

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS A	JUNCTION	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
ELEMENT NO 13	IS A	JUNCTION	1593.00	603.24	2	6	5	.013	160.0	142.4	603.24	604.24	30.00	45.00

ELEMENT NO	IS A	JUNCTION	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
ELEMENT NO 14	IS A	JUNCTION	1610.00	604.56	6	7	0	.013	35.7	.0	606.56	.00	45.00	.00

ELEMENT NO	IS A	JUNCTION	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
ELEMENT NO 15	IS A	JUNCTION	1670.00	606.98	9	9	0	.013	92.5	.0	607.56	.00	45.00	45.00

WARNING - ADJACENT SECTIONS ARE NOT IDENTICAL - SEE SECTION NUMBERS AND CHANNEL DEFINITIONS

ELEMENT NO	IS A	REACH	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
ELEMENT NO 16	IS A	REACH	2460.00	647.60	5	.013	.00	.00	45.00	1

ELEMENT NO	IS A	REACH	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
ELEMENT NO 17	IS A	REACH	2600.00	654.62	5	.013	.00	.00	45.00	1

ELEMENT NO	IS A	REACH	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
ELEMENT NO 18	IS A	REACH	2660.00	657.92	5	.013	.00	.00	.00	0

ELEMENT NO	IS A	JUNCTION	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
ELEMENT NO 19	IS A	JUNCTION	2680.00	658.16	5	9	0	.013	31.5	.0	659.66	.00	90.00	.00

ELEMENT NO	IS A	JUNCTION	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
ELEMENT NO 20	IS A	JUNCTION	2780.00	659.38	5	9	0	.013	7.3	.0	660.88	.00	90.00	.00

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	21	IS A SYSTEM HEADWORKS				
		W/S DATA	STATION	INVERT	SECT	W S ELEV
			2994.00	852.00	5	.00

NO EDIT ERRORS ENCOUNTERED-COMPUTATION IS NOW BEGINNING

!! WARNING NO. 2 !! - WATER SURFACE ELEVATION GIVEN IS LESS THAN OR EQUALS INVERT ELEVATION IN ROWK02, W.S.ELEV = INV + 00

WATER SURFACE PROFILE LISTING
 TEMPLETON GAP SUGGESTED ALTERNATIVE MAIN RUN JOB #743.3 8/2/39 MSP
 MAIN STORM CSEWER SYSTEM
 100 YEAR FLOWE

STATION	INVERT ELEV	DEPTH OF FLOW	W.G. ELEV	Q	VEL	VEL HEAD	ENERGY GRD.EL.	SUPER ELEV	CRITICAL DEPTH	HST/ DIA	BASE/ ID NO.	IL	NO PIER	AVBR
L/ELEN	BO					SF AVE	MF		NORM DEPTH					
.00	550.00	3.16	553.16	559.9	24.72	9.50	572.66	.00	5.37	3.97	4.50	.83	0	.00
299.05	.02354					.02234	4.67		3.20			.85		
299.05	564.27	3.11	567.40	558.9	25.23	9.93	577.33	.00	5.37	3.97	4.50	.85	0	.00
219.25	.02054					.02460	5.37		3.20			.83		
427.30	559.78	3.00	571.78	558.5	26.51	10.93	582.70	.00	5.37	3.97	4.50	.88	0	.00
132.70	.02054					.02799	3.71		3.20			.88		
550.00	571.50	2.90	574.40	559.9	25.50	10.91	585.31	.00	5.41	4.00	4.50	1.00	0	.00
1.00	.00000					.02676	.03		.00			1.00		
561.00	571.50	2.90	574.40	559.9	26.54	10.95	585.34	.00	5.41	4.00	4.50	1.00	0	.00
254.00	.02508					.02836	7.20		2.95			1.00		
813.00	577.87	2.82	580.69	558.9	27.63	11.86	592.55	.00	5.41	4.00	4.50	1.00	0	.00
.07	2.00000					.02965	.00		.86			1.00		
915.07	573.01	2.83	580.84	558.9	27.45	11.71	592.55	.00	5.41	4.00	4.50	1.00	0	.00
.49	2.00000					.02760	.01		.86			1.00		
915.56	573.99	2.93	581.92	558.9	26.17	10.54	592.56	.00	5.41	4.00	4.50	1.00	0	.00
.44	2.00000					.02403	.01		.86			1.00		
816.00	575.27	3.00	580.50	558.9	24.93	9.65	592.57	.00	5.41	4.00	4.50	1.00	0	.00
JUNCT STR	.02444					.02777	4.67					1.00		
983.00	584.00	2.64	586.64	528.9	28.02	12.21	592.58	.00	5.21	4.00	4.50	1.00	0	.00
50.00	.02150					.03096	2.72		2.30			1.00		
1065.00	586.12	2.51	588.71	528.9	25.76	12.95	601.57	.00	5.21	4.00	4.50	1.00	0	.00
.50	2.00000					.03319	.02		.82			1.00		

WATER SURFACE PROFILE LISTING
 TEMPLETON GAP SUGGESTED ALTERNATIVE MAIN RUN JOB #743.3 8/2/89 MSP
 MAIN STORM SEWER SYSTEM
 100 YEAR FLOWS

STATION	INVERT ELEV	DEPTH OF FLOW	W.S. ELEV	Q	VEL	VEL HEAD	ENERGY GRD. EL.	SUPER ELEV	CRITICAL DEPTH	HGT/ DIA	BASE/ ID NO.	ZL	NO	AVSPP
L/S/LEM	BO				SP AVE	HF			NORM DEPTH			ZR		
1065.50	587.13	2.58	599.81	528.9	27.53	11.75	601.59	.00	5.21	4.00	4.50	1.00	0	.00
.50	2.00000					.02932	.01		.82			1.00		
1066.00	588.12	2.77	599.89	528.9	26.23	10.71	601.60	.00	5.21	4.00	4.50	1.00	0	.00
209.00	.02512					.02879	6.06		2.84			1.00		
1275.00	593.37	2.69	596.06	528.9	27.31	11.60	607.66	.00	5.21	4.00	4.50	1.00	0	.00
40.00	.02500					.03103	1.24		2.84			1.00		
1315.00	594.37	2.67	597.04	528.9	27.62	11.86	603.90	.00	5.21	4.00	4.50	1.00	0	.00
.07	2.00000					.03125	.00		.82			1.00		
1315.07	594.50	2.65	597.18	528.9	27.46	11.72	609.90	.00	5.21	4.00	4.50	1.00	0	.00
.49	2.00000					.02911	.01		.82			1.00		
1315.56	595.49	2.73	598.23	528.9	26.18	10.65	608.92	.00	5.21	4.00	4.50	1.00	0	.00
.44	2.00000					.02557	.01		.82			1.00		
1316.00	596.37	2.97	599.34	528.9	24.96	9.69	605.93	.00	5.21	4.00	4.50	1.00	0	.00
194.00	.02510					.02327	4.51		2.84			1.00		
1510.00	601.24	2.92	604.16	528.9	24.45	9.29	613.45	.00	5.21	4.00	4.50	1.00	0	.00
JUNCT STR	.02500					.04324	3.46					1.00		
1590.00	603.24	1.37	604.61	228.5	28.13	12.30	616.91	.00	3.33	4.00	4.50	1.00	0	.00
JUNCT STR	.03300					.08474	3.39					1.00		
1670.00	604.36	1.73	606.09	190.8	35.27	19.34	625.68	.00	3.92	4.00	4.50	1.00	0	.00
JUNCT STR	.05800					.46114	19.28					1.00		
1670.00	606.88	1.50	608.38	98.3	55.63	45.10	636.43	.00	1.50	1.50	1.50	1.00	0	.00
1670.00	606.88	1.75	608.64	98.3	22.81	9.08	616.72	.00	2.87	3.00	3.00	1.00	0	.00

