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SQUAW PEAK PARKWAY DRAINAGE REPORT APPENDIX

PREPARED FOR THE CITY OF PHOENIX

APRIL 1988

HNTB
HOWARD NEEDLES TAMMEN & BERGENDOFF
ARCHITECTS ENGINEERS PLANNERS
ANCHOR CENTRE TWO
2207 EAST CAMELBACK ROAD, SUITE 400
PHOENIX, ARIZONA 85016
(602) 954-7420

CITY OF PHOENIX
ENGINEERING DEPARTMENT
PLAZA MUNICIPAL BUILDING
125 East Washington Street
Phoenix, Arizona 85004

SQUAW PEAK PARKWAY
SEGMENT NO. 5B
DRAINAGE REPORT

APPENDIX

FLOOD CONTROL DISTRICT
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APRIL, 1988

HOWARD NEEDLES TAMMEN & BERGENDOFF
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CHAPTER 1

DESIGN CALCULATIONS SOUTH OF ARIZONA CANAL

APPENDIX

Design Calculations South of the Arizona Canal

A. Inlet Calculations, (HEC-12 Computer Output)

Input File: DUB0:[PHX.1184.HYDR.SPP]H12_18XST.IN;7 Made By: DFM

11184 21 01 18TH cross streets C.B. sizing 10-yr. storm

Maximum Depth 0.00 Ft. Intensity 3.80 In./hr. Manning's n 0.0150

Id. / Location / Type / Subtype	Level	A1 / A2 / A3 / Qa	C1 / C2 / C3 / Qo	So / S1 / S2 / S3	G / a / W	X1 / X2 / L / H	Aef / Pef	* * * Q - cfs * * * Total	Inter.	Bypass	Depth -ft.	Spread - ft. 1	2	Velocity -fps.	% Bypass
223	9	0.61	0.95	0.0124	1.50	0.00									
Sta. 32+94		.		.	0.00	2.04									
9 Grate		.		0.1000	0.00	4.50		2.20	1.74	0.46	0.30	0.00	6.31	3.21	21
6 P-1-7/8-4				0.0306											
221	9	0.61	0.95	0.0120	1.50	0.00									
Sta. 29+63		.		.	0.00	2.04									
9 Grate		.		0.1000	0.00	4.50		2.20	1.57	0.63	0.28	0.00	8.79	2.81	29
6 P-1-7/8-4				0.0179											
216	9	.		0.0102	1.50	0.00									
Sta. 26+34		.		.	0.00	2.04									
9 Grate		.		0.1000	0.00	4.50		5.94	2.95	2.99	0.35	0.00	17.28	2.96	50
6 P-1-7/8-4			5.94	0.0128											
212	9	.		0.0095	1.50	0.00									
Sta. 23+01		.		.	0.00	2.04									
9 Grate		.		0.1000	0.00	4.50		4.09	2.16	1.93	0.31	0.00	17.11	2.52	47
6 P-1-7/8-4			4.09	0.0104											
210	9	.		0.0115	1.50	0.00									
Sta. 19+82		.		.	0.00	2.04									
9 Grate		.		0.1000	0.00	4.50		2.13	1.47	0.66	0.27	0.00	9.84	2.62	31
6 P-1-7/8-4			2.13	0.0148											
206	9	.		0.0061	1.50	0.00									
Sta. 16+52		.		.	0.00	2.04									
9 Grate		.		0.1000	0.00	4.50		3.16	2.40	0.76	0.37	0.00	8.65	2.60	24
6 P-1-7/8-4			3.16	0.0304											
202	9	.		0.0059	1.50	0.00									
Sta. 13+62		.		.	0.00	2.04									
9 Grate		.		0.1000	0.00	4.50		5.70	3.26	2.44	0.39	0.00	16.66	2.49	43
6 P-1-7/8-4			5.70	0.0158											

Input File: DISKBO:[PHX.1184.HYDR.SPP]H12_18WST.IN;13 Made By: DFM

11184 21 01 18TH STREET FLOWS 10-YEAR WEST SIDE

Maximum Depth 0.00 Ft. Intensity 3.80 In./hr. Manning's n 0.0150

Id. / Location / Type / Subtype	Level	A1 / A2 / A3 / Qa	C1 / C2 / C3 / Qo	So / S1 / S2 / S3	G / a / W	X1 / X2 / L / H	Aef / Pef	* * * Q - cfs * * * Total	Inter.	Bypass	Depth -ft.	Spread - ft. 1	2	Velocity -fps.	% Bypass
219	9	0.12	0.95	0.0197	1.40	0.00									
STA. 29+34		0.25	0.45	.	0.00	2.04									
9 Grate		.		0.0417	0.00	4.50		0.86	0.67	0.20	0.14	0.00	5.55	2.61	23
6 P-1-7/8-4				0.0200											
214		0.25	0.95	0.0160	1.40	0.00									
STA. 23+50		0.37	0.40	.	0.00	2.04									
9 Grate		.		0.0417	0.00	4.50		1.66	1.38	0.28	0.21	0.00	4.33	3.44	17
6 P-1-7/8-4				0.0526											
208		0.22	0.95	0.0105	0.40	0.00									
STA. 17+50		0.03	0.95	0.2105	0.00	2.04									
9 Grate		0.43	0.40	0.1000	0.00	4.50		1.83	1.25	0.58	0.22	1.05	5.87	2.64	32
6 P-1-7/8-4				0.0333											

Maximum Depth 0.00 Ft. Intensity 3.80 In./hr. Manning's n 0.0150

Id. / Location / Type / Subtype	Level	A1 / A2 / A3 / Qa	C1 / C2 / C3 / Qo	So / S1 / S2 / S3	G / a / W	X1 / X2 / L / H	Aef / Pef	* * * Q - cfs * * * Total	Inter.	Bypass	Depth -ft.	Spread - ft. 1	2	Velocity -fps.	% Bypass
227	9	.		0.0141	1.40										
Sta. 35+50		.		.	2.00										
8 Curb		.		0.0176	1.42	24.79		9.37	8.91	0.46	0.29	0.00	16.54	3.89	5
			9.37	0.0176											
										Note: L= 30.47 Ft. for 100% Interception					
225		.		0.0141	1.40										
Sta. 34+00		.		.	2.00										
8 Curb		.		0.0176	1.42	24.79		6.07	6.07	0.00	0.25	0.00	14.05	3.49	0
			5.61	0.0176											
										Note: L= 23.35 Ft. for 100% Interception					
222		0.17	0.95	0.0156	2.00	0.00									
Sta. 30+20		.		.	0.00	2.04									
9 Grate		.		0.0180	0.00	3.21		0.61	0.48	0.13	0.10	0.00	5.76	2.06	21
6 P-1-7/8-4				0.0180											
218		0.14	0.95	0.0127	2.00	0.00									
Sta. 26+90		.		.	0.00	2.04									
9 Grate		.		0.0092	0.00	3.21		0.63	0.40	0.24	0.08	0.00	9.22	1.62	37
6 P-1-7/8-4				0.0092											
215		0.11	0.95	0.0143	2.00	0.00									
Sta. 23+68		.		.	0.00	2.04									
9 Grate		.		0.0045	0.00	4.50		0.63	0.36	0.28	0.06	0.00	14.09	1.42	44
6 P-1-7/8-4				0.0045											
211		0.10	0.95	0.0100	2.00	0.00									
Sta. 20+48		.		.	0.00	2.04									
9 Grate		.		0.0163	0.00	4.50		0.64	0.48	0.16	0.10	0.00	8.94	1.55	24
6 P-1-7/8-4				0.0100											
207		0.11	0.95	0.0105	2.00	0.00									
Sta. 17+08		.		.	0.00	2.04									
9 Grate		.		0.0156	0.00	3.21		0.55	0.39	0.17	0.10	0.00	8.16	1.54	30
6 P-1-7/8-4				0.0105											
203		0.10	0.95	0.0124	2.00	0.00									
Sta. 13+95		.		.	0.00	2.04									
9 Grate		.		0.0127	0.00	4.50		0.53	0.43	0.10	0.09	0.00	7.07	1.67	19
6 P-1-7/8-4				0.0127											

HEC12 (March 1984 - Revised 04/15/88) Pavement Drainage Calculations 05/02/88

Input File: DISKB0:[PHX.1184.HYDR.SPP]H12SHALFEST.IN;9 Made By: DFM

11184 21 01 S.P.P. & RAMP "D" S.1/2 2-YEAR EAST SIDE Page 1

Maximum Depth 0.33 Ft. Intensity 2.70 In./hr. Manning's n 0.0150

Id. / Location / Type / Subtype	Level	A1 / A2 / A3 / Qa	C1 / C2 / C3 / Qo	So / S1 / S2 / S3	G / a / W	X1 / X2 / L / H	Aef / Pef	* * * Q - cfs * * * Total	Inter.	Bypass	Depth -ft.	Spread - ft. 1	2	Velocity -fps.	% Bypass
121		0.35	0.95	0.0260	2.00	0.00									
STA 258+75		.		.	0.00	2.04									
9 Grate		.		0.0192	0.00	3.21		0.90	0.68	0.22	0.11	0.00	5.79	2.79	24
6 P-1-7/8-4				0.0192											
119		0.62	0.95	0.0304	1.50	0.00									
STA 253+00		.		.	0.00	2.04									
9 Grate		.		0.0395	0.00	4.50		1.81	1.41	0.40	0.18	0.00	4.70	4.20	22
6 P-1-7/8-4				0.0389											
117		0.24	0.45	0.0194	1.50	0.00									
STA 248+25		0.52	0.95	.	0.00	2.04									
9 Grate		.		0.0400	0.00	4.50		2.02	1.56	0.46	0.21	0.00	5.32	3.65	23
6 P-1-7/8-4				0.0390											
115		0.12	0.45	0.0144	1.50	0.00									
STA 243+50		0.62	0.95	.	0.00	2.04									
9 Grate		.		0.0400	0.00	4.50		2.20	1.44	0.76	0.20	0.00	8.62	2.87	34
6 P-1-7/8-4				0.0200											
113		0.06	0.45	0.0045	1.50	0.00									
STA 237+00		1.15	0.95	.	0.00	2.04									
9 Grate		.		0.0400	0.00	4.50		3.78	2.51	1.27	0.30	0.00	13.32	2.11	34
6 P-1-7/8-4				0.0200											
107		0.24	0.95	0.0060	1.50	0.00									
STA. 83+63		0.05	0.45	.	0.00	2.04									
9 Grate		.		0.0400	0.00	3.21		1.95	1.19	0.76	0.23	0.00	9.75	2.00	39
6 P-1-7/8-4				0.0200											
106		0.24	0.95	0.0160	1.50	0.00									
STA. 80+16		0.06	0.45	.	0.00	2.04									
9 Grate		.		0.0400	0.00	3.21		1.45	0.92	0.53	0.17	0.00	7.15	2.72	37
6 P-1-7/8-4				0.0200											
102		.													
STA. 75+80		.													
X Save Q		.						0.53							
102	9	0.38	0.95	.	1.50		6.5								
STA. 75+80		0.25	0.45	.			8.5								
9 Grate		.		0.0400				1.81			0.17	0.00	7.07		
		0.53		0.0200											

Note: Weir Flow

Input File: DISKBO:[PHX.1184.HYDR.SPP]H12SHALFEST.IN;9 Made By: DFM

11184 Z1 01 S.P.P. & RAMP "D" S.1/2 2-YEAR EAST SIDE

Maximum Depth 0.33 Ft. Intensity 2.70 In./hr. Manning's n 0.0150

Id. / Location / Type / Subtype	Level	A1 / A2 / A3 / Qa	C1 / C2 / C3 / Qo	So / S1 / S2 / S3	G / a / W	X1 / X2 / L / H	Aef / Pef	* * * Q - cfs * * * Total	Inter.	Bypass	Depth -ft.	Spread - ft. 1	2	Velocity -fps.	% Bypass
105	9	0.53	0.95	0.0200	1.50	0.00									
STA 230+00		.		.	0.00	2.04									
9 Grate		.		0.0400	0.00	3.21		1.36	0.88	0.48	0.16	0.00	6.66	2.91	35
6 P-1-7/8-4				0.0200											
111		0.58	0.95	0.0048	1.50	0.00									
STA 235+50		.		.	0.00	2.04									
9 Grate		.		0.0400	0.00	3.21		1.97	1.22	0.75	0.23	0.00	10.23	1.84	38
6 P-1-7/8-4				0.0200											
112		.													
STA 236+28		.													
X Save Q		.						0.75							
112	9	0.15	0.95	.	1.50		10.1								
STA 236+28		.		.			11.9								
9 Grate		.		0.0400				1.13			0.10	0.00	3.51		
		0.75		0.0200											

Note: Weir Flow

Input File: DUBO:[PHX.1184.HYDR.SPP]H12SHALFWST.IN;13 Made By: DFM

11184 Z1 01 H12SHALFWST.IN S. 1/2 2-Year Southbound

Maximum Depth 0.33 Ft. Intensity 2.70 In./hr. Manning's n 0.0150

Id. / Location / Type / Subtype	Level	A1 / A2 / A3 / Qa	C1 / C2 / C3 / Qo	So / S1 / S2 / S3	G / a / W	X1 / X2 / L / H	Aef / Pef	* * * Q - cfs * * * Total	Inter.	Bypass	Depth -ft.	Spread - ft. 1	2	Velocity -fps.	% Bypass
122	9	0.64	0.95	0.0145	1.50	0.00									
STA 262+00		.		.	0.00	2.04									
9 Grate		.		0.0400	0.00	3.21		1.64	1.20	0.44	0.20	0.00	5.20	3.11	27
6 P-1-7/8-4				0.0390											
120		0.43	0.95	0.0260	1.50	0.00									
STA 258+75		.		.	0.00	2.04									
9 Grate		.		0.0192	0.00	3.21		1.54	0.88	0.66	0.14	0.00	7.08	3.19	43
6 P-1-7/8-4				0.0193											
118		0.69	0.95	0.0304	2.00	0.00									
STA 253+00		.		.	0.00	2.04									
9 Grate		.		0.0389	0.00	4.50		2.43	1.99	0.44	0.20	0.00	5.27	4.52	18
6 P-1-7/8-4				0.0388											
116		0.51	0.95	0.0194	2.00	0.00									
STA 248+25		.		.	0.00	2.04									
9 Grate		.		0.0389	0.00	4.50		1.75	1.51	0.24	0.20	0.00	5.06	3.52	14
6 P-1-7/8-4				0.0389											
114		0.51	0.95	0.0144	2.00	0.00									
STA 243+50		.		.	0.00	2.04									
9 Grate		.		0.0093	0.00	4.50		1.55	0.90	0.65	0.12	0.00	12.56	2.13	42
6 P-1-7/8-4				0.0092											
108		0.16	0.45	0.0045	1.50	0.00									
STA 237+00		0.78	0.95	.	0.00	2.04									
9 Grate		.		0.0400	0.00	4.50		2.84	1.99	0.85	0.27	0.00	11.94	1.96	30
6 P-1-7/8-4				0.0200											
109		.													
STA 236+28		.													
X Save Q		.						0.85							
104	9	0.53	0.95	0.0200	1.50	0.00									
STA 230+00		.		.	0.00	2.04									
9 Grate		.		0.0400	0.00	3.21		1.36	0.88	0.48	0.16	0.00	6.66	2.91	35
6 P-1-7/8-4				0.0200											
110		0.58	0.95	0.0049	1.50	0.00									
STA 235+50		.		.	0.00	2.04									
9 Grate		.		0.0400	0.00	3.21		1.97	1.22	0.75	0.23	0.00	10.19	1.86	38
6 P-1-7/8-4				0.0200											

Maximum Depth 0.33 Ft. Intensity 2.70 In./hr. Manning's n 0.0150

Id.	Level	A1	C1	So	G	X1	Aef	* * * Q - cfs * * *			Depth	Spread - ft.		Velocity	%
Location		A2	C2	S1	a	X2	Pef	Total	Inter.	Bypass	-ft.	1	2	-fps.	Bypass
Type		A3	C3	S2	W	L									
Subtype		Qa	Qo	S3		H									
109		0.01	0.45	.	1.50		10.1								
STA 236+28		0.27	0.95	.			11.9								
9 Grate		.		0.0400				2.31			0.16	0.00	6.55		
		0.85		0.0200											

Note: Weir Flow

Input File: DUBO:[PHX.1184.HYDR.SPP]H12SOFBETH.IN;1 Made By: DFM

1184 21 01 Inlets South of Bethany Home Rd. 2-year

Maximum Depth 0.00 Ft. Intensity 2.70 In./hr. Manning's n 0.0150

Id. / Location / Type / Subtype	Level	A1 / A2 / A3 / Qa	C1 / C2 / C3 / Qo	So / S1 / S2 / S3	G / a / W	X1 / X2 / L / H	Aef / Pef	* * * Q - cfs * * * Total	Inter.	Bypass	Depth -ft.	Spread - ft. 1	2	Velocity -fps.	% Bypass
124	9	0.65	0.95	0.0335	1.50	0.00									
Sta.215+95		.		.	0.00	2.04									
9 Grate		.		0.0172	0.00	3.21		1.67	0.89	0.78	0.13	0.00	7.44	3.48	47
6 P-1-7/8-4				0.0173											
125		0.03	0.95	0.0347	1.50	0.00									
Sta.215+63		.		.	0.00	2.04									
9 Grate		.		0.0145	0.00	3.21		0.85	0.51	0.35	0.09	0.00	6.44	2.85	41
6 P-1-7/8-4				0.0144											
126		0.03	0.95	0.0359	1.50	0.00									
Sta.215+30		.		.	0.00	2.04									
9 Grate		.		0.0114	0.00	3.21		0.42	0.27	0.15	0.07	0.00	5.68	2.29	35
6 P-1-7/8-4				0.0115											
127	9	0.69	0.95	0.0388	1.50	0.00									
Sta.214+30		.		.	0.00	2.04									
9 Grate		.		0.0400	0.00	3.21		1.77	1.09	0.68	0.16	0.00	6.48	4.00	38
6 P-1-7/8-4				0.0200											
EX1		0.03	0.95	0.0388	1.50	0.00									
Sta.213+97		.		.	0.00	2.04									
9 Grate		.		0.0400	0.00	3.21		0.75	0.59	0.17	0.12	0.00	4.52	3.32	22
6 P-1-7/8-4				0.0200											
EX2		0.03	0.95	0.0388	1.50	0.00									
Sta.213+65		.		.	0.00	2.04									
9 Grate		.		0.0400	0.00	3.21		0.24	0.23	0.01	0.08	0.00	2.62	2.68	5
6 P-1-7/8-4				0.0200											

HEC12 (March 1984 - Revised 04/15/88) Pavement Drainage Calculations 04/27/88

Input File: DUBO:[PHX.1184.HYDR.SPP]H12BETHRMPC.IN;5 Made By: DFM

11184 21 01 BETHANY HOME RAMP-C 2-yr. storm Page 1

Maximum Depth 0.33 Ft. Intensity 2.70 In./hr. Manning's n 0.0150

Id. / Location / Type / Subtype	Level	A1 / A2 / A3 / Qa	C1 / C2 / C3 / Qo	So / S1 / S2 / S3	G / a / W	X1 / X2 / L / H	Aef / Pef	* * * Q - cfs * * * Total	Inter.	Bypass	Depth -ft.	Spread - ft. 1	2	Velocity -fps.	% Bypass
103	9	0.36	0.95	0.0093	1.50	0.00									
STA. 30+00		0.18	0.45	.	0.00	2.04									
9 Grate		.		0.0400	0.00	4.50		1.14	0.88	0.26	0.17	0.00	7.24	2.09	23
6 P-1-7/8-4				0.0200											
100		0.32	0.95	0.0093											
STA. 26+25		0.19	0.45	.	0.35										
8 Curb		.		0.0400	1.42	8.71		1.32	0.95	0.36	0.16	0.00	7.91	2.10	27
				0.0200											
										Note: L= 17.01 Ft. for 100% Interception					
EXT		0.25	0.95	.											
STA. 25+66		0.03	0.45	.	0.35										
8 Curb		.		0.0400	1.42	4.02		1.04			0.17	0.00	8.39		
				0.0200		6.00									
										Note: Weir Flow					
101	9	0.04	0.95	.											
STA. 15+75		0.03	0.45	.	0.35										
8 Curb		.		0.0400	1.42	4.02		0.14			0.04	0.00	2.19		
				0.0200		6.00									
										Note: Weir Flow					

APPENDIX

Design Calculations South of the Arizona Canal

B. Connector Pipe Design Calculations

Job 1184-21-01 Ref. 01 FILE:P411CB124-126.IN SPP SOUTH HALF City of Phoenix AZ OX By: TDS Date 04/09/88
INT. CURVE S85000 DROP=.00 DPS= 33, 0, 0, 0, MIN VEL= 2.00 2.00 2.00 MIN SLOPE= .00000 .00000 .00000 .00000 .00000

Input File = DUB0:[PHX.1184.HYDR.SPP]P411CB124-126.IN;3

CC	PG	LN	RUN NO.	FROM	TO	ES	FREQ YRS	LGTH FT	MIN DIA IN	TP	N	ZONE 1 A1 ACRE	C1	ZONE 2 A2 ACRE	C2	ZONE 3 A3 ACRE	C3	CONC TIME MIN	UPPER STRUCT TOP EL FT	M COV FT	LOWER STRUCT TOP EL FT	M COV FT	LR
03	01	05	P-124	124	125	0	2.0	26.	15.	2	.012	0.65	.95	0.00	.00	0.00	.00	10.	1198.52	2.06	1197.61	1.96	
03	01	06	P-125	125	126	0	2.0	26.	15.	2	.012	0.03	.95	0.00	.00	0.00	.00	10.	1197.61	2.06	1196.66	1.96	
03	01	10	P-126	126	END	9	2.0	112.	15.	2	.012	0.03	.95	0.00	.00	0.00	.00	10.	1196.66	2.06	1192.95	3.22	Z

Input File = DUB0:[PHX.1184.HYDR.SPP]P411CB124-126.IN;3

CC PG LN	RUN NO.	QA CFS	MAX FL LINE EL FT	CROWN CONTROL ELEV FT	CROWN CONTROL DIST FT	FLOW CONTROL ELEV FT	FLOW CONTROL DIST FT	C	ALTERNATE DESIGN FREQ YRS	MDIA IN	TP	N	QA CFS	GROUND CONTROL ELEV FT	GROUND CONTROL DIST FT	MIN CLEAR FT	OUTFALL ELEV FT	MAX VEL FPS
04 01 05	P-124	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00
04 01 06	P-125	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00
04 01 10	P-126	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00

- * - DESIGN SUMMARY - * -

HNTB - PROGRAM T411 - * - HYDRAULIC DESIGN OF STORM SEWERS - * - OUTPUT DATA Run Date 28-APR-88 Page 4
Job 1184-21-01 Ref. 01 FILE:P411CB124-126.IN SPP SOUTH HALF City of Phoenix AZ OX By: TDS Date 04/09/88
Number of Pipes in system = 3

Input File = DUB0:[PHX.1184.HYDR.SPP]P411CB124-126.IN;3

PIPE NO.	FROM	TO	LENGTH FT	TOTAL A	TOTAL C*A	CONC. TIME MIN	INT. IN/HR	DESIGN FLOW CFS	DIA IN	SLOPE %	TRAVEL TIME MIN	CAPAC. FLOW CFS	VEL. FPS	DEPTH FLOW FT	INVERT ELEV. UPPER FT	INVERT ELEV. LOWER FT	GROUND COVER UPPER FT	GROUND COVER LOWER FT
P-124	124	125	26.	0.65	0.62	10.00	2.70	1.67	15	3.115	0.06	12.36	7.02	0.31	1195.02	1194.21	2.06	1.96
P-125	125	126	26.	0.68	0.65	10.06	2.69	1.74	15	3.269	0.06	12.66	7.23	0.31	1194.11	1193.26	2.06	1.96
P-126	126	END	112.	0.71	0.67	10.12	2.69	1.81	15	4.348	0.23	14.60	8.10	0.30	1193.16	1188.29	2.06	3.22

Job 1184-21-01 Ref. 01 FILE:P411CB127.IN SQUAW PEAK PRKWY SOUTH HALF City of Phoenix AZ OX By: TDS Date 04/09/88
INT. CURVE S85000 DROP=.00 DPS= 33, 0, 0, 0, MIN VEL= 2.00 2.00 2.00 MIN SLOPE= .00000 .00000 .00000 .00000 .00000

Input File = DUBO:[PHX.1184.HYDR.SPP]P411CB127.IN;10

CC	PG	LN	RUN NO.	FROM	TO	ES	FREQ YRS	LGTH FT	MIN DIA IN	TP	N	ZONE 1 A1 ACRE	C1	ZONE 2 A2 ACRE	C2	ZONE 3 A3 ACRE	C3	CONC TIME MIN	UPPER STRUCT TOP EL FT	M COV FT	LOWER STRUCT TOP EL FT	M COV FT	LR
03	01	05	P-127	127	END	9	2.0	11.	15.	2	.012	0.69	.95	0.00	.00	0.00	.00	10.	1193.65	4.56	1193.11	6.54	Z

Job 1184-21-01 Ref. 01 FILE:P411CB127.IN SQUAW PEAK PRKWY SOUTH HALF City of Phoenix AZ OX By: TDS Date 04/09/88
INT. CURVE S85000 DROP=.00 DPS= 33, 0, 0, 0, MIN VEL= 2.00 2.00 2.00 MIN SLOPE= .00000 .00000 .00000 .00000 .00000

Input File = DUBO:[PHX.1184.HYDR.SPP]P411CB127.IN;10

CC	PG	LN	RUN NO.	QA CFS	MAX FL LINE EL FT	CROWN CONTROL ELEV FT	CROWN CONTROL DIST FT	FLOW CONTROL ELEV FT	FLOW CONTROL DIST FT	C	ALTERNATE DESIGN FREQ YRS	MDIA IN	TP	N	QA CFS	GROUND CONTROL ELEV FT	GROUND CONTROL DIST FT	MIN CLEAR FT	OUTFALL ELEV FT	MAX VEL FPS
04	01	05	P-127	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00

- * - DESIGN SUMMARY - * -

HNTB - PROGRAM T411 - * - HYDRAULIC DESIGN OF STORM SEWERS - * - OUTPUT DATA Run Date 28-APR-88 Page 4
Job 1184-21-01 Ref. 01 FILE:P411CB127.IN SQUAW PEAK PRKWY SOUTH HALF City of Phoenix AZ OX By: TDS Date 04/09/88
Number of Pipes in system = 1

Input File = DUB0:[PHX.1184.HYDR.SPP]P411CB127.IN;10

PIPE NO.	FROM	TO	LENGTH FT	TOTAL A	TOTAL C*A	CONC. TIME MIN	INT. IN/HR	DESIGN FLOW CFS	DIA IN	SLOPE %	TRAVEL TIME MIN	CAPAC. FLOW CFS	VEL. FPS	DEPTH FLOW FT	INVERT ELEV. UPPER FT	INVERT ELEV. LOWER FT	GROUND COVER UPPER FT	GROUND COVER LOWER FT
P-127	127	END	11.	0.69	0.66	10.00	2.70	1.77	15	22.909	0.01	33.51	14.46	0.20	1187.65	1185.13	4.56	6.54

Job 1184-21-01 Ref. 01 FILE:P411CB100.IN SQUAW PEAK PRKWY SOUTH HALF City of Phoenix AZ OX By: TDS Date 04/11/88
INT. CURVE S85000 DROP=.00 DPS= 33, 0, 0, 0, MIN VEL= 2.00 2.00 2.00 MIN SLOPE= .00000 .00000 .00000 .00000 .00000

Input File = DUB0:[PHX.1184.HYDR.SPP]P411CB100.IN;3

CC	PG	LN	RUN NO.	FROM	TO	ES	FREQ YRS	LGTH FT	MIN DIA IN	TP	N	ZONE 1 A1 ACRE	C1	ZONE 2 A2 ACRE	C2	ZONE 3 A3 ACRE	C3	CONC TIME MIN	UPPER STRUCT TOP EL FT	M COV FT	LOWER STRUCT TOP EL FT	M COV FT	LR
03	01	05	P-100	100	END	9	2.0	40.	15.	2	.012	0.32	.95	0.19	.45	0.00	.00	10.	1184.89	1.82	1184.70	1.80	Z

Job 1184-21-01 Ref. 01 FILE:P411CB100.IN SQUAW PEAK PRKWY SOUTH HALF City of Phoenix AZ OX By: TDS Date 04/11/88
INT. CURVE S85000 DROP=.00 DPS= 33, 0, 0, 0, MIN VEL= 2.00 2.00 2.00 MIN SLOPE= .00000 .00000 .00000 .00000 .00000

Input File = DUB0:[PHX.1184.HYDR.SPP]P411CB100.IN;3

CC	PG	LN	RUN NO.	QA CFS	MAX FL LINE EL FT	CROWN CONTROL ELEV FT	CROWN CONTROL DIST FT	FLOW CONTROL ELEV FT	FLOW CONTROL DIST FT	C	ALTERNATE DESIGN FREQ YRS	MDIA IN	TP	N	QA CFS	GROUND CONTROL ELEV FT	GROUND CONTROL DIST FT	MIN CLEAR FT	OUTFALL ELEV FT	MAX VEL FPS
04	01	05	P-100	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00

- * - DESIGN SUMMARY - * -

HNTB - PROGRAM T411 - * - HYDRAULIC DESIGN OF STORM SEWERS - * - OUTPUT DATA Run Date 28-APR-88 Page 4
Job 1184-21-01 Ref. 01 FILE:P411CB100.IN SQUAW PEAK PRKWY SOUTH HALF City of Phoenix AZ OX By: TDS Date 04/11/88
Number of Pipes in system = 1

Input File = DUBO:[PHX.1184.HYDR.SPP]P411CB100.IN;3

PIPE NO.	FROM	TO	LENGTH FT	TOTAL A	TOTAL C*A	CONC. TIME MIN	INT. IN/HR	DESIGN FLOW CFS	DIA IN	SLOPE %	TRAVEL TIME MIN	CAPAC. FLOW CFS	VEL. FPS	DEPTH FLOW FT	INVERT ELEV. UPPER FT	INVERT ELEV. LOWER FT	GROUND COVER UPPER FT	GROUND COVER LOWER FT
P-100	100	END	40.	0.51	0.39	10.00	2.70	1.05	15	0.440	0.22	4.64	3.06	0.40	1181.63	1181.46	1.82	1.81

Job 1184-21-01 Ref. 01 FILE:P411CB101.IN SQUAW PEAK PRKWY SOUTH HALF City of Phoenix AZ OX By: TDS Date 04/11/88
INT. CURVE S85000 DROP=.00 DPS= 33, 0, 0, 0, MIN VEL= 2.00 2.00 2.00 MIN SLOPE= .00000 .00000 .00000 .00000 .00000

Input File = DUB0:[PHX.1184.HYDR.SPP]P411CB101.IN;5

CC	PG	LN	RUN NO.	FROM	TO	ES	FREQ YRS	LGTH FT	MIN DIA IN	TP	N	ZONE 1 A1 ACRE	C1	ZONE 2 A2 ACRE	C2	ZONE 3 A3 ACRE	C3	CONC TIME MIN	UPPER STRUCT TOP EL FT	M COV FT	LOWER STRUCT TOP EL FT	M COV FT	LR
03	01	05	P-101	101	END	9	2.0	40.	15.	2	.012	0.04	.95	0.03	.45	0.00	.00	10.	1184.91	1.68	1185.00	1.94	Z

Job 1184-21-01 Ref. 01 FILE:P411CB101.IN SQUAW PEAK PRKWY SOUTH HALF City of Phoenix AZ OX By: TDS Date 04/11/88
INT. CURVE S85000 DROP=.00 DPS= 33, 0, 0, 0, MIN VEL= 2.00 2.00 2.00 MIN SLOPE= .00000 .00000 .00000 .00000

Input File = DUB0:[PHX.1184.HYDR.SPP]P411CB101.IN;5

CC	PG	LN	RUN NO.	QA CFS	MAX FL LINE EL FT	CROWN CONTROL ELEV FT	CROWN CONTROL DIST FT	FLOW CONTROL ELEV FT	FLOW CONTROL DIST FT	C	ALTERNATE DESIGN FREQ YRS	MDIA IN	TP	N	QA CFS	GROUND CONTROL ELEV FT	GROUND CONTROL DIST FT	MIN CLEAR FT	OUTFALL ELEV FT	MAX VEL FPS
04	01	05	P-101	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00

- * - DESIGN SUMMARY - * -

HNTB - PROGRAM T411 - * - HYDRAULIC DESIGN OF STORM SEWERS - * - OUTPUT DATA Run Date 28-APR-88 Page 4
Job 1184-21-01 Ref. 01 FILE:P411CB101.IN SQUAW PEAK PRKWY SOUTH HALF City of Phoenix AZ OX By: TDS Date 04/11/88
Number of Pipes in system = 1

Input File = DUB0:[PHX.1184.HYDR.SPP]P411CB101.IN;5

PIPE NO.	FROM	TO	LENGTH FT	TOTAL A	TOTAL C*A	CONC. TIME MIN	DESIGN INT. IN/HR	DESIGN FLOW CFS	DIA IN	SLOPE %	TRAVEL TIME MIN	CAPAC. FLOW CFS	VEL. FPS	DEPTH FLOW FT	INVERT ELEV. UPPER FT	INVERT ELEV. LOWER FT	GROUND COVER UPPER FT	GROUND COVER LOWER FT
P-101	101	END	40.	0.07	0.05	10.00	2.70	0.14	15	0.441	0.40	4.65	1.68	0.15	1181.79	1181.62	1.68	1.95

Job 1184-21-01 Ref. 01 FILE:P411CB102.IN SQUAW PEAK PRKWY SOUTH HALF City of Phoenix AZ OX By: TDS Date 04/11/88
INT. CURVE S85000 DROP=.00 DPS= 33, 0, 0, 0, MIN VEL= 2.00 2.00 2.00 MIN SLOPE= .00000 .00000 .00000 .00000 .00000

Input File = DUB0:[PHX.1184.HYDR.SPP]P411CB102.IN;2

CC	PG	LN	RUN NO.	FROM	TO	ES	FREQ YRS	LGTH FT	MIN DIA IN	TP	N	ZONE 1 A1 ACRE	C1	ZONE 2 A2 ACRE	C2	ZONE 3 A3 ACRE	C3	CONC TIME MIN	UPPER STRUCT TOP EL FT	M COV FT	LOWER STRUCT TOP EL FT	M COV FT	LR
03	01	05	P-102	102	END	9	2.0	30.	15.	2	.012	0.38	.95	0.25	.45	0.00	.00	10.	1185.61	2.06	1187.25	8.32	Z

Job 1184-21-01 Ref. 01 FILE:P411CB102.IN SQUAW PEAK PRKWY SOUTH HALF City of Phoenix AZ OX By: TDS Date 04/11/88
INT. CURVE S85000 DROP=.00 DPS= 33, 0, 0, 0, MIN VEL= 2.00 2.00 2.00 MIN SLOPE= .00000 .00000 .00000 .00000 .00000

Input File = DUBO:[PHX.1184.HYDR.SPP]P411CB102.IN;2

CC	PG	LN	RUN NO.	QA CFS	MAX FL LINE EL FT	CROWN CONTROL ELEV FT	CROWN CONTROL DIST FT	FLOW CONTROL ELEV FT	FLOW CONTROL DIST FT	C	ALTERNATE DESIGN FREQ YRS	MDIA IN	TP	N	QA CFS	GROUND CONTROL ELEV FT	GROUND CONTROL DIST FT	MIN CLEAR FT	OUTFALL ELEV FT	MAX VEL FPS
04	01	05	P-102	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00

- * - DESIGN SUMMARY - * -

HNTB - PROGRAM T411 - * - HYDRAULIC DESIGN OF STORM SEWERS - * - OUTPUT DATA Run Date 28-APR-88 Page 4
Job 1184-21-01 Ref. 01 FILE:P411CB102.IN SQUAW PEAK PRKWY SOUTH HALF City of Phoenix AZ OX By: TDS Date 04/11/88
Number of Pipes in system = 1

Input File = DUB0:[PHX.1184.HYDR.SPP]P411CB102.IN;2

PIPE NO.	FROM	TO	LENGTH FT	TOTAL A	TOTAL C*A	CONC. TIME MIN	INT. IN/HR	DESIGN FLOW CFS	DIA IN	SLOPE %	TRAVEL TIME MIN	CAPAC. FLOW CFS	VEL. FPS	DEPTH FLOW FT	INVERT ELEV. UPPER FT	INVERT ELEV. LOWER FT	GROUND COVER UPPER FT	GROUND COVER LOWER FT
P-102	102	END	30.	0.63	0.47	10.00	2.70	1.28	15	15.400	0.04	27.47	11.42	0.18	1182.11	1177.49	2.06	8.32

Job 1184-21-01 Ref. 01 FILE:P411726123.IN SQUAW PEAK PRKWY SOUTH HALF City of Phoenix AZ OX By: SAL Date 04/08/88
INT. CURVE S85000 DROP=.00 DPS= 33, 0, 0, 0, MIN VEL= 2.00 2.00 2.00 MIN SLOPE= .00000 .00000 .00000 .00000 .00000

Input File = DUB0:[PHX.1184.HYDR.SPP]P411SHALF103-106.IN;1

CC	PG	LN	RUN NO.	FROM	TO	ES	FREQ YRS	LGTH FT	MIN DIA IN	TP	N	ZONE 1 A1 ACRE	C1	ZONE 2 A2 ACRE	C2	ZONE 3 A3 ACRE	C3	CONC TIME MIN	UPPER STRUCT TOP EL FT	M COV FT	LOWER STRUCT TOP EL FT	M COV FT	LR
03	01	05	P-103	103	104	0	2.0	62.	15.	2	.012	0.36	.95	0.18	.45	0.00	.00	10.	1190.90	3.56	1207.61	2.06	
03	01	10	P-104	104	128	0	2.0	62.	15.	2	.012	0.53	.95	0.00	.00	0.00	.00	10.	1207.61	2.06	1208.09	2.06	
03	01	11	P-128	128	105	0	2.0	62.	15.	2	.012	0.00	.00	0.34	.45	0.00	.00	10.	1208.09	2.06	1207.75	2.06	
03	01	15	P-105	105	106	0	2.0	43.	15.	2	.012	0.53	.95	0.00	.00	0.00	.00	10.	1207.75	2.06	1191.56	5.46	
03	01	20	P-106	106	OUT	9	2.0	23.	15.	2	.012	0.24	.95	0.06	.45	0.00	.00	10.	1191.56	5.56	1191.73	7.29	Z

Input File = DUB0:[PHX.1184.HYDR.SPP]P411SHALF103-106.IN;1

CC	PG	LN	RUN NO.	QA CFS	MAX FL LINE EL FT	CROWN CONTROL ELEV FT	CROWN CONTROL DIST FT	FLOW CONTROL ELEV FT	FLOW CONTROL DIST FT	C	ALTERNATE DESIGN FREQ YRS	MDIA IN	TP	N	QA CFS	GROUND CONTROL ELEV FT	GROUND CONTROL DIST FT	MIN CLEAR FT	OUTFALL ELEV FT	MAX VEL FPS
04	01	05	P-103	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00
04	01	10	P-104	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00
04	01	11	P-128	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00
04	01	15	P-105	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00
04	01	20	P-106	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00

Number of Pipes in system = 5

Input File = DUB0:[PHX.1184.HYDR.SPP]P411SHALF103-106.IN;1

PIPE NO.	FROM	TO	LENGTH FT	TOTAL A	TOTAL C*A	CONC. TIME MIN	INT. IN/HR	DESIGN FLOW CFS	DIA IN	SLOPE %	TRAVEL TIME MIN	CAPAC. FLOW CFS	VEL. FPS	DEPTH FLOW FT	INVERT ELEV. UPPER FT	INVERT ELEV. LOWER FT	GROUND COVER UPPER FT	GROUND COVER LOWER FT
P-103	103	104	62.	0.54	0.42	10.00	2.70	1.14	15	0.440	0.33	4.64	3.13	0.42	1185.90	1185.63	3.56	20.54
P-104	104	128	62.	1.07	0.93	10.33	2.67	2.47	15	0.440	0.27	4.64	3.84	0.65	1185.63	1185.36	20.54	21.30
P-128	128	105	62.	1.41	1.08	10.60	2.64	2.85	15	0.441	0.26	4.65	3.98	0.71	1185.36	1185.08	21.30	21.23
P-105	105	106	43.	1.94	1.58	10.86	2.61	4.14	15	0.980	0.12	6.93	5.89	0.70	1185.08	1184.66	21.23	5.46
P-106	106	OUT	23.	2.24	1.84	10.98	2.60	4.78	15	6.783	0.03	18.23	12.51	0.44	1184.56	1183.00	5.56	7.29

Job 1184-21-01 Ref. 01 FILE:P411726546.IN SQUAW PEAK PKWY SOUTH HALF City of Phoenix AZ OX By: SAL Date 04/07/88
INT. CURVE S85000 DROP=.00 DPS= 33, 0, 0, 0, MIN VEL= 2.00 2.00 2.00 MIN SLOPE= .00000 .00000 .00000 .00000 .00000

Input File = DUB0:[PHX.1184.HYDR.SPP]P411SHALF108-112.IN;1

CC	PG	LN	RUN NO.	FROM	TO	ES	FREQ YRS	LGTH FT	MIN DIA IN	TP	N	ZONE 1 A1 ACRE	C1	ZONE 2 A2 ACRE	C2	ZONE 3 A3 ACRE	C3	CONC TIME MIN	UPPER STRUCT TOP EL FT	M COV FT	LOWER STRUCT TOP EL FT	M COV FT	LR
03	01	05	P-108	108	109	0	2.0	66.	15.	2	.012	0.78	.95	0.16	.45	0.00	.00	10.	1196.86	2.06	1196.59	2.06	
03	01	10	P-110	110	109	0	2.0	75.	15.	2	.012	0.58	.95	0.00	.00	0.00	.00	10.	1197.36	2.06	1196.59	2.06	
03	01	15	P-109	109	129	0	2.0	89.	15.	2	.012	0.27	.95	0.01	.45	0.00	.00	10.	1196.59	2.31	1197.61	3.71	
03	01	20	P-129	129	112	0	2.0	60.	15.	2	.012	0.47	.45	0.53	.45	0.00	.00	10.	1197.61	3.81	1197.17	3.57	
03	01	30	P-112	112	OUT	9	2.0	52.	15.	2	.012	0.15	.95	0.00	.00	0.00	.00	10.	1197.17	3.81	1197.17	8.74	Z

Input File = DUB0:[PHX.1184.HYDR.SPP]P411SHALF108-112.IN;1

CC	PG	LN	RUN NO.	QA CFS	MAX FL LINE EL FT	CROWN ELEV FT	CONTROL DIST FT	FLOW ELEV FT	CONTROL DIST FT	C	ALTERNATE DESIGN FREQ YRS	MDIA IN	TP	N	QA CFS	GROUND ELEV FT	CONTROL DIST FT	MIN CLEAR FT	OUTFALL ELEV FT	MAX VEL FPS
04	01	05	P-108	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	01	10	P-110	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	01	15	P-109	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	01	20	P-129	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	01	30	P-112	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00

- * - DESIGN SUMMARY - * -

HNTB - PROGRAM T411 - * - HYDRAULIC DESIGN OF STORM SEWERS - * - OUTPUT DATA Run Date 28-APR-88 Page 4
Job 1184-21-01 Ref. 01 FILE:P411726546.IN SQUAW PEAK PKWY SOUTH HALF City of Phoenix AZ OX By: SAL Date 04/07/88
Number of Pipes in system = 5

Input File = DUB0:[PHX.1184.HYDR.SPP]P411SHALF108-112.IN;1

PIPE NO.	FROM	TO	LENGTH FT	TOTAL A	TOTAL C*A	CONC. TIME MIN	INT. IN/HR	DESIGN FLOW CFS	DIA IN	SLOPE %	TRAVEL TIME MIN	CAPAC. FLOW CFS	VEL. FPS	DEPTH FLOW FT	INVERT ELEV. UPPER FT	INVERT ELEV. LOWER FT	GROUND COVER UPPER FT	GROUND COVER LOWER FT
P-108	108	109	66.	0.94	0.81	10.00	2.70	2.20	15	0.440	0.29	4.64	3.73	0.60	1193.36	1193.07	2.06	2.08
P-110	110	109	75.	0.58	0.55	10.00	2.70	1.49	15	1.027	0.27	7.09	4.57	0.39	1193.86	1193.09	2.06	2.06
P-109	109	129	89.	1.80	1.63	10.29	2.67	4.34	15	0.440	0.35	4.64	4.30	0.96	1192.84	1192.45	2.31	3.72
P-129	129	112	60.	2.80	2.08	10.64	2.64	5.47	15	0.613	0.20	5.48	5.09	1.02	1192.36	1191.99	3.81	3.74
P-112	112	OUT	52.	2.95	2.22	10.84	2.62	5.80	15	9.481	0.06	21.55	14.90	0.44	1191.92	1186.99	3.81	8.74

HNTB - PROGRAM T411 - * - HYDRAULIC DESIGN OF STORM SEWERS - * - INPUT DATA Run Date 28-APR-88 Page 1
Job 1184-21-01 Ref. 01 FILE:P411726125.IN SQUAW PEAK PRKWY SOUTH HALF City of Phoenix AZ OX By: SAL Date 04/08/88
INT. CURVE S85000 DROP=.00 DPS= 33, 0, 0, 0, MIN VEL= 2.00 2.00 2.00 MIN SLOPE= .00000 .00000 .00000 .00000 .00000

Input File = DUBO:[PHX.1184.HYDR.SPP]P411SHALF114-115.IN;1

CC	PG	LN	RUN NO.	FROM	TO	ES	FREQ YRS	LGTH FT	MIN DIA IN	TP	N	ZONE 1 A1 ACRE	C1	ZONE 2 A2 ACRE	C2	ZONE 3 A3 ACRE	C3	CONC TIME MIN	UPPER STRUCT TOP EL FT	M COV FT	LOWER STRUCT TOP EL FT	M COV FT	LR
03	01	05	P-114	114	130	0	2.0	16.	15.	2	.012	0.51	.95	0.00	.00	0.00	.00	10.	1207.55	2.06	1206.38	1.96	
03	01	06	P-130	130	115	0	2.0	75.	15.	2	.012	0.00	.00	0.37	.45	0.00	.00	10.	1206.38	2.06	1205.61	1.96	
03	01	10	P-115	115	OUT	9	2.0	38.	15.	2	.012	0.62	.95	0.12	.45	0.00	.00	10.	1205.61	2.06	1204.86	3.67	Z

Job 1184-21-01 Ref. 01 FILE:P411726125.IN SQUAW PEAK PRKWY SOUTH HALF City of Phoenix AZ OX By: SAL Date 04/08/88
INT. CURVE S85000 DROP=.00 DPS= 33, 0, 0, 0, MIN VEL= 2.00 2.00 2.00 MIN SLOPE= .00000 .00000 .00000 .00000

Input File = DUBO:[PHX.1184.HYDR.SPP]P411SHALF114-115.IN;1

CC	PG	LN	RUN NO.	QA CFS	MAX FL LINE EL FT	CROWN CONTROL ELEV FT	CROWN CONTROL DIST FT	FLOW CONTROL ELEV FT	FLOW CONTROL DIST FT	C	FREQ YRS	ALTERNATE DESIGN MDIA IN	TP	N	QA CFS	GROUND CONTROL ELEV FT	GROUND CONTROL DIST FT	MIN CLEAR FT	OUTFALL ELEV FT	MAX VEL FPS
04	01	05	P-114	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00
04	01	06	P-130	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00
04	01	10	P-115	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00

- * - DESIGN SUMMARY - * -

HNTB - PROGRAM T411 - * - HYDRAULIC DESIGN OF STORM SEWERS - * - OUTPUT DATA Run Date 28-APR-88 Page 4
Job 1184-21-01 Ref. 01 FILE:P411726125.IN SQUAW PEAK PRKWY SOUTH HALF City of Phoenix AZ OX By: SAL Date 04/08/88
Number of Pipes in system = 3

Input File = DUB0:[PHX.1184.HYDR.SPP]P411SHALF114-115.IN;1

PIPE NO.	FROM	TO	LENGTH FT	TOTAL A	TOTAL C*A	CONC. TIME MIN	DESIGN INT. IN/HR	DESIGN FLOW CFS	DIA IN	SLOPE %	TRAVEL TIME MIN	CAPAC. FLOW CFS	VEL. FPS	DEPTH FLOW FT	INVERT ELEV. UPPER FT	INVERT ELEV. LOWER FT	GROUND COVER UPPER FT	GROUND COVER LOWER FT
P-114	114	130	16.	0.51	0.48	10.00	2.70	1.31	15	6.687	0.03	18.10	8.57	0.23	1204.05	1202.98	2.06	1.96
P-130	130	115	75.	0.88	0.65	10.03	2.70	1.76	15	0.893	0.27	6.62	4.55	0.44	1202.88	1202.21	2.06	1.96
P-115	115	OUT	38.	1.62	1.29	10.31	2.67	3.45	15	6.210	0.06	17.45	11.07	0.38	1202.11	1199.75	2.06	3.67

HNTB - PROGRAM T411 - * - HYDRAULIC DESIGN OF STORM SEWERS - * - INPUT DATA Run Date 28-APR-88 Page 1
Job 1184-21-01 Ref. 01 FILE:P411726124.IN SQUAW PEAK PRKWY SOUTH HALF City of Phoenix AZ OX By: SAL Date 04/07/88
INT. CURVE S85000 DROP=.00 DPS= 33, 0, 0, 0, MIN VEL= 2.00 2.00 2.00 MIN SLOPE= .00000 .00000 .00000 .00000 .00000

Input File = DUB0:[PHX.1184.HYDR.SPP]P411SHALF116-117.IN;1

CC	PG	LN	RUN NO.	FROM	TO	ES	FREQ YRS	LGTH FT	MIN DIA IN	TP	N	ZONE 1 A1 ACRE	C1	ZONE 2 A2 ACRE	C2	ZONE 3 A3 ACRE	C3	CONC TIME MIN	UPPER STRUCT TOP EL FT	M COV FT	LOWER STRUCT TOP EL FT	M COV FT	LR
03	01	05	P-116	116	131	0	2.0	16.	15.	2	.012	0.51	.95	0.00	.00	0.00	.00	10.	1215.22	2.06	1213.21	1.96	
03	01	06	P-131	131	117	0	2.0	65.	15.	2	.012	0.00	.00	0.37	.45	0.00	.00	10.	1213.21	2.06	1211.82	1.96	
03	01	10	P-117	117	OUT	9	2.0	42.	15.	2	.012	0.52	.95	0.24	.45	0.00	.00	10.	1211.82	2.06	1211.82	2.06	Z

Input File = DUBO:[PHX.1184.HYDR.SPP]P411SHALF116-117.IN;1

CC	PG	LN	RUN NO.	QA CFS	MAX FL LINE EL FT	CROWN CONTROL ELEV FT	CROWN CONTROL DIST FT	FLOW CONTROL ELEV FT	FLOW CONTROL DIST FT	C	ALTERNATE DESIGN FREQ YRS	MDIA IN	TP	N	QA CFS	GROUND CONTROL ELEV FT	GROUND CONTROL DIST FT	MIN CLEAR FT	OUTFALL ELEV FT	MAX VEL FPS
04	01	05	P-116	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00
04	01	06	P-131	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00
04	01	10	P-117	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00

- * - DESIGN SUMMARY - * -

HNTB - PROGRAM T411 - * - HYDRAULIC DESIGN OF STORM SEWERS - * - OUTPUT DATA Run Date 28-APR-88 Page 4
Job 1184-21-01 Ref. 01 FILE:P411726124.IN SQUAW PEAK PRKWY SOUTH HALF City of Phoenix AZ OX By: SAL Date 04/07/88
Number of Pipes in system = 3

Input File = DUB0:[PHX.1184.HYDR.SPP]P411SHALF116-117.IN;1

PIPE NO.	FROM	TO	LENGTH FT	TOTAL A	TOTAL C*A	CONC. TIME MIN	INT. IN/HR	DESIGN FLOW CFS	DIA IN	SLOPE %	TRAVEL TIME MIN	CAPAC. FLOW CFS	VEL. FPS	DEPTH FLOW FT	INVERT ELEV. UPPER FT	INVERT ELEV. LOWER FT	GROUND COVER UPPER FT	GROUND COVER LOWER FT
P-116	116	131	16.	0.51	0.48	10.00	2.70	1.31	15	11.937	0.03	24.19	10.52	0.20	1211.72	1209.81	2.06	1.96
P-131	131	117	65.	0.88	0.65	10.03	2.70	1.76	15	1.985	0.18	9.86	6.07	0.36	1209.71	1208.42	2.06	1.96
P-117	117	OUT	42.	1.64	1.25	10.20	2.68	3.36	15	0.440	0.17	4.64	4.12	0.79	1208.32	1208.14	2.06	2.24

HNTB - PROGRAM T411 - * - HYDRAULIC DESIGN OF STORM SEWERS - * - INPUT DATA Run Date 4-MAY-88 Page 1
Job 1184-21-01 Ref. 01 X FILE:P411SHALF193-229.IN S.P.P. SOUTH HALF City of Phoenix AZ OX By: TDS Date 04/07/88
INT. CURVE S85000 DROP=.00 DPS= 33, 0, 0, 0, MIN VEL= 2.00 2.00 2.00 MIN SLOPE= .00000 .00000 .00000 .00000 .00000

Input File = DISKB0:[PHX.1184.HYDR.SPP]P411SHALF193-229.IN;43

CC	PG	LN	RUN NO.	FROM	TO	ES	FREQ YRS	LGTH FT	MIN DIA IN	TP	N	ZONE 1 A1 ACRE	C1	ZONE 2 A2 ACRE	C2	ZONE 3 A3 ACRE	C3	CONC TIME MIN	UPPER STRUCT TOP EL FT	M COV FT	LOWER STRUCT TOP EL FT	M COV FT	LR
03	01	05	P-193	193	190	0	2.0	185.	15.	2	.012	0.34	.95	0.00	.00	0.00	.00	10.	1231.36	2.06	1242.90	14.41	
03	01	10	P-122	122	190	0	2.0	4.	15.	2	.012	0.64	.95	0.00	.00	0.00	.00	10.	1248.17	6.95	1242.90	2.06	
03	01	15	P-190	190	191	0	2.0	94.	15.	2	.012	0.00	.00	0.00	.00	0.00	.00	0.	1242.90	14.51	1250.74	22.77	
03	01	16	P-134	134	191	0	2.0	46.	15.	2	.012	0.43	.95	0.53	.45	0.00	.00	10.	1251.67	2.06	1250.74	2.06	
03	01	18	P-191	191	192	0	2.0	290.	15.	2	.012	0.00	.00	0.00	.00	0.00	.00	0.	1250.74	22.87	1243.68	17.09	
03	01	19	P-120	120	192	0	2.0	67.	15.	2	.012	0.43	.95	0.00	.00	0.00	.00	10.	1243.26	2.06	1243.68	2.77	
03	01	20	P-133	133	192	0	2.0	9.	15.	2	.012	0.24	.45	0.00	.00	0.00	.00	10.	1244.11	2.06	1243.68	2.06	
03	01	21	P-121	121	192	0	2.0	17.	15.	2	.012	0.35	.95	0.00	.00	0.00	.00	10.	1245.01	2.06	1243.68	2.06	
03	01	22	P-192	192	231	0	2.0	68.	15.	2	.012	0.00	.00	0.00	.00	0.00	.00	0.	1243.68	17.19	1246.40	20.40	
03	01	25	P-231	231	232	0	2.0	75.	15.	2	.012	0.00	.00	0.00	.00	0.00	.00	0.	1246.40	20.50	1243.86	18.50	
03	01	26	P-233	233	232	0	2.0	17.	15.	2	.012	0.17	.45	0.00	.00	0.00	.00	10.	1238.50	2.06	1243.86	8.00	
03	01	27	P-234	234	232	0	2.0	70.	15.	2	.012	0.41	.45	0.00	.00	0.00	.00	10.	1232.50	2.06	1243.86	13.73	
03	01	28	P-232	232	230	0	2.0	250.	15.	2	.012	0.00	.00	0.00	.00	0.00	.00	0.	1243.86	18.60	1234.58	11.44	
03	01	29	P-235	235	230	0	2.0	90.	15.	2	.012	0.34	.45	0.00	.00	0.00	.00	10.	1225.50	2.06	1234.58	11.54	
03	01	31	P-230	230	229	0	2.0	241.	15.	2	.012	0.00	.00	0.00	.00	0.00	.00	0.	1234.58	21.27	1225.44	14.28	
03	01	35	P-128	128	118	0	2.0	54.	15.	2	.012	0.44	.45	0.00	.00	0.00	.00	24.	1227.50	2.06	1228.14	2.96	
03	01	40	P-118	118	132	0	2.0	16.	15.	2	.012	0.69	.95	0.00	.00	0.00	.00	10.	1228.14	3.06	1226.14	1.96	
03	01	41	P-132	132	119	0	2.0	60.	15.	2	.012	0.42	.45	0.00	.00	0.00	.00	10.	1226.14	2.06	1224.94	1.96	
03	01	45	P-119	119	229	9	2.0	2.	15.	2	.012	0.62	.95	0.00	.00	0.00	.00	10.	1224.94	2.06	1225.44	2.57	Z

INT. CURVE S85000 DROP=.00 DPS= 33, 0, 0, 0, MIN VEL= 2.00 2.00 2.00 MIN SLOPE= .00000 .00000 .00000 .00000 .00000

Input File = DISKB0:[PHX.1184.HYDR.SPP]P411SHALF193-229.IN;43

CC	PG	LN	RUN NO.	QA CFS	MAX FL LINE EL FT	CROWN CONTROL ELEV FT	CROWN CONTROL DIST FT	FLOW CONTROL ELEV FT	FLOW CONTROL DIST FT	C	ALTERNATE DESIGN FREQ YRS	MDIA IN	TP	N	QA CFS	GROUND CONTROL ELEV FT	GROUND CONTROL DIST FT	MIN CLEAR FT	OUTFALL ELEV FT	MAX VEL FPS
04	01	05	P-193	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00
04	01	10	P-122	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00
04	01	15	P-190	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00
04	01	16	P-134	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00
04	01	18	P-191	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00
04	01	19	P-120	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00
04	01	20	P-133	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00
04	01	21	P-121	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00
04	01	22	P-192	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00
04	01	25	P-231	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00
04	01	26	P-233	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00
04	01	27	P-234	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00
04	01	28	P-232	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00
04	01	29	P-235	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00
04	01	31	P-230	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00
04	01	35	P-128	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00
04	01	40	P-118	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00
04	01	41	P-132	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00
04	01	45	P-119	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00

- * - DESIGN SUMMARY - * -

HNTB - PROGRAM T411 - * - HYDRAULIC DESIGN OF STORM SEWERS - * - OUTPUT DATA Run Date 4-MAY-88 Page 4
Job 1184-21-01 Ref. 01 X FILE:P411SHALF193-229.IN S.P.P. SOUTH HALF City of Phoenix AZ OX By: TDS Date 04/07/88
Number of Pipes in system = 19

Input File = DISKB0:[PHX.1184.HYDR.SPP]P411SHALF193-229.IN;43

Output data for conversion to PL412: DISKB0:[PHX.1184.HYDR.SPP]P411SHALF193-229.XPL;1

PIPE NO.	FROM	TO	LENGTH FT	TOTAL A	TOTAL C*A	CONC. TIME MIN	INT. IN/HR	DESIGN FLOW CFS	DIA IN	SLOPE %	TRAVEL TIME MIN	CAPAC. FLOW CFS	VEL. FPS	DEPTH FLOW FT	INVERT ELEV. UPPER FT	INVERT ELEV. LOWER FT	GROUND COVER UPPER FT	GROUND COVER LOWER FT
P-193	193	190	185.	0.34	0.32	10.00	2.70	0.87	15	0.440	1.06	4.64	2.90	0.37	1227.86	1227.05	2.06	14.41
P-122	122	190	4.	0.64	0.61	10.00	2.70	1.64	15	9.503	0.01	21.58	10.37	0.23	1239.78	1239.40	6.95	2.06
P-190	190	191	94.	0.98	0.93	11.06	2.59	2.41	15	0.447	0.41	4.68	3.84	0.64	1226.95	1226.53	14.51	22.77
P-134	134	191	46.	0.96	0.65	10.00	2.70	1.75	15	2.022	0.13	9.95	6.10	0.35	1248.17	1247.24	2.06	2.06
P-191	191	192	290.	1.94	1.58	11.47	2.55	4.03	15	0.441	1.13	4.65	4.27	0.90	1226.43	1225.15	22.87	17.09
P-120	120	192	67.	0.43	0.41	10.00	2.70	1.10	15	0.440	0.36	4.64	3.10	0.41	1239.76	1239.47	2.06	2.77
P-133	133	192	9.	0.24	0.11	10.00	2.70	0.29	15	4.777	0.03	15.30	4.87	0.12	1240.61	1240.18	2.06	2.06
P-121	121	192	17.	0.35	0.33	10.00	2.70	0.90	15	7.823	0.03	19.58	8.10	0.18	1241.51	1240.18	2.06	2.06
P-192	192	231	68.	2.96	2.43	12.60	2.44	5.92	15	0.721	0.21	5.94	5.52	1.02	1225.05	1224.56	17.19	20.40
P-231	231	232	75.	2.96	2.43	12.81	2.42	5.87 *	15	0.720	0.23	5.94	5.52	1.02	1224.46	1223.92	20.50	18.50
*PIPE DESIGNED FOR 5.92 CFS																		
P-233	233	232	17.	0.17	0.08	10.00	2.70	0.21	15	3.412	0.07	12.93	3.91	0.11	1235.00	1234.42	2.06	8.00
P-234	234	232	70.	0.41	0.18	10.00	2.70	0.50	15	0.443	0.47	4.66	2.48	0.28	1229.00	1228.69	2.06	13.73
P-232	232	230	250.	3.54	2.69	13.04	2.40	6.44	15	0.848	0.70	6.45	5.99	1.02	1223.82	1221.70	18.60	11.44
P-235	235	230	90.	0.34	0.15	10.00	2.70	0.41	15	0.444	0.64	4.67	2.34	0.25	1222.00	1221.60	2.06	11.54
P-230	230	229	241.	3.88	2.84	13.73	2.33	6.61	15	0.892	0.65	6.61	6.14	1.02	1211.87	1209.72	21.27	14.28
P-128	128	118	54.	0.44	0.20	24.00	1.67	0.33	15	0.481	0.40	4.86	2.26	0.22	1224.00	1223.74	2.06	2.96
P-118	118	132	16.	1.13	0.85	24.40	1.65	1.41	15	5.625	0.03	16.60	8.25	0.25	1223.64	1222.74	3.06	1.96
P-132	132	119	60.	1.55	1.04	24.43	1.65	1.72	15	1.833	0.17	9.48	5.87	0.36	1222.64	1221.54	2.06	1.96
P-119	119	229	2.	2.17	1.63	24.60	1.64	2.68	15	0.495	0.01	4.93	4.10	0.66	1221.44	1221.43	2.06	2.57

Job 1184-21-01 Ref. 01 X FILE:P411SHALF229-228.IN S.P.P. SOUTH HALF City of Phoenix AZ OX By: DFM Date 04/28/88
INT. CURVE S85000 DROP=.00 DPS= 33, 0, 0, 0, MIN VEL= 2.00 2.00 2.00 MIN SLOPE= .00000 .00000 .00000 .00000 .00000

Input File = DUB0:[PHX.1184.HYDR.SPP]P411SHALF229-228.IN;2

CC	PG	LN	RUN NO.	FROM	TO	ES	FREQ YRS	LGTH FT	MIN DIA IN	TP	N	ZONE 1 A1 ACRE	C1	ZONE 2 A2 ACRE	C2	ZONE 3 A3 ACRE	C3	CONC TIME MIN	UPPER STRUCT TOP EL FT	M COV FT	LOWER STRUCT TOP EL FT	M COV FT	LR
03	01	55	P-229	229	228	9	2.0	213.	18.	2	.012	2.24	.50	2.24	.50	0.00	.00	10.	1225.44	14.01	1219.73	9.19	Z

Job 1184-21-01 Ref. 01 X FILE:P411SHALF229-228.IN S.P.P. SOUTH HALF City of Phoenix AZ OX By: DFM Date 04/28/88
INT. CURVE S85000 DROP=.00 DPS= 33, 0, 0, 0, MIN VEL= 2.00 2.00 2.00 MIN SLOPE= .00000 .00000 .00000 .00000

Input File = DUB0:[PHX.1184.HYDR.SPP]P411SHALF229-228.IN;2

CC	PG	LN	RUN NO.	QA CFS	MAX FL LINE EL FT	CROWN CONTROL ELEV FT	CROWN CONTROL DIST FT	FLOW CONTROL ELEV FT	FLOW CONTROL DIST FT	C	ALTERNATE DESIGN FREQ YRS	MDIA IN	TP	N	QA CFS	GROUND CONTROL ELEV FT	GROUND CONTROL DIST FT	MIN CLEAR FT	OUTFALL ELEV FT	MAX VEL FPS
04	01	55	P-229	0.	0.00	0.00	0.	0.00	0.	X	2.0	0.	0	.000	0.	0.00	0.	0.00	0.00	20.00

- * - DESIGN SUMMARY - * -

HNTB - PROGRAM T411 - * - HYDRAULIC DESIGN OF STORM SEWERS - * - OUTPUT DATA Run Date 28-APR-88 Page 4
Job 1184-21-01 Ref. 01 X FILE:P411SHALF229-228.IN S.P.P. SOUTH HALF City of Phoenix AZ OX By: DFM Date 04/28/88
Number of Pipes in system = 1

Input File = DUB0:[PHX.1184.HYDR.SPP]P411SHALF229-228.IN;2

Output data for conversion to PL412: DUB0:[PHX.1184.HYDR.SPP]P411SHALF229-228.XPL;1

PIPE NO.	FROM	TO	LENGTH FT	TOTAL A	TOTAL C*A	CONC. TIME MIN	DESIGN INT. IN/HR	DESIGN FLOW CFS	DIA IN	SLOPE %	TRAVEL TIME MIN	CAPAC. FLOW CFS	VEL. FPS	DEPTH FLOW FT	INVERT ELEV. UPPER FT	INVERT ELEV. LOWER FT	GROUND COVER UPPER FT	GROUND COVER LOWER FT
P-229	229	228	213.	4.48	2.24	10.00	2.70	6.05	18	0.418	0.76	7.36	4.65	1.04	1209.72	1208.83	14.01	9.19

APPENDIX

Design Calculations South of the Arizona Canal

C. Memo Regarding Design of 18th Street Storm Drain

HNTB

HOWARD NEEDLES TAMMEN & BERGENDOFF

Interoffice Correspondence

To File

Date April 28, 1987

From Kathy Alberts

Subject Squaw Peak Parkway Drainage Design
Job No. 11184-22-01

18th Street Storm Drain Sizing

Following is a summary of the April 28, 1987, meeting with the City of Phoenix Drainage Department staff regarding the 18th Street Storm Drain Sizing:

In Attendance:

Ray Acuna	C.O.P.
Phil Arthur	C.O.P.
Ross Blakely	C.O.P.
Pete Johnson	C.O.P. (Squaw Peak Parkway Coordinator)
Dwayne Williams	C.O.P.
Tom Klimek	HNTB
Tim Schoonhoven	HNTB
Kathy Alberts	HNTB

During the meeting the following events occurred.

1) HNTB presented it's overland flow calculations for the area from the Arizona Canal to Bethany Home Road and from 20th Street to the Squaw Peak Parkway. We emphasized that our overall flow value was 34 cfs, which is more than twice the 16 cfs as was presented in the Greiner Engineering report "Squaw Peak Parkway Task 12 Technical Memorandum: Drainage Study of the Squaw Peak Corridor Between 16th Street and 24th Street, November 1983."

2) Dwayne Williams stated that he believed that the discrepancy was due to using two different design methods. He also said that previous studies indicate that the TR-20 modeling method was much more accurate than the rational method than the Rational Method that HNTB had used.

3) The City storm drain design section directed HNTB to size the catch basin using the rational method, however, they stated that they believe the Greiner Design for the 18th Street storm drain is adequate and should be used by HNTB instead of the value from the rational method.

4) HNTB agreed to adopt the Greiner storm drain design and to size the catch basins using the rational method.

DII.194.16/all

HNTB HOWARD NEEDLES TAMMEN & BERGENDOFF	Made by TDS	Date 9-22-87	Job No. 11184-21-01
	Checked by JRD	Date 9-22-87	Sheet No. 1/1
For 18th Street Storm Drain, Squaw Peak Parkway			

COMPARISON OF 18th STREET STORM DRAIN SIZE

	GREINER ENGINEERING PRELIMINARY DESIGN*		HNTB FINAL DESIGN	
LOCATION	SIZE	SLOPE	SIZE	SLOPE
ROVEY AVENUE TO MARLETTE AVENUE	21"	0.0153 %	21"	0.0153 %
MARLETTE AVENUE TO NORTH OF MARYLAND AVE.	18"	0.0153 %	18"	0.0153 %

* Squaw Peak Parkway, Task 12 Technical Memorandum: Drainage Study of the Squaw Peak Corridor Between 16th Street and 24th Street. November 1983.

