



GREEN MOUNTAIN ENGINEERING

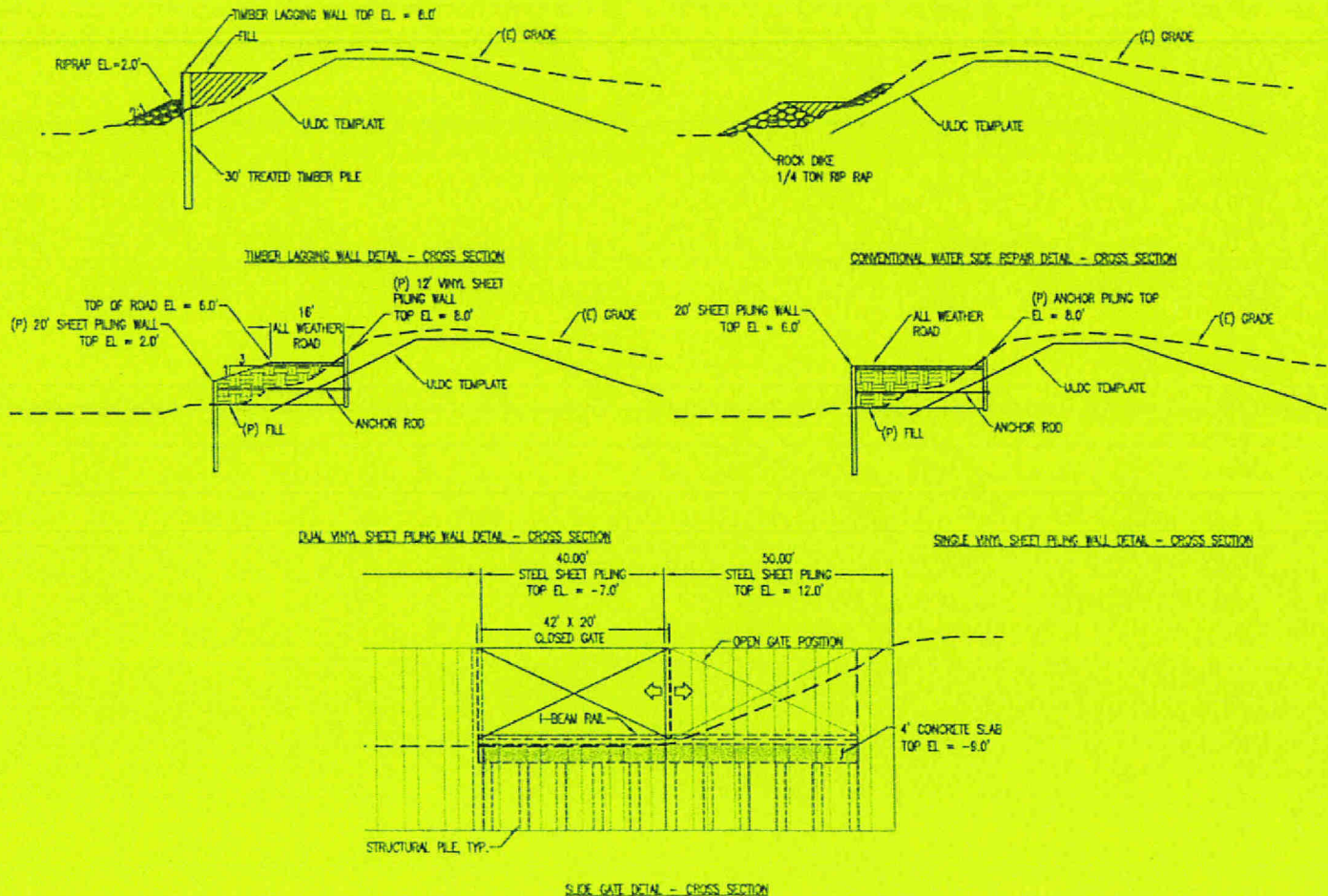
Surveying • Civil Engineering • Permitting • Estimating • Construction Consulting

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San Joaquin County Flood Control Agency Statement of Qualifications/Statement of Proposal

Smith Canal Flood Control FEMA and ULDC compliance



Prepared BY
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(9/25/13) (Rev (1) 10/2/13)

Summary of Alternates
Estimated Budgets
GME Sales by Customer Report 1/1/09 to 6/30/13
ULDC Compliance Evaluation
Estimated Schedules



10/2/2013

SJA/CA SOP Summary of Expected Project Costs, ULDC Compliance and Time of Completion

	Selected Alternate			Atherton Cove Design Procedure			Dual Vinyl Sheet Pile Wall		
	RD 1614	RD 828	Total	RD 1614	RD 828	Total	RD 1614	RD 828	Total
Construction Cost (include Const Management, mitigation and contingency)	\$26,056,129	\$0	\$26,056,129	\$11,690,149	\$0	\$11,690,149	\$19,122,586	\$5,369,071	\$24,491,657
Engineering/Survey/Geotechnical Cost	\$1,215,746	\$0	\$1,215,746	\$1,215,746	\$0	\$1,215,746	\$837,930	\$233,802	\$1,071,732
Biological/CEQA/NEPA Cost	\$1,901,016	\$0	\$1,901,016	\$1,380,937	\$0	\$1,380,937	\$676,017	\$158,844	\$834,861
General Requirements	\$2,614,806	\$0	\$2,614,806	\$1,099,246	\$0	\$1,099,246	\$1,265,846	\$249,960	\$1,515,806
Contingency	\$859,735	\$0	\$859,735	\$369,593	\$0	\$369,593	\$277,979	\$64,261	\$342,240
Habitat Enhancement component			\$0			\$0			\$0
Subtotal Costs	\$32,647,433	\$0	\$32,647,433	\$15,755,672	\$0	\$15,755,672	\$22,180,359	\$6,075,937	\$28,256,297
Total Both Districts			\$32,647,433			\$15,755,672			\$28,256,297
Yearly Maintenance Costs (2012 dollars)				85%	85%		50%	50%	
Levee Maintenance and patrols	\$150,000	\$25,000	\$175,000	\$127,500	\$21,250	\$148,750	\$75,000	\$12,500	\$87,500
operations, maintenance and testing	\$85,000	\$35,000	\$120,000	\$72,250	\$29,750	\$102,000			\$0
Electricity for pumps (\$7/acre-ft/day)	\$265,720	\$127,750	\$393,470	\$225,862	\$108,588	\$334,450			\$0
Investment for Future Replacement	\$60,000	\$20,000	\$80,000	\$51,000	\$17,000	\$68,000	\$3,000	\$1,000	\$4,000
Total 1 year Maintenance cost Districts	\$560,720	\$207,750	\$768,470	\$476,612	\$176,588	\$653,200	\$78,000	\$13,500	\$91,500
ULDC Standards Compliance Grade			25%			24%			91%
Estimated Completion Date and Years Required			5.7			5.7			1.9
Required For Completion			7/1/2019			7/1/2019			8/25/2015
	Timber Bulkhead Wall			Single Vinyl Sheet Pile Wall			RD 828 FEMA		
Construction Cost	\$9,564,923	\$4,686,873	\$14,251,795	\$7,779,417	\$3,677,692	\$11,457,110	\$0	\$1,967,000	\$1,967,000
Engineering/Survey/Geotechnical Cost	\$714,240	\$233,802	\$948,042	\$837,930	\$233,802	\$1,071,732	\$0	\$372,858	\$372,858
Biological/CEQA/NEPA Cost	\$386,412	\$158,844	\$545,256	\$676,017	\$158,844	\$834,861	\$0	\$158,844	\$158,844
General Requirements	\$328,696	\$249,960	\$578,656	\$1,265,846	\$249,960	\$1,515,806	\$0	\$249,960	\$249,960
Contingency	\$142,935	\$64,261	\$207,195	\$277,979	\$64,261	\$342,240	\$0	\$78,166	\$78,166
Habitat Enhancement component			\$0			\$0			\$0
Subtotal Costs	\$11,137,206	\$5,393,739	\$16,530,945	\$10,837,190	\$4,384,559	\$15,221,749	\$0	\$2,826,828	\$2,826,828
Total Both Districts			\$16,530,945			\$15,221,749			\$2,826,828
Yearly Maintenance Costs (2012 dollars)	50%	50%		50%	50%		0%	100%	
Levee Maintenance and patrols	\$75,000	\$12,500	\$87,500	\$75,000	\$12,500	\$87,500	\$0	\$25,000	\$25,000
operations, maintenance and testing			\$0			\$0	\$0		\$0
Electricity for pumps (\$7/acre-ft/day)			\$0			\$0	\$0		\$0
Investment for Future Replacement	\$9,000	\$3,000	\$12,000	\$3,000	\$1,000	\$4,000	\$0		\$0
Total 1 year Maintenance cost Districts	\$84,000	\$15,500	\$99,500	\$78,000	\$13,500	\$91,500	\$0	\$25,000	\$25,000
ULDC Standards Compliance Grade			71%			79%		N/A	
Estimated Completion Date and Years Required			1.9			1.9			1.9
For Completion			8/25/2015			8/25/2015			8/25/2015