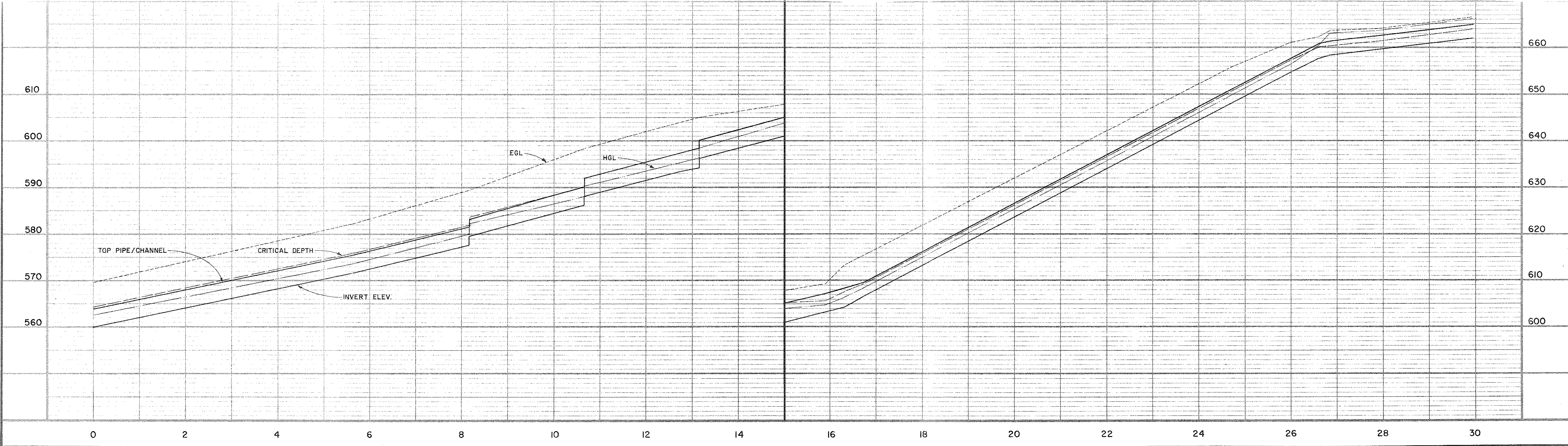
WATER SURFACE PROFILE LISTING
 TEMPLETON SAP SUGGESTED ALTERNATIVE RAIN RUN JOB #743.3 8/2/99 MSP
 MAIN STORM SEWER SYSTEM
 100 YEAR FLOWS

STATION	INVERT ELEV	DEPTH OF FLOW	M.S. ELEV	Q	VEL	VEL HEAD	ENERGY GRD. EL.	SLPER ELEV	CRITICAL DEPTH	HET/ DIA	BASE/ ID NO.	ZL	NO PIER	AVDPR
L/ELEM	SO				SF AVE	HF			NORM DEPTH			ZR		
563.74	.05154				.05158	29.08			1.76			.00		
2253.74	635.94	1.76	637.70	98.3	22.81	8.08	645.78	.00	2.89	3.00	.00	.00	0	.00
226.24	.05154				.04862	11.00			1.76			.00		
2460.00	647.60	1.83	649.43	98.3	21.75	7.35	656.78	.00	2.89	3.00	.00	.00	0	.00
14.10	.05157				.04530	.64			1.76			.00		
2474.10	648.33	1.84	650.17	98.3	21.61	7.26	657.43	.00	2.89	3.00	.00	.00	0	.00
63.53	.05157				.04238	2.47			1.76			.00		
2537.53	651.60	1.92	653.52	98.3	20.60	6.60	660.12	.00	2.89	3.00	.00	.00	0	.00
37.09	.05157				.03761	1.39			1.76			.00		
2574.72	653.52	2.00	655.52	98.3	19.54	6.00	661.51	.00	2.89	3.00	.00	.00	0	.00
25.28	.05157				.03345	.85			1.76			.00		
2600.00	654.92	2.09	656.91	98.3	18.73	5.45	662.36	.00	2.89	3.00	.00	.00	0	.00
19.23	.05167				.02984	.54			1.76			.00		
2618.23	655.76	2.18	657.94	98.3	17.87	4.96	662.90	.00	2.89	3.00	.00	.00	0	.00
13.96	.05167				.02673	.57			1.76			.00		
1932.19	656.68	2.28	658.76	98.3	17.04	4.51	663.28	.00	2.89	3.00	.00	.00	0	.00
10.75	.05167				.02404	.24			1.76			.00		
2642.84	657.04	2.39	659.43	98.3	16.24	4.10	663.53	.00	2.89	3.00	.00	.00	0	.00
8.00	.05167				.02179	.18			1.76			.00		
2651.14	657.46	2.52	659.98	98.3	15.49	3.73	663.71	.00	2.89	3.00	.00	.00	0	.00
5.87	.05167				.02002	.12			1.76			.00		
2657.01	657.77	2.68	660.44	98.3	14.77	3.39	663.83	.00	2.89	3.00	.00	.00	0	.00

WATER SURFACE PROFILE LISTING
 TEMPLETON GAP SUGGESTED ALTERNATIVE MAIN RUN JOB #743.3 8/2/89 MSP
 MAIN STORM SEWER SYSTEM
 100 YEAR FLOW

STATION	INVERT ELEV	DEPTH OF FLOW	M.S. ELEV	D	VEL	VEL HEAD	ENERGY GRD. EL.	SUPER ELEV	CRITICAL DEPTH	HST/ DIA	BASE/ ID NO.	ZL	NO	AVGPR. PIEP
L/ELEM	SC					GF AVE	HF		NORM DEPTH			ZR		
	2.99	.95167				.01712	.06		1.76			.00		
2660.00	657.92	2.99	660.91	95.3	14.08	3.08	663.89	.00	2.99	3.00	.00	.00	0	.00
JUNCT STR	.01200					.01450	.29					.00		
2680.00	658.16	6.27	664.43	66.8	9.45	1.39	665.81	.00	2.61	3.00	.00	.00	0	.00
JUNCT STR	.01220					.00399	.90					.00		
2780.00	659.38	6.52	665.90	59.5	8.42	1.10	667.00	.00	2.49	3.00	.00	.00	0	.00
JUNCT STR	.01220					.00786	.00					.00		
2994.00	662.00	6.52	668.52	59.5	8.42	1.10	669.62	.00	2.49	3.00	.00	.00	0	.00

TELEPHONE POST 14872P



<p style="font-size: small; margin: 0;">engineering professionals inc.</p>	Pikes Peak Research Park 5475 Mark Dabbling Boulevard Suite 109 Colorado Springs, Colorado 80918 (719) 590-8866	NO.	REVISIONS	BY	DATE	PREPARED UNDER THE SUPERVISION OF JPM	CLIENT: City of Colorado Springs		TITLE: Templeton Gap Basin A Sub-basin 2 Hydraulic Profile of Main Line	JOB NO.	743.3
		DESIGNED AWMc	CHECKED AWMc	SCALE V - 1" = 10' H - 1" = 100'	DRAWN MSP	DATE NOV 1989				SHEET NO.	1 OF 1 SHEETS

*Hydraulic Computer Analysis
Lateral One*

*Lateral One
10 Year Flows*

INPUT FILE LISTING

T1 TEMPLETON GAP SUGGESTED ALTERNATE LATERAL 1 JOB #743.7 NCP 8/2/89

T2 10 YEAR FLOWS

SO	0.00	604.24	5	.013					
R	25.00	604.98	5					30.00	
JX	35.00	605.78	5	.013	3.1	606.78		90.00	
JX	115.00	607.34	5	.013	26.1	609.54		90.00	
JX	390.00	615.27	5	.013	21.0	616.27		65.00	1
JX	975.00	646.99	5	.013	3.2	646.99		45.00	2
S	975.00	647.88	7	.013					19.00
JX	1781.00	697.53	7	.013	11.0	698.30		90.00	
R	1900.00	698.76	7						45.00
SA	1930.00	700.45	7						

