	.74	1788.00	1585.40	1348
* .000	16000.00	10.93	1791.67	1791.67	1793.52	399.92	.54	400.46	.76	1788.00	1465.88	1236

.000	5300.00	6.87	1789.93	.00	1790.67	399.48	.76	400.24	.92	1788.00	772.26	504
.000	4400.00	6.59	1789.68	.00	1790.36	399.42	.79	400.21	.95	1788.00	667.67	428
.000	3300.00	6.32	1789.31	1789.28	1789.93	399.33	.84	400.16	.99	1788.00	522.25	336
.000	2200.00	4.83	1789.14	.00	1789.50	399.29	.86	400.14	1.06	1788.00	455.66	228

SUMMARY OF ERRORS AND SPECIAL NOTES

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CAUTION  SECNO=    2.450  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.450  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.450  PROFILE= 3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.450  PROFILE= 4  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.450  PROFILE= 5  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.450  PROFILE= 6  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.450  PROFILE= 7  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.450  PROFILE= 8  CRITICAL DEPTH ASSUMED

CAUTION  SECNO=    2.090  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.090  PROFILE= 1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    2.090  PROFILE= 1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    2.090  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.090  PROFILE= 2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    2.090  PROFILE= 2  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    2.090  PROFILE= 3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.090  PROFILE= 3  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    2.090  PROFILE= 3  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    2.090  PROFILE= 4  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.090  PROFILE= 4  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    2.090  PROFILE= 4  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    2.090  PROFILE= 5  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.090  PROFILE= 5  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    2.090  PROFILE= 5  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    2.090  PROFILE= 6  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.090  PROFILE= 6  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    2.090  PROFILE= 6  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    2.090  PROFILE= 7  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.090  PROFILE= 7  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    2.090  PROFILE= 7  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    2.090  PROFILE= 8  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.090  PROFILE= 8  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    2.090  PROFILE= 8  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION  SECNO=    1.550  PROFILE= 3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    1.550  PROFILE= 3  MINIMUM SPECIFIC ENERGY
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CAUTION  SECNO=    1.550  PROFILE= 4  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    1.550  PROFILE= 4  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    1.550  PROFILE= 5  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    1.550  PROFILE= 5  MINIMUM SPECIFIC ENERGY
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CAUTION  SECNO=    1.210  PROFILE= 6  CRITICAL DEPTH ASSUMED
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CAUTION  SECNO=    1.210  PROFILE= 7  MINIMUM SPECIFIC ENERGY
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CAUTION  SECNO=     .000  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     .000  PROFILE= 1  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=     .000  PROFILE= 2  CRITICAL DEPTH ASSUMED
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CAUTION  SECNO=     .000  PROFILE= 3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     .000  PROFILE= 3  MINIMUM SPECIFIC ENERGY
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THIS RUN EXECUTED 02/10/86 15:21:25

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*************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
  IBM-PC-XT VERSION
*************************************************
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THIS RUN EXECUTED 02/10/86 15:37:43

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*********************************************
 HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
 ERROR CORR -  01,02,03,04,05,06
 MODIFICATION -  50,51,52,53,54,55,56
 IBM-PC-XT VERSION
*********************************************
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#4

```
FR
T1     APACHE JUNCTION FRS      PHOENIX SCS
T2     DOWNSTREAM INUNDATION FOR BREACH AT IDAHO ROAD  HIGH
T3     FBH AND PSH-- FLOWS FROM 18000 TO 2200 CFS, ~~LOW~~ N VALUES

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

      0.       2.       0.       0. -1.000000      .00       .0       0.  1640.000     .000

J2  NPROF    IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IBW      CHNIM    ITRACE

     .000     .000     .000     .000     .000    2.000     .000     .000     .000     .000

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    38.000   43.000   26.000    1.000    2.000    3.000    4.000   53.000   54.000    6.000

    42.000   25.000     .000     .000     .000     .000     .000     .000     .000     .000

NC      .080     .080     .040     .100     .300     .000     .000     .000     .000     .000
QT     8.000 18000.000 16000.000 14000.000 10000.000  5300.000 4400.000 3300.000 2200.000     .000
X1     2.450     9.000   870.000 1140.000     .000     .000     .000     .000     .000     .000
GR  1640.000     .000  1638.000  120.000  1638.000   340.000 1636.000   870.000 1635.000  980.000
GR  1636.000  1140.000  1638.000 1530.000  1638.000  2040.000 1640.000  2600.000     .000     .000

X1     2.440     .000     .000     .000   200.000   200.000   200.000     .000     .000     .000
```

NH	4060.000	.040	4230.000	.080	5450.000	.000	.000	.000	.000	.000
X1	2.090	17.000	2780.000	4230.000	1850.000	1850.000	1850.000	.000	.000	.000
GR	1660.000	.000	1658.000	170.000	1658.000	1490.000	1656.000	1700.000	1656.000	1930.000
GR	1658.000	2190.000	1656.000	2780.000	1654.000	3070.000	1654.000	3240.000	1656.000	3350.000
GR	1658.000	3600.000	1656.000	3640.000	1656.000	4060.000	1654.000	4120.000	1656.000	4230.000
GR	1656.000	5350.000	1660.000	5450.000	.000	.000	.000	.000	.000	.000

NH	5.000	.080	2940.000	.040	4450.000	.080	5430.000	.040	5550.000	.080
NH	6230.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
X1	1.770	20.000	2940.000	4450.000	1690.000	1690.000	1690.000	.000	.000	.000
GR	1676.000	.000	1674.000	40.000	1674.000	900.000	1676.000	980.000	1674.000	1160.000
GR	1676.000	2080.000	1674.000	2580.000	1674.000	2940.000	1670.000	3080.000	1672.000	3100.000
GR	1674.000	3300.000	1674.000	3640.000	1672.000	3850.000	1672.000	3860.000	1676.000	4450.000
GR	1672.000	4830.000	1674.000	5120.000	1672.000	5430.000	1672.000	5550.000	1676.000	6230.000
NH	3.000	.080	4530.000	.040	4880.000	.080	4940.000	.000	.000	.000
X1	1.550	13.000	4530.000	4940.000	1160.000	1160.000	1160.000	.000	.000	.000
GR	1688.000	.000	1686.000	160.000	1686.000	700.000	1688.000	810.000	1688.000	1410.000
GR	1686.000	1470.000	1688.000	1940.000	1688.000	2300.000	1686.000	2420.000	1686.000	4530.000
GR	1684.000	4850.000	1684.000	4880.000	1688.000	4940.000	.000	.000	.000	.000
NH	3.000	.080	140.000	.040	430.000	.080	2470.000	.000	.000	.000
X1	1.210	8.000	140.000	430.000	1800.000	1800.000	1800.000	.000	.000	.000
GR	1708.000	.000	1704.000	140.000	1704.000	310.000	1708.000	430.000	1708.000	760.000
GR	1706.000	860.000	1706.000	2370.000	1708.000	2470.000	.000	.000	.000	.000
NH	5.000	.040	400.000	.080	620.000	.040	2400.000	.080	3450.000	.040
NH	4300.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
X1	1.030	12.000	670.000	2400.000	950.000	950.000	950.000	.000	.000	.000
GR	1720.000	.000	1716.000	150.000	1716.000	230.000	1720.000	400.000	1718.000	620.000
GR	1716.000	670.000	1716.000	2400.000	1718.000	2470.000	1718.000	3450.000	1716.000	3600.000
GR	1716.000	3830.000	1720.000	4300.000	.000	.000	.000	.000	.000	.000
NH	4.000	.080	500.000	.040	740.000	.080	3180.000	.040	3600.000	.000
X1	.830	10.000	3180.000	3600.000	1060.000	1060.000	1060.000	.000	.000	.000
GR	1732.000	.000	1728.000	160.000	1730.000	280.000	1730.000	580.000	1728.000	590.000
GR	1728.000	740.000	1730.000	800.000	1730.000	3180.000	1726.000	3330.000	1732.000	3600.000
NH	6.000	.080	730.000	.040	900.000	.080	1160.000	.040	1640.000	.080
NH	2620.000	.040	3350.000	.000	.000	.000	.000	.000	.000	.000
X1	.520	18.000	2620.000	3350.000	1640.000	1640.000	1640.000	.000	.000	.000
GR	1752.000	.000	1750.000	100.000	1750.000	310.000	1752.000	400.000	1750.000	470.000
GR	1750.000	730.000	1748.000	800.000	1750.000	900.000	1750.000	1160.000	1748.000	1300.000
GR	1752.000	1640.000	1752.000	2620.000	1748.000	2930.000	1748.000	2990.000	1750.000	3060.000
GR	1750.000	3250.000	1748.000	3300.000	1752.000	3350.000	.000	.000	.000	.000
NH	6.000	.080	400.000	.040	460.000	.080	920.000	.040	950.000	.080

NH	1200.000	.040	1500.000	.080	2620.000	.040	2740.000	.080	2970.000	.000
X1	.290	15.000	650.000	1860.000	1200.000	1200.000	1200.000	.000	.000	.000
GR	1768.000	.000	1766.000	120.000	1764.000	400.000	1764.000	460.000	1766.000	650.000
GR	1764.000	820.000	1764.000	950.000	1766.000	1200.000	1764.000	1210.000	1764.000	1500.000
GR	1768.000	1860.000	1768.000	2320.000	1764.000	2620.000	1764.000	2740.000	1768.000	2970.000

NH	3.000	.080	300.000	.040	1440.000	.080	2900.000	.000	.000	.000
X1	.180	14.000	300.000	1440.000	580.000	580.000	580.000	.000	.000	.000
GR	1776.000	.000	1774.000	60.000	1772.000	300.000	1771.000	350.000	1773.000	450.000
GR	1772.500	500.000	1772.500	1250.000	1774.000	1350.000	1772.000	1370.000	1772.000	1440.000
GR	1774.000	1550.000	1774.000	2100.000	1776.000	2380.000	1776.000	2900.000	.000	.000

NH	3.000	.080	940.000	.040	1050.000	.080	2200.000	.000	.000	.000
X1	.100	12.000	940.000	1050.000	420.000	420.000	420.000	.000	.000	.000
GR	1780.000	.000	1776.000	200.000	1778.000	240.000	1780.000	660.000	1780.000	940.000
GR	1776.000	980.000	1780.000	1050.000	1780.000	1200.000	1778.000	1600.000	1777.000	1850.000
GR	1777.000	1850.000	1780.000	2200.000	.000	.000	.000	.000	.000	.000

MC	.060	.060	.060	.100	.300	.000	.000	.000	.000	.000
X1	.000	4.000	1.000	400.000	530.000	530.000	530.000	.000	.000	.000
GR	1796.000	.000	1788.000	1.000	1788.000	400.000	1796.000	401.000	.000	.000
EJ	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

*PROF 1

THIS RUN EXECUTED 02/10/86 15:00:38

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**********************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
  IBM-PC-XT VERSION
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

FBH AND PSH-- FLOWS FROM

SUMMARY PRINTOUT

	SECNO	Q	VCH	CWSEL	CRIWS	EG	TOPWID	SSTA	ENDST	TIME	ELMIN	AREA	VOL
*	2.450	18000.00	9.73	1639.09	1639.09	1639.93	2291.17	54.50	2345.67	.00	1635.00	3893.61	
*	2.450	16000.00	9.17	1638.98	1638.98	1639.74	2254.77	60.92	2315.69	.00	1635.00	3650.28	
*	2.450	14000.00	8.94	1638.80	1638.80	1639.55	2190.56	72.25	2262.82	.00	1635.00	3230.54	
*	2.450	10000.00	8.00	1638.44	1638.44	1639.09	2068.38	93.82	2162.19	.00	1635.00	2465.27	
*	2.450	5300.00	7.40	1637.59	1637.59	1638.27	1001.10	448.82	1449.92	.00	1635.00	1145.12	
*	2.450	4400.00	7.05	1637.39	1637.39	1638.03	909.35	501.68	1411.03	.00	1635.00	954.59	
*	2.450	3300.00	6.52	1637.11	1637.11	1637.69	782.73	574.62	1357.35	.00	1635.00	721.70	
*	2.450	2200.00	5.86	1636.77	1636.77	1637.27	626.40	664.68	1291.08	.00	1635.00	482.26	
	2.440	18000.00	3.68	1641.65	.00	1641.74	2600.00	.00	2600.00	.03	1635.00	10412.36	33
	2.440	16000.00	3.51	1641.39	.00	1641.48	2600.00	.00	2600.00	.03	1635.00	9736.34	31
	2.440	14000.00	3.31	1641.14	.00	1641.21	2600.00	.00	2600.00	.03	1635.00	9072.37	28
	2.440	10000.00	2.89	1640.53	.00	1640.59	2600.00	.00	2600.00	.03	1635.00	7488.63	23
	2.440	5300.00	2.26	1639.56	.00	1639.61	2455.03	25.58	2480.61	.04	1635.00	5037.29	14
	2.440	4400.00	2.13	1639.30	.00	1639.34	2363.68	41.70	2405.38	.04	1635.00	4389.95	12
	2.440	3300.00	1.95	1638.93	.00	1638.97	2235.76	64.28	2300.04	.04	1635.00	3524.75	10
	2.440	2200.00	1.72	1638.46	.00	1638.49	2079.79	91.80	2171.59	.04	1635.00	2534.89	7
	2.090	18000.00	5.76	1657.16	.00	1657.57	3320.66	1578.40	5378.95	.13	1654.00	4286.19	345
	2.090	16000.00	5.00	1656.96	.00	1657.41	3182.57	1599.11	5374.02	.13	1654.00	3644.76	315

*	2.090	14000.00	5.96	1656.81	1656.81	1657.27	3078.92	1614.66	5370.32	.13	1654.00	3181.18	208
*	2.090	10000.00	5.40	1656.57	1656.57	1656.97	2909.48	1640.08	5364.27	.14	1654.00	2456.39	234
*	2.090	5300.00	4.83	1656.14	1656.14	1656.49	2607.41	1685.39	5353.48	.15	1654.00	1266.07	148
*	2.090	4400.00	6.00	1655.75	1655.75	1656.31	668.68	2816.29	4216.24	.13	1654.00	733.74	121
*	2.090	3300.00	5.65	1655.51	1655.51	1656.01	601.64	2850.39	4203.30	.13	1654.00	584.33	97
*	2.090	2200.00	5.17	1655.23	1655.23	1655.65	521.03	2891.41	4187.74	.14	1654.00	425.57	70

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	SECNO	Q	VCH	CWSEL	CRIWS	EG	TOPWID	SSTA	ENDST	TIME	ELMIN	AREA	
	1.770	18000.00	2.35	1675.94	.00	1676.00	6153.42	1.20	6219.77	.40	1670.00	11977.38	660
	1.770	16000.00	2.23	1675.81	.00	1675.85	5981.15	3.91	6196.76	.41	1670.00	11156.01	602
	1.770	14000.00	2.12	1675.63	1674.08	1675.68	5762.60	7.35	6167.56	.42	1670.00	10147.50	547
	1.770	10000.00	1.92	1675.21	1673.71	1675.25	5217.22	15.92	6094.70	.45	1670.00	7794.59	433
	1.770	5300.00	1.55	1674.57	1673.22	1674.60	4416.78	28.50	5987.76	.52	1670.00	4764.56	265
	1.770	4400.00	1.38	1674.49	1673.15	1674.51	4300.44	30.33	5972.22	.54	1670.00	4366.05	220
	1.770	3300.00	1.24	1674.26	1672.94	1674.28	4022.08	34.70	5935.03	.58	1670.00	3455.77	175
	1.770	2200.00	1.28	1673.88	1672.79	1673.90	2019.31	2943.88	5871.14	.59	1670.00	2205.07	121
	1.550	18000.00	6.14	1687.65	.00	1687.91	3812.20	28.26	4934.70	.49	1684.00	6043.62	900
	1.550	16000.00	6.26	1687.46	.00	1687.74	3720.93	43.63	4931.82	.49	1684.00	5319.92	821
	1.550	14000.00	6.20	1687.30	.00	1687.58	3645.26	56.38	4929.43	.50	1684.00	4733.19	745
	1.550	10000.00	5.69	1687.01	.00	1687.27	3511.49	78.91	4925.21	.54	1684.00	3725.46	586
	1.550	5300.00	5.06	1686.57	.00	1686.82	3301.54	114.27	4918.57	.61	1684.00	2219.73	358
*	1.550	4400.00	5.11	1686.44	1686.44	1686.72	3238.86	124.82	4916.60	.62	1684.00	1788.20	302
*	1.550	3300.00	4.63	1686.33	1686.33	1686.58	3184.76	133.94	4914.89	.67	1684.00	1422.40	240
	1.550	2200.00	5.55	1685.97	.00	1686.45	373.70	4535.76	4909.46	.64	1684.00	396.43	155
	1.210	18000.00	4.19	1709.72	.00	1709.84	2470.00	.00	2470.00	.69	1704.00	8665.61	1204
	1.210	16000.00	3.97	1709.52	.00	1709.63	2470.00	.00	2470.00	.70	1704.00	8162.39	1100
	1.210	14000.00	3.77	1709.27	.00	1709.37	2470.00	.00	2470.00	.73	1704.00	7547.00	999
	1.210	10000.00	3.39	1708.66	.00	1708.74	2470.00	.00	2470.00	.79	1704.00	6037.92	788
	1.210	5300.00	2.80	1707.75	.00	1707.81	2098.45	8.81	2457.41	.89	1704.00	3886.31	484
	1.210	4400.00	2.65	1707.54	1706.53	1707.59	2063.95	16.13	2446.95	.92	1704.00	3451.12	410
	1.210	3300.00	2.52	1707.19	1706.36	1707.24	2007.31	28.15	2429.79	.96	1704.00	2752.37	327
	1.210	2200.00	2.15	1706.90	1705.60	1706.94	1957.36	38.74	2414.65	.97	1704.00	2152.25	208
	1.030	18000.00	3.69	1718.16	.00	1718.34	3732.18	69.25	4083.03	.76	1716.00	5314.06	1357
	1.030	16000.00	3.63	1717.96	.00	1718.15	2694.81	76.15	4061.40	.78	1716.00	4662.28	1240
	1.030	14000.00	3.53	1717.78	.00	1717.96	2633.97	83.01	4039.90	.80	1716.00	4174.74	1127
	1.030	10000.00	3.21	1717.43	.00	1717.58	2514.76	96.46	3997.77	.87	1716.00	3251.77	889
	1.030	5300.00	2.70	1716.92	.00	1717.02	2346.65	115.42	3938.36	.99	1716.00	2022.77	549
	1.030	4400.00	2.62	1716.80	.00	1716.90	2303.95	120.23	3923.27	1.02	1716.00	1724.16	467
	1.030	3300.00	2.36	1716.66	.00	1716.75	2260.96	125.08	3908.08	1.08	1716.00	1429.10	372
	1.030	2200.00	2.42	1716.43	.00	1716.52	2184.98	133.65	3881.23	1.08	1716.00	921.12	242
	.830	18000.00	4.37	1731.80	.00	1731.94	3583.28	7.87	3591.15	.87	1726.00	7633.68	1514
	.830	16000.00	4.16	1731.69	.00	1731.81	3572.52	12.93	3585.45	.89	1726.00	7180.77	1384

.830	10000.00	3.59	1731.15	.00	1731.25	3527.27	34.22	3561.50	1.00	1726.00	5290.98	993
.830	5300.00	2.99	1730.56	.00	1730.64	3477.07	57.85	3534.92	1.13	1726.00	3222.26	612
.830	4400.00	2.79	1730.42	.00	1730.49	3465.53	63.28	3528.81	1.17	1726.00	2751.06	521
.830	3300.00	2.62	1730.17	.00	1730.24	3444.57	73.14	3517.71	1.22	1726.00	1899.10	413
.830	2200.00	2.16	1729.89	.00	1729.95	799.26	84.78	3504.63	1.24	1726.00	1212.75	268

SECNO	Q	VCH	CWSEL	CRIWS	EG	TOPWID	SSTA	ENDST	TIME	ELMIN	AREA	VOL
.520	18000.00	3.98	1752.20	.00	1752.37	3350.00	.00	3350.00	1.01	1748.00	5680.62	1765
.520	16000.00	3.89	1751.99	.00	1752.16	2364.86	.84	3349.79	1.03	1748.00	4990.12	1613
.520	14000.00	3.81	1751.74	.00	1751.91	2293.08	12.61	3346.85	1.06	1748.00	4441.99	1467
.520	10000.00	3.53	1751.27	.00	1751.41	2146.80	36.59	3340.85	1.15	1748.00	3377.28	1156
.520	5300.00	3.07	1750.56	.00	1750.68	1932.53	71.72	3332.07	1.30	1748.00	1944.38	710
.520	4400.00	3.01	1750.38	.00	1750.50	1876.12	80.96	3329.76	1.33	1748.00	1592.20	603
.520	3300.00	2.75	1750.18	.00	1750.29	1814.10	91.13	3327.22	1.39	1748.00	1216.97	471
.520	2200.00	3.79	1749.63	.00	1749.83	695.99	742.92	3320.38	1.37	1748.00	616.41	302
.290	18000.00	3.06	1767.76	.00	1767.88	2441.65	14.52	2956.09	1.13	1764.00	6400.99	1931
.290	16000.00	2.90	1767.59	.00	1767.70	2394.27	24.58	2946.44	1.16	1764.00	5995.44	1764
.290	14000.00	2.75	1767.39	.00	1767.49	2338.85	36.35	2935.16	1.19	1764.00	5531.20	1604
.290	10000.00	2.45	1766.91	.00	1766.99	2203.08	65.19	2907.53	1.30	1764.00	4439.79	1264
.290	5300.00	1.97	1766.20	.00	1766.25	2001.97	107.90	2866.60	1.48	1764.00	2942.97	777
.290	4400.00	1.82	1766.05	.00	1766.10	1958.35	117.17	2857.72	1.53	1764.00	2637.20	661
.290	3300.00	1.69	1765.78	.00	1765.82	1796.58	150.90	2842.31	1.60	1764.00	2132.11	517
.290	2200.00	1.41	1765.53	.00	1765.55	1627.30	186.14	2827.84	1.62	1764.00	1701.20	334
.180	18000.00	4.54	1775.39	.00	1775.67	2276.51	18.26	2294.77	1.17	1771.00	5100.14	2008
.180	16000.00	4.42	1775.17	.00	1775.44	2239.43	24.81	2264.23	1.20	1771.00	4607.59	1835
.180	14000.00	4.28	1774.95	.00	1775.20	2201.57	31.49	2233.06	1.24	1771.00	4113.18	1669
.180	10000.00	3.90	1774.48	.00	1774.70	2122.24	45.49	2167.73	1.34	1771.00	3104.27	1314
.180	5300.00	3.30	1773.78	.00	1773.94	1434.79	86.32	1537.94	1.53	1771.00	1776.71	808
.180	4400.00	3.19	1773.59	.00	1773.74	1388.13	108.57	1527.74	1.58	1771.00	1514.99	689
.180	3300.00	2.94	1773.38	.00	1773.51	1334.12	134.33	1515.93	1.66	1771.00	1222.89	540
.180	2200.00	2.93	1773.05	.00	1773.18	1252.96	173.03	1498.20	1.68	1771.00	805.71	351
.100	18000.00	5.64	1781.80	.00	1781.95	2200.00	.00	2200.00	1.21	1776.00	6673.06	2065
.100	16000.00	5.35	1781.62	.00	1781.75	2200.00	.00	2200.00	1.24	1776.00	6266.20	1087
.100	14000.00	5.04	1781.42	.00	1781.54	2200.00	.00	2200.00	1.28	1776.00	5827.65	1717
.100	10000.00	4.39	1780.95	.00	1781.04	2200.00	.00	2200.00	1.39	1776.00	4802.31	1352
.100	5300.00	3.38	1780.26	.00	1780.32	2200.00	.00	2200.00	1.60	1776.00	3261.61	833
.100	4400.00	3.10	1780.09	.00	1780.14	2200.00	.00	2200.00	1.65	1776.00	2908.19	710
.100	3300.00	2.82	1779.81	.00	1779.85	1652.15	9.75	2177.24	1.74	1776.00	2376.22	557
.100	2200.00	2.35	1779.50	.00	1779.53	1468.36	24.96	2141.75	1.77	1776.00	1901.60	364
.000	18000.00	7.89	1793.71	.00	1794.68	400.43	.29	400.71	1.23	1788.00	2284.16	2119
.000	16000.00	7.55	1793.32	.00	1794.21	400.33	.34	400.66	1.26	1788.00	2123.51	1938
.000	14000.00	7.17	1792.90	.00	1793.69	400.22	.39	400.61	1.30	1788.00	1955.23	1714

	.000	10000.00	6.29	1791.98	1790.68	1792.60	400.00	.50	400.50	1.42	1788.00	1590.77	1391
	.000	5300.00	5.03	1790.64	.00	1791.03	399.66	.67	400.33	1.63	1788.00	1054.48	859
	.000	4400.00	4.80	1790.30	.00	1790.66	399.57	.71	400.29	1.68	1788.00	916.77	733
	.000	3300.00	4.41	1789.88	.00	1790.18	399.47	.77	400.23	1.77	1788.00	748.37	576
*	.000	2200.00	4.50	1789.22	.00	1789.54	399.31	.85	400.15	1.80	1788.00	488.81	378

SUMMARY OF ERRORS AND SPECIAL NOTES

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CAUTION  SECNO=    2.450  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.450  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.450  PROFILE= 3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.450  PROFILE= 4  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.450  PROFILE= 5  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.450  PROFILE= 6  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.450  PROFILE= 7  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.450  PROFILE= 8  CRITICAL DEPTH ASSUMED

CAUTION  SECNO=    2.090  PROFILE= 3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.090  PROFILE= 3  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    2.090  PROFILE= 4  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.090  PROFILE= 4  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    2.090  PROFILE= 5  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.090  PROFILE= 5  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    2.090  PROFILE= 5  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    2.090  PROFILE= 6  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.090  PROFILE= 6  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    2.090  PROFILE= 6  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    2.090  PROFILE= 7  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.090  PROFILE= 7  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    2.090  PROFILE= 7  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    2.090  PROFILE= 8  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.090  PROFILE= 8  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    2.090  PROFILE= 8  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION  SECNO=    1.550  PROFILE= 6  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    1.550  PROFILE= 6  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    1.550  PROFILE= 7  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    1.550  PROFILE= 7  MINIMUM SPECIFIC ENERGY

CAUTION  SECNO=     .000  PROFILE= 8  SLOPE TOO STEEP
```

THIS RUN EXECUTED 02/10/86 16:02:39

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*************************************************
 NEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
 ERROR CORR -  01,02,03,04,05,06
 MODIFICATION -  50,51,52,53,54,55,56
 IBM-PC-XT VERSION
*************************************************
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THIS RUN EXECUTED 02/11/86 16:08:20

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*********************************************
 HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
 ERROR CORR -  01,02,03,04,05,06
 MODIFICATION -  50,51,52,53,54,55,56
 IBM-PC-XT VERSION
*********************************************
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#5

T1 APACHE JUNCTION F.R.S.
T2 DOWNSTREAM INUNDATION -
T3 PSH+FBH FOR BREACH AT S.E. CORNER OF F.R.S. - LOW N'S - subcritical

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	2.	0.	0.	-1.000000	.00	.0	0.	1700.000	.000

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	.000	1.000	.000	1.000	.000	.000	.000	.000	.000	.000

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

38.000	43.000	26.000	1.000	2.000	3.000	4.000	53.000	54.000	6.000
42.000	25.000	7.000	.000	.000	.000	.000	.000	.000	.000

NC	.080	.080	.040	.100	.300	.000	.000	.000	.000	.000
QT	8.000	18000.000	16000.000	14000.000	10000.000	5300.000	4400.000	3300.000	2200.000	.000
X1	1.640	18.000	900.000	1130.000	.000	.000	.000	.000	.000	.000
GR	1700.000	.000	1700.000	490.000	1698.000	570.000	1698.000	900.000	1696.000	980.000
GR	1694.000	1100.000	1696.000	1130.000	1700.000	1200.000	1698.000	1250.000	1696.000	1310.000
GR	1696.000	1440.000	1698.000	1470.000	1698.000	1510.000	1696.000	1930.000	1696.000	1990.000
GR	1698.000	2230.000	1698.000	2350.000	1700.000	2600.000	.000	.000	.000	.000
X1	1.638	.000	.000	.000	200.000	200.000	200.000	.000	.000	.000

X1	1.468	7.000	1300.000	1550.000	900.000	900.000	900.000	.000	.000	.000
GR	1706.000	.000	1706.000	1210.000	1704.000	1300.000	1702.000	1380.000	1704.000	1550.000
GR	1706.000	1860.000	1706.000	2950.000	.000	.000	.000	.000	.000	.000
NH	5.000	.080	800.000	.040	1040.000	.080	1300.000	.040	1500.000	.080
NH	3000.000	.000	.000	.000	.000	.080	.000	.000	.000	.000
X1	1.231	14.000	800.000	1500.000	1250.000	1250.000	1250.000	.000	.000	.000
GR	1720.000	.000	1720.000	800.000	1718.000	830.000	1716.000	850.000	1714.000	900.000
GR	1712.000	920.000	1714.000	970.000	1714.000	1010.000	1716.000	1040.000	1716.000	1170.000
GR	1718.000	1300.000	1714.000	1400.000	1720.000	1500.000	1720.000	3000.000	.000	.000

NH	5.000	.080	420.000	.040	600.000	.080	1420.000	.040	1950.000	.080
NH	3100.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
X1	.900	23.000	420.000	1650.000	1750.000	1750.000	1750.000	.000	.000	.000
GR	1740.000	.000	1738.000	40.000	1736.000	190.000	1738.000	420.000	1736.000	470.000
GR	1734.000	500.000	1736.000	530.000	1738.000	550.000	1740.000	600.000	1740.000	930.000
GR	1738.000	950.000	1738.000	1000.000	1740.000	1050.000	1738.000	1260.000	1736.000	1320.000
GR	1738.000	1420.000	1736.000	1600.000	1736.000	1650.000	1740.000	1950.000	1740.000	2150.000
GR	1736.000	2470.000	1736.000	2950.000	1740.000	3100.000	.000	.000	.000	.000
NH	5.000	.080	100.000	.040	570.000	.080	1850.000	.040	2090.000	.080
NH	2350.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
X1	.559	16.000	350.000	2090.000	1800.000	1800.000	1800.000	.000	.000	.000
GR	1760.000	.000	1756.000	100.000	1756.000	350.000	1754.000	400.000	1760.000	570.000
GR	1760.000	700.000	1756.000	750.000	1756.000	800.000	1760.000	850.000	1760.000	1070.000
GR	1756.000	1130.000	1760.000	1400.000	1760.000	1850.000	1756.000	1980.000	1756.000	2090.000
GR	1760.000	2350.000	.000	.000	.000	.000	.000	.000	.000	.000
NH	5.000	.080	220.000	.040	300.000	.080	360.000	.040	1500.000	.080
NH	1650.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
X1	.303	13.000	220.000	1380.000	1350.000	1350.000	1350.000	.000	.000	.000
GR	1776.000	.000	1776.000	140.000	1772.000	220.000	1772.000	250.000	1776.000	300.000
GR	1776.000	360.000	1772.000	520.000	1772.000	640.000	1770.000	750.000	1772.000	980.000
GR	1772.000	1380.000	1776.000	1500.000	1776.000	1650.000	.000	.000	.000	.000
NH	3.000	.080	140.000	.040	1010.000	.080	1200.000	.000	.000	.000
X1	.123	7.000	140.000	1010.000	950.000	950.000	950.000	.000	.000	.000
GR	1784.000	.000	1782.000	140.000	1780.000	380.000	1780.000	470.000	1782.000	760.000
GR	1782.000	1010.000	1784.000	1200.000	.000	.000	.000	.000	.000	.000
NC	.060	.060	.060	.100	.300	.000	.000	.000	.000	.000
X1	.000	4.000	1.000	400.000	650.000	650.000	650.000	.000	.000	.000
GR	1796.000	.000	1788.000	1.000	1788.000	400.000	1796.000	401.000	.000	.000
EJ	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

```
  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


*PROF 1


CCHV=    .100 CEHV=    .300
*SECNO 1.640

3265 DIVIDED FLOW

3720 CRITICAL DEPTH ASSUMED
    1.64     5.05  1699.05  1699.05  1700.00  1699.89      .84      .00      .00  1698.00
   18000.     850.     7916.     9234.      368.      771.     2446.       0.       0.  1696.00
     .06     2.31     10.27     3.77     .080     .040     .080     .000  1694.00   528.09
  .015234       0.       0.       0.        0        9        0      .00  1912.40  2480.97


*SECNO 1.638
3280 CROSS SECTION      1.64 EXTENDED      .73 FEET


3301 HV CHANGED MORE THAN HVINS

    1.64     6.72  1700.72      .00      .00  1700.90      .18      .95      .07  1698.00
   18000.    1992.     6039.     9969.    1393.     1157.     4836.      25.      10.  1696.00
     .02     1.43     5.22     2.06     .080     .040     .080     .000  1694.00      .00
  .002293     200.      200.      200.        3        0        0      .00  2600.00  2600.00


*SECNO 1.460
3280 CROSS SECTION      1.47 EXTENDED      1.28 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
    1.47     5.28  1707.28  1707.28      .00  1707.96      .68     3.53      .15  1704.00
   18000.     2535.     9487.     4973.     1252.     1076.     2185.      152.       68.  1704.00
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```
     .06     2.09     8.87     2.30     .080     .040     .080     .000 1702.00      .00
 .008195     900.     900.     900.       20       14        0      .00 2950.00  2950.00


1490 NH CARD USED
*SECNO 1.231
    1.23     7.14  1719.14      .00      .00  1720.14     1.00    12.08      .10  1720.00
   18000.       0.   18000.       0.       0.    2239.       0.     255.     120.   1720.00
     .11      .00     8.04      .00     .080     .044     .080     .000 1712.00   812.91
 .011571    1250.    1250.    1250.        4        0        0      .00  672.76  1485.66
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  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTH      ELMIN     SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST


1490 NH CARD USED
*SECNO  .900

3265 DIVIDED FLOW

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3720 CRITICAL DEPTH ASSUMED
     .90     4.20  1738.20  1738.20      .00  1738.96      .76    34.05      .02  1738.00
   18000.    1895.     6989.    9116.     456.     807.    1521.     356.     171.   1736.00
     .18     4.16     8.66     5.99     .080     .041     .074     .000 1734.00     36.02
 .039345    1750.    1750.    1750.       20       14        0      .00 1890.16  3032.47


1490 NH CARD USED
*SECNO  .559

3265 DIVIDED FLOW

     .56     5.80  1759.80      .00      .00  1760.19      .38    21.19      .04  1756.00
   18000.    6789.    10215.     996.    1129.    2332.     468.     495.     241.   1756.00
     .28     6.01     4.38     2.13     .042     .048     .080     .000 1754.00     5.10
 .005575    1800.    1800.    1800.        9        0        0      .00 1497.34  2336.75


1490 NH CARD USED
*SECNO  .303

3265 DIVIDED FLOW


3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
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```
  18000.     86.   17656.     258.      36.    2114.      53.     590.     281.   1772.00
     .32    2.41     8.35     4.83    .080     .040     .040     .000  1770.00    182.23
 .018235   1350.    1350.    1350.       6       19        0      .00  1083.56   1436.65


1490 NH CARD USED
*SECNO  .123
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```
  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IOC      ICONT    CORAR    TOPWID     ENDST


3280 CROSS SECTION      .12 EXTENDED      .26 FEET

     .12     4.27  1784.27      .00      .00  1784.89      .62     9.89      .84  1782.00
   18000.     314.   17260.     426.     177.    2678.     240.     648.     306.  1782.00
     .37     1.78     6.44     1.78     .080     .040     .080     .000  1780.00      .00
 .006719     950.     950.     950.        5        0        0      .00  1200.00  1200.00


CCHV=    .100 CEHV=    .300
*SECNO  .000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
     .00     3.97  1791.97  1791.97      .00  1793.97     2.01     8.34      .42  1788.00
   18000.       2.   17996.       2.       1.    1583.       1.     683.     318.  1788.00
     .38     1.78    11.37     1.78     .060     .060     .060     .000  1788.00      .50
 .033525     650.     650.     650.        2       11        0      .00   399.99   400.50
```

CROSS SECTION 1.64
STREAM BH FOR BREACH AT S.E. CO
DISCHARGE= 18000.

PLOTTED POINTS (BY PRIORITY)-B=BOTTOM BRIDGE,T=TOP BRIDGE,X=GROUND,W=WATER SUR,E=ENERGY GRADIENT,C=CRITICAL WSEL

```
ELEV 1694.    1695.    1696.    1697.    1698.    1699.    1700.    1701.    1702.    1703.    1704.


   STA-FEET

2  0. .       .        .        .        .                 X        .        .        .        .        .
  20. .       .        .        .        .                 X        .        .        .        .        .
  40. .       .        .        .        .                 X        .        .        .        .        .
  60. .       .        .        .        .                 X        .        .        .        .        .
  80. .       .        .        .        .                 X        .        .        .        .        .
 100. .       .        .        .        .                 X        .        .        .        .        .
 120. .       .        .        .        .                 X        .        .        .        .        .
 140. .       .        .        .        .                 X        .        .        .        .        .
 160. .       .        .        .        .                 X        .        .        .        .        .
 180. .       .        .        .        .                 X        .        .        .        .        .
 200. .       .        .        .        .                 X        .        .        .        .        .
 220. .       .        .        .        .                 X        .        .        .        .        .
 240. .       .        .        .        .                 X        .        .        .        .        .
 260. .       .        .        .        .                 X        .        .        .        .        .
 280. .       .        .        .        .                 X        .        .        .        .        .
 300. .       .        .        .        .                 X        .        .        .        .        .
 320. .       .        .        .        .                 X        .        .        .        .        .
 340. .       .        .        .        .                 X        .        .        .        .        .
 360. .       .        .        .        .                 X        .        .        .        .        .
 380. .       .        .        .        .                 X        .        .        .        .        .
 400. .       .        .        .        .                 X        .        .        .        .        .
 420. .       .        .        .        .                 X        .        .        .        .        .
 440. .       .        .        .        .                 X        .        .        .        .        .
 460. .       .        .        .        .                 X        .        .        .        .        .
3 480. .      .        .        .        .                 X        .        .        .        .        .
 500. .       .        .        .        .           X     E.       .        .        .        .        .
 520. .       .        .        .        .        X        E.       .        .        .        .        .
 540. .       .        .        .        .     X  W        E.       .        .        .        .        .
4 560. .      .        .        .        X        W        E.       .        .        .        .        .
 580. .       .        .        .        X        W        E.       .        .        .        .        .
 600. .       .        .        .        X        W        E.       .        .        .        .        .
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```
  640. .     .     .     .     X     W     E.    .     .     .     .     .
  660. .     .     .     .     X     W     E.    .     .     .     .     .
  680. .     .     .     .     X     W     E.    .     .     .     .     .
  700. .     .     .     .     X     W     E.    .     .     .     .     .
  720. .     .     .     .     X     W     E.    .     .     .     .     .
  740. .     .     .     .     X     W     E.    .     .     .     .     .
  760. .     .     .     .     X     W     E.    .     .     .     .     .
  780. .     .     .     .     X     W     E.    .     .     .     .     .
  800. .     .     .     .     X     W     E.    .     .     .     .     .
  820. .     .     .     .     X     W     E.    .     .     .     .     .
  840. .     .     .     .     X     W     E.    .     .     .     .     .
  860. .     .     .     .     X     W     E.    .     .     .     .     .
  880. .     .     .     .     X     W     E.    .     .     .     .     .
5 900. .     .     .     .     X     W     E.    .     .     .     .  BANK.
  920. .     .     .     .  X  .     W     E.    .     .     .     .     .
  940. .     .     .     X     .     W     E.    .     .     .     .     .
  960. .     .     .  X  .     .     W     E.    .     .     .     .     .
6 980. .     .     X     .     .     W     E.    .     .     .     .     .
 1000. .     .  X  .     .     .     W     E.    .     .     .     .     .
 1020. .     .  X  .     .     .     W     E.    .     .     .     .     .
 1040. .     X     .     .     .     W     E.    .     .     .     .     .
 1060. .  X  .     .     .     .     W     E.    .     .     .     .     .
 1080. .  X  .     .     .     .     W     E.    .     .     .     .     .
71100. X     .     .     .     .     W     E.    .     .     .     .     .
81120. .     .     X     .     .     W     E.    .     .     .     .  BANK.
 1140. .     .     .     .X    .     W     E.    .     .     .     .     .
 1160. .     .     .     .     .  X  W     E.    .     .     .     .     .
 1180. .     .     .     .     .        X  E.    .     .     .     .     .
91200. .     .     .     .     .           X     .     .     .     .     .
 1220. .     .     .     .     .     X     E.    .     .     .     .     .
101240. .    .     .     .     X     W     E.    .     .     .     .     .
 1260. .     .     .     . X   .     W     E.    .     .     .     .     .
 1280. .     .     .  X  .     .     W     E.    .     .     .     .     .
111300. .    .     X     .     .     W     E.    .     .     .     .     .
 1320. .     .     X     .     .     W     E.    .     .     .     .     .
 1340. .     .     X     .     .     W     E.    .     .     .     .     .
 1360. .     .     X     .     .     W     E.    .     .     .     .     .
 1380. .     .     X     .     .     W     E.    .     .     .     .     .
 1400. .     .     X     .     .     W     E.    .     .     .     .     .
 1420. .     .     X     .     .     W     E.    .     .     .     .     .
121440. .    .     X     .     .     W     E.    .     .     .     .     .
131460. .    .     .     .     X     W     E.    .     .     .     .     .
 1480. .     .     .     .     X     W     E.    .     .     .     .     .
141500. .    .     .     .     X     W     E.    .     .     .     .     .
 1520. .     .     .     .    X.     W     E.    .     .     .     .     .
 1540. .     .     .     .   X .     W     E.    .     .     .     .     .
 1560. .     .     .     .  X  .     W     E.    .     .     .     .     .
 1580. .     .     .     . X   .     W     E.    .     .     .     .     .
 1600. .     .     .     .X    .     W     E.    .     .     .     .     .
 1620. .     .     .     X     .     W     E.    .     .     .     .     .
 1640. .     .     .     . X   .     W     E.    .     .     .     .     .
 1660. .     .     .     .X    .     W     E.    .     .     .     .     .
 1680. .     .     .     .X    .     W     E.    .     .     .     .     .
 1700. .     .     .     X     .     W     E.    .     .     .     .     .
 1720. .     .     .     X     .     W     E.    .     .     .     .     .
 1740. .     .     .    X.     .     W     E.    .     .     .     .     .
 1760. .     .     .   X .     .     W     E.    .     .     .     .     .
 1780. .     .     .  X  .     .     W     E.    .     .     .     .     .
 1800. .     .     . X   .     .     W     E.    .     .     .     .     .
 1820. .     .     .X    .     .     W     E.    .     .     .     .     .
 1840. .     .     . X   .     .     W     E.    .     .     .     .     .
 1860. .     .     .  X  .     .     W     E.    .     .     .     .     .
 1880. .     .     .  X  .     .     W     E.    .     .     .     .     .
 1900. .     .     .X    .     .     W     E.    .     .     .     .     .
151920. .    .     X     .     .     W     E.    .     .     .     .     .
```

```
  1960. .       .       X       .       .       W       E.      .       .       .       .       .
161980. .       .       X       .       .       W       E.      .       .       .       .       .
  2000. .       .       . X     .       .       W       E.      .       .       .       .       .
  2020. .       .       .  X    .       .       W       E.      .       .       .       .       .
  2040. .       .       .   X   .       .       W       E.      .       .       .       .       .
  2060. .       .       .    X  .       .       W       E.      .       .       .       .       .
  2080. .       .       .     X .       .       W       E.      .       .       .       .       .
  2100. .       .       .      X        .       W       E.      .       .       .       .       .
  2120. .       .       .       . X     .       W       E.      .       .       .       .       .
  2140. .       .       .       .  X    .       W       E.      .       .       .       .       .
  2160. .       .       .       .   X   .       W       E.      .       .       .       .       .
  2180. .       .       .       .    X  .       W       E.      .       .       .       .       .
  2200. .       .       .       .     X .       W       E.      .       .       .       .       .
172220. .       .       .       .      X        W       E.      .       .       .       .       .
  2240. .       .       .       .      X        W       E.      .       .       .       .       .
  2260. .       .       .       .      X        W       E.      .       .       .       .       .
  2280. .       .       .       .      X        W       E.      .       .       .       .       .
  2300. .       .       .       .      X        W       E.      .       .       .       .       .
  2320. .       .       .       .      X        W       E.      .       .       .       .       .
182340. .       .       .       .      X        W       E.      .       .       .       .       .
  2360. .       .       .       .       . X     W       E.      .       .       .       .       .
  2380. .       .       .       .       . X     W       E.      .       .       .       .       .
  2400. .       .       .       .       .  X    W       E.      .       .       .       .       .
  2420. .       .       .       .       .  X    W       E.      .       .       .       .       .
  2440. .       .       .       .       .   X   W       E.      .       .       .       .       .
  2460. .       .       .       .       .       X       E.      .       .       .       .       .
  2480. .       .       .       .       .        X      E.      .       .       .       .       .
  2500. .       .       .       .       .         X     E.      .       .       .       .       .
  2520. .       .       .       .       .          X    E.      .       .       .       .       .
  2540. .       .       .       .       .           X   E.      .       .       .       .       .
  2560. .       .       .       .       .            XE.        .       .       .       .       .
  2580. .       .       .       .       .             X.        .       .       .       .       .
192600. .       .       .       .       .              X        .       .       .       .       .

NRD=      0 ELLC=  9999999.00 ELTRD=  9999999.00

 EL(I),STA(I)
   1700.00       .00    1700.00     490.00    1698.00     570.00    1698.00     900.00    1696.00     980.00
   1694.00    1100.00    1696.00    1130.00    1700.00    1200.00    1698.00    1250.00    1696.00    1310.00
   1696.00    1440.00    1698.00    1470.00    1698.00    1510.00    1696.00    1930.00    1696.00    1990.00
   1698.00    2230.00    1698.00    2350.00    1700.00    2680.00
```

CROSS SECTION 1.64
STREAM BH FOR BREACH AT S.E. CO
DISCHARGE= 18000.

PLOTTED POINTS (BY PRIORITY)-B=BOTTOM BRIDGE,T=TOP BRIDGE,X=GROUND,W=WATER SUR,E=ENERGY GRADIENT,C=CRITICAL WSEL

```
ELEV 1694.    1695.    1696.    1697.    1698.    1699.    1700.    1701.    1702.    1703.    1704.

  STA-FEET

2  0. .       .        .        .        .        .        X        W E.     .        .        .        .
   20. .      .        .        .        .        .        X        W E.     .        .        .        .
   40. .      .        .        .        .        .        X        W E.     .        .        .        .
   60. .      .        .        .        .        .        X        W E.     .        .        .        .
   80. .      .        .        .        .        .        X        W E.     .        .        .        .
  100. .      .        .        .        .        .        X        W E.     .        .        .        .
  120. .      .        .        .        .        .        X        W E.     .        .        .        .
  140. .      .        .        .        .        .        X        W E.     .        .        .        .
  160. .      .        .        .        .        .        X        W E.     .        .        .        .
  180. .      .        .        .        .        .        X        W E.     .        .        .        .
  200. .      .        .        .        .        .        X        W E.     .        .        .        .
  220. .      .        .        .        .        .        X        W E.     .        .        .        .
  240. .      .        .        .        .        .        X        W E.     .        .        .        .
  260. .      .        .        .        .        .        X        W E.     .        .        .        .
  280. .      .        .        .        .        .        X        W E.     .        .        .        .
  300. .      .        .        .        .        .        X        W E.     .        .        .        .
  320. .      .        .        .        .        .        X        W E.     .        .        .        .
  340. .      .        .        .        .        .        X        W E.     .        .        .        .
  360. .      .        .        .        .        .        X        W E.     .        .        .        .
  380. .      .        .        .        .        .        X        W E.     .        .        .        .
  400. .      .        .        .        .        .        X        W E.     .        .        .        .
  420. .      .        .        .        .        .        X        W E.     .        .        .        .
  440. .      .        .        .        .        .        X        W E.     .        .        .        .
  460. .      .        .        .        .        .        X        W E.     .        .        .        .
3 480. .      .        .        .        .        .        X        W E.     .        .        .        .
  500. .      .        .        .        .        .   X    .        W E.     .        .        .        .
  520. .      .        .        .        .        X        .        W E.     .        .        .        .
  540. .      .        .        .        .   X    .        .        W E.     .        .        .        .
4 560. .      .        .        .        X        .        .        W E.     .        .        .        .
  580. .      .        .        .        X        .        .        W E.     .        .        .        .
  600. .      .        .        .        X        .        .        W E.     .        .        .        .
```

```
  640. .       .       .       .       X       .       .       W E.    .       .       .       .
  660. .       .       .       .       X       .       .       W E.    .       .       .       .
  680. .       .       .       .       X       .       .       W E.    .       .       .       .
  700. .       .       .       .       X       .       .       W E.    .       .       .       .
  720. .       .       .       .       X       .       .       W E.    .       .       .       .
  740. .       .       .       .       X       .       .       W E.    .       .       .       .
  760. .       .       .       .       X       .       .       W E.    .       .       .       .
  780. .       .       .       .       X       .       .       W E.    .       .       .       .
  800. .       .       .       .       X       .       .       W E.    .       .       .       .
  820. .       .       .       .       X       .       .       W E.    .       .       .       .
  840. .       .       .       .       X       .       .       W E.    .       .       .       .
  860. .       .       .       .       X       .       .       W E.    .       .       .       .
  880. .       .       .       .       X       .       .       W E.    .       .       .       .
5 900. .       .       .       .       X       .       .       W E.    .       .       .       BANK.
  920. .       .       .       .   X   .       .       .       W E.    .       .       .       .
  940. .       .       .       X       .       .       .       W E.    .       .       .       .
  960. .       .       .   X   .       .       .       .       W E.    .       .       .       .
6 980. .       .       X       .       .       .       .       W E.    .       .       .       .
 1000. .       .   X   .       .       .       .       .       W E.    .       .       .       .
 1020. .       . X     .       .       .       .       .       W E.    .       .       .       .
 1040. .       X       .       .       .       .       .       W E.    .       .       .       .
 1060. .     X .       .       .       .       .       .       W E.    .       .       .       .
 1080. . X     .       .       .       .       .       .       W E.    .       .       .       .
71100. X       .       .       .       .       .       .       W E.    .       .       .       .
81120. .       .       X       .       .       .       .       W E.    .       .       .       BANK.
 1140. .       .       .       .X      .       .       .       W E.    .       .       .       .
 1160. .       .       .       .       . X     .       .       W E.    .       .       .       .
 1180. .       .       .       .       .       . X     .       W E.    .       .       .       .
91200. .       .       .       .       .       .       X       W E.    .       .       .       .
 1220. .       .       .       .       .       . X     .       W E.    .       .       .       .
101240. .      .       .       .       X       .       .       W E.    .       .       .       .
 1260. .       .       .       . X     .       .       .       W E.    .       .       .       .
 1280. .       .       .     X .       .       .       .       W E.    .       .       .       .
111300. .      .       X       .       .       .       .       W E.    .       .       .       .
 1320. .       .       X       .       .       .       .       W E.    .       .       .       .
 1340. .       .       X       .       .       .       .       W E.    .       .       .       .
 1360. .       .       X       .       .       .       .       W E.    .       .       .       .
 1380. .       .       X       .       .       .       .       W E.    .       .       .       .
 1400. .       .       X       .       .       .       .       W E.    .       .       .       .
 1420. .       .       X       .       .       .       .       W E.    .       .       .       .
121440. .      .       X       .       .       .       .       W E.    .       .       .       .
131460. .      .       .       .       X       .       .       W E.    .       .       .       .
 1480. .       .       .       .       X       .       .       W E.    .       .       .       .
141500. .      .       .       .       X       .       .       W E.    .       .       .       .
 1520. .       .       .       .      X.       .       .       W E.    .       .       .       .
 1540. .       .       .       .     X .       .       .       W E.    .       .       .       .
 1560. .       .       .       .    X  .       .       .       W E.    .       .       .       .
 1580. .       .       .       .   .X  .       .       .       W E.    .       .       .       .
 1600. .       .       .       .   X   .       .       .       W E.    .       .       .       .
 1620. .       .       .       . X     .       .       .       W E.    .       .       .       .
 1640. .       .       .       . X     .       .       .       W E.    .       .       .       .
 1660. .       .       .       .X      .       .       .       W E.    .       .       .       .
 1680. .       .       .       .X      .       .       .       W E.    .       .       .       .
 1700. .       .       .       X       .       .       .       W E.    .       .       .       .
 1720. .       .       .       X       .       .       .       W E.    .       .       .       .
 1740. .       .       .      X.       .       .       .       W E.    .       .       .       .
 1760. .       .       .     X .       .       .       .       W E.    .       .       .       .
 1780. .       .       .    X  .       .       .       .       W E.    .       .       .       .
 1800. .       .       .   X   .       .       .       .       W E.    .       .       .       .
 1820. .       .       .  X    .       .       .       .       W E.    .       .       .       .
 1840. .       .       . X     .       .       .       .       W E.    .       .       .       .
 1860. .       .       .X      .       .       .       .       W E.    .       .       .       .
 1880. .       .       X       .       .       .       .       W E.    .       .       .       .
 1900. .       .       X       .       .       .       .       W E.    .       .       .       .
151920. .      .       X       .       .       .       .       W E.    .       .       .       .
```

```
  1960. .         .         X         .         .         .         .         W E.         .         .         .         .
161980. .         .         X         .         .         .         .         W E.         .         .         .         .
  2000. .         .         . X       .         .         .         .         W E.         .         .         .         .
  2020. .         .         .  X      .         .         .         .         W E.         .         .         .         .
  2040. .         .         .   X     .         .         .         .         W E.         .         .         .         .
  2060. .         .         .     X . .         .         .         .         W E.         .         .         .         .
  2080. .         .         .      X .         .         .         .         W E.         .         .         .         .
  2100. .         .         .        X         .         .         .         W E.         .         .         .         .
  2120. .         .         .         . X      .         .         .         W E.         .         .         .         .
  2140. .         .         .         .  X     .         .         .         W E.         .         .         .         .
  2160. .         .         .         .   X    .         .         .         W E.         .         .         .         .
  2180. .         .         .         .     X  .         .         .         W E.         .         .         .         .
  2200. .         .         .         .      X .         .         .         W E.         .         .         .         .
172220. .         .         .         .        X         .         .         W E.         .         .         .         .
  2240. .         .         .         .        X         .         .         W E.         .         .         .         .
  2260. .         .         .         .        X         .         .         W E.         .         .         .         .
  2280. .         .         .         .        X         .         .         W E.         .         .         .         .
  2300. .         .         .         .        X         .         .         W E.         .         .         .         .
  2320. .         .         .         .        X         .         .         W E.         .         .         .         .
182340. .         .         .         .        X         .         .         W E.         .         .         .         .
  2360. .         .         .         .         . X      .         .         W E.         .         .         .         .
  2380. .         .         .         .         .  X     .         .         W E.         .         .         .         .
  2400. .         .         .         .         .   X    .         .         W E.         .         .         .         .
  2420. .         .         .         .         .    X   .         .         W E.         .         .         .         .
  2440. .         .         .         .         .     X  .         .         W E.         .         .         .         .
  2460. .         .         .         .         .       X         .         W E.         .         .         .         .
  2480. .         .         .         .         .       .X        .         W E.         .         .         .         .
  2500. .         .         .         .         .       .  X      .         W E.         .         .         .         .
  2520. .         .         .         .         .       .   X     .         W E.         .         .         .         .
  2540. .         .         .         .         .       .    X    .         W E.         .         .         .         .
  2560. .         .         .         .         .       .     X . .         W E.         .         .         .         .
  2580. .         .         .         .         .       .      X.           W E.         .         .         .         .
192600. .         .         .         .         .       .       X           W E.         .         .         .         .
```

NRD= 0 ELLC= 9999999.00 ELTRD= 9999999.00

EL(I),STA(I)

1700.00	.00	1700.00	490.00	1698.00	570.00	1698.00	900.00	1696.00	980.00
1694.00	1100.00	1696.00	1130.00	1700.00	1200.00	1698.00	1250.00	1696.00	1310.00
1696.00	1440.00	1698.00	1470.00	1698.00	1510.00	1696.00	1930.00	1696.00	1990.00
1698.00	2230.00	1698.00	2350.00	1700.00	2600.00				

CROSS SECTION 1.47
STREAM BH FOR BREACH AT S.E. CO
DISCHARGE= 18000.

PLOTTED POINTS (BY PRIORITY)-B=BOTTOM BRIDGE,T=TOP BRIDGE,X=GROUND,W=WATER SUR,E=ENERGY GRADIENT,C=CRITICAL WSEL

```
ELEV 1702.    1703.    1704.    1705.    1706.    1707.    1708.    1709.    1710.    1711.    1712.


  STA-FEET

2  0. .       .        .        .        X        . W      E        .        .        .        .        .
   50. .       .        .        .        X        . W      E        .        .        .        .        .
  100. .       .        .        .        X        . W      E        .        .        .        .        .
  150. .       .        .        .        X        . W      E        .        .        .        .        .
  200. .       .        .        .        X        . W      E        .        .        .        .        .
  250. .       .        .        .        X        . W      E        .        .        .        .        .
  300. .       .        .        .        X        . W      E        .        .        .        .        .
  350. .       .        .        .        X        . W      E        .        .        .        .        .
  400. .       .        .        .        X        . W      E        .        .        .        .        .
  450. .       .        .        .        X        . W      E        .        .        .        .        .
  500. .       .        .        .        X        . W      E        .        .        .        .        .
  550. .       .        .        .        X        . W      E        .        .        .        .        .
  600. .       .        .        .        X        . W      E        .        .        .        .        .
  650. .       .        .        .        X        . W      E        .        .        .        .        .
  700. .       .        .        .        X        . W      E        .        .        .        .        .
  750. .       .        .        .        X        . W      E        .        .        .        .        .
  800. .       .        .        .        X        . W      E        .        .        .        .        .
  850. .       .        .        .        X        . W      E        .        .        .        .        .
  900. .       .        .        .        X        . W      E        .        .        .        .        .
  950. .       .        .        .        X        . W      E        .        .        .        .        .
 1000. .       .        .        .        X        . W      E        .        .        .        .        .
 1050. .       .        .        .        X        . W      E        .        .        .        .        .
 1100. .       .        .        .        X        . W      E        .        .        .        .        .
 1150. .       .        .        .        X        . W      E        .        .        .        .        .
31200. .       .        .        .        X        . W      E        .        .        .        .        .
 1250. .       .        .        X.       .        . W      E        .        .        .        .        .
41300. .       .        X        .        .        . W      E        .        .        .        .        BANK.
 1350. .     X .        .        .        .        . W      E        .        .        .        .        .
51400. X       .        .        .        .        . W      E        .        .        .        .        .
 1450. .     X .        .        .        .        . W      E        .        .        .        .        .
 1500. .       . X      .        .        .        . W      E        .        .        .        .        .
```

```
 1600. .       .       . X     .       .       . W     E       .       .       .       .       .
 1650. .       .       .   X   .       .       . W     E       .       .       .       .       .
 1700. .       .       .       X       .       . W     E       .       .       .       .       .
 1750. .       .       .       . X     .       . W     E       .       .       .       .       .
 1800. .       .       .       .   X   .       . W     E       .       .       .       .       .
71850. .       .       .       .       X       . W     E       .       .       .       .       .
 1900. .       .       .       .       X       . W     E       .       .       .       .       .
 1950. .       .       .       .       X       . W     E       .       .       .       .       .
 2000. .       .       .       .       X       . W     E       .       .       .       .       .
 2050. .       .       .       .       X       . W     E       .       .       .       .       .
 2100. .       .       .       .       X       . W     E       .       .       .       .       .
 2150. .       .       .       .       X       . W     E       .       .       .       .       .
 2200. .       .       .       .       X       . W     E       .       .       .       .       .
 2250. .       .       .       .       X       . W     E       .       .       .       .       .
 2300. .       .       .       .       X       . W     E       .       .       .       .       .
 2350. .       .       .       .       X       . W     E       .       .       .       .       .
 2400. .       .       .       .       X       . W     E       .       .       .       .       .
 2450. .       .       .       .       X       . W     E       .       .       .       .       .
 2500. .       .       .       .       X       . W     E       .       .       .       .       .
 2550. .       .       .       .       X       . W     E       .       .       .       .       .
 2600. .       .       .       .       X       . W     E       .       .       .       .       .
 2650. .       .       .       .       X       . W     E       .       .       .       .       .
 2700. .       .       .       .       X       . W     E       .       .       .       .       .
 2750. .       .       .       .       X       . W     E       .       .       .       .       .
 2800. .       .       .       .       X       . W     E       .       .       .       .       .
 2850. .       .       .       .       X       . W     E       .       .       .       .       .
 2900. .       .       .       .       X       . W     E       .       .       .       .       .
82950. .       .       .       .       X       . W     E       .       .       .       .       .

NRD=      0 ELLC=  9999999.00 ELTRD=  9999999.00

 EL(I),STA(I)
   1706.00       .00    1706.00    1210.00    1704.00    1300.00    1702.00    1380.00    1704.00    1550.00
   1706.00   1860.00    1706.00    2950.00
```

CROSS SECTION 1.23
STREAM BH FOR BREACH AT S.E. CO
DISCHARGE= 18000.

PLOTTED POINTS (BY PRIORITY)-B=BOTTOM BRIDGE,T=TOP BRIDGE,X=GROUND,W=WATER SUR,E=ENERGY GRADIENT,C=CRITICAL WSEL

ELEV	1712.	1713.	1714.	1715.	1716.	1717.	1718.	1719.	1720.	1721.	1722.
STA-FEET											
2 0.	.	.	.	.	.	.	.	.	XE	.	.
20.	.	.	.	.	.	.	.	.	XE	.	.
40.	.	.	.	.	.	.	.	.	XE	.	.
60.	.	.	.	.	.	.	.	.	XE	.	.
80.	.	.	.	.	.	.	.	.	XE	.	.
100.	.	.	.	.	.	.	.	.	XE	.	.
120.	.	.	.	.	.	.	.	.	XE	.	.
140.	.	.	.	.	.	.	.	.	XE	.	.
160.	.	.	.	.	.	.	.	.	XE	.	.
180.	.	.	.	.	.	.	.	.	XE	.	.
200.	.	.	.	.	.	.	.	.	XE	.	.
220.	.	.	.	.	.	.	.	.	XE	.	.
240.	.	.	.	.	.	.	.	.	XE	.	.
260.	.	.	.	.	.	.	.	.	XE	.	.
280.	.	.	.	.	.	.	.	.	XE	.	.
300.	.	.	.	.	.	.	.	.	XE	.	.
320.	.	.	.	.	.	.	.	.	XE	.	.
340.	.	.	.	.	.	.	.	.	XE	.	.
360.	.	.	.	.	.	.	.	.	XE	.	.
380.	.	.	.	.	.	.	.	.	XE	.	.
400.	.	.	.	.	.	.	.	.	XE	.	.
420.	.	.	.	.	.	.	.	.	XE	.	.
440.	.	.	.	.	.	.	.	.	XE	.	.
460.	.	.	.	.	.	.	.	.	XE	.	.
480.	.	.	.	.	.	.	.	.	XE	.	.
500.	.	.	.	.	.	.	.	.	XE	.	.
520.	.	.	.	.	.	.	.	.	XE	.	.
540.	.	.	.	.	.	.	.	.	XE	.	.
560.	.	.	.	.	.	.	.	.	XE	.	.
580.	.	.	.	.	.	.	.	.	XE	.	.
600.	.	.	.	.	.	.	.	.	XE	.	.

