Draft

Attachment 4 18.5-foot Raise and Reservoir Area Infrastructure Cost Estimates

Engineering Summary Appendix

Shasta Lake Water Resources Investigation, California

Prepared by:

U. S. Department of the Interior Bureau of Reclamation Mid-Pacific Region



BUREAU OF RECLAMATION ESTIMATE WORKSHEET 1 OF 1

BUREAU OF R	RECLAMATION	ON	ESTIMATE WORKS	HEET				SUMMARY SHEET 1 OF 1
FEATU	RE:			PROJE(CT:			
		Water Resources In	ovestigation		Central Vall	ev Projec	t - CA	
Feasibil			restigation		Shasta Divi		I-OA	
	-	•		REGION:	MP		TE LEVEL	Faceibility
wain (C	Jonere	ete) Dam						Feasibility
				WOID:	SHAEF	PRICE L	EVEL:	Apr - 10
		Most P	robable					
Summa	ary		18.5-ft Dam Raise					
⊨	5							
PLANT ACCOUNT	ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
J 00	PAY		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	 							
		Main (concrete) Dam						
			einforced concrete raise of the existing	· ·	dam			
		between blo	cks 15 thru 70 (including top of dam d	etails).				
		Bridge over raise	ed spillway (Included with spillway)					
		Extensions of the	e existing freight and passenger eleva	tor towers	;			
		Electrical and me	echanical features associated with the	top of dar	n			
		and the eleva						
			g foundation drains (Not Included)					
			plition/salvaging of existing features as	senciated	with aviatio	a main da	m	
	 	LACAVALION/UE/IIC	ontion/sarvaging of existing leatures as	ssocialed	MILLI CYIZUU	y mam ua		
		Objects 4 . 0.00.0015	•					#O 170 000 00
		Sheets 1 - 3: 86-6812						\$6,476,622.00
			tensions, top of dam miscellaneous meta	I work				
		Sheets 4-6 : 86-68130						\$36,638,193.50
		Dam raise, top of	dam details, gallery					
		Sheets 7 - 10: 86-684	10					\$4,246,000.00
		Top of dam & tow	vers mechanical features					
		Sheet 11: 86-68430						\$1,330,700.00
			ers electrical features					ψ 1,000,100.00
		Top of dain & tow	ers electrical leatures					
		Subtotal 1						\$48,691,515.50
		Mobilization		5%	+/-			\$2,400,000.00
		Subtotal 1 with Mobil	lization					\$51,091,515.50
		Escalation to Notic	ce to Proceed (NTP): None assumed.	0%				\$0.00
			1 with Mobilization + Escalation to NT					\$51,091,515.50
				10%	+/-			
		Design Contingen		10%	+/-			\$4,784,471.50
			2 + Design Contingencies	2 22/				\$55,875,987.00
			curement Strategies (APS)	2.0%	+/-			\$1,124,013.00
		Type of solici	tation assumed is: Request for Proposal					
	<u> </u>	Subtotal 4 = Subtotal	3 + APS					\$57,000,000.00
		CONTRACT COST						\$57,000,000.00
		Construction Conf	tingencies	20%	+/-			\$12,000,000.00
		FIELD COST						\$69,000,000.00
		-						. , ,
						+		
						+		
	 							
	 							
	 							
	<u> </u>							
		Note: Escalation from publish	hed price level to notice to proceed is excluded. Est	timates mav ir	nclude discrepa	ncies due to	rounding.	
			d terminology, see Reclamation Manual, Directives					
			ANTITIES	Candult	, 00 01, 1		PRICES	
- 16			CHECKED	BY			CHECKED	
ВҮ	See Group Sheets See Group Sheets				Greg Akins		I	Kelly Brom
	ıp Sheets		See Group Sneets		Oleg Akilis			reny Bronn
			PEER REVIEW	DATE PREP			PEER REVIEW	rony Bronn