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

TEMPLETON SAP SUGGESTED ALTERNATE LATERAL 1 CCB #743.3 MSP 8/21/95

HEADING LINE NO 2 IS -

10 YEAR FLOW

HEADING LINE NO 3 IS -

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	9 IS A REACH	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	PGN P
	U/S DATA	1800.00	678.78	7	.014	.01	.00	45.00	0

ELEMENT NO	10 IS A SYSTEM HEADWORKS	STATION	INVERT	SECT	W S ELEV
	U/S DATA	1830.00	700.68	7	.00

NO EDIT ERRORS ENCOUNTERED-COMPUTATION IS NOW BEGINNING

WARNING NO. 1 ## - WATER SURFACE ELEVATION GIVEN IS LESS THAN OR EQUALS INVERT ELEVATION IN BOXES, W.S.ELEV = INV - DC

WATER SURFACE PROFILE LISTING
TEMPLETON SAP SUGGESTED ALTERNATE LATERAL 1 JOB #743.3 MSP 9/2/99
10 YEAR FLOWS

STATION	INVERT ELEV	DEPTH OF FLOW	W.S. ELEV	Q	VEL	VEL HEAD	ENERGY EQV. EL.	SUPER ELEV	CRITICAL DEPTH	HST/ DIA	BASE/ ID NO.	ZL	NO	AVRPT
L/ELEM	SO				CF AVE	MF			NORM DEPTH					
.00	604.24	2.29	606.53	78.3	13.59	2.87	609.39	.00	2.76	3.00	.00	.00	0	.00
5.58	.02960				.01925	.10			1.91			.00		
5.58	604.41	2.37	606.73	78.5	13.33	2.76	609.49	.00	2.76	3.00	.00	.00	0	.00
10.49	.02960				.01702	.15			1.91			.00		
15.07	604.72	2.45	607.16	78.5	12.71	2.51	609.57	.00	2.76	3.00	.00	.00	0	.00
6.46	.02960				.01550	.16			1.91			.00		
22.53	604.91	2.59	607.49	78.5	12.12	2.23	607.77	.00	2.76	3.00	.00	.00	0	.00
2.47	.02960				.01439	.04			1.91			.00		
25.00	604.98	2.76	607.74	78.5	11.55	2.07	609.81	.00	2.76	3.00	.00	.00	0	.00
JUNCT STR	.03001				.01239	.12						.00		
35.00	605.28	3.05	608.33	75.3	10.65	1.76	610.09	.00	2.72	3.00	.00	.00	0	.00
JUNCT STR	.02950				.00909	.73						.00		
115.00	607.69	3.44	611.00	49.2	6.96	.75	611.83	.00	2.29	3.00	.00	.00	0	.00
JUNCT STR	.02774											.00		
390.00	615.27	.98	616.15	27.3	15.84	3.70	620.05	.00	1.69	3.00	.00	.00	0	.00
JUNCT STR	.05225				.05048	30.54						.00		
995.00	646.88	.50	647.63	24.0	20.36	6.44	654.12	.00	1.74	2.00	.00	.00	0	.00
.44	1.00000				.09349	.04			.44			.00		
995.44	647.32	.92	648.14	24.0	19.67	6.01	654.15	.00	1.74	2.00	.00	.00	0	.00
.56	1.00000				.08371	.05			.44			.00		
996.00	647.25	.81	648.73	24.0	18.76	6.47	654.21	.00	1.74	2.00	1.00	.00	0	.00
JUNCT STR	.05329				.05374	41.82						.00		

WATER SURFACE PROFILE LISTING
 TEMPLETON GAP SUGGESTED ALTERNATE LATERAL 1 069 #743.3 MBP 3/2/87
 1% YEAR FLOW

STATION	INVERT ELEV	DEPTH OF FLOW	W.G. ELEV	G	VEL	VEL HEAD	ENERGY GRD.EL.	SUPER ELEV	CRITICAL DEPTH	HGT/ DIA	BASE/ IS NO.	ZL	NO PIER	AVGFD
1/ELEV	50						HF		NORM DEPTH			ZR		
1780.00	697.53	.91	698.30	13.0	10.98	1.87	700.19	.00	1.30	2.00	.00	.00	0	.00
2.54	.06300					.03176	.08		.68			.00		
1782.64	697.66	.92	698.48	13.0	11.69	1.78	700.26	.00	1.30	2.00	.00	.00	0	.00
3.84	.06300					.02872	.11		.68			.00		
1784.35	697.70	.85	698.75	13.0	10.20	1.62	700.37	.00	1.30	2.00	.00	.00	0	.00
3.04	.06300					.02524	.08		.68			.00		
1789.42	698.07	.88	698.98	13.0	9.72	1.47	700.45	.00	1.30	2.00	.00	.00	0	.00
2.48	.06300					.02215	.05		.68			.00		
1791.90	698.25	.92	699.16	13.0	9.27	1.33	700.50	.00	1.30	2.00	.00	.00	0	.00
1.99	.06300					.01950	.04		.68			.00		
1793.89	698.38	.95	699.33	13.0	8.84	1.21	700.54	.00	1.30	2.00	.00	.00	0	.00
1.62	.06300					.01716	.03		.68			.00		
1795.51	698.48	.99	699.46	13.0	8.43	1.10	700.57	.00	1.30	2.00	.00	.00	0	.00
1.32	.06300					.01510	.02		.68			.00		
1796.83	698.55	1.02	699.58	13.0	8.03	1.00	700.59	.00	1.30	2.00	.00	.00	0	.00
1.03	.06300					.01331	.01		.68			.00		
1797.55	698.63	1.06	699.69	13.0	7.66	.91	700.60	.00	1.30	2.00	.00	.00	0	.00
.82	.06300					.01173	.01		.68			.00		
1798.68	698.69	1.10	699.79	13.0	7.30	.83	700.61	.00	1.30	2.00	.00	.00	0	.00
.67	.06300					.01036	.01		.68			.00		
1799.27	698.71	1.15	699.86	13.0	6.96	.75	700.62	.00	1.30	2.00	.00	.00	0	.00
.42	.06300					.00915	.00		.68			.00		

WATER SURFACE PROFILE LISTING
 TEMPLETON BAP SUGGESTED ALTERNATE LATERAL 1 JOB #743.3 MSP 8/2/97
 10 YEAR FLOWS

STATION	INVERT ELEV	DEPTH OF FLOW	W.S. ELEV	Q	VEL	VEL HEAD	ENERGY SQD.SL.	SUPER ELEV	CRITICAL DEPTH	HGT/ DIA	BASE/ ID NO.	ZL	NO PIER	AVSPR
L/ELEM	SO					SF AVE	HF		NSFM DEPTH			ZF		
1779.67	698.74	1.19	699.93	13.0	6.64	.69	700.62	.00	1.30		2.00	.00	0	.30
.24	.06300					.00910	.00		.65			.00		
1795.92	698.76	1.24	700.00	11.0	6.33	.62	700.62	.00	1.30		2.00	.00	0	.30
.07	.06300					.00717	.00		.68			.00		
1800.00	698.76	1.30	700.06	13.0	6.03	.57	700.62	.00	1.30		2.00	.00	0	.30
1830.10	700.65	1.30	701.95	13.0	6.03	.57	702.51	.00	1.30		2.00	.00	0	.00

*Lateral One
100 Year Flows*

INPUT FILE LISTING

T1 TEMPLETON SAP SUGGESTED ALTERNATE LATERAL 1 JOB #743.3 WSP 5/2/89

T2 100 YEAR FLOWS

SD	0.00	604.24	5	.013					
R	25.00	604.93	5					30.00	
IX	35.00	605.23	5	.017	4.7	606.78		90.00	
IX	115.00	607.64	5	.013	42.1	608.64		90.00	
IX	390.00	615.27	5	.013	37.0	616.27		85.00	1
IX	975.00	646.88	5	.013	21.6	646.88		45.00	2
R	956.00	647.88	7	.012					15.00
IX	1750.00	697.50	7	.012	14.0	698.00		50.00	
R	1500.00	698.76	7						45.00
SH	1850.00	700.65	7						