DESCRIPTION	QUANT	UNIT	UNIT COST	TOTAL	QUANT	UNIT	UNIT COST	TOTAL
Dual Vinyl Sheetpile Wall	RD 828 Levee				RD 1614 Levee			
	9,500	ft			12,600	ft		
	1,000	ft			1,000	ft		
	10,500	required			13,600	required		
	10,700	furnished			13,700	furnished		
Developed lots	20.0	ea			75.0	ea		
Steel Sheetpile Wall	100	ft	TBD		40	ft	TBD	
Double Plastic D/Sheetpile wall	200	ft	TBD		8900	ft	9+00 to 105+00	
Single Plastic Sheetpile wall	3500	ft	41+00 to 46+00 and 85+00 to 115+00		1260	ft	105+00 to 115+00	
Timber Bulkhead Wall	3000	ft	0+00 to 30+00 (AC)		3000	ft	0+00 to 30+00 (AC)	
Conventional Waterside Repair	3900	ft	46+00 to 85+00		500	ft	TBD	
Gate Structure	42	ft	Not Used		42	ft	Not Used	
Dredging	2	cys			2	cys		
General Construction Requirements	1.0	ls	\$1,193,800	\$1,193,800	1.0	ls	\$2,190,220	\$2,190,220
				-\$1,193,800				-\$2,190,220
Mobilization/Demob	1	ls	\$25,000	\$25,000	1	ls	\$25,000	\$25,000
Dock and boat accommodations	20	ea	\$5,000	\$100,000	75	ea	\$5,000	\$375,000
Clearing and grubbing	1	ls	\$12,000	\$12,000	1	ls	\$12,000	\$12,000
Pump Station Retrofits	2	ea	\$350,000	\$700,000	4	ea	\$350,000	\$1,400,000
Construction Dredging	21,200	cy	\$12.50	\$265,000	27,320	cy	\$12.50	\$341,500
Steel Sheetpile Wall	100	ft	\$2,286	\$228,578	40	ft	\$2,286	\$91,431
				-\$228,578				-\$91,431
Furnish Steel sheetpiles	108,000	lbs	\$0.85	\$91,800	43,200	lbs	\$0.85	\$36,720
Sheetpile coating	6,000	sf	\$3.00	\$18,000	2,400	sf	\$3.00	\$7,200
Cathodic Protection	6,000	sf	\$3.00	\$18,000	2,400	sf	\$3.00	\$7,200
Drive Steel sheetpiles	100	lf	\$903	\$90,278	40	lf	\$903	\$36,111
Furnish and install Engineered fill	300	tons	\$20.00	\$6,000	120	tons	\$20.00	\$2,400
F/I QS Rip Rap	100	tons	\$45.00	\$4,500	40	tons	\$45.00	\$1,800
Double Plastic D/Sheetpile wall	200	ft	\$1,515	\$302,997	8,900	ft	\$1,246	\$11,089,626
				-\$302,997				-\$11,089,626
Waterside exploratory core trench	3,700	ft	\$12.50	\$46,250	5,750	ft	\$12.50	\$71,875
Furnish Plastic sheetpiles	6,400	sf	\$12.00	\$76,800	284,800	sf	\$12.00	\$3,417,600
Drive Plastic sheetpiles	400	lf	\$345.00	\$138,000	17,800	lf	\$345.00	\$6,141,000
Furnish Waler and connectors	100	ft	\$65.03	\$6,503	4,450	ft	\$65.03	\$289,374
Furnish and install Engineered fill	600	ton	\$20.00	\$12,000	26,700	ton	\$20.00	\$534,000
F/I QS Rip Rap	200	ton	\$45.00	\$9,000	8,900	ton	\$45.00	\$400,500
F/I all weather road Materials	148	ton	\$30.00	\$4,444	6,593	ton	\$30.00	\$197,778
Utility crossings	20	ea	\$500.00	\$10,000	75	ea	\$500.00	\$37,500
Timber Bulkhead Wall	3,000	ft	\$220	\$660,000	3,000	ft	\$220	\$660,000
				-\$660,000				-\$660,000
Furnish Timber Piles	375	ea	\$400.00	\$150,000	375	ea	\$400.00	\$150,000
Furnish Structural Timbers	15,000	bf	\$8.00	\$120,000	15,000	bf	\$8.00	\$120,000
Furnish Waler and connectors	3,000	lf	\$2.50	\$7,500	3,000	lf	\$2.50	\$7,500
Furnish and install Engineered fill	9,000	tons	\$20.00	\$180,000	9,000	tons	\$20.00	\$180,000
F/I QS Rip Rap	3,000	tons	\$45.00	\$135,000	3,000	tons	\$45.00	\$135,000
F/I all weather road Materials	2,250	tons	\$30.00	\$67,500	2,250	tons	\$30.00	\$67,500
Other Components								
Flood, Drainag, Navagational Dredging	5000	cys	\$12.50	\$265,000	5000	cys	\$12.50	\$341,500
F/I River Run cobble rock	2,000	tons	\$60	\$120,000	2,000	tons	\$60	\$120,000
Plantings and restoration	1	allow	\$250,000	\$250,000	1	allow	\$250,000	\$250,000
Subtotal Construction costs				\$2,928,575				\$14,706,058
Mitigation @ 3 x impact	12.6	acres	\$150,000	\$1,890,496	16.8	acres	\$150,000	\$2,516,529
Staking and Construction Management	12%			\$350,000	8%			\$1,200,000
Construction Contingency	7%			\$200,000	5%			\$700,000
Total DVSP levee improvements				\$5,369,071				\$19,122,586
Engineering/Surveying and Geotechnical (ENG)	1.0			\$233,802	1.0			\$837,930
				-\$233,802				-\$837,930
Prepare Clarification for EIP using refined proposal	1.0	est	\$7,870	\$7,870	1.0	est	\$16,610	\$16,610
Perform topographic and Hydrographic surveys	1.0	est	\$17,740	\$17,740	1.0	est	\$76,880	\$76,880