E101-0374-20M

CHAPTER 2

DESIGN CALCULATIONS NORTH OF ARIZONA CANAL

APPENDIX

Design Calculations North of the Arizona Canal

A. Offsite Flow Analysis, (TR 20 Computer Output)

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JOB TR-20                    FULLPRINT          SUMMARY                    10
TITLE 001   OCOTILLO 50 YR. STORM FOR THE OFFSITE DRAINAGE FOR S.P.P.      20
 5 RAINFL 1            0.5000                                             30
 8          0.0000     0.0040     0.0080     0.0130     0.0180            40
 8          0.0220     0.0250     0.0310     0.0350     0.0400            50
 8          0.0410     0.0480     0.0530     0.0570     0.0620            60
 8          0.0660     0.0710     0.0750     0.0800     0.0930            70
 8          0.1070     0.1200     0.1400     0.1700     0.6000            80
 8          0.8600     0.8600     0.8800     0.8930     0.9070            90
 8          0.9200     0.9240     0.9280     0.9330     0.9370           100
 8          0.9420     0.9470     0.9510     0.9560     0.9600           110
 8          0.9640     0.9690     0.9730     0.9780     0.9820           120
 8          0.9870     0.9910     0.9950     1.0000     1.0000           130
 9 ENDTBL                                                                140
 6 RUNOFF 1 001       1 0.1244     98.000     0.1667     1     1   1      150
 6 REACH  3 002   1   2 5650.0     0.7880     0.0000     1     1   1      160
 6 RUNOFF 1 003       3 0.4698     89.000     0.3519     1     1   1      170
 6 ADDHYD 4 003   2 3 4                                  1 1   1   1      180
 6 REACH  3 004   4   1 2400.0     0.6840     0.0000     1     1   1      190
 6 RUNOFF 1 005       2 0.2927     89.000     0.2570     1     1   1      200
 6 ADDHYD 4 005   1 2 3                                  1 1   1   1      210
 6 REACH  3 006   3   1 1300.0     0.6009     0.0000     1     1   1      220
 6 RUNOFF 1 007       2 0.0907     90.000     0.1667     1     1   1      230
 6 ADDHYD 4 007   1 2 5                                  1 1   1   1      240
   ENDATA                                                                250
 7 INCREM 6            0.0500                                             260
 7 COMPUT 7 001  008   0.0000     3.5700     1.0000         101 201      270
   ENDCMP 1                                                              280
   ENDJOB 2                                                              290
```

50 YR. STORM FOR THE OFFSITE DRAINAGE FOR S.P.P. OCOTILLO

TR-20 HYDROLOGY

Input File Name :DUB0:[PHX.11843705023.IN;37

PASS= 1

EXECUTIVE CONTROL CARD 260 OPERATION INCREM, MAIN TIME INCREMENT= 0.05
EXECUTIVE CONTROL CARD 270 OPERATION COMPUT, FROM XSECTN/STRUCT 1/ 0 TO XSECTN/STRUCT 8/ 0
STARTING TIME= 0.00 RAIN DEPTH= 3.57 RAIN DURATION= 1.00 RAIN TABLE NO.= 1 SOIL CONDITION= 2
ALTERNATE NO.= 1 STORM NO.= 1

SUBROUTINE RUNOFF CROSS SECTION 1
AREA= 0.12 INPUT RUNOFF CURVE= 98.0 TIME OF CONCENTRATION= 0.17

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
3.51	1.440	(RUNOFF)
4.48	1.550	(RUNOFF)
5.49	2.448	(RUNOFF)
5.99	1.877	(RUNOFF)
6.99	2.036	(RUNOFF)
7.98	2.152	(RUNOFF)
10.00	6.803	(RUNOFF)
11.98	242.261	(RUNOFF)
13.48	11.349	(RUNOFF)
14.47	7.940	(RUNOFF)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 3.0289 CFS-HRS= 243.17 ACRE-FT= 20.10

SUBROUTINE REACH CROSS SECTION 2
LENGTH= 5650.00 INPUT COEFFICIENT= 0.7880 INPUT ROUTINGS= 0.00

AVERAGE WATER VELOCITY= 6.319 AVERAGE ROUTING COEFF= 0.7880 NUMBER OF ROUTINGS= 3.91

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
3.73	1.418	(NULL)
4.68	1.526	(NULL)
5.72	2.421	(NULL)
6.19	1.869	(NULL)
7.20	2.023	(NULL)
8.19	2.142	(NULL)
10.23	6.784	(NULL)
12.20	239.408	(NULL)
13.69	11.249	(NULL)
14.68	7.932	(NULL)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 3.0059 CFS-HRS= 241.32 ACRE-FT= 19.94

SUBROUTINE RUNOFF CROSS SECTION 3
AREA= 0.47 INPUT RUNOFF CURVE= 89.0 TIME OF CONCENTRATION= 0.35

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.11	645.937	(RUNOFF)
13.54	56.519	(RUNOFF)
14.53	27.316	(RUNOFF)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 2.1261 CFS-HRS= 644.63 ACRE-FT= 53.27

SUBROUTINE ADD-HYD CROSS SECTION 3
INPUT HYDROGRAPHS= 2,3 OUTPUT HYDROGRAPH= 4

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS

2.76	0.597	(NULL)
3.73	1.418	(NULL)
4.68	1.526	(NULL)
5.72	2.421	(NULL)
6.19	1.869	(NULL)
7.20	2.023	(NULL)
8.23	2.215	(NULL)
12.12	880.940	(NULL)
13.57	47.284	(NULL)
14.54	35.211	(NULL)

HYDROGRAPH, TZERO= 0.00 DELTA T= 0.05 DRAINAGE AREA= 0.59

TIME											
0.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.50	DISCHG	0.00	0.00	0.00	0.01	0.02	0.05	0.09	0.13	0.17	0.21
2.00	DISCHG	0.26	0.30	0.34	0.38	0.42	0.45	0.47	0.48	0.49	0.50
2.50	DISCHG	0.51	0.53	0.55	0.57	0.59	0.60	0.59	0.57	0.55	0.54
3.00	DISCHG	0.54	0.54	0.54	0.55	0.56	0.60	0.70	0.85	1.00	1.12
3.50	DISCHG	1.21	1.28	1.33	1.37	1.41	1.42	1.37	1.29	1.20	1.14
4.00	DISCHG	1.10	1.09	1.09	1.09	1.10	1.13	1.18	1.26	1.33	1.39
4.50	DISCHG	1.44	1.47	1.49	1.51	1.52	1.48	1.31	1.04	0.78	0.58
5.00	DISCHG	0.46	0.39	0.36	0.34	0.34	0.42	0.71	1.15	1.58	1.90
5.50	DISCHG	2.11	2.24	2.33	2.38	2.41	2.41	2.33	2.19	2.06	1.96
6.00	DISCHG	1.90	1.88	1.87	1.86	1.87	1.86	1.81	1.73	1.66	1.61
6.50	DISCHG	1.58	1.56	1.56	1.56	1.56	1.59	1.65	1.74	1.83	1.90
7.00	DISCHG	1.95	1.98	2.00	2.01	2.02	2.01	1.96	1.88	1.79	1.74
7.50	DISCHG	1.70	1.68	1.68	1.67	1.68	1.70	1.77	1.87	1.96	2.03
8.00	DISCHG	2.09	2.13	2.16	2.19	2.21	2.22	2.18	2.10	2.03	1.99
8.50	DISCHG	1.97	1.97	1.99	2.01	2.05	2.10	2.21	2.34	2.47	2.58
9.00	DISCHG	2.66	2.74	2.86	3.04	3.28	3.71	4.51	5.58	6.60	7.40
9.50	DISCHG	7.99	8.42	8.76	9.06	9.35	9.64	9.97	10.32	10.66	10.97
10.00	DISCHG	11.24	11.47	11.68	11.85	12.00	12.11	12.18	12.21	12.25	12.32
10.50	DISCHG	12.43	12.64	13.02	13.60	14.34	15.28	16.56	18.01	19.32	20.38
11.00	DISCHG	21.22	22.00	22.89	24.13	25.58	27.30	29.49	31.94	34.16	35.90
11.50	DISCHG	39.59	51.37	78.11	125.55	197.65	291.20	406.50	532.42	648.14	741.68
12.00	DISCHG	812.74	859.49	882.22	881.96	863.41	831.80	790.63	748.00	713.13	689.20
12.50	DISCHG	672.02	653.28	617.14	557.31	483.64	400.87	309.65	219.92	150.66	100.36
13.00	DISCHG	66.30	44.64	32.14	26.62	26.39	28.60	32.67	37.50	41.73	44.70
13.50	DISCHG	46.56	47.43	47.39	46.53	45.03	43.08	40.87	38.68	36.86	35.57
14.00	DISCHG	34.70	34.18	33.96	33.94	34.06	34.27	34.56	34.85	35.09	35.27
14.50	DISCHG	35.37	35.41	35.35	35.16	34.91	34.61	34.28	33.95	33.68	33.47

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 2.3103 CFS-HRS= 885.95 ACRE-FT= 73.22

SUBROUTINE REACH CROSS SECTION 4

LENGTH= 2400.00 INPUT COEFFICIENT= 0.6840 INPUT ROUTINGS= 0.00

AVERAGE WATER VELOCITY= 3.680 AVERAGE ROUTING COEFF= 0.6840 NUMBER OF ROUTINGS= 2.48

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
2.93	0.586	(NULL)
3.89	1.389	(NULL)
4.83	1.505	(NULL)
5.88	2.331	(NULL)
7.35	2.010	(NULL)
8.38	2.193	(NULL)
12.31	861.730	(NULL)
13.76	46.478	(NULL)

14.71	35.135	(NULL)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 2.2946 CFS-HRS= 879.94 ACRE-FT= 72.72

SUBROUTINE RUNOFF CROSS SECTION 5
AREA= 0.29 INPUT RUNOFF CURVE= 89.0 TIME OF CONCENTRATION= 0.26

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.05	429.621	(RUNOFF)
13.51	23.667	(RUNOFF)
14.49	17.090	(RUNOFF)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 2.1334 CFS-HRS= 403.00 ACRE-FT= 33.30

SUBROUTINE ADDHYD CROSS SECTION 5
INPUT HYDROGRAPHS= 1,2 OUTPUT HYDROGRAPH= 3

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
2.93	0.586	(NULL)
3.89	1.389	(NULL)
4.83	1.505	(NULL)
5.88	2.381	(NULL)
7.35	2.010	(NULL)
8.41	2.293	(NULL)
12.27	1192.913	(NULL)
13.66	65.777	(NULL)
14.59	51.851	(NULL)

HYDROGRAPH, TZERO= 0.00 DELTA T= 0.05 DRAINAGE AREA= 0.89

TIME											
0.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.04	0.07
2.00	DISCHG	0.11	0.15	0.19	0.23	0.27	0.32	0.36	0.40	0.43	0.45
2.50	DISCHG	0.47	0.48	0.49	0.51	0.52	0.54	0.56	0.57	0.58	0.59
3.00	DISCHG	0.58	0.56	0.55	0.54	0.54	0.54	0.55	0.56	0.60	0.68
3.50	DISCHG	0.79	0.92	1.04	1.15	1.23	1.29	1.34	1.38	1.39	1.37
4.00	DISCHG	1.31	1.24	1.18	1.14	1.11	1.10	1.10	1.10	1.13	1.17
4.50	DISCHG	1.23	1.29	1.35	1.40	1.44	1.47	1.50	1.50	1.46	1.33
5.00	DISCHG	1.14	0.92	0.72	0.57	0.47	0.40	0.37	0.37	0.45	0.66
5.50	DISCHG	0.99	1.35	1.67	1.93	2.11	2.24	2.32	2.37	2.38	2.33
6.00	DISCHG	2.24	2.13	2.03	1.96	1.91	1.89	1.87	1.87	1.85	1.82
6.50	DISCHG	1.76	1.70	1.65	1.61	1.58	1.57	1.56	1.57	1.59	1.64
7.00	DISCHG	1.71	1.78	1.85	1.91	1.95	1.98	2.00	2.01	2.00	1.97
7.50	DISCHG	1.91	1.84	1.78	1.73	1.71	1.69	1.68	1.68	1.71	1.76
8.00	DISCHG	1.84	1.93	2.02	2.09	2.15	2.20	2.25	2.28	2.30	2.29
8.50	DISCHG	2.25	2.21	2.18	2.18	2.19	2.22	2.25	2.31	2.38	2.48
9.00	DISCHG	2.61	2.78	2.99	3.25	3.54	3.84	4.17	4.55	5.07	5.86
9.50	DISCHG	6.33	7.86	8.82	9.65	10.33	10.91	11.40	11.85	12.29	12.73
10.00	DISCHG	13.18	13.62	14.02	14.36	14.67	14.96	15.22	15.46	15.67	15.85
10.50	DISCHG	16.01	16.26	16.70	17.35	18.13	18.99	19.88	20.86	22.01	23.36
11.00	DISCHG	24.86	26.49	28.31	30.34	32.35	34.30	36.21	38.17	40.33	42.75
11.50	DISCHG	45.49	57.80	92.25	152.88	229.81	315.80	408.32	510.99	626.77	756.50
12.00	DISCHG	889.10	1009.91	1100.67	1156.78	1186.12	1197.47	1196.26	1182.33	1156.53	1122.28
12.50	DISCHG	1083.48	1036.90	972.91	888.67	801.47	716.40	633.31	549.15	460.70	369.12
13.00	DISCHG	281.28	206.00	148.09	107.63	81.13	64.86	55.96	52.50	52.80	55.48
13.50	DISCHG	59.28	62.87	65.21	66.07	65.85	65.03	63.84	62.27	60.35	58.23
14.00	DISCHG	56.10	54.24	52.84	51.94	51.42	51.17	51.11	51.19	51.37	51.62

14.50	DISCHG	51.88	52.08	52.14	52.05	51.88	51.66	51.41	51.14	50.84	50.55

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 2.2414 CFS-HRS= 1282.94 ACRE-FT= 106.02

SUBROUTINE REACH CROSS SECTION 6
LENGTH= 1300.00 INPUT COEFFICIENT= 0.6009 INPUT ROUTINGS= 0.00

AVERAGE WATER VELOCITY= 2.560 AVERAGE ROUTING COEFF= 0.6009 NUMBER OF ROUTINGS= 1.70

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
3.06	0.577	(NULL)
4.02	1.362	(NULL)
4.94	1.480	(NULL)
6.02	2.335	(NULL)
7.48	1.996	(NULL)
8.54	2.271	(NULL)
12.42	1178.273	(NULL)
13.82	64.846	(NULL)
14.73	51.733	(NULL)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 2.2290 CFS-HRS= 1275.81 ACRE-FT= 105.43

SUBROUTINE RUNOFF CROSS SECTION 7
AREA= 0.09 INPUT RUNOFF CURVE= 90.0 TIME OF CONCENTRATION= 0.17

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.01	145.416	(RUNOFF)
12.45	97.920	(RUNOFF)
13.48	7.668	(RUNOFF)
14.47	5.386	(RUNOFF)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 2.2270 CFS-HRS= 130.36 ACRE-FT= 10.77

SUBROUTINE ADDHYD CROSS SECTION 7
INPUT HYDROGRAPHS= 1,2 OUTPUT HYDROGRAPH= 5

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
3.06	0.577	(NULL)
4.02	1.362	(NULL)
4.94	1.480	(NULL)
6.02	2.335	(NULL)
7.49	2.023	(NULL)
8.57	2.397	(NULL)
12.42	1275.996	(NULL)
13.81	69.913	(NULL)
14.71	56.784	(NULL)

TIME HYDROGRAPH, TZERO= 0.00 DELTA T= 0.05 DRAINAGE AREA= 0.93

0.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
2.00	DISCHG	0.03	0.06	0.09	0.12	0.16	0.20	0.24	0.28	0.32	0.36
2.50	DISCHG	0.40	0.43	0.45	0.47	0.48	0.50	0.51	0.53	0.54	0.56
3.00	DISCHG	0.57	0.58	0.58	0.57	0.56	0.55	0.55	0.55	0.55	0.56
3.50	DISCHG	0.59	0.65	0.73	0.84	0.95	1.07	1.15	1.22	1.29	1.33
4.00	DISCHG	1.36	1.36	1.33	1.28	1.23	1.19	1.15	1.12	1.11	1.11

4.50	DISCHG	1.12	1.15	1.19	1.25	1.30	1.36	1.40	1.44	1.47	1.48
5.00	DISCHG	1.46	1.38	1.24	1.06	0.88	0.72	0.59	0.49	0.43	0.41
5.50	DISCHG	0.45	0.59	0.82	1.11	1.41	1.69	1.92	2.09	2.21	2.29
6.00	DISCHG	2.33	2.32	2.27	2.19	2.11	2.03	1.97	1.92	1.90	1.88
6.50	DISCHG	1.86	1.83	1.79	1.74	1.69	1.65	1.61	1.59	1.58	1.57
7.00	DISCHG	1.59	1.62	1.67	1.73	1.80	1.87	1.92	1.96	2.00	2.02
7.50	DISCHG	2.02	2.01	1.98	1.93	1.88	1.84	1.81	1.79	1.78	1.78
8.00	DISCHG	1.80	1.84	1.89	1.97	2.05	2.13	2.20	2.26	2.32	2.36
8.50	DISCHG	2.39	2.40	2.40	2.39	2.37	2.37	2.37	2.39	2.43	2.48
9.00	DISCHG	2.54	2.67	2.89	3.15	3.43	3.71	4.02	4.35	4.70	5.10
9.50	DISCHG	5.61	6.29	7.15	8.11	9.09	10.00	10.81	11.52	12.14	12.68
10.00	DISCHG	13.19	13.67	14.13	14.58	15.01	15.41	15.77	16.11	16.42	16.71
10.50	DISCHG	16.98	17.29	17.75	18.27	18.83	19.47	20.22	21.05	21.96	22.95
11.00	DISCHG	24.07	25.48	27.34	29.39	31.45	33.53	35.63	37.72	39.78	41.87
11.50	DISCHG	44.58	54.71	82.76	122.91	170.82	230.68	303.56	386.87	478.77	579.65
12.00	DISCHG	690.81	806.55	916.65	1020.32	1113.68	1187.49	1238.02	1267.94	1280.93	1279.30
12.50	DISCHG	1264.24	1230.19	1170.19	1099.83	1027.76	950.33	868.15	784.35	700.39	615.76
13.00	DISCHG	529.05	441.27	356.56	279.22	213.11	160.81	122.31	95.71	78.65	68.91
13.50	DISCHG	64.54	63.67	64.58	66.39	68.33	69.70	70.26	70.09	69.35	68.16
14.00	DISCHG	66.58	64.76	62.90	61.14	59.60	58.41	57.57	57.05	56.78	56.69
14.50	DISCHG	56.75	56.87	56.97	57.05	57.10	57.08	56.98	56.82	56.61	56.40

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 2.2288 CFS-HRS= 1406.17 ACRE-FT= 116.21

ENDCMP

SUMMARY TABLE 1

ALT	STORM	ID	DA SQ-MI.	RAIN TBLE	AMC	DELTA-T HRS.	TZERO HRS.	PRECIP IN.	PRECIP DURATION	PEAK-Q CFS	PEAK-TIME	PEAK-ELEV	RUNOFF IN.	CSM
1	1	1	0.12	1	2	0.05	0.00	3.57	24.00	242.26	11.98	0.00	3.03	1947.44
1	1	2	0.12	1	2	0.05	0.00	3.57	24.00	239.41	12.20	0.00	3.01	1924.50
1	1	3	0.47	1	2	0.05	0.00	3.57	24.00	645.94	12.11	0.00	2.13	1374.92
1	1	3	0.59	1	2	0.05	0.00	3.57	24.00	880.94	12.12	0.00	2.31	1482.57
1	1	4	0.59	1	2	0.05	0.00	3.57	24.00	861.73	12.31	0.00	2.29	1450.24
1	1	5	0.29	1	2	0.05	0.00	3.57	24.00	429.62	12.05	0.00	2.13	1467.79
1	1	5	0.89	1	2	0.05	0.00	3.57	24.00	1192.91	12.27	0.00	2.24	1345.04
1	1	6	0.89	1	2	0.05	0.00	3.57	24.00	1178.27	12.42	0.00	2.23	1328.53
1	1	7	0.09	1	2	0.05	0.00	3.57	24.00	145.42	12.01	0.00	2.23	1603.26
1	1	7	0.98	1	2	0.05	0.00	3.57	24.00	1276.00	12.42	0.00	2.23	1305.23

SUMMARY TABLE 3

	DISCHARGE,CFS									
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
XSEC/STRUC NO. 1										
ALTERNATE 1	242.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
XSEC/STRUC NO. 2										
ALTERNATE 1	239.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
XSEC/STRUC NO. 3										
ALTERNATE 1	880.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
XSEC/STRUC NO. 4										
ALTERNATE 1	861.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
XSEC/STRUC NO. 5										
ALTERNATE 1	1192.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
XSEC/STRUC NO. 6										
ALTERNATE 1	1178.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
XSEC/STRUC NO. 7										
ALTERNATE 1	1276.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

ENDJOB CARD ENCOUNTERED. END OF JOB.

----- T.R. 20 ---------- INPUT LISTING -----

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JOB TR-20                    FULLPRINT          SUMMARY                    10
TITLE 001   GLENDALE 50 YR. STORM FOR THE OFFSITE DRAINAGE FOR S.P.P.      20
 5 RAINFL 1            0.5000                                             30
 8          0.0000     0.0040     0.0080     0.0130     0.0180            40
 8          0.0220     0.0250     0.0310     0.0350     0.0400            50
 8          0.0410     0.0480     0.0530     0.0570     0.0620            60
 8          0.0660     0.0710     0.0750     0.0800     0.0930            70
 8          0.1070     0.1200     0.1400     0.1700     0.6000            80
 8          0.8600     0.8600     0.8800     0.8930     0.9070            90
 8          0.9200     0.9240     0.9280     0.9330     0.9370           100
 8          0.9420     0.9470     0.9510     0.9560     0.9600           110
 8          0.9640     0.9690     0.9730     0.9780     0.9820           120
 8          0.9870     0.9910     0.9950     1.0000     1.0000           130
 9 ENDTBL                                                                140
 6 RUNOFF 1 001       1 0.0290     89.000     0.1757     1 1   1   1      150
   ENDATA                                                                160
 7 INCREM 6            0.0500                                             170
 7 COMPUT 7 001   001  0.0000     3.5700     1.0000         101 201       180
   ENDCMP 1                                                              190
   ENDJOB 2                                                              200
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50 YR. STORM FOR THE OFFSITE DRAINAGE FOR S.P.P. GLENDALE

TR-20 HYDROLOGY

Input File Name :DUB0:[PHX.1184]705122.IN;40

PASS= 1

EXECUTIVE CONTROL CARD 170 OPERATION INCREM, MAIN TIME INCREMENT= 0.05
EXECUTIVE CONTROL CARD 180 OPERATION COMPUT, FROM XSECTN/STRUCT 1/ 0 TO XSECTN/STRUCT 1/ 0
STARTING TIME= 0.00 RAIN DEPTH= 3.57 RAIN DURATION= 1.00 RAIN TABLE NO.= 1 SOIL CONDITION= 2
ALTERNATE NO.= 1 STORM NO.= 1

SUBROUTINE RUNOFF CROSS SECTION 1
AREA= 0.03 INPUT RUNOFF CURVE= 89.0 TIME OF CONCENTRATION= 0.18

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.02	44.695	(RUNOFF)
12.48	31.152	(RUNOFF)
13.48	2.412	(RUNOFF)
14.47	1.697	(RUNOFF)

HYDROGRAPH, TZERO= 0.00 DELTA T= 0.05 DRAINAGE AREA= 0.03

TIME											
0.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8.00	DISCHG	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01
8.50	DISCHG	0.01	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03
9.00	DISCHG	0.03	0.04	0.06	0.09	0.11	0.12	0.14	0.15	0.16	0.17
9.50	DISCHG	0.18	0.20	0.21	0.23	0.24	0.26	0.27	0.28	0.29	0.31
10.00	DISCHG	0.32	0.33	0.33	0.33	0.34	0.35	0.36	0.36	0.37	0.38
10.50	DISCHG	0.39	0.42	0.49	0.56	0.62	0.66	0.69	0.72	0.74	0.76
11.00	DISCHG	0.78	0.83	0.96	1.11	1.22	1.29	1.35	1.39	1.43	1.47
11.50	DISCHG	1.60	3.74	10.17	18.86	26.16	31.55	35.60	38.74	41.25	43.25
12.00	DISCHG	44.77	44.56	40.74	36.11	32.98	31.63	31.02	30.81	30.81	30.90
12.50	DISCHG	31.02	28.47	20.60	11.49	5.82	2.95	1.46	0.74	0.36	0.16
13.00	DISCHG	0.08	0.24	0.83	1.51	1.96	2.19	2.31	2.37	2.40	2.41
13.50	DISCHG	2.42	2.35	2.14	1.90	1.74	1.66	1.62	1.60	1.59	1.59
14.00	DISCHG	1.58	1.59	1.62	1.66	1.68	1.69	1.70	1.70	1.70	1.71
14.50	DISCHG	1.71	1.70	1.67	1.63	1.61	1.60	1.59	1.59	1.59	1.59

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 2.1388 CFS-HRS= 40.03 ACRE-FT= 3.31

ENDCMP

SUMMARY TABLE 1

ALT	STORM	ID	DA SQ-MI.	RAIN TBLE	AMC	DELTA-T HRS.	TZERO HRS.	PRECIP IN.	PRECIP DURATION	PEAK-Q CFS	PEAK-TIME	PEAK-ELEV	RUNOFF IN.	CSN
1	1	1	0.03	1	2	0.05	0.00	3.57	24.00	44.69	12.02	0.00	2.14	1541.19

SUMMARY TABLE 3

	DISCHARGE,CFS									
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q3	Q9	Q10
XSEC/STRUC NO. 1										
ALTERNATE 1	44.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

ENDJOB CARD ENCOUNTERED. END OF JOB.

----- T.R. 20 ---------- INPUT LISTING -----

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JOB TR-20                    FULLPRINT          SUMMARY                    10
TITLE 001   GLENDALE CULVERT Q'S 50 YR. STORM, OFFSITE FLOWS FOR S.P.P.    20
 5 RAINFL 1            0.5000                                             30
 8          0.0000     0.0040     0.0080     0.0130     0.0180            40
 8          0.0220     0.0250     0.0310     0.0350     0.0400            50
 8          0.0410     0.0480     0.0530     0.0570     0.0620            60
 8          0.0660     0.0710     0.0750     0.0800     0.0930            70
 8          0.1070     0.1200     0.1400     0.1700     0.6000            80
 8          0.8600     0.8600     0.8800     0.8930     0.9070            90
 8          0.9200     0.9240     0.9280     0.9330     0.9370           100
 8          0.9420     0.9470     0.9510     0.9560     0.9600           110
 8          0.9640     0.9690     0.9730     0.9780     0.9820           120
 8          0.9870     0.9910     0.9950     1.0000     1.0000           130
 9 ENDTEL                                                                140
 6 RUNOFF 1 001       1 0.0351     89.000     0.2561     1 1   1   1      150
   ENDATA                                                                160
 7 INCREM 6            0.0500                                             170
 7 COMPUT 7 001  001   0.0000     3.5700     1.0000         101 201       180
   ENDCMP 1                                                              190
   ENDJOB 2                                                              200
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CULVERT Q'S 50 YR. STORM, OFFSITE FLOWS FOR S.P.P. GLENDALE

TR-20 HYDROLOGY

Input File Name :DUB0:[PHX.11843705123.IN;42

PASS= 1

EXECUTIVE CONTROL CARD 170 OPERATION INCREM, MAIN TIME INCREMENT= 0.05
EXECUTIVE CONTROL CARD 180 OPERATION COMPUT, FROM XSECTN/STRUCT 1/ 0 TO XSECTN/STRUCT 1/ 0
STARTING TIME= 0.00 RAIN DEPTH= 3.57 RAIN DURATION= 1.00 RAIN TABLE NO.= 1 SOIL CONDITION= 2
ALTERNATE NO.= 1 STORM NO.= 1

SUBROUTINE RUNOFF CROSS SECTION 1
AREA= 0.04 INPUT RUNOFF CURVE= 89.0 TIME OF CONCENTRATION= 0.26

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.05	51.560	(RUNOFF)
13.51	2.839	(RUNOFF)
14.51	2.049	(RUNOFF)

HYDROGRAPH, TZERO= 0.00 DELTA T= 0.05 DRAINAGE AREA= 0.04

TIME											
0.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8.00	DISCHG	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01
8.50	DISCHG	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.04
9.00	DISCHG	0.04	0.04	0.06	0.08	0.10	0.12	0.14	0.16	0.18	0.19
9.50	DISCHG	0.21	0.22	0.24	0.25	0.27	0.29	0.31	0.32	0.34	0.35
10.00	DISCHG	0.37	0.38	0.39	0.40	0.40	0.41	0.42	0.43	0.44	0.45
10.50	DISCHG	0.46	0.48	0.53	0.59	0.66	0.73	0.78	0.82	0.85	0.88
11.00	DISCHG	0.91	0.96	1.04	1.17	1.30	1.42	1.51	1.59	1.65	1.71
11.50	DISCHG	1.79	2.97	6.84	13.61	21.53	29.10	35.41	40.49	44.61	47.95
12.00	DISCHG	50.55	51.79	50.83	47.91	44.38	41.43	39.65	38.66	38.10	37.83
12.50	DISCHG	37.53	36.02	31.69	24.30	16.72	10.64	6.60	4.13	2.57	1.58
13.00	DISCHG	0.99	0.74	0.85	1.27	1.76	2.17	2.45	2.62	2.74	2.81
13.50	DISCHG	2.85	2.84	2.73	2.55	2.35	2.20	2.09	2.03	1.98	1.96
14.00	DISCHG	1.94	1.94	1.95	1.97	2.00	2.02	2.04	2.05	2.05	2.06
14.50	DISCHG	2.06	2.06	2.04	2.01	1.98	1.96	1.95	1.94	1.93	1.93

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 2.1330 CFS-HRS= 48.32 ACRE-FT= 3.99

ENDCMP

SUMMARY TABLE 1

ALT	STORM	ID	DA SQ-MI.	RAIN TBLE	AMC	DELTA-T HRS.	TZERO HRS.	PRECIP IN.	PRECIP DURATION	PEAK-Q CFS	PEAK-TIME	PEAK-ELEV	RUNOFF IN.	CSM
1	1	1	0.04	1	2	0.05	0.00	3.57	24.00	51.56	12.05	0.00	2.13	1468.96

SUMMARY TABLE 3

	DISCHARGE,CFS									
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
XSEC/STRUC NO. 1										
ALTERNATE 1	51.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

ENDJOB CARD ENCOUNTERED. END OF JOB.

```
JOB TR-20                    FULLPRINT          SUMMARY                    10
TITLE 001   CACTUS WREN 50 YR. STORM FOR THE OFFSITE DRAINAGE FOR S.P.P.    20
 5 RAINFL 1            0.5000                                              30
 8          0.0000     0.0040     0.0080     0.0130     0.0180             40
 8          0.0220     0.0250     0.0310     0.0350     0.0400             50
 8          0.0410     0.0480     0.0530     0.0570     0.0620             60
 8          0.0660     0.0710     0.0750     0.0800     0.0930             70
 8          0.1070     0.1200     0.1400     0.1700     0.6000             80
 8          0.8600     0.8600     0.8800     0.8930     0.9070             90
 8          0.9200     0.9240     0.9280     0.9330     0.9370            100
 8          0.9420     0.9470     0.9510     0.9560     0.9600            110
 8          0.9640     0.9690     0.9730     0.9780     0.9820            120
 8          0.9870     0.9910     0.9950     1.0000     1.0000            130
 9 ENDTBL                                                                 140
 6 RUNOFF 1 001       1 0.0042     89.000     0.1667     1 1   1   1      150
   ENDATA                                                                 160
 7 INCREM 6            0.0500                                              170
 7 COMPUT 7 001  001   0.0000     3.5700     1.0000         101 201       180
   ENDCMP 1                                                               190
   ENDJOB 2                                                               200
```

REN 50 YR. STORM FOR THE OFFSITE DRAINAGE FOR S.P.P. CACTUS W

TR-20 HYDROLOGY

Input File Name :DUB0:[PHX.1184]705124.IN;39

EXECUTIVE CONTROL CARD 170 OPERATION INCREM, MAIN TIME INCREMENT= 0.05
EXECUTIVE CONTROL CARD 180 OPERATION COMPUT, FROM XSECTN/STRUCT 1/ 0 TO XSECTN/STRUCT 1/ 0
STARTING TIME= 0.00 RAIN DEPTH= 3.57 RAIN DURATION= 1.00 RAIN TABLE NO.= 1 SOIL CONDITION= 2
ALTERNATE NO.= 1 STORM NO.= 1

SUBROUTINE RUNOFF CROSS SECTION 1
AREA= 0.00 INPUT RUNOFF CURVE= 89.0 TIME OF CONCENTRATION= 0.17

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.01	6.516	(RUNOFF)
12.46	4.453	(RUNOFF)
13.48	0.350	(RUNOFF)
13.53	0.292	(RUNOFF)

HYDROGRAPH, TZERO= 0.00 DELTA T= 0.05 DRAINAGE AREA= 0.00

TIME											
0.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9.00	DISCHG	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.03
9.50	DISCHG	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04
10.00	DISCHG	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06
10.50	DISCHG	0.06	0.06	0.07	0.08	0.09	0.10	0.10	0.10	0.11	0.11
11.00	DISCHG	0.11	0.12	0.14	0.16	0.18	0.19	0.20	0.20	0.21	0.21
11.50	DISCHG	0.24	0.57	1.60	2.89	3.93	4.68	5.25	5.68	6.03	6.31
12.00	DISCHG	6.54	6.46	5.84	5.13	4.71	4.54	4.47	4.45	4.46	4.47
12.50	DISCHG	4.46	4.06	2.83	1.53	0.74	0.36	0.17	0.08	0.04	0.02
13.00	DISCHG	0.01	0.03	0.13	0.23	0.29	0.32	0.34	0.34	0.35	0.35
13.50	DISCHG	0.35	0.34	0.31	0.27	0.25	0.24	0.23	0.23	0.23	0.23
14.00	DISCHG	0.23	0.23	0.24	0.24	0.24	0.25	0.25	0.25	0.25	0.25
14.50	DISCHG	0.25	0.25	0.24	0.24	0.23	0.23	0.23	0.23	0.23	0.23

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 2.1384 CFS-HRS= 5.80 ACRE-FT= 0.48

ENDCMP

SUMMARY TABLE 1

ALT	STORM	ID	DA SQ-MI.	RAIN TBLE	AMC	DELTA-T HRS.	TZERO HRS.	PRECIP IN.	PRECIP DURATION	PEAK-Q CFS	PEAK-TIME	PEAK-ELEV	RUNOFF IN.	CSM
1	1	1	0.00	1	2	0.05	0.00	3.57	24.00	6.52	12.01	0.00	2.14	1551.47

SUMMARY TABLE 3

	DISCHARGE,CFS									
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
XSEC/STRUC NO. 1										
ALTERNATE 1	6.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

ENDJOB CARD ENCOUNTERED. END OF JOB.

```
JOB TR-20                    FULLPRINT          SUMMARY                    10
TITLE 001   AURELIUS 50 YR. STORM FOR THE OFFSITE DRAINAGE FOR S.P.P.      20
 5 RAINFL 1            0.5000                                             30
 8          0.0000     0.0040     0.0080     0.0130     0.0180            40
 8          0.0220     0.0250     0.0310     0.0350     0.0400            50
 8          0.0410     0.0480     0.0530     0.0570     0.0620            60
 8          0.0660     0.0710     0.0750     0.0800     0.0930            70
 8          0.1070     0.1200     0.1400     0.1700     0.6000            80
 8          0.8600     0.8600     0.8800     0.8930     0.9070            90
 8          0.9200     0.9240     0.9280     0.9330     0.9370           100
 8          0.9420     0.9470     0.9510     0.9560     0.9600           110
 8          0.9640     0.9690     0.9730     0.9780     0.9820           120
 8          0.9870     0.9910     0.9950     1.0000     1.0000           130
 9 ENDTBL                                                                140
 6 RUNOFF 1 001       1 0.0077     89.000     0.2000     1 1   1   1      150
   ENDATA                                                                160
 7 INCREM 6            0.0500                                             170
 7 COMPUT 7 001  001   0.0000     3.5700     1.0000         101 201      180
   ENDCMP 1                                                              190
   ENDJOB 2                                                              200
```

50 YR. STORM FOR THE OFFSITE DRAINAGE FOR S.P.P. AURELIUS

TR-20 HYDROLOGY

Input File Name :DUB0:[PHX.11843705222.IN;42

PASS= 1

EXECUTIVE CONTROL CARD 170 OPERATION INCREM, MAIN TIME INCREMENT= 0.05
EXECUTIVE CONTROL CARD 180 OPERATION COMPUT, FROM XSECTN/STRUCT 1/ 0 TO XSECTN/STRUCT 1/ 0
STARTING TIME= 0.00 RAIN DEPTH= 3.57 RAIN DURATION= 1.00 RAIN TABLE NO.= 1 SOIL CONDITION= 2
ALTERNATE NO.= 1 STORM NO.= 1

SUBROUTINE RUNOFF CROSS SECTION 1
AREA= 0.01 INPUT RUNOFF CURVE= 89.0 TIME OF CONCENTRATION= 0.20

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.03	11.780	(RUNOFF)
12.43	8.178	(RUNOFF)
13.48	0.637	(RUNOFF)
14.50	0.450	(RUNOFF)

HYDROGRAPH, TZERO= 0.00 DELTA T= 0.05 DRAINAGE AREA= 0.01

TIME											
0.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8.50	DISCHG	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01
9.00	DISCHG	0.01	0.01	0.02	0.02	0.03	0.03	0.03	0.04	0.04	0.04
9.50	DISCHG	0.05	0.05	0.05	0.06	0.06	0.07	0.07	0.07	0.08	0.08
10.00	DISCHG	0.08	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.10	0.10
10.50	DISCHG	0.10	0.11	0.12	0.14	0.16	0.17	0.18	0.19	0.19	0.20
11.00	DISCHG	0.20	0.22	0.24	0.28	0.31	0.33	0.35	0.36	0.38	0.39
11.50	DISCHG	0.44	0.85	2.24	4.26	6.22	7.77	8.96	9.89	10.64	11.22
12.00	DISCHG	11.71	11.76	11.07	9.96	9.05	8.58	8.35	8.24	8.21	8.21
12.50	DISCHG	8.18	7.69	6.03	3.89	2.21	1.19	0.66	0.36	0.19	0.10
13.00	DISCHG	0.05	0.07	0.18	0.34	0.48	0.55	0.59	0.62	0.63	0.64
13.50	DISCHG	0.64	0.63	0.58	0.53	0.48	0.45	0.44	0.43	0.42	0.42
14.00	DISCHG	0.42	0.42	0.43	0.44	0.44	0.45	0.45	0.45	0.45	0.45
14.50	DISCHG	0.45	0.45	0.44	0.44	0.43	0.43	0.42	0.42	0.42	0.42

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 2.1366 CFS-HRS= 10.62 ACRE-FT= 0.88

ENDCMP

SUMMARY TABLE 1

ALT	STORM	ID	DA SQ-MI.	RAIN TBLE	AMC	DELTA-T HRS.	TZERO HRS.	PRECIP IN.	PRECIP DURATION	PEAK-Q CFS	PEAK-TIME	PEAK-ELEV	RUNOFF IN.	CSM
1	1	1	0.01	1	2	0.05	0.00	3.57	24.00	11.78	12.03	0.00	2.14	1529.36

SUMMARY TABLE 3

	DISCHARGE,CFS									
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
XSEC/STRUC NO. 1										
ALTERNATE 1	11.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

ENDJOB CARD ENCOUNTERED. END OF JOB.

----- T.R. 20 ---------- INPUT LISTING -----

```
JOB TR-20                    FULLPRINT          SUMMARY                    10
TITLE 001   NORTH AURELIUS 50-YR.STORM FOR THE OFFSITE DRAINAGE FOR S.P.P.  20
 5 RAINFL 1            0.5000                                              30
 8          0.0000     0.0040     0.0080     0.0130     0.0180             40
 8          0.0220     0.0250     0.0310     0.0350     0.0400             50
 8          0.0410     0.0480     0.0530     0.0570     0.0620             60
 8          0.0660     0.0710     0.0750     0.0800     0.0930             70
 8          0.1070     0.1200     0.1400     0.1700     0.6000             80
 8          0.8600     0.8600     0.8800     0.8930     0.9070             90
 8          0.9200     0.9240     0.9280     0.9330     0.9370            100
 8          0.9420     0.9470     0.9510     0.9560     0.9600            110
 8          0.9640     0.9690     0.9730     0.9780     0.9820            120
 8          0.9870     0.9910     0.9950     1.0000     1.0000            130
 9 ENDTBL                                                                 140
 6 RUNOFF 1 001       1 0.0072     89.000     0.2833     1 1   1   1       150
   ENDATA                                                                 160
 7 INCREM 6            0.0500                                              170
 7 COMPUT 7 001  001   0.0000     3.5700     1.0000         101 201       180
   ENDCMP 1                                                               190
   ENDJOB 2                                                               200
```

RELIUS 50-YR.STORM FOR THE OFFSITE DRAINAGE FOR S.P. NORTH AU

TR-20 HYDROLOGY

Input File Name :DUB0:[PHX.11841705321.IN;42

PASS= 1

EXECUTIVE CONTROL CARD 170 OPERATION INCREM, MAIN TIME INCREMENT= 0.05
EXECUTIVE CONTROL CARD 180 OPERATION COMPUT, FROM XSECTN/STRUCT 1/ 0 TO XSECTN/STRUCT 1/ 0
STARTING TIME= 0.00 RAIN DEPTH= 3.57 RAIN DURATION= 1.00 RAIN TABLE NO.= 1 SOIL CONDITION= 2
ALTERNATE NO.= 1 STORM NO.= 1

SUBROUTINE RUNOFF CROSS SECTION 1
AREA= 0.01 INPUT RUNOFF CURVE= 89.0 TIME OF CONCENTRATION= 0.28

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.07	10.424	(RUNOFF)
13.53	0.578	(RUNOFF)
14.33	0.428	(RUNOFF)

HYDROGRAPH, TZERO= 0.00 DELTA T= 0.05 DRAINAGE AREA= 0.01

TIME											
0.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01
9.00	DISCHG	0.01	0.01	0.01	0.01	0.02	0.02	0.03	0.03	0.03	0.04
9.50	DISCHG	0.04	0.04	0.05	0.05	0.05	0.06	0.06	0.06	0.07	0.07
10.00	DISCHG	0.07	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09
10.50	DISCHG	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16	0.17	0.18
11.00	DISCHG	0.18	0.19	0.21	0.23	0.26	0.28	0.30	0.32	0.33	0.34
11.50	DISCHG	0.38	0.59	1.22	2.38	3.85	5.36	6.71	7.82	8.72	9.47
12.00	DISCHG	10.08	10.44	10.40	9.94	9.31	8.72	8.29	8.04	7.90	7.82
12.50	DISCHG	7.73	7.43	6.67	5.43	4.01	2.74	1.79	1.17	0.77	0.50
13.00	DISCHG	0.33	0.24	0.22	0.27	0.34	0.42	0.48	0.52	0.54	0.56
13.50	DISCHG	0.58	0.58	0.57	0.53	0.50	0.46	0.44	0.42	0.41	0.41
14.00	DISCHG	0.40	0.40	0.40	0.40	0.41	0.41	0.42	0.42	0.42	0.42
14.50	DISCHG	0.42	0.42	0.42	0.41	0.41	0.40	0.40	0.40	0.40	0.40

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 2.1317 CFS-HRS= 9.91 ACRE-FT= 0.82

ENDCMP

SUMMARY TABLE 1

ALT	STORM	ID	DA SQ-MI.	RAIN TBLE	AMC	DELTA-T HRS.	TZERO HRS.	PRECIP IN.	PRECIP DURATION	PEAK-Q CFS	PEAK-TIME	PEAK-ELEV	RUNOFF IN.	CSM
1	1	1	0.01	1	2	0.05	0.00	3.57	24.00	10.42	12.07	0.00	2.13	1447.80

SUMMARY TABLE 3

	DISCHARGE,CFS									
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
XSEC/STRUC NO. 1										
ALTERNATE 1	10.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

ENDJOB CARD ENCOUNTERED. END OF JOB.

```
JOB TR-20                    FULLPRINT          SUMMARY                    10
TITLE 001   MYRTLE AVE. 50 YR. STORM FOR THE OFFSITE DRAINAGE FOR S.P.P.    20
 5 RAINFL 1            0.5000                                              30
 8          0.0000     0.0040     0.0080     0.0130     0.0180             40
 8          0.0220     0.0250     0.0310     0.0350     0.0400             50
 8          0.0410     0.0480     0.0530     0.0570     0.0620             60
 8          0.0660     0.0710     0.0750     0.0800     0.0930             70
 8          0.1070     0.1200     0.1400     0.1700     0.6000             80
 8          0.8600     0.8600     0.8800     0.8930     0.9070             90
 8          0.9200     0.9240     0.9280     0.9330     0.9370            100
 8          0.9420     0.9470     0.9510     0.9560     0.9600            110
 8          0.9640     0.9690     0.9730     0.9780     0.9820            120
 8          0.9870     0.9910     0.9950     1.0000     1.0000            130
 9 ENDTBL                                                                 140
 6 RUNOFF 1 001       1 0.0200     89.000     0.2094     1 1   1   1      150
   ENDATA                                                                 160
 7 INCREM 6            0.0500                                              170
 7 COMPUT 7 001  001   0.0000     3.5700     1.0000         101 201       180
   ENDCMP 1                                                               190
   ENDJOB 2                                                               200
```

VE. 50 YR. STORM FOR THE OFFSITE DRAINAGE FOR S.P.P. MYRTLE A

TR-20 HYDROLOGY

Input File Name :DUB0:[PHX.11843705224.IN;42

PASS= 1

EXECUTIVE CONTROL CARD 170 OPERATION INCREM, MAIN TIME INCREMENT= 0.05
EXECUTIVE CONTROL CARD 180 OPERATION COMPUT, FROM XSECTN/STRUCT 1/ 0 TO XSECTN/STRUCT 1/ 0
STARTING TIME= 0.00 RAIN DEPTH= 3.57 RAIN DURATION= 1.00 RAIN TABLE NO.= 1 SOIL CONDITION= 2
ALTERNATE NO.= 1 STORM NO.= 1

SUBROUTINE RUNOFF CROSS SECTION 1
AREA= 0.02 INPUT RUNOFF CURVE= 89.0 TIME OF CONCENTRATION= 0.21

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.03	30.340	(RUNOFF)
13.49	1.650	(RUNOFF)
14.50	1.170	(RUNOFF)

HYDROGRAPH, TZERO= 0.00 DELTA T= 0.05 DRAINAGE AREA= 0.02

TIME											
0.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7.50	DISCHG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8.00	DISCHG	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01
8.50	DISCHG	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02
9.00	DISCHG	0.02	0.03	0.04	0.05	0.07	0.08	0.09	0.10	0.11	0.12
9.50	DISCHG	0.12	0.13	0.14	0.15	0.16	0.17	0.18	0.19	0.20	0.21
10.00	DISCHG	0.21	0.22	0.23	0.23	0.23	0.24	0.24	0.25	0.25	0.26
10.50	DISCHG	0.27	0.28	0.32	0.36	0.41	0.44	0.46	0.48	0.50	0.51
11.00	DISCHG	0.53	0.56	0.63	0.72	0.80	0.86	0.90	0.94	0.97	1.00
11.50	DISCHG	1.12	2.15	5.37	10.39	15.49	19.58	22.76	25.29	27.26	28.88
12.00	DISCHG	30.11	30.37	28.87	26.22	23.88	22.52	21.84	21.50	21.38	21.36
12.50	DISCHG	21.30	20.02	16.24	10.87	6.32	3.53	2.02	1.11	0.63	0.35
13.00	DISCHG	0.19	0.20	0.45	0.84	1.18	1.40	1.51	1.59	1.62	1.65
13.50	DISCHG	1.66	1.63	1.53	1.38	1.26	1.18	1.14	1.12	1.11	1.10
14.00	DISCHG	1.10	1.10	1.11	1.13	1.15	1.16	1.17	1.17	1.17	1.18
14.50	DISCHG	1.18	1.17	1.16	1.14	1.12	1.11	1.10	1.10	1.10	1.10

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 2.1362 CFS-HRS= 27.57 ACRE-FT= 2.28

ENDCMP

SUMMARY TABLE 1

ALT	STORM	ID	DA SQ-MI.	RAIN TBLE	AMC	DELTA-T HRS.	TZERO HRS.	PRECIP IN.	PRECIP DURATION	PEAK-Q CFS	PEAK-TIME	PEAK-ELEV	RUNOFF IN.	CSM
1	1	1	0.02	1	2	0.05	0.00	3.57	24.00	30.34	12.03	0.00	2.14	1517.02

SUMMARY TABLE 3

	DISCHARGE,CFS									
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
XSEC/STRUC NO. 1										
ALTERNATE 1	30.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

ENDJOB CARD ENCOUNTERED. END OF JOB.

```
JOB TR-20                    FULLPRINT          SUMMARY                    10
TITLE 001   SQUAW PEAK PARKWAY DRAINAGE STUDY FOR MYRTLE WASH 50 YR STORM  20
 5 RAINFL 1            0.5000                                              30
 8          0.0000     0.0040     0.0080     0.0130     0.0180             40
 8          0.0220     0.0250     0.0310     0.0350     0.0400             50
 8          0.0410     0.0480     0.0530     0.0570     0.0620             60
 8          0.0660     0.0710     0.0750     0.0800     0.0930             70
 8          0.1070     0.1200     0.1400     0.1700     0.6000             80
 8          0.8600     0.8600     0.8800     0.8930     0.9070             90
 8          0.9200     0.9240     0.9280     0.9330     0.9370            100
 8          0.9420     0.9470     0.9510     0.9560     0.9600            110
 8          0.9640     0.9690     0.9730     0.9780     0.9820            120
 8          0.9870     0.9910     0.9950     1.0000     1.0000            130
 9 ENDTBL                                                                 140
 6 RUNOFF 1 001      1 0.6656     98.000     0.3877     1     1   1       150
   ENDATA                                                                 160
 7 INCREM 6            0.0500                                              170
 7 COMPUT 7 001   001  0.0000     3.5700     1.0000         101 201       180
   ENDCMP 1                                                               190
   ENDJOB 2                                                               200
```

AK PARKWAY DRAINAGE STUDY FOR MYRTLE WASH 50 YR STOR SQUAW PE

TR-20 HYDROLOGY

Input File Name :DUB0:[PHX.1184]TRONE.IN;33

PASS= 1

EXECUTIVE CONTROL CARD 170 OPERATION INCREM, MAIN TIME INCREMENT= 0.05
EXECUTIVE CONTROL CARD 180 OPERATION COMPUT, FROM XSECTN/STRUCT 1/ 0 TO XSECTN/STRUCT 1/ 0
STARTING TIME= 0.00 RAIN DEPTH= 3.57 RAIN DURATION= 1.00 RAIN TABLE NO.= 1 SOIL CONDITION= 2
ALTERNATE NO.= 1 STORM NO.= 1

SUBROUTINE RUNOFF CROSS SECTION 1
AREA= 0.67 INPUT RUNOFF CURVE= 98.0 TIME OF CONCENTRATION= 0.39

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
2.65	3.036	(RUNOFF)
3.62	7.047	(RUNOFF)
4.52	7.765	(RUNOFF)
5.63	11.960	(RUNOFF)
7.06	10.538	(RUNOFF)
8.06	11.168	(RUNOFF)
10.10	35.800	(RUNOFF)
12.09	1168.131	(RUNOFF)
13.55	56.934	(RUNOFF)
14.53	42.188	(RUNOFF)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 3.0124 CFS-HRS= 1294.01 ACRE-FT= 106.94

ENDCMP

SUMMARY TABLE 1

ALT	STORM	ID	DA SQ-MI.	RAIN TBLE	AMC	DELTA-T HRS.	TZERO HRS.	PRECIP IN.	PRECIP DURATION	PEAK-Q CFS	PEAK-TIME	PEAK-ELEV	RUNOFF IN.	CSM
1	1	1	0.67	1	2	0.05	0.00	3.57	24.00	1168.13	12.09	0.00	3.01	1755.00

SUMMARY TABLE 3

	DISCHARGE,CFS									
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
XSEC/STRUC NO. 1										
ALTERNATE 1	1168.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

ENDJOB CARD ENCOUNTERED. END OF JOB.