```
  640. .   .   .   .   .   .   .   .   XE  .   .   .
  660. .   .   .   .   .   .   .   .   XE  .   .   .
  680. .   .   .   .   .   .   .   .   XE  .   .   .
  700. .   .   .   .   .   .   .   .   XE  .   .   .
  720. .   .   .   .   .   .   .   .   XE  .   .   .
  740. .   .   .   .   .   .   .   .   XE  .   .   .
  760. .   .   .   .   .   .   .   .   XE  .   .   .
  780. .   .   .   .   .   .   .   .   XE  .   .   .
3 800. .   .   .   .   .   .   .   .   XE  .   .   BANK.
4 820. .   .   .   .   .   .   .   X   .W  .E  .   .   .
5 840. .   .   .   .   X   .   .   .   .W  .E  .   .   .
  860. .   .   .   X   .   .   .   .   .W  .E  .   .   .
  880. .   .   X   .   .   .   .   .   .W  .E  .   .   .
6 900. .   .   X   .   .   .   .   .   .W  .E  .   .   .
7 920. X   .   .   .   .   .   .   .   .W  .E  .   .   .
  940. .   X   .   .   .   .   .   .   .W  .E  .   .   .
8 960. .   .   X   .   .   .   .   .   .W  .E  .   .   .
  980. .   .   X   .   .   .   .   .   .W  .E  .   .   .
91000. .   .   X   .   .   .   .   .   .W  .E  .   .   .
 1020. .   .   .   X   .   .   .   .   .W  .E  .   .   .
101040. .  .   .   .   X   .   .   .   .W  .E  .   .   .
 1060. .   .   .   .   X   .   .   .   .W  .E  .   .   .
 1080. .   .   .   .   X   .   .   .   .W  .E  .   .   .
 1100. .   .   .   .   X   .   .   .   .W  .E  .   .   .
 1120. .   .   .   .   X   .   .   .   .W  .E  .   .   .
 1140. .   .   .   .   X   .   .   .   .W  .E  .   .   .
111160. .  .   .   .   X   .   .   .   .W  .E  .   .   .
 1180. .   .   .   .   .   X   .   .   .W  .E  .   .   .
 1200. .   .   .   .   .   .   X   .   .W  .E  .   .   .
 1220. .   .   .   .   .   .   .   X   .W  .E  .   .   .
 1240. .   .   .   .   .   .   .   X   .W  .E  .   .   .
 1260. .   .   .   .   .   .   .   .   X .W  .E  .   .   .
 1280. .   .   .   .   .   .   .   .   X .W  .E  .   .   .
121300. .  .   .   .   .   .   .   .   X .W  .E  .   .   .
 1320. .   .   .   .   .   .   .   X   .W  .E  .   .   .
 1340. .   .   .   .   .   X   .   .   .W  .E  .   .   .
 1360. .   .   .   .   X   .   .   .   .W  .E  .   .   .
 1380. .   .   .   X   .   .   .   .   .W  .E  .   .   .
131400. .  .   X   .   .   .   .   .   .W  .E  .   .   .
 1420. .   .   .   X   .   .   .   .   .W  .E  .   .   .
 1440. .   .   .   .   .   X   .   .   .W  .E  .   .   .
 1460. .   .   .   .   .   .   .   X   .W  .E  .   .   .
 1480. .   .   .   .   .   .   .   .   X .W  .E  .   .   .
141500. .  .   .   .   .   .   .   .   .  XE  .   .   BANK.
 1520. .   .   .   .   .   .   .   .   .  XE  .   .   .
 1540. .   .   .   .   .   .   .   .   .  XE  .   .   .
 1560. .   .   .   .   .   .   .   .   .  XE  .   .   .
 1580. .   .   .   .   .   .   .   .   .  XE  .   .   .
 1600. .   .   .   .   .   .   .   .   .  XE  .   .   .
 1620. .   .   .   .   .   .   .   .   .  XE  .   .   .
 1640. .   .   .   .   .   .   .   .   .  XE  .   .   .
 1660. .   .   .   .   .   .   .   .   .  XE  .   .   .
 1680. .   .   .   .   .   .   .   .   .  XE  .   .   .
 1700. .   .   .   .   .   .   .   .   .  XE  .   .   .
 1720. .   .   .   .   .   .   .   .   .  XE  .   .   .
 1740. .   .   .   .   .   .   .   .   .  XE  .   .   .
 1760. .   .   .   .   .   .   .   .   .  XE  .   .   .
 1780. .   .   .   .   .   .   .   .   .  XE  .   .   .
 1800. .   .   .   .   .   .   .   .   .  XE  .   .   .
 1820. .   .   .   .   .   .   .   .   .  XE  .   .   .
 1840. .   .   .   .   .   .   .   .   .  XE  .   .   .
 1860. .   .   .   .   .   .   .   .   .  XE  .   .   .
 1880. .   .   .   .   .   .   .   .   .  XE  .   .   .
 1900. .   .   .   .   .   .   .   .   .  XE  .   .   .
 1920. .   .   .   .   .   .   .   .   .  XE  .   .   .
```

1940.	.	.	.	.	.	.	.	XE	.	.	.
1960.	.	.	.	.	.	.	.	XE	.	.	.
1980.	.	.	.	.	.	.	.	XE	.	.	.
2000.	.	.	.	.	.	.	.	XE	.	.	.
2020.	.	.	.	.	.	.	.	XE	.	.	.
2040.	.	.	.	.	.	.	.	XE	.	.	.
2060.	.	.	.	.	.	.	.	XE	.	.	.
2080.	.	.	.	.	.	.	.	XE	.	.	.
2100.	.	.	.	.	.	.	.	XE	.	.	.
2120.	.	.	.	.	.	.	.	XE	.	.	.
2140.	.	.	.	.	.	.	.	XE	.	.	.
2160.	.	.	.	.	.	.	.	XE	.	.	.
2180.	.	.	.	.	.	.	.	XE	.	.	.
2200.	.	.	.	.	.	.	.	XE	.	.	.
2220.	.	.	.	.	.	.	.	XE	.	.	.
2240.	.	.	.	.	.	.	.	XE	.	.	.
2260.	.	.	.	.	.	.	.	XE	.	.	.
2280.	.	.	.	.	.	.	.	XE	.	.	.
2300.	.	.	.	.	.	.	.	XE	.	.	.
2320.	.	.	.	.	.	.	.	XE	.	.	.
2340.	.	.	.	.	.	.	.	XE	.	.	.
2360.	.	.	.	.	.	.	.	XE	.	.	.
2380.	.	.	.	.	.	.	.	XE	.	.	.
2400.	.	.	.	.	.	.	.	XE	.	.	.
2420.	.	.	.	.	.	.	.	XE	.	.	.
2440.	.	.	.	.	.	.	.	XE	.	.	.
2460.	.	.	.	.	.	.	.	XE	.	.	.
2480.	.	.	.	.	.	.	.	XE	.	.	.
2500.	.	.	.	.	.	.	.	XE	.	.	.
2520.	.	.	.	.	.	.	.	XE	.	.	.
2540.	.	.	.	.	.	.	.	XE	.	.	.
2560.	.	.	.	.	.	.	.	XE	.	.	.
2580.	.	.	.	.	.	.	.	XE	.	.	.
2600.	.	.	.	.	.	.	.	XE	.	.	.
2620.	.	.	.	.	.	.	.	XE	.	.	.
2640.	.	.	.	.	.	.	.	XE	.	.	.
2660.	.	.	.	.	.	.	.	XE	.	.	.
2680.	.	.	.	.	.	.	.	XE	.	.	.
2700.	.	.	.	.	.	.	.	XE	.	.	.
2720.	.	.	.	.	.	.	.	XE	.	.	.
2740.	.	.	.	.	.	.	.	XE	.	.	.
2760.	.	.	.	.	.	.	.	XE	.	.	.
2780.	.	.	.	.	.	.	.	XE	.	.	.
2800.	.	.	.	.	.	.	.	XE	.	.	.
2820.	.	.	.	.	.	.	.	XE	.	.	.
2840.	.	.	.	.	.	.	.	XE	.	.	.
2860.	.	.	.	.	.	.	.	XE	.	.	.
2880.	.	.	.	.	.	.	.	XE	.	.	.
2900.	.	.	.	.	.	.	.	XE	.	.	.
2920.	.	.	.	.	.	.	.	XE	.	.	.
2940.	.	.	.	.	.	.	.	XE	.	.	.
2960.	.	.	.	.	.	.	.	XE	.	.	.
2980.	.	.	.	.	.	.	.	XE	.	.	.
153000.	.	.	.	.	.	.	.	XE	.	.	.

NRD= 0 ELLC= 9999999.00 ELTRD= 9999999.00

EL(I),STR(I)

1720.00	.00	1720.00	800.00	1718.00	830.00	1716.00	850.00	1714.00	900.00
1712.00	920.00	1714.00	970.00	1714.00	1010.00	1716.00	1040.00	1716.00	1170.00
1718.00	1300.00	1714.00	1400.00	1720.00	1500.00	1720.00	3000.00		

CROSS SECTION .90
STREAM BH FOR BREACH AT S.E. CO
DISCHARGE= 18000.

PLOTTED POINTS (BY PRIORITY)-B=BOTTOM BRIDGE,T=TOP BRIDGE,X=GROUND,W=WATER SUR,E=ENERGY GRADIENT,C=CRITICAL WSEL

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ELEV 1734.    1735.    1736.    1737.    1738.    1739.    1740.    1741.    1742.    1743.    1744.


   STA-FEET

 2  0. .       .        .        .        .                 X        .        .        .        .        .
   20. .       .        .        .        .        X        .        .        .        .        .        .
 3  40. .      .        .        .        X W      E        .        .        .        .        .        .
   60. .       .        .        .     X  . W      E        .        .        .        .        .        .
   80. .       .        .        .   X    . W      E        .        .        .        .        .        .
  100. .       .        .        . X      . W      E        .        .        .        .        .        .
  120. .       .        .      X.         . W      E        .        .        .        .        .        .
  140. .       .        .    X .          . W      E        .        .        .        .        .        .
  160. .       .        .  X   .          . W      E        .        .        .        .        .        .
 4 180. .      .        X      .          . W      E        .        .        .        .        .        .
  200. .       .        . X    .          . W      E        .        .        .        .        .        .
  220. .       .        .  X   .          . W      E        .        .        .        .        .        .
  240. .       .        .   X  .          . W      E        .        .        .        .        .        .
  260. .       .        .    X .          . W      E        .        .        .        .        .        .
  280. .       .        .      X.         . W      E        .        .        .        .        .        .
  300. .       .        .       X         . W      E        .        .        .        .        .        .
  320. .       .        .        . X      . W      E        .        .        .        .        .        .
  340. .       .        .        .  X     . W      E        .        .        .        .        .        .
  360. .       .        .        .   X    . W      E        .        .        .        .        .        .
  380. .       .        .        .    X   . W      E        .        .        .        .        .        .
  400. .       .        .        .     X. W      E        .        .        .        .        .        .
 5 420. .      .        .        .        X W      E        .        .        .        .        .   BANK.
  440. .       .        .        . X      . W      E        .        .        .        .        .        .
 6 460. .      .        X        .        . W      E        .        .        .        .        .        .
  480. .    X  .        .        .        . W      E        .        .        .        .        .        .
 7 500. X      .        .        .        . W      E        .        .        .        .        .        .
 8 520. .      .        X        .        . W      E        .        .        .        .        .        .
 9 540. .      .        .        .        X W      E        .        .        .        .        .        .
  560. .       .        .        .        .      X E        .        .        .        .        .        .
  580. .       .        .        .        .             X  .        .        .        .        .        .
10 600. .      .        .        .        .                X        .        .        .        .        .
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```
  640. .         .         .         .         .                   X         .         .         .         .         .
  660. .         .         .         .         .                   X         .         .         .         .         .
  680. .         .         .         .         .                   X         .         .         .         .         .
  700. .         .         .         .         .                   X         .         .         .         .         .
  720. .         .         .         .         .                   X         .         .         .         .         .
  740. .         .         .         .         .                   X         .         .         .         .         .
  760. .         .         .         .         .                   X         .         .         .         .         .
  780. .         .         .         .         .                   X         .         .         .         .         .
  800. .         .         .         .         .                   X         .         .         .         .         .
  820. .         .         .         .         .                   X         .         .         .         .         .
  840. .         .         .         .         .                   X         .         .         .         .         .
  860. .         .         .         .         .                   X         .         .         .         .         .
  880. .         .         .         .         .                   X         .         .         .         .         .
  900. .         .         .         .         .                   X         .         .         .         .         .
11 920. .         .         .         .         .                   X         .         .         .         .         .
12 940. .         .         .         .         X W     E         .         .         .         .         .         .
  960. .         .         .         .         X W     E         .         .         .         .         .         .
  980. .         .         .         .         X W     E         .         .         .         .         .         .
131000. .         .         .         .         X W     E         .         .         .         .         .         .
 1020. .         .         .         .         .     X E         .         .         .         .         .         .
141040. .         .         .         .         .                   X         .         .         .         .         .
 1060. .         .         .         .         .                 X .         .         .         .         .         .
 1080. .         .         .         .         .               X   .         .         .         .         .         .
 1100. .         .         .         .         .             X     .         .         .         .         .         .
 1120. .         .         .         .         .           X       .         .         .         .         .         .
 1140. .         .         .         .         .         X         .         .         .         .         .         .
 1160. .         .         .         .         .         XE        .         .         .         .         .         .
 1180. .         .         .         .         .       X  E        .         .         .         .         .         .
 1200. .         .         .         .         .     X    E        .         .         .         .         .         .
 1220. .         .         .         .         .   X      E        .         .         .         .         .         .
 1240. .         .         .         .         .XW      E        .         .         .         .         .         .
151260. .         .         .         .         X W     E         .         .         .         .         .         .
 1280. .         .         .       X .       .W      E         .         .         .         .         .         .
 1300. .         .       X .         .       .W      E         .         .         .         .         .         .
161320. .         .     X           .       .W      E         .         .         .         .         .         .
 1340. .         .     . X         .       .W      E         .         .         .         .         .         .
 1360. .         .       X .       .       .W      E         .         .         .         .         .         .
 1380. .         .         . X     .       .W      E         .         .         .         .         .         .
 1400. .         .           . X   .       .W      E         .         .         .         .         .         .
171420. .         .           X W         .W      E         .         .         .         .         .         .
 1440. .         .             X . W     .       E         .         .         .         .         .         .
 1460. .         .           . X   .       .W      E         .         .         .         .         .         .
 1480. .         .         . X     .       .W      E         .         .         .         .         .         .
 1500. .         .       .X        .       .W      E         .         .         .         .         .         .
 1520. .         .      X.         .       .W      E         .         .         .         .         .         .
 1540. .         .       X .       .       .W      E         .         .         .         .         .         .
 1560. .         .     . X         .       .W      E         .         .         .         .         .         .
 1580. .         .    . X          .       .W      E         .         .         .         .         .         .
181600. .         .     X           .       .W      E         .         .         .         .         .         .
 1620. .         .     X           .       .W      E         .         .         .         .         .         .
191640. .         .     X           .       .W      E         .         .         .         .         .    BANK.
 1660. .         .    . X          .       .W      E         .         .         .         .         .         .
 1680. .         .     . X         .       .W      E         .         .         .         .         .         .
 1700. .         .       X .       .       .W      E         .         .         .         .         .         .
 1720. .         .       .X        .       .W      E         .         .         .         .         .         .
 1740. .         .         . X     .       .W      E         .         .         .         .         .         .
 1760. .         .           . X   .       .W      E         .         .         .         .         .         .
 1780. .         .           X. W        .       E         .         .         .         .         .         .
 1800. .         .           .XW         .       E         .         .         .         .         .         .
 1820. .         .           .   X       .       E         .         .         .         .         .         .
 1840. .         .           .     X     .       E         .         .         .         .         .         .
 1860. .         .           .       XE  .       E         .         .         .         .         .         .
 1880. .         .           .         X .       E         .         .         .         .         .         .
 1900. .         .           .           X       E         .         .         .         .         .         .
 1920. .         .           .             X     E         .         .         .         .         .         .
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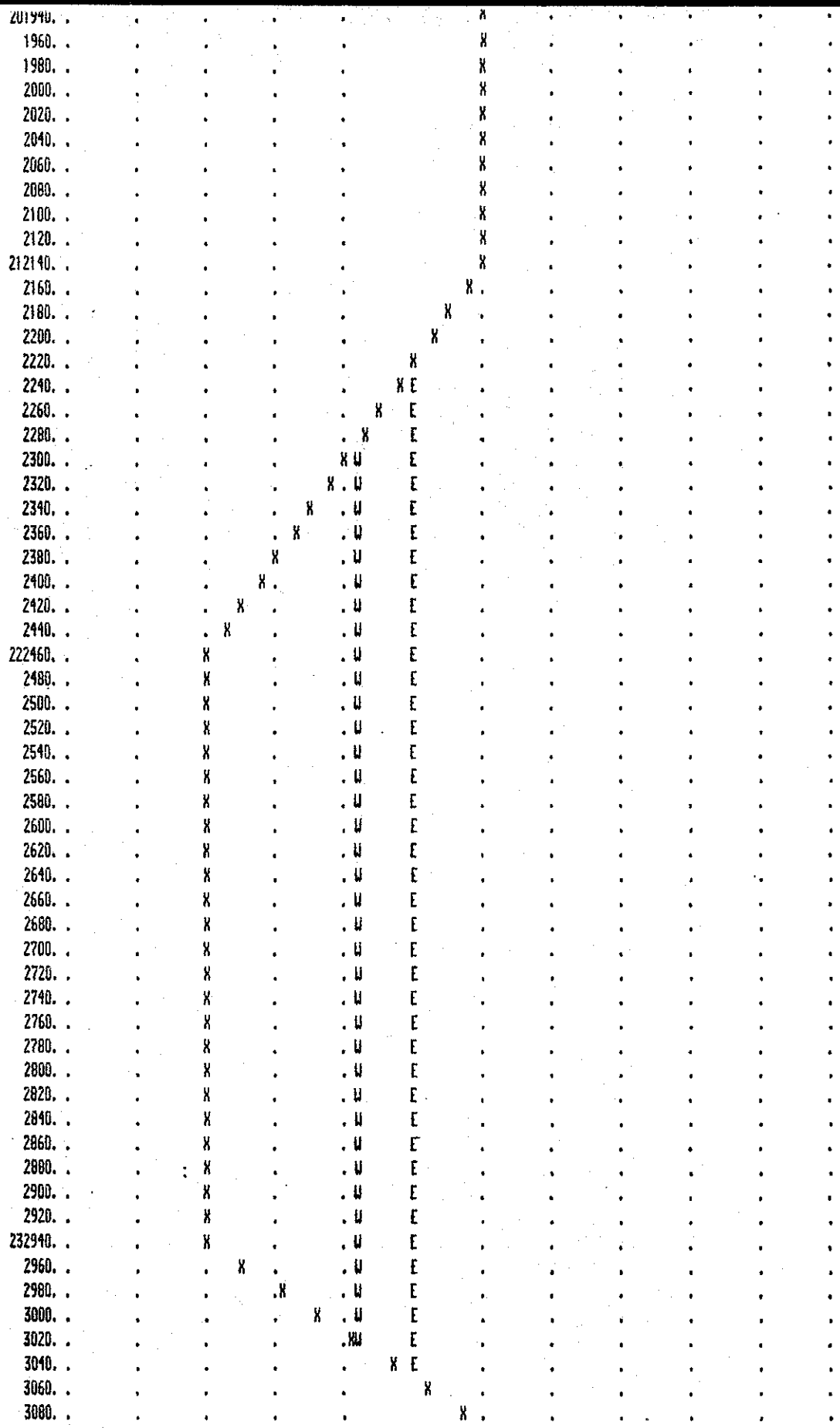

NRD= 0 ELLC= 9999999.00 ELTRD= 9999999.00

EL(I),STR(I)

1740.00	.00	1738.00	40.00	1736.00	190.00	1738.00	420.00	1736.00	470.00
1734.00	500.00	1736.00	530.00	1738.00	550.00	1740.00	600.00	1740.00	930.00
1738.00	950.00	1738.00	1000.00	1740.00	1050.00	1738.00	1260.00	1736.00	1320.00
1738.00	1420.00	1736.00	1500.00	1736.00	1550.00	1740.00	1950.00	1740.00	2150.00

1736.00	2470.00	1736.00	2950.00	1740.00	3100.00

CROSS SECTION .56
STREAM BH FOR BREACH AT S.E. CO
DISCHARGE= 18000.

PLOTTED POINTS (BY PRIORITY)-B=BOTTOM BRIDGE,T=TOP BRIDGE,X=GROUND,W=WATER SUR,E=ENERGY GRADIENT,C=CRITICAL WSEL

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ELEV 1754.    1755.    1756.    1757.    1758.    1759.    1760.    1761.    1762.    1763.    1764.


  STA-FEET

 2  0. .       .        .        .        .        .        X E      .        .        .        .        .
    50. .       .        .        .        X        .      W . E      .        .        .        .        .
 3 100. .       .        X        .        .        .      W . E      .        .        .        .        .
   150. .       .        X        .        .        .      W . E      .        .        .        .        .
   200. .       .        X        .        .        .      W . E      .        .        .        .        .
   250. .       .        X        .        .        .      W . E      .        .        .        .        .
   300. .       .        X        .        .        .      W . E      .        .        .        .        .
 4 350. .       .        X        .        .        .      W . E      .        .        .        .      BANK.
 5 400. X       .        .        .        .        .      W . E      .        .        .        .        .
   450. .       .      X .        .        .        .      W . E      .        .        .        .        .
   500. .       .        .        .      X  .        .      W . E      .        .        .        .        .
 6 550. .       .        .        .        .        .        X E      .        .        .        .        .
   600. .       .        .        .        .        .        X E      .        .        .        .        .
   650. .       .        .        .        .        .        X E      .        .        .        .        .
 7 700. .       .        .        .        .        .        X E      .        .        .        .        .
 8 750. .       .        X        .        .        .      W . E      .        .        .        .        .
 9 800. .       .        X        .        .        .      W . E      .        .        .        .        .
10 850. .       .        .        .        .        .        X E      .        .        .        .        .
   900. .       .        .        .        .        .        X E      .        .        .        .        .
   950. .       .        .        .        .        .        X E      .        .        .        .        .
  1000. .       .        .        .        .        .        X E      .        .        .        .        .
111050. .       .        .        .        .        .        X E      .        .        .        .        .
  1100. .       .        .      X .        .        .      W . E      .        .        .        .        .
121150. .       .        X        .        .        .      W . E      .        .        .        .        .
  1200. .       .        .      X .        .        .      W . E      .        .        .        .        .
  1250. .       .        .        .      X  .        .      W . E      .        .        .        .        .
  1300. .       .        .        .        . X      .      W . E      .        .        .        .        .
  1350. .       .        .        .        .        X      W . E      .        .        .        .        .
131400. .       .        .        .        .        .        X E      .        .        .        .        .
  1450. .       .        .        .        .        .        X E      .        .        .        .        .
  1500. .       .        .        .        .        .        X E      .        .        .        .        .
```

```
 1550. .     .     .     .     .     .     W E     .     .     .     .     .
 1600. .     .     .     .     .     .     X E     .     .     .     .     .
 1650. .     .     .     .     .     .     X E     .     .     .     .     .
 1700. .     .     .     .     .     .     X E     .     .     .     .     .
 1750. .     .     .     .     .     .     X E     .     .     .     .     .
 1800. .     .     .     .     .     .     X E     .     .     .     .     .
141850. .    .     .     .     .     .     X E     .     .     .     .     .
 1900. .     .     .     .     .   X .   W . E     .     .     .     .     .
 1950. .     .     .    X.     .     .   W . E     .     .     .     .     .
152000. .    .     X     .     .     .   W . E     .     .     .     .     .
 2050. .     .     X     .     .     .   W . E     .     .     .     .     .
162100. .    .     X     .     .     .   W . E     .     .     .     .  BANK.
 2150. .     .     .    X .    .     .   W . E     .     .     .     .     .
 2200. .     .     .     .  X  .     .   W . E     .     .     .     .     .
 2250. .     .     .     .     . X   .   W . E     .     .     .     .     .
 2300. .     .     .     .     .     .X  W . E     .     .     .     .     .
172350. .    .     .     .     .     .     X E     .     .     .     .     .
```

NRD= 0 ELLC= 9999999.00 ELTRD= 9999999.00

EL(I),STA(I)

1760.00	.00	1756.00	100.00	1756.00	350.00	1754.00	400.00	1760.00	570.00
1760.00	700.00	1756.00	750.00	1756.00	800.00	1760.00	850.00	1760.00	1070.00
1756.00	1130.00	1760.00	1400.00	1760.00	1850.00	1756.00	1980.00	1756.00	2090.00
1760.00	2350.00								

CROSS SECTION .30
STREAM BH FOR BREACH AT S.E. CO
DISCHARGE= 18000.

PLOTTED POINTS (BY PRIORITY)-B=BOTTOM BRIDGE,T=TOP BRIDGE,X=GROUND,W=WATER SUR,E=ENERGY GRADIENT,C=CRITICAL WSEL

```
ELEV 1770.    1771.    1772.    1773.    1774.    1775.    1776.    1777.    1778.    1779.    1780.


   STA-FEET

 2   0. .       .       .       .       .               X       .       .       .       .       .
    50. .       .       .       .       .               X       .       .       .       .       .
   100. .       .       .       .       .               X       .       .       .       .       .
 3 150. .       .       .       .       .               X       .       .       .       .       .
 4 200. .       .       X       .       W.       E       .       .       .       .       .   BANK.
 5 250. .       .       X       .       W.       E       .       .       .       .       .       .
 6 300. .       .       .       .       .               X       .       .       .       .       .
 7 350. .       .       .       .       .               X       .       .       .       .       .
   400. .       .       .       .       .     X E       .       .       .       .       .       .
   450. .       .       .       .   X   W.       E       .       .       .       .       .       .
 8 500. .       .       X       .       W.       E       .       .       .       .       .       .
   550. .       .       X       .       W.       E       .       .       .       .       .       .
   600. .       .       X       .       W.       E       .       .       .       .       .       .
 9 650. .       .       X       .       W.       E       .       .       .       .       .       .
   700. .      .X       .       .       W.       E       .       .       .       .       .       .
10 750. X       .       .       .       W.       E       .       .       .       .       .       .
   800. .   X   .       .       .       W.       E       .       .       .       .       .       .
   850. .      X.       .       .       W.       E       .       .       .       .       .       .
   900. .       . X     .       .       W.       E       .       .       .       .       .       .
   950. .       .    X  .       .       W.       E       .       .       .       .       .       .
111000. .       .       X       .       W.       E       .       .       .       .       .       .
  1050. .       .       X       .       W.       E       .       .       .       .       .       .
  1100. .       .       X       .       W.       E       .       .       .       .       .       .
  1150. .       .       X       .       W.       E       .       .       .       .       .       .
  1200. .       .       X       .       W.       E       .       .       .       .       .       .
  1250. .       .       X       .       W.       E       .       .       .       .       .       .
  1300. .       .       X       .       W.       E       .       .       .       .       .       .
  1350. .       .       X       .       W.       E       .       .       .       .       .       .
121400. .       .       X       .       W.       E       .       .       .       .       .   BANK.
  1450. .       .       .       .     X W.       E       .       .       .       .       .       .
131500. .       .       .       .       .               X       .       .       .       .       .
```

```
 1550. .        .        .        .        .                 X        .        .        .        .        .
 1600. .        .        .        .        .                 X        .        .        .        .        .
141650. .        .        .        .        .                 X        .        .        .        .        .
```

NRD= 0 ELLC= 9999999.00 ELTRD= 9999999.00

EL(I),STA(I)

1776.00	.00	1776.00	140.00	1772.00	220.00	1772.00	250.00	1776.00	300.00
1776.00	360.00	1772.00	520.00	1772.00	640.00	1770.00	750.00	1772.00	980.00
1772.00	1380.00	1776.00	1500.00	1776.00	1650.00				

CROSS SECTION .12
STREAM BH FOR BREACH AT S.E. CO
DISCHARGE= 18000.

PLOTTED POINTS (BY PRIORITY)-B=BOTTOM BRIDGE,T=TOP BRIDGE,X=GROUND,W=WATER SUR,E=ENERGY GRADIENT,C=CRITICAL WSEL

```
ELEV 1780.    1781.    1782.    1783.    1784.    1785.    1786.    1787.    1788.    1789.    1790.


   STA-FEET

2  0. .        .        .        .        .      X W    E.        .        .        .        .        .        .
  20. .        .        .        .        .    X . W    E.        .        .        .        .        .        .
  40. .        .        .        .      X      . W    E.        .        .        .        .        .        .
  60. .        .        .        .     .X      . W    E.        .        .        .        .        .        .
  80. .        .        .        .    X.       . W    E.        .        .        .        .        .        .
 100. .        .        .      X  .       . W    E.        .        .        .        .        .        .
 120. .        .        .    X    .       . W    E.        .        .        .        .        .        .
3 140. .        .        X      .       . W    E.        .        .        .        .        .     BANK.
 160. .        .      X .      .       . W    E.        .        .        .        .        .        .
 180. .        .     X  .      .       . W    E.        .        .        .        .        .        .
 200. .        .   X    .      .       . W    E.        .        .        .        .        .        .
 220. .        . X      .      .       . W    E.        .        .        .        .        .        .
 240. .        . X      .      .       . W    E.        .        .        .        .        .        .
 260. .       X         .      .       . W    E.        .        .        .        .        .        .
 280. .      X .        .      .       . W    E.        .        .        .        .        .        .
 300. .     X  .        .      .       . W    E.        .        .        .        .        .        .
 320. .   X    .        .      .       . W    E.        .        .        .        .        .        .
 340. . X      .        .      .       . W    E.        .        .        .        .        .        .
 360. . X      .        .      .       . W    E.        .        .        .        .        .        .
4 380. X       .        .      .       . W    E.        .        .        .        .        .        .
 400. X        .        .      .       . W    E.        .        .        .        .        .        .
 420. X        .        .      .       . W    E.        .        .        .        .        .        .
 440. X        .        .      .       . W    E.        .        .        .        .        .        .
5 460. X       .        .      .       . W    E.        .        .        .        .        .        .
 480. .X       .        .      .       . W    E.        .        .        .        .        .        .
 500. . X      .        .      .       . W    E.        .        .        .        .        .        .
 520. .  X     .        .      .       . W    E.        .        .        .        .        .        .
 540. .    X   .        .      .       . W    E.        .        .        .        .        .        .
 560. .     X  .        .      .       . W    E.        .        .        .        .        .        .
 580. .      X .        .      .       . W    E.        .        .        .        .        .        .
 600. .        X        .      .       . W    E.        .        .        .        .        .        .
```

```
  640. .       . X     .       .       . W    E.      .       .       .       .       .       .
  660. .       .  X    .       .       . W    E.      .       .       .       .       .       .
  680. .       .   X   .       .       . W    E.      .       .       .       .       .       .
  700. .       .    X  .       .       . W    E.      .       .       .       .       .       .
  720. .       .     X .       .       . W    E.      .       .       .       .       .       .
  740. .       .      X.       .       . W    E.      .       .       .       .       .       .
6 760. .       .       X       .       . W    E.      .       .       .       .       .       .
  780. .       .       X       .       . W    E.      .       .       .       .       .       .
  800. .       .       X       .       . W    E.      .       .       .       .       .       .
  820. .       .       X       .       . W    E.      .       .       .       .       .       .
  840. .       .       X       .       . W    E.      .       .       .       .       .       .
  860. .       .       X       .       . W    E.      .       .       .       .       .       .
  880. .       .       X       .       . W    E.      .       .       .       .       .       .
  900. .       .       X       .       . W    E.      .       .       .       .       .       .
  920. .       .       X       .       . W    E.      .       .       .       .       .       .
  940. .       .       X       .       . W    E.      .       .       .       .       .       .
  960. .       .       X       .       . W    E.      .       .       .       .       .       .
  980. .       .       X       .       . W    E.      .       .       .       .       .       .
71000. .       .       X       .       . W    E.      .       .       .       .       .    BANK.
 1020. .       .      . X      .       . W    E.      .       .       .       .       .       .
 1040. .       .      .  X     .       . W    E.      .       .       .       .       .       .
 1060. .       .      .   X    .       . W    E.      .       .       .       .       .       .
 1080. .       .      .    X   .       . W    E.      .       .       .       .       .       .
 1100. .       .      .     .X        . W    E.      .       .       .       .       .       .
 1120. .       .      .      . X      . W    E.      .       .       .       .       .       .
 1140. .       .      .       .  X     . W    E.      .       .       .       .       .       .
 1160. .       .      .       .   X    . W    E.      .       .       .       .       .       .
 1180. .       .      .       .    X   . W    E.      .       .       .       .       .       .
81200. .       .      .       .     X  W .  E.      .       .       .       .       .       .

NRD=      0 ELLC=  9999999.00 ELTRD=  9999999.00

 EL(I),STA(I)
   1784.00       .00    1782.00     140.00    1780.00     380.00    1780.00     470.00    1782.00     760.00
   1782.00    1010.00    1784.00    1200.00
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CROSS SECTION       .00
STREAM  BH FOR BREACH AT S.E. CO
DISCHARGE=    18000.


PLOTTED POINTS (BY PRIORITY)-B=BOTTOM BRIDGE,T=TOP BRIDGE,X=GROUND,W=WATER SUR,E=ENERGY GRADIENT,C=CRITICAL WSEL

ELEV 1788.     1789.     1790.     1791.     1792.     1793.     1794.     1795.     1796.     1797.     1798.


    STA-FEET

 3   0. XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX        .         .       BANK.
    10. X         .         .         .       W         .       E         .         .         .         .         .
    20. X         .         .         .       W         .       E         .         .         .         .         .
    30. X         .         .         .       W         .       E         .         .         .         .         .
    40. X         .         .         .       W         .       E         .         .         .         .         .
    50. X         .         .         .       W         .       E         .         .         .         .         .
    60. X         .         .         .       W         .       E         .         .         .         .         .
    70. X         .         .         .       W         .       E         .         .         .         .         .
    80. X         .         .         .       W         .       E         .         .         .         .         .
    90. X         .         .         .       W         .       E         .         .         .         .         .
   100. X         .         .         .       W         .       E         .         .         .         .         .
   110. X         .         .         .       W         .       E         .         .         .         .         .
   120. X         .         .         .       W         .       E         .         .         .         .         .
   130. X         .         .         .       W         .       E         .         .         .         .         .
   140. X         .         .         .       W         .       E         .         .         .         .         .
   150. X         .         .         .       W         .       E         .         .         .         .         .
   160. X         .         .         .       W         .       E         .         .         .         .         .
   170. X         .         .         .       W         .       E         .         .         .         .         .
   180. X         .         .         .       W         .       E         .         .         .         .         .
   190. X         .         .         .       W         .       E         .         .         .         .         .
   200. X         .         .         .       W         .       E         .         .         .         .         .
   210. X         .         .         .       W         .       E         .         .         .         .         .
   220. X         .         .         .       W         .       E         .         .         .         .         .
   230. X         .         .         .       W         .       E         .         .         .         .         .
   240. X         .         .         .       W         .       E         .         .         .         .         .
   250. X         .         .         .       W         .       E         .         .         .         .         .
   260. X         .         .         .       W         .       E         .         .         .         .         .
   270. X         .         .         .       W         .       E         .         .         .         .         .
   280. X         .         .         .       W         .       E         .         .         .         .         .
   290. X         .         .         .       W         .       E         .         .         .         .         .
   300. X         .         .         .       W         .       E         .         .         .         .         .
```

```
   310. X     .        .        .        W        .        E        .        .        .        .        .
   320. X     .        .        .        W        .        E        .        .        .        .        .
   330. X     .        .        .        W        .        E        .        .        .        .        .
   340. X     .        .        .        W        .        E        .        .        .        .        .
   350. X     .        .        .        W        .        E        .        .        .        .        .
   360. X     .        .        .        W        .        E        .        .        .        .        .
   370. X     .        .        .        W        .        E        .        .        .        .        .
   380. X     .        .        .        W        .        E        .        .        .        .        .
   390. X     .        .        .        W        .        E        .        .        .        .        .
 5 400. XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX        .        .     BANK.

NRD=       0 ELLC=  9999999.00 ELTRD=  9999999.00

 EL(I),STA(I)
   1796.00        .00    1788.00       1.00    1788.00     400.00    1796.00     401.00




PROFILE FOR STREAM  BH FOR BREACH AT S.E. CO



PLOTTED POINTS (BY PRIORITY)-E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA


ELEVATION  1680.    1700.    1720.    1740.    1760.    1780.    1800.    1820.    1840.    1860.
   SECNO   CUMDIS

    1.64     0. .      IRLE     .        .        .        .        .        .        .        .        .
           100. C      IRLE     .        .        .        .        .        .        .        .        .
    1.64   200. C      IRLE     .        .        .        .        .        .        .        .        .
           300. C      IRLME    .        .        .        .        .        .        .        .        .
           400. C       IRLE    .        .        .        .        .        .        .        .        .
           500. C       IRLWE   .        .        .        .        .        .        .        .        .
           600. C        ILME   .        .        .        .        .        .        .        .        .
           700. C        IRLE   .        .        .        .        .        .        .        .        .
           800. C         ILME  .        .        .        .        .        .        .        .        .
           900. C         ILME  .        .        .        .        .        .        .        .        .
          1000. C         .ILWE .        .        .        .        .        .        .        .        .
    1.47  1100. .         .ILME .        .        .        .        .        .        .        .        .
          1200. C         .I LE .        .        .        .        .        .        .        .        .
          1300. C         . ILME .       .        .        .        .        .        .        .        .
          1400. C         . I LE  .      .        .        .        .        .        .        .        .
          1500. C         .  I LE .      .        .        .        .        .        .        .        .
          1600. C         .  I LE .      .        .        .        .        .        .        .        .
          1700. C         .  I  WE .     .        .        .        .        .        .        .        .
          1800. C         .   I LE .     .        .        .        .        .        .        .        .
          1900. C         .   I  WE.     .        .        .        .        .        .        .        .
          2000. C         .    I  E.     .        .        .        .        .        .        .        .
          2100. C         .    I  WE.    .        .        .        .        .        .        .        .
          2200. C         .    I   E.    .        .        .        .        .        .        .        .
          2300. C         .     I  WE    .        .        .        .        .        .        .        .
    1.23  2400. C         .     I   E    .        .        .        .        .        .        .        .
          2500. C         .      I  WE   .        .        .        .        .        .        .        .
          2600. C         .      I  .E   .        .        .        .        .        .        .        .
          2700. C         .       I .WE  .        .        .        .        .        .        .        .
          2800. C         .        I. E  .        .        .        .        .        .        .        .
          2900. C         .        I. WE .        .        .        .        .        .        .        .
          3000. C         .         I  E .        .        .        .        .        .        .        .
          3100. C         .         I  WE .       .        .        .        .        .        .        .
          3200. C         .         .I  EM .      .        .        .        .        .        .        .
```

```
     3300. C        .        . I WE   .        .        .        .        .        .        .
     3400. C        .        . I  EM  .        .        .        .        .        .        .
     3500. C        .        . I RE   .        .        .        .        .        .        .
     3600. C        .        .  IRWE  .        .        .        .        .        .        .
     3700. C        .        .  I RE  .        .        .        .        .        .        .
     3800. C        .        .   IRWE .        .        .        .        .        .        .
     3900. C        .        .   I REM.        .        .        .        .        .        .
     4000. C        .        .    IRWE.        .        .        .        .        .        .
.90  4100. .        .        .     IREM        .        .        .        .        .        .
     4200. C        .        .      IREM       .        .        .        .        .        .
     4300. C        .        .      IRWE       .        .        .        .        .        .
     4400. C        .        .       IREM      .        .        .        .        .        .
     4500. C        .        .       IRLE      .        .        .        .        .        .
     4600. C        .        .        IREM     .        .        .        .        .        .
     4700. C        .        .        IRLE     .        .        .        .        .        .
     4800. C        .        .        .IRWE    .        .        .        .        .        .
     4900. C        .        .        .IRLE    .        .        .        .        .        .
     5000. C        .        .        . IRLE   .        .        .        .        .        .
     5100. C        .        .        . ILEM   .        .        .        .        .        .
     5200. C        .        .        . IRLE   .        .        .        .        .        .
     5300. C        .        .        .  ILWE  .        .        .        .        .        .
     5400. C        .        .        .  IRLE  .        .        .        .        .        .
     5500. C        .        .        .   IL E .        .        .        .        .        .
     5600. C        .        .        .   IRLE .        .        .        .        .        .
     5700. C        .        .        .    IL E.        .        .        .        .        .
     5800. C        .        .        .    IRLWE        .        .        .        .        .
.56  5900. C        .        .        .     IL E        .        .        .        .        .
     6000. C        .        .        .      ILWE       .        .        .        .        .
     6100. C        .        .        .      IL.E       .        .        .        .        .
     6200. C        .        .        .       ILWE      .        .        .        .        .
     6300. C        .        .        .       IL E      .        .        .        .        .
     6400. C        .        .        .        IL E     .        .        .        .        .
     6500. C        .        .        .        .ILEM    .        .        .        .        .
     6600. C        .        .        .        .IL E    .        .        .        .        .
     6700. C        .        .        .        . ILEM   .        .        .        .        .
     6800. C        .        .        .        . IL E   .        .        .        .        .
     6900. C        .        .        .        .  ILWE  .        .        .        .        .
     7000. C        .        .        .        .   ILEM .        .        .        .        .
     7100. C        .        .        .        .   ILWE .        .        .        .        .
     7200. .        .   C    .        .        .    ILEM.        .        .        .        .
.30  7300. .        .        .        .        .    ILEM.        .        .        .        .
     7400. C        .        .        .        .     IWE .        .        .        .        .
     7500. C        .        .        .        .     ILWE.        .        .        .        .
     7600. C        .        .        .        .      ILE.        .        .        .        .
     7700. C        .        .        .        .      ILWE        .        .        .        .
     7800. C        .        .        .        .       ILE        .        .        .        .
     7900. C        .        .        .        .       ILWE       .        .        .        .
     8000. C        .        .        .        .        ILE       .        .        .        .
     8100. C        .        .        .        .        ILWE      .        .        .        .
.12  8200. C        .        .        .        .         ILE      .        .        .        .
     8300. C        .        .        .        .         .I E     .        .        .        .
     8400. C        .        .        .        .         .ILWE    .        .        .        .
     8500. C        .        .        .        .         . I WE   .        .        .        .
     8600. C        .        .        .        .         . IL EM  .        .        .        .
     8700. C        .        .        .        .         . I WEM  .        .        .        .
     8800. C        .        .        .        .         .  I WEM .        .        .        .
.00  8900. .        .        .        .        .         .  I WEM .        .        .        .
```

THIS RUN EXECUTED 02/11/86 16:26:04

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*********************************************
 HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
 ERROR CORR -  01,02,03,04,05,06
 MODIFICATION -  50,51,52,53,54,55,56
 IBM-PC-XT VERSION
*********************************************
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```
T1
T2
T3 FBH,Q=16000

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   NVINS    Q        WSEL     FQ

      0.       3.       0.       0. -1.000000      .00       .0       0.  1700.000     .000

J2  NPROF    IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IBW      CHNIM    ITRACE

     2.000     .000     .000     .000     .000     .000     .000     .000     .000     .000
```

```
  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA    LEFT/RIGHT
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IOC      ICONT    CORAR    TOPWID     ENDST


*PROF 2


CCHV=    .100 CEHV=    .300
*SECNO 1.640

3265 DIVIDED FLOW

3720 CRITICAL DEPTH ASSUMED
    1.64     4.90  1698.90  1698.90  1700.00  1699.69      .79      .00      .00  1698.00
   16000.     649.     7259.     8092.      313.     737.    2254.       0.       0.  1696.00
     .00     2.07     9.85     3.59     .080     .040     .080     .000  1694.00   534.81
  .014895       0.       0.       0.        0       13        0      .00  1881.68  2462.46


*SECNO 1.638
3280 CROSS SECTION      1.64 EXTENDED      .51 FEET


3301 HV CHANGED MORE THAN HVINS

    1.64     6.51  1700.51      .00      .00  1700.68      .17      .93      .06  1698.00
   16000.    1622.     5536.     8842.    1200.    1108.    4521.      23.      10.  1696.00
     .02     1.35     5.00     1.96     .080     .040     .080     .000  1694.00      .00
  .002228     200.      200.      200.        3        0        0      .00  2600.00  2600.00


*SECNO 1.468
3280 CROSS SECTION      1.47 EXTENDED      1.16 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
    1.47     5.16  1707.16  1707.16      .00  1707.80      .64     3.40      .14  1704.00
```

```
  16000.    5865.    6819.    1110.    1930.    1010.    1930.     .00     .00     .00
     .06     1.92     8.47     2.13     .080     .040     .080     .000 1702.00     .00
 .007776     900.     900.     900.       20       14        0      .00 2950.00 2950.00


1490 NH CARD USED
*SECNO 1.231
    1.23     6.83  1718.83      .00      .00  1719.79      .96    11.89      .10 1720.00
   16000.       0.   16000.       0.       0.    2035.       0.     236.     119.  1720.00
     .11      .00     7.86      .00     .080     .044     .080     .000 1712.00  817.50
 .011912    1250.    1250.    1250.        4        0        0      .00  663.05 1480.55
```



```
  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA    LEFT/RIGHT
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IOC      ICONT    CORAR    TOPWID     ENDST


1490 NH CARD USED
*SECNO  .900

3265 DIVIDED FLOW

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3720 CRITICAL DEPTH ASSUMED
     .90     4.08  1738.08  1738.08      .00  1738.80      .72    34.78      .02 1738.00
   16000.    1594.     6207.     8200.     410.     735.    1414.     328.     170.  1736.00
     .16     3.89     8.44     5.80     .080     .041     .074     .000 1734.00   38.43
 .039603    1750.    1750.    1750.       20       14        0      .00 1844.72 3027.95


1490 NH CARD USED
*SECNO  .559

3265 DIVIDED FLOW

     .56     5.57  1759.57      .00      .00  1759.93      .36    21.10      .04 1756.00
   16000.    6081.     9077.     842.    1052.    2131.     414.     455.     238.  1756.00
     .29     5.78     4.26     2.03     .042     .047     .080     .000 1754.00   10.76
 .005529    1800.    1800.    1800.        9        0        0      .00 1438.81 2322.02


1490 NH CARD USED
*SECNO  .303

3265 DIVIDED FLOW


3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
```

```
     .50     3.12  1113.12  1113.12     .00  1114.12     ----     ----     ---   -------
   16000.      68.   15727.     205.     30.    1951.      44.     542.     277.   1772.00
     .33     2.30     8.06     4.60    .080     .040     .040     .000  1770.00    185.55
  .018703   1350.    1350.    1350.      6       23        0      .00  1066.53   1431.67


1490 NH CARD USED
*SECNO  .123
```



```
   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN     SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IBC      ICONT    CORAR    TOPWID    ENDST


3280 CROSS SECTION      .12 EXTENDED      .08 FEET

     .12      4.07  1784.07      .00      .00  1784.64      .56     9.88      .04  1782.00
   16000.      239.    15436.     325.     151.    2517.     205.     596.     301.   1782.00
     .38      1.59     6.13     1.59    .080     .040     .080     .000  1780.00      .00
  .006607     950.     950.     950.       6        0        0      .00  1200.00  1200.00


CCHV=    .100 CEHV=    .300
*SECNO  .000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
     .00      3.67  1791.67  1791.67      .00  1793.52     1.85     8.31      .39  1788.00
   16000.        1.    15997.       1.       1.     1464.       1.     628.     313.   1788.00
     .39      1.71    10.93     1.71    .060     .060     .060     .000  1788.00      .54
  .034415     650.     650.     650.       2       11        0      .00   399.92   400.46
```

PROFILE FOR STREAM =16000

PLOTTED POINTS (BY PRIORITY)-E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA

```
ELEVATION 1680.    1700.    1720.    1740.    1760.    1780.    1800.    1820.    1840.    1860.
   SECNO  CUMDIS

    1.64    0. .    IRWE       .        .        .        .        .        .        .        .
          100. C    IRLE       .        .        .        .        .        .        .        .
    1.64  200. C    IRLE       .        .        .        .        .        .        .        .
          300. C    IRLME      .        .        .        .        .        .        .        .
          400. C     IRLE      .        .        .        .        .        .        .        .
          500. C     IRLWE     .        .        .        .        .        .        .        .
          600. C      ILME     .        .        .        .        .        .        .        .
          700. C      IRLE     .        .        .        .        .        .        .        .
          800. C       ILWE    .        .        .        .        .        .        .        .
          900. C       ILME    .        .        .        .        .        .        .        .
         1000. C       .ILWE   .        .        .        .        .        .        .        .
    1.47 1100. .       .ILME   .        .        .        .        .        .        .        .
         1200. C       .I LE   .        .        .        .        .        .        .        .
         1300. C       . ILME  .        .        .        .        .        .        .        .
         1400. C       . I LE  .        .        .        .        .        .        .        .
         1500. C       .  I WE .        .        .        .        .        .        .        .
         1600. C       .  I LE .        .        .        .        .        .        .        .
         1700. C       .  I  WE.        .        .        .        .        .        .        .
         1800. C       .   I LE.        .        .        .        .        .        .        .
         1900. C       .   I  WE.       .        .        .        .        .        .        .
         2000. C       .    I  E.       .        .        .        .        .        .        .
         2100. C       .    I  WE.      .        .        .        .        .        .        .
         2200. C       .    I   E.      .        .        .        .        .        .        .
         2300. C       .     I  WE      .        .        .        .        .        .        .
    1.23 2400. C       .     I  WE      .        .        .        .        .        .        .
         2500. C       .      I  EL     .        .        .        .        .        .        .
         2600. C       .      I  .E     .        .        .        .        .        .        .
         2700. C       .       I .WE    .        .        .        .        .        .        .
         2800. C       .        I. E    .        .        .        .        .        .        .
         2900. C       .        I. WE   .        .        .        .        .        .        .
         3000. C       .         I  E   .        .        .        .        .        .        .
         3100. C       .         I  WE  .        .        .        .        .        .        .
         3200. C       .         .I  EM .        .        .        .        .        .        .
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     3300. C     .     . I WE  .     .     .     .     .     .     .     .
     3400. C     .     . I  EM .     .     .     .     .     .     .     .
     3500. C     .     .  I WE .     .     .     .     .     .     .     .
     3600. C     .     .  IREM .     .     .     .     .     .     .     .
     3700. C     .     .  I RE .     .     .     .     .     .     .     .
     3800. C     .     .   IREM .    .     .     .     .     .     .     .
     3900. C     .     .   I REM.    .     .     .     .     .     .     .
     4000. C     .     .   IRWE.     .     .     .     .     .     .     .
.90  4100. .     .     .    IREM     .     .     .     .     .     .     .
     4200. C     .     .    IREM     .     .     .     .     .     .     .
     4300. C     .     .    IRWE     .     .     .     .     .     .     .
     4400. C     .     .     IREM    .     .     .     .     .     .     .
     4500. C     .     .     IRWE    .     .     .     .     .     .     .
     4600. C     .     .      IREM   .     .     .     .     .     .     .
     4700. C     .     .      IRLE   .     .     .     .     .     .     .
     4800. C     .     .      .IRWE  .     .     .     .     .     .     .
     4900. C     .     .      .IRLE  .     .     .     .     .     .     .
     5000. C     .     .      . IRWE .     .     .     .     .     .     .
     5100. C     .     .      . ILEM .     .     .     .     .     .     .
     5200. C     .     .      . IRLE .     .     .     .     .     .     .
     5300. C     .     .      .  ILEM .    .     .     .     .     .     .
     5400. C     .     .      .  IRLE .    .     .     .     .     .     .
     5500. C     .     .      .   ILWE .   .     .     .     .     .     .
     5600. C     .     .      .   IRLE .   .     .     .     .     .     .
     5700. C     .     .      .    IL E.   .     .     .     .     .     .
     5800. C     .     .      .    IRLE.   .     .     .     .     .     .
.56  5900. C     .     .      .     IL E   .     .     .     .     .     .
     6000. C     .     .      .      ILWE  .     .     .     .     .     .
     6100. C     .     .      .      IL.E  .     .     .     .     .     .
     6200. C     .     .      .       ILWE .     .     .     .     .     .
     6300. C     .     .      .       IL E .     .     .     .     .     .
     6400. C     .     .      .        ILWE .    .     .     .     .     .
     6500. C     .     .      .        .ILEM .   .     .     .     .     .
     6600. C     .     .      .        .ILWE .   .     .     .     .     .
     6700. C     .     .      .        . ILEM .  .     .     .     .     .
     6800. C     .     .      .        . IL E .  .     .     .     .     .
     6900. C     .     .      .        .  ILEM .  .     .     .     .     .
     7000. C     .     .      .        .   ILEM .  .     .     .     .     .
     7100. C     .     .      .        .   ILWE .  .     .     .     .     .
     7200. .     .  C  .      .        .    ILEM .  .     .     .     .     .
.30  7300. .     .     .      .        .    ILEM .  .     .     .     .     .
     7400. C     .     .      .        .     IWE .  .     .     .     .     .
     7500. C     .     .      .        .     ILEM.  .     .     .     .     .
     7600. C     .     .      .        .      IWE.  .     .     .     .     .
     7700. C     .     .      .        .      ILEM  .     .     .     .     .
     7800. C     .     .      .        .       ILE  .     .     .     .     .
     7900. C     .     .      .        .       ILEM .     .     .     .     .
     8000. C     .     .      .        .        ILE .     .     .     .     .
     8100. C     .     .      .        .        ILWE .    .     .     .     .
.12  8200. C     .     .      .        .         ILE .    .     .     .     .
     8300. C     .     .      .        .         .I E .   .     .     .     .
     8400. C     .     .      .        .         .ILWE .  .     .     .     .
     8500. C     .     .      .        .         . I EM . .     .     .     .
     8600. C     .     .      .        .         . ILWEM . .    .     .     .
     8700. C     .     .      .        .         .  I WEM . .   .     .     .
     8800. C     .     .      .        .         .   I E M . .  .     .     .
.00  8900. .     .     .      .        .         .   I WEM . .  .     .     .
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THIS RUN EXECUTED 02/11/86 16:28:34

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*********************************************
 HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
 ERROR CORR -  01,02,03,04,05,06
 MODIFICATION -  50,51,52,53,54,55,56
 IBM-PC-XT VERSION
*********************************************
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T1
T2
T3 FBW, Q=14000,

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	4.	0.	0.	-1.000000	.00	.0	0.	1700.000	.000

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	3.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

```
  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN     SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST


*PROF 3


CCHV=    .100 CEHV=    .300
*SECNO 1.640

3265 DIVIDED FLOW

3720 CRITICAL DEPTH ASSUMED
    1.64     4.75  1698.75  1698.75  1700.00  1699.48      .73      .00      .00  1698.00
   14000.     467.    6569.    6964.     259.     703.    2064.       0.       0.  1696.00
     .00     1.80     9.35     3.37     .080     .040     .080     .000  1694.00   539.99
  .014301       0.       0.       0.        0       13        0      .00  1850.68  2443.78


*SECNO 1.638
3280 CROSS SECTION      1.64 EXTENDED      .28 FEET


3301 HV CHANGED MORE THAN HVINS

    1.64     6.27  1700.27      .00      .00  1700.43      .16      .90      .06  1698.00
   14000.    1277.    5019.    7704.     990.    1054.    4178.      21.      10.  1696.00
     .02     1.29     4.76     1.84     .080     .040     .080     .000  1694.00      .00
  .002160     200.     200.     200.        3        0        0      .00  2600.00  2600.00


*SECNO 1.468
3280 CROSS SECTION      1.47 EXTENDED      1.03 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
    1.47     5.03  1707.03  1707.03      .00  1707.63      .61     3.27      .13  1704.00
```

```
 14000.    2473.    8713.    5112.    1124.    [illegible]    [illegible]    [illegible]    [illegible]    [illegible]
    .07     1.74     8.06     1.95     .080     .040     .080     .000  1702.00      .00
 .007352    900.     900.     900.       20       14        0      .00  2950.00  2950.00


1490 NH CARD USED
*SECNO 1.231
   1.23     6.50  1718.50      .00      .00  1719.42      .92    11.69      .09  1720.00
  14000.       0.   14000.       0.       0.    1822.       0.     215.     119.  1720.00
    .11      .00     7.68      .00     .080     .043     .080     .000  1712.00   822.34
 .012305    1250.    1250.    1250.        3        0        0      .00   652.83  1475.17
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```
  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       QLOSS    BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA    LEFT/RIGHT
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTH      ELMIN      SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


1490 NH CARD USED
*SECNO  .900

3265 DIVIDED FLOW

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3720 CRITICAL DEPTH ASSUMED
    .90     3.95  1737.95  1737.95      .00  1738.63      .68    35.24      .02  1738.00
  14000.    1305.    5500.    7195.     363.     666.    1305.     298.     167.  1736.00
    .19     3.60     8.26     5.51     .080     .042     .074     .000  1734.00    43.49
 .038753    1750.    1750.    1750.       20       14        0      .00  1737.68  3023.26


1490 NH CARD USED
*SECNO  .559

3265 DIVIDED FLOW

    .56     5.32  1759.32      .00      .00  1759.66      .34    20.99      .03  1756.00
  14000.    5363.    7945.     692.     967.    1917.     358.     413.     232.  1756.00
    .30     5.55     4.14     1.94     .042     .047     .080     .000  1754.00    17.08
 .005535    1800.    1800.    1800.        9        0        0      .00  1373.47  2305.58


1490 NH CARD USED
*SECNO  .303

3265 DIVIDED FLOW


3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
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     .30     3.55  1773.55  1773.55     .00  1779.97     .92    12.68     .18  1772.00
   14000.      52.   13792.     156.     24.    1779.     36.     492.     269.  1772.00
     .34     2.17     7.75     4.35    .080     .040    .040     .000  1770.00   189.07
  .019303    1350.    1350.    1350.       6       23       0      .00  1048.52  1426.40


1490 NH CARD USED
*SECNO  .123
     .12     3.88  1783.88      .00     .00  1784.39     .51     9.87     .04  1782.00
   14000.     177.   13582.     241.    124.    2345.    168.     541.     293.  1782.00
     .39     1.43     5.79     1.43    .080     .040    .080     .000  1780.00     8.48
  .006483     950.     950.     950.       7        0       0      .00  1180.02  1188.50


 02/11/86    16:08:18                                                                PAGE  13


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       DLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN     SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST


CCHV=    .100 CEHV=    .300
*SECNO  .000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
     .00     3.36  1791.36  1791.36     .00  1793.05     1.69     8.26     .36  1788.00
   14000.       1.   13998.       1.      1.    1340.       1.     571.     305.  1788.00
     .41     1.64    10.45     1.64    .060     .060    .060     .000  1788.00      .58
  .035365     650.     650.     650.       3       11       0      .00   399.84   400.42
```

