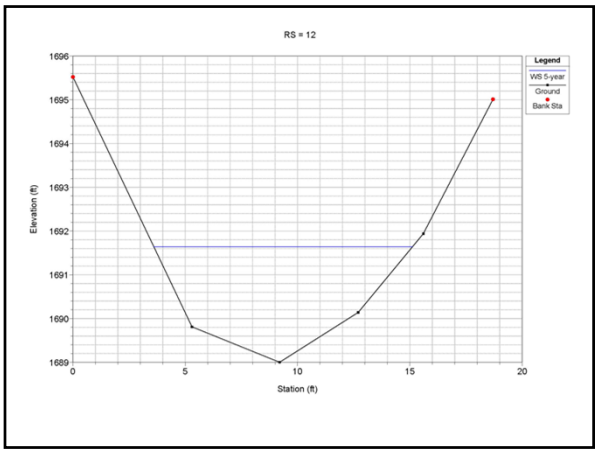
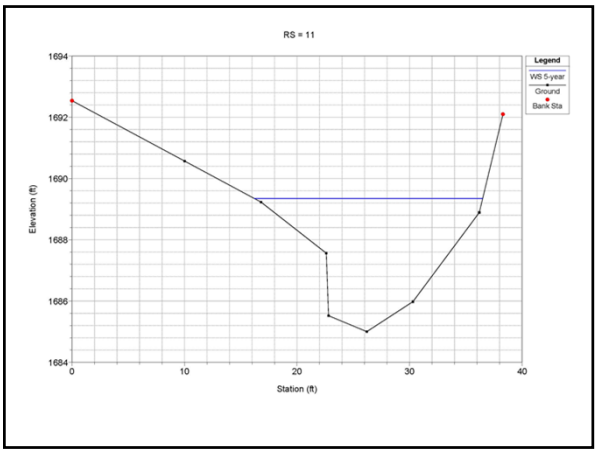
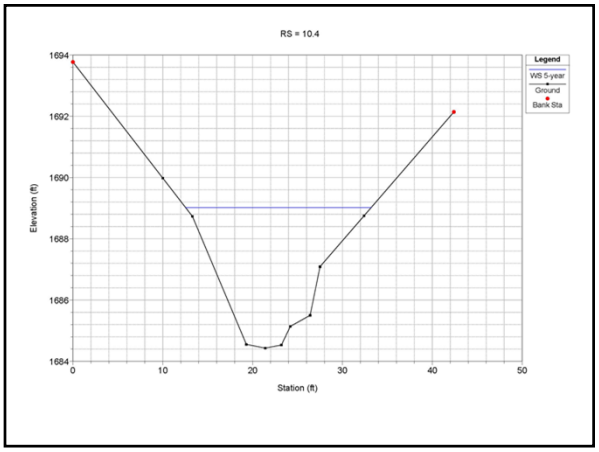
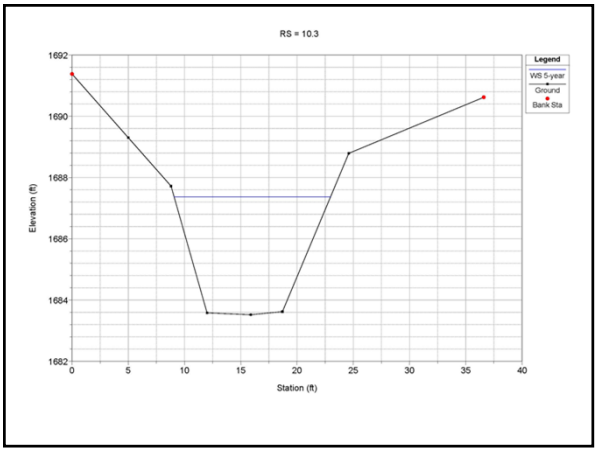
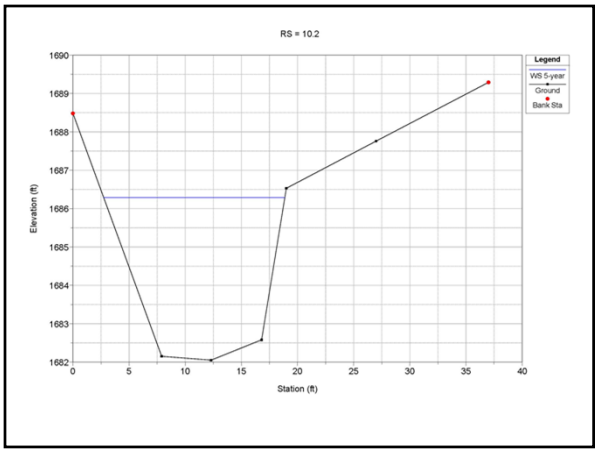
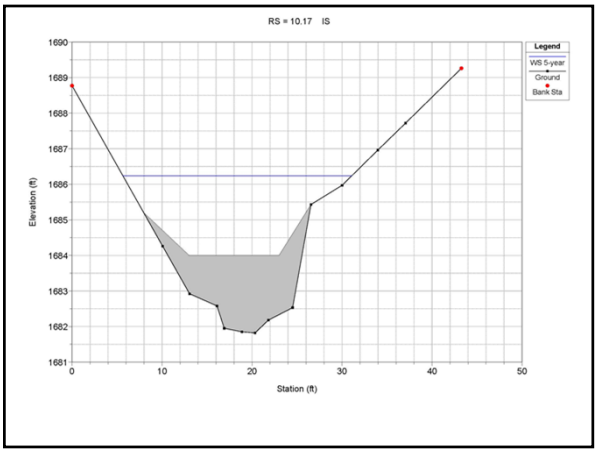