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_1_OF__11_

	F RECLAMA	TION	ESTIMATE WORK				S	HEET1 OF11
FEAT	URE:			PROJEC1	Γ:			
		Water Resources	s Investigation		Central Val	ley Proj	ect - CA	
	cility St	•			Shasta Div			
Main	(Conc	rete) Dam		REGION:	MP		ATE LEVEL:	Feasibility
				WOID:	SHAEF	PRICE	LEVEL:	Apr - 10
		Most	Probable					
			18.5-ft Dam Raise	e				
μ <u>Γ</u>	EM							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		The following items	a charried be noncorred from the					
		Existing Dam:	s should be removed from the					
	1	Gantry Crane Rails	(214-D-8793 & -10216)					
		Saw cut grout ir	n rail blockout (8-inch deep, ea. side)	68120	7,700	LF	\$7.80	\$60,060.00
		Remove grout i	n blockout	68120	145	CY	\$350.00	\$50,750.00
		Remove 175 lb/	/yd crane rail (3,850 ft)	68120	224,600	LBS	\$0.07	\$15,722.00
		Remove 90 spli	ce pl., 224 splice bars, 1970 rail clips,	68120	24,600	LBS	\$0.30	\$7,380.00
		800 bearing pl	ates, 224 splice bars w/bolts, nuts,					
		& washers, 2 o	contraction joint plates					
		Assume existing rail	will be removed and salvaged					
		by Contractor.	<u> </u>					
	2	Lighted Aluminum	Guardrail (214-D-10071)					
			rail from upstream face of dam	68120	2,860	LF	\$21.00	\$60,060.00
			rdrail is removed and reinstalled	00120	2,000	<u> </u>	Ψ21.00	Ψ00,000.00
		on downstream para						
		on downstream para	apet of faised crest.					
	3	Vehicle Barrier Gat	tes (Bob Gee email dated 10/4/07)					
	J		hicle barrier gates and controls	68120	2	EA	\$21,000.00	\$42,000.00
			Ita Barriers in raised crest of dam.	00120		LA	Ψ21,000.00	Ψ+2,000.00
			nil from Bob Gee. (\$305,000)					
		OCC OLITY 20 OF CITIE	π ποιπ Βου Θου. (ψουσ,σου)					
	4	Miscellaneous Met	alwork (214-D-9299 thru -9303)					
			e of miscellaneous metalwork	68120	50,000	LBS	\$0.80	\$40,000.00
			vers and manhole covers)	00120	33,333		40.00	ψ.ο,σσσ.σσ
		,	paint on 50% of metalwork.					
		Assume lead based	paint off 50 70 of frictalwork.					
	5	Remove Freight &	Passenger Elevator Towers:					
	<u> </u>		4-D-9743 thru -9745))					
		`	concrete (f'c = 5,500 psi)	68120	600	CY	\$1,200.00	\$720,000.00
			scellaneous metalwork	68120	1,900	LBS	\$1.40	\$2,660.00
		· ·	paint on 50% of metalwork.	00.20	1,000		¥\$	Ψ=,000.00
	6		ice & Erection Platform Structure:		1	LS	#22.000.00	\$22,000,00
		`	4-D-10214 & -10362))	68120	55	CY	\$22,000.00	\$22,000.00
			e columns, floors, and walls:		55	LS	Included in Lump Sum	
		Wood products:	· 700 cc #\	68120	<u>'</u>	LS	Included in Lump Sum	
		(Plywood infill walls						
		(Roofing: 420 sq. ft.						
		(Kemovable flooring	g 4"x8" timbers: 325 sq. ft.)	+			+	
	TITIES	Sheet Subtotal =		DDIOCO	<u> </u>			\$1,020,632.00
DUAN.	IIIIES)		PRICES	•			
BY	_		CHECKED	ВҮ			CHECKED	
	Gary Snyder Rodney Barthel			Greg Akins			Kelly Brom	
	REPARED		PEER REVIEW	DATE PREPAR	RED		PEER REVIEW	
4/9/2008	(updated	6/2010)	Dick LaFond, P.E.	02/03/11			Dan Donalds	son

