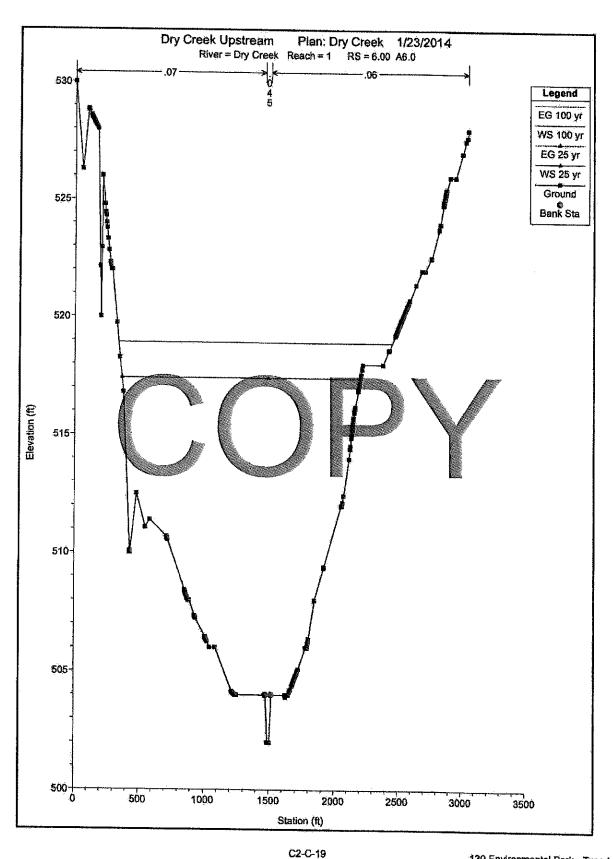
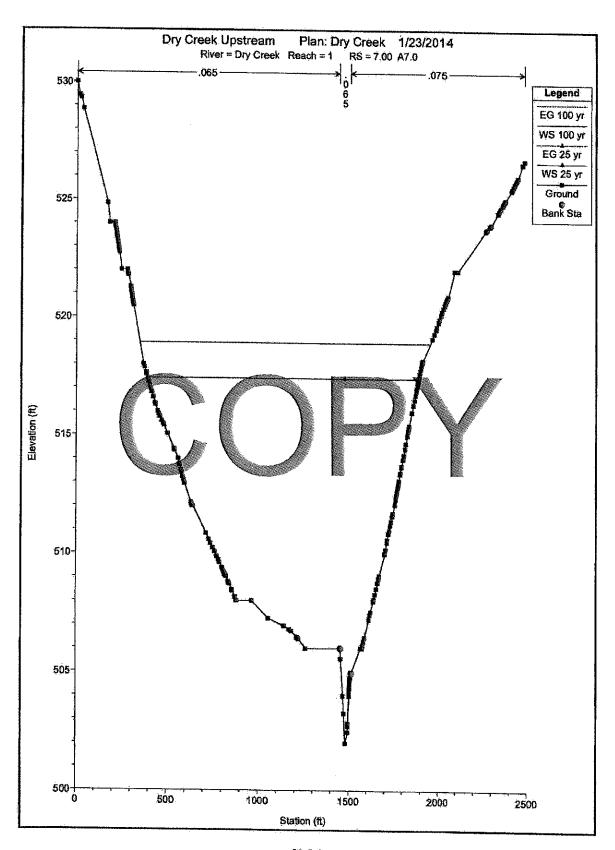


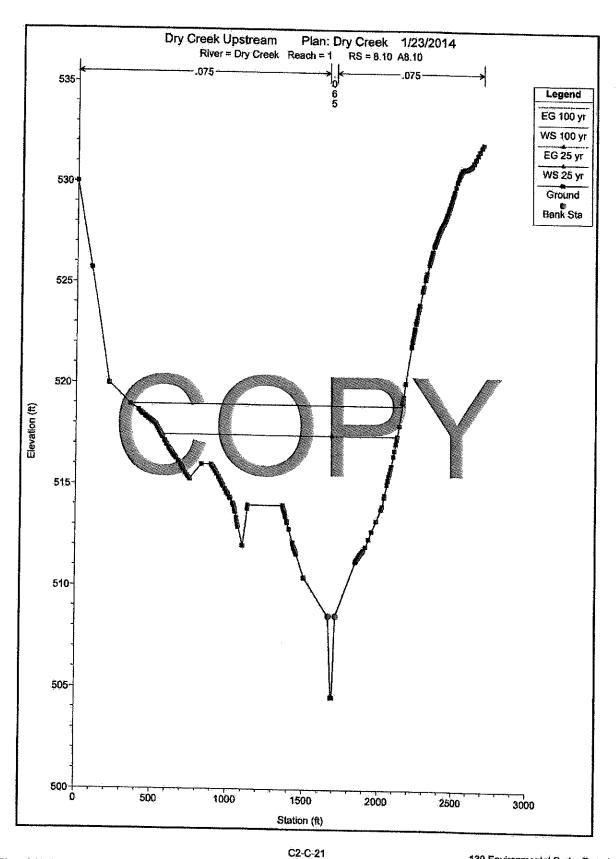
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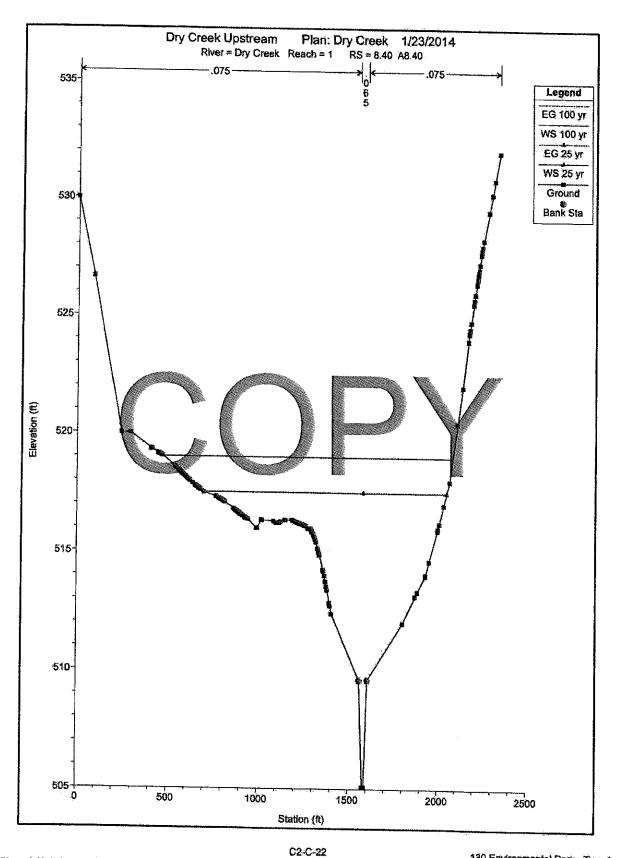
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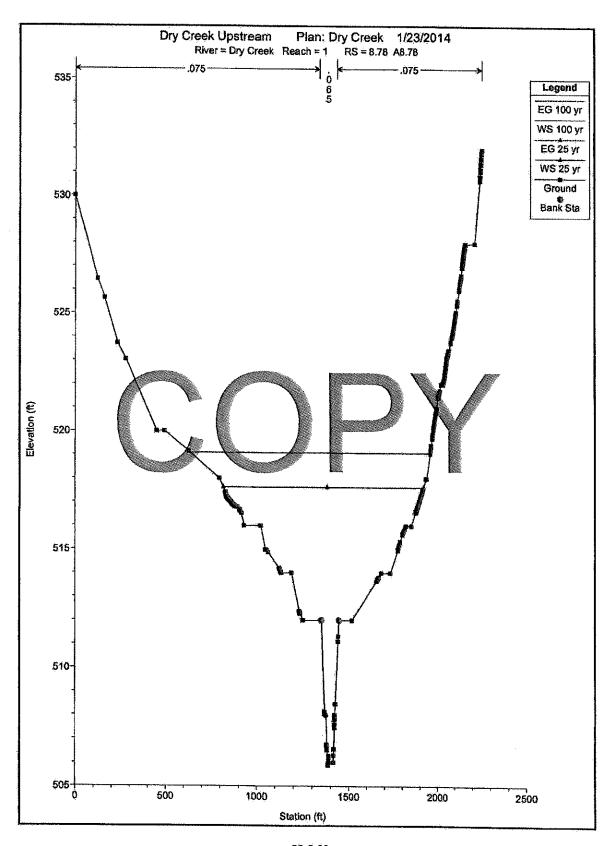


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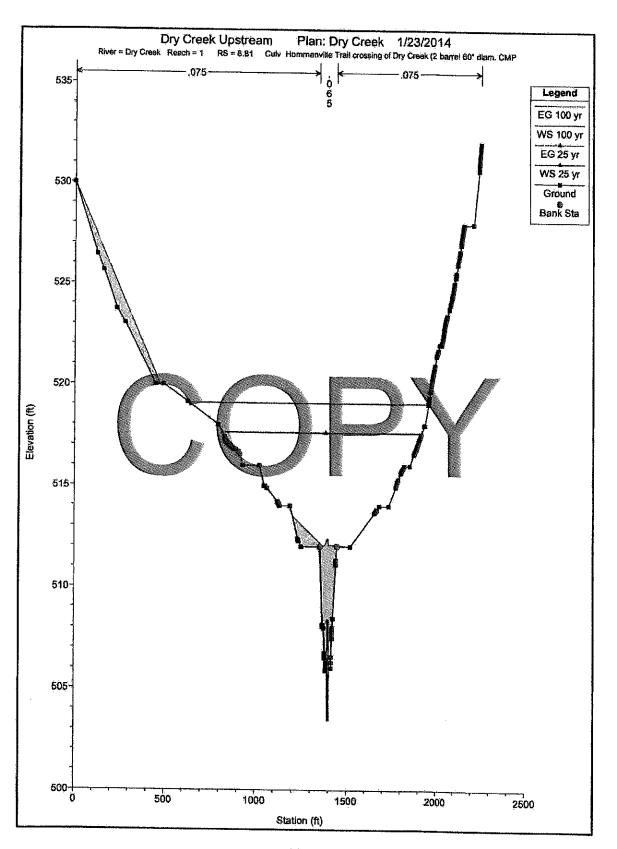


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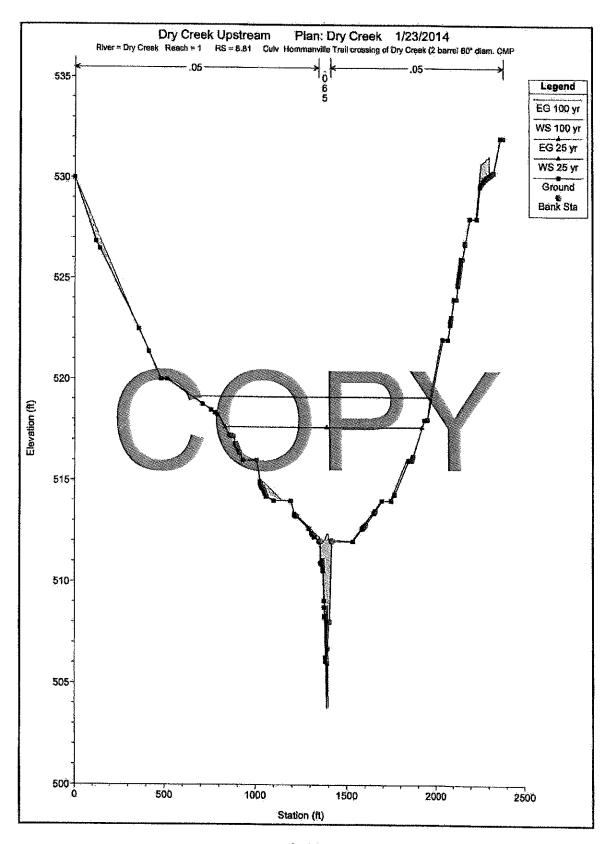
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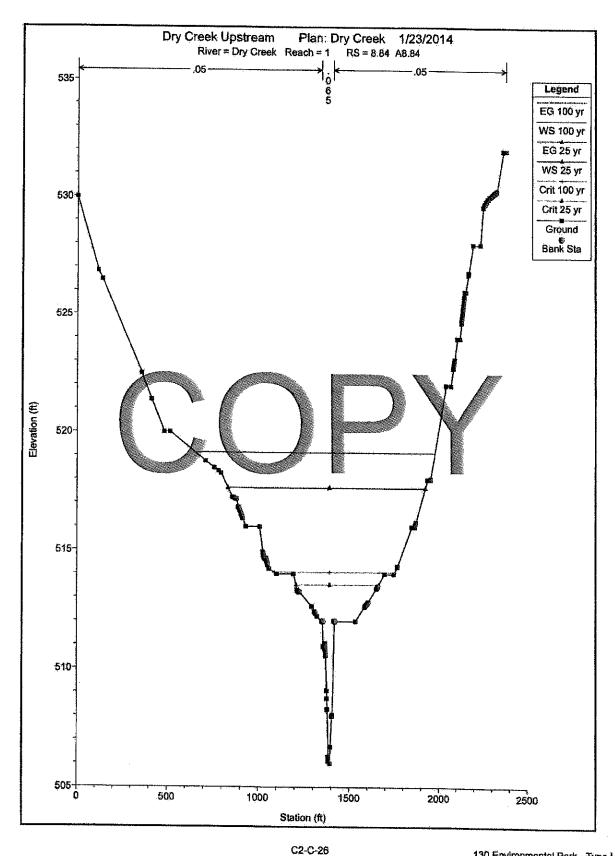
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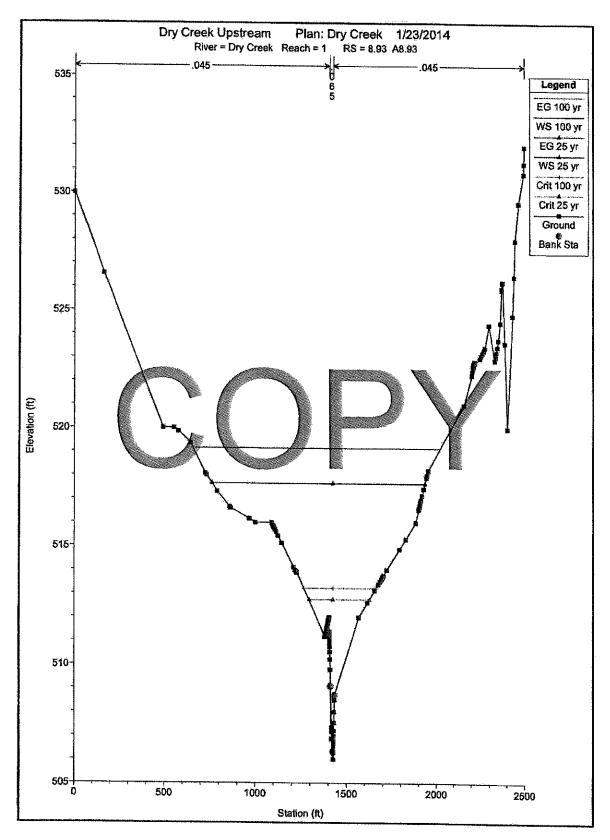


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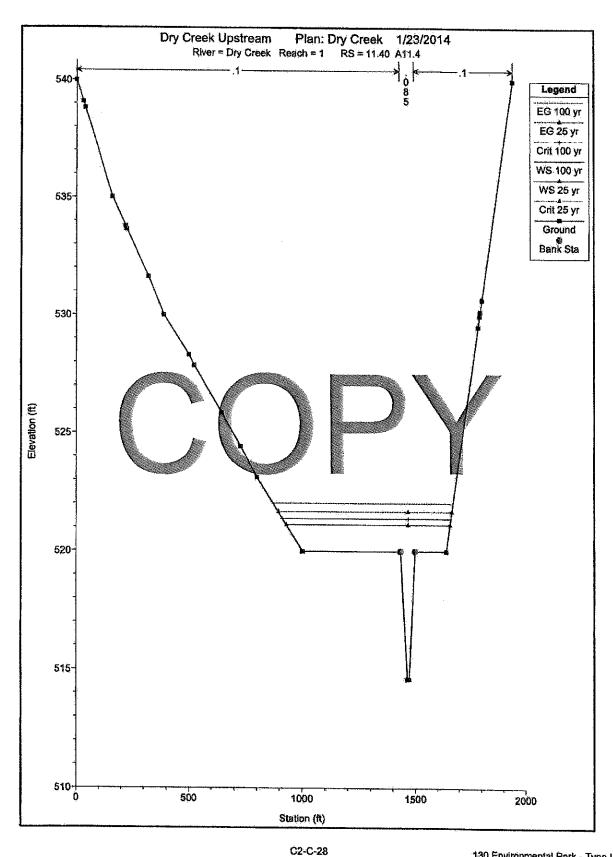


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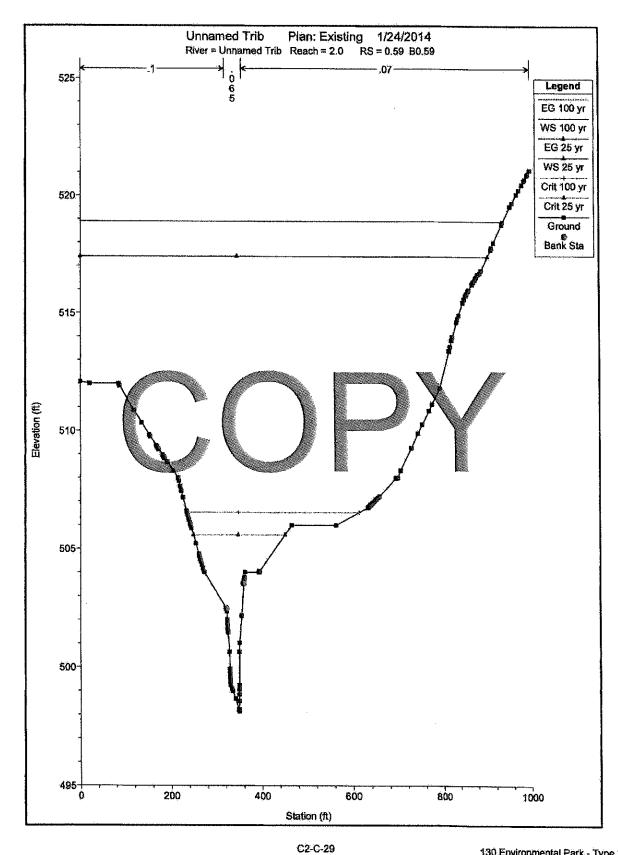




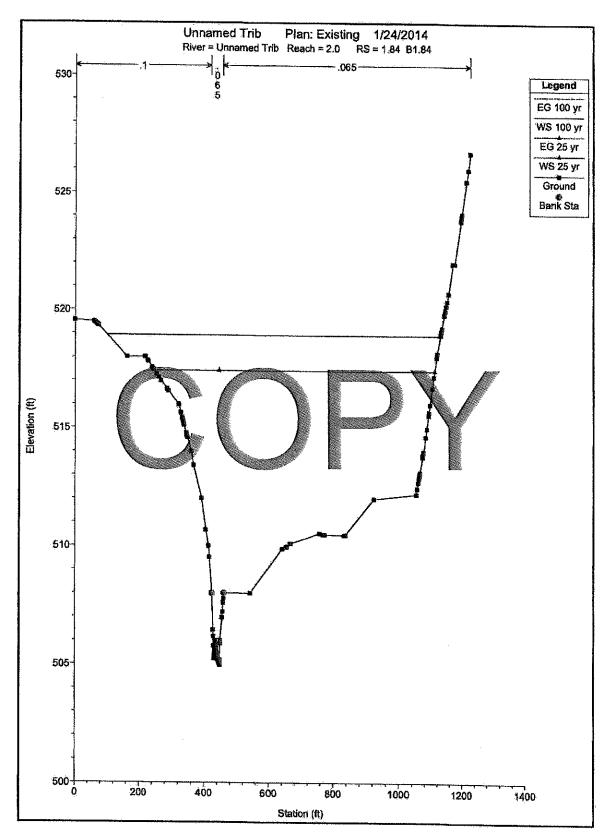
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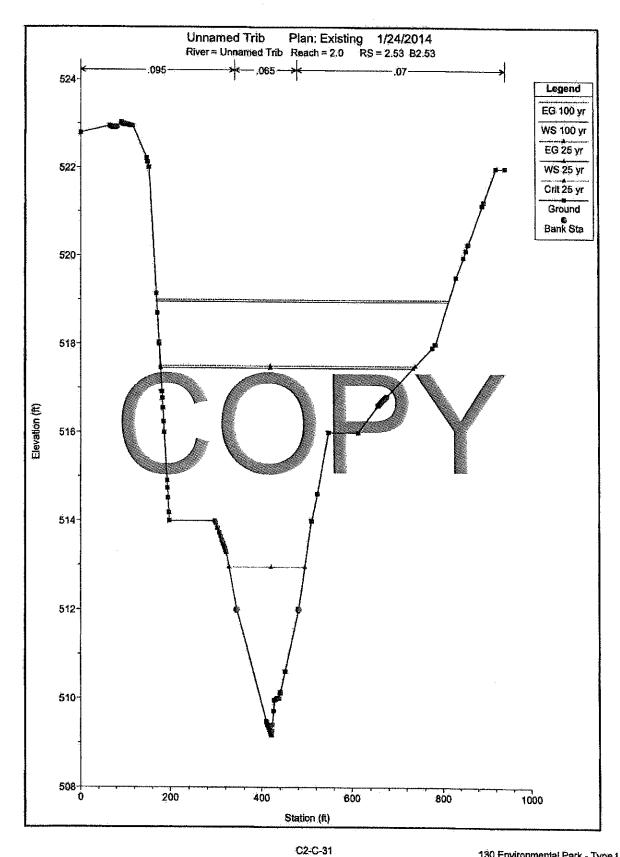
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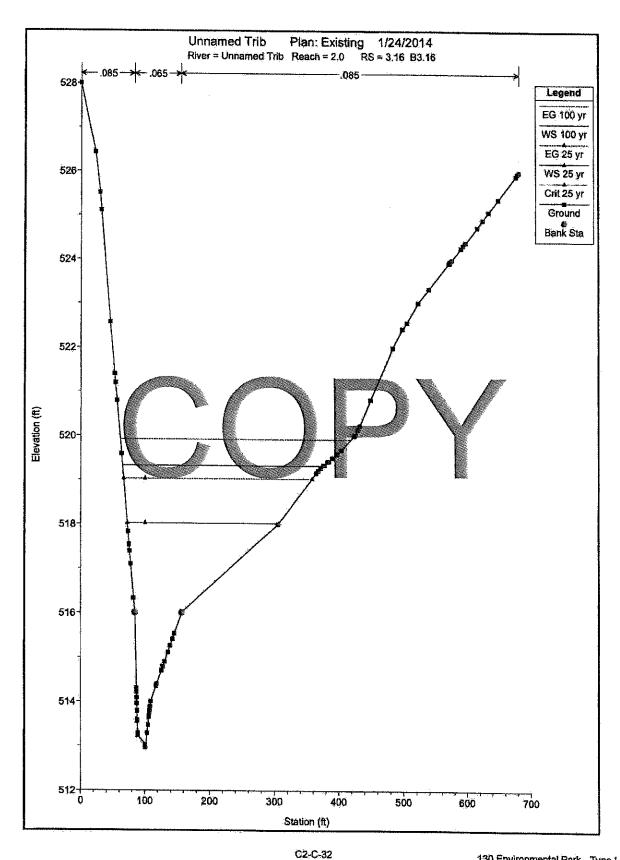
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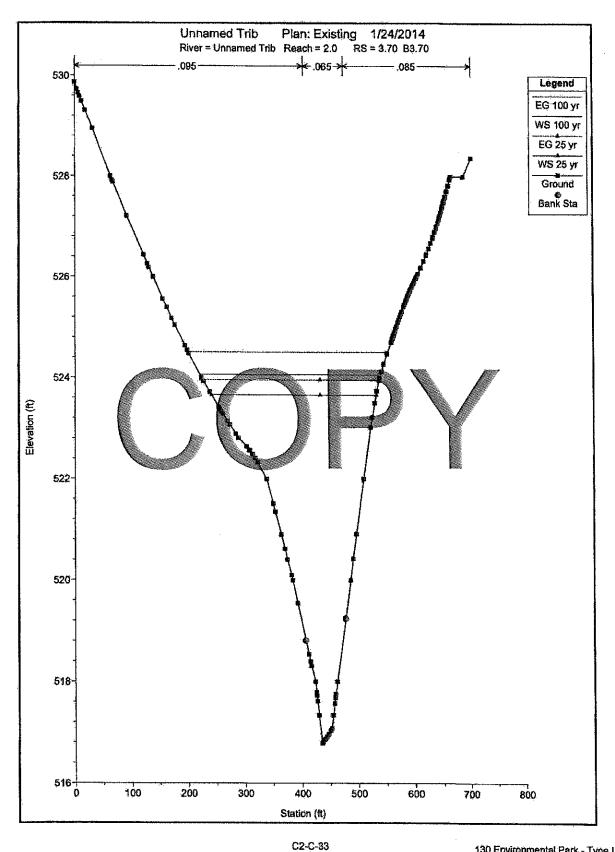
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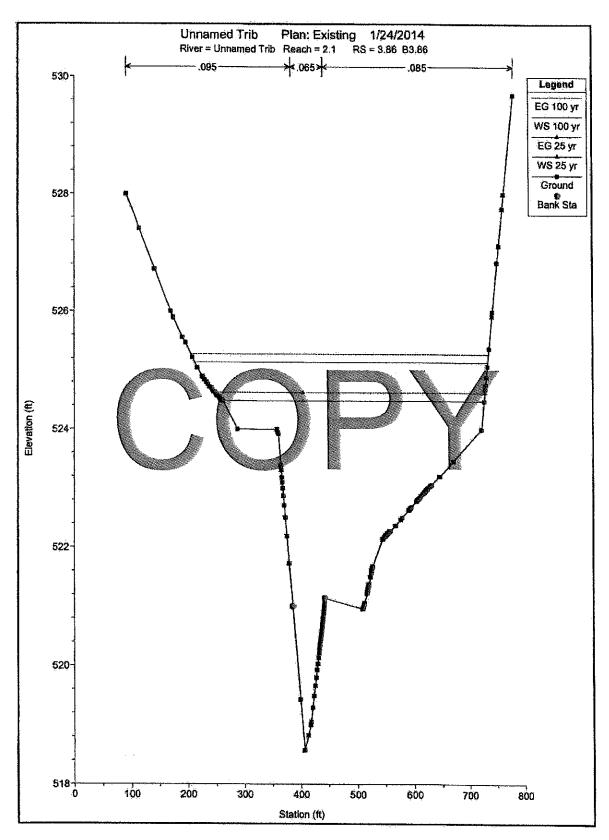
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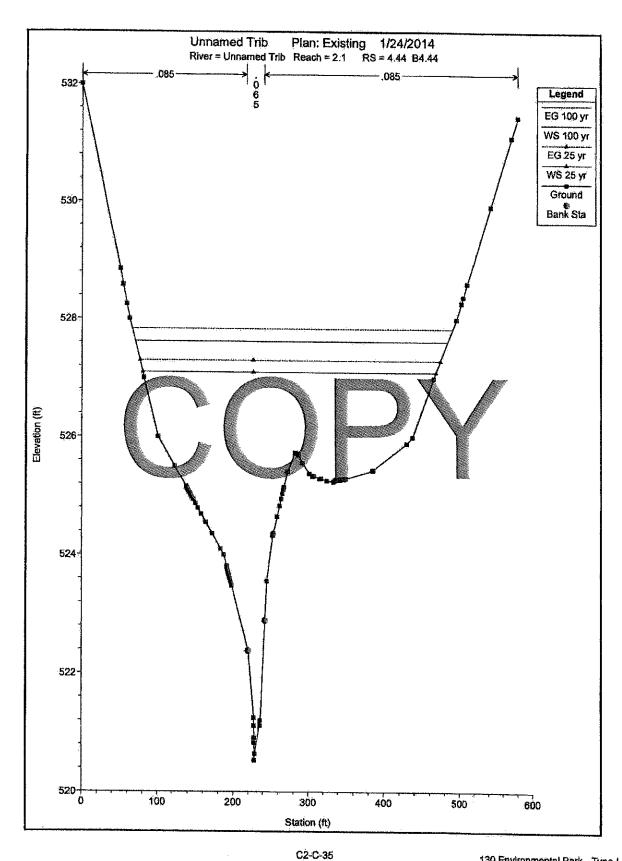
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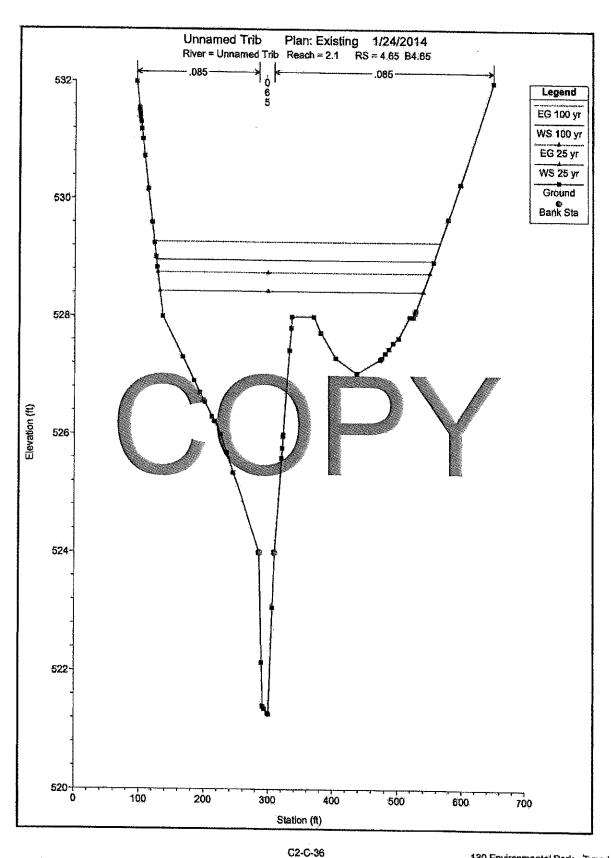
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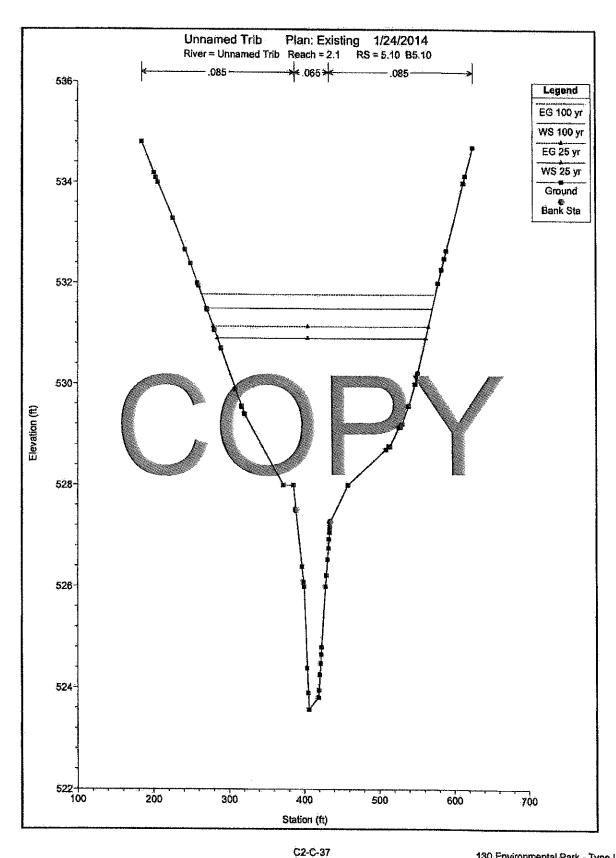