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

TENPLETON GAP SUGGESTED ALTERNATE LATERAL 1 JOB #743.3 MSP 9/2/09

HEADING LINE NO 2 IS -

100 YEAR FLOWS

HEADING LINE NO 3 IS -

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	9 IS A REACH	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	FOR N
	U/S DATA	1900.00	698.75	7	.014	.00	.00	45.00	0

ELEMENT NO	10 IS A SYSTEM HEADWORKS	STATION	INVERT	SECT	N	W S ELEV
	U/S DATA	1930.00	700.00	7		.00

NO EDIT ERRORS ENCOUNTERED-COMPUTATION IS NOW BEGINNING

* WARNING NO. 2 ** - WATER SURFACE ELEVATION GIVEN IS LESS THAN OR EQUALS INVERT ELEVATION IN HOWDS, W.S.ELEV = INV + 00

WATER SURFACE PROFILE LISTING
 TEMPLETON BAP SUGGESTED ALTERNATE LATERAL 1 JOB #743.3 MSP 8/2/89
 100 YEAR FLOW

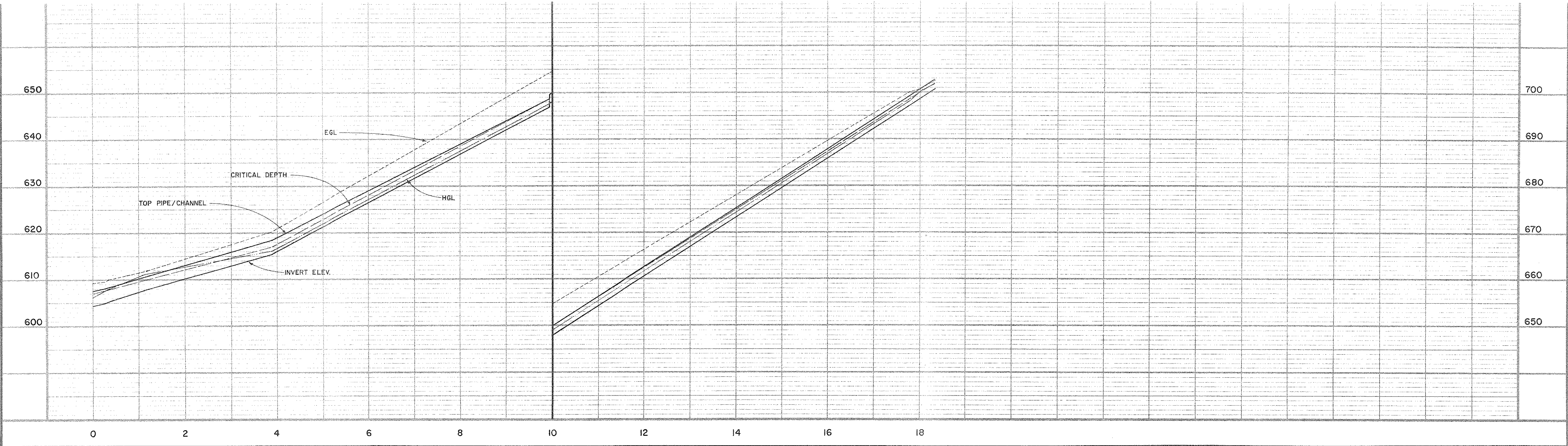
STATION	INVERT ELEV	DEPTH OF FLOW	M.S. ELEV	Q	VEL	VEL HEAD	ENERGY GRD.E.L.	SUPER ELEV	CRITICAL DEPTH	HST/DIA	BASE/ID NO.	ZL	NO	AVDFF
L/ELEM	SD					EF AVE	HF		NORM DEPTH			ZI		
.00	604.24	2.97	607.21	142.4	20.18	6.33	613.54	.00	2.97	3.00	.00	.00	0	.00
.42	.02960					.05046	.02		3.00			.00		
.42	604.25	3.00	607.25	142.4	20.14	6.31	613.55	.00	2.97	3.00	.00	.00	0	.00
24.59	.02960					.05244	1.29		3.00			.00		
25.00	604.98	4.25	609.27	142.4	20.14	6.31	615.58	.00	2.97	3.00	.00	.00	0	.00
JUNCT STR	.03001					.04410	.44					.00		
55.00	605.28	5.25	610.53	137.7	19.43	5.90	614.43	.00	2.97	3.00	.00	.00	0	.00
JUNCT STR	.02950					.03158	2.53					.00		
115.00	607.64	11.53	619.17	95.6	13.52	2.64	622.01	.00	2.88	3.00	.00	.00	0	.00
JUNCT STR	.02774					.01413	3.89					.00		
390.00	615.27	11.23	626.50	58.6	8.29	1.07	627.57	.00	2.48	3.00	.00	.00	0	.00
JUNCT STR	.05225											.00		
995.00	646.83	1.04	647.87	37.0	22.41	7.81	635.73	.00	1.93	2.00	.00	.00	0	.00
.30	1.00000					.09148	.03		.55			.00		
995.50	647.13	1.05	648.18	37.0	22.00	7.52	631.75	.00	1.93	2.00	.00	.00	0	.00
.70	1.00000					.08394	.06		.55			.00		
996.00	647.82	1.10	648.92	37.0	20.98	6.84	635.81	.00	1.93	2.00	.00	.00	0	.00
JUNCT STR	.05329					.05260	41.24					.00		
1780.00	697.50	1.14	698.64	23.0	12.37	2.35	701.92	.00	1.71	2.00	.00	.00	0	.00
4.50	.06300					.02898	.14		.92			.00		
1784.99	697.31	1.19	698.50	23.0	11.80	2.15	701.36	.00	1.71	2.00	.00	.00	0	.00
3.99	.05300					.02567	.10		.92			.00		



3. {

WATER SURFACE PROFILE LISTING
 TEMPLETON GAP SUGGESTED ALTERNATE LATERAL 1 309 #740.3 MSP 2/2/99
 100 YEAR FLOWS

STATION	INVERT ELEV	DEPTH OF FLOW	W.S. ELEV	Q	VEL	VEL HEAD	ENERGY GEO.EL.	SUPER ELEV	CRITICAL DEPTH	HST/ DIA	BASE/ ID NO.	ZL	NO PIER	PIERS
L/ELEV	SS					SF AVE	HF		NORM DEPTH			ZR		
1798.59	698.06	1.24	699.30	23.0	11.25	1.97	701.27	.00	1.71	2.00	.00	.00	0	.00
	3.15	.06300				.02275	.07		.92			.00		
1792.04	698.23	1.29	699.55	23.0	10.73	1.79	701.34	.00	1.71	2.00	.00	.00	0	.00
	2.52	.06300				.02020	.05		.92			.00		
1794.56	698.42	1.35	699.76	23.0	10.23	1.63	701.39	.00	1.71	2.00	.00	.00	0	.00
	1.97	.06300				.01797	.04		.92			.00		
1796.53	698.54	1.40	699.95	23.0	9.73	1.48	701.42	.00	1.71	2.00	.00	.00	0	.00
	1.50	.06300				.01604	.02		.92			.00		
1798.63	698.64	1.47	700.10	23.0	9.30	1.34	701.45	.00	1.71	2.00	.00	.00	0	.00
	1.07	.06300				.01437	.02		.92			.00		
1799.10	698.70	1.54	700.24	23.0	8.87	1.22	701.46	.00	1.71	2.00	.00	.00	0	.00
	.66	.06300				.01295	.01		.92			.00		
1797.75	698.74	1.62	700.36	23.0	8.46	1.11	701.47	.00	1.71	2.00	.00	.00	0	.00
	.24	.06300				.01175	.00		.92			.00		
1800.00	698.76	1.71	700.47	23.0	8.06	1.01	701.47	.00	1.71	2.00	.00	.00	0	.00
1800.00	700.65	1.71	702.36	23.0	8.06	1.01	703.36	.00	1.71	2.00	.00	.00	0	.00