DESCRIPTION	QUANT	UNIT	UNIT COST	TOTAL	QUANT	UNIT	UNIT COST	TOTAL
Create topographic maps and features	1.0	est	\$11,460	\$11,460	1.0	est	\$55,930	\$55,930
Geotechnical Testing and Sampling	1.0	est	\$32,176	\$32,176	1.0	est	\$156,810	\$156,810
Preliminary Design of Alternates	1.0	est	\$7,760	\$7,760	1.0	est	\$28,790	\$28,790
Initiate FEMA involvement	1.0	est	\$22,820	\$22,820	1.0	est	\$102,384	\$102,384
Landowner Coordination	1.0	est	\$9,270	\$9,270	1.0	est	\$68,990	\$68,990
Prepare initial CLOMR and Submit	1.0	est	\$15,280	\$15,280	1.0	est	\$47,449	\$47,449
Estimate alternate costs and benefits	1.0	est	\$6,470	\$6,470	1.0	est	\$24,242	\$24,242
Prepare Alternate evaluation report and recommendations	1.0	est	\$13,240	\$13,240	1.0	est	\$29,965	\$29,965
Prepare DWR PFA Scope of Work	1.0	est	\$17,640	\$17,640	1.0	est	\$26,380	\$26,380
Design Pump Station Modifications	1.0	est	\$22,170	\$22,170	1.0	est	\$73,300	\$73,300
Submit to Delta Stewardship Council for approval	1.0	est	\$7,270	\$7,270	1.0	est	\$16,010	\$16,010
Prepare Stream Bed Alteration Notification	1.0	est	\$4,480	\$4,480	1.0	est	\$10,222	\$10,222
Prepare Section 404 Permits	1.0	est	\$10,776	\$10,776	1.0	est	\$24,760	\$24,760
Submittal The State Lands Commission	1.0	est	\$7,160	\$7,160	1.0	est	\$26,878	\$26,878
Investigate Mitigation Options	1.0	est	\$20,220	\$20,220	1.0	est	\$52,330	\$52,330
Biological and Permitting (BP)				\$158,844				\$676,017
				-\$158,844				-\$676,017
Initiate CORPS, NMFS and USFW consultation	1.0	est	\$20,700	\$20,700	1.0	est	\$90,540	\$90,540
Prepare CEQA documents	1.0	est	\$36,740	\$36,740	1.0	est	\$169,470	\$169,470
Address CEQA concerns and resubmittals	1.0	est	\$45,200	\$45,200	1.0	est	\$198,450	\$198,450
Prepare Section 404 Permits	1.0	est	\$24,460	\$24,460	1.0	est	\$108,930	\$108,930
Submittal The State Lands Commission	1.0	est	\$13,224	\$13,224	1.0	est	\$51,522	\$51,522
Investigate Mitigation Options	1.0	est	\$18,520	\$18,520	1.0	est	\$57,105	\$57,105
General Requirements (GR)				\$249,960				\$1,265,846
				-\$249,960				-\$1,265,846
Administration	1.0	est	\$9,676	\$9,676	1.0	est	\$43,276	\$43,276
Public Outreach	1.0	est	\$13,826	\$13,826	1.0	est	\$59,212	\$59,212
Legal and Real Estate	1.0	est	\$22,980	\$22,980	1.0	est	\$106,603	\$106,603
ROW Acquisition	1.0	est	\$80,890	\$80,890	1.0	est	\$425,368	\$425,368
Landowner Compensation	1.0	est	\$103,568	\$103,568	1.0	est	\$550,701	\$550,701
Public Outreach	1.0	est	\$19,020	\$19,020	1.0	est	\$80,687	\$80,687
Contingency (ENG,BP,GR)	10%		\$642,606	\$642,606	10%		\$2,779,793	\$277,979.34
Total ENG,BP,GR				\$706,867				\$3,057,773
							\$4,825,000	\$3,764,639
Total Cost to certify levee to Substantial ULDC			RD 828	\$6,075,937			RD 1614	\$22,180,359
Total Cost Both Districts								\$28,256,297

DESCRIPTION	QUANT	UNIT	UNIT COST	TOTAL	QUANT	UNIT	UNIT COST	TOTAL
Atherton Cove Gate Procedure	RD 828 Levee				RD 1614 Levee and Gate			
					4200.0			
					4200.0			
					4280.0			
Developed lots					21.0	ea		
Steel Sheetpile Wall					40	ft	Gate Structure	
Double Plastic D\Sheetpile wall					4000	ft	9+00 to 21+00, 0+00 to 30+00	
Single Plastic Sheetpile wall					40	ft	TBD	
Timber Bulkhead Wall					100	ft	TBD	
Conventional Waterside Repair					100	ft	TBD	
Gate Structure					42	ft		
Dredging					2	cys		
General Construction Requirements	1.0	ls			1.0	ls	\$775,220	\$775,220
								-\$775,220
Mobilization/Demob	1	ls			1	ls	\$75,000	\$75,000
Dock and boat accommodations	10				21	ea	\$7,500	\$157,500
Clearing and grubbing	1	ls			1	ls	\$50,000	\$50,000
Pump Station Retrofits	2	ea			1	ea	\$350,000	\$350,000
Construction Dredging		cy	\$12.50		8,480	cy	\$12.50	\$106,000
Steel Sheetpile Wall					40	ft	\$2,286	\$91,431
								-\$91,431
Furnish Steel sheetpiles		lbs	\$0.85		43,200	lbs	\$0.85	\$36,720
Sheetpile coating		sf	\$3.00		2,400	sf	\$3.00	\$7,200
Cathodic Protection		sf	\$3.00		2,400	sf	\$3.00	\$7,200
Drive Steel sheetpiles		lf	\$903		40	lf	\$903	\$36,111
Furnish and install Engineered fill		tons	\$20.00		120	tons	\$20.00	\$2,400
F/I QS Rip Rap		tons	\$45.00		40	tons	\$45.00	\$1,800
Double Plastic D\Sheetpile wall					4,000	ft	\$1,243	\$4,971,444
								-\$4,971,444
Waterside exploratory core trench		ft	\$12.50		2,080	ft	\$12.50	\$26,000
Furnish Plastic sheetpiles		sf	\$12.00		128,000	sf	\$12.00	\$1,536,000
Drive Plastic sheetpiles		lf	\$345.00		8,000	lf	\$345.00	\$2,760,000
Furnish Waler and connectors		ft	\$65.03		2,000	ft	\$65.03	\$130,056
Furnish and install Engineered fill		ton	\$20.00		12,000	ton	\$20.00	\$240,000
F/I QS Rip Rap		ton	\$45.00		4,000	ton	\$45.00	\$180,000
F/I all weather road Materials		ton	\$30.00		2,963	ton	\$30.00	\$88,889
Utility crossings		ea	\$500.00		21	ea	\$500.00	\$10,500
Timber Bulkhead Wall					100	ft	\$220	\$22,000
								-\$22,000
Furnish Timber Piles		ea	\$400.00		13	ea	\$400.00	\$5,000
Furnish Structural Timbers		bf	\$8.00		500	bf	\$8.00	\$4,000
Furnish Waler and connectors		lf	\$2.50		100	lf	\$2.50	\$250
Furnish and install Engineered fill		tons	\$20.00		300	tons	\$20.00	\$6,000
F/I QS Rip Rap		tons	\$45.00		100	tons	\$45.00	\$4,500
F/I all weather road Materials		tons	\$30.00		75	tons	\$30.00	\$2,250
Gate Structure					42	ft	\$1,155,165	\$3,184,956
								-\$3,184,956
Furnish Structural piles					880	lf	\$100.00	\$88,000
Furnish Steel sheetpiles					518,400	lbs	\$0.85	\$440,640
Sheetpile coating					19,200	sf	\$3.00	\$57,600
Cathodic Protection					19,200	sf	\$3.00	\$57,600
Drive Steel sheetpiles					480	lf	\$1,038.19	\$498,333
Drive Structural piles					40	ea	\$3,385.42	\$135,417
F/I structural Concrete					444	cy	\$478.00	\$212,444
Furnish and install Engineered fill					7,407	ton	\$40.00	\$296,296
F/I QS Rip Rap					900	ton	\$56.25	\$50,625
F/I all weather road Materials					200	ton	\$60.00	\$12,000
Site work: paving, gates, fences					1	allow	\$200,000	\$200,000
Pumps Station					1	allow	\$300,000	\$300,000
Buildings					1	allow	\$75,000.00	\$75,000
Electrical					1	allow	\$75,000.00	\$75,000