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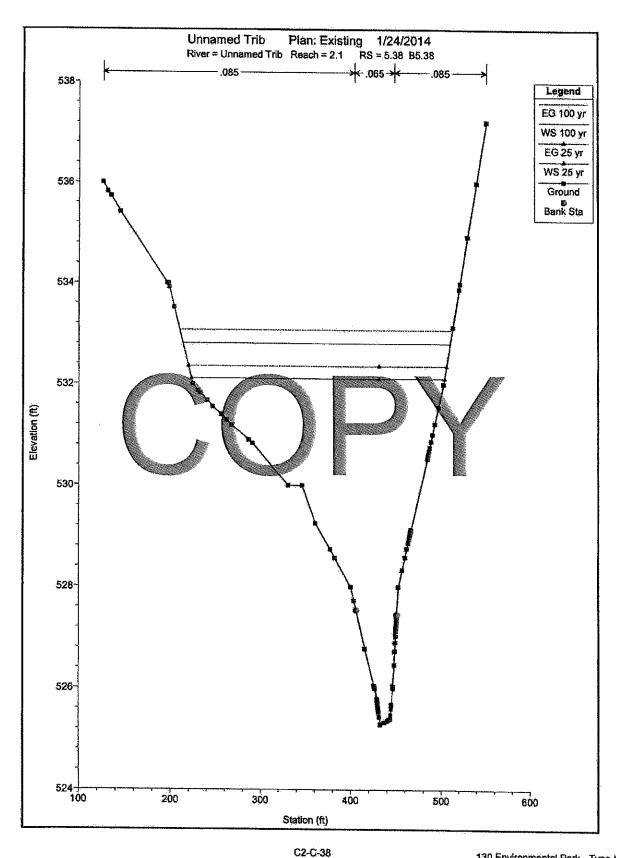


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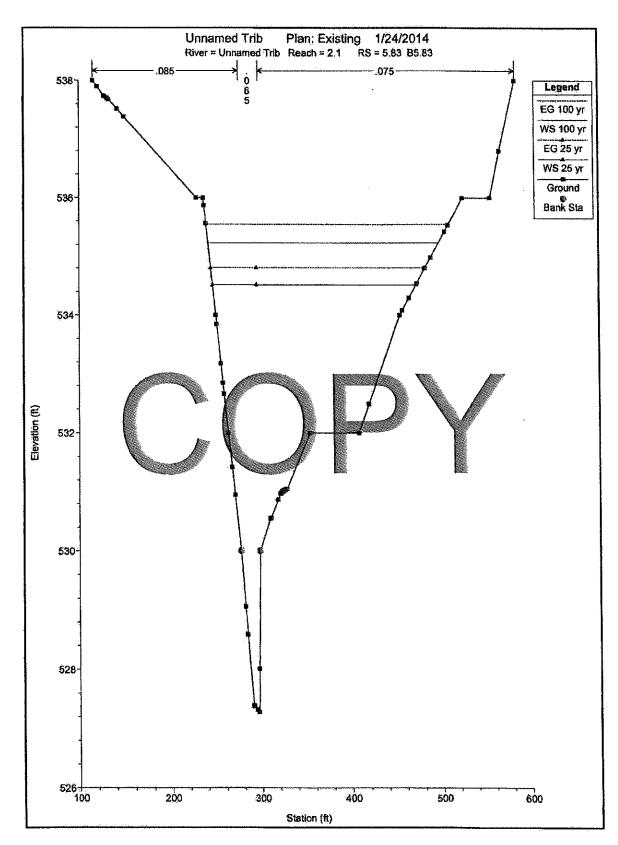
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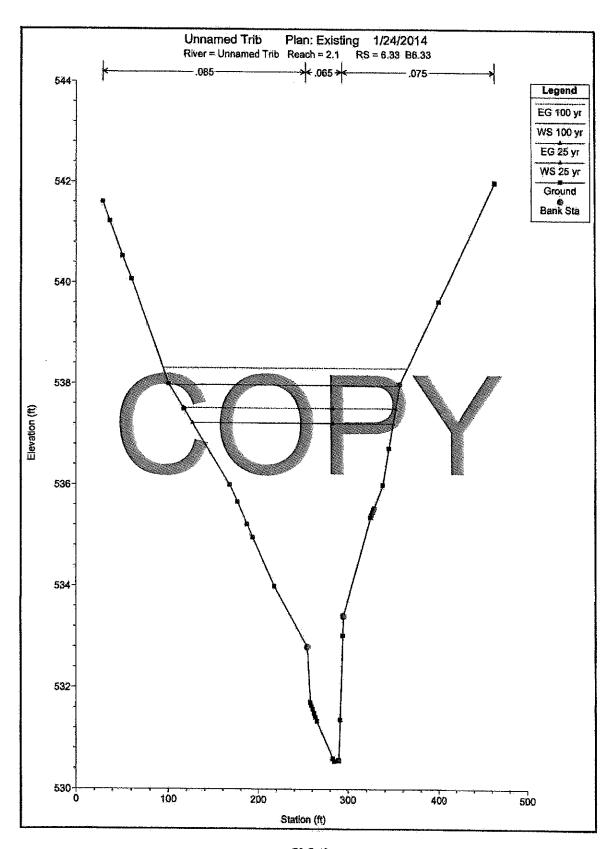
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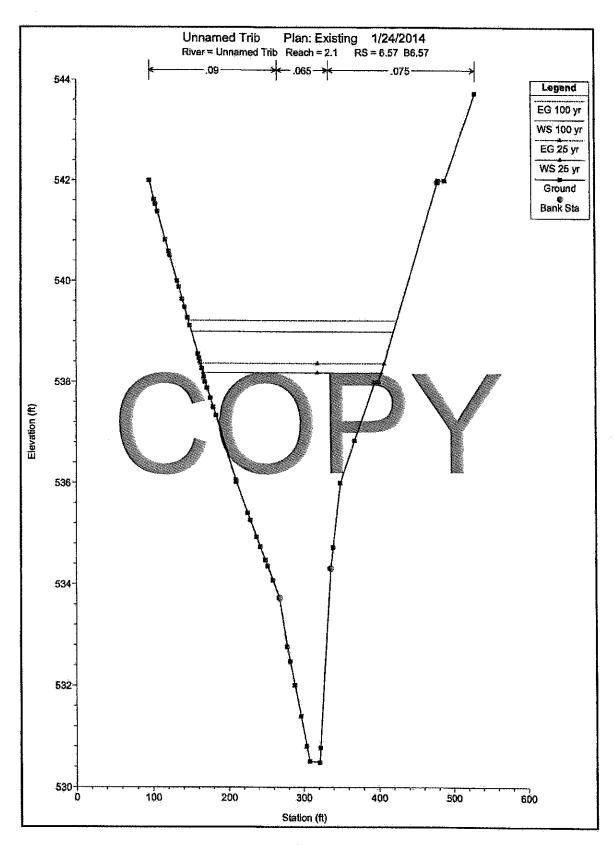
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IIIE-79

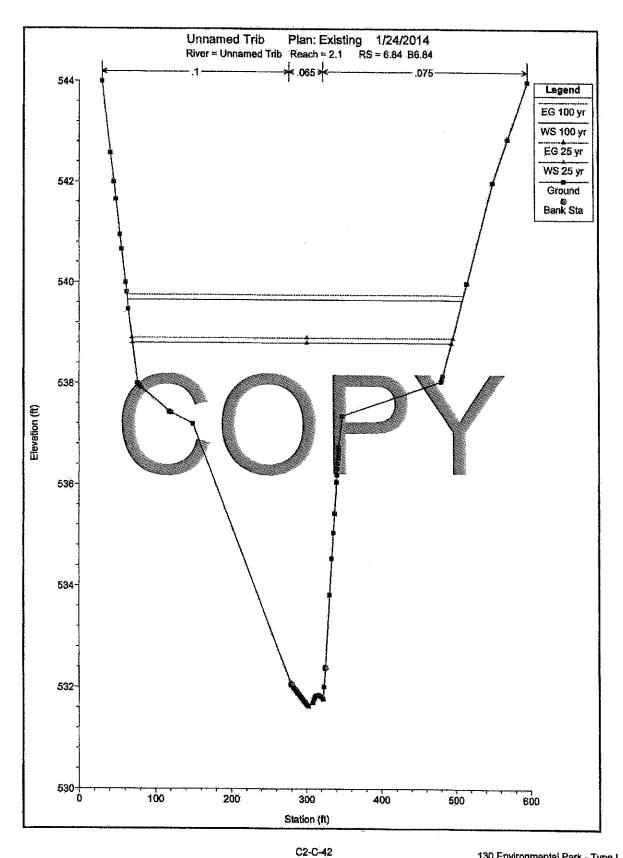


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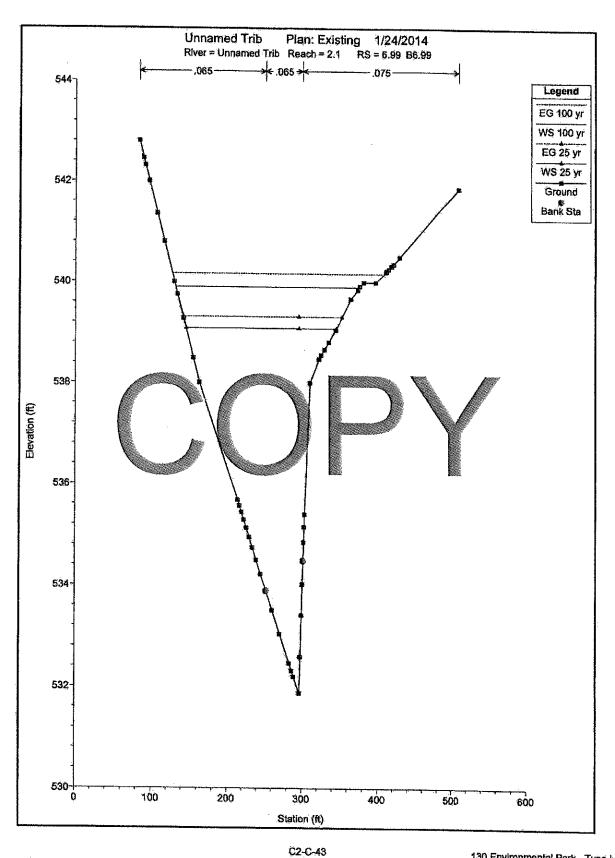


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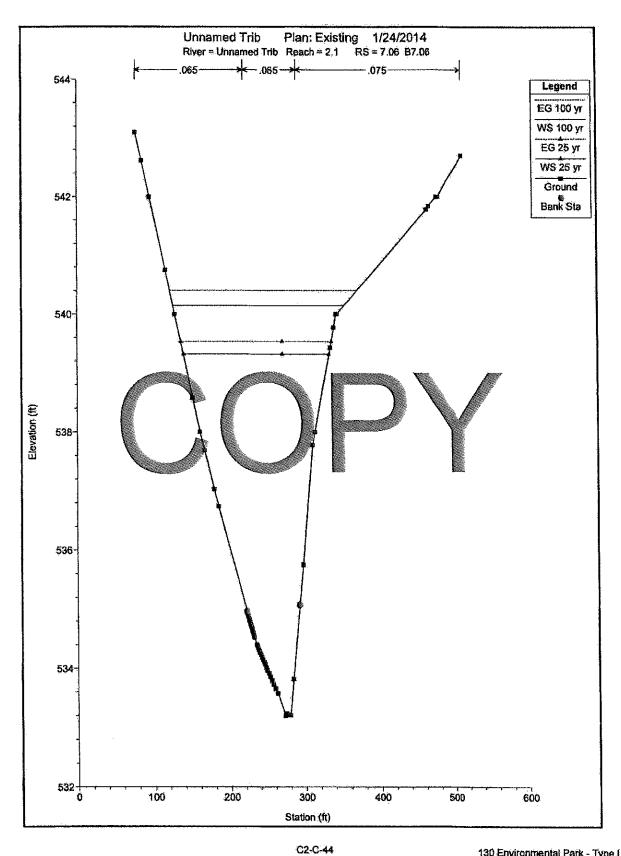
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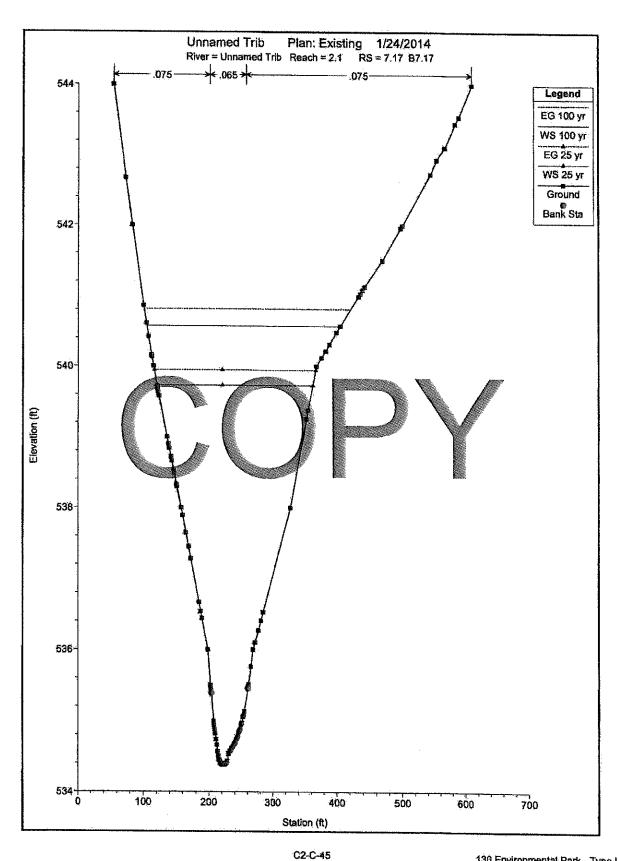
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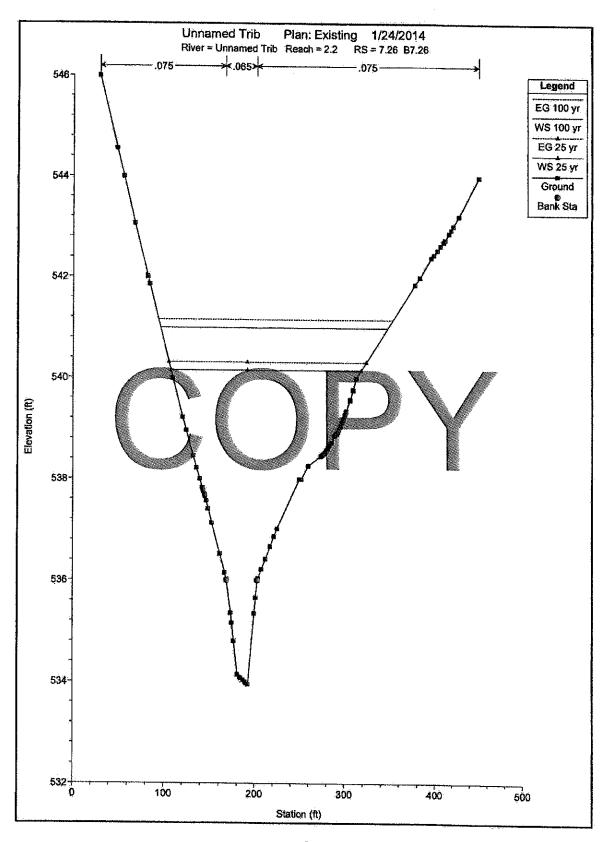
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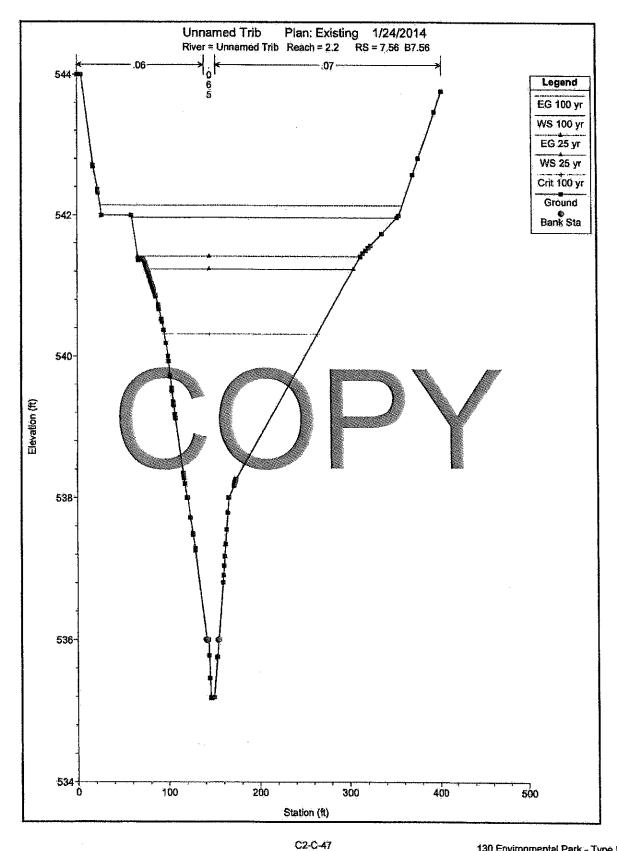
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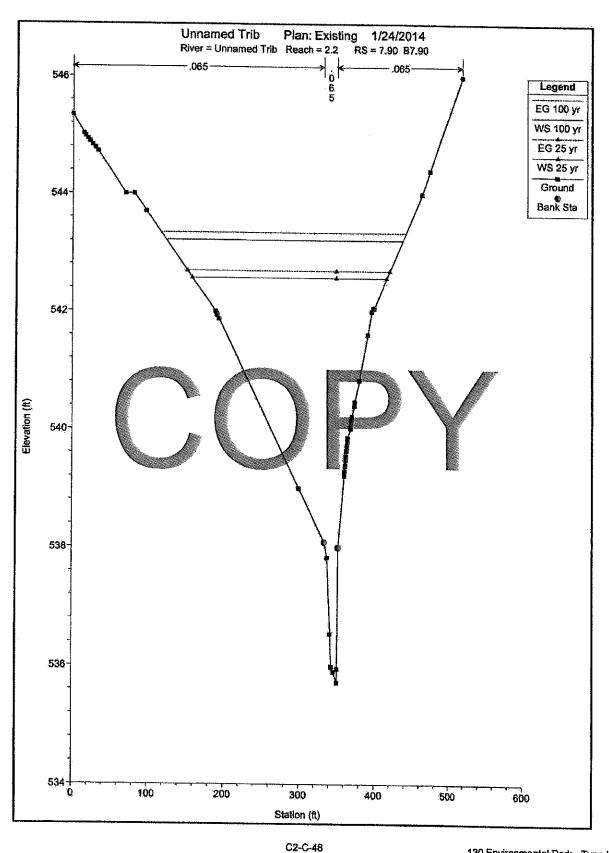
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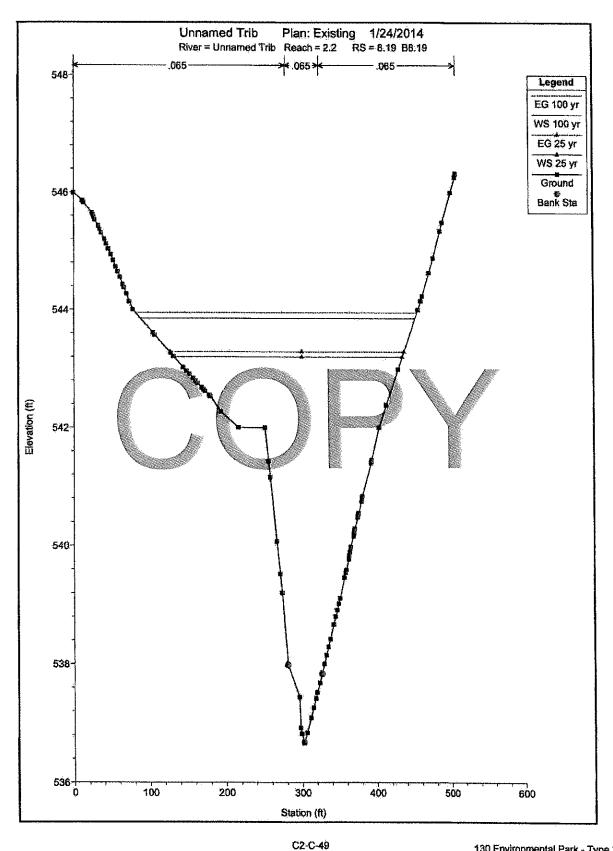
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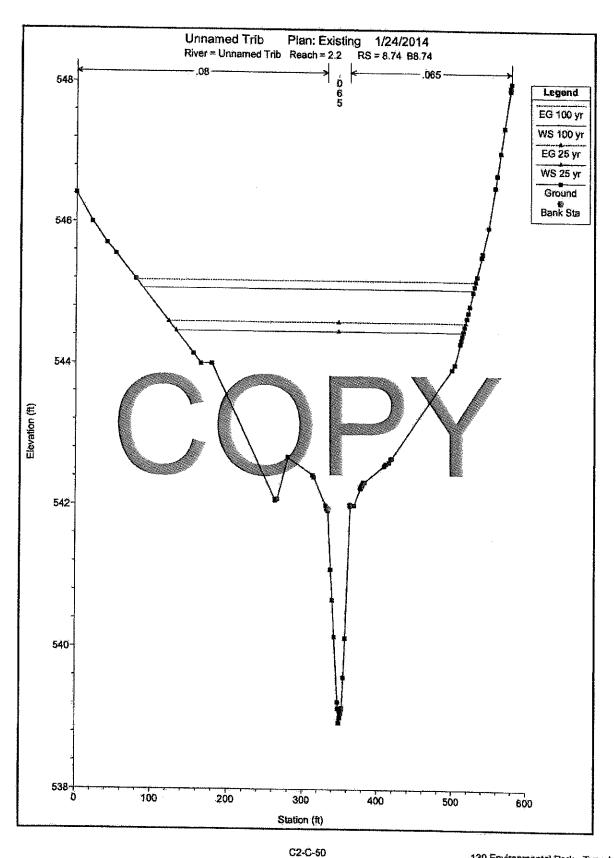
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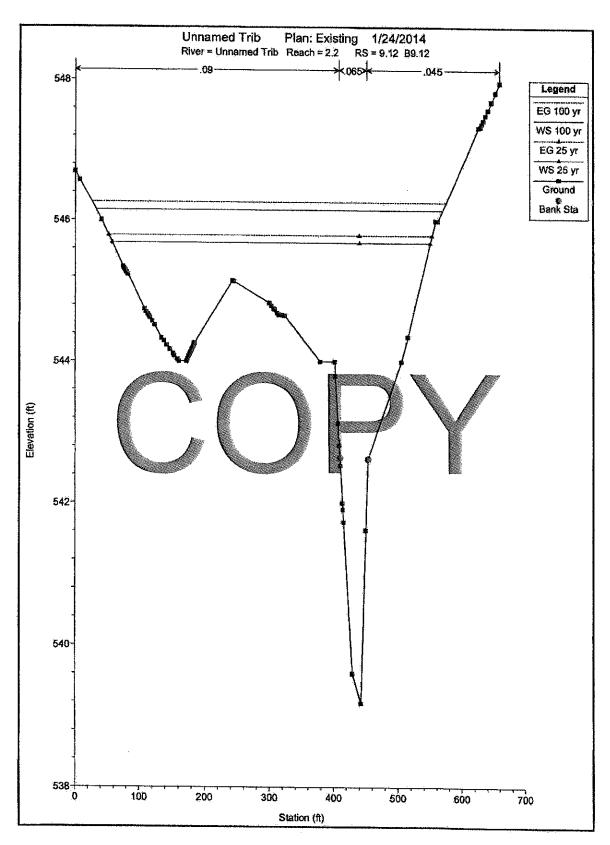
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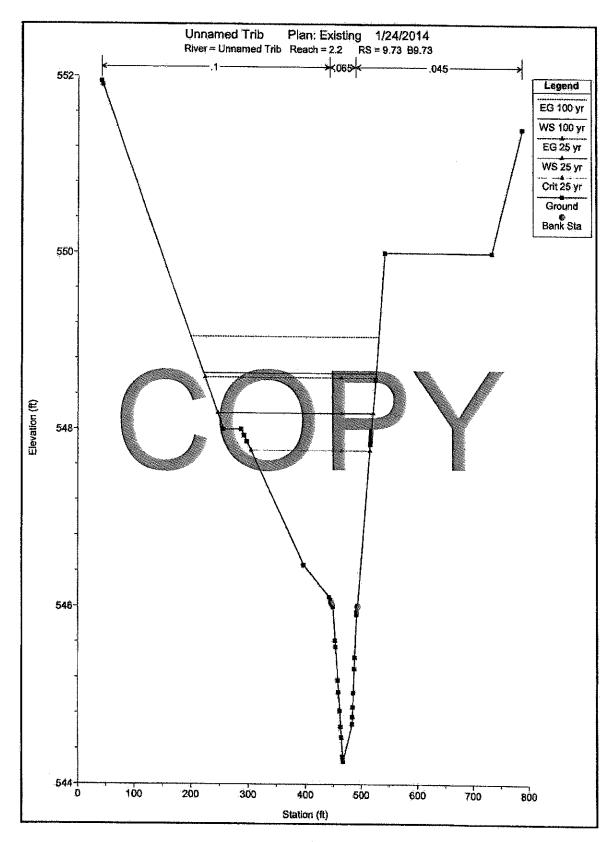
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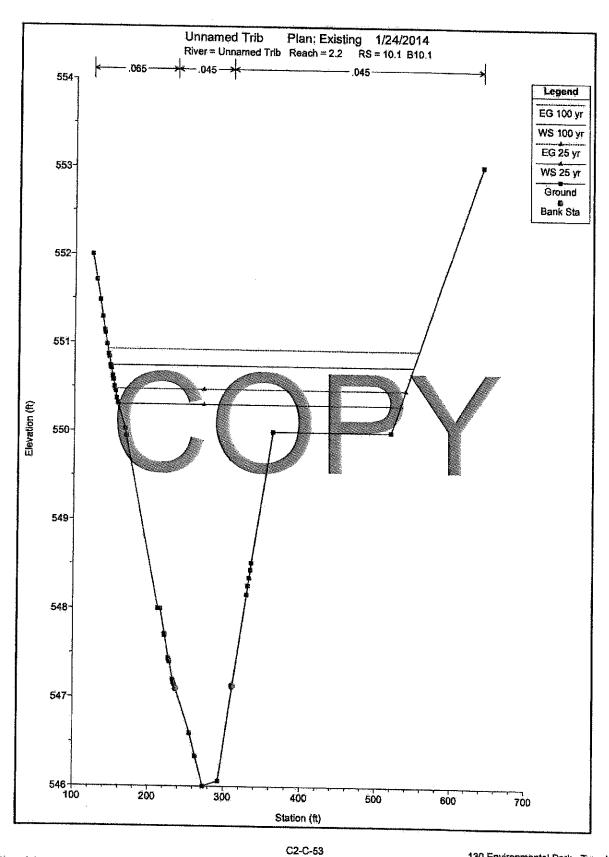
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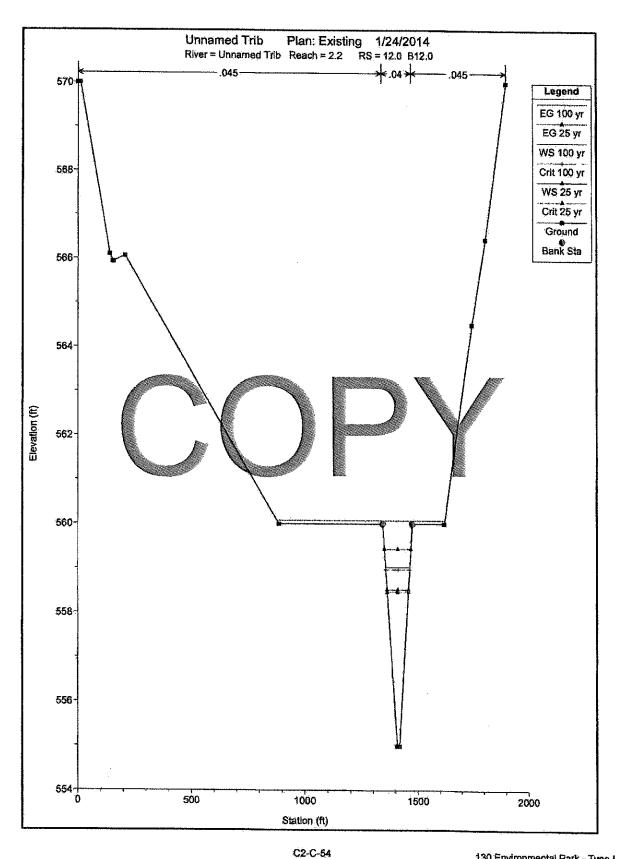


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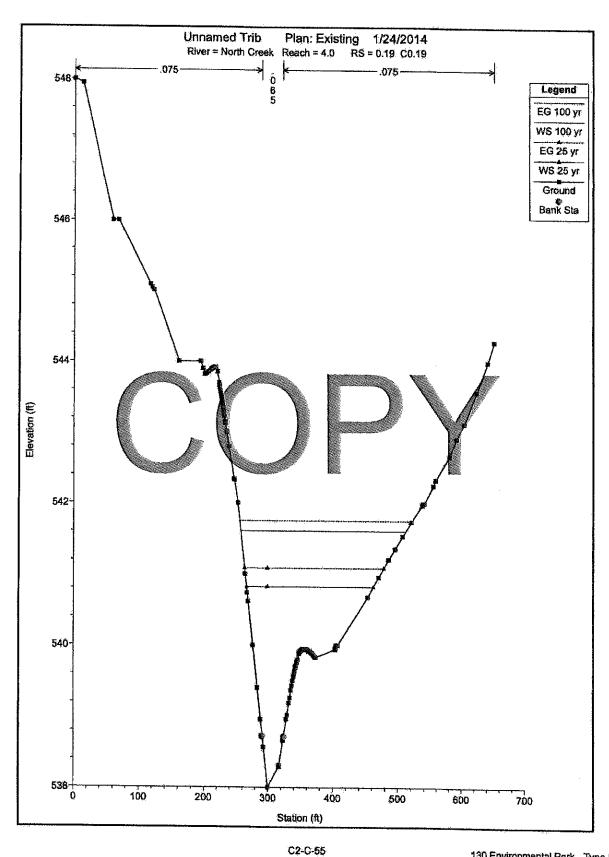