RS = 12
Legend
WS 5-year
Ground
Bank Sta
Elevation (ft)
Station (ft)

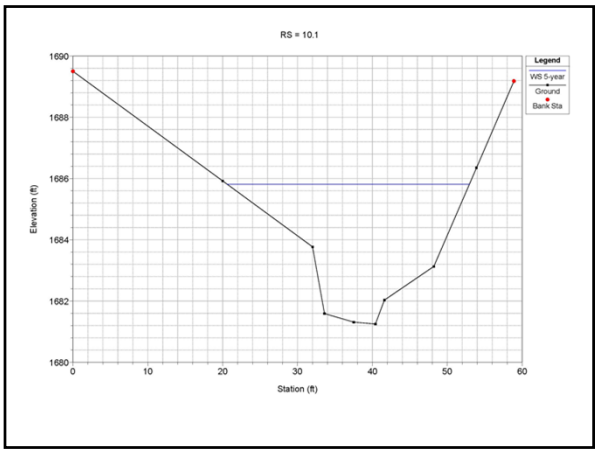

RS = 11
Legend
WS 5-year
Ground
Bank Sta
Elevation (ft)
Station (ft)

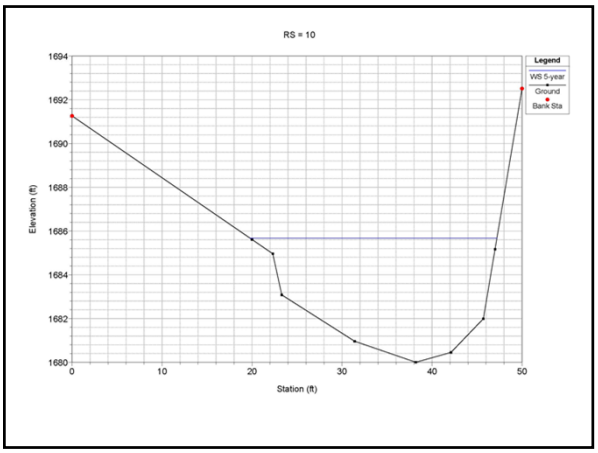

RS = 10.4
Legend
WS 5-year
Ground
Bank Sta
Elevation (ft)
Station (ft)

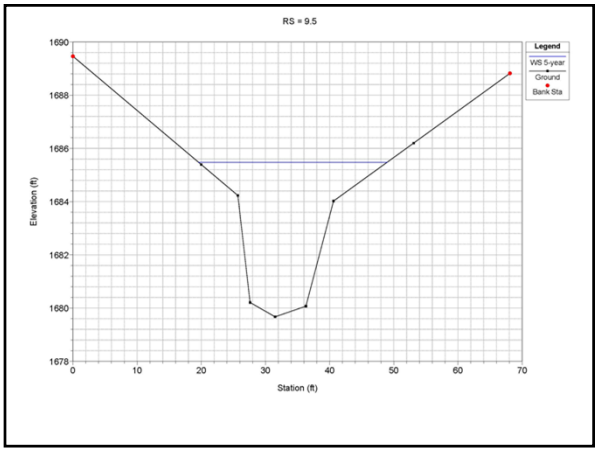

RS = 10.3
Legend
WS 5-year
Ground
Bank Sta
Elevation (ft)
Station (ft)

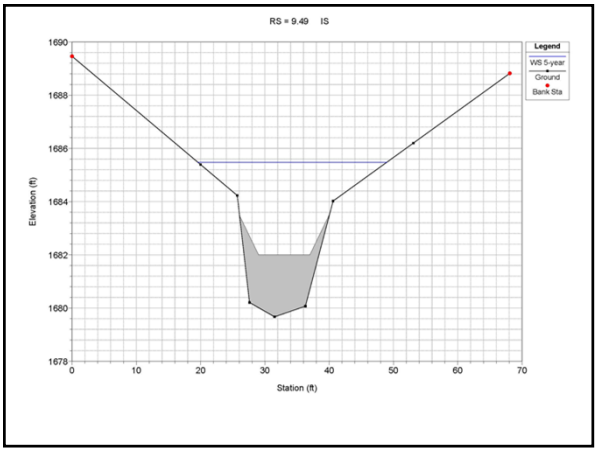

RS = 10.2
Legend
WS 5-year
Ground
Bank Sta
Elevation (ft)
Station (ft)

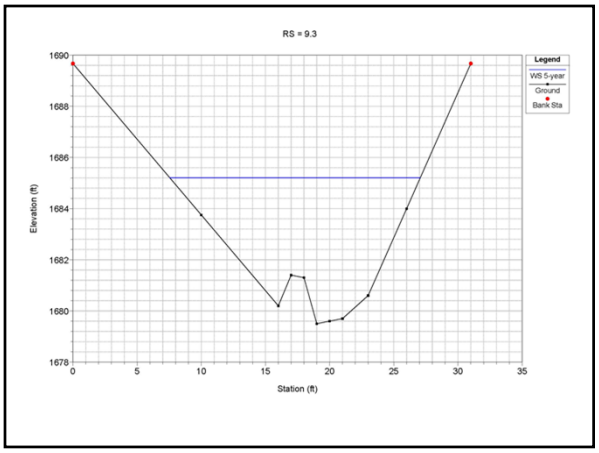

RS = 10.17 IS
Legend
WS 5-year
Ground
Bank Sta
Elevation (ft)
Station (ft)