DESCRIPTION	QUANT	UNIT	UNIT COST	TOTAL	QUANT	UNIT	UNIT COST	TOTAL
Mechanical					1	allow	\$500,000	\$500,000
Other Components								
Flood, Drainag, Navigational Dredging		cys	\$12.50		2000	cys	\$12.50	\$106,000
F/I River Run cobble rock		tons	\$60		1,000	tons	\$60	\$60,000
Plantings and restoration		allow	\$250,000		1	allow	\$20,000	\$20,000
Subtotal Construction costs								\$9,008,331
Mitigation @ 3 x impact		acres	\$150,000		6.2	acres	\$150,000	\$931,818
Staking and Construction Management	#DIV/0!				11%			\$1,000,000
Construction Contingency	#DIV/0!				8%			\$750,000
Total Atherton Cove to FEMA & Partial ULDC								\$11,690,149
Engineering/Surveying and Geotechnical (ENG)	1.0				1.0			\$1,215,746
								-\$1,215,746
Prepare Clarification for EIP using refined proposal		est	\$7,870		1.0	est	\$16,610	\$16,610
Perform topographic and Hydrographic surveys		est	\$17,740		1.0	est	\$76,880	\$76,880
Create topographic maps and features		est	\$11,460		1.0	est	\$43,670	\$43,670
Geotechnical Testing and Sampling		est	\$32,176		1.0	est	\$224,840	\$224,840
Preliminary Design of Alternates		est	\$7,760		1.0	est	\$24,050	\$24,050
Initiate FEMA involvement		est	\$22,820		1.0	est	\$102,384	\$102,384
Landowner Coordination		est	\$9,270		1.0	est	\$40,540	\$40,540
Prepare initial CLOMR and Submit		est	\$15,280		1.0	est	\$47,449	\$47,449
Estimate alternate costs and benefits		est	\$6,470		1.0	est	\$25,958	\$25,958
Prepare Alternate evaluation report and recommendations		est	\$13,240		1.0	est	\$29,965	\$29,965
Prepare DWR PFA Scope of Work		est	\$17,640		1.0	est	\$26,380	\$26,380
Design Gate Structure, Mech and elec		est	\$22,170		1.0	est	\$426,820	\$426,820
Submit to Delta Stewardship Council for approval		est	\$7,270		1.0	est	\$16,010	\$16,010
Prepare Stream Bed Alteration Notification		est	\$4,480		1.0	est	\$10,222	\$10,222
Prepare Section 404 Permits		est	\$10,776		1.0	est	\$24,760	\$24,760
Submittal The State Lands Commission		est	\$7,160		1.0	est	\$26,878	\$26,878
Investigate Mitigation Options		est	\$20,220		1.0	est	\$52,330	\$52,330
Biological and Permitting (BP)								\$1,380,937
								-\$1,380,937
Initiate CORPS, NMFS and USFW consultation		est	\$20,700		1.0	est	\$122,100	\$122,100
Prepare CEQA documents		est	\$36,740		1.0	est	\$285,220	\$285,220
Address CEQA concerns and resubmittals		est	\$45,200		1.0	est	\$728,460	\$728,460
Prepare Section 404 Permits		est	\$24,460		1.0	est	\$133,380	\$133,380
Submittal The State Lands Commission		est	\$13,224		1.0	est	\$54,672	\$54,672
Investigate Mitigation Options		est	\$18,520		1.0	est	\$57,105	\$57,105
General Requirements (GR)								\$1,099,246
								-\$1,099,246
Administration		est	\$9,676		1.0	est	\$43,276	\$43,276
Public Outreach		est	\$13,826		1.0	est	\$59,212	\$59,212
Legal and Real Estate		est	\$22,980		1.0	est	\$106,603	\$106,603
ROW Acquisition		est	\$80,890		1.0	est	\$547,618	\$547,618
Landowner Compensation		est	\$103,568		1.0	est	\$213,701	\$213,701
Public Outreach		est	\$19,020		1.0	est	\$128,837	\$128,837
Contingency (ENG,BP,GR)	10%				10%		\$3,695,929	\$369,592.94
Total ENG,BP,GR			#DIV/0!				\$4,065,522	\$4,065,522
Total Atherton Cove to FEMA & Partial ULDC			RD 828				RD 1614	\$15,755,672
Total Cost Both Districts								\$15,755,672

DESCRIPTION	QUANT	UNIT	UNIT COST	TOTAL	QUANT	UNIT	UNIT COST	TOTAL
Current Selected Alternative Gate and Improve Dadds Point	RD 828 Levee				RD 1614 Levee and Gate			
					1900		Dadds Point	
					1900.0			
					2020.0			
Developed lots		ea			2.0	ea		
Steel Sheetpile Wall		ft			10	ft	NA	
Double Plastic D\Sheetpile wall		ft			10	ft	NA	
Single Plastic Sheetpile wall		ft				ft	TBD	
Timber Bulkhead Wall		ft			100	ft	TBD	
Conventional Waterside Repair		ft			1900	ft	DADDS POINT	
Gate Structure		ft			42	ft		
Dredging		cys			2	cys		
General Construction Requirements	1.0	ls			1.0	ls	\$874,930	\$874,930
								-\$874,930
Mobilization/Demob	1	ls			1	ls	\$150,000	\$150,000
Dock and boat accommodations	10	ea			2	ea	\$7,000	\$14,000
Clearing and grubbing	1	ls			1	ls	\$175,000	\$175,000
Pump Station Retrofits	2	ea				ea	\$350,000	
Construction Dredging		cy	\$12.50		6,020	cy	\$87.50	\$526,750
Steel Sheetpile Wall		ft	#DIV/0!		10	ft	\$2,286	\$22,858
								-\$22,858
Furnish Steel sheetpiles		lbs	\$0.85		10,800	lbs	\$0.85	\$9,180
Sheetpile coating		sf	\$3.00		600	sf	\$3.00	\$1,800
Cathodic Protection		sf	\$3.00		600	sf	\$3.00	\$1,800
Drive Steel sheetpiles		lf	\$903		10	lf	\$903	\$9,028
Furnish and install Engineered fill		tons	\$20.00		30	tons	\$20.00	\$600
F/I QS Rip Rap		tons	\$45.00		10	tons	\$45.00	\$450
Double Plastic D\Sheetpile wall		ft	#DIV/0!		10	ft	\$1,352	\$13,525
								-\$13,525
Waterside exploratory core trench		ft	\$12.50		15	ft	\$12.50	\$188
Furnish Plastic sheetpiles		sf	\$12.00		320	sf	\$12.00	\$3,840
Drive Plastic sheetpiles		lf	\$345.00		20	lf	\$345.00	\$6,900
Furnish Waler and connectors		ft	\$65.03		5	ft	\$65.03	\$325
Furnish and install Engineered fill		ton	\$20.00		30	ton	\$20.00	\$600
F/I QS Rip Rap		ton	\$45.00		10	ton	\$45.00	\$450
F/I all weather road Materials		ton	\$30.00		7	ton	\$30.00	\$222
Utility crossings		ea	\$500.00		2	ea	\$500.00	\$1,000
Timber Bulkhead Wall		ft	#DIV/0!		100	ft	\$220	\$22,000
								-\$22,000
Furnish Timber Piles		ea	\$400.00		13	ea	\$400.00	\$5,000
Furnish Structural Timbers		bf	\$8.00		500	bf	\$8.00	\$4,000
Furnish Waler and connectors		lf	\$2.50		100	lf	\$2.50	\$250
Furnish and install Engineered fill		tons	\$20.00		300	tons	\$20.00	\$6,000
F/I QS Rip Rap		tons	\$45.00		100	tons	\$45.00	\$4,500
F/I all weather road Materials		tons	\$30.00		75	tons	\$30.00	\$2,250
Gate Structure		ft			42	ft	\$6,005,173	\$18,380,757
								-\$18,380,757
Furnish Structural piles					2,880	lf	\$100.00	\$288,000
Furnish Steel sheetpiles					4,730,400	lb	\$0.85	\$4,020,840
Sheetpile coating					175,200	sf	\$3.00	\$525,600
Cathodic Protection					175,200	sf	\$4.00	\$700,800
Construction Dredging		cy	\$12.50		2,000	cy	\$50.00	\$100,000
Drive Steel sheetpiles					4,380	lf	\$1,038.19	\$4,547,292
Drive Structural piles					72	ea	\$3,385.42	\$243,750
F/I structural Concrete					1,200	cy	\$478.00	\$573,600
Furnish and install Engineered fill					50,000	ton	\$20.00	\$1,000,000
F/I QS Rip Rap					900	ton	\$56.25	\$50,625
F/I all weather road Materials					4,667	ton	\$37.50	\$175,000
Site work: paving, gates, fences					1	allow	\$400,000	\$400,000
Pumps Station					1	allow	\$3,000,000	\$3,000,000
Buildings					1	allow	\$75,000	\$75,000
Electrical					1	allow	\$125,000	\$125,000
Mechanical					1	allow	\$2,400,000	\$2,400,000