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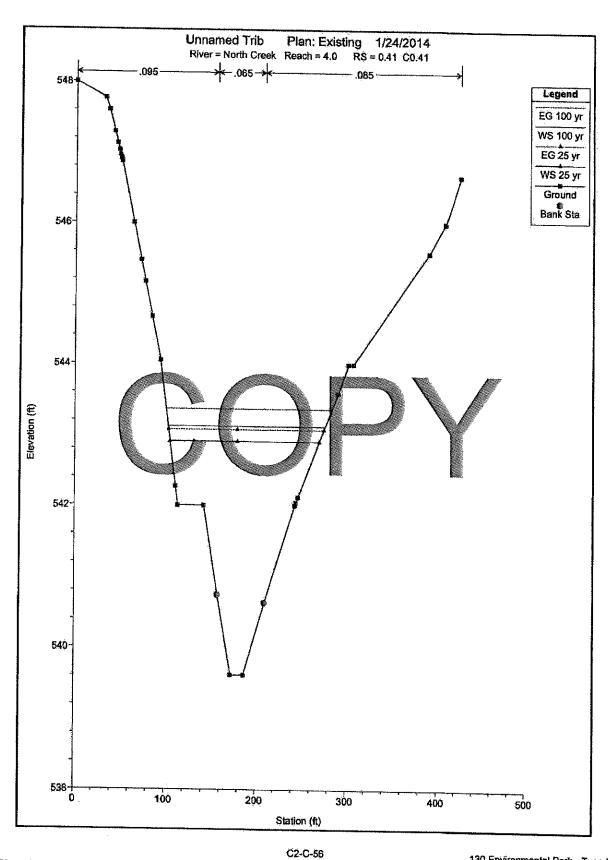
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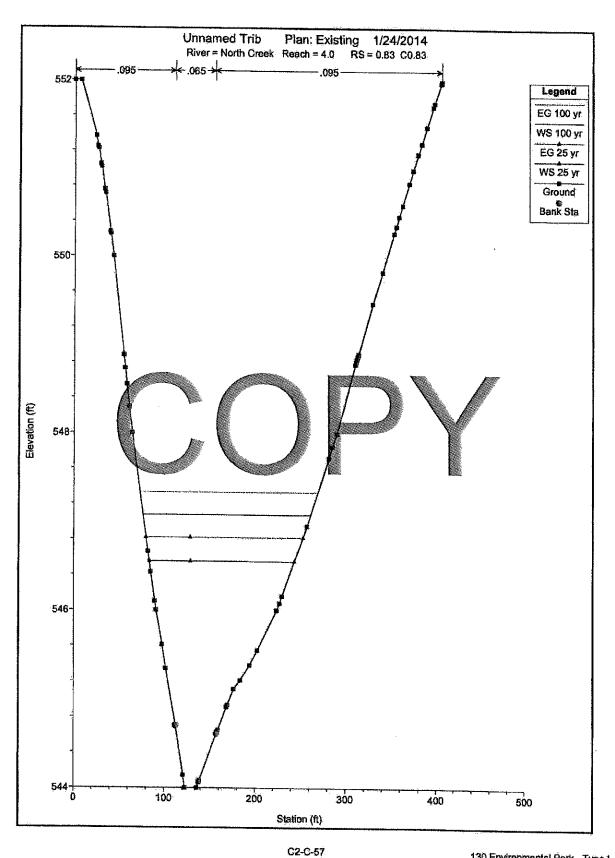
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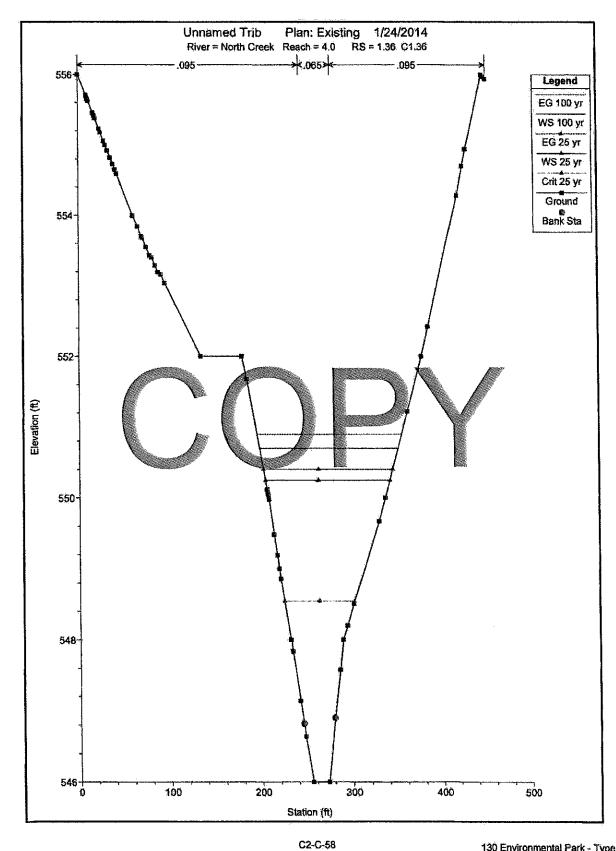
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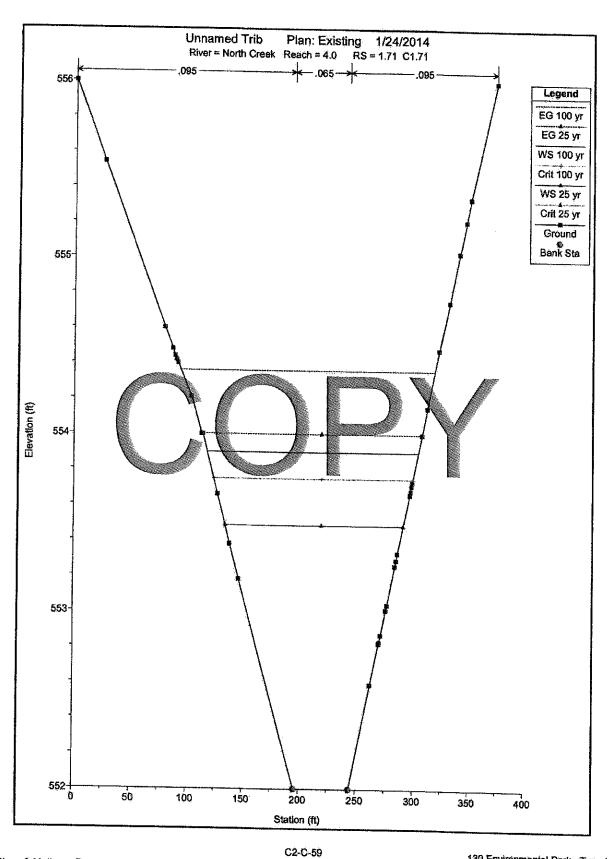
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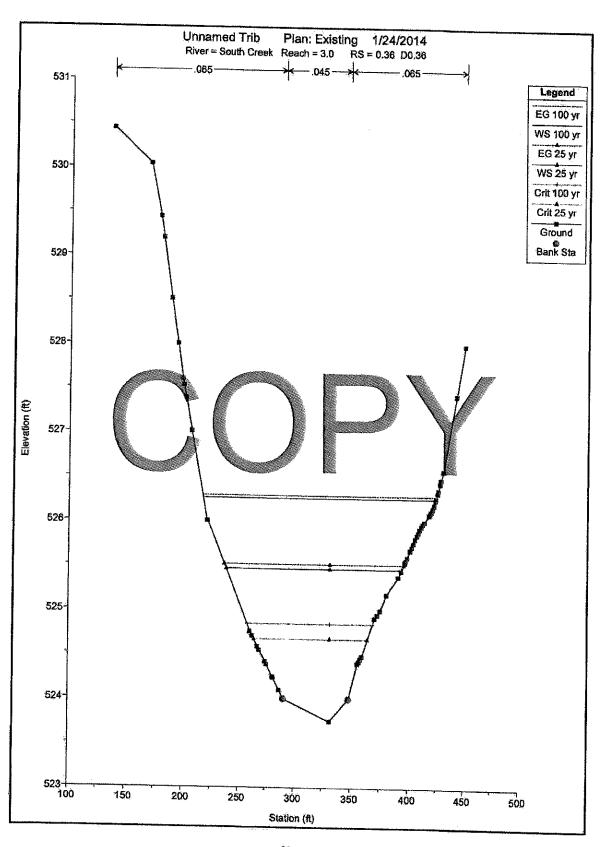


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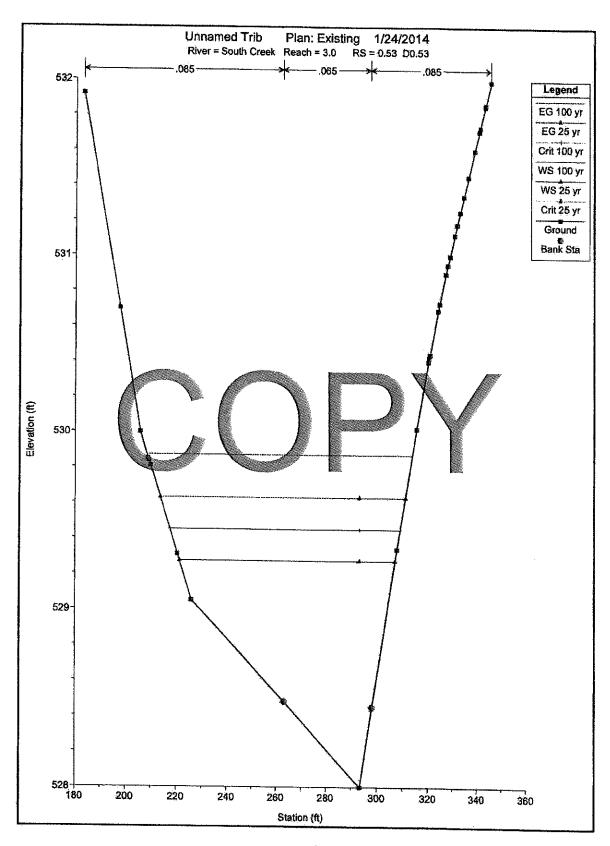
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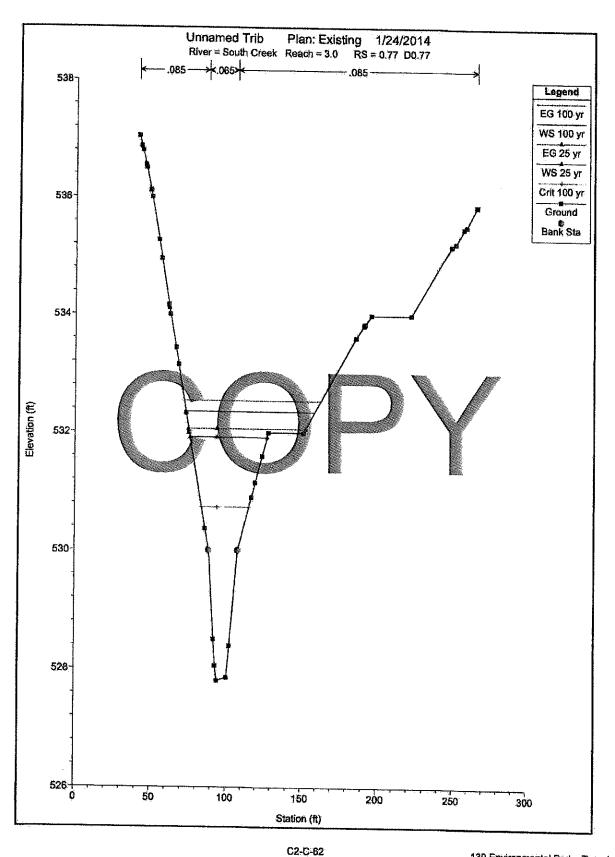
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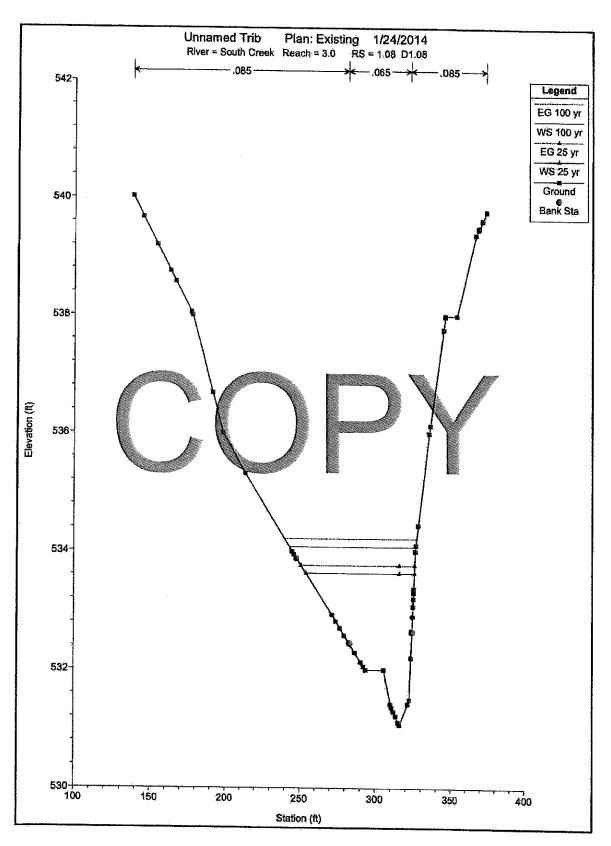
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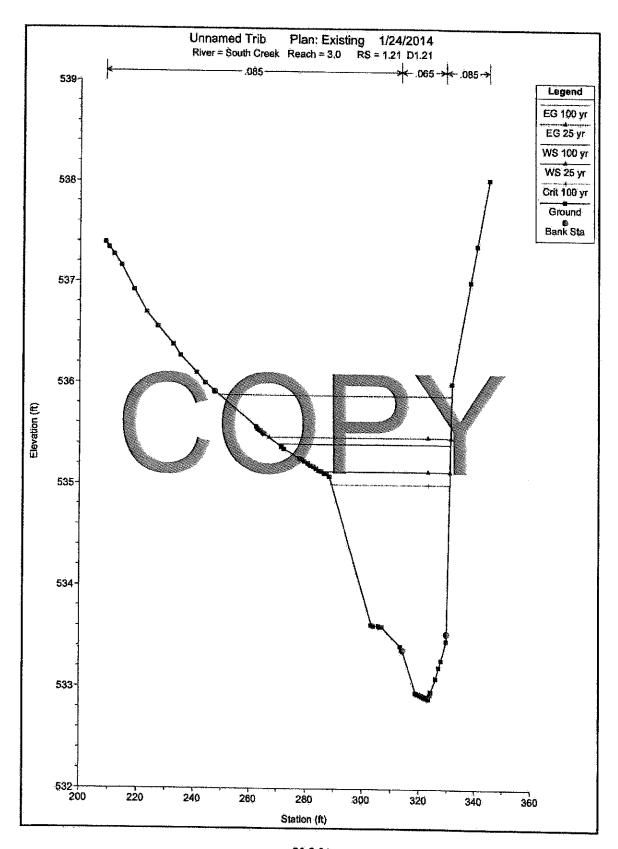


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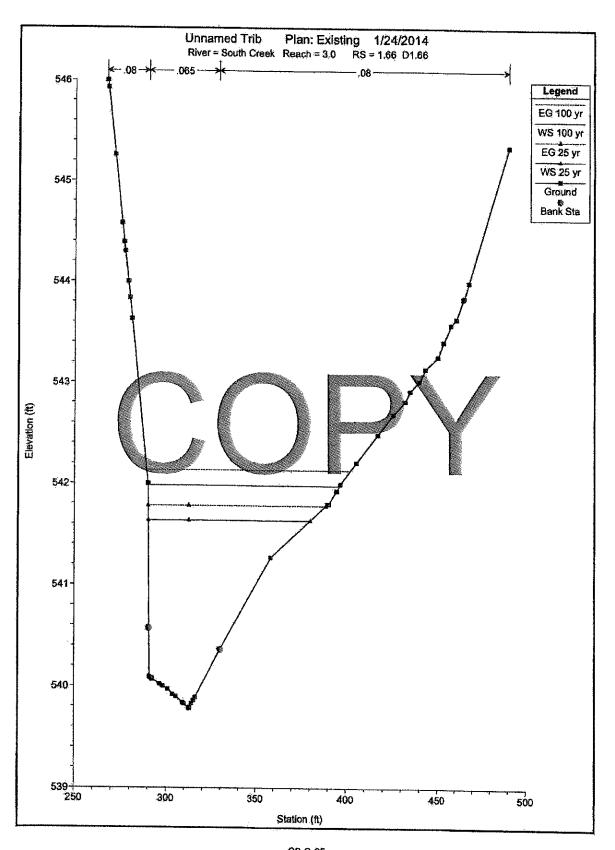
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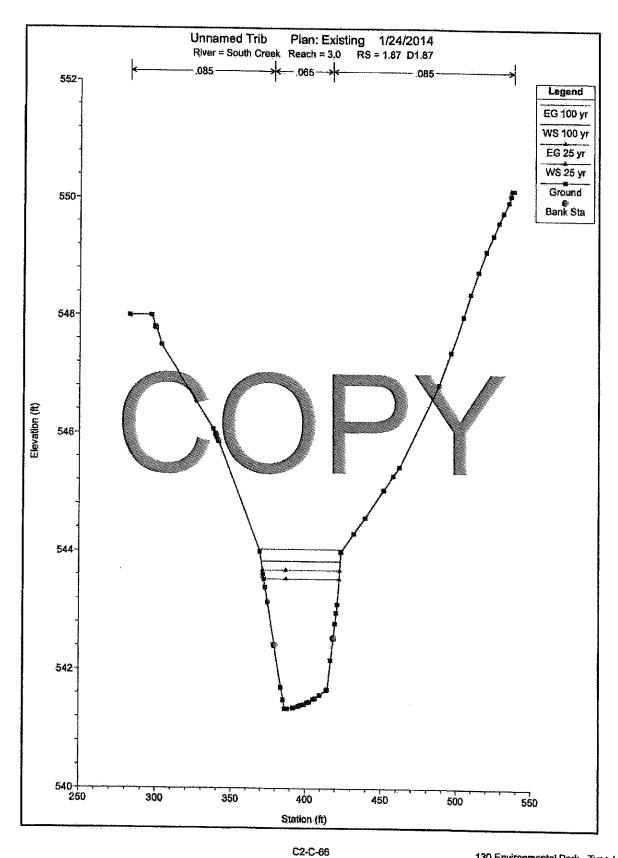
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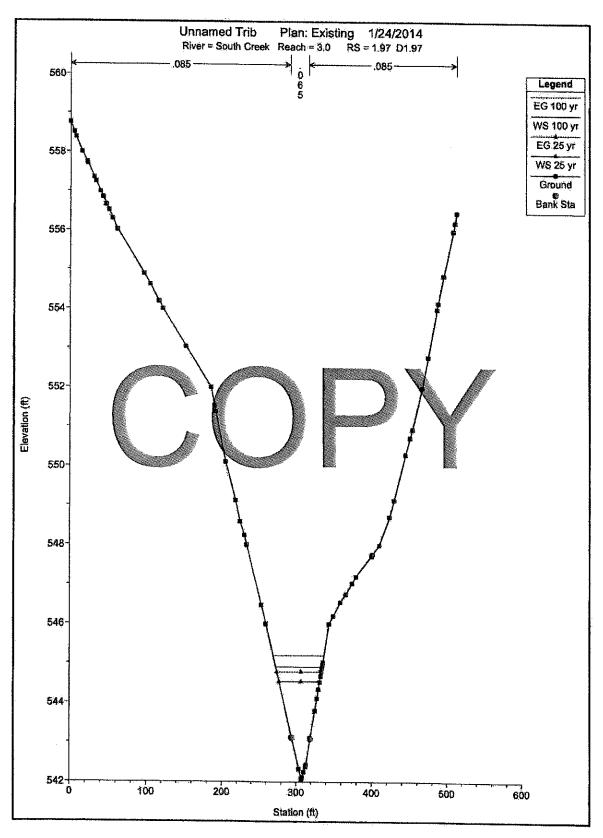


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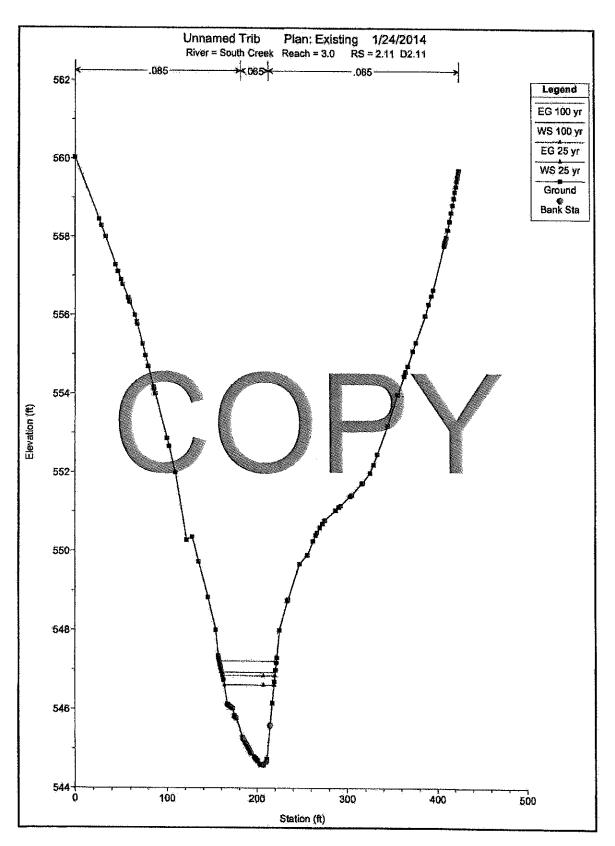


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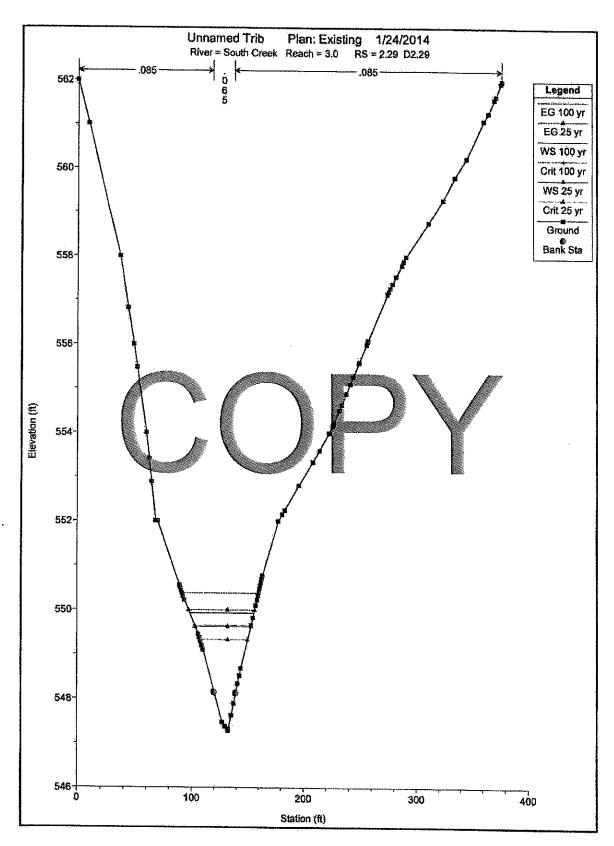
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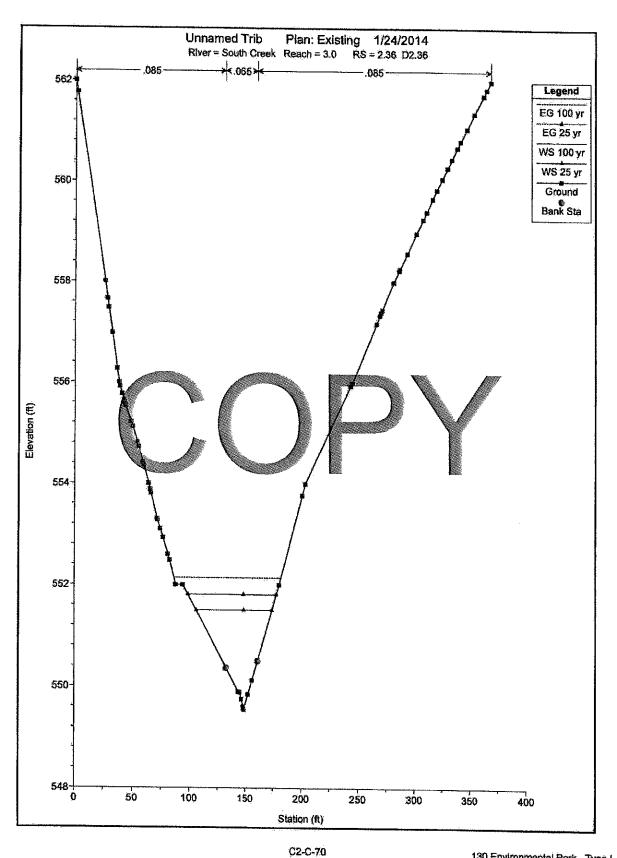
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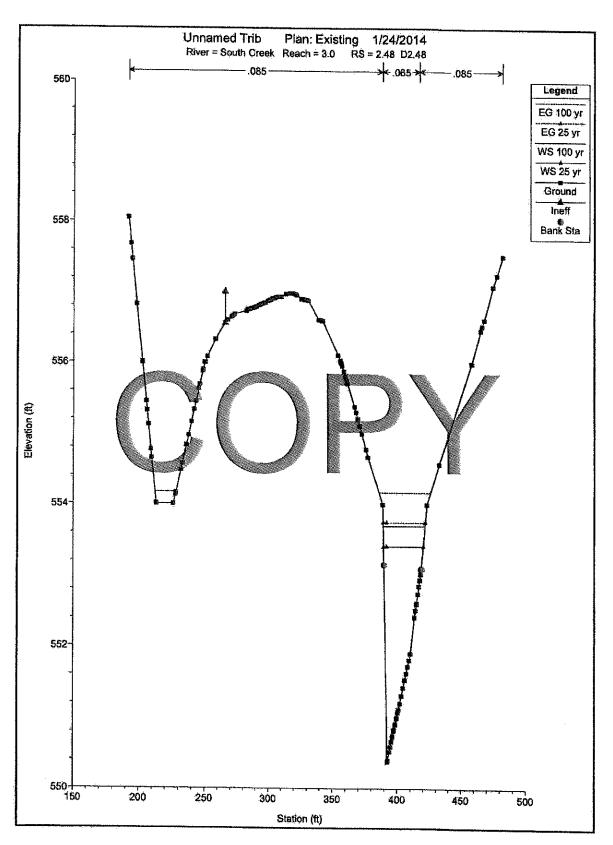
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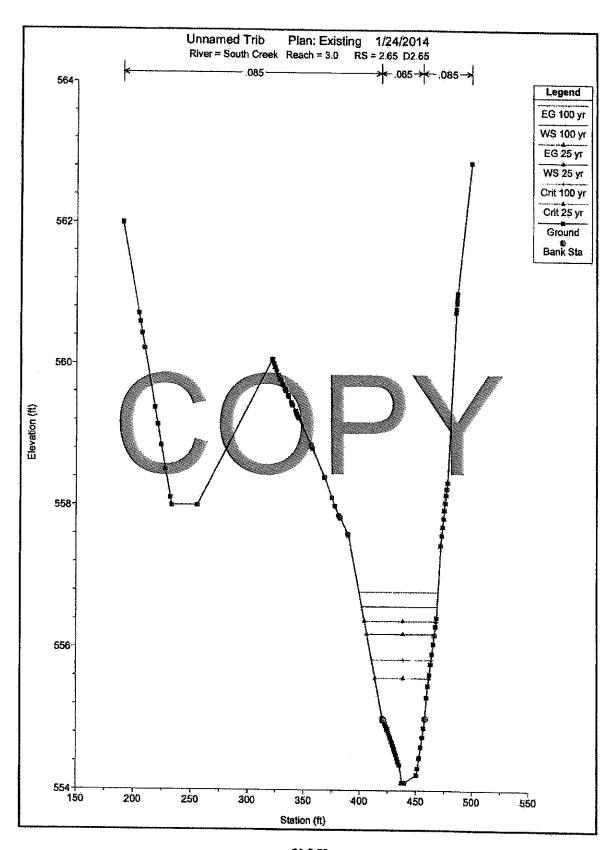
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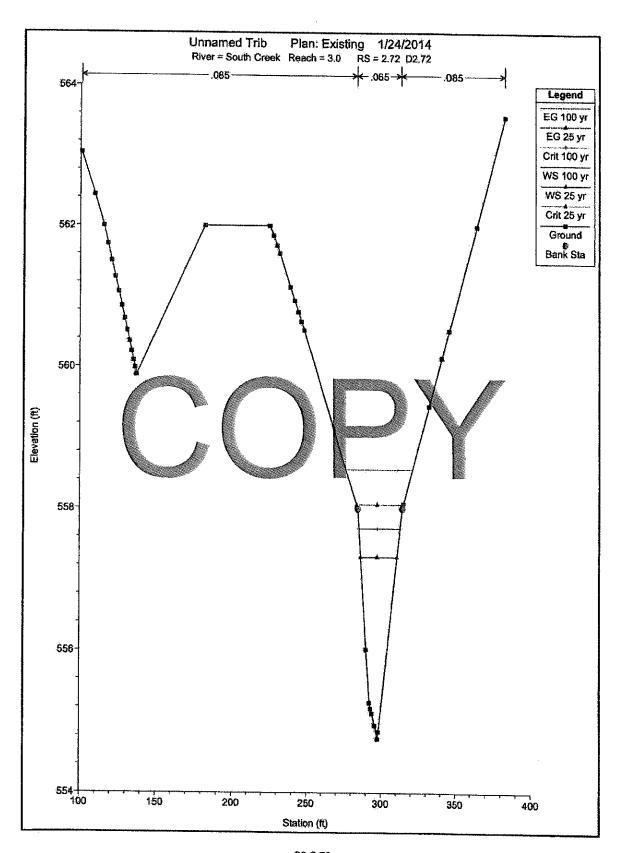
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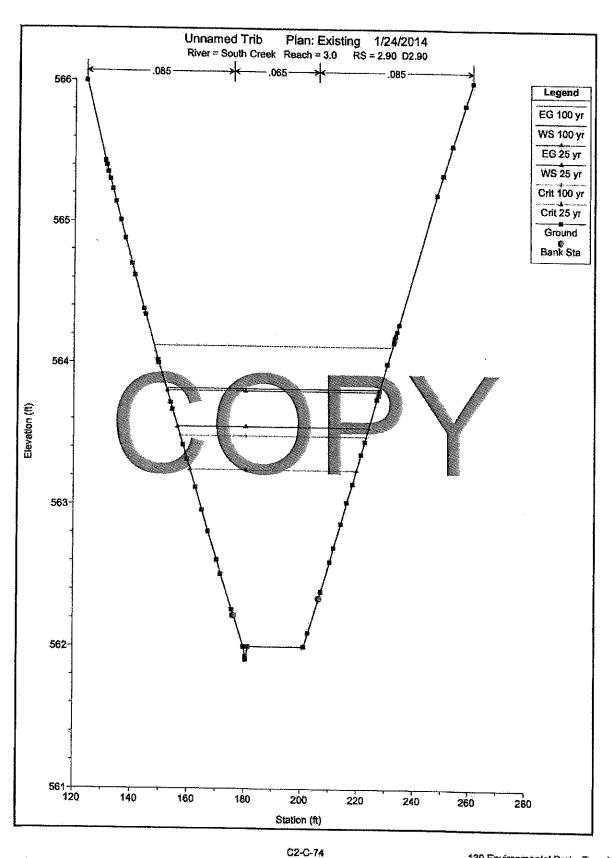
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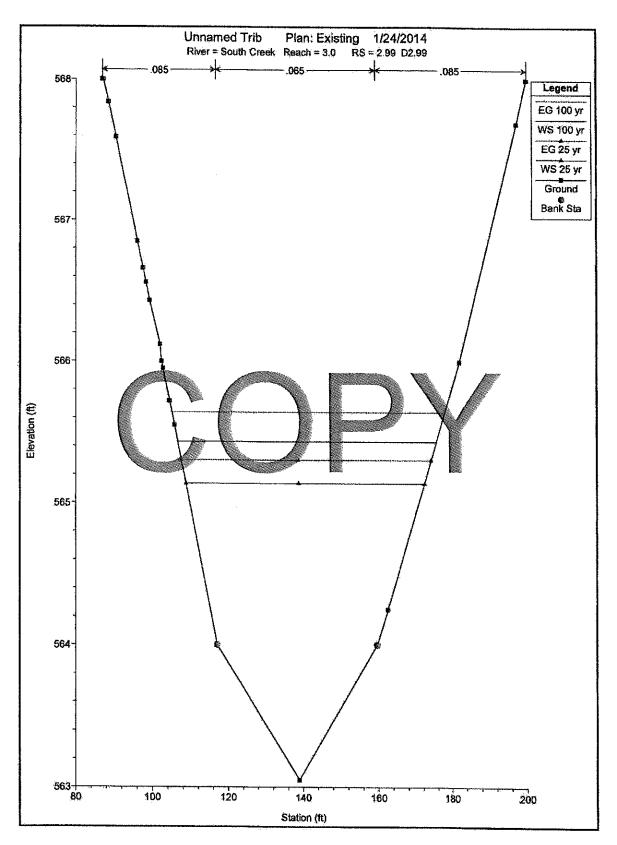