PROFILE FOR STREAM Q=14000,

PLOTTED POINTS (BY PRIORITY)-E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA

```
ELEVATION 1680.    1700.    1720.    1740.    1760.    1780.    1800.    1820.    1840.    1860.
   SECNO  CUMDIS

    1.64     0. .    IRWE      .        .        .        .        .        .        .        .        .
           100. C    IRLE      .        .        .        .        .        .        .        .        .
    1.64   200. C    IRLE      .        .        .        .        .        .        .        .        .
           300. C    IRLME     .        .        .        .        .        .        .        .        .
           400. C     IRLE     .        .        .        .        .        .        .        .        .
           500. C     IRLE     .        .        .        .        .        .        .        .        .
           600. C      ILME    .        .        .        .        .        .        .        .        .
           700. C      IRLE    .        .        .        .        .        .        .        .        .
           800. C       ILWE   .        .        .        .        .        .        .        .        .
           900. C       ILME   .        .        .        .        .        .        .        .        .
          1000. C       .ILE   .        .        .        .        .        .        .        .        .
    1.47  1100. .       .ILME  .        .        .        .        .        .        .        .        .
          1200. C       .I LE  .        .        .        .        .        .        .        .        .
          1300. C       . ILWE .        .        .        .        .        .        .        .        .
          1400. C       . I LE .        .        .        .        .        .        .        .        .
          1500. C       . I WE .        .        .        .        .        .        .        .        .
          1600. C       . I LE .        .        .        .        .        .        .        .        .
          1700. C       . I WE .        .        .        .        .        .        .        .        .
          1800. C       . I LE .        .        .        .        .        .        .        .        .
          1900. C       . I WE .        .        .        .        .        .        .        .        .
          2000. C       . I E .         .        .        .        .        .        .        .        .
          2100. C       . I WE.         .        .        .        .        .        .        .        .
          2200. C       . I E.          .        .        .        .        .        .        .        .
          2300. C       . I EL          .        .        .        .        .        .        .        .
    1.23  2400. C       . I WE          .        .        .        .        .        .        .        .
          2500. C       . I EL          .        .        .        .        .        .        .        .
          2600. C       . I WE          .        .        .        .        .        .        .        .
          2700. C       . I .EL         .        .        .        .        .        .        .        .
          2800. C       . I.WE          .        .        .        .        .        .        .        .
          2900. C       . I. EL         .        .        .        .        .        .        .        .
          3000. C       . I E           .        .        .        .        .        .        .        .
          3100. C       . I WE          .        .        .        .        .        .        .        .
          3200. C       . .I EM         .        .        .        .        .        .        .        .
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     3300. C        .        . I WE   .        .        .        .        .        .        .        .
     3400. C        .        . I  EM  .        .        .        .        .        .        .        .
     3500. C        .        .  I WE  .        .        .        .        .        .        .        .
     3600. C        .        .  IREM  .        .        .        .        .        .        .        .
     3700. C        .        .  I WE  .        .        .        .        .        .        .        .
     3800. C        .        .   IREM .        .        .        .        .        .        .        .
     3900. C        .        .   I REM.        .        .        .        .        .        .        .
     4000. C        .        .    IREM.        .        .        .        .        .        .        .
.90  4100. .        .        .     IREM        .        .        .        .        .        .        .
     4200. C        .        .      IREM       .        .        .        .        .        .        .
     4300. C        .        .      IREM       .        .        .        .        .        .        .
     4400. C        .        .       IREM      .        .        .        .        .        .        .
     4500. C        .        .       IRWE      .        .        .        .        .        .        .
     4600. C        .        .        IREM     .        .        .        .        .        .        .
     4700. C        .        .        IRLE     .        .        .        .        .        .        .
     4800. C        .        .        .IREM    .        .        .        .        .        .        .
     4900. C        .        .        .IRLE    .        .        .        .        .        .        .
     5000. C        .        .        . IRWE   .        .        .        .        .        .        .
     5100. C        .        .        .  ILEM  .        .        .        .        .        .        .
     5200. C        .        .        .  IRLE  .        .        .        .        .        .        .
     5300. C        .        .        .   ILEM .        .        .        .        .        .        .
     5400. C        .        .        .   IRLE .        .        .        .        .        .        .
     5500. C        .        .        .    ILEM .       .        .        .        .        .        .
     5600. C        .        .        .    IRLE .       .        .        .        .        .        .
     5700. C        .        .        .     ILWE.       .        .        .        .        .        .
     5800. C        .        .        .     IRLE.       .        .        .        .        .        .
.56  5900. C        .        .        .      IL E       .        .        .        .        .        .
     6000. C        .        .        .       ILEM      .        .        .        .        .        .
     6100. C        .        .        .       IL.E      .        .        .        .        .        .
     6200. C        .        .        .        ILEM     .        .        .        .        .        .
     6300. C        .        .        .        IL E     .        .        .        .        .        .
     6400. C        .        .        .         ILWE    .        .        .        .        .        .
     6500. C        .        .        .         .ILEM   .        .        .        .        .        .
     6600. C        .        .        .         .ILWE   .        .        .        .        .        .
     6700. C        .        .        .         . ILEM  .        .        .        .        .        .
     6800. C        .        .        .         . ILWE  .        .        .        .        .        .
     6900. C        .        .        .         .  ILEM .        .        .        .        .        .
     7000. C        .        .        .         .   IWEM .       .        .        .        .        .
     7100. C        .        .        .         .   ILEM .       .        .        .        .        .
     7200. .        .   C    .        .         .    ILEM .      .        .        .        .        .
.30  7300. .        .        .        .         .    ILEM .      .        .        .        .        .
     7400. C        .        .        .         .     IWE .      .        .        .        .        .
     7500. C        .        .        .         .     ILEM.      .        .        .        .        .
     7600. C        .        .        .         .      IWE.      .        .        .        .        .
     7700. C        .        .        .         .      ILEM      .        .        .        .        .
     7800. C        .        .        .         .       IWE      .        .        .        .        .
     7900. C        .        .        .         .       ILEM     .        .        .        .        .
     8000. C        .        .        .         .        ILE     .        .        .        .        .
     8100. C        .        .        .         .        ILE     .        .        .        .        .
.12  8200. C        .        .        .         .         ILE    .        .        .        .        .
     8300. C        .        .        .         .         .I E   .        .        .        .        .
     8400. C        .        .        .         .         .ILWE  .        .        .        .        .
     8500. C        .        .        .         .         . I EM .        .        .        .        .
     8600. C        .        .        .         .         . ILWEM .       .        .        .        .
     8700. C        .        .        .         .         .  I WEM .      .        .        .        .
     8800. C        .        .        .         .         .   IWE M .     .        .        .        .
.00  8900. .        .        .        .         .         .   I WEM .     .        .        .        .
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     3400. C        .        . I ELM  .        .        .        .        .        .        .
     3500. C        .        . I EL   .        .        .        .        .        .        .
     3600. C        .        .  IELM  .        .        .        .        .        .        .
     3700. C        .        .  I EL  .        .        .        .        .        .        .
     3800. C        .        .   IELM .        .        .        .        .        .        .
     3900. C        .        .   I ELM.        .        .        .        .        .        .
     4000. C        .        .   IREM.        .        .        .        .        .        .
.90  4100. .        .        .    IWEM        .        .        .        .        .        .
     4200. C        .        .     IELM       .        .        .        .        .        .
     4300. C        .        .     IREM       .        .        .        .        .        .
     4400. C        .        .      IELM      .        .        .        .        .        .
     4500. C        .        .      IREM      .        .        .        .        .        .
     4600. C        .        .       IELM     .        .        .        .        .        .
     4700. C        .        .       IREM     .        .        .        .        .        .
     4800. C        .        .       .IELM    .        .        .        .        .        .
     4900. C        .        .       .IREM    .        .        .        .        .        .
     5000. C        .        .       . IWEM   .        .        .        .        .        .
     5100. C        .        .       . IE M   .        .        .        .        .        .
     5200. C        .        .       . IREM   .        .        .        .        .        .
     5300. C        .        .       .  IE M  .        .        .        .        .        .
     5400. C        .        .       .  IREM  .        .        .        .        .        .
     5500. C        .        .       .   IE M .        .        .        .        .        .
     5600. C        .        .       .   IREM .        .        .        .        .        .
     5700. C        .        .       .    IE M.        .        .        .        .        .
     5800. C        .        .       .    IREM.        .        .        .        .        .
.56  5900. C        .        .       .     ILEM        .        .        .        .        .
     6000. C        .        .       .      IE.M       .        .        .        .        .
     6100. C        .        .       .      ILEM       .        .        .        .        .
     6200. C        .        .       .       IE M      .        .        .        .        .
     6300. C        .        .       .       ILEM      .        .        .        .        .
     6400. C        .        .       .        IE M     .        .        .        .        .
     6500. C        .        .       .        .IE M    .        .        .        .        .
     6600. C        .        .       .        .IWEM    .        .        .        .        .
     6700. C        .        .       .        . IE M   .        .        .        .        .
     6800. C        .        .       .        . ILEM   .        .        .        .        .
     6900. C        .        .       .        .  IE M  .        .        .        .        .
     7000. C        .        .       .        .   IE M .        .        .        .        .
     7100. C        .        .       .        .   IE M .        .        .        .        .
     7200. .        . C      .       .        .    IE M.        .        .        .        .
.30  7300. .        .        .       .        .    IE M.        .        .        .        .
     7400. C        .        .       .        .     IEM.        .        .        .        .
     7500. C        .        .       .        .     IE M.       .        .        .        .
     7600. C        .        .       .        .      IEM.       .        .        .        .
     7700. C        .        .       .        .      IE M       .        .        .        .
     7800. C        .        .       .        .       IEM       .        .        .        .
     7900. C        .        .       .        .       IE.M      .        .        .        .
     8000. C        .        .       .        .        IEM      .        .        .        .
     8100. C        .        .       .        .        IEM      .        .        .        .
.12  8200. C        .        .       .        .         IEM     .        .        .        .
     8300. C        .        .       .        .         .IEM    .        .        .        .
     8400. C        .        .       .        .         .IE M   .        .        .        .
     8500. C        .        .       .        .         . IE M  .        .        .        .
     8600. C        .        .       .        .         . IE  M .        .        .        .
     8700. C        .        .       .        .         .  IE  M.        .        .        .
     8800. C        .        .       .        .         .   E  M.        .        .        .
.00  8900. C        .        .       .        .         .   IE M.        .        .        .
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THIS RUN EXECUTED 02/11/86 16:43:23

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 HEC2 RELEASE DATED NOV 76 UPDATED MAY 1984
 ERROR CORR - 01,02,03,04,05,06
 MODIFICATION - 50,51,52,53,54,55,56
 IBM-PC-XT VERSION
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

BH FOR BREACH AT S.E. CO

SUMMARY PRINTOUT

	SECNO	Q	VCH	CWSEL	CRIWS	EG	TOPWID	SSTA	ENDST	TIME	ELMIN	AREA	VOL
*	1.640	18000.00	10.27	1699.05	1699.05	1699.89	1912.40	528.09	2480.97	.00	1694.00	3584.79	.00
*	1.640	16000.00	9.85	1698.90	1698.90	1699.69	1881.68	534.01	2462.46	.00	1694.00	3303.89	.00
*	1.640	14000.00	9.35	1698.75	1698.75	1699.48	1850.68	539.99	2443.78	.00	1694.00	3025.06	.00
*	1.640	10000.00	8.80	1698.30	1698.30	1699.00	1756.80	558.09	2387.23	.00	1694.00	2209.06	.00
*	1.640	5300.00	7.50	1697.61	1697.61	1698.19	1034.68	915.75	2182.74	.00	1694.00	1254.01	.00
*	1.640	4400.00	7.04	1697.44	1697.44	1697.97	964.25	922.27	2163.20	.00	1694.00	1091.25	.00
*	1.640	3300.00	6.81	1697.13	1697.13	1697.66	830.10	934.67	2125.98	.00	1694.00	812.97	.00
*	1.640	2200.00	6.05	1696.82	1696.82	1697.28	694.15	947.25	2088.26	.00	1694.00	573.41	.00
	1.638	18000.00	5.22	1700.72	.00	1700.90	2600.00	.00	2600.00	.02	1694.00	7385.57	25.18
	1.638	16000.00	5.00	1700.51	.00	1700.68	2600.00	.00	2600.00	.02	1694.00	6828.56	23.26
	1.638	14000.00	4.76	1700.27	.00	1700.43	2600.00	.00	2600.00	.02	1694.00	6222.05	21.23
	1.638	10000.00	4.13	1699.77	.00	1699.89	2062.03	499.25	2571.10	.02	1694.00	5017.71	16.59
	1.638	5300.00	3.26	1698.90	.00	1698.98	1881.50	534.05	2462.35	.03	1694.00	3302.29	10.46
	1.638	4400.00	3.08	1698.66	.00	1698.74	1833.40	543.32	2433.37	.03	1694.00	2871.71	9.10
	1.638	3300.00	2.79	1698.35	.00	1698.42	1769.44	555.65	2394.85	.03	1694.00	2316.46	7.18
	1.638	2200.00	2.47	1697.94	.00	1698.00	1179.08	902.40	2222.81	.03	1694.00	1623.55	5.04
*	1.468	18000.00	8.87	1707.28	1707.28	1707.96	2950.00	.00	2950.00	.06	1702.00	4931.85	152.43

*	1.468	14000.00	8.06	1707.03	1707.03	1707.63	2950.00	.00	2950.00	.07	1702.00	4176.34	128.65
*	1.468	10000.00	7.14	1706.71	1706.71	1707.24	2950.00	.00	2950.00	.07	1702.00	3237.90	101.88
*	1.468	5300.00	8.14	1705.42	1705.42	1706.39	534.79	1235.92	1770.71	.06	1702.00	808.75	52.93
*	1.468	4400.00	7.76	1705.16	1705.16	1706.05	481.20	1247.98	1729.18	.06	1702.00	672.64	45.71
*	1.468	3300.00	7.21	1704.79	1704.79	1705.57	407.32	1264.60	1671.93	.06	1702.00	508.53	36.37
*	1.468	2200.00	6.52	1704.34	1704.34	1705.00	318.82	1284.51	1603.34	.07	1702.00	347.87	25.41

	SECNO	Q	VCH	CWSEL	CRIWS	EG	TOPWID	SSTA	ENDST	TIME	ELMIN	AREA	VOL
	1.231	18000.00	8.04	1719.14	.00	1720.14	672.76	812.91	1485.66	.11	1712.00	2239.47	255.32
	1.231	16000.00	7.86	1718.83	.00	1719.79	663.05	817.50	1480.55	.11	1712.00	2034.83	235.84
	1.231	14000.00	7.68	1718.50	.00	1719.42	652.83	822.34	1475.17	.11	1712.00	1822.48	214.72
	1.231	10000.00	7.40	1717.77	1717.51	1718.62	609.96	832.29	1462.85	.12	1712.00	1350.67	167.71
	1.231	5300.00	4.75	1717.37	.00	1717.72	563.02	836.31	1456.15	.13	1712.00	1114.70	80.53
	1.231	4400.00	4.55	1717.10	.00	1717.43	531.49	839.01	1451.64	.14	1712.00	966.79	69.24
	1.231	3300.00	4.26	1716.72	.00	1717.00	487.43	842.79	1445.35	.15	1712.00	774.38	54.78
	1.231	2200.00	3.92	1716.26	.00	1716.50	433.48	847.42	1437.64	.16	1712.00	561.46	38.46
*	.900	18000.00	8.66	1738.20	1738.20	1738.96	1890.16	36.02	3032.47	.18	1734.00	2783.84	356.23
*	.900	16000.00	8.44	1738.08	1738.08	1738.80	1844.72	38.43	3027.95	.18	1734.00	2559.07	328.12
*	.900	14000.00	8.26	1737.95	1737.95	1738.63	1737.68	43.49	3023.26	.19	1734.00	2333.55	298.20
	.900	10000.00	4.40	1738.32	1737.68	1738.52	1936.70	33.55	3037.09	.26	1734.00	3019.75	255.50
	.900	5300.00	6.27	1737.26	1737.17	1737.62	1328.89	95.67	2997.16	.24	1734.00	1266.69	128.36
*	.900	4400.00	6.36	1737.10	1737.10	1737.48	1238.46	107.22	2991.39	.24	1734.00	1069.09	110.13
*	.900	3300.00	5.99	1736.95	1736.95	1737.27	1146.09	119.01	2985.50	.26	1734.00	881.63	88.04
*	.900	2200.00	5.45	1736.76	1736.76	1737.03	1036.51	133.00	2978.50	.28	1734.00	678.08	63.36
	.559	18000.00	4.38	1759.80	.00	1760.19	1497.34	5.10	2336.75	.28	1754.00	3929.39	494.93
	.559	16000.00	4.26	1759.57	.00	1759.93	1438.81	10.76	2322.02	.29	1754.00	3596.78	455.31
	.559	14000.00	4.14	1759.32	.00	1759.66	1373.47	17.08	2305.58	.30	1754.00	3241.12	413.38
	.559	10000.00	5.45	1758.14	.00	1758.67	1068.56	46.59	2228.86	.34	1754.00	1799.97	355.08
	.559	5300.00	3.54	1757.83	.00	1758.04	990.51	54.14	2209.22	.37	1754.00	1488.92	185.30
	.559	4400.00	3.36	1757.65	.00	1757.84	943.36	58.71	2197.36	.39	1754.00	1312.46	159.34
	.559	3300.00	3.22	1757.36	.00	1757.52	867.71	66.03	2178.33	.41	1754.00	1047.27	127.89
	.559	2200.00	3.08	1757.00	.00	1757.14	775.98	74.91	2155.25	.45	1754.00	755.43	92.97
*	.303	18000.00	8.35	1773.89	1773.89	1774.96	1083.56	182.23	1436.65	.32	1770.00	2203.47	589.97
*	.303	16000.00	8.06	1773.72	1773.72	1774.72	1066.53	185.55	1431.67	.33	1770.00	2024.86	542.42
*	.303	14000.00	7.75	1773.55	1773.55	1774.47	1048.52	189.07	1426.40	.34	1770.00	1838.97	492.10
	.303	10000.00	5.56	1773.54	.00	1774.01	1047.79	189.21	1426.18	.41	1770.00	1831.55	411.36
*	.303	5300.00	5.59	1772.67	1772.67	1773.15	958.18	206.70	1399.95	.44	1770.00	954.67	223.16
*	.303	4400.00	5.29	1772.54	1772.54	1772.97	945.53	209.17	1396.25	.46	1770.00	837.20	192.65
*	.303	3300.00	4.78	1772.39	1772.39	1772.74	929.78	212.24	1391.64	.49	1770.00	693.09	154.86
	.303	2200.00	4.21	1772.20	1772.18	1772.48	910.87	215.93	1386.11	.54	1770.00	523.34	112.79
	.123	18000.00	6.44	1784.27	.00	1784.89	1200.00	.00	1200.00	.37	1780.00	3094.94	647.74
	.123	16000.00	6.13	1784.07	.00	1784.64	1200.00	.00	1200.00	.38	1780.00	2872.87	595.83
	.123	14000.00	5.80	1783.88	.00	1784.38	1100.03	9.40	1100.50	.39	1780.00	2635.00	540.00

.123	10000.00	5.85	1783.12	.00	1783.64	1055.00	61.51	1116.52	.46	1780.00	1789.17	450.84
.123	5300.00	3.87	1782.76	.00	1782.99	993.19	87.74	1080.93	.51	1780.00	1405.51	248.90
.123	4400.00	3.57	1782.59	.00	1782.79	968.19	98.34	1066.53	.53	1780.00	1256.95	215.48
.123	3300.00	3.17	1782.38	.00	1782.53	932.70	113.40	1046.10	.58	1780.00	1052.52	173.90
.123	2200.00	2.65	1782.14	.00	1782.24	892.48	130.46	1022.94	.64	1780.00	830.05	127.55

	SECNO	Q	VCH	CWSEL	CRIWS	EG	TOPWID	SSTA	ENDST	TIME	ELMIN	AREA	VOL
*	.000	18000.00	11.37	1791.97	1791.97	1793.97	399.99	.50	400.50	.38	1788.00	1585.26	682.66
*	.000	16000.00	10.93	1791.67	1791.67	1793.52	399.92	.54	400.46	.39	1788.00	1465.40	628.19
*	.000	14000.00	10.45	1791.36	1791.36	1793.05	399.84	.58	400.42	.41	1788.00	1341.46	570.57
	.000	10000.00	7.36	1791.41	.00	1792.25	399.85	.57	400.43	.48	1788.00	1360.35	474.34
	.000	5300.00	6.82	1789.95	.00	1790.67	399.49	.76	400.24	.53	1788.00	777.24	265.18
	.000	4400.00	6.38	1789.73	.00	1790.36	399.43	.78	400.22	.56	1788.00	690.49	230.01
	.000	3300.00	5.66	1789.45	.00	1789.95	399.37	.82	400.18	.61	1788.00	582.94	186.10
	.000	2200.00	4.89	1789.13	.00	1789.50	399.28	.86	400.14	.68	1788.00	450.25	137.10

SUMMARY OF ERRORS AND SPECIAL NOTES

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CAUTION  SECNO=    1.640  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    1.640  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    1.640  PROFILE= 3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    1.640  PROFILE= 4  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    1.640  PROFILE= 5  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    1.640  PROFILE= 6  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    1.640  PROFILE= 7  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    1.640  PROFILE= 8  CRITICAL DEPTH ASSUMED

CAUTION  SECNO=    1.468  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    1.468  PROFILE= 1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    1.468  PROFILE= 1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    1.468  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    1.468  PROFILE= 2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    1.468  PROFILE= 2  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    1.468  PROFILE= 3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    1.468  PROFILE= 3  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    1.468  PROFILE= 3  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    1.468  PROFILE= 4  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    1.468  PROFILE= 4  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    1.468  PROFILE= 4  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    1.468  PROFILE= 5  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    1.468  PROFILE= 5  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    1.468  PROFILE= 5  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    1.468  PROFILE= 6  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    1.468  PROFILE= 6  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    1.468  PROFILE= 6  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    1.468  PROFILE= 7  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    1.468  PROFILE= 7  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    1.468  PROFILE= 7  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    1.468  PROFILE= 8  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    1.468  PROFILE= 8  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    1.468  PROFILE= 8  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION  SECNO=     .900  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     .900  PROFILE= 1  20 TRIALS ATTEMPTED TO BALANCE WSEL
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CAUTION  SECNO=     .900  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     .900  PROFILE= 2  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=     .900  PROFILE= 3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     .900  PROFILE= 3  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=     .900  PROFILE= 6  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     .900  PROFILE= 6  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=     .900  PROFILE= 7  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     .900  PROFILE= 7  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=     .900  PROFILE= 8  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     .900  PROFILE= 8  MINIMUM SPECIFIC ENERGY

CAUTION  SECNO=     .303  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     .303  PROFILE= 1  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=     .303  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     .303  PROFILE= 2  MINIMUM SPECIFIC ENERGY
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CAUTION  SECNO=     .303  PROFILE= 3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     .303  PROFILE= 3  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=     .303  PROFILE= 5  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     .303  PROFILE= 5  MINIMUM SPECIFIC ENERGY
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CAUTION  SECNO=     .303  PROFILE= 7  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     .303  PROFILE= 7  MINIMUM SPECIFIC ENERGY

CAUTION  SECNO=     .000  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     .000  PROFILE= 1  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=     .000  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     .000  PROFILE= 2  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=     .000  PROFILE= 3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     .000  PROFILE= 3  MINIMUM SPECIFIC ENERGY
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THIS RUN EXECUTED 02/11/86 16:45:23

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*********************************************
 HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
 ERROR CORR -  01,02,03,04,05,06
 MODIFICATION -  50,51,52,53,54,55,56
 IBM-PC-XT VERSION
*********************************************
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THIS RUN EXECUTED 02/25/86 12:04:13

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*****************************************
 HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
 ERROR CORR -  01,02,03,04,05,06
 MODIFICATION -  50,51,52,53,54,55,56
 IBM-PC-XT VERSION     .
*****************************************
```

T1 APACHE JUNCTION F.R.S

T2 DOWNSTREAM INUNDATION -HIGH N'S

T3 PSH FOR BREACH AT S.E. CORNER OF F.R.S.

#6

J1	ICHECK	INQ	NINU	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	2.	0.	0.	-1.000000	.00	.0	0.	1674.000	.000

J2	NPROF	IPLOT	PRTVS	XSECV	XSECH	FN	ALLOC	IDU	CHNIM	ITRACE
	.000	.000	.000	.000	.000	2.000	.000	.000	.000	.000

High N values

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

38.000	43.000	26.000	1.000	2.000	3.000	4.000	53.000	54.000	6.000

	42.000	25.000	7.000	.000	.000	.000	.000	.000	.000	.000
MC	.080	.080	.040	.100	.300	.000	.000	.000	.000	.000
QT	4.000	5300.000	4400.000	3300.000	2200.000	.000	.000	.000	.000	.000
X1	2.074	4.000	700.000	1650.000	.000	.000	.000	.000	.000	.000
GR	1674.000	.000	1672.000	700.000	1672.000	1650.000	1674.000	1900.000	.000	.000
X1	2.036	.000	.000	.000	200.000	200.000	200.000	.000	.000	.000
X1	1.809	9.000	750.000	1990.000	1200.000	1200.000	1200.000	.000	.000	.000
GR	1686.000	.000	1684.000	40.000	1684.000	100.000	1686.000	450.000	1684.000	750.000
GR	1684.000	1970.000	1682.000	1980.000	1684.000	1990.000	1686.000	2100.000	.000	.000
NH	5.000	.080	350.000	.040	1100.000	.080	1640.000	.040	2050.000	.080
NH	2200.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
X1	1.667	13.000	1640.000	2050.000	750.000	750.000	750.000	.000	.000	.000
GR	1696.000	.000	1694.000	70.000	1694.000	170.000	1696.000	210.000	1696.000	350.000
GR	1694.000	1050.000	1692.000	1080.000	1694.000	1100.000	1694.000	1640.000	1692.000	1800.000
GR	1692.000	1850.000	1694.000	2050.000	1696.000	2200.000	.000	.000	.000	.000
NH	5.000	.080	800.000	.040	1330.000	.080	2000.000	.040	2160.000	.080
NH	2200.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
X1	1.468	12.000	2000.000	2160.000	1070.000	1070.000	1070.000	.000	.000	.000
GR	1706.000	.000	1705.000	800.000	1704.000	1270.000	1702.000	1280.000	1704.000	1300.000
GR	1704.000	1330.000	1704.000	2000.000	1702.000	2040.000	1702.000	2080.000	1704.000	2160.000
GR	1705.000	2180.000	1706.000	2200.000	.000	.000	.000	.000	.000	.000

NH	7.000	.080	80.000	.040	200.000	.080	790.000	.040	860.000	.080
NH	950.000	.040	1070.000	.080	1330.000	.000	.000	.000	.000	.000
X1	1.231	11.000	950.000	1070.000	1250.000	1250.000	1250.000	.000	.000	.000
GR	1720.000	.000	1718.000	80.000	1716.000	150.000	1716.000	200.000	1718.000	790.000
GR	1716.000	830.000	1716.000	860.000	1718.000	950.000	1716.000	1050.000	1716.000	1070.000
GR	1720.000	1330.000	.000	.000	.000	.000	.000	.000	.000	.000
NH	3.000	.080	1420.000	.040	1950.000	.080	3100.000	.000	.000	.000
X1	.900	11.000	1420.000	1650.000	1750.000	1750.000	1750.000	.000	.000	.000
GR	1740.000	1150.000	1738.000	1260.000	1736.000	1320.000	1738.000	1420.000	1736.000	1600.000
GR	1~~740~~ 1736.000	1650.000	1740.000	1950.000	1740.000	2150.000	1736.000	2470.000	1736.000	2950.000
GR	1740.000	3100.000	.000	.000	.000	.000	.000	.000	.000	.000
NH	3.000	.080	1850.000	.040	2090.000	.080	2350.000	.000	.000	.000
X1	.559	7.000	1850.000	2090.000	1800.000	1800.000	1800.000	.000	.000	.000
GR	1760.000	1070.000	1756.000	1130.000	1760.000	1400.000	1760.000	1850.000	1756.000	1980.000
GR	1756.000	2090.000	1760.000	2350.000	.000	.000	.000	.000	.000	.000
NH	3.000	.080	640.000	.040	1500.000	.080	1650.000	.000	.000	.000
X1	.303	6.000	640.000	1380.000	1350.000	1350.000	1350.000	.000	.000	.000
GR	1772.000	640.000	1770.000	750.000	1772.000	980.000	1772.000	1380.000	1776.000	1500.000
GR	1776.000	1650.000	.000	.000	.000	.000	.000	.000	.000	.000
NH	3.000	.080	140.000	.040	1010.000	.080	1200.000	.000	.000	.000
X1	.123	7.000	140.000	1010.000	950.000	950.000	950.000	.000	.000	.000

```
GR   1782.000   1810.000   1784.000   1200.000       .000       .000       .000       .000       .000       .000

NC       .060       .060       .060       .100       .300       .000       .000       .000       .000       .000
XI       .000      4.000      1.000    400.000    650.000    650.000    650.000       .000       .000       .000
GR   1796.000       .000   1798.000      1.000   1798.000    400.000   1796.000    401.000       .000       .000
EJ       .000       .000       .000       .000       .000       .000       .000       .000       .000       .000
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  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       QLOSS   BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN     SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IOC      ICONT    CORAR    TOPWID    ENDST


*PROF 1


CCHV=    .100 CEHV=    .300
*SECNO 2.074
3720 CRITICAL DEPTH ASSUMED
    2.07     .95  1672.95  1672.95  1674.00  1673.38     .43     .00     .00  1672.00
   5300.    272.    4930.     97.     159.     905.     57.      0.      0.  1672.00
     .00    1.72     5.45    1.72     .160     .080    .160    .000  1672.00   366.71
 .091085      0.       0.      0.        0       10       0     .00  1402.33  1769.03


*SECNO 2.036
3280 CROSS SECTION     2.04 EXTENDED      .70 FEET

    2.04     2.69  1674.69     .00     .00  1674.73     .04    1.30     .04  1672.00
   5300.    733.    4305.    262.    1190.    2566.    425.     12.      8.  1672.00
     .04     .62     1.68     .62     .160     .080    .160    .000  1672.00     .00
 .002170    200.     200.    200.       5        0       0     .00  1900.00  1900.00
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*SECNO 1.809

3235 SLOPE TOO STEEP,EXCEEDS      .10


3265 DIVIDED FLOW

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
    1.81     2.74  1684.74  1684.74     .00  1685.16     .43     8.11     .12  1684.00
   5300.     272.    5003.     25.    137.     932.     15.     85.     56.  1684.00
     .10     1.98     5.37    1.67    .160     .080    .160    .000  1682.00    25.29
  .122200    1200.    1200.   1200.      20        8       0     .00  1594.24  2030.46


1490 NH CARD USED
*SECNO 1.667
3840 SECTION NOT HIGH ENOUGH  1776.376  1746.000  1692.000  1746.000  1683.626        2

3265 DIVIDED FLOW
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWR   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN     SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST


    1.67     3.74  1695.74  1694.56     .00  1695.82     .07    10.62     .04  1694.00
   5300.     2071.    3159.     69.   1850.    1175.    114.     121.     86.  1694.00
     .20     1.12     2.69     .61    .124     .080    .160    .000  1692.00     8.94
  .005143    750.     750.     750.      10       12       0     .00  1936.15  2180.85


1490 NH CARD USED
*SECNO 1.468
3840 SECTION NOT HIGH ENOUGH  1763.866  1756.000  1702.000  1756.000  1695.747        2
    1.47     3.40  1705.40  1705.06     .00  1705.60     .20     9.74     .04  1704.00
   5300.     3123.    2154.     23.   1546.     425.     20.     184.    131.  1704.00
     .29     2.02     5.07    1.17    .121     .080    .160    .000  1702.00   476.56
  .020297    1070.    1070.   1070.       7       14       0     .00  1711.52  2188.09


1490 NH CARD USED
*SECNO 1.231
    1.23     3.40  1719.40     .00     .00  1719.46     .06    13.85     .01  1718.00
   5300.     3987.     897.    416.   2210.     308.    376.     254.    174.  1716.00
     .47     1.80     2.91    1.10    .126     .080    .160    .000  1716.00    23.88
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```
1490 NH CARD USED
*SECNO  .900

3265 DIVIDED FLOW

     .90     2.37  1738.37      .00      .00  1738.47      .10    18.99      .01  1738.00
    5300.     348.    1275.    3677.     223.     365.    1676.     358.     226.   1736.00
     .67     1.57     3.50     2.19     .160     .080     .147     .000  1736.00  1239.78
  .019186    1750.    1750.    1750.        6        0        0      .00  1346.00  3038.79


1490 NH CARD USED
*SECNO  .559
3280 CROSS SECTION       .56 EXTENDED       .40 FEET

     .56     4.40  1760.40      .00      .00  1760.55      .14    22.07      .01  1760.00
    5300.    1303.    3038.     959.     975.     797.     625.     454.     280.   1756.00
     .85     1.34     3.81     1.54     .160     .080     .160     .000  1756.00  1070.00
  .008505    1800.    1800.    1800.        4        0        0      .00  1280.00  2350.00


02/25/86    12:04:11                                                                    PAGE    5


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       BLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     WLOB     WCH      WROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    WLOBL    WLCH     WLOBR    ITRIAL   IBC      ICONT    CORAR    TOPWID     ENDST


1490 NH CARD USED
*SECNO  .303
3280 CROSS SECTION       .30 EXTENDED      1.68 FEET

     .30     3.68  1773.68      .00      .00  1773.85      .17    13.29      .01  1772.00
    5300.       0.    5225.      75.       0.    1581.      42.     516.     312.   1772.00
     .96      .00     3.30     1.77     .160     .080     .080     .000  1770.00   640.00
  .011531    1350.    1350.    1350.        6        0        0      .00   790.32  1430.32


1490 NH CARD USED
*SECNO  .123
     .12     3.28  1783.28      .00      .00  1783.40      .13     9.55      .00  1782.00
    5300.      37.    5213.      50.      57.    1822.      78.     555.     333.   1782.00
    1.06      .65     2.86      .65     .160     .080     .160     .000  1780.00     50.49
  .008846     950.     950.     950.        4        0        0      .00  1080.98   1131.48


CCHV=    .100 CEHV=    .300
*SECNO  .000
```

5300.	0.	5299.	0.	1.	1357.	1.	500.	344.	1708.00	
1.10	.61	3.90	.61	.120	.120	.120	.000	1708.00	.57	
.019434	650.	650.	650.	4	0	0	.00	399.85	400.43	

PROFILE FOR STREAM OR BREACH AT S.E. CORNER

PLOTTED POINTS (BY PRIORITY)-E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA

```
ELEVATION 1660.    1680.    1700.    1720.    1740.    1760.    1780.    1800.    1820.    1840.
   SECNO  CUMDIS

    2.07    0. .    WE .       .       .       .       .       .       .       .       .       .
          100. C    IE .       .       .       .       .       .       .       .       .       .
    2.04  200. C    IE .       .       .       .       .       .       .       .       .       .
          300. C    ILE .      .       .       .       .       .       .       .       .       .
          400. C     IE .      .       .       .       .       .       .       .       .       .
          500. C    ILE.       .       .       .       .       .       .       .       .       .
          600. C     IE.       .       .       .       .       .       .       .       .       .
          700. C     IWE       .       .       .       .       .       .       .       .       .
          800. C      IE       .       .       .       .       .       .       .       .       .
          900. C      IEM      .       .       .       .       .       .       .       .       .
         1000. C      ILE      .       .       .       .       .       .       .       .       .
         1100. C       IEM     .       .       .       .       .       .       .       .       .
         1200. C       ILE     .       .       .       .       .       .       .       .       .
         1300. C       .IEM    .       .       .       .       .       .       .       .       .
    1.81 1400. .       .IWE    .       .       .       .       .       .       .       .       .
         1500. .       . IE  M .       .       .       .       .       .       .       .       .
         1600. .       . ILE   .M      .       .       .       .       .       .       .       .
         1700. .       .  ICE  .   M   .       .       .       .       .       .       .       .
         1800. .       .   IE  .       M.      .       .       .       .       .       .       .
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      2000. .     .  ICE .     .     .M    .     .     .     .     .
1.67  2200. .     .  ICE .     .     . M   .     .     .     .     .
      2300. .     .  ILE .     .     . M   .     .     .     .     .
      2400. .     .  ICE.      .     .  M  .     .     .     .     .
      2500. .     .  ILE.      .     .  M  .     .     .     .     .
      2600. .     .   ICE      .     .   M .     .     .     .     .
      2700. .     .   ILE      .     .   M .     .     .     .     .
      2800. .     .    ICE     .     .    M.     .     .     .     .
      2900. .     .    ILE     .     .    M.     .     .     .     .
      3000. .     .     IWE    .     .     M     .     .     .     .
      3100. .     .     ILE    .     .     M     .     .     .     .
      3200. .     .     .IE    .     .      M    .     .     .     .
1.47  3300. .     .     .ILE   .     .      M    .     .     .     .
      3400. C     .     . IE   .     .     M     .     .     .     .
      3500. C     .     . ILE  .     .   M       .     .     .     .
      3600. C     .     .  IE  .     .  M        .     .     .     .
      3700. C     .     .  ILE .     . M         .     .     .     .
      3800. C     .     .   ILE .    .M          .     .     .     .
      3900. C     .     .   ILE .   M.           .     .     .     .
      4000. C     .     .    ILE .  M .          .     .     .     .
      4100. C     .     .    ILE .M   .          .     .     .     .
      4200. C     .     .     ILE .M  .          .     .     .     .
      4300. C     .     .      IE . M  .         .     .     .     .
      4400. C     .     .      ILE. M  .         .     .     .     .
1.23  4500. C     .     .       ILE    .         .     .     .     .
      4600. C     .     .       IEM    .         .     .     .     .
      4700. C     .     .       ILE    .         .     .     .     .
      4800. C     .     .        IEM   .         .     .     .     .
      4900. C     .     .        ILE   .         .     .     .     .
      5000. C     .     .        .IEM  .         .     .     .     .
      5100. C     .     .        .ILE  .         .     .     .     .
      5200. C     .     .        . IWE .         .     .     .     .
      5300. C     .     .        . IEM .         .     .     .     .
      5400. C     .     .        . ILE .         .     .     .     .
      5500. C     .     .         IEM  .         .     .     .     .
      5600. C     .     .         ILE  .         .     .     .     .
      5700. C     .     .          IEM .         .     .     .     .
      5800. C     .     .          ILE .         .     .     .     .
      5900. C     .     .           IEM.         .     .     .     .
      6000. C     .     .            IEM.        .     .     .     .
      6100. C     .     .            IEM.        .     .     .     .
      6200. C     .     .             IEM        .     .     .     .
 .90  6300. C     .     .             IEM        .     .     .     .
      6400. C     .     .              IEM       .     .     .     .
      6500. C     .     .              IEM       .     .     .     .
      6600. C     .     .               IEM      .     .     .     .
      6700. C     .     .               ILE      .     .     .     .
      6800. C     .     .               .IEM     .     .     .     .
      6900. C     .     .               .I E     .     .     .     .
      7000. C     .     .               . IWE    .     .     .     .
      7100. C     .     .               . I E    .     .     .     .
      7200. C     .     .               . I E    .     .     .     .
      7300. C     .     .               .  IEM   .     .     .     .
      7400. C     .     .               .  I E   .     .     .     .
      7500. C     .     .               .   ILE  .     .     .     .
      7600. C     .     .               .   I E  .     .     .     .
      7700. C     .     .               .    I E.     .     .     .
      7800. C     .     .               .    I E.     .     .     .
      7900. C     .     .               .     I E.    .     .     .
      8000. C     .     .               .     I LE    .     .     .
 .56  8100. C     .     .               .      I E    .     .     .
      8200. C     .     .               .       ILE   .     .     .
      8300. C     .     .               .       I.E   .     .     .
      8400. C     .     .               .        ILE  .     .     .
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        8600.  C      .      .      .      .      .ILE   .      .      .      .      .
        8700.  C      .      .      .      .      .IRE   .      .      .      .      .
        8800.  C      .      .      .      .      . ILE  .      .      .      .      .
        8900.  C      .      .      .      .      . IRE  .      .      .      .      .
        9000.  C      .      .      .      .      .  ILE .      .      .      .      .
        9100.  C      .      .      .      .      .  ILE .      .      .      .      .
        9200.  C      .      .      .      .      .   ILE .      .      .      .      .
        9300.  C      .      .      .      .      .   ILE .      .      .      .      .
   .30  9400.  C      .      .      .      .      .    ILE .      .      .      .      .
        9500.  C      .      .      .      .      .     IE .      .      .      .      .
        9600.  C      .      .      .      .      .    ILE .      .      .      .      .
        9700.  C      .      .      .      .      .     IE .      .      .      .      .
        9800.  C      .      .      .      .      .    ILE.      .      .      .      .
        9900.  C      .      .      .      .      .     IE.      .      .      .      .
       10000.  C      .      .      .      .      .    ILE       .      .      .      .
       10100.  C      .      .      .      .      .     IE       .      .      .      .
       10200.  C      .      .      .      .      .    ILE       .      .      .      .
       10300.  C      .      .      .      .      .     IEM      .      .      .      .
   .12 10400.  C      .      .      .      .      .    ILE       .      .      .      .
       10500.  C      .      .      .      .      .    .IEM      .      .      .      .
       10600.  C      .      .      .      .      .    .ILEM     .      .      .      .
       10700.  C      .      .      .      .      .    . I EM    .      .      .      .
       10800.  C      .      .      .      .      .    . ILE M   .      .      .      .
       10900.  C      .      .      .      .      .    .  I E M  .      .      .      .
   .00 11000.  C      .      .      .      .      .    .   I E M .      .      .      .
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THIS RUN EXECUTED 02/25/86 12:07:51

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*****************************************
 NEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
 ERROR CORR -  01,02,03,04,05,06
 MODIFICATION -  50,51,52,53,54,55,56
 IBM-PC-XT VERSION
*****************************************
```

T1
T2
T3 PSH, Q=4400

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	NVINS	Q	USEL	FQ
	0.	3.	0.	0.	-1.000000	.00	.0	0.	1674.000	.000

J2	MPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLOC	IBW	CHNIM	ITRACE
	2.000	.000	.000	.000	.000	2.000	.000	.000	.000	.000

```
  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       QLOSS   BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
  TIME     VLOB     VCH      VROB     XML      XMCH     XMR      WTN      ELMIN     SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST


*PROF 2

CCHV=   .100 CEHV=   .300
*SECNO 2.074
3720 CRITICAL DEPTH ASSUMED
    2.07     .84 1672.84 1672.84 1674.00 1673.23     .39     .00     .00 1672.00
   4400.    202.   4126.     72.    125.    803.     45.      0.      0. 1672.00
     .00    1.62    5.14    1.62    .160    .080    .160    .000 1672.00  404.26
  .095833     0.      0.      0.       0      13       0     .00 1351.36 1755.62


*SECNO 2.036
3200 CROSS SECTION     2.04 EXTENDED      .48 FEET

    2.04    2.48 1674.48     .00     .00 1674.51     .03    1.24     .04 1672.00
   4400.    566.   3631.    202.   1038.   2359.    371.     11.      7. 1672.00
     .04     .55    1.54     .55    .160    .000    .160    .000 1672.00     .00
  .002042    200.    200.    200.       6       0       0     .00 1900.00 1900.00
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*SECNO 1.889

3235 SLOPE TOO STEEP,EXCEEDS      .10


3265 DIVIDED FLOW

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
    1.81     2.66  1684.66  1684.66     .00  1685.03     .37     7.68     .10  1684.00
    4400.     212.    4169.      18.    114.     837.     12.      76.     55.  1684.00
     .11     1.86     4.98     1.54    .160     .080    .160     .000  1682.00    26.83
  .121679    1200.    1200.    1200.      20        8       0      .00  1563.43  2026.22


1490 NH CARD USED
*SECNO 1.667
3840 SECTION NOT HIGH ENOUGH  1775.909  1746.000  1692.000  1746.000  1686.797        2

3265 DIVIDED FLOW
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```
   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWR   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN     SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IOC      ICONT    CORAR    TOPWID    ENDST


    1.67     3.53  1695.53  1694.39     .00  1695.59     .07    10.54     .03  1694.00
    4400.    1598.    2754.      48.   1554.    1085.     87.     108.     84.  1694.00
     .22     1.03     2.54     .55    .125     .080    .160     .000  1692.00    16.62
  .005097     750.     750.     750.      11       15       0      .00  1829.70  2164.39


1490 NH CARD USED
*SECNO 1.468
3840 SECTION NOT HIGH ENOUGH  1763.344  1756.000  1702.000  1756.000  1695.526        2
    1.47     3.22  1705.22  1704.90     .00  1705.42     .20     9.78     .04  1704.00
    4400.    2434.    1950.      16.   1288.     396.     15.     162.    126.  1704.00
     .31     1.89     4.92     1.06    .122     .080    .160     .000  1702.00   618.46
  .020957    1070.    1070.    1070.       7       12       0      .00  1566.08  2184.54


1490 NH CARD USED
*SECNO 1.231
    1.23     3.15  1719.15     .00     .00  1719.21     .05    13.78     .01  1718.00
    4400.    3318.     747.     335.   1981.     279.    323.     224.    166.  1716.00
     .50     1.67     2.68     1.04    .125     .080    .160     .000  1716.00    33.82
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```
1490 NH CARD USED
*SECNO  .900

3265 DIVIDED FLOW

     .90     2.15  1738.15     .00     .00  1738.24     .09    19.02     .01  1738.00
    4400.     265.    1019.    3116.    184.     314.   1474.     315.     217.   1736.00
     .71     1.44     3.25     2.11    .160     .080    .148     .000  1736.00  1251.92
  .020184   1750.    1750.    1750.       5        0       0      .00  1291.38  3030.51


1490 NH CARD USED
*SECNO  .559
3280 CROSS SECTION      .56 EXTENDED      .15 FEET

     .56     4.15  1760.15     .00     .00  1760.28     .13    22.02     .01  1760.00
    4400.    1008.    2610.     782.    776.     736.    559.     399.     270.   1756.00
     .90     1.30     3.55     1.40    .160     .080    .160     .000  1756.00  1070.00
  .008201   1800.    1800.    1800.       6        0       0      .00  1280.00  2350.00


 02/25/86    12:04:11                                                                PAGE    9


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       BLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN     SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST


1490 NH CARD USED
*SECNO  .303
3280 CROSS SECTION      .30 EXTENDED      1.43 FEET

     .30     3.43  1773.43     .00     .00  1773.58     .15    13.30     .01  1772.00
    4400.       0.    4350.      50.      0.    1398.     31.     453.     302.   1772.00
    1.02      .00     3.11     1.63    .160     .080    .080     .000  1770.00   640.00
  .012058   1350.    1350.    1350.       5        0       0      .00   782.88  1422.88


1490 NH CARD USED
*SECNO  .123
     .12     3.08  1783.08     .00     .00  1783.19     .11     9.60     .00  1782.00
    4400.      23.    4345.      32.     41.    1648.     55.     487.     322.   1782.00
    1.12      .57     2.64     .57    .160     .080    .160     .000  1780.00    64.49
  .008588    950.     950.     950.       3        0       0      .00  1047.99  1112.48


CCHU=    .100 CEHU=    .300
*SECNO  .000
```

1.17	.57	3.62	.57	.120	.120	.120	.000	1788.00	.62
.019309	650.	650.	650.	4	0	0	.00	399.76	400.30

PROFILE FOR STREAM Q=4400

PLOTTED POINTS (BY PRIORITY)-E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA

```
ELEVATION 1660.    1680.    1700.    1720.    1740.    1760.    1780.    1800.    1820.    1840.
   SECNO  CUMDIS

   2.07     0. .    WE .       .       .       .       .       .       .       .       .       .
          100.. C    IE .       .       .       .       .       .       .       .       .       .
   2.04   200. C    IE .       .       .       .       .       .       .       .       .       .
          300. C    ILE .      .       .       .       .       .       .       .       .       .
          400. C     IE .      .       .       .       .       .       .       .       .       .
          500. C     ILE.      .       .       .       .       .       .       .       .       .
          600. C      IE.      .       .       .       .       .       .       .       .       .
          700. C      IEM      .       .       .       .       .       .       .       .       .
          800. C       IE      .       .       .       .       .       .       .       .       .
          900. C       IEM     .       .       .       .       .       .       .       .       .
         1000. C       ILE     .       .       .       .       .       .       .       .       .
         1100. C        IEM    .       .       .       .       .       .       .       .       .
         1200. C        IWE    .       .       .       .       .       .       .       .       .
         1300. C        .IEM   .       .       .       .       .       .       .       .       .
   1.81  1400. .        .IWE   .       .       .       .       .       .       .       .       .
         1500. .        . IE  M .      .       .       .       .       .       .       .       .
         1600. .        . ILE   .M     .       .       .       .       .       .       .       .
         1700. .        . ICE   .  M   .       .       .       .       .       .       .       .
         1800. .        .  IE   .      M.      .       .       .       .       .       .       .
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      2000. .       . ICE .       .    M .       .       .       .       .       .
      2100. .       . IE .        .      .M      .       .       .       .       .
 1.67 2200. .       . ICE .       .       . M    .       .       .       .       .
      2300. .       . ILE .       .       . M    .       .       .       .       .
      2400. .       . ICE.        .       .  M   .       .       .       .       .
      2500. .       . ILE.        .       .  M   .       .       .       .       .
      2600. .       . ICE         .       .   M  .       .       .       .       .
      2700. .       . ILE         .       .   M  .       .       .       .       .
      2800. .       . IWE         .       .    M .       .       .       .       .
      2900. .       . ILE         .       .    M .       .       .       .       .
      3000. .       . IE          .       .     M.       .       .       .       .
      3100. .       . ILE         .       .     M.       .       .       .       .
      3200. .       .IE           .       .      M       .       .       .       .
 1.47 3300. .       .ICE          .       .      M       .       .       .       .
      3400. C       . IE          .       .     M.       .       .       .       .
      3500. C       . ILE         .       .   M  .       .       .       .       .
      3600. C       . IE          .       .  M   .       .       .       .       .
      3700. C       . ILE         .      . M     .       .       .       .       .
      3800. C       . IE          .     .M       .       .       .       .       .
      3900. C       . ILE         .    M.        .       .       .       .       .
      4000. C       . ILE         .   M.         .       .       .       .       .
      4100. C       . ILE         .  M           .       .       .       .       .
      4200. C       . ILE,       M               .       .       .       .       .
      4300. C       . IE .      M                .       .       .       .       .
      4400. C       . ILE. M                     .       .       .       .       .
 1.23 4500. C       . ILE                        .       .       .       .       .
      4600. C       . IEM                        .       .       .       .       .
      4700. C       . ILE                        .       .       .       .       .
      4800. C       . IEM                        .       .       .       .       .
      4900. C       . ILE                        .       .       .       .       .
      5000. C       . .IEM                       .       .       .       .       .
      5100. C       . .ILE                       .       .       .       .       .
      5200. C       . . IEM                      .       .       .       .       .
      5300. C       . . IEM                      .       .       .       .       .
      5400. C       . . IEM                      .       .       .       .       .
      5500. C       . . IEM                      .       .       .       .       .
      5600. C       . . ILE                      .       .       .       .       .
      5700. C       . . IEM                      .       .       .       .       .
      5800. C       . . ILE                      .       .       .       .       .
      5900. C       . . IEM                      .       .       .       .       .
      6000. C       . . IEM.                     .       .       .       .       .
      6100. C       . . IEM.                     .       .       .       .       .
      6200. C       . . IEM                      .       .       .       .       .
  .90 6300. C       . . IEM                      .       .       .       .       .
      6400. C       . . IEM                      .       .       .       .       .
      6500. C       . . IEM                      .       .       .       .       .
      6600. C       . . IEM                      .       .       .       .       .
      6700. C       . . ILE                      .       .       .       .       .
      6800. C       . . .IEM                     .       .       .       .       .
      6900. C       . . .I E                     .       .       .       .       .
      7000. C       . . . IEM                    .       .       .       .       .
      7100. C       . . . I E                    .       .       .       .       .
      7200. C       . . . I E                    .       .       .       .       .
      7300. C       . . . IEM                    .       .       .       .       .
      7400. C       . . . I E                    .       .       .       .       .
      7500. C       . . . IEM                    .       .       .       .       .
      7600. C       . . . I E                    .       .       .       .       .
      7700. C       . . . I E.                   .       .       .       .       .
      7800. C       . . . I E.                   .       .       .       .       .
      7900. C       . . . I E.                   .       .       .       .       .
      8000. C       . . . I WE                   .       .       .       .       .
  .56 8100. C       . . . I E                    .       .       .       .       .
      8200. C       . . . ILE                    .       .       .       .       .
      8300. C       . . . I.E                    .       .       .       .       .
      8400. C       . . . ILE                    .       .       .       .       .
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        8600.  C      .      .      .      .     .ILE    .      .      .      .      .
        8700.  C      .      .      .      .     .IRE    .      .      .      .      .
        8800.  C      .      .      .      .     . ILE   .      .      .      .      .
        8900.  C      .      .      .      .     . IRE   .      .      .      .      .
        9000.  C      .      .      .      .     .  ILE  .      .      .      .      .
        9100.  C      .      .      .      .     .  ILE  .      .      .      .      .
        9200.  C      .      .      .      .     .   IWE .      .      .      .      .
        9300.  C      .      .      .      .     .   ILE .      .      .      .      .
   .30  9400.  C      .      .      .      .     .    ILE .     .      .      .      .
        9500.  C      .      .      .      .     .     IE .     .      .      .      .
        9600.  C      .      .      .      .     .     ILE.     .      .      .      .
        9700.  C      .      .      .      .     .      IE.     .      .      .      .
        9800.  C      .      .      .      .     .      ILE.    .      .      .      .
        9900.  C      .      .      .      .     .       IE.    .      .      .      .
       10000.  C      .      .      .      .     .       ILE    .      .      .      .
       10100.  C      .      .      .      .     .        IE    .      .      .      .
       10200.  C      .      .      .      .     .        ILE   .      .      .      .
       10300.  C      .      .      .      .     .         IEM  .      .      .      .
   .12 10400.  C      .      .      .      .     .         ILE  .      .      .      .
       10500.  C      .      .      .      .     .         .IEM .      .      .      .
       10600.  C      .      .      .      .     .         .ILEM .     .      .      .
       10700.  C      .      .      .      .     .         . IE M .    .      .      .
       10800.  C      .      .      .      .     .         . ILE M .   .      .      .
       10900.  C      .      .      .      .     .         . I E M .   .      .      .
   .00 11000.  C      .      .      .      .     .         .  I E M .  .      .      .
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THIS RUN EXECUTED 02/25/86 12:10:34

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*****************************************
 HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
 ERROR CORR -  01,02,03,04,05,06
 MODIFICATION -  50,51,52,53,54,55,56
 IBM-PC-XT VERSION
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T1
T2
T3 PSH, Q=3300

J1  ICHECK   INQ     NINV    IDIR     STRT     METRIC   NVINS    Q       WSEL     FQ

      0.      4.      0.      0. -1.000000      .00      .0      0.  1674.000    .000

J2  NPROF    IPLOT   PRFVS   XSECV    XSECH    FN       ALLOC    IBW     CHNIM    ITRACE

    3.000    .000    .000    .000    .000    2.000    .000    .000    .000    .000
```

```
  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN     SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IBC      ICONT    CORAR    TOPWID    ENDST


*PROF 3


CCHV=   .100 CEHV=   .300
*SECNO 2.074
3720 CRITICAL DEPTH ASSUMED
    2.07     .70 1672.70 1672.70 1674.00 1673.03     .33     .00     .00 1672.00
   3300.    127.   3128.     45.     85.    664.     30.      0.      0.  1672.00
     .09    1.48    4.71    1.48    .160    .080    .160    .000 1672.00   455.53
  .103920     0.      0.      0.       0      21       0     .00 1281.70  1737.31


*SECNO 2.036
3280 CROSS SECTION     2.04 EXTENDED      .19 FEET

    2.04    2.19 1674.19     .00     .00 1674.21     .02    1.15     .03 1672.00
   3300.    372.   2796.    133.    830.   2077.    297.      9.      7.  1672.00
     .05     .45    1.35     .45    .160    .080    .160    .000 1672.00     .00
  .001850    200.    200.    200.       0       0       0     .00 1900.00 1900.00
```

```
*SECNO 1.669
3840 SECTION NOT HIGH ENOUGH  1737.642  1736.000  1682.000  1736.000  1674.181        2

3235 SLOPE TOO STEEP,EXCEEDS       .10


3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
    1.81     2.52  1684.52  1684.52     .00  1684.85     .33     7.17     .09  1684.00
   3300.     141.    3148.     11.     79.     671.      8.      64.     54.  1684.00
     .12     1.79     4.69    1.46    .160     .080    .160     .000  1682.00    29.51
  .145019    1200.    1200.    1200.      0       11       0      .00  1509.86  2018.86


1490 NH CARD USED
*SECNO 1.667
3840 SECTION NOT HIGH ENOUGH  1793.278  1746.000  1692.000  1746.000  1674.181        2

3265 DIVIDED FLOW
```



```
  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWR   LEFT/RIGHT
  TIME     VLOB     VCH      VROB     XML      XNCH     XNR      WTN      ELMIN     SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST


    1.67     3.23  1695.23  1694.16     .00  1695.29     .06    10.41     .03  1694.00
   3300.    1059.    2214.     27.   1192.     966.     57.      89.     82.  1694.00
     .23      .89     2.29     .47    .126     .080    .160     .000  1692.00    26.80
  .004857    750.     750.     750.      9       15       0      .00  1688.61  2142.57


1490 NH CARD USED
*SECNO 1.468
3840 SECTION NOT HIGH ENOUGH  1775.409  1756.000  1702.000  1756.000  1695.232        2
    1.47     2.95  1704.95  1704.72     .00  1705.16     .21     9.82     .04  1704.00
   3300.    1592.    1700.      8.    940.     353.      9.     132.    119.  1704.00
     .32     1.69     4.82     .87    .124     .080    .160     .000  1702.00   821.57
  .023496    1070.    1070.    1070.      7       10       0      .00  1357.51  2179.08


1490 NH CARD USED
*SECNO 1.231
    1.23     2.83  1718.83     .00     .00  1718.87     .04    13.70     .02  1718.00
   3300.    2496.     561.     242.   1687.     240.    261.     183.    156.  1716.00
     .54     1.48     2.34     .93    .124     .080    .160     .000  1716.00    46.74
```

```
1490 NH CARD USED
*SECNO  .900

3265 DIVIDED FLOW

     .90    1.82  1737.82     .00     .00  1737.89     .08    19.01     .01  1738.00
    3300.    174.    724.   2402.    132.    239.   1188.    258.    284.  1736.00
     .76    1.32    3.03    2.02    .160    .080    .149    .000  1736.00  1265.56
  .022916   1750.   1750.   1750.       6       0       0     .00  1187.78  3018.05


1490 NH CARD USED
*SECNO  .559

3265 DIVIDED FLOW

     .56    3.75  1759.75     .00     .00  1759.86     .11    21.95     .01  1760.00
    3300.    789.   2032.    559.    578.    640.    456.    325.    245.  1756.00
     .97    1.23    3.18    1.23    .160    .080    .160    .000  1756.00  1073.84
  .007556   1800.   1800.   1800.       5       0       0     .00   783.95  2333.37
```



```
   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       QLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN     SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IOC      ICONT    CORAR    TOPWID    ENDST


1490 NH CARD USED
*SECNO  .303
3280 CROSS SECTION      .30 EXTENDED     1.08 FEET

     .30    3.08  1773.08     .00     .00  1773.21     .13    13.35     .01  1772.00
    3300.      0.   3275.     25.      0.   1140.     18.    368.    269.  1772.00
    1.10     .00    2.87    1.43    .160    .080    .080    .000  1770.00   640.00
  .013485   1350.   1350.   1350.       7       0       0     .00   772.42  1412.42


1490 NH CARD USED
*SECNO  .123
     .12    2.82  1782.82     .00     .00  1782.90     .08     9.69     .00  1782.00
    3300.     11.   3275.     15.     23.   1422.     32.    397.    288.  1782.00
    1.21     .46    2.30     .46    .160    .080    .160    .000  1780.00    82.71
  .007984    950.    950.    950.       5       0       0     .00  1005.03  1087.74


CCHV=    .100 CEHV=    .300
*SECNO  .000
```

1.27	.51	3.25	.51	.120	.120	.120	.000	1700.00	.68
.019905	650.	650.	650.	3	0	0	.00	399.64	400.32

PROFILE FOR STREAM Q=3300

PLOTTED POINTS (BY PRIORITY)-E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA

```
ELEVATION 1660.    1680.    1700.    1720.    1740.    1760.    1780.    1800.    1820.    1840.
   SECNO  CUMQIS

   2.07    0. .    WE .       .       .       .       .       .       .       .       .       .
         100. C    IE .       .       .       .       .       .       .       .       .       .
   2.04  200. C    IE .       .       .       .       .       .       .       .       .       .
         300. C    ILE M      .       .       .       .       .       .       .       .       .
         400. C     IE . M    .       .       .       .       .       .       .       .       .
         500. C     IE .   M  .       .       .       .       .       .       .       .       .
         600. C      IE.     M .      .       .       .       .       .       .       .       .
         700. C      IE.       M      .       .       .       .       .       .       .       .
         800. C       IE       . M    .       .       .       .       .       .       .       .
         900. C       IE       .   M  .       .       .       .       .       .       .       .
        1000. C       ILE      .     M.       .       .       .       .       .       .       .
        1100. C        IE      .       M      .       .       .       .       .       .       .
        1200. C        IWE     .       . M    .       .       .       .       .       .       .
        1300. C        .IE     .       .   M  .       .       .       .       .       .       .
   1.81 1400. .        .IE     .       .     M.       .       .       .       .       .       .
        1500. .        . IE    .       .      M.      .       .       .       .       .       .
        1600. .        . ILE   .       .      M.      .       .       .       .       .       .
        1700. .        .  IWE  .       .       M      .       .       .       .       .       .
        1800. .        .   IE  .       .       .M     .       .       .       .       .       .
```

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     2000.  .     .  ICE .     .     . M    .     .     .     .     .     .
     2100.  .     .   IE .     .     .  M   .     .     .     .     .     .
1.67 2200.  .     .  ICE .     .     .  M   .     .     .     .     .     .
     2300.  .     .  ILE .     .     .  M   .     .     .     .     .     .
     2400.  .     .   ICE.     .     .   M  .     .     .     .     .     .
     2500.  .     .   ILE.     .     .   M  .     .     .     .     .     .
     2600.  .     .    IE.     .     .    M .     .     .     .     .     .
     2700.  .     .    ILE     .     .    M .     .     .     .     .     .
     2800.  .     .     IE     .     .     M .     .     .     .     .     .
     2900.  .     .     ILE    .     .     M .     .     .     .     .     .
     3000.  .     .      IE    .     .      M.     .     .     .     .     .
     3100.  .     .      ILE   .     .      M.     .     .     .     .     .
     3200.  .     .      .IE   .     .       M     .     .     .     .     .
1.47 3300.  .     .      .IWE  .     .       M     .     .     .     .     .
     3400.  C     .      . IE  .     .      M .    .     .     .     .     .
     3500.  C     .      . ILE .     .    M   .    .     .     .     .     .
     3600.  C     .      .  IE .     .   M    .    .     .     .     .     .
     3700.  C     .      .  ILE .    . M      .    .     .     .     .     .
     3800.  C     .      .   IE .   .M        .    .     .     .     .     .
     3900.  C     .      .   ILE .  M.         .    .     .     .     .     .
     4000.  C     .      .    IE . M .         .    .     .     .     .     .
     4100.  C     .      .    ILE .  M         .    .     .     .     .     .
     4200.  C     .      .     IWE . M         .    .     .     .     .     .
     4300.  C     .      .      IE . M         .    .     .     .     .     .
     4400.  C     .      .      ILE. M         .    .     .     .     .     .
1.23 4500.  C     .      .       IEM           .    .     .     .     .     .
     4600.  C     .      .       IEM           .    .     .     .     .     .
     4700.  C     .      .       IWE           .    .     .     .     .     .
     4800.  C     .      .        IEM          .    .     .     .     .     .
     4900.  C     .      .        ILE          .    .     .     .     .     .
     5000.  C     .      .        .IEM         .    .     .     .     .     .
     5100.  C     .      .        .ILE         .    .     .     .     .     .
     5200.  C     .      .        . IEM        .    .     .     .     .     .
     5300.  C     .      .        .  IEM       .    .     .     .     .     .
     5400.  C     .      .        .  IEM       .    .     .     .     .     .
     5500.  C     .      .        .   IEM      .    .     .     .     .     .
     5600.  C     .      .        .   IEM      .    .     .     .     .     .
     5700.  C     .      .        .    IEM     .    .     .     .     .     .
     5800.  C     .      .        .    IEM     .    .     .     .     .     .
     5900.  C     .      .        .     IEM    .    .     .     .     .     .
     6000.  C     .      .        .      IEM.  .    .     .     .     .     .
     6100.  C     .      .        .      IEM.  .    .     .     .     .     .
     6200.  C     .      .        .       IEM  .    .     .     .     .     .
.90  6300.  C     .      .        .       IEM  .    .     .     .     .     .
     6400.  C     .      .        .        IEM .    .     .     .     .     .
     6500.  C     .      .        .        IEM .    .     .     .     .     .
     6600.  C     .      .        .         IEM .   .     .     .     .     .
     6700.  C     .      .        .         IEM .   .     .     .     .     .
     6800.  C     .      .        .         .IEM .  .     .     .     .     .
     6900.  C     .      .        .         .I E .  .     .     .     .     .
     7000.  C     .      .        .         . IEM .  .     .     .     .     .
     7100.  C     .      .        .         . I E .  .     .     .     .     .
     7200.  C     .      .        .         .  IEL .  .     .     .     .     .
     7300.  C     .      .        .         .   IEM .  .     .     .     .     .
     7400.  C     .      .        .         .   I E .  .     .     .     .     .
     7500.  C     .      .        .         .    IEM .  .     .     .     .     .
     7600.  C     .      .        .         .    I E .  .     .     .     .     .
     7700.  C     .      .        .         .     IEL .  .     .     .     .     .
     7800.  C     .      .        .         .     I E .  .     .     .     .     .
     7900.  C     .      .        .         .      I E.  .     .     .     .     .
     8000.  C     .      .        .         .      I E.  .     .     .     .     .
.56  8100.  C     .      .        .         .       I E  .     .     .     .     .
     8200.  C     .      .        .         .        IE  .     .     .     .     .
     8300.  C     .      .        .         .        I.E .     .     .     .     .
     8400.  C     .      .        .         .         IE .     .     .     .     .
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```
        8600. C      .      .      .      .     .IE    .      .      .      .      .
        8700. C      .      .      .      .     .IRE   .      .      .      .      .
        8800. C      .      .      .      .     . IE   .      .      .      .      .
        8900. C      .      .      .      .     . IRE  .      .      .      .      .
        9000. C      .      .      .      .     . IE   .      .      .      .      .
        9100. C      .      .      .      .     . ILE  .      .      .      .      .
        9200. C      .      .      .      .     . IE   .      .      .      .      .
        9300. C      .      .      .      .     . ILE  .      .      .      .      .
    .30 9400. C      .      .      .      .     . ILE  .      .      .      .      .
        9500. C      .      .      .      .     . IE   .      .      .      .      .
        9600. C      .      .      .      .     . ILE  .      .      .      .      .
        9700. C      .      .      .      .     . IE   .      .      .      .      .
        9800. C      .      .      .      .     . ILE  .      .      .      .      .
        9900. C      .      .      .      .     . IE   .      .      .      .      .
       10000. C      .      .      .      .     . ILE  .      .      .      .      .
       10100. C      .      .      .      .     . IE   .      .      .      .      .
       10200. C      .      .      .      .     . ILE  .      .      .      .      .
       10300. C      .      .      .      .     . IEM  .      .      .      .      .
    .12 10400. C      .      .      .      .     . IEM  .      .      .      .      .
       10500. C      .      .      .      .     . .IEM .      .      .      .      .
       10600. C      .      .      .      .     . .ILEM .      .      .      .      .
       10700. C      .      .      .      .     . . IE M .      .      .      .      .
       10800. C      .      .      .      .     . . ILE M .      .      .      .      .
       10900. C      .      .      .      .     . . IE  M .      .      .      .      .
    .00 11000. C      .      .      .      .     . .  IE  M .      .      .      .      .
```


THIS RUN EXECUTED 02/25/86 12:13:15

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*****************************************
 NEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
 ERROR CORR -  01,02,03,04,05,06
 MODIFICATION -  50,51,52,53,54,55,56
 IBM-PC-XT VERSION
*****************************************
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```
T1
T2
T3 PSH, Q=2200

J1  ICHECK   INQ     NINV    IDIR    STRT     METRIC   HVINS    Q       WSEL     FQ

      0.      5.      0.      0. -1.000000     .00      .0      0.  1674.000    .000

J2  NPROF    IPLOT   PRFVS   KSECV   KSECH    FN       ALLOC    IBW     CHNIM    ITRACE

    15.000    .000    .000    .000    .000   2.000     .000    .000    .000     .000
```

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IBC	ICONT	CORAR	TOPWID	ENDST

*PROF 4

CCHV= .100 CEHV= .300
*SECNO 2.074
3720 CRITICAL DEPTH ASSUMED

2.07	.54	1672.54	1672.54	1674.00	1672.79	.26	.00	.00	1672.00
2200.	66.	2111.	23.	50.	510.	18.	0.	0.	1672.00
.00	1.30	4.14	1.30	.160	.080	.160	.000	1672.00	512.01
.113597	0.	0.	0.	0	13	0	.00	1205.13	1717.14

*SECNO 2.036

2.04	1.82	1673.82	.00	.00	1673.84	.02	1.02	.02	1672.00
2200.	204.	1924.	73.	583.	1733.	208.	7.	7.	1672.00
.05	.35	1.11	.35	.160	.080	.160	.000	1672.00	61.44
.001601	200.	200.	200.	0	0	0	.00	1816.62	1878.06

*SECNO 1.809

```
3235 SLOPE TOO STEEP,EXCEEDS      .10


3265 DIVIDED FLOW

2185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
    1.81     2.42  1684.42  1684.42     .00  1684.65     .23     6.23     .06  1684.00
    2200.     85.    2110.      6.     56.     543.      5.      50.     52.  1684.00
     .14     1.51     3.88     1.19    .160     .080    .160     .000  1682.00    31.56
  .131389    1200.    1200.    1200.      0       16       0      .00  1468.80  2013.21


1490 NH CARD USED
*SECNO 1.667
3840 SECTION NOT HIGH ENOUGH  1782.953  1746.000  1692.000  1746.000  1673.817        2

3265 DIVIDED FLOW

    1.67     2.84  1694.84  1693.74     .00  1694.89     .05    10.23     .02  1694.00
    2200.     554.    1636.      10.    760.     806.     27.     69.     78.  1694.00
     .27      .73     2.03      .36    .126     .080    .160     .000  1692.00    40.44
  .004844     750.     750.     750.       7       15       0      .00  1499.57  2113.34


02/25/86    12:04:11                                                                PAGE  16


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       QLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN     SSTR
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST


1490 NH CARD USED
*SECNO 1.468
3840 SECTION NOT HIGH ENOUGH  1767.720  1756.000  1702.000  1756.000  1694.852        2
    1.47     2.65  1704.65  1704.47     .00  1704.85     .20     9.91     .04  1704.00
    2200.     848.    1349.      3.    603.     304.      4.     100.    111.  1704.00
     .36     1.41     4.44      .68    .125     .080    .160     .000  1702.00   965.06
  .024320    1070.    1070.    1070.      8        9       0      .00  1207.91  2172.98


1490 NH CARD USED
*SECNO 1.231
    1.23     2.41  1718.41     .00     .00  1718.44     .03    13.57     .02  1718.00
    2200.    1670.     374.     156.   1313.     190.    189.     137.    145.  1716.00
     .61     1.27     1.97      .82    .122     .080    .160     .000  1716.00    63.45
  .006119    1250.    1250.    1250.      6        0       0      .00  1163.45  1226.90


1490 NH CARD USED
*SECNO  .900
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```
     .90     1.45  1737.45     .00     .00  1737.52     .06    19.07     .01  1738.00
    2200.     99.     465.   1636.     84.     168.    901.     194.     190.   1736.00
     .06     1.18     2.77    1.82    .160     .080    .151     .000  1736.00  1276.41
  .024617    1750.    1750.   1750.       6       0       0      .00  1056.67  3004.48


1490 NN CARD USED
*SECNO  .559

3265 DIVIDED FLOW

     .56     3.14  1759.14     .00     .00  1759.23     .09    21.70     .01  1760.00
    2200.     434.    1423.    342.    409.     508.    322.     244.     225.   1756.00
    1.09     1.06     2.80    1.06    .160     .080    .160     .000  1756.00  1082.76
  .007132    1800.    1800.   1800.       6       0       0      .00   676.92  2294.72


1490 NN CARD USED
*SECNO  .303
3280 CROSS SECTION       .30 EXTENDED       .71 FEET
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02/25/86    12:04:11                                                                    PAGE  17


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       NU       NL       QLOSS    BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA    LEFT/RIGHT
   TIME     WLOB     VCH      VROB     XNL      XNCH     XNR      WTH      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


     .30     2.71  1772.71     .00     .00  1772.81     .10    13.58     .00  1772.00
    2200.       0.     2191.      9.      0.     863.      7.     276.     248.   1772.00
    1.23     .00     2.54    1.15    .160     .080    .080     .000  1770.00   640.00
  .015243    1350.    1350.   1350.       5       0       0      .00   761.20  1401.20


1490 NN CARD USED
*SECNO  .123
     .12     2.49  1782.49     .00     .00  1782.55     .06     9.74     .00  1782.00
    2200.       3.     2193.      4.      9.    1146.     12.     299.     266.   1782.00
    1.37     .32     1.91     .32    .160     .080    .160     .000  1780.00   104.94
  .007359     950.     950.    950.       3       0       0      .00   952.64  1057.58


CCHV=    .100 CEHV=    .300
*SECNO  .000
     .00     1.97  1789.97     .00     .00  1790.09     .12     7.52     .02  1788.00
    2200.       0.     2200.      0.      0.     785.      0.     313.     276.   1788.00
    1.44     .44     2.80     .44    .120     .120    .120     .000  1788.00      .75
  .020798     650.     650.    650.       3       0       0      .00   399.49   400.25
```

PROFILE FOR STREAM Q=2200

PLOTTED POINTS (BY PRIORITY)-E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA

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ELEVATION 1660.    1680.    1700.    1720.    1740.    1760.    1780.    1800.    1820.    1840.
   SECNO  CUMDIS