TELETYPE POST N482749



	Pikes Peak Research Park 5475 Mark Dabbling Boulevard Suite 109 Colorado Springs, Colorado 80918 (719) 590-8866	NO.	REVISIONS	BY	DATE	PREPARED UNDER THE SUPERVISION OF JPM	CLIENT: City of Colorado Springs		TITLE: Templeton Gap Basin A Sub-basin 2 Hydraulic Profile of Lateral One	JOB NO. 743.3
		DESIGNED AWMc	CHECKED AWMc	SCALE $V - 1" = 10'$ $H - 1" = 100'$		DATE NOV 1989				SHEET NO. 1 OF 1 SHEETS

*Hydraulic Computer Analysis
Lateral Two*

*Lateral Two
10 Year Flows*

INPUT FILE LISTING

T1 TEMPLETON GAF SUGGESTED ALTERNATIVE LATERAL 2

T2 JOB NO. 743.3

T3 10 YEAR FLOW

EO	0.00	506.56	8	.013					
F	80.00	608.95	8	.013					
R	370.00	617.62	8	.013			36.92		1
R	675.00	627.34	8	.013				45.00	1
JX	735.00	628.54	8	.013	-35.7	628.54	30.00		
R	625.00	631.23	8	.013				45.00	1
JX	840.00	631.68	8	.013	9.1	631.68	90.00		
JY	870.00	632.57	8	.013	3.3	632.57	90.00		
JZ	900.00	633.47	8	.013	15.9	633.47	70.00		
J1	1320.00	661.10	8	.013	22.0	661.10	45.00		
J2	1378.00	663.95	10	7.013	30.7	4.7 663.45 665.45	20.00 90.00		
J3	1448.00	669.00	10	.013					

CARD CODE	SECT NO	CHN TYPE	NO OF PIERS	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	LR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)	
00	1	1	0	.00	3.57	4.50	.88	.88	.00											
00	2	1	0	.00	4.00	4.50	1.00	1.00	.00											
00	5	4			3.00															
00	6	4			2.75															
00	7	4			2.00															
00	8	4			2.50															
00	9	4			1.50															
00	10	4			1.00															

ERROR MESSAGE NUMBER 7 IN SEQUENCE CHECKING THRU CHANNEL DEFINITION DATA
 INVALID CARD CODE ENCOUNTERED WHILE PROCESSING 03 AND P78 CARDS - CODE =

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

TEMPLETON GAP SUGGESTED ALTERNATIVE LATERAL 2

HEADING LINE NO 2 IS -

JOB NO. 7-3.3

HEADING LINE NO 3 IS -

10 YEAR FLOWS

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	11 IS A JUNCTION	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	FRI 3	FRI 4
	1378.00	663.75	10	7	7	.013	30.7	4.7	653.45	655.45	20.00	90.00

ELEMENT NO	12 IS A SYSTEM HEADWORKS	‡	‡	‡	‡
U/S DATA	STATION	INVERT	SECT	‡	‡
	1648.00	669.00	10		W S ELEV .00

NO EDIT ERRORS ENCOUNTERED-COMPUTATION IS NOW BEGINNING

** WARNING NO. 2 ** - WATER SURFACE ELEVATION GIVEN IS LESS THAN OR EQUALS INVERT ELEVATION IN LOWKES, W.S.ELEV = INV + DC

WATER SURFACE PROFILE LISTING
 TEMPLETON SAP SUGGESTED ALTERNATIVE LATERAL 2
 JOB NO. 743.3
 10 YEAR FLOW

STATION	INVERT ELEV	DEPTH OF FLOW	W.S. ELEV	Q	VEL	VEL HEAD	ENERGY GRD. EL.	SUPER ELEV	CRITICAL DEPTH	HGT/ DIA	BASE/ ID NO.	IL	NO PIER	AVGPR
L/ELEM	SO					CF AVE	HF		NORM DEPTH					
.00	605.56	1.56	608.12	50.4	15.69	3.83	611.94	.00	2.31	2.50	.00	.00	0	.00
32.45	.02987					.02995	.98		1.56			.00		
32.45	607.54	1.56	609.09	50.4	15.67	3.83	612.92	.00	2.31	2.50	.00	.00	0	.00
47.32	.02987					.02998	1.42		1.56			.00		
50.00	605.95	1.53	610.81	50.4	15.71	3.83	614.34	.00	2.31	2.50	.00	.00	0	.00
290.00	.02990					.03001	8.70		1.55			.00		
370.00	617.62	1.53	619.17	50.4	15.71	3.83	623.01	.00	2.31	2.50	.00	.00	0	.00
31.92	.02991					.03001	.98		1.55			.00		
431.92	619.88	1.55	620.13	50.4	15.71	3.83	623.96	.00	2.31	2.50	.00	.00	0	.00
144.98	.02991					.03064	4.44		1.55			.00		
540.90	602.91	1.53	624.44	50.4	15.65	3.95	626.41	.00	2.31	2.50	.00	.00	0	.00
99.11	.02991					.03330	3.30		1.55			.00		
648.01	625.85	1.47	627.35	50.4	16.74	4.36	631.71	.00	2.31	2.50	.00	.00	0	.00
49.97	.02991					.03765	1.84		1.55			.00		
695.00	627.34	1.42	625.74	50.4	17.56	4.79	633.55	.00	2.31	2.50	.00	.00	0	.00
ELAND STR	.03000					.03223	1.29		.00			.00		
735.00	619.54	2.08	620.62	86.1	16.49	4.23	634.94	.00	2.82	3.00	.00	.00	0	.00
6.55	.02989					.02470	.15		1.93			.00		
742.35	629.70	1.07	630.32	86.1	15.40	4.16	635.00	.00	2.82	3.00	.00	.00	0	.00
40.48	.02989					.02285	.93		1.93			.00		
781.83	639.94	2.12	632.12	86.1	15.63	3.90	635.92	.00	2.82	3.00	.00	.00	0	.00
29.77	.02989					.02046	.53		1.93			.00		

WATER SURFACE PROFILE LISTING
 TEMPLETON GAP SUGGESTED ALTERNATIVE LATERAL 2
 JOB NO. 743.3
 10 YEAR FLOWS

STATION	INVERT ELEV	DEPTH OF FLOW	W.S. ELEV	Q	VEL	VEL HEAD	ENERGY GRD.E.L.	SUPER ELEV	CRITICAL DEPTH	HGT/ DIA	BASE ID NO.	ZL	NO PIER	A.3PS
L/ELEV	SO				EF AVE	HF			NOEM DEPTH			ZR		
867.80	630.71	2.18	632.89	86.1	14.91	3.46	634.45	.00	2.62	3.00	.00	.00	0	.00
17.5E	.02989				.01840	.32			1.57			.00		
825.00	631.23	2.40	633.63	86.1	14.21	3.14	634.77	.00	2.62	3.00	.00	.00	0	.00
JUNCT STR	.03000				.02159	.32						.00		
840.00	631.68	1.90	633.58	76.0	15.51	4.24	637.82	.00	2.75	3.00	.00	.00	0	.00
JUNCT STR	.02967				.02793	.24						.00		
870.00	632.57	1.75	634.32	74.7	17.43	4.72	639.04	.00	2.72	3.00	.00	.00	0	.00
JUNCT STR	.03000				.03506	1.65						.00		
900.00	633.47	1.15	634.62	59.2	23.60	6.66	643.28	.00	2.49	3.00	.00	.00	0	.00
JUNCT STR	.04579				.04425	18.59						.00		
1300.00	651.10	2.00	653.10	37.2	8.84	1.22	664.31	.00	2.07	2.50	.00	.00	0	.00
JUNCT STR	.04914				.00761	.44						.00		
1375.00	663.95	.57	664.52	1.9	3.39	.23	664.76	.00	.57	1.00	.00	.00	0	.00
1548.00	669.00	.57	669.57	1.9	3.89	.23	669.61	.00	.57	1.00	.00	.00	0	.00