```
JOB TR-20                    FULLPRINT          SUMMARY                    10
TITLE 001   SQUAW PEAK PARKWAY DRAINAGE STUDY FOR MYRTLE WASH 100 YR STORM  20
 5 RAINFL 1            0.5000                                              30
 8          0.0000      0.0040      0.0080      0.0130      0.0180         40
 8          0.0220      0.0250      0.0310      0.0350      0.0400         50
 8          0.0410      0.0480      0.0530      0.0570      0.0620         60
 8          0.0660      0.0710      0.0750      0.0800      0.0930         70
 8          0.1070      0.1200      0.1400      0.1700      0.6000         80
 8          0.8600      0.8600      0.8800      0.8930      0.9070         90
 8          0.9200      0.9240      0.9280      0.9330      0.9370        100
 8          0.9420      0.9470      0.9510      0.9560      0.9600        110
 8          0.9640      0.9690      0.9730      0.9780      0.9820        120
 8          0.9870      0.9910      0.9950      1.0000      1.0000        130
 9 ENDTBL                                                                 140
 6 RUNOFF 1 001       1 0.6656      98.000      0.3877      1     1   1    150
   ENDATA                                                                 160
 7 INCREM 6            0.0500                                              170
 7 COMPUT 7 001   001  0.0000      4.0400      1.0000          101 201     180
   ENDCMP 1                                                               190
   ENDJOB 2                                                               200
```

AK PARKWAY DRAINAGE STUDY FOR MYRTLE WASH 100 YR STO SQUAW PE

TR-20 HYDROLOGY

Input File Name :DUB0:[PHX.1184]TRONE100.IN;32

PASS= 1

EXECUTIVE CONTROL CARD 170 OPERATION INCREM, MAIN TIME INCREMENT= 0.05
EXECUTIVE CONTROL CARD 180 OPERATION COMPUT, FROM XSECTN/STRUCT 1/ 0 TO XSECTN/STRUCT 1/ 0
STARTING TIME= 0.00 RAIN DEPTH= 4.04 RAIN DURATION= 1.00 RAIN TABLE NO.= 1 SOIL CONDITION= 2
ALTERNATE NO.= 1 STORM NO.= 1

SUBROUTINE RUNOFF CROSS SECTION 1
AREA= 0.67 INPUT RUNOFF CURVE= 98.0 TIME OF CONCENTRATION= 0.39

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
2.63	4.209	(RUNOFF)
3.61	9.055	(RUNOFF)
4.51	9.652	(RUNOFF)
5.62	14.568	(RUNOFF)
7.06	12.593	(RUNOFF)
8.06	13.233	(RUNOFF)
10.10	41.667	(RUNOFF)
12.09	1326.548	(RUNOFF)
13.55	64.483	(RUNOFF)
14.53	47.779	(RUNOFF)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 3.4382 CFS-HRS= 1476.92 ACRE-FT= 122.05

ENDCMP

SUMMARY TABLE 1

ALT	STORM	ID	DA SQ-MI.	RAIN TBLE	AMC	DELTA-T HRS.	TZERO HRS.	PRECIP IN.	PRECIP DURATION	PEAK-Q CFS	PEAK-TIME	PEAK-ELEV	RUNOFF IN.	CSM
1	1	1	0.67	1	2	0.05	0.00	4.04	24.00	1326.55	12.09	0.00	3.44	1993.01

SUMMARY TABLE 3

	DISCHARGE,CFS									
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
XSEC/STRUC NO. 1										
ALTERNATE 1	1326.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

ENDJOB CARD ENCOUNTERED. END OF JOB.

APPENDIX

Design Calculations North of the Arizona Canal

B. Inlet Calculations, (HEC-12 Computer Output)

Input File: DUBO:[PHX.1184.HYDR.SPP]H12NHALFEST.IN;22 Made By: PDI

11184 21 01 SQUAW PEAK PARKWAY EAST SIDE

Maximum Depth 0.33 Ft. Intensity 5.00 In./hr. Manning's n 0.0150

Id. / Location / Type / Subtype	Level	A1 / A2 / A3 / Qa	C1 / C2 / C3 / Qo	So / S1 / S2 / S3	G / a / W	X1 / X2 / L / H	Aef / Pef	* * * Q - cfs * * * Total	Inter.	Bypass	Depth -ft.	Spread - ft. 1	2	Velocity -fps.	% Bypass
42	9	0.34	0.95	0.0163	2.00	0.00									
STA.270+75		0.05	0.45	.	0.00	2.04									
9 Grate		.		0.0090	0.00	4.50		1.73	0.97	0.76	0.12	0.00	12.81	2.29	44
6 P-1-7/8-4				0.0092											
19		0.77	0.95	0.0051	8.00	1.00									
STA.277+80		0.53	0.45	0.0230	0.00	1.04									
9 Grate		.		0.0400	0.00	4.50		5.61	3.91	1.71	0.27	11.78	6.77	2.23	30
6 P-1-7/8-4				0.0250											
20		.													
STA.278+55		.													
X Save Q		.						1.71							
2	9	0.19	0.95	0.0390	1.50	0.00									
STA.289+00		0.04	0.45	.	0.00	2.04									
9 Grate		.		0.0400	0.00	4.50		0.99	0.76	0.23	0.13	0.00	5.09	3.53	23
6 P-1-7/8-4				0.0200											
5		0.35	0.95	0.0390	1.50	0.00									
STA.286+00		0.21	0.45	.	0.00	2.04									
9 Grate		.		0.0400	0.00	1.48		2.36	1.30	1.06	0.19	0.00	5.49	4.75	45
6 P-1-7/8-4				0.0324											
8		0.27	0.95	0.0339	1.50	0.00									
STA.283+50		0.27	0.45	.	0.00	2.04									
9 Grate		.		0.0400	0.00	1.48		2.95	1.53	1.42	0.21	0.00	5.78	4.87	48
6 P-1-7/8-4				0.0360											
18		0.43	0.95	0.0092	8.00	1.00									
STA.279+90		0.31	0.45	0.0828	0.00	1.04									
9 Grate		.		0.0400	0.00	4.50		4.16	3.25	0.91	0.27	3.30	6.82	3.01	22
6 P-1-7/8-4				0.0307											
20		0.09	0.95	.	8.00		10.1								
STA.278+55		.		0.1276			11.9								
9 Grate		.		0.0400				3.04			0.19	1.52	4.84		
		1.71		0.0250											

Note: Weir Flow

Input File: DUBO:[PHX.1184.HYDR.SPP]H12NHALFWST.IN;15 Made By: PDI

11184 21 01 SQUAW PEAK PARKWAY WEST SIDE

Maximum Depth 0.00 Ft. Intensity 5.00 In./hr. Manning's n 0.0150

Id. / Location / Type / Subtype	Level	A1 / A2 / A3 / Qa	C1 / C2 / C3 / Qo	So / S1 / S2 / S3	G / a / W	X1 / X2 / L / H	Aef / Pef	* * * Q - cfs * * * Total	Inter.	Bypass	Depth -ft.	Spread - ft. 1	2	Velocity -fps.	% Bypass
43	9	0.59	0.95	0.0163	1.50	0.00									
STA.270+75		.		.	0.00	2.04									
9 Grate		.		0.0091	0.00	4.50		2.80	1.23	1.58	0.14	0.00	15.35	2.59	56
6 P-1-7/8-4				0.0092											
15		0.80	0.95	0.0038	2.00	0.00									
STA.278+00		0.59	0.45	.	0.00	2.04									
9 Grate		.		0.0250	0.00	3.21		6.70	3.69	3.01	0.37	0.00	14.98	2.39	45
6 P-1-7/8-4				0.0250											
16		.													
STA.278+55		.													
X Save Q		.						3.01							
3	9	0.10	0.95	0.0390	2.00	0.00									
STA.289+00		.		.	0.00	2.04									
9 Grate		.		0.0095	0.00	4.50		0.47	0.35	0.12	0.06	0.00	6.57	2.32	26
6 P-1-7/8-4				0.0095											
7		0.59	0.95	0.0339	2.00	0.00									
STA.283+50		0.25	0.45	.	0.00	2.04									
9 Grate		.		0.0360	0.00	1.48		3.49	2.06	1.42	0.22	0.00	6.19	5.05	41
6 P-1-7/8-4				0.0360											
17		0.43	0.95	0.0092	2.00	0.00									
STA.279+90		0.18	0.45	.	0.00	2.04									
9 Grate		.		0.0306	0.00	1.48		3.87	2.03	1.84	0.28	0.00	9.10	3.05	48
6 P-1-7/8-4				0.0306											
16		0.06	0.95	.	2.00		3.0								
STA.278+55		0.01	0.45	.			5.0								
9 Grate		.		0.0250				5.16			0.49	0.00	19.64		
		3.01		0.0250											

Note: Weir Flow

HEC12 (March 1984 - Revised 04/15/88) Pavement Drainage Calculations 04/27/88

Input File: DUBO:[PHX.1184.HYDR.SPP]H12RMPAGLEN.IN;14 Made By: PDI

11184 21 01 SQUAW PEAK PARKWAY RAMP A GLENDALE

Maximum Depth 0.33 Ft. Intensity 5.00 In./hr. Manning's n 0.0150

Id. / Location / Type / Subtype	Level	A1 / A2 / A3 / Qa	C1 / C2 / C3 / Qo	So / S1 / S2 / S3	G / a / W	X1 / X2 / L / H	Aef / Pef	* * * Q - cfs * * * Total	Inter.	Bypass	Depth -ft.	Spread - ft. 1	2	Velocity -fps.	% Bypass
13	9	0.45	0.95	0.0204	1.50	0.00									
STA. 56+60		0.01	0.95	.	0.00	2.04									
9 Grate		.		0.0270	0.00	4.50		2.18	1.48	0.71	0.18	0.00	6.88	3.45	32
6 P-1-7/8-4				0.0267											
45		0.30	0.95	0.0143	1.50	0.00									
STA. 53+00		0.02	0.45	.	0.00	2.04									
9 Grate		.		0.0267	0.00	4.50		2.18	1.51	0.66	0.20	0.00	7.30	3.02	31
6 P-1-7/8-4				0.0270											
83		0.08	0.95	0.0075	1.50	0.00									
STA. 51+90		.		.	0.00	2.04									
9 Grate		.		0.0167	0.00	4.50		1.04	0.77	0.28	0.14	0.00	8.60	1.74	27
6 P-1-7/8-4				0.0162											
46		0.03	0.95	0.0044	1.50	0.00									
STA. 51+40		.		.	0.00	2.04									
9 Grate		.		0.0073	0.00	4.50		0.42	0.32	0.10	0.08	0.00	11.21	0.93	25
6 P-1-7/8-4				0.0072											
47		.													
STA. 50+33		.													
X Save Q		.						0.10							
49	9	0.27	0.95	0.0041	1.50	0.00									
STA. 49+75		0.01	0.45	.	0.00	2.04									
9 Grate		0.06	0.45	0.0200	0.00	4.50		1.44	1.17	0.27	0.19	0.00	9.53	1.58	18
6 P-1-7/8-4				0.0200											
47		0.11	0.95	.	1.50		10.1								
STA. 50+33		0.26	0.45	.			11.9								
9 Grate		0.03	0.45	0.0178				1.54			0.12	0.00	6.89		
		0.10		0.0179											

Note: Weir Flow

Maximum Depth 0.33 Ft. Intensity 5.00 In./hr. Manning's n 0.0150

Id. / Location / Type / Subtype	Level	A1 / A2 / A3 / Qa	C1 / C2 / C3 / Qo	So / S1 / S2 / S3	G / a / W	X1 / XZ / L / H	Aef / Pef	* * * Q - cfs * * * Total	Inter.	Bypass	Depth -ft.	Spread - ft. 1	2	Velocity -fps.	% Bypass
65	9	0.08	0.95	0.0107	1.50	0.00									
STA. 39+00		.		.	0.00	2.04									
9 Grate		.		0.0393	0.00	3.21		0.38	0.35	0.03	0.12	0.00	3.18	1.92	9
6 P-1-7/8-4				0.0390											
40		0.20	0.95	.	1.50		6.5								
STA. 41+85		.		.			8.5								
9 Grate		.		0.0200				0.98			0.11	0.00	5.70		
				0.0200											
										Note: Weir Flow					
35	9	0.15	0.95	0.0071	1.50	0.00									
STA. 47+90		0.05	0.45	.	0.00	2.04									
9 Grate		.		0.0170	0.00	4.50		0.83	0.64	0.18	0.13	0.00	7.65	1.63	22
6 P-1-7/8-4				0.0173											
34		0.16	0.95	0.0076	1.50	0.00									
STA. 47+85		.		.	0.00	2.04									
9 Grate		.		0.0200	0.00	4.50		0.94	0.78	0.16	0.14	0.00	7.24	1.80	17
6 P-1-7/8-4				0.0200											
37		0.28	0.95	0.0216	1.50	0.00									
STA. 45+00		0.21	0.45	.	0.00	2.04									
9 Grate		.		0.0200	0.00	4.50		1.96	1.38	0.58	0.16	0.00	7.84	3.19	29
6 P-1-7/8-4				0.0200											
38		0.21	0.95	0.0115	1.50	0.00									
STA. 43+00		0.10	0.45	.	0.00	2.04									
9 Grate		.		0.0200	0.00	4.50		1.80	1.32	0.47	0.17	0.00	8.54	2.46	26
6 P-1-7/8-4				0.0200											
77		0.08	0.95	0.0094	1.50	0.00									
STA 142+34		.		.	0.00	2.04									
9 Grate		0.02	0.45	0.0200	0.00	4.50		0.90	0.75	0.15	0.14	0.00	6.84	1.92	17
6 P-1-7/8-4				0.0200											
78		0.09	0.95	0.0244	1.50	0.00									
STA 140+00		0.03	0.45	.	0.00	2.04									
9 Grate		0.04	0.45	0.0200	0.00	4.50		0.74	0.62	0.12	0.11	0.00	5.31	2.61	16
6 P-1-7/8-4				0.0200											
79		0.08	0.95	0.0244	1.50	0.00									
STA 138+00		0.06	0.45	.	0.00	2.04									
9 Grate		0.01	0.45	0.0200	0.00	4.50		0.65	0.56	0.09	0.10	0.00	5.07	2.54	14
6 P-1-7/8-4				0.0200											

Maximum Depth 0.33 Ft. Intensity 5.00 In./hr. Manning's n 0.0150

Id.	Level	A1	C1	So	G	X1	Aef	* * * Q - cfs * * *			Depth	Spread - ft.		Velocity	%
Location		A2	C2	S1	a	X2	Pef	Total	Inter.	Bypass	-ft.	1	2	-fps.	Bypass
Type		A3	C3	S2	W	L									
Subtype		Qa	Qo	S3		H									
80		0.06	0.95	.	1.50		10.1								
STA 136+62		0.08	0.45	.			11.9								
9	Grate	.		0.0147				0.56			0.06	0.00	4.25		
				0.0147											

Note: Weir Flow

Maximum Depth 0.33 Ft. Intensity 5.00 In./hr. Manning's n 0.0150

Id. / Location / Type / Subtype	Level	A1 / A2 / A3 / Qa	C1 / C2 / C3 / Qo	So / S1 / S2 / S3	G / a / W	X1 / X2 / L / H	Aef / Pef	* * * Q - cfs * * * Total	Inter.	Bypass	Depth -ft.	Spread - ft. 1	2	Velocity -fps.	% Bypass
9	9	0.50	0.95	0.0191	1.50	0.00									
STA. 11+00		.		.	0.00	2.04									
9 Grate		.		0.0340	0.00	3.21		2.38	1.76	0.62	0.21	0.00	6.19	3.65	26
6 P-1-7/8-4				0.0340											
10		0.17	0.95	0.0115	1.50	0.00									
STA. 12+00		0.11	0.45	.	0.00	2.04									
9 Grate		.		0.0400	0.00	3.21		1.67	1.38	0.30	0.22	0.00	5.39	2.88	18
6 P-1-7/8-4				0.0400											
11		.													
STA. 13+50		.													
X Save Q		.						0.30							
52	9	0.53	0.95	0.0316	1.50	0.00									
STA 293+75		0.11	0.45	.	0.00	2.04									
9 Grate		.		0.0399	0.00	4.50		2.77	1.65	1.11	0.19	0.00	8.08	4.09	40
6 P-1-7/8-4				0.0200											
51		0.28	0.95	0.0363	1.50	0.00									
STA 292+00		0.06	0.45	.	0.00	2.04									
9 Grate		.		0.0127	0.00	4.50		2.58	1.42	1.15	0.13	0.00	10.46	3.70	45
6 P-1-7/8-4				0.0127											
4		0.47	0.95	0.0320	1.50	0.00									
STA. 18+75		0.03	0.45	.	0.00	2.04									
9 Grate		.		0.0180	0.00	4.50		3.45	2.04	1.41	0.17	0.00	9.61	4.15	41
6 P-1-7/8-4				0.0180											
55		0.21	0.95	0.0190	1.50	0.00									
STA. 16+00		0.08	0.45	.	0.00	2.04									
9 Grate		.		0.0400	0.00	3.21		2.59	1.98	0.60	0.23	0.00	5.78	3.88	23
6 P-1-7/8-4				0.0400											
11		0.35	0.95	.	1.50		6.5								
STA. 13+50		0.44	0.45	.			8.5								
9 Grate		.		0.0400				3.55			0.27	0.00	6.72		
		0.30		0.0400											

Note: Weir Flow

Input File: DISKB0:[PHX.1184.HYDR.SPP]H12RMPDGLEN.IN;13 Made By: PDI

11184 21 01 SQUAW PEAK PARKWAY RAMP D GLENDALE

Maximum Depth 0.33 Ft. Intensity 5.00 In./hr. Manning's n 0.0150

Id. / Location / Type / Subtype	Level	A1 / A2 / A3 / Qa	C1 / C2 / C3 / Qo	So / S1 / S2 / S3	G / a / W	X1 / X2 / L / H	Aef / Pef	* * * Q - cfs * * * Total	Inter.	Bypass	Depth -ft.	Spread - ft. 1	2	Velocity -fps.	% Bypass
21	9	0.44	0.95	.	1.50		6.5								
STA. 21+40		0.41	0.45	.			8.5								
9 Grate		.		0.0160				3.01			0.24	0.00	15.31		
				0.0157											
										Note: Weir Flow					
22	9	0.17	0.95	0.0066	1.50	0.00									
STA. 23+75		0.25	0.45	.	0.00	2.04									
9 Grate		.		0.0200	0.00	3.21		1.37	0.96	0.41	0.17	0.00	8.56	1.87	30
6 P-1-7/8-4				0.0200											
6		.													
STA. 25+12		.													
X Save Q		.						0.41							
63	9	0.45	0.95	0.0289	1.50	0.00									
STA.294+75		.		.	0.00	2.04									
9 Grate		.		0.0400	0.00	4.50		2.14	1.44	0.70	0.18	0.00	6.66	3.88	33
6 P-1-7/8-4				0.0240											
50		0.54	0.95	0.0377	1.50	0.00									
STA.291+50		0.06	0.45	.	0.00	2.04									
9 Grate		.		0.0351	0.00	4.50		3.40	2.24	1.16	0.21	0.00	6.11	5.19	34
6 P-1-7/8-4				0.0350											
1		0.28	0.95	0.0310	1.50	0.00									
STA. 29+00		0.13	0.45	.	0.00	2.04									
9 Grate		.		0.0200	0.00	4.50		2.78	1.81	0.98	0.17	0.00	8.35	3.99	35
6 P-1-7/8-4				0.0200											
6		0.44	0.95	.	1.50		6.5								
STA. 26+15		0.16	0.45	.			8.5								
9 Grate		.		0.0200				3.83			0.28	0.00	14.13		
		0.41		0.0200											
										Note: Weir Flow					

Input File: DISKB0:[PHX.1184.HYDR.SPP]H12GLEN_WST.IN;7 Made By: DFM

11184 21 01 Glendale Ave. Just West of SPP--2-year storm Page 1

Maximum Depth 0.00 Ft. Intensity 2.70 In./hr. Manning's n 0.0150

Id. / Location / Type / Subtype	Level	A1 / A2 / A3 / Qa	C1 / C2 / C3 / Qo	So / S1 / S2 / S3	G / a / W	X1 / X2 / L / H	Aef / Pef	* * * Q - cfs * * * Total	Inter.	Bypass	Depth -ft.	Spread - ft. 1	2	Velocity -fps.	% Bypass
75	9	0.28	0.95	0.0228	1.40										
Sta.N22+50		.		.	2.00										
8 Curb		.		0.0417	1.42	4.02		0.72	0.60	0.11	0.12	0.00	6.22	2.45	16
				0.0137											
										Note: L=	6.29 Ft. for 100% Interception				
G2		0.22	0.95	0.0157	1.40										
Sta.N20+40		0.05	0.45	.	2.00										
8 Curb		.		0.0417	1.42	4.02		0.74	0.65	0.09	0.13	0.00	6.86	2.13	12
				0.0136											
										Note: L=	5.76 Ft. for 100% Interception				
76	9	0.24	0.95	0.0228	1.40										
Sta.S22+50		0.01	0.45	.	2.00										
8 Curb		.		0.0417	1.42	4.02		0.63	0.55	0.08	0.13	0.00	4.25	2.68	13
				0.0240											
										Note: L=	5.94 Ft. for 100% Interception				
G3		0.22	0.95	0.0150	1.40										
Sta.S20+40		0.04	0.45	.	2.00										
8 Curb		.		0.0417	1.42	4.02		0.70	0.63	0.07	0.14	0.00	4.85	2.33	9
				0.0239											
										Note: L=	5.50 Ft. for 100% Interception				
G1		0.27	0.95	0.0156	1.40										
Sta.S17+87		0.07	0.45	.	2.00										
8 Curb		.		0.0417	1.42	4.02		0.84	0.72	0.12	0.15	0.00	4.70	2.56	14
				0.0286											
										Note: L=	6.09 Ft. for 100% Interception				

HEC12 (March 1984 - Revised 04/15/88) Pavement Drainage Calculations 04/27/88

Input File: DUBO:[PHX.1184.HYDR.SPP]H12GLENSTH.IN;12 Made By: DFM

11184 21 01 FILE:H12GLENSTH.IN Glen S. Side 50-year Page 1

Maximum Depth 0.50 Ft. Intensity 3.96 In./hr. Manning's n 0.0150

Id. / Location / Type / Subtype	Level	A1 / A2 / A3 / Qa	C1 / C2 / C3 / Qo	So / S1 / S2 / S3	G / a / W	X1 / X2 / L / H	Aef / Pef	* * * Q - cfs * * * Total	Inter.	Bypass	Depth -ft.	Spread - ft. 1	2	Velocity -fps.	% Bypass
72	9	5.62	0.58	0.0211	1.40										
STA. 29+00		5.62	0.58	.	2.00										
8 Curb		.		0.0417	1.42	24.79		25.82	18.65	7.17	0.48	0.00	17.43	6.46	28
				0.0262											
										Note: L= 48.69 Ft. for 100% Interception					
70		.		0.0210	1.40										
STA. 28+30		.		.	2.00										
8 Curb		.		0.0417	1.42	15.41		7.17	6.21	0.96	0.30	0.00	10.81	4.69	13
				0.0259											
										Note: L= 22.91 Ft. for 100% Interception					
31		.		0.0112	1.40										
STA. 27+09		.		.	2.00										
8 Curb		.		0.0417	1.42	5.36		0.96	0.94	0.02	0.17	0.00	5.61	2.27	2
				0.0259											
										Note: L= 6.03 Ft. for 100% Interception					

Input File: DUBO:[PHX.1184.HYDR.SPP]H12GLENNTH.IN;10 Made By: DFM

11184 21 01 Glendale Ave. North Side 50-year S.P.P.

Maximum Depth 0.00 Ft. Intensity 3.96 In./hr. Manning's n 0.0150

Id. / Location / Type / Subtype	Level	A1 / A2 / A3 / Qa	C1 / C2 / C3 / Qo	So / S1 / S2 / S3	G / a / W	X1 / X2 / L / H	Aef / Pef	* * * Q - cfs * * * Total	Inter.	Bypass	Depth -ft.	Spread - ft. 1	2	Velocity -fps.	% Bypass
73	9	5.62	0.58	0.0221	1.40										
STA. 29+00		5.62	0.58	.	2.00										
8 Curb		.		0.0417	1.42	24.79		25.82	16.15	9.66	0.40	0.00	24.44	5.73	37
				0.0150											
										Note: L= 58.92 Ft. for 100% Interception					
71		.		0.0210	1.40										
STA. 28+25		.		.	2.00										
8 Curb		.		0.0417	1.42	15.41		9.66	6.83	2.83	0.29	0.00	16.71	4.44	29
				0.0154											
										Note: L= 31.19 Ft. for 100% Interception					
29		.		0.0210	1.40										
STA. 27+56		.		.	2.00										
8 Curb		.		0.0417	1.42	13.40		2.83	2.83	0.01	0.20	0.00	10.38	3.31	0
				0.0154											
										Note: L= 13.93 Ft. for 100% Interception					

Input File: DUBO:[PHX.1184.HYDR.SPP]H12CWREN.IN;4 Made By: PDI

11184 21 01 CACTUS WREN & AURELIUS CATCH BASIN SPACING

Maximum Depth 0.50 Ft. Intensity 5.00 In./hr. Manning's n 0.0120

Id. / Location / Type / Subtype	Level	A1 / A2 / A3 / Qa	C1 / C2 / C3 / Qo	So / S1 / S2 / S3	G / a / W	X1 / X2 / L / H	Aef / Pef	* * * Q - cfs * * * Total	Inter.	Bypass	Depth -ft.	Spread - ft. 1	Z	Velocity -fps.	% Bypass
67	9	4.95	0.58	0.0268	1.40										
STA. 10+75		.		.	2.00										
8 Curb		.		0.0417	1.4224.79			14.35	10.52	3.84	0.29	0.00	18.84	6.10	27
				0.0131											

Note: L= 47.70 Ft. for 100% Interception

68		.													
STA. 8+78		.													
X Save Q		.						3.84							
68	9	2.71	0.58	.	1.40										
STA. 8+78		.		.	2.00										
8 Curb		.		0.0417	1.4224.79			11.69			0.33	0.00	21.81		
		3.84		0.0131	6.00										

Note: Weir Flow

Maximum Depth 0.50 Ft. Intensity 5.00 In./hr. Manning's n 0.0150

Id. / Location / Type / Subtype	Level	A1 / A2 / A3 / Qa	C1 / C2 / C3 / Qo	So / S1 / S2 / S3	G / a / W	X1 / X2 / L / H	Aef / Pef	* * * Q - cfs * * * Total	Inter.	Bypass	Depth -ft.	Spread - ft. 1	2	Velocity -fps.	% Bypass
91	9	6.39	0.47	0.0219	1.40										
STA. 13+60		.		.	2.00										
8 Curb		.		0.0417	1.42	24.79		15.02	13.07	1.95	0.38	0.00	14.70	5.64	13
				0.0245											
										Note: L= 36.53 Ft. for 100% Interception					
95		.													
		.													
X Save Q		.						1.95							
94	9	6.38	0.47	0.0230	1.40										
STA. 13+35		.		.	2.00										
8 Curb		.		0.0417	1.42	24.79		14.99	12.50	2.49	0.36	0.00	16.72	5.43	17
				0.0196											
										Note: L= 39.27 Ft. for 100% Interception					
95		0.23	0.95	.	1.40										
STA. 12+11		0.27	0.45	.	2.00										
8 Curb		.		0.0417	1.42	10.05		6.14			0.36	0.00	13.27		
		1.95		0.0250		6.00									
										Note: Weir Flow					

APPENDIX

Design Calculations North of the Arizona Canal

C. Connector Pipe Design Calculations

HNTB - PROGRAM T411 - * - HYDRAULIC DESIGN OF STORM SEWERS - * - INPUT DATA Run Date 28-APR-88 Page 1
Job 1184-21-01 Ref. 01 XFILE:P411SPPNCANALWST.IN SQUAW PEAK NORTH CANAL PHOENIX,ARIZONA OX By: PDI Date 04/22/88
INT. CURVE S85000 DROP=.10 DPS= 33, 0, 0, 0, MIN VEL= 2.00 2.00 2.00 MIN SLOPE= .00000 .00000 .00000 .00000

Input File = DUB0:[PHX.1184.HYDR.SPP]P411SPPNCANALWST.IN;21

CC	PG	LN	RUN NO.	FROM	TO	ES	FREQ YRS	LGTH FT	MIN DIA IN	TP	N	ZONE 1 A1 ACRE	C1	ZONE 2 A2 ACRE	C2	ZONE 3 A3 ACRE	C3	CONC TIME MIN	UPPER STRUCT TOP EL FT	M COV FT	LOWER STRUCT TOP EL FT	M COV FT	LR
03	01	00	P-51	51	53	0	50.0	132.	18.	2	.012	0.28	.95	0.06	.45	0.00	.00	10.	1276.40	2.06	1274.74	2.06	
03	01	10	P-50	50	53	0	50.0	92.	18.	2	.012	0.54	.95	0.06	.45	0.00	.00	10.	1273.32	2.06	1274.74	2.06	
03	01	20	P-53	53	54	0	50.0	247.	24.	2	.012	0.00	.00	0.58	.45	0.00	.00	10.	1274.74	2.06	1265.02	2.06	
03	01	30	P-1	1	2	0	50.0	49.	18.	2	.012	0.28	.95	0.13	.45	0.00	.00	10.	1263.96	2.06	1264.54	2.06	
03	01	40	P-2	2	54	0	50.0	63.	18.	2	.012	0.19	.95	0.04	.45	0.00	.00	10.	1264.54	2.06	1265.02	2.06	
03	01	50	P-54	54	3	0	50.0	21.	24.	2	.012	0.00	.00	0.25	.45	0.00	.00	10.	1265.02	2.06	1266.24	2.06	
03	01	60	P-3	3	4	0	50.0	63.	24.	2	.012	0.10	.95	0.00	.00	0.00	.00	10.	1266.24	2.06	1265.71	2.06	
03	01	70	P-4	4	55	0	50.0	265.	24.	2	.012	0.47	.95	0.03	.45	0.00	.00	10.	1265.71	2.06	1257.45	2.06	
03	01	80	P-55	55	11	0	50.0	244.	24.	2	.012	0.21	.95	0.08	.45	0.00	.00	10.	1257.45	2.06	1255.07	2.06	
03	01	90	P-11	11	10	0	50.0	144.	24.	2	.012	0.35	.95	0.44	.45	0.00	.00	10.	1255.07	2.06	1255.94	2.06	
03	02	00	P-10	10	9	0	50.0	94.	24.	2	.012	0.17	.95	0.11	.45	0.00	.00	10.	1255.94	2.06	1257.55	2.06	
03	02	10	P-9	9	14	0	50.0	263.	24.	2	.012	0.50	.95	0.00	.00	0.00	.00	10.	1257.55	2.06	1261.70	2.06	
03	02	20	P-75	75	76	0	50.0	95.	15.	2	.012	0.28	.95	0.00	.00	0.00	.00	10.	1258.17	2.06	1257.66	2.06	
03	02	30	P-76	76	14	0	50.0	140.	15.	2	.012	0.24	.95	0.01	.45	0.00	.00	10.	1257.66	2.06	1261.70	2.06	
03	02	40	P-14	14	13	0	50.0	172.	24.	2	.012	0.00	.00	0.00	.00	0.00	.00	10.	1261.70	2.06	1257.07	2.06	
03	02	50	P-13	13	45	0	50.0	345.	24.	2	.012	0.45	.95	0.01	.95	0.00	.00	10.	1257.07	2.06	1250.13	2.06	
03	02	60	P-45	45	83	0	50.0	100.	24.	2	.012	0.30	.95	0.02	.45	0.00	.00	10.	1250.13	2.06	1249.25	2.06	
03	02	70	P-83	83	46	9	50.0	40.	24.	2	.012	0.08	.95	0.00	.00	0.00	.00	10.	1249.25	2.06	1249.18	2.06	Z

Job 1184-21-01 Ref. 01 XFILE:P411SPPNCANALWST.IN SQUAW PEAK NORTH CANAL PHOENIX,ARIZONA OX By: PDI Date 04/22/88
INT. CURVE S85000 DROP=.10 DPS= 33, 0, 0, 0, MIN VEL= 2.00 2.00 2.00 MIN SLOPE= .00000 .00000 .00000 .00000

Input File = DUB0:[PHX.1184.HYDR.SPP]P411SPPNCANALWST.IN;21

CC	PG	LN	RUN NO.	QA CFS	MAX FL LINE EL FT	CROWN CONTROL ELEV FT	CROWN CONTROL DIST FT	FLOW CONTROL ELEV FT	FLOW CONTROL DIST FT	C	ALTERNATE DESIGN FREQ YRS	MDIA IN	TP	N	QA CFS	GROUND CONTROL ELEV FT	GROUND CONTROL DIST FT	MIN CLEAR FT	OUTFALL ELEV FT	MAX VEL FPS
04	01	00	P-51	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	01	10	P-50	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	01	20	P-53	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	01	30	P-1	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	01	40	P-2	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	01	50	P-54	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	01	60	P-3	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	01	70	P-4	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	01	80	P-55	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	01	90	P-11	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	02	00	P-10	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	02	10	P-9	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	02	20	P-75	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	10.00
04	02	30	P-76	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	10.00
04	02	40	P-14	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	10.00
04	02	50	P-13	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	10.00
04	02	60	P-45	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	10.00
04	02	70	P-83	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	10.00

- * - DESIGN SUMMARY - * -

HNTB - PROGRAM T411 - * - HYDRAULIC DESIGN OF STORM SEWERS - * - OUTPUT DATA Run Date 28-APR-88 Page 4
Job 1184-21-01 Ref. 01 XFILE:P411SPPNCANALWST.IN SQUAW PEAK NORTH CANAL PHOENIX,ARIZONA OX By: PDI Date 04/22/88
Number of Pipes in system = 18

Input File = DUB0:[PHX.1184.HYDR.SPP]P411SPPNCANALWST.IN;21

Output data for conversion to PL412: DUB0:[PHX.1184.HYDR.SPP]P411SPPNCANALWST.XPL;1

PIPE NO.	FROM	TO	LENGTH FT	TOTAL A	TOTAL C*A	CONC. TIME MIN	INT. IN/HR	DESIGN FLOW CFS	DIA IN	SLOPE %	TRAVEL TIME MIN	CAPAC. FLOW CFS	VEL. FPS	DEPTH FLOW FT	INVERT ELEV. UPPER FT	INVERT ELEV. LOWER FT	GROUND COVER UPPER FT	GROUND COVER LOWER FT
P-51	51	53	132.	0.34	0.29	10.00	4.95	1.45	18	1.258	0.46	12.77	4.79	0.34	1272.63	1270.97	2.06	2.06
P-50	50	53	92.	0.60	0.54	10.00	4.95	2.67	18	0.330	0.44	6.54	3.51	0.67	1269.55	1269.25	2.06	3.78
P-53	53	54	247.	1.52	1.09	10.46	4.89	5.35	24	3.255	0.43	44.23	9.51	0.47	1268.75	1260.71	3.74	2.06
P-1	1	2	49.	0.41	0.32	10.00	4.95	1.61	18	0.330	0.27	6.54	3.06	0.51	1260.19	1260.03	2.06	2.80
P-2	2	54	63.	0.64	0.52	10.27	4.91	2.57	18	0.330	0.30	6.54	3.48	0.65	1259.93	1259.72	2.90	3.59
P-54	54	3	21.	2.41	1.73	10.89	4.83	8.35	24	0.240	0.08	12.01	4.13	1.23	1259.22	1259.17	3.55	4.82
P-3	3	4	63.	2.51	1.82	10.98	4.81	8.78	24	0.241	0.25	12.03	4.18	1.27	1259.07	1258.92	4.92	4.54
P-4	4	55	265.	3.01	2.28	11.23	4.78	10.92	24	2.144	0.44	35.90	10.02	0.76	1258.82	1253.14	4.64	2.06
P-55	55	11	244.	3.30	2.52	11.67	4.72	11.89	24	0.934	0.54	23.70	7.55	1.00	1253.04	1250.76	2.16	2.06
P-11	11	10	144.	4.09	3.05	12.21	4.64	14.16	24	0.335	0.47	14.20	5.15	1.63	1250.66	1250.17	2.16	3.52
P-10	10	9	94.	4.37	3.26	12.67	4.58	14.92	24	0.373	0.29	14.96	5.43	1.64	1250.07	1249.72	3.62	5.58
P-9	9	14	263.	4.87	3.74	12.96	4.54	16.95	24	0.480	0.71	16.98	6.16	1.64	1249.62	1248.36	5.68	11.09
P-75	75	76	95.	0.28	0.27	10.00	4.95	1.32	15	0.537	0.45	5.13	3.50	0.43	1254.67	1254.16	2.06	2.06
P-76	76	14	140.	0.53	0.50	10.45	4.89	2.44	15	0.440	0.61	4.64	3.83	0.64	1254.06	1253.45	2.16	6.82
P-14	14	13	172.	5.40	4.24	13.67	4.44	18.79	24	0.647	0.40	19.72	7.14	1.56	1248.26	1247.15	11.19	7.67
P-13	13	45	345.	5.86	4.67	14.07	4.38	20.46	24	0.766	0.74	21.45	7.77	1.56	1247.05	1244.41	7.77	3.47
P-45	45	83	100.	6.18	4.97	14.81	4.28	21.23	24	0.823	0.21	22.24	8.06	1.56	1244.31	1243.48	3.57	3.52
P-83	83	46	40.	6.26	5.04	15.02	4.25	21.42	24	0.765	0.09	21.44	7.78	1.64	1243.38	1243.08	3.62	3.85

HNTB - PROGRAM T411 - * - HYDRAULIC DESIGN OF STORM SEWERS - * - INPUT DATA Run Date 4-MAY-88 Page 1
Job 1184-21-01 Ref. 01 XFILE:P411SPPNCANALEST.IN SQUAW PEAK NORTH CANAL PHOENIX ARIZONA 0 OX By: PDI Date 04/22/88
INT. CURVE S85000 DROP=.10 DPS= 33, 27, 0, 0, MIN VEL= 2.00 2.00 2.00 MIN SLOPE= .00000 .00000 .00000 .00000 .00000

Input File = DISKB0:[PHX.1184.HYDR.SPP]P411SPPNCANALEST.IN;35

CC	PG	LN	RUN NO.	FROM	TO	ES	FREQ YRS	LGTH FT	MIN DIA IN	TP	N	ZONE 1 A1 ACRE	C1	ZONE 2 A2 ACRE	C2	ZONE 3 A3 ACRE	C3	CONC TIME MIN	UPPER STRUCT TOP EL FT	M COV FT	LOWER STRUCT TOP EL FT	M COV FT	LR
03	01	00	P-024	024	064	0	50.0	35.	24.	2	.012	4.00	.58	0.00	.00	0.00	.00	27.	1282.30	2.06	1279.60	2.06	
03	01	05	P-064	064	066	0	50.0	84.	24.	2	.012	0.00	.00	0.00	.00	0.00	.00	10.	1279.60	2.06	1277.60	2.06	
03	01	10	P-067	067	066	0	50.0	3.	18.	2	.012	5.30	.58	0.00	.00	0.00	.00	17.	1277.04	2.06	1277.60	2.06	
03	01	20	P-066	066	069	0	50.0	187.	24.	2	.012	0.00	.00	0.00	.00	0.00	.00	0.	1277.60	2.06	1273.62	2.06	
03	01	30	P-068	068	069	0	50.0	3.	18.	2	.012	2.71	.58	0.00	.00	0.00	.00	16.	1273.06	2.06	1273.62	2.06	
03	01	40	P-069	069	025	0	50.0	172.	24.	2	.012	0.00	.00	0.00	.00	0.00	.00	10.	1273.62	2.06	1271.00	2.00	
03	01	60	P-023	023	025	0	50.0	32.	36.	2	.012	5.95	.50	5.95	.50	0.00	.00	10.	1271.00	12.67	1271.00	2.00	
03	01	65	P-021	021	025	0	50.0	144.	18.	2	.012	0.44	.95	0.41	.45	0.00	.00	10.	12~~8~~2.24 6	2.06	1271.00	2.06	
03	01	70	P-025	025	026	0	50.0	135.	24.	2	.012	0.00	.00	0.00	.00	0.00	.00	0.	1271.00	2.00	1267.50	2.06	
03	01	80	P-027	027	026	0	50.0	57.	15.	2	.012	18.59	.58	0.00	.00	0.00	.00	16.	1271.50	7.50	1267.50	2.06	
03	01	85	P-073	073	074	0	50.0	4.	24.	2	.012	11.00	.58	0.00	.00	0.00	.00	15.	1268.20	2.06	1268.57	2.06	
03	01	90	P-071	071	074	0	50.0	4.	24.	2	.012	0.10	.58	0.00	.00	0.00	.00	10.	12~~7~~7.59 6	2.06	1268.57	2.06	
03	02	00	P-029	029	074	0	50.0	4.	24.	2	.012	0.14	.58	0.00	.00	0.00	.00	10.	12~~6~~6.14 6	2.06	1268.57	2.06	
03	02	10	P-074	074	026	0	50.0	191.	24.	2	.012	0.00	.00	0.00	.00	0.00	.00	0.	12~~6~~8.57 6	2.06	1267.50	2.06	
03	02	20	P-026	026	032	0	50.0	143.	24.	2	.012	0.00	.00	0.00	.00	0.00	.00	0.	1267.50	2.06	1265.41	10.00	
03	02	25	P-072	072	030	0	50.0	2.	24.	2	.012	11.00	.58	0.00	.00	0.00	.00	15.	1268.95	2.06	1269.10	2.06	
03	02	30	P-070	070	030	0	50.0	5.	24.	2	.012	0.05	.58	0.00	.00	0.00	.00	10.	12~~7~~7.49 6	2.06	1269.10	2.06	
03	02	40	P-031	031	030	0	50.0	5.	24.	2	.012	0.10	.58	0.00	.00	0.00	.00	10.	12~~7~~5.24 6	2.06	1269.10	2.06	
03	02	50	P-030	030	032	0	50.0	258.	24.	2	.012	0.00	.00	0.00	.00	0.00	.00	0.	12~~6~~9.10 6	2.06	1265.41	2.06	
03	02	60	P-034	034	035	0	50.0	47.	15.	2	.012	0.16	.95	0.00	.00	0.00	.00	10.	1262.39	2.06	1262.52	2.06	
03	02	70	P-035	035	032	0	50.0	11.	15.	2	.012	0.15	.95	0.05	.45	0.00	.00	10.	12~~7~~2.52 6	2.06	1265.41	2.06	
03	02	80	P-032	032	036	0	50.0	427.	24.	2	.012	0.00	.00	0.00	.00	0.00	.00	0.	1265.41	2.06	1258.17	2.06	
03	02	90	P-037	037	036	0	50.0	10.	15.	2	.012	0.28	.95	0.21	.45	0.00	.00	10.	1257.55	2.06	1258.17	2.06	
03	03	00	P-038	038	036	0	50.0	4.	15.	2	.012	0.21	.95	0.10	.45	0.00	.00	10.	12~~7~~3.57 5	2.06	1258.17	2.06	
03	03	10	P-077	077	036	0	50.0	2.	15.	2	.012	0.08	.95	0.02	.45	0.00	.00	10.	12~~7~~3.04 5	2.06	1258.17	2.06	
03	03	20	P-040	040	036	0	50.0	28.	15.	2	.012	0.20	.95	0.00	.00	0.00	.00	10.	12~~7~~3.28 5	4.81	1258.17	2.06	
03	03	30	P-036	036	041	0	50.0	458.	24.	2	.012	0.00	.00	0.00	.00	0.00	.00	0.	1258.17	2.06	1254.50	2.06	
03	03	40	P-042	042	041	0	50.0	3.	15.	2	.012	0.34	.95	0.05	.45	0.00	.00	10.	12~~6~~0.56 5	2.06	1254.50	2.06	
03	03	50	P-082	082	041	0	50.0	7.	15.	2	.012	0.29	.95	0.20	.45	0.00	.00	10.	12~~6~~9.66 4	2.06	1254.50	2.06	
03	03	60	P-043	043	041	0	50.0	3.	15.	2	.012	0.59	.95	0.00	.00	0.00	.00	10.	12~~6~~9.78 4	2.06	1254.50	2.06	
03	03	70	P-041	041	044	0	50.0	159.	24.	2	.012	0.00	.00	0.00	.00	0.00	.00	0.	1254.50	2.06	1250.25	2.06	
03	03	80	P-046	046	044	0	50.0	111.	24.	2	.012	0.03	.95	5.01	.50	5.01	.50	10.	12~~6~~9.18 4	2.06	1250.25	2.06	
03	03	90	P-047	047	044	0	50.0	17.	15.	2	.012	0.11	.95	0.26	.45	0.03	.45	10.	12~~6~~9.08 4	2.06	1250.25	2.06	
03	04	00	P-049	049	044	0	50.0	5.	15.	2	.012	0.27	.95	0.01	.45	0.06	.45	10.	12~~6~~9.27 4	2.06	1250.25	2.06	
03	04	10	P-044	044	DDB	9	50.0	193.	48.	2	.012	0.00	.00	0.00	.00	0.00	.00	10.	1250.25	2.06	1240.60	2.06	Z

Job 1184-21-01 Ref. 01 XFILE:P411SPPNCANALEST.IN SQUAW PEAK NORTH CANAL PHOENIX ARIZONA 0 0X By: PDI Date 04/22/88
INT. CURVE S85000 DROP=.10 DPS= 33, 27, 0, 0, MIN VEL= 2.00 2.00 2.00 MIN SLOPE= .00000 .00000 .00000 .00000 .00000

Input File = DISKB0:[PHX.1184.HYDR.SPP]P411SPPNCANALEST.IN;35

CC	PG	LN	RUN NO.	QA CFS	MAX FL LINE EL FT	CROWN CONTROL ELEV FT	CROWN CONTROL DIST FT	FLOW CONTROL ELEV FT	FLOW CONTROL DIST FT	C	ALTERNATE DESIGN FREQ YRS	MDIA IN	TP	N	QA CFS	GROUND CONTROL ELEV FT	GROUND CONTROL DIST FT	MIN CLEAR FT	OUTFALL ELEV FT	MAX VEL FPS
04	01	00	P-024	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	10.00
04	01	05	P-064	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	10.00
04	01	10	P-067	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	10.00
04	01	20	P-066	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	10.00
04	01	30	P-068	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	10.00
04	01	40	P-069	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	10.00
04	01	60	P-023	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	10.00
04	01	65	P-021	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	10.00
04	01	70	P-025	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	10.00
04	01	80	P-027	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	10.00
04	01	85	P-073	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	10.00
04	01	90	P-071	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	10.00
04	02	00	P-029	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	10.00
04	02	10	P-074	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	10.00
04	02	20	P-026	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	02	25	P-072	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	02	30	P-070	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	02	40	P-031	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	02	50	P-030	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	02	60	P-034	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	02	70	P-035	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	02	80	P-032	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	02	90	P-037	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	03	00	P-038	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	03	10	P-077	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	03	20	P-040	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	03	30	P-036	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	03	40	P-042	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	03	50	P-082	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	03	60	P-043	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	03	70	P-041	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	03	80	P-046	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	10.00
04	03	90	P-047	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	10.00
04	04	00	P-049	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	10.00
04	04	10	P-044	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00

- * - DESIGN SUMMARY - * -

HNTB - PROGRAM T411 - * - HYDRAULIC DESIGN OF STORM SEWERS - * - OUTPUT DATA Run Date 4-MAY-88 Page 4
Job 1184-21-01 Ref. 01 XFILE:P411SPPNCANALEST.IN SQUAW PEAK NORTH CANAL PHOENIX ARIZONA 0 OX By: FDI Date 04/22/88
Number of Pipes in system = 35

Input File = DISKB0:[PHX.1184.HYDR.SPP]P411SPPNCANALEST.IN;35

Output data for conversion to PL412: DISKB0:[PHX.1184.HYDR.SPP]P411SPPNCANALEST.XPL;5

PIPE NO.	FROM	TO	LENGTH FT	TOTAL A	TOTAL C*A	CONC. TIME MIN	DESIGN INT. IN/HR	DESIGN FLOW CFS	DIA IN	SLOPE %	TRAVEL TIME MIN	CAPAC. FLOW CFS	VEL. FPS	DEPTH FLOW FT	INVERT ELEV. UPPER FT	INVERT ELEV. LOWER FT	GROUND COVER UPPER FT	GROUND COVER LOWER FT
P-024	024	064	35.	4.00	2.32	27.00	3.22	7.46	24	1.265	0.08	27.57	7.46	0.71	1275.73	1275.29	4.32	2.06
P-064	064	066	84.	4.00	2.32	27.08	3.21	7.45 *	24	2.263	0.15	36.88	9.19	0.61	1275.19	1273.29	2.16	2.06
*PIPE DESIGNED FOR 7.46 CFS																		
P-067	067	066	3.	5.30	3.07	17.00	4.04	12.41	18	1.191	0.01	12.42	8.01	1.23	1273.27	1273.24	2.06	2.66
P-066	066	069	187.	9.30	5.39	27.23	3.20	17.26	24	1.265	0.34	27.57	9.26	1.15	1271.68	1269.31	3.67	2.06
P-068	068	069	3.	2.71	1.57	16.00	4.14	6.51	18	0.330	0.01	6.54	4.22	1.22	1269.29	1269.28	2.06	2.63
P-069	069	025	172.	12.01	6.97	27.57	3.18	22.12	24	1.182	0.30	26.66	9.48	1.39	1268.78	1266.75	2.59	2.00
P-023	023	025	32.	11.90	5.95	10.00	4.95	29.45	36	0.168	0.11	29.63	4.78	2.44	1255.00	1254.94	12.67	12.72
										2.250					58.74	55.50		
P-021	021	025	144.	0.85	0.60	10.00	4.95	2.98	18	~~1.856~~	0.35	15.51	6.78	0.45	12~~69.90~~	12~~67.23~~	10.63	2.06
P-025	025	026	135.	24.76	13.52	27.87	3.15	42.63	36	0.382	0.31	44.69	7.19	2.34	1254.84	1254.33	12.82	9.84
P-027	027	026	57.	18.59	10.78	16.00	4.14	44.68	36	0.384	0.13	44.80	7.22	2.45	1260.67	1260.45	7.50	3.72
										45.67					64.70	63.33		
P-073	073	074	4.	11.00	6.38	15.00	4.25	27.11	30	~~0.374~~	0.01	27.19	6.31	2.04	12~~63.35~~	12~~63.33~~	2.06	2.45
										37.25					64.09	62.60		
P-071	071	074	4.	0.10	0.06	10.00	4.95	0.29	24	~~1.265~~	0.02	27.57	2.85	0.14	12~~64.31~~	12~~64.26~~	11.03	2.06
										22.25					62.64	61.75		
P-029	029	074	4.	0.14	0.08	10.00	4.95	0.40	24	~~1.265~~	0.02	27.57	3.16	0.17	12~~64.31~~	12~~64.26~~	9.58	2.06
P-074	074	026	191.	11.24	6.52	15.01	4.25	27.70	30	0.428	0.47	29.08	6.74	1.95	1263.23	1262.42	22.55	2.29
P-026	026	032	143.	54.59	30.82	28.18	3.13	96.49	42	1.350	0.16	126.66	14.49	2.29	1253.46	1251.54	10.16	10.00
										45.00					64.45	63.55		
P-072	072	030	2.	11.00	6.38	15.00	4.25	27.11	24	~~1.225~~	0.00	27.14	9.84	1.64	12~~64.64~~	12~~64.62~~	2.06	2.23
										40.50					63.99	61.95		
P-070	070	030	5.	0.05	0.03	10.00	4.95	0.14	24	~~167.800~~	0.01	317.57	12.65	0.03	12~~73.18~~	12~~64.79~~	2.06	2.06
PROJECTED SLOPE BELOW OUTFALL										15.40					61.24	60.47		
P-031	031	030	5.	0.10	0.06	10.00	4.95	0.29	24	~~122.800~~	0.01	271.67	14.01	0.05	12~~70.93~~	12~~64.79~~	2.06	2.06
PROJECTED SLOPE BELOW OUTFALL																		
P-030	030	032	258.	11.15	6.47	15.00	4.25	27.48	24	1.382	0.41	28.82	10.44	1.56	1264.52	1260.95	22.33	2.21
P-034	034	035	47.	0.16	0.15	10.00	4.95	0.75	15	0.440	0.28	4.64	2.78	0.34	1258.89	1258.69	2.06	2.40
P-035	035	032	11.	0.36	0.32	10.28	4.91	1.56	15	0.441	0.05	4.65	3.41	0.50	1258.59	1258.54	12.50	5.44
P-032	032	036	427.	66.10	37.60	28.35	3.12	117.29	42	1.271	0.49	122.91	14.54	2.74	1251.44	1246.01	10.10	8.29
P-037	037	036	10.	0.49	0.36	10.00	4.95	1.78	15	0.440	0.05	4.64	3.53	0.54	1254.05	1254.01	2.06	2.72

- * - DESIGN SUMMARY - * -

HNTB - PROGRAM T411 - * - HYDRAULIC DESIGN OF STORM SEWERS - * - OUTPUT DATA Run Date 4-MAY-88 Page 5
Job 1184-21-01 Ref. 01 XFILE:P411SPPNCANALEST.IN SQUAW PEAK NORTH CANAL PHOENIX ARIZONA 0 OX By: PDI Date 04/22/88
Number of Pipes in system = 35

Input File = DISKB0:[PHX.1184.HYDR.SPP]P411SPPNCANALEST.IN;35

Output data for conversion to PL412: DISKB0:[PHX.1184.HYDR.SPP]P411SPPNCANALEST.XPL;5

PIPE NO.	FROM	TO	LENGTH FT	TOTAL A	TOTAL C*A	CONC. TIME MIN	INT. IN/HR	DESIGN FLOW CFS	DIA IN	SLOPE %	TRAVEL TIME MIN	CAPAC. FLOW CFS	VEL. FPS	DEPTH FLOW FT	INVERT ELEV. UPPER FT	INVERT ELEV. LOWER FT	GROUND COVER UPPER FT	GROUND COVER LOWER FT
										19.25					45.57	44.80		
P-038	038	036	4.	0.31	0.24	10.00	4.95	1.21	15	~~5.327~~	0.01	16.16	7.73	0.23	1254.39	1254.67	17.25	2.06
										42.00					45.04	44.20		
P-077	077	036	2.	0.10	0.09	10.00	4.95	0.42	15	~~5.327~~	0.01	16.16	5.65	0.14	1254.78	1254.67	16.82	2.06
P-040	040	036	28.	0.20	0.19	10.00	4.95	0.94	15	5.327	0.07	16.16	7.17	0.20	1256.16	1254.67	15.68	2.06
P-036	036	041	458.	67.20	38.48	28.84	3.08	118.68	42	1.187	0.54	118.77	14.07	2.87	1245.91	1240.47	8.39	10.15
										50.55					47.06	41.5		
P-042	042	041	3.	0.39	0.35	10.00	4.95	1.71	15	~~5.327~~	0.01	16.16	8.56	0.27	1251.16	1251.00	7.96	2.06
										54.00					46.10	41.3		
P-082	082	041	7.	0.49	0.37	10.00	4.95	1.81	15	~~5.327~~	0.01	16.16	8.70	0.28	1251.38	1251.00	6.85	2.06
										52.55					46.23	40.5		
P-043	043	041	3.	0.59	0.56	10.00	4.95	2.77	15	~~5.327~~	0.01	16.16	9.84	0.35	1251.16	1251.00	7.18	2.06
P-041	041	044	159.	68.67	39.76	29.38	3.04	121.04	42	1.350	0.18	126.66	14.98	2.74	1240.37	1238.23	10.25	8.15
										5.10					42.93	37.4		
P-046	046	044	111.	10.05	5.04	10.00	4.95	24.94	24	~~1.265~~	0.19	27.57	9.94	1.49	1247.34	1245.94	19.59	2.06
										30.75					45.58	38.2		
P-047	047	044	17.	0.40	0.23	10.00	4.95	1.16	15	~~2.367~~	0.05	10.77	5.74	0.28	1247.15	1246.75	20.49	2.06
										63.92					45.77	38.1		
P-049	049	044	5.	0.34	0.29	10.00	4.95	1.43	15	~~2.367~~	0.01	10.77	6.09	0.31	1246.87	1246.75	20.96	2.06
P-044	044	ODB	193.	79.46	45.32	29.56	3.03	137.40	48	1.129	0.22	165.44	14.72	2.78	1236.30	1234.12	9.53	2.06

HNTB - PROGRAM T411 - * - HYDRAULIC DESIGN OF STORM SEWERS - * - INPUT DATA Run Date 28-APR-88 Page 1
Job 1184-21-01 Ref. 01 XFILE:P411SPPNTHPUMP.IN SQUAW PEAK NORTH CANAL PHOENIX,ARIZONA OX By: PDI Date 04/25/88
INT. CURVE S85000 DROP=.10 DPS= 33, 0, 0, 0, MIN VEL= 2.00 2.00 2.00 MIN SLOPE= .00000 .00000 .00000 .00000 .00020

Input File = DUB0:[PHX.1184.HYDR.SPP]P411SPPNTHPUMP.IN;13

CC	PG	LN	RUN NO.	FROM	TO	ES	FREQ YRS	LGTH FT	MIN DIA IN	TP	N	ZONE 1 A1 ACRE	C1	ZONE 2 A2 ACRE	C2	ZONE 3 A3 ACRE	C3	CONC TIME MIN	UPPER STRUCT TOP EL FT	M COV FT	LOWER STRUCT TOP EL FT	M COV FT	LR
03	02	00	P-084	084	015	0	50.0	84.	18.	2	.012	0.00	.00	0.51	.45	0.00	.00	10.	1235.88	2.06	1236.62	2.06	
03	02	10	P-015	015	016	0	50.0	50.	18.	2	.012	0.80	.95	0.59	.45	0.00	.00	10.	1236.62	2.06	1236.55	2.06	
03	02	20	P-016	016	020	0	50.0	64.	18.	2	.012	0.06	.95	0.01	.45	0.00	.00	10.	1236.55	2.06	1234.71	2.06	
03	02	30	P-019	019	020	0	50.0	65.	18.	2	.012	0.77	.95	0.53	.45	0.00	.00	10.	1234.90	2.06	1234.71	2.06	
03	02	40	P-020	020	018	0	50.0	125.	24.	2	.012	0.09	.95	0.00	.00	0.00	.00	10.	1234.71	2.06	1235.02	2.06	
03	02	50	P-017	017	018	0	50.0	63.	18.	2	.012	0.43	.95	0.18	.45	0.00	.00	10.	1237.18	2.06	1235.02	2.06	
03	02	60	P-018	018	012	0	50.0	142.	24.	2	.012	0.43	.95	0.31	.45	0.00	.00	10.	1235.02	2.06	1237.10	2.06	
03	02	65	P-085	085	012	0	50.0	62.	18.	2	.012	0.00	.00	0.66	.45	0.00	.00	10.	1237.40	2.06	1237.10	2.06	
03	02	70	P-006	006	005	0	50.0	77.	18.	2	.012	0.44	.95	0.16	.45	0.00	.00	10.	1259.58	2.06	1252.14	2.06	
03	02	80	P-005	005	008	0	50.0	246.	18.	2	.012	0.35	.95	0.21	.45	0.00	.00	10.	1252.14	2.06	1242.42	2.06	
03	02	90	P-022	022	008	0	50.0	90.	18.	2	.012	0.17	.95	0.25	.45	0.00	.00	10.	1260.90	2.06	1242.42	2.06	
03	03	00	P-007	007	008	0	50.0	81.	18.	2	.012	0.59	.95	0.25	.45	0.00	.00	10.	1245.46	3.04	1242.42	2.06	
03	03	10	P-008	008	012	0	50.0	202.	24.	2	.012	0.27	.95	0.27	.45	0.00	.00	10.	1242.42	2.06	1237.10	2.06	
03	03	20	P-012	012	23	9	50.0	125.	60.	2	.012	0.00	.00	0.00	.00	0.00	.00	10.	1237.10	2.06	1271.00	39.00	Z

Input File = DUB0:[PHX.1184.HYDR.SPP]P411SPPNTHPUMP.IN;13

CC PG LN	RUN NO.	QA CFS	MAX FL LINE EL FT	CROWN CONTROL ELEV FT	CROWN CONTROL DIST FT	FLOW CONTROL ELEV FT	FLOW CONTROL DIST FT	C	ALTERNATE DESIGN FREQ YRS	MDIA IN	TP	N	QA CFS	GROUND CONTROL ELEV FT	GROUND CONTROL DIST FT	MIN CLEAR FT	OUTFALL ELEV FT	MAX VEL FPS
04 02 00	P-084	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	10.00
04 02 10	P-015	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	10.00
04 02 20	P-016	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	10.00
04 02 30	P-019	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	10.00
04 02 40	P-020	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	10.00
04 02 50	P-017	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	10.00
04 02 60	P-018	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	10.00
04 02 65	P-085	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	10.00
04 02 70	P-006	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04 02 80	P-005	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04 02 90	P-022	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04 03 00	P-007	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04 03 10	P-008	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04 03 20	P-012	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00

- * - DESIGN SUMMARY - * -

HNTB - PROGRAM T411 - * - HYDRAULIC DESIGN OF STORM SEWERS - * - OUTPUT DATA Run Date 28-APR-88 Page 4
Job 1184-21-01 Ref. 01 XFILE:P411SPPNTHPUMP.IN SQUAW PEAK NORTH CANAL PHOENIX,ARIZONA OX By: PDI Date 04/25/88
Number of Pipes in system = 14

Input File = DUBO:[PHX.1184.HYDR.SPP]P411SPPNTHPUMP.IN;13

Output data for conversion to PL412: DUBO:[PHX.1184.HYDR.SPP]P411SPPNTHPUMP.XPL;1

PIPE NO.	FROM	TO	LENGTH FT	TOTAL A	TOTAL C*A	CONC. TIME MIN	DESIGN INT. IN/HR	DESIGN FLOW CFS	DIA IN	SLOPE %	TRAVEL TIME MIN	CAPAC. FLOW CFS	VEL. FPS	DEPTH FLOW FT	INVERT ELEV. UPPER FT	INVERT ELEV. LOWER FT	GROUND COVER UPPER FT	GROUND COVER LOWER FT
P-084	084	015	84.	0.51	0.23	10.00	4.95	1.14	18	0.330	0.50	6.54	2.77	0.42	1232.11	1231.83	2.06	3.08
P-015	015	016	50.	1.90	1.25	10.50	4.88	6.12	18	0.330	0.20	6.54	4.20	1.15	1231.73	1231.57	3.18	3.27
P-016	016	020	64.	1.97	1.32	10.70	4.85	6.39	18	0.826	0.17	10.34	6.16	0.85	1231.47	1230.94	3.37	2.06
P-019	019	020	65.	1.30	0.97	10.00	4.95	4.80	18	0.330	0.27	6.54	4.04	0.96	1231.13	1230.92	2.06	2.08
P-020	020	018	125.	3.36	2.37	10.88	4.83	11.45	24	0.240	0.48	12.01	4.35	1.56	1230.40	1230.10	2.06	2.67
P-017	017	018	63.	0.61	0.49	10.00	4.95	2.42	18	3.429	0.13	21.08	7.94	0.34	1233.41	1231.25	2.06	2.06
P-018	018	012	142.	4.71	3.41	11.36	4.76	16.23	24	0.440	0.40	16.27	5.90	1.64	1230.00	1229.37	2.77	5.48
P-085	085	012	62.	0.66	0.30	10.00	4.95	1.47	18	0.484	0.30	7.92	3.42	0.44	1233.63	1233.33	2.06	2.06
P-006	006	005	77.	0.60	0.49	10.00	4.95	2.43	18	9.662	0.11	35.38	11.45	0.27	1255.81	1248.37	2.06	2.06
P-005	005	008	246.	1.16	0.92	10.11	4.93	4.53	18	3.911	0.41	22.51	9.96	0.46	1248.27	1238.65	2.16	2.06
P-022	022	008	90.	0.42	0.27	10.00	4.95	1.36	18	20.533	0.12	51.58	12.55	0.17	1257.13	1238.65	2.06	2.06
P-007	007	008	81.	0.84	0.67	10.00	4.95	3.33	18	2.543	0.17	18.15	7.83	0.44	1240.71	1238.65	3.04	2.06
P-008	008	012	202.	2.96	2.24	10.52	4.88	10.93	24	2.634	0.31	39.79	10.80	0.72	1238.11	1232.79	2.06	2.06
P-012	012	23	125.	8.33	5.95	11.76	4.70	27.98	60	0.021	0.93	40.89	2.24	3.04	1226.37	1226.35	5.23	39.15

Job 1184-21-01 Ref. 01 XFILE:P411MYTAVE.IN MYRTLE AVENUE PHOENIX,ARIZONA OX By: TDS Date 04/22/88
INT. CURVE S85000 DROP=.00 DPS= 33, 0, 0, 0, MIN VEL= 2.00 2.00 2.00 MIN SLOPE= .00000 .00000 .00000 .00000 .00000

Input File = DUBO:[PHX.1184.HYDR.SPP]P411MYTAVE.IN;32

CC	PG	LN	RUN NO.	FROM	TO	ES	FREQ YRS	LGTH FT	MIN DIA IN	TP	N	ZONE 1 A1 ACRE	C1	ZONE 2 A2 ACRE	C2	ZONE 3 A3 ACRE	C3	CONC TIME MIN	UPPER STRUCT TOP EL FT	M COV FT	LOWER STRUCT TOP EL FT	M COV FT	LR
03	01	10	P-091	091	096	0	50.0	45.	24.	2	.012	6.39	.47	0.00	.00	0.00	.00	10.	1295.62	2.06	1295.36	2.06	
03	01	15	P-094	094	096	0	50.0	12.	24.	2	.012	6.38	.47	0.00	.00	0.00	.00	10.	1294.86	2.06	1295.36	2.06	
03	01	20	P-096	096	095	0	50.0	125.	24.	2	.012	0.00	.00	0.00	.00	0.00	.00	10.	1295.36	2.06	1292.48	8.00	
03	01	25	P-095	095	097	0	50.0	95.	24.	2	.012	0.23	.95	0.27	.45	0.00	.00	10.	1292.48	2.06	1300.00	2.06	
03	01	26	P-097	097	BOX	0	50.0	75.	24.	2	.012	0.00	.00	0.00	.00	0.00	.00	10.	1300.00	2.06	1279.25	1.00	Z

Job 1184-21-01 Ref. 01 XFILE:P411MYTAVE.IN MYRTLE AVENUE PHOENIX,ARIZONA OX By: TDS Date 04/22/88
INT. CURVE S85000 DROP=.00 DPS= 33, 0, 0, 0, MIN VEL= 2.00 2.00 2.00 MIN SLOPE= .00000 .00000 .00000 .00000

Input File = DUBO:[PHX.1184.HYDR.SPP]P411MYTAVE.IN;32

CC	PG	LN	RUN NO.	QA CFS	MAX FL LINE EL FT	CROWN CONTROL ELEV FT	CROWN CONTROL DIST FT	FLOW CONTROL ELEV FT	FLOW CONTROL DIST FT	C	ALTERNATE DESIGN FREQ YRS	MDIA IN	TP	N	QA CFS	GROUND CONTROL ELEV FT	GROUND CONTROL DIST FT	MIN CLEAR FT	OUTFALL ELEV FT	MAX VEL FPS
04	01	10	P-091	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	01	15	P-094	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	01	20	P-096	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	01	25	P-095	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	01	26	P-097	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00

- * - DESIGN SUMMARY - * -

HNTB - PROGRAM T411 - * - HYDRAULIC DESIGN OF STORM SEWERS - * - OUTPUT DATA Run Date 28-APR-88 Page 4
Job 1184-21-01 Ref. 01 XFILE:P411MYTAVE.IN MYRTLE AVENUE PHOENIX,ARIZONA OX By: TDS Date 04/22/88
Number of Pipes in system = 5

Input File = DUB0:[PHX.1184.HYDR.SPP]P411MYTAVE.IN;32

Output data for conversion to PL412: DUB0:[PHX.1184.HYDR.SPP]P411MYTAVE.XPL;63

PIPE NO.	FROM	TO	LENGTH FT	TOTAL A	TOTAL C*A	CONC. TIME MIN	INT. IN/HR	DESIGN FLOW CFS	DIA IN	SLOPE %	TRAVEL TIME MIN	CAPAC. FLOW CFS	VEL. FPS	DEPTH FLOW FT	INVERT ELEV. UPPER FT	INVERT ELEV. LOWER FT	GROUND COVER UPPER FT	GROUND COVER LOWER FT
P-091	091	096	45.	6.39	3.00	10.00	4.95	14.87	24	0.578	0.11	18.64	6.59	1.35	1291.31	1291.05	2.06	2.06
P-094	094	096	12.	6.38	3.00	10.00	4.95	14.84	24	0.369	0.04	14.88	5.40	1.64	1290.55	1290.51	2.06	2.60
P-096	096	095	125.	12.77	6.00	10.11	4.93	29.62	24	2.846	0.15	41.36	14.31	1.25	1285.79	1282.23	7.32	8.00
P-095	095	097	95.	13.27	6.34	10.26	4.91	31.16	24	1.618	0.14	31.18	11.31	1.64	1282.23	1280.69	8.00	17.06
P-097	097	BOX	75.	13.27	6.34	10.40	4.89	31.04 *	24	2.846	0.09	41.36	14.46	1.30	1278.13	1276.00	19.62	1.00

*PIPE DESIGNED FOR 31.16 CFS

Job 1184-21-01 Ref. 01 XFILE:P411CB63.IN PHOENIX,ARIZONA OX By: TDS Date 04/23/88
INT. CURVE S85000 DROP=.00 DPS= 33, 0, 0, 0, MIN VEL= 2.00 2.00 2.00 MIN SLOPE= .00000 .00000 .00000 .00000

Input File = DUBO:[PHX.1184.HYDR.SPP]P411CB63.IN;3

CC	PG	LN	RUN NO.	FROM	TO	ES	FREQ YRS	LGTH FT	MIN DIA IN	TP	N	ZONE 1 A1 ACRE	C1	ZONE 2 A2 ACRE	C2	ZONE 3 A3 ACRE	C3	CONC TIME MIN	UPPER STRUCT TOP EL FT	M COV FT	LOWER STRUCT TOP EL FT	M COV FT	LR
03	01	10	P-63	63	BOX	0	50.0	20.	18.	2	.012	0.45	.95	0.00	.00	0.00	.00	10.	1284.60	2.06	1281.00	1.00	Z

INT. CURVE S85000 DROP=.00 DPS= 33, 0, 0, 0, MIN VEL= 2.00 2.00 2.00 MIN SLOPE= .00000 .00000 .00000 .00000 .00000

Input File = DUB0:[PHX.1184.HYDR.SPP]P411CB63.IN;3

CC PG LN	RUN NO.	QA CFS	MAX FL LINE EL FT	CROWN CONTROL ELEV FT	CROWN CONTROL DIST FT	FLOW CONTROL ELEV FT	FLOW CONTROL DIST FT	C	FREQ YRS	ALTERNATE DESIGN MDIA IN	TP	N	QA CFS	GROUND CONTROL ELEV FT	GROUND CONTROL DIST FT	MIN CLEAR FT	OUTFALL ELEV FT	MAX VEL FPS
04 01 10	P-63	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00

- * - DESIGN SUMMARY - * -

HNTB - PROGRAM T411 - * - HYDRAULIC DESIGN OF STORM SEWERS - * - OUTPUT DATA Run Date 28-APR-88 Page 4
Job 1184-21-01 Ref. 01 XFILE:P411CB63.IN PHOENIX,ARIZONA OX By: TDS Date 04/23/88
Number of Pipes in system = 1

Input File = DUB0:[PHX.1184.HYDR.SPP]P411CB63.IN;3

Output data for conversion to PL412: DUB0:[PHX.1184.HYDR.SPP]P411CB63.XPL;7

PIPE NO.	FROM	TO	LENGTH FT	TOTAL A	TOTAL C*A	CONC. TIME MIN	DESIGN INT. IN/HR	DESIGN FLOW CFS	DIA IN	SLOPE %	TRAVEL TIME MIN	CAPAC. FLOW CFS	VEL. FPS	DEPTH FLOW FT	INVERT ELEV. UPPER FT	INVERT ELEV. LOWER FT	GROUND COVER UPPER FT	GROUND COVER LOWER FT
P-63	63	BOX	20.	0.45	0.43	10.00	4.95	2.12	18	12.700	0.03	40.57	12.11	0.23	1280.83	1278.29	2.06	1.00

INT. CURVE S85000 DROP=.00 DPS= 33, 0, 0, 0, MIN VEL= 2.00 2.00 2.00 MIN SLOPE= .00000 .00000 .00000 .00000 .00000

Input File = DUBO:[PHX.1184.HYDR.SPP]P411CB52.IN;4

CC	PG	LN	RUN NO.	FROM	TO	ES	FREQ YRS	LGTH FT	MIN DIA IN	TP	N	ZONE 1 A1 ACRE	C1	ZONE 2 A2 ACRE	C2	ZONE 3 A3 ACRE	C3	CONC TIME MIN	UPPER STRUCT TOP EL FT	M COV FT	LOWER STRUCT TOP EL FT	M COV FT	LR
03	01	10	P-52	52	BOX	0	50.0	15.	18.	2	.012	0.53	.95	0.11	.45	0.00	.00	10.	1281.74	2.06	1279.00	1.00	Z

INT. CURVE S85000 DROP=.00 DPS= 33, 0, 0, 0, MIN VEL= 2.00 2.00 2.00 MIN SLOPE= .00000 .00000 .00000 .00000

Input File = DUB0:[PHX.1184.HYDR.SPP]P411CB52.IN;4

CC PG LN	RUN NO.	QA CFS	MAX FL LINE EL FT	CROWN CONTROL ELEV FT	CROWN CONTROL DIST FT	FLOW CONTROL ELEV FT	FLOW CONTROL DIST FT	C	ALTERNATE DESIGN FREQ YRS	MDIA IN	TP	N	QA CFS	GROUND CONTROL ELEV FT	GROUND CONTROL DIST FT	MIN CLEAR FT	OUTFALL ELEV FT	MAX VEL FPS
04 01 10	P-52	0.	0.00	0.00	0.	0.00	0.	X	50.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00

- * - DESIGN SUMMARY - * -

HNTB - PROGRAM T411 - * - HYDRAULIC DESIGN OF STORM SEWERS - * - OUTPUT DATA Run Date 28-APR-88 Page 4
Job 1184-21-01 Ref. 01 XFILE:P411CB52.IN PHOENIX,ARIZONA OX By: TDS Date 04/23/88
Number of Pipes in system = 1

Input File = DUB0:[PHX.1184.HYDR.SPP]P411CB52.IN;4

Output data for conversion to PL412: DUB0:[PHX.1184.HYDR.SPP]P411CB52.XPL;7

PIPE NO.	FROM	TO	LENGTH FT	TOTAL A	TOTAL C*A	CONC. TIME MIN	DESIGN INT. IN/HR	DESIGN FLOW CFS	DIA IN	SLOPE %	TRAVEL TIME MIN	CAPAC. FLOW CFS	VEL. FPS	DEPTH FLOW FT	INVERT ELEV. UPPER FT	INVERT ELEV. LOWER FT	GROUND COVER UPPER FT	GROUND COVER LOWER FT
P-52	52	BOX	15.	0.64	0.55	10.00	4.95	2.74	18	11.200	0.02	38.10	12.50	0.27	1277.97	1276.29	2.06	1.00

Job 1184-21-01 Ref. 01 XOCOTILLO FRONTAGE ROAD -- NORTH OF AZ CANAL PHOENIX,ARIZONA OX By: PDI Date 04/12/88
INT. CURVE S85000 DROP=.00 DPS= 33, 0, 0, 0, MIN VEL= 2.00 2.00 2.00 MIN SLOPE= .00000 .00000 .00000 .00000

Input File = DUB0:[PHX.1184.HYDR.SPP]P411OCTFRNTRD-2.IN;5

CC	PG	LN	RUN NO.	FROM	TO	ES	FREQ YRS	LGTH FT	MIN DIA IN	TP	N	ZONE 1 A1 ACRE	C1	ZONE 2 A2 ACRE	C2	ZONE 3 A3 ACRE	C3	CONC TIME MIN	UPPER STRUCT TOP EL FT	M COV FT	LOWER STRUCT TOP EL FT	M COV FT	LR
03	01	05	P-65	65	78	0	5.0	50.	15.	2	.012	0.08	.95	0.00	.00	0.00	.00	10.	1255.68	6.56	1247.10	3.62	Z

Job 1184-21-01 Ref. 01 XOCOTILLO FRONTAGE ROAD -- NORTH OF AZ CANAL PHOENIX,ARIZONA OX By: PDI Date 04/12/88
INT. CURVE S85000 DROP=.00 DPS= 33, 0, 0, 0, MIN VEL= 2.00 2.00 2.00 MIN SLOPE= .00000 .00000 .00000 .00000

Input File = DUBO:[PHX.1184.HYDR.SPP]P411OCTFRNTRD-2.IN;5

CC	PG	LN	RUN NO.	QA CFS	MAX FL LINE EL FT	CROWN CONTROL ELEV FT	CROWN CONTROL DIST FT	FLOW CONTROL ELEV FT	FLOW CONTROL DIST FT	C	FREQ YRS	ALTERNATE DESIGN MDIA IN	TP	N	QA CFS	GROUND CONTROL ELEV FT	GROUND CONTROL DIST FT	MIN CLEAR FT	OUTFALL ELEV FT	MAX VEL FPS
04	01	05	P-65	0.	0.00	0.00	0.	0.00	0.	X	5.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00

- * - DESIGN SUMMARY - * -

HNTB - PROGRAM T411 - * - HYDRAULIC DESIGN OF STORM SEWERS - * - OUTPUT DATA Run Date 28-APR-88 Page 4
Job 1184-21-01 Ref. 01 XOCOTILLO FRONTAGE ROAD -- NORTH OF AZ CANAL PHOENIX,ARIZONA OX By: PDI Date 04/12/88
Number of Pipes in system = 1

Input File = DUB0:[PHX.1184.HYDR.SPP]P411OCTFRNTRD-2.IN;5

Output data for conversion to PL412: DUB0:[PHX.1184.HYDR.SPP]P411OCTFRNTRD-2.XPL;13

PIPE NO.	FROM	TO	LENGTH FT	TOTAL A	TOTAL C*A	CONC. TIME MIN	INT. IN/HR	DESIGN FLOW CFS	DIA IN	SLOPE %	TRAVEL TIME MIN	CAPAC. FLOW CFS	VEL. FPS	DEPTH FLOW FT	INVERT ELEV. UPPER FT	INVERT ELEV. LOWER FT	GROUND COVER UPPER FT	GROUND COVER LOWER FT
P-65	65	78	50.	0.08	0.08	10.00	3.40	0.26	15	11.280	0.13	23.51	6.34	0.09	1247.68	1242.04	6.56	3.62

HNTB - PROGRAM T411 - * - HYDRAULIC DESIGN OF STORM SEWERS - * - INPUT DATA Run Date 3-MAY-88 Page 1
Job 1184-21-01 Ref. 01 XOCOTILLO FRONTAGE ROAD -- NORTH OF AZ CANAL PHOENIX,ARIZONA OX By: PDI Date 04/19/88
INT. CURVE S85000 DROP=.00 DPS= 33, 0, 0, 0, MIN VEL= 2.00 2.00 2.00 MIN SLOPE= .00000 .00000 .00000 .00000 .00000

Input File = DISKB0:[PHX.1184.HYDR.SPP]P411OCTFRNTRD.IN;22

CC	PG	LN	RUN NO.	FROM	TO	ES	FREQ YRS	LGTH FT	MIN DIA IN	TP	N	ZONE 1 A1 ACRE	C1	ZONE 2 A2 ACRE	C2	ZONE 3 A3 ACRE	C3	CONC TIME MIN	UPPER STRUCT TOP EL FT	M COV FT	LOWER STRUCT TOP EL FT	M COV FT	LR
03	01	10	P-78	78	79	0	5.0	191.	15.	2	.012	0.18	.95	0.03	.45	0.04	.45	10.	1249.34	3.56	1244.46	3.46	
03	01	15	P-79	79	80	0	5.0	129.	15.	2	.012	0.08	.95	0.06	.45	0.01	.45	10.	1244.46	3.56	1242.60	2.46	
03	01	20	P-80	80	81	0	5.0	45.	15.	2	.012	0.06	.95	0.08	.45	0.00	.00	10.	1242.60	2.56	1241.57	2.46	
03	01	25	P-81	81	ODB	0	5.0	105.	15.	2	.012	0.00	.00	0.00	.00	0.00	.00	10.	1241.57	2.56	1240.60	2.41	Z

INT. CURVE S85000 DROP=.00 DPS= 33, 0, 0, 0, MIN VEL= 2.00 2.00 2.00 MIN SLOPE= .00000 .00000 .00000 .00000

Input File = DISKBO:[PHX.1184.HYDR.SPP]P411OCTFRNTRD.IN;22

CC	PG	LN	RUN NO.	QA CFS	MAX FL LINE EL FT	CROWN CONTROL ELEV FT	CROWN CONTROL DIST FT	FLOW CONTROL ELEV FT	FLOW CONTROL DIST FT	C	ALTERNATE DESIGN FREQ YRS	MDIA IN	TP	N	QA CFS	GROUND CONTROL ELEV FT	GROUND CONTROL DIST FT	MIN CLEAR FT	OUTFALL ELEV FT	MAX VEL FPS
04	01	10	P-78	1.	0.00	0.00	0.	0.00	0.	X	5.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	01	15	P-79	0.	0.00	0.00	0.	0.00	0.	X	5.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	01	20	P-80	0.	0.00	0.00	0.	0.00	0.	X	5.0	0.	0	.000	0.	0.00	0.	0.00	0.00	15.00
04	01	25	P-81	0.	0.00	0.00	0.	0.00	0.	X	5.0	0.	0	.000	0.	0.00	0.	0.00	0.00	0.00

- * - DESIGN SUMMARY - * -

HNTB - PROGRAM T411 - * - HYDRAULIC DESIGN OF STORM SEWERS - * - OUTPUT DATA Run Date 3-MAY-88 Page 4
Job 1184-21-01 Ref. 01 XOCOTILLO FRONTAGE ROAD -- NORTH OF AZ CANAL PHOENIX,ARIZONA OX By: PDI Date 04/19/88
Number of Pipes in system = 4

Input File = DISKB0:[PHX.1184.HYDR.SPP]P411OCTFRNTRD.IN;22

Output data for conversion to PL412: DISKB0:[PHX.1184.HYDR.SPP]P411OCTFRNTRD.XPL;9

PIPE NO.	FROM	TO	LENGTH FT	TOTAL A	TOTAL C*A	CONC. TIME MIN	DESIGN INT. IN/HR	DESIGN FLOW CFS	DIA IN	SLOPE %	TRAVEL TIME MIN	CAPAC. FLOW CFS	VEL. FPS	DEPTH FLOW FT	INVERT ELEV. UPPER FT	INVERT ELEV. LOWER FT	GROUND COVER UPPER FT	GROUND COVER LOWER FT
P-78	78	79	191.	0.25	0.20	10.00	3.40	1.69	15	2.503	0.49	11.07	6.52	0.33	1244.34	1239.56	3.56	3.46
P-79	79	80	129.	0.40	0.31	10.49	3.35	2.04	15	0.589	0.53	5.37	4.08	0.53	1239.46	1238.70	3.56	2.46
P-80	80	81	45.	0.54	0.40	11.02	3.29	2.33	15	2.067	0.11	10.06	6.67	0.41	1238.60	1237.67	2.56	2.46
P-81	81	ODB	105.	0.54	0.40	11.13	3.28	2.32 *	15	0.781	0.37	6.19	4.68	0.53	1237.57	1236.75	2.56	2.41

*PIPE DESIGNED FOR 2.33 CFS

APPENDIX

Design Calculations North of the Arizona Canal

D. Hydraulic Grade Line Calculations

Input file = DUBO:[PHX.1184.HYDR.SPP]HGLNTHEST.INX;5

TW.EL.= 1242.00 SYSTEM: North of the Canal East Side "Gravity"

********* I N P U T *********

PIPE	Q	QA	L	TS2	FL1	FL2	DIA	N	UPSTREAM L1	UPSTREAM AN1	LATERAL 3 L3	LATERAL 3 AN3	LATERAL 4 L4	LATERAL 4 AN4
P-044	137.4	0.0	193.0	1250.25	1234.12	1236.30	4.0	0.012	P-041	0.0	P-046	90.0		0.0
P-041	121.0	0.0	159.0	1254.50	1238.23	1240.37	3.5	0.012	P-036	90.0		0.0		0.0
P-036	118.7	0.0	458.0	1258.17	1240.47	1245.91	3.5	0.012	P-032	0.0	P-037	0.0		0.0
P-032	117.3	0.0	427.0	1265.41	1246.01	1251.44	3.5	0.012	P-026	52.0		0.0		0.0
P-026	96.5	0.0	143.0	1267.50	1251.54	1253.46	3.5	0.012	P-025	55.0	P-027	11.0		0.0
P-025	42.6	0.0	135.0	1271.00	1254.33	1254.84	3.0	0.012	P-069	0.0	P-023	90.0		0.0
P-069	22.1	0.0	172.0	1273.62	1266.75	1268.78	2.0	0.012	P-066	0.0	P-068	90.0		0.0
P-066	17.3	0.0	187.0	1277.60	1269.31	1271.68	2.0	0.012	P-064	0.0	P-067	90.0		0.0
P-064	7.5	0.0	84.0	1279.60	1273.29	1275.19	2.0	0.012	P-024	0.0		0.0		0.0
P-024	7.5	0.0	35.0	1282.30	1275.29	1275.73	2.0	0.012		0.0		0.0		0.0

HYDRAULIC GRADELINE PROFILE JOB:111842101 REF: 1 DATE:04/29/88 DES:DFM PAGE 2

Input file = DUBO:[PHX.1184.HYDR.SPP]HGLNTHEST.INX;5

TW.EL.= 1242.00 SYSTEM: North of the Canal East Side "Gravity"

..... O U T P U T .....

PIPE	Q	L	N	DIA	FL1	FL2	HG1	HG2	D1	D2	V1	V2	DC	DN	SO	S	DY	FB	*	L3	LATERAL 3 Q3	D3	V3	L4	LATERAL 4 Q4	D4	V4
P-044	137.4	193.0	0.012	4.0	1234.12	1236.30	1242.00	1243.50	4.00	4.00	10.93	10.93	3.49	2.78	0.01130	0.00780	0.00	6.75	5	P-046	24.9	1.76	8.51		0.0	0.00	0.00
P-041	121.0	159.0	0.012	3.5	1238.23	1240.37	1243.50	1245.46	3.50	3.50	12.58	12.58	3.25	2.74	0.01346	0.01232	4.91	4.12	5		0.0	0.00	0.00		0.0	0.00	0.00
P-036	118.7	458.0	0.012	3.5	1240.47	1245.91	1250.38	1255.81	3.50	3.50	12.34	12.34	3.24	2.87	0.01188	0.01186	0.10	2.26	5	P-037	1.8	1.30	1.36		0.0	0.00	0.00
P-032	117.3	427.0	0.012	3.5	1246.01	1251.44	1255.91	1260.86	3.50	3.50	12.19	12.19	3.23	2.74	0.01272	0.01158	2.69	1.86	5		0.0	0.00	0.00		0.0	0.00	0.00
P-026	96.5	143.0	0.012	3.5	1251.54	1253.46	1263.55	1264.67	3.50	3.50	10.03	10.03	3.03	2.29	0.01343	0.00784	2.02	0.81	5	P-027	44.7	3.00	6.32		0.0	0.00	0.00
P-025	42.6	135.0	0.012	3.0	1254.33	1254.84	1266.69	1267.16	3.00	3.00	6.03	6.03	2.13	2.36	0.00378	0.00348	0.52	3.32	5	P-023	29.5	3.00	4.17		0.0	0.00	0.00
P-069	22.1	172.0	0.012	2.0	1266.75	1268.78	1268.14	1270.46	1.39	1.68	9.48	7.85	1.68	1.39	0.01180	0.00000	0.06	3.11	1	P-068	6.5	1.23	4.18		0.0	0.00	0.00
P-066	17.3	187.0	0.012	2.0	1269.31	1271.68	1270.51	1273.18	1.20	1.50	8.75	6.85	1.50	1.15	0.01267	0.00000	1.24	3.18	1	P-067	12.4	1.33	7.49		0.0	0.00	0.00
P-064	7.5	84.0	0.012	2.0	1273.29	1275.19	1274.42	1276.16	1.13	0.97	4.08	4.94	0.97	0.61	0.02262	0.00000	0.00	3.44	1		0.0	0.00	0.00		0.0	0.00	0.00
P-024	7.5	35.0	0.012	2.0	1275.29	1275.73	1276.16	1276.70	0.87	0.97	5.69	4.94	0.97	0.71	0.01257	0.00000	0.57	5.03	1		0.0	0.00	0.00		0.0	0.00	0.00

* DENOTES HGL FORMULA USED:

(1) HG2=FL2+DC
(2) HG2=FL2+DN
(3) HG2=TWEL+(SAVG*L)+VH1-VH2
(4) HG2=FL1+H+(SFULL*L)
(5) HG2=TWEL+(SFULL*L)

Input file = DUB0:[PHX.1184.HYDR.SPP]HGLNTHEST-5.INX;4

TW.EL.= 1259.38 SYSTEM: North of the Canal East Side "Lat £5"

********* I N P U T *********

PIPE	Q	QA	L	TS2	FL1	FL2	DIA	N	UPSTREAM L1	UPSTREAM AN1	LATERAL 3 L3	LATERAL 3 AN3	LATERAL 4 L4	LATERAL 4 AN4
B-074	27.7	0.0	41.0	1288.57	1253.80	1261.43	2.5	0.012	P-074	0.0		0.0		0.0
P-074	27.7	0.0	150.0	1288.57	1261.43	1263.27	2.5	0.012	P-073	90.0		0.0		0.0
P-073	27.1	0.0	3.0	1268.20	1263.33	1264.70	2.5	0.012		0.0		0.0		0.0

HYDRAULIC GRADELINE PROFILE JOB:111842101 REF: 1 DATE:05/04/88 DES:DFM PAGE 2

Input file = DUBO:[PHX.1184.HYDR.SPP]HGLNTHEST-5.INX;4

TW.EL.= 1259.38 SYSTEM: North of the Canal East Side "Lat £5"

..... O U T P U T .....

PIPE	Q	L	N	DIA	FL1	FL2	HG1	HG2	D1	D2	V1	V2	DC	DN	SO	S	DY	FB	*	L3	LATERAL 3 Q3	D3	V3	L4	LATERAL 4 Q4	D4	V4
B-074	27.7	41.0	0.012	2.5	1253.80	1261.43	1259.38	1263.22	2.50	1.79	5.64	7.35	1.79	0.64	0.18610	0.00000	0.00	25.35	1		0.0	0.00	0.00		0.0	0.00	0.00
P-074	27.7	150.0	0.012	2.5	1261.43	1263.27	1263.22	1265.06	1.79	1.79	7.35	7.35	1.79	1.34	0.01227	0.00000	1.46	22.05	1		0.0	0.00	0.00		0.0	0.00	0.00
P-073	27.1	3.0	0.012	2.5	1263.33	1264.70	1266.52	1266.53	2.50	1.83	5.52	7.03	1.77	0.51	0.45667	0.00372	1.15	0.52	5		0.0	0.00	0.00		0.0	0.00	0.00

* DENOTES HGL FORMULA USED:
(1) HG2=FL2+DC
(2) HG2=FL2+DN
(3) HG2=TWEL+(SAVG*L)+VH1-VH2
(4) HG2=FL1+H+(SFULL*L)
(5) HG2=TWEL+(SFULL*L)

Input file = DUB0:[PHX.1184.HYDR.SPP]HGLNTHEST-8.INX;5

TW.EL.= 1255.35 SYSTEM: Glendale Ave. East of Parkway South Side

********* I N P U T *********

PIPE	Q	QA	L	TS2	FL1	FL2	DIA	N	UPSTREAM L1	UPSTREAM AN1	LATERAL 3 L3	LATERAL 3 AN3	LATERAL 4 L4	LATERAL 4 AN4
B-030	27.5	0.0	18.0	1289.10	1252.40	1259.58	2.5	0.012	P-030	0.0		0.0		0.0
P-030	27.5	0.0	243.0	1289.10	1259.58	1262.55	2.5	0.012	P-072	90.0		0.0		0.0
P-072	27.1	0.0	2.0	1268.95	1263.55	1264.45	2.0	0.012		0.0		0.0		0.0

HYDRAULIC GRADELINE PROFILE JOB:111842101 REF: 1 DATE:05/04/88 DES:DFM PAGE 2

Input file = DUBO:[PHX.1184.HYDR.SPP]HGLNTHEST-8.INX;5

TW.EL.= 1255.35 SYSTEM: Glendale Ave. East of Parkway South Side

..... O U T P U T .....

PIPE	Q	L	N	DIA	FL1	FL2	HG1	HG2	D1	D2	V1	V2	DC	DN	SO	S	DY	FB	*	L3	LATERAL 3 Q3	D3	V3	L4	LATERAL 4 Q4	D4	V4
B-030	27.5	18.0	0.012	2.5	1252.40	1259.58	1255.35	1261.37	2.50	1.79	5.60	7.32	1.79	0.53	0.39889	0.00000	0.00	27.73	1		0.0	0.00	0.00		0.0	0.00	0.00
P-030	27.5	243.0	0.012	2.5	1259.58	1262.55	1261.37	1264.34	1.79	1.79	7.32	7.32	1.79	1.34	0.01222	0.00000	1.81	22.95	1		0.0	0.00	0.00		0.0	0.00	0.00
P-072	27.1	2.0	0.012	2.0	1263.55	1264.45	1266.15	1266.26	2.00	1.81	8.63	9.07	1.81	0.55	0.45000	0.00000	1.91	0.78	1		0.0	0.00	0.00		0.0	0.00	0.00

* DENOTES HGL FORMULA USED:
(1) HG2=FL2+DC
(2) HG2=FL2+DN
(3) HG2=TWEL+(SAVG*L)+VH1-VH2
(4) HG2=FL1+H+(SFULL*L)
(5) HG2=TWEL+(SFULL*L)

Input file = DUBO:[PHX.1184.HYDR.SPP]HGLNTHWST.INX;8

TW.EL.= 1243.45 SYSTEM: NORTH OF CANAL WEST SIDE OF SQUAW PEAK

********* I N P U T *********

PIPE	Q	QA	L	TS2	FL1	FL2	DIA	N	UPSTREAM L1	UPSTREAM AN1	LATERAL 3 L3	LATERAL 3 AN3	LATERAL 4 L4	LATERAL 4 AN4
P-046	24.9	0.0	111.0	1269.18	1237.40	1242.98	2.0	0.012	P-083	0.0		0.0		0.0
P-083	21.4	0.0	40.0	1249.25	1243.08	1243.39	2.0	0.012	P-045	0.0		0.0		0.0
P-045	21.2	0.0	100.0	1250.13	1243.49	1244.31	2.0	0.012	P-013	0.0		0.0		0.0
P-013	20.5	0.0	345.0	1257.07	1244.41	1247.05	2.0	0.012	P-014	0.0		0.0		0.0
P-014	18.8	0.0	172.0	1261.70	1247.15	1248.26	2.0	0.012	P-009	0.0	P-076	85.0		0.0
P-009	16.9	0.0	263.0	1257.55	1248.36	1249.62	2.0	0.012	P-010	0.0		0.0		0.0
P-010	14.9	0.0	94.0	1255.94	1249.72	1250.07	2.0	0.012	P-011	0.0		0.0		0.0
P-011	14.2	0.0	144.0	1255.07	1250.17	1250.66	2.0	0.012	P-055	0.0		0.0		0.0
P-055	11.9	0.0	244.0	1257.45	1250.76	1253.04	2.0	0.012	P-004	0.0		0.0		0.0
P-004	10.9	0.0	265.0	1265.71	1253.14	1258.82	2.0	0.012	P-003	65.0		0.0		0.0
P-003	8.8	0.0	63.0	1266.24	1258.92	1259.07	2.0	0.012	P-054	18.0		0.0		0.0
P-054	8.3	0.0	21.0	1265.02	1259.17	1259.22	2.0	0.012	P-053	90.0	P-002	0.0		0.0
P-053	5.3	0.0	247.0	1274.74	1260.71	1268.75	2.0	0.012	P-051	60.0	P-050	90.0		0.0
P-051	1.5	0.0	132.0	1276.40	1270.97	1272.63	1.5	0.012		0.0		0.0		0.0

HYDRAULIC GRADELINE PROFILE JOB:111842101 REF: 1 DATE:05/04/88 DES:DFM PAGE 2

Input file = DUBO:[PHX.1184.HYDR.SPP]HGLNTHWST.INX;8

TW.EL.= 1243.45 SYSTEM: NORTH OF CANAL WEST SIDE OF SQUAW PEAK

..... O U T P U T .....

PIPE	Q	L	N	DIA	FL1	FL2	HG1	HG2	D1	D2	V1	V2	DC	DN	SO	S	DY	FB	*	L3	LATERAL 3 Q3	D3	V3	L4	LATERAL 4 Q4	D4	V4
P-046	24.9	111.0	0.012	2.0	1237.40	1242.98	1243.45	1244.74	2.00	1.76	7.93	8.51	1.76	0.94	0.05027	0.00000	0.68	23.76	1		0.0	0.00	0.00		0.0	0.00	0.00
P-083	21.4	40.0	0.012	2.0	1243.08	1243.39	1245.42	1245.72	2.00	2.00	6.81	6.81	1.66	1.63	0.00775	0.00763	0.03	3.50	5		0.0	0.00	0.00		0.0	0.00	0.00
P-045	21.2	100.0	0.012	2.0	1243.49	1244.31	1245.75	1246.50	2.00	2.00	6.75	6.75	1.65	1.56	0.00820	0.00748	0.09	3.54	5		0.0	0.00	0.00		0.0	0.00	0.00
P-013	20.5	345.0	0.012	2.0	1244.41	1247.05	1246.59	1249.00	2.00	1.95	6.53	6.57	1.62	1.57	0.00765	0.00700	0.22	7.85	5		0.0	0.00	0.00		0.0	0.00	0.00
P-014	18.8	172.0	0.012	2.0	1247.15	1248.26	1249.22	1250.23	2.00	1.97	5.98	6.00	1.56	1.56	0.00645	0.00588	0.00	11.47	5	P-076	2.4	0.61	3.90		0.0	0.00	0.00
P-009	16.9	263.0	0.012	2.0	1248.36	1249.62	1250.23	1251.34	1.87	1.72	5.53	5.88	1.48	1.63	0.00479	0.00445	0.29	5.92	3		0.0	0.00	0.00		0.0	0.00	0.00
P-010	14.9	94.0	0.012	2.0	1249.72	1250.07	1251.63	1251.95	1.91	1.88	4.82	4.87	1.39	1.63	0.00372	0.00346	0.06	3.94	3		0.0	0.00	0.00		0.0	0.00	0.00
P-011	14.2	144.0	0.012	2.0	1250.17	1250.66	1252.00	1252.45	1.83	1.79	4.71	4.79	1.36	1.63	0.00340	0.00316	0.23	2.39	3		0.0	0.00	0.00		0.0	0.00	0.00
P-055	11.9	244.0	0.012	2.0	1250.76	1253.04	1252.68	1254.28	1.92	1.24	3.84	5.82	1.24	1.00	0.00934	0.00000	0.27	2.90	1		0.0	0.00	0.00		0.0	0.00	0.00
P-004	10.9	265.0	0.012	2.0	1253.14	1258.82	1254.55	1260.00	1.41	1.18	4.62	5.64	1.18	0.76	0.02143	0.00000	0.64	5.07	1		0.0	0.00	0.00		0.0	0.00	0.00
P-003	8.8	63.0	0.012	2.0	1258.92	1259.07	1260.64	1260.75	1.72	1.68	3.06	3.13	1.06	1.28	0.00238	0.00179	0.04	5.46	3		0.0	0.00	0.00		0.0	0.00	0.00
P-054	8.3	21.0	0.012	2.0	1259.17	1259.22	1260.78	1260.82	1.61	1.60	3.05	3.08	1.03	1.23	0.00238	0.00178	0.35	3.85	3	P-002	2.6	1.45	1.49		0.0	0.00	0.00
P-053	5.3	247.0	0.012	2.0	1260.71	1268.75	1261.18	1269.56	0.47	0.81	9.48	4.43	0.81	0.47	0.03255	0.00000	0.79	4.39	1	P-050	2.7	1.10	1.94		0.0	0.00	0.00
P-051	1.5	132.0	0.012	1.5	1270.97	1272.63	1271.32	1273.09	0.35	0.46	4.84	3.27	0.46	0.35	0.01258	0.00000	0.25	3.06	1		0.0	0.00	0.00		0.0	0.00	0.00

* DENOTES HGL FORMULA USED:

(1) HG2=FL2+DC
(2) HG2=FL2+DN
(3) HG2=TWEL+(SAVG*L)+VH1-VH2
(4) HG2=FL1+H+(SFULL*L)
(5) HG2=TWEL+(SFULL*L)

Input file = DUBO:[PHX.1184.HYDR.SPP]HGLNTHGLWST.INX;2

TW.EL.= 1250.23 SYSTEM: Glendale Ave West Side.

********* I N P U T *********

									UPSTREAM		LATERAL 3		LATERAL 4	
PIPE	Q	QA	L	TS2	FL1	FL2	DIA	N	L1	AN1	L3	AN3	L4	AN4
P-076	2.4	0.0	140.0	1257.66	1253.45	1254.06	1.3	0.012	P-075	90.0		0.0		0.0
P-075	1.3	0.0	95.0	1258.17	1254.16	1254.67	1.3	0.012		0.0		0.0		0.0

HYDRAULIC GRADELINE PROFILE JOB:111842101 REF: 1 DATE:05/04/88 DES:DFM PAGE 2

Input file = DUBO:[PHX.1184.HYDR.SPP]HGLNTHGLWST.INX;2

TW.EL.= 1250.23 SYSTEM: Glendale Ave West Side.

..... O U T P U T .....

PIPE	Q	L	N	DIA	FL1	FL2	HG1	HG2	D1	D2	V1	V2	DC	DN	SO	S	DY	FB	*	L3	LATERAL 3 Q3	D3	V3	L4	LATERAL 4 Q4	D4	V4
P-076	2.4	140.0	0.012	1.3	1253.46	1254.06	1254.06	1254.68	0.61	0.62	3.90	3.81	0.61	0.62	0.00436	0.00436	0.32	2.65	2		0.0	0.00	0.00		0.0	0.00	0.00
P-075	1.3	95.0	0.012	1.3	1254.16	1254.67	1255.01	1255.11	0.85	0.44	1.42	3.24	0.44	0.42	0.00537	0.00000	0.24	2.81	1		0.0	0.00	0.00		0.0	0.00	0.00

* DENOTES HGL FORMULA USED:

(1) HG2=FL2+DC
(2) HG2=FL2+DN
(3) HG2=TWEL+(SAVG*L)+VH1-VH2
(4) HG2=FL1+H+(SFULL*L)
(5) HG2=TWEL+(SFULL*L)

Input file = DUB0:[PHX.1184.HYDR.SPP]HGLNTHPUMP-4.INX;11

TW.EL.= 1232.17 SYSTEM: NORTH OF CANAL TO PUMP STATION--LATERAL 4

********* I N P U T *********

									UPSTREAM		LATERAL 3		LATERAL 4	
PIPE	Q	QA	L	TS2	FL1	FL2	DIA	N	L1	AN1	L3	AN3	L4	AN4
P-012	28.0	0.0	125.0	1237.10	1226.35	1226.38	5.0	0.012	P-018	83.0	P-085	100.0	P-008	18.0
P-018	16.2	0.0	142.0	1235.02	1229.38	1230.00	2.0	0.012	P-020	0.0	P-017	89.0		0.0
P-020	11.5	0.0	125.0	1234.71	1230.10	1230.40	2.0	0.012	P-016	88.0	P-019	0.0		0.0
P-016	6.4	0.0	64.0	1236.55	1230.94	1231.47	1.5	0.012	P-015	90.0		0.0		0.0
P-015	6.1	0.0	50.0	1236.62	1231.57	1231.73	1.5	0.012	P-084	4.0		0.0		0.0
P-084	1.1	0.0	84.0	1235.88	1231.83	1232.11	1.5	0.012		0.0		0.0		0.0

HYDRAULIC GRADELINE PROFILE JOB:111842101 REF: 1 DATE:04/29/88 DES:DFM PAGE 2

Input file = DUBO:[PHX.1184.HYDR.SPP]HGLNTHPUMP-4.INX;11

TW.EL.= 1232.17 SYSTEM: NORTH OF CANAL TO PUMP STATION--LATERAL 4

..... O U T P U T .....

																					LATERAL 3				LATERAL 4		
PIPE	Q	L	N	DIA	FL1	FL2	HG1	HG2	D1	D2	V1	V2	DC	DN	SO	S	DY	FB	*	L3	Q3	D3	V3	L4	Q4	D4	V4
P-012	28.0	125.0	0.012	5.0	1226.35	1226.38	1232.17	1232.18	5.00	5.00	1.43	1.43	1.47	2.91	0.00024	0.00010	0.00	4.92	5	P-085	1.5	0.46	3.27	P-008	10.9	1.18	5.64
P-018	16.2	142.0	0.012	2.0	1229.38	1230.00	1232.18	1232.80	2.00	2.00	5.16	5.16	1.45	2.00	0.00437	0.00437	0.41	1.81	5	P-017	2.4	1.50	1.36		0.0	0.00	0.00
P-020	11.5	125.0	0.012	2.0	1230.10	1230.40	1233.21	1233.49	2.00	2.00	3.66	3.66	1.22	1.57	0.00240	0.00220	0.36	0.87	5	P-019	4.8	1.50	2.72		0.0	0.00	0.00
P-016	6.4	64.0	0.012	1.5	1230.94	1231.47	1233.84	1234.05	1.50	1.50	3.62	3.62	0.98	0.85	0.00828	0.00316	0.41	2.10	5		0.0	0.00	0.00		0.0	0.00	0.00
P-015	6.1	50.0	0.012	1.5	1231.57	1231.73	1234.45	1234.60	1.50	1.50	3.45	3.45	0.95	1.17	0.00320	0.00287	0.36	1.66	5		0.0	0.00	0.00		0.0	0.00	0.00
P-084	1.1	84.0	0.012	1.5	1231.83	1232.11	1234.96	1234.96	1.50	1.50	0.62	0.62	0.39	0.42	0.00333	0.00009	0.01	0.91	5		0.0	0.00	0.00		0.0	0.00	0.00

* DENOTES HGL FORMULA USED:
(1) HG2=FL2+DC
(2) HG2=FL2+DN
(3) HG2=TWEL+(SAVG*L)+VH1-VH2
(4) HG2=FL1+H+(SFULL*L)
(5) HG2=TWEL+(SFULL*L)

Input file = DUB0:[PHX.1184.HYDR.SPP]HGLNTHPUMP.INX;6

TW.EL.= 1232.18 SYSTEM: NORTH OF CANAL TO PUMP STATION--MAINLINE

********* I N P U T *********

									UPSTREAM		LATERAL 3		LATERAL 4	
PIPE	Q	QA	L	TS2	FL1	FL2	DIA	N	L1	AN1	L3	AN3	L4	AN4
P-008	10.9	0.0	202.0	1242.42	1232.79	1238.11	2.0	0.012	P-005	2.5	P-022	80.0	P-007	90.0
P-005	4.5	0.0	246.0	1252.14	1238.65	1248.27	1.5	0.012	P-006	80.0		0.0		0.0
P-006	2.4	0.0	77.0	1259.58	1248.37	1255.81	1.5	0.012		0.0		0.0		0.0

HYDRAULIC GRADELINE PROFILE JOB:111842101 REF: 1 DATE:04/29/88 DES:DFM PAGE 2

Input file = DUBO:[PHX.1184.HYDR.SPP]HGLNTHPUMP.INX;6

TW.EL.= 1232.18 SYSTEM: NORTH OF CANAL TO PUMP STATION--MAINLINE

..... O U T P U T .....

																					LATERAL 3				LATERAL 4		
PIPE	Q	L	N	DIA	FL1	FL2	HG1	HG2	D1	D2	V1	V2	DC	DN	SO	S	DY	FB	*	L3	Q3	D3	V3	L4	Q4	D4	V4
P-008	10.9	202.0	0.012	2.0	1232.79	1238.11	1233.51	1239.29	0.72	1.18	10.79	5.64	1.18	0.72	0.02634	0.00000	0.84	2.29	1	P-022	1.4	1.48	0.79	P-007	3.3	1.48	1.87
P-005	4.5	246.0	0.012	1.5	1238.65	1248.27	1240.13	1249.08	1.48	0.81	2.55	4.60	0.81	0.45	0.03911	0.00000	0.47	2.59	1		0.0	0.00	0.00		0.0	0.00	0.00
P-006	2.4	77.0	0.012	1.5	1248.37	1255.81	1249.55	1256.40	1.18	0.59	1.61	3.75	0.59	0.27	0.09662	0.00000	0.33	2.86	1		0.0	0.00	0.00		0.0	0.00	0.00

* DENOTES HGL FORMULA USED:
(1) HG2=FL2+DC
(2) HG2=FL2+DN
(3) HG2=TWEL+(SAVG*L)+VH1-VH2
(4) HG2=FL1+H+(SFULL*L)
(5) HG2=TWEL+(SFULL*L)

Input file = DUB0:[PHX.1184.HYDR.SPP]HGLNTHPUMP-1.INX;2

TW.EL.= 1239.29 SYSTEM: NORTH OF CANAL TO PUMP STATION--LATERAL 1

********* I N P U T *********

									UPSTREAM		LATERAL 3		LATERAL 4	
PIPE	Q	QA	L	TS2	FL1	FL2	DIA	N	L1	AN1	L3	AN3	L4	AN4
P-007	3.3	0.0	81.0	1245.46	1238.65	1241.69	1.5	0.012		0.0		0.0		0.0

HYDRAULIC GRADELINE PROFILE JOB:111842101 REF: 1 DATE:04/29/88 DES:DFM PAGE 2

Input file = DUBO:[PHX.1184.HYDR.SPP]HGLNTHPUMP-1.INX;2

TW.EL.= 1239.29 SYSTEM: NORTH OF CANAL TO PUMP STATION--LATERAL 1

..... O U T P U T .....

																					LATERAL 3				LATERAL 4		
PIPE	Q	L	N	DIA	FL1	FL2	HG1	HG2	D1	D2	V1	V2	DC	DN	SO	S	DY	FB	*	L3	Q3	D3	V3	L4	Q4	D4	V4
P-007	3.3	81.0	0.012	1.5	1238.65	1241.69	1239.29	1242.38	0.64	0.69	4.59	4.14	0.69	0.39	0.03753	0.00000	0.40	2.68	1		0.0	0.00	0.00		0.0	0.00	0.00

* DENOTES HGL FORMULA USED:
(1) HG2=FL2+DC
(2) HG2=FL2+DN
(3) HG2=TWEL+(SAVG*L)+VH1-VH2
(4) HG2=FL1+H+(SFULL*L)
(5) HG2=TWEL+(SFULL*L)

Input file = DUB0:[PHX.1184.HYDR.SPP]HGLNTHPUMP-2.INX;2

TW.EL.= 1239.29 SYSTEM: NORTH OF CANAL TO PUMP STATION--LATERAL 2

********* I N P U T *********

									UPSTREAM		LATERAL 3		LATERAL 4	
PIPE	Q	QA	L	TS2	FL1	FL2	DIA	N	L1	AN1	L3	AN3	L4	AN4
P-022	1.4	0.0	90.0	1260.90	1238.65	1257.13	1.5	0.012		0.0		0.0		0.0

HYDRAULIC GRADELINE PROFILE JOB:111842101 REF: 1 DATE:04/29/88 DES:DFM PAGE 2

Input file = DUBO:[PHX.1184.HYDR.SPP]HGLNTHPUMP-2.INX;2

TW.EL.= 1239.29 SYSTEM: NORTH OF CANAL TO PUMP STATION--LATERAL 2

..... O U T P U T .....

PIPE	Q	L	N	DIA	FL1	FL2	HG1	HG2	D1	D2	V1	V2	DC	DN	SO	S	DY	FB	*	L3	LATERAL 3 Q3	D3	V3	L4	LATERAL 4 Q4	D4	V4
P-022	1.4	90.0	0.012	1.5	1238.65	1257.13	1239.29	1257.57	0.64	0.44	1.95	3.21	0.44	0.17	0.20533	0.00000	0.24	3.09	1		0.0	0.00	0.00		0.0	0.00	0.00

* DENOTES HGL FORMULA USED:
(1) HG2=FL2+DC
(2) HG2=FL2+DN
(3) HG2=TWEL+(SAVG*L)+VH1-VH2
(4) HG2=FL1+H+(SFULL*L)
(5) HG2=TWEL+(SFULL*L)

Input file = DUBO:[PHX.1184.HYOR.SPP]HGLNTHPUMP-3.INX;2

TW.EL.= 1232.18 SYSTEM: NORTH OF CANAL TO PUMP STATION--LATERAL 3

********* I N P U T *********

									UPSTREAM		LATERAL 3		LATERAL 4	
PIPE	Q	QA	L	TS2	FL1	FL2	DIA	N	L1	AN1	L3	AN3	L4	AN4
P-085	1.5	0.0	62.0	1237.40	1233.33	1233.63	1.5	0.012		0.0		0.0		0.0

HYDRAULIC GRADELINE PROFILE JOB:111842101 REF: 1 DATE:04/29/88 DES:DFM PAGE 2

Input file = DUBO:[PHX.1184.HYDR.SPP]HGLNTHPUMP-3.INX;2

TW.EL.= 1232.18 SYSTEM: NORTH OF CANAL TO PUMP STATION--LATERAL 3

..... O U T P U T .....

PIPE	Q	L	N	DIA	FL1	FL2	HG1	HG2	D1	D2	V1	V2	DC	DN	SO	S	DY	FB	*	L3	LATERAL 3 Q3	LATERAL 3 D3	LATERAL 3 V3	L4	LATERAL 4 Q4	LATERAL 4 D4	LATERAL 4 V4
P-085	1.5	62.0	0.012	1.5	1233.33	1233.63	1233.77	1234.09	0.44	0.46	3.44	3.27	0.46	0.44	0.00484	0.00000	0.25	3.06	1		0.0	0.00	0.00		0.0	0.00	0.00

* DENOTES HGL FORMULA USED:
(1) HG2=FL2+DC
(2) HG2=FL2+DN
(3) HG2=TWEL+(SAVG*L)+VH1-VH2
(4) HG2=FL1+H+(SFULL*L)
(5) HG2=TWEL+(SFULL*L)

Input file = DUB0:[PHX.1184.HYDR.SPP]HGLNTHPUMP-5.INX;2

TW.EL.= 1233.49 SYSTEM: NORTH OF CANAL TO PUMP STATION--LATERAL 5

********* I N P U T *********

									UPSTREAM		LATERAL 3		LATERAL 4	
PIPE	Q	QA	L	TS2	FL1	FL2	DIA	N	L1	AN1	L3	AN3	L4	AN4
P-019	4.8	0.0	65.0	1234.90	1230.92	1231.13	1.5	0.012		0.0		0.0		0.0

HYDRAULIC GRADELINE PROFILE JOB:111842101 REF: 1 DATE:04/29/88 DES:DFM PAGE 2

Input file = DUBO:[PHX.1184.HYDR.SPP]HGLNTHPUMP-5.INX;2

TW.EL.= 1233.49 SYSTEM: NORTH OF CANAL TO PUMP STATION--LATERAL 5

..... O U T P U T .....

																					LATERAL 3				LATERAL 4		
PIPE	Q	L	N	DIA	FL1	FL2	HG1	HG2	D1	D2	V1	V2	DC	DN	SO	S	DY	FB	*	L3	Q3	D3	V3	L4	Q4	D4	V4
P-019	4.8	65.0	0.012	1.5	1230.92	1231.13	1233.49	1233.61	1.50	1.50	2.72	2.72	0.84	0.96	0.00323	0.00178	0.17	1.12	5		0.0	0.00	0.00		0.0	0.00	0.00

* DENOTES HGL FORMULA USED:
(1) HG2=FL2+DC
(2) HG2=FL2+DN
(3) HG2=TWEL+(SAVG*L)+VH1-VH2
(4) HG2=FL1+H+(SFULL*L)
(5) HG2=TWEL+(SFULL*L)

Input file = DUB0:[PHX.1184.HYDR.SPP]HGLNTHPUMP-6.INX;2

TW.EL.= 1232.80 SYSTEM: NORTH OF CANAL TO PUMP STATION--LATERAL 6

********* I N P U T *********

									UPSTREAM		LATERAL 3		LATERAL 4	
PIPE	Q	QA	L	TS2	FL1	FL2	DIA	N	L1	AN1	L3	AN3	L4	AN4
P-017	2.4	0.0	63.0	1237.18	1231.25	1233.41	1.5	0.012		0.0		0.0		0.0

HYDRAULIC GRADELINE PROFILE JOB:111842101 REF: 1 DATE:04/29/88 DES:DFM PAGE 2

Input file = DUB0:[PHX.1184.HYDR.SPP]HGLNTHPUMP-6.INX;2

TW.EL.= 1232.80 SYSTEM: NORTH OF CANAL TO PUMP STATION--LATERAL 6

..... O U T P U T .....

PIPE	Q	L	N	DIA	FL1	FL2	HG1	HG2	D1	D2	V1	V2	DC	DN	SO	S	DY	FB	*	L3	LATERAL 3 Q3	D3	V3	L4	LATERAL 4 Q4	D4	V4
P-017	2.4	63.0	0.012	1.5	1231.25	1233.41	1232.80	1234.00	1.50	0.59	1.36	3.75	0.59	0.34	0.03429	0.00000	0.33	2.86	1		0.0	0.00	0.00		0.0	0.00	0.00

* DENOTES HGL FORMULA USED:
(1) HG2=FL2+DC
(2) HG2=FL2+DN
(3) HG2=TWEL+(SAVG*L)+VH1-VH2
(4) HG2=FL1+H+(SFULL*L)
(5) HG2=TWEL+(SFULL*L)

Input file = DUBO:[PHX.1184.HYDR.SPP]HGLMYTAVE.INX;46

TW.EL.= 1278.00 SYSTEM: Myrtle Ave. 50-year storm.

********* I N P U T *********

PIPE	Q	QA	L	TS2	FL1	FL2	DIA	N	UPSTREAM L1	UPSTREAM AN1	LATERAL 3 L3	LATERAL 3 AN3	LATERAL 4 L4	LATERAL 4 AN4
P-097	31.0	0.0	75.0	1300.00	1276.00	1278.14	2.0	0.012	P-095	0.0		0.0		0.0
P-095	31.2	0.0	95.0	1292.48	1280.69	1282.23	2.0	0.012	P-096	0.0		0.0		0.0
P-096	29.6	0.0	125.0	1295.36	1282.23	1285.79	2.0	0.012	P-094	0.0	P-091	0.0		0.0
P-094	14.8	0.0	12.0	1294.86	1290.51	1290.55	2.0	0.012		0.0		0.0		0.0

HYDRAULIC GRADELINE PROFILE JOB:111842101 REF: 1 DATE:05/04/88 DES:DFM PAGE 2

Input file = DUBO:[PHX.1184.HYDR.SPP]HGLMYTAVE.INX;46

TW.EL.= 1278.00 SYSTEM: Myrtle Ave. 50-year storm.

..... O U T P U T .....

PIPE	Q	L	N	DIA	FL1	FL2	HG1	HG2	D1	D2	V1	V2	DC	DN	SO	S	DY	FB	*	L3	LATERAL 3 Q3	LATERAL 3 D3	LATERAL 3 V3	L4	LATERAL 4 Q4	LATERAL 4 D4	LATERAL 4 V4
P-097	31.0	75.0	0.012	2.0	1276.00	1278.14	1278.00	1280.02	2.00	1.88	9.87	10.13	1.88	1.29	0.02853	0.00000	0.00	19.98	1		0.0	0.00	0.00		0.0	0.00	0.00
P-095	31.2	95.0	0.012	2.0	1280.69	1282.23	1282.33	1284.11	1.64	1.88	11.32	10.18	1.88	1.64	0.01621	0.00000	0.39	7.98	1		0.0	0.00	0.00		0.0	0.00	0.00
P-096	29.6	125.0	0.012	2.0	1282.23	1285.79	1284.50	1287.65	2.00	1.86	9.42	9.73	1.86	1.25	0.02848	0.00000	1.14	6.57	1	P-091	14.9	1.39	6.39		0.0	0.00	0.00
P-094	14.8	12.0	0.012	2.0	1290.51	1290.55	1291.90	1292.55	1.39	2.00	6.37	4.71	1.39	2.00	0.00333	0.00365	0.52	1.79	4		0.0	0.00	0.00		0.0	0.00	0.00

* DENOTES HGL FORMULA USED:

(1) HG2=FL2+DC
(2) HG2=FL2+DN
(3) HG2=TWEL+(SAVG*L)+VH1-VH2
(4) HG2=FL1+H+(SFULL*L)
(5) HG2=TWEL+(SFULL*L)

APPENDIX

Design Calculations North of the Arizona Canal

E. Ocotillo Road Detention Basin

HNTB HOWARD NEEDLES TAMMEN & BERGENDOFF	Made by TMS	Date 4-22-08	Job No. 11184-21-01
	Checked by [illegible]	Date [illegible]	Sheet No. 1/1
Calculations For Ocotillo Road Detention Basin			

- Determine Required Detention

Volume required = 7200 Q

CA = 45.32

i = 0.80 in/hr (10 yr - 2 hr storm)

Volume = (7200)(45.32)(0.80) = 261,043 ft³

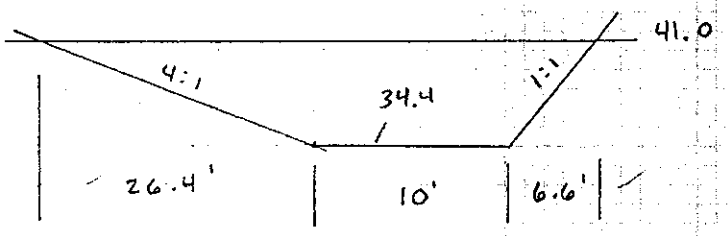
= 6 ac-ft.

HNTB HOWARD NEEDLES TAMMEN & BERGENDOFF	Made by TDS	Date 4-21-88	Job No. 11184-21-01
	Checked by SAL	Date [illegible]	Sheet No. 1/3
Calculations For Ocotillo Road Detention Basin			

Compute detained volume below elev 41.0

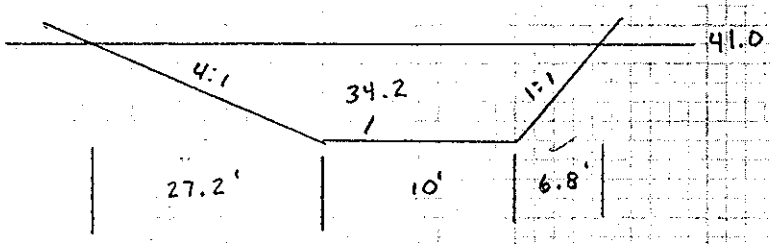
STA 11+96 A = 0

STA 11+70



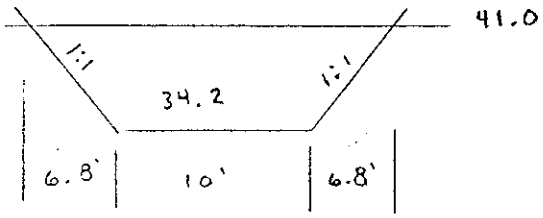
$$A = \frac{43+10}{2}(6.6) = 174.9 \text{ ft}^2$$

STA 9+86



$$A = \frac{44+10}{2}(6.8) = 183.6 \text{ ft}^2$$

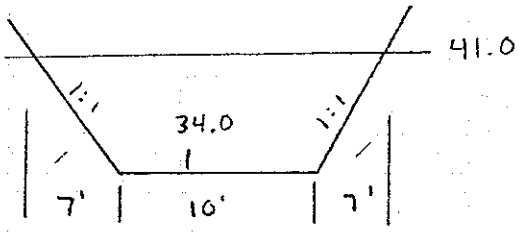
STA 9+36



$$A = \frac{23.6+10}{2}(6.8) = 114.2 \text{ ft}^2$$

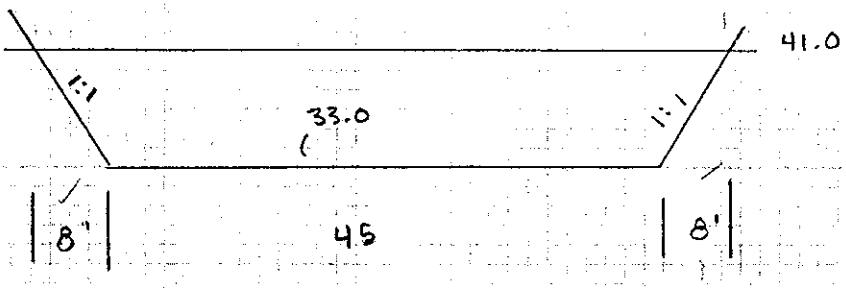
HNTB HOWARD NEEDLES TAMMEN & BERGENDOFF	Made by TDS	Date 4-21-88	Job No. 11184-21-01
	Checked by	Date	Sheet No. 2/3
Calculations For			

STA 7+39



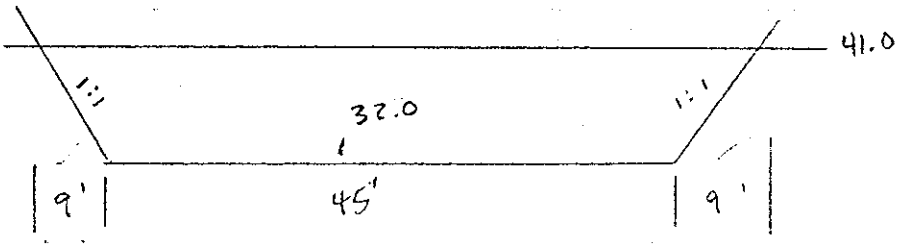
$$A = \frac{24+10}{2}(7) = 119 \text{ ft}^2$$

STA 6+43



$$A = \frac{61+45}{2}(8) = 424 \text{ ft}^2$$

STA 3+00



$$A = \frac{63+45}{2}(9) = 486 \text{ ft}^2$$

STA 2+60 $A = 0$

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS

MADE BY TDS DATE 4-21-88 JOB. NO. 11184-21-0
CHECKED BY DATE SEC. NO.
SHEET NO. 3/3

CALCULATIONS FOR

STATION	DIST. FT.	EXCAVATION END AREA SQ. FT.	EXCAVATION ~~SUM~~ AVG OF END AREAS	EXCAVATION VOLUME CU. YDS.	STATION	DIST. FT.	EMBANKMENT END AREA SQ. FT.	EMBANKMENT SUM OF END AREAS	EMBANKMENT VOLUME CU. YDS.
11+96		0							
	26		87.5	2,275					
11+70		174.9							
	184		179.3	32,991					
9+86		183.6							
	50		148.9	7,445					
9+36		114.2							
	197		116.6	22,970					
7+39		119.0							
	96		271.5	26,064					
6+43		424.0							
	343		455.0	156,065					
3+00		486.0							
	40		243.0	9,730					
2+60		0							
				257,542					
				≈ 6 ac-ft					

FORM NO. 7-463

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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
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T1      Hydraulic analysis for the Ocotillo Detention Basin
T2      April, 1988 Subcritical conditions "Design by TDS"
T3      Stations 4+68 to 10+56, Tailwater Elevation: 1242.12

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

      0.       0.       0.       0.  0.000000     0.00     0.0    1300.    42.120   0.000

J2  NPROF    IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IBW      CHNIM    ITRACE

    -1.000    1.000    0.000    0.000    0.000    0.000    0.000    0.000    0.000    0.000

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    38.000    1.000    2.000    8.000   25.000   26.000   30.000   42.000   33.000   43.000

     4.000   60.000   17.000  150.000    0.000    0.000    0.000    0.000    0.000    0.000

NC     0.015    0.015    0.015    0.000    0.000    0.000    0.000    0.000    0.000    0.000
X1   468.000    5.000    0.000   65.110    0.000    0.000    0.000    0.000    0.000    0.000
GR    44.000    0.000   32.890   11.110   32.490   51.110   32.540   56.110   41.540   65.110

X1   643.000    5.000    0.000   64.600  175.000  175.000  175.000    0.000    0.000    0.000
GR    44.000    0.000   33.400   10.600   33.000   50.600   33.050   55.600   42.050   64.600

X1   739.000    4.000    0.000   30.000  100.000   90.000   96.000    0.000    0.000    0.000
GR    44.000    0.000   34.000   10.000   34.000   20.000   44.000   30.000    0.000    0.000

X1   936.000    4.000    0.000   29.600  197.000  197.000  197.000    0.000    0.000    0.000
GR    44.000    0.000   34.200    9.800   34.200   19.800   44.000   29.600    0.000    0.000

X1   986.000    4.000    0.000   50.400   58.000   50.000   46.000    0.000    0.000    0.000
GR    41.900    0.000   34.240   30.640   34.240   40.640   44.000   50.400    0.000    0.000

X1  1056.000    4.000    0.000   50.100   70.000   70.000   70.000    0.000    0.000    0.000
GR    41.900    0.000   34.300   30.400   34.300   40.400   44.000   50.100    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
```

```
  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

*SECNO 468.000
3280 CROSS SECTION    468.00 EXTENDED      0.58 FEET

  468.00     9.63    42.12     0.00    42.12    42.22     0.10     0.00     0.00    44.00
   1300.       0.    1300.       0.       0.     514.       0.       0.       0.    41.54
    0.00     0.00     2.53     0.00    0.000    0.015    0.000    0.000    32.49     1.88
0.000047       0.       0.       0.        0        0        0     0.00    63.23    65.11

*SECNO 643.000
3280 CROSS SECTION    643.00 EXTENDED      0.07 FEET

  643.00     9.12    42.12     0.00     0.00    42.23     0.11     0.01     0.00    44.00
   1300.       0.    1300.       0.       0.     482.       0.       2.       0.    42.05
    0.02     0.00     2.70     0.00    0.000    0.015    0.000    0.000    33.00     1.88
0.000057     175.     175.     175.        1        0        0     0.00    62.72    64.60

*SECNO 739.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
  739.00     6.43    40.43    40.43     0.00    42.78     2.35     0.02     0.00    44.00
   1300.       0.    1300.       0.       0.     106.       0.       3.       0.    44.00
    0.02     0.00    12.30     0.00    0.000    0.015    0.000    0.000    34.00     3.57
0.002644     100.      96.      90.       20       19        0     0.00    22.87    26.43

*SECNO 936.000

3301 HV CHANGED MORE THAN HVINS

  936.00     7.38    41.58     0.00     0.00    43.18     1.60     0.39     0.00    44.00
   1300.       0.    1300.       0.       0.     128.       0.       3.       0.    44.00
    0.03     0.00    10.14     0.00    0.000    0.015    0.000    0.000    34.20     2.42
0.001568     197.     197.     197.        4        0        0     0.00    24.76    27.18
```