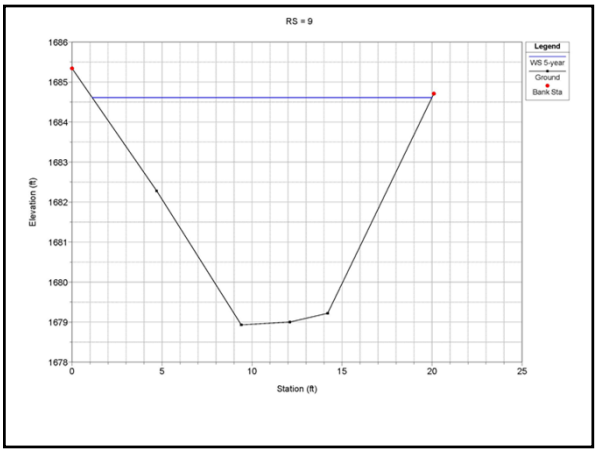

RS = 10.1
Legend
WS 5-year
Ground
Bank Sta
Elevation (ft)
Station (ft)

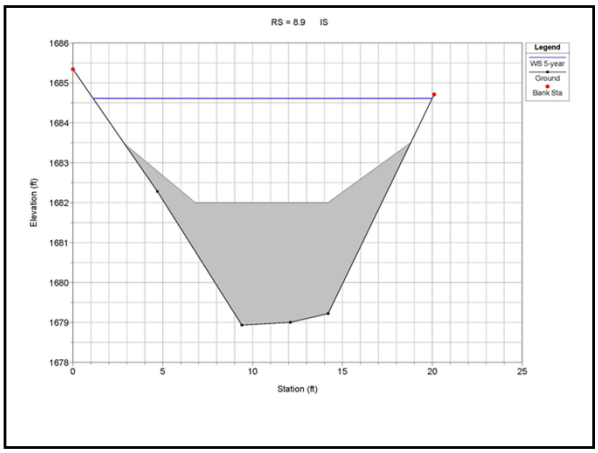

RS = 10
Legend
WS 5-year
Ground
Bank Sta
Elevation (ft)
Station (ft)

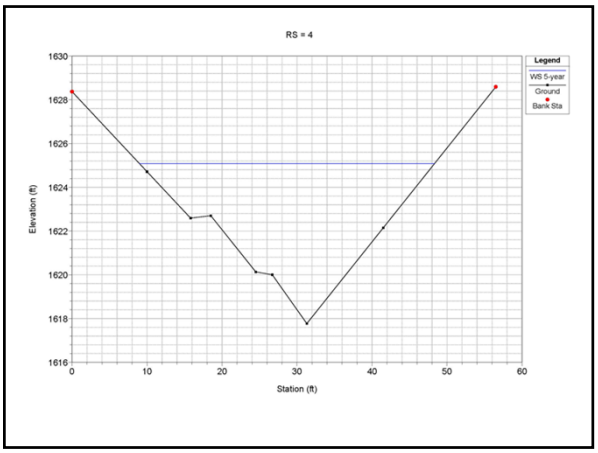

RS = 9.5
Legend
WS 5-year
Ground
Bank Sta
Elevation (ft)
Station (ft)

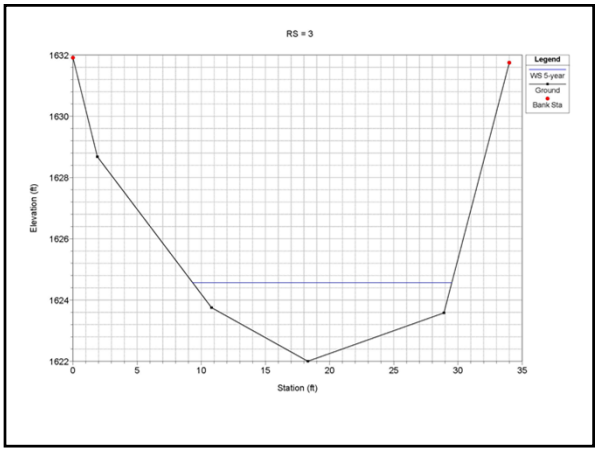

RS = 9.49 IS
Legend
WS 5-year
Ground
Bank Sta
Elevation (ft)
Station (ft)

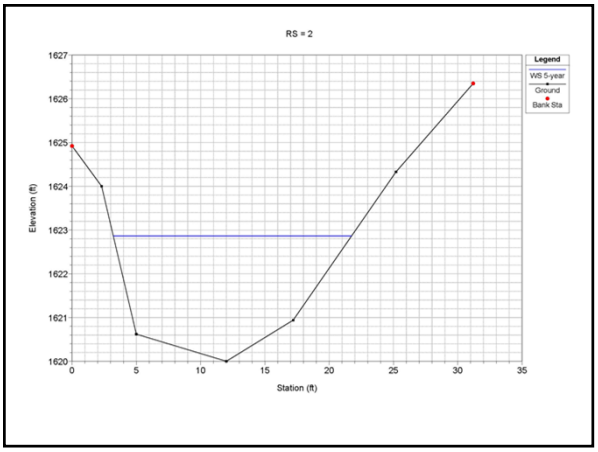

RS = 9.3
Legend
WS 5-year
Ground
Bank Sta
Elevation (ft)
Station (ft)


RS = 9
Legend
WS 5-year
Ground
Bank Sta
Elevation (ft)
Station (ft)


RS = 8.9 IS
Legend
WS 5-year
Ground
Bank Sta
Elevation (ft)
Station (ft)