***Lateral Two
100 Year Flows***

INPUT FILE LISTING

T1 TEXPLETON BAP SUGGESTED ALTERNATIVE LATERAL 2

T2 JOB NO. 743.2

T3 100 YEAR FLOWS

BD	0.00	606.56	8	.013					
R	80.00	608.95	8	.013					
R	370.00	617.62	9	.013			36.92		1
R	695.00	627.34	5	.013				45.00	1
JX	735.00	628.54	5	.013	-35.7	628.54	30.00		
F	825.00	631.23	5	.013				45.00	1
JX	940.00	631.68	5	.013	14.8	631.68	90.00		
JX	670.00	632.57	5	.013	8.2	632.57	90.00		
JX	900.00	633.47	5	.013	26.9	633.47	70.00		
JX	1320.00	661.10	8	.013	32.1	661.10	45.00		
JX	1378.00	663.95	10	.013	30.7	13.7 663.45 665.45	20.00 90.00		
JH	1442.00	669.00	10	.013					

CARD CODE	BEST NO	CHN TYPE	NO OF PIERS	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	EL	IR	IN/ DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CB	1	1	0	.00	3.97	4.50	.88	.88	.00										
CB	2	1	0	.00	4.00	4.50	1.00	1.00	.00										
CB	5	4			3.00														
CB	6	4			4.00														
CB	7	4			2.00														
CB	8	4			2.50														
CB	9	4			1.50														
CB	10	4			1.00														

ERROR MESSAGE NUMBER 7 IN SEQUENCE CHECKING THRU CHANNEL DEFINITION DATA
 INVALID CARD CODE ENCOUNTERED WHILE PROCESSING CB AND PTS CARDS - CODE =

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

TEMPLETON S&P SUGGESTED ALTERNATIVE LATERAL 2

HEADING LINE NO 2 IS -

JOB NO. 740.3

HEADING LINE NO 3 IS -

100 YEAR FLOW

WATER SURFACE PROFILE - ELEMENT DATA LISTING

ELEMENT NO	DESCRIPTION	U/S DATA	STATION	INVERT	SECT	N	W S ELEV	RADIUS	ANGLE	ANG PT	MAN H			
1	IS A SYSTEM OUTLET		.00	606.56	B		.00							
2	IS A REACH		89.00	608.95	B	N	.013	.00	.00	.00	1			
3	IS A REACH		370.00	617.61	B	N	.013	.00	36.92	.00	1			
4	IS A REACH		678.00	627.34	B	N	.013	.00	.00	45.00	1			
5	IS A JUNCTION		735.00	628.54	B	C	.013	0	-35.7	.0	628.54	.00	30.00	.01
6	IS A REACH		825.00	631.23	B	N	.013	.00	.00	45.00	1			
7	IS A JUNCTION		849.00	631.68	B	7	.013	0	14.8	.0	631.68	.00	90.00	.00
8	IS A JUNCTION		870.00	632.57	B	7	.013	0	8.2	.0	632.57	.00	90.00	.00
9	IS A JUNCTION		900.00	633.47	B	7	.013	0	25.9	.0	633.47	.00	7.00	.00
10	IS A JUNCTION		1320.00	661.10	B	7	.013	0	32.1	.0	661.10	.00	45.00	.00

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	11 IS A JUNCTION												
	U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	M	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
		1378.00	663.95	10	7	7	.113	30.7	13.7	663.45	663.45	20.00	90.00

ELEMENT NO	12 IS A SYSTEM HEADWORKS					
	U/S DATA	STATION	INVERT	SECT		W S ELE /
		1648.00	659.00	10		.00

NO EDIT ERRORS ENCOUNTERED-COMPUTATION IS NOW BEGINNING

!! WARNING NO. 2 !! - WATER SURFACE ELEVATION GIVEN IS LESS THAN OR EQUALS INVERT ELEVATION IN ROWK08, W.S.ELEV = INV + DC

WATER SURFACE PROFILE LISTING
 TEMPLETON GAP SUGGESTED ALTERNATIVE LATERAL 2
 JOB NO. 743.3
 100 YEAR FLOWS

STATION	INVERT ELEV	DEPTH OF FLOW	M.S. ELEV	S	VEL	VEL HEAD	ENERGY GRD. EL.	SUPER ELEV	CRITICAL DEPTH	HGT/ DIA	BASE/ IS NO.	ZL	NO	AVSPR PIER
L/ELEM	SB				BF AVE	HF			NORM DEPTH			ZR		
.00	605.56	2.48	609.04	92.5	19.87	5.53	614.57	.00	2.48	2.50	.00	.00	0	.00
.35	.02987				.04861	.02			2.50			.00		
.35	606.57	2.50	609.07	92.5	19.84	5.52	614.59	.00	2.48	2.50	.00	.00	0	.00
79.65	.02987				.05043	4.02			2.50			.00		
20.00	608.95	4.17	613.12	92.5	19.84	5.52	619.14	.00	2.48	2.50	.00	.00	0	.00
250.00	.02990				.05086	14.75			2.50			.00		
370.00	617.62	11.23	628.85	92.5	19.84	5.52	634.37	.00	2.48	2.50	.00	.00	0	.00
325.00	.02991				.05086	16.53			2.50			.00		
695.00	627.34	19.14	646.49	92.5	19.84	5.52	652.00	.00	2.48	2.50	.00	.00	0	.00
JUNCT STR	.03000				.04390	1.75						.00		
735.00	628.54	20.10	648.64	128.2	18.14	5.11	653.75	.00	2.95	3.00	.00	.00	0	.00
90.00	.02989				.03694	3.32			3.00			.00		
825.00	631.23	21.75	652.98	128.2	18.14	5.11	658.09	.00	2.95	3.00	.00	.00	0	.00
JUNCT STR	.03000				.03293	.49						.00		
840.00	631.56	24.02	655.70	113.4	16.04	4.00	659.70	.00	2.93	3.00	.00	.00	0	.00
JUNCT STR	.02967				.02689	.81						.00		
870.00	672.57	25.05	697.62	105.2	14.88	3.44	661.06	.00	2.91	3.00	.00	.00	0	.00
JUNCT STR	.03000				.01933	.56						.00		
900.00	633.47	27.45	660.92	76.3	11.03	1.91	662.53	.00	2.75	3.00	.00	.00	0	.00
JUNCT STR	.06579				.01323	5.56						.00		
1310.00	681.10	6.42	687.52	45.2	9.41	1.38	668.96	.00	2.24	2.50	.00	.00	0	.00
JUNCT STR	.04714				.00762	.44						.00		

WATER SURFACE PROFILE LISTING
 TEMPLETON GAP SUGGESTED ALTERNATIVE LATERAL 2
 CDB NO. 743.3
 100 YEAR FLOWS

STATION	INVERT ELEV	DEPTH OF FLOW	W.S. ELEV	S	VEL	VEL HEAD	ENERGY GRD.ELV.	SUPER ELEV	CRITICAL DEPTH	HST/ DIA	BASE/ ID NO.	ZL	NO PIER	AVSPR
L/ELEM	SO						SF AVE	HF		NORM DEPTH		ZR		
1372.00	663.95	5.64	669.59	1.3	2.27	.08	667.67	.00	.57	1.00	.00	.00	0	.00
BLIND STR	.00458						.00458	.00				.00		
1449.00	659.00	5.64	674.64	1.3	2.29	.08	674.72	.00	.57	1.00	.00	.00	0	.00