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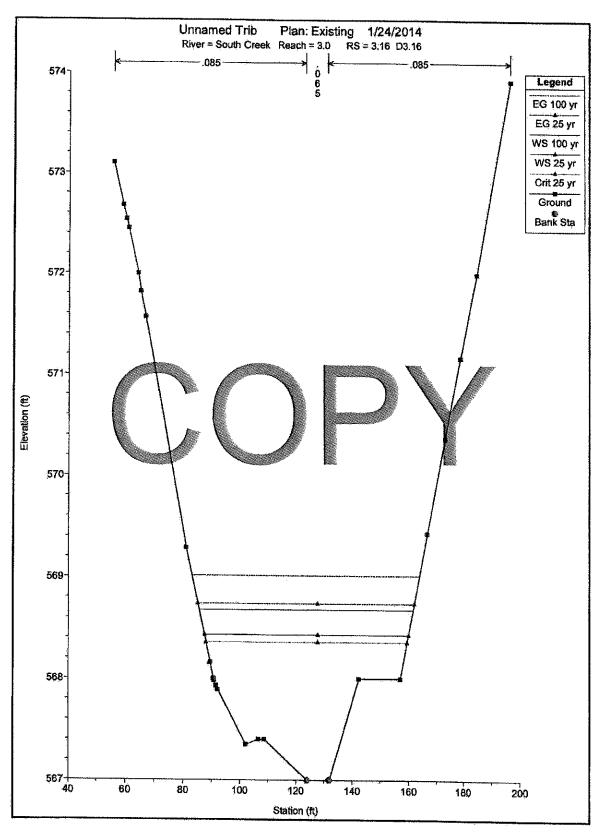
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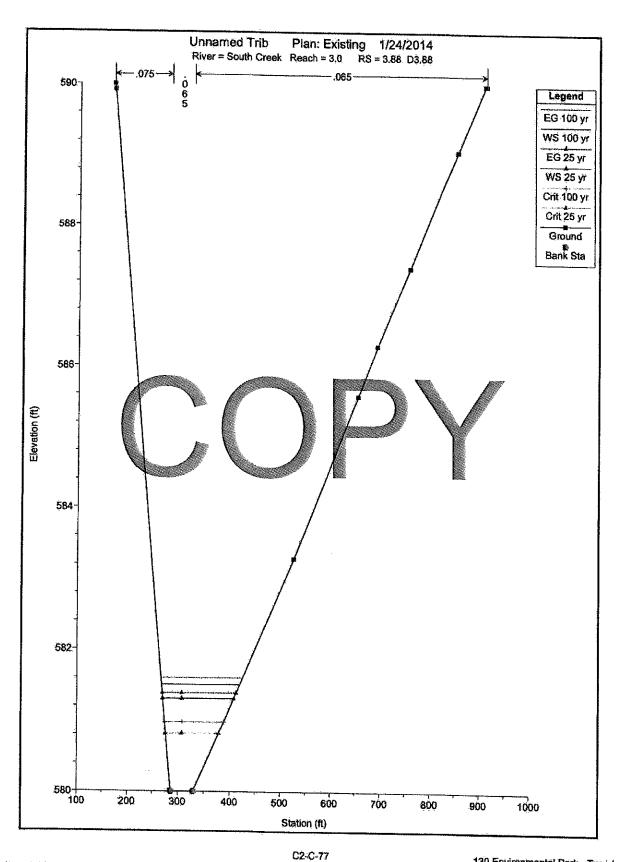


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## 130 ENVIRONMENTAL PARK

### **ATTACHMENT C2**

## **APPENDIX C2-D**

# POST DEVELOPMENT CONDITION HEC-RAS ANALYSIS

Includes pages C2-D-1 through C2-D-79

D-25-14

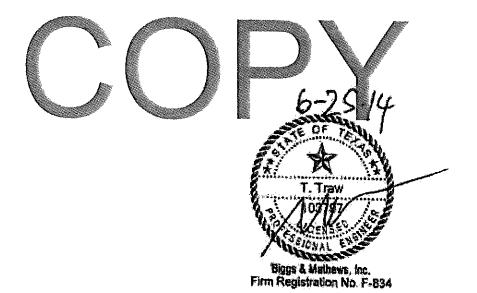
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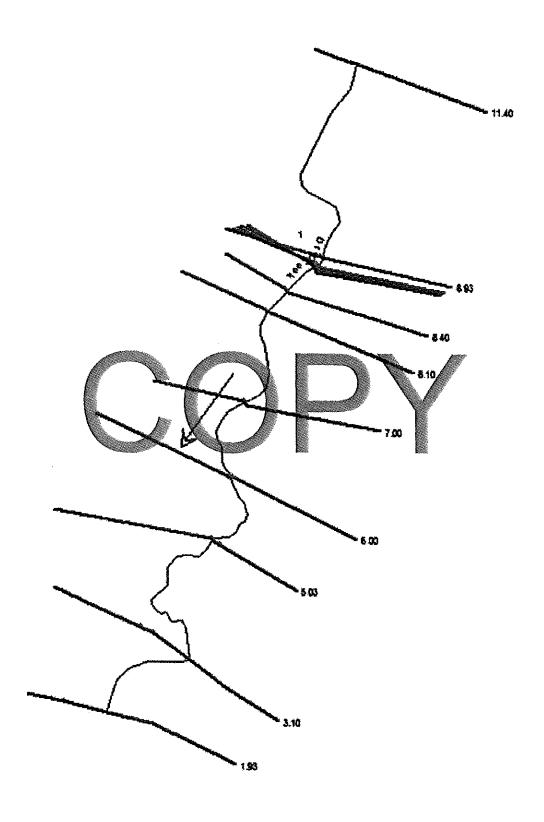
Biggs & Mathews, Inc. Firm Registration No. F-834

### CONTENTS

Post Developed Condition HEC-RAS Schematic	.C2-D-
Pose Developed Condition HEC-RAS Analysis	C2-D-/



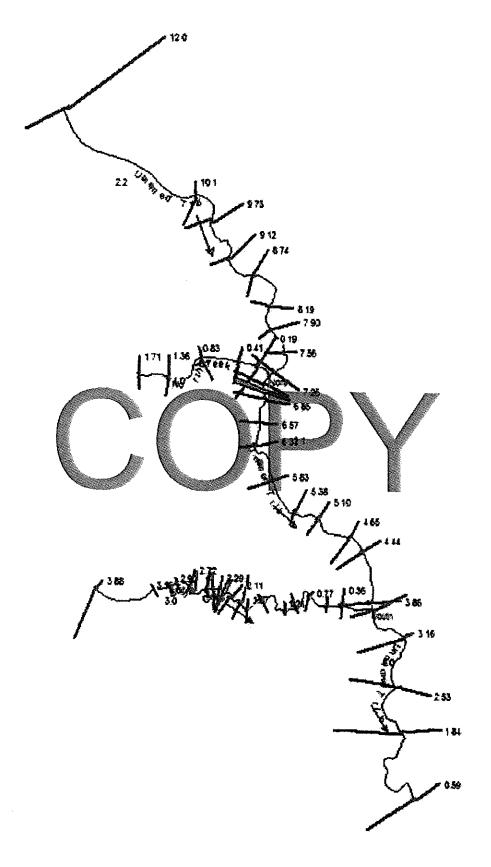
# POST DEVELOPED CONDITION HEC-RAS SCHEMATIC



Biggs & Mathews Environmental
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C2-D-2

130 Environmental Park – Type I Rev. 0, 2/12/2014 Part III, Attachment C2, Appendix C2-D 130 Environmental Park Type V Part III, Appendix IIIE



Biggs & Mathews Environmental
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C2-C-3

IIIE-122

130 Environmental Park – Type I Rev. 0, 2/12/2014 Part III, Attachment C2, Appendix C2-C 130 Environmental Park Type V Part III, Appendix IIIE

# POST DEVELOPED CONDITION HEC-RAS ANALYSIS

Froude #Ghl		0.74		90 0	200	IA'O	70.0			0.08	0+0	5	0 0	0.10		0.08	90:08		0.03	0.03	0.03	0.03		0.02	0.02		0.01	0.01	-
Top Width	(file	746.25	725.27	1361.27	1171.05		1323 34	1088.03		1321.31	1101 00	2	1506.63	1348.86		1799.46	1561,55		1609.42	1499,68	2123.98	1843.82		2115.32	1987.57		2343.33	2239.22	
Flow Area	fso.fit	1152.96	957.88	6021.98	4130.43		5885 99	4094.37		5951.36	4190.24		6714.24	4497.98		9148.12	6638.62		14286.76	11952.51	20236.27	17241.55		23576.79	20489.25		32791.92	29348.24	
Velichel	(fVs)	8.80	7.80	1.16	1,29		1.19	1.27		1.66	1 70		1,65	1.82		1.17	1.21		0.73	0.65	0.72	0.60		0.49	0.41		0.28	0.23	
E.G. Slope	(40H)	0.035746	0.030491	0.000099	0.000147		0.000127	0,000178		0.000217	0.000278		0.000194	0.000283		0.000090	0.000114		0.000028	0.000025	0.000012	0.00000		0.000007	0.000006		0.000001	0.000001	
E.G. Elev	( <b>()</b> )	522.04		519.15	517.66		\$19.14	\$17.64		519.09	517.63		\$19,01	517.52	V	518.97	517.47		\$18.92	\$17.42	18.91	517.41	¥	518.91	517.40		518.90	517.40	,
Crit W.S.	ω)	521.38	521.12	513,23	81 21 C		514.07	513,53	/																				
W.S. Elev	(f)	521.38	521.12	519.14	517.64		519.13	517.6		519.07	517.61		519.00	517.50		518.96	517.46	es.	518.92	517.42	518.91	517.41		518.90	517.40		518.90	517.40	
Minchel	(n)	514.60	514.60	506,00	506.00		506.00	506.00		505.89	505.89		505.09	505.09		504.56	504.56		502.00	502.00	502.00	502.00		500.00	200.00		498.12	498.12	
Q Total	(cfs)	5381.00	3939.60	5381.00	3939.60		5381.00	3939.60	Culver	5381.00	3939.60		5381.00	3939.60		5381.00	3939.60		7266.00	5326,50	7266.00	532B.50			5326,50		7266.00	5326.50	
Profile		(fodyr	25 tr	чбоуй	25 yr		100 yr	25 yr		100 yr	25 yr	3	100 M	25 F		1000)	25 yr.		(OC)	25 yr	190.00	25 yr		100 JF	26.Vf		100 %	25.75	
Kiver Sta		11.40	11,40		8,93		8.84	8,84	18.81	8,78	8.78		6.40	8,40			8.10			7.00		6.00			5:03	1		Z OJE	
Reach																													The second secon

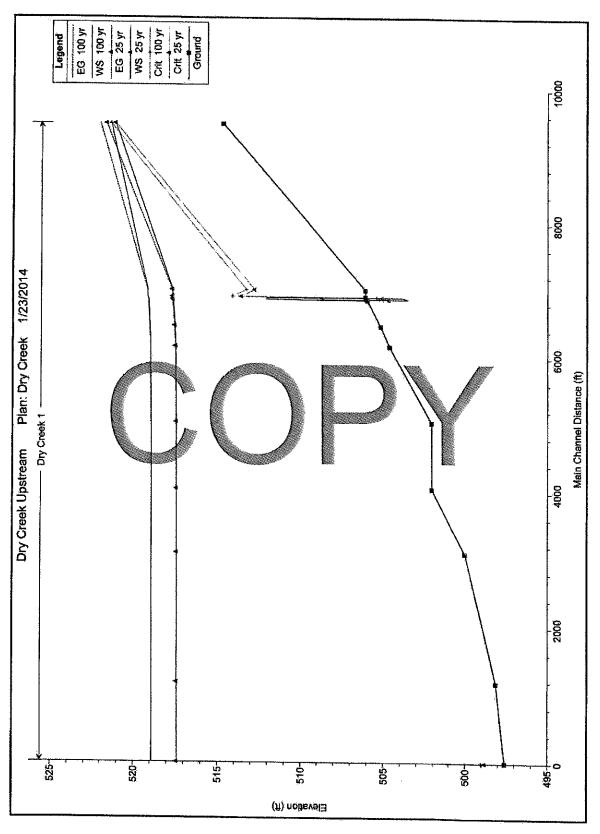
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River	Keach					The state of the s		The second secon	A COLOR OF THE COL	The state of the s			
				(GIS)	(i)	(H)	ω)	(μ)	(ff/ft)	(£/\$)		(n)	
Unnamed Trib	2.2	120	100 yr	1933.40	555,00	559.02	558.97	90.099	0,017260	6.24	234.61	106.59	96'0
Unnamed Trip	žž	120	žšyr	1410.50	555,00	558.52	558.47	559.43	0.017537	7.66	184.20	94.56	0.97
Unitamen Tifb	2,2	101	Yooyr	1933.40	546.00	550.74		550.93	0.002164	4.06	724.48	403.55	0.35
Unnamed Trib	2,2	101	25,41	1410.50	546.00	550.30		550.47	0.002101		553.95	375.28	0.33
						\							
anamed Trib	2.2	67,9	100 yr	1933.40	544.26	\$48.53		549.05	0.014005	6.36	514.76	305.47	0.59
Unnamed Trib	22	87.6	25 yr	1410.50	544.26	548.18	547.70	548.59	0,015072	6.04	383.86	274.34	0.60
Hrnamed Trib	2.2	8:12	100.4	1933.40	539.18	£46.15	N.	546.26	0.002352	3,46	1015,24	539.49	0.26
Innamed Trib	2.2	9172	25 yr	1410.50	539.18	545.88		545.79	0,002290	3,23	773.61	494.43	0.25
							es.						
Illunamed Trib	2:2	8,74	100 yr	1933.40	538.94	545.0		545.19	0.003892	3.99	869.22	440.60	0.32
Unnamed Tob	22	8:74	25 yr	1410.50	538.94	\$44.45	/	544.59	0.004963	4.12	619.19	382.28	96.0
Janamed Tab	2.2	87.18	100-yr	1933.40	536.67	543,91		544,00	0.001528	3.13	962.94	370.88	0.22
Manamed Tab	2.5	18.19	25 vr	1410.50	536.67	543,22		543.31	0.001497	2:87	730.56	305.52	0.21
101 241141							K						
Immaniad Trib	66	797	700 vr	1933.40	535.72		1	543.44	0.002820	4.07	807.29	323.94	0.28
Imamedifib	66	17.90	25.97	1410,50	535.72	542.52		542.73	0.002981	3.89	601.06	262.38	0.28
Honamed Trih	2.5	7.56	TOOAL	1933.40	535.18	66.539		542.49	0.003072	4.51	819.95	345,27	0.30
Unnamed Trib	2,2	7.56	25.yr	1410.50	535.18	541.48		541.62	0.003932	4.65	550,53	252,48	0.34
Unismed Tith	3.5	7.26	100.4r	1933,40	533,95	541.28		541.53	0,003850	4.95	589.59	181,08	0.34
Threamed Trib	212	1.26	25 vr	1410.50	533.95	540.28		540.50	0.003964	4.50	434,53	136.51	0.34
a ili control il			-										
finnamed Trib	2.4	7,03	100 vr	2909.00	532.47	539.98	537.90	540.39	0.005958	8.27	643.17	154.65	0.42
Unnamed Trib	· S	7.03	25 yr	2121.10	532.47	538.76	524 26	539.18	0,007597	6.20	465.47	136.51	0.46
Uhhamed Thib	2.1	8.95		Culved						-			
Unnamed Trib	2.1	6.85	160 yr	2909.00	531.33	539.70	1	539.81	0.001584	3.67	1263.13	333.68	0.23
Unnamed Trib	ë	608	25 yr	2121.10	531.33	538.82		538.91	0.001469	3.27	993.00	270,86	0.21
2.1		1	2,000	SO SOOK	200 40	60.00		530 24	n edzebe	434	975.43	269.30	0.28
Unnamed I nn	2		16.90	2303,00	22.00	2000		10401	*00000	20.0	1.4 04.4	207.00	76.0
Unnamed Trib	152	6.57	25 VI	2121.10	530.49	536.18		238.37	0.002394	3.01	110011	08'167	4
( foliamed) Tith	5.3	6.33	and a	2909.00	530.55	537.97		538.31	0.005338	5.87	810.94	256.11	0.40
		5.33	25 Vr	2121.10	530.55	537.22		537.52	0.005142	5.32	630.93	223.40	0.38
1		100000000000000000000000000000000000000											

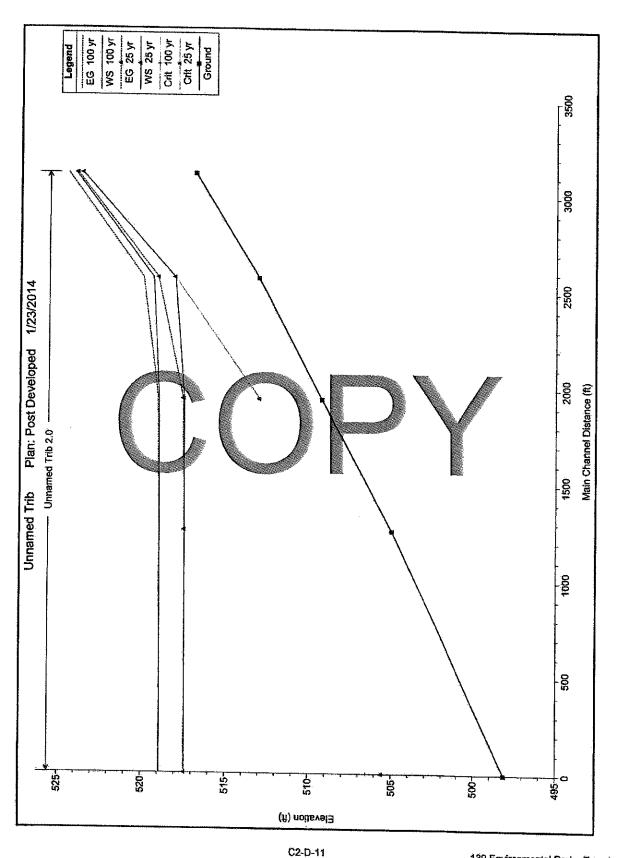
River	Reach	River Sta	Profile	O Total	Min.Ch.El	W.S. Elev	Critwis	E.G. Elev	E.G. Slope	Vel Chal	Flow Area	TopWidth	Froude # Chi
				(\$ <del>2</del> 6)	€	(m)	(f)	(H)	(BAH)	(fVs)	(sa fi	₩	
Unnamed Trib	N N	5,83	100 yr	2909.00	527.28	535.23		535,55	0.006706	_	1		77.0
Unnamed Trib	21	583	25 yr	2121.10	527.28	534.52		534.81	0.006653				
											<u> </u>		
Uninamed Tob	2:1	5,38	100 yr	2909.00	525.29	532.81		533.07	0.004352	5.28	928.22		0736
Unnamed Trib	2.1	5,38	25.yr	2121.10	525.29	532.11		532.36	0.004287	4.87		281 29	
							1					2	
Unitamed Trib	દ	5/10	100 yr	2909:00	523.57	531 49		531.77	0.004970	5.40	898.20	300.24	AE O
Unnamed Trib	2:1	5/10	25 yr	2121.10	523.57	530.91		531.14	0.004437	4.78	728.57	277.21	
Unnamed Trib	127	4,65	100.91	2909.00	521.27	\$28.95	K	529.27	0.006902	6.62	945.35	431.63	0.45
Unrained Trib	24	4,65	28.4	2121.10	521.27	E#8#3		528.75	0.007019	6.32	722.83	408:90	0.45
						i i							
Unnamed Trib	23		100,97	2909:00	520.53	527.61		527.83	0.006265	5.89	1014.85	414,31	0.42
Unnamed Trib	2.1	4.44	25.yr	2121.10	520.53	60.75	1	527.29	0.006138	5,49	805.60	388.88	141
Unnamed Trib	15		100.yr	2909.00	518.57	6 525.15		525.29	0,003261	4.03	1273.81	520.54	0.30
Umamed Trib.	2.1	3.86	25yr	2121.10	518.57	524.50		524,63	0.003602	3.89	948,95	464.47	0.31
Unnamed Trib	5.0		100 yr	3803.20	516.79	30,00		524.53	0.006320	6.17	954.64	320.47	0.43
Uninamed Trib	88	3,70	25 yr	2761,00	516.79	523.87		523.97	0.004516	4.96	829.37	291.38	0.36
100 mg													
Unnamed 100	200		100.7	3803.20	512.97	519.33		519,93	0.012649	7.29	77.775	311.74	0.58
Unitamed Inc	750	3516	Zeo.	2761.00	512.97	518.05	518.05	519.04	0.027319	8.72	427.46	236,43	0.82
			27.8		1								
	7.0		700 yr	3803.20	509.18	518.96		519.00	0.000452	2:00	2839.41	644.07	0.12
Umamed Trib	250	2,53	25 yr	2761.00	509.18	517,45	253	517.50	0.000634	2.08	1920.37	557.15	0,14
2.56				3									
1	570		190 yr	3803.20	504.96	518.92	V	518.93	0.000044	0.81	6751.34	1032.04	0,04
Unramed Trib	2.0	1.84	25 yr	2761.00	504,96	517.42	V	517.43	0.000043	0.74	5320.43	867.03	10.04
	200	. Acin	100 %	3803.20	498.13	00.915	506.55	518.90	0,000018	0.66	9669:92	938.57	0.03
Unnamed Inn			25.yr	2761.00	498.13	517.40	€05.59	517.40	0.000016	0.56	8288.81	903.26	0.02
				1									
Sugar Sugar			W.C.M.	337,20	260.00	581.50	580.94	581.60	0.009393	2.91	147.14	151.88	0.42
	3.0	3.88	25,yr	245.40	280.00	581,30	580.82	581.38	0.009017	2.59	118.17	137.48	0.40
South Greek	9,0	3,16	100.vr	337.20	567.00	568.68		569.01	0.041991	6.61	81.58	76.01	06.0
			25.yr	245,40	567.00	568.43	568.36	568.74	0.046629	6.26	63.25	72.50	0.92
South Creek	3.0	56.2	#00 X	337.20	563,05	565.43		565.64	0.011699	3.80	100 18	69 GB	87.0
			The second secon									3	3

Kiver	Reach	RiverSta	Profile	O Total	Minch	W.S. Elev	CHI W.S.	E.G. Elev	E.G. Slope	Velichni	Flow Area	Top:Width	Froude # Ch
				(cfs)	<b>(H</b> )	(₩)	(#)	(₩)	(uau)	(\$/JJ)	(sarft)	₩.	
South Creek			190 yr	337.20	561.91		563.49	584.12	0.021098	4.87	89.04	75.84	P9 0
South Creek	3,0	2,30	25 yr	245.40	561.91					SC X		a0.10	
										00.4		07.00	0.63
South Creek	3.0	2,72	100 yr	337.20	554.76	557.72	557 72	558 56	0.053866	7.33	en ay	0	
South Creek	3.0	2.72	25 yr	245.40	554.76	`			0.057553	200		21.00	00.
								Annas	200		30.48	74.90	1.01
South Greek	3,0	2.65	100 VF	337.20	554.11	556.59	555.44	557 70	970010	2.03	100 57	22.00	
South Creek			SE OF	245 40	FC 4 4.4	00.000		2	0.01021	20:0	105201	07.70	0.46
1000	100		£ 62.4	04:047	334,1	02000		556.38	0.011561	3.54	77.74	60.08	0.47
Cough Count			100	200	400								
Jon Clark		6.40	7700	337.20	550.38	0.00	1.00	554.17	0.022866	5.50	62.16	32.46	0.67
South Creek	3.0		25 VI	245.40	550.38	553,42		553.76	0.019565	4.63	53.31	30.86	0,80
outh Greek			1000r	337.20	549.54	62.73	7	552.13	0.024247	507	85.17	78 48	cac
South Creek	3.0	2,36	25:yr	245.40	549.54	551.48		551.80	0.027819	4 91	69.63	12 3d	27.0
											3	3	5
SouthCreek	3.0	2.29	100-vr	337.20	547 2A	CE 133	KAO RE	EK1 AU	SAGGOOD	co c	70 000	10.70	
Califie Chast			100	77.4	24 44	201.00	5 5	04.100	0,002040	Z,03	178.34	91.07	0.27
IDIII ÇI GGR	8		£3.yr	245.46	547.28	550,43	549.62	550.55	0.005165	3.24	168,27	69.95	0.34
The second							\						
South Creek	0.00	223		Culvert									
South Greek	3.0		TOON	337.20	544.58	Co 929		547.21	0.015195	4.55	88.86	59.80	0.56
South Creek		2.11	25.yr	245.40	544.58	546.61		546.84	0.015274	4.08	64:02	55.72	0.54
										*******	-		
South Creak			100 yr	337.20	542.05	544.91		545.20	0.013285	4.67	92.31	62.12	0.53
uth Greek	3:0	f 97	25 vr	245.40	542.05	544.54		544.79	0.013833	4.26	70.69	54.42	0,53
South Creek			100 yr	337.20	541.35	543.84	T	544.04	0.008963	3.69	97.66	52.87	0.43
SouthCreek	3.0	1,87	25.yr	245.40	541.35	543,54	\	543.69	0.007836	3.13	82.32	50.23	0.40
İ							V						
	3,0		100 yr	337.20	539.78	26 485		542.13	0.009260	3,45	126.21	106.48	0.43
South Greek		1666	25.yr	245.40	539.78	541.63		541.78	0.010783	3.27	91.87	90.12	0.45
							7						
South Creek	13:0		100 yr	337.20	532.89	535.40	535.00	535.88	0.026395	6.46	78.22	60.92	0.75
		1,21	25 yr	245.40	532.89	535,13		535.46	0.021136	5.32	61.79	45.30	n Ag
			106 yr	337.20	531 07	534.07		534.21	0.006541	3.17	127.35	83.73	0.37
South Creek	3.0	1,08	25 yr	245.40	531.07	533.63		533.76	0.007917	3.01	92.81	74.80	0.39
South Creek	3.0	077	100 yr	337.20	527.80	532.35	530.73	532.54	0.004760	3.76	128.92	85.78	6.33
			A STATE OF THE PARTY OF THE PAR	1771					į				-

100 yr   25 yr   245.40   528.45   528.45   529.87   529.87   529.87   529.87   529.87   529.87   529.87   529.87   529.87   529.87   529.87   529.83   0.051032   525.yr   245.40   523.75   528.28   524.84   525.53   0.000734   525.yr   716.60   528.00   529.27   548.55   559.43   0.004585   525.yr   716.60   539.61   544.00   546.50   548.55   541.66   0.004585   541.66   539.61   542.98   541.66   0.005740   542.98   541.68   5	200	RiverSta	Profile	D Total	Mh.Ch.El	W.S. Elev	CrfW,S	E.G. Elev	E.G. Slope	Vel Grin)	Flow Area	Top-Width	Top Width Froude # Chi
337.20         528.40         529.45         529.87         529.87         0.050730         5.85         75.03         91.66           245.40         528.20         528.27         529.27         529.87         529.83         0.051032         5.26         56.26         85.36         85.93         1.60         307.97         206.65         85.93         91.66         85.93         85.93         1.60         90.0000         91.60         91.66         85.93         91.60         85.93         91.60 <td>1</td> <td></td> <td></td> <td>(cts)</td> <td>(ii)</td> <td>(ii)</td> <td>(4)</td> <td><b>(</b></td> <td>(WW)</td> <td>(NS)</td> <td>(jj bs)</td> <td>(<b>(</b>(</td> <td></td>	1			(cts)	(ii)	(ii)	(4)	<b>(</b>	(WW)	(NS)	(jj bs)	( <b>(</b> (	
25 yr         245 yr         528 28         528 27         529 67 </td <td>659</td> <td></td> <td>100 yr</td> <td>337.20</td> <td>528.00</td> <td>529.45</td> <td></td> <td></td> <td>0.050737</td> <td>TA TA</td> <td></td> <td></td> <td></td>	659		100 yr	337.20	528.00	529.45			0.050737	TA TA			
100 yr         337.20         523.75         526.28         524.84         526.31         0.000734         1.60         307.97         206.65           25 yr         25 yr         245.40         523.75         552.00         553.48         553.4         554.36         0.002667         6.74         162.79         156.36           25 yr         716.9y         975.70         552.00         553.48         553.4         554.00         0.051292         6.74         152.74         156.89           25 yr         716.9y         975.70         546.00         550.00         550.40         550.40         0.051292         6.74         152.74         156.89           25 yr         716.0y         975.70         546.00         560.43         0.005486         4.21         362.37         152.74           25 yr         716.60         544.00         546.50         546.55         560.43         0.01612         4.91         365.72         184.21           25 yr         716.60         538.61         546.50         546.50         546.30         0.016899         4.31         305.72         184.21           25 yr         716.60         538.61         546.50         546.30         0.016899         4.4	8		25.yr	245.40	528.00	529.27			0.051032	5.28			
100 yr         337.20         523.75         556.58         524.84         525.58         0.000734         1.60         307.97         206.65           100 yr         26 yr         245.40         553.75         553.58         553.76         553.58         553.76         553.67         553.67         553.67         553.67         553.67         553.67         553.67         553.67         553.67         553.67         166.79         166.79         166.87													
25/yr         245.4yr         245.4y         523.75         553.6y         553.76         553.6yr         553.76         553.76         553.76         553.76         553.76         553.79         186.97	2		00 yr	337.20	523.75	526.28			0.000734	1.60	307.97	206.65	0.18
100 yr         975.70         562.00         563.7e         554.3e         554.3e         563.7e         554.3e         563.7e         554.3e         653.7e         554.3e         653.7e         554.3e         653.7e         554.3e         653.7e         554.3e         653.7e         554.3e         653.7e         656.3e         656.3e<	Ŏ.		55.yr	245.40	523,75	# 629			0.002006	2.03	162.79	156.35	0.28
100b,yr         975.70         562.00         563.7b         563.7b         564.36         0.035647         6.60         222.13         146.97           25/yr         716.50         563.4b         553.4b         554.00         0.051292         6.7d         162.7d         166.87           100 yr         975.70         548.00         563.4b         550.27         548.55         550.40         0.004585         4.21         362.37         152.7d           100 yr         975.70         548.00         560.27         548.55         550.43         0.004586         4.21         362.37         152.7d           100 yr         975.70         544.00         548.50         547.32         0.011612         4.91         305.72         184.21           25 yr         716.60         544.00         548.50         546.73         0.016698         4.41         317.38         175.20           25 yr         716.60         538.61         543.15         543.39         0.008063         4.41         312.39         175.20           26 yr         716.50         538.00         541.50         541.66         0.007400         4.28         371.14         246.47           26 yr         716.50         536													
25yr         716 60         562.00         563.48         553.48         554.00         0.051292         6.74         152.74         156.88           100 yr         975.70         548.00         560.27         548.65         550.43         0.004585         4.21         362.37         152.74           25.yr         718.60         544.00         560.27         548.55         550.43         0.011612         4.91         305.72         184.21           25.yr         718.60         544.00         548.50         546.73         0.011612         4.91         305.72         184.21           100 yr         975.70         548.50         546.79         0.016699         4.41         317.39         175.20           25.yr         716.60         553.61         543.15         543.39         0.006063         4.41         312.39         175.20           26.yr         716.50         538.00         541.50         541.66         0.007400         4.28         371.14         246.47           26.yr         716.50         540.58         541.03         0.007400         4.28         371.14         185.74	5 J		J. Go.	975.70	552:00	553.89	553.75	554,36	0.035647	6.60	222.13	185.97	58.0
100 yr         975.70         548.00         550.91         550.91         0.004585         4.21         362.37         152.74           100 yr         975.70         548.00         550.27         548.55         550.43         0.001612         4.91         305.72         182.74           100 yr         975.70         544.00         548.50         546.73         0.011612         4.91         305.72         184.21           100 yr         975.70         548.50         546.79         0.016899         4.98         210.69         157.49           100 yr         975.70         539.61         543.15         543.39         0.008063         4.41         312.39         175.20           25 yr         716.50         539.61         543.15         541.30         0.005575         3.53         282.38         168.22           25 yr         716.50         541.50         541.50         541.66         0.007400         4.28         371.14         246.47           25 yr         716.50         540.58         541.03         0.007400         4.28         371.14         185.74	- 1		λS	716.60	552.00	553.48	553.48	554.00	0.051292	8.74	152.31	156.89	26.0
100 yr         975.70         546.00         \$60.71         550.91         0.004585         4.21         362.37         152.74           25.yr         718.60         548.05         548.55         550.43         0.003880         3.62         298.04         137.73           100.yr         975.70         544.06         4.06         547.32         0.011612         4.81         305.72         184.21           100.yr         975.70         544.06         4.06         546.79         546.79         0.016898         4.81         305.72         184.21           100.yr         975.70         539.61         543.15         543.39         0.008063         4.41         312.39         175.20           26.yr         716.69         538.61         543.15         543.13         0.005575         3.53         282.36         168.22           26.yr         716.50         538.00         541.50         541.66         0.007400         4.28         371.14         246.47           25.yr         716.50         540.58         541.03         0.007400         4.28         371.14         185.74						Á						The state of the s	
25.yr         718.60         548.00         550.22         548.55         550.43         0.002880         3.62         289.04         137.73           100.yr         975.70         544.00         4.00         547.32         0.011612         4.91         305.72         184.21           100.yr         975.70         544.00         546.50         546.73         0.016898         4.91         305.72         184.21           25.yr         716.60         539.61         543.15         543.39         0.008063         4.41         312.39         175.20           25.yr         716.50         539.61         542.98         543.13         0.005575         3.53         282.36         168.22           300.yr         975.70         538.00         541.50         541.66         0.007400         4.28         371.14         246.47           25.yr         716.50         540.58         541.03         0.007400         4.28         371.14         246.47	2.34		00 Xri	975.70	546.00	LACON.		550.91	0.004585	4.21	362.37	152.74	0.35
100 yr         975.70         544.00         42.00         547.32         0.011612         4.91         305.72         184.21           100 yr         975.70         544.00         546.50         546.73         0.016699         4.91         305.72         184.21           100 yr         975.70         539.61         543.15         543.39         0.008063         4.41         312.39         175.20           25 yr         716.60         539.61         542.98         543.13         0.005575         3.53         282.38         168.22           300 yr         975.70         538.00         541.50         541.66         0.007400         4.28         371.14         246.47           25 yr         716.50         540.58         541.03         0.019384         5.70         194.71         185.74	0.00		5.97	716.60	546.00	550.27	548.55	550.43	0.003880	3.62	299,04	137,73	0.32
100 yr         975.70         544.00         47.06         547.22         0.011512         4.91         305.72         184.21           25 yr         718.60         544.00         546.50         546.73         546.73         10.016899         4.98         210.69         157.49           100 yr         975.70         539.61         543.15         543.33         0.008063         4.41         312.39         175.20           26 yr         716.60         539.61         542.98         543.13         0.005575         3.53         282.38         188.22           30 yr         716.50         538.00         541.30         541.66         0.007400         4.28         371.14         246.47           25 yr         716.50         540.56         541.03         0.01384         5.70         194.71         185.74				,			1						
25 yr         718.60         544.00         548.50         546.79         0.015699         4.98         210.69         157.49           100 yr         975.70         539.61         543.15         543.39         0.006063         4.41         312.39         175.20           26 yr         716.50         539.61         542.36         543.13         0.005575         3.53         282.38         168.22           26 yr         776.50         538.00         541.30         541.66         0.007400         4.28         371.14         246.47           26 yr         776.50         538.00         540.56         541.03         0.019384         5.70         194.71         185.74			- AKOO	975.70	544.00	30/243/		547.32	0.011512	4.91	305.72	184.21	0.51
1005yr         975.70         539.61         543.15         543.39         0.008063         4.41         312.39         175.20           26yr         716.50         538.61         \$42.36         543.13         0.005575         3.53         282.38         168.22           100yr         975.70         538.00         541.30         541.66         0.007400         4.28         371.14         246.47           25yr         71b.60         540.56         541.03         0.019384         5.70         194.71         185.74			5 yr	716.60	544.00	546.50		546.79	0.015899	4.98	210.69	157.49	0.58
100 yr         975.70         539.61         543.15         543.39         0.008063         4.41         312.39         175.20           26 yr         716.50         539.61         \$42.98         543.13         0.005575         3.53         282.38         168.22           30 yr         975.70         538.00         541.30         541.66         0.007400         4.28         371.14         246.47           25 yr         71 p.50         540.56         541.03         0.019384         5.70         194.71         185.74													
26 yr         716.60         539.61         \$42.98         543.13         0.005675         3.53         282.38         188.22           100 yr         975.70         538.00         541.50         541.66         0.007400         4.28         371.14         246.47           25 yr         71 p.50         540.56         541.03         0.019384         5.70         194.71         185.74			14.00	975.70	539.61	543.15	***	543,39	0.008063	4.41	312.39	175.20	0.44
EUO.yr         975.70         538.00         541.50         541.66         0.007400         4.28         371.14         246.47           25.yr         716.50         540.58         541.03         6.019384         5.70         194.71         185.74			5,97	716.60	539.61	\$42.98		543.13	0.005575	3.53	282.36	168.22	0.36
(100 yr         975.70         538.00         541.50         541.66         0.007400         4.28         371.14         246.47           25 yr         716.60         538.00         540.68         541.03         0.019384         5.70         194.71         185.74						7	\						
25xt 716.60 538.00 540.68 541.03 0.019384 5.70 194.71 185.74			10. yr.	975.70	538.00	541,50		541.66	0,007400	4.28	371.14	246.47	0.42
		126	ī.yr (	716.60	538.00	540.68		541.03	0.019384	5.70	194.71	185.74	0.65