RS = 4
Legend
WS 5-year
Ground
Bank Sta
Elevation (ft)
Station (ft)


RS = 3
Legend
WS 5-year
Ground
Bank Sta
Elevation (ft)
Station (ft)


RS = 2
Legend
WS 5-year
Ground
Bank Sta
Elevation (ft)
Station (ft)

APPENDIX F

Calculations for Restoration Measures

Prepared for

The Boeing Company
5800 Woolsey Canyon Road, MC: 033-T436
Canoga Park, CA 91304-1148

Appendix F

Calculations for Restoration Measures

Prepared by

Geosyntec consultants

engineers | scientists | innovators
6701 Center Drive West Suite 550
Los Angeles, CA 90045

Project Number SB0363R

September 21, 2011

		Design Discharge (cfs)					
SWMM Node	HEC RAS Station	2-year	**5-year**	10-year	25-year	50-year	100-year
J15	51	14	**48**	74	104	127	149
J14	44.1764*	15	**51**	77	109	132	155
J13	41.5384*	20	**64**	96	133	161	188
J12A	37	21	**74**	115	164	200	236
J12	32.3333*	23	**88**	138	198	238	276
J11	29.64*	24	**104**	172	266	339	384
J10	28.25*	24	**107**	179	274	343	396
J8	23.1212*	29	**129**	214	313	382	445
J7	21	29	**131**	218	320	390	455
J6	18.5142*	31	**140**	233	340	455	536
J5	13	32	**142**	235	343	415	484
J4	11	32	**148**	248	370	455	536
J2	9.34*	33.7	**151**	251	374	459	541
J1	2	41	**184**	308	460	567	663

Notes:

* HEC RAS stations were interpolated between surveyed cross sections in field.

Appendix F: Calculations for Restoration Measures: Table F2 Hydraulic Analysis Results

Design Station	HEC-RAS Station	Proposed Measure	Scenario	5-yr Design Discharge (cfs)	Max Depth (ft)	Flow Width (ft)	Velocity (ft/s)	Velocity Downstream (ft/s)	Shear Stress (lb/ft^2)	Shear Stress Downstream (lb/ft^2)	Material Type	Permissible Velocity (ft/s)	Permissible Shear Stress (lb/ft^2)	Velocity Safety Factor	Shear Stress Safety Factor	GPS ID	Photo ID
80+73	50.5	Bank stabilization	Existing	48	2.58	11.08	3.35		1.48		Alluvial Silts (colloidall)	3.75	0.26	1.12	0.18	8	377
			Proposed	48	2.58	11.08	3.35		1.48		Erosion Control Blanket	8	3	2.39	2.03		
80+34	49.9285	Bank stabilization	Existing	48	2.08	11.39	3.4		1.54		Alluvial Silts (colloidall)	3.75	0.26	1.10	0.17	9	379
			Proposed	48	2.08	11.39	3.4		1.54		Erosion Control Blanket	8	3	2.35	1.95		
79+87	49.5714	Bank stabilization	Existing	48	2.58	8.15	3.97		2.06		Alluvial Silts (colloidall)	3.75	0.26	0.94	0.13	11	380
			Proposed	48	2.58	8.15	3.97		2.06		Erosion Control Blanket	8	3	2.02	1.46		
79+45	49.3	Bank stabilization	Existing	48	2.75	8.47	4.19		2.35		Alluvial Silts (colloidall)	3.75	0.26	0.89	0.11	12	381
			Proposed	48	2.75	8.47	4.19		2.35		Erosion Control Blanket	8	3	1.91	1.28		
77+25	47.4285	Check structure (47.35)	Existing	48	1.89	5.69	6.3	6.18	5.41	5.18	Alluvial Silts (colloidall)	3.75	0.26	0.60	0.05	15	384
			Proposed	48	3.38	10.12	2.53	6.18	0.78	5.18	Class Facing - 75 lb (~11.4-inch D50)	12.1	5.3	1.96	1.02		
76+17	44.8235	Bank stabilization	Existing	48	2.17	7.48	5.16		3.63		Alluvial Silts (colloidall)	3.75	0.26	0.73	0.07	16	385
			Proposed	48	2.17	7.48	5.16		3.63		Turf Reinforcement Mat	14	8	2.71	2.20		
74+27	44.294	Bank stabilization	Existing	48	1.99	8	5.12		3.59		Alluvial Silts (colloidall)	3.75	0.26	0.73	0.07	19	389