DESCRIPTION	QUANT	UNIT	UNIT COST	TOTAL	QUANT	UNIT	UNIT COST	TOTAL
Other Components								
Flood, Drainag, Navigational Dredging		cys	\$12.50		2000	cys	\$12.50	\$75,250
F/I River Run cobble rock		tons	\$60		1,000	tons	\$60	\$60,000
Plantings and restoration		allow	\$250,000		1	allow	\$20,000	\$20,000
Subtotal Construction costs								\$19,304,889
Mitigation @ 3 x impact		acres	\$150,000		19.0	acres	\$150,000	\$2,851,240
Staking and Construction Management	#DIV/0!				8%			\$1,500,000
Construction Contingency	#DIV/0!				12%			\$2,400,000
Total Construction cost for Gate to FEMA								\$26,056,129
Engineering/Surveying and Geotechnical (ENG)	1.0				1.0			\$1,215,746
								-\$1,215,746
Prepare Clarification for EIP using refined proposal		est	\$7,870		1.0	est	\$16,610	\$16,610
Perform topographic and Hydrographic surveys		est	\$17,740		1.0	est	\$76,880	\$76,880
Create topographic maps and features		est	\$11,460		1.0	est	\$43,670	\$43,670
Geotechnical Testing and Sampling		est	\$32,176		1.0	est	\$224,840	\$224,840
Preliminary Design of Alternates		est	\$7,760		1.0	est	\$24,050	\$24,050
Initiate FEMA involvement		est	\$22,820		1.0	est	\$102,384	\$102,384
Landowner Coordination		est	\$9,270		1.0	est	\$40,540	\$40,540
Prepare initial CLOMR and Submit		est	\$15,280		1.0	est	\$47,449	\$47,449
Estimate alternate costs and benefits		est	\$6,470		1.0	est	\$25,958	\$25,958
Prepare Alternate evaluation report and recommendations		est	\$13,240		1.0	est	\$29,965	\$29,965
Prepare DWR PFA Scope of Work		est	\$17,640		1.0	est	\$26,380	\$26,380
Design Gate Structure, Mech and elec		est	\$22,170		1.0	est	\$426,820	\$426,820
Submit to Delta Stewardship Council for approval		est	\$7,270		1.0	est	\$16,010	\$16,010
Prepare Stream Bed Alteration Notification		est	\$4,480		1.0	est	\$10,222	\$10,222
Prepare Section 404 Permits		est	\$10,776		1.0	est	\$24,760	\$24,760
Submittal The State Lands Commission		est	\$7,160		1.0	est	\$26,878	\$26,878
Investigate Mitigation Options		est	\$20,220		1.0	est	\$52,330	\$52,330
Biological and Permitting (BP)								\$1,901,016
								-\$1,901,016
Initiate CORPS, NMFS and USFW consultation		est	\$20,700		1.0	est	\$122,100	\$122,100
Prepare CEQA documents		est	\$36,740		1.0	est	\$435,220	\$435,220
Address CEQA concerns and resubmittals		est	\$45,200		1.0	est	\$1,098,539	\$1,098,539
Prepare Section 404 Permits		est	\$24,460		1.0	est	\$133,380	\$133,380
Submittal The State Lands Commission		est	\$13,224		1.0	est	\$54,672	\$54,672
Investigate Mitigation Options		est	\$18,520		1.0	est	\$57,105	\$57,105
General Requirements (GR)								\$2,614,806
								-\$2,614,806
Administration		est	\$9,676		1.0	est	\$43,276	\$43,276
Public Outreach		est	\$13,826		1.0	est	\$59,212	\$59,212
Legal and Real Estate		est	\$22,980		1.0	est	\$1,242,163	\$1,242,163
ROW Acquisition		est	\$80,890		1.0	est	\$752,618	\$752,618
Landowner Compensation		est	\$103,568		1.0	est	\$338,701	\$338,701
Public Outreach		est	\$19,020		1.0	est	\$178,837	\$178,837
Contingency (ENG,BP,GR)	10%				15%		\$5,731,568	\$659,735.26
Total ENG,BP,GR								\$6,591,304
							\$4,825,000	\$6,591,304
Total Construction cost for Gate to FEMA			RD 828				RD 1614	\$32,647,433
Total Both Districts								\$32,647,433

DESCRIPTION	QUANT	UNIT	UNIT COST	TOTAL	QUANT	UNIT	UNIT COST	TOTAL
Timber Bulkhead Wall	RD 828 Levee				RD 1614 Levee			
	6500.0				12600.0			
	1000.0				1000.0			
	7500.0				13600.0			
	7550.0				14200.0			
Developed lots	20.0	ea			75.0	ea		
Steel Sheetpile Wall	50	ft			100	ft	TBD	
Double Plastic D\Sheetpile wall		ft				ft		
Single Plastic Sheetpile wall		ft				ft		
Timber Bulkhead Wall	7500	ft	40+00 to 115+00		13600	ft	0+00 to 30+00 (AC), 9+00 to 115+00	
Conventional Waterside Repair		ft			500	ft	TBD	
Gate Structure	42	ft			42	ft	Not Used	
Dredging	2	cys			2	cys		
General Construction Requirements	1.0	ls	\$1,070,400	\$1,070,400	1.0	ls	\$2,256,300	\$2,256,300
				-\$1,070,400				-\$2,256,300
Mobilization/Demob	1	ls	\$25,000	\$25,000	1	ls	\$25,000	\$25,000
Dock and boat accommodations	20	ea	\$5,000	\$100,000	75	ea	\$5,000	\$375,000
Clearing and grubbing	1	ls	\$12,000	\$12,000	1	ls	\$12,000	\$12,000
Pump Station Retrofits	2	ea	\$350,000	\$700,000	4	ea	\$350,000	\$1,400,000
Construction Dredging	15,000	cy	\$12.50	\$187,500	28,200	cy	\$12.50	\$352,500
Steel Sheetpile Wall	50	ft	\$2,286	\$114,289	100	ft	\$2,286	\$228,578
				-\$114,289				-\$228,578
Furnish Steel sheetpiles	54,000	lbs	\$0.85	\$45,900	108,000	lbs	\$0.85	\$91,800
Sheetpile coating	3,000	sf	\$3.00	\$9,000	6,000	sf	\$3.00	\$18,000
Cathodic Protection	3,000	sf	\$3.00	\$9,000	6,000	sf	\$3.00	\$18,000
Drive Steel sheetpiles	50	lf	\$903	\$45,139	100	lf	\$903	\$90,278
Furnish and install Engineered fill	150	tons	\$20.00	\$3,000	300	tons	\$20.00	\$6,000
F/I QS Rip Rap	50	tons	\$45.00	\$2,250	100	tons	\$45.00	\$4,500
Double Plastic D\Sheetpile wall		ft	#DIV/0!	\$10,625		ft	#DIV/0!	\$38,750
				-\$10,625				-\$38,750
Waterside exploratory core trench	50	ft	\$12.50	\$625	100	ft	\$12.50	\$1,250
Furnish Plastic sheetpiles		sf	\$12.00			sf	\$12.00	
Drive Plastic sheetpiles		lf	\$345.00			lf	\$345.00	
Furnish Waler and connectors		ft	\$65.03			ft	\$65.03	
Furnish and install Engineered fill		ton	\$20.00			ton	\$20.00	
F/I QS Rip Rap		ton	\$45.00			ton	\$45.00	
F/I all weather road Materials		ton	\$30.00			ton	\$30.00	
Utility crossings	20	ea	\$500.00	\$10,000	75	ea	\$500.00	\$37,500
Timber Bulkhead Wall	7,500	ft	\$220	\$1,650,000	13,600	ft	\$220	\$2,992,000
				-\$1,650,000				-\$2,992,000
Furnish Timber Piles	938	ea	\$400.00	\$375,000	1,700	ea	\$400.00	\$680,000
Furnish Structural Timbers	37,500	bf	\$8.00	\$300,000	68,000	bf	\$8.00	\$544,000
Furnish Waler and connectors	7,500	lf	\$2.50	\$18,750	13,600	lf	\$2.50	\$34,000
Furnish and install Engineered fill	22,500	tons	\$20.00	\$450,000	40,800	tons	\$20.00	\$816,000
F/I QS Rip Rap	7,500	tons	\$45.00	\$337,500	13,600	tons	\$45.00	\$612,000
F/I all weather road Materials	5,625	tons	\$30.00	\$168,750	10,200	tons	\$30.00	\$306,000
Other Components								
Flood, Drainag, Navigational Dredging	5000	cys	\$12.50	\$187,500	5000	cys	\$12.50	\$352,500
F/I River Run cobble rock	2,000	tons	\$60	\$120,000	2,000	tons	\$60	\$120,000
Plantings and restoration	1	allow	\$250,000	\$250,000	1	allow	\$250,000	\$250,000
Subtotal Construction costs				\$3,356,914				\$6,146,328
Mitigation @ 3 x impact	5.2	acres	\$150,000	\$779,959	10.1	acres	\$150,000	\$1,518,595
Staking and Construction Management	10%			\$350,000	20%			\$1,200,000
Construction Contingency	6%			\$200,000	11%			\$700,000
Total Timber Bulkhead				\$4,686,873				\$9,564,923
Engineering/Surveying and Geotechnical (ENG)	1.0			\$233,802	1.0			\$714,240
				-\$233,802				-\$714,240
Prepare Clarification for EIP using refined proposal	1.0	est	\$7,870	\$7,870	1.0	est	\$16,610	\$16,610