    2.07    0. .    EM .       . .    .       .       .       .       .       .       .       .
          100. C    IE .       .       .       .       .       .       .       .       .       .
    2.04  200. C    IE .       .       .       .       .       .       .       .       .       .
          300. C    IE M       .       .       .       .       .       .       .       .       .
          400. C     IE . M    .       .       .       .       .       .       .       .       .
          500. C     IE .   M  .       .       .       .       .       .       .       .       .
          600. C      IE.     M .       .       .       .       .       .       .       .       .
          700. C      IE.       M       .       .       .       .       .       .       .       .
          800. C       IE       . M     .       .       .       .       .       .       .       .
          900. C       IE       .   M   .       .       .       .       .       .       .       .
         1000. C       IWE      .     M .       .       .       .       .       .       .       .
         1100. C        IE      .       M       .       .       .       .       .       .       .
         1200. C        IE      .       . M     .       .       .       .       .       .       .
         1300. C        .IE     .       .   M   .       .       .       .       .       .       .
    1.81 1400. .        .IE     .       .     M .       .       .       .       .       .       .
         1500. .        . IE    .       .      M.       .       .       .       .       .       .
         1600. .        . ICE   .       .      M.       .       .       .       .       .       .
         1700. .        .  IE   .       .       M       .       .       .       .       .       .
         1800. .        .   IE  .       .       .M      .       .       .       .       .       .
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```
     2000.  .     .  IE  .     .     .  M     .     .     .     .     .     .
     2100.  .     .  IE  .     .     .  M     .     .     .     .     .     .
1.67 2200.  .     .  IE  .     .     .  M     .     .     .     .     .     .
     2300.  .     .  ICE .     .     .  M     .     .     .     .     .     .
     2400.  .     .  IE  .     .     .  M     .     .     .     .     .     .
     2500.  .     .  ICE.     .     .  M     .     .     .     .     .     .
     2600.  .     .  IE.     .     .   M     .     .     .     .     .     .
     2700.  .     .  ICE     .     .   M     .     .     .     .     .     .
     2800.  .     .   IE     .     .    M    .     .     .     .     .     .
     2900.  .     .  ICE     .     .    M    .     .     .     .     .     .
     3000.  .     .   IE     .     .     M   .     .     .     .     .     .
     3100.  .     .  ICE     .     .     M   .     .     .     .     .     .
     3200.  .     .  .IE     .     .      M  .     .     .     .     .     .
1.47 3300.  .     .  .IE     .     .      M  .     .     .     .     .     .
     3400.  C     .  . IE    .     .     M   .     .     .     .     .     .
     3500.  C     .  . IWE   .     .   M     .     .     .     .     .     .
     3600.  C     .  . IE    .     .  M      .     .     .     .     .     .
     3700.  C     .  . ILE   .     . M       .     .     .     .     .     .
     3800.  C     .  .  IE   .     .M        .     .     .     .     .     .
     3900.  C     .  .  ILE  .    M.         .     .     .     .     .     .
     4000.  C     .  .   IE  .   M .         .     .     .     .     .     .
     4100.  C     .  .   ILE .  M  .         .     .     .     .     .     .
     4200.  C     .  .    IE .  M  .         .     .     .     .     .     .
     4300.  C     .  .     IE . M  .         .     .     .     .     .     .
     4400.  C     .  .     IE . M  .         .     .     .     .     .     .
1.23 4500.  C     .  .      IEM  .           .     .     .     .     .     .
     4600.  C     .  .      IEM  .           .     .     .     .     .     .
     4700.  C     .  .      IEM  .           .     .     .     .     .     .
     4800.  C     .  .       IEM .           .     .     .     .     .     .
     4900.  C     .  .       IEM .           .     .     .     .     .     .
     5000.  C     .  .       .IEM .          .     .     .     .     .     .
     5100.  C     .  .       .IEM .          .     .     .     .     .     .
     5200.  C     .  .       . IEM .         .     .     .     .     .     .
     5300.  C     .  .       . IEM .         .     .     .     .     .     .
     5400.  C     .  .       . IEM .         .     .     .     .     .     .
     5500.  C     .  .       .  IEM .        .     .     .     .     .     .
     5600.  C     .  .       .  IEM .        .     .     .     .     .     .
     5700.  C     .  .       .   IEM .       .     .     .     .     .     .
     5800.  C     .  .       .   IEM .       .     .     .     .     .     .
     5900.  C     .  .       .    IEM .      .     .     .     .     .     .
     6000.  C     .  .       .     ELM.      .     .     .     .     .     .
     6100.  C     .  .       .     IEM.      .     .     .     .     .     .
     6200.  C     .  .       .      ELM      .     .     .     .     .     .
.90  6300.  C     .  .       .      IEM      .     .     .     .     .     .
     6400.  C     .  .       .       ELM     .     .     .     .     .     .
     6500.  C     .  .       .       IEM     .     .     .     .     .     .
     6600.  C     .  .       .        IEM    .     .     .     .     .     .
     6700.  C     .  .       .        IEM    .     .     .     .     .     .
     6800.  C     .  .       .        .IEM   .     .     .     .     .     .
     6900.  C     .  .       .        .IEL   .     .     .     .     .     .
     7000.  C     .  .       .        . IEM  .     .     .     .     .     .
     7100.  C     .  .       .        . I E  .     .     .     .     .     .
     7200.  C     .  .       .        .  IEL .     .     .     .     .     .
     7300.  C     .  .       .        .   IEM .    .     .     .     .     .
     7400.  C     .  .       .        .   IEL .    .     .     .     .     .
     7500.  C     .  .       .        .    IEM .   .     .     .     .     .
     7600.  C     .  .       .        .    I E .   .     .     .     .     .
     7700.  C     .  .       .        .     IEL .  .     .     .     .     .
     7800.  C     .  .       .        .     I E .  .     .     .     .     .
     7900.  C     .  .       .        .      IEL.  .     .     .     .     .
     8000.  C     .  .       .        .      I E.  .     .     .     .     .
.56  8100.  C     .  .       .        .       I E  .     .     .     .     .
     8200.  C     .  .       .        .        IE  .     .     .     .     .
     8300.  C     .  .       .        .        I.E .     .     .     .     .
     8400.  C     .  .       .        .         IE .     .     .     .     .
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       8600. C     .     .     .     .    .IE    .     .     .     .     .
       8700. C     .     .     .     .    .IRE   .     .     .     .     .
       8800. C     .     .     .     .    . IE   .     .     .     .     .
       8900. C     .     .     .     .    . IRE  .     .     .     .     .
       9000. C     .     .     .     .    . IE   .     .     .     .     .
       9100. C     .     .     .     .    . ILE  .     .     .     .     .
       9200. C     .     .     .     .    . IE   .     .     .     .     .
       9300. C     .     .     .     .    . ILE  .     .     .     .     .
  .30  9400. C     .     .     .     .    . IE   .     .     .     .     .
       9500. C     .     .     .     .    . IE   .     .     .     .     .
       9600. C     .     .     .     .    . IE   .     .     .     .     .
       9700. C     .     .     .     .    . IE   .     .     .     .     .
       9800. C     .     .     .     .    . IEM  .     .     .     .     .
       9900. C     .     .     .     .    . IE   .     .     .     .     .
      10000. C     .     .     .     .    . IEM  .     .     .     .     .
      10100. C     .     .     .     .    . IE   .     .     .     .     .
      10200. C     .     .     .     .    . IWE  .     .     .     .     .
      10300. C     .     .     .     .    . IEM  .     .     .     .     .
  .12 10400. C     .     .     .     .    . IEM  .     .     .     .     .
      10500. C     .     .     .     .    . .IEM .     .     .     .     .
      10600. C     .     .     .     .    . .IE M .     .     .     .     .
      10700. C     .     .     .     .    . . IE M .     .     .     .     .
      10800. C     .     .     .     .    . . ILE M .     .     .     .     .
      10900. C     .     .     .     .    . . IE  M .     .     .     .     .
  .00 11000. C     .     .     .     .    . .  IE  M .     .     .     .     .
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THIS RUN EXECUTED 02/25/86 12:15:57

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 HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
 ERROR CORR -  01,02,03,04,05,06
 MODIFICATION -  50,51,52,53,54,55,56
 IBM-PC-XT VERSION
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

DR BREACH AT S.E. CORNER

SUMMARY PRINTOUT

	SECNO	Q	VCH	CWSEL	CRIWS	EG	TOPWID	SSTA	ENDST	TIME	ELMIN	AREA	VOL
*	2.074	5300.00	5.45	1672.95	1672.95	1673.38	1402.33	366.71	1769.03	.00	1672.00	1120.03	.00
*	2.074	4400.00	5.14	1672.84	1672.84	1673.23	1351.36	404.26	1755.62	.00	1672.00	972.29	.00
*	2.074	3300.00	4.71	1672.70	1672.70	1673.03	1281.78	455.53	1737.31	.00	1672.00	779.43	.00
*	2.074	2200.00	4.14	1672.54	1672.54	1672.79	1205.13	512.01	1717.14	.00	1672.00	578.77	.00

	2.036	4400.00	1.54	1674.48	.00	1674.51	1900.00	.00	1900.00	.04	1672.00	3767.99	10.88
	2.036	3300.00	1.35	1674.19	.00	1674.21	1900.00	.00	1900.00	.05	1672.00	3203.93	9.14
	2.036	2200.00	1.11	1673.82	.00	1673.84	1816.62	61.44	1878.06	.05	1672.00	2523.80	7.12
*	1.809	5300.00	5.37	1684.74	1684.74	1685.16	1594.24	25.29	2030.46	.10	1682.00	1084.49	84.70
*	1.809	4400.00	4.98	1684.66	1684.66	1685.03	1563.43	26.83	2026.22	.11	1682.00	962.88	76.05
*	1.809	3300.00	4.69	1684.52	1684.52	1684.85	1509.86	29.51	2018.86	.12	1682.00	757.11	63.70
*	1.809	2200.00	3.88	1684.42	1684.42	1684.65	1468.80	31.56	2013.21	.14	1682.00	604.21	50.21
	1.667	5300.00	2.69	1695.74	1694.56	1695.82	1936.15	8.94	2180.85	.20	1692.00	3139.75	121.07
	1.667	4400.00	2.54	1695.53	1694.39	1695.59	1829.70	16.62	2164.39	.22	1692.00	2726.48	107.81
	1.667	3300.00	2.29	1695.23	1694.16	1695.29	1688.61	26.80	2142.57	.23	1692.00	2214.76	89.29
	1.667	2200.00	2.03	1694.84	1693.74	1694.89	1499.57	40.44	2113.34	.27	1692.00	1593.42	69.13
	1.468	5300.00	5.07	1705.40	1705.06	1705.60	1711.52	476.56	2188.09	.29	1702.00	1989.95	184.07
	1.468	4400.00	4.92	1705.22	1704.90	1705.42	1566.08	618.46	2184.54	.31	1702.00	1699.28	162.16
	1.468	3300.00	4.82	1704.95	1704.72	1705.16	1357.51	821.57	2179.08	.32	1702.00	1302.18	132.48
	1.468	2200.00	4.44	1704.65	1704.47	1704.85	1207.91	965.06	2172.98	.36	1702.00	910.57	99.88
	1.231	5300.00	2.91	1719.40	.00	1719.46	1267.31	23.88	1291.19	.47	1716.00	2894.64	254.15
	1.231	4400.00	2.68	1719.15	.00	1719.21	1241.23	33.82	1275.05	.50	1716.00	2583.07	223.61
	1.231	3300.00	2.34	1718.83	.00	1718.87	1207.31	46.74	1254.05	.54	1716.00	2187.63	182.56
	1.231	2200.00	1.97	1718.41	.00	1718.44	1163.45	63.45	1226.90	.61	1716.00	1692.47	137.23
	.900	5300.00	3.50	1738.37	.00	1738.47	1346.00	1239.78	3038.79	.67	1736.00	2263.16	357.76
	.900	4400.00	3.25	1738.15	.00	1738.24	1291.38	1251.92	3030.51	.71	1736.00	1972.12	315.11
	.900	3300.00	3.03	1737.82	.00	1737.89	1187.78	1265.56	3018.05	.76	1736.00	1558.52	257.80
	.900	2200.00	2.77	1737.45	.00	1737.52	1056.67	1276.41	3004.48	.86	1736.00	1152.62	194.38

SECNO	Q	VCH	CWSEL	CRIWS	EG	TOPWID	SSTA	ENDST	TIME	ELMIN	AREA	VOL
.559	5300.00	3.81	1760.40	.00	1760.55	1280.00	1070.00	2350.00	.85	1756.00	2396.72	454.04
.559	4400.00	3.55	1760.15	.00	1760.28	1280.00	1070.00	2350.00	.90	1756.00	2069.69	398.62
.559	3300.00	3.18	1759.75	.00	1759.86	783.95	1073.84	2333.37	.97	1756.00	1673.53	324.58
.559	2200.00	2.80	1759.14	.00	1759.23	676.92	1082.76	2294.72	1.09	1756.00	1239.21	243.80
.303	5300.00	3.30	1773.68	.00	1773.85	790.32	640.00	1430.32	.96	1770.00	1623.55	516.34
.303	4400.00	3.11	1773.43	.00	1773.58	782.08	640.00	1422.08	1.02	1770.00	1428.25	452.82
.303	3300.00	2.87	1773.08	.00	1773.21	772.42	640.00	1412.42	1.10	1770.00	1157.13	368.45
.303	2200.00	2.54	1772.71	.00	1772.81	761.20	640.00	1401.20	1.23	1770.00	870.52	276.49
.123	5300.00	2.86	1783.28	.00	1783.40	1080.98	50.49	1131.48	1.06	1780.00	1957.35	555.38
.123	4400.00	2.64	1783.08	.00	1783.19	1047.99	64.49	1112.48	1.12	1780.00	1744.50	487.42
.123	3300.00	2.30	1782.82	.00	1782.90	1005.03	82.71	1087.74	1.21	1780.00	1477.22	397.17
.123	2200.00	1.91	1782.49	.00	1782.55	952.64	104.94	1057.58	1.37	1780.00	1166.44	298.70
.000	5300.00	3.90	1791.40	.00	1791.64	399.85	.57	400.43	1.10	1788.00	1358.59	580.12
.000	4400.00	3.62	1791.05	.00	1791.25	399.76	.62	400.38	1.17	1788.00	1217.30	509.52
.000	3300.00	3.25	1790.54	.00	1790.71	399.64	.68	400.32	1.27	1788.00	1014.87	415.77
.000	2200.00	2.80	1789.97	.00	1790.09	399.49	.75	400.25	1.44	1788.00	785.19	313.26

SUMMARY OF ERRORS AND SPECIAL NOTES

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CAUTION  SECNO=    2.074  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.074  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.074  PROFILE= 3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.074  PROFILE= 4  CRITICAL DEPTH ASSUMED

CAUTION  SECNO=    1.809  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    1.809  PROFILE= 1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    1.809  PROFILE= 1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    1.809  PROFILE= 1  SLOPE TOO STEEP
CAUTION  SECNO=    1.809  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    1.809  PROFILE= 2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    1.809  PROFILE= 2  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    1.809  PROFILE= 2  SLOPE TOO STEEP
CAUTION  SECNO=    1.809  PROFILE= 3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    1.809  PROFILE= 3  SLOPE TOO STEEP
CAUTION  SECNO=    1.809  PROFILE= 3  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    1.809  PROFILE= 4  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    1.809  PROFILE= 4  SLOPE TOO STEEP
CAUTION  SECNO=    1.809  PROFILE= 4  MINIMUM SPECIFIC ENERGY
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THIS RUN EXECUTED 02/25/06 12:16:57

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*****************************************
 HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
 ERROR CORR -  01,02,03,04,05,06
 MODIFICATION -  50,51,52,53,54,55,56
 IBM-PC-XT VERSION
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  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


*PROF 4


CCHV=   .100 CEHV=   .300
*SECNO 1.640

3265 DIVIDED FLOW

3720 CRITICAL DEPTH ASSUMED
    1.64     4.30  1698.30  1698.30  1700.00  1699.00     .70     .00     .00  1698.00
   10000.     103.    5265.    4632.     100.     599.   1510.      0.      0.  1696.00
     .00     1.03     8.80     3.07     .080     .040    .080    .000  1694.00   558.09
  .015672      0.       0.       0.        0       12       0     .00  1756.80  2387.23


*SECNO 1.638

3265 DIVIDED FLOW


3301 HV CHANGED MORE THAN HVINS

    1.64     5.77  1699.77     .00     .00  1699.89     .12     .84     .06  1698.00
   10000.     739.    3872.    5389.    646.     937.   3435.     17.      9.  1696.00
     .02     1.14     4.13     1.57    .080     .040    .080    .000  1694.00   499.25
  .001904     200.     200.     200.       4        0       0     .00  2062.03  2571.10


*SECNO 1.468
3280 CROSS SECTION      1.47 EXTENDED       .71 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
    1.47     4.71  1706.71  1706.71       60  1707.24       54     2.89       12  1704.00
```

10000.	1341.	6619.	2040.	1010.	927.	1301.	102.	61.	1704.00
.07	1.33	7.14	1.57	.080	.040	.080	.000	1702.00	.00
.006439	900.	900.	900.	20	14	0	.00	2950.00	2950.00

1490 NH CARD USED
*SECNO 1.231

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3265 DIVIDED FLOW

1.23	5.77	1717.77	1717.51	.00	1718.62	.85	11.29	.09	1720.00
10000.	0.	10000.	0.	0.	1351.	0.	168.	112.	1720.00
.12	.00	7.40	.00	.080	.040	.080	.000	1712.00	832.29
.013567	1250.	1250.	1250.	13	11	0	.00	609.96	1462.85

1490 NH CARD USED
*SECNO .900

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

.90	4.32	1738.32	1737.68	.00	1738.52	.20	19.83	.07	1738.00
10000.	1103.	3886.	5011.	504.	882.	1634.	256.	163.	1736.00
.26	2.19	4.40	3.07	.080	.042	.074	.000	1734.00	33.55
.009609	1750.	1750.	1750.	18	18	0	.00	1936.70	3037.09

1490 NH CARD USED
*SECNO .559

3265 DIVIDED FLOW

.56	4.14	1758.14	.00	.00	1758.67	.53	20.05	.10	1756.00
10000.	3888.	5783.	329.	591.	1060.	148.	355.	225.	1756.00
.34	6.58	5.45	2.22	.041	.044	.080	.000	1754.00	46.59
.013059	1800.	1800.	1800.	5	0	0	.00	1068.56	2228.86

*SECNO .303

3265 DIVIDED FLOW

.30	3.54	1773.54	.00	.00	1774.01	.47	15.34	.01	1772.00
10000.	37.	9852.	111.	24.	1772.	36.	411.	258.	1772.00
.41	1.56	5.56	3.11	.080	.040	.040	.000	1770.00	189.21
.009973	1350.	1350.	1350.	4	0	0	.00	1047.79	1426.18

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

1490 NH CARD USED
*SECNO .123

.12	3.12	1783.12	.00	.00	1783.64	.53	9.62	.02	1782.00
10000.	56.	9867.	76.	44.	1685.	60.	451.	281.	1782.00
.46	1.28	5.85	1.28	.080	.040	.080	.000	1780.00	61.51
.010282	950.	950.	950.	5	0	0	.00	1055.00	1116.52

CCHV= .100 CEHV= .300
*SECNO .000

.00	3.41	1791.41	.00	.00	1792.25	.84	8.51	.09	1788.00
10000.	1.	9998.	1.	1.	1359.	1.	474.	291.	1788.00
.48	1.15	7.36	1.15	.060	.060	.060	.000	1788.00	.57
.017222	650.	650.	650.	4	0	0	.00	399.85	400.43

PROFILE FOR STREAM Q=10000

PLOTTED POINTS (BY PRIORITY)-E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA

```
ELEVATION 1680.    1700.    1720.    1740.    1760.    1780.    1800.    1820.    1840.    1860.
   SECNO  CUMDIS

    1.64     0. .    IRWE      .        .        .        .        .        .        .        .        .
           100. C    IRLE      .        .        .        .        .        .        .        .        .
    1.64   200. C    IRLE      .        .        .        .        .        .        .        .        .
           300. C    IRLE      .        .        .        .        .        .        .        .        .
           400. C     IRLE     .        .        .        .        .        .        .        .        .
           500. C     IRLE     .        .        .        .        .        .        .        .        .
           600. C      ILWE    .        .        .        .        .        .        .        .        .
           700. C      IRLE    .        .        .        .        .        .        .        .        .
           800. C       ILE    .        .        .        .        .        .        .        .        .
           900. C       ILME   .        .        .        .        .        .        .        .        .
          1000. C       .ILE   .        .        .        .        .        .        .        .        .
    1.47  1100. .       .ILWE  .        .        .        .        .        .        .        .        .
          1200. .       .I LE  .        .        .        .        .        .        .        .        .
          1300. .       . ILWE .        .        .        .        .        .        .        .        .
          1400. .       . I LE .        .        .        .        .        .        .        .        .
          1500. .       . I E  .        .        .        .        .        .        .        .        .
          1600. .       . I LE .        .        .        .        .        .        .        .        .
          1700. .       . I  E .        .        .        .        .        .        .        .        .
          1800. .       .  I WE .       .        .        .        .        .        .        .        .
          1900. .       .  I  E .       .        .        .        .        .        .        .        .
          2000. .       .   I WE .      .        .        .        .        .        .        .        .
          2100. .       .   I  EM.      .        .        .        .        .        .        .        .
          2200. .       .   I  WE.      .        .        .        .        .        .        .        .
          2300. .       .    I  EL      .        .        .        .        .        .        .        .
    1.23  2400. .       .    I  EL      .        .        .        .        .        .        .        .
          2500. .       .     I WEL     .        .        .        .        .        .        .        .
          2600. .       .     I  EL     .        .        .        .        .        .        .        .
          2700. .       .      I CEL    .        .        .        .        .        .        .        .
          2800. .       .       I.WE    .        .        .        .        .        .        .        .
          2900. .       .       I. EL   .        .        .        .        .        .        .        .
          3000. .       .        I WE   .        .        .        .        .        .        .        .
          3100. .       .        I  EL  .        .        .        .        .        .        .        .
          3200. .       .        .I CEM .        .        .        .        .        .        .        .
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     3500. .         .  I WE  .       .       .       .       .       .       .
     3600. .         .   IREM .       .       .       .       .       .       .
     3700. .         .   I CE .       .       .       .       .       .       .
     3800. .         .    IREM .      .       .       .       .       .       .
     3900. .         .    I CEM.      .       .       .       .       .       .
     4000. .         .     IREM.      .       .       .       .       .       .
 .90 4100. .         .      IREM      .       .       .       .       .       .
     4200. C         .       IREM     .       .       .       .       .       .
     4300. C         .       IREM     .       .       .       .       .       .
     4400. C         .        IREM    .       .       .       .       .       .
     4500. C         .        IREM    .       .       .       .       .       .
     4600. C         .         IREM   .       .       .       .       .       .
     4700. C         .         IRWE   .       .       .       .       .       .
     4800. C         .         .IREM  .       .       .       .       .       .
     4900. C         .         .IRLE. .       .       .       .       .       .
     5000. C         .         . IREM .       .       .       .       .       .
     5100. C         .         .  ILEM .      .       .       .       .       .
     5200. C         .         .  IREM .      .       .       .       .       .
     5300. C         .         .   ILEM .     .       .       .       .       .
     5400. C         .         .   IRWE .     .       .       .       .       .
     5500. C         .         .    ILEM .    .       .       .       .       .
     5600. C         .         .    IRWE .    .       .       .       .       .
     5700. C         .         .     ILEM.    .       .       .       .       .
     5800. C         .         .     IRLE.    .       .       .       .       .
 .56 5900. C         .         .      ILEM    .       .       .       .       .
     6000. C         .         .       ILEM   .       .       .       .       .
     6100. C         .         .       ILEM   .       .       .       .       .
     6200. C         .         .        ILEM  .       .       .       .       .
     6300. C         .         .        ILWE  .       .       .       .       .
     6400. C         .         .         ILEM .       .       .       .       .
     6500. C         .         .         .IWEM .      .       .       .       .
     6600. C         .         .         .ILEM .      .       .       .       .
     6700. C         .         .         . ILEM .     .       .       .       .
     6800. C         .         .         . ILEM .     .       .       .       .
     6900. C         .         .         .  ILEM .    .       .       .       .
     7000. C         .         .         .   IWEM .   .       .       .       .
     7100. C         .         .         .   ILEM .   .       .       .       .
     7200. C         .         .         .    IWEM .  .       .       .       .
 .30 7300. C         .         .         .    ILEM .  .       .       .       .
     7400. C         .         .         .     IWE .  .       .       .       .
     7500. C         .         .         .     ILEM.  .       .       .       .
     7600. C         .         .         .      IWE.  .       .       .       .
     7700. C         .         .         .      ILEM  .       .       .       .
     7800. C         .         .         .       IWE  .       .       .       .
     7900. C         .         .         .       ILEM .       .       .       .
     8000. C         .         .         .        IWE .       .       .       .
     8100. C         .         .         .        ILE .       .       .       .
 .12 8200. C         .         .         .         ILE .      .       .       .
     8300. C         .         .         .         .IEM .     .       .       .
     8400. C         .         .         .         .ILEM .    .       .       .
     8500. C         .         .         .         . IWEM .   .       .       .
     8600. C         .         .         .         . ILE M .  .       .       .
     8700. C         .         .         .         .  I E M .  .       .       .
     8800. C         .         .         .         .   IWE M . .       .       .
 .00 8900. C         .         .         .         .   I E M . .       .       .
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THIS RUN EXECUTED 02/11/86 16:33:34

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  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
  IBM-PC-XT VERSION
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T1
T2
T3 PSH, Q=5300

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	6.	0.	0.	-1.000000	.00	.0	0.	1699.000	.000

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	5.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

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  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN     SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST


*PROF 5


CCHV=   .100 CEHV=   .300
*SECNO 1.640

3265 DIVIDED FLOW

3720 CRITICAL DEPTH ASSUMED
    1.64     3.61  1697.61  1697.61  1699.00  1698.19      .58      .00      .00  1698.00
   5300.       0.    3320.    1980.       0.     443.     811.       0.       0.  1696.00
     .00      .00     7.50     2.44     .080     .040     .080     .000  1694.00   915.75
  .015512      0.       0.       0.       0       17        0      .00  1034.68  2182.74


*SECNO 1.638

3265 DIVIDED FLOW

    1.64     4.90  1698.90      .00      .00  1698.98      .09      .75      .05  1698.00
   5300.     215.    2405.    2680.     313.     737.    2253.      10.       7.  1696.00
     .03      .69     3.26     1.19     .080     .040     .080     .000  1694.00   534.05
 .001636     200.     200.     200.        4        0        0      .00  1881.50  2462.35


*SECNO 1.468

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
    1.47     3.42  1705.42  1705.42      .00  1706.39      .96     3.32      .26  1704.00
   5300.       82.    4935.     283.      46.     686.     157.      53.       32.  1704.00
      00     1.00     0.14     1.00     000      640      000      000  1702.00  1725.92
```

.00	1.00	0.71	1.00	0.00	0.00	0.00	0.00	0.00	0.00
.014761	900.	900.	900.	20	19	0	.00	534.79	1770.71

1490 NH CARD USED
*SECNO 1.231

3265 DIVIDED FLOW

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3301 HV CHANGED MORE THAN HVINS

1.23	5.37	1717.37	.00	.00	1717.72	.35	11.27	.06	1720.00
5300.	0.	5300.	0.	0.	1115.	0.	81.	47.	1720.00
.13	.00	4.75	.00	.080	.038	.080	.000	1712.00	836.31
.006074	1250.	1250.	1250.	6	0	0	.00	563.02	1456.15

1490 NH CARD USED
*SECNO .900

3265 DIVIDED FLOW

.90	3.26	1737.26	1737.17	.00	1737.62	.37	19.90	.00	1738.00
5300.	346.	2262.	2692.	150.	360.	756.	128.	85.	1736.00
.24	2.30	6.27	3.56	.080	.039	.076	.000	1734.00	95.67
.028491	1750.	1750.	1750.	14	14	0	.00	1328.89	2997.16

1490 NH CARD USED
*SECNO .559

3265 DIVIDED FLOW

.56	3.83	1757.83	.00	.00	1758.04	.21	20.41	.02	1756.00
5300.	2042.	3109.	149.	501.	879.	109.	185.	133.	1756.00
.37	4.08	3.54	1.36	.041	.043	.080	.000	1754.00	54.14
.006047	1800.	1800.	1800.	7	0	0	.00	990.51	2209.22

1490 NH CARD USED
*SECNO .303

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.30	2.67	1772.67	1772.67	.00	1773.15	.48	14.03	.08	1772.00
5300.	6.	5277.	17.	4.	944.	7.	223.	164.	1772.00
.44	1.32	5.59	2.64	.080	.040	.040	.000	1770.00	206.70
.021869	1350.	1350.	1350.	6	18	0	.00	958.18	1399.95

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	BLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

1490 NH CARD USED
*SECNO .123

.12	2.76	1782.76	.00	.00	1782.99	.23	9.81	.03	1782.00
5300.	15.	5266.	20.	20.	1360.	26.	249.	185.	1782.00
.51	.75	3.87	.75	.080	.040	.080	.000	1780.00	87.74
.005994	950.	950.	950.	7	0	0	.00	993.19	1080.93

ECHV= .100 CEHV= .300
*SECNO .000

.00	1.95	1789.95	.00	.00	1790.67	.72	7.53	.15	1788.00
5300.	0.	5299.	0.	0.	777.	0.	265.	195.	1788.00
.53	1.07	6.82	1.07	.060	.060	.060	.000	1788.00	.76
.031216	650.	650.	650.	3	0	0	.00	399.49	400.24

PROFILE FOR STREAM Q=5300

PLOTTED POINTS (BY PRIORITY)-E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA

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ELEVATION 1680.    1700.    1720.    1740.    1760.    1780.    1800.    1820.    1840.    1860.
   SECNO  CUMDIS

    1.64     0. .     IREM      .        .        .        .        .        .        .        .
           100. C     IREM      .        .        .        .        .        .        .        .
    1.64   200. C     IREM      .        .        .        .        .        .        .        .
           300. C     IRLE      .        .        .        .        .        .        .        .
           400. C      IREM     .        .        .        .        .        .        .        .
           500. C      IRLE     .        .        .        .        .        .        .        .
           600. C       ILE     .        .        .        .        .        .        .        .
           700. C       IRWE    .        .        .        .        .        .        .        .
           800. C       ILE     .        .        .        .        .        .        .        .
           900. C       ILE     .        .        .        .        .        .        .        .
          1000. C       .IWE    .        .        .        .        .        .        .        .
    1.47  1100. .       .ILE    .        .        .        .        .        .        .        .
          1200. C       .I WE   .        .        .        .        .        .        .        .
          1300. C       . ILE   .        .        .        .        .        .        .        .
          1400. C       . I WE  .        .        .        .        .        .        .        .
          1500. C       .  I E  .        .        .        .        .        .        .        .
          1600. C       .  I EM .        .        .        .        .        .        .        .
          1700. C       .  I  E .        .        .        .        .        .        .        .
          1800. C       .   I EM .       .        .        .        .        .        .        .
          1900. C       .   I  E .       .        .        .        .        .        .        .
          2000. C       .    I EL .      .        .        .        .        .        .        .
          2100. C       .    I WEM.      .        .        .        .        .        .        .
          2200. C       .    I  EL.      .        .        .        .        .        .        .
          2300. C       .     I WEL      .        .        .        .        .        .        .
    1.23  2400. C       .     I  EL      .        .        .        .        .        .        .
          2500. C       .      I ERL     .        .        .        .        .        .        .
          2600. C       .      I  EL     .        .        .        .        .        .        .
          2700. C       .       I WEL    .        .        .        .        .        .        .
          2800. C       .        I.EL    .        .        .        .        .        .        .
          2900. C       .        I. EL   .        .        .        .        .        .        .
          3000. C       .         I EL   .        .        .        .        .        .        .
          3100. C       .         I  EL  .        .        .        .        .        .        .
          3200. C       .         .I ELM .        .        .        .        .        .        .
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```
     3500. C        .        . I EL  .        .        .        .        .        .        .        .
     3600. C        .        .  IREM .        .        .        .        .        .        .        .
     3700. C        .        .  I EL .        .        .        .        .        .        .        .
     3800. C        .        .   IREM .        .        .        .        .        .        .        .
     3900. C        .        .   I ELM.        .        .        .        .        .        .        .
     4000. C        .        .    IREM.        .        .        .        .        .        .        .
 .90 4100. .        .        .     IREM        .        .        .        .        .        .        .
     4200. C        .        .      IELM       .        .        .        .        .        .        .
     4300. C        .        .      IREM       .        .        .        .        .        .        .
     4400. C        .        .       IWEM      .        .        .        .        .        .        .
     4500. C        .        .       IREM      .        .        .        .        .        .        .
     4600. C        .        .        IWEM     .        .        .        .        .        .        .
     4700. C        .        .        IREM     .        .        .        .        .        .        .
     4800. C        .        .        .IREM    .        .        .        .        .        .        .
     4900. C        .        .        .IREM    .        .        .        .        .        .        .
     5000. C        .        .        . IREM   .        .        .        .        .        .        .
     5100. C        .        .        .  IE M  .        .        .        .        .        .        .
     5200. C        .        .        .  IREM  .        .        .        .        .        .        .
     5300. C        .        .        .   IWEM .        .        .        .        .        .        .
     5400. C        .        .        .   IREM .        .        .        .        .        .        .
     5500. C        .        .        .    ILEM .       .        .        .        .        .        .
     5600. C        .        .        .    IREM .       .        .        .        .        .        .
     5700. C        .        .        .     ILEM.       .        .        .        .        .        .
     5800. C        .        .        .     IREM.       .        .        .        .        .        .
 .56 5900. C        .        .        .      ILEM       .        .        .        .        .        .
     6000. C        .        .        .       IWEM      .        .        .        .        .        .
     6100. C        .        .        .       ILEM      .        .        .        .        .        .
     6200. C        .        .        .        ILEM     .        .        .        .        .        .
     6300. C        .        .        .        ILEM     .        .        .        .        .        .
     6400. C        .        .        .         ILEM    .        .        .        .        .        .
     6500. C        .        .        .         .IE M   .        .        .        .        .        .
     6600. C        .        .        .         .ILEM   .        .        .        .        .        .
     6700. C        .        .        .         . IE M  .        .        .        .        .        .
     6800. C        .        .        .         . ILEM  .        .        .        .        .        .
     6900. C        .        .        .         .  IWEM .        .        .        .        .        .
     7000. C        .        .        .         .   IE M .       .        .        .        .        .
     7100. C        .        .        .         .   ILEM .       .        .        .        .        .
     7200. .        .   C    .        .         .    IE M .      .        .        .        .        .
 .30 7300. .        .        .        .         .    IWEM .      .        .        .        .        .
     7400. C        .        .        .         .     IEM .      .        .        .        .        .
     7500. C        .        .        .         .     IWEM.      .        .        .        .        .
     7600. C        .        .        .         .      IEM.      .        .        .        .        .
     7700. C        .        .        .         .      IWEM      .        .        .        .        .
     7800. C        .        .        .         .       IEM      .        .        .        .        .
     7900. C        .        .        .         .       ILEM     .        .        .        .        .
     8000. C        .        .        .         .        IEM     .        .        .        .        .
     8100. C        .        .        .         .        ILE     .        .        .        .        .
 .12 8200. C        .        .        .         .         IEM    .        .        .        .        .
     8300. C        .        .        .         .         .IEM   .        .        .        .        .
     8400. C        .        .        .         .         .IWEM  .        .        .        .        .
     8500. C        .        .        .         .         . IE M .        .        .        .        .
     8600. C        .        .        .         .         . ILE M .       .        .        .        .
     8700. C        .        .        .         .         .  IE  M .      .        .        .        .
     8800. C        .        .        .         .         .   IE  M .     .        .        .        .
 .00 8900. C        .        .        .         .         .   IE  M .     .        .        .        .
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THIS RUN EXECUTED 02/11/86 16:36:01

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 HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
 ERROR CORR -  01,02,03,04,05,06
 MODIFICATION -  50,51,52,53,54,55,56
 IBM-PC-XT VERSION
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T1
T2
T3 PBS, Q=4400

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	7.	0.	0.	-1.000000	.00	.0	0.	1699.000	.000

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	6.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

```
  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
  TIME     VLOB     VCH      VROB     XHL      XNCH     XNR      WTN      ELMIN     SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST


*PROF 6


CCHV=    .100 CEHV=    .300
*SECNO 1.640

3265 DIVIDED FLOW

3720 CRITICAL DEPTH ASSUMED
    1.64     3.44  1697.44  1697.44  1699.00  1697.97     .53     .00     .00  1698.00
    4400.      0.     2875.     1525.      0.     408.     683.      0.      0.  1696.00
     .00     .00     7.04     2.23     .080     .040     .080    .000  1694.00   922.27
  .014615      0.      0.      0.        0       17        0     .00   964.25  2163.20


*SECNO 1.638

3265 DIVIDED FLOW

    1.64     4.66  1698.66     .00     .00  1698.74     .08     .73     .05  1698.00
    4400.     128.     2106.    2166.    229.     683.    1959.     9.      6.  1696.00
     .03     .56     3.08     1.11     .080     .040     .080    .000  1694.00   543.32
  .001611     200.     200.     200.       4        0        0     .00  1833.40  2433.37


*SECNO 1.468

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
    1.47     3.16  1705.16  1705.16     .00  1706.05     .89    3.33     .24  1704.00
    4400.     49.     4184.     167.     30.     539.     104.     46.     30.  1704.00
      [illegible]  [illegible]  [illegible]  [illegible]  [illegible]  [illegible]  [illegible]  [illegible]  [illegible]  [illegible]
```

.06	1.67	1.70	1.67	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
.015680	900.	900.	900.	20	19	0	.00	481.20	1729.18

1490 NH CARD USED
*SECNO 1.231

3265 DIVIDED FLOW

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3301 HV CHANGED MORE THAN HVINS

1.23	5.10	1717.10	.00	.00	1717.43	.32	11.32	.06	1720.00
4400.	0.	4400.	0.	0.	967.	0.	69.	45.	1720.00
.14	.00	4.55	.00	.080	.037	.080	.000	1712.00	839.01
.005890	1250.	1250.	1250.	6	0	0	.00	531.49	1451.64

1490 NH CARD USED
*SECNO .900

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.90	3.10	1737.10	1737.10	.00	1737.48	.37	19.95	.01	1738.00
4400.	254.	1947.	2200.	116.	306.	647.	110.	80.	1736.00
.24	2.19	6.36	3.40	.080	.039	.076	.000	1734.00	107.22
.030742	1750.	1750.	1750.	9	18	0	.00	1238.46	2991.39

1490 NH CARD USED
*SECNO .559

3265 DIVIDED FLOW

.56	3.65	1757.65	.00	.00	1757.84	.19	20.35	.02	1756.00
4400.	1678.	2612.	111.	447.	777.	89.	159.	125.	1756.00
.39	3.75	3.36	1.25	.041	.043	.080	.000	1754.00	58.71
.005820	1800.	1800.	1800.	8	0	0	.00	943.36	2197.36

1490 NH CARD USED

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.30	2.54	1772.54	1772.54	.00	1772.97	.43	13.90	.07	1772.00
4400.	3.	4386.	10.	3.	830.	4.	193.	155.	1772.00
.46	1.18	5.29	2.35	.080	.040	.040	.000	1770.00	209.17
.022940	1350.	1350.	1350.	9	18	0	.00	945.53	1396.25

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTH	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

1490 NH CARD USED
*SECNO .123

.12	2.59	1782.59	.00	.00	1782.79	.20	9.79	.02	1782.00
4400.	8.	4382.	11.	12.	1228.	17.	215.	176.	1782.00
.53	.63	3.57	.63	.080	.040	.080	.000	1780.00	98.34
.005830	950.	950.	950.	7	0	0	.00	968.19	1066.53

CCHV= .100 CEHV= .300
*SECNO .000

.00	1.73	1789.73	.00	.00	1790.36	.63	7.44	.13	1788.00
4400.	0.	4400.	0.	0.	690.	0.	230.	186.	1788.00
.56	1.00	6.38	1.00	.060	.060	.060	.000	1788.00	.78
.031913	650.	650.	650.	4	0	0	.00	399.43	400.22

PROFILE FOR STREAM Q=4400

PLOTTED POINTS (BY PRIORITY)-E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA

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ELEVATION 1680.    1700.    1720.    1740.    1760.    1780.    1800.    1820.    1840.    1860.
   SECNO  CUMDIS

    1.64     0. .    IREM      .        .        .        .        .        .        .        .        .
           100. C    IREM      .        .        .        .        .        .        .        .        .
    1.64   200. C    IREM      .        .        .        .        .        .        .        .        .
           300. C    IRLE      .        .        .        .        .        .        .        .        .
           400. C     IREM     .        .        .        .        .        .        .        .        .
           500. C     IRWE     .        .        .        .        .        .        .        .        .
           600. C      ILE     .        .        .        .        .        .        .        .        .
           700. C      IREM    .        .        .        .        .        .        .        .        .
           800. C       IWE    .        .        .        .        .        .        .        .        .
           900. C       ILE    .        .        .        .        .        .        .        .        .
          1000. C       .IWE   .        .        .        .        .        .        .        .        .
    1.47  1100. .       .ILE   .        .        .        .        .        .        .        .        .
          1200. C       .I EM  .        .        .        .        .        .        .        .        .
          1300. C       . ILE  .        .        .        .        .        .        .        .        .
          1400. C       . I EM .        .        .        .        .        .        .        .        .
          1500. C       .  IWE .        .        .        .        .        .        .        .        .
          1600. C       .  I EM .       .        .        .        .        .        .        .        .
          1700. C       .  I WE .       .        .        .        .        .        .        .        .
          1800. C       .   I EM .      .        .        .        .        .        .        .        .
          1900. C       .   I WE .      .        .        .        .        .        .        .        .
          2000. C       .    I EL .     .        .        .        .        .        .        .        .
          2100. C       .    I WEM.     .        .        .        .        .        .        .        .
          2200. C       .    I  EL.     .        .        .        .        .        .        .        .
          2300. C       .     I E L     .        .        .        .        .        .        .        .
    1.23  2400. C       .     I  EL     .        .        .        .        .        .        .        .
          2500. C       .      I ERL    .        .        .        .        .        .        .        .
          2600. C       .      I  EL    .        .        .        .        .        .        .        .
          2700. C       .       I ERL   .        .        .        .        .        .        .        .
          2800. C       .        I.EL   .        .        .        .        .        .        .        .
          2900. C       .        I.WEL  .        .        .        .        .        .        .        .
          3000. C       .         I EL  .        .        .        .        .        .        .        .
          3100. C       .         I  EL .        .        .        .        .        .        .        .
          3200. C       .         .I ELM .       .        .        .        .        .        .        .
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     3300. C        .        . I EL   .        .        .        .        .        .        .
     3400. C        .        . I ELM  .        .        .        .        .        .        .
     3500. C        .        . I EL   .        .        .        .        .        .        .
     3600. C        .        .  IWEM  .        .        .        .        .        .        .
     3700. C        .        .  I EL  .        .        .        .        .        .        .
     3800. C        .        .   IREM .        .        .        .        .        .        .
     3900. C        .        .   I ELM.        .        .        .        .        .        .
     4000. C        .        .    IREM.        .        .        .        .        .        .
 .90 4100. .        .        .     IREM        .        .        .        .        .        .
     4200. C        .        .      IELM       .        .        .        .        .        .
     4300. C        .        .      IREM       .        .        .        .        .        .
     4400. C        .        .       IELM      .        .        .        .        .        .
     4500. C        .        .       IREM      .        .        .        .        .        .
     4600. C        .        .        IWEM     .        .        .        .        .        .
     4700. C        .        .        IREM     .        .        .        .        .        .
     4800. C        .        .        .IREM    .        .        .        .        .        .
     4900. C        .        .        .IREM    .        .        .        .        .        .
     5000. C        .        .        . IREM   .        .        .        .        .        .
     5100. C        .        .        .  IE M  .        .        .        .        .        .
     5200. C        .        .        .  IREM  .        .        .        .        .        .
     5300. C        .        .        .   IWEM .        .        .        .        .        .
     5400. C        .        .        .   IREM .        .        .        .        .        .
     5500. C        .        .        .    ILEM .       .        .        .        .        .
     5600. C        .        .        .    IREM .       .        .        .        .        .
     5700. C        .        .        .     ILEM.       .        .        .        .        .
     5800. C        .        .        .     IREM.       .        .        .        .        .
 .56 5900. C        .        .        .      ILEM       .        .        .        .        .
     6000. C        .        .        .       IE.M      .        .        .        .        .
     6100. C        .        .        .       ILEM      .        .        .        .        .
     6200. C        .        .        .        IWEM     .        .        .        .        .
     6300. C        .        .        .        ILEM     .        .        .        .        .
     6400. C        .        .        .         ILEM    .        .        .        .        .
     6500. C        .        .        .         .IE M   .        .        .        .        .
     6600. C        .        .        .         .ILEM   .        .        .        .        .
     6700. C        .        .        .         . IE M  .        .        .        .        .
     6800. C        .        .        .         . ILEM  .        .        .        .        .
     6900. C        .        .        .         .  IWEM .        .        .        .        .
     7000. C        .        .        .         .   IE M .       .        .        .        .
     7100. C        .        .        .         .   IWEM .       .        .        .        .
     7200. .        . C      .        .         .    IE M .      .        .        .        .
 .30 7300. .        .        .        .         .    IE M .      .        .        .        .
     7400. C        .        .        .         .     IEM .      .        .        .        .
     7500. C        .        .        .         .     IWEM.      .        .        .        .
     7600. C        .        .        .         .      IEM.      .        .        .        .
     7700. C        .        .        .         .      IWEM      .        .        .        .
     7800. C        .        .        .         .       IEM      .        .        .        .
     7900. C        .        .        .         .       IWEM     .        .        .        .
     8000. C        .        .        .         .        IEM     .        .        .        .
     8100. C        .        .        .         .        ILE     .        .        .        .
 .12 8200. C        .        .        .         .         IEM    .        .        .        .
     8300. C        .        .        .         .         .IEM   .        .        .        .
     8400. C        .        .        .         .         .IWEM  .        .        .        .
     8500. C        .        .        .         .         . IE M .        .        .        .
     8600. C        .        .        .         .         . IWE M .       .        .        .
     8700. C        .        .        .         .         .  IE  M .      .        .        .
     8800. C        .        .        .         .         .   IE  M .     .        .        .
 .00 8900. C        .        .        .         .         .   IE  M .     .        .        .
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THIS RUN EXECUTED 02/11/86 16:38:28

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 NEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
 ERROR CORR -  01,02,03,04,05,06
 MODIFICATION -  50,51,52,53,54,55,56
 IBM-PC-XT VERSION
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T1
T2
T3 PSH, Q=3300

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	NVINS	Q	WSEL	FQ
	0.	8.	0.	0.	-1.000000	.00	.0	0.	1699.000	.000

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	7.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

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  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN     SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST


*PROF 7


CCHV=    .100 CEHV=    .300
*SECNO 1.640

3265 DIVIDED FLOW

3720 CRITICAL DEPTH ASSUMED
    1.64     3.13  1697.13  1697.13  1699.00  1697.66      .53      .00      .00  1698.00
   3300.       0.    2354.     946.       0.     346.     467.       0.       0.  1696.00
     .00      .00     6.81     2.03     .080     .040     .080     .000  1694.00   934.67
  .015705      0.       0.       0.        0       13        0      .00   830.10  2125.98


*SECNO 1.638

3265 DIVIDED FLOW

    1.64     4.35  1698.35      .00      .00  1698.42      .07      .71      .05  1698.00
   3300.      44.    1709.    1547.     121.     613.    1583.       7.       6.  1696.00
     .03      .36     2.79      .98     .080     .040     .080     .000  1694.00   555.65
  .001529    200.     200.     200.        4        0        0      .00  1769.44  2394.85


*SECNO 1.468

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
    1.47     2.79  1704.79  1704.79      .00  1705.57      .79     3.27      .22  1704.00
   3300.      18.    3219.      63.      14.     447.      48.      36.      28.  1704.00
     .06     1.71     2.21     1.71     .000     .040     .090     .000  1702.00  1264.60
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.06	1.31	1.21	1.31	.000	.010	.000	.000	1702.00	1201.00
.017359	900.	900.	900.	20	14	0	.00	407.32	1671.93

1490 NH CARD USED
*SECNO 1.231

3265 DIVIDED FLOW

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3301 HV CHANGED MORE THAN HVINS

1.23	4.72	1716.72	.00	.00	1717.00	.28	11.37	.05	1720.00
3300.	0.	3300.	0.	0.	774.	0.	55.	41.	1720.00
.15	.00	4.26	.00	.080	.035	.080	.000	1712.00	842.79
.005589	1250.	1250.	1250.	7	0	0	.00	487.43	1445.35

1490 NH CARD USED
*SECNO .900

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.90	2.95	1736.95	1736.95	.00	1737.27	.33	18.82	.01	1738.00
3300.	162.	1533.	1605.	85.	256.	541.	88.	74.	1736.00
.26	1.91	5.99	2.97	.080	.037	.077	.000	1734.00	119.01
.020621	1750.	1750.	1750.	4	17	0	.00	1146.09	2985.50

1490 NH CARD USED
*SECNO .559

3265 DIVIDED FLOW

.56	3.36	1757.36	.00	.00	1757.52	.16	20.23	.02	1756.00
3300.	1221.	2013.	67.	363.	624.	60.	128.	116.	1756.00
.41	3.37	3.22	1.11	.041	.042	.080	.000	1754.00	66.03
.005960	1800.	1800.	1800.	9	0	0	.00	867.71	2178.33

1490 NH CARD USED

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.30	2.39	1772.39	1772.39	.00	1772.74	.35	14.27	.06	1772.00
3300.	1.	3294.	4.	2.	689.	2.	155.	144.	1772.00
.49	.96	4.78	1.91	.080	.040	.040	.000	1770.00	212.24
.023672	1350.	1350.	1350.	8	14	0	.00	929.78	1391.64

SECNO	DEPTH	CWSEL	CRIWS	USELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

1490 NH CARD USED
*SECNO .123

.12	2.38	1782.38	.00	.00	1782.53	.16	9.77	.02	1782.00
3300.	2.	3294.	3.	5.	1041.	7.	174.	164.	1782.00
.58	.46	3.17	.46	.080	.040	.080	.000	1780.00	113.40
.005720	950.	950.	950.	8	0	0	.00	932.70	1046.10

CCHV= .100 CEHV= .300
*SECNO .000

.00	1.45	1789.45	.00	.00	1789.95	.50	7.32	.10	1788.00
3300.	0.	3300.	0.	0.	583.	0.	186.	174.	1788.00
.61	.89	5.66	.89	.060	.060	.060	.000	1788.00	.82
.031558	650.	650.	650.	4	0	0	.00	399.37	400.18

PROFILE FOR STREAM Q=3300

PLOTTED POINTS (BY PRIORITY)-E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA

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ELEVATION 1680.    1700.    1720.    1740.    1760.    1780.    1800.    1820.    1840.    1860.
   SECNO  CUMDIS

    1.64    0. .    IREM      .        .        .        .        .        .        .        .        .
          100. C    IREM      .        .        .        .        .        .        .        .        .
    1.64  200. C    IREM      .        .        .        .        .        .        .        .        .
          300. C    IRLE      .        .        .        .        .        .        .        .        .
          400. C     IREM     .        .        .        .        .        .        .        .        .
          500. C     IREM     .        .        .        .        .        .        .        .        .
          600. C      ILE     .        .        .        .        .        .        .        .        .
          700. C      IREM    .        .        .        .        .        .        .        .        .
          800. C       IWE    .        .        .        .        .        .        .        .        .
          900. C       ILE    .        .        .        .        .        .        .        .        .
         1000. C       .IEM   .        .        .        .        .        .        .        .        .
    1.47 1100. .       .IWE   .        .        .        .        .        .        .        .        .
         1200. C       .I EM  .        .        .        .        .        .        .        .        .
         1300. C       . IWE  .        .        .        .        .        .        .        .        .
         1400. C       . I EM .        .        .        .        .        .        .        .        .
         1500. C       .  IWE .        .        .        .        .        .        .        .        .
         1600. C       .  I EM .       .        .        .        .        .        .        .        .
         1700. C       .  I WE .       .        .        .        .        .        .        .        .
         1800. C       .   I EM .      .        .        .        .        .        .        .        .
         1900. C       .   I EL .      .        .        .        .        .        .        .        .
         2000. C       .    I EL .     .        .        .        .        .        .        .        .
         2100. C       .    I ELM.     .        .        .        .        .        .        .        .
         2200. C       .    I  EL.     .        .        .        .        .        .        .        .
         2300. C       .     I E L     .        .        .        .        .        .        .        .
    1.23 2400. C       .     I WEL     .        .        .        .        .        .        .        .
         2500. C       .      I ERL    .        .        .        .        .        .        .        .
         2600. C       .      I  EL    .        .        .        .        .        .        .        .
         2700. C       .       I ERL   .        .        .        .        .        .        .        .
         2800. C       .        I.EL   .        .        .        .        .        .        .        .
         2900. C       .        I.ERL  .        .        .        .        .        .        .        .
         3000. C       .         I EL  .        .        .        .        .        .        .        .
         3100. C       .         I WEL .        .        .        .        .        .        .        .
         3200. C       .         .I ELM .       .        .        .        .        .        .        .
```

```
     3400. C        .        . I ELM  .        .        .        .        .        .        .
     3500. C        .        . I EL   .        .        .        .        .        .        .
     3600. C        .        .  IELM  .        .        .        .        .        .        .
     3700. C        .        .  I EL  .        .        .        .        .        .        .
     3800. C        .        .   IWEM .        .        .        .        .        .        .
     3900. C        .        .   I ELM.        .        .        .        .        .        .
     4000. C        .        .    IREM.        .        .        .        .        .        .
.90  4100. .        .        .     IWEM        .        .        .        .        .        .
     4200. C        .        .      IELM       .        .        .        .        .        .
     4300. C        .        .      IREM       .        .        .        .        .        .
     4400. C        .        .       IELM      .        .        .        .        .        .
     4500. C        .        .       IREM      .        .        .        .        .        .
     4600. C        .        .        IELM     .        .        .        .        .        .
     4700. C        .        .        IREM     .        .        .        .        .        .
     4800. C        .        .        .IWEM    .        .        .        .        .        .
     4900. C        .        .        .IREM    .        .        .        .        .        .
     5000. C        .        .        . IREM   .        .        .        .        .        .
     5100. C        .        .        .  IE M  .        .        .        .        .        .
     5200. C        .        .        .  IREM  .        .        .        .        .        .
     5300. C        .        .        .   IE M .        .        .        .        .        .
     5400. C        .        .        .   IREM .        .        .        .        .        .
     5500. C        .        .        .    IWEM .       .        .        .        .        .
     5600. C        .        .        .    IREM .       .        .        .        .        .
     5700. C        .        .        .     ILEM.       .        .        .        .        .
     5800. C        .        .        .     IREM.       .        .        .        .        .
.56  5900. C        .        .        .      ILEM       .        .        .        .        .
     6000. C        .        .        .      IE.M       .        .        .        .        .
     6100. C        .        .        .      ILEM       .        .        .        .        .
     6200. C        .        .        .       IE M      .        .        .        .        .
     6300. C        .        .        .       ILEM      .        .        .        .        .
     6400. C        .        .        .        IWEM     .        .        .        .        .
     6500. C        .        .        .        .IE M    .        .        .        .        .
     6600. C        .        .        .        .ILEM    .        .        .        .        .
     6700. C        .        .        .        . IE M   .        .        .        .        .
     6800. C        .        .        .        . ILEM   .        .        .        .        .
     6900. C        .        .        .        .  IE M  .        .        .        .        .
     7000. C        .        .        .        .   IE M .        .        .        .        .
     7100. C        .        .        .        .   IWEM .        .        .        .        .
     7200. .        . C      .        .        .    IE M.        .        .        .        .
.30  7300. .        .        .        .        .    IE M.        .        .        .        .
     7400. C        .        .        .        .     IEM.        .        .        .        .
     7500. C        .        .        .        .     IE M.       .        .        .        .
     7600. C        .        .        .        .      IEM.       .        .        .        .
     7700. C        .        .        .        .      IE M       .        .        .        .
     7800. C        .        .        .        .       IEM       .        .        .        .
     7900. C        .        .        .        .       IE.M      .        .        .        .
     8000. C        .        .        .        .        IEM      .        .        .        .
     8100. C        .        .        .        .        IEM      .        .        .        .
.12  8200. C        .        .        .        .         IEM     .        .        .        .
     8300. C        .        .        .        .         .IEM    .        .        .        .
     8400. C        .        .        .        .         .IE M   .        .        .        .
     8500. C        .        .        .        .         . IE M  .        .        .        .
     8600. C        .        .        .        .         . IWE M .        .        .        .
     8700. C        .        .        .        .         .  IE  M.        .        .        .
     8800. C        .        .        .        .         .   WE  M.       .        .        .
.00  8900. C        .        .        .        .         .   IE  M.       .        .        .
```

THIS RUN EXECUTED 02/11/86 16:40:54

```
*********************************************
 HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
 ERROR CORR -  01,02,03,04,05,06
 MODIFICATION -  50,51,52,53,54,55,56
 IBM-PC-XT VERSION
*********************************************
```

T1
T2
T3 PSH, Q=2200

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	9.	0.	0.	-1.000000	.00	.0	0.	1699.000	.000
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	15.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

```
  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       DLOSS   BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
  TIME     VLOB     VCH      VROB     XML      XMCH     XMR      WTN      ELMIN      SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


*PROF 8


CCHV=    .100 CEHV=    .300
*SECNO 1.640

3265 DIVIDED FLOW

3720 CRITICAL DEPTH ASSUMED
    1.64     2.82  1696.82  1696.82  1699.00  1697.28     .46     .00     .00  1698.00
   2200.       0.    1732.     468.       0.     286.     287.      0.      0.  1696.00
     .00      .00     6.05     1.63     .080     .040     .080    .000  1694.00   947.25
  .014590       0.       0.       0.       0       10        0     .00   694.15  2088.26


*SECNO 1.638

3265 DIVIDED FLOW

    1.64     3.94  1697.94      .00      .00  1698.00     .06     .68     .04  1698.00
   2200.       0.    1273.     927.       0.     516.    1107.      5.      4.  1696.00
     .03      .00     2.47      .84     .080     .040     .080    .000  1694.00   902.40
  .001479     200.     200.     200.       4        0        0     .00  1179.08  2222.81


*SECNO 1.468

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
    1.47     2.34  1704.34  1704.34      .00  1705.00     .66    3.32     .18  1704.00
   2200.       2.    2190.       8.       3.     336.       9.     25.     20.  1704.00
     [illegible]
```

```
     .30     2.20  1772.20  1772.18     .00  1772.48     .28    15.29     .04  1772.00
    2200.      0.    2199.      1.      0.     522.      1.     113.    124.  1772.00
     .54     .65     4.21     1.31    .080     .040    .040     .000 1770.00   215.93
  .026036   1350.    1350.    1350.      12       13       0      .00  910.87  1386.11


1490 NH CARD USED
```



```
   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       DLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN     SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST


*SECNO  .123
     .12     2.14  1782.14     .00     .00  1782.24     .11     9.75     .02  1782.00
    2200.      0.    2200.      0.      1.     829.      1.     128.    143.  1782.00
     .64     .23     2.65     .23    .080     .040    .080     .000 1780.00   130.46
  .005451    950.     950.     950.       7        0       0      .00  892.48  1022.94


CCHV=    .100 CEHV=    .300
*SECNO  .000
     .00     1.13  1789.13     .00     .00  1789.50     .37     7.18     .08  1788.00
    2200.      0.    2200.      0.      0.     450.      0.     137.    153.  1788.00
     .68     .05     4.89     .05    .060     .060    .060     .000 1788.00      .86
  .033169    650.     650.     650.       4        0       0      .00  399.28   400.14
```

PROFILE FOR STREAM Q=2200

PLOTTED POINTS (BY PRIORITY)-E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA

```
ELEVATION 1680.    1700.    1720.    1740.    1760.    1780.    1800.    1820.    1840.    1860.
   SECND  CUMDIS

    1.64     0. .    IWEM       .        .        .        .        .        .        .        .        .
           100. C    IREM       .        .        .        .        .        .        .        .        .
    1.64   200. C    IREM       .        .        .        .        .        .        .        .        .
           300. C    IREM       .        .        .        .        .        .        .        .        .
           400. C     IREM      .        .        .        .        .        .        .        .        .
           500. C     IREM      .        .        .        .        .        .        .        .        .
           600. C      IWE      .        .        .        .        .        .        .        .        .
           700. C      IREM     .        .        .        .        .        .        .        .        .
           800. C       IEM     .        .        .        .        .        .        .        .        .
           900. C       IWE     .        .        .        .        .        .        .        .        .
          1000. C       .IEM    .        .        .        .        .        .        .        .        .
    1.47  1100. .       .IWE    .        .        .        .        .        .        .        .        .
          1200. C       .I EM   .        .        .        .        .        .        .        .        .
          1300. C       . IEM   .        .        .        .        .        .        .        .        .
          1400. C       . . I EM .       .        .        .        .        .        .        .        .
          1500. C       . IEL   .        .        .        .        .        .        .        .        .
          1600. C       . I EM  .        .        .        .        .        .        .        .        .
          1700. C       . I EL  .        .        .        .        .        .        .        .        .
          1800. C       .  I EM .        .        .        .        .        .        .        .        .
          1900. C       .  I EL .        .        .        .        .        .        .        .        .
          2000. C       .   IWEL .       .        .        .        .        .        .        .        .
          2100. C       .   I ELM.       .        .        .        .        .        .        .        .
          2200. C       .   I WEL.       .        .        .        .        .        .        .        .
          2300. C       .    I E L       .        .        .        .        .        .        .        .
    1.23  2400. C       .    I E L       .        .        .        .        .        .        .        .
          2500. C       .     I ERL      .        .        .        .        .        .        .        .
          2600. C       .    I E.L       .        .        .        .        .        .        .        .
          2700. C       .     I ERL      .        .        .        .        .        .        .        .
          2800. C       .      IWEL      .        .        .        .        .        .        .        .
          2900. C       .      I.ERL     .        .        .        .        .        .        .        .
          3000. C       .       I EL     .        .        .        .        .        .        .        .
          3100. C       .       I ERL    .        .        .        .        .        .        .        .
          3200. C       .       .I ELM   .        .        .        .        .        .        .        .
```

A P E X R E M O T E B A T C H

DFB1C23 *UNITED INFORMATION SERVICES, INC.* 67. APEX/SL D.4.7.5

14.31.38. 02/05/86.

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DDDDDDDDDD   FFFFFFFFFFFF  BBBBBBBBBBBB      111        CCCCCCCCCC    2222222222    33333333333
DDDDDDDDDDD  FFFFFFFFFFFF  BBBBBBBBBBBB     1111       CCCCCCCCCCCC  222222222222  333333333333
DD       DD  FF            BB        BB    1 11       CC        CC  2          22  3          33
DD       DD  FF            BB        BB      11       CC                       22             33
DD       DD  FF            BB        BB      11       CC                       22            33
DD       DD  FF            BB        BB      11       CC                       22           33
DD       DD  FF            BB        BB      11       CC                       22          33
DD       DD  FFFFFFFF      BBBBBBBBBBBB      11       CC                 2222222          33
DD       DD  FFFFFFFF      BBBBBBBBBBB       11       CC                2222222           333
DD       DD  FF            BB        BB      11       CC              22                   33
DD       DD  FF            BB        BB      11       CC             22                    33
DD       DD  FF            BB        BB      11       CC            22                      33
DD       DD  FF            BB        BB      11       CC            22                      33
DD       DD  FF            BB        BB      11       CC        CC  22             3        33
DDDDDDDDDDD  FF            BBBBBBBBBBBB  111111111111  CCCCCCCCCCCC  222222222222  33333333333
DDDDDDDDDD   FF            BBBBBBBBBBB   111111111111   CCCCCCCCCC   222222222222   333333333
```

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*************************************
*                                   *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)*
*          FEBRUARY 1981            *
*        REVISED 30 OCT 81          *
*                                   *
*  RUN DATE  02/05/86    TIME  13:28:34 *
*                                   *
*************************************
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*************************************
*                                   *
*    U.S. ARMY CORPS OF ENGINEERS   *
*  THE HYDROLOGIC ENGINEERING CENTER *
*         609 SECOND STREET         *
*       DAVIS, CALIFORNIA 95616     *
*  (916) 440-3285 OR (FTS) 448-3285 *
*                                   *
*************************************
```

#7 APACHE
FBH-SPILLWAY
LOW N'S

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X              X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX   XXXXX         XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. SEE SEPTEMBER 1981 INPUT DESCRIPTION FOR NEW DEFINITIONS.

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

  1           ID        APACHE JUNCTION FRS, DOWNSTREAM INUNDATION STUDY, PHOENIX SCS
  2           ID        FREEBOARD HYDROGRAPH ROUTED DOWNSTREAM
  3           IT      10              230      28

  4           KK      SP      FBH SPILLWAY OUTFLOW
  5           BA    5.79
  6           QI     450     3370     6500     8750     9900    10400    10600    10450    10200     9900
  7           QI    9520     9120     8603     8010     7400     6900     6400     5920     5500     5050
  8           QI    4660     4300     3960     3700     3430     3170     2907     2651

  9           KK      RR     REACH ROUTING DOWNSTREAM FROM SPILLWAY
 10           KM        FIRST REACH-- DAM TO .691, REPRESENTED BY .388
 11           RS       1     FLOW      450
 12           RC     .08      .04      .08     3650    .0131     1765
 13           RX              200      440      600     1280     1300     1330     1500
 14           RY    1760     1759     1758     1756     1756     1758     1759     1760

 15           KK      RR
 16           KM        2ND REACH-- .691 TO 1.682, REPRESENTED BY 1.303
 17           RS       1     FLOW      450
 18           RC     .08      .04      .08     5232    .0115     1705
 19           RX     120      360     1500     1920     1980     2220     2300     3000
 20           RY    1700     1699     1698     1696     1696     1698     1700     1701

 21           KK      RR
 22           KM        THIRD REACH-- 1.682 TO 2.43, REPRESENTED BY 2.098
 23           RS       1     FLOW      450
 24           RC     .08      .04      .08     3950   .00899     1660
 25           RX              140      370      870      935     1000     1760     1800
 26           RY    1660     1657     1657     1656     1655     1656     1658     1660

 27           KK      RR
 28           KM        FINAL REACH-- 2.43 TO 3.17, REPRESENTED BY 2.717
 29           RS       1     FLOW      450
 30           RC     .08      .04      .08     3907   .00837     1633
 31           RX      40      100     1700     1840     1950     2350     2400     3000
 32           RY    1630     1628     1628     1625     1628     1628     1630     1633
 33           ZZ
```

```
*****************************************                    *****************************************
*                                       *                    *                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                    *    U.S. ARMY CORPS OF ENGINEERS       *
*            FEBRUARY 1981              *                    *  THE HYDROLOGIC ENGINEERING CENTER    *
*          REVISED 30 OCT 81            *                    *          609 SECOND STREET            *
*                                       *                    *       DAVIS, CALIFORNIA 95616         *
*  RUN DATE  02/05/86    TIME  13:28:34 *                    *  (916) 440-3285 OR (FTS) 448-3285     *
*                                       *                    *                                       *
*****************************************                    *****************************************


                    APACHE JUNCTION FRS, DOWNSTREAM INUNDATION STUDY, PHOENIX SCS
                    FREEBOARD HYDROGRAPH ROUTED DOWNSTREAM

     IT          HYDROGRAPH TIME DATA
                      NMIN          10  MINUTES IN COMPUTATION INTERVAL
                     IDATE      1    0  STARTING DATE
                     ITIME        0230  STARTING TIME
                        NQ          28  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE      1    0  ENDING DATE
                    NDTIME        0700  ENDING TIME

                 COMPUTATION INTERVAL    0.17 HOURS
                      TOTAL TIME BASE    4.50 HOURS

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


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

            **************
            *            *
     4 KK   *     SP     *          FBH SPILLWAY OUTFLOW
            *            *
            **************

               SUBBASIN RUNOFF DATA

     5 BA        SUBBASIN CHARACTERISTICS
                      TAREA        5.79  SUBBASIN AREA

                                                    ***
*****************************************************************************************************************
                                          HYDROGRAPH AT STATION       SP
*****************************************************************************************************************
                                 *                    *                    *                    *
   DA MON HRMN  ORD     FLOW     *  DA MON HRMN  ORD     FLOW     *  DA MON HRMN  ORD     FLOW     *  DA MON HRMN  ORD     FLOW
```

1	0240	2	3370.	*	1	0350	9	10200.	*	1	0500	16	6900.	*	1	0610	23	3960.
1	0250	3	6500.	*	1	0400	10	9900.	*	1	0510	17	6400.	*	1	0620	24	3700.
1	0300	4	8750.	*	1	0410	11	9520.	*	1	0520	18	5920.	*	1	0630	25	3430.
1	0310	5	9900.	*	1	0420	12	9120.	*	1	0530	19	5500.	*	1	0640	26	3170.
1	0320	6	10400.	*	1	0430	13	8603.	*	1	0540	20	5050.	*	1	0650	27	2907.
1	0330	7	10600.	*	1	0440	14	8010.	*	1	0550	21	4660.	*	1	0700	28	2651.

****

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	4.50-HR
10600.	1.00	(CFS)	6673.	6673.	6673.	6673.
		(INCHES)	8.037	8.037	8.037	8.037
		(AC-FT)	2482.	2482.	2482.	2482.

CUMULATIVE AREA = 5.79 SQ MI

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

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        **************
        *            *
 9 KK   *     RR     *      REACH ROUTING DOWNSTREAM FROM SPILLWAY
        *            *
        **************
```

FIRST REACH-- DAM TO .691, REPRESENTED BY .388

HYDROGRAPH ROUTING DATA

11 RS STORAGE ROUTING

NSTPS	1	NUMBER OF SUBREACHES
ITYP	FLOW	TYPE OF INITIAL CONDITION
RSVRIC	450.00	INITIAL CONDITION
X	0.00	WORKING R AND D COEFFICIENT

12 RC NORMAL DEPTH CHANNEL ROUTING

ANL	0.080	LEFT OVERBANK N-VALUE
ANCH	0.040	MAIN CHANNEL N-VALUE
ANR	0.080	RIGHT OVERBANK N-VALUE
RLNTH	3650.	REACH LENGTH
SEL	0.0131	ENERGY SLOPE
ELMAX	1765.0	MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

CROSS-SECTION DATA

		--- LEFT OVERBANK ---		+ ------ MAIN CHANNEL -------			+ --- RIGHT OVERBANK ---		
14 RY	ELEVATION	1760.00	1759.00	1758.00	1756.00	1756.00	1758.00	1759.00	1760.00
13 RX	DISTANCE	0.00	200.00	440.00	600.00	1280.00	1300.00	1330.00	1500.00

***

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	0.00	27.84	57.36	88.58	121.50	157.12	197.75	243.86	296.83	355.68
OUTFLOW	0.00	843.61	2709.74	5392.01	8821.32	13236.26	18518.96	24624.26	31608.18	39621.37
ELEVATION	1756.00	1756.47	1756.95	1757.42	1757.89	1758.37	1758.84	1759.32	1759.79	1760.26
STORAGE	415.21	474.75	534.29	593.82	653.36	712.90	772.43	831.97	891.51	951.04
OUTFLOW	48620.99	58462.45	69103.79	80511.63	92658.21	105519.80	119075.67	133307.46	148198.73	163734.58
ELEVATION	1760.74	1761.21	1761.68	1762.16	1762.63	1763.11	1763.58	1764.05	1764.53	1765.00

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN 39621. TO 163775.

THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)

HYDROGRAPH AT STATION RR

DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0230	1	450.	14.8	1756.3	1		0410	11	9739.	128.9	1758.0	1		0550	21	4986.	83.9	1757.3
1		0240	2	1038.	30.9	1756.5	1		0420	12	9353.	125.8	1758.0	1		0600	22	4610.	79.5	1757.3
1		0250	3	3558.	67.2	1757.1	1		0430	13	8900.	122.1	1757.9	1		0610	23	4253.	75.3	1757.2
1		0300	4	6729.	101.4	1757.6	1		0440	14	8397.	117.4	1757.8	1		0620	24	3939.	71.7	1757.2
1		0310	5	8906.	122.2	1757.9	1		0450	15	7819.	111.9	1757.8	1		0630	25	3661.	68.4	1757.1
1		0320	6	10052.	131.4	1758.0	1		0500	16	7260.	106.5	1757.7	1		0640	26	3393.	65.3	1757.1
1		0330	7	10465.	134.8	1758.1	1		0510	17	6750.	101.6	1757.6	1		0650	27	3129.	62.2	1757.0
1		0340	8	10520.	135.2	1758.1	1		0520	18	6257.	96.9	1757.5	1		0700	28	2869.	59.2	1757.0
1		0350	9	10340.	133.8	1758.1	1		0530	19	5800.	92.5	1757.5							
1		0400	10	10073.	131.6	1758.0	1		0540	20	5365.	88.3	1757.4							

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	4.50-HR
10520.	1.17	(CFS)	6554.	6554.	6554.	6554.
		(INCHES)	7.893	7.893	7.893	7.893
		(AC-FT)	2437.	2437.	2437.	2437.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	4.50-HR
135.	1.17	97.	97.	97.	97.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	4.50-HR
1758.06	1.17	1757.53	1757.53	1757.53	1757.53

CUMULATIVE AREA = 5.79 SQ MI

*** ***

```
              **************
              *            *
15 KK         *     RR     *
              *            *
              **************
```

2ND REACH-- .691 TO 1.682, REPRESENTED BY 1.303

HYDROGRAPH ROUTING DATA

```
17 RS     STORAGE ROUTING
               NSTPS          1  NUMBER OF SUBREACHES
                ITYP       FLOW  TYPE OF INITIAL CONDITION
               RSVRIC     450.00  INITIAL CONDITION
                    X       0.00 WORKING R AND D COEFFICIENT

18 RC     NORMAL DEPTH CHANNEL ROUTING
                 ANL      0.080  LEFT OVERBANK N-VALUE
                ANCH      0.040  MAIN CHANNEL N-VALUE
                 ANR      0.080  RIGHT OVERBANK N-VALUE
```

ELMAX 1705.0 MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

CROSS-SECTION DATA

		--- LEFT OVERBANK ---		+ ------ MAIN CHANNEL -------			+ --- RIGHT OVERBANK ---		
20 RY	ELEVATION	1700.00	1699.00	1698.00	1696.00	1696.00	1698.00	1700.00	1701.00
19 RX	DISTANCE	126.00	360.00	1500.00	1920.00	1980.00	2220.00	2300.00	3000.00

***

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	0.00	7.86	24.61	50.26	84.80	135.17	216.76	324.77	441.68	567.87
OUTFLOW	0.00	117.81	549.49	1429.85	2877.04	5405.12	9040.19	14005.21	20226.22	27651.29
ELEVATION	1696.00	1696.47	1696.95	1697.42	1697.89	1698.37	1698.84	1699.32	1699.79	1700.26
STORAGE	711.81	872.76	1036.61	1200.47	1364.33	1528.18	1692.04	1855.89	2019.75	2183.60
OUTFLOW	36506.38	46850.88	58670.86	71747.53	86010.11	101403.83	117883.93	135412.62	153957.23	173489.06
ELEVATION	1700.74	1701.21	1701.68	1702.16	1702.63	1703.11	1703.58	1704.05	1704.53	1705.00

HYDROGRAPH AT STATION RR

DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0230	1	450.	20.8	1696.8	1		0410	11	10000.	237.7	1698.9	1		0550	21	5674.	141.2	1698.4
1		0240	2	539.	24.2	1696.9	1		0420	12	9782.	232.9	1698.9	1		0600	22	5249.	132.1	1698.3
1		0250	3	1208.	43.8	1697.3	1		0430	13	9467.	226.0	1698.9	1		0610	23	4829.	123.7	1698.3
1		0300	4	2941.	86.1	1697.9	1		0440	14	9073.	217.5	1698.8	1		0620	24	4452.	116.2	1698.2
1		0310	5	5443.	136.0	1698.4	1		0450	15	8619.	207.3	1698.8	1		0630	25	4117.	109.5	1698.1
1		0320	6	7338.	178.6	1698.6	1		0500	16	8112.	195.9	1698.7	1		0640	26	3814.	103.5	1698.1
1		0330	7	8709.	209.3	1698.8	1		0510	17	7592.	184.3	1698.7	1		0650	27	3530.	97.8	1698.0
1		0340	8	9559.	228.0	1698.9	1		0520	18	7081.	172.8	1698.6	1		0700	28	3257.	92.4	1698.0
1		0350	9	9978.	237.2	1698.9	1		0530	19	6587.	161.7	1698.5							
1		0400	10	10088.	239.6	1698.9	1		0540	20	6115.	151.1	1698.5							

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	4.50-HR
10088.	1.50	(CFS)	6361.	6361.	6361.	6361.
		(INCHES)	7.661	7.661	7.661	7.661
		(AC-FT)	2366.	2366.	2366.	2366.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	4.50-HR
240.	1.50	157.	157.	157.	157.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	4.50-HR
1698.94	1.50	1698.40	1698.40	1698.40	1698.40

CUMULATIVE AREA = 5.79 SQ MI

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THIRD REACH-- 1.682 TO 2.43, REPRESENTED BY 2.098

HYDROGRAPH ROUTING DATA

```
23 RS        STORAGE ROUTING
                  NSTPS          1  NUMBER OF SUBREACHES
                   ITYP       FLOW  TYPE OF INITIAL CONDITION
                 RSVRIC     450.00  INITIAL CONDITION
                      X       0.00  WORKING R AND D COEFFICIENT

24 RC        NORMAL DEPTH CHANNEL ROUTING
                    ANL      0.080  LEFT OVERBANK N-VALUE
                   ANCH      0.040  MAIN CHANNEL N-VALUE
                    ANR      0.080  RIGHT OVERBANK N-VALUE
                  RLNTH      3950.  REACH LENGTH
                    SEL     0.0090  ENERGY SLOPE
                  ELMAX     1660.0  MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

                                    CROSS-SECTION DATA
                        --- LEFT OVERBANK --- + ------ MAIN CHANNEL ------- + --- RIGHT OVERBANK ---
26 RY      ELEVATION   1660.00   1657.00   1657.00   1656.00   1655.00   1656.00   1658.00   1660.00
25 RX      DISTANCE       0.00    140.00    370.00    870.00    935.00   1000.00   1760.00   1800.00

                                                  ***

                                   COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

        STORAGE        0.00      0.41      1.63      3.67      6.63     13.60     26.09     44.12     69.63    101.63
        OUTFLOW        0.00      4.11     26.11     76.99    153.62    283.42    570.16   1054.70   1856.87   3074.96
      ELEVATION     1655.00   1655.26   1655.53   1655.79   1656.05   1656.32   1656.58   1656.84   1657.11   1657.37

        STORAGE      136.31    173.67    213.31    253.54    294.19    335.26    376.75    418.66    460.98    503.72
        OUTFLOW     4587.68   6386.49   8534.92  11000.64  13726.31  16701.80  19918.89  23370.75  27051.59  30956.42
      ELEVATION     1657.63   1657.89   1658.16   1658.42   1658.68   1658.95   1659.21   1659.47   1659.74   1660.00
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HYDROGRAPH AT STATION RR

DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0230	1	450.	20.9	1656.5	1		0410	11	9841.	234.6	1658.3	1		0550	21	6297.	171.8	1657.9
1		0240	2	462.	21.4	1656.5	1		0420	12	9871.	235.1	1658.3	1		0600	22	5881.	163.2	1657.8
1		0250	3	575.	26.3	1656.6	1		0430	13	9724.	232.7	1658.3	1		0610	23	5462.	154.5	1657.8
1		0300	4	1044.	43.7	1656.8	1		0440	14	9455.	228.3	1658.3	1		0620	24	5053.	146.0	1657.7
1		0310	5	2214.	79.0	1657.2	1		0450	15	9094.	222.4	1658.2	1		0630	25	4670.	138.0	1657.6
1		0320	6	4047.	123.9	1657.5	1		0500	16	8661.	215.4	1658.2	1		0640	26	4339.	130.6	1657.6
1		0330	7	5985.	165.3	1657.8	1		0510	17	8211.	207.3	1658.1	1		0650	27	4030.	123.5	1657.5
1		0340	8	7660.	197.2	1658.1	1		0520	18	7736.	198.6	1658.1	1		0700	28	3736.	116.8	1657.5
1		0350	9	8831.	218.1	1658.2	1		0530	19	7245.	189.5	1658.0							
1		0400	10	9545.	229.8	1658.3	1		0540	20	6759.	180.5	1657.9							

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	4.50-HR
9871.	1.83	(CFS)	6103.	6103.	6103.	6103.
		(INCHES)	7.350	7.350	7.350	7.350
		(AC-FT)	2270.	2270.	2270.	2270.

```
(AC-FT)      (HR)                  6-HR       24-HR       72-HR      4.50-HR
  235.       1.83                  161.       161.        161.        161.

PEAK STAGE   TIME                          MAXIMUM AVERAGE STAGE
  (FEET)     (HR)                  6-HR       24-HR       72-HR      4.50-HR
1658.30      1.83                1657.76    1657.76     1657.76     1657.76

                    CUMULATIVE AREA =    5.79 SQ MI

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

            **************
            *            *
 27 KK      *        RR  *
            *            *
            **************
                          FINAL REACH-- 2.43 TO 3.17, REPRESENTED BY 2.717

          HYDROGRAPH ROUTING DATA

 29 RS          STORAGE ROUTING
                     NSTPS          1  NUMBER OF SUBREACHES
                      ITYP       FLOW  TYPE OF INITIAL CONDITION
                    RSVRIC     450.00  INITIAL CONDITION
                         X       3.00  WORKING R AND D COEFFICIENT

 30 RC          NORMAL DEPTH CHANNEL ROUTING
                       ANL      0.080  LEFT OVERBANK N-VALUE
                      ANCH      0.040  MAIN CHANNEL N-VALUE
                       ANR      0.080  RIGHT OVERBANK N-VALUE
                     RLNTH      3907.  REACH LENGTH
                       SEL     0.0084  ENERGY SLOPE
                     ELMAX     1633.0  MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

                                   CROSS-SECTION DATA
                          --- LEFT OVERBANK --- + ------ MAIN CHANNEL ------- + --- RIGHT OVERBANK ---
 32 RY      ELEVATION   1630.00   1628.00   1628.00   1625.00   1628.00   1628.00   1630.00   1633.00
 31 RX      DISTANCE      40.00    100.00   1700.00   1840.00   1950.00   2350.00   2400.00   3000.00

                                                  ***

                                   COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

          STORAGE        0.00      0.66      2.65      5.96     10.60     16.56     23.85     32.46    108.32    194.49
          OUTFLOW        0.00      8.91     56.56    166.75    359.11    651.11   1058.78   1597.10   2534.64   5577.03
        ELEVATION     1625.00   1625.42   1625.84   1626.26   1626.68   1627.11   1627.53   1627.95   1628.37   1628.79

          STORAGE      281.54    369.47    458.28    549.40    643.69    741.16    841.82    945.65   1052.67   1162.86
          OUTFLOW     9616.56  14542.47  20282.32  26825.12  34165.30  42280.35  51161.69  60804.49  71206.07  82365.33
        ELEVATION     1629.21   1629.63   1630.05   1630.47   1630.89   1631.32   1631.74   1632.16   1632.58   1633.00

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                                   HYDROGRAPH AT STATION       RR

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                                  *                                 *
 DA MON HRMN ORD  OUTFLOW  STORAGE   STAGE * DA MON HRMN ORD  OUTFLOW  STORAGE   STAGE * DA MON HRMN ORD  OUTFLOW  STORAGE   STAGE
                                  *                                 *
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1	0250	3	486.	13.2	1626.9	*	1	0430	13	9451.	278.0	1629.2	*	1	0610	23	6136.	206.5	1628.8
1	0300	4	649.	16.5	1627.1	*	1	0440	14	9518.	279.4	1629.2	*	1	0620	24	5710.	197.4	1628.8
1	0310	5	1205.	26.2	1627.6	*	1	0450	15	9400.	276.9	1629.2	*	1	0630	25	5353.	188.1	1628.8
1	0320	6	1797.	48.6	1628.0	*	1	0500	16	9147.	271.4	1629.2	*	1	0640	26	5021.	178.7	1628.7
1	0330	7	2302.	89.5	1628.3	*	1	0510	17	8803.	264.0	1629.1	*	1	0650	27	4694.	169.5	1628.7
1	0340	8	3723.	142.0	1628.5	*	1	0520	18	8401.	255.3	1629.1	*	1	0700	28	4377.	160.5	1628.6
1	0350	9	5492.	192.1	1628.8	*	1	0530	19	7960.	245.8	1629.0	*						
1	0400	10	7262.	230.8	1629.0	*	1	0540	20	7496.	235.8	1629.0	*						
						*							*						

****

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	4.50-HR
9518.	2.17	(CFS)	5705.	5705.	5705.	5705.
		(INCHES)	6.871	6.871	6.871	6.871
		(AC-FT)	2122.	2122.	2122.	2122.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	4.50-HR
279.	2.17	181.	181.	181.	181.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	4.50-HR
1629.20	2.17	1628.58	1628.58	1628.58	1628.58

CUMULATIVE AREA = 5.79 SQ MI

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	SP	10600.	1.00	6673.	6673.	6673.	5.79		
ROUTED TO	RR	10520.	1.17	6554.	6554.	6554.	5.79	1758.08	1.17
ROUTED TO	RR	10088.	1.50	6361.	6361.	6361.	5.79	1698.94	1.50
ROUTED TO	RR	9871.	1.83	6103.	6103.	6103.	5.79	1658.30	1.83
ROUTED TO	RR	9518.	2.17	5705.	5705.	5705.	5.79	1629.20	2.17

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

```
*************************************
*                                   *
*   FLOOD HYDROGRAPH PACKAGE (HEC-1)*
*          FEBRUARY 1981            *
*        REVISED 30 OCT 81          *
*                                   *
* RUN DATE 02/05/86    TIME 13:27:55*
*                                   *
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*************************************
*                                   *
*   U.S. ARMY CORPS OF ENGINEERS    *
* THE HYDROLOGIC ENGINEERING CENTER *
*        609 SECOND STREET          *
*      DAVIS, CALIFORNIA 95616      *
* (916) 440-3285 OR (FTS) 448-3285  *
*                                   *
*************************************
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#8 APACHE
FBH, SPILLWAY
HIGH N's

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X              X
XXXXXXX  XXXX     X        XXXXX X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX   XXXXX         XXX
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THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE. THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. SEE SEPTEMBER 1981 INPUT DESCRIPTION FOR NEW DEFINITIONS.

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

  1           ID        APACHE JUNCTION FRS, DOWNSTREAM INUNDATION STUDY, PHOENIX SCS
  2           ID        FREEBOARD HYDROGRAPH ROUTED DOWNSTREAM
  3           IT      10          230      28

  4           KK      SP      FBH SPILLWAY OUTFLOW
  5           BA    5.79
  6           QI     450     3370     6500     8750     9900    10400    10600    10450    10200     9900
  7           QI    9520     9120     8603     8010     7400     6900     6400     5920     5500     5050
  8           QI    4660     4300     3960     3700     3430     3170     2907     2651

  9           KK      RR      REACH ROUTING DOWNSTREAM FROM SPILLWAY
 10           KM        FIRST REACH-- DAM TO .691, REPRESENTED BY .388
 11           RS        1     FLOW      450
 12           RC     .16      .08      .16     3650    .0131     1765
 13           RX              200      440      600     1280     1300     1330     1500
 14           RY    1760     1759     1758     1756     1756     1758     1759     1760

 15           KK      RR
 16           KM        2ND REACH-- .691 TO 1.682, REPRESENTED BY 1.303
 17           RS        1     FLOW      450
 18           RC     .16      .08      .16     5232    .0115     1705
 19           RX     120      360     1500     1920     1980     2220     2300     3000
 20           RY    1700     1699     1698     1696     1696     1698     1700     1701

 21           KK      RR
 22           KM        THIRD REACH-- 1.682 TO 2.43, REPRESENTED BY 2.098
 23           RS        1     FLOW      450
 24           RC     .16      .08      .16     3950   .00899     1660
 25           RX              140      370      870      935     1000     1760     1800
 26           RY    1660     1657     1657     1656     1655     1656     1658     1660

 27           KK      RR
 28           KM        FINAL REACH-- 2.43 TO 3.17, REPRESENTED BY 2.717
 29           RS        1     FLOW      450
 30           RC     .16      .08      .16     3907   .00837     1633
 31           RX      40      100     1700     1840     1950     2350     2400     3000
 32           RY    1630     1628     1628     1625     1628     1628     1630     1633
 33           ZZ
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*************************************                                    *************************************
*                                   *                                    *                                   *
*  FLOOD HYDROGRAPH PACKAGE  (HEC-1)*                                    *  U.S. ARMY CORPS OF ENGINEERS     *
*          FEBRUARY 1981            *                                    *THE HYDROLOGIC ENGINEERING CENTER *
*        REVISED 30 OCT 81          *                                    *        609 SECOND STREET          *
*                                   *                                    *      DAVIS, CALIFORNIA 95616      *
*  RUN DATE  02/05/86    TIME  13:27:55 *                               *(916) 440-3285 OR (FTS) 448-3285   *
*                                   *                                    *                                   *
*************************************                                    *************************************

                          APACHE JUNCTION FRS, DOWNSTREAM INUNDATION STUDY, PHOENIX SCS
                          FREEBOARD HYDROGRAPH ROUTED DOWNSTREAM

   IT          HYDROGRAPH TIME DATA
                    NMIN          10  MINUTES IN COMPUTATION INTERVAL
                   IDATE       1   0  STARTING DATE
                   ITIME        0230  STARTING TIME
                      NQ          28  NUMBER OF HYDROGRAPH ORDINATES
                  NDDATE       1   0  ENDING DATE
                  NDTIME        0700  ENDING TIME

              COMPUTATION INTERVAL     0.17 HOURS
                   TOTAL TIME BASE     4.50 HOURS

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

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

             **************
             *            *
   4 KK      *     SP     *        FBH SPILLWAY OUTFLOW
             *            *
             **************

             SUBBASIN RUNOFF DATA

   5 BA          SUBBASIN CHARACTERISTICS
                      TAREA        5.79  SUBBASIN AREA

                                                   ***

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                                          HYDROGRAPH AT STATION       SF

*****************************************************************************************************************************
                                 *                    *                    *                    *
   DA MON HRMN  ORD     FLOW     *  DA MON HRMN  ORD     FLOW     *  DA MON HRMN  ORD     FLOW     *  DA MON HRMN  ORD     FLOW
```

```
   1    0240    2    3370.   *   1    0350    9   10200.   *   1    0500   16    6900.   *   1    0610   23    3960.
   1    0250    3    6500.   *   1    0400   10    9900.   *   1    0510   17    6400.   *   1    0620   24    3700.
   1    0300    4    8750.   *   1    0410   11    9520.   *   1    0520   18    5920.   *   1    0630   25    3430.
   1    0310    5    9900.   *   1    0420   12    9120.   *   1    0530   19    5500.   *   1    0640   26    3170.
   1    0320    6   10400.   *   1    0430   13    8603.   *   1    0540   20    5050.   *   1    0650   27    2907.
   1    0330    7   10600.   *   1    0440   14    8010.   *   1    0550   21    4660.   *   1    0700   28    2651.
                                *                            *                            *
*****************************************************************************************************************

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
   (CFS)       (HR)                 6-HR        24-HR       72-HR      4.50-HR
   10600.      1.00        (CFS)    6673.       6673.       6673.       6673.
                          (INCHES)  8.037       8.037       8.037       8.037
                           (AC-FT)  2482.       2482.       2482.       2482.

                          CUMULATIVE AREA =    5.79 SQ MI


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


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              *            *
   9 KK       *     RR     *        REACH ROUTING DOWNSTREAM FROM SPILLWAY
              *            *
              **************
                                FIRST REACH-- DAM TO .691, REPRESENTED BY .388

              HYDROGRAPH ROUTING DATA

  11 RS          STORAGE ROUTING
                      NSTPS          1  NUMBER OF SUBREACHES
                       ITYP       FLOW  TYPE OF INITIAL CONDITION
                     RSVRIC     450.00  INITIAL CONDITION
                          X       0.00  WORKING R AND D COEFFICIENT

  12 RC          NORMAL DEPTH CHANNEL ROUTING
                        ANL      0.160  LEFT OVERBANK N-VALUE
                       ANCH      0.080  MAIN CHANNEL N-VALUE
                        ANR      0.160  RIGHT OVERBANK N-VALUE
                      RLNTH      3650.  REACH LENGTH
                        SEL     0.0131  ENERGY SLOPE
                      ELMAX     1765.0  MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

                                   CROSS-SECTION DATA
                        --- LEFT OVERBANK --- + ------ MAIN CHANNEL ------- + --- RIGHT OVERBANK ---
  14 RY       ELEVATION  1760.00   1759.00   1758.00   1756.00   1756.00   1758.00   1759.00   1760.00
  13 RX       DISTANCE      0.00    200.00    440.00    600.00   1280.00   1300.00   1330.00   1500.00
                                                          ***

                                   COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

          STORAGE       0.00     27.84     57.36     88.58    121.50    157.12    197.75    243.86    296.83    355.68
          OUTFLOW       0.00    421.81   1354.87   2696.01   4410.66   6618.13   9259.48  12312.13  15804.09  19810.68
        ELEVATION    1756.00   1756.47   1756.95   1757.42   1757.89   1758.37   1758.84   1759.32   1759.79   1760.26

          STORAGE     415.21    474.75    534.29    593.82    653.36    712.90    772.43    831.97    891.51    951.04
          OUTFLOW   24310.49  29231.23  34551.90  40255.81  46329.11  52759.90  59537.83  66653.73  74099.36  81867.29
        ELEVATION    1760.74   1761.21   1761.68   1762.16   1762.63   1763.11   1763.58   1764.05   1764.53   1765.00
```

HYDROGRAPH AT STATION RR

DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0230	1	450.	28.7	1756.5	1		0410	11	9876.	207.1	1758.9	1		0550	21	5144.	133.3	1758.1
1		0240	2	972.	45.2	1756.8	1		0420	12	9528.	201.8	1758.9	1		0600	22	4747.	126.9	1758.0
1		0250	3	2675.	88.1	1757.4	1		0430	13	9112.	195.5	1758.8	1		0610	23	4382.	120.9	1757.9
1		0300	4	5402.	137.5	1758.1	1		0440	14	8614.	187.8	1758.7	1		0620	24	4090.	115.3	1757.8
1		0310	5	7767.	175.1	1758.6	1		0450	15	8052.	179.2	1758.6	1		0630	25	3813.	110.0	1757.7
1		0320	6	9249.	197.6	1758.8	1		0500	16	7494.	170.6	1758.5	1		0640	26	3542.	104.8	1757.7
1		0330	7	10032.	209.4	1759.0	1		0510	17	6972.	162.6	1758.4	1		0650	27	3276.	99.7	1757.6
1		0340	8	10341.	214.1	1759.0	1		0520	18	6475.	154.8	1758.3	1		0700	28	3014.	94.7	1757.5
1		0350	9	10331.	213.9	1759.0	1		0530	19	6017.	147.4	1758.2							
1		0400	10	10155.	211.3	1759.0	1		0540	20	5573.	140.3	1758.1							

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	4.50-HR
10341.	1.17	(CFS)	6496.	6496.	6496.	6496.
		(INCHES)	7.823	7.823	7.823	7.823
		(AC-FT)	2416.	2416.	2416.	2416.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	4.50-HR
214.	1.17	152.	152.	152.	152.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	4.50-HR
1759.01	1.17	1758.26	1758.26	1758.26	1758.26

CUMULATIVE AREA = 5.79 SQ MI

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*            *
*     RR     *
*            *
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15 KK

2ND REACH-- .691 TO 1.682, REPRESENTED BY 1.303

HYDROGRAPH ROUTING DATA

17 RS STORAGE ROUTING

NSTPS	1	NUMBER OF SUBREACHES
ITYP	FLOW	TYPE OF INITIAL CONDITION
RSVRIC	450.00	INITIAL CONDITION
X	0.00	WORKING R AND D COEFFICIENT

18 RC NORMAL DEPTH CHANNEL ROUTING

ANL	0.160	LEFT OVERBANK N-VALUE
ANCH	0.080	MAIN CHANNEL N-VALUE
ANR	0.160	RIGHT OVERBANK N-VALUE
RLNTH	5232.	REACH LENGTH
SEL	0.0115	ENERGY SLOPE
ELMAX	1705.0	MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

20 RY	ELEVATION	1700.00	1699.00	1698.00	1696.00	1696.00	1698.00	1700.00	1701.00
19 RX	DISTANCE	120.00	360.00	1500.00	1920.00	1980.00	2220.00	2300.00	3000.00

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COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	0.00	7.86	24.61	50.26	84.80	135.17	216.76	324.77	441.68	567.87
OUTFLOW	0.00	58.91	274.75	714.92	1438.52	2702.56	4520.09	7002.61	10113.11	13825.65
ELEVATION	1696.00	1696.47	1696.95	1697.42	1697.89	1698.37	1698.84	1699.32	1699.79	1700.26
STORAGE	711.81	872.76	1036.61	1200.47	1364.33	1528.18	1692.04	1855.89	2019.75	2183.60
OUTFLOW	18253.19	23425.44	29335.43	35873.76	43005.05	50701.91	58941.97	67706.31	76978.62	86744.53
ELEVATION	1700.74	1701.21	1701.68	1702.16	1702.63	1703.11	1703.58	1704.05	1704.53	1705.00

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HYDROGRAPH AT STATION RR

DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0230	1	450.	34.8	1697.1	*	1		0410	11	9151.	405.5	1699.6	*	1		0550	21	6425.	299.7	1699.2
1		0240	2	505.	38.0	1697.2	*	1		0420	12	9321.	411.9	1699.7	*	1		0600	22	6021.	282.1	1699.1
1		0250	3	797.	54.2	1697.5	*	1		0430	13	9321.	411.9	1699.7	*	1		0610	23	5623.	264.7	1699.1
1		0300	4	1644.	93.0	1698.0	*	1		0440	14	9179.	406.6	1699.6	*	1		0620	24	5244.	248.2	1699.0
1		0310	5	3064.	151.4	1698.5	*	1		0450	15	8917.	396.7	1699.6	*	1		0630	25	4890.	232.9	1698.9
1		0320	6	4515.	216.5	1698.8	*	1		0500	16	8563.	383.4	1699.6	*	1		0640	26	4559.	218.5	1698.8
1		0330	7	5916.	277.5	1699.1	*	1		0510	17	8151.	367.9	1699.5	*	1		0650	27	4252.	204.7	1698.8
1		0340	8	7094.	328.2	1699.3	*	1		0520	18	7709.	351.3	1699.4	*	1		0700	28	3958.	191.5	1698.7
1		0350	9	8098.	365.9	1699.5	*	1		0530	19	7256.	334.3	1699.4	*							
1		0400	10	8762.	390.9	1699.6	*	1		0540	20	6827.	317.1	1699.3	*							

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PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	4.50-HR
9321.	1.83	(CFS)	6074.	6074.	6074.	6074.
		(INCHES)	7.316	7.316	7.316	7.316
		(AC-FT)	2259.	2259.	2259.	2259.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	4.50-HR
412.	1.83	280.	280.	280.	280.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	4.50-HR
1699.67	1.83	1699.02	1699.02	1699.02	1699.02

CUMULATIVE AREA = 5.79 SQ MI

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* *
21 KK * RR *
* *
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HYDROGRAPH ROUTING DATA

23 RS STORAGE ROUTING

NSTPS	1	NUMBER OF SUBREACHES
ITYP	FLOW	TYPE OF INITIAL CONDITION
RSVRIC	450.00	INITIAL CONDITION
X	0.00	WORKING R AND D COEFFICIENT

24 RC NORMAL DEPTH CHANNEL ROUTING

ANL	0.160	LEFT OVERBANK N-VALUE
ANCH	0.080	MAIN CHANNEL N-VALUE
ANR	0.160	RIGHT OVERBANK N-VALUE
RLNTH	3950.	REACH LENGTH
SEL	0.0090	ENERGY SLOPE
ELMAX	1660.0	MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

CROSS-SECTION DATA

		--- LEFT OVERBANK ---	+	------ MAIN CHANNEL	-------	+	--- RIGHT OVERBANK ---	
26 RY	ELEVATION	1660.00	1657.00	1657.00	1656.00	1655.00	1656.00	1658.00	1660.00
25 RX	DISTANCE	0.00	140.00	370.00	870.00	935.00	1000.00	1760.00	1800.00

***

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	0.00	0.41	1.63	3.67	6.63	13.60	26.09	44.12	69.63	101.63
OUTFLOW	0.00	2.06	13.06	38.49	76.81	141.71	285.08	527.35	928.44	1537.48
ELEVATION	1655.00	1655.26	1655.53	1655.79	1656.05	1656.32	1656.58	1656.84	1657.11	1657.37
STORAGE	136.31	173.67	213.31	253.54	294.19	335.26	376.75	418.66	460.98	503.72
OUTFLOW	2293.84	3193.25	4267.46	5500.32	6863.15	8350.90	9959.45	11685.38	13525.79	15478.21
ELEVATION	1657.63	1657.89	1658.16	1658.42	1658.68	1658.95	1659.21	1659.47	1659.74	1660.00

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HYDROGRAPH AT STATION RR

DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0230	1	450.	38.4	1656.8	1		0410	11	7310.	306.5	1658.8	1		0550	21	7221.	304.1	1658.7
1		0240	2	455.	38.7	1656.8	1		0420	12	8079.	327.8	1658.9	1		0600	22	6825.	293.1	1658.7
1		0250	3	488.	41.2	1656.8	1		0430	13	8588.	341.4	1659.0	1		0610	23	6449.	281.8	1658.6
1		0300	4	625.	50.3	1656.9	1		0440	14	8867.	348.6	1659.0	1		0620	24	6068.	270.5	1658.5
1		0310	5	969.	71.8	1657.1	1		0450	15	8943.	350.5	1659.0	1		0630	25	5692.	259.3	1658.5
1		0320	6	1634.	106.1	1657.4	1		0500	16	8858.	348.3	1659.0	1		0640	26	5341.	248.4	1658.4
1		0330	7	2594.	148.8	1657.7	1		0510	17	8646.	342.9	1659.0	1		0650	27	5015.	237.7	1658.3
1		0340	8	3761.	194.6	1658.0	1		0520	18	8345.	335.1	1658.9	1		0700	28	4698.	227.4	1658.2
1		0350	9	5043.	238.6	1658.3	1		0530	19	8000.	325.6	1658.9							
1		0400	10	6279.	276.8	1658.6	1		0540	20	7617.	315.0	1658.8							

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	4.50-HR
8943.	2.33	(CFS)	5566.	5566.	5566.	5566.
		(INCHES)	6.704	6.704	6.704	6.704
		(AC-FT)	2070.	2070.	2070.	2070.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	4.50-HR
351.	2.33	242.	242.	242.	242.

(FEET)	(HR)	6-HR	24-HR	72-HR	4.50-HR
1659.04	2.33	1658.31	1658.31	1658.31	1658.31

CUMULATIVE AREA = 5.79 SQ MI

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              *            *
27 KK         *     RR     *
              *            *
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FINAL REACH-- 2.43 TO 3.17, REPRESENTED BY 2.717

HYDROGRAPH ROUTING DATA

29 RS STORAGE ROUTING

NSTPS	1	NUMBER OF SUBREACHES
ITYP	FLOW	TYPE OF INITIAL CONDITION
RSVRIC	450.00	INITIAL CONDITION
X	0.00	WORKING R AND D COEFFICIENT

30 RC NORMAL DEPTH CHANNEL ROUTING

ANL	0.160	LEFT OVERBANK N-VALUE
ANCH	0.080	MAIN CHANNEL N-VALUE
ANR	0.160	RIGHT OVERBANK N-VALUE
RLNTH	3907.	REACH LENGTH
SEL	0.0084	ENERGY SLOPE
ELMAX	1633.0	MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

CROSS-SECTION DATA

		--- LEFT OVERBANK ---	+	------ MAIN CHANNEL -------	+	--- RIGHT OVERBANK ---		
32 RY	ELEVATION	1630.00	1628.00	1628.00	1625.00	1628.00	1628.00	1630.00	1633.00
31 RX	DISTANCE	40.00	100.00	1700.00	1840.00	1950.00	2350.00	2400.00	3000.00

***

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	0.00	0.66	2.65	5.96	10.60	16.56	23.85	32.46	108.32	194.49
OUTFLOW	0.00	4.45	28.28	83.37	179.56	325.56	529.39	798.55	1267.32	2788.51
ELEVATION	1625.00	1625.42	1625.84	1626.26	1626.68	1627.11	1627.53	1627.95	1628.37	1628.79
STORAGE	281.54	369.47	458.28	549.40	643.69	741.16	841.82	945.65	1052.67	1162.86
OUTFLOW	4808.28	7271.23	10141.16	13412.56	17082.65	21140.17	25580.84	30402.24	35603.03	41182.66
ELEVATION	1629.21	1629.63	1630.05	1630.47	1630.89	1631.32	1631.74	1632.16	1632.58	1633.00

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HYDROGRAPH AT STATION RR

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DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0230	1	450.	21.0	1627.4	*	1		0410	11	3539.	226.8	1628.9	*	1		0550	21	7861.	387.7	1629.7
1		0240	2	451.	21.0	1627.4	*	1		0420	12	4684.	276.2	1629.2	*	1		0600	22	7556.	378.3	1629.7
1		0250	3	457.	21.3	1627.4	*	1		0430	13	5843.	318.5	1629.4	*	1		0610	23	7227.	367.9	1629.6
1		0300	4	489.	22.4	1627.4	*	1		0440	14	6776.	351.8	1629.5	*	1		0620	24	6914.	356.7	1629.6

1	0330	7	916.	51.4	1628.1	*	1	0510	17	8275.	400.5	1629.6	*	1	0650	27	5894.	320.3	1629.4
1	0340	8	1100.	81.3	1628.2	*	1	0520	18	8356.	403.0	1629.8	*	1	0700	28	5558.	308.3	1629.3
1	0350	9	1540.	123.8	1628.4	*	1	0530	19	8289.	401.0	1629.8	*						
1	0400	10	2433.	174.4	1628.7	*	1	0540	20	8114.	395.5	1629.8	*						
						*							*						

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PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	4.50-HR
8356.	2.83	(CFS)	4794.	4794.	4794.	4794.
		(INCHES)	5.773	5.773	5.773	5.773
		(AC-FT)	1783.	1783.	1783.	1783.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	4.50-HR
403.	2.83	250.	250.	250.	250.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	4.50-HR
1629.79	2.83	1628.96	1628.96	1628.96	1628.96

CUMULATIVE AREA = 5.79 SQ MI

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	SP	10600.	1.00	6673.	6673.	6673.	5.79		
ROUTED TO	RR	10341.	1.17	6496.	6496.	6496.	5.79	1759.01	1.17
ROUTED TO	RR	9321.	1.83	6074.	6074.	6074.	5.79	1699.67	1.83
ROUTED TO	RR	8943.	2.33	5566.	5566.	5566.	5.79	1659.04	2.33
ROUTED TO	RR	8356.	2.83	4794.	4794.	4794.	5.79	1629.79	2.83

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

```
13:26:30    0.0009   CSP     UIS COMPANY   KANSAS CITY, MISSOURI  02/05/86
13:26:30    0.0009   CSP                   APEX/CRAY SERVICE
13:26:30    0.0009   CSP     CRAY-1 S/2000   COS LEVEL:  C14 1.12-11/27/85
13:26:30    0.0009   CSP
13:26:30    0.0009   CSP     WANG,T50.
13:26:30    0.0009   CSP     ACCOUNT,E142120 USD3767400
13:26:40    0.0010   CSP     TAPEIN,DN=XX,NT,LB=AU,FI=HEC1SB,VSN=1978.
13:27:37    0.0013   SCP      13.27.35.VSN,T=1978.
13:27:37    0.0013   SCP      13.27.35.LABEL,T,PO=RU,NT,LB=AU,FI=HEC1SB.
13:27:37    0.0013   SCP      13.27.58.NT64, ASSIGNED TO T       , VSN=1978  .
13:27:41    0.0013   SCP     DATASET RECEIVED FROM FRONT END.
13:27:43    0.0017   CSP     COPYF,XX,TEMP.
13:27:52    0.2489   USER    IO048 - COPY OF     16067 RECORDS        1 FILES COMPLETED
13:27:52    0.2493   CSP     COPYF,XX,HEC1ABS.
13:27:54    0.2584   USER    IO048 - COPY OF          1 RECORDS       1 FILES COMPLETED
13:27:54    0.2585   CSP     REWIND,HEC1ABS.
13:27:54    0.2589   CSP     HEC1ABS.
13:27:55    0.4438   USER    UT010 -    STOP 101          IN HEC1
13:27:55    0.4438   CSP     EXIT.
13:27:55    0.4439   CSP     END OF JOB
13:27:55    0.4439   CSP
13:27:55    0.4439   CSP
13:27:57    0.4753   USER          JOBNAME = DFB1C2B   USER NUMBER = E142120
13:27:57    0.4753   USER          CP SECONDS          =     0.475
13:27:57    0.4753   USER          AVERAGE MEMORY      =    0.0628
13:27:57    0.4753   USER          IO BLOCKS MOVED     =     1076.
13:27:57    0.4753   USER          IO REQUESTS         =      205.
13:27:57    0.4753   USER          MT MOUNTS           =        1.
13:27:57    0.4754   USER          MT BLOCKS STAGED    =      376.
13:27:57    0.4754   USER          I/O/D BLOCKS        =       39.
13:27:57    0.4754   USER
13:27:57    0.4754   USER          CSU-2               =    11.93
13:27:57    0.4754   USER          PRIORITY            =       15
13:27:57    0.4754   USER          COST                =     4.18
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*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*            FEBRUARY 1981              *
*          REVISED 30 OCT 81            *
*                                       *
*  RUN DATE  02/04/86    TIME  15:52:18 *
*                                       *
*****************************************
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*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*  THE HYDROLOGIC ENGINEERING CENTER    *
*          609 SECOND STREET            *
*       DAVIS, CALIFORNIA 95616         *
*  (916) 440-3285 OR (FTS) 448-3285     *
*                                       *
*****************************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X              X
XXXXXXX  XXXX     X        XXXXX X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX   XXXXX        XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. SEE SEPTEMBER 1981 INPUT DESCRIPTION FOR NEW DEFINITIONS.

#9 APACHE SPILLWAY
ESH WITH n=.04,.08

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

  1           ID        APACHE JUNCTION FRS, DOWNSTREAM INUNDATION STUDY, PHOENIX SCS
  2           ID        EMERGENCY SPILLWAY HYDROGRAPH ROUTED DOWNSTREAM
  3           IT      10              250       20

  4           KK      SP      ESH SPILLWAY OUTFLOW
  5           BA    5.79
  6           QI     100      490      810     1190     1485     1530     1690     1780     1845     1890
  7           QI    1898     1850     1800     1740     1680     1610     1550     1480     1400     1335

  8           KK      RR ,  REACH ROUTING DOWNSTREAM FROM SPILLWAY
  9           KM        FIRST REACH-- DAM TO .691, REPRESENTED BY .388
 10           RS       1     FLOW      100
 11           RC     .08      .04      .08     3650    .0131     1755
 12           RX              200      440      600     1280     1300     1330     1500
 13           RY    1760     1759     1758     1756     1756     1758     1759     1760

 14           KK      RR
 15           KM        2ND REACH-- .691 TO 1.682, REPRESENTED BY 1.303
 16           RS       1     FLOW      100
 17           RC     .08      .04      .08     5232    .0115     1705
 18           RX     120      360     1500     1920     1980     2220     2300     3000
 19           RY    1700     1699     1698     1696     1696     1698     1700     1701

 20           KK      RR
 21           KM        THIRD REACH-- 1.682 TO 2.43, REPRESENTED BY 2.098
 22           RS       1     FLOW      100
 23           RC     .08      .04      .08     3950   .00899     1650
 24           RX              140      370      870      935     1000     1760     1800
 25           RY    1660     1657     1657     1656     1655     1656     1658     1660

 26           KK      RR
 27           KM        FINAL REACH-- 2.43 TO 3.17, REPRESENTED BY 2.717
 28           RS       1     FLOW      100
 29           RC     .08      .04      .08     3907   .00837     1633
 30           RX      40      100     1700     1840     1950     2350     2400     3000
 31           RY    1630     1628     1628     1625     1628     1628     1630     1633
 32           ZZ
```

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*****************************************                    *****************************************
*                                       *                    *                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                    *    U.S. ARMY CORPS OF ENGINEERS       *
*            FEBRUARY 1981              *                    *  THE HYDROLOGIC ENGINEERING CENTER    *
*          REVISED 30 OCT 81            *                    *          609 SECOND STREET            *
*                                       *                    *       DAVIS, CALIFORNIA 95616         *
*  RUN DATE  02/04/86    TIME  15:52:18 *                    *  (916) 440-3285 OR (FTS) 448-3285     *
*                                       *                    *                                       *
*****************************************                    *****************************************


                    APACHE JUNCTION FRS, DOWNSTREAM INUNDATION STUDY, PHOENIX SCS
                    EMERGENCY SPILLWAY HYDROGRAPH ROUTED DOWNSTREAM

     IT          HYDROGRAPH TIME DATA
                      NMIN          10  MINUTES IN COMPUTATION INTERVAL
                     IDATE      1    0  STARTING DATE
                     ITIME        0250  STARTING TIME
                        NQ          20  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE      1    0  ENDING DATE
                    NDTIME        0600  ENDING TIME

                 COMPUTATION INTERVAL     0.17 HOURS
                      TOTAL TIME BASE     3.17 HOURS

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

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

               **************
               *            *
     4 KK      *     SP     *          ESH SPILLWAY OUTFLOW
               *            *
               **************

               SUBBASIN RUNOFF DATA

     5 BA          SUBBASIN CHARACTERISTICS
                        TAREA        5.79  SUBBASIN AREA

                                                  ***

*****************************************************************************************************************************
                                                HYDROGRAPH AT STATION       SP
*****************************************************************************************************************************
                                  *                                  *                                  *
    DA MON HRMN  ORD      FLOW    *  DA MON HRMN  ORD      FLOW    *  DA MON HRMN  ORD      FLOW    *  DA MON HRMN  ORD      FLOW
                                  *                                  *                                  *
```

```
  1    0310    3    810.   *   1    0400    8    1780.   *   1    0450   13    1800.   *   1    0540   18    1480.
  1    0320    4   1190.   *   1    0410    9    1845.   *   1    0500   14    1740.   *   1    0550   19    1400.
  1    0330    5   1405.   *   1    0420   10    1890.   *   1    0510   15    1680.   *   1    0600   20    1335.
                           *                             *                             *
*****************************************************************************************************************

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
   (CFS)        (HR)                 6-HR        24-HR        72-HR       3.17-HR
   1898.        1.67        (CFS)    1495.        1495.        1495.        1495.
                          (INCHES)   1.267        1.267        1.267        1.267
                            (AC-FT)   391.         391.         391.         391.

                       CUMULATIVE AREA =     5.79 SQ MI


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


              **************
              *            *
    8 KK      *      RR    *        PEACH ROUTING DOWNSTREAM FROM SPILLWAY
              *            *
              **************
                                FIRST REACH-- DAM TO .691, REPRESENTED BY .388

                HYDROGRAPH ROUTING DATA

   10 RS          STORAGE ROUTING
                      NSTPS          1  NUMBER OF SUBREACHES
                       ITYP       FLOW  TYPE OF INITIAL CONDITION
                     RSVRIC     100.00  INITIAL CONDITION
                          X       0.00 WORKING R AND D COEFFICIENT

   11 RC          NORMAL DEPTH CHANNEL ROUTING
                        ANL      0.080  LEFT OVERBANK N-VALUE
                       ANCH      0.040  MAIN CHANNEL N-VALUE
                        ANR      0.080  RIGHT OVERBANK N-VALUE
                      RLNTH      3650.  REACH LENGTH
                        SEL     0.0131  ENERGY SLOPE
                      ELMAX     1765.0  MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

                                      CROSS-SECTION DATA
                          --- LEFT OVERBANK --- + ------ MAIN CHANNEL ------- + --- RIGHT OVERBANK ---
   13 RY       ELEVATION   1760.00   1759.00   1758.00   1756.00   1756.00   1758.00   1759.00   1760.00
   12 RX       DISTANCE       0.00    200.00    440.00    600.00   1280.00   1300.00   1330.00   1500.00

                                                      ***

                                      COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

            STORAGE       0.00     27.84     57.36     88.58    121.50    157.12    197.75    243.86    296.83    355.68
            OUTFLOW       0.00    843.61   2709.74   5392.01   8821.32  13236.26  18518.96  24624.26  31608.18  39621.37
          ELEVATION    1756.00   1756.47   1756.95   1757.42   1757.89   1758.37   1758.84   1759.32   1759.79   1760.26

            STORAGE     415.21    474.75    534.29    593.82    653.36    712.90    772.43    831.97    891.51    951.04
            OUTFLOW   48620.99  58462.45  69103.79  80511.63  92658.21 105519.80 119075.67 133307.46 148198.73 163734.58
          ELEVATION    1760.74   1761.21   1761.68   1762.16   1762.63   1763.11   1763.58   1764.05   1764.53   1765.00

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN    39621. TO    163735.
                THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
                THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)
```

HYDROGRAPH AT STATION RR

DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0250	1	100.	3.3	1756.1	1		0400	8	1629.	40.3	1756.7	1		0510	15	1745.	42.1	1756.7
1		0300	2	167.	5.5	1756.1	1		0410	9	1740.	42.0	1756.7	1		0520	16	1684.	41.1	1756.7
1		0310	3	334.	11.0	1756.2	1		0420	10	1818.	43.2	1756.7	1		0530	17	1621.	40.1	1756.7
1		0320	4	564.	18.6	1756.3	1		0430	11	1864.	44.3	1756.7	1		0540	18	1557.	39.1	1756.7
1		0330	5	817.	27.0	1756.5	1		0440	12	1870.	44.1	1756.7	1		0550	19	1486.	38.0	1756.6
1		0340	6	1207.	33.6	1756.6	1		0450	13	1843.	43.6	1756.7	1		0600	20	1414.	36.9	1756.6
1		0350	7	1467.	37.7	1756.6	1		0500	14	1799.	42.9	1756.7							

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	3.17-HR
1870.	1.83	(CFS)	1367.	1367.	1367.	1367.
		(INCHES)	1.158	1.158	1.158	1.158
		(AC-FT)	358.	358.	358.	358.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	3.17-HR
44.	1.83	34.	34.	34.	34.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	3.17-HR
1756.73	1.83	1756.53	1756.58	1756.58	1756.58

CUMULATIVE AREA = 5.79 SQ MI

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              **************
              *            *
   14 KK      *        RR  *
              *            *
              **************
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2ND REACH-- .691 TO 1.682, REPRESENTED BY 1.303

HYDROGRAPH ROUTING DATA

```
16 RS          STORAGE ROUTING
                    NSTPS          1  NUMBER OF SUBREACHES
                     ITYP       FLOW  TYPE OF INITIAL CONDITION
                   RSVRIC     100.00  INITIAL CONDITION
                        X       0.00  WORKING R AND D COEFFICIENT

17 RC          NORMAL DEPTH CHANNEL ROUTING
                      ANL      0.080  LEFT OVERBANK N-VALUE
                     ANCH      0.040  MAIN CHANNEL N-VALUE
                      ANR      0.080  RIGHT OVERBANK N-VALUE
                    RLNTH      5232.  REACH LENGTH
                      SEL     0.0115  ENERGY SLOPE
                    ELMAX     1705.0  MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION
```

CROSS-SECTION DATA

--- LEFT OVERBANK --- + ------ MAIN CHANNEL ------- + --- RIGHT OVERBANK ---

***

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	0.00	7.86	24.61	50.26	84.80	135.17	216.76	324.77	441.68	567.87
OUTFLOW	0.00	117.81	549.49	1429.85	2877.04	5405.12	9040.19	14005.21	20226.22	27651.29
ELEVATION	1696.00	1696.47	1696.95	1697.42	1697.89	1698.37	1698.84	1699.32	1699.79	1700.26

STORAGE	711.81	872.76	1035.61	1200.47	1364.33	1528.18	1692.04	1855.89	2019.75	2183.60
OUTFLOW	36506.38	46850.88	58870.86	71747.53	86010.11	101403.83	117883.93	135412.62	153957.23	173489.06
ELEVATION	1700.74	1701.21	1701.68	1702.16	1702.63	1703.11	1703.58	1704.05	1704.53	1705.00

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HYDROGRAPH AT STATION RR

****

DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0250	1	100.	6.7	1696.4	1		0400	8	1125.	41.4	1697.3	1		0510	15	1793.	58.9	1697.5
1		0300	2	106.	7.1	1696.4	1		0410	9	1339.	47.6	1697.4	1		0520	16	1758.	58.1	1697.5
1		0310	3	143.	8.8	1696.5	1		0420	10	1521.	52.4	1697.5	1		0530	17	1711.	57.0	1697.5
1		0320	4	235.	12.4	1696.6	1		0430	11	1664.	55.8	1697.5	1		0540	18	1656.	55.7	1697.5
1		0330	5	372.	17.7	1696.8	1		0440	12	1755.	58.0	1697.5	1		0550	19	1596.	54.2	1697.5
1		0340	6	569.	25.2	1697.0	1		0450	13	1800.	59.1	1697.5	1		0600	20	1530.	52.7	1697.5
1		0350	7	863.	33.7	1697.1	1		0500	14	1809.	59.3	1697.5							

****

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	3.17-HR
1809.	2.17	(CFS)	1191.	1191.	1191.	1191.
		(INCHES)	1.009	1.009	1.009	1.009
		(AC-FT)	312.	312.	312.	312.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	3.17-HR
59.	2.17	42.	42.	42.	42.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	3.17-HR
1697.55	2.17	1697.21	1697.21	1697.21	1697.21

CUMULATIVE AREA = 5.79 SQ MI

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              **************
              *            *
   20 KK      *        RR  *
              *            *
              **************
```

THIRD REACH-- 1.682 TO 2.43, REPRESENTED BY 2.098

HYDROGRAPH ROUTING DATA

22 RS STORAGE ROUTING

```
                    RSVRIC      109.00  INITIAL CONDITION
                         X        0.00 WORKING R AND D COEFFICIENT

 23 RC          NORMAL DEPTH CHANNEL ROUTING
                       ANL       0.080  LEFT OVERBANK N-VALUE
                      ANCH       0.040  MAIN CHANNEL N-VALUE
                       ANR       0.080  RIGHT OVERBANK N-VALUE
                     RLNTH       3950.  REACH LENGTH
                       SEL      0.0090  ENERGY SLOPE
                     ELMAX      1660.0  MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

                                   CROSS-SECTION DATA
                          --- LEFT OVERBANK --- + ------ MAIN CHANNEL ------- + --- RIGHT OVERBANK ---
 25 RY        ELEVATION   1660.00   1657.00   1657.00   1656.00   1655.00   1656.00   1658.00   1660.00
 24 RX        DISTANCE       0.00    140.00    370.00    870.00    935.00   1000.00   1760.00   1800.00

                                                  ***

                                  COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

          STORAGE       0.00      0.41      1.63      3.67      6.63     13.60     26.09     44.12     69.63    101.63
          OUTFLOW       0.00      4.11     26.11     76.99    153.62    283.42    575.16   1054.70   1856.87   3074.96
        ELEVATION    1655.00   1655.26   1655.53   1655.79   1656.05   1656.32   1656.58   1656.84   1657.11   1657.37

          STORAGE     136.31    173.67    213.31    253.54    294.19    335.26    376.75    418.66    460.98    503.72
          OUTFLOW    4587.68   6386.49   8534.92  11000.64  13726.31  15701.80  19918.89  23376.75  27051.59  30956.42
        ELEVATION    1657.63   1657.89   1658.16   1658.42   1658.68   1658.95   1659.21   1659.47   1659.74   1660.00

*****************************************************************************************************************************
                                        HYDROGRAPH AT STATION       RR
*****************************************************************************************************************************
 DA MON HRMN ORD  OUTFLOW  STORAGE   STAGE * DA MON HRMN ORD  OUTFLOW  STORAGE   STAGE * DA MON HRMN ORD  OUTFLOW  STORAGE   STAGE
                                          *                                          *
  1   0250  1     100.      4.6  1655.9 *  1   0400  8     536.     24.6  1656.5 *  1   0510 15    1682.     64.1  1657.0
  1   0300  2     101.      4.6  1655.9 *  1   0410  9     749.     32.7  1656.7 *  1   0520 16    1715.     65.1  1657.1
  1   0310  3     108.      4.9  1655.9 *  1   0420 10     962.     40.7  1656.8 *  1   0530 17    1722.     65.3  1657.1
  1   0320  4     133.      5.8  1656.0 *  1   0430 11    1173.     47.9  1656.9 *  1   0540 18    1708.     64.9  1657.1
  1   0330  5     177.      7.9  1656.1 *  1   0440 12    1364.     54.0  1656.9 *  1   0550 19    1679.     64.0  1657.0
  1   0340  6     244.     11.5  1656.2 *  1   0450 13    1511.     58.6  1657.0 *  1   0600 20    1638.     62.7  1657.0
  1   0350  7     365.     17.1  1656.4 *  1   0500 14    1616.     62.0  1657.0 *
                                          *                                          *
*****************************************************************************************************************************

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
   (CFS)       (HR)                  6-HR        24-HR        72-HR       3.17-HR
   1722.       2.67        (CFS)     969.         969.         969.         969.
                         (INCHES)   0.821        0.821        0.821        0.321
                          (AC-FT)    254.         254.         254.         254.

 PEAK STORAGE  TIME                          MAXIMUM AVERAGE STORAGE
   (AC-FT)     (HR)                  6-HR        24-HR        72-HR       3.17-HR
     65.       2.67                   38.          38.          38.          38.

 PEAK STAGE    TIME                          MAXIMUM AVERAGE STAGE
   (FEET)      (HR)                  6-HR        24-HR        72-HR       3.17-HR
  1657.06      2.67               1656.63      1656.63      1656.63      1656.63

                         CUMULATIVE AREA =    5.79 SQ MI
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

                 **************
                 *            *
 26 KK           *     RR     *
                 *            *
                 **************
                          FINAL REACH-- 2.43 TO 3.17, REPRESENTED BY 2.717

            HYDROGRAPH ROUTING DATA

 28 RS          STORAGE ROUTING
                     NSTPS          1  NUMBER OF SUBREACHES
                      ITYP       FLOW  TYPE OF INITIAL CONDITION
                    RSVRIC     100.00  INITIAL CONDITION
                         X       0.00 WORKING R AND D COEFFICIENT

 29 RC          NORMAL DEPTH CHANNEL ROUTING
                       ANL      0.080  LEFT OVERBANK N-VALUE
                      ANCH      0.040  MAIN CHANNEL N-VALUE
                       ANR      0.080  RIGHT OVERBANK N-VALUE
                     RLNTH      3907.  REACH LENGTH
                       SEL     0.0084  ENERGY SLOPE
                     ELMAX     1633.0  MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

                                CROSS-SECTION DATA
                        --- LEFT OVERBANK --- + ------ MAIN CHANNEL ------- + --- RIGHT OVERBANK ---
 31 RY       ELEVATION   1630.00   1628.00   1628.00   1625.00   1628.00   1628.00   1630.00   1633.00
 32 RX       DISTANCE      40.00    100.00   1700.00   1840.00   1950.00   2350.00   2400.00   3000.00

                                                  ***

                                 COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

          STORAGE       0.00      0.66      2.65      5.96     10.60     16.56     23.85     32.46    108.32    194.49
          OUTFLOW       0.00      8.91     56.56    166.75    359.11    651.11   1058.78   1597.10   2534.64   5577.03
        ELEVATION    1625.00   1625.42   1625.84   1626.26   1626.68   1627.11   1627.53   1627.95   1628.37   1628.79

          STORAGE     281.54    369.47    458.28    549.40    643.69    741.16    841.82    945.65   1052.67   1162.86
          OUTFLOW    9616.56  14542.47  20232.32  26825.12  34165.30  42280.35  51161.69  60804.49  71206.07  82365.33
        ELEVATION    1629.21   1629.63   1630.05   1630.47   1630.89   1631.32   1631.74   1632.16   1632.58   1633.00

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

                                        HYDROGRAPH AT STATION        RR

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

 DA MON HRMN ORD  OUTFLOW  STORAGE   STAGE * DA MON HRMN ORD  OUTFLOW  STORAGE   STAGE * DA MON HRMN ORD  OUTFLOW  STORAGE   STAGE
                                          *                                          *                                          *
  1   0250  1     100.      4.0  1626.0 * 1   0400  8     323.      9.7  1626.6 * 1   0510 15    1574.     32.1  1627.9
  1   0300  2     100.      4.0  1626.0 * 1   0410  9     479.     13.1  1626.9 * 1   0520 16    1611.     33.6  1628.0
  1   0310  3     102.      4.0  1626.0 * 1   0420 10     671.     16.9  1627.1 * 1   0530 17    1627.     34.9  1628.0
  1   0320  4     109.      4.2  1626.0 * 1   0430 11     891.     20.9  1627.4 * 1   0540 18    1641.     36.0  1628.0
  1   0330  5     126.      4.7  1626.1 * 1   0440 12    1105.     24.6  1627.6 * 1   0550 19    1649.     36.7  1628.0
  1   0340  6     157.      5.7  1626.2 * 1   0450 13    1305.     27.5  1627.7 * 1   0600 20    1651.     36.8  1628.0
  1   0350  7     221.      7.3  1626.4 * 1   0500 14    1461.     30.3  1627.8 *
                                          *                                          *
*****************************************************************************************************************************

 PEAK FLOW     TIME                    MAXIMUM AVERAGE FLOW
  (CFS)        (HR)          6-HR        24-HR        72-HR       3.17-HR
```

	(AC-FT)	221.	221.	221.	221.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	3.17-HR
37.	3.17	19.	19.	19.	19.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	3.17-HR
1627.97	3.17	1627.08	1627.08	1627.08	1627.08

CUMULATIVE AREA = 5.79 SQ MI

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	SP	1898.	1.67	1495.	1495.	1495.	5.79		
ROUTED TO	RR	1870.	1.83	1367.	1367.	1367.	5.79	1756.73	1.83
ROUTED TO	RR	1809.	2.17	1191.	1191.	1191.	5.79	1697.55	2.17
ROUTED TO	RR	1722.	2.67	969.	969.	969.	5.79	1657.06	2.67
ROUTED TO	RR	1651.	3.17	844.	844.	844.	5.79	1627.97	3.17

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

```
15:44:57    0.0009   CSP    UIS COMPANY   KANSAS CITY, MISSOURI  02/04/86
15:44:57    0.0009   CSP                  APEX/CRAY SERVICE
15:44:57    0.0009   CSP    CRAY-1 S/2000   COS LEVEL:  C14 1.12-11/27/85
15:44:57    0.0009   CSP
15:44:57    0.0009   CSP    WANG,T50.
15:44:57    0.0009   CSP    ACCOUNT,E142120 USD3767400
15:45:45    0.0010   CSP    TAPEIN,DN=XX,NT,LB=AU,FI=HEC1SB,VSN=1978.
15:51:29    0.0013   SCP     15.46.17.VSN,T=1978.
15:51:29    0.0013   SCP     15.46.17.LABEL,T,PO=RU,NT,LB=AU,FI=HEC1SB.
15:51:29    0.0013   SCP     15.51.41.NT65, ASSIGNED TO T      , VSN=1978  .
15:51:40    0.0013   SCP    DATASET RECEIVED FROM FRONT END.
15:51:50    0.0017   CSP    COPYF,XX,TEMP.
15:52:02    0.2490   USER   I0048 - COPY OF    16067 RECORDS       1 FILES COMPLETED
15:52:02    0.2494   CSP    COPYF,XX,HEC1ABS.
15:52:07    0.2584   USER   I0048 - COPY OF        1 RECORDS       1 FILES COMPLETED
15:52:07    0.2585   CSP    REWIND,HEC1ABS.
15:52:17    0.2589   CSP    HEC1ABS.
15:52:20    0.4321   USER   UT010 -    STOP 101          IN HEC1
15:52:20    0.4321   CSP    EXIT.
15:52:20    0.4322   CSP    END OF JOB
15:52:20    0.4322   CSP
15:52:20    0.4322   CSP
15:52:29    0.4637   USER         JOBNAME = DFBODSV   USER NUMBER = E142120
15:52:29    0.4637   USER         USER JOBNAME    =  TDK011
15:52:29    0.4637   USER         CP SECONDS        =     0.463
15:52:29    0.4637   USER         AVERAGE MEMORY    =    0.0611
15:52:29    0.4637   USER         IO BLOCKS MOVED   =     1076.
15:52:29    0.4637   USER         IO REQUESTS       =      196.
15:52:29    0.4637   USER         MT MOUNTS         =        1.
15:52:29    0.4637   USER         MT BLOCKS STAGED  =      376.
15:52:29    0.4637   USER         I/O/D BLOCKS      =       39.
15:52:29    0.4637   USER
15:52:29    0.4637   USER         CSU-2             =    11.78
15:52:29    0.4637   USER         PRIORITY          =       15
15:52:29    0.4637   USER         COST              =     4.12
```

APEX REMOTE BATCH

DFB2A2J *UNITED INFORMATION SERVICES, INC.* 67. APEX/SL D.4.7.5

08.38.39. 02/06/86.

```
DDDDDDDDDD    FFFFFFFFFFFF  BBBBBBBBBB    2222222222    AAAAAAAAAA    2222222222   JJJJJJJJJJJJ
DDDDDDDDDDD   FFFFFFFFFFFF  BBBBBBBBBBB  222222222222  AAAAAAAAAAAA  222222222222  JJJJJJJJJJJJ
DD        DD  FF            BB        BB  2          22  AA        AA  2          22        JJ
DD        DD  FF            BB        BB             22  AA        AA             22        JJ
DD        DD  FF            BB        BB             22  AA        AA             22        JJ
DD        DD  FF            BB        BB             22  AA        AA             22        JJ
DD        DD  FF            BB        BB             22  AA        AA             22        JJ
DD        DD  FFFFFFFF      BBBBBBBBBBBB       2222222  AA        AA       2222222        JJ
DD        DD  FFFFFFFF      BBBBBBBBBBB       2222222   AAAAAAAAAAAA      2222222        JJ
DD        DD  FF            BB        BB    22          AAAAAAAAAAAA    22               JJ
DD        DD  FF            BB        BB   22           AA        AA   22               JJ
DD        DD  FF            BB        BB  22            AA        AA  22                JJ
DD        DD  FF            BB        BB  22            AA        AA  22                JJ
DD        DD  FF            BB        BB  22            AA        AA  22            JJ  JJ
DDDDDDDDDDD   FF            BBBBBBBBBBBB  222222222222  AA        AA  222222222222  JJJJJJJJ
DDDDDDDDDD    FF            BBBBBBBBBBB   222222222222  AA        AA  222222222222   JJJJJ
```