			Proposed	48	1.99	8	5.12		3.6		Turf Reinforcement Mat	14	8	2.73	2.22		
73+89	44.0588	Check structure (44.03)	Existing	51	2.05	8.85	4.75	5.95	3.04	4.97	Alluvial Silts (colloidall)	3.75	0.26	0.79	0.09	20	390
			Proposed	51	2.78	15.87	2.66	5.95	0.94	4.97	Class Facing - 75 lb (~11.4-inch D50)	12.1	5.3	2.03	1.07		
71+66	41.3846	Bank stabilization	Existing	64	2.12	14.63	4.87		3.51		Alluvial Silts (colloidall)	3.75	0.26	0.77	0.07	23	395
			Proposed	64	2.12	14.63	4.87		3.51		Turf Reinforcement Mat	14	8	2.87	2.28		
70+48	40.7142	Bank stabilization	Existing	64	2.86	21.59	3.01		1.29		Alluvial Silts (colloidall)	3.75	0.26	1.25	0.20	25	399
			Proposed	64	2.86	21.59	3.01		1.29		Erosion Control Blanket	8	3	2.66	2.33		
68+74	39.5	Bank stabilization	Existing	64	2.99	6.12	5.72		4.28		Alluvial Silts (colloidall)	3.75	0.26	0.66	0.06	27	403, 404
			Proposed	64	2.99	6.12	5.72		4.28		Turf Reinforcement Mat	14	8	2.45	1.87		
60+94	32.8666	Bank stabilization	Existing	74	2.25	12.79	4.05		2.08		Alluvial Silts (colloidall)	3.75	0.26	0.93	0.13	39	421
			Proposed	74	2.25	12.79	4.05		2.08		Erosion Control Blanket	8	3	1.98	1.44		
60+20	32.4666	Bank stabilization	Existing	74	2.58	10.58	4.16		2.12		Alluvial Silts (colloidall)	3.75	0.26	0.90	0.12	40	422,423
			Proposed	74	2.58	10.58	4.16		2.12		Erosion Control Blanket	8	3	1.92	1.42		
59+71	32.1333	Bank stabilization	Existing	88	2.69	10.05	4.94		2.97		Alluvial Silts (colloidall)	3.75	0.26	0.76	0.09	41	424
			Proposed	88	2.69	10.05	4.94		2.97		Erosion Control Blanket	8	3	1.62	1.01		
56+62	29.9571	Bank stabilization	Existing	88	3.55	15.83	2.82		0.92		Alluvial Silts (colloidall)	3.75	0.26	1.33	0.28	45	428
			Proposed	88	3.55	15.83	2.82		0.92		Erosion Control Blanket	8	3	2.84	3.26		
55+51	29.8416	Bank stabilization	Existing	88	4.31	19.66	1.68		0.29		Alluvial Silts (colloidall)	3.75	0.26	2.23	0.90	46	429, 430
			Proposed	88	4.31	19.66	1.68		0.29		Erosion Control Blanket	8	3	4.76	10.34		
54+26	29.4	Outlet dissipation	Existing	104	2.34	14.33	11.11		12.89		Alluvial Silts (colloidall)	3.75	0.26	0.34	0.02	49	433-436
			Proposed	104	2.34	14.33	11.11		12.89		Grouted Riprap	40	20	3.60	1.55		
54+26	NONE	Bank stabilization	Existing	104	2.34	14.33	11.11		12.89		Alluvial Silts (colloidall)	3.75	0.26	0.34	0.02	49	433-436
			Proposed	104	2.34	14.33	11.11		12.89		Grouted Riprap	40	20	3.60	1.55		
53+87	29.3	Side tributary check structure	Existing	17	0.69	7.50	3.33		1.82		Alluvial Silts (colloidall)	3.75	0.26	1.13	0.14	50	437-439
			Proposed	17	0.69	7.50	3.33		1.82		Class Facing - 75 lb (~11.4-inch D50)	12.1	5.3	3.63	2.90		
51+28	28.125	Check structure retrofit (28.05)	Existing	107	2.33	15.64	4.53	6.24	2.52	5.1	Alluvial Silts (colloidall)	3.75	0.26	0.83	0.10	53	443
			Proposed	107	4.07	20	1.95	6.24	0.39	5.1	Class Facing - 75 lb (~11.4-inch D50)	12.1	5.3	1.94	1.04		
49+97	26.5	Bank stabilization	Existing	107	2.56	14.42	4.68		2.66		Alluvial Silts (colloidall)	3.75	0.26	0.80	0.10	55	446-448
			Proposed	107	2.56	14.42	4.68		2.66		Erosion Control Blanket	8	3	1.71	1.13		