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

*SECNO 986.000
3280 CROSS SECTION 986.00 EXTENDED 0.94 FEET

3301 HV CHANGED MORE THAN HVINS

986.00	8.60	42.84	0.00	0.00	43.20	0.36	0.03	0.00	41.90
1300.	0.	1300.	0.	0.	269.	0.	3.	0.	44.00
0.03	0.00	4.83	0.00	0.000	0.015	0.000	0.000	34.24	0.00
0.000284	58.	46.	50.	3	0	0	0.00	49.24	49.24

*SECNO 1056.000
3280 CROSS SECTION 1056.00 EXTENDED 0.95 FEET

1056.00	8.55	42.85	0.00	0.00	43.22	0.37	0.02	0.00	41.90
1300.	0.	1300.	0.	0.	267.	0.	4.	1.	44.00
0.03	0.00	4.88	0.00	0.000	0.015	0.000	0.000	34.30	0.00
0.000291	70.	70.	70.	2	0	0	0.00	48.95	48.95

CROSS SECTION 468.00
STREAM Stations 4+68 to 10+56,
DISCHARGE= 1300.

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

```
ELEV   32.      34.      36.      38.      40.      42.      44.      46.      48.      50.      52.

   STA-FEET

 2  0. .        .        .        .        .        .        X        .        .        .        .      BANK.
    2. .        .        .        .        .       XW        .        .        .        .        .        .
    4. .        .        .        .        X       .W        .        .        .        .        .        .
    6. .        .        .        X        .       .W        .        .        .        .        .        .
    8. .        .        X        .        .       .W        .        .        .        .        .        .
   10. .        X        .        .        .       .W        .        .        .        .        .        .
 3 12. .   X    .        .        .        .       .W        .        .        .        .        .        .
   14. .   X    .        .        .        .       .W        .        .        .        .        .        .
   16. .   X    .        .        .        .       .W        .        .        .        .        .        .
   18. .   X    .        .        .        .       .W        .        .        .        .        .        .
   20. .   X    .        .        .        .       .W        .        .        .        .        .        .
   22. .   X    .        .        .        .       .W        .        .        .        .        .        .
   24. .   X    .        .        .        .       .W        .        .        .        .        .        .
   26. .   X    .        .        .        .       .W        .        .        .        .        .        .
   28. .   X    .        .        .        .       .W        .        .        .        .        .        .
   30. .   X    .        .        .        .       .W        .        .        .        .        .        .
   32. .  X     .        .        .        .       .W        .        .        .        .        .        .
   34. .  X     .        .        .        .       .W        .        .        .        .        .        .
   36. .  X     .        .        .        .       .W        .        .        .        .        .        .
   38. .  X     .        .        .        .       .W        .        .        .        .        .        .
   40. .  X     .        .        .        .       .W        .        .        .        .        .        .
   42. .  X     .        .        .        .       .W        .        .        .        .        .        .
   44. .  X     .        .        .        .       .W        .        .        .        .        .        .
   46. .  X     .        .        .        .       .W        .        .        .        .        .        .
   48. .  X     .        .        .        .       .W        .        .        .        .        .        .
   50. .  X     .        .        .        .       .W        .        .        .        .        .        .
 4 52. . X      .        .        .        .       .W        .        .        .        .        .        .
   54. .  X     .        .        .        .       .W        .        .        .        .        .        .
 5 56. .  X     .        .        .        .       .W        .        .        .        .        .        .
   58. .        . X      .        .        .       .W        .        .        .        .        .        .
   60. .        .        . X      .        .       .W        .        .        .        .        .        .
   62. .        .        .        . X      .       .W        .        .        .        .        .        .
   64. .        .        .        .        . X     .W        .        .        .        .        .        .
 6 66. .        .        .        .        .      X .W        .        .        .        .        .      BANK.

NRD=      0 ELLC=  9999999.00 ELTRD=  9999999.00

 EL(I),STA(I)
    44.00       0.00       32.89       11.11       32.49       51.11       32.54       56.11       41.54       65.11
```

CROSS SECTION 643.00
STREAM Stations 4+68 to 10+56,
DISCHARGE= 1300.

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

```
ELEV  33.      34.      35.      36.      37.      38.      39.      40.      41.      42.      43.

  STA-FEET

2  0. .       .        .        .        .        .        .        .        .        .        .     BANKX
   2. .       .        .        .        .        .        .        .        .       XWE       .       .
   4. .       .        .        .        .        .        .        X        .       .WE       .       .
   6. .       .        .        .        .        X        .        .        .       .WE       .       .
   8. .       .        .        X        .        .        .        .        .       .WE       .       .
3 10. .   X   .        .        .        .        .        .        .        .       .WE       .       .
  12. .   X   .        .        .        .        .        .        .        .       .WE       .       .
  14. .   X   .        .        .        .        .        .        .        .       .WE       .       .
  16. .  X    .        .        .        .        .        .        .        .       .WE       .       .
  18. .  X    .        .        .        .        .        .        .        .       .WE       .       .
  20. .  X    .        .        .        .        .        .        .        .       .WE       .       .
  22. .  X    .        .        .        .        .        .        .        .       .WE       .       .
  24. .  X    .        .        .        .        .        .        .        .       .WE       .       .
  26. . X     .        .        .        .        .        .        .        .       .WE       .       .
  28. . X     .        .        .        .        .        .        .        .       .WE       .       .
  30. . X     .        .        .        .        .        .        .        .       .WE       .       .
  32. . X     .        .        .        .        .        .        .        .       .WE       .       .
  34. . X     .        .        .        .        .        .        .        .       .WE       .       .
  36. .X      .        .        .        .        .        .        .        .       .WE       .       .
  38. .X      .        .        .        .        .        .        .        .       .WE       .       .
  40. .X      .        .        .        .        .        .        .        .       .WE       .       .
  42. .X      .        .        .        .        .        .        .        .       .WE       .       .
  44. .X      .        .        .        .        .        .        .        .       .WE       .       .
  46. X       .        .        .        .        .        .        .        .       .WE       .       .
  48. X       .        .        .        .        .        .        .        .       .WE       .       .
4 50. X       .        .        .        .        .        .        .        .       .WE       .       .
  52. X       .        .        .        .        .        .        .        .       .WE       .       .
  54. X       .        .        .        .        .        .        .        .       .WE       .       .
5 56. X       .        .        .        .        .        .        .        .       .WE       .       .
  58. .       .        X        .        .        .        .        .        .       .WE       .       .
  60. .       .        .        .        X        .        .        .        .       .WE       .       .
  62. .       .        .        .        .        .        X        .        .       .WE       .       .
6 64. .       .        .        .        .        .        .        .        .       XWE       .     BANK.
```

RD= 0 ELLC= 9999999.00 ELTRD= 9999999.00

EL(I),STA(I)

44.00	0.00	33.40	10.60	33.00	50.60	33.05	55.60	42.05	64.60

CROSS SECTION 739.00
STREAM Stations 4+68 to 10+56,
DISCHARGE= 1300.

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

```
ELEV  34.      35.      36.      37.      38.      39.      40.      41.      42.      43.      44.

  STA-FEET

2  0. .       .       .       .       .       .       .       .       .       .       X     BANK.
   1. .       .       .       .       .       .       .       .       .       .   X   .       .
   1. .       .       .       .       .       .       .       .       .       X       .       .
   2. .       .       .       .       .       .       .       .       .   X   E .       .       .
   2. .       .       .       .       .       .       .       .       X       E .       .       .
   3. .       .       .       .       .       .       .       .   X   .       E .       .       .
   3. .       .       .       .       .       .       .       X       .       E .       .       .
   4. .       .       .       .       .       .       .   X   .       .       E .       .       .
   4. .       .       .       .       .       .       X   W   .       .       E .       .       .
   5. .       .       .       .       .       .   X   .   W   .       .       E .       .       .
   5. .       .       .       .       .       X       .   W   .       .       E .       .       .
   6. .       .       .       .       .   X   .       .   W   .       .       E .       .       .
   6. .       .       .       .       X       .       .   W   .       .       E .       .       .
   7. .       .       .       .   X   .       .       .   W   .       .       E .       .       .
   7. .       .       .       X       .       .       .   W   .       .       E .       .       .
   8. .       .       .   X   .       .       .       .   W   .       .       E .       .       .
   8. .       .       X       .       .       .       .   W   .       .       E .       .       .
   9. .       .   X   .       .       .       .       .   W   .       .       E .       .       .
   9. .       X       .       .       .       .       .   W   .       .       E .       .       .
  10. .   X   .       .       .       .       .       .   W   .       .       E .       .       .
3 10. X       .       .       .       .       .       .   W   .       .       E .       .       .
  11. X       .       .       .       .       .       .   W   .       .       E .       .       .
  11. X       .       .       .       .       .       .   W   .       .       E .       .       .
  12. X       .       .       .       .       .       .   W   .       .       E .       .       .
  12. X       .       .       .       .       .       .   W   .       .       E .       .       .
  13. X       .       .       .       .       .       .   W   .       .       E .       .       .
  13. X       .       .       .       .       .       .   W   .       .       E .       .       .
  14. X       .       .       .       .       .       .   W   .       .       E .       .       .
  14. X       .       .       .       .       .       .   W   .       .       E .       .       .
  15. X       .       .       .       .       .       .   W   .       .       E .       .       .
  15. X       .       .       .       .       .       .   W   .       .       E .       .       .
  16. X       .       .       .       .       .       .   W   .       .       E .       .       .
  16. X       .       .       .       .       .       .   W   .       .       E .       .       .
  17. X       .       .       .       .       .       .   W   .       .       E .       .       .
  17. X       .       .       .       .       .       .   W   .       .       E .       .       .
  18. X       .       .       .       .       .       .   W   .       .       E .       .       .
  18. X       .       .       .       .       .       .   W   .       .       E .       .       .
  19. X       .       .       .       .       .       .   W   .       .       E .       .       .
  19. X       .       .       .       .       .       .   W   .       .       E .       .       .
  20. X       .       .       .       .       .       .   W   .       .       E .       .       .
4 20. X       .       .       .       .       .       .   W   .       .       E .       .       .
  21. .   X   .       .       .       .       .       .   W   .       .       E .       .       .
  21. .       X       .       .       .       .       .   W   .       .       E .       .       .
  22. .       .   X   .       .       .       .       .   W   .       .       E .       .       .
  22. .       .       X       .       .       .       .   W   .       .       E .       .       .
  23. .       .       .   X   .       .       .       .   W   .       .       E .       .       .
  23. .       .       .       X       .       .       .   W   .       .       E .       .       .
  24. .       .       .       .   X   .       .       .   W   .       .       E .       .       .
  24. .       .       .       .       X       .       .   W   .       .       E .       .       .
  25. .       .       .       .       .   X   .       .   W   .       .       E .       .       .
```

```
   25. .        .        .        .        .        X        .  W     .        .     E .        .        .
   26. .        .        .        .        .        .  X     .  W     .        .     E .        .        .
   26. .        .        .        .        .        .        X  W     .        .     E .        .        .
   27. .        .        .        .        .        .        .   X    .        .     E .        .        .
   27. .        .        .        .        .        .        .        X        .     E .        .        .
   28. .        .        .        .        .        .        .        .  X     .     E .        .        .
   28. .        .        .        .        .        .        .        .        X     E .        .        .
   29. .        .        .        .        .        .        .        .        .  X  E .        .        .
   29. .        .        .        .        .        .        .        .        .       X        .        .
   30. .        .        .        .        .        .        .        .        .        .  X     .        .
5  30. .        .        .        .        .        .        .        .        .        .        X    BANK.
```

NRD= 0 ELLC= 9999999.00 ELTRD= 9999999.00

EL(I),STA(I)

44.00	0.00	34.00	10.00	34.00	20.00	44.00	30.00

CROSS SECTION 936.00
STREAM Stations 4+68 to 10+56,
DISCHARGE= 1300.

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

```
ELEV  34.      35.      36.      37.      38.      39.      40.      41.      42.      43.      44.

  STA-FEET

2  0. .        .        .        .        .        .        .        .        .        .        X    BANK.
   1. .        .        .        .        .        .        .        .        .        .   X    .        .
   1. .        .        .        .        .        .        .        .        .       X E   .        .
   2. .        .        .        .        .        .        .        .        .   X   . E   .        .
   2. .        .        .        .        .        .        .        .       X        . E   .        .
   3. .        .        .        .        .        .        .        .      XW        . E   .        .
   3. .        .        .        .        .        .        .       X       W        . E   .        .
   4. .        .        .        .        .        .        .   X   .       W        . E   .        .
   4. .        .        .        .        .        .       X        .       W        . E   .        .
   5. .        .        .        .        .        .   X    .        .       W        . E   .        .
   5. .        .        .        .        .       X         .        .       W        . E   .        .
   6. .        .        .        .        .   X    .        .        .       W        . E   .        .
   6. .        .        .        .       X         .        .        .       W        . E   .        .
   7. .        .        .        .   X    .        .        .        .       W        . E   .        .
   7. .        .        .       X         .        .        .        .       W        . E   .        .
   8. .        .        .   X    .        .        .        .        .       W        . E   .        .
   8. .        .       X         .        .        .        .        .       W        . E   .        .
   9. .        .   X    .        .        .        .        .        .       W        . E   .        .
   9. .       X         .        .        .        .        .        .       W        . E   .        .
  10. .   X    .        .        .        .        .        .        .       W        . E   .        .
3 10. . X      .        .        .        .        .        .        .       W        . E   .        .
  11. . X      .        .        .        .        .        .        .       W        . E   .        .
  11. . X      .        .        .        .        .        .        .       W        . E   .        .
  12. . X      .        .        .        .        .        .        .       W        . E   .        .
  12. . X      .        .        .        .        .        .        .       W        . E   .        .
  13. . X      .        .        .        .        .        .        .       W        . E   .        .
  13. . X      .        .        .        .        .        .        .       W        . E   .        .
  14. . X      .        .        .        .        .        .        .       W        . E   .        .
  14. . X      .        .        .        .        .        .        .       W        . E   .        .
  15. . X      .        .        .        .        .        .        .       W        . E   .        .
  15. . X      .        .        .        .        .        .        .       W        . E   .        .
  16. . X      .        .        .        .        .        .        .       W        . E   .        .
  16. . X      .        .        .        .        .        .        .       W        . E   .        .
  17. . X      .        .        .        .        .        .        .       W        . E   .        .
  17. . X      .        .        .        .        .        .        .       W        . E   .        .
  18. . X      .        .        .        .        .        .        .       W        . E   .        .
  18. . X      .        .        .        .        .        .        .       W        . E   .        .
  19. . X      .        .        .        .        .        .        .       W        . E   .        .
  19. . X      .        .        .        .        .        .        .       W        . E   .        .
  20. . X      .        .        .        .        .        .        .       W        . E   .        .
4 20. . X      .        .        .        .        .        .        .       W        . E   .        .
  21. .     X  .        .        .        .        .        .        .       W        . E   .        .
  21. .        . X      .        .        .        .        .        .       W        . E   .        .
  22. .        .     X  .        .        .        .        .        .       W        . E   .        .
  22. .        .        . X      .        .        .        .        .       W        . E   .        .
  23. .        .        .     X  .        .        .        .        .       W        . E   .        .
  23. .        .        .        . X      .        .        .        .       W        . E   .        .
  24. .        .        .        .     X  .        .        .        .       W        . E   .        .
  24. .        .        .        .        . X      .        .        .       W        . E   .        .
  25. .        .        .        .        .     X  .        .        .       W        . E   .        .
```

```
 25. .        .        .        .        .        . X      .        .    W   .        . E      .        .
 26. .        .        .        .        .        .     X  .        .    W   .        . E      .        .
 26. .        .        .        .        .        .        . X      .    W   .        . E      .        .
 27. .        .        .        .        .        .        .     X  .    W   .        . E      .        .
 27. .        .        .        .        .        .        .        . X  W   .        . E      .        .
 28. .        .        .        .        .        .        .        .    X   .        . E      .        .
 28. .        .        .        .        .        .        .        .        . X      . E      .        .
 29. .        .        .        .        .        .        .        .        .     X  . E      .        .
 29. .        .        .        .        .        .        .        .        .        . X      .        .
5 30. .        .        .        .        .        .        .        .        .        .        X    BANK.

RD=       0 ELLC=  9999999.00 ELTRD=  9999999.00

EL(I),STA(I)
    44.00        0.00        34.20        9.80        34.20        19.80        44.00        29.60
```

CROSS SECTION 986.00
STREAM Stations 4+68 to 10+56,
DISCHARGE= 1300.

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

```
ELEV   34.      35.      36.      37.      38.      39.      40.      41.      42.      43.      44.

   STA-FEET

2   0. .        .        .        .        .        .        .        .       X.      W . E      .    BANK.
    1. .        .        .        .        .        .        .        .     X  .      W . E      .        .
    2. .        .        .        .        .        .        .        .   X    .      W . E      .        .
    3. .        .        .        .        .        .        .        . X      .      W . E      .        .
    4. .        .        .        .        .        .        .       X.        .      W . E      .        .
    5. .        .        .        .        .        .        .     X  .        .      W . E      .        .
    6. .        .        .        .        .        .        .   X    .        .      W . E      .        .
    7. .        .        .        .        .        .        . X      .        .      W . E      .        .
    8. .        .        .        .        .        .       X.        .        .      W . E      .        .
    9. .        .        .        .        .        .     X  .        .        .      W . E      .        .
   10. .        .        .        .        .        .   X    .        .        .      W . E      .        .
   11. .        .        .        .        .        . X      .        .        .      W . E      .        .
   12. .        .        .        .        .       X.        .        .        .      W . E      .        .
   13. .        .        .        .        .     X  .        .        .        .      W . E      .        .
   14. .        .        .        .        .   X    .        .        .        .      W . E      .        .
   15. .        .        .        .        . X      .        .        .        .      W . E      .        .
   16. .        .        .        .       X.        .        .        .        .      W . E      .        .
   17. .        .        .        .     X  .        .        .        .        .      W . E      .        .
   18. .        .        .        .   X    .        .        .        .        .      W . E      .        .
   19. .        .        .        . X      .        .        .        .        .      W . E      .        .
   20. .        .        .       X.        .        .        .        .        .      W . E      .        .
   21. .        .        .     X  .        .        .        .        .        .      W . E      .        .
   22. .        .        .   X    .        .        .        .        .        .      W . E      .        .
   23. .        .        . X      .        .        .        .        .        .      W . E      .        .
   24. .        .       X.        .        .        .        .        .        .      W . E      .        .
   25. .        .     X  .        .        .        .        .        .        .      W . E      .        .
   26. .        .   X    .        .        .        .        .        .        .      W . E      .        .
   27. .        . X      .        .        .        .        .        .        .      W . E      .        .
   28. .       X.        .        .        .        .        .        .        .      W . E      .        .
   29. .     X  .        .        .        .        .        .        .        .      W . E      .        .
   30. .   X    .        .        .        .        .        .        .        .      W . E      .        .
3  31. . X      .        .        .        .        .        .        .        .      W . E      .        .
   32. . X      .        .        .        .        .        .        .        .      W . E      .        .
   33. . X      .        .        .        .        .        .        .        .      W . E      .        .
   34. . X      .        .        .        .        .        .        .        .      W . E      .        .
   35. . X      .        .        .        .        .        .        .        .      W . E      .        .
   36. . X      .        .        .        .        .        .        .        .      W . E      .        .
   37. . X      .        .        .        .        .        .        .        .      W . E      .        .
   38. . X      .        .        .        .        .        .        .        .      W . E      .        .
   39. . X      .        .        .        .        .        .        .        .      W . E      .        .
   40. . X      .        .        .        .        .        .        .        .      W . E      .        .
4  41. . X      .        .        .        .        .        .        .        .      W . E      .        .
   42. .        . X      .        .        .        .        .        .        .      W . E      .        .
   43. .        .        . X      .        .        .        .        .        .      W . E      .        .
   44. .        .        .        . X      .        .        .        .        .      W . E      .        .
   45. .        .        .        .        . X      .        .        .        .      W . E      .        .
   46. .        .        .        .        .        . X      .        .        .      W . E      .        .
   47. .        .        .        .        .        .        . X      .        .      W . E      .        .
   48. .        .        .        .        .        .        .        . X      .      W . E      .        .
   49. .        .        .        .        .        .        .        .        . X    W . E      .        .
```

```
 50. .        .        .        .        .        .        .        .        .        .        X     BANK.

NRD=       0 ELLC=  9999999.00 ELTRD=  9999999.00

EL(I),STA(I)
    41.90       0.00       34.24       30.64       34.24       40.64       44.00       50.40
```

CROSS SECTION 1056.00
STREAM Stations 4+68 to 10+56,
DISCHARGE= 1300.

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

```
ELEV  34.      35.      36.      37.      38.      39.      40.      41.      42.      43.      44.

   STA-FEET

 2  0. .        .        .        .        .        .        .        .        X.       W. E      .    BANK.
    1. .        .        .        .        .        .        .        .      X .       W. E      .       .
    2. .        .        .        .        .        .        .        .    X   .       W. E      .       .
    3. .        .        .        .        .        .        .        . X     .       W. E      .       .
    4. .        .        .        .        .        .        .      X.        .       W. E      .       .
    5. .        .        .        .        .        .        .    X .         .       W. E      .       .
    6. .        .        .        .        .        .        .  X   .         .       W. E      .       .
    7. .        .        .        .        .        .        . X     .         .       W. E      .       .
    8. .        .        .        .        .        .      X.        .         .       W. E      .       .
    9. .        .        .        .        .        .    X .         .         .       W. E      .       .
   10. .        .        .        .        .        .  X   .         .         .       W. E      .       .
   11. .        .        .        .        .        . X     .         .         .       W. E      .       .
   12. .        .        .        .        .      X.        .         .         .       W. E      .       .
   13. .        .        .        .        .    X .         .         .         .       W. E      .       .
   14. .        .        .        .        . X     .         .         .         .       W. E      .       .
   15. .        .        .        .        .X      .         .         .         .       W. E      .       .
   16. .        .        .        .      X.        .         .         .         .       W. E      .       .
   17. .        .        .        .    X .         .         .         .         .       W. E      .       .
   18. .        .        .        . X   .         .         .         .         .       W. E      .       .
   19. .        .        .        .X    .         .         .         .         .       W. E      .       .
   20. .        .        .      X.      .         .         .         .         .       W. E      .       .
   21. .        .        .    X .       .         .         .         .         .       W. E      .       .
   22. .        .        . X   .        .         .         .         .         .       W. E      .       .
   23. .        .        .X    .        .         .         .         .         .       W. E      .       .
   24. .        .      X.      .        .         .         .         .         .       W. E      .       .
   25. .        .    X .       .        .         .         .         .         .       W. E      .       .
   26. .        . X   .        .        .         .         .         .         .       W. E      .       .
   27. .        .X    .        .        .         .         .         .         .       W. E      .       .
   28. .      X.      .        .        .         .         .         .         .       W. E      .       .
   29. .    X   .     .        .        .         .         .         .         .       W. E      .       .
 3 30. . X      .     .        .        .         .         .         .         .       W. E      .       .
   31. . X      .     .        .        .         .         .         .         .       W. E      .       .
   32. . X      .     .        .        .         .         .         .         .       W. E      .       .
   33. . X      .     .        .        .         .         .         .         .       W. E      .       .
   34. . X      .     .        .        .         .         .         .         .       W. E      .       .
   35. . X      .     .        .        .         .         .         .         .       W. E      .       .
   36. . X      .     .        .        .         .         .         .         .       W. E      .       .
   37. . X      .     .        .        .         .         .         .         .       W. E      .       .
   38. . X      .     .        .        .         .         .         .         .       W. E      .       .
   39. . X      .     .        .        .         .         .         .         .       W. E      .       .
 4 40. . X      .     .        .        .         .         .         .         .       W. E      .       .
   41. .        . X   .        .        .         .         .         .         .       W. E      .       .
   42. .        .     . X      .        .         .         .         .         .       W. E      .       .
   43. .        .     .        . X      .         .         .         .         .       W. E      .       .
   44. .        .     .        .        . X       .         .         .         .       W. E      .       .
   45. .        .     .        .        .         . X       .         .         .       W. E      .       .
   46. .        .     .        .        .         .         . X       .         .       W. E      .       .
   47. .        .     .        .        .         .         .         . X       .       W. E      .       .
   48. .        .     .        .        .         .         .         .         . X     W. E      .       .
   49. .        .     .        .        .         .         .         .         .         . X     .       .
```

```
5  50. .        .        .        .        .        .        .        .        .        .        X     BANK.

NRD=       0 ELLC=  9999999.00 ELTRD=  9999999.00

EL(I),STA(I)
    41.90       0.00       34.30       30.40       34.30       40.40       44.00       50.10
```

PROFILE FOR STREAM Stations 4+68 to 10+56,

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   32.      34.      36.      38.      40.      42.      44.      46.      48.      50.
  SECNO   CUMDIS

468.00     0.  C I     .        .        .        .      R .E       L        .        .        .        .
          10.  C  I    .        .        .        .      R .E       L        .        .        .        .
          20.  C  I    .        .        .        .      R .E       L        .        .        .        .
          30.  C  I    .        .        .        .      R .E       L        .        .        .        .
          40.  C  I    .        .        .        .      R .E       L        .        .        .        .
          50.  C  I    .        .        .        .      R .E       L        .        .        .        .
          60.  C  I    .        .        .        .       R.E       L        .        .        .        .
          70.  C  I    .        .        .        .       R.E       L        .        .        .        .
          80.  C   I   .        .        .        .       R.E       L        .        .        .        .
          90.  C   I   .        .        .        .       R.E       L        .        .        .        .
         100.  C   I   .        .        .        .       R.E       L        .        .        .        .
         110.  C   I   .        .        .        .       R.E       L        .        .        .        .
         120.  C   I   .        .        .        .       R.E       L        .        .        .        .
         130.  C   I   .        .        .        .        RE       L        .        .        .        .
         140.  C   I   .        .        .        .        RE       L        .        .        .        .
         150.  C    I  .        .        .        .        RE       L        .        .        .        .
         160.  C    I  .        .        .        .        RE       L        .        .        .        .
         170.  C    I  .        .        .        .        RE       L        .        .        .        .
643.00   180.  C    I  .        .        .        .        RE       L        .        .        .        .
         190.  C     I .        .        .        .        WE       L        .        .        .        .
         200.  C     I .        .        .        .       W. E      L        .        .        .        .
         210.  C      I .        .        .        .      W . ER     L        .        .        .        .
         220.  C      I .        .        .        .     W  . E R    L        .        .        .        .
         230.  C       I .        .        .        .    W   . E R   L        .        .        .        .
         240.  C       I .        .        .        .   W    . E  R  L        .        .        .        .
         250.  C        I.        .        .        .  W     . E   R L        .        .        .        .
         260.  .       CI.        .        .        .  W     . E    R L       .        .        .        .
         270.  .        I         .        C        . W      .  E   RL        .        .        .        .
739.00   280.  .        I         .        .        .W       .  E    L        .        .        .        .
         290.  .        I         .        . C      .W       .  E    L        .        .        .        .
         300.  .        I        . C       .        . W      .  E    L        .        .        .        .
         310.  .        IC        .        .        . W      .  E    L        .        .        .        .
         320.  .C       I         .        .        . W      .  E    L        .        .        .        .
         330.  C        I         .        .        .  W     .  E    L        .        .        .        .
         340.  C        I         .        .        .  W     .   E   L        .        .        .        .
         350.  C        I         .        .        .  W     .   E   L        .        .        .        .
         360.  C        I         .        .        .  W     .   E   L        .        .        .        .
         370.  C        I         .        .        .   W    .   E   L        .        .        .        .
         380.  C        .I        .        .        .   W    .   E   L        .        .        .        .
         390.  C        .I        .        .        .   W    .   E   L        .        .        .        .
         400.  C        .I        .        .        .    W   .   E   L        .        .        .        .
         410.  C        .I        .        .        .    W   .   E   L        .        .        .        .
         420.  C        .I        .        .        .    W   .   E   L        .        .        .        .
         430.  C        .I        .        .        .     W  .   E   L        .        .        .        .
         440.  C        .I        .        .        .     W  .    E  L        .        .        .        .
         450.  C        .I        .        .        .     W  .    E  L        .        .        .        .
         460.  C        .I        .        .        .     W  .    E  L        .        .        .        .
936.00   470.  C        .I        .        .        .      W .    E  L        .        .        .        .
         480.  C        .I        .        .        .       W.    E L R       .        .        .        .
         490.  C        .I        .        .        .        .W   LE  R       .        .        .        .
         500.  C        .I        .        .        .        . WL  E  R       .        .        .        .
         510.  C        .I        .        .        .        .L W  E  R       .        .        .        .
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986.00	520.	C	.I	.	.	.	L	W	E	R	.	.	.	.
	530.	C	.I	.	.	.	L	W	E	R	.	.	.	.
	540.	C	.I	.	.	.	L	W	E	R	.	.	.	.
	550.	C	.I	.	.	.	L	W	E	R	.	.	.	.
	560.	C	.I	.	.	.	L	W	E	R	.	.	.	.
	570.	C	.I	.	.	.	L	W	E	R	.	.	.	.
	580.	C	.I	.	.	.	L	W	E	R	.	.	.	.
1056.00	590.	C	.I	.	.	.	L	W	E	R	.	.	.	.

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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
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

Stations 4+68 to 10+56,

SUMMARY PRINTOUT

SECNO	CWSEL	CRIWS	DEPTH	AREA	VCH	BW	ELMIN	K*CHSL	Q	TOPWID	QCHP	K*XNCH
468.000	42.12	0.00	9.63	513.54	2.53	0.01	32.49	0.00	1300.00	63.23	100.00	15.00
643.000	42.12	0.00	9.12	481.54	2.70	0.01	33.00	2.91	1300.00	62.72	100.00	15.00
739.000	40.43	40.43	6.43	105.73	12.30	0.01	34.00	10.42	1300.00	22.87	100.00	15.00
936.000	41.58	0.00	7.38	128.25	10.14	0.01	34.20	1.02	1300.00	24.76	100.00	15.00
986.000	42.84	0.00	8.60	268.99	4.83	0.01	34.24	0.87	1300.00	49.24	100.00	15.00
1056.000	42.85	0.00	8.55	266.55	4.88	0.01	34.30	0.86	1300.00	48.95	100.00	15.00

Stations 4+68 to 10+56,

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
	468.000	0.00	0.00	0.00	32.49	1300.00	42.12	0.00	42.22	0.47	2.53	513.54	1896.41
	643.000	175.00	0.00	0.00	33.00	1300.00	42.12	0.00	42.23	0.57	2.70	481.54	1723.39
*	739.000	96.00	0.00	0.00	34.00	1300.00	40.43	40.43	42.78	26.44	12.30	105.73	252.81
	936.000	197.00	0.00	0.00	34.20	1300.00	41.58	0.00	43.18	15.68	10.14	128.25	328.35
	986.000	46.00	0.00	0.00	34.24	1300.00	42.84	0.00	43.20	2.84	4.83	268.99	770.87
	1056.000	70.00	0.00	0.00	34.30	1300.00	42.85	0.00	43.22	2.91	4.88	266.55	762.00

Stations 4+68 to 10+56,

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	468.000	1300.00	42.12	0.00	0.00	0.00	63.23	0.00
	643.000	1300.00	42.12	0.00	0.00	0.00	62.72	175.00
*	739.000	1300.00	40.43	0.00	-1.68	0.00	22.87	96.00
	936.000	1300.00	41.58	0.00	1.15	0.00	24.76	197.00
	986.000	1300.00	42.84	0.00	1.26	0.00	49.24	46.00
	1056.000	1300.00	42.85	0.00	0.01	0.00	48.95	70.00

SUMMARY OF ERRORS AND SPECIAL NOTES

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CAUTION  SECNO=  739.000  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=  739.000  PROFILE= 1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=  739.000  PROFILE= 1  20 TRIALS ATTEMPTED TO BALANCE WSEL
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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
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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
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T1      Hydraulic analysis for the Ocotillo Spillway
T2      April, 1988 Cross Sections were generated by TDS
T3      Stations 1,2,3,4,5, Tailwater Elev. 1238.0

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

      0.       0.       0.       0.  0.000000     0.00     0.0    1300.   38.000   0.000

J2  NPROF    IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IBW      CHNIM    ITRACE

   -1.000    1.000    0.000    0.000    0.000    0.000    0.000    0.000    0.000    0.000

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

   38.000    1.000    2.000    8.000   25.000   26.000   30.000   42.000   33.000   43.000

    4.000   60.000   17.000  150.000    0.000    0.000    0.000    0.000    0.000    0.000

NC     0.015    0.015    0.015    0.000    0.000    0.000    0.000    0.000    0.000    0.000
X1     1.000    4.000    0.000  410.000   10.000   10.000   10.000    0.000    0.000    0.000
GR    44.000    0.000   40.000   30.000   40.000  380.000   44.000  410.000    0.000    0.000

X1     2.000    4.000    0.000  410.000    0.000    0.000    0.000    0.000    0.000    0.000
GR    44.000    0.000   41.000   30.000   41.000  380.000   44.000  410.000    0.000    0.000

X1     3.000    4.000    0.000  410.000   31.000   31.000   31.000    0.000    0.000    0.000
GR    44.000    0.000   40.070   30.000   40.070  380.000   44.000  410.000    0.000    0.000

X1     4.000    4.000    0.000  410.000    8.020    8.020    8.020    0.000    0.000    0.000
GR    44.000    0.000   32.050   30.000   32.050  380.000   44.000  410.000    0.000    0.000

X1     5.000    4.000    0.000  410.000    5.000    5.000    5.000    0.000    0.000    0.000
GR    44.000    0.000   32.000   30.000   32.000  380.000   44.000  410.000    0.000    0.000
NJ     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

*SECNO 1.000
    1.00     1.00    41.00     0.00    38.00    41.21     0.21     0.00     0.00    44.00
   1300.       0.    1300.       0.       0.     358.       0.       0.       0.    44.00
    0.00     0.00     3.64     0.00    0.000    0.015    0.000    0.000    40.00    22.50
0.001386      10.      10.      10.        0        0        0     0.00   365.00   387.50

*SECNO 2.000
685 20 TRIALS ATTEMPTED WSEL,CWSEL
693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
    2.00     0.75    41.75    41.75     0.00    42.12     0.37     0.00     0.00    44.00
   1300.       0.    1300.       0.       0.     267.       0.       0.       0.    44.00
    0.00     0.00     4.87     0.00    0.000    0.015    0.000    0.000    41.00    22.54
0.003678       0.       0.       0.       20       15        0     0.00   364.92   387.46

*SECNO 3.000
    3.00     2.01    42.08     0.00     0.00    42.13     0.05     0.01     0.00    44.00
   1300.       0.    1300.       0.       0.     734.       0.       0.       0.    44.00
    0.00     0.00     1.77     0.00    0.000    0.015    0.000    0.000    40.07    14.67
0.000133      31.      31.      31.        2        0        0     0.00   380.67   395.33

*SECNO 4.000
    4.00    10.07    42.12     0.00     0.00    42.13     0.00     0.00     0.00    44.00
   1300.       0.    1300.       0.       0.    3781.       0.       1.       0.    44.00
    0.01     0.00     0.34     0.00    0.000    0.015    0.000    0.000    32.05     4.71
0.000001       8.       8.       8.        2        0        0     0.00   400.59   405.29

*SECNO 5.000
    5.00    10.12    42.12     0.00     0.00    42.13     0.00     0.00     0.00    44.00
   1300.       0.    1300.       0.       0.    3800.       0.       1.       0.    44.00
    0.02     0.00     0.34     0.00    0.000    0.015    0.000    0.000    32.00     4.69
0.000001       5.       5.       5.        0        0        0     0.00   400.63   405.31
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CROSS SECTION      1.00
STREAM  Stations 1,2,3,4,5, Tail
DISCHARGE=     1300.

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

ELEV  40.      41.      42.      43.      44.      45.      46.      47.      48.      49.      50.

   STA-FEET

2   0. .                .        .        X        .        .        .        .        .        .   BANK.
   10. .                .      X .        .        .        .        .        .        .        .      .
   20. .          X     .        .        .        .        .        .        .        .        .      .
3  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     .        .        .        .        .        .        .        .        .      .
4 380. X        W E     .        .        .        .        .        .        .        .        .      .
  390. .          X     .        .        .        .        .        .        .        .        .      .
  400. .                .      X .        .        .        .        .        .        .        .      .
5 410. .                .        .        X        .        .        .        .        .        .   BANK.

NRD=       0 ELLC=  9999999.00 ELTRD=  9999999.00

 EL(I),STA(I)
     44.00        0.00       40.00       30.00       40.00      380.00       44.00      410.00
```

CROSS SECTION 2.00
STREAM Stations 1,2,3,4,5, Tail
DISCHARGE= 1300.

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

```
ELEV   41.      42.      43.      44.      45.      46.      47.      48.      49.      50.      51.

  STA-FEET

 2  0. .        .        .        X        .        .        .        .        .        .        .      BANK.
   10. .        .        X        .        .        .        .        .        .        .        .        .
   20. .       XE        .        .        .        .        .        .        .        .        .        .
 3 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       .        .        .        .        .        .        .        .        .        .
 4 380. X     W  .E       .        .        .        .        .        .        .        .        .        .
  390. .       XE        .        .        .        .        .        .        .        .        .        .
  400. .        .        X        .        .        .        .        .        .        .        .        .
 5 410. .        .        .        X        .        .        .        .        .        .        .      BANK.
```

NRD= 0 ELLC= 9999999.00 ELTRD= 9999999.00

EL(I),STA(I)

44.00	0.00	41.00	30.00	41.00	380.00	44.00	410.00

```
CROSS SECTION      3.00
STREAM  Stations 1,2,3,4,5, Tail
DISCHARGE=     1300.

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

ELEV  40.      41.      42.      43.      44.      45.      46.      47.      48.      49.      50.

  STA-FEET

2  0. .       .        .        .        X        .        .        .        .        .        .     BANK.
  10. .       .        .      X .        .        .        .        .        .        .        .       .
  20. .       .      X .W       .        .        .        .        .        .        .        .       .
3 30. .X      .        .W       .        .        .        .        .        .        .        .       .
  40. .X      .        .W       .        .        .        .        .        .        .        .       .
  50. .X      .        .W       .        .        .        .        .        .        .        .       .
  60. .X      .        .W       .        .        .        .        .        .        .        .       .
  70. .X      .        .W       .        .        .        .        .        .        .        .       .
  80. .X      .        .W       .        .        .        .        .        .        .        .       .
  90. .X      .        .W       .        .        .        .        .        .        .        .       .
 100. .X      .        .W       .        .        .        .        .        .        .        .       .
 110. .X      .        .W       .        .        .        .        .        .        .        .       .
 120. .X      .        .W       .        .        .        .        .        .        .        .       .
 130. .X      .        .W       .        .        .        .        .        .        .        .       .
 140. .X      .        .W       .        .        .        .        .        .        .        .       .
 150. .X      .        .W       .        .        .        .        .        .        .        .       .
 160. .X      .        .W       .        .        .        .        .        .        .        .       .
 170. .X      .        .W       .        .        .        .        .        .        .        .       .
 180. .X      .        .W       .        .        .        .        .        .        .        .       .
 190. .X      .        .W       .        .        .        .        .        .        .        .       .
 200. .X      .        .W       .        .        .        .        .        .        .        .       .
 210. .X      .        .W       .        .        .        .        .        .        .        .       .
 220. .X      .        .W       .        .        .        .        .        .        .        .       .
 230. .X      .        .W       .        .        .        .        .        .        .        .       .
 240. .X      .        .W       .        .        .        .        .        .        .        .       .
 250. .X      .        .W       .        .        .        .        .        .        .        .       .
 260. .X      .        .W       .        .        .        .        .        .        .        .       .
 270. .X      .        .W       .        .        .        .        .        .        .        .       .
 280. .X      .        .W       .        .        .        .        .        .        .        .       .
 290. .X      .        .W       .        .        .        .        .        .        .        .       .
 300. .X      .        .W       .        .        .        .        .        .        .        .       .
 310. .X      .        .W       .        .        .        .        .        .        .        .       .
 320. .X      .        .W       .        .        .        .        .        .        .        .       .
 330. .X      .        .W       .        .        .        .        .        .        .        .       .
 340. .X      .        .W       .        .        .        .        .        .        .        .       .
 350. .X      .        .W       .        .        .        .        .        .        .        .       .
 360. .X      .        .W       .        .        .        .        .        .        .        .       .
 370. .X      .        .W       .        .        .        .        .        .        .        .       .
4 380. .X      .        .W       .        .        .        .        .        .        .        .       .
 390. .       .      X .W       .        .        .        .        .        .        .        .       .
 400. .       .        .      X .        .        .        .        .        .        .        .       .
5 410. .       .        .        .        X        .        .        .        .        .        .     BANK.

NRD=       0 ELLC=  9999999.00 ELTRD=  9999999.00

 EL(I),STA(I)
     44.00        0.00       40.07       30.00       40.07      380.00       44.00      410.00
```

CROSS SECTION 4.00
STREAM Stations 1,2,3,4,5, Tail
DISCHARGE= 1300.

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

ELEV	32.	34.	36.	38.	40.	42.	44.	46.	48.	50.	52.	
STA-FEET												
2 0.	.	.	.	.	.	.	X	.	.	.	.	BANK.
10.	.	.	.	.	X	.W	.	.	.	.	.	.
20.	.	.	X	.	.	.W	.	.	.	.	.	.
3 30.	X	.	.	.	.	.W	.	.	.	.	.	.
40.	X	.	.	.	.	.W	.	.	.	.	.	.
50.	X	.	.	.	.	.W	.	.	.	.	.	.
60.	X	.	.	.	.	.W	.	.	.	.	.	.
70.	X	.	.	.	.	.W	.	.	.	.	.	.
80.	X	.	.	.	.	.W	.	.	.	.	.	.
90.	X	.	.	.	.	.W	.	.	.	.	.	.
100.	X	.	.	.	.	.W	.	.	.	.	.	.
110.	X	.	.	.	.	.W	.	.	.	.	.	.
120.	X	.	.	.	.	.W	.	.	.	.	.	.
130.	X	.	.	.	.	.W	.	.	.	.	.	.
140.	X	.	.	.	.	.W	.	.	.	.	.	.
150.	X	.	.	.	.	.W	.	.	.	.	.	.
160.	X	.	.	.	.	.W	.	.	.	.	.	.
170.	X	.	.	.	.	.W	.	.	.	.	.	.
180.	X	.	.	.	.	.W	.	.	.	.	.	.
190.	X	.	.	.	.	.W	.	.	.	.	.	.
200.	X	.	.	.	.	.W	.	.	.	.	.	.
210.	X	.	.	.	.	.W	.	.	.	.	.	.
220.	X	.	.	.	.	.W	.	.	.	.	.	.
230.	X	.	.	.	.	.W	.	.	.	.	.	.
240.	X	.	.	.	.	.W	.	.	.	.	.	.
250.	X	.	.	.	.	.W	.	.	.	.	.	.
260.	X	.	.	.	.	.W	.	.	.	.	.	.
270.	X	.	.	.	.	.W	.	.	.	.	.	.
280.	X	.	.	.	.	.W	.	.	.	.	.	.
290.	X	.	.	.	.	.W	.	.	.	.	.	.
300.	X	.	.	.	.	.W	.	.	.	.	.	.
310.	X	.	.	.	.	.W	.	.	.	.	.	.
320.	X	.	.	.	.	.W	.	.	.	.	.	.
330.	X	.	.	.	.	.W	.	.	.	.	.	.
340.	X	.	.	.	.	.W	.	.	.	.	.	.
350.	X	.	.	.	.	.W	.	.	.	.	.	.
360.	X	.	.	.	.	.W	.	.	.	.	.	.
370.	X	.	.	.	.	.W	.	.	.	.	.	.
4 380.	X	.	.	.	.	.W	.	.	.	.	.	.
390.	.	.	X	.	.	.W	.	.	.	.	.	.
400.	.	.	.	.	X	.W	.	.	.	.	.	.
5 410.	.	.	.	.	.	.	X	.	.	.	.	BANK.

NRD= 0 ELLC= 9999999.00 ELTRD= 9999999.00

EL(I),STA(I)

44.00	0.00	32.05	30.00	32.05	380.00	44.00	410.00

CROSS SECTION 5.00
STREAM Stations 1,2,3,4,5, Tail
DISCHARGE= 1300.

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

```
ELEV   32.      34.      36.      38.      40.      42.      44.      46.      48.      50.      52.

   STA-FEET

 2  0. .       .        .        .        .        .        X        .        .        .        .      BANK.
   10. .       .        .        .        X        .W       .        .        .        .        .        .
   20. .       .        X        .        .        .W       .        .        .        .        .        .
 3 30. X       .        .        .        .        .W       .        .        .        .        .        .
   40. X       .        .        .        .        .W       .        .        .        .        .        .
   50. X       .        .        .        .        .W       .        .        .        .        .        .
   60. X       .        .        .        .        .W       .        .        .        .        .        .
   70. X       .        .        .        .        .W       .        .        .        .        .        .
   80. X       .        .        .        .        .W       .        .        .        .        .        .
   90. X       .        .        .        .        .W       .        .        .        .        .        .
  100. X       .        .        .        .        .W       .        .        .        .        .        .
  110. X       .        .        .        .        .W       .        .        .        .        .        .
  120. X       .        .        .        .        .W       .        .        .        .        .        .
  130. X       .        .        .        .        .W       .        .        .        .        .        .
  140. X       .        .        .        .        .W       .        .        .        .        .        .
  150. X       .        .        .        .        .W       .        .        .        .        .        .
  160. X       .        .        .        .        .W       .        .        .        .        .        .
  170. X       .        .        .        .        .W       .        .        .        .        .        .
  180. X       .        .        .        .        .W       .        .        .        .        .        .
  190. X       .        .        .        .        .W       .        .        .        .        .        .
  200. X       .        .        .        .        .W       .        .        .        .        .        .
  210. X       .        .        .        .        .W       .        .        .        .        .        .
  220. X       .        .        .        .        .W       .        .        .        .        .        .
  230. X       .        .        .        .        .W       .        .        .        .        .        .
  240. X       .        .        .        .        .W       .        .        .        .        .        .
  250. X       .        .        .        .        .W       .        .        .        .        .        .
  260. X       .        .        .        .        .W       .        .        .        .        .        .
  270. X       .        .        .        .        .W       .        .        .        .        .        .
  280. X       .        .        .        .        .W       .        .        .        .        .        .
  290. X       .        .        .        .        .W       .        .        .        .        .        .
  300. X       .        .        .        .        .W       .        .        .        .        .        .
  310. X       .        .        .        .        .W       .        .        .        .        .        .
  320. X       .        .        .        .        .W       .        .        .        .        .        .
  330. X       .        .        .        .        .W       .        .        .        .        .        .
  340. X       .        .        .        .        .W       .        .        .        .        .        .
  350. X       .        .        .        .        .W       .        .        .        .        .        .
  360. X       .        .        .        .        .W       .        .        .        .        .        .
  370. X       .        .        .        .        .W       .        .        .        .        .        .
 4 380. X      .        .        .        .        .W       .        .        .        .        .        .
  390. .       .        X        .        .        .W       .        .        .        .        .        .
  400. .       .        .        .        X        .W       .        .        .        .        .        .
 5 410. .       .        .        .        .        .        X        .        .        .        .      BANK.
```

NRD= 0 ELLC= 9999999.00 ELTRD= 9999999.00

EL(I),STA(I)

44.00	0.00	32.00	30.00	32.00	380.00	44.00	410.00

ROFILE FOR STREAM Stations 1,2,3,4,5, Tail

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   32.      34.      36.      38.      40.      42.      44.      46.      48.      50.
  SECNO  CUMDIS

  1.00     0. C       .        .        .        I   WE   .       L        .        .        .
  2.00     1. .       .        .        .        .    I  W.E      L        .        .        .
           2. .       .        .        .       .C    I  W.E      L        .        .        .
           3. .       .        .        .   C   .    I  W.E      L        .        .        .
           4. .       .        .       C.       .    I  W.E      L        .        .        .
           5. .       .       .C        .        .   I   W.E      L        .        .        .
           6. .       .   C    .        .        .   I   W.E      L        .        .        .
           7. .     C .        .        .        .   I   W.E      L        .        .        .
           8. . C     .        .        .        .   I   W.E      L        .        .        .
           9. C       .        .        .        .   I   W.E      L        .        .        .
          10. C       .        .        .        .   I   W.E      L        .        .        .
          11. C       .        .        .        .   I   W.E      L        .        .        .
          12. C       .        .        .        .  I    W.E      L        .        .        .
          13. C       .        .        .        .  I    W.E      L        .        .        .
          14. C       .        .        .        .  I    W.E      L        .        .        .
          15. C       .        .        .        .  I    W.E      L        .        .        .
          16. C       .        .        .        .  I     WE      L        .        .        .
          17. C       .        .        .        .  I     WE      L        .        .        .
          18. C       .        .        .        . I      WE      L        .        .        .
          19. C       .        .        .        . I      WE      L        .        .        .
          20. C       .        .        .        . I      WE      L        .        .        .
          21. C       .        .        .        . I      WE      L        .        .        .
          22. C       .        .        .        . I      WE      L        .        .        .
          23. C       .        .        .        . I      WE      L        .        .        .
          24. C       .        .        .        . I      WE      L        .        .        .
          25. C       .        .        .        .I       WE      L        .        .        .
          26. C       .        .        .        .I       WE      L        .        .        .
          27. C       .        .        .        .I       WE      L        .        .        .
          28. C       .        .        .        .I       WE      L        .        .        .
          29. C       .        .        .        .I       WE      L        .        .        .
          30. C       .        .        .        .I       WE      L        .        .        .
  3.00    31. C       .        .        .        I        WE      L        .        .        .
          32. C       .        .        .   I    .        WE      L        .        .        .
          33. C       .        .        I        .        WE      L        .        .        .
          34. C       .        .   I    .        .        WE      L        .        .        .
          35. C       .        I        .        .        WE      L        .        .        .
          36. C       .   I    .        .        .         .E     L        .        .        .
          37. C       I        .        .        .         .E     L        .        .        .
          38. C   I   .        .        .        .         .E     L        .        .        .
          39. I       .        .        .        .         .E     L        .        .        .
  4.00    40. I       .        .        .        .         .E     L        .        .        .
          41. I       .        .        .        .         .E     L        .        .        .
          42. I       .        .        .        .         .E     L        .        .        .
          43. I       .        .        .        .         .E     L        .        .        .
          44. I       .        .        .        .         .E     L        .        .        .
  5.00    45. I       .        .        .        .         .E     L        .        .        .
```

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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
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

Stations 1,2,3,4,5, Tail

SUMMARY PRINTOUT

SECNO	CWSEL	CRIWS	DEPTH	AREA	VCH	BW	ELMIN	K*CHSL	Q	TOPWID	QCHP	K*XNCH
1.000	41.00	0.00	1.00	357.50	3.64	0.01	40.00	0.00	1300.00	365.00	100.00	15.00
* 2.000	41.75	41.75	0.75	266.71	4.87	0.01	41.00	1000.00	1300.00	364.92	100.00	15.00
3.000	42.08	0.00	2.01	733.85	1.77	0.01	40.07	-30.00	1300.00	380.67	100.00	15.00
4.000	42.12	0.00	10.07	3781.03	0.34	0.01	32.05	-1000.00	1300.00	400.59	100.00	15.00
5.000	42.12	0.00	10.12	3800.13	0.34	0.01	32.00	-10.00	1300.00	400.63	100.00	15.00

Stations 1,2,3,4,5, Tail

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
1.000	0.00	0.00	0.00	40.00	1300.00	41.00	0.00	41.21	13.86	3.64	357.50	349.21
2.000	0.00	0.00	0.00	41.00	1300.00	41.75	41.75	42.12	36.78	4.87	266.71	214.35
3.000	31.00	0.00	0.00	40.07	1300.00	42.08	0.00	42.13	1.33	1.77	733.85	1125.62
4.000	8.02	0.00	0.00	32.05	1300.00	42.12	0.00	42.13	0.01	0.34	3781.03	16623.92
5.000	5.00	0.00	0.00	32.00	1300.00	42.12	0.00	42.13	0.01	0.34	3800.13	16762.03

Stations 1,2,3,4,5, Tail

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
1.000	1300.00	41.00	0.00	0.00	3.00	365.00	0.00
2.000	1300.00	41.75	0.00	0.75	0.00	364.92	0.00
3.000	1300.00	42.08	0.00	0.33	0.00	380.67	31.00
4.000	1300.00	42.12	0.00	0.05	0.00	400.59	8.02
5.000	1300.00	42.12	0.00	0.00	0.00	400.63	5.00

SUMMARY OF ERRORS AND SPECIAL NOTES

```
CAUTION  SECNO=    2.000  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    2.000  PROFILE= 1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    2.000  PROFILE= 1  20 TRIALS ATTEMPTED TO BALANCE WSEL
```

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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
**************************************************
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APPENDIX

Design Calculations North of the Arizona Canal

F. Myrtle Wash Culvert Design

AMWEST INC.
Consulting Engineers

RECEIVED
MAR 0 2 1987
H.N.T.B.

March 2, 1987

Arizona Department of Transportation
205 South 17th Avenue
Phoenix, AZ 85007

Attn: Mr. Art May

Re: Squaw Peak Extension (SPE)
Route Location Study (SR 510)
Myrtle Avenue Wash Crossing the SPE

Dear Mr. May:

This letter is in response to our meeting of February 25, 1987, with representatives of HNTB regarding the hydrology for Myrtle wash at the Squaw Peak Extension (SPE) alignment. Per our meeting discussions, we have revised our TR-20 model to reflect the time of concentration of 0.385 hours (23.1 minutes). We have computed a weighted curve number (CN) for the area, using City of Phoenix (COP) criteria, and with a modification to COP CN from 98 to 96 for hillside, greater than 10 percent slope, (Type D soil). This computation resulted in a revision to the TR-20 model weighted CN. The 100-year 24-hour and 25-, 50-, and 100-year 1-hour storm events were modeled. The 100-year 1-hour rainfall distribution produces a greater peak discharge than the 100-year 24-hour distribution.

In addition, a peak discharge was computed at the Arizona Canal, for comparison to the peak 100-year discharge of 2,300 cfs computed at this location by the Corps of Engineers.

Based on these calculations, we would recommend the use of 1,528, 1,301, and 1,061 cfs as the peak discharges for the 100-, 50-, and 25-year storm events on Myrtle Wash at 18th Street (SPE). We are enclosing a copy of the drainage area map, TR-20 input and output, and subarea Tc and CN calculations.

4120 North 20th Street, Phoenix, AZ 85016-6014 • (602) 957-3681

If you have any questions, please contact us.

Sincerely,

A-N WEST, INC.

Greg Schuelke

Greg A. Schuelke, P.E.
Project Manager

GAS/sal

enclosures

cc: Mr. Fred Pearson, Gruen Associates
Ms. Kathy Alberts, HNTB

HOWARD NEEDLES TAMMEN & BERGENDOFF

March 3, 1987

Mr. Art May
Arizona Department of Transportation
Urban Highway Section, Room 118E
205 South 17th Avenue
Phoenix, Arizona 85007

Re: Squaw Peak Parkway
Myrtle Wash Crossing
COP #P-856344
ST-850891
HNTB Project No. 11184-21-01

Dear Mr. May:

In response to our meeting, February 25, 1987, we have run the TR-20 program to analyze the peak flow for the Myrtle Wash drainage basin as defined by the Army Corps of Engineers in order to correlate our results with theirs. The drainage basin considered by the Corps included all areas of the Myrtle Wash drainage basin tributary to the Arizona Canal.

This calculation was made considering the entire basin as a whole, assuming a curve number of 98 over the entire area. The resulting peak flow generated for the 100-year, 1-hour duration storm was determined to be 2200 cfs. This value compares to the Corps value of 2300 cfs.

Based on these calculations, we feel that our analysis is consistent with that of the Corps of Engineers. Therefore, we recommend the use of 1326 cfs and 1168 cfs as the peak discharges for the 100 year and 50-year 1-hour storm events for the Myrtle Wash crossing at the Squaw Peak Parkway. These values were generated by analyzing the portion of the Myrtle Wash drainage basin tributary to the Squaw Peak Parkway crossing as a single basin with a curve number of 98. The input and output data for these calculations was sent to you with our transmittal of February 13, 1987.

Architects Engineers Planners Anchor Centre Two - Suite 400, 2207 East Camelback Road, Phoenix, Arizona 85016, 602 954-7420

Partners James F. Finn PE, Gerard F. Fox PE, Browning Crow PE, Charles T. Hennigan PE, Daniel J. Watkins PE, Daniel J. Spigai PE, John L. Cotton PE, Francis X. Hall PE, Robert S. Coma PE, Donald A. Dupies PE, William Love AIA, Robert D. Miller PE, James L. Tuttle, Jr. PE, Hugh E. Schaff PE, Cary C. Goodman AIA, Gordon H. Slaney, Jr. PE, Harvey K. Hammond, Jr. PE, Stephen G. Goddard PE, John W. Wight PE

Associates Daniel J. Appel PE, Robert W. Richards PE, Don R. Ort PE, Frederick H. Sterbenz PE, Robert B. Kollmar PE, Kendall T. Lincoln CPA, Jack P. Shedd PE, Roberts W. Smithem PE, Richard D. Beckman PE, Harry D. Bertossa PE, Ralph E. Robison PE, Cecil P. Counts PE, Stanley I. Mast PE, Robert W. Anzia PE, Walter Sharko PE, James O. Russell PE, Ross L. Jensen AIA, Frank T. Lamm PE, Alexander F. Silady PE, Ronald W. Aarons AIA, H. Jerome Butler PE, Blaise M. Carriere PE, Michael P. Ingardia PE, Bernard L. Prince PE, Stephen B. Quinn PE, Saul A. Jacobs PE, James A. Smith, Ronald F. Turner AIA, Ewing H. Miller FAIA, Douglas C. Myhre PE, Carl J. Mellea PE, Daniel F. Becker PE, Richard L. Farnan AIA, Paul L. Jorgensen AIA, Donald P. Keuth PE, Douglas E. Prescott PE

Offices Alexandria, VA, Atlanta, GA, Austin, TX, Baton Rouge, LA, Boston, MA, Casper, WY, Charleston, WV, Chicago, IL, Cleveland, OH, Dallas, TX, Denver, CO, Fairfield, NJ, Houston, TX, Indianapolis, IN, Kansas City, MO, Lexington, KY, Lexington, MA, Los Angeles, CA, Miami, FL, Milwaukee, WI, Minneapolis, MN

We have enclosed a copy of a drainage area map and the TR-20 input and output for our calculations at the Arizona Canal.

If you have any questions regarding this information, please contact this office.