DESCRIPTION	QUANT	UNIT	UNIT COST	TOTAL	QUANT	UNIT	UNIT COST	TOTAL
Perform topographic and Hydrographic surveys	1.0	est	\$17,740	\$17,740	1.0	est	\$76,880	\$76,880
Create topographic maps and features	1.0	est	\$11,460	\$11,460	1.0	est	\$55,930	\$55,930
Geotechnical Testing and Sampling	1.0	est	\$32,176	\$32,176	1.0	est	\$72,560	\$72,560
Preliminary Design of Alternates	1.0	est	\$7,760	\$7,760	1.0	est	\$28,790	\$28,790
Initiate FEMA involvement	1.0	est	\$22,820	\$22,820	1.0	est	\$62,944	\$62,944
Landowner Coordination	1.0	est	\$9,270	\$9,270	1.0	est	\$68,990	\$68,990
Prepare initial CLOMR and Submit	1.0	est	\$15,280	\$15,280	1.0	est	\$47,449	\$47,449
Estimate alternate costs and benefits	1.0	est	\$6,470	\$6,470	1.0	est	\$24,242	\$24,242
Prepare Alternate evaluation report and recommendations	1.0	est	\$13,240	\$13,240	1.0	est	\$29,965	\$29,965
Prepare DWR PFA Scope of Work	1.0	est	\$17,640	\$17,640	1.0	est	\$26,380	\$26,380
Design Pump Station Modifications	1.0	est	\$22,170	\$22,170	1.0	est	\$73,300	\$73,300
Submit to Delta Stewardship Council for approval	1.0	est	\$7,270	\$7,270	1.0	est	\$16,010	\$16,010
Prepare Stream Bed Alteration Notification	1.0	est	\$4,480	\$4,480	1.0	est	\$10,222	\$10,222
Prepare Section 404 Permits	1.0	est	\$10,776	\$10,776	1.0	est	\$24,760	\$24,760
Submittal The State Lands Commission	1.0	est	\$7,160	\$7,160	1.0	est	\$26,878	\$26,878
Investigate Mitigation Options	1.0	est	\$20,220	\$20,220	1.0	est	\$52,330	\$52,330
Biological and Permitting (BP)				\$158,844				\$386,412
				-\$158,844				-\$386,412
Initiate CORPS, NMFS and USFW consultation	1.0	est	\$20,700	\$20,700	1.0	est	\$90,540	\$90,540
Prepare CEQA documents	1.0	est	\$36,740	\$36,740	1.0	est	\$60,220	\$60,220
Address CEQA concerns and resubmittals	1.0	est	\$45,200	\$45,200	1.0	est	\$76,460	\$76,460
Prepare Section 404 Permits	1.0	est	\$24,460	\$24,460	1.0	est	\$68,380	\$68,380
Submittal The State Lands Commission	1.0	est	\$13,224	\$13,224	1.0	est	\$37,872	\$37,872
Investigate Mitigation Options	1.0	est	\$18,520	\$18,520	1.0	est	\$52,940	\$52,940
General Requirements (GR)				\$249,960				\$328,696
				-\$249,960				-\$328,696
Administration	1.0	est	\$9,676	\$9,676	1.0	est	\$33,796	\$33,796
Public Outreach	1.0	est	\$13,826	\$13,826	1.0	est	\$49,732	\$49,732
Legal and Real Estate	1.0	est	\$22,980	\$22,980	1.0	est	\$74,163	\$74,163
ROW Acquisition	1.0	est	\$80,890	\$80,890	1.0	est	\$42,618	\$42,618
Landowner Compensation	1.0	est	\$103,568	\$103,568	1.0	est	\$47,701	\$47,701
Public Outreach	1.0	est	\$19,020	\$19,020	1.0	est	\$80,687	\$80,687
Contingency (ENG,BP,GR)	10%		\$642,606	\$642,606	10%		\$1,429,348	\$1,429,348
Total ENG,BP,GR			13%	\$706,867			14%	\$1,572,283
							\$4,825,000	\$2,279,150
Total Timber Bulkhead			RD 828	\$5,393,739			RD 1614	\$11,137,206
								\$16,530,945