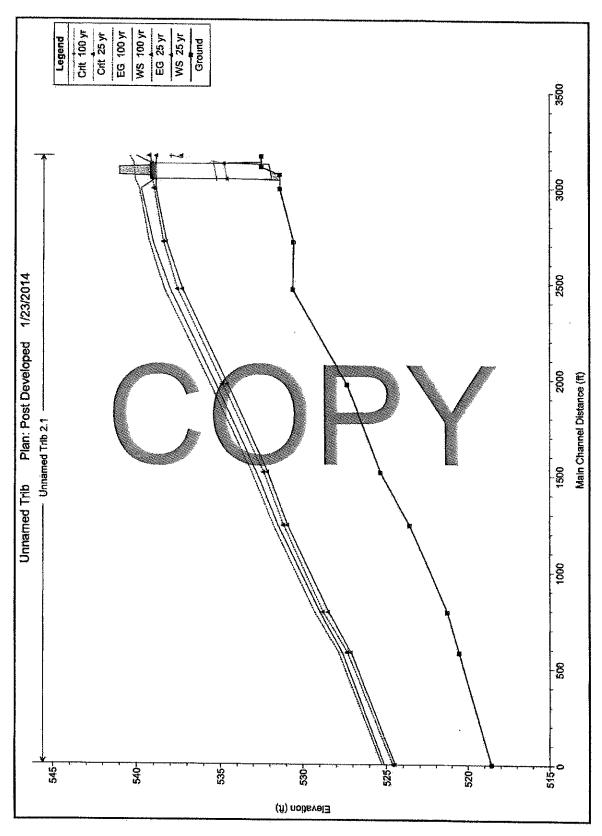


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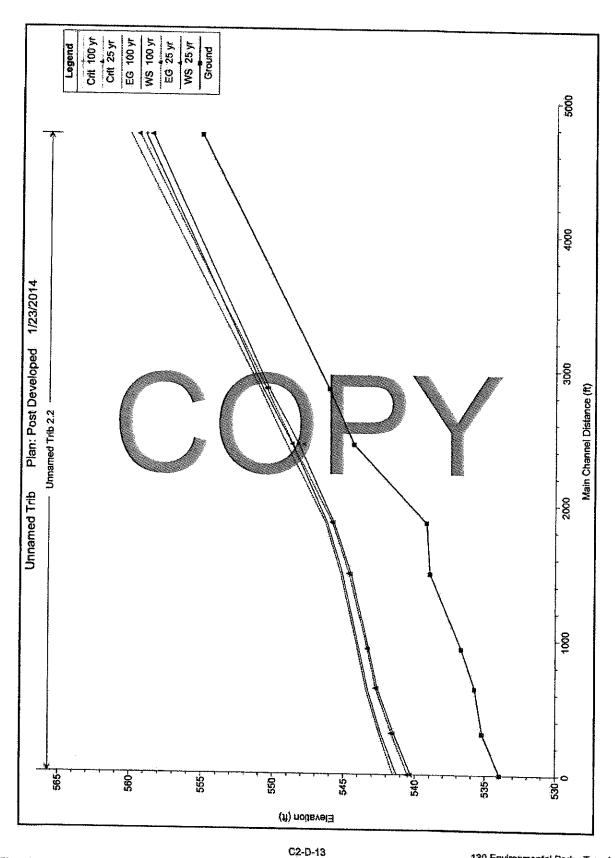
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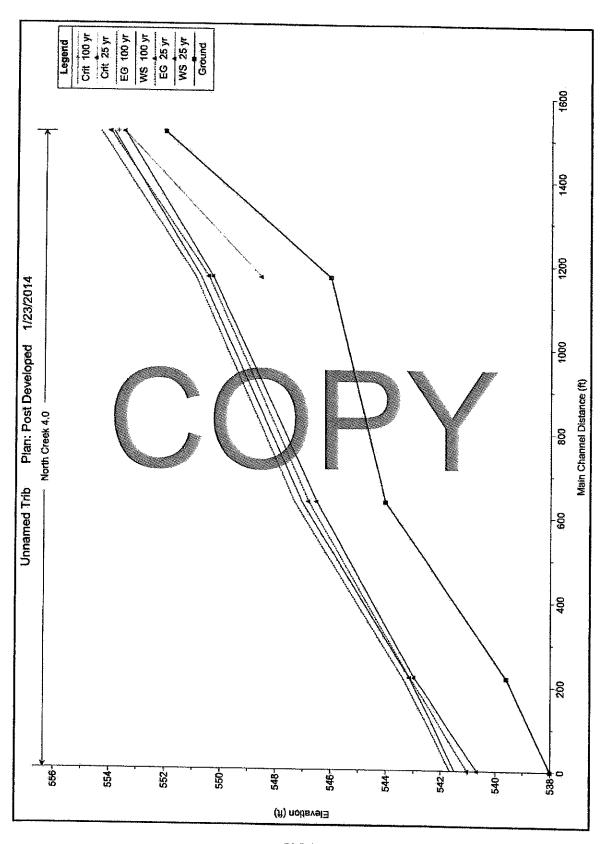


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130 Environmental Park - Type I Rev. 0, 2/12/2014 Part III, Attachment C2, Appendix C2-D 130 Environmental Park Type V Part III, Appendix IIIE

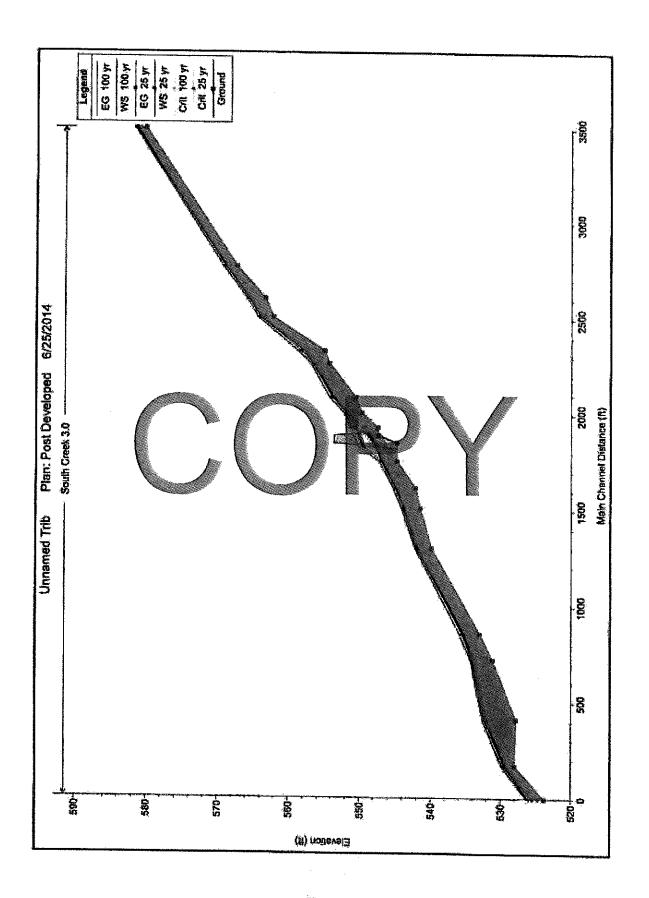


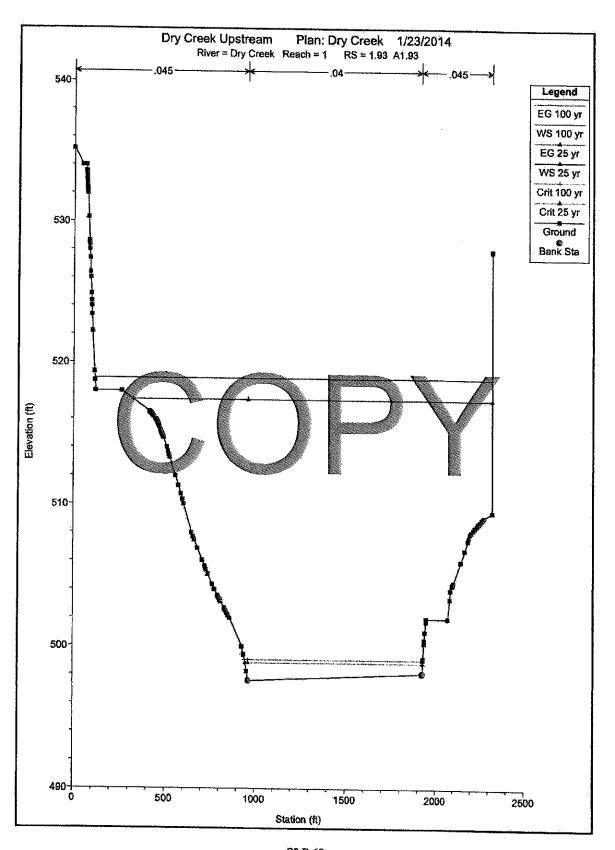
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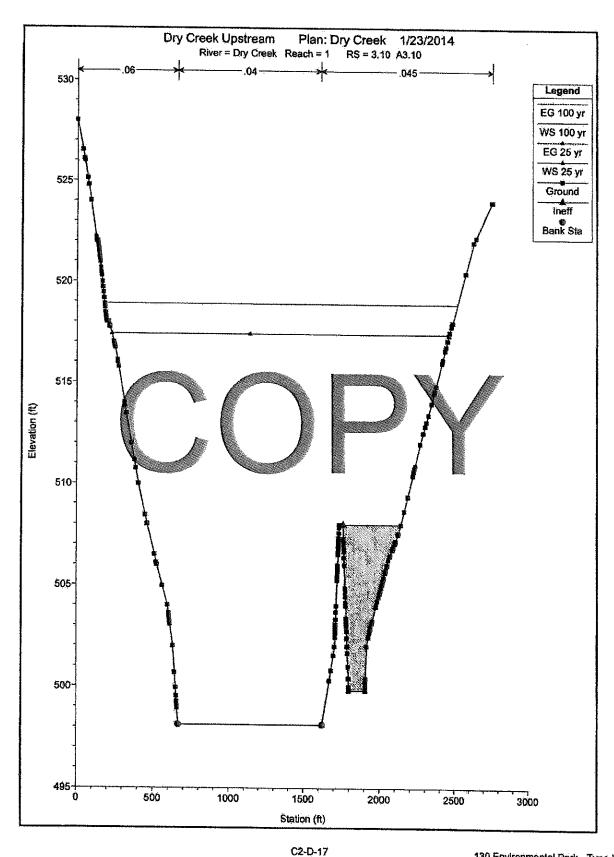
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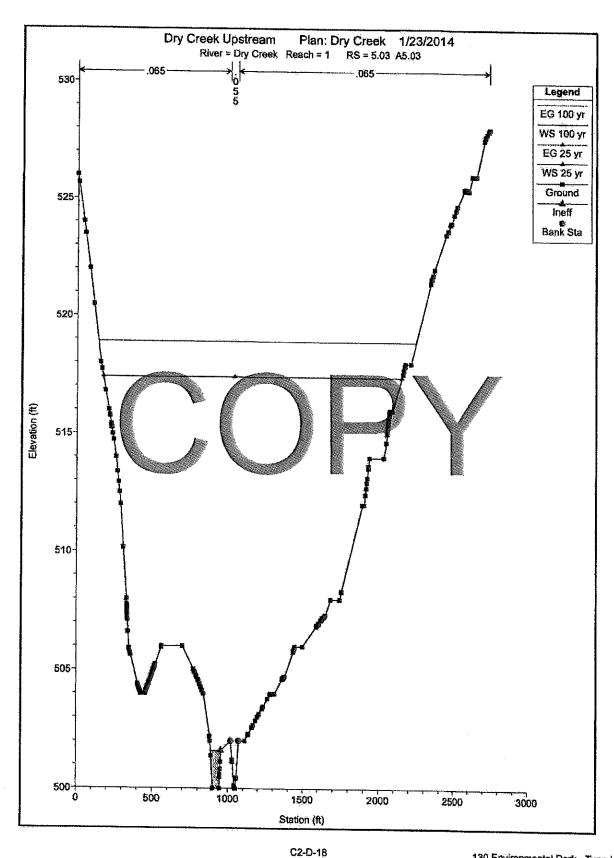




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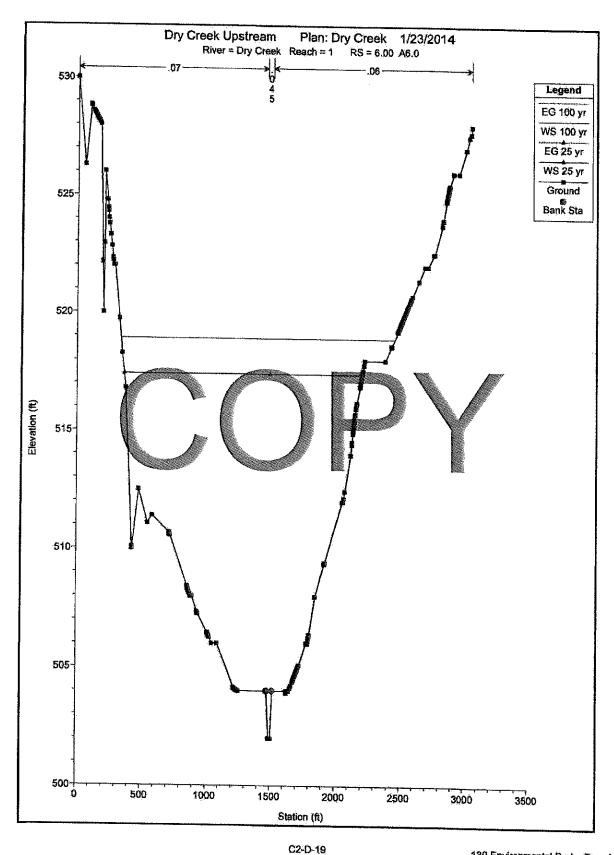


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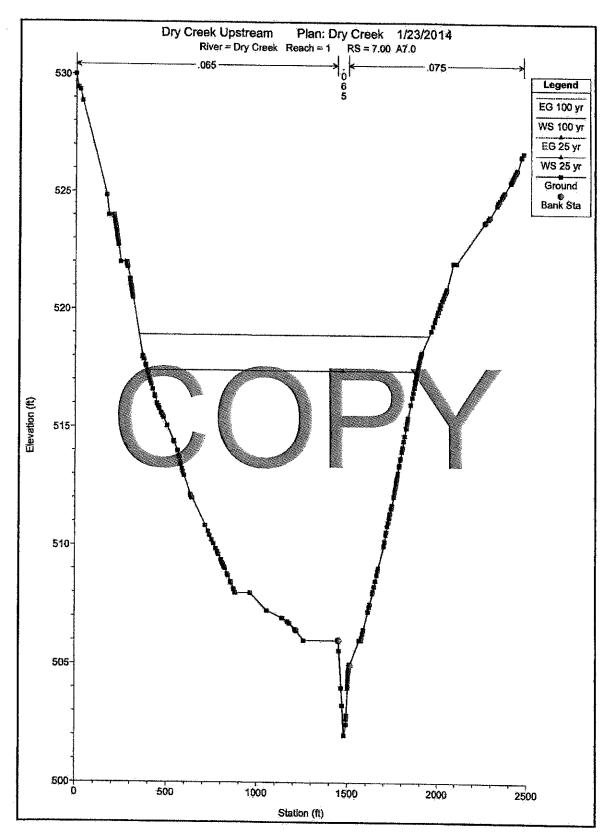
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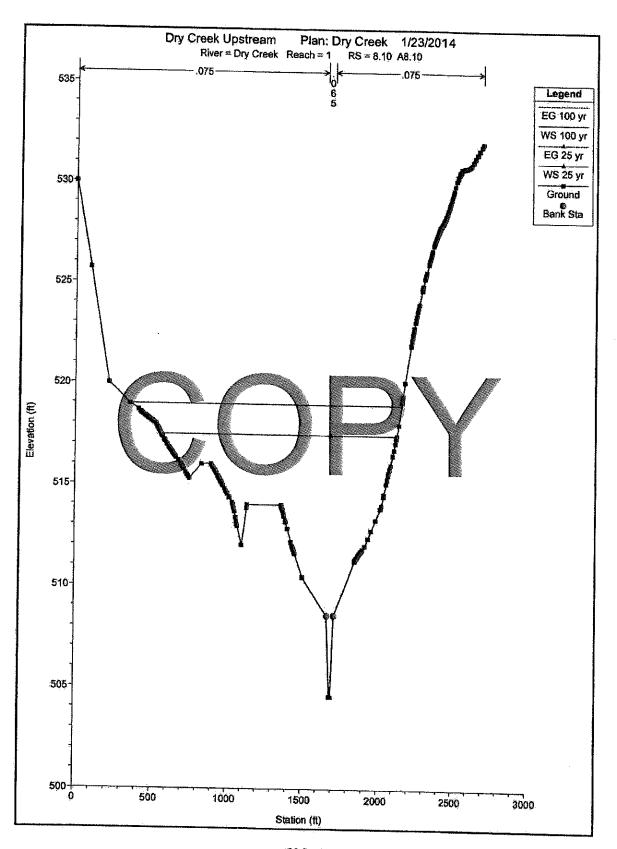


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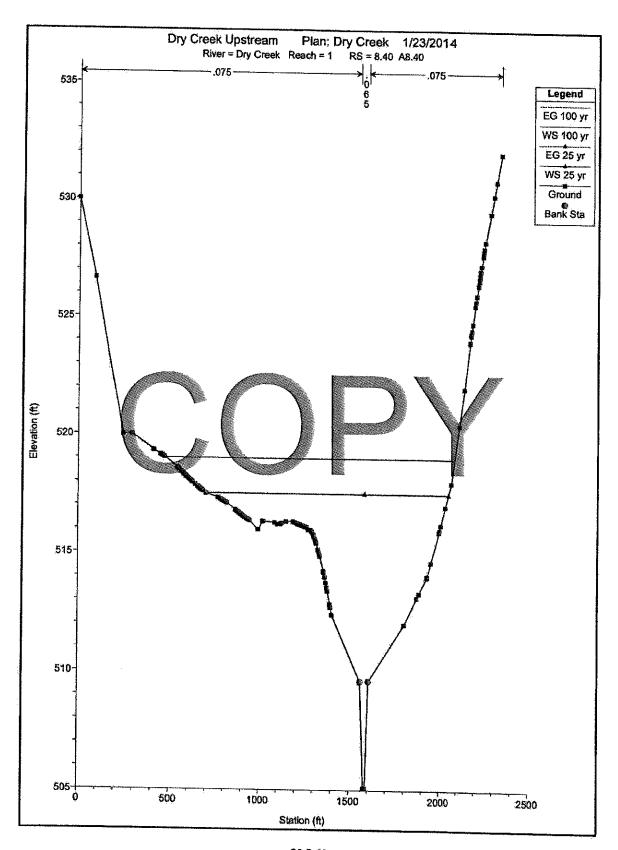
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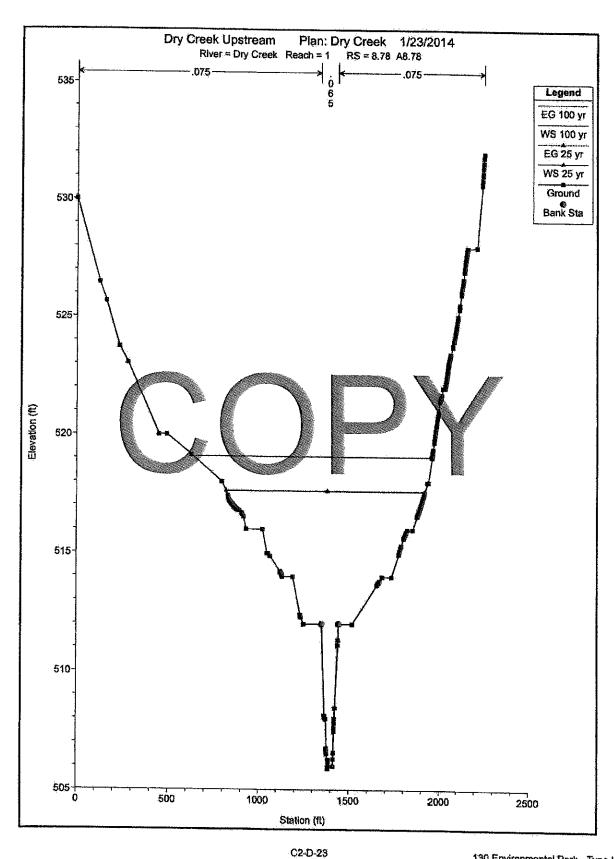
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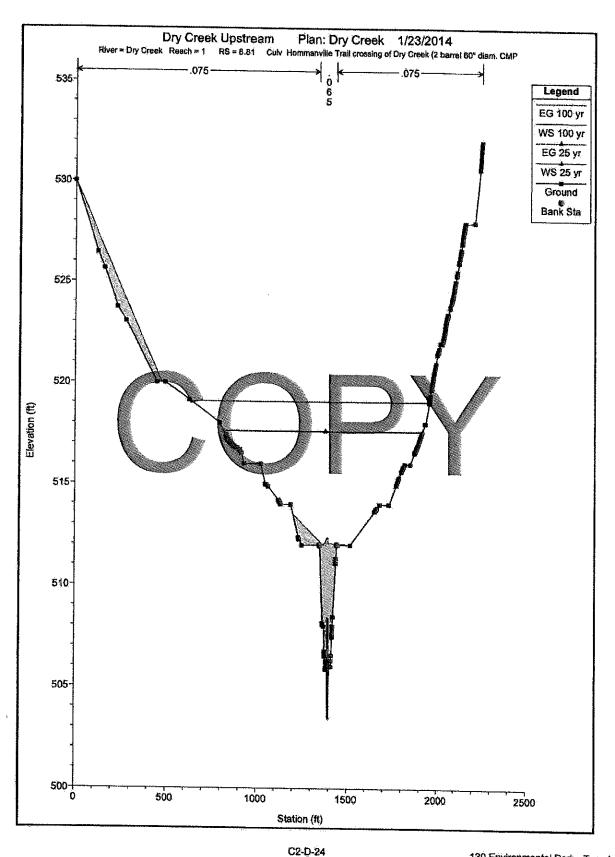


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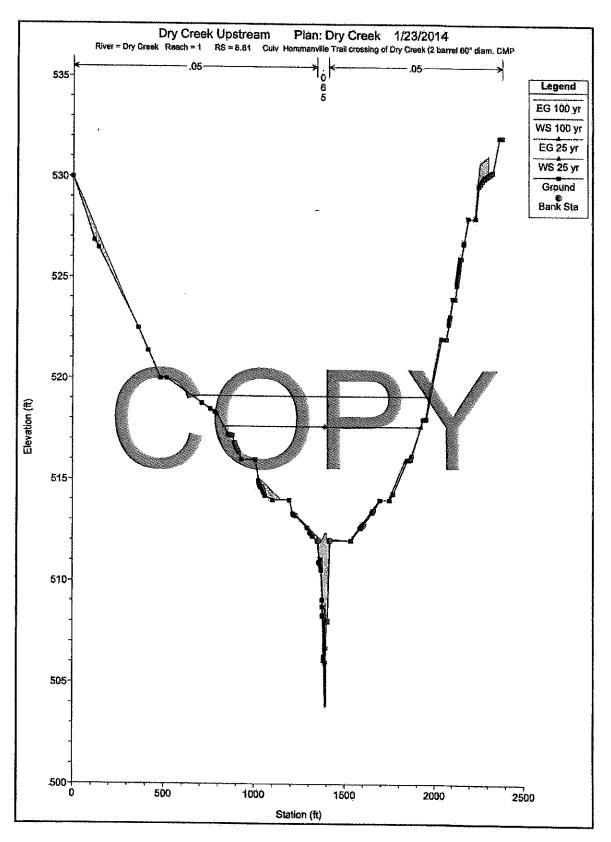
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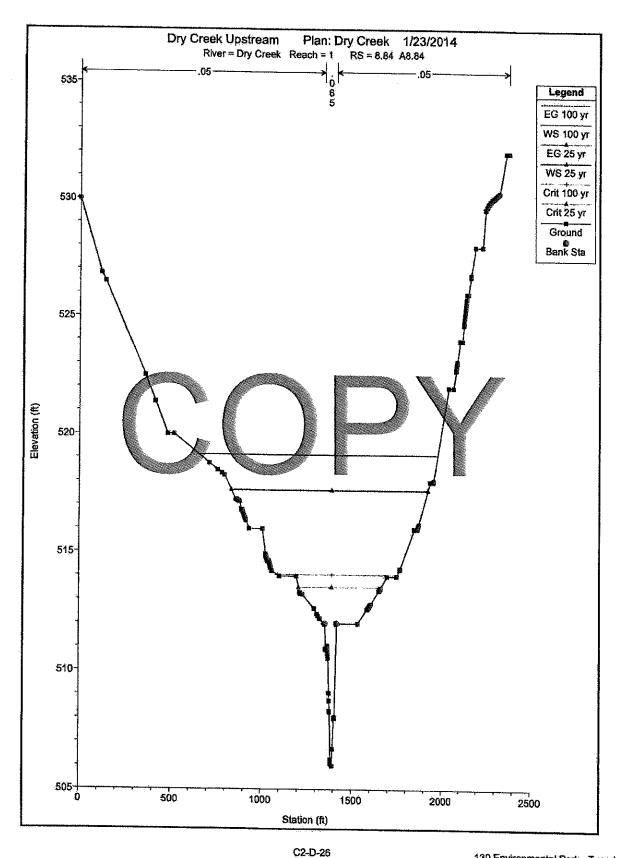