Very truly yours,

HOWARD NEEDLES TAMMEN & BERGENDOFF

Terry C. Weber
Project Manager

TCW/TS/pa
DII132.18

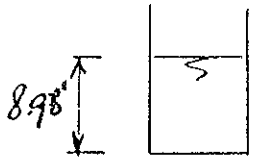
Enclosure

cc: G. Schuelke, PE - A-N West, Inc.
P. Johnson, PE - Squaw Peak Coordinator
T. Klimek - HNTB

HNTB HOWARD NEEDLES TAMMEN & BERGENDOFF	Made by RVM	Date 4-23-88	Job Number 11184-21-01
	Checked by [illegible]	Date 4/25/88	Sheet Number 1
For Myrtle Wash	Backchecked by	Date	

Critical Slope Calculations

Box - culvert $\quad n = 0.015$



$Q_{100} = 1528$ cfs :

$$d_c = \left(\frac{q^2}{g}\right)^{1/3} = \left(\frac{152.8^2}{32.2}\right)^{\frac{1}{3}} = 8.98' \checkmark$$

$$V_c = \frac{Q}{A} = \frac{1528}{8.98 \cdot 10} = 17.02 \text{ ft/sec.} \checkmark$$

$$R = \frac{A}{P} = \frac{89.8}{27.96} = 3.21' \checkmark$$

$$S_c = \left(\frac{n \cdot V_c}{1.49 \cdot R^{2/3}}\right)^2 = \left(\frac{0.015 \cdot 17.02}{1.49 \cdot 3.21^{2/3}}\right)^2 = \underline{0.0062 \text{ ft/ft}} \checkmark$$

$Q_{50} = 1333$ cfs : ✓

$$d_c = \left(\frac{q^2}{g}\right)^{\frac{1}{3}} = \left(\frac{133.3^2}{32.2}\right)^{\frac{1}{3}} = 8.20' \checkmark \qquad V_c = \frac{1333}{82} = 16.26 \text{ ft/sec} \checkmark$$

$$R = \frac{A}{P} = \frac{82}{26.4} = 3.11' \checkmark$$

$$S_c = \left(\frac{0.015 \cdot 16.26}{1.49 \cdot 3.11^{2/3}}\right)^2 = \underline{0.0059 \text{ ft/ft}} \checkmark$$

$Q_{10} = 1000$ cfs : ✓

$$d_c = \left(\frac{100^2}{32.2}\right)^{\frac{1}{3}} = 6.77' \checkmark \qquad V_c = \frac{1000}{67.7} = 14.77 \text{ ft/sec} \checkmark$$

$$R = \frac{A}{P} = \frac{67.7}{23.54} = 2.88' \checkmark$$

$$S_c = \left(\frac{0.015 \cdot 14.77}{1.49 \cdot 2.88^{2/3}}\right)^2 = \underline{0.0054 \text{ ft/ft}} \checkmark$$

101-1087-20M

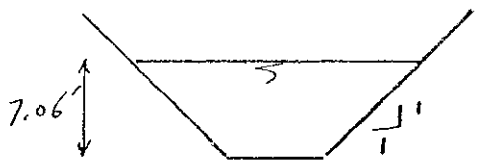
HNTB HOWARD NEEDLES TAMMEN & BERGENDOFF	Made by RMM	Date 4-25-88	Job Number 11184-21-01
	Checked by	Date 4/29/88	Sheet Number 2
For	Backchecked by	Date	

Channel section

$n = 0.018$ (Gunite)

$Q_{100} = 1528$ cfs

$d_c = 7.06'$ (see chart)



$$V_c = \frac{1528}{10 \times 7.06 + 7.06^2} = 12.69 \text{ ft/sec}$$

$$R = \frac{A}{P} = \frac{7.06^2 + 10 \times 7.06}{10' + 1.41 \times 7.06 \times 2} = 4.03'$$

$$S_c = \left(\frac{n \cdot V_c}{1.49 \cdot R^{2/3}}\right)^2 = \left(\frac{0.018 \times 12.69}{1.49 \times 4.03^{2/3}}\right)^2 = \underline{0.0036 \text{ ft/ft}}$$

$Q_{50} = 1333$ cfs $\quad d_c = 6.5'$ (see chart)

$$V_c = \frac{1333}{6.5 \times 10 + 6.5^2} = 12.42 \text{ ft/sec}$$

$$R = \frac{A}{P} = \frac{6.5 \times 10 + 6.5^2}{10 + 1.41 \times 6.5 \times 2} = 3.79'$$

$$S_c = \left(\frac{0.018 \times 12.42}{1.49 \times 3.79^{2/3}}\right)^2 = \underline{0.0038 \text{ ft/ft}}$$

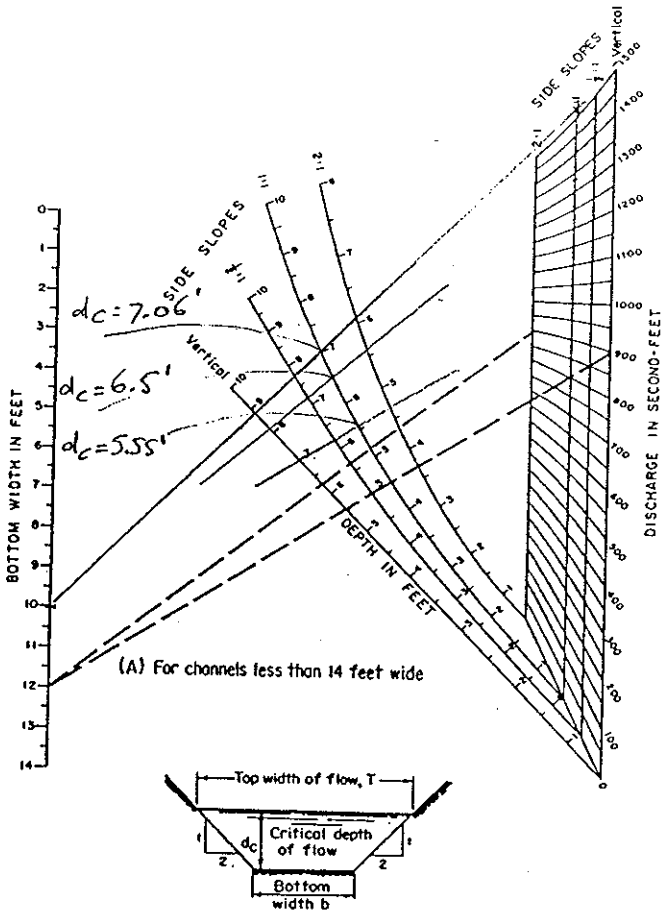
$Q_{10} = 1000$ cfs $\quad d_c = 5.6'$ (see chart)

$$V_c = \frac{1000}{5.6 \times 10 + 5.6^2} = 11.45 \text{ ft/sec}$$

$$R = \frac{10 \times 5.6 + 5.6^2}{10 + 1.41 \times 5.6 \times 2} = 3.39'$$

$$S_c = \left(\frac{0.018 \times 11.45}{1.49 \times 3.39^{2/3}}\right)^2 = \underline{0.0038 \text{ ft/ft}}$$

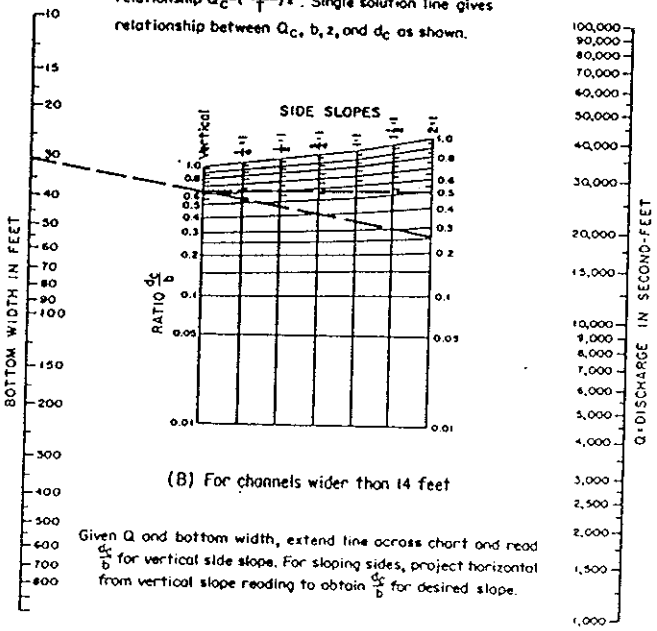
101-1087-20M



Example No. 1
Q_c = 900 cfs
Bottom width "b" = 12'

Side slope	Critical depth "d_c" (feet)
2:1	4.4
Vertical	5.6

Chart gives values of d_c for known values of Q_c in the relationship $Q_c = (\frac{A^3 g}{T})^{\frac{1}{2}}$. Single solution line gives relationship between Q_c, b, z, and d_c as shown.



Given Q and bottom width, extend line across chart and read $\frac{d_c}{b}$ for vertical side slope. For sloping sides, project horizontal from vertical slope reading to obtain $\frac{d_c}{b}$ for desired slope.

Example No 2
Q = 15,000 cfs
Bottom width "b" = 30'
Side slope = 2:1
Vertical "d_c" = .68b = 20'+
"d_c" for 2:1 = (0.5)(30) = 15'

Figure B–4. Critical depth in trapezoidal sections. 288–D–2825 After C. Freeman

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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
**************************************************
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```
T1      Analysis for the 10 year storm flow's given by AM-WEST
T2      April, 1988 Made by DFM
T3      Stations 0+25 to 18+75 along Myrtle Wash "Supercritical"

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

      0.       0.       0.       1. -1.000000     0.00      0.0    1000.  1308.000    0.000

J2  NPROF    IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IBW      CHNIM    ITRACE

    15.000    0.000    0.000    0.000    0.000    0.000   -1.000    0.000    0.000    15.000
```

```
  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 2

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS


*SECNO 1875.000
3720 CRITICAL DEPTH ASSUMED
  1875.00     2.26  1310.26  1310.26  1308.00  1311.11     0.85     0.00     0.00  1312.00
   1000.       0.    1000.       0.       0.     135.       0.       0.       0.   1314.00
    0.00     0.00     7.42     0.00    0.000    0.030    0.000    0.000  1308.00    23.08
 0.011143      0.       0.       0.        0       27        0     0.00    79.49   102.57


FLOW DISTRIBUTION FOR SECNO=   1875.00          CWSEL=   1310.26

STA=      23.     145.
  PER Q=    100.0
   AREA=    134.8
    VEL=      7.4

*SECNO 1815.000

3301 HV CHANGED MORE THAN HVINS

  1815.00     2.20  1308.20  1308.79     0.00  1310.11     1.91     1.00     0.00  1312.00
   1000.       0.    1000.       0.       0.      90.       0.       0.       0.   1310.00
    0.00     0.00    11.09     0.00    0.000    0.030    0.000    0.000  1306.00    45.59
 0.027616      60.      60.      60.        6       11        0     0.00    57.42   103.01


FLOW DISTRIBUTION FOR SECNO=   1815.00          CWSEL=   1308.20

STA=      46.     121.
  PER Q=    100.0
   AREA=     90.2
    VEL=     11.1

*SECNO 1765.000
  1765.00     2.70  1306.70  1307.35     0.00  1308.74     2.04     1.37     0.00  1310.00
   1000.       0.    1000.       0.       0.      87.       0.       0.       0.   1308.00
    0.00     0.00    11.46     0.00    0.000    0.030    0.000    0.000  1304.00    43.07
 0.027326      50.      50.      50.        6       14        0     0.00    52.21    95.28
```

```
   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


FLOW DISTRIBUTION FOR SECNO=   1765.00         CWSEL=   1306.70

STA=      43.     109.
  PER Q=    100.0
   AREA=     87.3
    VEL=     11.5

*SECNO 1720.000

3301 HV CHANGED MORE THAN HVINS

  1720.00     2.14  1304.14  1305.12     0.00  1307.26     3.12     1.48     0.00  1310.00
    1000.       0.    1000.       0.       0.      71.       0.       0.       0.  1306.00
     0.00     0.00    14.17     0.00    0.000    0.030    0.000    0.000  1302.00    60.31
 0.040345      45.      45.      45.        6        8        0     0.00    40.97   101.28


FLOW DISTRIBUTION FOR SECNO=   1720.00         CWSEL=   1304.14

STA=      60.     105.
  PER Q=    100.0
   AREA=     70.6
    VEL=     14.2

*SECNO 1625.000
  1625.00     3.08  1301.08  1302.03     0.00  1304.13     3.05     3.13     0.00  1304.00
    1000.       0.    1000.       0.       0.      71.       0.       0.       0.  1304.00
     0.01     0.00    14.01     0.00    0.000    0.030    0.000    0.000  1298.00    22.33
 0.027446      95.      95.      95.        6       14        0     0.00    30.81    53.14


FLOW DISTRIBUTION FOR SECNO=   1625.00         CWSEL=   1301.08

STA=      22.      60.
  PER Q=    100.0
   AREA=     71.4
    VEL=     14.0

*SECNO 1525.000
  1525.00     5.27  1299.27  1299.84     0.00  1302.01     2.74     2.12     0.00  1306.00
    1000.       0.    1000.       0.       0.      75.       0.       1.       0.  1302.00
     0.01     0.00    13.28     0.00    0.000    0.030    0.000    0.000  1294.00    23.37
 0.016852     100.     100.     100.        4       14        0     0.00    20.52    43.89
```

```
  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


FLOW DISTRIBUTION FOR SECNO=   1525.00         CWSEL=   1299.27

STA=      23.      52.
  PER Q=    100.0
   AREA=     75.3
    VEL=     13.3

*SECNO 1470.000

3301 HV CHANGED MORE THAN HVINS

  1470.00     2.07  1291.69  1293.87     0.00  1300.81     9.12     1.20     0.00  1299.60
    1000.       0.    1000.       0.       0.      41.       0.       1.       0.  1298.60
     0.01     0.00    24.23     0.00    0.000    0.015    0.000    0.000  1289.62    12.51
 0.029220      55.      55.      55.        4       15        0     0.00    19.98    32.49


FLOW DISTRIBUTION FOR SECNO=   1470.00         CWSEL=   1291.69

STA=      13.      33.
  PER Q=    100.0
   AREA=     41.3
    VEL=     24.2

*SECNO 1461.000

3301 HV CHANGED MORE THAN HVINS

  1461.00     2.04  1290.76  1293.04     0.00  1300.53     9.77     0.27     0.00  1298.70
    1000.       0.    1000.       0.       0.      40.       0.       1.       0.  1298.70
     0.01     0.00    25.08     0.00    0.000    0.015    0.000    0.000  1288.72    13.01
 0.031825       9.       9.       9.        6       17        0     0.00    19.49    32.50


FLOW DISTRIBUTION FOR SECNO=   1461.00         CWSEL=   1290.76

STA=      13.      33.
  PER Q=    100.0
   AREA=     39.9
    VEL=     25.1

*SECNO 1436.000
```

```
  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

  1436.00     2.04  1288.26  1290.76     0.00  1299.67    11.41     0.87     0.00  1296.20
    1000.       0.    1000.       0.       0.      37.       0.       1.       0.  1296.20
     0.01     0.00    27.11     0.00    0.000    0.015    0.000    0.000  1286.22    14.01
 0.038038      25.      25.      25.        7       17        0     0.00    18.13    32.14


FLOW DISTRIBUTION FOR SECNO=   1436.00         CWSEL=   1288.26

STA=      14.      32.
  PER Q=    100.0
   AREA=     36.9
    VEL=     27.1

*SECNO 1411.000

3301 HV CHANGED MORE THAN HVINS

  1411.00     2.07  1285.79  1288.50     0.00  1298.66    12.87     1.01     0.00  1293.70
    1000.       0.    1000.       0.       0.      35.       0.       1.       0.  1293.70
     0.01     0.00    28.78     0.00    0.000    0.015    0.000    0.000  1283.72    15.01
 0.042907      25.      25.      25.        8       17        0     0.00    16.77    31.78


FLOW DISTRIBUTION FOR SECNO=   1411.00         CWSEL=   1285.79

STA=      15.      32.
  PER Q=    100.0
   AREA=     34.7
    VEL=     28.8

*SECNO 1386.000

3301 HV CHANGED MORE THAN HVINS

  1386.00     2.15  1283.37  1286.28     0.00  1297.54    14.17     1.12     0.00  1291.20
    1000.       0.    1000.       0.       0.      33.       0.       1.       0.  1291.20
     0.01     0.00    30.21     0.00    0.000    0.015    0.000    0.000  1281.22    17.01
 0.046574      25.      25.      25.        8       17        0     0.00    15.41    32.42
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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   IDC      ICONT    CORAR    TOPWID     ENDST


FLOW DISTRIBUTION FOR SECNO=   1386.00         CWSEL=   1283.37

STA=      17.      32.
  PER Q=    100.0
   AREA=     33.1
    VEL=     30.2

*SECNO 1361.000

3301 HV CHANGED MORE THAN HVINS

  1361.00     2.26  1280.98  1284.10     0.00  1296.34    15.36     1.20     0.00  1288.70
    1000.       0.    1000.       0.       0.     32.       0.       1.       0.   1288.70
     0.01     0.00    31.45     0.00    0.000    0.015    0.000    0.000  1278.72    18.01
 0.049261      25.      25.      25.        8       17        0     0.00    14.06    32.07


FLOW DISTRIBUTION FOR SECNO=   1361.00         CWSEL=   1280.98

STA=      18.      32.
  PER Q=    100.0
   AREA=     31.8
    VEL=     31.5

*SECNO 1336.000

3301 HV CHANGED MORE THAN HVINS

  1336.00     2.42  1278.64  1281.98     0.00  1295.09    16.45     1.25     0.00  1286.20
    1000.       0.    1000.       0.       0.     31.       0.       1.       0.   1286.20
     0.01     0.00    32.55     0.00    0.000    0.015    0.000    0.000  1276.22    19.01
 0.051115      25.      25.      25.        8       17        0     0.00    12.70    31.71


FLOW DISTRIBUTION FOR SECNO=   1336.00         CWSEL=   1278.64

STA=      19.      32.
  PER Q=    100.0
   AREA=     30.7
    VEL=     32.5

*SECNO 1311.000
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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


3301 HV CHANGED MORE THAN HVINS

  1311.00     2.63  1276.35  1279.93     0.00  1293.79    17.45     1.29     0.00  1283.70
    1000.       0.    1000.       0.       0.      30.       0.       1.       0.  1283.70
     0.01     0.00    33.52     0.00    0.000    0.015    0.000    0.000  1273.72    20.01
 0.052387      25.      25.      25.        8       17        0     0.00    11.35    31.35


FLOW DISTRIBUTION FOR SECNO=   1311.00         CWSEL=   1276.35

STA=      20.      31.
  PER Q=    100.0
   AREA=     29.8
    VEL=     33.5

*SECNO 1286.000

3301 HV CHANGED MORE THAN HVINS

  1286.00     2.91  1274.13  1277.98     0.00  1292.47    18.34     1.32     0.00  1281.20
    1000.       0.    1000.       0.       0.      29.       0.       1.       0.  1281.20
     0.01     0.00    34.37     0.00    0.000    0.015    0.000    0.000  1271.22    21.01
 0.053353      25.      25.      25.        8       17        0     0.00     9.99    30.99


FLOW DISTRIBUTION FOR SECNO=   1286.00         CWSEL=   1274.13

STA=      21.      31.
  PER Q=    100.0
   AREA=     29.1
    VEL=     34.4

*SECNO 1261.000

3301 HV CHANGED MORE THAN HVINS

  1261.00     3.01  1273.98  1277.72     0.00  1291.20    17.22     1.27     0.00  1281.00
    1000.       0.    1000.       0.       0.      30.       0.       1.       0.  1281.00
     0.01     0.00    33.30     0.00    0.000    0.015    0.000    0.000  1270.97    21.56
 0.048792      25.      25.      25.        7       17        0     0.00     9.99    31.54
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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


FLOW DISTRIBUTION FOR SECNO=   1261.00         CWSEL=   1273.98

STA=      22.      32.
  PER Q=    100.0
   AREA=     30.0
    VEL=     33.3

*SECNO 1236.000

3301 HV CHANGED MORE THAN HVINS

  1236.00     3.10  1273.82  1277.47     0.00  1290.03    16.21     1.17     0.00  1280.70
    1000.       0.    1000.       0.       0.      31.       0.       1.       0.  1280.70
     0.01     0.00    32.31     0.00    0.000    0.015    0.000    0.000  1270.72    22.11
 0.044790      25.      25.      25.        7       17        0     0.00     9.99    32.09


FLOW DISTRIBUTION FOR SECNO=   1236.00         CWSEL=   1273.82

STA=      22.      32.
  PER Q=    100.0
   AREA=     31.0
    VEL=     32.3

*SECNO 1211.000

3301 HV CHANGED MORE THAN HVINS

  1211.00     3.19  1273.66  1277.22     0.00  1288.96    15.29     1.07     0.00  1280.50
    1000.       0.    1000.       0.       0.      32.       0.       1.       0.  1280.50
     0.01     0.00    31.38     0.00    0.000    0.015    0.000    0.000  1270.47    22.61
 0.041272      25.      25.      25.        6       17        0     0.00     9.99    32.59


FLOW DISTRIBUTION FOR SECNO=   1211.00         CWSEL=   1273.66

STA=      23.      33.
  PER Q=    100.0
   AREA=     31.9
    VEL=     31.4

*SECNO 1186.000
```

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

1186.00	3.29	1273.51	1276.98	0.00	1287.96	14.46	0.99	0.00	1280.20
1000.	0.	1000.	0.	0.	33.	0.	1.	0.	1280.20
0.01	0.00	30.51	0.00	0.000	0.015	0.000	0.000	1270.22	23.21
0.038139	25.	25.	25.	5	17	0	0.00	9.99	33.19

FLOW DISTRIBUTION FOR SECNO= 1186.00 CWSEL= 1273.51

STA= 23. 33.
PER Q= 100.0
AREA= 32.8
VEL= 30.5

*SECNO 1161.000

3301 HV CHANGED MORE THAN HVINS

1161.00	3.37	1273.34	1276.75	0.00	1287.05	13.70	0.92	0.00	1280.00
1000.	0.	1000.	0.	0.	34.	0.	1.	0.	1280.00
0.01	0.00	29.71	0.00	0.000	0.015	0.000	0.000	1269.97	23.77
0.035375	25.	25.	25.	4	14	0	0.00	9.99	33.75

FLOW DISTRIBUTION FOR SECNO= 1161.00 CWSEL= 1273.34

STA= 24. 34.
PER Q= 100.0
AREA= 33.7
VEL= 29.7

*SECNO 1136.000

3301 HV CHANGED MORE THAN HVINS

1136.00	3.45	1273.17	1276.50	0.00	1286.19	13.02	0.85	0.00	1279.70
1000.	0.	1000.	0.	0.	35.	0.	1.	0.	1279.70
0.01	0.00	28.96	0.00	0.000	0.015	0.000	0.000	1269.72	24.32
0.032954	25.	25.	25.	5	14	0	0.00	9.99	34.30

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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

FLOW DISTRIBUTION FOR SECNO=   1136.00         CWSEL=   1273.17

STA=      24.      34.
  PER Q=    100.0
   AREA=     34.5
    VEL=     29.0

*SECNO 1111.000

3301 HV CHANGED MORE THAN HVINS

  1111.00     3.55  1273.02  1276.24     0.00  1285.40    12.38     0.79     0.00  1279.50
    1000.       0.    1000.       0.       0.      35.       0.       1.       0.  1279.50
     0.01     0.00    28.23     0.00    0.000    0.015    0.000    0.000  1269.47    24.88
 0.030701      25.      25.      25.        6       14        0     0.00     9.99    34.86

FLOW DISTRIBUTION FOR SECNO=   1111.00         CWSEL=   1273.02

STA=      25.      35.
  PER Q=    100.0
   AREA=     35.4
    VEL=     28.2

*SECNO 1086.000

3301 HV CHANGED MORE THAN HVINS

  1086.00     3.63  1272.85  1275.99     0.00  1284.66    11.80     0.74     0.00  1279.20
    1000.       0.    1000.       0.       0.      36.       0.       1.       0.  1279.20
     0.01     0.00    27.57     0.00    0.000    0.015    0.000    0.000  1269.22    25.43
 0.028738      25.      25.      25.        7       14        0     0.00     9.99    35.41

FLOW DISTRIBUTION FOR SECNO=   1086.00         CWSEL=   1272.85

STA=      25.      35.
  PER Q=    100.0
   AREA=     36.3
    VEL=     27.6

*SECNO 1061.000
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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   IOC      ICONT    CORAR    TOPWID     ENDST


3301 HV CHANGED MORE THAN HVINS

  1061.00     3.72  1272.69  1275.73     0.00  1283.96    11.27     0.70     0.00  1279.00
    1000.       0.    1000.       0.       0.      37.       0.       1.       0.  1279.00
     0.01     0.00    26.94     0.00    0.000    0.015    0.000    0.000  1268.97    25.97
 0.026956      25.      25.      25.        7       14        0     0.00     9.99    35.95


FLOW DISTRIBUTION FOR SECNO=   1061.00         CWSEL=   1272.69

STA=      26.      36.
  PER Q=    100.0
   AREA=     37.1
    VEL=     26.9

*SECNO 1037.000
  1037.00     3.80  1272.53  1275.49     0.00  1283.33    10.80     0.63     0.00  1278.70
    1000.       0.    1000.       0.       0.      38.       0.       1.       0.  1278.70
     0.01     0.00    26.37     0.00    0.000    0.015    0.000    0.000  1268.73    26.51
 0.025422      24.      24.      24.        7       14        0     0.00     9.99    36.49


FLOW DISTRIBUTION FOR SECNO=   1037.00         CWSEL=   1272.53

STA=      27.      37.
  PER Q=    100.0
   AREA=     37.9
    VEL=     26.4

*SECNO 1027.000

3301 HV CHANGED MORE THAN HVINS

  1027.00     2.86  1271.55  1274.27     0.00  1283.01    11.46     0.32     0.00  1288.50
    1000.       0.    1000.       0.       0.      37.       0.       1.       0.  1288.00
     0.01     0.00    27.16     0.00    0.000    0.018    0.000    0.000  1268.69    39.95
 0.041992      10.      10.      10.        6       11        0     0.00    15.72    55.67


FLOW DISTRIBUTION FOR SECNO=   1027.00         CWSEL=   1271.55

STA=      40.      72.
  PER Q=    100.0
   AREA=     36.8
    VEL=     27.2
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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   IDC      ICONT    CORAR    TOPWID     ENDST


*SECNO 1017.000
 1017.00     2.91  1271.56  1274.23     0.00  1282.60    11.04     0.41     0.00  1288.50
   1000.       0.    1000.       0.       0.      37.       0.       1.       0.   1288.00
    0.01     0.00    26.67     0.00    0.000    0.018    0.000    0.000  1268.65    37.94
0.039858      10.      10.      10.        7       14        0     0.00    15.81    53.76


FLOW DISTRIBUTION FOR SECNO=   1017.00         CWSEL=   1271.56

STA=      38.      70.
  PER Q=    100.0
   AREA=     37.5
    VEL=     26.7

*SECNO 1007.000
 1007.00     2.95  1271.56  1274.19     0.00  1282.21    10.65     0.39     0.00  1288.50
   1000.       0.    1000.       0.       0.      38.       0.       1.       0.   1288.00
    0.01     0.00    26.19     0.00    0.000    0.018    0.000    0.000  1268.61    34.94
0.037849      10.      10.      10.        7       14        0     0.00    15.90    50.84


FLOW DISTRIBUTION FOR SECNO=   1007.00         CWSEL=   1271.56

STA=      35.      67.
  PER Q=    100.0
   AREA=     38.2
    VEL=     26.2

*SECNO 997.000
  997.00     3.00  1271.58  1274.16     0.00  1281.84    10.26     0.37     0.00  1288.50
   1000.       0.    1000.       0.       0.      39.       0.       1.       1.   1288.00
    0.01     0.00    25.71     0.00    0.000    0.018    0.000    0.000  1268.58    31.42
0.035824      10.      10.      10.        7       14        0     0.00    15.92    47.34


FLOW DISTRIBUTION FOR SECNO=    997.00         CWSEL=   1271.58

STA=      31.      63.
  PER Q=    100.0
   AREA=     38.9
    VEL=     25.7
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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 987.000
   987.00     3.04  1271.58  1274.11     0.00  1281.49     9.92     0.35     0.00  1288.50
    1000.       0.    1000.       0.       0.      40.       0.       1.       1.  1288.00
     0.01     0.00    25.27     0.00    0.000    0.018    0.000    0.000  1268.54    28.92
 0.034216      10.      10.      10.        7       14        0     0.00    16.07    45.00


FLOW DISTRIBUTION FOR SECNO=    987.00          CWSEL=   1271.58

STA=      29.      61.
  PER Q=    100.0
   AREA=     39.6
    VEL=     25.3

*SECNO 977.000
   977.00     3.08  1271.58  1274.07     0.00  1281.16     9.58     0.33     0.00  1288.50
    1000.       0.    1000.       0.       0.      40.       0.       1.       1.  1288.00
     0.01     0.00    24.83     0.00    0.000    0.018    0.000    0.000  1268.50    26.92
 0.032557      10.      10.      10.        6       14        0     0.00    16.16    43.08


FLOW DISTRIBUTION FOR SECNO=    977.00          CWSEL=   1271.58

STA=      27.      60.
  PER Q=    100.0
   AREA=     40.3
    VEL=     24.8

*SECNO 967.000
   967.00     3.12  1271.58  1274.02     0.00  1280.84     9.26     0.32     0.00  1288.50
    1000.       0.    1000.       0.       0.      41.       0.       1.       1.  1288.00
     0.01     0.00    24.42     0.00    0.000    0.018    0.000    0.000  1268.46    26.92
 0.031041      10.      10.      10.        6       14        0     0.00    16.24    43.16


FLOW DISTRIBUTION FOR SECNO=    967.00          CWSEL=   1271.58

STA=      27.      60.
  PER Q=    100.0
   AREA=     41.0
    VEL=     24.4
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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 957.000
   957.00     3.16  1271.58  1273.98     0.00  1280.54     8.96     0.30     0.00  1288.50
    1000.       0.    1000.       0.       0.      42.       0.       1.       1.  1288.00
     0.01     0.00    24.02     0.00    0.000    0.018    0.000    0.000  1268.42    26.92
 0.029614      10.      10.      10.        6       14        0     0.00    16.33    43.24


FLOW DISTRIBUTION FOR SECNO=    957.00          CWSEL=   1271.58

STA=      27.      60.
  PER Q=    100.0
   AREA=     41.6
    VEL=     24.0

*SECNO 947.000
   947.00     3.21  1271.59  1273.94     0.00  1280.25     8.66     0.29     0.00  1288.50
    1000.       0.    1000.       0.       0.      42.       0.       1.       1.  1288.00
     0.01     0.00    23.62     0.00    0.000    0.018    0.000    0.000  1268.38    26.91
 0.028263      10.      10.      10.        6       14        0     0.00    16.41    43.33


FLOW DISTRIBUTION FOR SECNO=    947.00          CWSEL=   1271.59

STA=      27.      60.
  PER Q=    100.0
   AREA=     42.3
    VEL=     23.6

*SECNO 937.000
   937.00     3.24  1271.59  1273.91     0.00  1279.97     8.38     0.28     0.00  1288.50
    1000.       0.    1000.       0.       0.      43.       0.       1.       1.  1288.00
     0.01     0.00    23.23     0.00    0.000    0.018    0.000    0.000  1268.35    26.90
 0.026970      10.      10.      10.        5       14        0     0.00    16.50    43.40


FLOW DISTRIBUTION FOR SECNO=    937.00          CWSEL=   1271.59

STA=      27.      60.
  PER Q=    100.0
   AREA=     43.0
    VEL=     23.2
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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


*SECNO 925.000
   925.00      3.30  1271.60  1273.86      0.00  1279.66      8.06      0.31      0.00  1283.00
    1000.        0.    1000.       0.        0.      44.        0.        1.        1.  1283.30
     0.01      0.00     22.78     0.00     0.000     0.018     0.000     0.000   1268.30    21.40
 0.025519       12.       12.       12.         6        14         0      0.00     16.60    38.00


FLOW DISTRIBUTION FOR SECNO=    925.00          CWSEL=   1271.60

STA=      21.      50.
  PER Q=    100.0
   AREA=     43.9
    VEL=     22.8

*SECNO 855.000

3301 HV CHANGED MORE THAN HVINS

   855.00      3.56  1271.55  1273.53      0.00  1278.12      6.56      1.54      0.00  1282.60
    1000.        0.    1000.       0.        0.      49.        0.        1.        1.  1282.70
     0.01      0.00     20.56     0.00     0.000     0.018     0.000     0.000   1267.99    23.62
 0.019224       70.       70.       70.         7        14         0      0.00     17.31    40.93


FLOW DISTRIBUTION FOR SECNO=    855.00          CWSEL=   1271.55

STA=      24.      52.
  PER Q=    100.0
   AREA=     48.6
    VEL=     20.6

*SECNO 800.000

3301 HV CHANGED MORE THAN HVINS

   800.00      3.84  1271.66  1273.38      0.00  1277.19      5.53      0.93      0.00  1282.60
    1000.        0.    1000.       0.        0.      53.        0.        1.        1.  1281.80
     0.02      0.00     18.86     0.00     0.000     0.018     0.000     0.000   1267.82    22.95
 0.015034       55.       55.       55.         6        14         0      0.00     17.67    40.61


FLOW DISTRIBUTION FOR SECNO=    800.00          CWSEL=   1271.66

STA=      23.      51.
  PER Q=    100.0
   AREA=     53.0
    VEL=     18.9
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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 755.000

3301 HV CHANGED MORE THAN HVINS

   755.00     3.99  1271.64  1273.21     0.00  1276.56     4.92     0.62     0.00  1281.70
    1000.       0.    1000.       0.       0.      56.       0.       1.       1.  1281.10
     0.02     0.00    17.79     0.00    0.000    0.018    0.000    0.000  1267.65    23.43
 0.012819      45.      45.      45.        5       11        0     0.00    18.12    41.55


FLOW DISTRIBUTION FOR SECNO=    755.00         CWSEL=   1271.64

STA=      23.      51.
  PER Q=    100.0
   AREA=     56.2
    VEL=     17.8

*SECNO 667.000

3301 HV CHANGED MORE THAN HVINS

   667.00     3.90  1271.21  1272.57     0.00  1275.49     4.28     1.07     0.00  1280.00
    1000.       0.    1000.       0.       0.      60.       0.       1.       1.  1280.00
     0.02     0.00    16.61     0.00    0.000    0.018    0.000    0.000  1267.31    33.72
 0.011545      88.      88.      88.        5       11        0     0.00    20.88    54.59


FLOW DISTRIBUTION FOR SECNO=    667.00         CWSEL=   1271.21

STA=      34.      63.
  PER Q=    100.0
   AREA=     60.2
    VEL=     16.6

*SECNO 600.000

3301 HV CHANGED MORE THAN HVINS

   600.00     4.82  1271.88  1272.63     0.00  1274.92     3.04     0.57     0.00  1277.60
    1000.       0.    1000.       0.       0.      72.       0.       2.       1.  1277.80
     0.02     0.00    13.98     0.00    0.000    0.018    0.000    0.000  1267.06    51.76
 0.006562      67.      67.      67.        3       11        0     0.00    19.68    71.44
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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


FLOW DISTRIBUTION FOR SECNO=    600.00         CWSEL=   1271.88

STA=      52.      77.
  PER Q=    100.0
   AREA=     71.5
    VEL=     14.0

*SECNO 470.000

3301 HV CHANGED MORE THAN HVINS

   470.00     2.21  1267.21  1268.60     0.00  1272.77     5.56     2.15     0.00  1270.00
    1000.       0.    1000.       0.       0.      53.       0.       2.       1.  1270.00
     0.02     0.00    18.93     0.00    0.000    0.030    0.000    0.000  1265.00    28.75
 0.096179     130.     130.     130.        7       19        0     0.00    37.93    66.67


FLOW DISTRIBUTION FOR SECNO=    470.00         CWSEL=   1267.21

STA=      29.      75.
  PER Q=    100.0
   AREA=     52.8
    VEL=     18.9

*SECNO 430.000

3301 HV CHANGED MORE THAN HVINS

   430.00     1.30  1265.30  1266.26     0.00  1268.76     3.45     4.02     0.00  1270.00
    1000.       0.    1000.       0.       0.      67.       0.       2.       1.  1270.00
     0.02     0.00    14.91     0.00    0.000    0.030    0.000    0.000  1264.00    21.38
 0.068156      50.      50.      50.        6        8        0     0.00    53.25    74.62


FLOW DISTRIBUTION FOR SECNO=    430.00         CWSEL=   1265.30

STA=      21.      90.
  PER Q=    100.0
   AREA=     67.1
    VEL=     14.9

*SECNO 325.000
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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


3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
   325.00     3.96  1266.96  1266.96     0.00  1268.68     1.72     2.23     1.50  1268.00
    1000.       0.    1000.       0.       0.      95.       0.       2.       1.  1269.00
     0.02     0.00    10.53     0.00    0.000    0.030    0.000    0.000  1263.00    11.04
 0.010246     105.     105.     105.       20       20        0     0.00    27.93    38.96


FLOW DISTRIBUTION FOR SECNO=    325.00          CWSEL=   1266.96

STA=      11.      70.
  PER Q=    100.0
   AREA=     95.0
    VEL=     10.5

*SECNO 225.000
   225.00     3.70  1265.70  1265.93     0.00  1267.57     1.87     1.11     0.00  1266.00
    1000.       0.    1000.       0.       0.      91.       0.       2.       1.  1267.00
     0.03     0.00    10.98     0.00    0.000    0.030    0.000    0.000  1262.00    10.37
 0.012085     100.     100.     100.        3        7        0     0.00    29.25    39.63


FLOW DISTRIBUTION FOR SECNO=    225.00          CWSEL=   1265.70

STA=      10.      70.
  PER Q=    100.0
   AREA=     91.1
    VEL=     11.0

*SECNO 125.000
   125.00     2.05  1263.05  1263.66     0.00  1265.10     2.05     2.48     0.00  1264.00
    1000.       0.    1000.       0.       0.      87.       0.       2.       1.  1264.00
     0.03     0.00    11.49     0.00    0.000    0.030    0.000    0.000  1261.00    17.16
 0.076705     100.     100.     100.        6       16        0     0.00   113.03   130.19


FLOW DISTRIBUTION FOR SECNO=    125.00          CWSEL=   1263.05

STA=      17.     208.
  PER Q=    100.0
   AREA=     87.0
    VEL=     11.5
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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 25.000
3280 CROSS SECTION     25.00 EXTENDED      0.25 FEET


3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
    25.00     2.25  1262.25  1262.25     0.00  1262.99     0.74     2.45     2.11  1262.00
    1000.       0.    1000.       0.       0.     145.       0.       3.       1.  1262.00
     0.03     0.00     6.90     0.00    0.000    0.030    0.000    0.000  1260.00    10.00
 0.011898     100.     100.     100.       20        8        0     0.00   100.00   110.00


FLOW DISTRIBUTION FOR SECNO=     25.00          CWSEL=   1262.25

STA=      10.     110.
  PER Q=    100.0
   AREA=    145.0
    VEL=      6.9
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PROFILE FOR STREAM Stations 0+25 to 18+75 a

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  1260.    1270.    1280.    1290.    1300.    1310.    1320.    1330.    1340.    1350.
   SECNO   CUMDIS

 1875.00     0.  .        .        .        .        .      I WEL R  .        .        .        .        .
             5.  .        .        .        .        .      I WEL R  .        .        .        .        .
            10.  .        .        .        .        .      I WELR   .        .        .        .        .
            15.  .        .        .        .        .      I WELR   .        .        .        .        .
            20.  .        .        .        .        .     I  WELR   .        .        .        .        .
            25.  .        .        .        .        .     I WCEL    .        .        .        .        .
            30.  .        .        .        .        .     I WCEL    .        .        .        .        .
            35.  .        .        .        .        .     I W.EL    .        .        .        .        .
            40.  .        .        .        .        .     I WERL    .        .        .        .        .
            45.  .        .        .        .        .     I WERL    .        .        .        .        .
            50.  .        .        .        .        .    I  WERL    .        .        .        .        .
            55.  .        .        .        .        .    I WCE L    .        .        .        .        .
 1815.00    60.  .        .        .        .        .    I WCE L    .        .        .        .        .
            65.  .        .        .        .        .    I WCE L    .        .        .        .        .
            70.  .        .        .        .        .    I WCE L    .        .        .        .        .
            75.  .        .        .        .        .   I  WREL     .        .        .        .        .
            80.  .        .        .        .        .   I  WREL     .        .        .        .        .
            85.  .        .        .        .        .   I WCE.L     .        .        .        .        .
            90.  .        .        .        .        .   I WCE.L     .        .        .        .        .
            95.  .        .        .        .        .   I WCE.L     .        .        .        .        .
           100.  .        .        .        .        .  I  WCEL      .        .        .        .        .
           105.  .        .        .        .        .  I  WREL      .        .        .        .        .
 1765.00   110.  .        .        .        .        .  I  WREL      .        .        .        .        .
           115.  .        .        .        .        .  I WCREL      .        .        .        .        .
           120.  .        .        .        .        .  I WCE L      .        .        .        .        .
           125.  .        .        .        .        . I  WCE L      .        .        .        .        .
           130.  .        .        .        .        . I  WRE L      .        .        .        .        .
           135.  .        .        .        .        . I WCRE L      .        .        .        .        .
           140.  .        .        .        .        . I WCRE L      .        .        .        .        .
           145.  .        .        .        .        . I  WC E L     .        .        .        .        .
           150.  .        .        .        .        . I WCRE  L     .        .        .        .        .
 1720.00   155.  .        .        .        .        . I WCRE  L     .        .        .        .        .
           160.  .        .        .        .        . I WCRE  L     .        .        .        .        .
           165.  .        .        .        .        . I WCRE L.     .        .        .        .        .
           170.  .        .        .        .        .I  WCRE L.     .        .        .        .        .
           175.  .        .        .        .        .I WC RE L.     .        .        .        .        .
           180.  .        .        .        .        .I WCRE L .     .        .        .        .        .
           185.  .        .        .        .        .I WCRE L .     .        .        .        .        .
           190.  .        .        .        .        .I WCRE L .     .        .        .        .        .
           195.  .        .        .        .        I  WCREL  .     .        .        .        .        .
           200.  .        .        .        .        I  WCREL  .     .        .        .        .        .
           205.  .        .        .        .        I  W REL  .     .        .        .        .        .
           210.  .        .        .        .        I WC E L  .     .        .        .        .        .
           215.  .        .        .        .       I. WC EL   .     .        .        .        .        .
           220.  .        .        .        .       I. WC EL   .     .        .        .        .        .
           225.  .        .        .        .       I. WC EL   .     .        .        .        .        .
           230.  .        .        .        .       I. WCRE    .     .        .        .        .        .
           235.  .        .        .        .       I. WCRE    .     .        .        .        .        .
           240.  .        .        .        .      I .WC EL    .     .        .        .        .        .
           245.  .        .        .        .      I .WC E     .     .        .        .        .        .
 1625.00   250.  .        .        .        .      I .WC E     .     .        .        .        .        .
           255.  .        .        .        .      I .WC E     .     .        .        .        .        .
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         260.  .         .         .         .       I .WC E    .         .         .         .         .         .
         265.  .         .         .         .      I  .WC E    .         .         .         .         .         .
         270.  .         .         .         .      I  .WC E    .         .         .         .         .         .
         275.  .         .         .         .      I  .W  EL   .         .         .         .         .         .
         280.  .         .         .         .      I  .W E L   .         .         .         .         .         .
         285.  .         .         .         .      I  WC E L   .         .         .         .         .         .
         290.  .         .         .         .     I   WC E L   .         .         .         .         .         .
         295.  .         .         .         .     I   WC E L   .         .         .         .         .         .
         300.  .         .         .         .     I   WC E L   .         .         .         .         .         .
         305.  .         .         .         .     I   WC E L   .         .         .         .         .         .
         310.  .         .         .         .     I   WC E L   .         .         .         .         .         .
         315.  .         .         .         .    I    WC E L   .         .         .         .         .         .
         320.  .         .         .         .    I    W  E L   .         .         .         .         .         .
         325.  .         .         .         .    I    W  E  L  .         .         .         .         .         .
         330.  .         .         .         .    I    W E  L   .         .         .         .         .         .
         335.  .         .         .         .    I    W E  L   .         .         .         .         .         .
         340.  .         .         .         .   I    WC E  L   .         .         .         .         .         .
         345.  .         .         .         .   I    WC E  L   .         .         .         .         .         .
1525.00  350.  .         .         .         .   I    WC E  L   .         .         .         .         .         .
         355.  .         .         .         .   I    W. E  L   .         .         .         .         .         .
         360.  .         .         .         .  I    WC. E  L   .         .         .         .         .         .
         365.  .         .         .         .  I   WC .RE L    .         .         .         .         .         .
         370.  .         .         .         . I    WC .RE L    .         .         .         .         .         .
         375.  .         .         .         . I   WC  .E L     .         .         .         .         .         .
         380.  .         .         .         . I  W C  .E L     .         .         .         .         .         .
         385.  .         .         .         .I  W C   REL      .         .         .         .         .         .
         390.  .         .         .         .I  WC    RE       .         .         .         .         .         .
         395.  .         .         .         I  W C    RE       .         .         .         .         .         .
         400.  .         .         .         I W C     LE       .         .         .         .         .         .
1470.00  405.  .         .         .         I W C     LE       .         .         .         .         .         .
         410.  .         .         .        I.W C     L.E       .         .         .         .         .         .
1461.00  415.  .         .         .        I.W C     L.E       .         .         .         .         .         .
         420.  .         .         .       I W  C    L E        .         .         .         .         .         .
         425.  .         .         .       I W C     L E        .         .         .         .         .         .
         430.  .         .         .      I W. C    L  E        .         .         .         .         .         .
         435.  .         .         .      I W.C     L  E        .         .         .         .         .         .
1436.00  440.  .         .         .     I W .C    L   E        .         .         .         .         .         .
         445.  .         .         .     I W C     L  E.        .         .         .         .         .         .
         450.  .         .         .    I W  C    L   E.        .         .         .         .         .         .
         455.  .         .         .    I W C.    L   E.        .         .         .         .         .         .
         460.  .         .         .   I W  C.   L    E.        .         .         .         .         .         .
1411.00  465.  .         .         .   I W  C.   L    E.        .         .         .         .         .         .
         470.  .         .         . I W  C . L    E .         .         .         .         .         .         .
         475.  .         .         . I W  C . L    E .         .         .         .         .         .         .
         480.  .         .         . I W  C  . L   E .         .         .         .         .         .         .
         485.  .         .         . I W  C  . L   E .         .         .         .         .         .         .
1386.00  490.  .         .         .I W  C   .L     E .         .         .         .         .         .         .
         495.  .         .         .I W  C   .L    E  .         .         .         .         .         .         .
         500.  .         .         I W  C    L     E  .         .         .         .         .         .         .
         505.  .         .         I W  C    L     E  .         .         .         .         .         .         .
         510.  .         .        I.W   C   L.     E  .         .         .         .         .         .         .
1361.00  515.  .         .        I.W  C    L.    E   .         .         .         .         .         .         .
         520.  .         .       I .W  C   L .    E   .         .         .         .         .         .         .
         525.  .         .       I W  C    L .    E   .         .         .         .         .         .         .
         530.  .         .      I  W  C   L  .    E   .         .         .         .         .         .         .
         535.  .         .      I W. C    L  .   E    .         .         .         .         .         .         .
1336.00  540.  .         .     I  W. C   L  .   E    .         .         .         .         .         .         .
         545.  .         .     I W . C   L  .   E    .         .         .         .         .         .         .
         550.  .         .    I  W .C   L   .   E    .         .         .         .         .         .         .
         555.  .         .    I W  .C   L   .  E     .         .         .         .         .         .         .
         560.  .         .   I  W  C   L    .  E     .         .         .         .         .         .         .
1311.00  565.  .         .   I W   C   L    .  E     .         .         .         .         .         .         .
         570.  .         . I  W   C  L     .  E     .         .         .         .         .         .         .
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          575.  .        . I W    C.  L      . E      .         .         .         .         .         .         .
          580.  .        . I  W    C. L      .  E     .         .         .         .         .         .         .
          585.  .        . I  W   C . L      .  E     .         .         .         .         .         .         .
 1286.00  590.  .        .I  W    C .L       . E      .         .         .         .         .         .         .
          595.  .        .I  W    C .L       . E      .         .         .         .         .         .         .
          600.  .        .I  W    C .L       . E      .         .         .         .         .         .         .
          605.  .        .I  W    C .L       . E      .         .         .         .         .         .         .
          610.  .        .I  W    C .L       .E       .         .         .         .         .         .         .
 1261.00  615.  .        .I  W    C .L       .E       .         .         .         .         .         .         .
          620.  .        .I  W    C .L       .E       .         .         .         .         .         .         .
          625.  .        .I  W    C .L       .E       .         .         .         .         .         .         .
          630.  .        .I  W    C .L       E        .         .         .         .         .         .         .
          635.  .        .I  W    C .L       E        .         .         .         .         .         .         .
 1236.00  640.  .        .I  W  C  .L        E        .         .         .         .         .         .         .
          645.  .        .I  W  C  .L        E        .         .         .         .         .         .         .
          650.  .        .I  W  C  .L        E        .         .         .         .         .         .         .
          655.  .        .I  W  C  .L      E.         .         .         .         .         .         .         .
          660.  .        .I  W  C  .L      E.         .         .         .         .         .         .         .
 1211.00  665.  .        I   W  C  .L      E.         .         .         .         .         .         .         .
          670.  .        I   W  C L        E.         .         .         .         .         .         .         .
          675.  .        I   W  C L        E.         .         .         .         .         .         .         .
          680.  .        I   W  C L       E .         .         .         .         .         .         .         .
          685.  .        I   W  C L       E .         .         .         .         .         .         .         .
 1186.00  690.  .        I   W  C L       E .         .         .         .         .         .         .         .
          695.  .        I W    C L       E .         .         .         .         .         .         .         .
          700.  .        I W    C L       E .         .         .         .         .         .         .         .
          705.  .        I W    C L      E  .         .         .         .         .         .         .         .
          710.  .        I W    C L      E  .         .         .         .         .         .         .         .
 1161.00  715.  .        I W    C L      E  .         .         .         .         .         .         .         .
          720.  .        I W    C L      E  .         .         .         .         .         .         .         .
          725.  .        I W    C L      E  .         .         .         .         .         .         .         .
          730.  .        I W    C L      E  .         .         .         .         .         .         .         .
          735.  .        I W    C L     E   .         .         .         .         .         .         .         .
 1136.00  740.  .        I W    C L     E   .         .         .         .         .         .         .         .
          745.  .        I W  C   L     E   .         .         .         .         .         .         .         .
          750.  .        I W  C   L     E   .         .         .         .         .         .         .         .
          755.  .        I W  C   L     E   .         .         .         .         .         .         .         .
          760.  .        I W  C   L     E   .         .         .         .         .         .         .         .
 1111.00  765.  .       I. W  C   L    E    .         .         .         .         .         .         .         .
          770.  .       I. W  C  L.    E    .         .         .         .         .         .         .         .
          775.  .       I. W  C  L.    E    .         .         .         .         .         .         .         .
          780.  .       I. W  C  L.    E    .         .         .         .         .         .         .         .
          785.  .       I. W  C  L.    E    .         .         .         .         .         .         .         .
 1086.00  790.  .       I. W  C  L.    E    .         .         .         .         .         .         .         .
          795.  .       I. W  C  L.    E    .         .         .         .         .         .         .         .
          800.  .       I. W  C  L.   E     .         .         .         .         .         .         .         .
          805.  .       I. W  C  L.   E     .         .         .         .         .         .         .         .
          810.  .       I. W  C  L.   E     .         .         .         .         .         .         .         .
 1061.00  815.  .       I. W  C  L.   E     .         .         .         .         .         .         .         .
          820.  .       I. W  C  L.   E     .         .         .         .         .         .         .         .
          825.  .       I. W  C  L.   E     .         .         .         .         .         .         .         .
          830.  .       I. W  C  L.   E     .         .         .         .         .         .         .         .
          835.  .       I. W  C  L.  E      .         .         .         .         .         .         .         .
 1037.00  840.  .       I. W C   L.  E      .         .         .         .         .         .         .         .
          845.  .       I. W  C    . EL     .         .         .         .         .         .         .         .
 1027.00  850.  .       I. W C     .  E    RL.        .         .         .         .         .         .         .
          855.  .       I. W C     .  E    RL.        .         .         .         .         .         .         .
 1017.00  860.  .       I. W C     .  E    RL.        .         .         .         .         .         .         .
          865.  .       I. W C     . E     RL.        .         .         .         .         .         .         .
 1007.00  870.  .       I. W C     . E     RL.        .         .         .         .         .         .         .
          875.  .       I. W C     . E     RL.        .         .         .         .         .         .         .
  997.00  880.  .       I. W C     . E     RL.        .         .         .         .         .         .         .
          885.  .       I. W C     . E     RL.        .         .         .         .         .         .         .
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987.00	890.	.		I.	W	C		.E		RL.		.	.	.	.	.	.
	895.	.		I.	W	C		.E		RL.		.	.	.	.	.	.
977.00	900.	.		I.	W	C		.E		RL.		.	.	.	.	.	.
	905.	.		I .	W	C		.E		RL.		.	.	.	.	.	.
967.00	910.	.		I .	W	C		.E		RL.		.	.	.	.	.	.
	915.	.		I .	W	C		.E		RL.		.	.	.	.	.	.
957.00	920.	.		I .	W	C		.E		RL.		.	.	.	.	.	.
	925.	.		I .	W	C		E		RL.		.	.	.	.	.	.
947.00	930.	.		I .	W	C		E		RL.		.	.	.	.	.	.
	935.	.		I .	W	C		E		RL.		.	.	.	.	.	.
937.00	940.	.		I .	W	C		E		RL.		.	.	.	.	.	.
	945.	.		I .	W	C		E		L	.	.	.	.	.	.	.
925.00	950.	.		I .	W	C		E	L		.	.	.	.	.	.	.
	955.	.		I .	W	C		E	L		.	.	.	.	.	.	.
	960.	.		I .	W	C		E.	L		.	.	.	.	.	.	.
	965.	.		I .	W	C		E.	L		.	.	.	.	.	.	.
	970.	.		I .	W	C		E.	L		.	.	.	.	.	.	.
	975.	.		I .	W	C		E.	L		.	.	.	.	.	.	.
	980.	.		I .	W	C		E.	L		.	.	.	.	.	.	.
	985.	.		I .	W	C		E.	L		.	.	.	.	.	.	.
	990.	.		I .	W	C		E.	L		.	.	.	.	.	.	.
	995.	.		1 .	W	C		E.	L		.	.	.	.	.	.	.
	1000.	.		I .	W	C		E.	L		.	.	.	.	.	.	.
	1005.	.		I .	W	C		E .	L		.	.	.	.	.	.	.
	1010.	.		I .	W	C		E .	L		.	.	.	.	.	.	.
	1015.	.		I .	W	C		E .	L		.	.	.	.	.	.	.
855.00	1020.	.		I .	W	C		E .	L		.	.	.	.	.	.	.
	1025.	.		I .	W	C		E .	L		.	.	.	.	.	.	.
	1030.	.		I .	W	C		E .	ML		.	.	.	.	.	.	.
	1035.	.		I .	WC			E .	RL		.	.	.	.	.	.	.
	1040.	.		I .	WC			E .	RL		.	.	.	.	.	.	.
	1045.	.		I .	WC			E .	RL		.	.	.	.	.	.	.
	1050.	.		I .	WC			E .	RL		.	.	.	.	.	.	.
	1055.	.		I .	WC			E .	RL		.	.	.	.	.	.	.
	1060.	.		I .	WC		E	.	RL		.	.	.	.	.	.	.
	1065.	.		I .	WC		E	.	RL		.	.	.	.	.	.	.
	1070.	.		I .	WC		E	.	RL		.	.	.	.	.	.	.
800.00	1075.	.		I .	WC		E	.	RL		.	.	.	.	.	.	.
	1080.	.		I .	WC		E	.	RL		.	.	.	.	.	.	.
	1085.	.		I .	WC		E	.	L		.	.	.	.	.	.	.
	1090.	.		I .	WC		E	.	L		.	.	.	.	.	.	.
	1095.	.		I .	WC		E	.	RL		.	.	.	.	.	.	.
	1100.	.		I .	WC		E	.	RL		.	.	.	.	.	.	.
	1105.	.		I .	WC		E	.	RL		.	.	.	.	.	.	.
	1110.	.		I .	WC		E	.	RL		.	.	.	.	.	.	.
	1115.	.		I .	WC		E	.	RL		.	.	.	.	.	.	.
755.00	1120.	.		I .	WC		E	.	RL		.	.	.	.	.	.	.
	1125.	.		I .	WC	E		.	RL		.	.	.	.	.	.	.
	1130.	.		I .	WC	E		.	RL		.	.	.	.	.	.	.
	1135.	.		I .	WC	E		.	L		.	.	.	.	.	.	.
	1140.	.		I .	WC	E		.	L		.	.	.	.	.	.	.
	1145.	.		I .	WC	E		.	L		.	.	.	.	.	.	.
	1150.	.		I .	WC	E		.	L		.	.	.	.	.	.	.
	1155.	.		I .	W	C	E	.	L		.	.	.	.	.	.	.
	1160.	.	I	.	W	C	E	.	L		.	.	.	.	.	.	.
	1165.	.	I	.	W	C	E	.	L		.	.	.	.	.	.	.
	1170.	.	I	.	W	C	E		RL		.	.	.	.	.	.	.
	1175.	.	I	.	W	C	E		RL		.	.	.	.	.	.	.
	1180.	.	I	.	W	C	E		RL		.	.	.	.	.	.	.
	1185.	.	I	.	W	C	E		L		.	.	.	.	.	.	.
	1190.	.	I	.	W	C	E		L		.	.	.	.	.	.	.
	1195.	.	I	.	W	C	E		L		.	.	.	.	.	.	.
	1200.	.	I	.	W	C	E		L		.	.	.	.	.	.	.

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        1205.  .     I  .W C  E   L        .         .         .         .         .         .         .         .
667.00  1210.  .     I  .W C E    L        .         .         .         .         .         .         .         .
        1215.  .     I  .W C E    L        .         .         .         .         .         .         .         .
        1220.  .     I  .W C E    L        .         .         .         .         .         .         .         .
        1225.  .     I  .W C E   LR        .         .         .         .         .         .         .         .
        1230.  .     I  .W C E   L.        .         .         .         .         .         .         .         .
        1235.  .     I  .W C E   L.        .         .         .         .         .         .         .         .
        1240.  .     I  . WC E   L.        .         .         .         .         .         .         .         .
        1245.  .     I  . WC E   L.        .         .         .         .         .         .         .         .
        1250.  .     I  . WC E   L.        .         .         .         .         .         .         .         .
        1255.  .     I  . WC E  LR.        .         .         .         .         .         .         .         .
        1260.  .     I  . WC E  L .        .         .         .         .         .         .         .         .
        1265.  .     I  . WC E  L .        .         .         .         .         .         .         .         .
        1270.  .     I  . WC E  L .        .         .         .         .         .         .         .         .
600.00  1275.  .     I  . WC E  L .        .         .         .         .         .         .         .         .
        1280.  .     I  . W  E LR .        .         .         .         .         .         .         .         .
        1285.  .     I  . W  E L  .        .         .         .         .         .         .         .         .
        1290.  .     I  .WC  E L  .        .         .         .         .         .         .         .         .
        1295.  .     I  .WC  ELR  .        .         .         .         .         .         .         .         .
        1300.  .     I  .WC  EL   .        .         .         .         .         .         .         .         .
        1305.  .     I  .WC E L   .        .         .         .         .         .         .         .         .
        1310.  .     I  .WC E L   .        .         .         .         .         .         .         .         .
        1315.  .    I   WC  EL    .        .         .         .         .         .         .         .         .
        1320.  .    I   WC  EL    .        .         .         .         .         .         .         .         .
        1325.  .    I   WC  EL    .        .         .         .         .         .         .         .         .
        1330.  .    I   WC  ER    .        .         .         .         .         .         .         .         .
        1335.  .    I   WC  E     .        .         .         .         .         .         .         .         .
        1340.  .    I   WC  E     .        .         .         .         .         .         .         .         .
        1345.  .    I  WC   E     .        .         .         .         .         .         .         .         .
        1350.  .    I  WC  LE     .        .         .         .         .         .         .         .         .
        1355.  .    I  WC  LE     .        .         .         .         .         .         .         .         .
        1360.  .    I  WC  LE     .        .         .         .         .         .         .         .         .
        1365.  .    I  WC LE      .        .         .         .         .         .         .         .         .
        1370.  .    I W C LE      .        .         .         .         .         .         .         .         .
        1375.  .   I  W C LE      .        .         .         .         .         .         .         .         .
        1380.  .   I  WC.LRE      .        .         .         .         .         .         .         .         .
        1385.  .   I  WC.L E      .        .         .         .         .         .         .         .         .
        1390.  .   I  WC.L E      .        .         .         .         .         .         .         .         .
        1395.  .   I  WC.L E      .        .         .         .         .         .         .         .         .
        1400.  .   I W CL  E      .        .         .         .         .         .         .         .         .
470.00  1405.  .   I W CL  E      .        .         .         .         .         .         .         .         .
        1410.  .   I WC L E       .        .         .         .         .         .         .         .         .
        1415.  .   I WC L E       .        .         .         .         .         .         .         .         .
        1420.  .   I WC L E       .        .         .         .         .         .         .         .         .
        1425.  .   IW C LE        .        .         .         .         .         .         .         .         .
        1430.  .   IWC  LE        .        .         .         .         .         .         .         .         .
        1435.  .  I WC  E         .        .         .         .         .         .         .         .         .
        1440.  .  I WC  E         .        .         .         .         .         .         .         .         .
        1445.  .  I WC  E         .        .         .         .         .         .         .         .         .
        1450.  .  IWC  EL         .        .         .         .         .         .         .         .         .
430.00  1455.  .  IWC  EL         .        .         .         .         .         .         .         .         .
        1460.  .  IWC  EL         .        .         .         .         .         .         .         .         .
        1465.  .  IWC  EL         .        .         .         .         .         .         .         .         .
        1470.  .  I W  EL         .        .         .         .         .         .         .         .         .
        1475.  .  I W  EL         .        .         .         .         .         .         .         .         .
        1480.  .  I W  EL         .        .         .         .         .         .         .         .         .
        1485.  .  I W  ER         .        .         .         .         .         .         .         .         .
        1490.  .  I W  ER         .        .         .         .         .         .         .         .         .
        1495.  .  I WC ER         .        .         .         .         .         .         .         .         .
        1500.  .  I WC ER         .        .         .         .         .         .         .         .         .
        1505.  .  I WC ER         .        .         .         .         .         .         .         .         .
        1510.  . I  WC E.         .        .         .         .         .         .         .         .         .
        1515.  . I  WC E.         .        .         .         .         .         .         .         .         .
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        1520.  .  I  WC E.      .      .      .      .      .      .      .      .      .
        1525.  .  I  WC E.      .      .      .      .      .      .      .      .      .
        1530.  .  I  WC E.      .      .      .      .      .      .      .      .      .
        1535.  .  I   WLE.      .      .      .      .      .      .      .      .      .
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        1550.  .  I   WLE.      .      .      .      .      .      .      .      .      .
        1555.  .  I   WLE.      .      .      .      .      .      .      .      .      .
325.00  1560.  .  I   WLE.      .      .      .      .      .      .      .      .      .
        1565.  .  I   WLE.      .      .      .      .      .      .      .      .      .
        1570.  .  I   WLE.      .      .      .      .      .      .      .      .      .
        1575.  .  I   WLE.      .      .      .      .      .      .      .      .      .
        1580.  .  I   WER.      .      .      .      .      .      .      .      .      .
        1585.  .  I   WER.      .      .      .      .      .      .      .      .      .
        1590.  .  I   WE .      .      .      .      .      .      .      .      .      .
        1595.  .  I   WE .      .      .      .      .      .      .      .      .      .
        1600.  .  I  WCE .      .      .      .      .      .      .      .      .      .
        1605.  .  I  WLE .      .      .      .      .      .      .      .      .      .
        1610.  .  I  WLE .      .      .      .      .      .      .      .      .      .
        1615.  . I   WLE .      .      .      .      .      .      .      .      .      .
        1620.  . I   WLE .      .      .      .      .      .      .      .      .      .
        1625.  . I   WLE .      .      .      .      .      .      .      .      .      .
        1630.  . I   WLE .      .      .      .      .      .      .      .      .      .
        1635.  . I   WLE .      .      .      .      .      .      .      .      .      .
        1640.  . I   WRE .      .      .      .      .      .      .      .      .      .
        1645.  . I   WRE .      .      .      .      .      .      .      .      .      .
        1650.  . I   WRE .      .      .      .      .      .      .      .      .      .
        1655.  . I   WRE .      .      .      .      .      .      .      .      .      .
225.00  1660.  . I   WRE .      .      .      .      .      .      .      .      .      .
        1665.  . I   WE  .      .      .      .      .      .      .      .      .      .
        1670.  . I  WCE  .      .      .      .      .      .      .      .      .      .
        1675.  . I  WCE  .      .      .      .      .      .      .      .      .      .
        1680.  . I  WLE  .      .      .      .      .      .      .      .      .      .
        1685.  . I  WLE  .      .      .      .      .      .      .      .      .      .
        1690.  . I  WRE  .      .      .      .      .      .      .      .      .      .
        1695.  . I  WRE  .      .      .      .      .      .      .      .      .      .
        1700.  . I  WRE  .      .      .      .      .      .      .      .      .      .
        1705.  . I  WE   .      .      .      .      .      .      .      .      .      .
        1710.  . I WCE   .      .      .      .      .      .      .      .      .      .
        1715.  .I  WCE   .      .      .      .      .      .      .      .      .      .
        1720.  .I  WCE   .      .      .      .      .      .      .      .      .      .
        1725.  .I  WLE   .      .      .      .      .      .      .      .      .      .
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        1740.  .I  WRE   .      .      .      .      .      .      .      .      .      .
        1745.  .I WCE    .      .      .      .      .      .      .      .      .      .
        1750.  .I WCE    .      .      .      .      .      .      .      .      .      .
        1755.  .I WCE    .      .      .      .      .      .      .      .      .      .
125.00  1760.  .I WCE    .      .      .      .      .      .      .      .      .      .
        1765.  .I WCE    .      .      .      .      .      .      .      .      .      .
        1770.  .I WCE    .      .      .      .      .      .      .      .      .      .
        1775.  .I WLE    .      .      .      .      .      .      .      .      .      .
        1780.  .I WLE    .      .      .      .      .      .      .      .      .      .
        1785.  .I WLE    .      .      .      .      .      .      .      .      .      .
        1790.  .I WE     .      .      .      .      .      .      .      .      .      .
        1795.  .I WE     .      .      .      .      .      .      .      .      .      .
        1800.  .I WE     .      .      .      .      .      .      .      .      .      .
        1805.  .I WE     .      .      .      .      .      .      .      .      .      .
        1810.  .I WE     .      .      .      .      .      .      .      .      .      .
        1815.  I  WE     .      .      .      .      .      .      .      .      .      .
        1820.  I  WE     .      .      .      .      .      .      .      .      .      .
        1825.  I  WE     .      .      .      .      .      .      .      .      .      .
        1830.  I WCE     .      .      .      .      .      .      .      .      .      .
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       1835.  I WCE    .       .       .       .       .       .       .       .       .       .
       1840.  I WE     .       .       .       .       .       .       .       .       .       .
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       1850.  I WE     .       .       .       .       .       .       .       .       .       .
       1855.  I WE     .       .       .       .       .       .       .       .       .       .
25.00  1860.  I WE     .       .       .       .       .       .       .       .       .       .
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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
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

Stations 0+25 to 18+75 a

SUMMARY PRINTOUT

	SECNO	CWSEL	CRIWS	DEPTH	AREA	VCH	BW	ELMIN	K*CHSL	Q	TOPWID	QCHP	K*XN
*	1875.000	1310.65	1310.65	2.65	167.84	7.94	0.01	1308.00	0.00	1333.48	86.45	100.00	30.
*	1875.000	1310.26	1310.26	2.26	134.82	7.42	0.01	1308.00	0.00	1000.03	79.49	100.00	30.
	1815.000	1308.62	1309.25	2.62	115.44	11.55	0.01	1306.00	-33.33	1333.48	64.46	100.00	30.
	1815.000	1308.20	1308.79	2.20	90.21	11.09	0.01	1306.00	-33.33	1000.03	57.42	100.00	30.
	1765.000	1307.10	1307.85	3.10	109.88	12.14	0.01	1304.00	-40.00	1333.48	60.44	100.00	30.
	1765.000	1306.70	1307.35	2.70	87.27	11.46	0.01	1304.00	-40.00	1000.03	52.21	100.00	30.
	1720.000	1304.60	1305.66	2.60	90.22	14.78	0.01	1302.00	-44.44	1333.48	44.19	100.00	30.
	1720.000	1304.14	1305.12	2.14	70.58	14.17	0.01	1302.00	-44.44	1000.03	40.97	100.00	30.
	1625.000	1301.61	1302.76	3.61	88.71	15.03	0.01	1298.00	-42.11	1333.48	33.25	100.00	30.
	1625.000	1301.08	1302.03	3.08	71.36	14.01	0.01	1298.00	-42.11	1000.03	30.81	100.00	30.
	1525.000	1300.33	1300.98	6.33	98.59	13.52	0.01	1294.00	-40.00	1333.48	23.98	100.00	30.
	1525.000	1299.27	1299.84	5.27	75.30	13.28	0.01	1294.00	-40.00	1000.03	20.52	100.00	30.
	1470.000	1292.27	1294.77	2.65	52.88	25.22	0.01	1289.62	-79.64	1333.48	19.99	100.00	15.
	1470.000	1291.69	1293.87	2.07	41.27	24.23	0.01	1289.62	-79.64	1000.03	19.98	100.00	15.
	1461.000	1291.35	1293.97	2.63	51.12	26.08	0.01	1288.72	-100.00	1333.48	19.50	100.00	15.
	1461.000	1290.76	1293.04	2.04	39.87	25.08	0.01	1288.72	-100.00	1000.03	19.49	100.00	15.
	1436.000	1288.83	1291.72	2.61	47.25	28.22	0.01	1286.22	-100.00	1333.48	18.14	100.00	15.
	1436.000	1288.26	1290.76	2.04	36.89	27.11	0.01	1286.22	-100.00	1000.03	18.13	100.00	15.
	1411.000	1286.36	1289.51	2.64	44.44	30.01	0.01	1283.72	-100.00	1333.48	16.78	100.00	15.
	1411.000	1285.79	1288.50	2.07	34.74	28.78	0.01	1283.72	-100.00	1000.03	16.77	100.00	15.
	1386.000	1283.97	1287.35	2.75	42.29	31.53	0.01	1281.22	-100.00	1333.48	15.42	100.00	15.
	1386.000	1283.37	1286.28	2.15	33.10	30.21	0.01	1281.22	-100.00	1000.03	15.41	100.00	15.

SECNO	CWSEL	CRIWS	DEPTH	AREA	VCH	BW	ELMIN	K*CHSL	Q	TOPWID	QCHP	K*XNC
1361.000	1281.60	1285.23	2.88	40.57	32.87	0.01	1278.72	-100.00	1333.48	14.07	100.00	15.0
1361.000	1280.98	1284.10	2.26	31.79	31.45	0.01	1278.72	-100.00	1000.03	14.06	100.00	15.0
1336.000	1279.30	1283.19	3.08	39.18	34.04	0.01	1276.22	-100.00	1333.48	12.71	100.00	15.0
1336.000	1278.64	1281.98	2.42	30.72	32.55	0.01	1276.22	-100.00	1000.03	12.70	100.00	15.0
1311.000	1277.07	1281.24	3.35	38.04	35.06	0.01	1273.72	-100.00	1333.48	11.35	100.00	15.0
1311.000	1276.35	1279.93	2.63	29.84	33.52	0.01	1273.72	-100.00	1000.03	11.35	100.00	15.0
1286.000	1274.94	1279.41	3.72	37.12	35.92	0.01	1271.22	-100.00	1333.48	9.99	100.00	15.0
1286.000	1274.13	1277.98	2.91	29.10	34.37	0.01	1271.22	-100.00	1000.03	9.99	100.00	15.0
1261.000	1274.79	1279.15	3.82	38.08	35.01	0.01	1270.97	-10.00	1333.48	9.99	100.00	15.0
1261.000	1273.98	1277.72	3.01	30.03	33.30	0.01	1270.97	-10.00	1000.03	9.99	100.00	15.0
1236.000	1274.63	1278.90	3.91	39.04	34.15	0.01	1270.72	-10.00	1333.48	9.99	100.00	15.0
1236.000	1273.82	1277.47	3.10	30.95	32.31	0.01	1270.72	-10.00	1000.03	9.99	100.00	15.0
1211.000	1274.47	1278.65	4.00	39.99	33.34	0.01	1270.47	-10.00	1333.48	9.99	100.00	15.0
1211.000	1273.66	1277.22	3.19	31.86	31.38	0.01	1270.47	-10.00	1000.03	9.99	100.00	15.0
1186.000	1274.32	1278.43	4.10	40.95	32.57	0.01	1270.22	-10.00	1333.48	9.99	100.00	15.0
1186.000	1273.51	1276.98	3.29	32.77	30.51	0.01	1270.22	-10.00	1000.03	9.99	100.00	15.0
1161.000	1274.17	1278.18	4.20	41.89	31.83	0.01	1269.97	-10.00	1333.48	9.99	100.00	15.0
1161.000	1273.34	1276.75	3.37	33.66	29.71	0.01	1269.97	-10.00	1000.03	9.99	100.00	15.0
1136.000	1274.01	1277.92	4.29	42.82	31.14	0.01	1269.72	-10.00	1333.48	9.99	100.00	15.0
1136.000	1273.17	1276.50	3.45	34.53	28.96	0.01	1269.72	-10.00	1000.03	9.99	100.00	15.0
1111.000	1273.85	1277.67	4.38	43.75	30.48	0.01	1269.47	-10.00	1333.48	9.99	100.00	15.0
1111.000	1273.02	1276.24	3.55	35.42	28.23	0.01	1269.47	-10.00	1000.03	9.99	100.00	15.0
1086.000	1273.70	1277.41	4.48	44.66	29.86	0.01	1269.22	-10.00	1333.48	9.99	100.00	15.0
1086.000	1272.85	1275.99	3.63	36.27	27.57	0.01	1269.22	-10.00	1000.03	9.99	100.00	15.0
1061.000	1273.54	1277.16	4.57	45.56	29.27	0.01	1268.97	-10.00	1333.48	9.99	100.00	15.0
1061.000	1272.69	1275.73	3.72	37.12	26.94	0.01	1268.97	-10.00	1000.03	9.99	100.00	15.0
1037.000	1273.38	1276.92	4.65	46.42	28.73	0.01	1268.73	-10.00	1333.48	9.99	100.00	15.0
1037.000	1272.53	1275.49	3.80	37.92	26.37	0.01	1268.73	-10.00	1000.03	9.99	100.00	15.0
1027.000	1272.04	1275.23	3.35	44.69	29.84	0.01	1268.69	-4.00	1333.48	16.70	100.00	18.0
1027.000	1271.55	1274.27	2.86	36.82	27.16	0.01	1268.69	-4.00	1000.03	15.72	100.00	18.0
1017.000	1272.04	1275.20	3.39	45.39	29.38	0.01	1268.65	-3.99	1333.48	16.78	100.00	18.
1017.000	1271.56	1274.23	2.91	37.50	26.67	0.01	1268.65	-3.99	1000.03	15.81	100.00	18.
1007.000	1272.05	1275.16	3.44	46.10	28.93	0.01	1268.61	-4.00	1333.48	16.86	100.00	18.
1007.000	1271.56	1274.19	2.95	38.19	26.19	0.01	1268.61	-4.00	1000.03	15.90	100.00	18.

	SECNO	CWSEL	CRIWS	DEPTH	AREA	VCH	BW	ELMIN	K*CHSL	Q	TOPWID	QCHP	K*XN
	997.000	1272.07	1275.14	3.49	46.84	28.47	0.01	1268.58	-3.00	1333.48	16.88	100.00	18.
	997.000	1271.58	1274.16	3.00	38.90	25.71	0.01	1268.58	-3.00	1000.03	15.92	100.00	18.
	987.000	1272.06	1275.08	3.52	47.52	28.06	0.01	1268.54	-3.99	1333.48	17.03	100.00	18.
	987.000	1271.58	1274.11	3.04	39.57	25.27	0.01	1268.54	-3.99	1000.03	16.07	100.00	18.
	977.000	1272.06	1275.04	3.56	48.24	27.64	0.01	1268.50	-4.00	1333.48	17.12	100.00	18.
	977.000	1271.58	1274.07	3.08	40.27	24.83	0.01	1268.50	-4.00	1000.03	16.16	100.00	18.
	967.000	1272.06	1275.00	3.60	48.95	27.24	0.01	1268.46	-4.00	1333.48	17.20	100.00	18.
	967.000	1271.58	1274.02	3.12	40.95	24.42	0.01	1268.46	-4.00	1000.03	16.24	100.00	18.
	957.000	1272.06	1274.96	3.64	49.66	26.85	0.01	1268.42	-3.99	1333.48	17.28	100.00	18.
	957.000	1271.58	1273.98	3.16	41.64	24.02	0.01	1268.42	-3.99	1000.03	16.33	100.00	18.
	947.000	1272.06	1274.91	3.68	50.37	26.47	0.01	1268.38	-4.00	1333.48	17.36	100.00	18.
	947.000	1271.59	1273.94	3.21	42.34	23.62	0.01	1268.38	-4.00	1000.03	16.41	100.00	18.
	937.000	1272.06	1274.88	3.71	51.09	26.10	0.01	1268.35	-3.00	1333.48	17.45	100.00	18.
	937.000	1271.59	1273.91	3.24	43.04	23.23	0.01	1268.35	-3.00	1000.03	16.50	100.00	18.
	925.000	1272.07	1274.83	3.77	51.97	25.66	0.01	1268.30	-4.16	1333.48	17.55	100.00	18.
	925.000	1271.60	1273.86	3.30	43.90	22.78	0.01	1268.30	-4.16	1000.03	16.60	100.00	18.
	855.000	1272.02	1274.49	4.03	56.89	23.44	0.01	1267.99	-4.43	1333.48	18.26	100.00	18.
	855.000	1271.55	1273.53	3.56	48.64	20.56	0.01	1267.99	-4.43	1000.03	17.31	100.00	18.
	800.000	1272.11	1274.35	4.29	61.27	21.76	0.01	1267.82	-3.09	1333.48	18.58	100.00	18.
	800.000	1271.66	1273.38	3.84	53.01	18.86	0.01	1267.82	-3.09	1000.03	17.67	100.00	18.
	755.000	1272.11	1274.16	4.46	64.63	20.63	0.01	1267.65	-3.78	1333.48	19.04	100.00	18.
	755.000	1271.64	1273.21	3.99	56.20	17.79	0.01	1267.65	-3.78	1000.03	18.12	100.00	18.
	667.000	1271.62	1273.45	4.31	69.03	19.32	0.01	1267.31	-3.86	1333.48	22.02	100.00	18.
	667.000	1271.21	1272.57	3.90	60.22	16.61	0.01	1267.31	-3.86	1000.03	20.88	100.00	18.
	600.000	1272.26	1273.58	5.20	79.06	16.87	0.01	1267.06	-3.73	1333.48	20.43	100.00	18.
	600.000	1271.88	1272.63	4.82	71.52	13.98	0.01	1267.06	-3.73	1000.03	19.68	100.00	18.
	470.000	1267.53	1269.12	2.53	65.47	20.37	0.01	1265.00	-15.85	1333.48	41.94	100.00	30.
	470.000	1267.21	1268.60	2.21	52.84	18.93	0.01	1265.00	-15.85	1000.03	37.93	100.00	30.
	430.000	1265.54	1266.73	1.54	79.51	16.77	0.01	1264.00	-20.00	1333.48	53.83	100.00	30.
	430.000	1265.30	1266.26	1.30	67.06	14.91	0.01	1264.00	-20.00	1000.03	53.25	100.00	30.
*	325.000	1267.69	1267.69	4.69	115.82	11.51	0.01	1263.00	-9.52	1333.48	29.38	100.00	30.
*	325.000	1266.96	1266.96	3.96	94.98	10.53	0.01	1263.00	-9.52	1000.03	27.93	100.00	30.
	225.000	1266.46	1267.03	4.46	116.56	11.44	0.01	1262.00	-10.00	1333.48	43.52	100.00	30.
	225.000	1265.70	1265.93	3.70	91.12	10.98	0.01	1262.00	-10.00	1000.03	29.25	100.00	30.

	SECNO	CWSEL	CRIWS	DEPTH	AREA	VCH	BW	ELMIN	K*CHSL	Q	TOPWID	DCHP	K*XN(
	125.000	1263.24	1263.91	2.24	109.91	12.13	0.01	1261.00	-10.00	1333.48	129.81	100.00	30.(
	125.000	1263.05	1263.66	2.05	87.02	11.49	0.01	1261.00	-10.00	1000.03	113.03	100.00	30.(
*	25.000	1262.57	1262.57	2.57	176.68	7.55	0.01	1260.00	-10.00	1333.48	100.00	100.00	30.(
*	25.000	1262.25	1262.25	2.25	145.04	6.90	0.01	1260.00	-10.00	1000.03	100.00	100.00	30.(

Stations 0+25 to 18+75 a

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01
*	1875.000	0.00	0.00	0.00	1308.00	1333.48	1310.65	1310.65	1311.63	106.81	7.94	167.84	129.
*	1875.000	0.00	0.00	0.00	1308.00	1000.03	1310.26	1310.26	1311.11	111.43	7.42	134.82	94.
	1815.000	60.00	0.00	0.00	1306.00	1333.48	1308.62	1309.25	1310.69	251.89	11.55	115.44	84.
	1815.000	60.00	0.00	0.00	1306.00	1000.03	1308.20	1308.79	1310.11	276.16	11.09	90.21	60.
	1765.000	50.00	0.00	0.00	1304.00	1333.48	1307.10	1307.85	1309.38	273.73	12.14	109.88	80.
	1765.000	50.00	0.00	0.00	1304.00	1000.03	1306.70	1307.35	1308.74	273.26	11.46	87.27	60.
	1720.000	45.00	0.00	0.00	1302.00	1333.48	1304.60	1305.66	1307.99	351.40	14.78	90.22	71.
	1720.000	45.00	0.00	0.00	1302.00	1000.03	1304.14	1305.12	1307.26	403.45	14.17	70.58	49.
	1625.000	95.00	0.00	0.00	1298.00	1333.48	1301.61	1302.76	1305.12	262.89	15.03	88.71	82.
	1625.000	95.00	0.00	0.00	1298.00	1000.03	1301.08	1302.03	1304.13	274.46	14.01	71.36	60.
	1525.000	100.00	0.00	0.00	1294.00	1333.48	1300.33	1300.98	1303.17	149.99	13.52	98.59	108.
	1525.000	100.00	0.00	0.00	1294.00	1000.03	1299.27	1299.84	1302.01	168.52	13.28	75.30	77.
	1470.000	55.00	0.00	0.00	1289.62	1333.48	1292.27	1294.77	1302.14	242.05	25.22	52.88	85.
	1470.000	55.00	0.00	0.00	1289.62	1000.03	1291.69	1293.87	1300.81	292.20	24.23	41.27	58.
	1461.000	9.00	0.00	0.00	1288.72	1333.48	1291.35	1293.97	1301.91	263.31	26.08	51.12	82.
	1461.000	9.00	0.00	0.00	1288.72	1000.03	1290.76	1293.04	1300.53	318.25	25.08	39.87	56.
	1436.000	25.00	0.00	0.00	1286.22	1333.48	1288.83	1291.72	1301.19	316.85	28.22	47.25	74.
	1436.000	25.00	0.00	0.00	1286.22	1000.03	1288.26	1290.76	1299.67	380.38	27.11	36.89	51.
	1411.000	25.00	0.00	0.00	1283.72	1333.48	1286.36	1289.51	1300.35	360.88	30.01	44.44	70.
	1411.000	25.00	0.00	0.00	1283.72	1000.03	1285.79	1288.50	1298.66	429.07	28.78	34.74	48.
	1386.000	25.00	0.00	0.00	1281.22	1333.48	1283.97	1287.35	1299.40	395.74	31.53	42.29	67.
	1386.000	25.00	0.00	0.00	1281.22	1000.03	1283.37	1286.28	1297.54	465.74	30.21	33.10	46.
	1361.000	25.00	0.00	0.00	1278.72	1333.48	1281.60	1285.23	1298.38	423.81	32.87	40.57	64.
	1361.000	25.00	0.00	0.00	1278.72	1000.03	1280.98	1284.10	1296.34	492.61	31.45	31.79	45.
	1336.000	25.00	0.00	0.00	1276.22	1333.48	1279.30	1283.19	1297.29	445.65	34.04	39.18	63.
	1336.000	25.00	0.00	0.00	1276.22	1000.03	1278.64	1281.98	1295.09	511.15	32.55	30.72	44.
	1311.000	25.00	0.00	0.00	1273.72	1333.48	1277.07	1281.24	1296.16	463.41	35.06	38.04	61.
	1311.000	25.00	0.00	0.00	1273.72	1000.03	1276.35	1279.93	1293.79	523.87	33.52	29.84	43.
	1286.000	25.00	0.00	0.00	1271.22	1333.48	1274.94	1279.41	1294.98	479.42	35.92	37.12	60.
	1286.000	25.00	0.00	0.00	1271.22	1000.03	1274.13	1277.98	1292.47	533.53	34.37	29.10	43.
	1261.000	25.00	0.00	0.00	1270.97	1333.48	1274.79	1279.15	1293.82	446.62	35.01	38.08	63.
	1261.000	25.00	0.00	0.00	1270.97	1000.03	1273.98	1277.72	1291.20	487.92	33.30	30.03	45.

SECNO	XLCH	ELTRO	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01
1236.000	25.00	0.00	0.00	1270.72	1333.48	1274.63	1278.90	1292.74	417.06	34.15	39.04	65.
1236.000	25.00	0.00	0.00	1270.72	1000.03	1273.82	1277.47	1290.03	447.90	32.31	30.95	47.
1211.000	25.00	0.00	0.00	1270.47	1333.48	1274.47	1278.65	1291.74	390.45	33.34	39.99	67.
1211.000	25.00	0.00	0.00	1270.47	1000.03	1273.66	1277.22	1288.96	412.72	31.38	31.86	49.
1186.000	25.00	0.00	0.00	1270.22	1333.48	1274.32	1278.43	1290.79	366.10	32.57	40.95	69.
1186.000	25.00	0.00	0.00	1270.22	1000.03	1273.51	1276.98	1287.96	381.39	30.51	32.77	51.
1161.000	25.00	0.00	0.00	1269.97	1333.48	1274.17	1278.18	1289.90	344.01	31.83	41.89	71.
1161.000	25.00	0.00	0.00	1269.97	1000.03	1273.34	1276.75	1287.05	353.75	29.71	33.66	53.
1136.000	25.00	0.00	0.00	1269.72	1333.48	1274.01	1277.92	1289.07	324.10	31.14	42.82	74.
1136.000	25.00	0.00	0.00	1269.72	1000.03	1273.17	1276.50	1286.19	329.54	28.96	34.53	55.
1111.000	25.00	0.00	0.00	1269.47	1333.48	1273.85	1277.67	1288.28	305.78	30.48	43.75	76.
1111.000	25.00	0.00	0.00	1269.47	1000.03	1273.02	1276.24	1285.40	307.01	28.23	35.42	57.
1086.000	25.00	0.00	0.00	1269.22	1333.48	1273.70	1277.41	1287.54	289.06	29.86	44.66	78.
1086.000	25.00	0.00	0.00	1269.22	1000.03	1272.85	1275.99	1284.66	287.38	27.57	36.27	58.
1061.000	25.00	0.00	0.00	1268.97	1333.48	1273.54	1277.16	1286.84	273.90	29.27	45.56	80.
1061.000	25.00	0.00	0.00	1268.97	1000.03	1272.69	1275.73	1283.96	269.56	26.94	37.12	60.
1037.000	24.00	0.00	0.00	1268.73	1333.48	1273.38	1276.92	1286.19	260.53	28.73	46.42	82.
1037.000	24.00	0.00	0.00	1268.73	1000.03	1272.53	1275.49	1283.33	254.22	26.37	37.92	62.
1027.000	10.00	0.00	0.00	1268.69	1333.48	1272.04	1275.23	1285.86	431.49	29.84	44.69	64.
1027.000	10.00	0.00	0.00	1268.69	1000.03	1271.55	1274.27	1283.01	419.92	27.16	36.82	48.
1017.000	10.00	0.00	0.00	1268.65	1333.48	1272.04	1275.20	1285.44	412.95	29.38	45.39	65.
1017.000	10.00	0.00	0.00	1268.65	1000.03	1271.56	1274.23	1282.60	398.58	26.67	37.50	50.
1007.000	10.00	0.00	0.00	1268.61	1333.48	1272.05	1275.16	1285.04	395.31	28.93	46.10	67.
1007.000	10.00	0.00	0.00	1268.61	1000.03	1271.56	1274.19	1282.21	378.49	26.19	38.19	51.
997.000	10.00	0.00	0.00	1268.58	1333.48	1272.07	1275.14	1284.65	377.17	28.47	46.84	68.
997.000	10.00	0.00	0.00	1268.58	1000.03	1271.58	1274.16	1281.84	358.24	25.71	38.90	52.
987.000	10.00	0.00	0.00	1268.54	1333.48	1272.06	1275.08	1284.28	363.01	28.06	47.52	69.
987.000	10.00	0.00	0.00	1268.54	1000.03	1271.58	1274.11	1281.49	342.16	25.27	39.57	54.
977.000	10.00	0.00	0.00	1268.50	1333.48	1272.06	1275.04	1283.93	348.00	27.64	48.24	71.
977.000	10.00	0.00	0.00	1268.50	1000.03	1271.58	1274.07	1281.16	325.57	24.83	40.27	55.
967.000	10.00	0.00	0.00	1268.46	1333.48	1272.06	1275.00	1283.59	334.11	27.24	48.95	72.
967.000	10.00	0.00	0.00	1268.46	1000.03	1271.58	1274.02	1280.84	310.41	24.42	40.95	56.
957.000	10.00	0.00	0.00	1268.42	1333.48	1272.06	1274.96	1283.26	320.92	26.85	49.66	74.
957.000	10.00	0.00	0.00	1268.42	1000.03	1271.58	1273.98	1280.54	296.14	24.02	41.64	58.

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01
	947.000	10.00	0.00	0.00	1268.38	1333.48	1272.06	1274.91	1282.94	308.34	26.47	50.37	75.
	947.000	10.00	0.00	0.00	1268.38	1000.03	1271.59	1273.94	1280.25	282.63	23.62	42.34	59.
	937.000	10.00	0.00	0.00	1268.35	1333.48	1272.06	1274.88	1282.64	296.33	26.10	51.09	77.
	937.000	10.00	0.00	0.00	1268.35	1000.03	1271.59	1273.91	1279.97	269.70	23.23	43.04	60.
	925.000	12.00	0.00	0.00	1268.30	1333.48	1272.07	1274.83	1282.29	282.50	25.66	51.97	79.
	925.000	12.00	0.00	0.00	1268.30	1000.03	1271.60	1273.86	1279.66	255.19	22.78	43.90	62.
	855.000	70.00	0.00	0.00	1267.99	1333.48	1272.02	1274.49	1280.55	220.73	23.44	56.89	89.
	855.000	70.00	0.00	0.00	1267.99	1000.03	1271.55	1273.53	1278.12	192.24	20.56	48.64	72.
	800.000	55.00	0.00	0.00	1267.82	1333.48	1272.11	1274.35	1279.46	178.71	21.76	61.27	99.
	800.000	55.00	0.00	0.00	1267.82	1000.03	1271.66	1273.38	1277.19	150.34	18.86	53.01	81.
	755.000	45.00	0.00	0.00	1267.65	1333.48	1272.11	1274.16	1278.72	154.68	20.63	64.63	107.
	755.000	45.00	0.00	0.00	1267.65	1000.03	1271.64	1273.21	1276.56	128.19	17.79	56.20	88.
	667.000	88.00	0.00	0.00	1267.31	1333.48	1271.62	1273.45	1277.42	140.82	19.32	69.03	112.
	667.000	88.00	0.00	0.00	1267.31	1000.03	1271.21	1272.57	1275.49	115.45	16.61	60.22	93.
	600.000	67.00	0.00	0.00	1267.06	1333.48	1272.26	1273.58	1276.68	88.59	16.87	79.06	141.
	600.000	67.00	0.00	0.00	1267.06	1000.03	1271.88	1272.63	1274.92	65.62	13.98	71.52	123.
	470.000	130.00	0.00	0.00	1265.00	1333.48	1267.53	1269.12	1273.97	957.69	20.37	65.47	43.
	470.000	130.00	0.00	0.00	1265.00	1000.03	1267.21	1268.60	1272.77	961.79	18.93	52.84	32.
	430.000	50.00	0.00	0.00	1264.00	1333.48	1265.54	1266.73	1269.90	699.77	16.77	79.51	50.
	430.000	50.00	0.00	0.00	1264.00	1000.03	1265.30	1266.26	1268.76	681.56	14.91	67.06	38.
*	325.000	105.00	0.00	0.00	1263.00	1333.48	1267.69	1267.69	1269.75	102.39	11.51	115.82	131.
*	325.000	105.00	0.00	0.00	1263.00	1000.03	1266.96	1266.96	1268.68	102.46	10.53	94.98	98.
	225.000	100.00	0.00	0.00	1262.00	1333.48	1266.46	1267.03	1268.49	157.91	11.44	116.56	106.
	225.000	100.00	0.00	0.00	1262.00	1000.03	1265.70	1265.93	1267.57	120.85	10.98	91.12	90.
	125.000	100.00	0.00	0.00	1261.00	1333.48	1263.24	1263.91	1265.52	752.80	12.13	109.91	48.
	125.000	100.00	0.00	0.00	1261.00	1000.03	1263.05	1263.66	1265.10	767.05	11.49	87.02	36.
*	25.000	100.00	0.00	0.00	1260.00	1333.48	1262.57	1262.57	1263.45	110.50	7.55	176.68	126.
*	25.000	100.00	0.00	0.00	1260.00	1000.03	1262.25	1262.25	1262.99	118.98	6.90	145.04	91.

Stations 0+25 to 18+75 a

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	1875.000	1333.48	1310.65	0.00	0.00	2.65	86.45	0.00
*	1875.000	1000.03	1310.26	-0.40	0.00	2.26	79.49	0.00
	1815.000	1333.48	1308.62	0.00	-2.03	0.00	64.46	60.00
	1815.000	1000.03	1308.20	-0.42	-2.05	0.00	57.42	60.00
	1765.000	1333.48	1307.10	0.00	-1.53	0.00	60.44	50.00
	1765.000	1000.03	1306.70	-0.40	-1.50	0.00	52.21	50.00
	1720.000	1333.48	1304.60	0.00	-2.50	0.00	44.19	45.00
	1720.000	1000.03	1304.14	-0.46	-2.56	0.00	40.97	45.00
	1625.000	1333.48	1301.61	0.00	-2.99	0.00	33.25	95.00
	1625.000	1000.03	1301.08	-0.54	-3.06	0.00	30.81	95.00
	1525.000	1333.48	1300.33	0.00	-1.28	0.00	23.98	100.00
	1525.000	1000.03	1299.27	-1.06	-1.81	0.00	20.52	100.00
	1470.000	1333.48	1292.27	0.00	-8.07	0.00	19.99	55.00
	1470.000	1000.03	1291.69	-0.58	-7.58	0.00	19.98	55.00
	1461.000	1333.48	1291.35	0.00	-0.92	0.00	19.50	9.00
	1461.000	1000.03	1290.76	-0.58	-0.93	0.00	19.49	9.00
	1436.000	1333.48	1288.83	0.00	-2.52	0.00	18.14	25.00
	1436.000	1000.03	1288.26	-0.57	-2.51	0.00	18.13	25.00
	1411.000	1333.48	1286.36	0.00	-2.46	0.00	16.78	25.00
	1411.000	1000.03	1285.79	-0.57	-2.46	0.00	16.77	25.00
	1386.000	1333.48	1283.97	0.00	-2.40	0.00	15.42	25.00
	1386.000	1000.03	1283.37	-0.60	-2.42	0.00	15.41	25.00
	1361.000	1333.48	1281.60	0.00	-2.36	0.00	14.07	25.00
	1361.000	1000.03	1280.98	-0.62	-2.39	0.00	14.06	25.00
	1336.000	1333.48	1279.30	0.00	-2.30	0.00	12.71	25.00
	1336.000	1000.03	1278.64	-0.67	-2.34	0.00	12.70	25.00
	1311.000	1333.48	1277.07	0.00	-2.23	0.00	11.35	25.00
	1311.000	1000.03	1276.35	-0.72	-2.29	0.00	11.35	25.00
	1286.000	1333.48	1274.94	0.00	-2.13	0.00	9.99	25.00
	1286.000	1000.03	1274.13	-0.81	-2.22	0.00	9.99	25.00
	1261.000	1333.48	1274.79	0.00	-0.15	0.00	9.99	25.00
	1261.000	1000.03	1273.98	-0.81	-0.16	0.00	9.99	25.00

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
1236.000	1333.48	1274.63	0.00	-0.15	0.00	9.99	25.00
1236.000	1000.03	1273.82	-0.81	-0.16	0.00	9.99	25.00
1211.000	1333.48	1274.47	0.00	-0.16	0.00	9.99	25.00
1211.000	1000.03	1273.66	-0.81	-0.16	0.00	9.99	25.00
1186.000	1333.48	1274.32	0.00	-0.15	0.00	9.99	25.00
1186.000	1000.03	1273.51	-0.82	-0.16	0.00	9.99	25.00
1161.000	1333.48	1274.17	0.00	-0.15	0.00	9.99	25.00
1161.000	1000.03	1273.34	-0.82	-0.16	0.00	9.99	25.00
1136.000	1333.48	1274.01	0.00	-0.16	0.00	9.99	25.00
1136.000	1000.03	1273.17	-0.84	-0.17	0.00	9.99	25.00
1111.000	1333.48	1273.85	0.00	-0.15	0.00	9.99	25.00
1111.000	1000.03	1273.02	-0.83	-0.15	0.00	9.99	25.00
1086.000	1333.48	1273.70	0.00	-0.16	0.00	9.99	25.00
1086.000	1000.03	1272.85	-0.84	-0.17	0.00	9.99	25.00
1061.000	1333.48	1273.54	0.00	-0.16	0.00	9.99	25.00
1061.000	1000.03	1272.69	-0.84	-0.16	0.00	9.99	25.00
1037.000	1333.48	1273.38	0.00	-0.16	0.00	9.99	24.00
1037.000	1000.03	1272.53	-0.85	-0.16	0.00	9.99	24.00
1027.000	1333.48	1272.04	0.00	-1.34	0.00	16.70	10.00
1027.000	1000.03	1271.55	-0.48	-0.98	0.00	15.72	10.00
1017.000	1333.48	1272.04	0.00	0.00	0.00	16.78	10.00
1017.000	1000.03	1271.56	-0.48	0.00	0.00	15.81	10.00
1007.000	1333.48	1272.05	0.00	0.01	0.00	16.86	10.00
1007.000	1000.03	1271.56	-0.48	0.01	0.00	15.90	10.00
997.000	1333.48	1272.07	0.00	0.02	0.00	16.88	10.00
997.000	1000.03	1271.58	-0.48	0.02	0.00	15.92	10.00
987.000	1333.48	1272.06	0.00	-0.01	0.00	17.03	10.00
987.000	1000.03	1271.58	-0.48	-0.01	0.00	16.07	10.00
977.000	1333.48	1272.06	0.00	0.01	0.00	17.12	10.00
977.000	1000.03	1271.58	-0.48	0.01	0.00	16.16	10.00
967.000	1333.48	1272.06	0.00	0.00	0.00	17.20	10.00
967.000	1000.03	1271.58	-0.48	0.00	0.00	16.24	10.00
957.000	1333.48	1272.06	0.00	0.00	0.00	17.28	10.00
957.000	1000.03	1271.58	-0.48	0.00	0.00	16.33	10.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	947.000	1333.48	1272.06	0.00	0.00	0.00	17.36	10.00
	947.000	1000.03	1271.59	-0.48	0.00	0.00	16.41	10.00
	937.000	1333.48	1272.06	0.00	0.00	0.00	17.45	10.00
	937.000	1000.03	1271.59	-0.47	0.01	0.00	16.50	10.00
	925.000	1333.48	1272.07	0.00	0.01	0.00	17.55	12.00
	925.000	1000.03	1271.60	-0.47	0.01	0.00	16.60	12.00
	855.000	1333.48	1272.02	0.00	-0.05	0.00	18.26	70.00
	855.000	1000.03	1271.55	-0.47	-0.05	0.00	17.31	70.00
	800.000	1333.48	1272.11	0.00	0.09	0.00	18.58	55.00
	800.000	1000.03	1271.66	-0.45	0.11	0.00	17.67	55.00
	755.000	1333.48	1272.11	0.00	0.00	0.00	19.04	45.00
	755.000	1000.03	1271.64	-0.46	-0.02	0.00	18.12	45.00
	667.000	1333.48	1271.62	0.00	-0.48	0.00	22.02	88.00
	667.000	1000.03	1271.21	-0.41	-0.44	0.00	20.88	88.00
	600.000	1333.48	1272.26	0.00	0.64	0.00	20.43	67.00
	600.000	1000.03	1271.88	-0.38	0.68	0.00	19.68	67.00
	470.000	1333.48	1267.53	0.00	-4.73	0.00	41.94	130.00
	470.000	1000.03	1267.21	-0.32	-4.67	0.00	37.93	130.00
	430.000	1333.48	1265.54	0.00	-1.99	0.00	53.83	50.00
	430.000	1000.03	1265.30	-0.23	-1.91	0.00	53.25	50.00
*	325.000	1333.48	1267.69	0.00	2.16	0.00	29.38	105.00
*	325.000	1000.03	1266.96	-0.73	1.66	0.00	27.93	105.00
	225.000	1333.48	1266.46	0.00	-1.23	0.00	43.52	100.00
	225.000	1000.03	1265.70	-0.76	-1.26	0.00	29.25	100.00
	125.000	1333.48	1263.24	0.00	-3.22	0.00	129.81	100.00
	125.000	1000.03	1263.05	-0.19	-2.66	0.00	113.03	100.00
*	25.000	1333.48	1262.57	0.00	-0.67	0.00	100.00	100.00
*	25.000	1000.03	1262.25	-0.32	-0.80	0.00	100.00	100.00

SUMMARY OF ERRORS AND SPECIAL NOTES

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CAUTION  SECNO= 1875.000  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO= 1875.000  PROFILE= 2  CRITICAL DEPTH ASSUMED

CAUTION  SECNO=  325.000  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=  325.000  PROFILE= 1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=  325.000  PROFILE= 1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=  325.000  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=  325.000  PROFILE= 2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=  325.000  PROFILE= 2  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION  SECNO=   25.000  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   25.000  PROFILE= 1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   25.000  PROFILE= 1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=   25.000  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   25.000  PROFILE= 2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   25.000  PROFILE= 2  20 TRIALS ATTEMPTED TO BALANCE WSEL
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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
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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
*****************************************************

T1      Analysis for the 50 year storm flow's given by AM-WEST
T2      April, 1988 Made by DFM
T3      Stations 0+25 to 18+75 along Myrtle Wash "Supercritical"

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0.        0.        0.        1. -1.000000      0.00      0.0     1333.  1308.000     0.000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLOC     IBW       CHNIM     ITRACE

     0.000     0.000     0.000     0.000     0.000     0.000    -1.000     0.000     0.000    15.000

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    38.000     1.000     2.000     8.000    25.000    26.000    30.000    42.000    33.000    43.000


     4.000    60.000    17.000   150.000     0.000     0.000     0.000     0.000     0.000     0.000


NC      0.030     0.030     0.030     0.000     0.000     0.000     0.000     0.000     0.000     0.000
X1   1875.000     7.000    10.000   145.000    60.000    60.000    60.000     0.000     0.000     0.000
GR   1312.000    10.000  1310.000    25.000  1308.000    35.000  1308.000    75.000  1310.000   100.000
GR   1312.000   120.000  1314.000   145.000     0.000     0.000     0.000     0.000     0.000     0.000

X1   1815.000     7.000    10.000   121.000    50.000    50.000    50.000     0.000     0.000     0.000
GR   1312.000    10.000  1310.000    33.000  1308.000    47.000  1306.000    64.000  1306.000    89.000
GR   1308.000   101.000  1310.000   121.000     0.000     0.000     0.000     0.000     0.000     0.000

X1   1765.000     7.000    10.000   109.000    45.000    45.000    45.000     0.000     0.000     0.000
GR   1310.000    10.000  1308.000    30.000  1306.000    50.000  1304.000    63.000  1304.000    81.000
GR   1306.000    88.000  1308.000   109.000     0.000     0.000     0.000     0.000     0.000     0.000

X1   1720.000     8.000    10.000   105.000    95.000    95.000    95.000     0.000     0.000     0.000
GR   1310.000    10.000  1308.000    22.000  1306.000    51.000  1304.000    61.000  1302.000    69.000
GR   1302.000    94.000  1304.000   101.000  1306.000   105.000     0.000     0.000     0.000     0.000

X1   1625.000     8.000    10.000    60.000   100.000   100.000   100.000     0.000     0.000     0.000
GR   1304.000    10.000  1302.000    20.000  1300.000    25.000  1298.000    30.000  1298.000    45.000
GR   1300.000    51.000  1302.000    55.000  1304.000    60.000     0.000     0.000     0.000     0.000
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X1	1525.000	12.000	10.000	52.000	55.000	55.000	55.000	0.000	0.000	0.000
GR	1306.000	10.000	1304.000	14.000	1302.000	18.000	1300.000	23.000	1298.000	24.000
GR	1296.000	25.000	1294.000	26.000	1294.000	35.000	1296.000	37.000	1298.000	42.000
GR	1300.000	45.000	1302.000	52.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.015	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	1470.000	5.000	10.000	32.500	9.000	9.000	9.000	0.000	0.000	0.000
GR	1299.600	10.000	1299.600	12.500	1289.620	12.510	1289.620	32.490	1299.600	32.500
X1	1461.000	5.000	10.000	32.510	25.000	25.000	25.000	0.000	0.000	0.000
GR	1298.700	10.000	1298.700	13.000	1288.720	13.010	1288.720	32.500	1298.700	32.510
X1	1436.000	5.000	10.000	32.150	25.000	25.000	25.000	0.000	0.000	0.000
GR	1296.200	10.000	1296.200	14.000	1286.220	14.010	1286.220	32.140	1296.200	32.150
X1	1411.000	5.000	10.000	31.790	25.000	25.000	25.000	0.000	0.000	0.000
GR	1293.700	10.000	1293.700	15.000	1283.720	15.010	1283.720	31.780	1293.700	31.790
X1	1386.000	5.000	10.000	32.430	25.000	25.000	25.000	0.000	0.000	0.000
GR	1291.200	10.000	1291.200	17.000	1281.220	17.010	1281.220	32.420	1291.200	32.430
X1	1361.000	5.000	10.000	32.080	25.000	25.000	25.000	0.000	0.000	0.000
GR	1288.700	10.000	1288.700	18.000	1278.720	18.010	1278.720	32.070	1288.700	32.080
X1	1336.000	5.000	10.000	31.720	25.000	25.000	25.000	0.000	0.000	0.000
GR	1286.200	10.000	1286.200	19.000	1276.220	19.010	1276.220	31.710	1286.200	31.720
X1	1311.000	5.000	10.000	31.360	25.000	25.000	25.000	0.000	0.000	0.000
GR	1283.700	10.000	1283.700	20.000	1273.720	20.010	1273.720	31.350	1283.700	31.360
X1	1286.000	5.000	10.000	31.000	25.000	25.000	25.000	0.000	0.000	0.000
GR	1281.200	10.000	1281.200	21.000	1271.220	21.010	1271.220	30.990	1281.200	31.000
X1	1261.000	5.000	10.000	31.550	25.000	25.000	25.000	0.000	0.000	0.000
GR	1281.000	10.000	1281.000	21.550	1270.970	21.560	1270.970	31.540	1281.000	31.550
X1	1236.000	5.000	10.000	32.100	25.000	25.000	25.000	0.000	0.000	0.000
GR	1280.700	10.000	1280.700	22.100	1270.720	22.110	1270.720	32.090	1280.700	32.100
X1	1211.000	5.000	10.000	32.600	25.000	25.000	25.000	0.000	0.000	0.000
GR	1280.500	10.000	1280.500	22.600	1270.470	22.610	1270.470	32.590	1280.500	32.600
X1	1186.000	5.000	10.000	33.200	25.000	25.000	25.000	0.000	0.000	0.000
GR	1280.200	10.000	1280.200	23.200	1270.220	23.210	1270.220	33.190	1280.200	33.200
X1	1161.000	5.000	10.000	33.760	25.000	25.000	25.000	0.000	0.000	0.000
GR	1280.000	10.000	1280.000	23.760	1269.970	23.770	1269.970	33.750	1280.000	33.760

X1	1136.000	5.000	10.000	34.310	25.000	25.000	25.000	0.000	0.000	0.000
GR	1279.700	10.000	1279.700	24.310	1269.720	24.320	1269.720	34.300	1279.700	34.310
X1	1111.000	5.000	10.000	34.870	25.000	25.000	25.000	0.000	0.000	0.000
GR	1279.500	10.000	1279.500	24.870	1269.470	24.880	1269.470	34.860	1279.500	34.870
X1	1086.000	5.000	10.000	35.420	25.000	25.000	25.000	0.000	0.000	0.000
GR	1279.200	10.000	1279.200	25.420	1269.220	25.430	1269.220	35.410	1279.200	35.420
X1	1061.000	5.000	10.000	35.960	24.000	24.000	24.000	0.000	0.000	0.000
GR	1279.000	10.000	1279.000	25.960	1268.970	25.970	1268.970	35.950	1279.000	35.960
X1	1037.000	5.000	10.000	36.500	10.000	10.000	10.000	0.000	0.000	0.000
GR	1278.700	10.000	1278.700	26.500	1268.730	26.510	1268.730	36.490	1278.700	36.500
NC	0.018	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	1027.000	5.000	10.000	72.120	10.000	10.000	10.000	0.000	0.000	0.000
GR	1288.500	10.000	1288.500	23.000	1268.690	42.810	1268.690	52.810	1288.000	72.120
X1	1017.000	5.000	10.000	70.200	10.000	10.000	10.000	0.000	0.000	0.000
GR	1288.500	10.000	1288.500	21.000	1268.650	40.850	1268.650	50.850	1288.000	70.200
X1	1007.000	5.000	10.000	67.280	10.000	10.000	10.000	0.000	0.000	0.000
GR	1288.500	10.000	1288.500	18.000	1268.610	37.890	1268.610	47.890	1288.000	67.280
X1	997.000	5.000	10.000	63.340	10.000	10.000	10.000	0.000	0.000	0.000
GR	1288.500	10.000	1288.500	14.500	1268.580	34.420	1268.580	44.420	1288.000	63.340
X1	987.000	5.000	10.000	61.420	10.000	10.000	10.000	0.000	0.000	0.000
GR	1288.500	10.000	1288.500	12.000	1268.540	31.960	1268.540	41.960	1288.000	61.420
X1	977.000	4.000	10.000	59.500	10.000	10.000	10.000	0.000	0.000	0.000
GR	1288.500	10.000	1268.500	30.000	1268.500	40.000	1288.000	59.500	0.000	0.000
X1	967.000	4.000	10.000	59.580	10.000	10.000	10.000	0.000	0.000	0.000
GR	1288.500	10.000	1268.460	30.040	1268.460	40.040	1288.000	59.580	0.000	0.000
X1	957.000	4.000	10.000	59.660	10.000	10.000	10.000	0.000	0.000	0.000
GR	1288.500	10.000	1268.420	30.080	1268.420	40.080	1288.000	59.660	0.000	0.000
X1	947.000	4.000	10.000	59.740	10.000	10.000	10.000	0.000	0.000	0.000
GR	1288.500	10.000	1268.380	30.120	1268.380	40.120	1288.000	59.740	0.000	0.000
X1	937.000	4.000	10.000	59.800	12.000	12.000	12.000	0.000	0.000	0.000
GR	1288.500	10.000	1268.350	30.150	1268.350	40.150	1288.000	59.800	0.000	0.000
X1	925.000	4.000	10.000	49.700	70.000	70.000	70.000	0.000	0.000	0.000
GR	1283.000	10.000	1268.300	24.700	1268.300	34.700	1283.300	49.700	0.000	0.000

X1	855.000	5.000	10.000	52.080	55.000	55.000	55.000	0.000	0.000	0.000
GR	1282.600	10.000	1282.600	12.000	1267.990	27.370	1267.990	37.370	1282.700	52.080
X1	800.000	5.000	10.000	50.760	45.000	45.000	45.000	0.000	0.000	0.000
GR	1282.600	10.000	1282.600	12.000	1267.820	26.780	1267.820	36.780	1281.800	50.760
X1	755.000	5.000	10.000	51.000	88.000	88.000	88.000	0.000	0.000	0.000
GR	1281.700	10.000	1281.700	13.050	1267.650	27.550	1267.650	37.550	1281.100	51.000
X1	667.000	5.000	10.000	63.380	67.000	67.000	67.000	0.000	0.000	0.000
GR	1280.000	10.000	1280.000	18.000	1267.310	40.690	1267.310	50.690	1280.000	63.380
X1	600.000	5.000	10.000	77.360	130.000	130.000	130.000	0.000	0.000	0.000
GR	1277.600	10.000	1277.600	46.000	1267.060	56.620	1267.060	66.620	1277.800	77.360
NC	0.030	0.030	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	470.000	6.000	10.000	75.000	50.000	50.000	50.000	0.000	0.000	0.000
GR	1270.000	10.000	1268.000	20.000	1265.000	53.000	1265.000	63.000	1268.000	68.000
GR	1270.000	75.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	430.000	6.000	10.000	90.000	105.000	105.000	105.000	0.000	0.000	0.000
GR	1270.000	10.000	1268.000	18.000	1264.000	23.000	1264.000	73.000	1268.000	78.000
GR	1270.000	90.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	325.000	5.000	10.000	70.000	100.000	100.000	100.000	0.000	0.000	0.000
GR	1268.000	10.000	1263.000	15.000	1263.000	35.000	1268.000	40.000	1269.000	70.000
X1	225.000	5.000	10.000	70.000	100.000	100.000	100.000	0.000	0.000	0.000
GR	1266.000	10.000	1262.000	15.000	1262.000	35.000	1266.000	40.000	1267.000	70.000
X1	125.000	6.000	10.000	208.000	100.000	100.000	100.000	0.000	0.000	0.000
GR	1264.000	10.000	1262.000	25.000	1261.000	28.000	1261.000	43.000	1262.000	45.000
GR	1264.000	208.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	25.000	4.000	10.000	110.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	1262.000	10.000	1260.000	60.000	1260.000	80.000	1262.000	110.000	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

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS


*SECNO 1875.000
3720 CRITICAL DEPTH ASSUMED
  1875.00     2.65  1310.65  1310.65  1308.00  1311.63     0.98     0.00     0.00  1312.00
    1333.       0.    1333.       0.       0.     168.       0.       0.       0.  1314.00
     0.00     0.00     7.94     0.00    0.000    0.030    0.000    0.000  1308.00    20.09
 0.010681       0.       0.       0.        0       40        0     0.00    86.45   106.55


FLOW DISTRIBUTION FOR SECNO=   1875.00         CWSEL=   1310.65

STA=      20.     145.
  PER Q=    100.0
   AREA=    167.8
    VEL=      7.9

*SECNO 1815.000

3301 HV CHANGED MORE THAN HVINS

  1815.00     2.62  1308.62  1309.25     0.00  1310.69     2.07     0.94     0.00  1312.00
    1333.       0.    1333.       0.       0.     115.       0.       0.       0.  1310.00
     0.00     0.00    11.55     0.00    0.000    0.030    0.000    0.000  1306.00    42.69
 0.025189      60.      60.      60.        6       11        0     0.00    64.46   107.15


FLOW DISTRIBUTION FOR SECNO=   1815.00         CWSEL=   1308.62

STA=      43.     121.
  PER Q=    100.0
   AREA=    115.4
    VEL=     11.6

*SECNO 1765.000
  1765.00     3.10  1307.10  1307.85     0.00  1309.38     2.29     1.31     0.00  1310.00
    1333.       0.    1333.       0.       0.     110.       0.       0.       0.  1308.00
     0.00     0.00    12.14     0.00    0.000    0.030    0.000    0.000  1304.00    39.05
 0.027373      50.      50.      50.        7       11        0     0.00    60.44    99.49
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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

FLOW DISTRIBUTION FOR SECNO=   1765.00         CWSEL=   1307.10

STA=      39.     109.
  PER Q=    100.0
   AREA=    109.9
    VEL=     12.1

*SECNO 1720.000

3301 HV CHANGED MORE THAN HVINS

  1720.00     2.60  1304.60  1305.66     0.00  1307.99     3.39     1.39     0.00  1310.00
    1333.       0.    1333.       0.       0.      90.       0.       0.       0.  1306.00
     0.00     0.00    14.78     0.00    0.000    0.030    0.000    0.000  1302.00    58.01
 0.035140      45.      45.      45.        6       11        0     0.00    44.19   102.20

FLOW DISTRIBUTION FOR SECNO=   1720.00         CWSEL=   1304.60

STA=      58.     105.
  PER Q=    100.0
   AREA=     90.2
    VEL=     14.8

*SECNO 1625.000
  1625.00     3.61  1301.61  1302.76     0.00  1305.12     3.51     2.87     0.00  1304.00
    1333.       0.    1333.       0.       0.      89.       0.       1.       0.  1304.00
     0.01     0.00    15.03     0.00    0.000    0.030    0.000    0.000  1298.00    20.97
 0.026289      95.      95.      95.        6       14        0     0.00    33.25    54.22

FLOW DISTRIBUTION FOR SECNO=   1625.00         CWSEL=   1301.61

STA=      21.      60.
  PER Q=    100.0
   AREA=     88.7
    VEL=     15.0

*SECNO 1525.000

3301 HV CHANGED MORE THAN HVINS

  1525.00     6.33  1300.33  1300.98     0.00  1303.17     2.84     1.95     0.00  1306.00
    1333.       0.    1333.       0.       0.      99.       0.       1.       0.  1302.00
     0.01     0.00    13.52     0.00    0.000    0.030    0.000    0.000  1294.00    22.17
 0.014999     100.     100.     100.        4       14        0     0.00    23.98    46.16
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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


FLOW DISTRIBUTION FOR SECNO=   1525.00         CWSEL=   1300.33

STA=      22.      52.
  PER Q=    100.0
   AREA=     98.6
    VEL=     13.5

*SECNO 1470.000

3301 HV CHANGED MORE THAN HVINS

  1470.00     2.65  1292.27  1294.77     0.00  1302.14     9.87     1.03     0.00  1299.60
    1333.       0.    1333.       0.       0.      53.       0.       1.       0.  1299.60
     0.01     0.00    25.22     0.00    0.000    0.015    0.000    0.000  1289.62    12.51
 0.024205      55.      55.      55.        6       15        0     0.00    19.99    32.49


FLOW DISTRIBUTION FOR SECNO=   1470.00         CWSEL=   1292.27

STA=      13.      33.
  PER Q=    100.0
   AREA=     52.9
    VEL=     25.2

*SECNO 1461.000

3301 HV CHANGED MORE THAN HVINS

  1461.00     2.63  1291.35  1293.97     0.00  1301.91    10.56     0.23     0.00  1298.70
    1333.       0.    1333.       0.       0.      51.       0.       1.       0.  1298.70
     0.01     0.00    26.08     0.00    0.000    0.015    0.000    0.000  1288.72    13.01
 0.026331       9.       9.       9.        4       14        0     0.00    19.50    32.50


FLOW DISTRIBUTION FOR SECNO=   1461.00         CWSEL=   1291.35

STA=      13.      33.
  PER Q=    100.0
   AREA=     51.1
    VEL=     26.1

*SECNO 1436.000
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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

3301 HV CHANGED MORE THAN HVINS

1436.00	2.61	1288.83	1291.72	0.00	1301.19	12.37	0.72	0.00	1296.20
1333.	0.	1333.	0.	0.	47.	0.	1.	0.	1296.20
0.01	0.00	28.22	0.00	0.000	0.015	0.000	0.000	1286.22	14.01
0.031685	25.	25.	25.	6	17	0	0.00	18.14	32.14

FLOW DISTRIBUTION FOR SECNO= 1436.00 CWSEL= 1288.83

STA= 14. 32.
PER Q= 100.0
AREA= 47.3
VEL= 28.2

*SECNO 1411.000

3301 HV CHANGED MORE THAN HVINS

1411.00	2.64	1286.36	1289.51	0.00	1300.35	13.98	0.84	0.00	1293.70
1333.	0.	1333.	0.	0.	44.	0.	1.	0.	1293.70
0.01	0.00	30.01	0.00	0.000	0.015	0.000	0.000	1283.72	15.01
0.036088	25.	25.	25.	6	17	0	0.00	16.78	31.78

FLOW DISTRIBUTION FOR SECNO= 1411.00 CWSEL= 1286.36

STA= 15. 32.
PER Q= 100.0
AREA= 44.4
VEL= 30.0

*SECNO 1386.000

3301 HV CHANGED MORE THAN HVINS

1386.00	2.75	1283.97	1287.35	0.00	1299.40	15.44	0.94	0.00	1291.20
1333.	0.	1333.	0.	0.	42.	0.	1.	0.	1291.20
0.01	0.00	31.53	0.00	0.000	0.015	0.000	0.000	1281.22	17.01
0.039574	25.	25.	25.	7	17	0	0.00	15.42	32.42

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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


FLOW DISTRIBUTION FOR SECNO=   1386.00         CWSEL=   1283.97

STA=      17.      32.
  PER Q=    100.0
   AREA=     42.3
    VEL=     31.5

*SECNO 1361.000

3301 HV CHANGED MORE THAN HVINS

  1361.00     2.88  1281.60  1285.23     0.00  1298.38    16.78     1.02     0.00  1288.70
    1333.       0.    1333.       0.       0.      41.       0.       1.       0.   1288.70
     0.01     0.00    32.87     0.00    0.000    0.015    0.000    0.000  1278.72    18.01
 0.042381      25.      25.      25.        7       17        0     0.00    14.07    32.07


FLOW DISTRIBUTION FOR SECNO=   1361.00         CWSEL=   1281.60

STA=      18.      32.
  PER Q=    100.0
   AREA=     40.6
    VEL=     32.9

*SECNO 1336.000

3301 HV CHANGED MORE THAN HVINS

  1336.00     3.08  1279.30  1283.19     0.00  1297.29    17.99     1.09     0.00  1286.20
    1333.       0.    1333.       0.       0.      39.       0.       1.       0.   1286.20
     0.01     0.00    34.04     0.00    0.000    0.015    0.000    0.000  1276.22    19.01
 0.044565      25.      25.      25.        7       17        0     0.00    12.71    31.71


FLOW DISTRIBUTION FOR SECNO=   1336.00         CWSEL=   1279.30

STA=      19.      32.
  PER Q=    100.0
   AREA=     39.2
    VEL=     34.0

*SECNO 1311.000
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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	IDC	ICONT	CORAR	TOPWID	ENDST

3301 HV CHANGED MORE THAN HVINS

1311.00	3.35	1277.07	1281.24	0.00	1296.16	19.09	1.14	0.00	1283.70
1333.	0.	1333.	0.	0.	38.	0.	1.	0.	1283.70
0.01	0.00	35.06	0.00	0.000	0.015	0.000	0.000	1273.72	20.01
0.046341	25.	25.	25.	6	17	0	0.00	11.35	31.35

FLOW DISTRIBUTION FOR SECNO= 1311.00 CWSEL= 1277.07

STA= 20. 31.
PER Q= 100.0
AREA= 38.0
VEL= 35.1

*SECNO 1286.000

3301 HV CHANGED MORE THAN HVINS

1286.00	3.72	1274.94	1279.41	0.00	1294.98	20.04	1.18	0.00	1281.20
1333.	0.	1333.	0.	0.	37.	0.	1.	0.	1281.20
0.01	0.00	35.92	0.00	0.000	0.015	0.000	0.000	1271.22	21.01
0.047942	25.	25.	25.	7	17	0	0.00	9.99	30.99

FLOW DISTRIBUTION FOR SECNO= 1286.00 CWSEL= 1274.94

STA= 21. 31.
PER Q= 100.0
AREA= 37.1
VEL= 35.9

*SECNO 1261.000

3301 HV CHANGED MORE THAN HVINS

1261.00	3.82	1274.79	1279.15	0.00	1293.82	19.04	1.16	0.00	1281.00
1333.	0.	1333.	0.	0.	38.	0.	1.	0.	1281.00
0.01	0.00	35.01	0.00	0.000	0.015	0.000	0.000	1270.97	21.56
0.044662	25.	25.	25.	5	17	0	0.00	9.99	31.54

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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   IDC      ICONT    CORAR    TOPWID     ENDST


FLOW DISTRIBUTION FOR SECNO=   1261.00         CWSEL=   1274.79

STA=      22.      32.
  PER Q=    100.0
   AREA=     38.1
    VEL=     35.0

*SECNO 1236.000

3301 HV CHANGED MORE THAN HVINS

  1236.00     3.91  1274.63  1278.90     0.00  1292.74    18.11     1.08     0.00  1280.70
    1333.       0.    1333.       0.       0.     39.       0.       1.       0.   1280.70
     0.01     0.00    34.15     0.00    0.000    0.015    0.000    0.000  1270.72    22.11
 0.041706      25.      25.      25.        4       17        0     0.00     9.99    32.09


FLOW DISTRIBUTION FOR SECNO=   1236.00         CWSEL=   1274.63

STA=      22.      32.
  PER Q=    100.0
   AREA=     39.0
    VEL=     34.2

*SECNO 1211.000

3301 HV CHANGED MORE THAN HVINS

  1211.00     4.00  1274.47  1278.65     0.00  1291.74    17.26     1.01     0.00  1280.50
    1333.       0.    1333.       0.       0.     40.       0.       1.       0.   1280.50
     0.01     0.00    33.34     0.00    0.000    0.015    0.000    0.000  1270.47    22.61
 0.039045      25.      25.      25.        5       17        0     0.00     9.99    32.59


FLOW DISTRIBUTION FOR SECNO=   1211.00         CWSEL=   1274.47

STA=      23.      33.
  PER Q=    100.0
   AREA=     40.0
    VEL=     33.3

*SECNO 1186.000
```