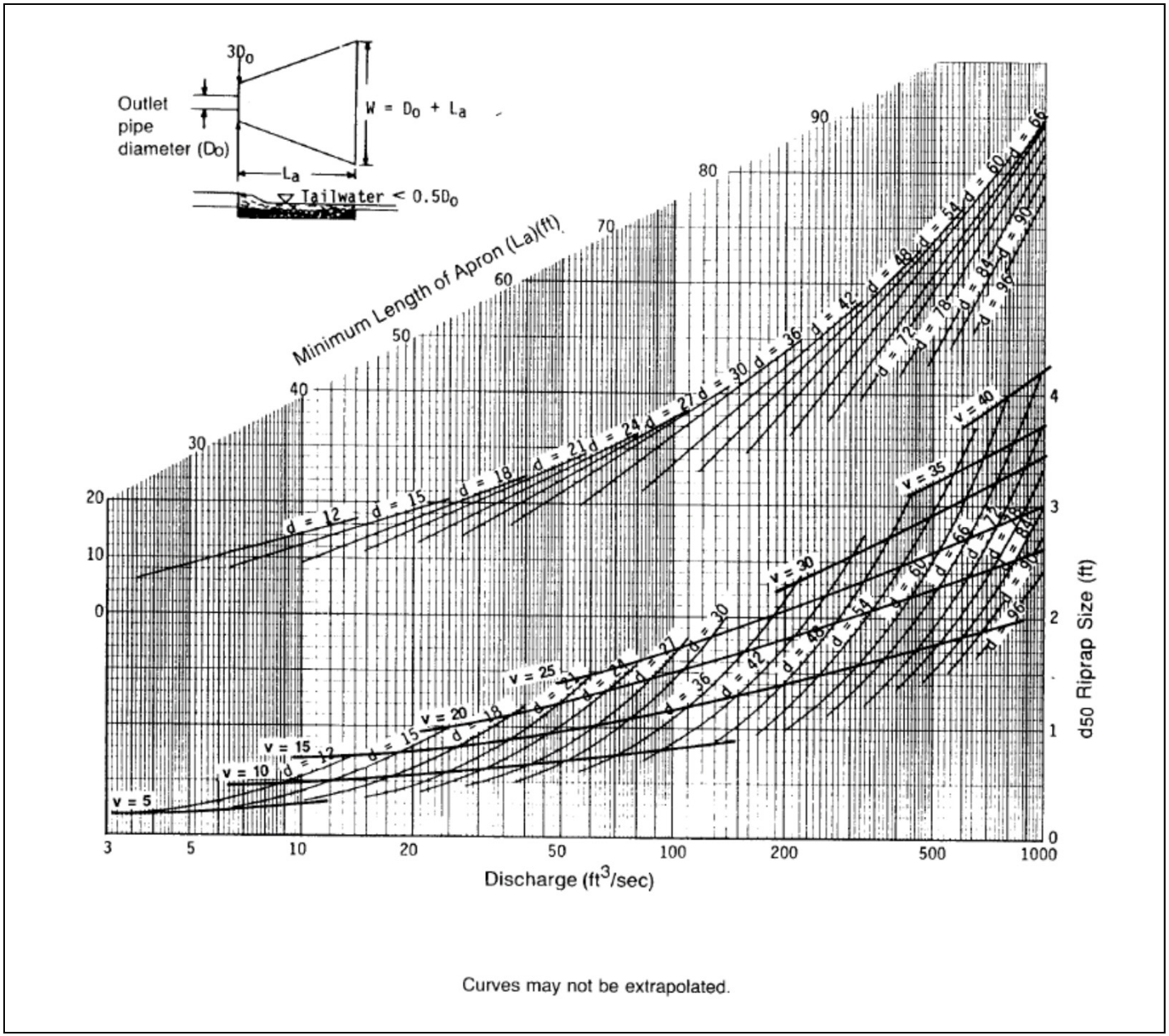
Appendix F: Calculations for Restoration Measures: Table F2 Hydraulic Analysis Results