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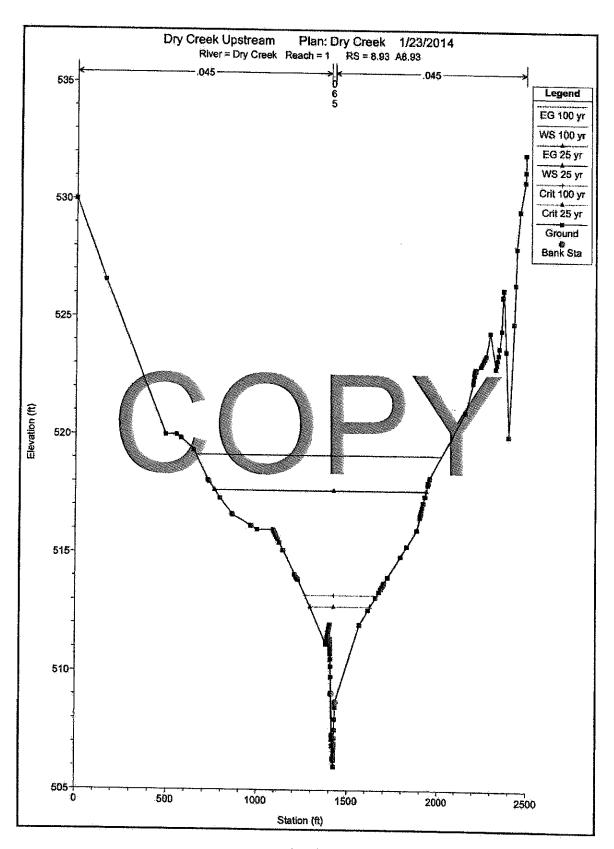
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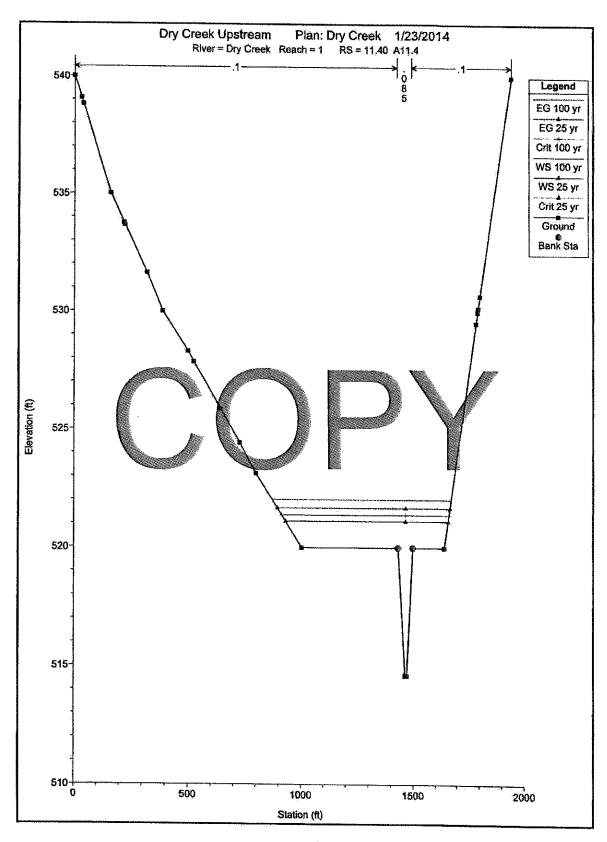
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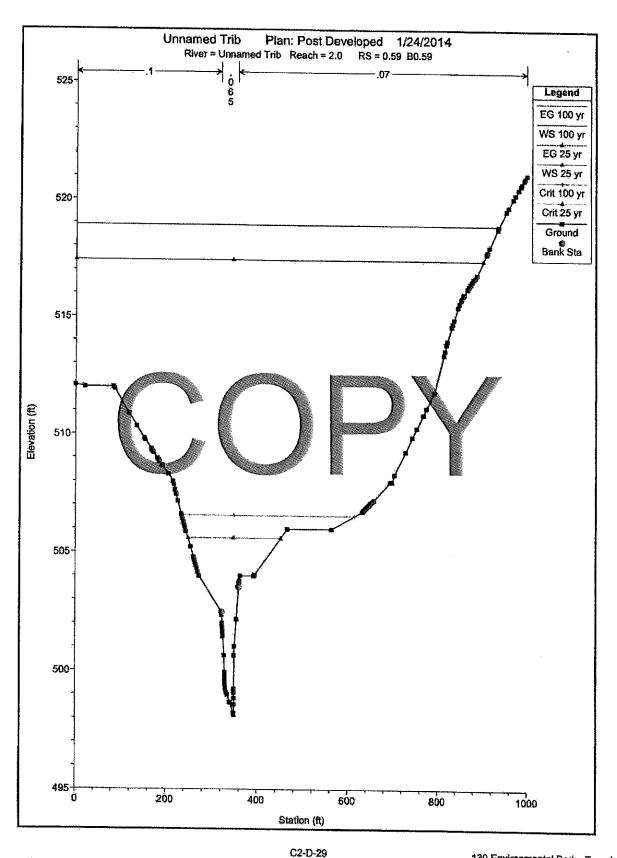
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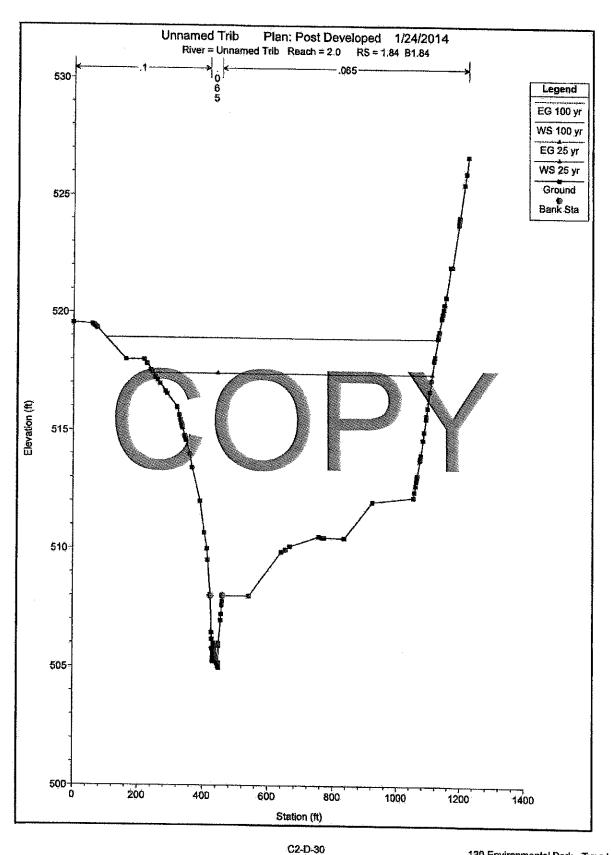
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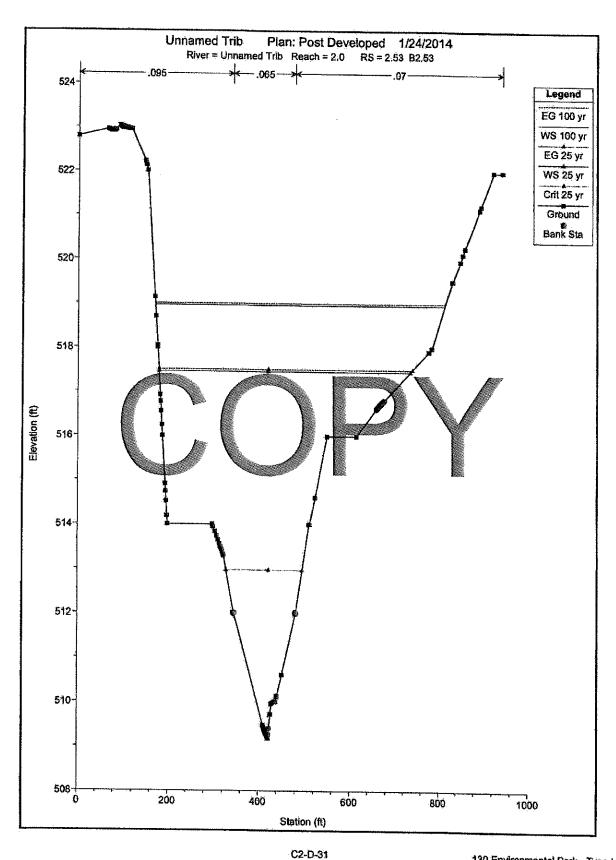


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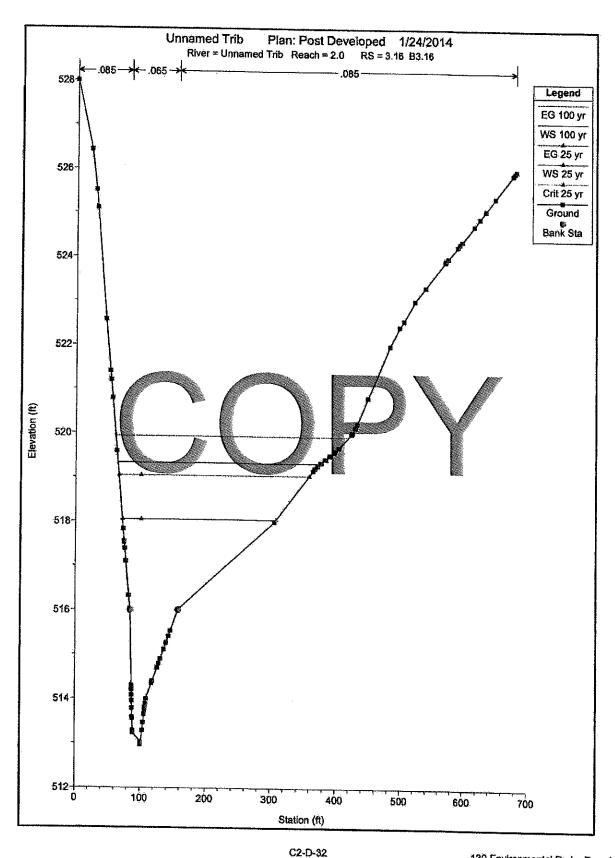


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130 Environmental Park - Type I Rev. 0, 2/12/2014 Part III, Attachment C2, Appendix C2-D 130 Environmental Park Type V Part III, Appendix IIIE

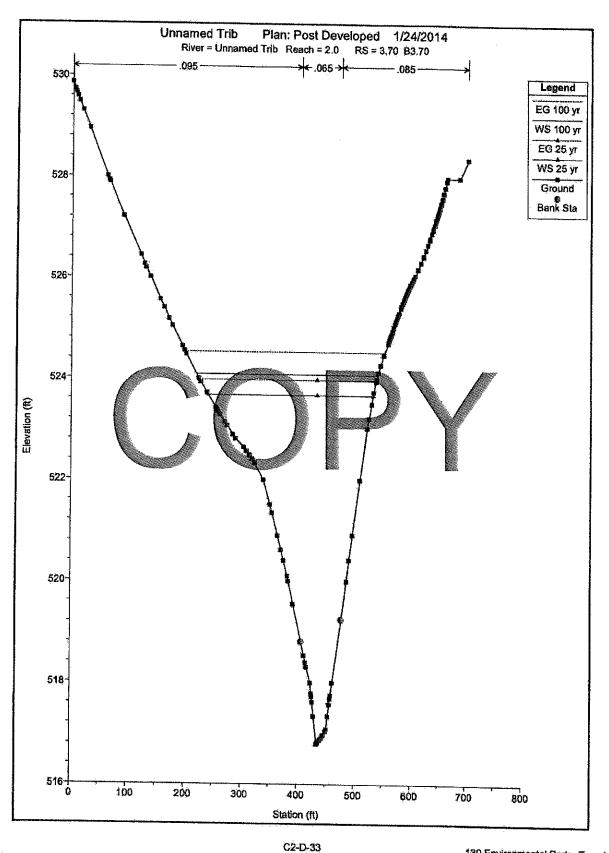


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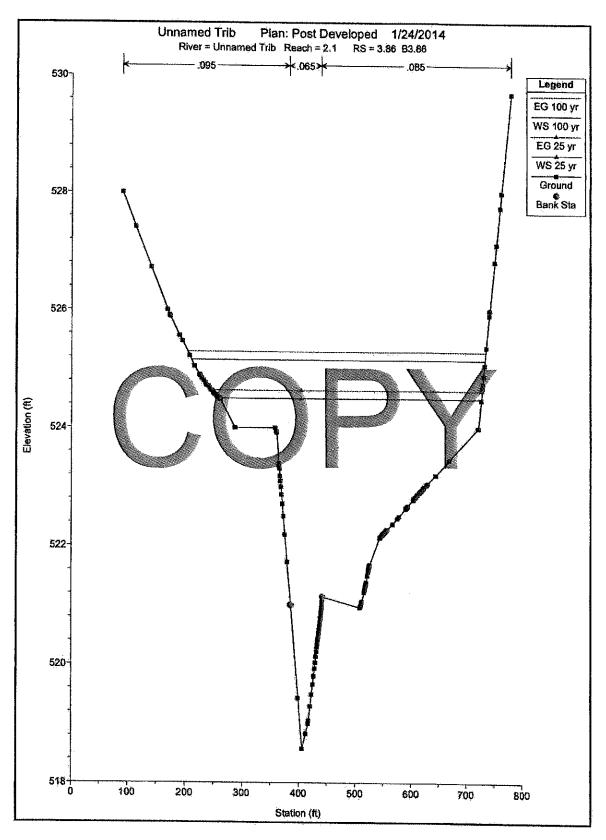
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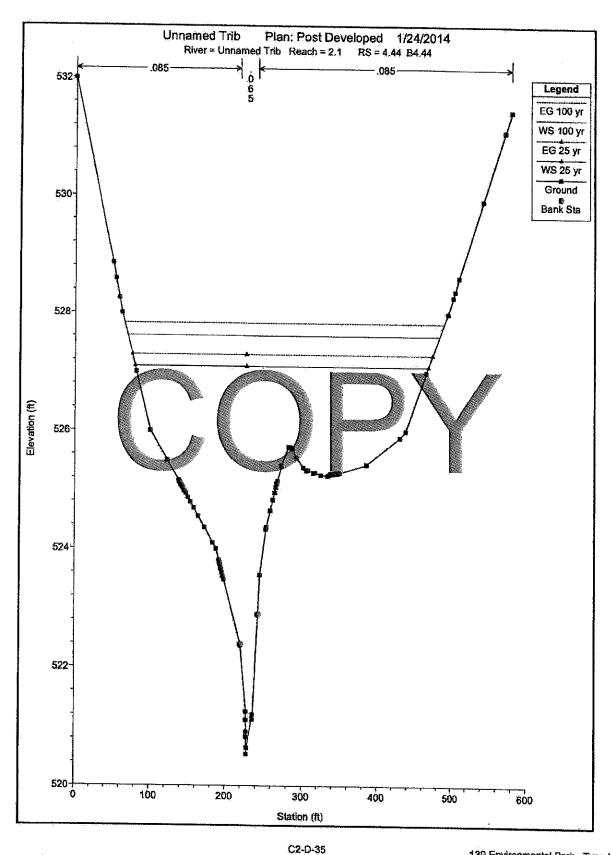


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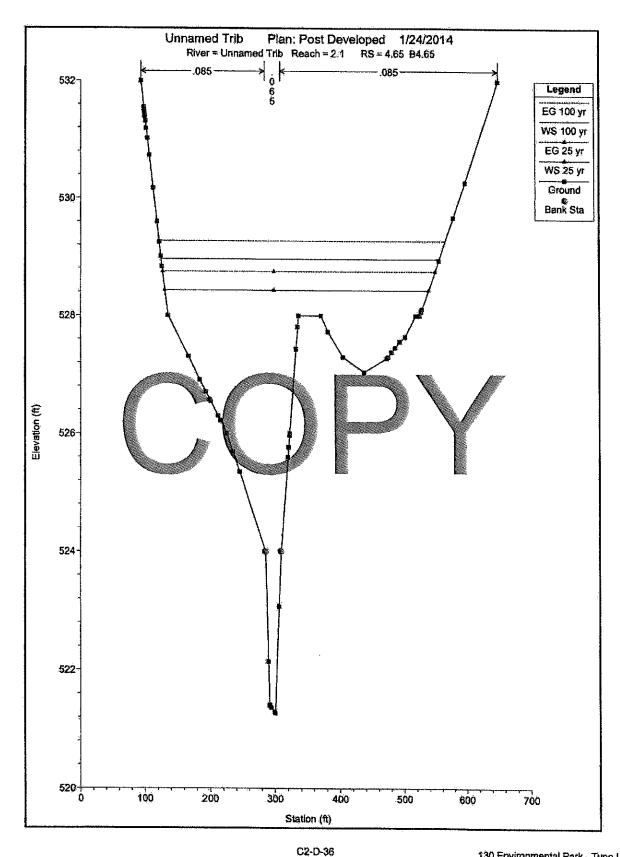


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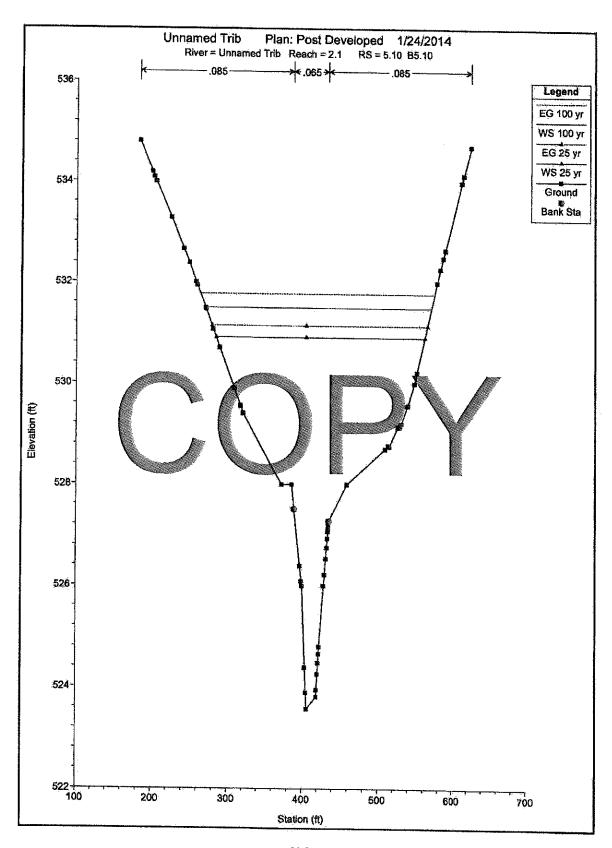


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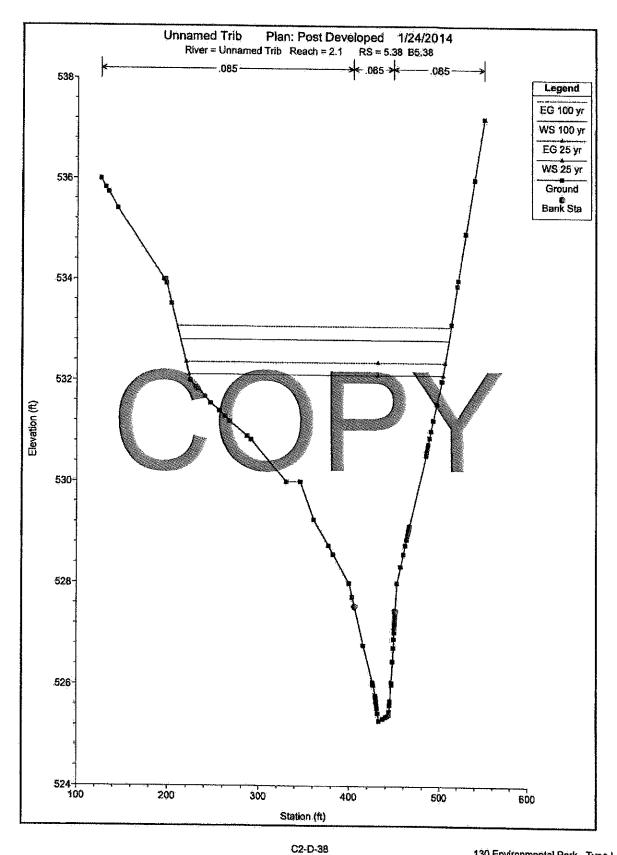
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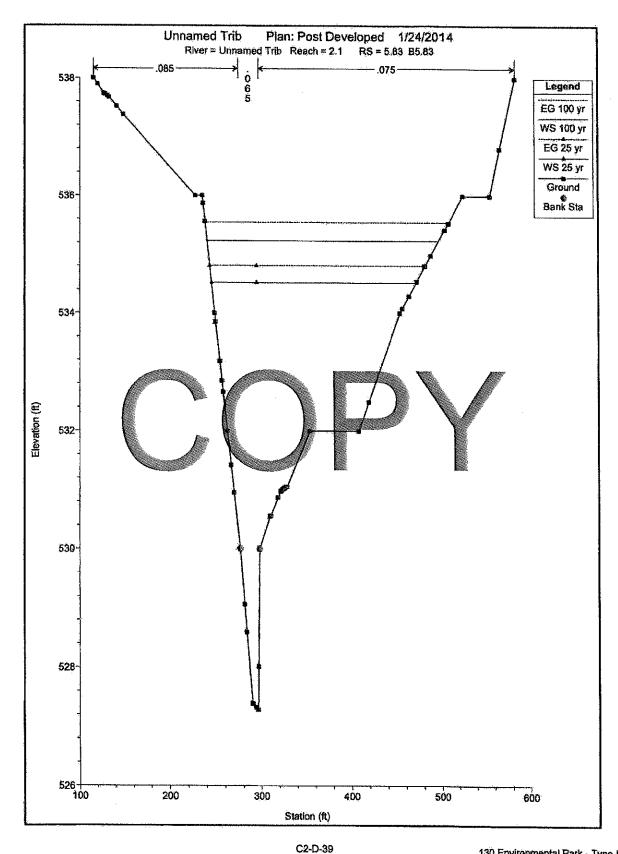
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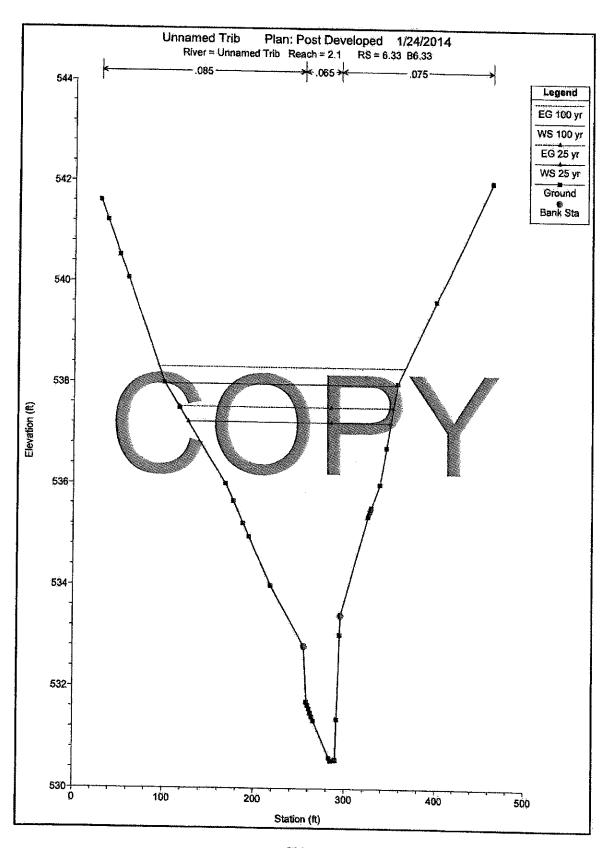
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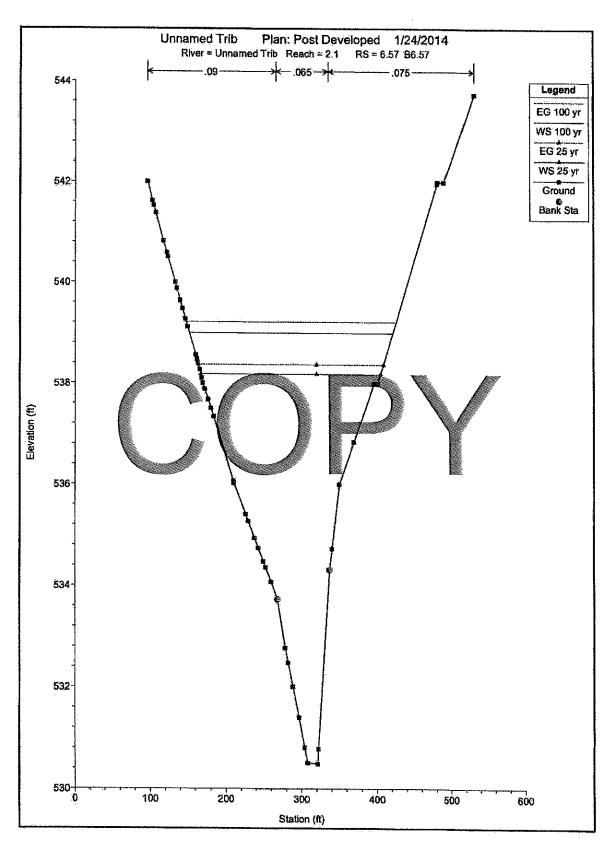


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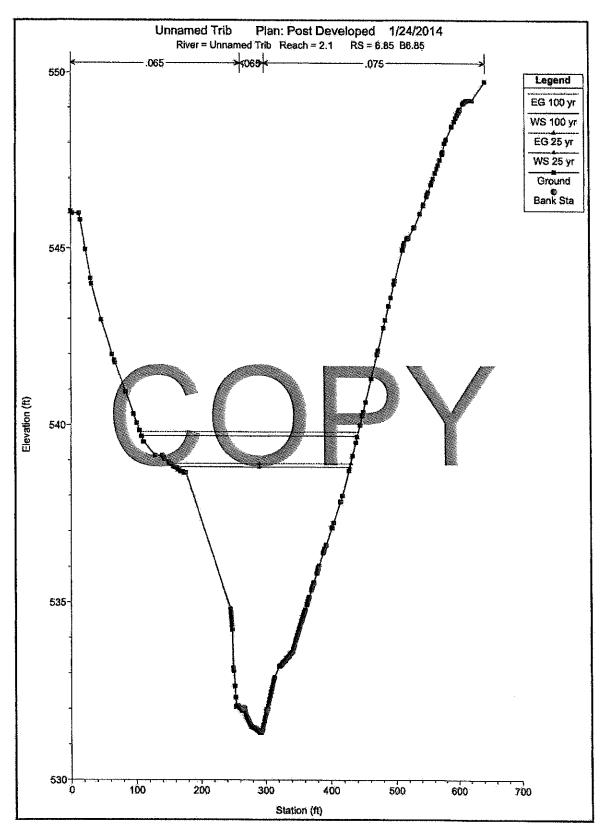


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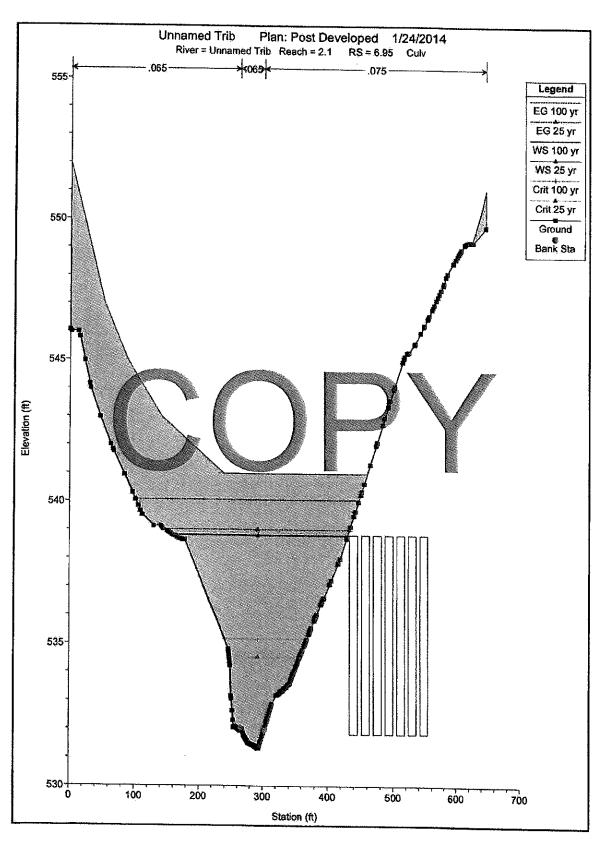
130 Environmental Park - Type 1 Rev. 0, 2/12/2014 Part III, Attachment C2, Appendix C2-D 130 Environmental Park Type V Part III, Appendix IIIE



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IIIE-160

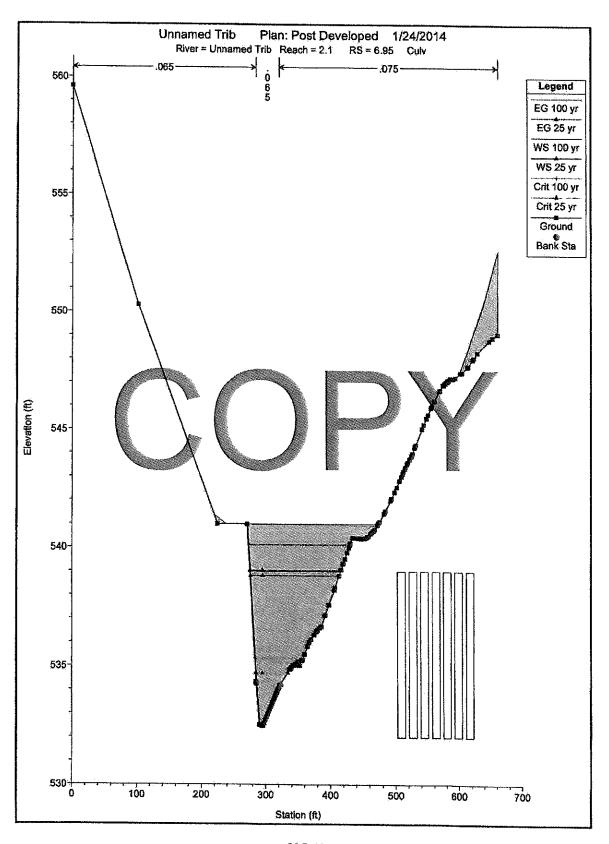


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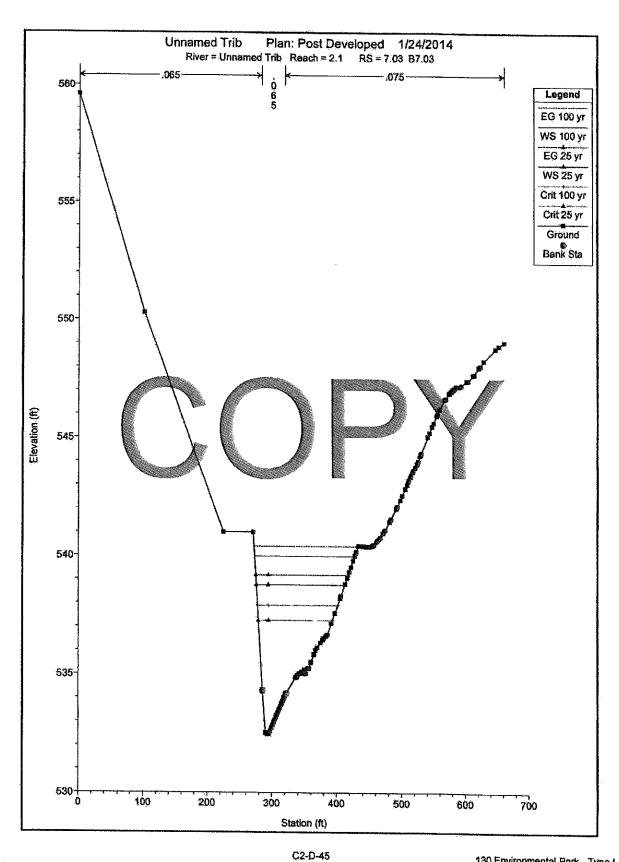