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

1186.00	4.10	1274.32	1278.43	0.00	1290.79	16.47	0.94	0.00	1280.20
1333.	0.	1333.	0.	0.	41.	0.	1.	0.	1280.20
0.01	0.00	32.57	0.00	0.000	0.015	0.000	0.000	1270.22	23.21
0.036610	25.	25.	25.	6	14	0	0.00	9.99	33.19

FLOW DISTRIBUTION FOR SECNO= 1186.00 CWSEL= 1274.32

STA= 23. 33.
PER Q= 100.0
AREA= 40.9
VEL= 32.6

*SECNO 1161.000

3301 HV CHANGED MORE THAN HVINS

1161.00	4.20	1274.17	1278.18	0.00	1289.90	15.73	0.89	0.00	1280.00
1333.	0.	1333.	0.	0.	42.	0.	1.	0.	1280.00
0.01	0.00	31.83	0.00	0.000	0.015	0.000	0.000	1269.97	23.77
0.034401	25.	25.	25.	6	14	0	0.00	9.99	33.75

FLOW DISTRIBUTION FOR SECNO= 1161.00 CWSEL= 1274.17

STA= 24. 34.
PER Q= 100.0
AREA= 41.9
VEL= 31.8

*SECNO 1136.000

3301 HV CHANGED MORE THAN HVINS

1136.00	4.29	1274.01	1277.92	0.00	1289.07	15.06	0.83	0.00	1279.70
1333.	0.	1333.	0.	0.	43.	0.	1.	1.	1279.70
0.01	0.00	31.14	0.00	0.000	0.015	0.000	0.000	1269.72	24.32
0.032410	25.	25.	25.	7	14	0	0.00	9.99	34.30

```
  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

FLOW DISTRIBUTION FOR SECNO=   1136.00         CWSEL=   1274.01

STA=      24.      34.
  PER Q=    100.0
   AREA=     42.8
    VEL=     31.1

*SECNO 1111.000

3301 HV CHANGED MORE THAN HVINS

  1111.00     4.38  1273.85  1277.67     0.00  1288.28    14.43     0.79     0.00  1279.50
    1333.       0.    1333.       0.       0.      44.       0.       1.       1.  1279.50
     0.01     0.00    30.48     0.00    0.000    0.015    0.000    0.000  1269.47    24.88
 0.030578      25.      25.      25.        7       14        0     0.00     9.99    34.86

FLOW DISTRIBUTION FOR SECNO=   1111.00         CWSEL=   1273.85

STA=      25.      35.
  PER Q=    100.0
   AREA=     43.7
    VEL=     30.5

*SECNO 1086.000

3301 HV CHANGED MORE THAN HVINS

  1086.00     4.48  1273.70  1277.41     0.00  1287.54    13.84     0.74     0.00  1279.20
    1333.       0.    1333.       0.       0.      45.       0.       1.       1.  1279.20
     0.01     0.00    29.86     0.00    0.000    0.015    0.000    0.000  1269.22    25.43
 0.028906      25.      25.      25.        7       14        0     0.00     9.99    35.41

FLOW DISTRIBUTION FOR SECNO=   1086.00         CWSEL=   1273.70

STA=      25.      35.
  PER Q=    100.0
   AREA=     44.7
    VEL=     29.9

*SECNO 1061.000
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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

3301 HV CHANGED MORE THAN HVINS

1061.00	4.57	1273.54	1277.16	0.00	1286.84	13.30	0.70	0.00	1279.00
1333.	0.	1333.	0.	0.	46.	0.	1.	1.	1279.00
0.01	0.00	29.27	0.00	0.000	0.015	0.000	0.000	1268.97	25.97
0.027390	25.	25.	25.	7	14	0	0.00	9.99	35.95

FLOW DISTRIBUTION FOR SECNO= 1061.00 CWSEL= 1273.54

STA= 26. 36.
PER Q= 100.0
AREA= 45.6
VEL= 29.3

*SECNO 1037.000

1037.00	4.65	1273.38	1276.92	0.00	1286.19	12.81	0.64	0.00	1278.70
1333.	0.	1333.	0.	0.	46.	0.	1.	1.	1278.70
0.01	0.00	28.73	0.00	0.000	0.015	0.000	0.000	1268.73	26.51
0.026053	24.	24.	24.	7	14	0	0.00	9.99	36.49

FLOW DISTRIBUTION FOR SECNO= 1037.00 CWSEL= 1273.38

STA= 27. 37.
PER Q= 100.0
AREA= 46.4
VEL= 28.7

*SECNO 1027.000

3301 HV CHANGED MORE THAN HVINS

1027.00	3.35	1272.04	1275.23	0.00	1285.86	13.83	0.33	0.00	1288.50
1333.	0.	1333.	0.	0.	45.	0.	1.	1.	1288.00
0.01	0.00	29.84	0.00	0.000	0.018	0.000	0.000	1268.69	39.46
0.043149	10.	10.	10.	6	11	0	0.00	16.70	56.16

FLOW DISTRIBUTION FOR SECNO= 1027.00 CWSEL= 1272.04

STA= 39. 72.
PER Q= 100.0
AREA= 44.7
VEL= 29.8

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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   IDC      ICONT    CORAR    TOPWID     ENDST


*SECNO 1017.000
  1017.00     3.39  1272.04  1275.20     0.00  1285.44    13.40     0.42     0.00  1288.50
    1333.       0.    1333.       0.       0.      45.       0.       1.       1.  1288.00
     0.01     0.00    29.38     0.00    0.000    0.018    0.000    0.000  1268.65    37.46
 0.041295      10.      10.      10.        7       14        0     0.00    16.78    54.24


FLOW DISTRIBUTION FOR SECNO=   1017.00         CWSEL=   1272.04

STA=      37.      70.
  PER Q=    100.0
   AREA=     45.4
    VEL=     29.4

*SECNO 1007.000
  1007.00     3.44  1272.05  1275.16     0.00  1285.04    12.99     0.40     0.00  1288.50
    1333.       0.    1333.       0.       0.      46.       0.       1.       1.  1288.00
     0.01     0.00    28.93     0.00    0.000    0.018    0.000    0.000  1268.61    34.46
 0.039531      10.      10.      10.        7       14        0     0.00    16.86    51.32


FLOW DISTRIBUTION FOR SECNO=   1007.00         CWSEL=   1272.05

STA=      34.      67.
  PER Q=    100.0
   AREA=     46.1
    VEL=     28.9

*SECNO 997.000
   997.00     3.49  1272.07  1275.14     0.00  1284.65    12.59     0.39     0.00  1288.50
    1333.       0.    1333.       0.       0.      47.       0.       1.       1.  1288.00
     0.01     0.00    28.47     0.00    0.000    0.018    0.000    0.000  1268.58    30.94
 0.037717      10.      10.      10.        7       14        0     0.00    16.88    47.82


FLOW DISTRIBUTION FOR SECNO=    997.00         CWSEL=   1272.07

STA=      31.      63.
  PER Q=    100.0
   AREA=     46.8
    VEL=     28.5
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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 987.000
   987.00     3.52  1272.06  1275.08     0.00  1284.28    12.23     0.37     0.00  1288.50
    1333.       0.    1333.       0.       0.      48.       0.       1.       1.   1288.00
     0.01     0.00    28.06     0.00    0.000    0.018    0.000    0.000  1268.54    28.44
 0.036301      10.      10.      10.        7       14        0     0.00    17.03    45.48


FLOW DISTRIBUTION FOR SECNO=    987.00         CWSEL=   1272.06

STA=      28.      61.
  PER Q=    100.0
   AREA=     47.5
    VEL=     28.1

*SECNO 977.000
   977.00     3.56  1272.06  1275.04     0.00  1283.93    11.86     0.36     0.00  1288.50
    1333.       0.    1333.       0.       0.      48.       0.       1.       1.   1288.00
     0.01     0.00    27.64     0.00    0.000    0.018    0.000    0.000  1268.50    26.44
 0.034800      10.      10.      10.        6       14        0     0.00    17.12    43.56


FLOW DISTRIBUTION FOR SECNO=    977.00         CWSEL=   1272.06

STA=      26.      60.
  PER Q=    100.0
   AREA=     48.2
    VEL=     27.6

*SECNO 967.000
   967.00     3.60  1272.06  1275.00     0.00  1283.59    11.52     0.34     0.00  1288.50
    1333.       0.    1333.       0.       0.      49.       0.       1.       1.   1288.00
     0.01     0.00    27.24     0.00    0.000    0.018    0.000    0.000  1268.46    26.44
 0.033411      10.      10.      10.        6       14        0     0.00    17.20    43.64


FLOW DISTRIBUTION FOR SECNO=    967.00         CWSEL=   1272.06

STA=      26.      60.
  PER Q=    100.0
   AREA=     48.9
    VEL=     27.2
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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 957.000
   957.00     3.64  1272.06  1274.96     0.00  1283.26     11.20      0.33      0.00  1288.50
    1333.       0.    1333.       0.       0.      50.       0.       1.        1.   1288.00
     0.01     0.00    26.85     0.00    0.000     0.018    0.000    0.000   1268.42     26.44
 0.032092      10.      10.      10.        6        14        0     0.00     17.28     43.72


FLOW DISTRIBUTION FOR SECNO=    957.00          CWSEL=   1272.06

STA=      26.      60.
  PER Q=    100.0
   AREA=     49.7
    VEL=     26.9

*SECNO 947.000
   947.00     3.68  1272.06  1274.91     0.00  1282.94     10.88      0.31      0.00  1288.50
    1333.       0.    1333.       0.       0.      50.       0.       1.        1.   1288.00
     0.01     0.00    26.47     0.00    0.000     0.018    0.000    0.000   1268.38     26.44
 0.030834      10.      10.      10.        6        14        0     0.00     17.36     43.80


FLOW DISTRIBUTION FOR SECNO=    947.00          CWSEL=   1272.06

STA=      26.      60.
  PER Q=    100.0
   AREA=     50.4
    VEL=     26.5

*SECNO 937.000
   937.00     3.71  1272.06  1274.88     0.00  1282.64     10.58      0.30      0.00  1288.50
    1333.       0.    1333.       0.       0.      51.       0.       1.        1.   1288.00
     0.01     0.00    26.10     0.00    0.000     0.018    0.000    0.000   1268.35     26.43
 0.029633      10.      10.      10.        5        14        0     0.00     17.45     43.87


FLOW DISTRIBUTION FOR SECNO=    937.00          CWSEL=   1272.06

STA=      26.      60.
  PER Q=    100.0
   AREA=     51.1
    VEL=     26.1
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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   IDC      ICONT    CORAR    TOPWID     ENDST


*SECNO 925.000
  925.00     3.77  1272.07  1274.83     0.00  1282.29    10.22     0.35     0.00  1283.00
   1333.      0.    1333.      0.       0.      52.       0.       1.       1.   1283.30
    0.01     0.00    25.66     0.00    0.000    0.018    0.000    0.000  1268.30    20.93
0.028250      12.      12.      12.        6       14        0     0.00    17.55    38.47


FLOW DISTRIBUTION FOR SECNO=    925.00         CWSEL=   1272.07

STA=      21.      50.
 PER Q=    100.0
  AREA=     52.0
   VEL=     25.7

*SECNO 855.000

3301 HV CHANGED MORE THAN HVINS

  855.00     4.03  1272.02  1274.49     0.00  1280.55     8.53     1.74     0.00  1282.60
   1333.      0.    1333.      0.       0.      57.       0.       2.       1.   1282.70
    0.01     0.00    23.44     0.00    0.000    0.018    0.000    0.000  1267.99    23.13
0.022073      70.      70.      70.        7       14        0     0.00    18.26    41.40


FLOW DISTRIBUTION FOR SECNO=    855.00         CWSEL=   1272.02

STA=      23.      52.
 PER Q=    100.0
  AREA=     56.9
   VEL=     23.4

*SECNO 800.000

3301 HV CHANGED MORE THAN HVINS

  800.00     4.29  1272.11  1274.35     0.00  1279.46     7.35     1.09     0.00  1282.60
   1333.      0.    1333.      0.       0.      61.       0.       2.       1.   1281.80
    0.01     0.00    21.76     0.00    0.000    0.018    0.000    0.000  1267.82    22.49
0.017871      55.      55.      55.        7       14        0     0.00    18.58    41.07


FLOW DISTRIBUTION FOR SECNO=    800.00         CWSEL=   1272.11

STA=      22.      51.
 PER Q=    100.0
  AREA=     61.3
   VEL=     21.8
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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   IDC      ICONT    CORAR    TOPWID     ENDST


*SECNO 755.000

3301 HV CHANGED MORE THAN HVINS

   755.00     4.46  1272.11  1274.16     0.00  1278.72     6.61     0.75     0.00  1281.70
    1333.       0.    1333.       0.       0.      65.       0.       2.       1.  1281.10
     0.01     0.00    20.63     0.00    0.000    0.018    0.000    0.000  1267.65    22.96
 0.015468      45.      45.      45.        6       14        0     0.00    19.04    42.00


FLOW DISTRIBUTION FOR SECNO=    755.00         CWSEL=   1272.11

STA=      23.      51.
  PER Q=    100.0
   AREA=     64.6
    VEL=     20.6

*SECNO 667.000

3301 HV CHANGED MORE THAN HVINS

   667.00     4.31  1271.62  1273.45     0.00  1277.42     5.79     1.30     0.00  1280.00
    1333.       0.    1333.       0.       0.      69.       0.       2.       1.  1280.00
     0.02     0.00    19.32     0.00    0.000    0.018    0.000    0.000  1267.31    32.98
 0.014082      88.      88.      88.        6       11        0     0.00    22.02    55.00


FLOW DISTRIBUTION FOR SECNO=    667.00         CWSEL=   1271.62

STA=      33.      63.
  PER Q=    100.0
   AREA=     69.0
    VEL=     19.3

*SECNO 600.000

3301 HV CHANGED MORE THAN HVINS

   600.00     5.20  1272.26  1273.58     0.00  1276.68     4.42     0.74     0.00  1277.60
    1333.       0.    1333.       0.       0.      79.       0.       2.       1.  1277.80
     0.02     0.00    16.87     0.00    0.000    0.018    0.000    0.000  1267.06    51.38
 0.008859      67.      67.      67.        4       14        0     0.00    20.43    71.82
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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


FLOW DISTRIBUTION FOR SECNO=    600.00         CWSEL=   1272.26

STA=      51.      77.
  PER Q=    100.0
   AREA=     79.1
    VEL=     16.9

*SECNO 470.000

3301 HV CHANGED MORE THAN HVINS

   470.00     2.53  1267.53  1269.12     0.00  1273.97     6.44     2.71     0.00  1270.00
    1333.       0.    1333.       0.       0.      65.       0.       2.       1.  1270.00
     0.02     0.00    20.37     0.00    0.000    0.030    0.000    0.000  1265.00    25.27
 0.095769     130.     130.     130.        7       15        0     0.00    41.94    67.20


FLOW DISTRIBUTION FOR SECNO=    470.00         CWSEL=   1267.53

STA=      25.      75.
  PER Q=    100.0
   AREA=     65.5
    VEL=     20.4

*SECNO 430.000

3301 HV CHANGED MORE THAN HVINS

   430.00     1.54  1265.54  1266.73     0.00  1269.90     4.37     4.07     0.00  1270.00
    1333.       0.    1333.       0.       0.      80.       0.       2.       1.  1270.00
     0.02     0.00    16.77     0.00    0.000    0.030    0.000    0.000  1264.00    21.09
 0.069977      50.      50.      50.        6        8        0     0.00    53.83    74.91


FLOW DISTRIBUTION FOR SECNO=    430.00         CWSEL=   1265.54

STA=      21.      90.
  PER Q=    100.0
   AREA=     79.5
    VEL=     16.8

*SECNO 325.000
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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


3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
   325.00     4.69  1267.69  1267.69     0.00  1269.75     2.06     2.25     1.54  1268.00
    1333.       0.    1333.       0.       0.     116.       0.       2.       1.  1269.00
     0.02     0.00    11.51     0.00    0.000    0.030    0.000    0.000  1263.00    10.31
 0.010239     105.     105.     105.       20       21        0     0.00    29.38    39.69


FLOW DISTRIBUTION FOR SECNO=    325.00          CWSEL=   1267.69

STA=      10.      70.
  PER Q=    100.0
   AREA=    115.8
    VEL=     11.5

*SECNO 225.000
3280 CROSS SECTION    225.00 EXTENDED      0.45 FEET

   225.00     4.46  1266.46  1267.03     0.00  1268.49     2.03     1.26     0.00  1266.00
    1333.       0.    1333.       0.       0.     117.       0.       3.       1.  1267.00
     0.02     0.00    11.44     0.00    0.000    0.030    0.000    0.000  1262.00    10.00
 0.015791     100.     100.     100.        3        8        0     0.00    43.52    53.52


FLOW DISTRIBUTION FOR SECNO=    225.00          CWSEL=   1266.46

STA=      10.      70.
  PER Q=    100.0
   AREA=    116.6
    VEL=     11.4

*SECNO 125.000
   125.00     2.24  1263.24  1263.91     0.00  1265.52     2.29     2.97     0.00  1264.00
    1333.       0.    1333.       0.       0.     110.       0.       3.       1.  1264.00
     0.03     0.00    12.13     0.00    0.000    0.030    0.000    0.000  1261.00    15.75
 0.075280     100.     100.     100.        6       14        0     0.00   129.81   145.55
```

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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


FLOW DISTRIBUTION FOR SECNO=    125.00         CWSEL=   1263.24

STA=      16.     208.
  PER Q=    100.0
   AREA=    109.9
    VEL=     12.1

*SECNO 25.000
3280 CROSS SECTION     25.00 EXTENDED      0.57 FEET


3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
    25.00     2.57  1262.57  1262.57     0.00  1263.45     0.88     2.31     0.33  1262.00
    1333.       0.    1333.       0.       0.     177.       0.       3.       2.  1262.00
     0.03     0.00     7.55     0.00    0.000    0.030    0.000    0.000  1260.00    10.00
 0.011050     100.     100.     100.       20        8        0     0.00   100.00   110.00


FLOW DISTRIBUTION FOR SECNO=     25.00         CWSEL=   1262.57

STA=      10.     110.
  PER Q=    100.0
   AREA=    176.7
    VEL=      7.5
```

PROFILE FOR STREAM Stations 0+25 to 18+75 a

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  1260.    1270.    1280.    1290.    1300.    1310.    1320.    1330.    1340.    1350.
   SECNO   CUMDIS

 1875.00     0.  .        .        .        .        .      I .WE R  .        .        .        .        .
             5.  .        .        .        .        .      I WCE R  .        .        .        .        .
            10.  .        .        .        .        .      I WELR   .        .        .        .        .
            15.  .        .        .        .        .      I WELR   .        .        .        .        .
            20.  .        .        .        .        .     I  WELR   .        .        .        .        .
            25.  .        .        .        .        .     I  WEL    .        .        .        .        .
            30.  .        .        .        .        .     I  WEL    .        .        .        .        .
            35.  .        .        .        .        .     I WCEL    .        .        .        .        .
            40.  .        .        .        .        .     I WCEL    .        .        .        .        .
            45.  .        .        .        .        .     I WCEL    .        .        .        .        .
            50.  .        .        .        .        .    I  WMEL    .        .        .        .        .
            55.  .        .        .        .        .    I  WREL    .        .        .        .        .
 1815.00    60.  .        .        .        .        .    I  WREL    .        .        .        .        .
            65.  .        .        .        .        .    I WCREL    .        .        .        .        .
            70.  .        .        .        .        .    I WCE L    .        .        .        .        .
            75.  .        .        .        .        .   I  WCEL     .        .        .        .        .
            80.  .        .        .        .        .   I  WCEL     .        .        .        .        .
            85.  .        .        .        .        .   I  WCEL     .        .        .        .        .
            90.  .        .        .        .        .   I  WREL     .        .        .        .        .
            95.  .        .        .        .        .   I  WREL     .        .        .        .        .
           100.  .        .        .        .        .  I  WC E      .        .        .        .        .
           105.  .        .        .        .        .  I  WC E      .        .        .        .        .
 1765.00   110.  .        .        .        .        .  I  WCEL      .        .        .        .        .
           115.  .        .        .        .        .  I  WCEL      .        .        .        .        .
           120.  .        .        .        .        .  I  WREL      .        .        .        .        .
           125.  .        .        .        .        . I  WC EL      .        .        .        .        .
           130.  .        .        .        .        . I  WC EL      .        .        .        .        .
           135.  .        .        .        .        . I  WC EL      .        .        .        .        .
           140.  .        .        .        .        . I WCRE L      .        .        .        .        .
           145.  .        .        .        .        . I  WC E L     .        .        .        .        .
           150.  .        .        .        .        . I  WC E L     .        .        .        .        .
 1720.00   155.  .        .        .        .        . I  WC E L     .        .        .        .        .
           160.  .        .        .        .        . I W C E L     .        .        .        .        .
           165.  .        .        .        .        . I WCR EL.     .        .        .        .        .
           170.  .        .        .        .        .I  WCR EL.     .        .        .        .        .
           175.  .        .        .        .        .I  WCRE L.     .        .        .        .        .
           180.  .        .        .        .        .I  WC EL .     .        .        .        .        .
           185.  .        .        .        .        .I  WC EL .     .        .        .        .        .
           190.  .        .        .        .        .I W C EL .     .        .        .        .        .
           195.  .        .        .        .        I  WCR E  .     .        .        .        .        .
           200.  .        .        .        .        I  WCR E  .     .        .        .        .        .
           205.  .        .        .        .        I  WCREL  .     .        .        .        .        .
           210.  .        .        .        .        I  WCREL  .     .        .        .        .        .
           215.  .        .        .        .       I.  WCRE   .     .        .        .        .        .
           220.  .        .        .        .       I.  WCRE   .     .        .        .        .        .
           225.  .        .        .        .       I. W CRE   .     .        .        .        .        .
           230.  .        .        .        .       I. WCRLE   .     .        .        .        .        .
           235.  .        .        .        .       I. WCRLE   .     .        .        .        .        .
           240.  .        .        .        .      I . WCRE    .     .        .        .        .        .
           245.  .        .        .        .      I . WCLE    .     .        .        .        .        .
 1625.00   250.  .        .        .        .      I . WCLE    .     .        .        .        .        .
           255.  .        .        .        .      I . WCLE    .     .        .        .        .        .
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         260.  .     .     .     .      I .W CLE  .     .     .     .     .     .
         265.  .     .     .     .     I  .WC LE  .     .     .     .     .     .
         270.  .     .     .     .     I  .WC LE  .     .     .     .     .     .
         275.  .     .     .     .     I  .WC RE  .     .     .     .     .     .
         280.  .     .     .     .     I  .WCR E  .     .     .     .     .     .
         285.  .     .     .     .     I  .WCREL  .     .     .     .     .     .
         290.  .     .     .     .    I   .WCREL  .     .     .     .     .     .
         295.  .     .     .     .    I   .WCREL  .     .     .     .     .     .
         300.  .     .     .     .    I   .WCREL  .     .     .     .     .     .
         305.  .     .     .     .    I   .WCREL  .     .     .     .     .     .
         310.  .     .     .     .    I   .WCREL  .     .     .     .     .     .
         315.  .     .     .     .   I    .WCREL  .     .     .     .     .     .
         320.  .     .     .     .   I    .WCREL  .     .     .     .     .     .
         325.  .     .     .     .   I    .W RE L  .     .     .     .     .     .
         330.  .     .     .     .   I    .WR E L  .     .     .     .     .     .
         335.  .     .     .     .   I    .WRE  L  .     .     .     .     .     .
         340.  .     .     .     .  I     WCRE  L  .     .     .     .     .     .
         345.  .     .     .     .  I     WCRE  L  .     .     .     .     .     .
1525.00  350.  .     .     .     .  I     WCRE  L  .     .     .     .     .     .
         355.  .     .     .     .  I     W RE L  .     .     .     .     .     .
         360.  .     .     .     . I     WC RE L  .     .     .     .     .     .
         365.  .     .     .     . I    WC.R EL   .     .     .     .     .     .
         370.  .     .     .     . I    W C.R EL  .     .     .     .     .     .
         375.  .     .     .     . I    WC .R E   .     .     .     .     .     .
         380.  .     .     .     . I   W C .R E   .     .     .     .     .     .
         385.  .     .     .     .I   W C  R LE   .     .     .     .     .     .
         390.  .     .     .     .I  W C   RLE    .     .     .     .     .     .
         395.  .     .     .     I   W C   RLE    .     .     .     .     .     .
         400.  .     .     .     I  W C    L E    .     .     .     .     .     .
1470.00  405.  .     .     .     I W  C    L E    .     .     .     .     .     .
         410.  .     .     .    I. W C    L. E    .     .     .     .     .     .
1461.00  415.  .     .     .    I.W  C    L. E    .     .     .     .     .     .
         420.  .     .     .   I .W  C   L . E    .     .     .     .     .     .
         425.  .     .     .   I W  C    L . E    .     .     .     .     .     .
         430.  .     .     .  I  W  C   L  .E     .     .     .     .     .     .
         435.  .     .     .  I W. C    L  .E     .     .     .     .     .     .
1436.00  440.  .     .     .  I  W. C   L   .E    .     .     .     .     .     .
         445.  .     .     .  I W .C    L   .E    .     .     .     .     .     .
         450.  .     .     . I  W .C   L    .E    .     .     .     .     .     .
         455.  .     .     . I W  C    L    .E    .     .     .     .     .     .
         460.  .     .     . I  W  C   L    .E    .     .     .     .     .     .
1411.00  465.  .     .     . I W   C   L    E     .     .     .     .     .     .
         470.  .     .     . I  W  C.  L    E     .     .     .     .     .     .
         475.  .     .     . I W   C.  L    E     .     .     .     .     .     .
         480.  .     .     . I  W  C . L    E     .     .     .     .     .     .
         485.  .     .     . I W   C . L    E     .     .     .     .     .     .
1386.00  490.  .     .     .I  W  C  .L    E.     .     .     .     .     .     .
         495.  .     .     .I W   C  .L    E.     .     .     .     .     .     .
         500.  .     .     I  W   C L      E.     .     .     .     .     .     .
         505.  .     .     I  W  C  L      E.     .     .     .     .     .     .
         510.  .     .    I. W   C L.      E.     .     .     .     .     .     .
1361.00  515.  .     .    I. W  C  L.     E .     .     .     .     .     .     .
         520.  .     .   I .W   C L .     E .     .     .     .     .     .     .
         525.  .     .   I .W  C  L .     E .     .     .     .     .     .     .
         530.  .     .  I  W   C L  .     E .     .     .     .     .     .     .
         535.  .     .  I  W   C L  .     E .     .     .     .     .     .     .
1336.00  540.  .     .  I  W.  C L  .    E  .     .     .     .     .     .     .
         545.  .     .  I  W.  C L  .    E  .     .     .     .     .     .     .
         550.  .     . I  W . C L  .    E  .     .     .     .     .     .     .
         555.  .     . I  W . C L  .    E  .     .     .     .     .     .     .
         560.  .     .I  W . C L   .   E   .     .     .     .     .     .     .
1311.00  565.  .     .I  W .C  L   .   E   .     .     .     .     .     .     .
         570.  .     .I  W .C L    .   E   .     .     .     .     .     .     .
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         575.  .      . I W  .C L     .   E  .     .     .     .     .     .     .
         580.  .      . I  W  C L     .  E   .     .     .     .     .     .     .
         585.  .      . I W   C L     .  E   .     .     .     .     .     .     .
1286.00  590.  .      .I  W  C.L      .  E   .     .     .     .     .     .     .
         595.  .      .I  W  C.L      .  E   .     .     .     .     .     .     .
         600.  .      .I  W  C.L      .  E   .     .     .     .     .     .     .
         605.  .      .I  W  C.L      . E    .     .     .     .     .     .     .
         610.  .      .I  W  C.L      . E    .     .     .     .     .     .     .
1261.00  615.  .      .I  W  C.L      . E    .     .     .     .     .     .     .
         620.  .      .I  W  C.L      . E    .     .     .     .     .     .     .
         625.  .      .I  W  C.L      . E    .     .     .     .     .     .     .
         630.  .      .I  W  C.L      . E    .     .     .     .     .     .     .
         635.  .      .I  W  C.L      . E    .     .     .     .     .     .     .
1236.00  640.  .      .I  W  C.L      . E    .     .     .     .     .     .     .
         645.  .      .I  W  C.L      . E    .     .     .     .     .     .     .
         650.  .      .I  W  C.L      .E     .     .     .     .     .     .     .
         655.  .      .I  W  C.L      .E     .     .     .     .     .     .     .
         660.  .      .I  W  C.L      .E     .     .     .     .     .     .     .
1211.00  665.  .      I  W   C.L      .E     .     .     .     .     .     .     .
         670.  .      I  W   CL       .E     .     .     .     .     .     .     .
         675.  .      I  W   CL       .E     .     .     .     .     .     .     .
         680.  .      I  W   CL       .E     .     .     .     .     .     .     .
         685.  .      I  W  C L       .E     .     .     .     .     .     .     .
1186.00  690.  .      I  W  C L       .E     .     .     .     .     .     .     .
         695.  .      I  W  C L       .E     .     .     .     .     .     .     .
         700.  .      I  W  C L       E      .     .     .     .     .     .     .
         705.  .      I  W  C L       E      .     .     .     .     .     .     .
         710.  .      I  W  C L       E      .     .     .     .     .     .     .
1161.00  715.  .      I  W  C L       E      .     .     .     .     .     .     .
         720.  .      I  W  C L       E      .     .     .     .     .     .     .
         725.  .      I  W  C L       E      .     .     .     .     .     .     .
         730.  .      I  W  C L      E.      .     .     .     .     .     .     .
         735.  .      I  W  C L      E.      .     .     .     .     .     .     .
1136.00  740.  .      I  W  C L      E.      .     .     .     .     .     .     .
         745.  .      I  W  C L      E.      .     .     .     .     .     .     .
         750.  .      I  W  C L      E.      .     .     .     .     .     .     .
         755.  .      I  W  C L      E.      .     .     .     .     .     .     .
         760.  .      I  W  C L     E .      .     .     .     .     .     .     .
1111.00  765.  .     I.  W  C L     E .      .     .     .     .     .     .     .
         770.  .     I.  W  CL.     E .      .     .     .     .     .     .     .
         775.  .     I.  W  CL.     E .      .     .     .     .     .     .     .
         780.  .     I.  W  CL.     E .      .     .     .     .     .     .     .
         785.  .     I.  W  C L.    E .      .     .     .     .     .     .     .
1086.00  790.  .     I.  W  C L.    E .      .     .     .     .     .     .     .
         795.  .     I.  W  C L.    E  .     .     .     .     .     .     .     .
         800.  .     I.  W  C L.    E  .     .     .     .     .     .     .     .
         805.  .     I.  W  C L.    E  .     .     .     .     .     .     .     .
         810.  .     I.  W  C L.    E  .     .     .     .     .     .     .     .
1061.00  815.  .     I.  W  C L.    E  .     .     .     .     .     .     .     .
         820.  .     I. W   C L.    E  .     .     .     .     .     .     .     .
         825.  .     I. W   C L.    E  .     .     .     .     .     .     .     .
         830.  .     I. W   C L.   E   .     .     .     .     .     .     .     .
         835.  .     I. W   C L.   E   .     .     .     .     .     .     .     .
1037.00  840.  .     I. W   C L.   E   .     .     .     .     .     .     .     .
         845.  .     I. W C   .  RL E   .     .     .     .     .     .     .     .
1027.00  850.  .     I. W C   .   E RL.     .     .     .     .     .     .     .
         855.  .     I. W C   .   E RL.     .     .     .     .     .     .     .
1017.00  860.  .     I. W C   .  E  RL.     .     .     .     .     .     .     .
         865.  .     I. W C   .  E  RL.     .     .     .     .     .     .     .
1007.00  870.  .     I. W C   .  E  RL.     .     .     .     .     .     .     .
         875.  .     I. W C   .  E  RL.     .     .     .     .     .     .     .
 997.00  880.  .     I. W C   .  E  RL.     .     .     .     .     .     .     .
         885.  .     I. W C   . E   RL.     .     .     .     .     .     .     .
```

987.00	890.	.		I.	W	C		.	E	RL.		.	.	.	.	.	.	.
	895.	.		I.	W	C		.	E	RL.		.	.	.	.	.	.	.
977.00	900.	.		I.	W	C		.	E	RL.		.	.	.	.	.	.	.
	905.	.	I	.	W	C		.	E	RL.		.	.	.	.	.	.	.
967.00	910.	.	I	.	W	C		.	E	RL.		.	.	.	.	.	.	.
	915.	.	I	.	W	C		.	E	RL.		.	.	.	.	.	.	.
957.00	920.	.	I	.	W	C		.	E	RL.		.	.	.	.	.	.	.
	925.	.	I	.	W	C		.	E	RL.		.	.	.	.	.	.	.
947.00	930.	.	I	.	W	C		.	E	RL.		.	.	.	.	.	.	.
	935.	.	I	.	W	C		.	E	RL.		.	.	.	.	.	.	.
937.00	940.	.	I	.	W	C		.	E	RL.		.	.	.	.	.	.	.
	945.	.	I	.	W	C		.	E		L	.	.	.	.	.	.	.
925.00	950.	.	I	.	W	C		.	EL			.	.	.	.	.	.	.
	955.	.	I	.	W	C		.	EL			.	.	.	.	.	.	.
	960.	.	I	.	W	C		.	EL			.	.	.	.	.	.	.
	965.	.	I	.	W	C		.	EL			.	.	.	.	.	.	.
	970.	.	I	.	W	C		.	EL			.	.	.	.	.	.	.
	975.	.	I	.	W	C		.	EL			.	.	.	.	.	.	.
	980.	.	I	.	W	C		.	EL			.	.	.	.	.	.	.
	985.	.	I	.	W	C		.E	L			.	.	.	.	.	.	.
	990.	.	I	.	W	C		.E	L			.	.	.	.	.	.	.
	995.	.	I	.	W	C		.E	L			.	.	.	.	.	.	.
	1000.	.	I	.	W	C		.E	L			.	.	.	.	.	.	.
	1005.	.	I	.	W	C		.E	L			.	.	.	.	.	.	.
	1010.	.	I	.	W	C		.E	L			.	.	.	.	.	.	.
	1015.	.	I	.	W	C		.E	L			.	.	.	.	.	.	.
855.00	1020.	.	I	.	W	C		.E	L			.	.	.	.	.	.	.
	1025.	.	I	.	W	C		E	L			.	.	.	.	.	.	.
	1030.	.	I	.	W	C		E	ML			.	.	.	.	.	.	.
	1035.	.	I	.	W	C		E	RL			.	.	.	.	.	.	.
	1040.	.	I	.	W	C		E	RL			.	.	.	.	.	.	.
	1045.	.	I	.	W	C		E	RL			.	.	.	.	.	.	.
	1050.	.	I	.	W	C		E	RL			.	.	.	.	.	.	.
	1055.	.	I	.	W	C		E	RL			.	.	.	.	.	.	.
	1060.	.	I	.	W	C		E	RL			.	.	.	.	.	.	.
	1065.	.	I	.	W	C		E	RL			.	.	.	.	.	.	.
	1070.	.	I	.	W	C		E	RL			.	.	.	.	.	.	.
800.00	1075.	.	I	.	W	C		E.	RL			.	.	.	.	.	.	.
	1080.	.	I	.	W	C		E.	RL			.	.	.	.	.	.	.
	1085.	.	I	.	W	C		E.	L			.	.	.	.	.	.	.
	1090.	.	I	.	W	C		E.	L			.	.	.	.	.	.	.
	1095.	.	I	.	W	C		E.	RL			.	.	.	.	.	.	.
	1100.	.	I	.	W	C		E.	RL			.	.	.	.	.	.	.
	1105.	.	I	.	W	C		E.	RL			.	.	.	.	.	.	.
	1110.	.	I	.	W	C		E.	RL			.	.	.	.	.	.	.
	1115.	.	I	.	W	C		E.	RL			.	.	.	.	.	.	.
755.00	1120.	.	I	.	W	C		E.	RL			.	.	.	.	.	.	.
	1125.	.	I	.	W	C		E.	RL			.	.	.	.	.	.	.
	1130.	.	I	.	W	C		E.	RL			.	.	.	.	.	.	.
	1135.	.	I	.	W	C	E	.	L			.	.	.	.	.	.	.
	1140.	.	I	.	W	C	E	.	L			.	.	.	.	.	.	.
	1145.	.	I	.	W	C	E	.	L			.	.	.	.	.	.	.
	1150.	.	I	.	W	C	E	.	L			.	.	.	.	.	.	.
	1155.	.	I	.	W	C	E	.	L			.	.	.	.	.	.	.
	1160.	.	I	.	W	C	E	.	L			.	.	.	.	.	.	.
	1165.	.	I	.	W	C	E	.	L			.	.	.	.	.	.	.
	1170.	.	I	.	W	C	E		RL			.	.	.	.	.	.	.
	1175.	.	I	.	W	C	E		RL			.	.	.	.	.	.	.
	1180.	.	I	.	W	C	E		RL			.	.	.	.	.	.	.
	1185.	.	I	.	W	C	E		L			.	.	.	.	.	.	.
	1190.	.	I	.	W	C	E		L			.	.	.	.	.	.	.
	1195.	.	I	.	W	C	E		L			.	.	.	.	.	.	.
	1200.	.	I	.	W	C	E		L			.	.	.	.	.	.	.