*Hydraulic Computer Analysis
Lateral Three*

*Lateral Three
10 Year Flows*

INPUT FILE LISTING

T1 TEMPLETON GAP SUGGESTED ALTERNATIVE LATERAL 3

T2 JOB NO. 740.3

T3 10 YEAR FLOOD

GD	0.00	497.38	5		
R	58.00	498.89	5	.013	
S	340.00	517.31	5	.013	38.88
SH	728.00	428.54	5	.013	45

WATER SURFACE PROFILE - TITLE CASE LISTING

HEADING LINE NO 1 IS -

TEMPLETON S&P SUBJECTED ALTERNATIVE LATERAL 3

HEADING LINE NO 2 IS -

JOB NO. 743.7

HEADING LINE NO 3 IS -

10 YEAR FLOWS

WATER SURFACE PROFILE - ELEMENT DATA LISTING

ELEMENT NO	DESCRIPTION	U/S DATA	STATION	INVERT	SECT	W S ELEV	RADIUS	ANGLE	ANG FT	MAN H
1	IS A SYSTEM OUTLET									
			100	697.00	5					
2	IS A REACH									
			55.00	698.99	5		.013	.00	.00	0
3	IS A REACH									
			346.00	617.31	5		.013	.00	38.88	0
4	IS A SYSTEM HEADWORKS									
			725.00	628.54	5					

NO BEST ERRORS ENCOUNTERED-COMPUTATION IS NOW BEGINNING

** WARNING NO. 1 ** - WATER SURFACE ELEVATION GIVEN IS LESS THAN OR EQUALS INVERT ELEVATION IN HIKKOS. W.S.ELEV = INV + DC

WATER SURFACE PROFILE LISTING
 TEMPLETON BAP SUGGESTED ALTERNATIVE LATERAL 3
 JOB NO. 743.3
 10 YEAR FLOWS

STATION	INVERT ELEV	DEPTH OF FLOW	W.S. ELEV	Q	VEL	VEL HEAD	ENERGY GRD. EL.	SUPER ELEV	CRITICAL DEPTH	HST/ DIA	BASE/ ID NO.	ZL	NO PIER	A/DPP
L/ELEM	SC					SF A/E	HF		NORM DEPTH			ZR		
.00	607.33	1.40	608.73	50.4	15.57	3.77	612.55	.00	2.31	3.00	.00	.00	0	.00
55.00	.02927					.02877	1.55		1.39			.00		
55.00	608.99	1.40	610.40	50.4	15.51	3.74	611.14	.00	2.31	3.00	.00	.00	0	.00
82.78	.02919					.02809	2.33		1.40			.00		
137.78	611.41	1.42	612.83	50.4	15.30	3.54	615.46	.00	2.31	3.00	.00	.00	0	.00
24.00	.02919					.02589	2.17		1.40			.00		
211.72	613.64	1.47	615.33	50.4	14.58	3.31	618.64	.00	2.31	3.00	.00	.00	0	.00
38.02	.02919					.02279	.87		1.40			.00		
259.81	614.97	1.53	616.50	50.4	13.90	3.00	619.50	.00	2.31	3.00	.00	.00	0	.00
23.52	.02919					.02002	.47		1.40			.00		
293.33	615.65	1.59	617.24	50.4	13.24	2.73	619.98	.00	2.31	3.00	.00	.00	0	.00
19.22	.02919					.01771	.29		1.40			.00		
299.55	616.13	1.55	617.78	50.4	12.64	2.48	620.23	.00	2.31	3.00	.00	.00	0	.00
11.95	.02919					.01543	.19		1.40			.00		
311.40	616.47	1.72	618.19	50.4	12.05	2.26	620.45	.00	2.31	3.00	.00	.00	0	.00
9.84	.02919					.01351	.12		1.40			.00		
320.25	616.73	1.78	618.52	50.4	11.49	2.13	620.57	.00	2.31	3.00	.00	.00	0	.00
6.89	.02919					.01222	.08		1.40			.00		
325.95	616.93	1.83	618.77	50.4	10.96	1.87	620.65	.00	2.31	3.00	.00	.00	0	.00
4.99	.02919					.01093	.05		1.40			.00		
331.94	617.03	1.94	619.01	50.4	10.45	1.70	620.71	.00	2.31	3.00	.00	.00	0	.00
2.63	.02919					.00962	.03		1.40			.00		

WATER SURFACE PROFILE LISTING
 TEMPLETON GAP SUGGESTED ALTERNATIVE LATERAL 3
 JOB NO. 743.3
 10 YEAR FLOW

STATION	INVERT ELEV	DEPTH OF FLOW	W.G. ELEV	θ	VEL	VEL HEAD	ENERGY SPR.ELE.	SUPER ELEV	CRITICAL DEPTH	HGT./ DIA	BASE/ ID NO.	ZL	NO PIER	AVGPR
L/ELEM	SD				BF AVE	HF			NOPIA DEPTH			ZL		
335.57	617.18	2.02	619.20	50.4	9.96	1.54	620.74	.00	2.31	3.00	.00	.00	0	.00
	2.48	.02919			.00856	.02			1.40			.00		
338.08	617.25	2.11	619.36	50.4	9.50	1.40	620.76	.00	2.31	3.00	.00	.00	0	.00
	1.44	.02919			.00764	.01			1.40			.00		
337.51	617.30	2.20	619.50	50.4	9.05	1.27	620.77	.00	2.31	3.00	.00	.00	0	.00
	.47	.02917			.00654	.00			1.40			.00		
340.00	617.31	2.31	619.62	50.4	8.63	1.16	620.78	.00	2.31	3.00	.00	.00	0	.00
725.00	628.54	2.31	630.85	50.4	8.63	1.16	632.01	.00	2.31	3.00	.00	.00	0	.00

*Lateral Three
100 Year Flows*

INPUT FILE LISTING

T1 TEXPLETON GAP SUGGESTED ALTERNATIVE LATERAL 3

T2 JOB NO. 743.3

T3 100 YEAR FLOWS

SC	0.00	407.38	5		
R	15.00	608.79	5	.013	
R	340.00	917.31	5	.013	38.95
SH	725.00	928.54	5	.013	45

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

TEMPLETON GAP SUGGESTED ALTERNATIVE LATERAL 3

HEADING LINE NO 2 IS -

JOB NO. 743.3

HEADING LINE NO 3 IS -

100 YEAR FLOWS

WATER SURFACE PROFILE - ELEVANT CARD LISTING

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ELEMENT NO 1 IS A SYSTEM OUTLET      *      *      *
      U/S DATA  STATION  INVERT  SECT      # S ELEV
      .00  607.73      5
      .00

ELEMENT NO 2 IS A REACH                *      *      *
      U/S DATA  STATION  INVERT  SECT      #      RADIUS  ANGLE  ANG PT  MAX H
      55.00  608.99      5      .013      .00      .00      .00      0

ELEMENT NO 3 IS A REACH                *      *      *
      U/S DATA  STATION  INVERT  SECT      #      RADIUS  ANGLE  ANG PT  MAX H
      340.00  617.31      5      .015      .00  89.88      .00      0