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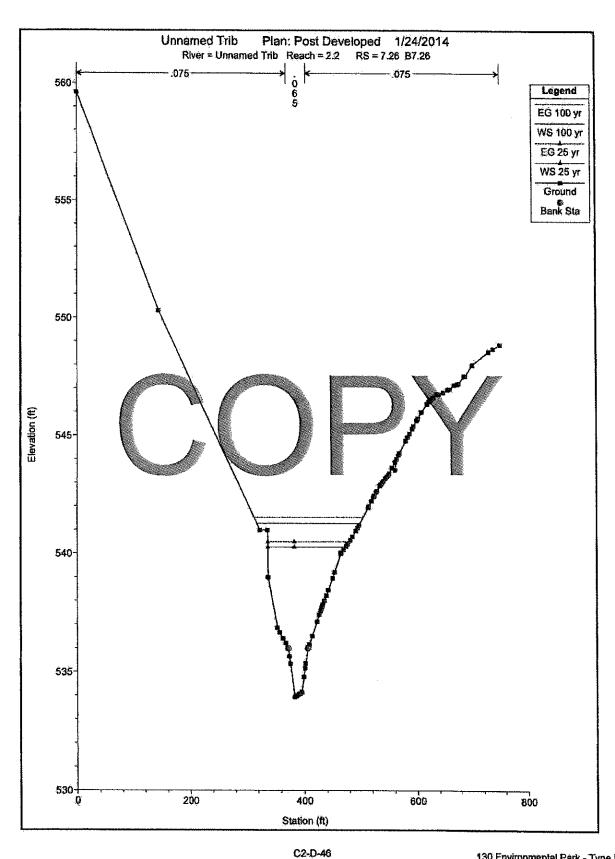
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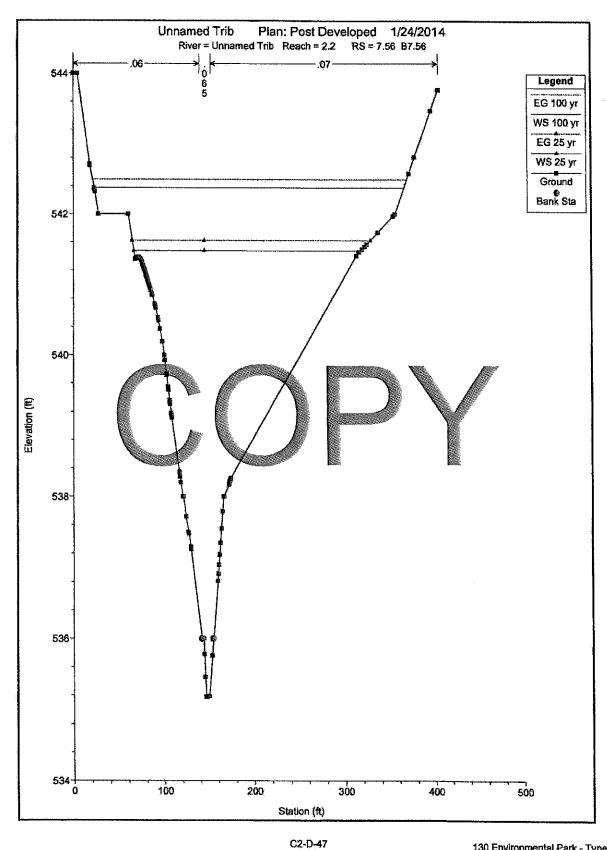
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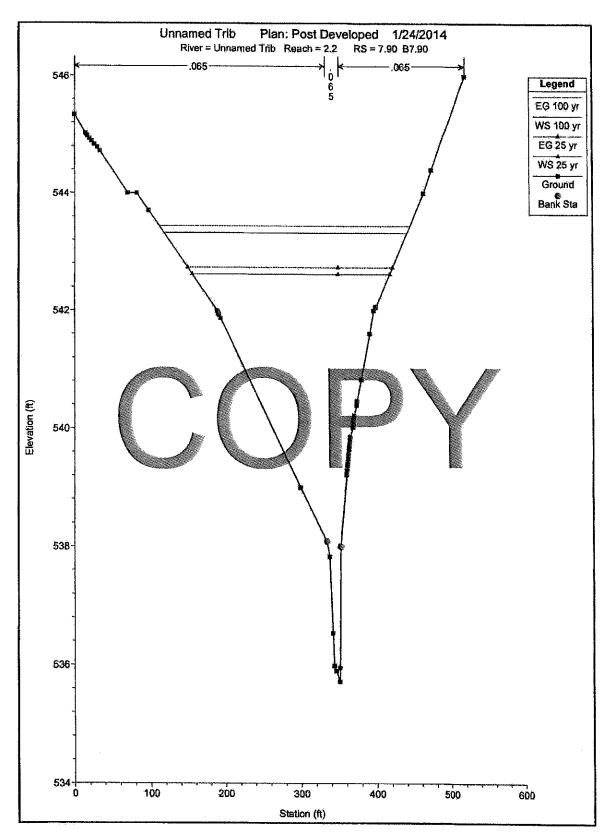
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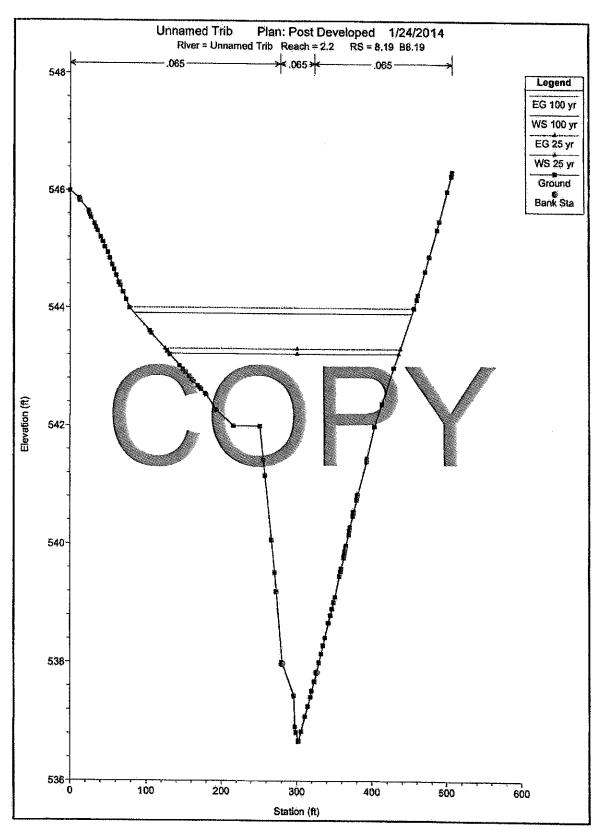
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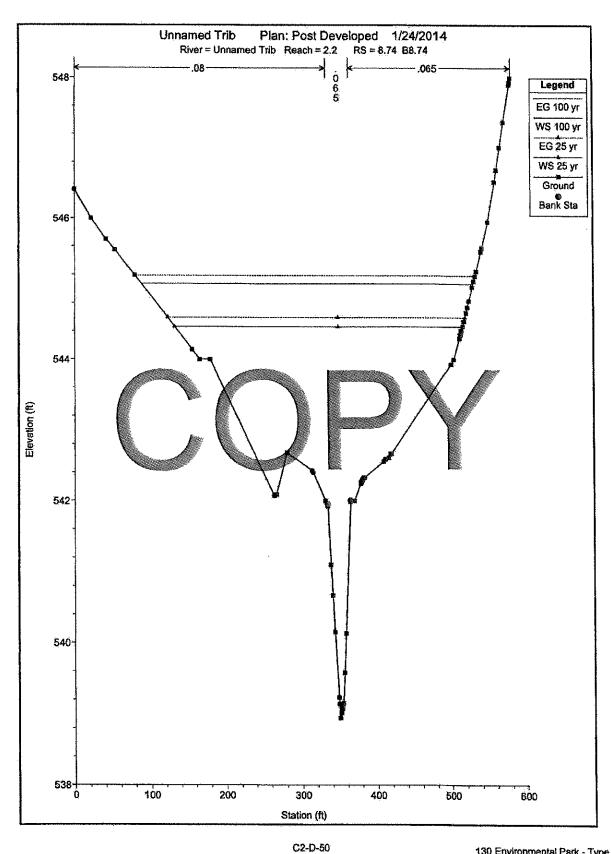
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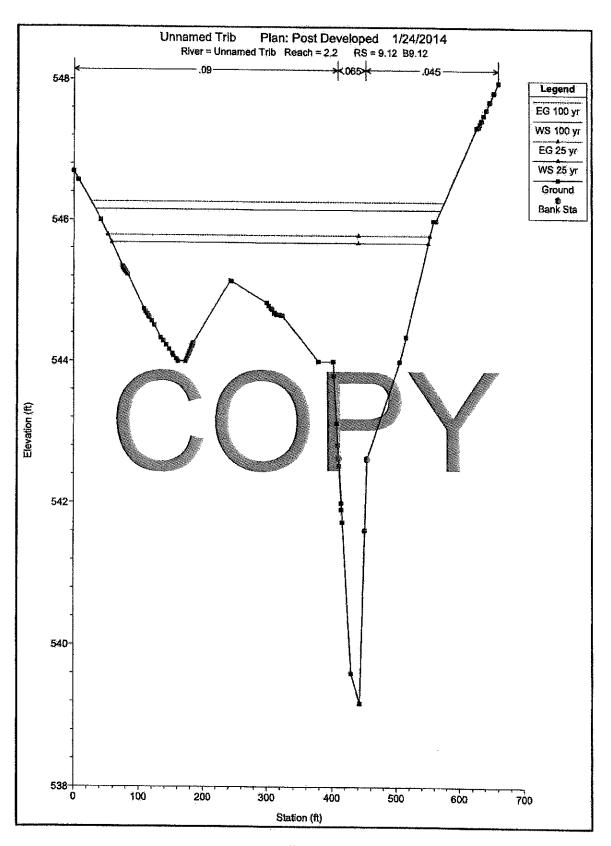
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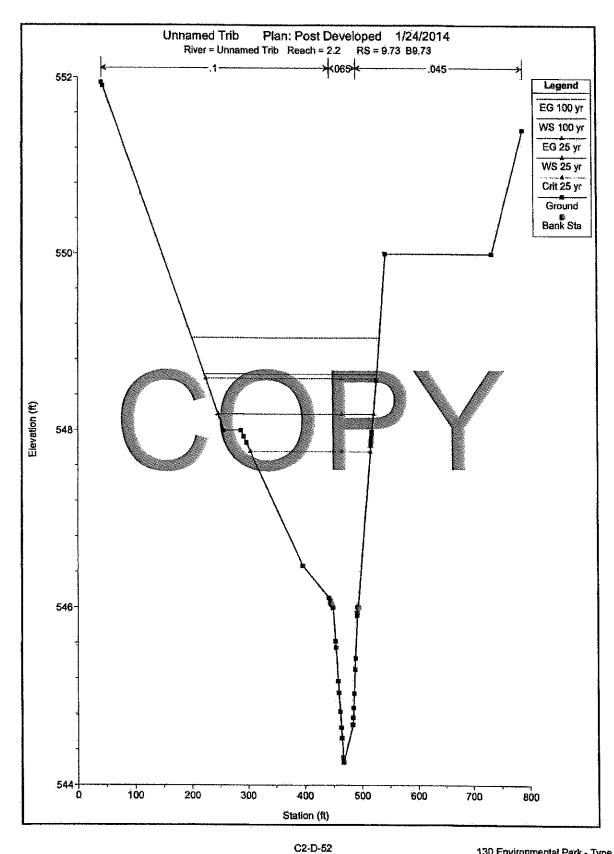
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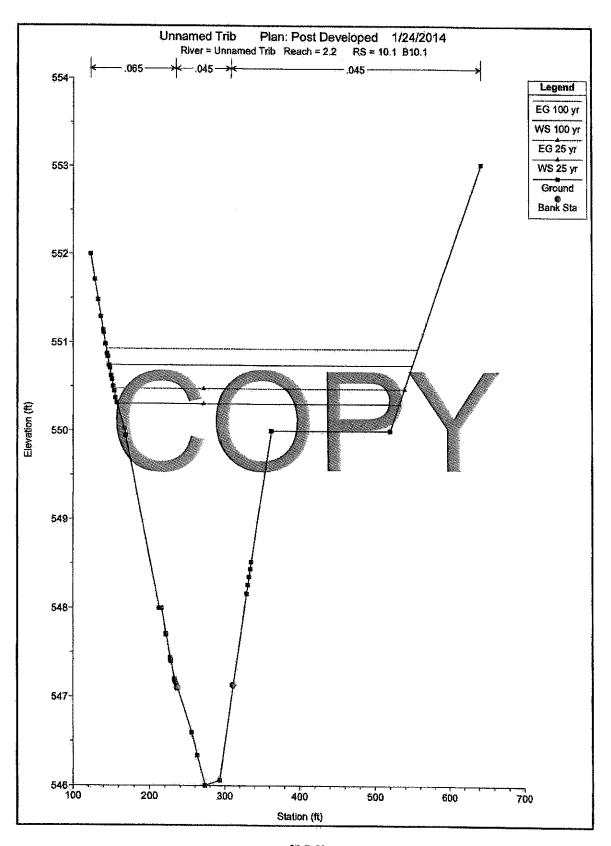
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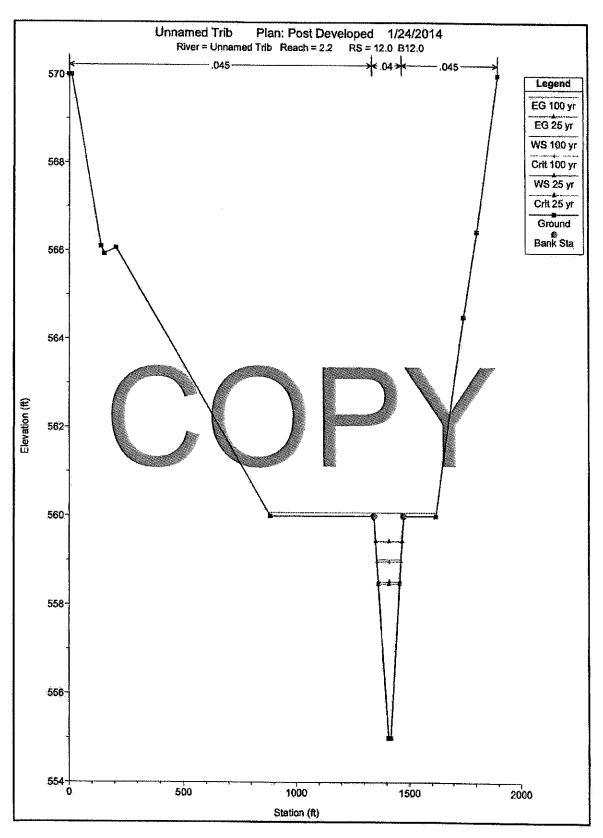
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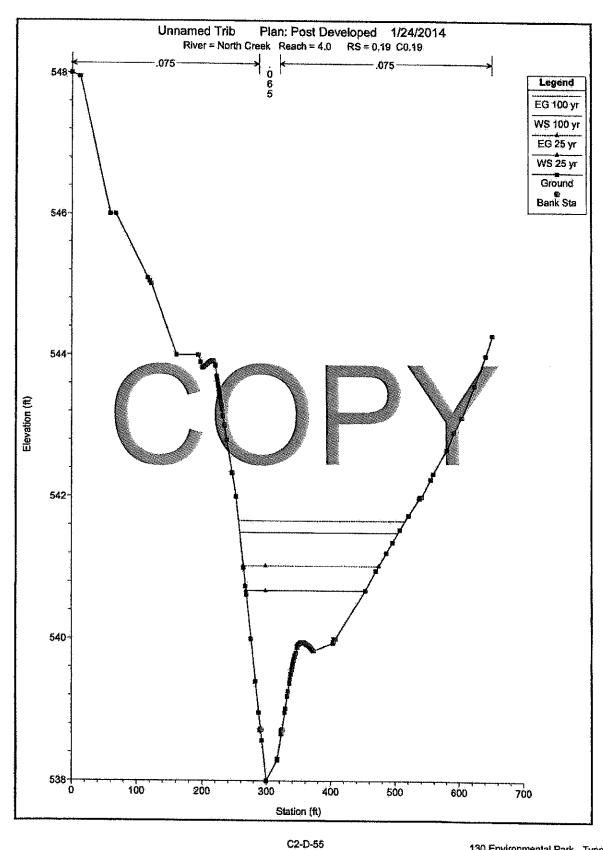
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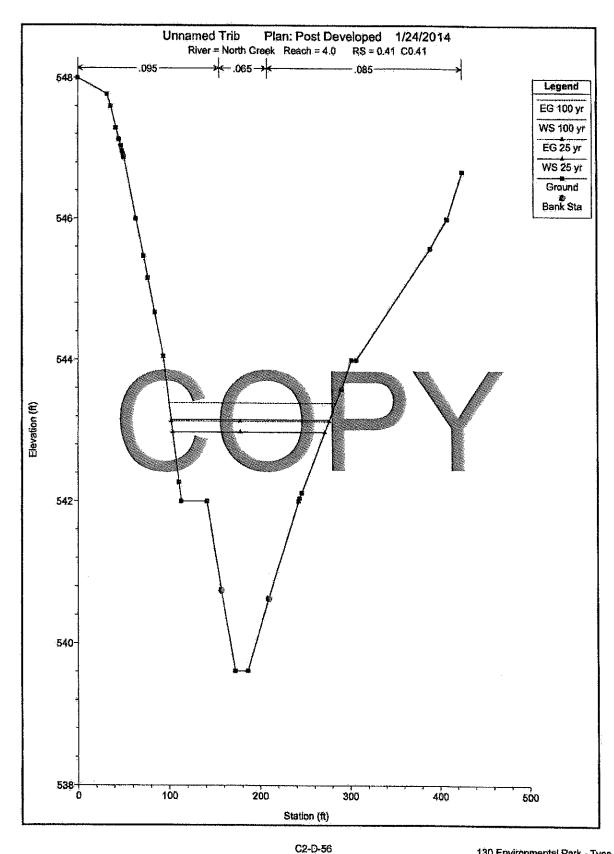
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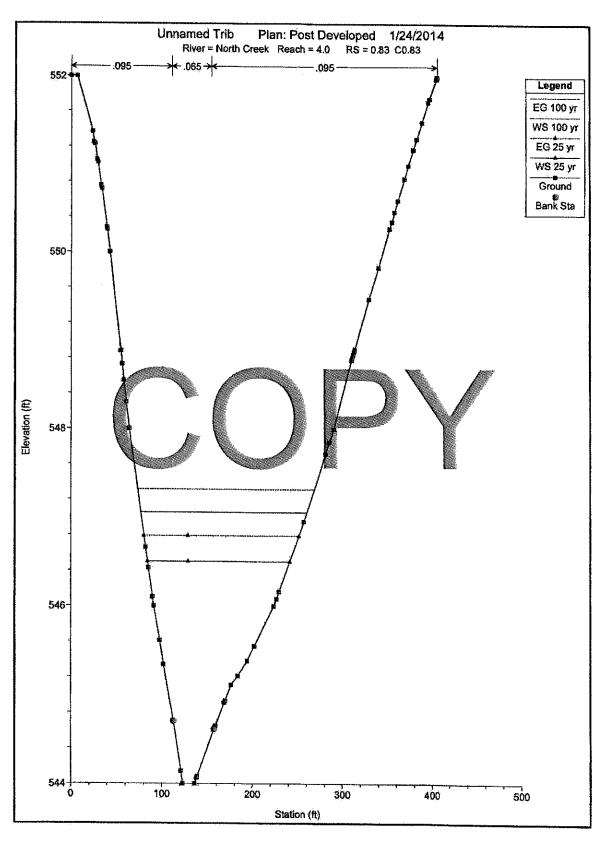
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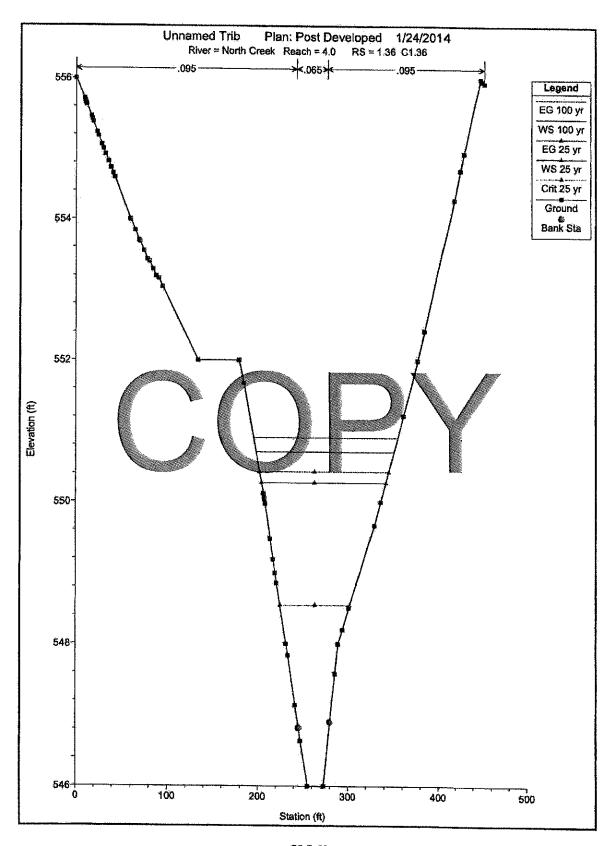
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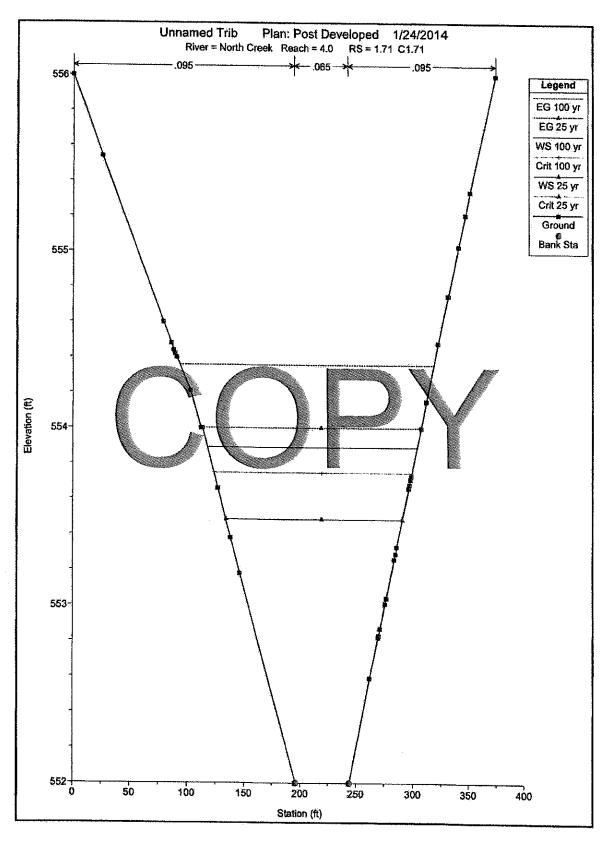


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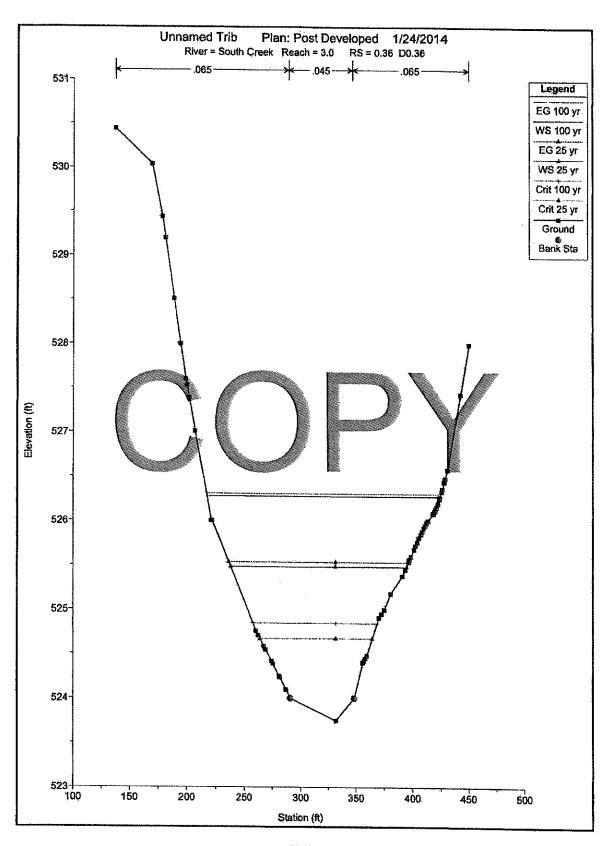
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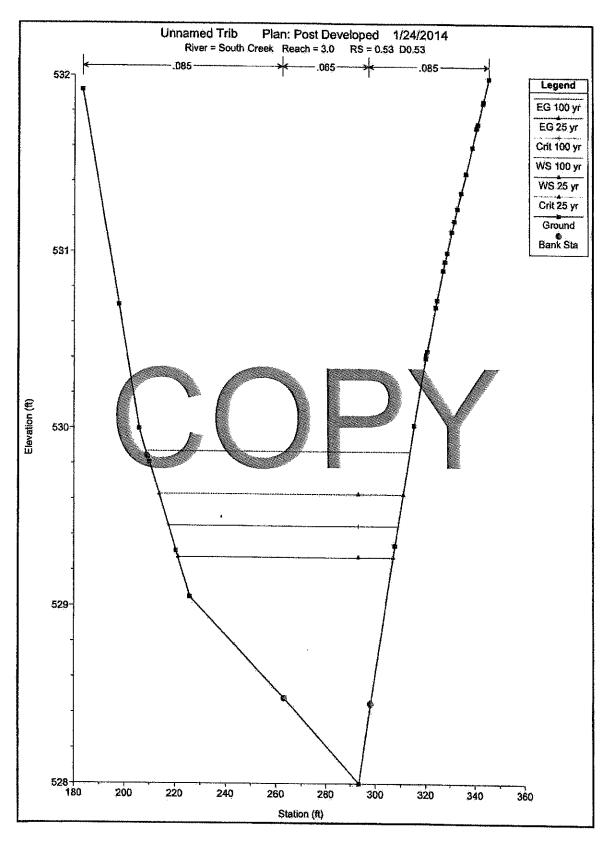


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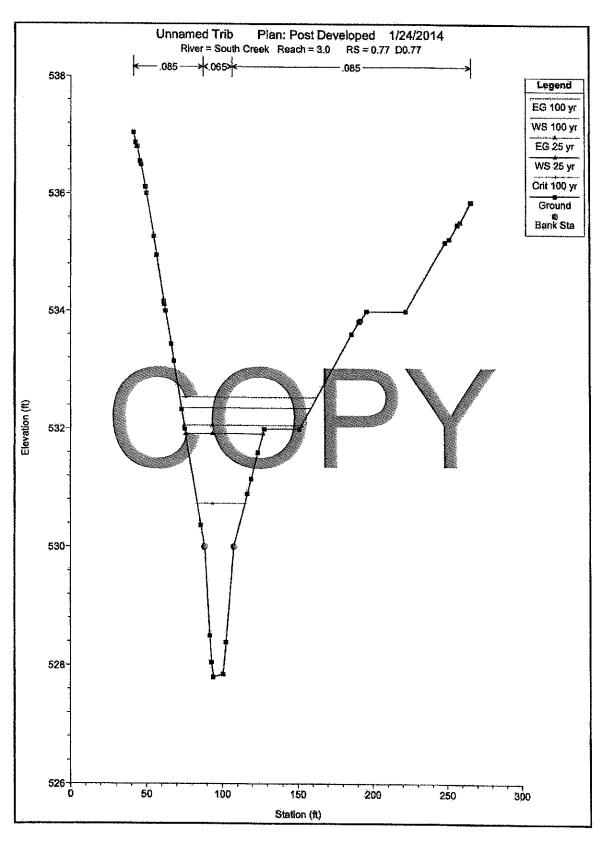
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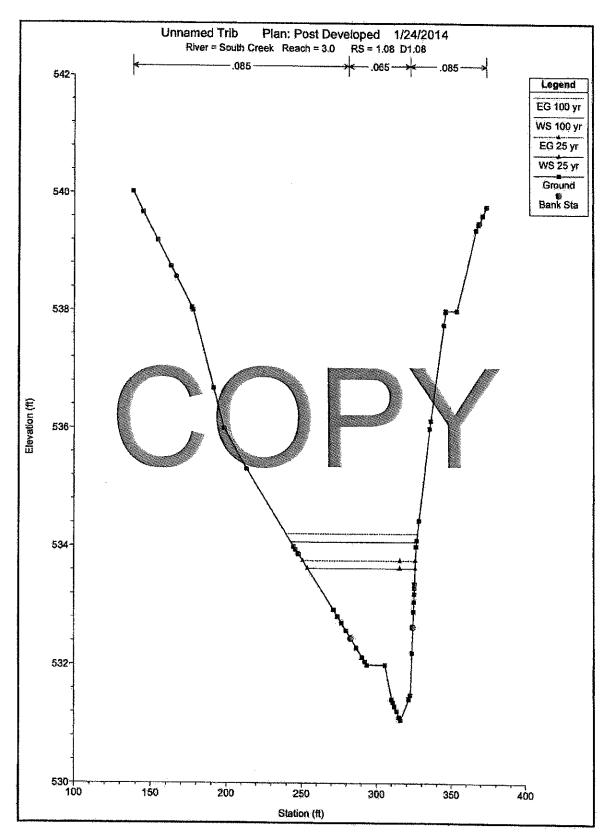


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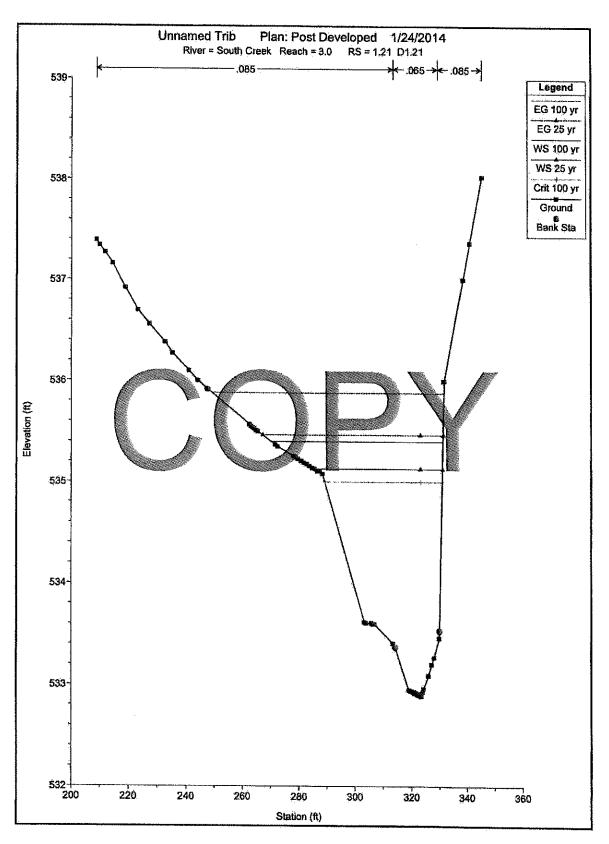


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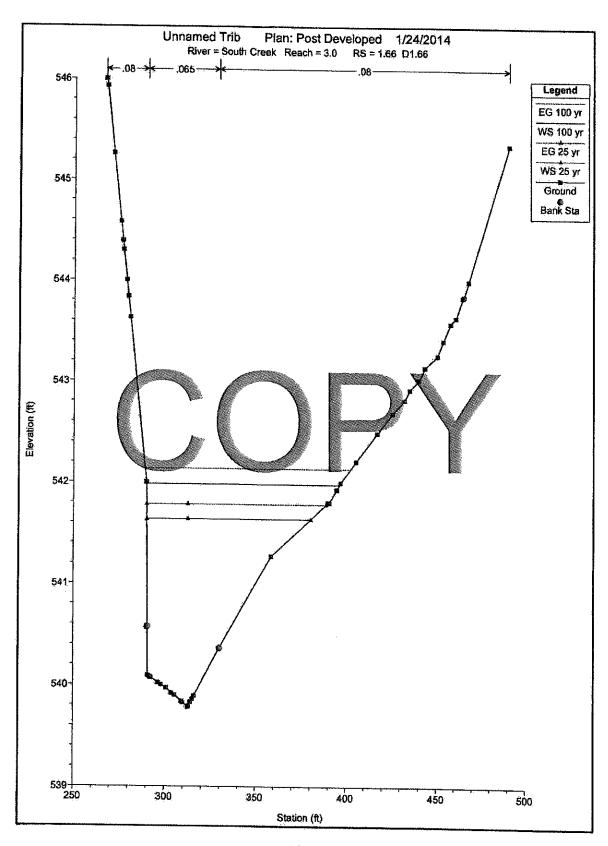
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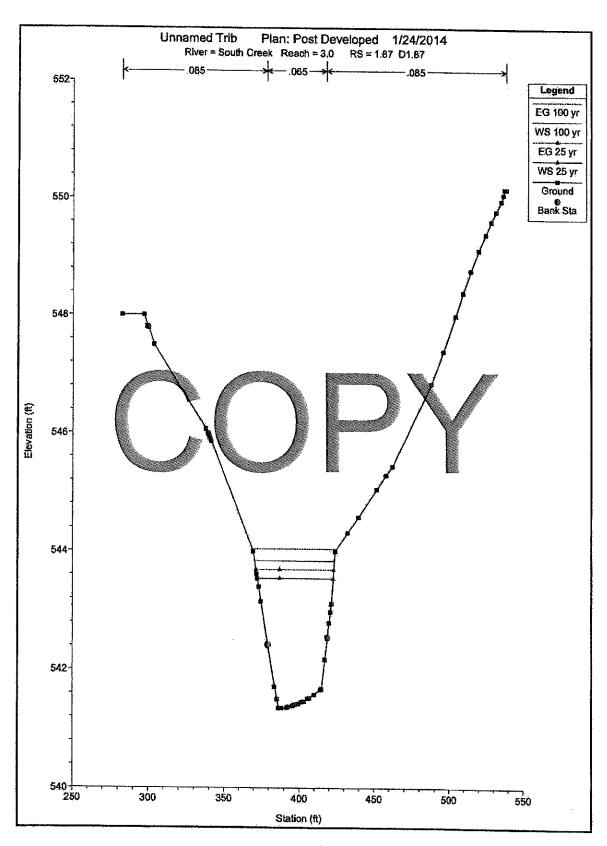