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        1205.  .     I  . WC   E  L        .        .        .        .        .        .        .
667.00  1210.  .     I  . WC   E  L        .        .        .        .        .        .        .
        1215.  .     I  . WC   E  L        .        .        .        .        .        .        .
        1220.  .     I  . WC   E  L        .        .        .        .        .        .        .
        1225.  .     I  . WC   E LR        .        .        .        .        .        .        .
        1230.  .     I  . WC   E L.        .        .        .        .        .        .        .
        1235.  .     I  . WC   E L.        .        .        .        .        .        .        .
        1240.  .     I  . W C  E L.        .        .        .        .        .        .        .
        1245.  .     I  . W C  E L.        .        .        .        .        .        .        .
        1250.  .     I  . W C  E L.        .        .        .        .        .        .        .
        1255.  .     I  . W C  ELR.        .        .        .        .        .        .        .
        1260.  .     I  . W C  EL .        .        .        .        .        .        .        .
        1265.  .     I  . W C  EL .        .        .        .        .        .        .        .
        1270.  .     I  . W C  EL .        .        .        .        .        .        .        .
600.00  1275.  .     I  . W C  EL .        .        .        .        .        .        .        .
        1280.  .     I  . WC   ER .        .        .        .        .        .        .        .
        1285.  .     I  . WC  EL  .        .        .        .        .        .        .        .
        1290.  .     I  . WC  EL  .        .        .        .        .        .        .        .
        1295.  .     I  . WC  ER  .        .        .        .        .        .        .        .
        1300.  .     I  .W C  E   .        .        .        .        .        .        .        .
        1305.  .     I  .W C  E   .        .        .        .        .        .        .        .
        1310.  .     I  .WC   E   .        .        .        .        .        .        .        .
        1315.  .    I   .WC  LE   .        .        .        .        .        .        .        .
        1320.  .    I   .WC  LE   .        .        .        .        .        .        .        .
        1325.  .    I   W C  LE   .        .        .        .        .        .        .        .
        1330.  .    I   W C LRE   .        .        .        .        .        .        .        .
        1335.  .    I   W C LE    .        .        .        .        .        .        .        .
        1340.  .    I   WC  LE    .        .        .        .        .        .        .        .
        1345.  .    I   WC  LE    .        .        .        .        .        .        .        .
        1350.  .    I   WC L E    .        .        .        .        .        .        .        .
        1355.  .    I  W.C L E    .        .        .        .        .        .        .        .
        1360.  .    I  W.C L E    .        .        .        .        .        .        .        .
        1365.  .    I  WC L  E    .        .        .        .        .        .        .        .
        1370.  .    I  WC L  E    .        .        .        .        .        .        .        .
        1375.  .   I   WC L  E    .        .        .        .        .        .        .        .
        1380.  .   I  W CLR E     .        .        .        .        .        .        .        .
        1385.  .   I  W CL  E     .        .        .        .        .        .        .        .
        1390.  .   I  W CL  E     .        .        .        .        .        .        .        .
        1395.  .   I  WC.L  E     .        .        .        .        .        .        .        .
        1400.  .   I  WCL   E     .        .        .        .        .        .        .        .
470.00  1405.  .   I  WCL   E     .        .        .        .        .        .        .        .
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430.00  1455.  .  I WC  E         .        .        .        .        .        .        .        .
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        1520.  .  I   W LE        .         .         .         .         .         .         .         .         .
        1525.  .  I   W LE        .         .         .         .         .         .         .         .         .
        1530.  .  I   W LE        .         .         .         .         .         .         .         .         .
        1535.  .  I   WLRE        .         .         .         .         .         .         .         .         .
        1540.  .  I   WCRE        .         .         .         .         .         .         .         .         .
        1545.  .  I   WCRE        .         .         .         .         .         .         .         .         .
        1550.  .  I   WCRE        .         .         .         .         .         .         .         .         .
        1555.  .  I    WRE        .         .         .         .         .         .         .         .         .
325.00  1560.  .  I    WRE        .         .         .         .         .         .         .         .         .
        1565.  .  I    WRE        .         .         .         .         .         .         .         .         .
        1570.  .  I    WRE        .         .         .         .         .         .         .         .         .
        1575.  .  I    WRE        .         .         .         .         .         .         .         .         .
        1580.  .  I   WCE.        .         .         .         .         .         .         .         .         .
        1585.  .  I   WCE.        .         .         .         .         .         .         .         .         .
        1590.  .  I   WRE.        .         .         .         .         .         .         .         .         .
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        1600.  .  I   WRE.        .         .         .         .         .         .         .         .         .
        1605.  .  I   WRE.        .         .         .         .         .         .         .         .         .
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        1615.  . I    WRE.        .         .         .         .         .         .         .         .         .
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        1630.  . I    WRE.        .         .         .         .         .         .         .         .         .
        1635.  . I    WRE.        .         .         .         .         .         .         .         .         .
        1640.  . I   LW E.        .         .         .         .         .         .         .         .         .
        1645.  . I   LW E.        .         .         .         .         .         .         .         .         .
        1650.  . I   LW E.        .         .         .         .         .         .         .         .         .
        1655.  . I   LW E.        .         .         .         .         .         .         .         .         .
225.00  1660.  . I   WCE .        .         .         .         .         .         .         .         .         .
        1665.  . I   WCE .        .         .         .         .         .         .         .         .         .
        1670.  . I   WCE .        .         .         .         .         .         .         .         .         .
        1675.  . I   WCE .        .         .         .         .         .         .         .         .         .
        1680.  . I   W E .        .         .         .         .         .         .         .         .         .
        1685.  . I   W E .        .         .         .         .         .         .         .         .         .
        1690.  . I  WC E .        .         .         .         .         .         .         .         .         .
        1695.  . I  WCE  .        .         .         .         .         .         .         .         .         .
        1700.  . I  WCE  .        .         .         .         .         .         .         .         .         .
        1705.  . I  WCE  .        .         .         .         .         .         .         .         .         .
        1710.  . I  WRE  .        .         .         .         .         .         .         .         .         .
        1715.  .I   W E  .        .         .         .         .         .         .         .         .         .
        1720.  .I   W E  .        .         .         .         .         .         .         .         .         .
        1725.  .I  WC E  .        .         .         .         .         .         .         .         .         .
        1730.  .I  WCE   .        .         .         .         .         .         .         .         .         .
        1735.  .I  WCE   .        .         .         .         .         .         .         .         .         .
        1740.  .I  WCE   .        .         .         .         .         .         .         .         .         .
        1745.  .I  W E   .        .         .         .         .         .         .         .         .         .
        1750.  .I  W E   .        .         .         .         .         .         .         .         .         .
        1755.  .I WC E   .        .         .         .         .         .         .         .         .         .
125.00  1760.  .I WC E   .        .         .         .         .         .         .         .         .         .
        1765.  .I WCE    .        .         .         .         .         .         .         .         .         .
        1770.  .I WCE    .        .         .         .         .         .         .         .         .         .
        1775.  .I WCE    .        .         .         .         .         .         .         .         .         .
        1780.  .I WCE    .        .         .         .         .         .         .         .         .         .
        1785.  .I WCE    .        .         .         .         .         .         .         .         .         .
        1790.  .I WCE    .        .         .         .         .         .         .         .         .         .
        1795.  .I W E    .        .         .         .         .         .         .         .         .         .
        1800.  .I W E    .        .         .         .         .         .         .         .         .         .
        1805.  .I W E    .        .         .         .         .         .         .         .         .         .
        1810.  .I WE     .        .         .         .         .         .         .         .         .         .
        1815.  I  WE     .        .         .         .         .         .         .         .         .         .
        1820.  I  WE     .        .         .         .         .         .         .         .         .         .
        1825.  I  WE     .        .         .         .         .         .         .         .         .         .
        1830.  I  WE     .        .         .         .         .         .         .         .         .         .
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       1835.  I  WE    .       .       .       .       .       .       .       .       .       .
       1840.  I LWE    .       .       .       .       .       .       .       .       .       .
       1845.  I LWE    .       .       .       .       .       .       .       .       .       .
       1850.  I LWE    .       .       .       .       .       .       .       .       .       .
       1855.  I LWE    .       .       .       .       .       .       .       .       .       .
25.00  1860.  I LE     .       .       .       .       .       .       .       .       .       .
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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
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T1      Analysis for the 100 year storm flow's given by AM-WEST
T2      April, 1988 Made by DFM
T3      Stations 0+25 to 18+75 along Myrtle Wash "Supercritical"

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0.        0.        0.        1. -1.000000      0.00      0.0     1528.  1308.000     0.000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

    -1.000     0.000     0.000     0.000     0.000     0.000    -1.000     0.000     0.000    15.000

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    38.000     1.000     2.000     8.000    25.000    26.000    30.000    42.000    33.000    43.000


     4.000    60.000    17.000   150.000     0.000     0.000     0.000     0.000     0.000     0.000


NC      0.030     0.030     0.030     0.000     0.000     0.000     0.000     0.000     0.000     0.000
X1   1875.000     7.000    10.000   145.000    60.000    60.000    60.000     0.000     0.000     0.000
GR   1312.000    10.000  1310.000    25.000  1308.000    35.000  1308.000    75.000  1310.000   100.000
GR   1312.000   120.000  1314.000   145.000     0.000     0.000     0.000     0.000     0.000     0.000

X1   1815.000     7.000    10.000   121.000    50.000    50.000    50.000     0.000     0.000     0.000
GR   1312.000    10.000  1310.000    33.000  1308.000    47.000  1306.000    64.000  1306.000    89.000
GR   1308.000   101.000  1310.000   121.000     0.000     0.000     0.000     0.000     0.000     0.000

X1   1765.000     7.000    10.000   109.000    45.000    45.000    45.000     0.000     0.000     0.000
GR   1310.000    10.000  1308.000    30.000  1306.000    50.000  1304.000    63.000  1304.000    81.000
GR   1306.000    88.000  1308.000   109.000     0.000     0.000     0.000     0.000     0.000     0.000

X1   1720.000     8.000    10.000   105.000    95.000    95.000    95.000     0.000     0.000     0.000
GR   1310.000    10.000  1308.000    22.000  1306.000    51.000  1304.000    61.000  1302.000    69.000
GR   1302.000    94.000  1304.000   101.000  1306.000   105.000     0.000     0.000     0.000     0.000

X1   1625.000     8.000    10.000    60.000   100.000   100.000   100.000     0.000     0.000     0.000
GR   1304.000    10.000  1302.000    20.000  1300.000    25.000  1298.000    30.000  1298.000    45.000
GR   1300.000    51.000  1302.000    55.000  1304.000    60.000     0.000     0.000     0.000     0.000
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X1	1525.000	12.000	10.000	52.000	55.000	55.000	55.000	0.000	0.000	0.000
GR	1306.000	10.000	1304.000	14.000	1302.000	18.000	1300.000	23.000	1298.000	24.000
GR	1296.000	25.000	1294.000	26.000	1294.000	35.000	1296.000	37.000	1298.000	42.000
GR	1300.000	45.000	1302.000	52.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.015	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	1470.000	5.000	10.000	32.500	9.000	9.000	9.000	0.000	0.000	0.000
GR	1299.600	10.000	1299.600	12.500	1289.620	12.510	1289.620	32.490	1299.600	32.500
X1	1461.000	5.000	10.000	32.510	25.000	25.000	25.000	0.000	0.000	0.000
GR	1298.700	10.000	1298.700	13.000	1288.720	13.010	1288.720	32.500	1298.700	32.510
X1	1436.000	5.000	10.000	32.150	25.000	25.000	25.000	0.000	0.000	0.000
GR	1296.200	10.000	1296.200	14.000	1286.220	14.010	1286.220	32.140	1296.200	32.150
X1	1411.000	5.000	10.000	31.790	25.000	25.000	25.000	0.000	0.000	0.000
GR	1293.700	10.000	1293.700	15.000	1283.720	15.010	1283.720	31.780	1293.700	31.790
X1	1386.000	5.000	10.000	32.430	25.000	25.000	25.000	0.000	0.000	0.000
GR	1291.200	10.000	1291.200	17.000	1281.220	17.010	1281.220	32.420	1291.200	32.430
X1	1361.000	5.000	10.000	32.080	25.000	25.000	25.000	0.000	0.000	0.000
GR	1288.700	10.000	1288.700	18.000	1278.720	18.010	1278.720	32.070	1288.700	32.080
X1	1336.000	5.000	10.000	31.720	25.000	25.000	25.000	0.000	0.000	0.000
GR	1286.200	10.000	1286.200	19.000	1276.220	19.010	1276.220	31.710	1286.200	31.720
X1	1311.000	5.000	10.000	31.360	25.000	25.000	25.000	0.000	0.000	0.000
GR	1283.700	10.000	1283.700	20.000	1273.720	20.010	1273.720	31.350	1283.700	31.360
X1	1286.000	5.000	10.000	31.000	25.000	25.000	25.000	0.000	0.000	0.000
GR	1281.200	10.000	1281.200	21.000	1271.220	21.010	1271.220	30.990	1281.200	31.000
X1	1261.000	5.000	10.000	31.550	25.000	25.000	25.000	0.000	0.000	0.000
GR	1281.000	10.000	1281.000	21.550	1270.970	21.560	1270.970	31.540	1281.000	31.550
X1	1236.000	5.000	10.000	32.100	25.000	25.000	25.000	0.000	0.000	0.000
GR	1280.700	10.000	1280.700	22.100	1270.720	22.110	1270.720	32.090	1280.700	32.100
X1	1211.000	5.000	10.000	32.600	25.000	25.000	25.000	0.000	0.000	0.000
GR	1280.500	10.000	1280.500	22.600	1270.470	22.610	1270.470	32.590	1280.500	32.600
X1	1186.000	5.000	10.000	33.200	25.000	25.000	25.000	0.000	0.000	0.000
GR	1280.200	10.000	1280.200	23.200	1270.220	23.210	1270.220	33.190	1280.200	33.200
X1	1161.000	5.000	10.000	33.760	25.000	25.000	25.000	0.000	0.000	0.000
GR	1280.000	10.000	1280.000	23.760	1269.970	23.770	1269.970	33.750	1280.000	33.760

X1	1136.000	5.000	10.000	34.310	25.000	25.000	25.000	0.000	0.000	0.000
GR	1279.700	10.000	1279.700	24.310	1269.720	24.320	1269.720	34.300	1279.700	34.310
X1	1111.000	5.000	10.000	34.870	25.000	25.000	25.000	0.000	0.000	0.000
GR	1279.500	10.000	1279.500	24.870	1269.470	24.880	1269.470	34.860	1279.500	34.870
X1	1086.000	5.000	10.000	35.420	25.000	25.000	25.000	0.000	0.000	0.000
GR	1279.200	10.000	1279.200	25.420	1269.220	25.430	1269.220	35.410	1279.200	35.420
X1	1061.000	5.000	10.000	35.960	24.000	24.000	24.000	0.000	0.000	0.000
GR	1279.000	10.000	1279.000	25.960	1268.970	25.970	1268.970	35.950	1279.000	35.960
X1	1037.000	5.000	10.000	36.500	10.000	10.000	10.000	0.000	0.000	0.000
GR	1278.700	10.000	1278.700	26.500	1268.730	26.510	1268.730	36.490	1278.700	36.500
NC	0.018	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	1027.000	5.000	10.000	72.120	10.000	10.000	10.000	0.000	0.000	0.000
GR	1288.500	10.000	1288.500	23.000	1268.690	42.810	1268.690	52.810	1288.000	72.120
X1	1017.000	5.000	10.000	70.200	10.000	10.000	10.000	0.000	0.000	0.000
GR	1288.500	10.000	1288.500	21.000	1268.650	40.850	1268.650	50.850	1288.000	70.200
X1	1007.000	5.000	10.000	67.280	10.000	10.000	10.000	0.000	0.000	0.000
GR	1288.500	10.000	1288.500	18.000	1268.610	37.890	1268.610	47.890	1288.000	67.280
X1	997.000	5.000	10.000	63.340	10.000	10.000	10.000	0.000	0.000	0.000
GR	1288.500	10.000	1288.500	14.500	1268.580	34.420	1268.580	44.420	1288.000	63.340
X1	987.000	5.000	10.000	61.420	10.000	10.000	10.000	0.000	0.000	0.000
GR	1288.500	10.000	1288.500	12.000	1268.540	31.960	1268.540	41.960	1288.000	61.420
X1	977.000	4.000	10.000	59.500	10.000	10.000	10.000	0.000	0.000	0.000
GR	1288.500	10.000	1268.500	30.000	1268.500	40.000	1288.000	59.500	0.000	0.000
X1	967.000	4.000	10.000	59.580	10.000	10.000	10.000	0.000	0.000	0.000
GR	1288.500	10.000	1268.460	30.040	1268.460	40.040	1288.000	59.580	0.000	0.000
X1	957.000	4.000	10.000	59.660	10.000	10.000	10.000	0.000	0.000	0.000
GR	1288.500	10.000	1268.420	30.080	1268.420	40.080	1288.000	59.660	0.000	0.000
X1	947.000	4.000	10.000	59.740	10.000	10.000	10.000	0.000	0.000	0.000
GR	1288.500	10.000	1268.380	30.120	1268.380	40.120	1288.000	59.740	0.000	0.000
X1	937.000	4.000	10.000	59.800	12.000	12.000	12.000	0.000	0.000	0.000
GR	1288.500	10.000	1268.350	30.150	1268.350	40.150	1288.000	59.800	0.000	0.000
X1	925.000	4.000	10.000	49.700	70.000	70.000	70.000	0.000	0.000	0.000
GR	1283.000	10.000	1268.300	24.700	1268.300	34.700	1283.300	49.700	0.000	0.000

X1	855.000	5.000	10.000	52.080	55.000	55.000	55.000	0.000	0.000	0.000
GR	1282.600	10.000	1282.600	12.000	1267.990	27.370	1267.990	37.370	1282.700	52.080
X1	800.000	5.000	10.000	50.760	45.000	45.000	45.000	0.000	0.000	0.000
GR	1282.600	10.000	1282.600	12.000	1267.820	26.780	1267.820	36.780	1281.800	50.760
X1	755.000	5.000	10.000	51.000	88.000	88.000	88.000	0.000	0.000	0.000
GR	1281.700	10.000	1281.700	13.050	1267.650	27.550	1267.650	37.550	1281.100	51.000
X1	667.000	5.000	10.000	63.380	67.000	67.000	67.000	0.000	0.000	0.000
GR	1280.000	10.000	1280.000	18.000	1267.310	40.690	1267.310	50.690	1280.000	63.380
X1	600.000	5.000	10.000	77.360	130.000	130.000	130.000	0.000	0.000	0.000
GR	1277.600	10.000	1277.600	46.000	1267.060	56.620	1267.060	66.620	1277.800	77.360
NC	0.030	0.030	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	470.000	6.000	10.000	75.000	50.000	50.000	50.000	0.000	0.000	0.000
GR	1270.000	10.000	1268.000	20.000	1265.000	53.000	1265.000	63.000	1268.000	68.000
GR	1270.000	75.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	430.000	6.000	10.000	90.000	105.000	105.000	105.000	0.000	0.000	0.000
GR	1270.000	10.000	1268.000	18.000	1264.000	23.000	1264.000	73.000	1268.000	78.000
GR	1270.000	90.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	325.000	5.000	10.000	70.000	100.000	100.000	100.000	0.000	0.000	0.000
GR	1268.000	10.000	1263.000	15.000	1263.000	35.000	1268.000	40.000	1269.000	70.000
X1	225.000	5.000	10.000	70.000	100.000	100.000	100.000	0.000	0.000	0.000
GR	1266.000	10.000	1262.000	15.000	1262.000	35.000	1266.000	40.000	1267.000	70.000
X1	125.000	6.000	10.000	208.000	100.000	100.000	100.000	0.000	0.000	0.000
GR	1264.000	10.000	1262.000	25.000	1261.000	28.000	1261.000	43.000	1262.000	45.000
GR	1264.000	208.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	25.000	4.000	10.000	110.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	1262.000	10.000	1260.000	60.000	1260.000	80.000	1262.000	110.000	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

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS


*SECNO 1875.000
3720 CRITICAL DEPTH ASSUMED
  1875.00     2.86  1310.86  1310.86  1308.00  1311.91     1.05     0.00     0.00  1312.00
    1528.       0.    1528.       0.       0.     186.       0.       0.       0.  1314.00
     0.00     0.00     8.22     0.00    0.000    0.030    0.000    0.000  1308.00    18.55
 0.010524       0.       0.       0.        0       22        0     0.00    90.05   108.60


FLOW DISTRIBUTION FOR SECNO=   1875.00         CWSEL=   1310.86

STA=      19.     145.
  PER Q=    100.0
   AREA=    185.9
    VEL=      8.2

*SECNO 1815.000

3301 HV CHANGED MORE THAN HVINS

  1815.00     2.83  1308.83  1309.49     0.00  1310.99     2.16     0.92     0.00  1312.00
    1528.       0.    1528.       0.       0.     129.       0.       0.       0.  1310.00
     0.00     0.00    11.80     0.00    0.000    0.030    0.000    0.000  1306.00    41.21
 0.024263       60.      60.      60.        7       11        0     0.00    68.06   109.27


FLOW DISTRIBUTION FOR SECNO=   1815.00         CWSEL=   1308.83

STA=      41.     121.
  PER Q=    100.0
   AREA=    129.5
    VEL=     11.8

*SECNO 1765.000
  1765.00     3.30  1307.30  1308.08     0.00  1309.71     2.41     1.28     0.00  1310.00
    1528.       0.    1528.       0.       0.     123.       0.       0.       0.  1308.00
     0.00     0.00    12.45     0.00    0.000    0.030    0.000    0.000  1304.00    37.00
 0.027181       50.      50.      50.        7       11        0     0.00    64.66   101.65
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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


FLOW DISTRIBUTION FOR SECNO=   1765.00         CWSEL=   1307.30

STA=      37.     109.
  PER Q=    100.0
   AREA=    122.7
    VEL=     12.4

*SECNO 1720.000

3301 HV CHANGED MORE THAN HVINS

  1720.00     2.85  1304.85  1305.95     0.00  1308.37     3.52     1.34     0.00  1310.00
    1528.       0.    1528.       0.       0.     101.       0.       0.       0.  1306.00
     0.00     0.00    15.06     0.00    0.000    0.030    0.000    0.000  1302.00    56.75
 0.032866      45.      45.      45.        5       11        0     0.00    45.94   102.70


FLOW DISTRIBUTION FOR SECNO=   1720.00         CWSEL=   1304.85

STA=      57.     105.
  PER Q=    100.0
   AREA=    101.5
    VEL=     15.1

*SECNO 1625.000
  1625.00     3.91  1301.91  1303.13     0.00  1305.63     3.72     2.74     0.00  1304.00
    1528.       0.    1528.       0.       0.      99.       0.       1.       0.  1304.00
     0.01     0.00    15.47     0.00    0.000    0.030    0.000    0.000  1298.00    20.23
 0.025506      95.      95.      95.        6       14        0     0.00    34.58    54.81


FLOW DISTRIBUTION FOR SECNO=   1625.00         CWSEL=   1301.91

STA=      20.      60.
  PER Q=    100.0
   AREA=     98.8
    VEL=     15.5

*SECNO 1525.000

3301 HV CHANGED MORE THAN HVINS

  1525.00     6.89  1300.89  1301.51     0.00  1303.73     2.85     1.89     0.00  1306.00
    1528.       0.    1528.       0.       0.     113.       0.       1.       0.  1302.00
     0.01     0.00    13.54     0.00    0.000    0.030    0.000    0.000  1294.00    20.78
 0.014580     100.     100.     100.        4       14        0     0.00    27.32    48.10
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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


FLOW DISTRIBUTION FOR SECNO=   1525.00         CWSEL=   1300.89

STA=      21.      52.
  PER Q=    100.0
   AREA=    112.9
    VEL=     13.5

*SECNO 1470.000

3301 HV CHANGED MORE THAN HVINS

  1470.00     2.99  1292.61  1295.26     0.00  1302.76    10.15     0.97     0.00  1299.60
    1528.       0.    1528.       0.       0.      60.       0.       1.       0.  1299.60
     0.01     0.00    25.56     0.00    0.000    0.015    0.000    0.000  1289.62    12.51
 0.021904      55.      55.      55.        6       15        0     0.00    19.99    32.49


FLOW DISTRIBUTION FOR SECNO=   1470.00         CWSEL=   1292.61

STA=      13.      33.
  PER Q=    100.0
   AREA=     59.8
    VEL=     25.6

*SECNO 1461.000

3301 HV CHANGED MORE THAN HVINS

  1461.00     2.96  1291.68  1294.47     0.00  1302.56    10.87     0.21     0.00  1298.70
    1528.       0.    1528.       0.       0.      58.       0.       1.       0.  1298.70
     0.01     0.00    26.46     0.00    0.000    0.015    0.000    0.000  1288.72    13.01
 0.023888       9.       9.       9.        6       14        0     0.00    19.50    32.50


FLOW DISTRIBUTION FOR SECNO=   1461.00         CWSEL=   1291.68

STA=      13.      33.
  PER Q=    100.0
   AREA=     57.7
    VEL=     26.5

*SECNO 1436.000
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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   IOC      ICONT    CORAR    TOPWID     ENDST


3301 HV CHANGED MORE THAN HVINS

  1436.00     2.94  1289.16  1292.26     0.00  1301.90    12.74     0.65     0.00  1296.20
    1528.       0.    1528.       0.       0.      53.       0.       1.       0.  1296.20
     0.01     0.00    28.64     0.00    0.000    0.015    0.000    0.000  1286.22    14.01
 0.028833      25.      25.      25.        5       14        0     0.00    18.14    32.14


FLOW DISTRIBUTION FOR SECNO=   1436.00         CWSEL=   1289.16

STA=      14.      32.
  PER Q=    100.0
   AREA=     53.3
    VEL=     28.6

*SECNO 1411.000

3301 HV CHANGED MORE THAN HVINS

  1411.00     2.99  1286.71  1290.06     0.00  1301.13    14.42     0.77     0.00  1293.70
    1528.       0.    1528.       0.       0.      50.       0.       1.       0.  1293.70
     0.01     0.00    30.48     0.00    0.000    0.015    0.000    0.000  1283.72    15.01
 0.032995      25.      25.      25.        6       17        0     0.00    16.78    31.78


FLOW DISTRIBUTION FOR SECNO=   1411.00         CWSEL=   1286.71

STA=      15.      32.
  PER Q=    100.0
   AREA=     50.1
    VEL=     30.5

*SECNO 1386.000

3301 HV CHANGED MORE THAN HVINS

  1386.00     3.08  1284.30  1287.93     0.00  1300.26    15.96     0.87     0.00  1291.20
    1528.       0.    1528.       0.       0.      48.       0.       1.       0.  1291.20
     0.01     0.00    32.06     0.00    0.000    0.015    0.000    0.000  1281.22    17.01
 0.036446      25.      25.      25.        6       17        0     0.00    15.42    32.42
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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


FLOW DISTRIBUTION FOR SECNO=   1386.00         CWSEL=   1284.30

STA=      17.      32.
  PER Q=    100.0
   AREA=     47.7
    VEL=     32.1

*SECNO 1361.000

3301 HV CHANGED MORE THAN HVINS

  1361.00     3.25  1281.97  1285.85     0.00  1299.32    17.35     0.94     0.00  1288.70
    1528.       0.    1528.       0.       0.      46.       0.       1.       0.   1288.70
     0.01     0.00    33.43     0.00    0.000    0.015    0.000    0.000  1278.72    18.01
 0.039228      25.      25.      25.        7       17        0     0.00    14.07    32.07


FLOW DISTRIBUTION FOR SECNO=   1361.00         CWSEL=   1281.97

STA=      18.      32.
  PER Q=    100.0
   AREA=     45.7
    VEL=     33.4

*SECNO 1336.000

3301 HV CHANGED MORE THAN HVINS

  1336.00     3.47  1279.69  1283.85     0.00  1298.31    18.62     1.01     0.00  1286.20
    1528.       0.    1528.       0.       0.      44.       0.       1.       0.   1286.20
     0.01     0.00    34.62     0.00    0.000    0.015    0.000    0.000  1276.22    19.01
 0.041527      25.      25.      25.        7       17        0     0.00    12.71    31.71


FLOW DISTRIBUTION FOR SECNO=   1336.00         CWSEL=   1279.69

STA=      19.      32.
  PER Q=    100.0
   AREA=     44.1
    VEL=     34.6

*SECNO 1311.000
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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

3301 HV CHANGED MORE THAN HVINS

1311.00	3.78	1277.50	1281.95	0.00	1297.25	19.75	1.06	0.00	1283.70
1528.	0.	1528.	0.	0.	43.	0.	1.	0.	1283.70
0.01	0.00	35.67	0.00	0.000	0.015	0.000	0.000	1273.72	20.01
0.043505	25.	25.	25.	7	17	0	0.00	11.35	31.35

FLOW DISTRIBUTION FOR SECNO= 1311.00 CWSEL= 1277.50

STA= 20. 31.
PER Q= 100.0
AREA= 42.8
VEL= 35.7

*SECNO 1286.000

3301 HV CHANGED MORE THAN HVINS

1286.00	4.18	1275.40	1280.18	0.00	1296.14	20.73	1.11	0.00	1281.20
1528.	0.	1528.	0.	0.	42.	0.	1.	0.	1281.20
0.01	0.00	36.54	0.00	0.000	0.015	0.000	0.000	1271.22	21.01
0.045388	25.	25.	25.	6	17	0	0.00	9.99	30.99

FLOW DISTRIBUTION FOR SECNO= 1286.00 CWSEL= 1275.40

STA= 21. 31.
PER Q= 100.0
AREA= 41.8
VEL= 36.5

*SECNO 1261.000

3301 HV CHANGED MORE THAN HVINS

1261.00	4.29	1275.26	1279.93	0.00	1295.04	19.78	1.10	0.00	1281.00
1528.	0.	1528.	0.	0.	43.	0.	1.	0.	1281.00
0.01	0.00	35.69	0.00	0.000	0.015	0.000	0.000	1270.97	21.56
0.042575	25.	25.	25.	6	17	0	0.00	9.99	31.54

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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   IDC      ICONT    CORAR    TOPWID     ENDST


FLOW DISTRIBUTION FOR SECNO=   1261.00         CWSEL=   1275.26

STA=      22.      32.
  PER Q=    100.0
   AREA=     42.8
    VEL=     35.7

*SECNO 1236.000

3301 HV CHANGED MORE THAN HVINS

  1236.00     4.39  1275.11  1279.68     0.00  1294.01    18.90     1.03     0.00  1280.70
    1528.       0.    1528.       0.       0.      44.       0.       1.       1.  1280.70
     0.01     0.00    34.89     0.00    0.000    0.015    0.000    0.000  1270.72    22.11
 0.040022      25.      25.      25.        6       17        0     0.00     9.99    32.09


FLOW DISTRIBUTION FOR SECNO=   1236.00         CWSEL=   1275.11

STA=      22.      32.
  PER Q=    100.0
   AREA=     43.8
    VEL=     34.9

*SECNO 1211.000

3301 HV CHANGED MORE THAN HVINS

  1211.00     4.49  1274.96  1279.46     0.00  1293.04    18.08     0.97     0.00  1280.50
    1528.       0.    1528.       0.       0.      45.       0.       1.       1.  1280.50
     0.01     0.00    34.12     0.00    0.000    0.015    0.000    0.000  1270.47    22.61
 0.037693      25.      25.      25.        6       14        0     0.00     9.99    32.59


FLOW DISTRIBUTION FOR SECNO=   1211.00         CWSEL=   1274.96

STA=      23.      33.
  PER Q=    100.0
   AREA=     44.8
    VEL=     34.1

*SECNO 1186.000
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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


3301 HV CHANGED MORE THAN HVINS

  1186.00     4.59  1274.81  1279.21     0.00  1292.12    17.31     0.91     0.00  1280.20
    1528.       0.    1528.       0.       0.      46.       0.       1.       1.  1280.20
     0.01     0.00    33.39     0.00    0.000    0.015    0.000    0.000  1270.22    23.21
 0.035540      25.      25.      25.        6       14        0     0.00     9.99    33.19


FLOW DISTRIBUTION FOR SECNO=   1186.00         CWSEL=   1274.81

STA=      23.      33.
  PER Q=    100.0
   AREA=     45.8
    VEL=     33.4

*SECNO 1161.000

3301 HV CHANGED MORE THAN HVINS

  1161.00     4.68  1274.65  1278.95     0.00  1291.26    16.61     0.86     0.00  1280.00
    1528.       0.    1528.       0.       0.      47.       0.       1.       1.  1280.00
     0.01     0.00    32.70     0.00    0.000    0.015    0.000    0.000  1269.97    23.77
 0.033614      25.      25.      25.        7       14        0     0.00     9.99    33.75


FLOW DISTRIBUTION FOR SECNO=   1161.00         CWSEL=   1274.65

STA=      24.      34.
  PER Q=    100.0
   AREA=     46.7
    VEL=     32.7

*SECNO 1136.000

3301 HV CHANGED MORE THAN HVINS

  1136.00     4.78  1274.50  1278.70     0.00  1290.44    15.94     0.82     0.00  1279.70
    1528.       0.    1528.       0.       0.      48.       0.       1.       1.  1279.70
     0.01     0.00    32.04     0.00    0.000    0.015    0.000    0.000  1269.72    24.32
 0.031812      25.      25.      25.        7       14        0     0.00     9.99    34.30
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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


FLOW DISTRIBUTION FOR SECNO=   1136.00         CWSEL=   1274.50

STA=      24.      34.
  PER Q=    100.0
   AREA=     47.7
    VEL=     32.0

*SECNO 1111.000

3301 HV CHANGED MORE THAN HVINS

  1111.00     4.88  1274.35  1278.44     0.00  1289.67    15.32     0.77     0.00  1279.50
    1528.       0.    1528.       0.       0.      49.       0.       1.       1.   1279.50
     0.01     0.00    31.41     0.00    0.000    0.015    0.000    0.000  1269.47    24.88
 0.030166      25.      25.      25.        7       14        0     0.00     9.99    34.86


FLOW DISTRIBUTION FOR SECNO=   1111.00         CWSEL=   1274.35

STA=      25.      35.
  PER Q=    100.0
   AREA=     48.6
    VEL=     31.4

*SECNO 1086.000

3301 HV CHANGED MORE THAN HVINS

  1086.00     4.97  1274.19  1278.19     0.00  1288.93    14.74     0.73     0.00  1279.20
    1528.       0.    1528.       0.       0.      50.       0.       1.       1.   1279.20
     0.01     0.00    30.81     0.00    0.000    0.015    0.000    0.000  1269.22    25.43
 0.028658      25.      25.      25.        7       14        0     0.00     9.99    35.41


FLOW DISTRIBUTION FOR SECNO=   1086.00         CWSEL=   1274.19

STA=      25.      35.
  PER Q=    100.0
   AREA=     49.6
    VEL=     30.8

*SECNO 1061.000
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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


3301 HV CHANGED MORE THAN HVINS

  1061.00     5.06  1274.03  1277.94     0.00  1288.23    14.20     0.70     0.00  1279.00
    1528.       0.    1528.       0.       0.      51.       0.       1.       1.  1279.00
     0.01     0.00    30.24     0.00    0.000    0.015    0.000    0.000  1268.97    25.96
 0.027262      25.      25.      25.        7       14        0     0.00     9.99    35.96


FLOW DISTRIBUTION FOR SECNO=   1061.00         CWSEL=   1274.03

STA=      26.      36.
  PER Q=    100.0
   AREA=     50.5
    VEL=     30.2

*SECNO 1037.000
  1037.00     5.15  1273.88  1277.70     0.00  1287.59    13.71     0.64     0.00  1278.70
    1528.       0.    1528.       0.       0.      51.       0.       2.       1.  1278.70
     0.01     0.00    29.72     0.00    0.000    0.015    0.000    0.000  1268.73    26.50
 0.026024      24.      24.      24.        7       14        0     0.00     9.99    36.50


FLOW DISTRIBUTION FOR SECNO=   1037.00         CWSEL=   1273.88

STA=      27.      37.
  PER Q=    100.0
   AREA=     51.4
    VEL=     29.7

*SECNO 1027.000

3301 HV CHANGED MORE THAN HVINS

  1027.00     3.62  1272.31  1275.73     0.00  1287.26    14.96     0.33     0.00  1288.50
    1528.       0.    1528.       0.       0.      49.       0.       2.       1.  1288.00
     0.01     0.00    31.04     0.00    0.000    0.018    0.000    0.000  1268.69    39.19
 0.043166      10.      10.      10.        6       11        0     0.00    17.23    56.43


FLOW DISTRIBUTION FOR SECNO=   1027.00         CWSEL=   1272.31

STA=      39.      72.
  PER Q=    100.0
   AREA=     49.2
    VEL=     31.0
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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


*SECNO 1017.000
  1017.00     3.66  1272.31  1275.71     0.00  1286.84    14.53     0.42     0.00  1288.50
    1528.       0.    1528.       0.       0.      50.       0.       2.       1.  1288.00
     0.01     0.00    30.59     0.00    0.000    0.018    0.000    0.000  1268.65    37.19
 0.041438      10.      10.      10.        6       14        0     0.00    17.32    54.51


FLOW DISTRIBUTION FOR SECNO=   1017.00         CWSEL=   1272.31

STA=      37.      70.
  PER Q=    100.0
   AREA=     50.0
    VEL=     30.6

*SECNO 1007.000
  1007.00     3.70  1272.31  1275.67     0.00  1286.43    14.12     0.41     0.00  1288.50
    1528.       0.    1528.       0.       0.      51.       0.       2.       1.  1288.00
     0.01     0.00    30.16     0.00    0.000    0.018    0.000    0.000  1268.61    34.19
 0.039835      10.      10.      10.        7       14        0     0.00    17.40    51.59


FLOW DISTRIBUTION FOR SECNO=   1007.00         CWSEL=   1272.31

STA=      34.      67.
  PER Q=    100.0
   AREA=     50.7
    VEL=     30.2

*SECNO 997.000
   997.00     3.76  1272.34  1275.65     0.00  1286.04    13.70     0.39     0.00  1288.50
    1528.       0.    1528.       0.       0.      51.       0.       2.       1.  1288.00
     0.01     0.00    29.71     0.00    0.000    0.018    0.000    0.000  1268.58    30.67
 0.038089      10.      10.      10.        6       14        0     0.00    17.41    48.08


FLOW DISTRIBUTION FOR SECNO=    997.00         CWSEL=   1272.34

STA=      31.      63.
  PER Q=    100.0
   AREA=     51.4
    VEL=     29.7
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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 987.000
   987.00     3.78  1272.32  1275.59     0.00  1285.67     13.35      0.37      0.00  1288.50
    1528.       0.    1528.       0.       0.      52.        0.        2.        1.   1288.00
     0.01     0.00    29.32     0.00    0.000    0.018     0.000     0.000   1268.54     28.18
 0.036816      10.      10.      10.        7       14         0      0.00     17.56     45.74

FLOW DISTRIBUTION FOR SECNO=    987.00         CWSEL=   1272.32

STA=      28.      61.
  PER Q=    100.0
   AREA=     52.1
    VEL=     29.3

*SECNO 977.000
   977.00     3.83  1272.33  1275.55     0.00  1285.31     12.98      0.36      0.00  1288.50
    1528.       0.    1528.       0.       0.      53.        0.        2.        1.   1288.00
     0.01     0.00    28.92     0.00    0.000    0.018     0.000     0.000   1268.50     26.18
 0.035417      10.      10.      10.        6       14         0      0.00     17.65     43.82

FLOW DISTRIBUTION FOR SECNO=    977.00         CWSEL=   1272.33

STA=      26.      60.
  PER Q=    100.0
   AREA=     52.8
    VEL=     28.9

*SECNO 967.000
   967.00     3.86  1272.32  1275.51     0.00  1284.96     12.64      0.35      0.00  1288.50
    1528.       0.    1528.       0.       0.      54.        0.        2.        1.   1288.00
     0.01     0.00    28.53     0.00    0.000    0.018     0.000     0.000   1268.46     26.18
 0.034106      10.      10.      10.        6       14         0      0.00     17.73     43.90

FLOW DISTRIBUTION FOR SECNO=    967.00         CWSEL=   1272.32

STA=      26.      60.
  PER Q=    100.0
   AREA=     53.6
    VEL=     28.5
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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 957.000
   957.00     3.91  1272.33  1275.47     0.00  1284.63    12.30     0.33     0.00  1288.50
    1528.       0.    1528.       0.       0.      54.       0.       2.       1.   1288.00
     0.01     0.00    28.15     0.00    0.000    0.018    0.000    0.000  1268.42    26.18
 0.032852      10.      10.      10.        6       14        0     0.00    17.81    43.98


FLOW DISTRIBUTION FOR SECNO=    957.00          CWSEL=   1272.33

STA=      26.      60.
  PER Q=    100.0
   AREA=     54.3
    VEL=     28.1

*SECNO 947.000
   947.00     3.95  1272.33  1275.42     0.00  1284.30    11.98     0.32     0.00  1288.50
    1528.       0.    1528.       0.       0.      55.       0.       2.       1.   1288.00
     0.01     0.00    27.77     0.00    0.000    0.018    0.000    0.000  1268.38    26.17
 0.031656      10.      10.      10.        6       14        0     0.00    17.89    44.07


FLOW DISTRIBUTION FOR SECNO=    947.00          CWSEL=   1272.33

STA=      26.      60.
  PER Q=    100.0
   AREA=     55.0
    VEL=     27.8

*SECNO 937.000
   937.00     3.98  1272.33  1275.39     0.00  1283.99    11.67     0.31     0.00  1288.50
    1528.       0.    1528.       0.       0.      56.       0.       2.       1.   1288.00
     0.01     0.00    27.41     0.00    0.000    0.018    0.000    0.000  1268.35    26.16
 0.030511      10.      10.      10.        5       14        0     0.00    17.97    44.14


FLOW DISTRIBUTION FOR SECNO=    937.00          CWSEL=   1272.33

STA=      26.      60.
  PER Q=    100.0
   AREA=     55.7
    VEL=     27.4
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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   IDC      ICONT    CORAR    TOPWID     ENDST


*SECNO 925.000
   925.00     4.04  1272.34  1275.34     0.00  1283.64    11.30     0.36     0.00  1283.00
    1528.       0.    1528.       0.       0.      57.       0.       2.       1.  1283.30
     0.01     0.00    26.98     0.00    0.000    0.018    0.000    0.000  1268.30    20.66
 0.029187      12.      12.      12.        6       14        0     0.00    18.07    38.74


FLOW DISTRIBUTION FOR SECNO=    925.00         CWSEL=   1272.34

STA=      21.      50.
  PER Q=    100.0
   AREA=     56.6
    VEL=     27.0

*SECNO 855.000

3301 HV CHANGED MORE THAN HVINS

   855.00     4.28  1272.27  1274.99     0.00  1281.82     9.55     1.82     0.00  1282.60
    1528.       0.    1528.       0.       0.      62.       0.       2.       1.  1282.70
     0.01     0.00    24.80     0.00    0.000    0.018    0.000    0.000  1267.99    22.87
 0.023223      70.      70.      70.        8       14        0     0.00    18.79    41.65


FLOW DISTRIBUTION FOR SECNO=    855.00         CWSEL=   1272.27

STA=      23.      52.
  PER Q=    100.0
   AREA=     61.6
    VEL=     24.8

*SECNO 800.000

3301 HV CHANGED MORE THAN HVINS

   800.00     4.55  1272.37  1274.85     0.00  1280.67     8.30     1.15     0.00  1282.60
    1528.       0.    1528.       0.       0.      66.       0.       2.       1.  1281.80
     0.01     0.00    23.12     0.00    0.000    0.018    0.000    0.000  1267.82    22.24
 0.019029      55.      55.      55.        7       14        0     0.00    19.09    41.32


FLOW DISTRIBUTION FOR SECNO=    800.00         CWSEL=   1272.37

STA=      22.      51.
  PER Q=    100.0
   AREA=     66.1
    VEL=     23.1
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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 755.000

3301 HV CHANGED MORE THAN HVINS

   755.00     4.70  1272.35  1274.66     0.00  1279.87     7.51     0.80     0.00  1281.70
   1528.       0.    1528.       0.       0.      69.       0.       2.       1.   1281.10
     0.01     0.00    22.00     0.00    0.000    0.018    0.000    0.000  1267.65    22.70
 0.016648      45.      45.      45.        7       14        0     0.00    19.55    42.25


FLOW DISTRIBUTION FOR SECNO=    755.00         CWSEL=   1272.35

STA=      23.      51.
  PER Q=    100.0
   AREA=     69.5
    VEL=     22.0

*SECNO 667.000

3301 HV CHANGED MORE THAN HVINS

   667.00     4.54  1271.85  1273.92     0.00  1278.46     6.61     1.40     0.00  1280.00
   1528.       0.    1528.       0.       0.      74.       0.       2.       1.   1280.00
     0.02     0.00    20.63     0.00    0.000    0.018    0.000    0.000  1267.31    32.58
 0.015239      88.      88.      88.        6       11        0     0.00    22.65    55.23


FLOW DISTRIBUTION FOR SECNO=    667.00         CWSEL=   1271.85

STA=      33.      63.
  PER Q=    100.0
   AREA=     74.1
    VEL=     20.6

*SECNO 600.000

3301 HV CHANGED MORE THAN HVINS

   600.00     5.42  1272.48  1274.09     0.00  1277.65     5.17     0.81     0.00  1277.60
   1528.       0.    1528.       0.       0.      84.       0.       2.       1.   1277.80
     0.02     0.00    18.24     0.00    0.000    0.018    0.000    0.000  1267.06    51.16
 0.009930      67.      67.      67.        5       14        0     0.00    20.89    72.04
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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


FLOW DISTRIBUTION FOR SECNO=    600.00         CWSEL=   1272.48

STA=      51.      77.
  PER Q=    100.0
   AREA=     83.8
    VEL=     18.2

*SECNO 470.000

3301 HV CHANGED MORE THAN HVINS

   470.00     2.67  1267.67  1269.39     0.00  1274.68     7.01     2.97     0.00  1270.00
    1528.       0.    1528.       0.       0.      72.       0.       2.       1.   1270.00
     0.02     0.00    21.25     0.00    0.000    0.030    0.000    0.000  1265.00    23.61
 0.097606     130.     130.     130.        8       15        0     0.00    43.84    67.45


FLOW DISTRIBUTION FOR SECNO=    470.00         CWSEL=   1267.67

STA=      24.      75.
  PER Q=    100.0
   AREA=     71.9
    VEL=     21.2

*SECNO 430.000

3301 HV CHANGED MORE THAN HVINS

   430.00     1.66  1265.66  1266.99     0.00  1270.54     4.89     4.14     0.00  1270.00
    1528.       0.    1528.       0.       0.      86.       0.       2.       1.   1270.00
     0.02     0.00    17.74     0.00    0.000    0.030    0.000    0.000  1264.00    20.93
 0.071045      50.      50.      50.        6        8        0     0.00    54.14    75.07


FLOW DISTRIBUTION FOR SECNO=    430.00         CWSEL=   1265.66

STA=      21.      90.
  PER Q=    100.0
   AREA=     86.1
    VEL=     17.7

*SECNO 325.000
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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


3280 CROSS SECTION    325.00 EXTENDED      0.80 FEET


3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
   325.00     5.80  1268.80  1268.80     0.00  1270.24     1.44     2.24     0.91  1268.00
    1528.       0.    1528.       0.       0.     159.       0.       3.       1.  1269.00
     0.02     0.00     9.63     0.00    0.000    0.030    0.000    0.000  1263.00    10.00
 0.010105     105.     105.     105.       20       24        0     0.00    54.04    64.04


FLOW DISTRIBUTION FOR SECNO=    325.00          CWSEL=   1268.80

STA=      10.      70.
  PER Q=    100.0
   AREA=    158.7
    VEL=      9.6

*SECNO 225.000
3280 CROSS SECTION    225.00 EXTENDED      0.69 FEET


3301 HV CHANGED MORE THAN HVINS

   225.00     4.70  1266.70  1267.26     0.00  1268.91     2.21     1.34     0.00  1266.00
    1528.       0.    1528.       0.       0.     128.       0.       3.       1.  1267.00
     0.02     0.00    11.93     0.00    0.000    0.030    0.000    0.000  1262.00    10.00
 0.018496     100.     100.     100.        4       15        0     0.00    50.85    60.85


FLOW DISTRIBUTION FOR SECNO=    225.00          CWSEL=   1266.70

STA=      10.      70.
  PER Q=    100.0
   AREA=    128.1
    VEL=     11.9

*SECNO 125.000
   125.00     2.35  1263.35  1264.02     0.00  1265.66     2.32     3.24     0.00  1264.00
    1528.       0.    1528.       0.       0.     125.       0.       3.       1.  1264.00
     0.03     0.00    12.21     0.00    0.000    0.030    0.000    0.000  1261.00    14.90
 0.070865     100.     100.     100.        7       14        0     0.00   139.83   154.73
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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


FLOW DISTRIBUTION FOR SECNO=    125.00         CWSEL=   1263.35

STA=      15.     208.
  PER Q=    100.0
   AREA=    125.1
    VEL=     12.2

*SECNO 25.000
3280 CROSS SECTION     25.00 EXTENDED      0.74 FEET


3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
    25.00     2.74  1262.74  1262.74     0.00  1263.70     0.97     2.22     0.29  1262.00
    1528.       0.    1528.       0.       0.     194.       0.       4.       2.  1262.00
     0.03     0.00     7.89     0.00    0.000    0.030    0.000    0.000  1260.00    10.00
 0.010715     100.     100.     100.       20        8        0     0.00   100.00   110.00


FLOW DISTRIBUTION FOR SECNO=     25.00         CWSEL=   1262.74

STA=      10.     110.
  PER Q=    100.0
   AREA=    193.8
    VEL=      7.9
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PROFILE FOR STREAM Stations 0+25 to 18+75 a

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  1260.    1270.    1280.    1290.    1300.    1310.    1320.    1330.    1340.    1350.
   SECNO   CUMDIS

 1875.00     0.  .        .        .        .        .      I .WE R    .        .        .        .        .
             5.  .        .        .        .        .      I .WE R    .        .        .        .        .
            10.  .        .        .        .        .      I .WER     .        .        .        .        .
            15.  .        .        .        .        .      I WCER     .        .        .        .        .
            20.  .        .        .        .        .     I  WMER     .        .        .        .        .
            25.  .        .        .        .        .     I  WME      .        .        .        .        .
            30.  .        .        .        .        .     I  WEL      .        .        .        .        .
            35.  .        .        .        .        .     I  WEL      .        .        .        .        .
            40.  .        .        .        .        .     I  WEL      .        .        .        .        .
            45.  .        .        .        .        .     I WCEL      .        .        .        .        .
            50.  .        .        .        .        .    I  WCEL      .        .        .        .        .
            55.  .        .        .        .        .    I  WCEL      .        .        .        .        .
 1815.00    60.  .        .        .        .        .    I  WREL      .        .        .        .        .
            65.  .        .        .        .        .    I  WREL      .        .        .        .        .
            70.  .        .        .        .        .    I  WREL      .        .        .        .        .
            75.  .        .        .        .        .   I  WC.E       .        .        .        .        .
            80.  .        .        .        .        .   I  WCEL       .        .        .        .        .
            85.  .        .        .        .        .   I  WCEL       .        .        .        .        .
            90.  .        .        .        .        .   I  WCEL       .        .        .        .        .
            95.  .        .        .        .        .   I  WCEL       .        .        .        .        .
           100.  .        .        .        .        .  I   W E        .        .        .        .        .
           105.  .        .        .        .        .  I  WC E        .        .        .        .        .
 1765.00   110.  .        .        .        .        .  I  WC E        .        .        .        .        .
           115.  .        .        .        .        .  I  WC E        .        .        .        .        .
           120.  .        .        .        .        .  I  WCEL        .        .        .        .        .
           125.  .        .        .        .        . I  WC EL        .        .        .        .        .
           130.  .        .        .        .        . I  WC EL        .        .        .        .        .
           135.  .        .        .        .        . I  WC EL        .        .        .        .        .
           140.  .        .        .        .        . I  WC EL        .        .        .        .        .
           145.  .        .        .        .        . I  WC  EL       .        .        .        .        .
           150.  .        .        .        .        . I  WC  EL       .        .        .        .        .
 1720.00   155.  .        .        .        .        . I  WC E L       .        .        .        .        .
           160.  .        .        .        .        . I  WC E L       .        .        .        .        .
           165.  .        .        .        .        . I  WC EL.       .        .        .        .        .
           170.  .        .        .        .        .I  W C EL.       .        .        .        .        .
           175.  .        .        .        .        .I  WCR EL.       .        .        .        .        .
           180.  .        .        .        .        .I  WC  E .       .        .        .        .        .
           185.  .        .        .        .        .I  WC  E .       .        .        .        .        .
           190.  .        .        .        .        .I  WC EL .       .        .        .        .        .
           195.  .        .        .        .        I   WC E  .       .        .        .        .        .
           200.  .        .        .        .        I  W C E  .       .        .        .        .        .
           205.  .        .        .        .        I  WCR E  .       .        .        .        .        .
           210.  .        .        .        .        I  WCR E  .       .        .        .        .        .
           215.  .        .        .        .       I.  WCRLE  .       .        .        .        .        .
           220.  .        .        .        .       I.  WCRE   .       .        .        .        .        .
           225.  .        .        .        .       I.  WCRE   .       .        .        .        .        .
           230.  .        .        .        .       I.  WCLE   .       .        .        .        .        .
           235.  .        .        .        .       I. W CLE   .       .        .        .        .        .
           240.  .        .        .        .      I . WCRLE   .       .        .        .        .        .
           245.  .        .        .        .      I . WCL E   .       .        .        .        .        .
 1625.00   250.  .        .        .        .      I . WCL E   .       .        .        .        .        .
           255.  .        .        .        .      I . WCL E   .       .        .        .        .        .
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          260.  .     .     .     .     I . WCLE  .     .     .     .     .     .
          265.  .     .     .     .    I  . WCLE  .     .     .     .     .     .
          270.  .     .     .     .    I  . WCLE  .     .     .     .     .     .
          275.  .     .     .     .    I  . WCRE  .     .     .     .     .     .
          280.  .     .     .     .    I  . WC E  .     .     .     .     .     .
          285.  .     .     .     .    I  . WC E  .     .     .     .     .     .
          290.  .     .     .     .   I   . WR E  .     .     .     .     .     .
          295.  .     .     .     .   I   .WCR E  .     .     .     .     .     .
          300.  .     .     .     .   I   .WCR E  .     .     .     .     .     .
          305.  .     .     .     .   I   .WCR E  .     .     .     .     .     .
          310.  .     .     .     .   I   .WCREL  .     .     .     .     .     .
          315.  .     .     .     .  I    .WCREL  .     .     .     .     .     .
          320.  .     .     .     .  I    .WCREL  .     .     .     .     .     .
          325.  .     .     .     .  I    .WCRE L .     .     .     .     .     .
          330.  .     .     .     .  I    .WC E L .     .     .     .     .     .
          335.  .     .     .     .  I    .WC E L .     .     .     .     .     .
          340.  .     .     .     . I     .WC E L .     .     .     .     .     .
          345.  .     .     .     . I     .WC E L .     .     .     .     .     .
1525.00   350.  .     .     .     . I     .WC E L .     .     .     .     .     .
          355.  .     .     .     . I     WCR EL  .     .     .     .     .     .
          360.  .     .     .     . I    WC R EL  .     .     .     .     .     .
          365.  .     .     .     . I    WCR EL   .     .     .     .     .     .
          370.  .     .     .     .I    WC.R EL   .     .     .     .     .     .
          375.  .     .     .     .I   W C.R E    .     .     .     .     .     .
          380.  .     .     .     .I  W C .R E    .     .     .     .     .     .
          385.  .     .     .     .I   W C R LE   .     .     .     .     .     .
          390.  .     .     .     .I  W C  RL E   .     .     .     .     .     .
          395.  .     .     .     I  W C  RL E    .     .     .     .     .     .
          400.  .     .     .     I W  C  L  E    .     .     .     .     .     .
1470.00   405.  .     .     .     I W C   L  E    .     .     .     .     .     .
          410.  .     .     .    I. W  C  L. E    .     .     .     .     .     .
1461.00   415.  .     .     .    I. W C   L. E    .     .     .     .     .     .
          420.  .     .     .   I .W  C  L . E    .     .     .     .     .     .
          425.  .     .     .   I .W  C  L . E    .     .     .     .     .     .
          430.  .     .     .  I  W  C  L  . E    .     .     .     .     .     .
          435.  .     .     .  I  W  C  L  . E    .     .     .     .     .     .
1436.00   440.  .     .     .  I  W. C  L  . E    .     .     .     .     .     .
          445.  .     .     .  I  W. C  L  . E    .     .     .     .     .     .
          450.  .     .     . I  W .C  L  . E    .     .     .     .     .     .
          455.  .     .     . I  W .C  L  .E     .     .     .     .     .     .
          460.  .     .     . I  W  .C L  .E     .     .     .     .     .     .
1411.00   465.  .     .     . I  W  C  L  .E     .     .     .     .     .     .
          470.  .     .     . I  W  C  L  .E     .     .     .     .     .     .
          475.  .     .     . I  W  C. L  .E     .     .     .     .     .     .
          480.  .     .     . I  W  C. L  .E     .     .     .     .     .     .
          485.  .     .     . I  W  C . L  E     .     .     .     .     .     .
1386.00   490.  .     .     .I  W  C .L  E     .     .     .     .     .     .
          495.  .     .     .I  W  C .L  E     .     .     .     .     .     .
          500.  .     .     I  W  C  L  E     .     .     .     .     .     .
          505.  .     .     I  W  C  L  E     .     .     .     .     .     .
          510.  .     .    I. W  C  L. E     .     .     .     .     .     .
1361.00   515.  .     .    I. W  C  L. E.    .     .     .     .     .     .
          520.  .     .   I . W  C  L . E.    .     .     .     .     .     .
          525.  .     .   I .W  C  L . E.    .     .     .     .     .     .
          530.  .     .  I  .W  C L  . E.    .     .     .     .     .     .
          535.  .     .  I  W  C  L  . E.    .     .     .     .     .     .
1336.00   540.  .     . I  W  C L  . E .     .     .     .     .     .     .
          545.  .     . I  W. C  L  . E .     .     .     .     .     .     .
          550.  .     . I  W. C L  . E .     .     .     .     .     .     .
          555.  .     . I  W . C L  . E .     .     .     .     .     .     .
          560.  .     .I  W . C L  . E .     .     .     .     .     .     .
1311.00   565.  .     .I  W . C L  . E .     .     .     .     .     .     .
          570.  .     .I  W . CL   . E .     .     .     .     .     .     .
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        575.  .      . I  W  .C L     .    E .     .     .     .     .     .     .
        580.  .      . I  W  .CL      .    E .     .     .     .     .     .     .
        585.  .      . I  W  .CL      .   E  .     .     .     .     .     .     .
1286.00 590.  .      .I  W   CL       .   E  .     .     .     .     .     .     .
        595.  .      .I  W   CL       .   E  .     .     .     .     .     .     .
        600.  .      .I  W   CL       .   E  .     .     .     .     .     .     .
        605.  .      .I  W   CL       .  E   .     .     .     .     .     .     .
        610.  .      .I  W   CL       .  E   .     .     .     .     .     .     .
1261.00 615.  .      .I  W   CL       .  E   .     .     .     .     .     .     .
        620.  .      .I  W   CL       .  E   .     .     .     .     .     .     .
        625.  .      .I  W   CL       .  E   .     .     .     .     .     .     .
        630.  .      .I  W   CL       . E    .     .     .     .     .     .     .
        635.  .      .I  W   CL       . E    .     .     .     .     .     .     .
1236.00 640.  .      .I  W   CL       . E    .     .     .     .     .     .     .
        645.  .      .I  W   CL       . E    .     .     .     .     .     .     .
        650.  .      .I  W   CL       . E    .     .     .     .     .     .     .
        655.  .      .I  W   CL       . E    .     .     .     .     .     .     .
        660.  .      .I  W   CL       . E    .     .     .     .     .     .     .
1211.00 665.  .      I   W   C.L      . E    .     .     .     .     .     .     .
        670.  .      I   W   CL       . E    .     .     .     .     .     .     .
        675.  .      I   W   CL       . E    .     .     .     .     .     .     .
        680.  .      I   W   CL       .E     .     .     .     .     .     .     .
        685.  .      I   W   CL       .E     .     .     .     .     .     .     .
1186.00 690.  .      I   W   CL       .E     .     .     .     .     .     .     .
        695.  .      I   W   CL       .E     .     .     .     .     .     .     .
        700.  .      I   W   CL       .E     .     .     .     .     .     .     .
        705.  .      I   W   CL       .E     .     .     .     .     .     .     .
        710.  .      I   W   CL       .E     .     .     .     .     .     .     .
1161.00 715.  .      I   W   CL       .E     .     .     .     .     .     .     .
        720.  .      I   W   CL       .E     .     .     .     .     .     .     .
        725.  .      I   W   CL       .E     .     .     .     .     .     .     .
        730.  .      I   W   CL       .E     .     .     .     .     .     .     .
        735.  .      I   W   CL       .E     .     .     .     .     .     .     .
1136.00 740.  .      I   W   CL       E      .     .     .     .     .     .     .
        745.  .      I  W    CL       E      .     .     .     .     .     .     .
        750.  .      I  W    CL       E      .     .     .     .     .     .     .
        755.  .      I  W    CL       E      .     .     .     .     .     .     .
        760.  .      I  W   C L       E      .     .     .     .     .     .     .
1111.00 765.  .     I.  W   C L       E      .     .     .     .     .     .     .
        770.  .     I.  W   CL.       E      .     .     .     .     .     .     .
        775.  .     I.  W   CL.      E.      .     .     .     .     .     .     .
        780.  .     I.  W   CL.      E.      .     .     .     .     .     .     .
        785.  .     I.  W   CL.      E.      .     .     .     .     .     .     .
1086.00 790.  .     I.  W   CL.      E.      .     .     .     .     .     .     .
        795.  .     I.  W   CL.      E.      .     .     .     .     .     .     .
        800.  .     I.  W   CL.      E.      .     .     .     .     .     .     .
        805.  .     I.  W   CL.      E.      .     .     .     .     .     .     .
        810.  .     I.  W   CL.     E .      .     .     .     .     .     .     .
1061.00 815.  .     I.  W   CL.     E .      .     .     .     .     .     .     .
        820.  .     I.  W   CL.     E .      .     .     .     .     .     .     .
        825.  .     I.  W   CL.     E .      .     .     .     .     .     .     .
        830.  .     I.  W   CL.     E .      .     .     .     .     .     .     .
        835.  .     I.  W   CL.     E .      .     .     .     .     .     .     .
1037.00 840.  .     I.  W   CL.     E .      .     .     .     .     .     .     .
        845.  .     I.  W   C  .  RL E .     .     .     .     .     .     .     .
1027.00 850.  .     I. W   C   .    ERL.     .     .     .     .     .     .     .
        855.  .     I. W   C   .    ERL.     .     .     .     .     .     .     .
1017.00 860.  .     I. W   C   .    ERL.     .     .     .     .     .     .     .
        865.  .     I. W   C   .    ERL.     .     .     .     .     .     .     .
1007.00 870.  .     I. W   C   .   E RL.     .     .     .     .     .     .     .
        875.  .     I. W   C   .   E RL.     .     .     .     .     .     .     .
 997.00 880.  .     I. W   C   .   E RL.     .     .     .     .     .     .     .
        885.  .     I. W   C   .   E RL.     .     .     .     .     .     .     .
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987.00	890.	.	I.	W	C	.	E	RL.	.	.	.	.	.	.
	895.	.	I.	W	C	.	E	RL.	.	.	.	.	.	.
977.00	900.	.	I.	W	C	.	E	RL.	.	.	.	.	.	.
	905.	.	I .	W	C	.	E	RL.	.	.	.	.	.	.
967.00	910.	.	I .	W	C	.	E	RL.	.	.	.	.	.	.
	915.	.	I .	W	C	.	E	RL.	.	.	.	.	.	.
957.00	920.	.	I .	W	C	.	E	RL.	.	.	.	.	.	.
	925.	.	I .	W	C	.	E	RL.	.	.	.	.	.	.
947.00	930.	.	I .	W	C	.	E	RL.	.	.	.	.	.	.
	935.	.	I .	W	C	.	E	RL.	.	.	.	.	.	.
937.00	940.	.	I .	W	C	.	E	RL.	.	.	.	.	.	.
	945.	.	I .	W	C	.	E	L .	.	.	.	.	.	.
925.00	950.	.	I .	W	C	.	LE	.	.	.	.	.	.	.
	955.	.	I .	W	C	.	LE	.	.	.	.	.	.	.
	960.	.	I .	W	C	.	E	.	.	.	.	.	.	.
	965.	.	I .	W	C	.	E	.	.	.	.	.	.	.
	970.	.	I .	W	C	.	E	.	.	.	.	.	.	.
	975.	.	I .	W	C	.	E	.	.	.	.	.	.	.
	980.	.	I .	W	C	.	E	.	.	.	.	.	.	.
	985.	.	I .	W	C	.	E	.	.	.	.	.	.	.
	990.	.	I .	W	C	.	E	.	.	.	.	.	.	.
	995.	.	I .	W	C	.	EL	.	.	.	.	.	.	.
	1000.	.	I .	W	C	.	EL	.	.	.	.	.	.	.
	1005.	.	I .	W	C	.	EL	.	.	.	.	.	.	.
	1010.	.	I .	W	C	.	EL	.	.	.	.	.	.	.
	1015.	.	I .	W	C	.	EL	.	.	.	.	.	.	.
855.00	1020.	.	I .	W	C	.	EL	.	.	.	.	.	.	.
	1025.	.	I .	W	C	.	EL	.	.	.	.	.	.	.
	1030.	.	I .	W	C	.	EL	.	.	.	.	.	.	.
	1035.	.	I .	W	C	.	EL	.	.	.	.	.	.	.
	1040.	.	I .	W	C	.	ERL	.	.	.	.	.	.	.
	1045.	.	I .	W	C	.	ERL	.	.	.	.	.	.	.
	1050.	.	I .	W	C	.	ERL	.	.	.	.	.	.	.
	1055.	.	I .	W	C	.	ERL	.	.	.	.	.	.	.
	1060.	.	I .	W	C	.	ERL	.	.	.	.	.	.	.
	1065.	.	I .	W	C	.	ERL	.	.	.	.	.	.	.
	1070.	.	I .	W	C	.	ERL	.	.	.	.	.	.	.
800.00	1075.	.	I .	W	C	.	ERL	.	.	.	.	.	.	.
	1080.	.	I .	W	C	.	ERL	.	.	.	.	.	.	.
	1085.	.	I .	W	C	E	L	.	.	.	.	.	.	.
	1090.	.	I .	W	C	E	L	.	.	.	.	.	.	.
	1095.	.	I .	W	C	ERL		.	.	.	.	.	.	.
	1100.	.	I .	W	C	ERL		.	.	.	.	.	.	.
	1105.	.	I .	W	C	ERL		.	.	.	.	.	.	.
	1110.	.	I .	W	C	ERL		.	.	.	.	.	.	.
	1115.	.	I .	W	C	ERL		.	.	.	.	.	.	.
755.00	1120.	.	I .	W	C	ERL		.	.	.	.	.	.	.
	1125.	.	I .	W	C	ERL		.	.	.	.	.	.	.
	1130.	.	I .	W	C	ERL		.	.	.	.	.	.	.
	1135.	.	I .	W	C	EL		.	.	.	.	.	.	.
	1140.	.	I .	W	C	EL		.	.	.	.	.	.	.
	1145.	.	I .	W	C	E.L		.	.	.	.	.	.	.
	1150.	.	I .	W	C	E.L		.	.	.	.	.	.	.
	1155.	.	I .	W	C	E.L		.	.	.	.	.	.	.
	1160.	.	I .	W	C	E.L		.	.	.	.	.	.	.
	1165.	.	I .	W	C	E.L		.	.	.	.	.	.	.
	1170.	.	I .	W	C	ERL		.	.	.	.	.	.	.
	1175.	.	I .	W	C	ERL		.	.	.	.	.	.	.
	1180.	.	I .	W	C	ERL		.	.	.	.	.	.	.
	1185.	.	I .	W	C	EL		.	.	.	.	.	.	.
	1190.	.	I .	W	C	EL		.	.	.	.	.	.	.
	1195.	.	I .	W	C	EL		.	.	.	.	.	.	.
	1200.	.	I .	W	C	EL		.	.	.	.	.	.	.

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        1205.  .     I  . W C    EL        .         .         .         .         .         .         .
667.00  1210.  .     I  . W C   E L        .         .         .         .         .         .         .
        1215.  .     I  . W C   E L        .         .         .         .         .         .         .
        1220.  .     I  . W C   E L        .         .         .         .         .         .         .
        1225.  .     I  . W C   ELR        .         .         .         .         .         .         .
        1230.  .     I  . W C   EL.        .         .         .         .         .         .         .
        1235.  .     I  . W C   EL.        .         .         .         .         .         .         .
        1240.  .     I  . W C   EL.        .         .         .         .         .         .         .
        1245.  .     I  . W C   EL.        .         .         .         .         .         .         .
        1250.  .     I  . W C   EL.        .         .         .         .         .         .         .
        1255.  .     I  . W C   ER.        .         .         .         .         .         .         .
        1260.  .     I  . W C   E .        .         .         .         .         .         .         .
        1265.  .     I  . W C   E .        .         .         .         .         .         .         .
        1270.  .     I  . W C   E .        .         .         .         .         .         .         .
600.00  1275.  .     I  . W C   E .        .         .         .         .         .         .         .
        1280.  .     I  . W C  LE .        .         .         .         .         .         .         .
        1285.  .     I  . W C  E  .        .         .         .         .         .         .         .
        1290.  .     I  . W C  E  .        .         .         .         .         .         .         .
        1295.  .     I  . WC  LE  .        .         .         .         .         .         .         .
        1300.  .     I  . WC  LE  .        .         .         .         .         .         .         .
        1305.  .     I  .W C  LE  .        .         .         .         .         .         .         .
        1310.  .     I  .W C  LE  .        .         .         .         .         .         .         .
        1315.  .    I   .W C L E  .        .         .         .         .         .         .         .
        1320.  .    I   .WC  L E  .        .         .         .         .         .         .         .
        1325.  .    I   .WC  L E  .        .         .         .         .         .         .         .
        1330.  .    I   W C LRE   .        .         .         .         .         .         .         .
        1335.  .    I   W C L E   .        .         .         .         .         .         .         .
        1340.  .    I   W C L E   .        .         .         .         .         .         .         .
        1345.  .    I   W C L E   .        .         .         .         .         .         .         .
        1350.  .    I   WC L  E   .        .         .         .         .         .         .         .
        1355.  .    I   WC L  E   .        .         .         .         .         .         .         .
        1360.  .    I  W.C L  E   .        .         .         .         .         .         .         .
        1365.  .    I  W.CL   E   .        .         .         .         .         .         .         .
        1370.  .    I  W.CL  E    .        .         .         .         .         .         .         .
        1375.  .   I   WC L  E    .        .         .         .         .         .         .         .
        1380.  .   I   WCLR  E    .        .         .         .         .         .         .         .
        1385.  .   I  W CL   E    .        .         .         .         .         .         .         .
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        1395.  .   I  W CL   E    .        .         .         .         .         .         .         .
        1400.  .   I  W C    E    .        .         .         .         .         .         .         .
470.00  1405.  .   I  WCL    E    .        .         .         .         .         .         .         .
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        1545.  .  I   WCE      .      .      .      .      .      .      .      .      .
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        1800.  .I WCE   .      .      .      .      .      .      .      .      .      .
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        1830.  I  WE    .      .      .      .      .      .      .      .      .      .
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       1840.  I LWE    .       .       .       .       .       .       .       .       .       .
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25.00  1860.  I LWE    .       .       .       .       .       .       .       .       .       .
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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
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

Stations 0+25 to 18+75 a

SUMMARY PRINTOUT

	SECNO	CWSEL	CRIWS	DEPTH	AREA	VCH	BW	ELMIN	K*CHSL	Q	TOPWID	QCHP	K*XN(
*	1875.000	1310.86	1310.86	2.86	185.95	8.22	0.01	1308.00	0.00	1528.00	90.05	100.00	30.(
	1815.000	1308.83	1309.49	2.83	129.47	11.80	0.01	1306.00	-33.33	1528.00	68.06	100.00	30.(
	1765.000	1307.30	1308.08	3.30	122.74	12.45	0.01	1304.00	-40.00	1528.00	64.66	100.00	30.(
	1720.000	1304.85	1305.95	2.85	101.49	15.06	0.01	1302.00	-44.44	1528.00	45.94	100.00	30.(
	1625.000	1301.91	1303.13	3.91	98.76	15.47	0.01	1298.00	-42.11	1528.00	34.58	100.00	30.(
	1525.000	1300.89	1301.51	6.89	112.86	13.54	0.01	1294.00	-40.00	1528.00	27.32	100.00	30.(
	1470.000	1292.61	1295.26	2.99	59.77	25.56	0.01	1289.62	-79.64	1528.00	19.99	100.00	15.(
	1461.000	1291.68	1294.47	2.96	57.74	26.46	0.01	1288.72	-100.00	1528.00	19.50	100.00	15.(
	1436.000	1289.16	1292.26	2.94	53.35	28.64	0.01	1286.22	-100.00	1528.00	18.14	100.00	15.(
	1411.000	1286.71	1290.06	2.99	50.14	30.48	0.01	1283.72	-100.00	1528.00	16.78	100.00	15.
	1386.000	1284.30	1287.93	3.08	47.66	32.06	0.01	1281.22	-100.00	1528.00	15.42	100.00	15.
	1361.000	1281.97	1285.85	3.25	45.71	33.43	0.01	1278.72	-100.00	1528.00	14.07	100.00	15.
	1336.000	1279.69	1283.85	3.47	44.13	34.62	0.01	1276.22	-100.00	1528.00	12.71	100.00	15.
	1311.000	1277.50	1281.95	3.78	42.84	35.67	0.01	1273.72	-100.00	1528.00	11.35	100.00	15.
	1286.000	1275.40	1280.18	4.18	41.82	36.54	0.01	1271.22	-100.00	1528.00	9.99	100.00	15.
	1261.000	1275.26	1279.93	4.29	42.81	35.69	0.01	1270.97	-10.00	1528.00	9.99	100.00	15.
	1236.000	1275.11	1279.68	4.39	43.80	34.89	0.01	1270.72	-10.00	1528.00	9.99	100.00	15.