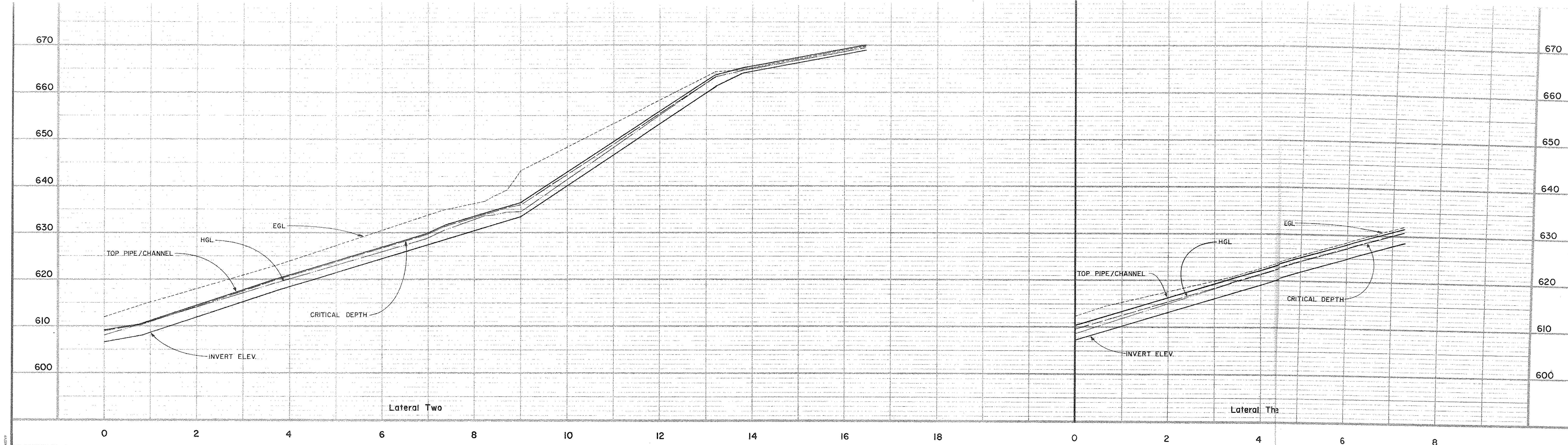
ELEMENT NO 4 IS A SYSTEM HEADWORKS    *      *      *
      U/S DATA  STATION  INVERT  SECT      # S ELEV
      725.00  628.54      5
      .00

NO EDIT ERRORS ENCOUNTERED-COMPUTATION IS NOW BEGINNING
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WARNING NO. 2 ## - WATER SURFACE ELEVATION GIVEN IS LESS THAN OR EQUALS INVERT ELEVATION IN ROWKDS, W.S.ELEV = INV + IC

WATER SURFACE PROFILE LISTING
 TEMPLETON GAP SUGGESTED ALTERNATIVE LATERAL 3
 JOB NO. 743.3
 100 YEAR FLOWS

STATION	INVERT ELEV	DEPTH OF FLOW	M.S. ELEV	Q	VEL	VEL HEAD	ENERGY GRD.ELV.	SUPER ELEV	CRITICAL DEPTH	HGT/ DIA	BASE/ ID NO.	ZL	MC	AVGPR PIER
L/ELEM	SC					SF AVE	HF		FORM DEPTH			ZR		
101	607.33	2.07	609.40	92.5	17.93	4.94	614.39	.00	2.86	3.00	.00	.00	0	.00
55.00	.02927					.02853	1.57		2.05			.00		
55.00	608.99	2.07	611.06	92.5	17.74	4.89	615.95	.00	2.86	3.00	.00	.00	0	.00
10.37	.02919					.02831	.29		2.05			.00		
55.37	609.29	2.08	611.37	92.5	17.72	4.88	615.25	.00	2.86	3.00	.00	.00	0	.00
143.22	.02916					.02674	3.83		2.05			.00		
208.59	613.47	2.17	615.64	92.5	16.89	4.44	620.03	.00	2.86	3.00	.00	.00	0	.00
57.23	.02919					.02393	1.37		2.05			.00		
265.82	615.14	2.27	617.41	92.5	16.11	4.03	621.45	.00	2.86	3.00	.00	.00	0	.00
33.16	.02919					.02151	.71		2.05			.00		
298.96	615.11	2.38	619.50	92.5	15.36	3.47	622.16	.00	2.86	3.00	.00	.00	0	.00
21.35	.02919					.01958	.42		2.05			.00		
320.33	615.74	2.51	619.24	92.5	14.65	3.33	622.58	.00	2.86	3.00	.00	.00	0	.00
13.57	.02919					.01781	.24		2.05			.00		
335.92	617.13	2.64	619.77	92.5	13.96	3.07	623.82	.00	2.86	3.00	.00	.00	0	.00
6.02	.02919					.01592	.10		2.05			.00		
340.50	617.31	2.63	620.17	92.5	13.31	2.75	622.92	.00	2.86	3.00	.00	.00	0	.00
723.06	620.54	2.86	631.40	92.5	13.31	2.75	634.15	.00	2.86	3.00	.00	.00	0	.00



Pikes Peak Research Park
5475 Mark Dabbling Boulevard
Suite 109
Colorado Springs, Colorado 80918
(719) 590-8866

NO.	REVISIONS	BY	DATE

PREPARED UNDER THE SUPERVISION OF JPM		
DESIGNED AWMc	CHECKED AWMc	SCALE V-1"=10' H-1"=100'
DRAWN MSP	DATE NOV 1989	

CLIENT: **City of Colorado Springs**



TITLE: **Tempton Gap Basin A Sub-basin 2
Hydraulic Profile of Lateral Two / Lateral Three**

JOB NO. 743.3
SHEET NO. 1 OF 1 SHEETS

***Sizing of Culvert at Oro Blanco
and Austin Bluffs Parkway***

Sizing of Culvert at Oro Blanco and Austin Bluffs

From MDBPS:

$$Q_5 = 265 \text{ cfs}$$

$$Q_{100} = 649 \text{ cfs}$$

Existing 48" CMP to be replaced with 66" RCP

Existing Field Conditions:

48" CMP

Length = 106 feet

Slope = 3.04 %

$$Q_{\text{capacity}} = 135.7 \text{ cfs}$$

Flows calculated using New City/County Criteria Manual:

24-Hour Storm

$$Q_{10} = 394.0 \text{ cfs}$$

$$Q_{100} = 685.1 \text{ cfs}$$

2-Hour Storm

$$Q_{10} = 394.7 \text{ cfs}$$

$$Q_{100} = 774.9 \text{ cfs}$$

Use $Q_{\text{Design}} = 775 \text{ cfs}$

160.0 cfs is to be intercepted by 48" RCP at Old Farm Drive and Austin Bluffs Parkway.

Q_{Net} at Oro Blanco and Austin Bluffs Parkway:

$$Q_{\text{Net}} = 775 - 160 = 615 \text{ cfs} = Q_{\text{Net}}$$

Use 615 cfs as Q_{Design} for crossing at Oro Blanco and Austin Bluffs Parkway.

Culvert Size Determination

$Q_{\text{Design}} = 615$ cfs

Assume Slope_(min) = 2.5 %

Assume Culvert Length of 120 feet

Head Available:

Austin Bluffs Parkway Elevation at Oro Blanco = 6560.0

Elevation of channel end at NE side of Oro Blanco and Austin Bluffs = 6550.0

Head Available: $6560.0 - 6550.0 = 10.0$

Use Head_{Available} = 9.5 feet

Culvert without Headwall

Manning's Coefficient, $n = 0.013$

Entrance Loss Coefficient, $K_e = 0.90$

Required Area = 36.85 sq. ft.

Use:

84" RCP

7' x 6' or 8' x 5' Concrete Box Culvert

Culvert with Mitered End

Manning's Coefficient, $n = 0.013$

Entrance Loss Coefficient, $K_e = 0.70$

Required Area = 35.15 sq. ft.

Use:

84" RCP

6' x 6' or 8' x 5' Concrete Box Culvert

Culvert with Headwall

Manning's Coefficient, $n = 0.013$

Entrance Loss Coefficient, $K_e = 0.50$

Required Area = 33.49 sq. ft.

Use:

84" RCP

6' x 6' or 7' x 5' Concrete Box Culvert

Culvert with Headwall with Rounded Edges

Manning's Coefficient, $n = 0.013$

Entrance Loss Coefficient, $K_e = 0.25$

Required Area = 31.17 sq. ft.

Use:

78" RCP

6' x 6' or 7' x 5' Concrete Box Culvert