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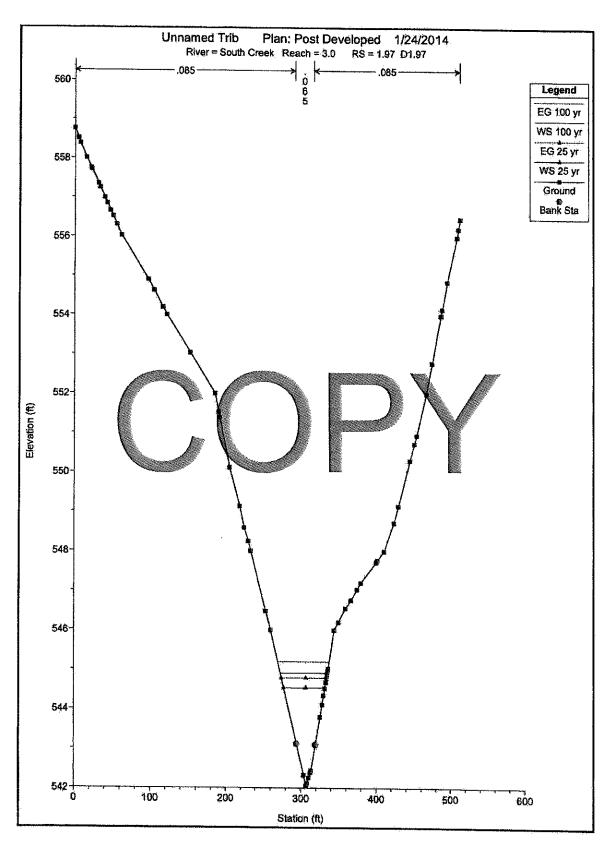
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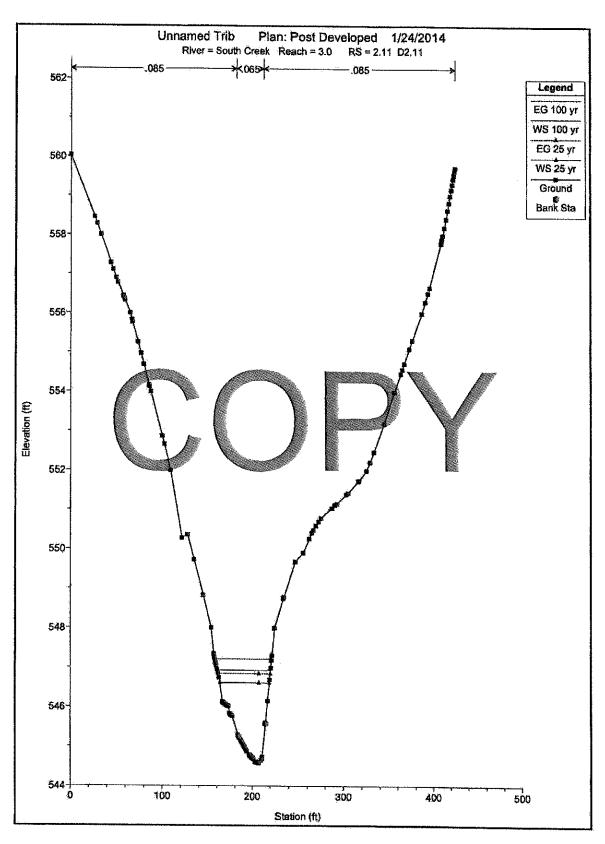
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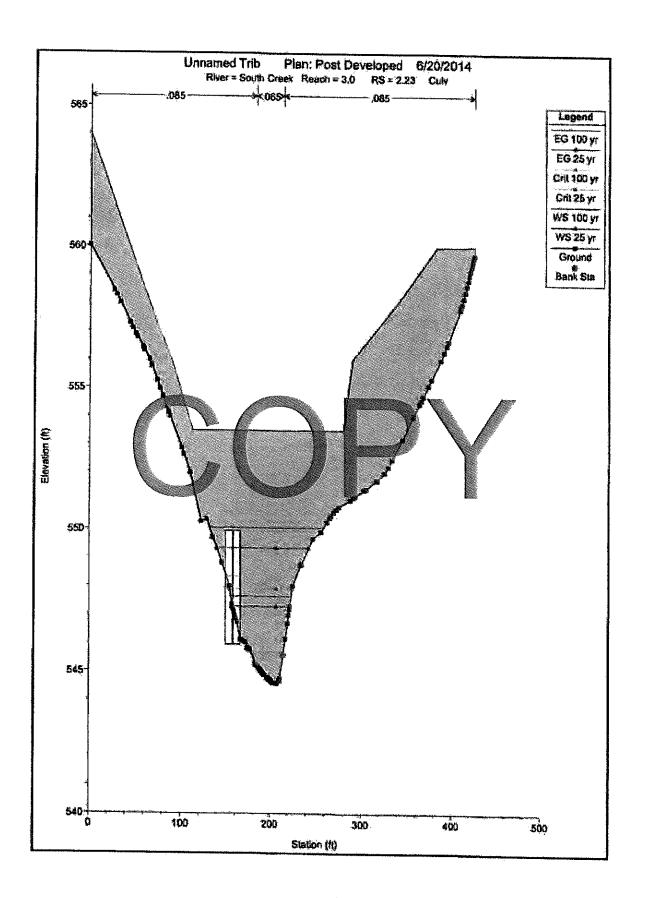


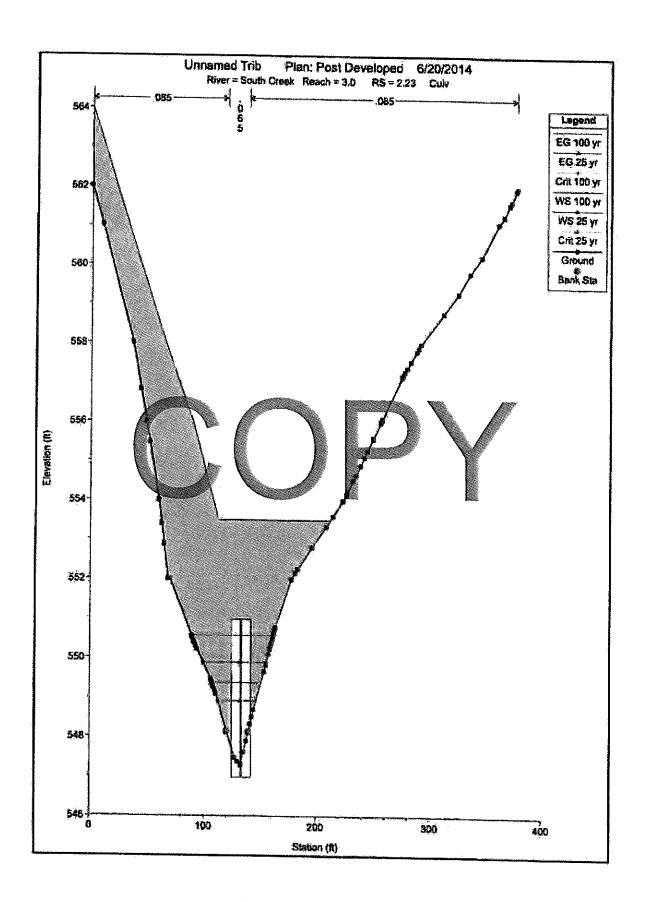
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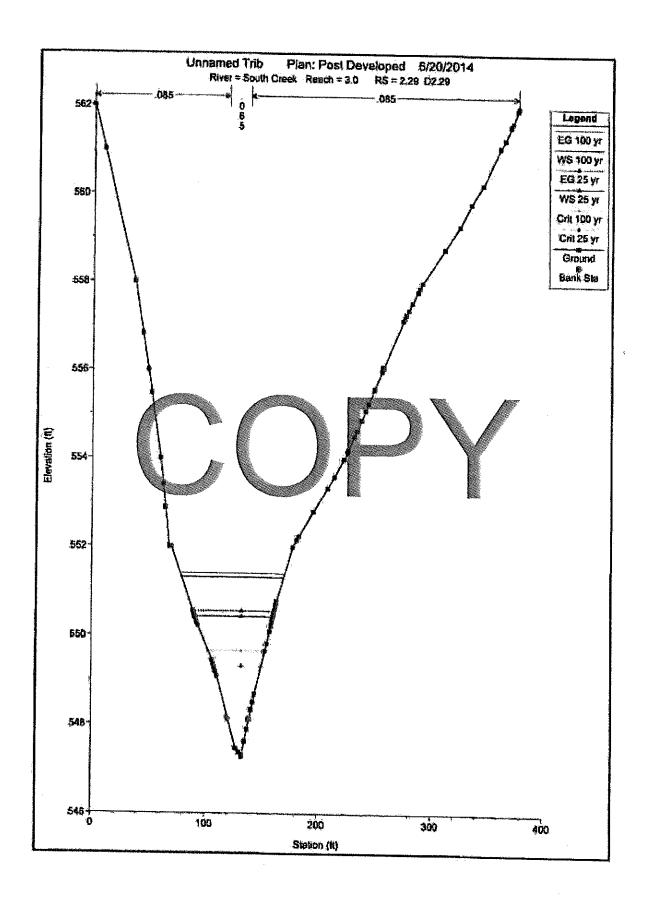
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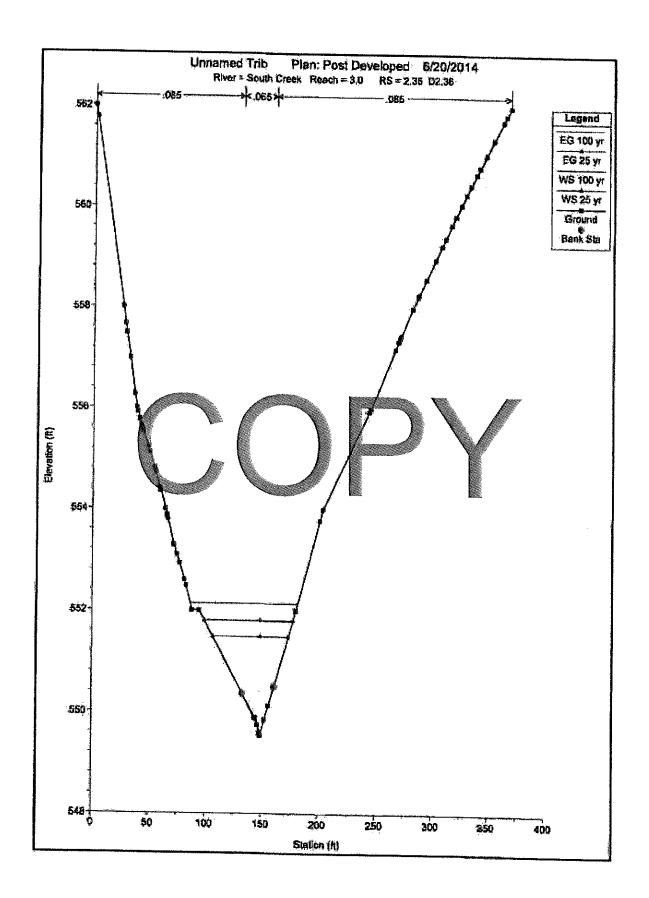


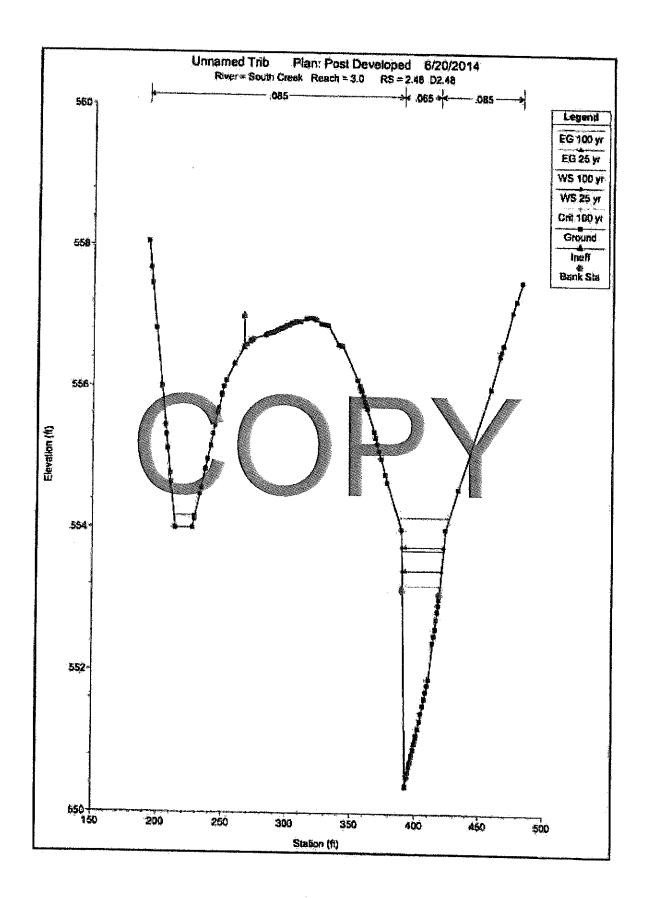
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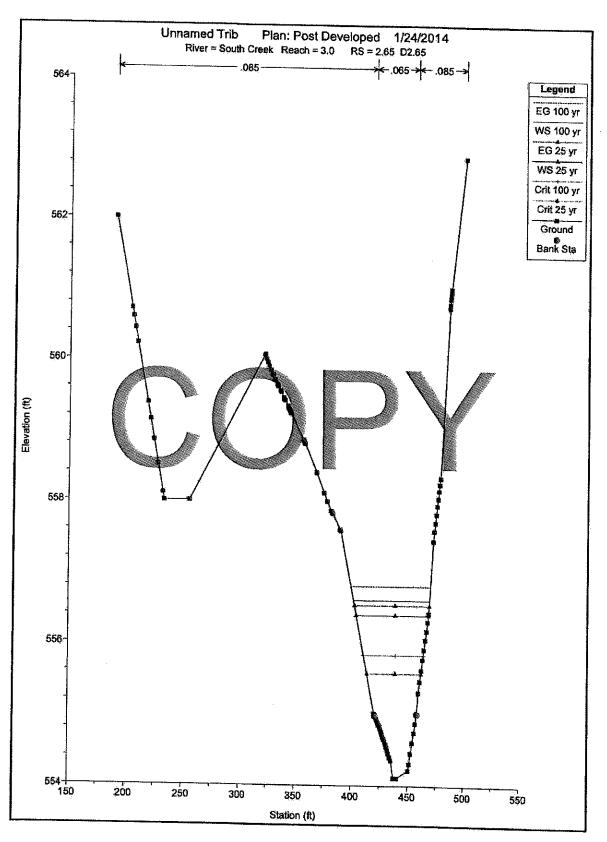






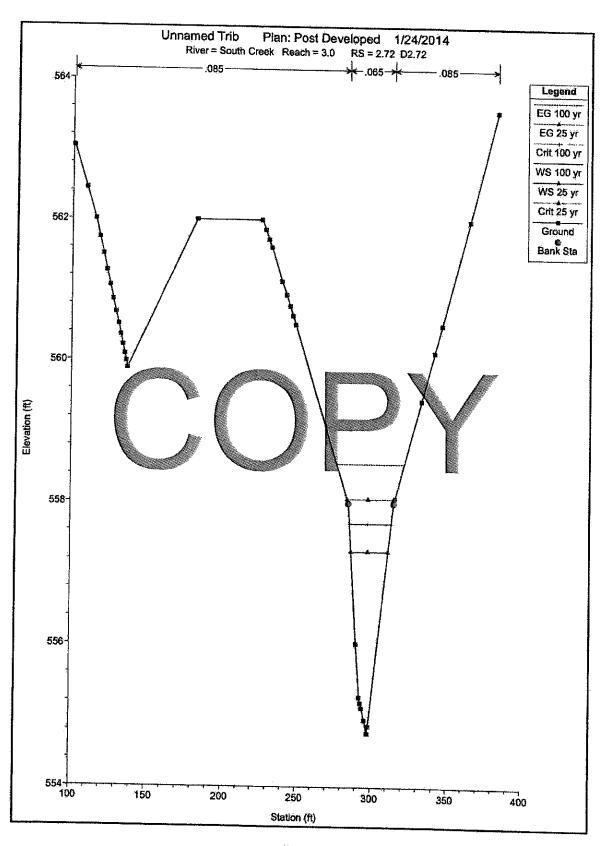




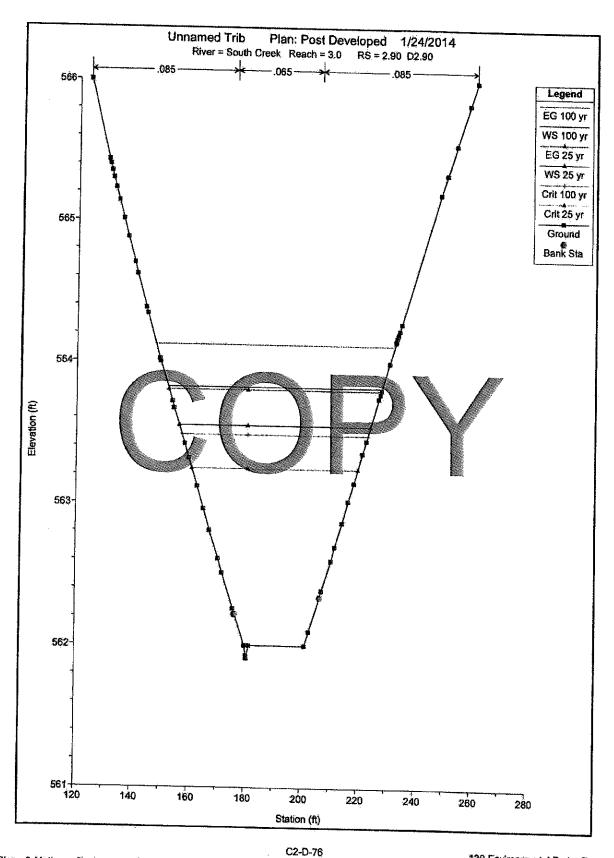


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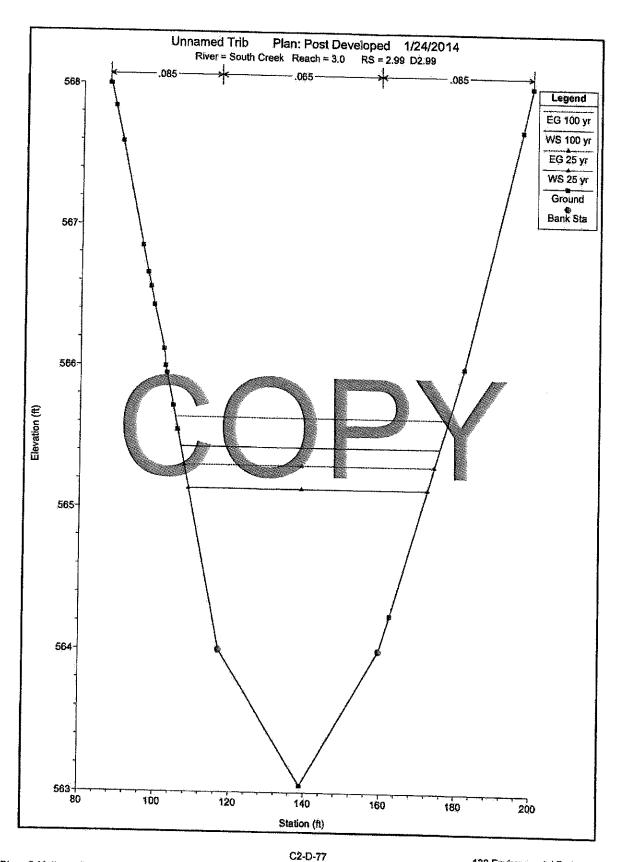
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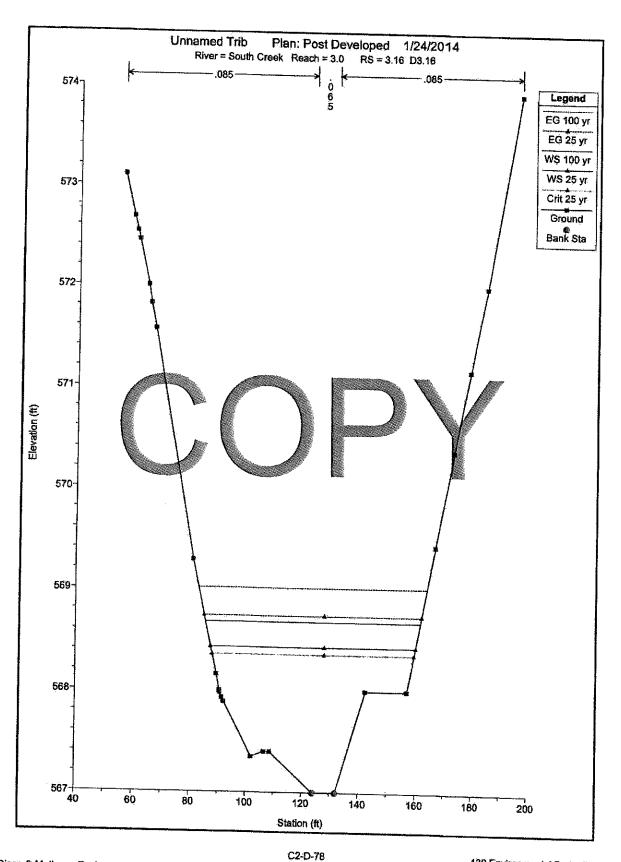
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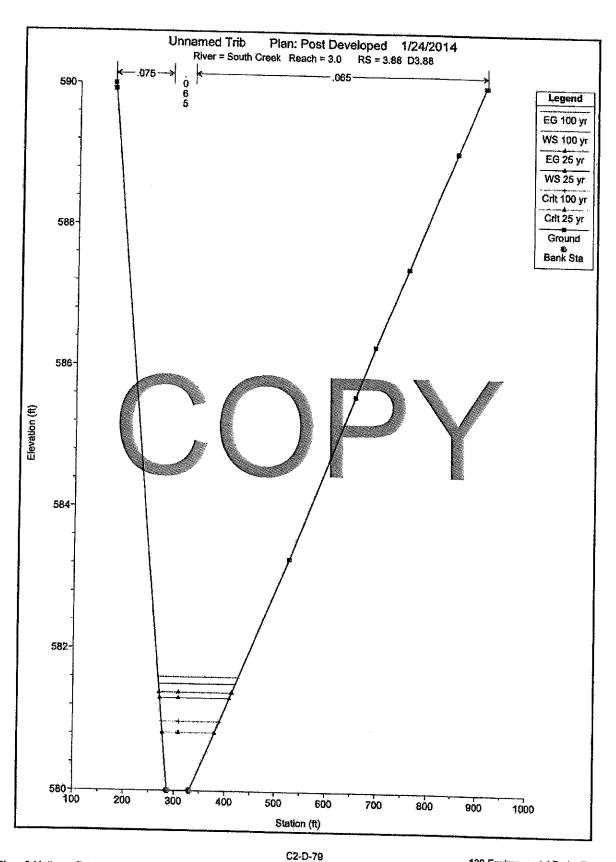
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# 130 ENVIRONMENTAL PARK CALDWELL COUNTY, TEXAS TCEQ REGISTRATION NO. MSW 40269

### TYPE V REGISTRATION APPLICATION

## PART IV SITE OPERATING PLAN

Prepared for

#### 130 ENVIRONMENTAL PARK, LLC

August 2013 Revised February 2014

Revised July 2014

J. HEATH PARKER

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Biggs & Mathews Environmental, Inc.
Firm Registration No., F-256

Prepared by

#### **BIGGS & MATHEWS ENVIRONMENTAL**

1700 Robert Road, Suite 100 • Mansfield, Texas 76063 • 817-563-1144

TEXAS BOARD OF PROFESSIONAL ENGINEERS FIRM REGISTRATION No. F-256 TEXAS BOARD OF PROFESSIONAL GEOSCIENTISTS FIRM REGISTRATION NO. 50222

And

#### **BIGGS & MATHEWS, INC.**

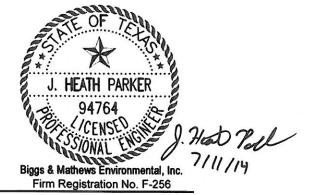
2500 Brook Avenue • Wichita Falls, Texas 76301 • 940-766-0156

TEXAS BOARD OF PROFESSIONAL ENGINEERS
FIRM REGISTRATION No. F-834



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#### **APPENDIX IVA**

Load Inspection Report

#### **APPENDIX IVB**

(Reserved)

#### **APPENDIX IVC**

Species Protection Plan

## 4 STORAGE REQUIREMENTS

30 TAC §§330.209 and 330.213

## 4.1 Solid Waste Storage

The transfer station will only accept construction or demolition wastes and other inert wastes as defined in 30 TAC §330.3. All solid waste entering the transfer station will be stored indoors or inside the closed transfer trailers or roll-off boxes awaiting transport. Transfer trailers and roll-off boxes will be tarped if stored outside. Because the waste will be stored in covered containers, all solid waste will be stored in a manner to prevent fires, ensure safety, control animals, control vectors, and contained to prevent windblown solid waste and litter. Odor control procedures are included in Section 7.12.1 and windblown waste control procedures are included in Section 7.6.

# 4.2 Approved Containers

All solid waste entering the transfer station will be transferred from the tipping floor to the transfer trailers or roll-off boxes. The transfer trailers and roll-off boxes will be equipped with tarps to cover and close the trailer during transport. In addition, the trailers and roll-off boxes will be designed to prevent spillage or leakage during storage, handling, or transport.

The transfer trailers and roll-off boxes will be maintained in a clean condition. The transfer trailers and roll-off boxes will be washed as necessary so that they do not constitute a nuisance and to retard the harborage, feeding, and propagation of vectors.

Adequate turning radii for the vehicles utilizing the facility have been provided to maintain normal traffic flow.

Adequate vehicle parking is provided for equipment, employees, and visitors at the facility.

## 7.2 Unloading of Waste

The categories of wastes that are prohibited at this facility by state and federal regulations are discussed in Section 2.1 of this SOP.

Trained personnel will monitor the incoming waste on the trucks at the unloading areas. These personnel will be familiar with the rules and regulations governing the various types of waste that can or cannot be accepted into this facility, including knowledge of §330.171 and §330.173. The personnel will also have a basic understanding of both industrial and hazardous waste and their transportation and disposal requirements. Trained personnel at the tipping floor will be on-duty during waste acceptance hours to observe all waste unloading.

Trained personnel at the tipping floor will have the authority and responsibility to reject loads which contain prohibited wastes. The personnel will also have the authority to have prohibited waste removed by the waste haul vehicle or transporter, immediately upon discovery. Trained personnel at the tipping floor will immediately notify the facility manager of suspected prohibited waste. The facility manager will direct transfer station personnel to remove or manage prohibited waste appropriately. The facility manager may assess appropriate surcharges to the waste hauler, transporter, or generator.

Any prohibited waste that is not discovered by the operators until after it is unloaded shall be returned to the vehicle that delivered the waste. That party shall be responsible for the proper disposal of this rejected waste. In the event the unauthorized waste is not discovered until after the vehicle that delivered it is gone, the waste shall be segregated and controlled as necessary. An effort shall first be made to identify the entity that deposited the prohibited waste and have them return to the facility and properly dispose of the waste. In the event that identification is not possible, the transfer station will notify the TCEQ and seek guidance on how to dispose of the waste. take the following steps based on the type of prohibited waste:

- Hazardous waste or PCB wastes The prohibited waste will be separated or isolated, if practical, by facility personnel trained in proper handling of hazardous waste or PCB wastes. TCEQ will be notified and the waste will be manifested and transported to an approved facility for disposal. Should an incident occur at the facility involving the removal of hazardous waste or PCB wastes requiring clean-up, a remediation plan will be developed and submitted to TCEQ for approval.
- RACM The prohibited waste will be separated or isolated, if practical, by facility personnel trained in properly handling of RACM. TCEQ will be notified and the waste will be inspected to ensure that bags are unruptured. If necessary, the RACM will be re-wetted and properly bagged. It will then be manifested and transported to an authorized facility for disposal.

- Municipal solid waste and non-RACM Any incidental amounts of municipal solid waste or non-RACM will be disposed of, along with site-generated municipal solid waste, at an authorized municipal solid waste facility.
- Other prohibited waste Other prohibited waste will be either transported to an authorized disposal facility for the waste, or TCEQ will be notified to seek guidance on disposal of the waste.

The unloading of solid waste in unauthorized areas is prohibited. Solid waste unloading will be controlled to prevent dumping in locations other than those specified by facility management. Load inspections will be conducted as outlined in Section 7.2.1 of this SOP. Any waste deposited in an unauthorized area will be promptly removed and placed on the tipping floor. Control will also be used to confine the working area to a minimum width consistent with the rate of incoming waste, while allowing for safe and efficient operation.

Signs with directional arrows and portable traffic barricades will help to restrict traffic to the designated unloading location. Signs will be placed along the entrance road to the unloading area. In addition, rules for waste unloading and prohibited waste will be prominently displayed on signs at the facility entrance.

## 7.2.1 Load Inspection Procedure

A properly trained qualified facility staff person will visually inspect all incoming waste loads. Should any indication of prohibited waste be detected, appropriate facility personnel will stop unloading of the vehicle to allow facility personnel to conduct a thorough evaluation of the load. The driver will be directed to a load inspection area, where the load will be discharged from the vehicle. The load inspector will separate the waste pile and inspect the material for any prohibited waste. Known prohibited waste will be placed back into the vehicle and the driver will be instructed to depart the facility. Should any regulated hazardous waste be detected, the entire load will be refused. (Refer to Appendix IVA for a copy of a sample load inspection report form.)

# 7.3 Spill Prevention and Control

The tipping floor has been designed to control and contain spills and contaminated water from leaving the facility. The tipping floor is sloped, of sufficient size, and contains a floor drain to control and contain a worst case release of contaminated water inside the transfer station building. Contaminated water generated by the transfer station will consist of wash water applied to the tipping floor. This wash water will be directed through a sand/grit trap and enter the 5,500 gallon contaminated water storage tank located outside of the transfer station building. The 5,500 gallon contaminated water storage tank will be installed within a concrete pad enclosed by a wall for secondary containment.

The proposed facility will be authorized to discharge storm water runoff from the site in accordance with the Texas Pollutant Discharge Elimination System (TPDES) Multi-Sector General Permit No. TXR050000. Prior to commencement of operations, a Stormwater Pollution Prevention Plan and Notice of Intent will be prepared to address coverage under the general permit and specific aspects of the facility operation.

including spill prevention and control. The following procedures for the control of any spills that may occur will be included:

- Make available to facility personnel materials and equipment necessary for spill control and clean-up. Such materials and equipment will be maintained at the transfer station building or other suitable location. An inventory of spill control/clean-up materials and equipment will be maintained with said materials/equipment. At a minimum, spill control/clean-up materials and/or equipment will include:
  - a. Spill absorbent (i.e., speedi-dri, etc.)
  - b. Scoops, shovels, brooms, bags, and drums
  - c. Spill wipe pads
  - d. Portable oil booms/dikes
  - e. Spill pillows
  - f. Personal protective equipment (neoprene gloves, boots, and goggles)
- In the event of a spill outside of the transfer station building, immediately notify the transfer station manager and promptly control/clean up the spill using the following procedures:
  - a. Clear the area of all unnecessary personnel
  - Rope-off and/or barricade the spill area to prevent entry of unauthorized personnel
  - c. Put on appropriate protective equipment, such as gloves, boots, etc.
  - d. If safe to do so, initiate action to stop the source of the spill by closing a valve, stopping a pump, etc.
  - e. If safe to do so, contain/clean-up the spill using absorbent materials, dikes, booms, and other appropriate equipment and materials

# 7.4 Operating Hours

The 130 Environmental Park tTransfer eStation will be authorized for waste acceptance from 7:00 a.m. to 7:00 p.m., Monday through Friday, and 7:00 a.m. to 12:00 p.m. on Saturday. The facility will be closed on Sunday. There will be no hourly limitation on conducting waste acceptance or other activities within the waste acceptance hours. The transfer station will be authorized for facility operations from 5:00 a.m. to 9:00 p.m., Monday through Friday, and 5:00 a.m. to 2:00 p.m. on Saturday. Facility operations include non-waste acceptance operations. The public waste acceptance hours will be posted on the facility sign. The transfer station may be open other hours, as may be required to provide waste acceptance for special events, inclement weather, emergencies, or other circumstances. 130 Environmental Park will notify the TCEQ regional office and will record waste acceptance hours outside of posted hours in the site operating record.

# 7.5 Facility Sign

A sign will be conspicuously displayed at the entrance to the facility. This sign will measure at least four feet by four feet, and have lettering of at least three inches in height. The sign will state the name of the facility, type of facility, hours and days of