#10 HEC-1

APACHE

ESH - HIGH N

SPILLWAY

```
****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*            FEBRUARY 1981             *
*          REVISED 30 OCT 81           *
*                                      *
*  RUN DATE  02/06/86    TIME  08:23:49 *
*                                      *
****************************************
```


```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*  THE HYDROLOGIC ENGINEERING CENTER   *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*  (916) 440-3285 OR (FTS) 448-3285    *
*                                      *
****************************************
```


```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X              X
XXXXXXX  XXXX     X        XXXXX X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX   XXXXX         XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. SEE SEPTEMBER 1981 INPUT DESCRIPTION FOR NEW DEFINITIONS.

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

  1           ID        APACHE JUNCTION FRS, DOWNSTREAM INUNDATION STUDY, PHOENIX SCS
  2           ID        EMERGENCY SPILLWAY HYDROGRAPH ROUTED DOWNSTREAM
  3           IT      10              250      35

  4           KK      SP      ESH SPILLWAY OUTFLOW
  5           BA    5.79
  6           QI     100     490     810    1190    1405    1580    1690    1780    1845    1890
  7           QI    1898    1850    1800    1740    1680    1610    1550    1480    1400    1335
  8           QI    1270    1210    1140    1070    1003     936     880     830     785     745
  9           QI     710     680     655     630     610

 10           KK      RR    REACH ROUTING DOWNSTREAM FROM SPILLWAY
 11           KM        FIRST REACH-- DAM TO .691, REPRESENTED BY .388
 12           RS       1    FLOW     100
 13           RC     .16     .08     .16    3650   .0131    1765
 14           RX             200     440     600    1280    1300    1330    1500
 15           RY    1760    1759    1758    1756    1756    1758    1759    1760

 16           KK      RR
 17           KM        2ND REACH-- .691 TO 1.682, REPRESENTED BY 1.303
 18           RS       1    FLOW     100
 19           RC     .16     .08     .16    5232   .0115    1705
 20           RX     120     360    1500    1920    1980    2220    2300    3000
 21           RY    1700    1699    1698    1696    1696    1698    1700    1701

 22           KK      RR
 23           KM        THIRD REACH-- 1.682 TO 2.43, REPRESENTED BY 2.098
 24           RS       1    FLOW     100
 25           RC     .16     .08     .16    3950  .00899    1660
 26           RX             140     370     870     935    1000    1760    1800
 27           RY    1660    1657    1657    1656    1655    1656    1658    1660

 28           KK      RR
 29           KM        FINAL REACH-- 2.43 TO 3.17, REPRESENTED BY 2.717
 30           RS       1    FLOW     100
 31           RC     .16     .08     .16    3907  .00837    1633
 32           RX      40     100    1700    1840    1950    2350    2400    3000
 33           RY    1630    1628    1628    1625    1628    1628    1630    1633
 34           ZZ
```

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*********************************************                                    ***************************************
*                                           *                                    *                                     *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)       *                                    *    U.S. ARMY CORPS OF ENGINEERS     *
*            FEBRUARY 1981                  *                                    *  THE HYDROLOGIC ENGINEERING CENTER  *
*          REVISED 30 OCT 81                *                                    *          609 SECOND STREET          *
*                                           *                                    *       DAVIS, CALIFORNIA 95616       *
*  RUN DATE  02/06/86    TIME  08:23:49     *                                    *  (916) 440-3285 OR (FTS) 448-3285   *
*                                           *                                    *                                     *
*********************************************                                    ***************************************

                                APACHE JUNCTION FRS, DOWNSTREAM INUNDATION STUDY, PHOENIX SCS
                                EMERGENCY SPILLWAY HYDROGRAPH ROUTED DOWNSTREAM

     IT          HYDROGRAPH TIME DATA
                      NMIN          10  MINUTES IN COMPUTATION INTERVAL
                     IDATE       I    0  STARTING DATE
                     ITIME        0250  STARTING TIME
                        NQ          35  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE       I    0  ENDING DATE
                    NDTIME        0830  ENDING TIME

                 COMPUTATION INTERVAL    0.17 HOURS
                      TOTAL TIME BASE    5.67 HOURS

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

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

            **************
            *            *
    4 KK    *     SP     *          ESH SPILLWAY OUTFLOW
            *            *
            **************

               SUBBASIN RUNOFF DATA

    5 BA          SUBBASIN CHARACTERISTICS
                      TAREA        5.79  SUBBASIN AREA

                                                   ***

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

                                          HYDROGRAPH AT STATION       SP

*****************************************************************************************************************************
                                 *                    *                    *                    *
    DA MON HRMN  ORD      FLOW   *  DA MON HRMN  ORD      FLOW   *  DA MON HRMN  ORD      FLOW   *  DA MON HRMN  ORD      FLOW
```

1	0300	2	490.	*	1	0430	11	1898.	*	1	0600	20	1335.	*	1	0730	29	765.
1	0310	3	810.	*	1	0440	12	1850.	*	1	0610	21	1270.	*	1	0740	30	745.
1	0320	4	1190.	*	1	0450	13	1800.	*	1	0620	22	1210.	*	1	0750	31	710.
1	0330	5	1405.	*	1	0500	14	1740.	*	1	0630	23	1140.	*	1	0800	32	680.
1	0340	6	1580.	*	1	0510	15	1680.	*	1	0640	24	1070.	*	1	0810	33	655.
1	0350	7	1690.	*	1	0520	16	1610.	*	1	0650	25	1003.	*	1	0820	34	630.
1	0400	8	1760.	*	1	0530	17	1550.	*	1	0700	26	936.	*	1	0830	35	610.
1	0410	9	1845.	*	1	0540	18	1480.	*	1	0710	27	880.	*				
				*					*					*				

****

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	5.67-HR
1858.	1.67	(CFS)	1233.	1233.	1233.	1233.
		(INCHES)	1.870	1.870	1.870	1.870
		(AC-FT)	577.	577.	577.	577.

CUMULATIVE AREA = 5.79 SQ MI

*** ***

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              **************
              *            *
 10 KK        *     RR     *      REACH ROUTING DOWNSTREAM FROM SPILLWAY
              *            *
              **************
```

FIRST REACH-- DAM TO .691, REPRESENTED BY .388

HYDROGRAPH ROUTING DATA

12 RS STORAGE ROUTING

NSTPS	1	NUMBER OF SUBREACHES
ITYP	FLOW	TYPE OF INITIAL CONDITION
RSVRIC	100.00	INITIAL CONDITION
X	0.00	WORKING R AND D COEFFICIENT

13 RC NORMAL DEPTH CHANNEL ROUTING

ANL	0.160	LEFT OVERBANK N-VALUE
ANCH	0.080	MAIN CHANNEL N-VALUE
ANR	0.160	RIGHT OVERBANK N-VALUE
RLNTH	3650.	REACH LENGTH
SEL	0.0131	ENERGY SLOPE
ELMAX	1765.0	MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

CROSS-SECTION DATA

		--- LEFT OVERBANK ---		+ ------ MAIN CHANNEL ------- +			--- RIGHT OVERBANK ---		
15 RY	ELEVATION	1760.00	1759.00	1758.00	1756.00	1756.00	1758.00	1759.00	1760.00
14 RX	DISTANCE	0.00	200.00	440.00	600.00	1280.00	1300.00	1330.00	1500.00

***

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	0.00	27.64	57.36	88.58	121.50	157.12	197.75	243.86	296.83	355.68
OUTFLOW	0.00	421.81	1354.87	2696.01	4410.66	6618.13	9259.48	12312.13	15804.09	19810.68
ELEVATION	1756.00	1756.47	1756.95	1757.42	1757.89	1758.37	1758.84	1759.32	1759.79	1760.26
STORAGE	415.21	474.75	534.29	593.82	653.36	712.90	772.43	831.97	891.51	951.04
OUTFLOW	24310.49	29231.23	34551.90	40255.81	46329.11	52759.90	59537.83	66653.73	74099.36	81867.29
ELEVATION	1760.74	1761.21	1761.68	1762.16	1762.63	1763.11	1763.58	1764.05	1764.53	1765.00

HYDROGRAPH AT STATION RR

DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0250	1	100.	6.6	1756.1	1		0450	13	1829.	68.4	1757.1	1		0650	25	1149.	50.9	1756.8
1		0300	2	137.	9.0	1756.2	1		0500	14	1802.	67.8	1757.1	1		0700	26	1085.	48.8	1756.8
1		0310	3	234.	15.4	1756.3	1		0510	15	1760.	66.8	1757.1	1		0710	27	1022.	46.8	1756.8
1		0320	4	379.	25.0	1756.4	1		0520	16	1708.	65.6	1757.1	1		0720	28	962.	44.9	1756.7
1		0330	5	669.	35.6	1756.6	1		0530	17	1649.	64.2	1757.1	1		0730	29	907.	43.2	1756.7
1		0340	6	963.	45.0	1756.7	1		0540	18	1588.	62.8	1757.0	1		0740	30	856.	41.6	1756.7
1		0350	7	1203.	52.6	1756.9	1		0550	19	1520.	61.2	1757.0	1		0750	31	810.	40.1	1756.7
1		0400	8	1404.	58.5	1757.0	1		0600	20	1451.	59.6	1757.0	1		0800	32	769.	38.8	1756.6
1		0410	9	1591.	62.9	1757.0	1		0610	21	1383.	58.0	1757.0	1		0810	33	733.	37.7	1756.6
1		0420	10	1717.	65.8	1757.1	1		0620	22	1326.	56.4	1756.9	1		0820	34	700.	36.7	1756.6
1		0430	11	1798.	67.7	1757.1	1		0630	23	1272.	54.7	1756.9	1		0830	35	672.	35.7	1756.6
1		0440	12	1833.	68.5	1757.1	1		0640	24	1212.	52.8	1756.9							

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	5.67-HR
1833.	1.83	(CFS)	1171.	1171.	1171.	1171.
		(INCHES)	1.776	1.776	1.776	1.776
		(AC-FT)	548.	548.	548.	548.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	5.67-HR
68.	1.83	50.	50.	50.	50.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	5.67-HR
1757.12	1.83	1756.82	1756.82	1756.82	1756.82

CUMULATIVE AREA = 5.79 SQ MI

*** ***

```
**************
*            *
*     RR     *
*            *
**************
```

16 KK

2ND REACH-- .691 TO 1.682, REPRESENTED BY 1.303

HYDROGRAPH ROUTING DATA

18 RS STORAGE ROUTING

NSTPS	1	NUMBER OF SUBREACHES
ITYP	FLOW	TYPE OF INITIAL CONDITION
RSVRIC	100.00	INITIAL CONDITION
X	0.00	WORKING R AND D COEFFICIENT

19 RC NORMAL DEPTH CHANNEL ROUTING

ANL	0.160	LEFT OVERBANK N-VALUE
ANCH	0.080	MAIN CHANNEL N-VALUE
ANR	0.160	RIGHT OVERBANK N-VALUE

ELMAX 1705.0 MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

CROSS-SECTION DATA

		--- LEFT OVERBANK ---		+ ------ MAIN CHANNEL -------			+ --- RIGHT OVERBANK ---		
21 RY	ELEVATION	1700.00	1699.00	1698.00	1696.00	1696.00	1698.00	1700.00	1701.00
20 RX	DISTANCE	120.00	360.00	1500.00	1920.00	1980.00	2220.00	2300.00	3000.00

***

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	0.00	7.86	24.61	50.26	84.80	135.17	216.76	324.77	441.68	567.87
OUTFLOW	0.00	58.91	274.75	714.92	1438.52	2702.56	4520.09	7002.61	10113.11	13825.65
ELEVATION	1696.00	1696.47	1696.95	1697.42	1697.89	1698.37	1698.84	1699.32	1699.79	1700.26
STORAGE	711.81	872.76	1036.61	1200.47	1364.33	1528.18	1692.04	1855.89	2019.75	2183.60
OUTFLOW	18283.19	23425.44	29335.43	35873.76	43005.05	50701.91	58941.97	67706.31	76978.62	86744.53
ELEVATION	1700.74	1701.21	1701.68	1702.16	1702.63	1703.11	1703.58	1704.05	1704.53	1705.00

****

HYDROGRAPH AT STATION RR

****

DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0250	1	100.	11.1	1696.6	1		0450	13	1503.	87.4	1697.9	1		0650	25	1332.	79.7	1697.8
1		0300	2	103.	11.3	1696.6	1		0500	14	1595.	91.0	1698.0	1		0700	26	1278.	77.1	1697.8
1		0310	3	116.	12.3	1696.6	1		0510	15	1650.	93.2	1698.0	1		0710	27	1221.	74.4	1697.8
1		0320	4	147.	14.7	1696.7	1		0520	16	1675.	94.2	1698.0	1		0720	28	1163.	71.7	1697.7
1		0330	5	209.	19.5	1696.8	1		0530	17	1676.	94.3	1698.0	1		0730	29	1106.	68.9	1697.7
1		0340	6	317.	27.1	1697.0	1		0540	18	1659.	93.6	1698.0	1		0740	30	1049.	66.2	1697.6
1		0350	7	479.	36.5	1697.2	1		0550	19	1628.	92.4	1698.0	1		0750	31	995.	63.6	1697.6
1		0400	8	654.	46.7	1697.4	1		0600	20	1586.	90.7	1698.0	1		0800	32	943.	61.1	1697.6
1		0410	9	855.	56.9	1697.5	1		0610	21	1536.	88.7	1697.9	1		0810	33	895.	58.8	1697.5
1		0420	10	1056.	66.5	1697.6	1		0620	22	1483.	86.6	1697.9	1		0820	34	850.	56.7	1697.5
1		0430	11	1233.	75.0	1697.8	1		0630	23	1430.	84.4	1697.9	1		0830	35	808.	54.7	1697.5
1		0440	12	1360.	82.0	1697.9	1		0640	24	1382.	82.1	1697.9							

****

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	5.67-HR
1576.	2.67	(CFS)	1078.	1078.	1078.	1078.
		(INCHES)	1.634	1.634	1.634	1.634
		(AC-FT)	505.	505.	505.	505.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	5.67-HR
94.	2.67	66.	66.	66.	66.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	5.67-HR
1697.98	2.67	1697.58	1697.58	1697.58	1697.58

CUMULATIVE AREA = 5.79 SQ MI

*** ***

```
22 KK        *          *
             *    PR    *
             *          *
             **********
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THIRD REACH-- 1.682 TO 2.43, REPRESENTED BY 2.098

HYDROGRAPH ROUTING DATA

```
24 RS        STORAGE ROUTING
                 NSTPS          1  NUMBER OF SUBREACHES
                  ITYP       FLOW  TYPE OF INITIAL CONDITION
                RSVRIC     100.00  INITIAL CONDITION
                     X       0.00 WORKING R AND D COEFFICIENT

25 RC        NORMAL DEPTH CHANNEL ROUTING
                   ANL      0.160  LEFT OVERBANK N-VALUE
                  ANCH      0.080  MAIN CHANNEL N-VALUE
                   ANR      0.160  RIGHT OVERBANK N-VALUE
                 RLNTH      3950.  REACH LENGTH
                   SEL     0.0090  ENERGY SLOPE
                 ELMAX     1660.0  MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION
```

CROSS-SECTION DATA

		--- LEFT OVERBANK ---		+ ------ MAIN CHANNEL -------			+ --- RIGHT OVERBANK ---		
27 RY	ELEVATION	1660.00	1657.00	1657.00	1656.00	1655.00	1656.00	1658.00	1660.00
26 RX	DISTANCE	0.00	140.00	370.00	870.00	935.00	1000.00	1760.00	1800.00

***

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	0.00	0.41	1.63	3.67	6.63	13.60	26.09	44.12	69.63	101.63
OUTFLOW	0.00	2.06	13.06	38.49	76.81	141.71	285.08	527.35	928.44	1537.48
ELEVATION	1655.00	1655.26	1655.53	1655.79	1656.05	1656.32	1656.58	1656.84	1657.11	1657.37
STORAGE	136.31	173.67	213.31	253.54	294.19	335.26	376.75	418.66	460.98	503.72
OUTFLOW	2293.84	3193.25	4267.46	5500.32	6863.15	8350.90	9959.45	11685.38	13525.79	15478.21
ELEVATION	1657.63	1657.89	1658.16	1658.42	1658.68	1658.95	1659.21	1659.47	1659.74	1660.00

****

HYDROGRAPH AT STATION RR

DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0250	1	100.	9.1	1656.1	1		0450	13	838.	63.9	1657.0	1		0650	25	1452.	97.1	1657.3
1		0300	2	100.	9.1	1656.1	1		0500	14	986.	72.7	1657.1	1		0700	26	1418.	95.3	1657.3
1		0310	3	101.	9.3	1656.2	1		0510	15	1133.	80.4	1657.2	1		0710	27	1379.	93.3	1657.3
1		0320	4	105.	9.7	1656.2	1		0520	16	1256.	86.8	1657.2	1		0720	28	1335.	91.0	1657.3
1		0330	5	114.	10.6	1656.2	1		0530	17	1353.	91.9	1657.3	1		0730	29	1289.	88.6	1657.3
1		0340	6	132.	12.5	1656.3	1		0540	18	1426.	95.8	1657.3	1		0740	30	1240.	86.0	1657.2
1		0350	7	169.	15.9	1656.4	1		0550	19	1476.	98.4	1657.3	1		0750	31	1189.	83.3	1657.2
1		0400	8	227.	21.0	1656.5	1		0600	20	1507.	100.0	1657.4	1		0800	32	1138.	80.7	1657.2
1		0410	9	307.	27.7	1656.6	1		0610	21	1519.	100.7	1657.4	1		0810	33	1087.	78.0	1657.2
1		0420	10	417.	35.9	1656.7	1		0620	22	1517.	100.6	1657.4	1		0820	34	1037.	75.4	1657.2
1		0430	11	542.	45.1	1656.8	1		0630	23	1503.	99.8	1657.4	1		0830	35	989.	72.8	1657.1
1		0440	12	692.	54.6	1656.9	1		0640	24	1480.	98.6	1657.3							

****

PEAK FLOW TIME MAXIMUM AVERAGE FLOW

```
                    (INCHES)      1.428       1.428       1.428       1.428
                    (AC-FT)       441.        441.        441.        441.

PEAK STORAGE   TIME                      MAXIMUM AVERAGE STORAGE
  (AC-FT)      (HR)              6-HR       24-HR       72-HR      5.67-HR
    101.       3.33              66.        66.         66.        66.

PEAK STAGE     TIME                      MAXIMUM AVERAGE STAGE
  (FEET)       (HR)              6-HR       24-HR       72-HR      5.67-HR
 1657.36       3.33           1656.98    1656.98     1656.98    1656.98

                    CUMULATIVE AREA =    5.79 SQ MI

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

          **************
          *            *
 29 KK    *      RR    *
          *            *
          **************
                    FINAL REACH== 2.43 TO 3.17, REPRESENTED BY 2.717

          HYDROGRAPH ROUTING DATA

 30 RS       STORAGE ROUTING
                 NSTPS          1  NUMBER OF SUBREACHES
                  ITYP       FLOW  TYPE OF INITIAL CONDITION
                RSVRIC     100.00  INITIAL CONDITION
                     X       0.00 WORKING R AND D COEFFICIENT

 31 PC       NORMAL DEPTH CHANNEL ROUTING
                   ANL      0.160  LEFT OVERBANK N-VALUE
                  ANCH      0.080  MAIN CHANNEL N-VALUE
                   ANR      0.160  RIGHT OVERBANK N-VALUE
                 RLNTH      3907.  REACH LENGTH
                   SEL     0.0084  ENERGY SLOPE
                 ELMAX     1633.0  MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

                              CROSS-SECTION DATA
                     --- LEFT OVERBANK --- + ------ MAIN CHANNEL ------- + --- RIGHT OVERBANK ---
 33 RY     ELEVATION  1630.00   1628.00   1628.00   1625.00   1628.00   1628.00   1630.00   1633.00
 32 RX     DISTANCE     40.00    100.00   1700.00   1840.00   1950.00   2350.00   2400.00   3000.00

                                                  ***

                              COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

        STORAGE       0.00      0.66      2.65      5.96     10.60     16.56     23.85     32.46    108.32    194.49
        OUTFLOW       0.00      4.45     28.28     63.37    179.56    325.56    529.39    798.55   1267.32   2788.51
      ELEVATION    1625.00   1625.42   1625.84   1626.26   1626.68   1627.11   1627.53   1627.95   1628.37   1628.79

        STORAGE     281.54    369.47    458.28    549.40    643.69    741.16    841.82    945.65   1052.67   1162.86
        OUTFLOW    4808.28   7271.23  10141.16  13412.56  17082.65  21140.17  25580.84  30402.24  35603.03  41182.66
      ELEVATION    1629.21   1629.63   1630.05   1630.47   1630.89   1631.32   1631.74   1632.16   1632.58   1633.00

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

                              HYDROGRAPH AT STATION       RR
```

DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0250	1	100.	6.8	1626.3	*	1		0450	13	516.	23.4	1627.5	*	1		0650	25	1172.	93.0	1628.3
1		0300	2	100.	6.8	1626.3	*	1		0500	14	655.	27.9	1627.7	*	1		0700	26	1194.	96.4	1628.3
1		0310	3	100.	6.8	1626.3	*	1		0510	15	798.	32.5	1627.9	*	1		0710	27	1211.	99.1	1628.3
1		0320	4	101.	6.8	1626.3	*	1		0520	16	831.	37.7	1628.0	*	1		0720	28	1223.	101.1	1628.3
1		0330	5	103.	6.9	1626.3	*	1		0530	17	870.	44.0	1628.0	*	1		0730	29	1230.	102.3	1628.3
1		0340	6	108.	7.2	1626.4	*	1		0540	18	912.	50.8	1628.0	*	1		0740	30	1233.	102.7	1628.3
1		0350	7	119.	7.7	1626.4	*	1		0550	19	956.	57.9	1628.1	*	1		0750	31	1231.	102.5	1628.3
1		0400	8	138.	8.6	1626.5	*	1		0600	20	1000.	65.0	1628.1	*	1		0800	32	1226.	101.6	1628.3
1		0410	9	171.	10.2	1626.6	*	1		0610	21	1042.	71.8	1628.2	*	1		0810	33	1216.	100.1	1628.3
1		0420	10	224.	12.4	1626.8	*	1		0620	22	1081.	78.1	1628.2	*	1		0820	34	1204.	98.1	1628.3
1		0430	11	298.	15.4	1627.0	*	1		0630	23	1116.	83.8	1628.2	*	1		0830	35	1188.	95.5	1628.3
1		0440	12	398.	19.1	1627.3	*	1		0640	24	1146.	88.7	1628.3	*							

****

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	5.67-HR
1233.	4.83	(CFS)	752.	752.	752.	752.
		(INCHES)	1.140	1.140	1.140	1.140
		(AC-FT)	352.	352.	352.	352.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	5.67-HR
103.	4.83	53.	53.	53.	53.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	5.67-HR
1628.34	4.83	1627.62	1627.62	1627.62	1627.62

CUMULATIVE AREA = 5.79 SQ MI

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	SP	1898.	1.67	1233.	1233.	1233.	5.79		
ROUTED TO	RR	1833.	1.83	1171.	1171.	1171.	5.79	1757.12	1.83
ROUTED TO	RR	1676.	2.67	1078.	1078.	1078.	5.79	1697.98	2.67
ROUTED TO	RR	1519.	3.33	941.	941.	941.	5.79	1657.36	3.33
ROUTED TO	RR	1233.	4.83	752.	752.	752.	5.79	1628.34	4.83

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

```
08:17:55    0.0009   CSP     UIS COMPANY   KANSAS CITY, MISSOURI  02/06/86
08:17:55    0.0009   CSP                   APEX/CRAY SERVICE
08:17:55    0.0009   CSP     CRAY-1 S/2000   COS LEVEL:  C14 1.12-11/27/85
08:17:55    0.0009   CSP     .
08:17:55    0.0009   CSP     WANG,T50.
08:17:55    0.0009   CSP     ACCOUNT,E142120 USD3767400
08:18:16    0.0010   CSP     TAPEIN,DN=XX,NT,LB=AU,FI=HEC1SB,VSN=1978.
08:23:27    0.0013   SCP      08.19.00.VSN,T=1978.
08:23:27    0.0013   SCP      08.19.00.LABEL,T,PO=RU,NT,LB=AU,FI=HEC1SB.
08:23:27    0.0013   SCP      08.23.55.NT64, ASSIGNED TO T       , VSN=1978  .
08:23:31    0.0013   SCP     DATASET RECEIVED FROM FRONT END.
08:23:33    0.0017   CSP     COPYF,XX,TEMP.
08:23:34    0.2492   USER    I0048 - COPY OF     16067 RECORDS        1 FILES COMPLETED
08:23:35    0.2496   CSP     COPYF,XX,HEC1ABS.
08:23:36    0.2588   USER    I0048 - COPY OF          1 RECORDS        1 FILES COMPLETED
08:23:36    0.2588   CSP     REWIND,HEC1ABS.
08:23:49    0.2593   CSP     HEC1ABS.
08:23:57    0.4547   USER    UT010 -    STOP 101          IN HEC1
08:23:57    0.4547   CSP     EXIT.
08:23:57    0.4548   CSP     END OF JOB
08:23:57    0.4548   CSP
08:23:57    0.4548   CSP
08:23:59    0.4863   USER          JOBNAME = DFB2A2J   USER NUMBER = E142120
08:23:59    0.4863   USER          USER JOBNAME   =  GEN1A
08:23:59    0.4863   USER          CP SECONDS        =     0.486
08:23:59    0.4863   USER          AVERAGE MEMORY    =    0.0642
08:23:59    0.4863   USER          IO BLOCKS MOVED   =     1076.
08:23:59    0.4863   USER          IO REQUESTS       =      158.
08:23:59    0.4864   USER          MT MOUNTS         =        1.
08:23:59    0.4864   USER          MT BLOCKS STAGED  =      376.
08:23:59    0.4864   USER          I/O/D BLOCKS      =       39.
08:23:59    0.4864   USER
08:23:59    0.4864   USER          CSU-2             =    11.79
08:23:59    0.4864   USER          PRIORITY          =       15
08:23:59    0.4864   USER          COST              =     4.13
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A P E X R E M O T E B A T C H

DFBREYR *UNITED INFORMATION SERVICES, INC.* 66. APEX/SL D.4.7.5

10.51.51. 02/10/86.

```
DDDDDDDDDD    FFFFFFFFFFFF  EEEEEEEEEE   RRRRRRRRRR   BBBBBBBBBB   YY        YY  BBBBBBBBBB
DDDDDDDDDDD   FFFFFFFFFFFF  BBBBBBBBBBB  RRRRRRRRRRR  BBBBBBBBBBB  YY        YY  BBBBBBBBBBB
DD        DD  FF            BB        BB RR        RR BB        BB YY        YY  BB        BB
DD        DD  FF            BB        BB RR        RR BB        BB YY        YY  BB        BB
DD        DD  FF            BB        BB RR        RR BB        BB YY        YY  BB        BB
DD        DD  FF            BB        BB RR        RR BB        BB YY        YY  BB        BB
DD        DD  FF            BB        BB RR        RR BB        BB YYY      YYY  BB        BB
DD        DD  FFFFFFFF      BBBBBBBBBBB  RRRRRRRRRRR  BBBBBBBBBBB   YYY    YYY   BBBBBBBBBBB
DD        DD  FFFFFFFF      BBBBBBBBBBB  RRRRRRRRRRR  BBBBBBBBBBB    YYY  YYY    BBBBBBBBBBB
DD        DD  FF            BB        BB RR  RR      BB        BB      YYYY      BB        BB
DD        DD  FF            BB        BB RR   RR     BB        BB       YY       BB        BB
DD        DD  FF            BB        BB RR    RR    BB        BB       YY       BB        BB
DD        DD  FF            BB        BB RR     RR   BB        BB       YY       BB        BB
DD        DD  FF            BB        BB RR      RR  BB        BB       YY       BB        BB
DDDDDDDDDDD   FF            BBBBBBBBBBB  RR       RR  BBBBBBBBBBB        YY       BBBBBBBBBBB
DDDDDDDDDD    FF            BBBBBBBBBBB  RR       RR  BBBBBBBBBBB        YY       BBBBBBBBBBB
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PROGRAM DAMBRK---VERSION-07/16/84

ANALYSIS OF THE DOWNSTREAM FLOOD HYDROGRAPH

PRODUCED BY THE DAM BREAK OF

APACHE JUNCTION FRS

ON

BUCKHORN-MESA WTSHD

ANALYSIS BY

BREACH AT IDAHO ROAD WITH PSH

BASED ON PROCEDURE DEVELOPED BY

DANNY L. FREAD, PH.D., RESEARCH HYDROLOGIST
HYDROLOGIC RESEARCH LABORATORY
W23, OFFICE OF HYDROLOGY
NOAA, NATIONAL WEATHER SERVICE
SILVER SPRING, MARYLAND 20910

#11 APACHE
DAMBRK
OUTFLOW WITH PSH

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*******************************
*******************************
***                         ***
***  SUMMARY OF INPUT DATA  ***
***                         ***
*******************************
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INPUT CONTROL PARAMETERS FOR APACHE JUNCTION FPS

PARAMETER	VARIABLE	VALUE
NUMBER OF DYNAMIC ROUTING REACHES	KKN	1
TYPE OF RESERVOIR ROUTING	KUI	0
MULTIPLE DAM INDICATOR	MULDAM	0
PRINTING INSTRUCTIONS FOR INPUT SUMMARY	KDMP	3
NO. OF RESERVOIR INFLOW HYDROGRAPH POINTS	ITEH	4
INTERVAL OF CROSS-SECTION INFO PRINTED OUT WHEN JNKE=0	NPRT	0
FLOOD-PLAIN MODEL PARAMETER	KFLP	0
LANDSLIDE PARAMETER	KSL	0

APACHE JUNCTION FRS RESERVOIR

TABLE OF ELEVATION VS VOLUME

VOLUME (ACRE-FEET) SA(K)	ELEVATION (FT) HSA(K)
2015.0	1809.40
1136.0	1804.30
638.0	1800.80
409.0	1798.90
228.0	1797.20
111.0	1795.80
20.0	1794.90
0.0	1789.00

APACHE JUNCTION FRS RESERVOIR

TABLE OF ELEVATION VS SURFACE AREA

SA(K)	HSA(K)
161.3	1809.40
183.4	1804.30
131.1	1800.80
139.9	1798.90
73.0	1797.20
94.1	1795.80
7.0	1794.50
1.0	1789.90

APACHE JUNCTION FRS RESERVOIR AND BREACH PARAMETERS

PARAMETER	UNITS	VARIABLE	VALUE
LENGTH OF RESERVOIR	MI	RLM	1.10
ELEVATION OF WATER SURFACE	FT	YO	1799.77
SIDE SLOPE OF BREACH		Z	1.00
ELEVATION OF BOTTOM OF BREACH	FT	YBMIN	1789.00
WIDTH OF BASE OF BREACH	FT	BB	40.74
TIME TO MAXIMUM BREACH SIZE	HR	TFH	0.08
ELEVATION (MSL) OF BOTTOM OF DAM	FT	DATUM	1789.00
VOLUME-SURFACE AREA PARAMETER		VOL	1.00
ELEVATION OF WATER WHEN BREACHED	FT	HF	1799.77
ELEVATION OF TOP OF DAM	FT	HD	1809.37
ELEVATION OF UNCONTROLLED SPILLWAY CREST	FT	HSP	0.00
ELEVATION OF CENTER OF GATE OPENINGS	FT	HGT	0.00
DISCHARGE COEF. FOR UNCONTROLLED SPILLWAY		CS	0.00
DISCHARGE COEF. FOR GATE FLOW		CG	0.00
DISCHARGE COEF. FOR UNCONTROLLED WEIR FLOW		CDO	0.00
DISCHARGE THRU TURBINES	CFS	QT	200.00

CDO SHOULD NOT BE 0.0 IF OVERTOPPING MAY OCCUR.

DHF(INTERVAL BETWEEN INPUT HYDROGRAPH ORDINATES) = 1.01 HRS.

TEN(TIME AT WHICH COMPUTATIONS TERMINATE) = 4.0400 HRS.

INFLOW HYDROGRAPH TO APACHE JUNCTION FRS

80.00	73.00	67.00	62.00

TIME OF INFLOW HYDROGRAPH ORDINATES

0.0000	1.0100	2.0200	3.0300

CROSS-SECTIONAL PARAMETERS FOR BUCKHORN-MESA WTSHD
BELOW APACHE JUNCTION FRS

PARAMETER	VARIABLE	VALUE
NUMBER OF CROSS-SECTIONS	NS	12
MAXIMUM NUMBER OF TOP WIDTHS	NCS	4
NUMBER OF CROSS-SECTIONAL HYDROGRAPHS TO PLOT	NTT	3
TYPE OF OUTPUT OTHER THAN HYDROGRAPH PLOTS	JNK	9
CROSS-SECTIONAL SMOOTHING PARAMETER	KSA	0
DOWNSTREAM SUPERCRITICAL OR NOT	KSUPC	1
NO. OF LATERAL INFLOW HYDROGRAPHS	LQ	0
NO. OF POINTS IN GATE CONTROL CURVE	KCG	0

NUMBER OF CROSS-SECTION WHERE HYDROGRAPH DESIRED
(MAX NUMBER OF HYDROGRAPHS = 6)

1 7 12

CROSS-SECTIONAL VARIABLES FOR BUCKHORN-MESA WTSHD
BELOW APACHE JUNCTION FRS

PARAMETER	UNITS	VARIABLE
LOCATION OF CROSS-SECTION	MI	XS(I)
ELEVATION (MSL) OF FLOODING AT CROSS-SECTION	FT	FSTG(I)
ELEV CORRESPONDING TO EACH TOP WIDTH	FT	HS(K,I)
TOP WIDTH CORRESPONDING TO EACH ELEV (ACTIVE FLOW PORTION)	FT	BS(K,I)
TOP WIDTH CORRESPONDING TO EACH ELEV (OFF-CHANNEL PORTION)	FT	BSS(K,I)
SURFACE AREA CORRESPONDING TO EACH ELEV (ACTIVE FLOW PORTION)	ACRES	DSA(K,I)
SURFACE AREA CORRESPONDING TO EACH ELEV (OFF-CHANNEL PORTION)	ACRES	SSA(K,I)
NUMBER OF CROSS-SECTION		I
NUMBER OF ELEVATION LEVEL		K

CROSS-SECTION NUMBER 1
****

XS(I) = 0.000 FSTG(I) = 0.00 XSL(I) = 0.0 XSR(I) = 0.0

HS ...	1789.0	1791.0	1792.0	1794.0
BS ...	85.0	600.0	1950.0	3500.0
BSS ...	0.0	0.0	0.0	0.0

CROSS-SECTION NUMBER 2
****

XS(I) = 0.158 FSTG(I) = 0.00 XSL(I) = 0.0 XSR(I) = 0.0

HS ...	1779.0	1781.0	1782.0	1784.0
BS ...	85.0	600.0	1950.0	3500.0
BSS ...	0.0	0.0	0.0	0.0

CROSS-SECTION NUMBER 3
****

XS(I) = 0.284 FSTG(I) = 0.00 XSL(I) = 0.0 XSR(I) = 0.0

HS ...	1771.0	1773.0	1774.0	1776.0
BS ...	85.0	600.0	1950.0	3500.0
BSS ...	0.0	0.0	0.0	0.0

CROSS-SECTION NUMBER 4
****

XS(I) = 0.395 FSTG(I) = 0.00 XSL(I) = 0.0 XSR(I) = 0.0

HS ...	1764.0	1766.0	1767.0	1769.0
BS ...	85.0	600.0	1950.0	3500.0
BSS ...	0.0	0.0	0.0	0.0

CROSS-SECTION NUMBER 5
****

XS(I) = 0.632 FSTG(I) = 0.00 XSL(I) = 0.0 XSR(I) = 0.0

HS ...	1749.0	1751.0	1752.0	1754.0
BS ...	85.0	600.0	1950.0	3500.0
BSS ...	0.0	0.0	0.0	0.0

CROSS-SECTION NUMBER 6
****

XS(I) = 0.964 FSTG(I) = 0.00 XSL(I) = 0.0 XSR(I) = 0.0

HS ...	1728.0	1730.0	1731.0	1733.0
BS ...	85.0	600.0	1950.0	3500.0
BSS ...	0.0	0.0	0.0	0.0

CROSS-SECTION NUMBER 7
****

XS(I) = 1.169 FSTG(I) = 0.00 XSL(I) = 0.0 XSR(I) = 0.0

HS ...	1715.0	1717.0	1718.0	1720.0
BS ...	85.0	600.0	1950.0	3500.0
BSS ...	0.0	0.0	0.0	0.0

CROSS-SECTION NUMBER 8
****

XS(I) = 1.343 FSTG(I) = 0.00 XSL(I) = 0.0 XSR(I) = 0.0

HS ...	1704.0	1706.0	1707.0	1709.0
BS ...	85.0	600.0	1950.0	3500.0
BSS ...	0.0	0.0	0.0	0.0

CROSS-SECTION NUMBER 9
****

XS(I) = 1.659 FSTG(I) = 0.00 XSL(I) = 0.0 XSR(I) = 0.0

HS ...	1684.0	1686.0	1687.0	1689.0
BS ...	85.0	600.0	1950.0	3500.0
BSS ...	0.0	0.0	0.0	0.0

CROSS-SECTION NUMBER 10
****

XS(I) = 1.880 FSTG(I) = 0.00 XSL(I) = 0.0 XSR(I) = 0.0

HS ...	1670.0	1672.0	1673.0	1675.0
BS ...	85.0	600.0	1950.0	3500.0
BSS ...	0.0	0.0	0.0	0.0

CROSS-SECTION NUMBER 11
****

XS(I) = 2.133 FSTG(I) = 0.00 XSL(I) = 0.0 XSR(I) = 0.0

HS ...	1654.0	1656.0	1657.0	1659.0
BS ...	85.0	600.0	1950.0	3500.0
BSS ...	0.0	0.0	0.0	0.0

CROSS-SECTION NUMBER 12
****

XS(I) = 2.433 FSTG(I) = 0.00 XSL(I) = 0.0 XSR(I) = 0.0

HS ...	1635.0	1637.0	1638.0	1640.0
BS ...	85.0	600.0	1950.0	3500.0
BSS ...	0.0	0.0	0.0	0.0

MANNING N ROUGHNESS COEFFICIENTS FOR THE GIVEN REACHES
(CM(K,I),K=1,NCS) WHERE I = REACH NUMBER

****

REACH 1	...	0.080	0.080	0.080	0.080
REACH 2	...	0.080	0.080	0.080	0.080
REACH 3	...	0.080	0.080	0.080	0.080
REACH 4	...	0.080	0.080	0.080	0.080
REACH 5	...	0.080	0.080	0.080	0.080
REACH 6	...	0.080	0.080	0.080	0.080
REACH 7	...	0.080	0.080	0.080	0.080
REACH 8	...	0.080	0.080	0.080	0.080
REACH 9	...	0.080	0.080	0.080	0.080
REACH 10	...	0.080	0.080	0.080	0.080
REACH 11	...	0.080	0.080	0.080	0.080

CROSS-SECTIONAL VARIABLES FOR BUCKHORN-MESA WTSHD
BELOW APACHE JUNCTION FRS

PARAMETER	UNITS	VARIABLE
MINIMUM COMPUTATIONAL DISTANCE USED BETWEEN CROSS-SECTIONS	MI	DXM(I)
CONTRACTION - EXPANSION COEFFICIENTS BETWEEN CROSS-SECTIONS		FKC(I)

REACH NUMBER	DXM(I)	FKC(I)
1	0.060	-0.800
2	0.060	0.000
3	0.060	0.000
4	0.060	0.000
5	0.060	0.000
6	0.060	0.000
7	0.060	0.000
8	0.060	0.000
9	0.060	0.000
10	0.060	0.000
11	0.060	0.000

DOWNSTREAM FLOW PARAMETERS FOR BUCKHORN-MESA WTSHD
BELOW APACHE JUNCTION FFS

PARAMETER	UNITS	VARIABLE	VALUE
MAX DISCHARGE AT DOWNSTREAM EXTREMITY	CFS	QMAXD	0.0
MAX LATERAL OUTFLOW PRODUCING LOSSES	CFS/FT	QLL	0.000
INITIAL SIZE OF TIME STEP	HR	DTHM	0.0000
INITIAL WATER SURFACE ELEVATION DOWNSTREAM	FT	YDN	0.25
SLOPE OF CHANNEL DOWNSTREAM OF DAM	FT/MI	SOM	63.00
THETA WEIGHTING FACTOR		THETA	0.00
CONVERGENCE CRITERION FOR STAGE	FT	EPSY	0.000
TIME AT WHICH DAM STARTS TO FAIL	HR	TFI	4.04

DOWNSTREAM BOUNDARY RATING TABLE

STAGE	DISCHARGE
1635.94	200.00
1637.00	1521.00
1638.00	3986.00
1640.00	9119.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

TOTAL NUMBER OF CROSS SECTIONS (ORIGINAL+INTERPOLATED) (N) = 36 (MAXIMUM ALLOWABLE = 200

```
*******************************
*******************************
***                         ***
***  SUMMARY OF OUTPUT DATA  ***
***                         ***
*******************************
*******************************
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SLOPE PROFILE

MILES

0.0 0.2 0.5 0.7 1.0 1.2 1.5 1.7 1.9 2.2 2.4

ELEVATION FEET

ELEV FEET	ELEV FEET	MILE
1789.00	1789.0	0.0
1779.00	1779.0	0.2
1771.00	1771.0	0.3
1764.00	1764.0	0.4
1749.00	1749.0	0.6
1728.00	1728.0	1.0
1715.00	1715.0	1.2
1704.00	1704.0	1.3
1684.00	1684.0	1.7
1670.00	1670.0	1.9
1654.00	1654.0	2.1

```
          I         I         I         I         I         I         I         I         I         I         I
          I         I         I         I         I         I         I         I         I         I         I
1635.00I         I         I         I         I         I         I         I         I         I         *1635.0   2.4
      0.0       0.2       0.5       0.7       1.0       1.2       1.5       1.7       1.9       2.2       2.4
                                          MILES
```

CROSS-SECTION NO.	MILE	BOTTOM ELEVATION FEET	REACH NO.	REACH LENGTH MILES	SLOPE FT/MI
1	0.00	1789.00			
2	0.16	1779.00	1	0.16	63.29
3	0.28	1771.00	2	0.13	63.49
4	0.39	1764.00	3	0.11	63.36
5	0.63	1749.00	4	0.24	63.25
6	0.96	1728.00	5	0.33	63.25
7	1.17	1715.00	6	0.20	63.41
8	1.34	1704.00	7	0.17	63.22
9	1.66	1684.00	8	0.32	63.29
10	1.88	1670.00	9	0.22	63.35
11	2.13	1654.00	10	0.25	63.24
12	2.43	1635.00	11	0.30	63.33

TOTAL VOLUME IN RESERVOIR BEHIND
APACHE JUNCTION FRS = 523.0 ACRE-FEET

MESAGE

DEFINITION OF VARIABLES IN RESERVOIR DEPLETION TABLE

PARAMETER	UNITS	VARIABLE
TIME STEP FROM START OF ANALYSIS		I
ITERATIONS NECESSARY TO SOLVE FLOW EQUATIONS		K
ELAPSED TIME FROM START OF ANALYSIS	HRS	TTP(I)
TOTAL OUTFLOW FROM DAM	CFS	Q(I)
ELEVATION OF WATER SURFACE AT DAM	FT	H2
ELEVATION OF BOTTOM OF BREACH	FT	YB
EST DEPTH OF FLOW IMMEDIATELY DOWNSTREAM	FT	D
SUBMERGENCE COEFFICIENT		SUF
VELOCITY CORRECTION		VCOR
TOTAL VOLUME DISCHARGED FROM TIME OF BREACH	AC-FT	OUTVOL
BREACH WIDTH FT BB		
RECTANGULAR BREACH DISCHARGE COEFFICIENT		COFB
INFLOW TO RESERVOIR	CFS	QI(I)
BREACH OUTFLOW	CFS	QBRECH
SPILLWAY OUTFLOW	CFS	QSPIL

RESERVOIR DEPLETION TABLE

I	K	TTP(I)	Q(I)	H2	YB	D	SUB	VCOR	OUTVOL	BB	COFR	QI(I)	QBRECH	QSPIL
***	**	******	********	*******	*******	*******	****	****	*********	****	****	*****	******	*****
1	0	0.000	200	1799.77	1799.77	1789.81	1.00	1.00	0.0	40.7	3.10	80.	0.	200.
2	1	0.002	212	1799.77	1799.55	1789.63	1.00	1.00	0.0	40.7	3.10	80.	13.	200.
3	1	0.003	235	1799.77	1799.34	1789.87	1.00	1.00	0.1	40.7	3.10	80.	36.	200.
4	1	0.005	266	1799.77	1799.12	1789.92	1.00	1.00	0.1	40.7	3.10	80.	66.	200.
5	1	0.007	302	1799.77	1798.91	1789.98	1.00	1.00	0.1	40.7	3.10	80.	103.	200.
6	1	0.008	343	1799.77	1798.69	1790.04	1.00	1.00	0.2	40.7	3.10	80.	144.	200.
7	1	0.010	389	1799.77	1798.48	1790.10	1.00	1.00	0.2	40.7	3.10	80.	190.	200.
8	1	0.012	440	1799.77	1798.26	1790.16	1.00	1.00	0.3	40.7	3.10	80.	240.	200.
9	1	0.013	494	1799.77	1798.05	1790.23	1.00	1.00	0.3	40.7	3.10	80.	295.	200.
10	1	0.015	552	1799.77	1797.83	1790.29	1.00	1.00	0.4	40.7	3.10	80.	353.	200.
11	1	0.017	614	1799.77	1797.62	1790.35	1.00	1.00	0.5	40.7	3.10	80.	415.	200.
12	1	0.018	680	1799.77	1797.40	1790.41	1.00	1.00	0.6	40.7	3.10	80.	481.	200.
13	1	0.020	749	1799.77	1797.19	1790.48	1.00	1.00	0.7	40.7	3.10	80.	550.	200.
14	1	0.022	814	1799.76	1796.97	1790.53	1.00	1.00	0.8	40.7	3.10	80.	622.	192.
15	1	0.023	873	1799.76	1796.75	1790.58	1.00	1.00	0.9	40.7	3.10	80.	698.	176.
16	1	0.025	936	1799.76	1796.54	1790.62	1.00	1.00	1.0	40.7	3.10	80.	777.	160.
17	1	0.027	1002	1799.76	1796.32	1790.67	1.00	1.00	1.2	40.7	3.10	80.	855.	144.
18	1	0.028	1072	1799.76	1796.11	1790.72	1.00	1.00	1.3	40.7	3.10	80.	944.	128.
19	1	0.030	1144	1799.76	1795.89	1790.77	1.00	1.00	1.5	40.7	3.10	80.	1032.	112.
20	1	0.032	1219	1799.76	1795.68	1790.82	1.00	1.00	1.6	40.7	3.10	80.	1124.	96.
21	1	0.033	1297	1799.76	1795.46	1790.87	1.00	1.00	1.8	40.7	3.10	80.	1218.	80.
22	1	0.035	1379	1799.76	1795.25	1790.92	1.00	1.00	2.0	40.7	3.10	80.	1315.	64.
23	1	0.037	1463	1799.75	1795.03	1790.97	1.00	1.00	2.2	40.7	3.10	80.	1415.	48.
24	1	0.038	1549	1799.75	1794.82	1791.02	1.00	1.00	2.4	40.7	3.10	80.	1518.	32.
25	1	0.040	1639	1799.75	1794.60	1789.81	1.00	1.00	2.6	40.7	3.10	80.	1624.	16.
26	1	0.041	1732	1799.75	1794.38	1785.61	1.00	1.00	2.8	40.7	3.10	80.	1732.	0.
27	1	0.043	1843	1799.75	1794.17	1786.41	1.00	1.00	3.1	40.7	3.10	80.	1844.	0.
28	1	0.045	1957	1799.75	1793.95	1788.45	1.00	1.00	3.3	40.7	3.10	80.	1958.	0.
29	1	0.046	2074	1799.74	1793.74	1790.50	1.00	1.00	3.6	40.7	3.10	80.	2075.	0.
30	1	0.048	2194	1799.74	1793.52	1790.14	1.00	1.00	3.9	40.7	3.10	80.	2194.	0.
31	1	0.050	2316	1799.74	1793.31	1794.25	1.00	1.00	4.2	40.7	3.10	80.	2316.	0.
32	1	0.051	2441	1799.74	1793.09	1793.00	1.00	1.00	4.5	40.7	3.10	80.	2441.	0.
33	1	0.053	2568	1799.73	1792.88	1792.23	1.00	1.00	4.9	40.7	3.10	80.	2569.	0.
34	1	0.055	2698	1799.73	1792.66	1791.66	1.00	1.00	5.2	40.7	3.10	80.	2699.	0.
35	1	0.056	2831	1799.73	1792.45	1791.73	1.00	1.00	5.6	40.7	3.10	80.	2832.	0.
36	1	0.058	2966	1799.72	1792.23	1791.75	1.00	1.00	6.0	40.7	3.10	80.	2967.	0.
37	1	0.060	3104	1799.72	1792.02	1791.79	1.00	1.00	6.4	40.7	3.10	80.	3105.	0.
38	1	0.061	3245	1799.72	1791.80	1791.83	1.00	1.00	6.9	40.7	3.10	80.	3246.	0.
39	1	0.063	3388	1799.71	1791.58	1791.86	1.00	1.00	7.3	40.7	3.10	80.	3389.	0.
40	1	0.065	3534	1799.71	1791.37	1791.90	1.00	1.00	7.8	40.7	3.10	80.	3534.	0.
41	1	0.066	3682	1799.71	1791.15	1791.93	1.00	1.00	8.3	40.7	3.10	80.	3683.	0.
42	1	0.068	3833	1799.70	1790.94	1791.97	1.00	1.00	8.8	40.7	3.10	80.	3833.	0.
43	1	0.070	3986	1799.70	1790.72	1792.00	1.00	1.00	9.4	40.7	3.10	80.	3987.	0.
44	1	0.071	4142	1799.69	1790.51	1792.03	1.00	1.00	9.9	40.7	3.10	80.	4142.	0.
45	1	0.073	4300	1799.69	1790.29	1792.05	1.00	1.00	10.5	40.7	3.10	79.	4301.	0.
46	1	0.075	4461	1799.68	1790.08	1792.08	1.00	1.00	11.1	40.7	3.10	79.	4462.	0.
47	1	0.076	4624	1799.68	1789.86	1792.11	1.00	1.00	11.7	40.7	3.10	79.	4625.	0.
48	1	0.078	4790	1799.67	1789.65	1792.14	1.00	1.00	12.4	40.7	3.10	79.	4791.	0.
49	1	0.080	4958	1799.67	1789.43	1792.16	1.00	1.00	13.0	40.7	3.10	79.	4959.	0.
50	1	0.081	5129	1799.66	1789.22	1792.19	1.00	1.00	13.7	40.7	3.10	79.	5129.	0.

RESERVOIR DEPLETION TABLE

I	K	TTP(I)	Q(I)	H2	YP	D	SUE	VCCR	OUTVOL	BB	CCFR	QI(I)	QBRECH	QSPIL
***	**	******	********	*******	*******	*******	****	****	*********	****	****	*****	******	*****
51	1	0.083	5302	1799.66	1789.00	1792.22	1.00	1.00	14.4	40.7	3.10	79.	5303.	0.
52	1	0.085	5297	1799.65	1789.00	1792.21	1.00	1.00	15.2	40.7	3.10	79.	5298.	0.
53	1	0.086	5293	1799.65	1789.00	1792.21	1.00	1.00	15.9	40.7	3.10	79.	5293.	0.
54	1	0.088	5288	1799.64	1789.00	1792.21	1.00	1.00	16.6	40.7	3.10	79.	5288.	0.
55	1	0.090	5283	1799.63	1789.00	1792.21	1.00	1.00	17.3	40.7	3.10	79.	5284.	0.
56	1	0.091	5278	1799.63	1789.00	1792.21	1.00	1.00	18.1	40.7	3.10	79.	5279.	0.
57	1	0.093	5274	1799.62	1789.00	1792.21	1.00	1.00	18.8	40.7	3.10	79.	5274.	0.
58	1	0.095	5269	1799.62	1789.00	1792.21	1.00	1.00	19.5	40.7	3.10	79.	5269.	0.
59	1	0.096	5264	1799.61	1789.00	1792.21	1.00	1.00	20.2	40.7	3.10	79.	5265.	0.
60	1	0.098	5259	1799.61	1789.00	1792.21	1.00	1.00	21.0	40.7	3.10	79.	5260.	0.
61	1	0.100	5255	1799.60	1789.00	1792.21	1.00	1.00	21.7	40.7	3.10	79.	5255.	0.
62	1	0.101	5250	1799.59	1789.00	1792.21	1.00	1.00	22.4	40.7	3.10	79.	5251.	0.
63	1	0.103	5245	1799.59	1789.00	1792.21	1.00	1.00	23.1	40.7	3.10	79.	5246.	0.
64	1	0.105	5241	1799.58	1789.00	1792.21	1.00	1.00	23.8	40.7	3.10	79.	5241.	0.
65	1	0.106	5236	1799.58	1789.00	1792.21	1.00	1.00	24.6	40.7	3.10	79.	5237.	0.
66	1	0.108	5231	1799.57	1789.00	1792.20	1.00	1.00	25.3	40.7	3.10	79.	5232.	0.
67	1	0.110	5227	1799.57	1789.00	1792.20	1.00	1.00	26.0	40.7	3.10	79.	5227.	0.
68	1	0.111	5222	1799.56	1789.00	1792.20	1.00	1.00	26.7	40.7	3.10	79.	5223.	0.
69	1	0.113	5218	1799.56	1789.00	1792.20	1.00	1.00	27.4	40.7	3.10	79.	5218.	0.
70	1	0.115	5213	1799.55	1789.00	1792.20	1.00	1.00	28.1	40.7	3.10	79.	5214.	0.
71	1	0.116	5208	1799.54	1789.00	1792.20	1.00	1.00	28.9	40.7	3.10	79.	5209.	0.
72	1	0.118	5204	1799.54	1789.00	1792.20	1.00	1.00	29.6	40.7	3.10	79.	5204.	0.
73	1	0.120	5199	1799.53	1789.00	1792.20	1.00	1.00	30.3	40.7	3.10	79.	5200.	0.
74	1	0.121	5195	1799.53	1789.00	1792.20	1.00	1.00	31.0	40.7	3.10	79.	5195.	0.
75	1	0.123	5190	1799.52	1789.00	1792.20	1.00	1.00	31.7	40.7	3.10	79.	5191.	0.
76	1	0.124	5186	1799.52	1789.00	1792.20	1.00	1.00	32.4	40.7	3.10	79.	5186.	0.
77	1	0.126	5181	1799.51	1789.00	1792.20	1.00	1.00	33.1	40.7	3.10	79.	5182.	0.
78	1	0.128	5177	1799.51	1789.00	1792.20	1.00	1.00	33.8	40.7	3.10	79.	5177.	0.
79	1	0.129	5172	1799.50	1789.00	1792.20	1.00	1.00	34.6	40.7	3.10	79.	5173.	0.
80	1	0.131	5168	1799.49	1789.00	1792.19	1.00	1.00	35.3	40.7	3.10	79.	5168.	0.
81	1	0.133	5163	1799.49	1789.00	1792.19	1.00	1.00	36.0	40.7	3.10	79.	5164.	0.
82	1	0.134	5159	1799.48	1789.00	1792.19	1.00	1.00	36.7	40.7	3.10	79.	5159.	0.
83	1	0.136	5154	1799.48	1789.00	1792.19	1.00	1.00	37.4	40.7	3.10	79.	5155.	0.
84	1	0.138	5150	1799.47	1789.00	1792.19	1.00	1.00	38.1	40.7	3.10	79.	5150.	0.
85	1	0.139	5145	1799.47	1789.00	1792.19	1.00	1.00	38.8	40.7	3.10	79.	5146.	0.
86	1	0.141	5141	1799.46	1789.00	1792.19	1.00	1.00	39.5	40.7	3.10	79.	5141.	0.
87	1	0.143	5136	1799.46	1789.00	1792.19	1.00	1.00	40.2	40.7	3.10	79.	5137.	0.
88	1	0.144	5132	1799.45	1789.00	1792.19	1.00	1.00	40.9	40.7	3.10	79.	5133.	0.
89	1	0.146	5128	1799.45	1789.00	1792.19	1.00	1.00	41.6	40.7	3.10	79.	5128.	0.
90	1	0.148	5123	1799.44	1789.00	1792.19	1.00	1.00	42.3	40.7	3.10	79.	5124.	0.
91	1	0.149	5119	1799.44	1789.00	1792.19	1.00	1.00	43.0	40.7	3.10	79.	5119.	0.
92	1	0.151	5114	1799.43	1789.00	1792.19	1.00	1.00	43.7	40.7	3.10	79.	5115.	0.
93	1	0.153	5110	1799.42	1789.00	1792.19	1.00	1.00	44.4	40.7	3.10	79.	5111.	0.
94	1	0.154	5106	1799.42	1789.00	1792.19	1.00	1.00	45.1	40.7	3.10	79.	5106.	0.
95	1	0.156	5101	1799.41	1789.00	1792.18	1.00	1.00	45.8	40.7	3.10	79.	5102.	0.
96	1	0.158	5097	1799.41	1789.00	1792.18	1.00	1.00	46.5	40.7	3.10	79.	5097.	0.
97	1	0.159	5093	1799.40	1789.00	1792.18	1.00	1.00	47.2	40.7	3.10	79.	5093.	0.
98	1	0.161	5088	1799.40	1789.00	1792.18	1.00	1.00	47.9	40.7	3.10	79.	5089.	0.
99	1	0.163	5084	1799.39	1789.00	1792.18	1.00	1.00	48.6	40.7	3.10	79.	5085.	0.
100	1	0.164	5080	1799.39	1789.00	1792.18	1.00	1.00	49.3	40.7	3.10	79.	5080.	0.

RESERVOIR DEPLETION TABLE

I	K	TTP(I)	Q(I)	H2	YB	D	SUE	VCOR	OUTVOL	BF	COFR	QI(I)	GBRECH	QSPIL
***	**	******	********	*******	*******	*******	****	****	*********	****	****	*****	******	*****
101	1	0.166	5075	1799.38	1789.00	1792.18	1.00	1.00	50.0	40.7	3.10	79.	5076.	0.
102	1	0.168	5071	1799.38	1789.00	1792.18	1.00	1.00	50.7	40.7	3.10	79.	5072.	0.
103	1	0.169	5066	1799.37	1789.00	1792.18	1.00	1.00	51.5	40.7	3.10	79.	5067.	0.
104	1	0.171	5061	1799.36	1789.00	1792.18	1.00	1.00	52.3	40.7	3.10	79.	5062.	0.
105	1	0.174	5056	1799.36	1789.00	1792.18	1.00	1.00	53.2	40.7	3.10	79.	5056.	0.
106	1	0.176	5049	1799.35	1789.00	1792.18	1.00	1.00	54.3	40.7	3.10	79.	5050.	0.
107	1	0.179	5042	1799.34	1789.00	1792.18	1.00	1.00	55.4	40.7	3.10	79.	5043.	0.
108	1	0.162	5035	1799.33	1789.00	1792.17	1.00	1.00	56.6	40.7	3.10	79.	5036.	0.
109	1	0.185	5027	1799.32	1789.00	1792.17	1.00	1.00	57.9	40.7	3.10	79.	5027.	0.
110	1	0.189	5018	1799.31	1789.00	1792.17	1.00	1.00	59.4	40.7	3.10	79.	5018.	0.
111	1	0.192	5008	1799.30	1789.00	1792.17	1.00	1.00	61.0	40.7	3.10	79.	5009.	0.
112	1	0.197	4997	1799.29	1789.00	1792.17	1.00	1.00	62.8	40.7	3.10	79.	4998.	0.
113	1	0.201	4985	1799.27	1789.00	1792.17	1.00	1.00	64.8	40.7	3.10	79.	4986.	0.
114	1	0.207	4973	1799.26	1789.00	1792.16	1.00	1.00	66.9	40.7	3.10	79.	4973.	0.
115	1	0.212	4959	1799.24	1789.00	1792.16	1.00	1.00	69.3	40.7	3.10	79.	4959.	0.
116	1	0.219	4943	1799.22	1789.00	1792.16	1.00	1.00	71.9	40.7	3.10	78.	4944.	0.
117	1	0.226	4926	1799.20	1789.00	1792.16	1.00	1.00	74.7	40.7	3.10	78.	4927.	0.
118	1	0.233	4906	1799.18	1789.00	1792.15	1.00	1.00	77.8	40.7	3.10	78.	4909.	0.
119	1	0.242	4888	1799.15	1789.00	1792.15	1.00	1.00	81.2	40.7	3.10	78.	4889.	0.
120	1	0.251	4866	1799.12	1789.00	1792.15	1.00	1.00	84.9	40.7	3.10	78.	4867.	0.
121	1	0.261	4843	1799.09	1789.00	1792.14	1.00	1.00	89.0	40.7	3.10	78.	4843.	0.
122	1	0.272	4817	1799.06	1789.00	1792.14	1.00	1.00	93.4	40.7	3.10	78.	4818.	0.
123	1	0.285	4789	1799.03	1789.00	1792.13	1.00	1.00	98.3	40.7	3.10	78.	4790.	0.
124	1	0.298	4759	1798.99	1789.00	1792.13	1.00	1.00	103.6	40.7	3.10	78.	4760.	0.
125	1	0.313	4726	1798.95	1789.00	1792.12	1.00	1.00	109.5	40.7	3.10	78.	4727.	0.
126	1	0.329	4691	1798.90	1789.00	1792.12	1.00	1.00	115.8	40.7	3.10	78.	4692.	0.
127	1	0.347	4652	1798.85	1789.00	1792.11	1.00	1.00	122.8	40.7	3.10	78.	4653.	0.
128	1	0.367	4610	1798.80	1789.00	1792.11	1.00	1.00	130.3	40.7	3.10	77.	4610.	0.
129	1	0.389	4563	1798.74	1789.00	1792.10	1.00	1.00	138.6	40.7	3.10	77.	4563.	0.
130	1	0.413	4511	1798.67	1789.00	1792.09	1.00	1.00	147.6	40.7	3.10	77.	4512.	0.
131	1	0.439	4454	1798.60	1789.00	1792.08	1.00	1.00	157.3	40.7	3.10	77.	4455.	0.
132	1	0.468	4391	1798.52	1789.00	1792.07	1.00	1.00	167.9	40.7	3.10	77.	4392.	0.
133	1	0.500	4321	1798.42	1789.00	1792.06	1.00	1.00	179.4	40.7	3.10	77.	4322.	0.
134	2	0.535	4244	1798.32	1789.00	1792.04	1.00	1.00	191.8	40.7	3.10	76.	4245.	0.
135	2	0.573	4158	1798.21	1789.00	1792.03	1.00	1.00	205.2	40.7	3.10	76.	4159.	0.
136	2	0.616	4063	1798.08	1789.00	1792.01	1.00	1.00	219.6	40.7	3.10	76.	4063.	0.
137	2	0.663	3957	1797.93	1789.00	1791.99	1.00	1.00	235.1	40.7	3.10	75.	3957.	0.
138	2	0.714	3838	1797.77	1789.00	1791.97	1.00	1.00	251.6	40.7	3.10	75.	3838.	0.
139	2	0.770	3703	1797.58	1789.00	1791.94	1.00	1.00	269.2	40.7	3.10	75.	3704.	0.
140	2	0.832	3550	1797.36	1789.00	1791.90	1.00	1.00	287.8	40.7	3.10	74.	3551.	0.
141	2	0.901	3379	1797.12	1789.00	1791.86	1.00	1.00	307.4	40.7	3.10	74.	3379.	0.
142	2	0.976	3203	1796.85	1789.00	1791.82	1.00	1.00	327.8	40.7	3.10	73.	3203.	0.
143	1	1.058	3032	1796.59	1789.00	1791.77	1.00	1.00	349.1	40.7	3.10	73.	3032.	0.
144	1	1.149	2867	1796.34	1789.00	1791.73	1.00	1.00	371.2	40.7	3.10	72.	2867.	0.
145	1	1.249	2707	1796.08	1789.00	1791.68	1.00	1.00	394.3	40.7	3.10	72.	2707.	0.
146	1	1.350	2552	1795.83	1789.00	1791.63	1.00	1.00	418.2	40.7	3.10	71.	2552.	0.
147	2	1.480	2399	1795.56	1789.00	1791.57	1.00	1.00	442.9	40.7	3.10	70.	2390.	0.
148	2	1.613	2199	1795.23	1789.00	1791.50	1.00	1.00	468.1	40.7	3.10	69.	2199.	0.
149	2	1.760	1957	1794.79	1789.00	1791.40	1.00	1.00	493.3	40.7	3.10	69.	1958.	0.
150	4	1.921	1518	1793.94	1789.00	1791.03	1.00	1.00	516.4	40.7	3.10	68.	1519.	0.