DESCRIPTION	QUANT	UNIT	UNIT COST	TOTAL	QUANT	UNIT	UNIT COST	TOTAL
Single Vinyl Sheetpile Wall	RD 828 Levee				RD 1614 Levee			
	5600.0				12600.0			
	1500.0				1000.0			
	7100.0				13600.0			
	7100.0				13600.0			
Developed lots	20.0	ea			75.0	ea		
Steel Sheetpile Wall		ft	Not Used			ft	TBD	
Double Plastic D'Sheetpile wall		ft	Not Used			ft	Not Used	
Single Plastic Sheetpile wall	7100	ft	41+00 to 115+00		13600	ft	9+00 to 115+00, 0+00 to 30+00 (AC)	
Timber Bulkhead Wall		ft	Not Used			ft	Not Used	
Conventional Waterside Repair		ft	Not Used			ft	TBD	
Gate Structure		ft	Not Used			ft	Not Used	
Dredging		cys				cys		
General Construction Requirements	1.0	ls	\$1,014,500	\$1,014,500	1.0	ls	\$2,152,000	\$2,152,000
				-\$1,014,500				-\$2,152,000
Mobilization/Demob	1	ls	\$25,000	\$25,000	1	ls	\$25,000	\$25,000
Dock and boat accommodations	20	ea	\$5,000	\$100,000	75	ea	\$5,000	\$375,000
Clearing and grubbing	1	ls	\$12,000	\$12,000	1	ls	\$12,000	\$12,000
Pump Station Retrofits	2	ea	\$350,000	\$700,000	4	ea	\$350,000	\$1,400,000
Construction Dredging	14,200	cy	\$12.50	\$177,500	27,200	cy	\$12.50	\$340,000
Steel Sheetpile Wall		ft	#DIV/0!			ft	#DIV/0!	
Furnish Steel sheetpiles		lbs	\$0.85			lbs	\$0.85	
Sheetpile coating		sf	\$3.00			sf	\$3.00	
Cathodic Protection		sf	\$3.00			sf	\$3.00	
Drive Steel sheetpiles		lf	\$903			lf	\$903	
Furnish and install Engineered fill		tons	\$20.00			tons	\$20.00	
F/I QS Rip Rap		tons	\$45.00			tons	\$45.00	
Double Plastic D'Sheetpile wall	ft	#DIV/0!	\$98,750	\$98,750	ft	#DIV/0!	\$207,500	\$207,500
				-\$98,750				-\$207,500
Waterside exploratory core trench	7,100	ft	\$12.50	\$88,750	13,600	ft	\$12.50	\$170,000
Furnish Plastic sheetpiles		sf	\$12.00			sf	\$12.00	
Drive Plastic sheetpiles		lf	\$345.00			lf	\$345.00	
Furnish Waler and connectors		ft	\$65.03			ft	\$65.03	
Furnish and install Engineered fill		ton	\$20.00			ton	\$20.00	
F/I QS Rip Rap		ton	\$45.00			ton	\$45.00	
F/I all weather road Materials		ton	\$30.00			ton	\$30.00	
Utility crossings	20	ea	\$500.00	\$10,000	75	ea	\$500.00	\$37,500
Timber Bulkhead Wall	ft	#DIV/0!	#DIV/0!	#DIV/0!	ft	#DIV/0!	#DIV/0!	#DIV/0!
Furnish Timber Piles		ea	\$400.00			ea	\$400.00	
Furnish Structural Timbers		bf	\$8.00			bf	\$8.00	
Furnish Waler and connectors		lf	\$2.50			lf	\$2.50	
Furnish and install Engineered fill		tons	\$20.00			tons	\$20.00	
F/I QS Rip Rap		tons	\$45.00			tons	\$45.00	
F/I all weather road Materials		tons	\$30.00			tons	\$30.00	
Other Components								
Flood, Drainag, Navigational Dredging	5000	cys	\$12.50	\$177,500	5000	cys	\$12.50	\$340,000
F/I River Run cobble rock	2,000	tons	\$60	\$120,000	2,000	tons	\$60	\$120,000
Plantings and restoration	1	allow	\$250,000	\$250,000	1	allow	\$250,000	\$250,000
Subtotal Construction costs				\$1,660,750				\$3,069,500
Mitigation @ 3 x impact	9.8	acres	\$150,000	\$1,466,942	18.7	acres	\$150,000	\$2,809,917
Staking and Construction Management	21%			\$350,000	39%			\$1,200,000
Construction Contingency	12%			\$200,000	23%			\$700,000
Total RD 828 levee improvements				\$3,677,692				\$7,779,417
Engineering/Surveying and Geotechnical (ENG)	1.0			\$233,802	1.0			\$837,930
				-\$233,802				-\$837,930
Prepare Clarification for EIP using refined proposal	1.0	est	\$7,870	\$7,870	1.0	est	\$16,610	\$16,610

DESCRIPTION	QUANT	UNIT	UNIT COST	TOTAL	QUANT	UNIT	UNIT COST	TOTAL
Perform topographic and Hydrographic surveys	1.0	est	\$17,740	\$17,740	1.0	est	\$76,880	\$76,880
Create topographic maps and features	1.0	est	\$11,460	\$11,460	1.0	est	\$55,930	\$55,930
Geotechnical Testing and Sampling	1.0	est	\$32,176	\$32,176	1.0	est	\$156,810	\$156,810
Preliminary Design of Alternates	1.0	est	\$7,760	\$7,760	1.0	est	\$28,790	\$28,790
Initiate FEMA involvement	1.0	est	\$22,820	\$22,820	1.0	est	\$102,384	\$102,384
Landowner Coordination	1.0	est	\$9,270	\$9,270	1.0	est	\$68,990	\$68,990
Prepare initial CLOMR and Submit	1.0	est	\$15,280	\$15,280	1.0	est	\$47,449	\$47,449
Estimate alternate costs and benefits	1.0	est	\$6,470	\$6,470	1.0	est	\$24,242	\$24,242
Prepare Alternate evaluation report and recommendations	1.0	est	\$13,240	\$13,240	1.0	est	\$29,965	\$29,965
Prepare DWR PFA Scope of Work	1.0	est	\$17,640	\$17,640	1.0	est	\$26,380	\$26,380
Design Pump Station Modifications	1.0	est	\$22,170	\$22,170	1.0	est	\$73,300	\$73,300
Submit to Delta Stewardship Council for approval	1.0	est	\$7,270	\$7,270	1.0	est	\$16,010	\$16,010
Prepare Stream Bed Alteration Notification	1.0	est	\$4,480	\$4,480	1.0	est	\$10,222	\$10,222
Prepare Section 404 Permits	1.0	est	\$10,776	\$10,776	1.0	est	\$24,760	\$24,760
Submittal The State Lands Commission	1.0	est	\$7,160	\$7,160	1.0	est	\$26,878	\$26,878
Investigate Mitigation Options	1.0	est	\$20,220	\$20,220	1.0	est	\$52,330	\$52,330
Biological and Permitting (BP)				\$158,844				\$676,017
				-\$158,844				-\$676,017
Initiate CORPS, NMFS and USFW consultation	1.0	est	\$20,700	\$20,700	1.0	est	\$90,540	\$90,540
Prepare CEQA documents	1.0	est	\$36,740	\$36,740	1.0	est	\$169,470	\$169,470
Address CEQA concerns and resubmittals	1.0	est	\$45,200	\$45,200	1.0	est	\$198,450	\$198,450
Prepare Section 404 Permits	1.0	est	\$24,460	\$24,460	1.0	est	\$108,930	\$108,930
Submittal The State Lands Commission	1.0	est	\$13,224	\$13,224	1.0	est	\$51,522	\$51,522
Investigate Mitigation Options	1.0	est	\$18,520	\$18,520	1.0	est	\$57,105	\$57,105
General Requirements (GR)				\$249,960				\$1,265,846
				-\$249,960				-\$1,265,846
Administration	1.0	est	\$9,676	\$9,676	1.0	est	\$43,276	\$43,276
Public Outreach	1.0	est	\$13,826	\$13,826	1.0	est	\$59,212	\$59,212
Legal and Real Estate	1.0	est	\$22,980	\$22,980	1.0	est	\$106,603	\$106,603
ROW Acquisition	1.0	est	\$80,890	\$80,890	1.0	est	\$425,368	\$425,368
Landowner Compensation	1.0	est	\$103,568	\$103,568	1.0	est	\$550,701	\$550,701
Public Outreach	1.0	est	\$19,020	\$19,020	1.0	est	\$80,687	\$80,687
Contingency (ENG,BP,GR)	10%		\$642,606	\$64,260.60	10%		\$2,779,793	\$277,979.34
Total ENG,BP,GR				\$706,867				\$3,057,773
							\$4,825,000	\$3,764,639
Total Cost to certify levee to Practical ULDC			RD 828	\$4,384,559			RD 1614	\$10,837,190
Total Cost SVSP to Practical ULDC								\$15,221,749