SECNO	CWSEL	CRIWS	DEPTH	AREA	VCH	BW	ELMIN	K*CHSL	Q	TOPWID	QCHP	K*XN
1211.000	1274.96	1279.46	4.49	44.78	34.12	0.01	1270.47	-10.00	1528.00	9.99	100.00	15.
1186.000	1274.81	1279.21	4.59	45.77	33.39	0.01	1270.22	-10.00	1528.00	9.99	100.00	15.
1161.000	1274.65	1278.95	4.68	46.72	32.70	0.01	1269.97	-10.00	1528.00	9.99	100.00	15.
1136.000	1274.50	1278.70	4.78	47.69	32.04	0.01	1269.72	-10.00	1528.00	9.99	100.00	15.
1111.000	1274.35	1278.44	4.88	48.65	31.41	0.01	1269.47	-10.00	1528.00	9.99	100.00	15.
1086.000	1274.19	1278.19	4.97	49.59	30.81	0.01	1269.22	-10.00	1528.00	9.99	100.00	15.
1061.000	1274.03	1277.94	5.06	50.53	30.24	0.01	1268.97	-10.00	1528.00	9.99	100.00	15.
1037.000	1273.88	1277.70	5.15	51.42	29.72	0.01	1268.73	-10.00	1528.00	9.99	100.00	15.
1027.000	1272.31	1275.73	3.62	49.23	31.04	0.01	1268.69	-4.00	1528.00	17.23	100.00	18.
1017.000	1272.31	1275.71	3.66	49.96	30.59	0.01	1268.65	-3.99	1528.00	17.32	100.00	18.
1007.000	1272.31	1275.67	3.70	50.67	30.16	0.01	1268.61	-4.00	1528.00	17.40	100.00	18.
997.000	1272.34	1275.65	3.76	51.44	29.71	0.01	1268.58	-3.00	1528.00	17.41	100.00	18.
987.000	1272.32	1275.59	3.78	52.11	29.32	0.01	1268.54	-3.99	1528.00	17.56	100.00	18.
977.000	1272.33	1275.55	3.83	52.84	28.92	0.01	1268.50	-4.00	1528.00	17.65	100.00	18.
967.000	1272.32	1275.51	3.86	53.56	28.53	0.01	1268.46	-4.00	1528.00	17.73	100.00	18.
957.000	1272.33	1275.47	3.91	54.29	28.15	0.01	1268.42	-3.99	1528.00	17.81	100.00	18.
947.000	1272.33	1275.42	3.95	55.01	27.77	0.01	1268.38	-4.00	1528.00	17.89	100.00	18.
937.000	1272.33	1275.39	3.98	55.75	27.41	0.01	1268.35	-3.00	1528.00	17.97	100.00	18.
925.000	1272.34	1275.34	4.04	56.64	26.98	0.01	1268.30	-4.16	1528.00	18.07	100.00	18.
855.000	1272.27	1274.99	4.28	61.62	24.80	0.01	1267.99	-4.43	1528.00	18.79	100.00	18.
800.000	1272.37	1274.85	4.55	66.10	23.12	0.01	1267.82	-3.09	1528.00	19.09	100.00	18.
755.000	1272.35	1274.66	4.70	69.46	22.00	0.01	1267.65	-3.78	1528.00	19.55	100.00	18.
667.000	1271.85	1273.92	4.54	74.06	20.63	0.01	1267.31	-3.86	1528.00	22.65	100.00	18.
600.000	1272.48	1274.09	5.42	83.76	18.24	0.01	1267.06	-3.73	1528.00	20.89	100.00	18.
470.000	1267.67	1269.39	2.67	71.91	21.25	0.01	1265.00	-15.85	1528.00	43.84	100.00	30.
430.000	1265.66	1266.99	1.66	86.13	17.74	0.01	1264.00	-20.00	1528.00	54.14	100.00	30.

	SECNO	CWSEL	CRIWS	DEPTH	AREA	VCH	BW	ELMIN	K*CHSL	Q	TOPWID	QCHP	K*XNI
*	325.000	1268.80	1268.80	5.80	158.67	9.63	0.01	1263.00	-9.52	1528.00	54.04	100.00	30.(
	225.000	1266.70	1267.26	4.70	128.09	11.93	0.01	1262.00	-10.00	1528.00	50.85	100.00	30.(
	125.000	1263.35	1264.02	2.35	125.10	12.21	0.01	1261.00	-10.00	1528.00	139.83	100.00	30.(
*	25.000	1262.74	1262.74	2.74	193.75	7.89	0.01	1260.00	-10.00	1528.00	100.00	100.00	30.(

Stations 0+25 to 18+75 a

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01
*	1875.000	0.00	0.00	0.00	1308.00	1528.00	1310.86	1310.86	1311.91	105.24	8.22	185.95	148.
	1815.000	60.00	0.00	0.00	1306.00	1528.00	1308.83	1309.49	1310.99	242.63	11.80	129.47	98.
	1765.000	50.00	0.00	0.00	1304.00	1528.00	1307.30	1308.08	1309.71	271.81	12.45	122.74	92.
	1720.000	45.00	0.00	0.00	1302.00	1528.00	1304.85	1305.95	1308.37	328.66	15.06	101.49	84.
	1625.000	95.00	0.00	0.00	1298.00	1528.00	1301.91	1303.13	1305.63	255.06	15.47	98.76	95.
	1525.000	100.00	0.00	0.00	1294.00	1528.00	1300.89	1301.51	1303.73	145.80	13.54	112.86	126.
	1470.000	55.00	0.00	0.00	1289.62	1528.00	1292.61	1295.26	1302.76	219.04	25.56	59.77	103.
	1461.000	9.00	0.00	0.00	1288.72	1528.00	1291.68	1294.47	1302.56	238.88	26.46	57.74	98.
	1436.000	25.00	0.00	0.00	1286.22	1528.00	1289.16	1292.26	1301.90	288.33	28.64	53.35	89.
	1411.000	25.00	0.00	0.00	1283.72	1528.00	1286.71	1290.06	1301.13	329.95	30.48	50.14	84.
	1386.000	25.00	0.00	0.00	1281.22	1528.00	1284.30	1287.93	1300.26	364.46	32.06	47.66	80.
	1361.000	25.00	0.00	0.00	1278.72	1528.00	1281.97	1285.85	1299.32	392.28	33.43	45.71	77.
	1336.000	25.00	0.00	0.00	1276.22	1528.00	1279.69	1283.85	1298.31	415.27	34.62	44.13	74.
	1311.000	25.00	0.00	0.00	1273.72	1528.00	1277.50	1281.95	1297.25	435.05	35.67	42.84	73.
	1286.000	25.00	0.00	0.00	1271.22	1528.00	1275.40	1280.18	1296.14	453.88	36.54	41.82	71.
	1261.000	25.00	0.00	0.00	1270.97	1528.00	1275.26	1279.93	1295.04	425.75	35.69	42.81	74.
	1236.000	25.00	0.00	0.00	1270.72	1528.00	1275.11	1279.68	1294.01	400.22	34.89	43.80	76.
	1211.000	25.00	0.00	0.00	1270.47	1528.00	1274.96	1279.46	1293.04	376.93	34.12	44.78	78.
	1186.000	25.00	0.00	0.00	1270.22	1528.00	1274.81	1279.21	1292.12	355.40	33.39	45.77	81.
	1161.000	25.00	0.00	0.00	1269.97	1528.00	1274.65	1278.95	1291.26	336.14	32.70	46.72	83.
	1136.000	25.00	0.00	0.00	1269.72	1528.00	1274.50	1278.70	1290.44	318.12	32.04	47.69	85.
	1111.000	25.00	0.00	0.00	1269.47	1528.00	1274.35	1278.44	1289.67	301.66	31.41	48.65	87.
	1086.000	25.00	0.00	0.00	1269.22	1528.00	1274.19	1278.19	1288.93	286.58	30.81	49.59	90.
	1061.000	25.00	0.00	0.00	1268.97	1528.00	1274.03	1277.94	1288.23	272.62	30.24	50.53	92.

	SECNO	XLCH	ELTRO	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01
	1037.000	24.00	0.00	0.00	1268.73	1528.00	1273.88	1277.70	1287.59	260.24	29.72	51.42	94.
	1027.000	10.00	0.00	0.00	1268.69	1528.00	1272.31	1275.73	1287.26	431.66	31.04	49.23	73.
	1017.000	10.00	0.00	0.00	1268.65	1528.00	1272.31	1275.71	1286.84	414.38	30.59	49.96	75.
	1007.000	10.00	0.00	0.00	1268.61	1528.00	1272.31	1275.67	1286.43	398.35	30.16	50.67	76.
	997.000	10.00	0.00	0.00	1268.58	1528.00	1272.34	1275.65	1286.04	380.89	29.71	51.44	78.
	987.000	10.00	0.00	0.00	1268.54	1528.00	1272.32	1275.59	1285.67	368.16	29.32	52.11	79.
	977.000	10.00	0.00	0.00	1268.50	1528.00	1272.33	1275.55	1285.31	354.17	28.92	52.84	81.
	967.000	10.00	0.00	0.00	1268.46	1528.00	1272.32	1275.51	1284.96	341.06	28.53	53.56	82.
	957.000	10.00	0.00	0.00	1268.42	1528.00	1272.33	1275.47	1284.63	328.52	28.15	54.29	84.
	947.000	10.00	0.00	0.00	1268.38	1528.00	1272.33	1275.42	1284.30	316.56	27.77	55.01	85.
	937.000	10.00	0.00	0.00	1268.35	1528.00	1272.33	1275.39	1283.99	305.11	27.41	55.75	87.
	925.000	12.00	0.00	0.00	1268.30	1528.00	1272.34	1275.34	1283.64	291.87	26.98	56.64	89.
	855.000	70.00	0.00	0.00	1267.99	1528.00	1272.27	1274.99	1281.82	232.23	24.80	61.62	100.
	800.000	55.00	0.00	0.00	1267.82	1528.00	1272.37	1274.85	1280.67	190.29	23.12	66.10	110.
	755.000	45.00	0.00	0.00	1267.65	1528.00	1272.35	1274.66	1279.87	166.48	22.00	69.46	118.
	667.000	88.00	0.00	0.00	1267.31	1528.00	1271.85	1273.92	1278.46	152.39	20.63	74.06	123.
	600.000	67.00	0.00	0.00	1267.06	1528.00	1272.48	1274.09	1277.65	99.30	18.24	83.76	153.
	470.000	130.00	0.00	0.00	1265.00	1528.00	1267.67	1269.39	1274.68	976.06	21.25	71.91	48.
	430.000	50.00	0.00	0.00	1264.00	1528.00	1265.66	1266.99	1270.54	710.45	17.74	86.13	57.
*	325.000	105.00	0.00	0.00	1263.00	1528.00	1268.80	1268.80	1270.24	101.05	9.63	158.67	152.
	225.000	100.00	0.00	0.00	1262.00	1528.00	1266.70	1267.26	1268.91	184.96	11.93	128.09	112.
	125.000	100.00	0.00	0.00	1261.00	1528.00	1263.35	1264.02	1265.66	708.65	12.21	125.10	57.
*	25.000	100.00	0.00	0.00	1260.00	1528.00	1262.74	1262.74	1263.70	107.15	7.89	193.75	147.

Stations 0+25 to 18+75 a

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	1875.000	1528.00	1310.86	0.00	0.00	2.86	90.05	0.00
	1815.000	1528.00	1308.83	0.00	-2.03	0.00	68.06	60.00
	1765.000	1528.00	1307.30	0.00	-1.53	0.00	64.66	50.00
	1720.000	1528.00	1304.85	0.00	-2.45	0.00	45.94	45.00
	1625.000	1528.00	1301.91	0.00	-2.94	0.00	34.58	95.00
	1525.000	1528.00	1300.89	0.00	-1.02	0.00	27.32	100.00
	1470.000	1528.00	1292.61	0.00	-8.27	0.00	19.99	55.00
	1461.000	1528.00	1291.68	0.00	-0.93	0.00	19.50	9.00
	1436.000	1528.00	1289.16	0.00	-2.52	0.00	18.14	25.00
	1411.000	1528.00	1286.71	0.00	-2.46	0.00	16.78	25.00
	1386.000	1528.00	1284.30	0.00	-2.40	0.00	15.42	25.00
	1361.000	1528.00	1281.97	0.00	-2.33	0.00	14.07	25.00
	1336.000	1528.00	1279.69	0.00	-2.28	0.00	12.71	25.00
	1311.000	1528.00	1277.50	0.00	-2.20	0.00	11.35	25.00
	1286.000	1528.00	1275.40	0.00	-2.09	0.00	9.99	25.00
	1261.000	1528.00	1275.26	0.00	-0.15	0.00	9.99	25.00
	1236.000	1528.00	1275.11	0.00	-0.15	0.00	9.99	25.00
	1211.000	1528.00	1274.96	0.00	-0.15	0.00	9.99	25.00
	1186.000	1528.00	1274.81	0.00	-0.14	0.00	9.99	25.00
	1161.000	1528.00	1274.65	0.00	-0.16	0.00	9.99	25.00
	1136.000	1528.00	1274.50	0.00	-0.15	0.00	9.99	25.00
	1111.000	1528.00	1274.35	0.00	-0.15	0.00	9.99	25.00
	1086.000	1528.00	1274.19	0.00	-0.16	0.00	9.99	25.00
	1061.000	1528.00	1274.03	0.00	-0.16	0.00	9.99	25.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	1037.000	1528.00	1273.88	0.00	-0.15	0.00	9.99	24.00
	1027.000	1528.00	1272.31	0.00	-1.57	0.00	17.23	10.00
	1017.000	1528.00	1272.31	0.00	0.01	0.00	17.32	10.00
	1007.000	1528.00	1272.31	0.00	0.00	0.00	17.40	10.00
	997.000	1528.00	1272.34	0.00	0.03	0.00	17.41	10.00
	987.000	1528.00	1272.32	0.00	-0.02	0.00	17.56	10.00
	977.000	1528.00	1272.33	0.00	0.00	0.00	17.65	10.00
	967.000	1528.00	1272.32	0.00	0.00	0.00	17.73	10.00
	957.000	1528.00	1272.33	0.00	0.00	0.00	17.81	10.00
	947.000	1528.00	1272.33	0.00	0.00	0.00	17.89	10.00
	937.000	1528.00	1272.33	0.00	0.00	0.00	17.97	10.00
	925.000	1528.00	1272.34	0.00	0.01	0.00	18.07	12.00
	855.000	1528.00	1272.27	0.00	-0.06	0.00	18.79	70.00
	800.000	1528.00	1272.37	0.00	0.10	0.00	19.09	55.00
	755.000	1528.00	1272.35	0.00	-0.02	0.00	19.55	45.00
	667.000	1528.00	1271.85	0.00	-0.50	0.00	22.65	88.00
	600.000	1528.00	1272.48	0.00	0.63	0.00	20.89	67.00
	470.000	1528.00	1267.67	0.00	-4.81	0.00	43.84	130.00
	430.000	1528.00	1265.66	0.00	-2.01	0.00	54.14	50.00
*	325.000	1528.00	1268.80	0.00	3.14	0.00	54.04	105.00
	225.000	1528.00	1266.70	0.00	-2.11	0.00	50.85	100.00
	125.000	1528.00	1263.35	0.00	-3.35	0.00	139.83	100.00
*	25.000	1528.00	1262.74	0.00	-0.61	0.00	100.00	100.00

SUMMARY OF ERRORS AND SPECIAL NOTES

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CAUTION  SECNO= 1875.000  PROFILE= 1  CRITICAL DEPTH ASSUMED

CAUTION  SECNO=  325.000  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=  325.000  PROFILE= 1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=  325.000  PROFILE= 1  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION  SECNO=   25.000  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   25.000  PROFILE= 1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   25.000  PROFILE= 1  20 TRIALS ATTEMPTED TO BALANCE WSEL
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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
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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
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T1      Analysis for the 100 year storm flow's from AM-WEST
T2      April, 1988 Made by DFM Supercritical run
T3      Stations 0+25 to 18+75 along Myrtle Wash Existing conditions

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

      0.       0.       0.       1. -1.000000     0.00     0.0    1528.  1308.000    0.000

J2  NPROF    IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IBW      CHNIM    ITRACE

    -1.000   0.000    0.000    0.000    0.000    0.000    -1.000   0.000    0.000    15.000

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    38.000   1.000    2.000    8.000   25.000   26.000   30.000   42.000   33.000   43.000

     4.000  60.000   17.000  150.000    0.000    0.000    0.000    0.000    0.000    0.000

NC     0.030     0.030     0.030     0.000     0.000     0.000     0.000     0.000     0.000     0.000
X1  1875.000     7.000    10.000   145.000    60.000    60.000    60.000     0.000     0.000     0.000
GR  1312.000    10.000  1310.000    25.000  1308.000    35.000  1308.000    75.000  1310.000   100.000
GR  1312.000   120.000  1314.000   145.000     0.000     0.000     0.000     0.000     0.000     0.000

X1  1815.000     7.000    10.000   121.000    50.000    50.000    50.000     0.000     0.000     0.000
GR  1312.000    10.000  1310.000    33.000  1308.000    47.000  1306.000    64.000  1306.000    89.000
GR  1308.000   101.000  1310.000   121.000     0.000     0.000     0.000     0.000     0.000     0.000

X1  1765.000     7.000    10.000   109.000    35.000    35.000    35.000     0.000     0.000     0.000
GR  1310.000    10.000  1308.000    30.000  1306.000    50.000  1304.000    63.000  1304.000    81.000
GR  1306.000    88.000  1308.000   109.000     0.000     0.000     0.000     0.000     0.000     0.000

X1  1730.000     4.000     0.000    88.000    50.000    50.000    50.000     0.000     0.000     0.000
GR  1302.000     0.000  1300.000    30.000  1300.000    70.000  1302.000    88.000     0.000     0.000

X1  1670.000     4.000     0.000    68.000    50.000    50.000    50.000     0.000     0.000     0.000
GR  1300.000     0.000  1296.000    12.000  1296.000    60.000  1300.000    68.000     0.000     0.000

X1  1630.000     4.000     0.000    60.000    50.000    50.000    50.000     0.000     0.000     0.000
GR  1300.000     0.000  1294.000    22.000  1294.000    32.000  1300.000    60.000     0.000     0.000
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X1	1570.000	4.000	0.000	50.000	50.000	50.000	50.000	0.000	0.000	0.000
GR	1300.000	0.000	1292.000	20.000	1292.000	30.000	1300.000	50.000	0.000	0.000
X1	1530.000	4.000	0.000	68.000	50.000	50.000	50.000	0.000	0.000	0.000
GR	1300.000	0.000	1290.000	24.000	1290.000	48.000	1300.000	68.000	0.000	0.000
X1	1470.000	4.000	0.000	88.000	50.000	50.000	50.000	0.000	0.000	0.000
GR	1300.000	0.000	1288.000	30.000	1288.000	48.000	1300.000	88.000	0.000	0.000
X1	1430.000	4.000	0.000	38.000	50.000	50.000	50.000	0.000	0.000	0.000
GR	1290.000	0.000	1286.000	12.000	1286.000	28.000	1290.000	38.000	0.000	0.000
X1	1370.000	4.000	0.000	40.000	50.000	50.000	50.000	0.000	0.000	0.000
GR	1290.000	0.000	1286.000	13.000	1286.000	30.000	1290.000	40.000	0.000	0.000
X1	1330.000	4.000	0.000	40.000	50.000	50.000	50.000	0.000	0.000	0.000
GR	1290.000	0.000	1284.000	18.000	1284.000	30.000	1290.000	40.000	0.000	0.000
X1	1270.000	4.000	0.000	48.000	50.000	50.000	50.000	0.000	0.000	0.000
GR	1290.000	0.000	1282.000	18.000	1282.000	23.000	1290.000	48.000	0.000	0.000
X1	1230.000	4.000	0.000	52.000	50.000	50.000	50.000	0.000	0.000	0.000
GR	1290.000	0.000	1280.000	20.000	1280.000	30.000	1290.000	52.000	0.000	0.000
X1	1170.000	4.000	0.000	75.000	50.000	50.000	50.000	0.000	0.000	0.000
GR	1290.000	0.000	1280.000	20.000	1280.000	38.000	1290.000	75.000	0.000	0.000
X1	1130.000	4.000	0.000	75.000	50.000	50.000	50.000	0.000	0.000	0.000
GR	1288.000	0.000	1280.000	12.000	1280.000	28.000	1288.000	75.000	0.000	0.000
X1	1070.000	4.000	0.000	60.000	50.000	50.000	50.000	0.000	0.000	0.000
GR	1286.000	0.000	1280.000	15.000	1280.000	38.000	1286.000	60.000	0.000	0.000
X1	1030.000	4.000	0.000	70.000	50.000	50.000	50.000	0.000	0.000	0.000
GR	1286.000	0.000	1280.000	28.000	1280.000	43.000	1286.000	70.000	0.000	0.000
X1	970.000	6.000	0.000	59.000	50.000	50.000	50.000	0.000	0.000	0.000
GR	1282.000	0.000	1280.000	15.000	1277.000	20.000	1277.000	40.000	1280.000	50.000
GR	1282.000	59.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	930.000	6.000	0.000	50.000	50.000	50.000	50.000	0.000	0.000	0.000
GR	1280.000	0.000	1277.000	9.000	1275.000	16.000	1275.000	35.000	1277.000	39.000
GR	1280.000	50.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	870.000	6.000	0.000	58.000	50.000	50.000	50.000	0.000	0.000	0.000
GR	1280.000	0.000	1277.000	5.000	1275.000	15.000	1275.000	35.000	1277.000	48.000
GR	1280.000	58.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	830.000	4.000	0.000	65.000	50.000	50.000	50.000	0.000	0.000	0.000
GR	1280.000	0.000	1280.000	2.000	1277.000	40.000	1277.000	65.000	0.000	0.000
X1	770.000	4.000	0.000	92.000	50.000	50.000	50.000	0.000	0.000	0.000
GR	1280.000	0.000	1278.000	5.000	1278.000	32.000	1280.000	92.000	0.000	0.000
X1	730.000	6.000	0.000	28.000	50.000	50.000	50.000	0.000	0.000	0.000
GR	1274.000	0.000	1272.000	8.000	1270.000	12.000	1270.000	20.000	1272.000	26.000
GR	1274.000	28.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	670.000	6.000	0.000	42.000	50.000	50.000	50.000	0.000	0.000	0.000
GR	1274.000	0.000	1272.000	3.000	1270.000	11.000	1270.000	30.000	1272.000	38.000
GR	1274.000	42.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	630.000	6.000	0.000	32.000	50.000	50.000	50.000	0.000	0.000	0.000
GR	1272.000	0.000	1270.000	5.000	1268.000	12.000	1268.000	20.000	1270.000	25.000
GR	1272.000	32.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	570.000	6.000	0.000	46.000	50.000	50.000	50.000	0.000	0.000	0.000
GR	1272.200	0.000	1270.000	7.000	1268.000	10.000	1268.000	28.000	1270.000	33.000
GR	1272.200	46.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	530.000	6.000	0.000	54.000	50.000	50.000	50.000	0.000	0.000	0.000
GR	1272.000	0.000	1270.000	7.000	1268.000	13.000	1268.000	36.000	1270.000	45.000
GR	1272.000	54.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	470.000	6.000	0.000	55.000	50.000	50.000	50.000	0.000	0.000	0.000
GR	1270.000	0.000	1268.000	10.000	1265.000	43.000	1265.000	43.000	1268.000	48.000
GR	1270.000	55.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	430.000	6.000	0.000	80.000	50.000	50.000	50.000	0.000	0.000	0.000
GR	1270.000	0.000	1268.000	8.000	1265.000	13.000	1265.000	63.000	1268.000	68.000
GR	1270.000	80.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	370.000	4.000	0.000	255.000	50.000	50.000	50.000	0.000	0.000	0.000
GR	1270.000	0.000	1268.000	50.000	1268.000	125.000	1270.000	255.000	0.000	0.000
X1	325.000	4.000	0.000	30.000	100.000	100.000	100.000	0.000	0.000	0.000
GR	1268.000	0.000	1266.000	5.000	1266.000	25.000	1268.000	30.000	0.000	0.000
X1	225.000	4.000	0.000	30.000	100.000	100.000	100.000	0.000	0.000	0.000
GR	1266.000	0.000	1264.000	5.000	1264.000	25.000	1266.000	30.000	0.000	0.000
X1	125.000	6.000	0.000	198.000	100.000	100.000	100.000	0.000	0.000	0.000
GR	1264.000	0.000	1262.000	15.000	1260.000	18.000	1260.000	33.000	1262.000	35.000
GR	1264.000	198.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	25.000	4.000	0.000	100.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	1262.000	0.000	1260.000	50.000	1260.000	70.000	1262.000	100.000	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

```
  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

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS


*SECNO 1875.000
3720 CRITICAL DEPTH ASSUMED
  1875.00     2.86  1310.86  1310.86  1308.00  1311.91     1.05     0.00     0.00  1312.00
    1528.       0.    1528.       0.       0.     186.       0.       0.       0.  1314.00
     0.00     0.00     8.22     0.00    0.000    0.030    0.000    0.000  1308.00    18.55
 0.010524       0.       0.       0.        0       22        0     0.00    90.05   108.60


FLOW DISTRIBUTION FOR SECNO=   1875.00         CWSEL=   1310.86

STA=      19.     145.
  PER Q=    100.0
   AREA=    185.9
    VEL=      8.2

*SECNO 1815.000

3301 HV CHANGED MORE THAN HVINS

  1815.00     2.83  1308.83  1309.49     0.00  1310.99     2.16     0.92     0.00  1312.00
    1528.       0.    1528.       0.       0.     129.       0.       0.       0.  1310.00
     0.00     0.00    11.80     0.00    0.000    0.030    0.000    0.000  1306.00    41.21
 0.024263      60.      60.      60.        7       11        0     0.00    68.06   109.27


FLOW DISTRIBUTION FOR SECNO=   1815.00         CWSEL=   1308.83

STA=      41.     121.
  PER Q=    100.0
   AREA=    129.5
    VEL=     11.8

*SECNO 1765.000
  1765.00     3.30  1307.30  1308.08     0.00  1309.71     2.41     1.28     0.00  1310.00
    1528.       0.    1528.       0.       0.     123.       0.       0.       0.  1308.00
     0.00     0.00    12.45     0.00    0.000    0.030    0.000    0.000  1304.00    37.00
 0.027181      50.      50.      50.        7       11        0     0.00    64.66   101.65
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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   IDC      ICONT    CORAR    TOPWID     ENDST

FLOW DISTRIBUTION FOR SECNO=   1765.00         CWSEL=   1307.30

STA=      37.     109.
  PER Q=    100.0
   AREA=    122.7
    VEL=     12.4

*SECNO 1730.000

3301 HV CHANGED MORE THAN HVINS

  1730.00     1.33  1301.33  1302.64     0.00  1307.79     6.46     1.91     0.00  1302.00
    1528.       0.    1528.       0.       0.     75.       0.       0.       0.  1302.00
     0.00     0.00    20.40     0.00    0.000    0.030    0.000    0.000  1300.00     9.95
 0.161574      35.      35.      35.        5       15        0     0.00    72.07    82.03

FLOW DISTRIBUTION FOR SECNO=   1730.00         CWSEL=   1301.33

STA=      10.      88.
  PER Q=    100.0
   AREA=     74.9
    VEL=     20.4

*SECNO 1670.000

3301 HV CHANGED MORE THAN HVINS

  1670.00     1.66  1297.66  1298.98     0.00  1302.54     4.88     5.25     0.00  1300.00
    1528.       0.    1528.       0.       0.     86.       0.       1.       0.  1300.00
     0.00     0.00    17.73     0.00    0.000    0.030    0.000    0.000  1296.00     7.04
 0.073740      50.      50.      50.        6       17        0     0.00    56.26    63.31

FLOW DISTRIBUTION FOR SECNO=   1670.00         CWSEL=   1297.66

STA=       7.      68.
  PER Q=    100.0
   AREA=     86.2
    VEL=     17.7

*SECNO 1630.000
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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


3301 HV CHANGED MORE THAN HVINS

  1630.00     4.27  1298.27  1299.01     0.00  1300.84     2.57     1.70     0.00  1300.00
    1528.       0.    1528.       0.       0.     119.       0.       1.       0.  1300.00
     0.00     0.00    12.87     0.00    0.000    0.030    0.000    0.000  1294.00     6.34
 0.019417      50.      50.      50.        6       20        0     0.00    45.59    51.93


FLOW DISTRIBUTION FOR SECNO=   1630.00         CWSEL=   1298.27

STA=       6.      60.
  PER Q=    100.0
   AREA=    118.7
    VEL=     12.9

*SECNO 1570.000
  1570.00     4.95  1296.95  1297.76     0.00  1299.91     2.96     0.93     0.00  1300.00
    1528.       0.    1528.       0.       0.     111.       0.       1.       0.  1300.00
     0.01     0.00    13.82     0.00    0.000    0.030    0.000    0.000  1292.00     7.64
 0.017833      50.      50.      50.        6       11        0     0.00    34.73    42.36


FLOW DISTRIBUTION FOR SECNO=   1570.00         CWSEL=   1296.95

STA=       8.      50.
  PER Q=    100.0
   AREA=    110.6
    VEL=     13.8

*SECNO 1530.000

3301 HV CHANGED MORE THAN HVINS

  1530.00     2.65  1292.65  1294.34     0.00  1298.46     5.81     1.45     0.00  1300.00
    1528.       0.    1528.       0.       0.      79.       0.       1.       0.  1300.00
     0.01     0.00    19.35     0.00    0.000    0.030    0.000    0.000  1290.00    17.65
 0.055150      50.      50.      50.        7       11        0     0.00    35.65    53.30


FLOW DISTRIBUTION FOR SECNO=   1530.00         CWSEL=   1292.65

STA=      18.      68.
  PER Q=    100.0
   AREA=     79.0
    VEL=     19.4
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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   IDC      ICONT    CORAR    TOPWID     ENDST

*SECNO 1470.000

3301 HV CHANGED MORE THAN HVINS

 1470.00     3.17  1291.17  1292.68     0.00  1296.06     4.89     2.41     0.00  1300.00
   1528.       0.    1528.       0.       0.     86.       0.       1.       0.  1300.00
    0.01     0.00    17.74     0.00    0.000    0.030    0.000    0.000  1288.00    22.09
0.042369      50.      50.      50.        6       14        0     0.00    36.45    58.54

FLOW DISTRIBUTION FOR SECNO=   1470.00         CWSEL=   1291.17

STA=      22.      88.
  PER Q=    100.0
   AREA=     86.1
    VEL=     17.7

*SECNO 1430.000
 1430.00     3.46  1289.46  1290.82     0.00  1294.08     4.62     1.98     0.00  1290.00
   1528.       0.    1528.       0.       0.     89.       0.       1.       1.  1290.00
    0.01     0.00    17.25     0.00    0.000    0.030    0.000    0.000  1286.00     1.59
0.036930      50.      50.      50.        5       14        0     0.00    35.08    36.67

FLOW DISTRIBUTION FOR SECNO=   1430.00         CWSEL=   1289.46

STA=       2.      38.
  PER Q=    100.0
   AREA=     88.6
    VEL=     17.3

*SECNO 1370.000

3301 HV CHANGED MORE THAN HVINS

 1370.00     4.00  1290.00  1290.70     0.00  1292.79     2.80     1.29     0.00  1290.00
   1528.       0.    1528.       0.       0.    114.       0.       1.       1.  1290.00
    0.01     0.00    13.42     0.00    0.000    0.030    0.000    0.000  1286.00     0.01
0.019025      50.      50.      50.        6       11        0     0.00    39.98    39.99

FLOW DISTRIBUTION FOR SECNO=   1370.00         CWSEL=   1290.00

STA=       0.      40.
  PER Q=    100.0
   AREA=    113.8
    VEL=     13.4
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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 1330.000
 1330.00     4.68  1288.68  1289.59     0.00  1291.84     3.16     0.96     0.00  1290.00
   1528.       0.    1528.       0.       0.     107.       0.       1.       1.  1290.00
    0.01     0.00    14.26     0.00    0.000    0.030    0.000    0.000  1284.00     3.97
0.019275      50.      50.      50.        7       11        0     0.00    33.82    37.79


FLOW DISTRIBUTION FOR SECNO=   1330.00         CWSEL=   1288.68

STA=       4.      40.
  PER Q=    100.0
   AREA=    107.1
    VEL=     14.3

*SECNO 1270.000
 1270.00     5.29  1287.29  1288.38     0.00  1290.80     3.50     1.04     0.00  1290.00
   1528.       0.    1528.       0.       0.     102.       0.       1.       1.  1290.00
    0.01     0.00    15.02     0.00    0.000    0.030    0.000    0.000  1282.00     6.09
0.022503      50.      50.      50.        7       11        0     0.00    33.44    39.54


FLOW DISTRIBUTION FOR SECNO=   1270.00         CWSEL=   1287.29

STA=       6.      48.
  PER Q=    100.0
   AREA=    101.7
    VEL=     15.0

*SECNO 1230.000

3301 HV CHANGED MORE THAN HVINS

 1230.00     4.41  1284.41  1286.03     0.00  1289.43     5.02     1.36     0.00  1290.00
   1528.       0.    1528.       0.       0.      85.       0.       2.       1.  1290.00
    0.01     0.00    17.99     0.00    0.000    0.030    0.000    0.000  1280.00    11.18
0.033673      50.      50.      50.        5        8        0     0.00    28.52    39.70


FLOW DISTRIBUTION FOR SECNO=   1230.00         CWSEL=   1284.41

STA=      11.      52.
  PER Q=    100.0
   AREA=     85.0
    VEL=     18.0
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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 1170.000

3301 HV CHANGED MORE THAN HVINS

  1170.00     3.32  1283.32  1284.70     0.00  1287.69     4.38     1.74     0.00  1290.00
    1528.       0.    1528.       0.       0.     91.       0.       2.       1.  1290.00
     0.01     0.00    16.79     0.00    0.000    0.030    0.000    0.000  1280.00    13.37
 0.036000      50.      50.      50.        6        8        0     0.00    36.90    50.27


FLOW DISTRIBUTION FOR SECNO=   1170.00         CWSEL=   1283.32

STA=      13.      75.
  PER Q=    100.0
   AREA=     91.0
    VEL=     16.8

*SECNO 1130.000

3301 HV CHANGED MORE THAN HVINS

  1130.00     3.95  1283.95  1284.64     0.00  1286.44     2.49     1.25     0.00  1288.00
    1528.       0.    1528.       0.       0.    121.       0.       2.       1.  1288.00
     0.01     0.00    12.67     0.00    0.000    0.030    0.000    0.000  1280.00     6.08
 0.018436      50.      50.      50.        6       11        0     0.00    45.11    51.19


FLOW DISTRIBUTION FOR SECNO=   1130.00         CWSEL=   1283.95

STA=       6.      75.
  PER Q=    100.0
   AREA=    120.6
    VEL=     12.7

*SECNO 1070.000

3301 HV CHANGED MORE THAN HVINS

  1070.00     4.17  1284.17  1284.22     0.00  1285.78     1.62     0.66     0.00  1286.00
    1528.       0.    1528.       0.       0.    150.       0.       2.       1.  1286.00
     0.02     0.00    10.20     0.00    0.000    0.030    0.000    0.000  1280.00     4.56
 0.009850      50.      50.      50.        0        8        0     0.00    48.75    53.31
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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


FLOW DISTRIBUTION FOR SECNO=   1070.00         CWSEL=   1284.17

STA=       5.      60.
  PER Q=    100.0
   AREA=    149.8
    VEL=     10.2

*SECNO 1030.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
  1030.00     4.47  1284.47  1284.47     0.00  1285.91     1.44     0.49     0.00  1286.00
    1528.       0.    1528.       0.       0.     159.       0.       2.       1.  1286.00
     0.02     0.00     9.63     0.00    0.000    0.030    0.000    0.000  1280.00     7.14
 0.009644      50.      50.      50.       20        8        0     0.00    55.98    63.12


FLOW DISTRIBUTION FOR SECNO=   1030.00         CWSEL=   1284.47

STA=       7.      70.
  PER Q=    100.0
   AREA=    158.6
    VEL=      9.6

*SECNO 970.000

3301 HV CHANGED MORE THAN HVINS

   970.00     3.09  1280.09  1281.68     0.00  1285.02     4.93     0.89     0.00  1282.00
    1528.       0.    1528.       0.       0.      86.       0.       2.       1.  1282.00
     0.02     0.00    17.82     0.00    0.000    0.030    0.000    0.000  1277.00    14.32
 0.042804      50.      50.      50.        7        8        0     0.00    36.09    50.41


FLOW DISTRIBUTION FOR SECNO=    970.00         CWSEL=   1280.09

STA=      14.      59.
  PER Q=    100.0
   AREA=     85.7
    VEL=     17.8

*SECNO 930.000
   930.00     3.14  1278.14  1279.63     0.00  1282.90     4.76     2.12     0.00  1280.00
    1528.       0.    1528.       0.       0.      87.       0.       2.       1.  1280.00
     0.02     0.00    17.51     0.00    0.000    0.030    0.000    0.000  1275.00     5.60
 0.042151      50.      50.      50.        6       11        0     0.00    37.56    43.16
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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


FLOW DISTRIBUTION FOR SECNO=    930.00          CWSEL=   1278.14

STA=       6.      50.
  PER Q=    100.0
   AREA=     87.3
    VEL=     17.5

*SECNO 870.000

3301 HV CHANGED MORE THAN HVINS

   870.00     2.95  1277.95  1278.93     0.00  1281.15     3.20     1.75     0.00  1280.00
    1528.       0.    1528.       0.       0.     106.       0.       2.       1.   1280.00
     0.02     0.00    14.36     0.00    0.000    0.030    0.000    0.000  1275.00     3.41
 0.029486      50.      50.      50.        5       11        0     0.00    47.78    51.19


FLOW DISTRIBUTION FOR SECNO=    870.00          CWSEL=   1277.95

STA=       3.      58.
  PER Q=    100.0
   AREA=    106.4
    VEL=     14.4

*SECNO 830.000
3280 CROSS SECTION    830.00 EXTENDED      3.53 FEET


3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
   830.00     3.53  1280.53  1280.53     0.00  1281.84     1.31     0.83     0.46  1280.00
    1528.       0.    1528.       0.       0.     166.       0.       3.       1.   1277.00
     0.02     0.00     9.18     0.00    0.000    0.030    0.000    0.000  1277.00     0.00
 0.010650      50.      50.      50.       20       11        0     0.00    65.00    65.00


FLOW DISTRIBUTION FOR SECNO=    830.00          CWSEL=   1280.53

STA=       0.      65.
  PER Q=    100.0
   AREA=    166.5
    VEL=      9.2
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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 770.000
3280 CROSS SECTION    770.00 EXTENDED      0.74 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
   770.00     2.74  1280.74  1280.74     0.00  1281.78     1.04     0.54     0.00  1280.00
    1528.       0.    1528.       0.       0.     187.       0.       3.       1.  1280.00
     0.02     0.00     8.17     0.00    0.000    0.030    0.000    0.000  1278.00     0.00
 0.010856      50.      50.      50.       20       15        0     0.00    92.00    92.00


FLOW DISTRIBUTION FOR SECNO=    770.00          CWSEL=   1280.74

STA=       0.      92.
  PER Q=    100.0
   AREA=    187.0
    VEL=      8.2

*SECNO 730.000
3280 CROSS SECTION    730.00 EXTENDED      0.06 FEET


3301 HV CHANGED MORE THAN HVINS

   730.00     4.06  1274.06  1275.93     0.00  1280.75     6.69     1.03     0.00  1274.00
    1528.       0.    1528.       0.       0.      74.       0.       3.       1.  1274.00
     0.02     0.00    20.75     0.00    0.000    0.030    0.000    0.000  1270.00     0.00
 0.053001      50.      50.      50.        7       17        0     0.00    28.00    28.00


FLOW DISTRIBUTION FOR SECNO=    730.00          CWSEL=   1274.06

STA=       0.      28.
  PER Q=    100.0
   AREA=     73.6
    VEL=     20.8

*SECNO 670.000

3301 HV CHANGED MORE THAN HVINS

   670.00     2.78  1272.78  1274.31     0.00  1278.14     5.36     2.61     0.00  1274.00
    1528.       0.    1528.       0.       0.      82.       0.       3.       1.  1274.00
     0.02     0.00    18.58     0.00    0.000    0.030    0.000    0.000  1270.00     1.84
 0.051376      50.      50.      50.        7        8        0     0.00    37.72    39.55
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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     ENOST


FLOW DISTRIBUTION FOR SECNO=    670.00          CWSEL=   1272.78

STA=       2.      42.
  PER Q=    100.0
   AREA=     82.2
    VEL=     18.6

*SECNO 630.000
3280 CROSS SECTION    630.00 EXTENDED      0.53 FEET


3301 HV CHANGED MORE THAN HVINS

   630.00     4.54  1272.54  1273.61     0.00  1276.39     3.85     1.75     0.00  1272.00
    1528.       0.    1528.       0.       0.      97.       0.       3.       1.  1272.00
     0.02     0.00    15.74     0.00    0.000    0.030    0.000    0.000  1268.00     0.00
 0.025328      50.      50.      50.        6       17        0     0.00    32.00    32.00


FLOW DISTRIBUTION FOR SECNO=    630.00          CWSEL=   1272.54

STA=       0.      32.
  PER Q=    100.0
   AREA=     97.1
    VEL=     15.7

*SECNO 570.000

3301 HV CHANGED MORE THAN HVINS

   570.00     3.78  1271.78  1272.74     0.00  1275.08     3.30     1.31     0.00  1272.20
    1528.       0.    1528.       0.       0.     105.       0.       3.       1.  1272.20
     0.03     0.00    14.58     0.00    0.000    0.030    0.000    0.000  1268.00     1.33
 0.026939      50.      50.      50.        5        8        0     0.00    42.20    43.53


FLOW DISTRIBUTION FOR SECNO=    570.00          CWSEL=   1271.78

STA=       1.      46.
  PER Q=    100.0
   AREA=    104.8
    VEL=     14.6
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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 530.000

3301 HV CHANGED MORE THAN HVINS

  530.00     3.34  1271.34  1272.07     0.00  1273.90     2.56     1.18     0.00  1272.00
   1528.       0.    1528.       0.       0.     119.       0.       3.       1.  1272.00
    0.03     0.00    12.84     0.00    0.000    0.030    0.000    0.000  1268.00     2.32
0.020926      50.      50.      50.        6        8        0     0.00    48.70    51.02


FLOW DISTRIBUTION FOR SECNO=    530.00         CWSEL=   1271.34

STA=       2.      54.
  PER Q=    100.0
  AREA=     119.0
   VEL=      12.8

*SECNO 470.000

3301 HV CHANGED MORE THAN HVINS

  470.00     4.04  1269.04  1270.12     0.00  1272.58     3.54     1.32     0.00  1270.00
   1528.       0.    1528.       0.       0.     101.       0.       4.       1.  1270.00
    0.03     0.00    15.09     0.00    0.000    0.030    0.000    0.000  1265.00     4.79
0.034410      50.      50.      50.        7       14        0     0.00    46.86    51.65


FLOW DISTRIBUTION FOR SECNO=    470.00         CWSEL=   1269.04

STA=       5.      55.
  PER Q=    100.0
  AREA=     101.2
   VEL=      15.1

*SECNO 430.000
  430.00     1.86  1266.86  1267.96     0.00  1270.58     3.72     2.00     0.00  1270.00
   1528.       0.    1528.       0.       0.      99.       0.       4.       2.  1270.00
    0.03     0.00    15.47     0.00    0.000    0.030    0.000    0.000  1265.00     9.90
0.047157      50.      50.      50.        7       15        0     0.00    56.20    66.10


FLOW DISTRIBUTION FOR SECNO=    430.00         CWSEL=   1266.86

STA=      10.      80.
  PER Q=    100.0
  AREA=      98.7
   VEL=      15.5
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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   IDC      ICONT    CORAR    TOPWID     ENDST


*SECNO 370.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
   370.00     1.68  1269.68  1269.68     0.00  1270.25     0.57     1.11     0.52  1270.00
    1528.       0.    1528.       0.       0.     253.       0.       4.       2.   1270.00
     0.03     0.00     6.05     0.00    0.000    0.030    0.000    0.000  1268.00     8.05
 0.012876      50.      50.      50.       20       11        0     0.00   226.01   234.06


FLOW DISTRIBUTION FOR SECNO=    370.00          CWSEL=   1269.68

STA=       8.     255.
  PER Q=    100.0
   AREA=    252.5
    VEL=      6.1

*SECNO 325.000
3280 CROSS SECTION    325.00 EXTENDED      2.63 FEET


3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
   325.00     4.63  1270.63  1270.63     0.00  1272.81     2.18     0.58     0.22  1268.00
    1528.       0.    1528.       0.       0.     129.       0.       4.       2.   1268.00
     0.03     0.00    11.85     0.00    0.000    0.030    0.000    0.000  1266.00     0.00
 0.010444      50.      50.      50.       20       20        0     0.00    30.00    30.00


FLOW DISTRIBUTION FOR SECNO=    325.00          CWSEL=   1270.63

STA=       0.      30.
  PER Q=    100.0
   AREA=    129.0
    VEL=     11.8
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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 225.000
3280 CROSS SECTION    225.00 EXTENDED      1.65 FEET


3301 HV CHANGED MORE THAN HVINS

   225.00     3.64  1267.64  1268.64     0.00  1271.32     3.67     1.49     0.00  1266.00
    1528.       0.    1528.       0.       0.      99.       0.       4.       2.  1266.00
     0.03     0.00    15.38     0.00    0.000    0.030    0.000    0.000  1264.00     0.00
 0.023128     100.     100.     100.        5        5        0     0.00    30.00    30.00


FLOW DISTRIBUTION FOR SECNO=    225.00          CWSEL=   1267.64

STA=       0.      30.
  PER Q=    100.0
   AREA=     99.4
    VEL=     15.4

*SECNO 125.000
   125.00     2.97  1262.97  1263.91     0.00  1266.86     3.89     4.45     0.00  1264.00
    1528.       0.    1528.       0.       0.      96.       0.       5.       2.  1264.00
     0.04     0.00    15.84     0.00    0.000    0.030    0.000    0.000  1260.00     7.71
 0.118835     100.     100.     100.        6        8        0     0.00   106.51   114.22


FLOW DISTRIBUTION FOR SECNO=    125.00          CWSEL=   1262.97

STA=       8.     198.
  PER Q=    100.0
   AREA=     96.5
    VEL=     15.8

*SECNO 25.000
3280 CROSS SECTION     25.00 EXTENDED      0.58 FEET


3301 HV CHANGED MORE THAN HVINS

    25.00     2.58  1262.58  1262.72     0.00  1263.73     1.15     3.13     0.00  1262.00
    1528.       0.    1528.       0.       0.     178.       0.       5.       2.  1262.00
     0.04     0.00     8.59     0.00    0.000    0.030    0.000    0.000  1260.00     0.00
 0.014184     100.     100.     100.        3       11        0     0.00   100.00   100.00
```

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

FLOW DISTRIBUTION FOR SECNO= 25.00 CWSEL= 1262.58

STA=	0.	100.
PER Q=	100.0	
AREA=	177.9	
VEL=	8.6	

PROFILE FOR STREAM Stations 0+25 to 18+75 a

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  1260.    1270.    1280.    1290.    1300.    1310.    1320.    1330.    1340.    1350.
   SECNO   CUMDIS

 1875.00     0.  .        .        .        .        .      I .WE R    .        .        .        .        .
            10.  .        .        .        .        .      I .WER     .        .        .        .        .
            20.  .        .        .        .        .     I  WMER     .        .        .        .        .
            30.  .        .        .        .        .     I  WEL      .        .        .        .        .
            40.  .        .        .        .        .     I  WEL      .        .        .        .        .
            50.  .        .        .        .        .    I  WCEL      .        .        .        .        .
 1815.00    60.  .        .        .        .        .    I  WREL      .        .        .        .        .
            70.  .        .        .        .        .    I  WREL      .        .        .        .        .
            80.  .        .        .        .        .   I  WCEL       .        .        .        .        .
            90.  .        .        .        .        .   I  WCEL       .        .        .        .        .
           100.  .        .        .        .        .  I   W E        .        .        .        .        .
 1765.00   110.  .        .        .        .        .  I  WC E        .        .        .        .        .
           120.  .        .        .        .        . I  WCLE.        .        .        .        .        .
           130.  .        .        .        .        . I WC   E.       .        .        .        .        .
           140.  .        .        .        .        .IWC    E .       .        .        .        .        .
 1730.00   150.  .        .        .        .        IWLC    E .       .        .        .        .        .
           160.  .        .        .        .       I.WC    E  .       .        .        .        .        .
           170.  .        .        .        .      I WC    E   .       .        .        .        .        .
           180.  .        .        .        .      IWCL   E    .       .        .        .        .        .
           190.  .        .        .        .     IW C   E     .       .        .        .        .        .
 1670.00   200.  .        .        .        .    I WCL  E      .       .        .        .        .        .
           210.  .        .        .        .    I WCL E       .       .        .        .        .        .
           220.  .        .        .        .   I  WCL E       .       .        .        .        .        .
           230.  .        .        .        .   I  WCL E       .       .        .        .        .        .
           240.  .        .        .        .  I   WCLE        .       .        .        .        .        .
 1630.00   250.  .        .        .        .  I   WCLE        .       .        .        .        .        .
           260.  .        .        .        .  I   WCLE        .       .        .        .        .        .
           270.  .        .        .        . I    WCE         .       .        .        .        .        .
           280.  .        .        .        . I   WC E         .       .        .        .        .        .
           290.  .        .        .        .I    WC E         .       .        .        .        .        .
 1570.00   300.  .        .        .        .I    WC E         .       .        .        .        .        .
           310.  .        .        .        .I   WC  E         .       .        .        .        .        .
           320.  .        .        .        .I   WC  EL        .       .        .        .        .        .
           330.  .        .        .        .I  W C  EL        .       .        .        .        .        .
           340.  .        .        .        I   WC   EL        .       .        .        .        .        .
 1530.00   350.  .        .        .        I  WC   E L        .       .        .        .        .        .
           360.  .        .        .        I W C   E L        .       .        .        .        .        .
           370.  .        .        .       I. W C   E L        .       .        .        .        .        .
           380.  .        .        .       I. WC   E  L        .       .        .        .        .        .
           390.  .        .        .      I .W C   E  L        .       .        .        .        .        .
 1470.00   400.  .        .        .      I .W C  E   L        .       .        .        .        .        .
           410.  .        .        .      I .WC   E L .        .       .        .        .        .        .
           420.  .        .        .     I  W C  EL   .        .       .        .        .        .        .
           430.  .        .        .     I  W C LE    .        .       .        .        .        .        .
           440.  .        .        .    I   WCL E     .        .       .        .        .        .        .
 1430.00   450.  .        .        .    I  WLC  E     .        .       .        .        .        .        .
           460.  .        .        .    I   WC  E     .        .       .        .        .        .        .
           470.  .        .        .    I   WC  E     .        .       .        .        .        .        .
           480.  .        .        .    I   WC E      .        .       .        .        .        .        .
           490.  .        .        .    I   WC E      .        .       .        .        .        .        .
 1370.00   500.  .        .        .    I   WC E      .        .       .        .        .        .        .
           510.  .        .        .    I   W  E      .        .       .        .        .        .        .
           520.  .        .        .   I   WC E       .        .       .        .        .        .        .
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```
         530.  .        .        .   I   WC E      .        .        .        .        .        .        .
         540.  .        .        .  I    WC E      .        .        .        .        .        .        .
1330.00  550.  .        .        .  I    WC E      .        .        .        .        .        .        .
         560.  .        .        .  I   WCL E      .        .        .        .        .        .        .
         570.  .        .        . I    WCLE       .        .        .        .        .        .        .
         580.  .        .        . I    WCLE       .        .        .        .        .        .        .
         590.  .        .        .I     WCLE       .        .        .        .        .        .        .
1270.00  600.  .        .        .I    WC LE       .        .        .        .        .        .        .
         610.  .        .        .I    WC LE       .        .        .        .        .        .        .
         620.  .        .        .I    WC  E       .        .        .        .        .        .        .
         630.  .        .        .I    WC  E       .        .        .        .        .        .        .
         640.  .        .        I    W C  E       .        .        .        .        .        .        .
1230.00  650.  .        .        I   W C  EL       .        .        .        .        .        .        .
         660.  .        .        I   W C  EL       .        .        .        .        .        .        .
         670.  .        .        I   WC   EL       .        .        .        .        .        .        .
         680.  .        .        I   WC  E L       .        .        .        .        .        .        .
         690.  .        .        I   WC  E L       .        .        .        .        .        .        .
1170.00  700.  .        .        I  W C  E L       .        .        .        .        .        .        .
         710.  .        .        I  W C E  L       .        .        .        .        .        .        .
         720.  .        .        I   WC E L.       .        .        .        .        .        .        .
         730.  .        .        I   WC E L.       .        .        .        .        .        .        .
         740.  .        .        I   WC EL .       .        .        .        .        .        .        .
1130.00  750.  .        .        I   WCE L .       .        .        .        .        .        .        .
         760.  .        .        I   WCE L .       .        .        .        .        .        .        .
         770.  .        .        I   W EL  .       .        .        .        .        .        .        .
         780.  .        .        I   W EL  .       .        .        .        .        .        .        .
         790.  .        .        I   W E   .       .        .        .        .        .        .        .
1070.00  800.  .        .        I   W E   .       .        .        .        .        .        .        .
         810.  .        .        I   W E   .       .        .        .        .        .        .        .
         820.  .        .        I   W E   .       .        .        .        .        .        .        .
         830.  .        .        I   W E   .       .        .        .        .        .        .        .
         840.  .        .        I   W E   .       .        .        .        .        .        .        .
1030.00  850.  .        .        I   W E   .       .        .        .        .        .        .        .
         860.  .        .       I.   WLE   .       .        .        .        .        .        .        .
         870.  .        .       I.  WL E   .       .        .        .        .        .        .        .
         880.  .        .      I . WCLE    .       .        .        .        .        .        .        .
         890.  .        .      I .WCL E    .       .        .        .        .        .        .        .
 970.00  900.  .        .     I  W C  E    .       .        .        .        .        .        .        .
         910.  .        .     I  WCL  E    .       .        .        .        .        .        .        .
         920.  .        .    I  W.C  E     .       .        .        .        .        .        .        .
         930.  .        .    I  WCL  E     .       .        .        .        .        .        .        .
         940.  .        .   I   WC  E      .       .        .        .        .        .        .        .
 930.00  950.  .        .   I  W C  E      .       .        .        .        .        .        .        .
         960.  .        .   I  WCL  E      .       .        .        .        .        .        .        .
         970.  .        .   I  WCL E       .       .        .        .        .        .        .        .
         980.  .        .   I  WCL E       .       .        .        .        .        .        .        .
         990.  .        .   I  WCL E       .       .        .        .        .        .        .        .
 870.00 1000.  .        .   I  WCLE        .       .        .        .        .        .        .        .
        1010.  .        .   I  WCLE        .       .        .        .        .        .        .        .
        1020.  .        .    I  WCE        .       .        .        .        .        .        .        .
        1030.  .        .    I R W E       .       .        .        .        .        .        .        .
        1040.  .        .     IR W E       .       .        .        .        .        .        .        .
 830.00 1050.  .        .     I  LWE       .       .        .        .        .        .        .        .
        1060.  .        .     IR LWE       .       .        .        .        .        .        .        .
        1070.  .        .     IR LWE       .       .        .        .        .        .        .        .
        1080.  .        .      IRLWE       .       .        .        .        .        .        .        .
        1090.  .        .      IRLWE       .       .        .        .        .        .        .        .
 770.00 1100.  .        .      I LWE       .       .        .        .        .        .        .        .
        1110.  .        .    I  WC E       .       .        .        .        .        .        .        .
        1120.  .        .   I  WC.E        .       .        .        .        .        .        .        .
        1130.  .        . I  LWC .E        .       .        .        .        .        .        .        .
        1140.  .        . I  W C  .E       .       .        .        .        .        .        .        .
 730.00 1150.  .        I   W C   .E       .       .        .        .        .        .        .        .
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        1160.  .        I   W C   E        .        .        .        .        .        .        .        .
        1170.  .        I   WC    E        .        .        .        .        .        .        .        .
        1180.  .        I  WLC   E.        .        .        .        .        .        .        .        .
        1190.  .        I  WLC   E.        .        .        .        .        .        .        .        .
670.00  1200.  .        I  WC   E .        .        .        .        .        .        .        .        .
        1210.  .        I  WC   E .        .        .        .        .        .        .        .        .
        1220.  .       I.  WC  E  .        .        .        .        .        .        .        .        .
        1230.  .       I.  WC  E  .        .        .        .        .        .        .        .        .
        1240.  .      I . LWC  E  .        .        .        .        .        .        .        .        .
630.00  1250.  .      I . LWC E   .        .        .        .        .        .        .        .        .
        1260.  .      I . WC  E   .        .        .        .        .        .        .        .        .
        1270.  .      I . WC  E   .        .        .        .        .        .        .        .        .
        1280.  .      I . WC  E   .        .        .        .        .        .        .        .        .
        1290.  .      I . WC E    .        .        .        .        .        .        .        .        .
570.00  1300.  .      I . WC E    .        .        .        .        .        .        .        .        .
        1310.  .      I . WC E    .        .        .        .        .        .        .        .        .
        1320.  .      I . W  E    .        .        .        .        .        .        .        .        .
        1330.  .      I . W E     .        .        .        .        .        .        .        .        .
        1340.  .      I .WC E     .        .        .        .        .        .        .        .        .
530.00  1350.  .      I .WC E     .        .        .        .        .        .        .        .        .
        1360.  .     I  .WC E     .        .        .        .        .        .        .        .        .
        1370.  .     I  WC E      .        .        .        .        .        .        .        .        .
        1380.  .    I   WC E      .        .        .        .        .        .        .        .        .
        1390.  .    I   WC E      .        .        .        .        .        .        .        .        .
470.00  1400.  .   I   WC  E      .        .        .        .        .        .        .        .        .
        1410.  .   I   WC E       .        .        .        .        .        .        .        .        .
        1420.  .   I  WCL E       .        .        .        .        .        .        .        .        .
        1430.  .   I  WCLE        .        .        .        .        .        .        .        .        .
        1440.  .   I WC LE        .        .        .        .        .        .        .        .        .
430.00  1450.  .   I WC LE        .        .        .        .        .        .        .        .        .
        1460.  .    IWC LE        .        .        .        .        .        .        .        .        .
        1470.  .    I WCE         .        .        .        .        .        .        .        .        .
        1480.  .     I WE         .        .        .        .        .        .        .        .        .
        1490.  .     I WE         .        .        .        .        .        .        .        .        .
370.00  1500.  .      I E         .        .        .        .        .        .        .        .        .
        1510.  .      I WE        .        .        .        .        .        .        .        .        .
        1520.  .     I LWE        .        .        .        .        .        .        .        .        .
        1530.  .     I LW E       .        .        .        .        .        .        .        .        .
        1540.  .    I L W E       .        .        .        .        .        .        .        .        .
325.00  1550.  .    I L .W E      .        .        .        .        .        .        .        .        .
        1560.  .    I L W  E      .        .        .        .        .        .        .        .        .
        1570.  .    I L W  E      .        .        .        .        .        .        .        .        .
        1580.  .   I L  W E       .        .        .        .        .        .        .        .        .
        1590.  .   I L WC E       .        .        .        .        .        .        .        .        .
        1600.  .   I L WC E       .        .        .        .        .        .        .        .        .
        1610.  .   I L W. E       .        .        .        .        .        .        .        .        .
        1620.  .   I L W. E       .        .        .        .        .        .        .        .        .
        1630.  .  I L WC. E       .        .        .        .        .        .        .        .        .
        1640.  .  I L WC.E        .        .        .        .        .        .        .        .        .
225.00  1650.  .  I L WC.E        .        .        .        .        .        .        .        .        .
        1660.  .  I LWC .E        .        .        .        .        .        .        .        .        .
        1670.  . I  LWC E         .        .        .        .        .        .        .        .        .
        1680.  . I LWC  E         .        .        .        .        .        .        .        .        .
        1690.  .I  LWC  E         .        .        .        .        .        .        .        .        .
        1700.  .I  WC  E.         .        .        .        .        .        .        .        .        .
        1710.  .I  WC  E.         .        .        .        .        .        .        .        .        .
        1720.  .I  WC  E .        .        .        .        .        .        .        .        .        .
        1730.  .I  WC  E .        .        .        .        .        .        .        .        .        .
        1740.  I  WC  E  .        .        .        .        .        .        .        .        .        .
125.00  1750.  I  WC  E  .        .        .        .        .        .        .        .        .        .
        1760.  I  WC  E  .        .        .        .        .        .        .        .        .        .
        1770.  I  WC E   .        .        .        .        .        .        .        .        .        .
        1780.  I  WC E   .        .        .        .        .        .        .        .        .        .
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       1790.  I  W  E   .     .     .     .     .     .     .     .     .     .
       1800.  I  W E    .     .     .     .     .     .     .     .     .     .
       1810.  I  W E    .     .     .     .     .     .     .     .     .     .
       1820.  I  W E    .     .     .     .     .     .     .     .     .     .
       1830.  I LWE     .     .     .     .     .     .     .     .     .     .
       1840.  I LWE     .     .     .     .     .     .     .     .     .     .
25.00  1850.  I LWE     .     .     .     .     .     .     .     .     .     .
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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
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

Stations 0+25 to 18+75 a

SUMMARY PRINTOUT

	SECNO	CWSEL	CRIWS	DEPTH	AREA	VCH	BW	ELMIN	K*CHSL	Q	TOPWID	QCHP	K*XN(
*	1875.000	1310.86	1310.86	2.86	185.95	8.22	0.01	1308.00	0.00	1528.00	90.05	100.00	30.(
	1815.000	1308.83	1309.49	2.83	129.47	11.80	0.01	1306.00	-33.33	1528.00	68.06	100.00	30.(
	1765.000	1307.30	1308.08	3.30	122.74	12.45	0.01	1304.00	-40.00	1528.00	64.66	100.00	30.(
	1730.000	1301.33	1302.64	1.33	74.89	20.40	0.01	1300.00	-114.29	1528.00	72.07	100.00	30.(
	1670.000	1297.66	1298.98	1.66	86.17	17.73	0.01	1296.00	-80.00	1528.00	56.26	100.00	30.(
	1630.000	1298.27	1299.01	4.27	118.71	12.87	0.01	1294.00	-40.00	1528.00	45.59	100.00	30.(
	1570.000	1296.95	1297.76	4.95	110.58	13.82	0.01	1292.00	-40.00	1528.00	34.73	100.00	30.(
	1530.000	1292.65	1294.34	2.65	78.96	19.35	0.01	1290.00	-40.00	1528.00	35.65	100.00	30.(
	1470.000	1291.17	1292.68	3.17	86.13	17.74	0.01	1288.00	-40.00	1528.00	36.45	100.00	30.(
	1430.000	1289.46	1290.82	3.46	88.57	17.25	0.01	1286.00	-40.00	1528.00	35.08	100.00	30.(
	1370.000	1290.00	1290.70	4.00	113.84	13.42	0.01	1286.00	0.00	1528.00	39.98	100.00	30.
	1330.000	1288.68	1289.59	4.68	107.14	14.26	0.01	1284.00	-40.00	1528.00	33.82	100.00	30.
	1270.000	1287.29	1288.38	5.29	101.72	15.02	0.01	1282.00	-40.00	1528.00	33.44	100.00	30.
	1230.000	1284.41	1286.03	4.41	84.95	17.99	0.01	1280.00	-40.00	1528.00	28.52	100.00	30.
	1170.000	1283.32	1284.70	3.32	91.01	16.79	0.01	1280.00	0.00	1528.00	36.90	100.00	30.
	1130.000	1283.95	1284.64	3.95	120.59	12.67	0.01	1280.00	0.00	1528.00	45.11	100.00	30.
	1070.000	1284.17	1284.22	4.17	149.78	10.20	0.01	1280.00	0.00	1528.00	48.75	100.00	30.

	SECNO	CWSEL	CRIWS	DEPTH	AREA	VCH	BW	ELMIN	K*CHSL	Q	TOPWID	QCHP	K*XNC
*	1030.000	1284.47	1284.47	4.47	158.65	9.63	0.01	1280.00	0.00	1528.00	55.98	100.00	30.0
	970.000	1280.09	1281.68	3.09	85.73	17.82	0.01	1277.00	-60.00	1528.00	36.09	100.00	30.0
	930.000	1278.14	1279.63	3.14	87.28	17.51	0.01	1275.00	-40.00	1528.00	37.56	100.00	30.0
	870.000	1277.95	1278.93	2.95	106.44	14.36	0.01	1275.00	0.00	1528.00	47.78	100.00	30.0
*	830.000	1280.53	1280.53	3.53	166.46	9.18	0.01	1277.00	40.00	1528.00	65.00	100.00	30.0
*	770.000	1280.74	1280.74	2.74	187.02	8.17	0.01	1278.00	20.00	1528.00	92.00	100.00	30.0
	730.000	1274.06	1275.93	4.06	73.62	20.75	0.01	1270.00	-160.00	1528.00	28.00	100.00	30.0
	670.000	1272.78	1274.31	2.78	82.24	18.58	0.01	1270.00	0.00	1528.00	37.72	100.00	30.0
	630.000	1272.54	1273.61	4.54	97.06	15.74	0.01	1268.00	-40.00	1528.00	32.00	100.00	30.0
	570.000	1271.78	1272.74	3.78	104.78	14.58	0.01	1268.00	0.00	1528.00	42.20	100.00	30.0
	530.000	1271.34	1272.07	3.34	118.97	12.84	0.01	1268.00	0.00	1528.00	48.70	100.00	30.0
	470.000	1269.04	1270.12	4.04	101.23	15.09	0.01	1265.00	-60.00	1528.00	46.86	100.00	30.0
	430.000	1266.86	1267.96	1.86	98.74	15.47	0.01	1265.00	0.00	1528.00	56.20	100.00	30.0
*	370.000	1269.68	1269.68	1.68	252.51	6.05	0.01	1268.00	60.00	1528.00	226.01	100.00	30.0
*	325.000	1270.63	1270.63	4.63	128.99	11.85	0.01	1266.00	-40.00	1528.00	30.00	100.00	30.0
	225.000	1267.64	1268.64	3.64	99.35	15.38	0.01	1264.00	-20.00	1528.00	30.00	100.00	30.0
	125.000	1262.97	1263.91	2.97	96.48	15.84	0.01	1260.00	-40.00	1528.00	106.51	100.00	30.0
	25.000	1262.58	1262.72	2.58	177.90	8.59	0.01	1260.00	0.00	1528.00	100.00	100.00	30.0

Stations 0+25 to 18+75 a

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01
*	1875.000	0.00	0.00	0.00	1308.00	1528.00	1310.86	1310.86	1311.91	105.24	8.22	185.95	148.
	1815.000	60.00	0.00	0.00	1306.00	1528.00	1308.83	1309.49	1310.99	242.63	11.80	129.47	98.
	1765.000	50.00	0.00	0.00	1304.00	1528.00	1307.30	1308.08	1309.71	271.81	12.45	122.74	92.
	1730.000	35.00	0.00	0.00	1300.00	1528.00	1301.33	1302.64	1307.79	1615.74	20.40	74.89	38.
	1670.000	50.00	0.00	0.00	1296.00	1528.00	1297.66	1298.98	1302.54	737.40	17.73	86.17	56.
	1630.000	50.00	0.00	0.00	1294.00	1528.00	1298.27	1299.01	1300.84	194.17	12.87	118.71	109.
	1570.000	50.00	0.00	0.00	1292.00	1528.00	1296.95	1297.76	1299.91	178.33	13.82	110.58	114.
	1530.000	50.00	0.00	0.00	1290.00	1528.00	1292.65	1294.34	1298.46	551.50	19.35	78.96	65.
	1470.000	50.00	0.00	0.00	1288.00	1528.00	1291.17	1292.68	1296.06	423.69	17.74	86.13	74.
	1430.000	50.00	0.00	0.00	1286.00	1528.00	1289.46	1290.82	1294.08	369.30	17.25	88.57	79.
	1370.000	50.00	0.00	0.00	1286.00	1528.00	1290.00	1290.70	1292.79	190.25	13.42	113.84	110.
	1330.000	50.00	0.00	0.00	1284.00	1528.00	1288.68	1289.59	1291.84	192.75	14.26	107.14	110.
	1270.000	50.00	0.00	0.00	1282.00	1528.00	1287.29	1288.38	1290.80	225.03	15.02	101.72	101.
	1230.000	50.00	0.00	0.00	1280.00	1528.00	1284.41	1286.03	1289.43	336.73	17.99	84.95	83.
	1170.000	50.00	0.00	0.00	1280.00	1528.00	1283.32	1284.70	1287.69	360.00	16.79	91.01	80.
	1130.000	50.00	0.00	0.00	1280.00	1528.00	1283.95	1284.64	1286.44	184.36	12.67	120.59	112.
	1070.000	50.00	0.00	0.00	1280.00	1528.00	1284.17	1284.22	1285.78	98.50	10.20	149.78	153.
*	1030.000	50.00	0.00	0.00	1280.00	1528.00	1284.47	1284.47	1285.91	96.44	9.63	158.65	155.
	970.000	50.00	0.00	0.00	1277.00	1528.00	1280.09	1281.68	1285.02	428.04	17.82	85.73	73.
	930.000	50.00	0.00	0.00	1275.00	1528.00	1278.14	1279.63	1282.90	421.51	17.51	87.28	74.
	870.000	50.00	0.00	0.00	1275.00	1528.00	1277.95	1278.93	1281.15	294.86	14.36	106.44	88.
*	830.000	50.00	0.00	0.00	1277.00	1528.00	1280.53	1280.53	1281.84	106.50	9.18	166.46	148.
*	770.000	50.00	0.00	0.00	1278.00	1528.00	1280.74	1280.74	1281.78	108.56	8.17	187.02	146.
	730.000	50.00	0.00	0.00	1270.00	1528.00	1274.06	1275.93	1280.75	530.01	20.75	73.62	66.

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.011
	670.000	50.00	0.00	0.00	1270.00	1528.00	1272.78	1274.31	1278.14	513.76	18.58	82.24	67.
	630.000	50.00	0.00	0.00	1268.00	1528.00	1272.54	1273.61	1276.39	253.28	15.74	97.06	96.
	570.000	50.00	0.00	0.00	1268.00	1528.00	1271.78	1272.74	1275.08	269.39	14.58	104.78	93.
	530.000	50.00	0.00	0.00	1268.00	1528.00	1271.34	1272.07	1273.90	209.26	12.84	118.97	105.
	470.000	50.00	0.00	0.00	1265.00	1528.00	1269.04	1270.12	1272.58	344.10	15.09	101.23	82.
	430.000	50.00	0.00	0.00	1265.00	1528.00	1266.86	1267.96	1270.58	471.57	15.47	98.74	70.
*	370.000	50.00	0.00	0.00	1268.00	1528.00	1269.68	1269.68	1270.25	128.76	6.05	252.51	134.
*	325.000	50.00	0.00	0.00	1266.00	1528.00	1270.63	1270.63	1272.81	104.44	11.85	128.99	149.
	225.000	100.00	0.00	0.00	1264.00	1528.00	1267.64	1268.64	1271.32	231.28	15.38	99.35	100.
	125.000	100.00	0.00	0.00	1260.00	1528.00	1262.97	1263.91	1266.86	1188.35	15.84	96.48	44.
	25.000	100.00	0.00	0.00	1260.00	1528.00	1262.58	1262.72	1263.73	141.84	8.59	177.90	128.

Stations 0+25 to 18+75 a

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	1875.000	1528.00	1310.86	0.00	0.00	2.86	90.05	0.00
	1815.000	1528.00	1308.83	0.00	-2.03	0.00	68.06	60.00
	1765.000	1528.00	1307.30	0.00	-1.53	0.00	64.66	50.00
	1730.000	1528.00	1301.33	0.00	-5.97	0.00	72.07	35.00
	1670.000	1528.00	1297.66	0.00	-3.67	0.00	56.26	50.00
	1630.000	1528.00	1298.27	0.00	0.61	0.00	45.59	50.00
	1570.000	1528.00	1296.95	0.00	-1.32	0.00	34.73	50.00
	1530.000	1528.00	1292.65	0.00	-4.30	0.00	35.65	50.00
	1470.000	1528.00	1291.17	0.00	-1.48	0.00	36.45	50.00
	1430.000	1528.00	1289.46	0.00	-1.71	0.00	35.08	50.00
	1370.000	1528.00	1290.00	0.00	0.53	0.00	39.98	50.00
	1330.000	1528.00	1288.68	0.00	-1.32	0.00	33.82	50.00
	1270.000	1528.00	1287.29	0.00	-1.39	0.00	33.44	50.00
	1230.000	1528.00	1284.41	0.00	-2.88	0.00	28.52	50.00
	1170.000	1528.00	1283.32	0.00	-1.09	0.00	36.90	50.00
	1130.000	1528.00	1283.95	0.00	0.63	0.00	45.11	50.00
	1070.000	1528.00	1284.17	0.00	0.22	0.00	48.75	50.00
*	1030.000	1528.00	1284.47	0.00	0.30	0.00	55.98	50.00
	970.000	1528.00	1280.09	0.00	-4.38	0.00	36.09	50.00
	930.000	1528.00	1278.14	0.00	-1.95	0.00	37.56	50.00
	870.000	1528.00	1277.95	0.00	-0.19	0.00	47.78	50.00
*	830.000	1528.00	1280.53	0.00	2.58	0.00	65.00	50.00
*	770.000	1528.00	1280.74	0.00	0.21	0.00	92.00	50.00
	730.000	1528.00	1274.06	0.00	-6.68	0.00	28.00	50.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	670.000	1528.00	1272.78	0.00	-1.28	0.00	37.72	50.00
	630.000	1528.00	1272.54	0.00	-0.24	0.00	32.00	50.00
	570.000	1528.00	1271.78	0.00	-0.76	0.00	42.20	50.00
	530.000	1528.00	1271.34	0.00	-0.44	0.00	48.70	50.00
	470.000	1528.00	1269.04	0.00	-2.30	0.00	46.86	50.00
	430.000	1528.00	1266.86	0.00	-2.18	0.00	56.20	50.00
*	370.000	1528.00	1269.68	0.00	2.82	0.00	226.01	50.00
*	325.000	1528.00	1270.63	0.00	0.96	0.00	30.00	50.00
	225.000	1528.00	1267.64	0.00	-2.99	0.00	30.00	100.00
	125.000	1528.00	1262.97	0.00	-4.68	0.00	106.51	100.00
	25.000	1528.00	1262.58	0.00	-0.39	0.00	100.00	100.00

SUMMARY OF ERRORS AND SPECIAL NOTES

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CAUTION  SECNO= 1875.000  PROFILE= 1  CRITICAL DEPTH ASSUMED

CAUTION  SECNO= 1030.000  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO= 1030.000  PROFILE= 1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO= 1030.000  PROFILE= 1  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION  SECNO=  830.000  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=  830.000  PROFILE= 1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=  830.000  PROFILE= 1  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION  SECNO=  770.000  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=  770.000  PROFILE= 1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=  770.000  PROFILE= 1  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION  SECNO=  370.000  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=  370.000  PROFILE= 1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=  370.000  PROFILE= 1  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION  SECNO=  325.000  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=  325.000  PROFILE= 1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=  325.000  PROFILE= 1  20 TRIALS ATTEMPTED TO BALANCE WSEL
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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
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CHAPTER 3

REFERENCES

REFERENCES

1. Hydraulic Engineering Circular 12, Roadway Inlet Analysis, U.S. Department of Transportation

2. Manual of Instruction, Hydraulic Design of Storm Sewer, HNTB Program 411

3. National Flood Insurance Program, Flood Insurance Rate Map, City of Phoenix, Arizona, Maricopa County

4. Storm Drain Design Manual, Storm Drains and Paving of Major Streets, City of Phoenix

5. Uniform Standard Details for Public Work Construction, Maricopa Association of Government, 1979, Arizona