RESERVOIR DÉPLETION TABLE

I	K	TTS(I)	G(I)	F2	YB	D	SUB	VCOR	OUTVOL	BB	COFR	GI(I)	GBRECH	GSPIL
***	**	******	********	*******	*******	*******	****	****	*********	****	****	*****	******	*****
151	3	2.098	490	1791.40	1789.00	1790.23	1.00	1.00	531.1	40.7	3.10	67.	490.	0.
152	0	2.49	441											
153	0	2.70	397											
154	0	2.94	357											
155	0	3.20	321											
156	0	3.48	289											
157	0	3.80	260											
158	0	4.14	234											

PARAMETER	UNITS	VARIABLE	VALUE
INITIAL FLOW	CFS	Q(1)	200.
MAX FLOW	CFS	QM	5303.
FINAL FLOW	CFS	Q(NU)	235.
TIME TO MAX FLOW	HRS	TP	0.08
NUMBER OF TIME STEPS		NNU	158
TOTAL VOLUME DISCHARGED FROM RESERVOIR	AC-FT	DISVOL	531.
NUMBER OF INTERMEDIATE STATIONS		NN(NS)	36
NUMBER OF TIME STEPS		NNU	158

INITIAL CONDITIONS

I	K	X(I)	YC(I)	GDI(I)	FRD	SOM
1	3	0.000	1635.94	200.00	0.00	67.291
1	5	0.000	1635.94	200.00		
2	1	0.079	1636.02	200.00	0.00	
2	2	0.079	1635.94	200.00	0.00	
2	3	0.079	1635.94	200.00	0.00	
3	1	0.158	1636.13	200.00	0.00	
3	2	0.158	1635.94	200.00	0.00	
3	3	0.158	1635.94	200.00	0.00	
4	1	0.221	1636.09	200.00	0.00	
4	2	0.221	1635.94	200.00	0.00	
4	3	0.221	1635.94	200.00	0.00	
5	1	0.284	1636.07	200.00	0.00	
5	2	0.284	1635.94	200.00	0.00	
5	3	0.284	1635.94	200.00	0.00	
6	1	0.395	1636.25	200.00	0.00	
6	2	0.395	1635.94	200.00	0.00	
6	3	0.395	1635.94	200.00	0.00	
7	1	0.474	1636.23	200.00	0.00	
7	2	0.474	1635.94	200.00	0.00	
7	3	0.474	1635.94	200.00	0.00	
8	1	0.553	1636.17	200.00	0.00	
8	2	0.553	1635.94	200.00	0.00	
8	3	0.553	1635.94	200.00	0.00	
9	1	0.632	1636.18	200.00	0.00	
9	2	0.632	1635.94	200.00	0.00	
9	3	0.632	1635.94	200.00	0.00	
10	1	0.698	1636.14	200.00	0.00	
10	2	0.698	1635.94	200.00	0.00	
10	3	0.698	1635.94	200.00	0.00	
11	1	0.765	1636.13	200.00	0.00	
11	2	0.765	1635.94	200.00	0.00	
11	3	0.765	1635.94	200.00	0.00	
12	1	0.831	1636.13	200.00	0.00	
12	2	0.831	1635.94	200.00	0.00	
12	3	0.831	1635.94	200.00	0.00	
13	1	0.898	1636.14	200.00	0.00	
13	2	0.898	1635.94	200.00	0.00	
13	3	0.898	1635.94	200.00	0.00	
14	1	0.964	1636.15	200.00	0.00	
14	2	0.964	1635.94	200.00	0.00	
14	3	0.964	1635.94	200.00	0.00	
15	1	1.032	1636.17	200.00	0.00	
15	2	1.032	1635.94	200.00	0.00	
15	3	1.032	1635.94	200.00	0.00	
16	1	1.101	1636.19	200.00	0.00	
16	2	1.101	1635.94	200.00	0.00	
16	3	1.101	1635.94	200.00	0.00	
17	1	1.169	1636.20	200.00	0.00	
17	2	1.169	1635.94	200.00	0.00	

18	2	1.256	1635.94	200.00	0.00
18	3	1.256	1635.94	200.00	0.00
19	1	1.343	1636.42	200.00	0.00
19	2	1.343	1635.94	200.00	0.00
19	3	1.343	1635.94	200.00	0.00
19	4	1.343	1635.94	200.00	0.00
20	1	1.406	1636.28	200.00	0.00
20	2	1.406	1635.94	200.00	0.00
20	3	1.406	1635.94	200.00	0.00
21	1	1.469	1636.23	200.00	0.00
21	2	1.469	1635.94	200.00	0.00
21	3	1.469	1635.94	200.00	0.00
22	1	1.533	1636.25	200.00	0.00
22	2	1.533	1635.94	200.00	0.00
22	3	1.533	1635.94	200.00	0.00
23	1	1.596	1636.27	200.00	0.00
23	2	1.596	1635.94	200.00	0.00
23	3	1.596	1635.94	200.00	0.00
23	4	1.596	1635.94	200.00	0.00
24	1	1.659	1636.30	200.00	0.00
24	2	1.659	1635.94	200.00	0.00
24	3	1.659	1635.94	200.00	0.00
24	4	1.659	1635.94	200.00	0.00
25	1	1.733	1636.43	200.00	0.00
25	2	1.733	1635.94	200.00	0.00
25	3	1.733	1635.94	200.00	0.00
25	4	1.733	1635.94	200.00	0.00
26	1	1.806	1636.54	200.00	0.00
26	2	1.806	1635.94	200.00	0.00
26	3	1.806	1635.94	200.00	0.00
26	4	1.806	1635.94	200.00	0.00
27	1	1.880	1636.61	200.00	0.00
27	2	1.880	1635.95	200.00	0.00
27	3	1.880	1635.94	200.00	0.00
27	4	1.880	1635.94	200.00	0.00
28	1	1.943	1636.57	200.00	0.00
28	2	1.943	1635.95	200.00	0.00
28	3	1.943	1635.94	200.00	0.00
28	4	1.943	1635.94	200.00	0.00
29	1	2.006	1636.58	200.00	0.00
29	2	2.006	1635.95	200.00	0.00
29	3	2.006	1635.94	200.00	0.00
29	4	2.006	1635.94	200.00	0.00
30	1	2.070	1636.69	200.00	0.00
30	2	2.070	1635.95	200.00	0.00
30	3	2.070	1635.94	200.00	0.00
30	4	2.070	1635.94	200.00	0.00
31	1	2.133	1636.84	200.00	0.00
31	2	2.133	1635.96	200.00	0.01
31	3	2.133	1635.94	200.00	0.01
31	4	2.133	1635.94	200.00	0.01
32	1	2.193	1636.98	200.00	0.00
32	2	2.193	1635.97	200.00	0.01
32	3	2.193	1635.94	200.00	0.01
32	4	2.193	1635.94	200.00	0.01
33	1	2.253	1637.25	200.00	0.01
33	2	2.253	1636.01	200.00	0.01
33	3	2.253	1635.94	200.00	0.01
33	4	2.253	1635.94	200.00	0.01
34	1	2.313	1637.83	200.00	0.01
34	2	2.313	1636.14	200.00	0.04
34	3	2.313	1635.93	200.00	0.03
34	4	2.313	1635.93	200.00	0.02
34	5	2.313	1635.93	200.00	0.02

35	3	2.373	1636.11	200.00	0.33
35	4	2.373	1635.90	200.00	0.09
35	5	2.373	1635.90	200.00	0.08
35	6	2.373	1635.90	200.00	0.08
36	1	2.433	1653.53	200.00	0.04
36	2	2.433	1647.57	200.00	0.00
36	3	2.433	1643.60	200.00	0.00
36	4	2.433	1640.96	200.00	0.00
36	5	2.433	1639.21	200.00	0.00
36	6	2.433	1638.05	200.00	0.01
36	7	2.433	1637.28	200.00	0.02
36	8	2.433	1636.59	200.00	0.04
36	9	2.433	1635.86	200.00	0.08
36	10	2.433	1632.65	200.00	0.28
36	1	2.433	1632.76	200.00	0.28
36	2	2.433	1643.25	200.00	0.12
36	3	2.433	1640.73	200.00	0.00
36	4	2.433	1639.05	200.00	0.00
36	5	2.433	1637.95	200.00	0.01
36	6	2.433	1637.21	200.00	0.02
36	7	2.433	1636.52	200.00	0.04
36	8	2.433	1635.77	200.00	0.09
36	9	2.433	1629.46	200.00	0.35
36	10	2.433	1657.58	200.00	0.03
36	1	2.433	1653.53	200.00	0.04
36	2	2.433	1647.57	200.00	0.00
36	3	2.433	1643.60	200.00	0.00
36	4	2.433	1640.96	200.00	0.00
36	5	2.433	1639.21	200.00	0.00
36	6	2.433	1638.05	200.00	0.01
36	7	2.433	1637.28	200.00	0.02
36	8	2.433	1636.59	200.00	0.04
36	9	2.433	1635.86	200.00	0.08
36	10	2.433	1632.65	200.00	0.28

INITIAL STEADY FLOW BACKWATER COMPUTATION AT CROSS-SECTION NO.= 36 DID NOT CONVERGE.
CHANGE CROSS-SECTION PROPERTIES AND/OR INCREASE INITIAL STEADY FLOW AND RERUN.

36	10	2.433	1632.65	200.00	0.28

I	X(I)	YD(I)	YNORM(I)
1	0.00	1635.94	1635.94
2	0.08	1635.94	1635.94
3	0.16	1635.94	1635.94
4	0.22	1635.94	1635.94
5	0.28	1635.94	1635.94
6	0.39	1635.94	1635.94
7	0.47	1635.94	1635.94
8	0.55	1635.94	1635.94
9	0.63	1635.94	1635.94
10	0.70	1635.94	1635.94
11	0.76	1635.94	1635.94
12	0.83	1635.94	1635.94
13	0.90	1635.94	1635.94
14	0.96	1635.94	1635.94
15	1.03	1635.94	1635.94
16	1.10	1635.94	1635.94
17	1.17	1635.94	1635.94
18	1.26	1635.94	1635.94
19	1.34	1635.94	1635.94
20	1.41	1635.94	1635.94

23	1.60	1635.94	1635.94
24	1.66	1635.94	1635.94
25	1.73	1635.94	1635.94
26	1.81	1635.94	1635.94
27	1.88	1635.94	1635.94
28	1.94	1635.94	1635.94
29	2.01	1635.94	1635.94
30	2.07	1635.94	1635.94
31	2.13	1635.94	1635.94
32	2.19	1635.94	1635.94
33	2.25	1635.94	1635.94
34	2.31	1635.93	1635.93
35	2.37	1635.90	1635.90
36	2.43	1632.65	1632.65

(GDI(I),I=1,N)
****

200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00
200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00
200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00
200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00
200.00	200.00	200.00	200.00				

(YD(I),I=1,N)
****

1635.94	1635.94	1635.94	1635.94	1635.94	1635.94	1635.94	1635.94
1635.94	1635.94	1635.94	1635.94	1635.94	1635.94	1635.94	1635.94
1635.94	1635.94	1635.94	1635.94	1635.94	1635.94	1635.94	1635.94
1635.94	1635.94	1635.94	1635.94	1635.94	1635.94	1635.94	1635.94
1635.94	1635.93	1635.90	1632.65				

TIME PARAMETERS OF OUTFLOW HYDROGRAPH IMMEDIATELY DOWNSTREAM OF DAM

PARAMETER	UNITS	VARIABLE	VALUE
TIME TO FAILURE	HR	TFH	0.083
TIME TO START OF RISING LIMB OF HYDROGRAPH	HR	TFO	0.000
TIME TO PEAK	HR	TP	0.083
TIME STEP SIZE	HR	DTHI	0.004

TT = 0.0000 DTH = 0.0041 ITERR = 0

QU(1) = 200.00 YU(1) = 1635.94 QU(N) = 200.00 YU(N) = 1632.65

X(I)	Y	V	A	B	BT	Q	CMM	FKC	WAVHT	DH	FRD	DISVOL
0.000	1635.94	0.02	13910.	85.	85.	0.200	0.0800	-0.80	0.00	153.1	0.0	
0.158	1635.94	0.02	12160.	85.	85.	0.200	0.0800	0.00	0.00	143.1	0.0	
0.284	1635.94	0.02	11480.	85.	85.	0.200	0.0800	0.00	0.00	135.1	0.0	
0.474	1635.94	0.02	10460.	85.	85.	0.200	0.0800	0.00	0.00	123.1	0.0	
0.632	1635.94	0.02	9610.	85.	85.	0.200	0.0800	0.00	0.00	113.1	0.0	
0.765	1635.94	0.02	8896.	85.	85.	0.200	0.0800	0.00	0.00	104.7	0.0	
0.898	1635.94	0.02	8182.	85.	85.	0.200	0.0800	0.00	0.00	96.3	0.0	
1.032	1635.94	0.03	7457.	85.	85.	0.200	0.0800	0.00	0.00	87.7	0.0	
1.169	1635.94	0.03	6720.	85.	85.	0.200	0.0800	0.00	0.00	79.1	0.0	
1.343	1635.94	0.03	5785.	85.	85.	0.200	0.0800	0.00	0.00	68.1	0.0	
1.469	1635.94	0.04	5105.	85.	85.	0.200	0.0800	0.00	0.00	60.1	0.0	
1.596	1635.94	0.05	4425.	85.	85.	0.200	0.0800	0.00	0.00	52.1	0.0	
1.733	1635.94	0.05	3688.	85.	85.	0.200	0.0800	0.00	0.00	43.4	0.0	
1.880	1635.94	0.07	2895.	85.	85.	0.200	0.0800	0.00	0.00	34.1	0.0	
2.006	1635.94	0.09	2215.	85.	85.	0.200	0.0800	0.00	0.00	26.1	0.0	
2.133	1635.94	0.13	1535.	85.	85.	0.200	0.0800	0.00	0.00	18.1	0.0	
2.253	1635.94	0.22	889.	85.	85.	0.200	0.0800	0.00	0.00	10.5	0.0	
2.373	1635.90	0.81	247.	85.	85.	0.200	0.0800	0.00	0.00	2.9	0.1	

FRDM= 0.11 IFR= 36 FRM=0.00 IFM= 1

```
10:37:16    0.0009   CSP     UIS COMPANY   KANSAS CITY, MISSOURI  02/10/86
10:37:16    0.0009   CSP                   APEX/CRAY SERVICE
10:37:16    0.0009   CSP     CRAY-1 S/2000   COS LEVEL:  C14 1.12-11/27/85
10:37:16    0.0009   CSP
10:37:16    0.0009   CSP     WANG,T100.
10:37:16    0.0009   CSP     ACCOUNT,E142120 USD3767400
10:37:27    0.0010   CSP     TAPEIN,DN=NWS,NT,LB=AU,FI=DAMBREAK,VSN=3429.
10:50:07    0.0013   SCP      10.38.17.VSN.T=3429.
10:50:07    0.0013   SCP      10.38.17.LABEL,T,PO=RU,NT,LB=AU,FI=DAMBREAK.
10:50:07    0.0013   SCP      10.40.23.NT63, ASSIGNED TO T      , VSN=3429  .
10:50:13    0.0013   SCP     DATASET RECEIVED FROM FRONT END.
10:50:13    0.0017   CSP     COPYF,NWS,TEMP.
10:50:14    0.0993   USER    IO048 - COPY OF     6314 RECORDS       1 FILES COMPLETED
10:50:14    0.0997   CSP     COPYF,NWS,DAMABS.
10:50:16    0.1080   USER    IO048 - COPY OF        1 RECORDS       1 FILES COMPLETED
10:50:16    0.1081   CSP     REWIND,DAMABS.
10:50:16    0.1085   CSP     DAMABS.
10:50:17    0.3717   ABORT   AB053 - FLOATING POINT ERROR
10:50:17    0.3717   ABORT   AB000 - JOB STEP ABORTED.   P = 00232037C
10:50:17    0.3717   ABORT   TB001 - BEGINNING OF TRACEBACK
10:50:17    0.3717   ABORT         - MATRXC   WAS CALLED BY  MAIN2      AT    216614D (LINE  NUMBER       565
10:50:17    0.3717   ABORT         - MAIN2    WAS CALLED BY  DAMBK      AT    165040B (LINE  NUMBER      1338
10:50:17    0.3717   ABORT   TB002 - END OF TRACEBACK
10:50:17    0.3717   EXP     EXIT.
10:50:17    0.3718   CSP     END OF JOB
10:50:17    0.3718   CSP
10:50:17    0.3718   CSP
10:50:18    0.4032   USER          JOBNAME = DFBRBYB   USER NUMBER = E142120
10:50:18    0.4032   USER          CP SECONDS        =     0.403
10:50:18    0.4032   USER          AVERAGE MEMORY    =    0.0849
10:50:18    0.4032   USER          IO BLOCKS MOVED   =      852.
10:50:18    0.4032   USER          IO REQUESTS       =      130.
10:50:18    0.4032   USER          MT MOUNTS         =        1.
10:50:18    0.4032   USER          MT BLOCKS STAGED  =      277.
10:50:18    0.4032   USER          I/O/D BLOCKS      =       58.
10:50:18    0.4032   USER
10:50:18    0.4032   USER          CSU-2             =    10.35
10:50:18    0.4032   USER          PRIORITY          =       15
10:50:18    0.4032   USER          COST              =     3.62
```

A P E X R E M O T E B A T C H

DFBTC77 *UNITED INFORMATION SERVICES, INC.* 66. APEX/SL D.4.7.5

14.20.26. 02/12/86.

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DDDDDDDDDD    FFFFFFFFFFFF  BBBBBBBBBBB   TTTTTTTTTTTT   CCCCCCCCCC   777777777777  777777777777
DDDDDDDDDDD   FFFFFFFFFFFF  BBBBBBBBBBB   TTTTTTTTTTTT   CCCCCCCCCCCC  777777777777  777777777777
DD      DD    FF            BB      BB       TT        CC        CC          77            77
DD      DD    FF            BB      BB       TT        CC                    77            77
DD      DD    FF            BB      BB       TT        CC                  77            77
DD      DD    FF            BB      BB       TT        CC                 77            77
DD      DD    FF            BB      BB       TT        CC                77            77
DD      DD    FFFFFFFF      BBBBBBBBBBB       TT        CC               77            77
DD      DD    FFFFFFFF      BBBBBBBBBBB       TT        CC              77            77
DD      DD    FF            BB      BB       TT        CC             77            77
DD      DD    FF            BB      BB       TT        CC            77            77
DD      DD    FF            BB      BB       TT        CC           77            77
DD      DD    FF            BB      BB       TT        CC         CC 77          77
DDDDDDDDDDD   FF            BBBBBBBBBBB       TT        CCCCCCCCCCCC 77          77
DDDDDDDDDD    FF            BBBBBBBBBBB       TT         CCCCCCCCCC  77          77
```

PROGRAM DAMBRK---VERSION-7/18/84

#12

ANALYSIS OF THE DOWNSTREAM FLOOD HYDROGRAPH

PRODUCED BY THE DAM BREAK OF

FBH

APACHE JUNCTION FRS

ON

BUCKHORN-MESA WTSHD

ANALYSIS BY

BASED ON PROCEDURE DEVELOPED BY

DANNY L. FREAD, PH.D., RESEARCH HYDROLOGIST
HYDROLOGIC RESEARCH LABORATORY
W23, OFFICE OF HYDROLOGY
NOAA, NATIONAL WEATHER SERVICE
SILVER SPRING, MARYLAND 20910

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***                         ***
***  SUMMARY OF INPUT DATA  ***
***                         ***
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INPUT CONTROL PARAMETERS FOR APACHE JUNCTION FRS

PARAMETER	VARIABLE	VALUE
NUMBER OF DYNAMIC ROUTING REACHES	KKN	1
TYPE OF RESERVOIR ROUTING	KUI	0
MULTIPLE DAM INDICATOR	MULDAM	0
PRINTING INSTRUCTIONS FOR INPUT SUMMARY	KOMF	3
NO. OF RESERVOIR INFLOW HYDROGRAPH POINTS	ITEH	30
INTERVAL OF CROSS-SECTION INFO PRINTED OUT WHEN JNK=9	NPRT	0
FLOOD-PLAIN MODEL PARAMETER	KFLP	0
LANDSLIDE PARAMETER	KSL	0

APACHE JUNCTION FRS RESERVOIR

TABLE OF ELEVATION VS VOLUME

VOLUME (ACRE-FEET) SA(K)	ELEVATION (FT) HSA(K)
2015.0	1809.40
1135.[illegible]	1[illegible]
63[illegible]	1[illegible]
4[illegible]	1[illegible]
228.0	1797.20
111.[illegible]	1795.80
2[illegible].0	1794.00
[illegible]	178[illegible]

APACHE JUNCTION FRS RESERVOIR

TABLE OF ELEVATION VS SURFACE AREA

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

161.3	1809.40
185.4	1804.30
111.1	1800.80
138.9	1798.50
73.0	1797.20
94.1	1795.80
7.0	1794.00
1.0	1785.00

APACHE JUNCTION FRS RESERVOIR AND BREACH PARAMETERS

PARAMETER	UNITS	VARIABLE	VALUE
LENGTH OF RESERVOIR	MI	RLM	1.10
ELEVATION OF WATER SURFACE	FT	YO	1809.37
SIDE SLOPE OF BREACH		Z	1.0
ELEVATION OF BOTTOM OF BREACH	FT	YBMIN	1789.00
WIDTH OF BASE OF BREACH	FT	BB	40.74
TIME TO MAXIMUM BREACH SIZE	HR	TFH	0.08
ELEVATION (MSL) OF BOTTOM OF DAM	FT	DATUM	1789.00
VOLUME-SURFACE AREA PARAMETER		VOL	1.00
ELEVATION OF WATER WHEN BREACHED	FT	HF	1809.37
ELEVATION OF TOP OF DAM	FT	HD	1809.37
ELEVATION OF UNCONTROLLED SPILLWAY CREST	FT	HSP	0.00
ELEVATION OF CENTER OF GATE OPENINGS	FT	HGT	0.00
DISCHARGE COEF. FOR UNCONTROLLED SPILLWAY		CS	0.00
DISCHARGE COEF. FOR GATE FLOW		CG	0.00
DISCHARGE COEF. FOR UNCONTROLLED WEIR FLOW		CDO	0.00
DISCHARGE THRU TURBINES	CFS	QT	200.00

CDO SHOULD NOT BE 0. IF OVERTOPPING MAY OCCUR

DHF(INTERVAL BETWEEN INPUT HYDROGRAPH ORDINATES) = 0.09 HRS.

TEH(TIME AT WHICH COMPUTATIONS TERMINATE) = 2.5000 HRS.

INFLOW HYDROGRAPH TO APACHE JUNCTION FRS

5987.00	5371.00	4725.00	4121.00	3588.00	3144.00	2801.00	2543.00
2357.00	2209.00	2094.00	1982.00	1863.00	1741.00	1618.00	1500.00
1399.00	1323.00	1270.00	1232.00	1200.00	0.00		

TIME OF INFLOW HYDROGRAPH ORDINATES

0.0000	0.0860	0.1720	0.2580	0.3440	0.4300	0.5160	0.6020
0.6880	0.7740	0.8600	0.9460	1.0320	1.1180	1.2040	1.2900
1.3760	1.4620	1.5480	1.6340	1.7200	1.8060	1.8920	1.9780
2.0640	2.1500	2.2360	2.3220	2.4080	2.4940		

CROSS-SECTIONAL PARAMETERS FOR BUCKHORN-MESA WTSHD
BELOW APACHE JUNCTION FRS

PARAMETER	VARIABLE	VALUE
NUMBER OF CROSS-SECTIONS	NS	12
MAXIMUM NUMBER OF TOP WIDTHS	NCS	4
NUMBER OF CROSS-SECTIONAL HYDROGRAPHS TO PLOT	NTT	3
TYPE OF OUTPUT OTHER THAN HYDROGRAPH PLOTS	JNK	9
CROSS-SECTIONAL SMOOTHING PARAMETER	KSA	
DOWNSTREAM SUPERCRITICAL OR NOT	KSUPC	1
NO. OF LATERAL INFLOW HYDROGRAPHS	LQ	0
NO. OF POINTS IN GATE CONTROL CURVE	KCG	

NUMBER OF CROSS-SECTION WHERE HYDROGRAPH DESIRED
(MAX NUMBER OF HYDROGRAPHS = 6)

1 7 12

CROSS-SECTIONAL VARIABLES FOR BUCKHORN-MESA WTSHD
BELOW APACHE JUNCTION FRS

PARAMETER	UNITS	VARIABLE
LOCATION OF CROSS-SECTION	MI	XS(I)
ELEVATION (MSL) OF FLOODING AT CROSS-SECTION	FT	FSTG(I)
ELEV CORRESPONDING TO EACH TOP WIDTH	FT	HS(K,I)
TOP WIDTH CORRESPONDING TO EACH ELEV (ACTIVE FLOW PORTION)	FT	BS(K,I)
TOP WIDTH CORRESPONDING TO EACH ELEV (OFF-CHANNEL PORTION)	FT	BSS(K,I)
SURFACE AREA CORRESPONDING TO EACH ELEV (ACTIVE FLOW PORTION)	ACRES	DSA(K,I)
SURFACE AREA CORRESPONDING TO EACH ELEV (OFF-CHANNEL PORTION)	ACRES	SSA(K,I)
NUMBER OF CROSS-SECTION		I
NUMBER OF ELEVATION LEVEL		K

```
CROSS-SECTION NUMBER  1
************************

XS(I) =   0.000   FST6(I) =    0.00          XSL(I) =     0.0          XSR(I) =     0.0

HS  ...   1789.0  1791.0  1792.0  1794.0
BS  ...     85.0   600.0  1950.0  3500.0
BSS ...      0.0     0.0     0.0     0.0


CROSS-SECTION NUMBER  2
************************

XS(I) =   0.158   FST6(I) =    0.00          XSL(I) =     0.0          XSR(I) =     0.0

HS  ...   1779.0  1781.0  1782.0  1784.0
BS  ...     85.0   600.0  1950.0  3500.0
BSS ...      0.0     0.0     0.0     0.0


CROSS-SECTION NUMBER  3
************************

XS(I) =   0.284   FST6(I) =    0.00          XSL(I) =     0.0          XSR(I) =     0.0

HS  ...   1771.0  1773.0  1774.0  1776.0
BS  ...     85.0   600.0  1950.0  3500.0
BSS ...      0.0     0.0     0.0     0.0


CROSS-SECTION NUMBER  4
************************

XS(I) =   0.395   FST6(I) =    0.00          XSL(I) =     0.0          XSR(I) =     0.0

HS  ...   1764.0  1766.0  1767.0  1769.0
BS  ...     85.0   600.0  1950.0  3500.0
BSS ...      0.0     0.0     0.0     0.0
```

CROSS-SECTION NUMBER 5
****

XS(I) = 0.632 FSTG(I) = 0.00 XSL(I) = 0.0 XSR(I) = 0.0

HS ...	1749.0	1751.0	1752.0	1754.0
BS ...	85.0	600.0	1950.0	3500.0
BSS ...	0.	0.	0.	0.

CROSS-SECTION NUMBER 6
****

XS(I) = 0.964 FSTG(I) = 0.00 XSL(I) = 0.0 XSR(I) = 0.0

HS ...	1728.0	1730.0	1731.0	1733.0
BS ...	85.0	600.0	1950.0	3500.0
BSS ...	0.0	0.0	0.0	0.

CROSS-SECTION NUMBER 7
****

XS(I) = 1.169 FSTG(I) = 0.00 XSL(I) = 0.0 XSR(I) = 0.0

HS ...	1715.0	1717.0	1718.0	1720.0
BS ...	85.0	600.0	1950.0	3500.0
BSS ...	0.0	0.0	0.0	0.0

CROSS-SECTION NUMBER 8
****

XS(I) = 1.343 FSTG(I) = 0.00 XSL(I) = 0.0 XSR(I) = 0.0

HS ...	1704.0	1706.0	1707.0	1709.0
BS ...	85.0	600.0	1950.0	3500.0
BSS ...	0.	0.	0.	0.

```
CROSS-SECTION NUMBER  9
***********************

XS(I) =   1.659   FST6(I) =   0.00        XSL(I) =   0.0        XSR(I) =   0.0

HS  ...   1684.0  1686.0  1687.0  1689.0
BS  ...     85.0   600.0  1950.0  3500.0
BSS ...      0.0     0.0     0.0     0.0


CROSS-SECTION NUMBER 10
***********************

XS(I) =   1.880   FST6(I) =   0.00        XSL(I) =   0.0        XSR(I) =   0.0

HS  ...   1670.0  1672.0  1673.0  1675.0
BS  ...     85.0   600.0  1950.0  3500.0
BSS ...      0.0     0.0     0.0     0.0


CROSS-SECTION NUMBER 11
***********************

XS(I) =   2.133   FST6(I) =   0.00        XSL(I) =   0.0        XSR(I) =   0.0

HS  ...   1654.0  1656.0  1657.0  1659.0
BS  ...     85.0   600.0  1950.0  3500.0
BSS ...      0.0     0.0     0.0     0.0


CROSS-SECTION NUMBER 12
***********************

XS(I) =   2.433   FST6(I) =   0.00        XSL(I) =   0.0        XSR(I) =   0.0

HS  ...   1635.0  1637.0  1638.0  1640.0
BS  ...     85.0   600.0  1950.0  3500.0
BSS ...      0.0     0.0     0.0     0.0
```

```
MANNING N ROUGHNESS COEFFICIENTS FOR THE GIVEN REACHES
      (CM(K,I),K=1,NCS) WHERE I = REACH NUMBER
*************************************************************

REACH  1 ... 0.080  0.080  0.080  0.080
REACH  2 ... 0.080  0.080  0.080  0.080
REACH  3 ... 0.080  0.080  0.080  0.080
REACH  4 ... 0.080  0.080  0.080  0.080
REACH  5 ... 0.080  0.080  0.080  0.080
REACH  6 ... 0.080  0.080  0.080  0.080
REACH  7 ... 0.080  0.080  0.080  0.080
REACH  8 ... 0.080  0.080  0.080  0.080
REACH  9 ... 0.080  0.080  0.080  0.080
REACH 10 ... 0.080  0.080  0.080  0.080
REACH 11 ... 0.080  0.080  0.080  0.080
```

CROSS-SECTIONAL VARIABLES FOR BUCKHORN-MESA WTSHD
BELOW APACHE JUNCTION FRS

PARAMETER	UNITS	VARIABLE
MINIMUM COMPUTATIONAL DISTANCE USED BETWEEN CROSS-SECTIONS	MI	DXM(I)
CONTRACTION - EXPANSION COEFFICIENTS BETWEEN CROSS-SECTIONS		FKC(I)

REACH NUMBER	DXM(I)	FKC(I)
1	0.060	-0.800
2	0.060	0.000
3	0.060	0.000
4	0.060	0.000
5	0.060	0.000
6	0.060	0.000
7	0.060	0.000
8	0.060	0.000
9	0.060	0.000
10	0.060	0.000
11	0.060	0.000

DOWNSTREAM FLOW PARAMETERS FOR BUCKHORN-MESA WTSHD
BELOW APACHE JUNCTION FRS

PARAMETER	UNITS	VARIABLE	VALUE
MAX DISCHARGE AT DOWNSTREAM EXTREMITY	CFS	QMAXD	0.0
MAX LATERAL OUTFLOW PRODUCING LOSSES	CFS/FT	QLL	0.000
INITIAL SIZE OF TIME STEP	HR	DTHM	0.0000
INITIAL WATER SURFACE ELEVATION DOWNSTREAM	FT	YDN	0.00
SLOPE OF CHANNEL DOWNSTREAM OF DAM	FT/MI	SOM	63.00
THETA WEIGHTING FACTOR		THETA	0.00
CONVERGENCE CRITERION FOR STAGE	FT	EPSY	0.000
TIME AT WHICH DAM STARTS TO FAIL	HR	TFI	2.50

TOTAL NUMBER OF CROSS SECTIONS (ORIGINAL+INTERPOLATED) (N) = 36 (MAXIMUM ALLOWABLE = 200

```
*********************************
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***                           ***
***  SUMMARY OF OUTPUT DATA   ***
***                           ***
*********************************
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```

SLOPE PROFILE

MILES

0.0 0.2 0.5 0.7 1.0 1.2 1.5 1.7 1.9 2.2 2.4

ELEV FEET MILE

1789.00 — 1789.0 0.0

1779.00 — 1779.0 0.2

1771.00 — 1771.0 0.3

1764.00 — 1764.0 0.4

1749.00 — 1749.0 0.6

1728.00 — 1728.0 1.0

1715.00 — 1715.0 1.2

ELEVATION 1704.00 — 1704.0 1.3

1684.00 — 1684.0 1.7

1670.00 — 1670.0 1.9

1654.00 — 1654.0 2.1

1635.0 0.0 0.2 0.5 0.7 1.0 1.2 1.5 1.7 1.9 2.2 2.4 *1635.0 2.4

MILES

CROSS-SECTION NO.	MILE	BOTTOM ELEVATION FEET	REACH NO.	REACH LENGTH MILES	SLOPE FT/MI	MESAGE
1	0.00	1789.00				
2	0.16	1779.00	1	0.16	63.29	
3	0.28	1771.00	2	0.13	63.49	
4	0.39	1764.00	3	0.11	63.06	
5	0.63	1749.00	4	0.24	63.29	
6	0.96	1728.00	5	0.33	63.25	
7	1.17	1715.00	6	0.20	63.41	
8	1.34	1708.00	7	0.17	63.22	
9	1.66	1684.00	8	0.32	63.29	
10	1.88	167[illegible].00	9	0.22	63.35	
11	2.13	1659.00	10	0.25	63.24	
12	2.43	1635.00	11	0.30	63.33	

TOTAL VOLUME IN RESERVOIR BEHIND
APACHE JUNCTION FRS = 2010.2 ACRE-FEET

DEFINITION OF VARIABLES IN RESERVOIR DEPLETION TABLE

PARAMETER	UNITS	VARIABLE
TIME STEP FROM START OF ANALYSIS		I
ITERATIONS NECESSARY TO SOLVE FLOW EQUATIONS		K
ELAPSED TIME FROM START OF ANALYSIS	HRS	TTP(I)
TOTAL OUTFLOW FROM DAM	CFS	Q(I)
ELEVATION OF WATER SURFACE AT DAM	FT	H2
ELEVATION OF BOTTOM OF BREACH	FT	YB
EST DEPTH OF FLOW IMMEDIATELY DOWNSTREAM	FT	D
SUBMERGENCE COEFFICIENT		SUB
VELOCITY CORRECTION		VCOR
TOTAL VOLUME DISCHARGED FROM TIME OF BREACH	AC-FT	OUTVOL
BREACH WIDTH	FT	BB
RECTANGULAR BREACH DISCHARGE COEFFICIENT		COFR
INFLOW TO RESERVOIR	CFS	QI(I)
BREACH OUTFLOW	CFS	QBRECH
SPILLWAY OUTFLOW	CFS	QSPIL

RESERVOIR DEPLETION TABLE

I	K	TTP(I)	Q(I)	H2	YB	D	SUB	VCOR	OUTVOL	BB	COFR	QI(I)	QBRECH	QSPIL
***	**	******	********	*******	*******	*******	****	****	*********	****	****	*****	******	*****
1	0	0.000	270	1809.37	1809.37	1789.81	1.00	1.00	0.0	40.7	3.10	10946.	0.	200.
2	1	0.002	234	1809.38	1808.96	1789.87	1.00	1.00	0.0	40.7	3.10	10924.	34.	200.
3	1	0.003	297	1809.39	1808.56	1789.98	1.00	1.00	0.1	40.7	3.10	10902.	98.	200.
4	1	0.005	380	1809.40	1808.15	1790.10	1.00	1.00	0.1	40.7	3.10	10880.	181.	200.
5	1	0.007	480	1809.41	1807.74	1790.22	1.00	1.00	0.2	40.7	3.10	10858.	280.	200.
6	1	0.008	594	1809.41	1807.33	1790.34	1.00	1.00	0.2	40.7	3.10	10837.	395.	200.
7	1	0.010	722	1809.42	1806.93	1790.46	1.00	1.00	0.3	40.7	3.10	10815.	523.	200.
8	1	0.012	863	1809.43	1806.52	1790.58	1.00	1.00	0.4	40.7	3.10	10793.	664.	200.
9	1	0.013	1016	1809.44	1806.11	1790.69	1.00	1.00	0.6	40.7	3.10	10771.	817.	200.
10	1	0.015	1181	1809.45	1805.70	1790.80	1.00	1.00	0.7	40.7	3.10	10749.	982.	200.
11	1	0.017	1358	1809.46	1805.30	1790.91	1.00	1.00	0.9	40.7	3.10	10727.	1158.	200.
12	1	0.018	1545	1809.46	1804.89	1791.02	1.00	1.00	1.1	40.7	3.10	10705.	1346.	200.
13	1	0.020	1744	1809.47	1804.48	1790.01	1.00	1.00	1.3	40.7	3.10	10683.	1545.	200.
14	1	0.022	1945	1809.48	1804.07	1774.69	1.00	1.00	1.6	40.7	3.10	10661.	1754.	192.
15	1	0.023	2149	1809.49	1803.67	1767.37	1.00	1.00	1.9	40.7	3.10	10640.	1974.	176.
16	1	0.025	2364	1809.49	1803.26	1755.45	1.00	1.00	2.2	40.7	3.10	10618.	2204.	160.
17	1	0.027	2588	1809.50	1802.85	1736.19	1.00	1.00	2.5	40.7	3.10	10596.	2445.	144.
18	1	0.028	2823	1809.51	1802.44	1705.20	1.00	1.00	2.9	40.7	3.10	10574.	2696.	128.
19	1	0.030	3069	1809.51	1802.04	1655.48	1.00	1.00	3.3	40.7	3.10	10552.	2957.	112.
20	1	0.032	3324	1809.52	1801.63	1575.83	1.00	1.00	3.7	40.7	3.10	10530.	3228.	96.
21	1	0.033	3589	1809.53	1801.22	1448.30	1.00	1.00	4.2	40.7	3.10	10508.	3509.	80.
22	1	0.035	3864	1809.53	1800.81	1244.20	1.00	1.00	4.7	40.7	3.10	10486.	3801.	64.
23	1	0.037	4149	1809.54	1800.41	917.60	1.00	1.00	5.3	40.7	3.10	10464.	4102.	48.
24	1	0.038	4444	1809.54	1800.00	385.04	1.00	1.00	5.8	40.7	3.10	10443.	4413.	32.
25	1	0.040	4749	1809.55	1799.59	-441.04	1.00	1.00	6.5	40.7	3.10	10421.	4734.	16.
26	1	0.041	5064	1809.55	1799.18	-1778.70	1.00	1.00	7.2	40.7	3.10	10399.	5064.	0.
27	1	0.043	5404	1809.56	1798.78	-3918.81	1.00	1.00	7.9	40.7	3.10	10377.	5405.	0.
28	1	0.045	5754	1809.56	1798.37	-7342.75	1.00	1.00	8.6	40.7	3.10	10355.	5755.	0.
29	1	0.046	6114	1809.57	1797.96	-12820.66	1.00	1.00	9.4	40.7	3.10	10333.	6115.	0.
30	1	0.048	6484	1809.57	1797.56	-21584.66	1.00	1.00	10.3	40.7	3.10	10311.	6484.	0.
31	1	0.050	6863	1809.57	1797.15	-35636.03	1.00	1.00	11.2	40.7	3.10	10289.	6863.	0.
32	1	0.051	7252	1809.57	1796.74	-58038.54	1.00	1.00	12.2	40.7	3.10	10267.	7252.	0.
33	1	0.053	7650	1809.58	1796.33	-93927.87	1.00	1.00	13.2	40.7	3.10	10246.	7651.	0.
34	1	0.055	8058	1809.58	1795.93	*********	1.00	1.00	14.3	40.7	3.10	10224.	8059.	0.
35	1	0.056	8476	1809.58	1795.52	*********	1.00	1.00	15.4	40.7	3.10	10202.	8477.	0.
36	1	0.058	8903	1809.58	1795.11	*********	1.00	1.00	16.5	40.7	3.10	10180.	8904.	0.
37	1	0.060	9340	1809.58	1794.71	*********	1.00	1.00	17.9	40.7	3.10	10158.	9341.	0.
38	1	0.061	9787	1809.58	1794.30	*********	1.00	1.00	19.2	40.7	3.10	10136.	9787.	0.
39	1	0.063	10243	1809.58	1793.89	*********	1.00	1.00	20.6	40.7	3.10	10114.	10243.	0.
40	1	0.065	10708	1809.58	1793.48	*********	1.00	1.00	22.0	40.7	3.10	10092.	10709.	0.
41	1	0.066	11183	1809.58	1793.07	*********	1.00	1.00	23.5	40.7	3.10	1007 .	11184.	0.
42	1	0.068	11668	1809.58	1792.67	*********	1.00	1.00	25.1	40.7	3.10	10049.	11668.	0.
43	1	0.070	12162	1809.58	1792.26	*********	1.00	1.00	26.7	40.7	3.10	10027.	12163.	0.
44	1	0.071	12666	1809.58	1791.85	*********	1.00	1.00	28.4	40.7	3.10	10005.	12666.	0.
45	1	0.073	13179	1809.57	1791.44	*********	1.00	1.00	30.2	40.7	3.10	9983.	13179.	0.
46	1	0.075	13701	1809.57	1791.04	*********	1.00	1.00	32.0	40.7	3.10	9961.	13702.	0.
47	1	0.076	14233	1809.57	1790.63	*********	1.00	1.00	33.9	40.7	3.10	9939.	14234.	0.
48	1	0.078	14775	1809.56	1790.22	*********	1.00	1.00	35.9	40.7	3.10	9917.	14775.	0.
49	1	0.080	15325	1809.56	1789.81	*********	1.00	1.00	38.0	40.7	3.10	9895.	15326.	0.
50	1	0.081	15886	1809.56	1789.41	*********	1.00	1.00	40.1	40.7	3.10	9873.	15886.	0.

RESERVOIR DEPLETION TABLE

I	K	TTP(I)	Q(I)	H2	YB	D	SUB	VCOR	OUTVOL	BB	COFR	QI(I)	QBRECH	QSPIL
***	**	******	********	*******	*******	*******	****	****	*********	****	****	*****	******	*****
51	1	0.083	16455	1809.55	1789.00	*********	1.00	1.00	42.4	40.7	3.10	9852.	16456.	0.
52	1	0.085	16447	1809.54	1789.00	*********	1.00	1.00	44.6	40.7	3.10	9830.	16448.	0.
53	1	0.086	16439	1809.54	1789.00	*********	1.00	1.00	46.9	40.7	3.10	9809.	16439.	0.
54	1	0.088	16431	1809.53	1789.00	*********	1.00	1.00	49.1	40.7	3.10	9792.	16431.	0.
55	1	0.089	16423	1809.53	1789.00	*********	1.00	1.00	51.4	40.7	3.10	9775.	16423.	0.
56	1	0.091	16415	1809.52	1789.00	*********	1.00	1.00	53.6	40.7	3.10	9758.	16415.	0.
57	1	0.093	16407	1809.52	1789.00	*********	1.00	1.00	55.9	40.7	3.10	9742.	16407.	0.
58	1	0.095	16398	1809.51	1789.00	*********	1.00	1.00	58.1	40.7	3.10	9725.	16399.	0.
59	1	0.096	16390	1809.50	1789.00	*********	1.00	1.00	60.4	40.7	3.10	9708.	16391.	0.
60	1	0.098	16382	1809.50	1789.00	*********	1.00	1.00	62.6	40.7	3.10	9691.	16383.	0.
61	1	0.100	16374	1809.49	1789.00	*********	1.00	1.00	64.9	40.7	3.10	9675.	16375.	0.
62	1	0.101	16366	1809.49	1789.00	*********	1.00	1.00	67.1	40.7	3.10	9658.	16366.	0.
63	1	0.103	16358	1809.48	1789.00	*********	1.00	1.00	69.4	40.7	3.10	9641.	16358.	0.
64	1	0.105	16350	1809.48	1789.00	*********	1.00	1.00	71.6	40.7	3.10	9624.	16350.	0.
65	1	0.106	16341	1809.47	1789.00	*********	1.00	1.00	73.8	40.7	3.10	9607.	16342.	0.
66	1	0.108	16333	1809.46	1789.00	*********	1.00	1.00	76.1	40.7	3.10	9591.	16334.	0.
67	1	0.110	16325	1809.46	1789.00	*********	1.00	1.00	78.3	40.7	3.10	9574.	16326.	0.
68	1	0.111	16317	1809.45	1789.00	*********	1.00	1.00	80.6	40.7	3.10	9557.	16317.	0.
69	1	0.113	16309	1809.45	1789.00	*********	1.00	1.00	82.8	40.7	3.10	9540.	16309.	0.
70	1	0.115	16300	1809.44	1789.00	*********	1.00	1.00	85.0	40.7	3.10	9524.	16301.	0.
71	1	0.116	16292	1809.44	1789.00	*********	1.00	1.00	87.3	40.7	3.10	9507.	16293.	0.
72	1	0.118	16284	1809.43	1789.00	*********	1.00	1.00	89.5	40.7	3.10	9490.	16285.	0.
73	1	0.120	16276	1809.42	1789.00	*********	1.00	1.00	91.7	40.7	3.10	9473.	16276.	0.
74	1	0.121	16268	1809.42	1789.00	*********	1.00	1.00	94.0	40.7	3.10	9457.	16268.	0.
75	1	0.123	16259	1809.41	1789.00	*********	1.00	1.00	96.2	40.7	3.10	9440.	16260.	0.
76	1	0.124	16251	1809.41	1789.00	*********	1.00	1.00	98.4	40.7	3.10	9423.	16252.	0.
77	1	0.126	16243	1809.40	1789.00	*********	1.00	1.00	100.7	40.7	3.10	9406.	16243.	0.
78	1	0.128	16235	1809.40	1789.00	*********	1.00	1.00	102.9	40.7	3.10	9389.	16235.	0.
79	1	0.129	16226	1809.39	1789.00	*********	1.00	1.00	105.1	40.7	3.10	9373.	16227.	0.
80	1	0.131	16218	1809.38	1789.00	*********	1.00	1.00	107.4	40.7	3.10	9356.	16218.	0.
81	1	0.133	16210	1809.38	1789.00	*********	1.00	1.00	109.6	40.7	3.10	9339.	16210.	0.
82	1	0.134	16201	1809.37	1789.00	*********	1.00	1.00	111.8	40.7	3.10	9322.	16202.	0.
83	1	0.136	16193	1809.37	1789.00	*********	1.00	1.00	114.0	40.7	3.10	9306.	16194.	0.
84	1	0.138	16185	1809.36	1789.00	*********	1.00	1.00	116.2	40.7	3.10	9289.	16185.	0.
85	1	0.139	16177	1809.35	1789.00	*********	1.00	1.00	118.5	40.7	3.10	9272.	16177.	0.
86	1	0.141	16168	1809.35	1789.00	*********	1.00	1.00	120.7	40.7	3.10	9255.	16169.	0.
87	1	0.143	16160	1809.34	1789.00	*********	1.00	1.00	122.9	40.7	3.10	9238.	16160.	0.
88	1	0.144	16152	1809.34	1789.00	*********	1.00	1.00	125.1	40.7	3.10	9222.	16152.	0.
89	1	0.146	16143	1809.33	1789.00	*********	1.00	1.00	127.3	40.7	3.10	9205.	16144.	0.
90	1	0.148	16135	1809.32	1789.00	*********	1.00	1.00	129.5	40.7	3.10	9188.	16135.	0.
91	1	0.149	16127	1809.32	1789.00	*********	1.00	1.00	131.8	40.7	3.10	9171.	16127.	0.
92	1	0.151	16118	1809.31	1789.00	*********	1.00	1.00	134.0	40.7	3.10	9155.	16119.	0.
93	1	0.153	16110	1809.31	1789.00	*********	1.00	1.00	136.2	40.7	3.10	9138.	16110.	0.
94	1	0.154	16101	1809.30	1789.00	*********	1.00	1.00	138.4	40.7	3.10	9121.	16102.	0.
95	1	0.156	16093	1809.30	1789.00	*********	1.00	1.00	140.6	40.7	3.10	9104.	16094.	0.
96	1	0.158	16085	1809.29	1789.00	*********	1.00	1.00	142.8	40.7	3.10	9087.	16085.	0.
97	1	0.159	16076	1809.28	1789.00	*********	1.00	1.00	145.0	40.7	3.10	9071.	16077.	0.
98	1	0.161	16068	1809.28	1789.00	*********	1.00	1.00	147.2	40.7	3.10	9054.	16068.	0.
99	1	0.163	16059	1809.27	1789.00	*********	1.00	1.00	149.4	40.7	3.10	9037.	16060.	0.
100	1	0.164	16051	1809.27	1789.00	*********	1.00	1.00	151.6	40.7	3.10	9020.	16052.	0.

RESERVOIR DEPLETION TABLE

I	K	TTP(I)	Q(I)	H2	YB	D	SUB	VCOR	OUTVOL	BB	COFR	QI(I)	QBRECH	QSPIL
***	**	******	********	*******	*******	*******	****	****	*********	****	****	*****	******	*****
101	1	0.166	16043	1809.26	1789.00	*********	1.00	1.00	153.8	40.7	3.10	9004.	16043.	0.
102	1	0.168	16034	1809.25	1789.00	*********	1.00	1.00	156.0	40.7	3.10	8987.	16035.	0.
103	1	0.169	16025	1809.25	1789.00	*********	1.00	1.00	158.4	40.7	3.10	8968.	16025.	0.
104	1	0.171	16015	1809.24	1789.00	*********	1.00	1.00	161.1	40.7	3.10	8948.	16015.	0.
105	1	0.174	16004	1809.23	1789.00	*********	1.00	1.00	164.0	40.7	3.10	8933.	16004.	0.
106	1	0.176	15991	1809.22	1789.00	*********	1.00	1.00	167.2	40.7	3.10	8911.	15992.	0.
107	1	0.179	15978	1809.21	1789.00	*********	1.00	1.00	170.8	40.7	3.10	8891.	15978.	0.
108	1	0.182	15963	1809.20	1789.00	*********	1.00	1.00	174.7	40.7	3.10	8868.	15963.	0.
109	1	0.185	15946	1809.19	1789.00	*********	1.00	1.00	178.9	40.7	3.10	8844.	15947.	0.
110	1	0.189	15928	1809.18	1789.00	*********	1.00	1.00	183.6	40.7	3.10	8816.	15928.	0.
111	1	0.192	15908	1809.16	1789.00	*********	1.00	1.00	188.8	40.7	3.10	8786.	15909.	0.
112	1	0.197	15886	1809.15	1789.00	*********	1.00	1.00	194.4	40.7	3.10	8753.	15887.	0.
113	1	0.201	15862	1809.13	1789.00	*********	1.00	1.00	200.6	40.7	3.10	8717.	15862.	0.
114	1	0.207	15835	1809.11	1789.00	*********	1.00	1.00	207.4	40.7	3.10	8677.	15836.	0.
115	1	0.212	15806	1809.09	1789.00	*********	1.00	1.00	214.9	40.7	3.10	8633.	15807.	0.
116	1	0.219	15774	1809.07	1789.00	*********	1.00	1.00	223.2	40.7	3.10	8585.	15774.	0.
117	1	0.226	15739	1809.04	1789.00	*********	1.00	1.00	232.2	40.7	3.10	8532.	15739.	0.
118	1	0.233	15699	1809.02	1789.00	*********	1.00	1.00	242.1	40.7	3.10	8473.	15700.	0.
119	1	0.242	15656	1808.98	1789.00	*********	1.00	1.00	253.0	40.7	3.10	8409.	15657.	0.
120	1	0.251	15609	1808.95	1789.00	*********	1.00	1.00	264.9	40.7	3.10	8338.	15610.	0.
121	1	0.261	15557	1808.91	1789.00	*********	1.00	1.00	278.0	40.7	3.10	8266.	15558.	0.
122	1	0.272	15500	1808.87	1789.00	*********	1.00	1.00	292.3	40.7	3.10	8200.	15500.	0.
123	1	0.285	15437	1808.83	1789.00	*********	1.00	1.00	308.0	40.7	3.10	8128.	15438.	0.
124	1	0.298	15368	1808.78	1789.00	*********	1.00	1.00	325.2	40.7	3.10	8049.	15369.	0.
125	1	0.313	15293	1808.72	1789.00	*********	1.00	1.00	344.1	40.7	3.10	7962.	15293.	0.
126	1	0.329	15210	1808.66	1789.00	*********	1.00	1.00	364.7	40.7	3.10	7866.	15210.	0.
127	1	0.347	15119	1808.60	1789.00	*********	1.00	1.00	387.2	40.7	3.10	7765.	15119.	0.
128	1	0.367	15019	1808.52	1789.00	*********	1.00	1.00	411.8	40.7	3.10	7677.	15019.	0.
129	1	0.389	14910	1808.44	1789.00	*********	1.00	1.00	438.8	40.7	3.10	7581.	14911.	0.
130	1	0.413	14791	1808.35	1789.00	*********	1.00	1.00	468.1	40.7	3.10	7475.	14792.	0.
131	1	0.439	14662	1808.26	1789.00	*********	1.00	1.00	500.2	40.7	3.10	7369.	14662.	0.
132	1	0.468	14521	1808.15	1789.00	*********	1.00	1.00	535.1	40.7	3.10	7272.	14522.	0.
133	1	0.500	14369	1808.04	1789.00	*********	1.00	1.00	573.2	40.7	3.10	7165.	14369.	0.
134	2	0.535	14203	1807.92	1789.00	*********	1.00	1.00	614.5	40.7	3.10	7052.	14204.	0.
135	2	0.573	14024	1807.78	1789.00	*********	1.00	1.00	659.5	40.7	3.10	6931.	14025.	0.
136	2	0.616	13830	1807.63	1789.00	*********	1.00	1.00	708.3	40.7	3.10	6804.	13831.	0.
137	2	0.663	13615	1807.47	1789.00	*********	1.00	1.00	761.2	40.7	3.10	6240.	13615.	0.
138	2	0.714	13373	1807.28	1789.00	*********	1.00	1.00	818.5	40.7	3.10	5802.	13374.	0.
139	2	0.770	13106	1807.07	1789.00	*********	1.00	1.00	880.2	40.7	3.10	5397.	13106.	0.
140	2	0.832	12811	1806.84	1789.00	*********	1.00	1.00	946.7	40.7	3.10	4932.	12811.	0.
141	2	0.901	12485	1806.58	1789.00	*********	1.00	1.00	1018.1	40.7	3.10	4439.	12485.	0.
142	2	0.976	12127	1806.29	1789.00	*********	1.00	1.00	1094.5	40.7	3.10	3935.	12127.	0.
143	2	1.058	11736	1805.97	1789.00	*********	1.00	1.00	1176.0	40.7	3.10	3451.	11737.	0.
144	2	1.149	11314	1805.62	1789.00	*********	1.00	1.00	1262.6	40.7	3.10	3019.	11315.	0.
145	2	1.249	10865	1805.24	1789.00	*********	1.00	1.00	1354.3	40.7	3.10	2665.	10866.	0.
146	2	1.359	10395	1804.83	1789.00	*********	1.00	1.00	1450.9	40.7	3.10	2387.	10395.	0.
147	2	1.480	9918	1804.40	1789.00	*********	1.00	1.00	1552.4	40.7	3.10	2184.	9909.	0.
148	2	1.613	9397	1803.93	1789.00	*********	1.00	1.00	1658.6	40.7	3.10	2039.	9398.	0.
149	2	1.760	8844	1803.41	1789.00	*********	1.00	1.00	1769.0	40.7	3.10	1806.	8844.	0.
150	2	1.921	8237	1802.83	1789.00	*********	1.00	1.00	1882.7	40.7	3.10	1578.	8237.	0.

RESERVOIR DEPLETION TABLE

I	K	TTP(I)	Q(I)	H2	YB	D	SUB	VCOR	OUTVOL	BB	COFR	QI(I)	QBRECH	QSPIL
***	**	******	********	*******	*******	*******	****	****	*********	****	****	*****	******	*****
151	2	2.058	7560	1802.16	1789.00	*********	1.00	1.00	1998.4	40.7	3.10	1369.	7570.	0.
152	2	2.293	6837	1801.40	1789.00	*********	1.00	1.00	2114.4	40.7	3.10	1245.	6838.	0.
153	2	2.507	5990	1800.46	1789.00	*********	1.00	1.00	2228.0	40.7	3.10	-186.	5991.	0.

PARAMETER	UNITS	VARIABLE	VALUE
INITIAL FLOW	CFS	Q(1)	[illegible]
MAX FLOW	CFS	QM	16456.
FINAL FLOW	CFS	Q(NU)	[illegible]
TIME TO MAX FLOW	HRS	TP	[illegible]
NUMBER OF TIME STEPS		NNU	153
TOTAL VOLUME DISCHARGED FROM RESERVOIR	AC-FT	DISVOL	[illegible]
NUMBER OF INTERMEDIATE STATIONS		NN(NS)	36
NUMBER OF TIME STEPS		NNU	153

INITIAL CONDITIONS

I	K	X(I)	YD(I)	QDI(I)	FRO	SOM
1	4	0.000	1789.81	200.00	0.32	63.291
1	2	0.000	1789.81	200.00		
2	1	0.079	1784.81	200.00	0.32	
3	1	0.158	1779.81	200.00	0.32	
4	1	0.221	1775.80	200.00	0.32	
4	2	0.221	1775.80	200.00	0.32	
5	1	0.284	1771.81	200.00	0.32	
5	2	0.284	1771.81	200.00	0.32	
6	1	0.395	1764.81	200.00	0.32	
6	2	0.395	1764.81	200.00	0.32	
7	1	0.474	1759.80	200.00	0.32	
7	2	0.474	1759.80	200.00	0.32	
8	1	0.553	1754.81	200.00	0.32	
8	2	0.553	1754.81	200.00	0.32	
9	1	0.632	1749.80	200.00	0.32	
9	2	0.632	1749.80	200.00	0.32	
10	1	0.698	1745.61	200.00	0.32	
10	2	0.698	1745.61	200.00	0.32	
11	1	0.765	1741.40	200.00	0.32	
11	2	0.765	1741.40	200.00	0.32	
12	1	0.831	1737.21	200.00	.32	
12	2	0.831	1737.21	200.00	0.32	
13	1	0.898	1733.00	200.00	0.32	
13	2	0.898	1733.00	200.00	0.32	
14	1	0.964	1728.81	200.00	0.32	
14	2	0.964	1728.81	200.00	0.32	
15	1	1.032	1724.47	200.00	.32	
15	2	1.032	1724.47	200.00	0.33	
16	1	1.101	1720.14	200.00	0.32	
16	2	1.101	1720.14	200.00	0.32	
17	1	1.169	1715.80	200.00	0.32	
17	2	1.169	1715.80	200.00	0.33	
18	1	1.256	1710.31	200.00	0.32	
18	2	1.256	1710.31	200.00	0.32	
19	1	1.343	1704.80	200.00	0.32	
19	2	1.343	1704.80	200.00	0.33	
20	1	1.406	1700.82	200.00	0.32	
20	2	1.406	1700.82	200.00	0.31	
21	1	1.469	1696.79	200.00	.32	
21	2	1.469	1696.79	200.00	.33	
22	1	1.533	1692.82	200.00	0.32	
22	2	1.533	1692.82	200.00	0.31	
23	1	1.596	1688.79	200.00	0.32	
23	2	1.596	1688.79	200.00	0.33	
24	1	1.659	1684.80	200.00	.32	
24	2	1.659	1684.80	200.00	0.31	
25	1	1.733	1680.12	200.00	0.32	
25	2	1.733	1680.12	200.00	0.34	
26	1	1.806	1675.50	200.00	0.32	
26	2	1.806	1675.50	200.00	0.31	
27	1	1.880	1670.77	200.00	0.32	

28	1	1.943	1668.84	[illegible]	[illegible]
28	2	1.943	1668.84	[illegible]	[illegible]
29	1	2.006	1662.76	[illegible]	[illegible]
29	2	2.006	1662.76	[illegible]	0.36
30	1	2.070	1658.86	[illegible]	[illegible]
30	2	2.070	1658.86	[illegible]	[illegible]
30	3	2.070	1658.86	200.00	0.29
31	1	2.133	1654.74	200.00	0.32
31	2	2.133	1654.74	200.00	0.38
31	3	2.133	1654.74	[illegible]	0.38
32	1	2.193	1651.08	200.00	0.33
32	2	2.193	1651.08	[illegible]	[illegible]
32	3	2.193	1651.08	200.00	0.27
33	1	2.253	1647.11	200.00	0.32
33	2	2.253	1647.11	200.00	0.41
33	3	2.253	1647.11	[illegible]	[illegible]
34	1	2.313	1643.50	[illegible]	[illegible]
34	2	2.313	1643.50	[illegible]	[illegible]
34	3	2.313	1643.50	200.00	0.26
35	1	2.373	1639.47	200.00	0.32
35	2	2.373	1639.47	200.00	0.47
35	3	2.373	1639.47	[illegible]	[illegible]
36	1	2.433	1635.94	[illegible]	0.34
36	2	2.433	1635.94	[illegible]	[illegible]
36	3	2.433	1635.94	200.00	0.23

I	X(I)	YD(I)	YNORM(I)
1	0.00	1789.81	1789.81
2	0.06	1784.81	1784.81
3	0.16	1779.81	1779.81
4	0.22	1775.80	1775.80
5	0.28	1771.81	1771.81
6	0.39	1764.81	1764.81
7	0.47	1759.80	1759.80
8	0.55	1754.81	1754.81
9	0.63	1749.81	1749.80
10	0.75	1745.61	1745.61
11	0.76	1741.40	1741.40
12	0.83	1737.21	1737.21
13	0.90	1733.00	1733.00
14	0.96	1728.81	1728.81
15	1.03	1724.47	1724.47
16	1.10	1720.14	1720.14
17	1.17	1715.80	1715.80
18	1.26	1710.31	1710.31
19	1.34	1704.80	1704.80
20	1.41	1700.82	1700.82
21	1.47	1696.79	1696.79
22	1.53	1692.82	1692.82
23	1.60	1688.79	1688.79
24	1.66	1684.82	1684.82
25	1.73	1680.12	1680.12
26	1.81	1675.50	1675.50
27	1.88	1671.77	1671.77
28	1.94	1668.84	1668.84
29	2.01	1662.76	1662.76
30	2.07	1658.86	1658.86
31	2.13	1654.74	1654.74
32	2.19	1651.08	1651.08
33	2.25	1647.11	1647.11
34	2.31	1643.50	1643.50
35	2.37	1639.47	1639.47
36	2.43	1635.94	1635.94

(QD(I),I=1,N)
****

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00
200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00
200.00	200.00	200.00	200.00				

(YD(I),I=1,N)
****

1789.81	1784.81	1779.81	1775.85	1771.81	1764.81	1759.80	1754.81
1749.80	1745.61	1741.40	1737.21	1733.00	1728.81	1724.47	1720.14
1715.80	1710.31	1704.80	1700.82	1696.79	1692.82	1688.79	1684.82
1680.12	1675.59	1670.77	1666.84	1662.76	1658.86	1654.74	1651.08
1647.11	[illegible]	1638.47	[illegible]				

TIME PARAMETERS OF OUTFLOW HYDROGRAPH IMMEDIATELY DOWNSTREAM OF DAM

PARAMETER	UNITS	VARIABLE	VALUE
TIME TO FAILURE	HR	TFH	0.083
TIME TO START OF RISING LIMB OF HYDROGRAPH	HR	TFO	0.000
TIME TO PEAK	HR	TP	0.083
TIME STEP SIZE	HR	DTHI	0.004

TT = 0.0000 DTH = 0.0041 ITERR = 0

QU(1) = 200.00 YU(1) = 1789.81 QU(N) = 200.00 YU(N) = 1635.94

X(I)	Y	V	A	B	BT	Q	CMM	FKC	WAVHT	DH	FRD	DISVOL
0.000	1789.81	1.32	152.	292.	292.	0.200	0.0800	-0.80	0.00	0.5	0.3	
0.158	1779.81	1.31	152.	293.	293.	0.200	0.0800	0.00	0.00	0.5	0.3	
0.284	1771.81	1.31	152.	293.	293.	0.200	0.0800	0.00	0.00	0.5	0.3	
0.474	1759.80	1.32	152.	292.	292.	0.200	0.0800	0.00	0.00	0.5	0.3	
0.632	1749.80	1.32	152.	292.	292.	0.200	0.0800	0.00	0.00	0.5	0.3	
0.765	1741.40	1.32	152.	292.	292.	0.200	0.0800	0.00	0.00	0.5	0.3	
0.898	1733.00	1.32	151.	292.	292.	0.200	0.0800	0.00	0.00	0.5	0.3	
1.032	1724.47	1.33	151.	291.	291.	0.200	0.0800	0.00	0.00	0.5	0.3	
1.169	1715.80	1.33	150.	291.	291.	0.200	0.0800	0.00	0.00	0.5	0.3	
1.343	1704.90	1.34	150.	290.	290.	0.200	0.0800	0.00	0.00	0.5	0.3	
1.469	1696.79	1.35	149.	289.	289.	0.200	0.0800	0.00	0.00	0.5	0.3	
1.596	1688.79	1.36	147.	288.	288.	0.200	0.0800	0.00	0.00	0.5	0.3	
1.733	1680.12	1.38	145.	287.	287.	0.200	0.0800	0.00	0.00	0.5	0.3	
1.880	1670.77	1.40	143.	285.	285.	0.200	0.0800	0.00	0.00	0.5	0.3	
2.006	1662.76	1.42	141.	284.	284.	0.200	0.0800	0.00	0.00	0.5	0.4	
2.133	1654.74	1.45	134.	279.	279.	0.200	0.0800	0.00	0.00	0.5	0.4	
2.253	1647.11	1.58	127.	269.	269.	0.200	0.0800	0.00	0.00	0.5	0.4	
2.373	1639.47	1.73	115.	258.	258.	0.200	0.0800	0.00	0.00	0.4	0.5	

FRDM= 0.46 IFR= 35 FRM=0.23 IFM= 36

TT = [illegible] DTH = [illegible] ITERR = [illegible]

QU(1) = 200.00 YU(1) = 1789.81 QU(N) = 200.00 YU(N) = 1635.95

X(I)	Y	V	A	B	BT	Q	CMM	FKC	WAVHT	DH	FRD	DISVOL
0.000	1789.81	1.32	152.	292.	292.	0.200	0.0800	-0.80	0.00	0.5	0.3	
0.158	1779.81	1.31	152.	293.	293.	0.200	0.0800	0.00	0.00	0.5	0.3	
0.284	1771.81	1.31	152.	293.	293.	0.200	0.0800	0.00	0.00	0.5	0.3	
0.474	1759.80	1.32	152.	292.	292.	0.200	0.0800	0.00	0.00	0.5	0.3	
0.632	1749.80	1.32	152.	292.	292.	0.200	0.0800	0.00	0.00	0.5	0.3	
0.765	1741.40	1.32	152.	292.	292.	0.200	0.0800	0.00	0.00	0.5	0.3	

1.169	1715.80	1.33	152.	291.	291.	0.200	0.0800	0.00	0.00	0.5	0.3	
1.343	1704.80	1.34	151.	290.	290.	0.200	0.0800	0.00	0.00	0.5	0.3	
1.469	1696.79	1.35	149.	289.	289.	0.200	0.0800	0.00	0.00	0.5	0.3	
1.596	1688.79	1.36	147.	288.	288.	0.200	0.0800	0.00	0.00	0.5	0.3	
1.733	1680.12	1.38	145.	287.	287.	0.200	0.0800	0.00	0.00	0.5	0.3	
1.880	1670.77	1.40	143.	285.	285.	0.201	0.0800	0.00	0.00	0.5	0.3	
2.006	1662.76	1.44	141.	281.	281.	0.200	0.0800	0.00	0.00	0.5	0.4	
2.133	1654.74	1.49	134.	276.	276.	0.200	0.0800	0.00	0.00	0.5	0.4	
2.253	1647.11	1.58	127.	269.	269.	0.200	0.0800	0.00	0.00	0.5	0.4	
2.373	1639.47	1.74	115.	258.	258.	0.201	0.0800	0.00	0.00	0.4	0.5	

FRDM= 0.46 IFR= 35 FRM=0.23 IFM= 36

TT = 0.0000 DTH = 0.0041 ITERR = 0

QU(1) = 200.00 YU(1) = 1789.81 QU(N) = 200.00 YU(N) = 1635.95

X(I)	Y	V	A	B	BT	Q	CMM	FKC	WAVHT	DH	FRD	DISVOL
0.000	1789.81	1.32	152.	292.	292.	0.200	0.0800	-0.80	0.00	0.5	0.3	
0.158	1779.81	1.31	152.	293.	293.	0.200	0.0800	0.00	0.00	0.5	0.3	
0.284	1771.81	1.31	152.	293.	293.	0.200	0.0800	0.00	0.00	0.5	0.3	
0.474	1759.86	1.32	152.	292.	292.	0.200	0.0800	0.00	0.00	0.5	0.3	
0.632	1749.86	1.32	152.	292.	292.	0.200	0.0800	0.00	0.00	0.5	0.3	
0.765	1741.40	1.32	152.	292.	292.	0.200	0.0800	0.00	0.00	0.5	0.3	
0.898	1733.00	1.32	151.	292.	292.	0.200	0.0800	0.00	0.00	0.5	0.3	
1.032	1724.47	1.33	151.	291.	291.	0.200	0.0800	0.00	0.00	0.5	0.3	
1.169	1715.80	1.33	150.	291.	291.	0.200	0.0800	0.00	0.00	0.5	0.3	
1.343	1704.80	1.34	151.	290.	290.	0.200	0.0800	0.00	0.00	0.5	0.3	
1.469	1696.79	1.35	149.	289.	289.	0.200	0.0800	0.00	0.00	0.5	0.3	
1.596	1688.79	1.36	147.	288.	288.	0.200	0.0800	0.00	0.00	0.5	0.3	
1.733	1680.12	1.38	145.	287.	287.	0.200	0.0800	0.00	0.00	0.5	0.3	
1.880	1670.77	1.40	143.	285.	285.	0.201	0.0800	0.00	0.00	0.5	0.3	
2.006	1662.76	1.44	140.	281.	281.	0.201	0.0800	0.00	0.00	0.5	0.4	
2.133	1654.74	1.51	134.	276.	276.	0.201	0.0800	0.00	0.00	0.5	0.4	
2.253	1647.11	1.59	127.	269.	269.	0.201	0.0800	0.00	0.00	0.5	0.4	
2.373	1639.47	1.75	115.	258.	258.	0.202	0.0800	0.00	0.00	0.4	0.5	