DESCRIPTION	QUANT	UNIT	UNIT COST	TOTAL	QUANT	UNIT	UNIT COST	TOTAL
RD 828 to FEMA Costs	RD 828 Levee							
General Construction Requirements	1.0	ls	\$637,000	\$637,000				
				-\$637,000				
Mobilization/Demob	1	ls	\$25,000	\$25,000				
Dock and boat accommodations	20	ea	\$5,000	\$100,000				
Clearing and grubbing	1	ls	\$12,000	\$12,000				
Pump Station Retrofits	1	ea	\$500,000	\$500,000				
Construction Dredging		cy	\$12.50					
Drive Steel sheetpiles		lf	\$903					
Furnish and install Engineered fill	20,000	tons	\$20.00	\$400,000				
F/I QS Rip Rap		tons	\$45.00					
Other Components								
Flood, Drainag, Navigational Dredging	5000	cys	\$12.50					
F/I River Run cobble rock	2,000	tons	\$60	\$120,000				
Plantings and restoration	1	allow	\$250,000	\$250,000				
Subtotal Construction costs				\$1,417,000				
Mitigation @ 3 x impact		acres	\$150,000					
Staking and Construction Management	25%			\$350,000				
Construction Contingency	14%			\$200,000				
Total RD 828 to FEMA cost				\$1,967,000				
Engineering/Surveying and Geotechnical (ENG)	1.0			\$372,858				
				-\$372,858				
Prepare Clarification for EIP using refined proposal	1.0	est	\$10,467	\$12,465				
Perform topographic and Hydrographic surveys	1.0	est	\$23,594	\$28,349				
Create topographic maps and features	1.0	est	\$15,242	\$18,243				
Geotechnical Testing and Sampling	1.0	est	\$42,794	\$51,581				
Preliminary Design of Alternates	1.0	est	\$10,321	\$12,288				
Initiate FEMA involvement	1.0	est	\$30,351	\$36,524				
Landowner Coordination	1.0	est	\$12,329	\$14,718				
Prepare initial CLOMR and Submit	1.0	est	\$20,322	\$24,390				
Estimate alternate costs and benefits	1.0	est	\$8,605	\$10,212				
Prepare Alternate evaluation report and recommendations	1.0	est	\$17,609	\$21,107				
Prepare DWR PFA Scope of Work	1.0	est	\$23,461	\$28,188				
Design Pump Station Modifications	1.0	est	\$29,486	\$35,478				
Submit to Delta Stewardship Council for approval	1.0	est	\$9,669	\$11,500				
Prepare Stream Bed Alteration Notification	1.0	est	\$5,958	\$7,010				
Prepare Section 404 Permits	1.0	est	\$14,332	\$17,142				
Submittal The State Lands Commission	1.0	est	\$9,523	\$11,323				
Investigate Mitigation Options	1.0	est	\$26,893	\$32,340				
Biological and Permitting (BP)				\$158,844				
				-\$158,844				
Initiate CORPS, NMFS and USFW consultation	1.0	est	\$20,700	\$20,700				
Prepare CEQA documents	1.0	est	\$36,740	\$36,740				
Address CEQA concerns and resubmittals	1.0	est	\$45,200	\$45,200				
Prepare Section 404 Permits	1.0	est	\$24,460	\$24,460				
Submittal The State Lands Commission	1.0	est	\$13,224	\$13,224				
Investigate Mitigation Options	1.0	est	\$18,520	\$18,520				
General Requirements (GR)				\$249,960				
				-\$249,960				
Administration	1.0	est	\$9,676	\$9,676				
Public Outreach	1.0	est	\$13,826	\$13,826				
Legal and Real Estate	1.0	est	\$22,980	\$22,980				
ROW Acquisition	1.0	est	\$80,890	\$80,890				
Landowner Compensation	1.0	est	\$103,568	\$103,568				

DESCRIPTION	QUANT	UNIT	UNIT COST	TOTAL	QUANT	UNIT	UNIT COST	TOTAL
Public Outreach	1.0	est	\$19,020	\$19,020				
Contingency (ENG,BP,GR)	10%		\$781,662	\$78,166.16				
Total RD 828 ENG,BP,GR				\$859,828				
Total Cost to certify levee to FEMA			RD 828	\$2,825,828				

Green Mountain Engineering

Sales by Customer Summary

January 2009 through June 2013

Jan '09 - Jun 13

BIMID	11,847.56
Bradford Island	
089 Bradford Island Triple Decker	0.01
133 2004 Engineering	0.50
2059-10 General Engineering 2007	12,341.16
2059-15 5 year plan	5,514.77
2059-17 levee failure at station 134+00	4,193.50
2059-18 special projects application	1,262.00
2059-20 Pump Station Repair	11,184.25
2059-21 08-09 FY Proj. Work Agree BR-09	49,020.38
Bradford Island - Other	120,014.14
Total Bradford Island	203,530.71
Upper Jones Tract	
2039-01 Upper Jones General Engineering	20,027.39
2039-02 hmp complinace	200.25
2039-11 upgrade sta 78-88	2,003.00
2039-12 special project application	3,058.53
2039-17 DWR 5 year plan	10,658.67
2039-20 Toe Berm Station 3+00 to 20+00	822.00
2039-21 DWR PFA UJ 10-1.0	2,993.54
2039-22 DWR PFA UJ 10-2.0	59,094.11
2039-23 DWR PFA UJ 10-3.0	69,533.25
2039-24 2011 EBMUD Proj PL 84-99 slope	16,134.41
Rd 2039 - Other	136,919.71
Total Rd 2039	321,444.86
Nomellini, Grilli & Mcdaniel	
2024-01 GENERAL ENGINEERING	16,044.19
2024-02 hmp compliance	1,771.00
2024-16 Dwr 5 year plan	10,232.92
2024-19 DWR Work agreement OP-10-2.0 Palm	61,801.00
2024-20 DWR WA OP-10-1.0 Orwood	65,774.84
2024-21 FY 12/13 levee improvments at RR	20,558.36
2038-01 GENERAL ENGINEE	8,368.36
2038-03 HMP compliance	2,344.50
2038-05 dwr 5 year plan	9,769.17
2038-09 Levee DWR Special Project 09-2.0	63,564.80
2038-10 DWR WA LJ-10-1.0	41,228.42
2072-02 hmp compliance	2,325.25
2072-10 General Engineering 2007	19,154.69
2072-16 DWR 5 yr plan	19,935.17
2072-19 FY 2009-2010 levee project	274.00
2072-20 DWR WA WD-10-1.0 Sta 385 to 471	57,371.30
2072-21 DWR WA WD-10-2.0 Sta 140 to 385	44,334.89
548-01 General engineering	36,441.79
548-02 HMP compliance	1,107.00
548-06 Terminous Tract Pump Station Reloc	1,845.25
548-09 special project application	3,354.38
548-14 DWR 5 year plan	13,051.92

Green Mountain Engineering
Sales by Customer Summary
January 2009 through June 2013

	Jan '09 - Jun 13
548-15 08-09 Lev Proj DWR TR 9.0-2.0	94,690.13
548-17 Cal Trans Rd. Alignment Project	19,302.00
548-18 09/10 DWR Levee project Toe berms	41,367.74
548-20 Tower Park HMP improvements	5,522.75
684-01 general engineering	23,574.50
684-06 crown fill sta 260-293	9,948.38
684-08 tiki lagoon improvements	2,828.00
684-09 special proj application	220.50
684-11 DWR 5 year plan	11,399.67
684-12--special projects application	8,039.28
684-15 Special Projects Application	1,596.00
684-16 DWR Work Agreement RL 10-1.0	67,931.29
684-17 DWR Work Agreement RL 10-2.0	78,884.92
684-18 5-year plan	392.00
Nomellini, Grilli & McDaniel - Other	618,719.74
Total Nomellini, Grilli & McDaniel	1,485,070.10
 RD 1007 Pico Naglee	
1007-01 General Engineering	1,819.00
1007-03 HMP PSP	2,829.53
Total RD 1007 Pico Naglee	4,648.53
 RD 2075 McMullin Reclamation District	
2075-01 Alegre Mining Permit Appeal	885.00
RD 2075 McMullin Reclamation District - Other	2,808.50
Total RD 2075 McMullin Reclamation District	3,693.50
 Reclamation District 1007 Pico and Naglee	
1007-01	1,535.25
Total Reclamation District 1007 Pico and Naglee	1,535.25
 TOTAL	2,031,770.51