Design Station	HEC-RAS Station	Proposed Measure	Scenario	5-yr Design Discharge (cfs)	Max Depth (ft)	Flow Width (ft)	Velocity (ft/s)	Velocity Downstream (ft/s)	Shear Stress (lb/ft^2)	Shear Stress Downstream (lb/ft^2)	Material Type	Permissible Velocity (ft/s)	Permissible Shear Stress (lb/ft^2)	Velocity Safety Factor	Shear Stress Safety Factor	GPS ID	Photo ID
49+03	25.4	Check structure retrofit (25.25)	Existing	107	2.22	11.76	7.02	4.58	6.43	2.49	Alluvial Silts (colloidall)	3.75	0.26	0.53	0.04	57	13,14
			Proposed	107	4.9	19.48	1.85	4.35	0.34	2.22	Class Facing - 75 lb (~11.4-inch D50)	12.1	5.3	2.78	2.39		
46+56	23.6969	Bank stabilization, both banks	Existing	107	3.15	14.72	3.41		1.3		Alluvial Silts (colloidall)	3.75	0.26	1.10	0.20	61	18-21
			Proposed	107	4.24	17.34	2.18		0.49		Erosion Control Blanket	8	3	3.67	6.12		
45+94	23.4545	Check structure (23.44)	Existing	107	2.98	16.03	3.36	3.35	1.28	1.28	Alluvial Silts (colloidall)	3.75	0.26	1.12	0.20	62	22,23
			Proposed	107	4.82	21.04	1.63	3.35	0.26	1.28	Class Facing - 75 lb (~11.4-inch D50)	12.1	5.3	3.61	4.14		
45+94	23.4545	Bank stabilization	Existing	107	2.98	16.03	3.36		1.28		Alluvial Silts (colloidall)	3.75	0.26	1.12	0.20	62	22,23
			Proposed	107	4.82	21.04	1.63		0.26		Erosion Control Blanket	8	3	4.91	11.54		
45+07	23.2121	Bank stabilization	Existing	107	2.82	18.48	3.16		1.15		Alluvial Silts (colloidall)	3.75	0.26	1.19	0.23	64	27
			Proposed	107	2.82	18.48	3.16		1.15		Erosion Control Blanket	8	3	2.53	2.61		
44+40	23.0303	Bank stabilization	Existing	129	2.36	20.51	4.07		2.02		Alluvial Silts (colloidall)	3.75	0.26	0.92	0.13	63	24-26
			Proposed	129	2.36	20.52	4.07		2.01		Erosion Control Blanket	8	3	1.97	1.49		
43+65	22.4	Check structure retrofit (22.35)	Existing	129	2.26	16.02	6.23	6.78	5.03	5.81	Alluvial Silts (colloidall)	3.75	0.26	0.60	0.05	67	32-34
			Proposed	129	3.26	22.27	3.15	6.78	1.14	5.81	Class Light - 200 lb (~15.9-inch D50)	14.3	7.3	2.11	1.26		
43+65	22.3	Bank Stabilization	Existing	129	2.15	13.52	6.78		5.81		Alluvial Silts (colloidall)	3.75	0.26	0.55	0.04	67	32-34
			Proposed	129	2.15	13.52	6.78		5.81		Turf Reinforcement Mat	14	8	2.06	1.38		
42+46	21	Bank stabilization	Existing	131	5.61	22.9	5.58		2.46		Alluvial Silts (colloidall)	3.75	0.26	0.67	0.11	69	38, 39
			Proposed	131	5.61	22.9	5.58		2.46		Erosion Control Blanket	8	3	1.43	1.22		
40+53	20	Outlet dissipation	Existing	131	2.94	21.92	11.92		14.42		Alluvial Silts (colloidall)	3.75	0.26	0.31	0.02	122	144,145
			Proposed	131	2.94	21.92	11.92		14.42		Grouted Riprap	40	20	3.36	1.39		
40+53	20	Bank stabilization	Existing	131	2.94	21.92	11.92		14.42		Alluvial Silts (colloidall)	3.75	0.26	0.31	0.02	122	144,145
			Proposed	131	2.94	21.92	11.92		14.42		Grouted Riprap	40	20	3.36	1.39		
39+89	19.3846	Bank stabilization, remove existing check structure	Existing	131	3.71	18.77	3.09		1.04		Alluvial Silts (colloidall)	3.75	0.26	1.21	0.25	121	143
			Proposed	131	3.71	18.77	3.09		1.04		Erosion Control Blanket	8	3	2.59	2.88		
37+51	18.4571	Bank stabilization	Existing	140	3.66	18.85	3.4		1.28		Alluvial Silts (colloidall)	3.75	0.26	1.10	0.20	118	135, 136
			Proposed	140	3.66	18.85	3.4		1.28		Erosion Control Blanket	8	3	2.35	2.34		
36+01	18.0285	Bank stabilization	Existing	140	3.08	12.82	4.97		2.77		Alluvial Silts (colloidall)	3.75	0.26	0.75	0.09	117	134
			Proposed	140	3.08	12.82	4.97		2.77		Erosion Control Blanket	8	3	1.61	1.08		
35+45	17.2	Check structure (17.05)	Existing	140	4.08	19.27	3.29	1.94	1.2	0.42	Alluvial Silts (colloidall)	3.75	0.26	1.14	0.22	116	131-133
			Proposed	140	4.57	24.66	2.64	1.62	0.77	0.28	Class Facing - 75 lb (~11.4-inch D50)	12.1	5.3	7.47	18.93		
35+45	17	Bank stabilization	Existing	140	5.11	33.86	1.94		0.42		Alluvial Silts (colloidall)	3.75	0.26	1.93	0.62	116	131-133
			Proposed	140	5.54	34.98	1.62		0.28		Erosion Control Blanket	8	3	4.94	10.71		
32+58	16.0344	Bank stabilization	Existing	140	3.48	14.16	4.43		2.19		Alluvial Silts (colloidall)	3.75	0.26	0.85	0.12	114	128
			Proposed	140	4.84	17.69	2.63		0.7		Erosion Control Blanket	8	3	3.04	4.29		
32+41	16	Check structure (15.85)	Existing	140	2.55	11.21	7.4	7.82	6.7	7.75	Alluvial Silts (colloidall)	3.75	0.26	0.51	0.04	113	127
			Proposed	140	4.78	16.94	2.79	7.06	0.8	6.18	Class Light - 200 lb (~15.9-inch D50)	14.3	7.3	2.03	1.18		
32+06	15	Bank stabilization	Existing	140	1.91	20.47	5.88		4.65		Alluvial Silts (colloidall)	3.75	0.26	0.64	0.06	112	123-126
			Proposed	140	1.9	20.46	5.9		4.67		Turf Reinforcement Mat	14	8	2.37	1.71		
30+93	14.3333	Bank stabilization	Existing	140	2.17	15.49	6.78		5.88		Alluvial Silts (colloidall)	3.75	0.26	0.55	0.04	110	117-119
			Proposed	140	2.16	15.45	6.83		5.97		Turf Reinforcement Mat	14	8	2.05	1.34		
27+83	10.2923	Bank stabilization	Existing	148	3.69	13.68	4		1.71		Alluvial Silts (colloidall)	3.75	0.26	0.94	0.15	108	112-114
			Proposed	148	3.86	14.01	3.77		1.5		Erosion Control Blanket	8	3	2.12	2.00		