FRDM= 0.46 IFR= 35 FRM=0.23 IFM= 36

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 26 27 28 29 30 31 32 33 34

TT= 0.000 DTH= 0.000 ITERR= 9

TT = 0.0021 DTH = 0.0021 ITERR = 3

QU(1) = 200.00 YU(1) = 1789.8 QU(N) = 312.63 YU(N) = 1635.95

X(I)	Y	V	A	B	BT	Q	CMM	FKC	WAVHT	DH	FRD	DISVOL
0.000	1789.90	1.40	179.	315.	315.	0.250	0.0800	-0.80	0.09	0.6	0.3	
0.158	1779.88	1.32	174.	311.	311.	0.230	0.0800	0.00	0.07	0.6	0.3	
0.284	1771.87	1.25	171.	308.	308.	0.213	0.0800	0.00	0.06	0.6	0.3	
0.474	1759.86	1.21	169.	307.	307.	0.205	0.0800	0.00	0.06	0.5	0.3	
0.632	1749.86	1.19	168.	307.	307.	0.200	0.0800	0.00	0.06	0.5	0.3	
0.765	1741.46	1.18	169.	307.	307.	0.200	0.0800	0.00	0.06	0.6	0.3	
0.898	1733.07	1.17	171.	309.	309.	0.200	0.0800	0.00	0.07	0.6	0.3	
1.032	1724.54	1.16	173.	310.	310.	0.200	0.0800	0.00	0.07	0.6	0.3	
1.169	1715.89	1.14	176.	312.	313.	0.200	0.0800	0.00	0.09	0.6	0.3	
1.343	1704.89	1.12	179.	315.	315.	0.200	0.0800	0.00	0.10	0.6	0.3	
1.469	1696.91	1.10	183.	318.	318.	0.200	0.0800	0.00	0.11	0.6	0.3	
1.596	1688.92	1.07	188.	322.	322.	0.200	0.0800	0.00	0.13	0.6	0.2	
1.733	1680.27	1.04	193.	326.	326.	0.200	0.0800	0.00	0.15	0.6	0.2	
1.880	1670.95	1.01	198.	330.	330.	0.201	0.0800	0.00	0.18	0.6	0.2	

2.253	1647.59	0.71	215.	348.	348.	0.201	0.0800	[illegible]	0.30	0.6	0.2
2.373	1639.83	[illegible]	224.	359.	359.	0.202	0.0800	0.00	0.36	0.6	0.2

FRDM= [illegible] IFR= [illegible] FRM= [illegible] IFM= 35

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 22 23 24 25 26 27 28 29 30
TT= 0.002 DTH= 0.002 ITERR= 9

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 36
TT= 0.002 DTH= 0.001 ITERR= 9

TT = 0.0031 DTH = 0.0010 ITERR = 2
QU(1) = 289.65 YU(1) = 1789.96 QU(N) = 459.67 YU(N) = 1635.95

X(I)	Y	V	A	B	RT	Q	CMM	FKC	WAVHT	DH	FRD	DISVOL
0.000	1789.96	1.45	200.	332.	332.	0.290	0.0800	-0.80	0.15	0.6	0.3	
0.158	1779.93	1.35	191.	325.	325.	.257	0.0800	0.00	0.12	0.6	0.3	
0.284	1771.91	1.25	184.	321.	321.	0.231	0.0800	0.00	0.11	0.6	0.3	
0.474	1759.90	1.21	182.	318.	318.	0.218	0.0800	0.00	0.10	0.6	0.3	
0.632	1749.91	1.15	182.	318.	318.	0.209	0.0800	0.00	0.10	0.6	0.3	
0.765	1741.51	1.10	183.	319.	319.	0.201	0.0800	0.00	0.10	0.6	0.3	
0.898	1733.12	1.07	186.	321.	321.	0.200	0.0800	0.00	0.11	0.6	0.2	
1.032	1724.60	1.05	190.	324.	324.	0.200	0.0800	0.00	0.13	0.6	0.2	
1.169	1715.95	[illegible]	195.	329.	329.	0.200	0.0800	0.00	0.15	0.6	0.2	
1.343	1704.96	[illegible]	[illegible]	332.	332.	0.200	0.0800	0.00	0.16	0.6	0.2	
1.465	1696.98	0.94	[illegible]	338.	338.	0.200	0.0800	0.00	0.19	0.6	0.2	
1.596	1689.01	0.92	217.	345.	345.	0.200	0.0800	0.00	0.22	0.6	0.2	
1.733	1680.37	0.88	227.	352.	352.	0.200	0.0800	0.00	0.26	0.6	0.2	
1.880	1671.07	0.85	237.	360.	360.	0.201	0.0800	0.00	0.29	0.7	0.2	
2.006	1663.10	[illegible]	[illegible]	365.	365.	0.201	0.0800	0.00	0.34	0.7	0.2	
2.133	1655.14	0.76	256.	[illegible]	[illegible]	0.201	0.0800	0.00	0.40	0.7	0.2	
2.253	1647.59	0.71	284.	391.	391.	0.201	0.0800	0.00	0.48	0.7	0.1	
2.373	1640.04	0.67	303.	404.	404.	0.202	0.0800	0.00	0.57	0.7	0.1	

FRDM= 0.53 IFR= 36 FRM=0.14 IFM= 35

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 20 21 22 23 24 25 26 27 28
TT= 0.003 DTH= 0.002 ITERR= 9

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 32 33 34 35 36
TT= 0.003 DTH= 0.001 ITERR= 9

TT = 0.0041 DTH = 0.0010 ITERR = 2
QU(1) = 339.10 YU(1) = 1790.03 QU(N) = 627.41 YU(N) = 1635.95

X(I)	Y	V	A	B	RT	Q	CMM	FKC	WAVHT	DH	FRD	DISVOL
0.000	1790.03	1.51	224.	350.	350.	0.339	0.0800	-0.80	0.23	0.6	0.3	
0.158	1779.99	1.38	210.	340.	340.	0.289	0.0800	0.00	0.18	0.6	0.3	
0.284	1771.96	1.24	200.	332.	332.	0.248	0.0800	0.00	0.15	0.6	0.3	
0.474	1759.95	1.17	197.	[illegible]	[illegible]	0.230	0.0800	0.00	0.15	0.6	0.3	
0.632	1749.95	1.11	197.	[illegible]	[illegible]	0.216	0.0800	0.00	0.15	0.6	0.2	
0.765	1741.56	[illegible]	199.	331.	331.	0.204	0.0800	0.00	0.15	0.6	0.2	
0.898	1733.17	0.98	204.	335.	335.	0.200	0.0800	0.00	0.17	0.6	0.2	
1.032	1724.66	0.95	211.	341.	341.	0.200	0.0800	0.00	0.19	0.6	0.2	
1.169	1716.02	0.91	220.	347.	347.	0.200	0.0800	0.00	0.22	0.6	0.2	
1.343	1705.04	0.88	228.	353.	353.	0.200	0.0800	0.00	0.24	0.6	0.2	

1.753	1680.[illegible]	[illegible]	275.	[illegible]	356.	[illegible]	[illegible]	[illegible]	[illegible]	0.34	0.7	0.2
1.880	1671.21	[illegible]	293.	399.	399.	0.201	0.0800	0.00	1.44	0.7	0.1
2.006	1663.27	0.63	317.	413.	413.	0.201	0.0800	0.00	1.51	0.8	0.1
2.133	1655.36	[illegible]	346.	431.	431.	0.201	0.0800	0.00	0.63	0.8	0.1
2.253	1647.42	[illegible]	3[illegible].	451.	451.	0.201	0.0800	0.00	0.71	0.8	0.1
2.373	1640.[illegible]	[illegible]	41[illegible].	472.	472.	0.202	0.0800	0.00	0.83	0.9	0.1

FRDM= 0.72 IFR= 36 FRM=0.09 IFM= 35

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 20 21 22 23 24 25 26 27 28
TT= 0.004 DTH= 0.002 ITERR= 9

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 28 30 31 32 33 34 35 36
TT= 0.004 DTH= 0.001 ITERR= 9

TT = 0.0052 DTH = 0.0010 ITERR = 2
QU(1) = 393.09 YU(1) = 1799.10 QU(N) = 747.96 YU(N) = 1635.95

X(I)	Y	V	A	B	BT	Q	CMM	FKC	WAVHT	DH	FRD	DISVOL
*******	********	*******	********	********	*******	********	********	*******	*******	******	******	********
[illegible]	1790.[illegible]	1.57	251.	369.	369.	0.393	0.0800	-0.00	0.30	0.7	0.3
0.158	1780.04	1.40	229.	354.	354.	0.321	0.0800	0.00	0.24	0.6	0.3
0.284	1772.00	1.23	215.	344.	344.	0.264	0.0800	0.00	0.20	0.6	0.3
0.474	1759.99	1.14	211.	341.	341.	0.241	0.0800	0.00	0.19	0.6	0.3
.632	1749.[illegible]	[illegible]	211.	341.	341.	[illegible].222	[illegible]	[illegible]	0.19	0.6	0.2
[illegible].765	1741.61	[illegible].97	216.	344.	344.	[illegible].208	0.0800	0.00	0.20	0.6	0.2
[illegible].898	1733.23	[illegible].90	224.	350.	350.	0.201	0.0800	0.00	0.23	0.6	0.2
1.032	1724.73	0.85	234.	358.	358.	0.200	0.0800	0.00	0.26	0.7	0.2
1.169	1716.10	0.81	248.	367.	367.	0.200	0.0800	0.00	0.30	0.7	0.2
1.343	1705.13	0.77	261.	376.	376.	0.200	0.0800	0.00	0.33	0.7	0.2
1.465	1697.19	0.71	282.	390.	390.	0.205	0.0800	0.00	0.39	0.7	0.1
1.596	1689.25	0.65	317.	416.	416.	0.200	0.0800	[illegible]	0.45	0.8	0.1
1.733	1680.65	[illegible]	334.	424.	424.	0.200	0.0800	0.00	0.53	0.8	0.1
1.880	1671.38	0.55	364.	441.	441.	0.201	0.0800	0.00	0.61	0.8	0.1
2.006	1663.47	0.50	404.	464.	464.	0.201	0.0800	0.00	0.71	0.9	0.1
2.133	1655.57	0.45	451.	489.	489.	0.201	0.0800	0.00	0.83	0.9	0.1
2.253	1648.[illegible]	[illegible].41	537.	518.	518.	0.201	0.0800	[illegible]	0.97	1.0	0.1
2.373	1640.60	[illegible].42	569.	548.	548.	0.237	0.0800	0.00	1.13	1.0	0.1

FRDM= [illegible].89 IFR= 34 FRM=[illegible].7 IFM= 33

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 18 19 20 21 22 23 24 25 26
TT= 0.005 DTH= 0.002 ITERR= 9

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 26 27 28 29 30 31 32 33 34
TT= 0.005 DTH= 0.001 ITERR= 9

TT = [illegible] DTH = [illegible] ITERR = 6
QU(1) = 455.35 YU(1) = 1799.18 QU(N) = 757.37 YU(N) = 1635.95

X(I)	Y	V	A	B	BT	Q	CMM	FKC	WAVHT	DH	FRD	DISVOL
*******	********	*******	********	********	*******	********	********	*******	*******	******	******	********
[illegible]	1790.18	1.63	279.	389.	389.	.455	0.0800	-0.00	0.37	0.7	0.3
[illegible].158	1780.10	1.42	249.	368.	368.	.355	0.0800	0.00	0.29	0.7	0.3
0.284	1772.05	1.21	230.	355.	355.	0.280	0.0800	0.00	0.24	0.6	0.3
0.474	1760.03	1.11	226.	351.	351.	0.250	0.0800	0.00	0.23	0.6	0.2
0.632	1750.04	1.01	226.	352.	352.	0.228	0.0800	0.00	0.23	0.6	0.2
[illegible].765	1741.66	[illegible].97	233.	357.	357.	[illegible].213	0.0800	[illegible]	1.25	[illegible].7	0.2

1.1[illegible]	1726.19	[illegible]	24[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.39	0.7	0.1
1.343	1715.23	[illegible]	30[illegible]	4[illegible]2.	432.	[illegible]	[illegible]	[illegible]	[illegible]	0.44	0.7	0.1
1.469	1697.31	[illegible]	331.	422.	422.	[illegible]	0.0800	[illegible]	[illegible]	0.51	0.8	0.1
1.594	1689.39	[illegible]	369.	444.	444.	[illegible]	[illegible]	[illegible]	[illegible]	0.63	0.8	0.1
1.733	1680.[illegible]	[illegible]	41[illegible].	467.	467.	[illegible]	[illegible]	[illegible]	[illegible]	0.70	0.9	0.1
1.88[illegible]	1671.69	[illegible]	43[illegible].	491.	491.	[illegible]	[illegible]	[illegible]	[illegible]	0.80	0.9	0.1
2.006	1663.70	0.40	514.	522.	522.	0.205	0.0800	0.00	[illegible]	0.93	1.0	0.1
2.133	1655.82	0.44	583.	554.	554.	0.254	0.0800	0.00	[illegible]	1.08	1.1	0.1
2.253	1648.36	0.57	659.	589.	589.	0.376	0.0800	0.00	[illegible]	1.24	1.1	0.1
2.373	1640.88	[illegible]	73[illegible].	7[illegible].	705.	0.498	0.0800	[illegible]	[illegible]	1.41	1.0	0.1

FRDM= 1.[illegible]1 IFR= [illegible] FRM=[illegible]7 IFM= 29

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 18 19 20 21 22 23 24 25 26
TT= 0.006 DTH= 0.002 ITERR= 9

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 26 27 28 29 30 31 32 33 34
TT= 0.006 DTH= 0.001 ITERR= 9

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 36
TT= 0.006 DTH= 0.001 ITERR= 9

TT = 0.0067 DTH = 0.0005 ITERR = 2

QU(1) = 467.41 YU(1) = 1[illegible].22 QU(N) = 1[illegible]7.15 YU(N) = 1635.[illegible]5

X(I)	Y	V	A	B	BT	Q	CMM	FKC	WAVHT	DH	FRD	DISVOL
0.000	1790.22	1.66	294.	398.	398.	0.487	0.0800	-0.80	0.41	0.7	0.3	
0.158	1780.13	1.44	259.	375.	375.	0.373	0.0800	0.00	0.32	0.7	0.3	
0.284	1772.07	1.22	23[illegible].	7[illegible].	36[illegible].	0.289	0.0800	0.00	0.26	0.7	0.3	
0.474	1760.[illegible]5	1.11	23[illegible].	35[illegible].	35[illegible].	0.257	0.0800	0.00	0.25	0.7	0.2	
0.632	1750.[illegible]6	1.0[illegible]	23[illegible].	357.	357.	0.234	0.0800	0.00	0.25	0.7	0.2	
0.765	1741.68	0.91	242.	363.	363.	0.220	0.0800	0.00	0.28	0.7	0.2	
0.898	1733.32	0.83	257.	373.	373.	0.213	0.0800	0.00	0.32	0.7	0.2	
1.032	1724.84	0.76	276.	386.	386.	0.210	0.0800	0.00	0.37	0.7	0.2	
1.169	1716.23	0.7[illegible]	299.	40[illegible].	402.	0.209	0.0800	0.0[illegible]	0.43	0.7	0.1	
1.343	1705.28	[illegible].65	32[illegible].	41[illegible].	41[illegible].	0.209	0.0800	0.00	0.49	0.8	0.1	
1.469	1697.37	[illegible].58	356.	43[illegible].	43[illegible].	0.207	0.0800	0.00	0.58	0.8	0.1	
1.596	1689.47	0.51	402.	463.	463.	0.204	0.0800	0.00	0.68	0.9	0.1	
1.733	1680.91	0.45	452.	490.	490.	0.202	0.0800	0.00	0.79	0.9	0.1	
1.880	1671.68	0.40	506.	517.	517.	0.201	0.0800	0.00	0.90	1.0	0.1	
2.0[illegible]6	1663.[illegible]	[illegible].35	57[illegible].	[illegible].	583.	0.205	0.0800	0.0[illegible]	1.05	1.0	0.1	
2.133	1655.96	[illegible].30	6[illegible].	[illegible].	59[illegible].	0.210	0.0800	0.0[illegible]	1.22	1.1	0.1	
2.253	1648.51	[illegible].33	75[illegible].	74[illegible].	746.	0.232	0.0800	0.0[illegible]	1.39	1.0	0.1	
2.373	1641.03	0.30	854.	904.	904.	0.252	0.0800	0.00[illegible]	1.55	0.9	0.1	

FRDM= 1.39 IFR= 36 FRM=0.05 IFM= 31

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 18 19 20 21 22 23 24 25 26
TT= 0.007 DTH= 0.002 ITERR= 9

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 26 27 28 29 30 31 32 33 34
TT= 0.007 DTH= 0.001 ITERR= 9

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 34 35 36
TT= 0.007 DTH= 0.001 ITERR= 9

GU(1) = 525.19 YU(1) = 1790.29 GU(N) = 1323.58 YU(N) = 1635.95

X(I)	Y	V	A	B	BT	Q	CMM	FKC	WAVHT	DH	FRD	DISVOL
0.000	1790.25	1.69	370.	418.	418.	0.523	0.0800	-0.80	0.45	0.8	0.3	
0.158	1780.18	1.45	271.	382.	382.	0.392	0.0800	0.00	0.35	0.7	0.3	
0.284	1772.09	1.21	246.	366.	366.	0.299	0.0800	0.00	0.28	0.7	0.3	
0.474	1760.08	1.10	240.	362.	362.	0.264	0.0800	0.00	0.27	0.7	0.2	
0.632	1750.08	0.99	242.	363.	363.	0.240	0.0800	0.00	0.28	0.7	0.2	
0.765	1741.71	0.89	252.	370.	370.	0.225	0.0800	0.00	0.30	0.7	0.2	
0.898	1733.35	0.81	269.	382.	382.	0.219	0.0800	0.00	0.35	0.7	0.2	
1.032	1724.88	0.75	292.	397.	397.	0.218	0.0800	0.00	0.41	0.7	0.2	
1.169	1716.28	0.68	319.	414.	414.	0.218	0.0800	0.00	0.48	0.8	0.1	
1.343	1705.34	0.62	345.	430.	430.	0.218	0.0800	0.00	0.54	0.8	0.1	
1.469	1697.44	0.56	388.	455.	455.	0.216	0.0800	0.00	0.64	0.9	0.1	
1.596	1689.55	0.49	441.	484.	484.	0.213	0.0800	0.00	0.76	0.9	0.1	
1.733	1681.06	0.43	512.	514.	514.	0.213	0.0800	0.00	0.88	1.0	0.1	
1.880	1671.79	0.37	594.	546.	546.	0.211	0.0800	0.00	1.01	1.0	0.1	
2.006	1663.95	0.33	653.	586.	586.	0.216	0.0800	0.00	1.18	1.1	0.1	
2.133	1656.10	0.28	755.	741.	741.	0.210	0.0800	0.00	1.36	1.0	0.0	
2.253	1648.65	0.24	873.	931.	931.	0.208	0.0800	0.00	1.53	0.9	0.0	
2.373	1641.16	0.20	994.	1092.	1092.	0.276	0.0800	0.00	1.69	0.9	0.1	

FRDM= 1.59 IFR= 34 FRM= .34 IFM= 33

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 18 19 20 21 22 23 24 25 26

TT= 0.007 DTH= 0.002 ITERR= 9

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 26 27 28 29 30 31 32 33 34

TT= 0.007 DTH= 0.001 ITERR= 9

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 34 35 36

TT= 0.007 DTH= 0.001 ITERR= 9

TT = 0.0078 DTH= 0.0005 ITERR = 2

GU(1) = 558.51 YU(1) = 1790.29 GU(N) = 1333.15 YU(N) = 1635.95

X(I)	Y	V	A	B	BT	Q	CMM	FKC	WAVHT	DH	FRD	DISVOL
0.000	1790.29	1.72	325.	418.	418.	0.559	0.0800	-0.80	0.49	0.8	0.3	
0.158	1780.18	1.46	280.	389.	389.	0.410	0.0800	0.00	0.38	0.7	0.3	
0.284	1772.11	1.21	253.	371.	371.	0.306	0.0800	0.00	0.30	0.7	0.3	
0.474	1760.18	1.[illegible]	249.	367.	367.	0.269	0.0800	0.00	0.29	0.7	0.2	
0.632	1750.14	0.97	252.	369.	369.	0.244	0.0800	0.00	0.30	0.7	0.2	
0.765	1741.73	0.89	262.	377.	377.	0.230	0.0800	0.00	0.33	0.7	0.2	
0.898	1733.39	0.80	282.	390.	390.	0.225	0.0800	0.00	0.38	0.7	0.2	
1.032	1724.92	0.73	308.	407.	407.	0.225	0.0800	0.00	0.45	0.8	0.1	
1.169	1716.33	0.67	341.	427.	427.	0.226	0.0800	0.00	0.53	0.8	0.1	
1.343	1705.40	0.62	378.	445.	445.	0.228	0.0800	0.00	0.60	0.8	0.1	
1.469	1697.51	0.54	423.	473.	473.	0.227	0.0800	0.00	0.71	0.9	0.1	
1.596	1689.63	0.47	481.	505.	505.	0.226	0.0800	0.00	0.84	1.0	0.1	
1.733	1681.10	0.42	551.	540.	540.	0.229	0.0800	0.00	0.98	1.0	0.1	
1.880	1671.90	0.37	628.	575.	575.	0.233	0.0800	0.00	1.13	1.1	0.1	
2.006	1664.18	0.3[illegible]	734.	702.	702.	0.222	0.0800	0.00	1.31	1.0	0.1	
2.133	1656.23	0.27	853.	919.	919.	0.215	0.0800	0.00	1.49	0.9	0.0	
2.253	1648.77	0.23	1[illegible]	1[illegible]	1[illegible]	0.277	0.0800	0.	1.66	0.9	0.1	
2.373	1641.29	0.39	1143.	1264.	1264.	0.449	0.0800	0.00	1.82	0.9	0.1	

FRDM= 1.72 IFR= 32 FRM=0.05 IFM= 31

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 16 17 18 19 20 21 22 23 24

TT= 0.008 DTH= 0.002 ITERR= 9

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 26 27 28 29 30 31 32 33 34
TT= 0.008 DTH= 0.001 ITERR= 9

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 32 33 34 35 36
TT= 0.008 DTH= 0.001 ITERR= 9

TT = 0.0083 DTH = 0.0005 ITERR = 2
QU(1) = 594.67 YU(1) = 1790.33 QU(N) = 1353.19 YU(N) = 1635.95

X(I)	Y	V	A	B	BT	Q	CMM	FKC	WAVHT	DH	FRD	DISVOL
0.000	1790.33	1.75	340.	427.	427.	.595	0.0800	-0.80	0.52	0.8	0.3	
0.158	1780.21	1.47	330.	396.	396.	.426	0.0800	0.00	0.40	0.7	0.3	
0.284	1772.13	1.20	260.	376.	376.	0.312	0.0800	0.00	0.32	0.7	0.3	
0.474	1760.11	1.07	254.	372.	372.	0.272	0.0800	0.00	0.31	0.7	0.2	
0.632	1750.12	0.96	257.	374.	374.	0.247	0.0800	0.00	0.32	0.7	0.2	
.765	1741.76	0.86	272.	384.	384.	0.234	0.0800	0.00	0.36	0.7	0.2	
.898	1733.42	0.72	284.	399.	399.	0.231	0.0800	0.00	0.41	0.7	0.2	
1.032	1724.96	0.72	324.	417.	417.	0.233	0.0800	0.00	0.49	0.8	0.1	
1.169	1716.38	0.65	361.	439.	439.	0.236	0.0800	0.00	0.58	0.8	0.1	
1.343	1705.45	0.60	396.	459.	459.	0.239	0.0800	0.00	0.66	0.9	0.1	
1.469	1697.58	0.53	453.	491.	491.	0.240	0.0800	0.00	0.78	0.9	0.1	
1.596	1689.72	0.49	507.	527.	527.	.241	0.0800	0.00	0.93	1.0	0.1	
1.733	1681.20	0.41	5 7.	566.	566.	.252	0.0800	0.00	1.08	1.1	0.1	
1.880	1672.12	0.37	539.	628.	628.	0.258	0.0800	0.0	1.25	1.1	0.1	
2.006	1664.19	0.27	823.	856.	856.	0.225	0.0800	0.00	1.43	1.0	0.0	
2.133	1656.34	0.27	970.	1062.	1062.	0.262	0.0800	0.00	1.60	0.9	0.0	
2.253	1648.89	0.37	1135.	1255.	1255.	0.422	0.0800	0.00	1.77	0.9	0.1	
2.373	1641.41	0.53	1237.	1419.	1419.	0.693	0.0800	0.00	1.93	0.9	0.1	

FRDM= 1.81 IFR= 00 FRM=0.05 IFM= 09

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 16 17 18 19 20 21 22 23 24
TT= 0.008 DTH= 0.002 ITERR= 9

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 24 25 26 27 28 29 30 31 32
TT= 0.008 DTH= 0.001 ITERR= 9

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 30 31 32 33 34 35 36
TT= 0.008 DTH= 0.001 ITERR= 9

TT = 0.0088 DTH = 0.0005 ITERR = 3
QU(1) = 634.69 YU(1) = 1790.37 QU(N) = 1417.15 YU(N) = 1635.95

X(I)	Y	V	A	B	BT	Q	CMM	FKC	WAVHT	DH	FRD	DISVOL
0.000	1790.37	1.78	357.	437.	437.	0.635	0.0800	-0.80	0.56	0.8	0.3	
0.158	1780.23	1.48	300.	402.	402.	0.445	0.0800	0.00	0.43	0.7	0.3	
0.284	1772.15	1.19	267.	381.	381.	.318	0.0800	0.00	0.34	0.7	.3	
0.474	1760.13	1.06	261.	377.	377.	.276	0.0800	0.00	0.33	0.7	0.2	
0.632	1750.14	0.94	266.	380.	380.	.250	0.0800	0.00	0.34	0.7	0.2	
0.765	1741.79	0.84	282.	391.	391.	0.238	0.0800	0.00	0.38	0.7	0.2	
0.898	1733.45	0.77	308.	408.	408.	0.237	0.0800	0.00	0.45	0.8	0.2	
1.032	1725.00	0.70	342.	428.	428.	0.241	0.0800	0.00	0.53	0.8	0.1	
1.169	1716.43	0.64	394.	453.	453.	0.246	0.0800	0.00	0.63	0.8	0.1	

1.596	1689.81	0.45	574.	[illegible]	[illegible]	0.260	[illegible]	[illegible]	1.02	1.0	0.1
1.733	1681.41	0.42	669.	693.	693.	0.281	0.0800	[illegible]	1.19	1.1	0.1
1.880	1672.13	0.33	775.	776.	776.	0.259	0.0800	[illegible]	1.36	1.0	0.1
2.006	1664.30	0.27	922.	999.	999.	0.251	0.0800	[illegible]	1.53	0.9	0.1
2.133	1656.45	0.34	1191.	1217.	1217.	0.366	0.0800	[illegible]	1.71	0.9	0.1
2.253	1648.99	[illegible]	1277.	[illegible]	[illegible]	0.640	[illegible]	[illegible]	1.88	0.9	0.1
2.373	1641.51	0.66	1452.	1559.	1559.	0.954	0.0800	0.00	2.04	0.9	0.1

FRDM= 1.90 IFR= 30 FRM=0.05 IFM= 29

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 16 17 18 19 20 21 22 23 24
TT= 0.009 DTH= 0.002 ITERR= 9

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 24 25 26 27 28 29 30 31 32
TT= 0.009 DTH= 0.001 ITERR= 9

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 30 31 32 33 34 35 36
TT= 0.009 DTH= 0.001 ITERR= 9

TT = 0.0093 DTH = [illegible] ITERR = 4
QU(1) = 674.71 YU(1) = 1790.41 QU(N) = 1550.23 YU(N) = 1635.95

X(I)	Y	V	A	B	BT	Q	CMM	FKC	WAVHT	DH	FRD	DISVOL
*******	********	*******	********	********	*******	********	********	*******	*******	******	******	********
0.000	1790.41	1.81	374.	447.	447.	0.675	[illegible]	[illegible]	0.60	0.8	0.3
0.158	1781.25	1.49	318.	418.	418.	0.461	[illegible]	[illegible]	0.45	0.8	0.3
0.284	1772.17	1.18	274.	385.	385.	0.324	0.0800	0.00	0.36	0.7	0.2
0.474	1760.15	1.04	268.	381.	381.	0.279	0.0800	0.00	0.35	0.7	0.2
0.632	1750.16	0.92	274.	385.	385.	0.253	0.0800	0.00	0.36	0.7	0.2
0.765	1741.81	0.83	293.	398.	398.	0.242	[illegible]	[illegible]	0.41	0.7	0.2
0.898	1733.49	0.75	323.	416.	416.	0.243	[illegible]	[illegible]	0.48	0.8	0.2
1.032	1725.24	0.69	361.	439.	439.	0.250	0.0800	[illegible]	0.58	0.8	0.1
1.169	1716.48	0.63	409.	466.	466.	0.257	0.0800	0.00	0.68	0.9	0.1
1.343	1705.58	0.58	454.	491.	491.	0.264	0.0800	0.00	0.78	0.9	0.1
1.469	1697.73	0.51	530.	525.	529.	0.270	0.0800	0.00	0.93	1.0	0.1
1.596	1689.90	0.45	625.	574.	574.	0.281	0.0800	0.00	1.11	1.1	0.1
1.733	1681.41	0.39	736.	705.	705.	0.287	0.0800	0.00	1.30	1.0	0.1
1.880	1672.23	0.31	859.	810.	810.	0.264	0.0800	[illegible]	1.46	0.9	0.1
2.006	1664.40	0.30	1028.	1134.	1134.	0.310	0.0800	0.00	1.63	0.9	0.1
2.133	1656.55	0.43	1219.	1343.	1343.	0.520	0.0800	0.00	1.81	0.9	0.1
2.253	1649.09	0.62	1422.	1533.	1533.	0.885	0.0800	0.00	1.98	0.9	0.1
2.373	1641.60	[illegible]	1615.	1687.	1687.	1.167	0.0800	[illegible]	2.13	1.0	0.1

FRDM= 1.98 IFR= [illegible] FRM=[illegible] IFM= 29

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 16 17 18 19 20 21 22 23 24
TT= 0.009 DTH= 0.002 ITERR= 9

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 24 25 26 27 28 29 30 31 32
TT= 0.009 DTH= [illegible] ITERR= 9

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 30 31 32 33 34 35 36
TT= 0.009 DTH= 0.001 ITERR= 9

TT = 0.0099 DTH = 0.0005 ITERR = 5
QU(1) = 714.73 YU(1) = [illegible] QU(N) = 1720.07 YU(N) = 1635.95

[illegible]	1792.44	1.82	39[illegible]	456.	456.	.715	[illegible]	-0.80	0.64	0.9	0.3
0.158	1780.28	1.45	319.	414.	414.	.477	[illegible]	0.00	0.47	0.8	0.3
0.284	1772.18	1.17	28[illegible]	389.	389.	.327	[illegible]	0.00	0.37	0.7	0.2
0.474	1760.17	1.03	274.	385.	385.	0.281	[illegible]	0.00	.36	0.7	0.2
.632	1750.18	0.91	281.	39[illegible]	39[illegible]	.255	[illegible]	0.00	0.38	0.7	0.2
0.765	1741.84	0.81	303.	404.	404.	0.247	0.0800	0.00	0.44	0.8	0.2
0.898	1733.52	0.74	337.	425.	425.	0.250	0.0800	0.00	0.52	0.8	0.1
1.032	1725.09	0.68	380.	450.	450.	0.260	0.0800	0.00	0.62	0.8	0.1
1.169	1716.53	0.62	434.	48[illegible]	480.	0.270	[illegible]	0.00	0.74	0.9	0.1
1.343	1705.64	0.59	493.	5[illegible]7.	5[illegible]7.	0.279	[illegible]	0.00	0.84	1.0	0.1
1.469	1697.80	0.51	571.	549.	549.	0.290	[illegible]	0.00	1.01	1.0	0.1
1.596	1689.99	0.45	680.	598.	598.	0.308	0.0800	0.00	1.20	1.1	0.1
1.733	1681.50	0.35	808.	831.	831.	0.283	0.0800	0.00	1.39	1.0	0.1
1.880	1672.32	0.30	949.	1036.	1036.	0.288	0.0800	0.00	1.55	0.9	0.1
2.006	1664.49	0.35	1141.	1262.	1262.	0.405	[illegible]	0.00	1.73	0.9	0.1
2.133	1656.64	0.53	1352.	1470.	147[illegible].	.717	[illegible]	0.00	1.90	0.9	0.1
2.253	1649.18	0.72	1564.	1655.	1655.	1.125	[illegible]	0.00	2.07	0.9	0.1
2.373	1641.69	0.76	1756.	1803.	1803.	1.336	0.0800	0.00	2.22	1.0	0.1

FRDM= 2.03 IFR= 30 FRM=0.06 IFM= 27

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 16 17 18 19 20 21 22 23 24
TT= 0.010 DTH= 0.002 ITERR= 9

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 24 25 26 27 28 29 30 31 32
TT= 0.010 DTH= 0.001 ITERR= 9

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 30 31 32 33 34 35 36
TT= 0.010 DTH= 0.001 ITERR= 9

TT = 0.104 DTH = [illegible] ITERR = 8

QU(1) = 757.96 YU(1) = 1790.48 QU(N) = 1902.13 YU(N) = 1635.95

X(I)	Y	V	A	B	BT	Q	CMM	FKC	WAVHT	DH	FRD	DISVOL
*******	********	*******	********	********	*******	********	********	*******	*******	******	******	********
0.000	1790.48	1.86	4[illegible]9.	469.	469.	.758	0.0800	-0.80	0.67	0.9	0.4
0.158	1780.30	1.50	329.	42[illegible].	420.	.493	0.0800	0.00	0.50	0.8	0.3
0.284	1772.20	1.16	286.	393.	393.	0.332	0.0800	0.00	0.39	0.7	0.2
0.474	1760.18	1.01	281.	390.	390.	0.284	0.0800	0.00	0.38	0.7	0.2
0.632	1750.20	0.89	289.	395.	395.	0.259	0.0800	0.00	0.40	0.7	0.2
.765	1741.87	[illegible]	314.	411.	411.	0.252	[illegible]	0.00	.46	0.8	0.2
0.898	1733.56	0.77	352.	434.	434.	0.258	[illegible]	0.00	0.55	0.8	0.1
1.032	1725.13	0.68	4[illegible].	462.	462.	0.271	[illegible]	[illegible]	0.66	0.9	0.1
1.169	1716.59	0.62	461.	494.	494.	.283	0.0800	0.00	0.79	0.9	0.1
1.343	1705.70	0.57	519.	524.	524.	0.296	0.0800	0.00	0.91	1.0	0.1
1.469	1697.88	0.51	616.	570.	570.	0.311	0.0800	0.00	1.09	1.1	0.1
1.596	1690.18	.42	74[illegible].	713.	713.	0.310	[illegible]	[illegible]	1.29	1.0	0.1
1.733	1681.69	.33	8[illegible]6.	[illegible]	95[illegible].	.291	[illegible]	[illegible]	1.48	0.9	0.1
1.880	1672.41	.33	1047.	1154.	1154.	.342	[illegible]	[illegible]	1.64	0.9	0.1
2.006	1664.58	0.43	1261.	1384.	1384.	0.546	0.0800	0.00	1.82	0.9	0.1
2.133	1656.73	0.64	1488.	1590.	1590.	0.950	0.0800	0.00	1.99	0.9	0.1
2.253	1649.27	0.78	1709.	1768.	1768.	1.341	0.0800	0.00	2.15	1.0	0.1
2.373	1641.77	.78	19[illegible]3.	1[illegible]1.	1910.	1.481	0.0800	0.0	2.30	1.0	0.1

FRDM= 2.19 IFR= 30 FRM=[illegible] IFM= 25

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 16 17 18 19 20 21 22 23 24
TT= 0.010 DTH= 0.002 ITERR= 9

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 24 25 26 27 28 29 30 31 32

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 30 31 32 33 34 35 36
TT= 0.010 DTH= 0.001 ITERR= 9

TT = 0.0109 DTH = 0.0005 ITERR = 9
QU(1) = 802.[illegible] YU(1) = 1790.52 QU(N) = 2078.82 YU(N) = 1635.95

X(I)	Y	V	A	B	BT	Q	CMM	FKC	WAVHT	DH	FRD	DISVOL
0.000	1790.52	1.89	425.	475.	475.	0.802	0.0800	-0.80	0.71	0.9	0.4	
0.158	1780.32	1.51	338.	426.	426.	0.509	0.0800	0.00	0.52	0.8	0.3	
0.284	1772.21	1.13	292.	357.	357.	0.335	0.0800	0.00	.41	0.7	0.2	
0.474	1760.21	1.[illegible]	237.	334.	334.	0.286	0.0800	0.00	0.39	0.7	0.2	
0.632	1750.22	1.[illegible]	[illegible]	[illegible]	[illegible]	0.261	0.0800	0.00	0.42	0.7	0.2	
0.765	1741.89	0.79	326.	418.	418.	0.258	0.0800	0.00	0.49	0.8	0.2	
0.898	1733.59	0.73	367.	443.	443.	0.267	0.0800	0.00	0.59	0.8	0.1	
1.032	1725.18	0.67	421.	474.	474.	0.282	0.0800	0.00	0.71	0.9	0.1	
1.169	1716.65	0.61	439.	579.	579.	0.298	0.0800	0.00	0.85	1.0	0.1	
1.343	1705.77	0.57	534.	541.	541.	0.315	0.0800	0.00	0.97	1.0	0.1	
1.469	1697.96	0.51	663.	591.	591.	0.336	0.0800	0.00	1.17	1.1	0.1	
1.596	1690.17	0.37	804.	825.	825.	0.301	0.0800	0.00	1.38	1.0	0.1	
1.733	1681.68	0.32	979.	1062.	1062.	0.313	0.0800	0.00	1.56	0.9	0.1	
1.880	1672.50	0.37	1151.	1272.	1272.	0.425	0.0800	0.00	1.72	0.9	0.1	
2.016	1664.67	0.52	1336.	1571.	1571.	0.721	0.0800	0.00	1.91	0.9	0.1	
2.133	1655.82	0.73	1625.	1772.	1772.	1.185	0.0800	0.00	2.07	1.0	0.1	
2.253	1649.34	0.82	1851.	1972.	1872.	1.516	0.0800	0.00	2.23	1.0	0.1	
2.373	1641.84	0.80	2048.	1985.	1985.	1.632	0.0800	0.00	2.37	1.0	0.1	

FRDM= 2.40 IFR= 36 FRM=0.06 IFM= 25

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 16 17 18 19 20 21 22 23 24
TT= 0.011 DTH= 0.002 ITERR= 9

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 22 23 24 25 26 27 28 29 30
TT= 0.011 DTH= 0.001 ITERR= 9

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 28 29 30 31 32 33 34 35 36
TT= 0.011 DTH= 0.001 ITERR= 9

TT = 0.0114 DTH = [illegible] ITERR = 9
QU(1) = 846.04 YU(1) = 1790.55 QU(N) = 153801.66 YU(N) = 1635.95

X(I)	Y	V	A	B	BT	Q	CMM	FKC	WAVHT	DH	FRD	DISVOL
0.000	1790.55	1.81	442.	465.	465.	.846	0.0800	-0.80	.75	0.9	0.4	
0.158	1780.34	1.51	344.	431.	431.	0.532	0.0800	0.00	0.54	0.8	0.3	
0.284	1772.22	1.13	297.	400.	400.	0.337	0.0800	0.00	0.42	0.7	0.2	
0.474	1760.21	0.98	293.	397.	397.	0.287	0.0800	0.00	0.41	0.7	0.2	
0.632	1750.24	0.87	305.	405.	405.	0.264	0.0800	0.00	0.44	0.8	0.2	
.765	1741.92	0.79	337.	425.	425.	0.263	0.0800	0.00	0.52	0.8	0.2	
.898	1733.63	0.73	363.	452.	452.	0.276	0.0800	0.00	0.62	0.8	0.1	
1.032	1725.22	.67	443.	485.	485.	0.295	0.0800	0.00	0.75	0.9	0.1	
1.169	1716.70	0.61	518.	523.	523.	0.315	0.0800	0.00	0.90	1.0	0.1	
1.343	1705.84	0.57	591.	558.	558.	0.336	0.0800	0.00	1.04	1.1	0.1	
1.469	1698.04	0.49	713.	660.	660.	0.348	0.0800	0.00	1.25	1.1	0.1	
1.596	1690.24	.34	872.	930.	930.	0.298	0.0800	0.00	1.46	0.9	0.1	

2.0[illegible]	1664.7[illegible]	[illegible]	1919.	[illegible]	1511.	[illegible]	[illegible]	[illegible]	[illegible]	1.39	[illegible]	0.1
2.133	1656.89	[illegible]	175[illegible]	[illegible]	18[illegible]6.	1.413	0.0800	0.00	2.15	1.0	0.1
2.253	1649.41	[illegible].84	1987.	1961.	1961.	1.667	0.0800	0.00	2.30	1.0	0.1
2.373	1641.92	[illegible].83	21[illegible].	[illegible]	2039.	1.811	0.0800	0.00	2.44	1.1	0.1

FRDM= 177.45 IFR= 36 FRM=[illegible].6 IFM= 23

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 16 17 18 19 20 21 22 23 24
TT= 0.011 DTH= 0.002 ITERR= 9

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 22 23 24 25 26 27 28 29 30
TT= 0.011 DTH= 0.001 ITERR= 9

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 28 29 30 31 32 33 34 35 36
TT= 0.011 DTH= 0.001 ITERR= 9

TT = 0.0119 DTH = 0.0005 ITERR = 9
QU(1) = 892.39 YU(1) = 17[illegible] QU(N) = ********** YU(N) = 1635.[illegible]

X(I)	Y	V	A	B	BT	Q	CMM	FKC	WAVHT	DH	FRD	DISVOL
*******	*********	*******	********	********	*******	*********	********	*******	*******	******	******	********
0.000	1790.59	1.94	460.	494.	494.	0.892	0.0800	-0.80	0.78	0.9	0.4
0.158	1780.36	1.51	355.	436.	436.	0.537	0.0800	0.00	0.56	0.8	0.3
0.284	1772.24	1.12	[illegible]	[illegible]	[illegible]	[illegible].340	0.0800	[illegible]	0.43	0.7	0.2
0.474	1760.23	[illegible]	2[illegible]	[illegible]	[illegible]	[illegible].289	0.0800	0.0[illegible]	0.42	0.7	0.2
[illegible].632	175[illegible].26	[illegible].86	313.	41[illegible].	41[illegible].	.268	0.0800	0.00	.46	0.8	0.2
0.765	1741.95	0.78	348.	432.	432.	0.270	0.0800	0.00	0.54	0.8	0.2
0.898	1733.66	0.72	400.	462.	462.	0.286	0.0800	0.00	0.66	0.9	0.1
1.032	1725.27	0.66	466.	497.	497.	0.309	0.0800	0.00	0.80	0.9	0.1
1.169	1716.76	[illegible].61	549.	538.	53[illegible].	[illegible].333	0.0800	0.0[illegible]	0.96	1.0	0.1
1.343	1705.90	[illegible].57	629.	575.	575.	[illegible].360	0.080	0.00	1.11	1.1	0.1
1.469	1698.12	[illegible].45	7[illegible]6.	76[illegible].	76[illegible].	[illegible].344	0.0800	0.00	1.32	1.0	0.1
1.596	1690.32	0.33	945.	1031.	1031.	0.310	0.0800	0.00	1.53	0.9	0.1
1.733	1681.83	0.37	1154.	1276.	1276.	0.426	0.0800	0.00	1.72	0.9	0.1
1.880	1672.66	0.50	1375.	1491.	1491.	0.681	0.0800	0.00	1.88	0.9	0.1
2.096	1664.83	[illegible].69	1633.	1715.	1715.	1.139	0.0800	0.0[illegible]	2.06	1.0	0.1
2.133	1656.97	0.84	1923.	1[illegible]3.	1[illegible]3.	1.600	0.0800	0.00	2.22	1.0	0.1
2.253	1649.48	[illegible].86	2122.	2[illegible]13.	2013.	1.826	0.0800	0.0	2.37	1.1	0.1
2.373	1641.98	0.87	2328.	2091.	2091.	2.014	0.0800	0.00	2.51	1.1	0.1

FRDM=44981.79 IFR= 36 FRM=0.06 IFM= 23

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 16 17 18 19 20 21 22 23 24
TT= 0.012 DTH= 0.002 ITERR= 9

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 22 23 24 25 26 27 28 29 30
TT= 0.012 DTH= 0.001 ITERR= 9

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 26 27 28 29 30 31 32 33 34
TT= [illegible].012 DTH= 0.00[illegible] ITERR= 9

TT = 0.0124 DTH = [illegible] ITERR = 9
QU(1) = 940.25 YU(1) = 1790.63 QU(N) = ********** YU(N) = 1635.95

X(I)	Y	V	A	B	BT	Q	CMM	FKC	WAVHT	DH	FRD	DISVOL
*******	*********	*******	********	********	*******	*********	********	*******	*******	******	******	********

0.284	1772.25	1.11	3[illegible].	[illegible]	[illegible]	[illegible].342	0.0800	0.[illegible]	0.44	0.8	0.2
0.474	1760.24	0.95	374.	415.	415.	0.290	0.0800	0.00	0.44	0.8	0.2
0.632	1750.28	0.84	321.	415.	415.	0.271	0.0800	0.00	0.48	0.8	0.2
0.765	1741.58	0.77	3[illegible].	439.	439.	0.277	0.0800	0.00	0.57	0.8	0.1
0.898	1733.70	0.71	417.	471.	471.	0.297	0.0800	0.00	0.70	0.9	0.1
1.032	1725.31	0.66	429.	509.	509.	0.324	0.0800	0.00	0.85	1.0	0.1
1.169	1716.82	0.61	580.	553.	553.	0.353	0.0800	0.00	1.02	1.0	0.1
1.343	1705.97	0.58	669.	593.	593.	0.386	0.0800	0.00	1.18	1.1	0.1
1.469	1698.19	0.41	822.	855.	855.	0.335	0.0800	0.00	1.39	1.0	0.1
1.596	1690.39	0.37	1023.	1125.	1129.	0.334	0.0800	0.00	1.63	0.9	0.1
1.733	1681.91	0.41	1255.	1378.	1378.	0.517	0.0800	0.00	1.79	0.9	0.1
1.880	1672.74	0.57	1492.	1594.	1594.	0.852	0.0800	0.00	1.96	0.9	0.1
2.006	1664.90	0.77	1770.	1814.	1814.	1.359	0.0800	0.00	2.14	1.0	0.1
2.133	1657.03	0.88	2024.	1975.	1975.	1.778	0.0800	0.00	2.29	1.0	0.2
2.253	1649.55	0.88	2253.	2063.	2063.	1.993	0.0800	0.00	2.43	1.1	0.1
2.373	1642.06	0.47	2490.	2150.	2150.	1.182	0.0800	0.00	2.59	1.2	0.1

FRDM=******** IFR= 36 FRM=[illegible].06 IFM= 23

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 16 17 18 19 20 21 22 23 24
TT= 0.012 DTH= 0.002 ITERR= 9

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 22 23 24 25 26 27 28 29 30
TT= 0.012 DTH= 0.001 ITERR= 9

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 28 29 30 31 32 33 34 35 36
TT= 0.012 DTH= 0.001 ITERR= 9

TT = 0.0130 DTH = 0.0005 ITERR = 9

QU(1) = 988.13 YU(1) = [illegible] QU(N) = ********** YU(N) = 1635.35

X(I)	Y	V	A	P	BT	Q	CMM	FKC	WAVHT	DH	FRD	DISVOL
*******	*********	*******	********	********	*******	*********	********	*******	*******	******	******	********
0.000	1790.66	1.95	496.	513.	513.	0.988	0.0800	-0.80	0.86	1.0	0.4	
0.158	1780.40	1.52	370.	445.	445.	0.562	0.0800	0.00	0.59	0.8	0.3	
0.284	1772.26	1.19	312.	410.	410.	0.342	0.0800	0.00	0.46	0.8	0.2	
0.474	1760.26	0.94	310.	408.	408.	0.291	0.0800	0.00	0.45	0.8	0.2	
0.632	1750.30	0.83	328.	427.	427.	0.275	0.0800	0.00	0.50	0.8	0.2	
0.765	1742.00	0.76	372.	446.	446.	0.285	0.0800	0.00	0.60	0.8	0.1	
0.898	1733.74	0.71	434.	480.	480.	0.309	0.0800	0.00	0.73	0.9	0.1	
1.032	1725.36	0.66	513.	521.	521.	0.340	0.0800	0.00	0.89	1.0	0.1	
1.169	1716.88	0.61	613.	569.	569.	0.374	0.0800	0.00	1.08	1.1	0.1	
1.343	1706.04	0.56	711.	657.	657.	0.397	0.0800	0.00	1.24	1.1	0.1	
1.469	1698.25	0.39	882.	944.	944.	0.332	0.0800	0.00	1.46	0.9	0.1	
1.596	1690.46	0.34	1106.	1223.	1223.	0.374	0.0800	0.00	1.67	0.9	0.1	
1.733	1681.98	0.46	1359.	1477.	1477.	0.630	0.0800	0.00	1.87	0.9	0.1	
1.880	1672.81	0.65	1613.	1692.	1692.	1.041	0.0800	0.00	2.03	1.0	0.1	
2.006	1664.97	0.82	1828.	1776.	1776.	1.565	0.0800	0.00	2.21	1.0	0.1	
2.133	1657.10	0.91	2132.	2025.	2025.	1.948	0.0800	0.00	2.35	1.1	0.2	
2.253	1649.61	0.91	2382.	2111.	2111.	2.174	0.0800	0.00	2.49	1.1	0.2	
2.373	1643.39	0.20	6036.	3181.	3181.	1.182	0.0800	0.00	3.92	1.9	0.0	

FRDM=******** IFR= 36 FRM=0.03 IFM= 35

NONCONVERGENCE OCCURRED AT CROSS-SECTION NO. 14 15 16 17 18 19 20 21 22
TT= 0.013 DTH= 0.002 ITERR= 9

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14:09:04   0.0009   CSP     UIS COMPANY   KANSAS CITY, MISSOURI  02/12/86
14:09:04   0.0009   CSP                   APEX/CRAY SERVICE
14:09:04   0.0009   CSP     CRAY-1 S/2100   COS LEVEL:  C14 1.12-11/27/85
14:09:04   0.0009   CSP
14:09:04   0.0009   CSP     WANG,T100.
14:09:04   0.0009   CSP     ACCOUNT,E142120 USD3767400
14:09:20   0.0010   CSP     TAPEIN,DN=NWS,NT,LB=AU,FI=DAMBREAK,VSN=3429.
14:10:52   0.0013   SCP      14.10.19.VSN,T=3429.
14:10:52   0.0013   SCP      14.10.19.LABEL,T,PO=RU,NT,LB=AU,FI=DAMBREAK.
14:10:52   0.0013   SCP      14.11.22.NT64, ASSIGNED TO T       , VSN=3429  .
14:10:54   0.0013   SCP     DATASET RECEIVED FROM FRONT END.
14:10:55   0.0017   CSP     COPYF,NWS,TEMP.
14:10:57   0.0991   USER    IO048 - COPY OF     6314 RECORDS       1 FILES COMPLETED
14:10:57   0.0995   CSP     COPYF,NWS,DAMABS.
14:11:00   0.1078   USER    IO048 - COPY OF        : RECORDS       1 FILES COMPLETED
14:11:00   0.1079   CSP     REWIND,DAMABS.
14:11:05   0.1083   CSP     DAMABS.
14:11:15   3.0972   ABORT   AB053 - FLOATING POINT ERROR
14:11:15   3.0972   ABORT   AB000 - JOB STEP ABORTED.   P = 00230162B
14:11:15   3.0972   ABORT   TB001 - BEGINNING OF TRACEBACK
14:11:15   3.0972   ABORT         - INTER    WAS CALLED BY  MAIN2      AT    2166020 (LINE  NUMBER      562
14:11:15   3.0972   ABORT         - MAIN2    WAS CALLED BY  DAMBK      AT    1650408 (LINE  NUMBER     1338
14:11:15   3.0972   ABORT   TB002 - END OF TRACEBACK
14:11:15   3.0972   EXP     EXIT.
14:11:15   3.0973   CSP     END OF JCB
14:11:15   3.0973   CSP
14:11:15   3.0973   CSP
14:11:19   3.1287   USER          JOBNAME = DFBTC77   USER NUMBER = E142120
14:11:19   3.1287   USER          CP SECONDS          =    3.128
14:11:19   3.1287   USER          AVERAGE MEMORY      =    0.1140
14:11:19   3.1287   USER          IO BLOCKS MOVED     =     865.
14:11:19   3.1287   USER          IO REQUESTS         =     124.
14:11:19   3.1287   USER          MT MOUNTS           =       1.
14:11:19   3.1288   USER          MT BLOCKS STAGED    =     277.
14:11:19   3.1288   USER          I/O/D BLOCKS        =      96.
14:11:19   3.1288   USER
14:11:19   3.1288   USER          CSU-2               =   17.84
14:11:19   3.1288   USER          PRIORITY            =      15
14:11:19   3.1288   USER          COST                =    6.24
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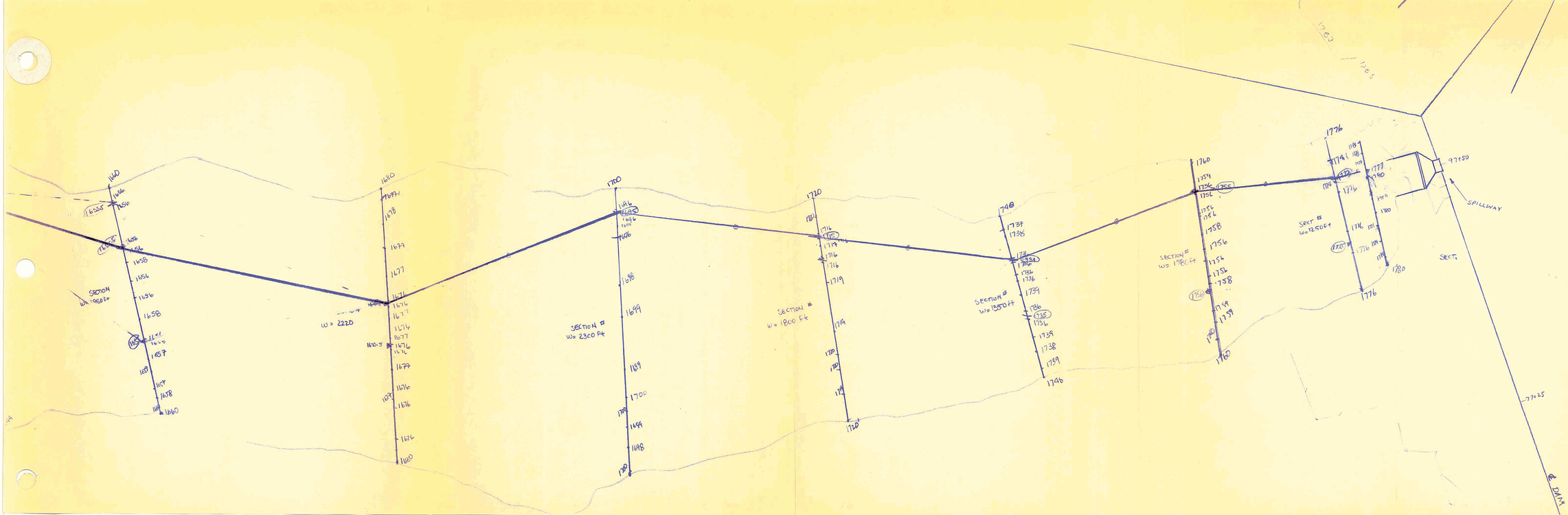
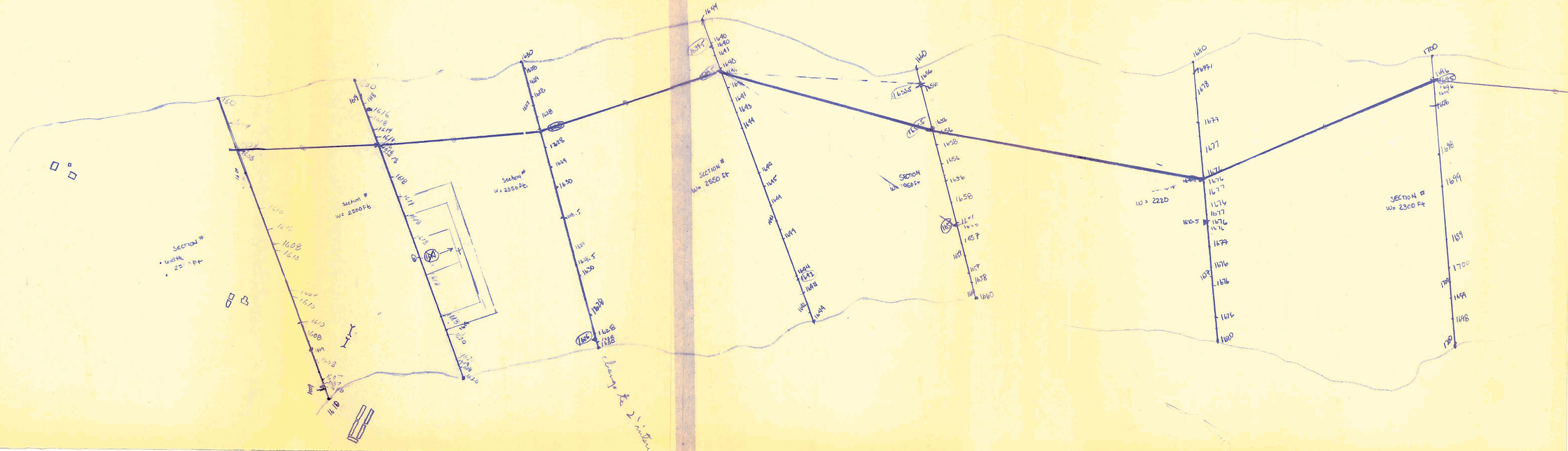

CROSS SECTION LOCATIONS
BELOW EMERGENCY SPILLWAY
SCALE 1" = 400'
SECTION
W = 960 ft
W = 2220
SECTION #
W = 2300 ft
SECTION #
W = 1800 ft
SECTION #
W = 1850 ft
SECTION #
W = 1850 ft
SECT #
W = 1250 ft
SECT.
SPILLWAY
DAM


SECTION #
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SECTION #
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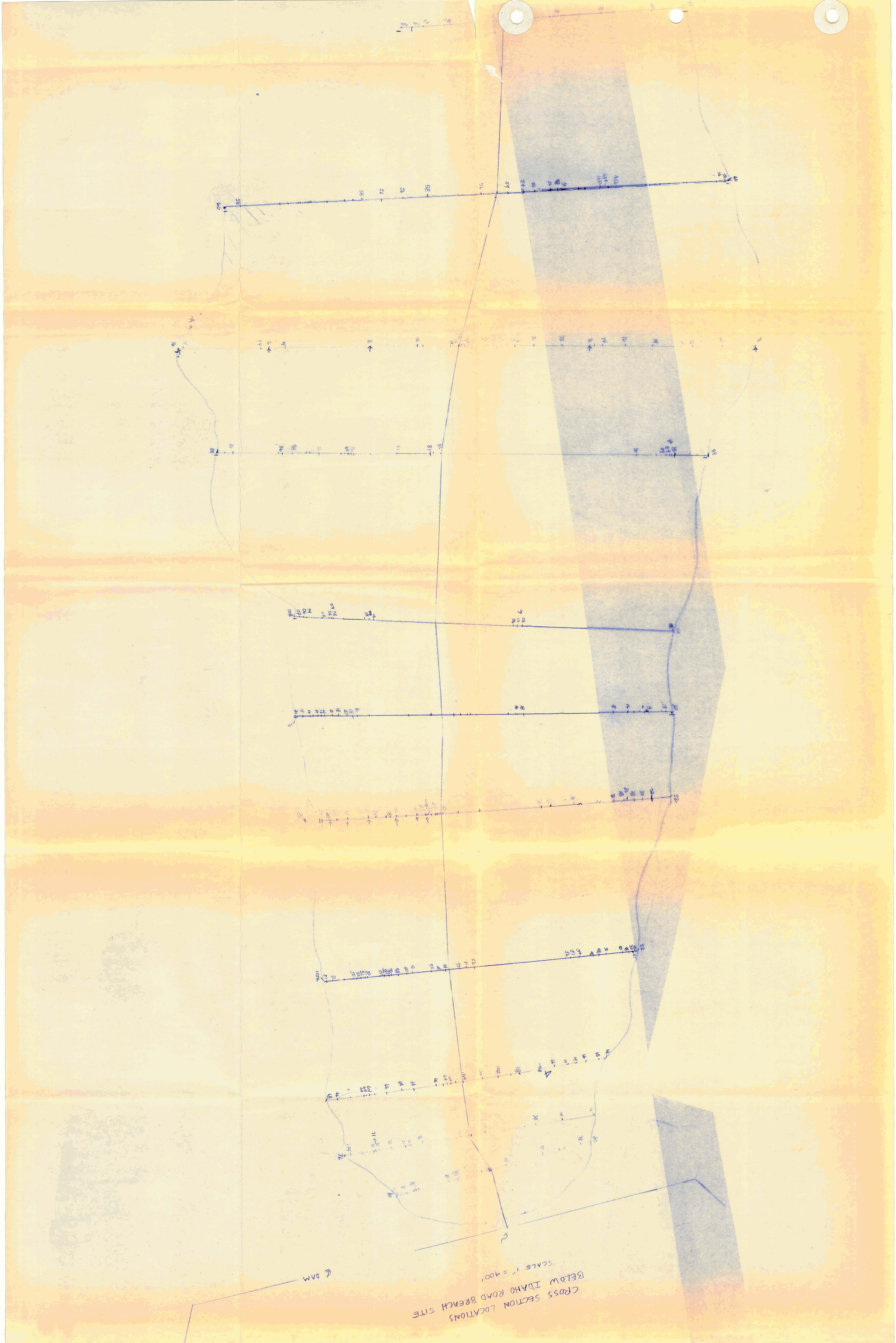
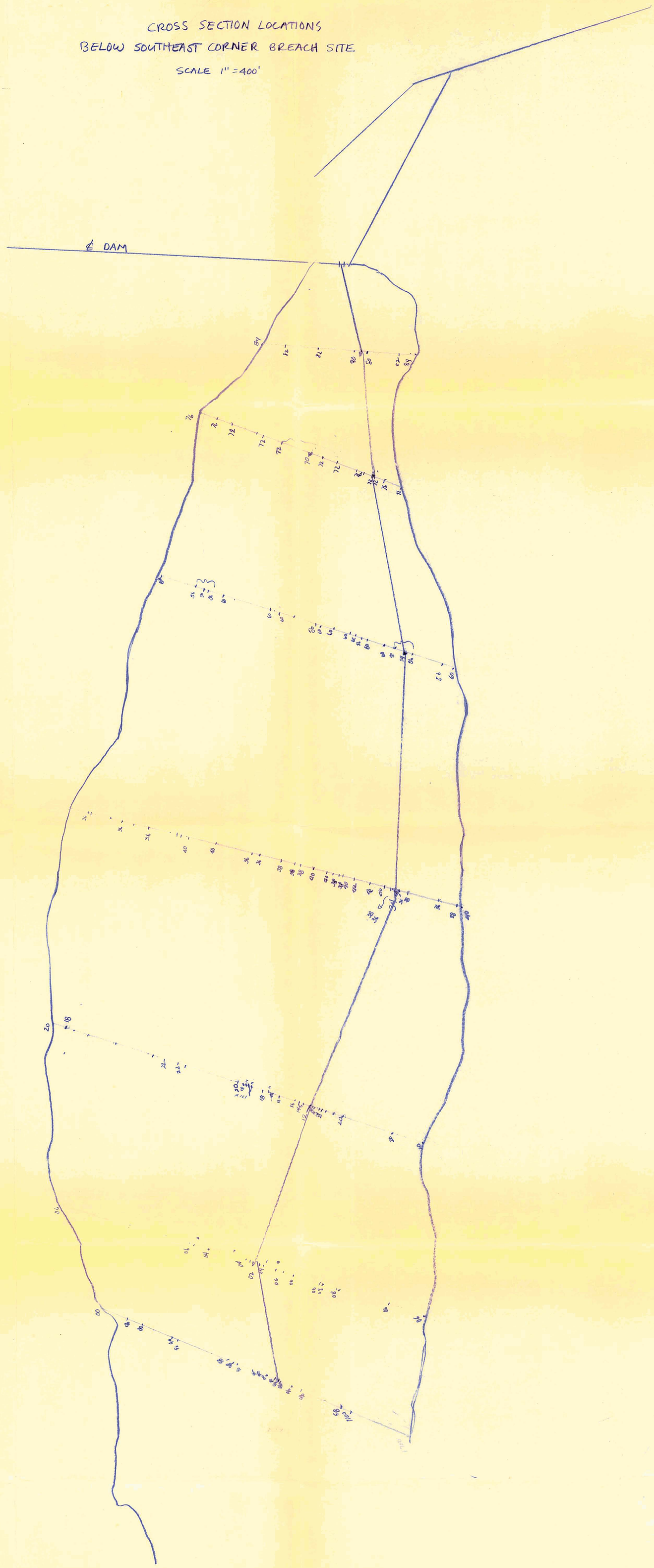
SECTION #
w = 2220
SECTION #
w = 2300 Ft


CROSS SECTION LOCATIONS
BELOW IDAHO ROAD BREACH SITE
SCALE 1" = 400'
℄ DAM

CROSS SECTION LOCATIONS
BELOW SOUTHEAST CORNER BREACH SITE
SCALE 1" = 400'