Appendix F: Calculations for Restoration Measures: Table F2 Hydraulic Analysis Results

Design Station	HEC-RAS Station	Proposed Measure	Scenario	5-yr Design Discharge (cfs)	Max Depth (ft)	Flow Width (ft)	Velocity (ft/s)	Velocity Downstream (ft/s)	Shear Stress (lb/ft^2)	Shear Stress Downstream (lb/ft^2)	Material Type	Permissible Velocity (ft/s)	Permissible Shear Stress (lb/ft^2)	Velocity Safety Factor	Shear Stress Safety Factor	GPS ID	Photo ID
27+35	10.2538	Bank stabilization	Existing	148	3.62	14.4	4		1.72		Alluvial Silts (colloidal)	3.75	0.26	0.94	0.15	107	110, 111
			Proposed	148	3.93	15.54	3.56		1.34		Erosion Control Blanket	8	3	2.25	2.24		
26+57	10.1714	Check structure (10.17)	Existing	148	3.79	20.62	2.97	2.78	0.95	0.85	Alluvial Silts (colloidal)	3.75	0.26	1.26	0.27	106	109
			Proposed	148	4.42	25.43	2.3	2.37	0.55	0.6	Class Facing - 75 lb (~11.4-inch D50)	12.1	5.3	5.11	8.83		
26+57	10.1714	Bank stabilization	Existing	148	3.79	20.62	2.97		0.95		Alluvial Silts (colloidal)	3.75	0.26	1.26	0.27	106	109
			Proposed	148	4.42	25.44	2.3		0.55		Erosion Control Blanket	8	3	3.48	5.45		
26+23	10.1428	Bank stabilization, boulder demolition	Existing	148	3.9	26.99	2.62		0.76		Alluvial Silts (colloidal)	3.75	0.26	1.43	0.34	104	106, 107
			Proposed	148	4.25	29.12	2.24		0.54		Erosion Control Blanket	8	3	3.57	5.56		
25+63	10.0727	Bank stabilization	Existing	148	4.36	28.42	2		0.41		Alluvial Silts (colloidal)	3.75	0.26	1.88	0.63	105	108
			Proposed	148	4.78	30.93	1.7		0.29		Erosion Control Blanket	8	3	4.71	10.34		
25+35	10.0454	Bank stabilization	Existing	148	4.64	27.43	1.8		0.32		Alluvial Silts (colloidal)	3.75	0.26	2.08	0.81	103	105
			Proposed	148	5.08	29.63	1.56		0.23		Erosion Control Blanket	8	3	5.13	13.04		
24+71	9.86363	Bank stabilization	Existing	148	5.19	28.44	1.6		0.25		Alluvial Silts (colloidal)	3.75	0.26	2.34	1.04	102	103, 104
			Proposed	148	5.67	30.45	1.39		0.18		Erosion Control Blanket	8	3	5.76	16.67		
23+70	9.5	Check structure retrofit (9.49)	Existing	148	5.18	22.67	2.35	2.36	0.58	0.59	Alluvial Silts (colloidal)	3.75	0.26	1.60	0.45	101	99-102
			Proposed	148	5.76	28.83	1.9	1.9	0.38	0.38	Class Facing - 75 lb (~11.4-inch D50)	12.1	5.3	6.37	13.95		
23+70	9.48	Bank stabilization	Existing	148	5.15	24.2	2.36		0.59		Alluvial Silts (colloidal)	3.75	0.26	1.59	0.44	101	99-102
			Proposed	148	5.72	29.4	1.9		0.38		Erosion Control Blanket	8	3	4.21	7.89		
23+40	9.42	Bank stabilization, boulder demolition	Existing	148	5.07	24.85	2.39		0.6		Alluvial Silts (colloidal)	3.75	0.26	1.57	0.43	100	98
			Proposed	148	5.7	28.64	1.88		0.36		Erosion Control Blanket	8	3	4.26	8.33		
22+91	9.34	Bank stabilization, boulder demolition	Existing	151	4.94	20.62	2.7		0.76		Alluvial Silts (colloidal)	3.75	0.26	1.39	0.34	99	96, 97
			Proposed	151	5.66	23.13	2.11		0.44		Erosion Control Blanket	8	3	3.79	6.82		
22+73	9.32	Bank stabilization	Existing	151	4.87	19	2.88		0.87		Alluvial Silts (colloidal)	3.75	0.26	1.30	0.30	98	93-95
			Proposed	151	5.63	21.27	2.23		0.5		Erosion Control Blanket	8	3	3.59	6.00		
22+26	9.2	Bank stabilization	Existing	151	4.55	16.25	3.42		1.25		Alluvial Silts (colloidal)	3.75	0.26	1.10	0.21	97	90-92
			Proposed	151	5.62	19.01	2.4		0.57		Erosion Control Blanket	8	3	3.33	5.26		
21+49	9.06	Bank stabilization	Existing	151	3.92	14.33	4.27		1.98		Alluvial Silts (colloidal)	3.75	0.26	0.88	0.13	96	87-89
			Proposed	151	5.66	18.86	2.35		0.54		Erosion Control Blanket	8	3	3.40	5.56		
21+12	9	Check structure (8.9)	Existing	151	2.61	10.95	7.66	11.24	7.01	16.32	Alluvial Silts (colloidal)	3.75	0.26	0.49	0.04	95	85, 86
			Proposed	151	5.68	18.88	2.31	7.59	0.52	6.91	Class Light - 200 lb (~15.9-inch D50)	14.3	7.3	1.88	1.06		
16+23	2.28571	Bank stabilization	Existing	151	2.78	19.74	4.3		2.16		Alluvial Silts (colloidal)	3.75	0.26	0.87	0.12	91	79
			Proposed	151	2.78	19.74	4.3		2.16		Erosion Control Blanket	8	3	1.86	1.39		
15+83	NONE	Bank stabilization	Existing	151	2.78*	19.74	4.3		2.16		Alluvial Silts (colloidal)	3.75	0.26	0.87	0.12	90	78
			Proposed	151	2.78*	19.74	4.3		2.16		Erosion Control Blanket	8	3	1.86	1.39		
15+56	NONE	Bank stabilization	Existing	151	2.78*	19.74	4.3		2.16		Alluvial Silts (colloidal)	3.75	0.26	0.87	0.12	89	71-77
			Proposed	151	2.78*	19.74	4.3		2.16		Erosion Control Blanket	8	3	1.86	1.39		
15+14	NONE	Check structure	Existing	151	2.78*	19.74	4.3		2.16		Alluvial Silts (colloidal)	3.75	0.26	0.87	0.12	85	68-70
			Proposed	151	2.78*	19.74	4.3		2.16		Class Facing - 75 lb (~11.4-inch D50)	12.1	5.3	2.81	2.45		

* Indicates that the exact location was not modeled in HEC-RAS, but hydraulic results were used from the nearest analyzed station.



Source: USDA, SCS 1975

Geosyntec consultants

Figure F1. Sizing Nomograph for Riprap Apron Under Minimum Tailwater Conditions
Boeing: SSFL Northern Drainage
Project No. SB0363R