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_2_OF_11_

	F RECLAMA	HON	ESTIMATE WOR		-			SHEET_2_ OF11
FEAT		W (D		PROJECT				
		Water Resources	Investigation		Central Val		ect - CA	
	oility S	•		5-516N	Shasta Div			
wain	(Conc	rete) Dam		REGION:	MP		ATE LEVEL:	Feasibility
		Moot I	Oroboble	WOID:	SHAEF	PRICE	LEVEL:	Apr - 10
		WOST	Probable					
			18.5-ft Dam Rais	se				
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
PLA	PAY		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AWOUNT
		The following items	should be installed on the					
		Raised Dam:						
	7	Gantry Crane Rails						
			all 175 lb/yd crane rail (3,850 lin. ft)	68120	224,600	LBS	\$2.20	\$494,120.00
			all pl, bar, clip, etc., hardware	68120	24,600	LBS	\$9.60	\$236,160.00
			e backfill grout in blockout	68120	145	CY	\$380.00	\$55,100.00
		Assume new rails and	d hardware will be required.					
	8	Lighted Aluminum G	Guardrail (214-D-10071)					
		-	ardrail on downstream parapet.	68120	2,860	LF	\$36.00	\$102,960.00
		Guardrail removed from		00.20			700.00	+ 10=,00010
			J					
	9	Vehicle Barrier Gate	es (Bob Gee email dated 10/4/07)					
			e barrier gates and controls	68120	2	EA	\$220,000.00	\$440,000.00
		Gates and controls re	emoved from existing dam.					
	40	Baile and House and Baile	h					
	10		lwork (214-D-9299 thru -9303)					
	Furnish and install new miscincluding access hatch cover		in-kind plus add stoplog slot covers.	68120	61,400	LBS	\$8.50	\$521,900.00
				00120	01,400	LBO	ψ0.00	Ψ021,000.00
		and manhole covers	m covere, water agin deere					
		Assume galvaniz	zed steel.					
	11		ssenger Elevator Towers:					
		Assume replace					4.5.1.5.5.5	
		·	nforced concrete (f'c= 4,000 psi)	68120	900	CY	\$2,400.00	\$2,160,000.00
		Reinforcement (150#	F/CY)	68120	135,000	LBS TONS	\$1.90	\$256,500.00
		Cement (0.28T/CY) Miscellaneous Metaly	work	68120 68120	250 2,000	LBS	\$150.00 \$8.40	\$37,500.00 \$16,800.00
		Wilscellaricous Wictary	VOIR	00120	2,000	LBG	ψ0.40	Ψ10,000.00
	12	Construct Two Gate	Service & Erection Platform Struct	ures:				
		Assume two stru	ctures similar to existing one.					
		Furnish and place rei	nforced concrete (f'c= 4000 psi)	68120	110	CY	\$2,100.00	\$231,000.00
		Reinforcement (150#	#/CY)	68120	16,500	LBS	\$1.70	\$28,050.00
		Cement (0.28T/CY)		68120	31	TONS	\$160.00	\$4,960.00
			vork (ladders, guardrails,)	68120	2,000	LBS	\$8.40	\$16,800.00
		Furnish and install me	<u> </u>	68120	840	SF	\$17.00	\$14,280.00
		Furnish and install me	•	68120	1,580	SF	\$17.00	\$26,860.00
		rumish and install str	ructural steel roof supports	68120	5,000	LBS	\$6.60	\$33,000.00
					1			
	Sheet Subtotal =						\$4,675,990.00	
QUAN	TITIES	3		PRICES	3			
вү			CHECKED	вү			CHECKED	
	Gary Sn	yder	Rodney Barthel	Greg Akins			Kelly Brom	
DATE P	TE PREPARED PEER REVIEW		DATE PREPAR	RED		PEER REVIEW		
4/9/2008	(updated	6/2010)	Dick LaFond, P.E.	09/09/10			Dan Don	aldson

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_3_ OF _11_

FEAT	JRE:			PROJECT	•			
		Water Resources	Investigation		Central Vall	ev Proje	ect - CA	
Feasib			3		Shasta Divi			
	-	ete) Dam		REGION:	MP	ESTIM/	ATE LEVEL:	Feasibility
		,		WOID:			LEVEL:	Apr - 10
		Most P	Probable					T
			18.5-ft Dam Raise					
5	Σ							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		The fellowing with a second of	III to to stall a disconding					
		The following items shoul	id be installed on the					
		Raised Dam:						
	13	Extend existing cond	crete Gate Hoist Structure	68120	1	LS	\$600,000.00	\$600,000.00
	10	(Dwgs. 214-D-9388 8		00120	'	LO	Ψ000,000.00	ψοσο,σσσ.σσ
		, ,) psi reinforced concrete)					
		Concrete: 200 C	·					
			29,850 Lbs (based on 150 Lbs/CY)					
			s (base on 0.282 Tons/CY ~ 6 sack m	iv\				
			nored dowel bars 335 EA	i^ <i>j</i>				
		(based on 1-0 s	spacing two faces)					
	1.1	Extend existing cond	erote Cate Cate Heist and	68120	1	LS	\$180,000.00	\$180,000.00
	14	Stems Transfer Stru	crete Gate, Gate Hoist, and	00120	1	LS	\$180,000.00	\$180,000.00
		(Dwgs. 214-D-9117 8	•					
		,) psi reinforced concrete)					
		Concrete: 54 CY						
			3,100 Lbs (based on 150 Lbs/CY)	'- ^				
			ns (base on 0.282 Tons/CY ~ 6 sack m	IX)				
		#6 Adhesive anchored dowel bars 124 EA (based on 1'-0" spacing two faces)						
		(based on 1'-0" s	spacing two faces)					
		This Sheet Subtotal :	_					\$780,000.00
		This Sheet Subtotal	=					\$700,000.00
		Sheet 1 of 3 Subtotal	l =					\$1,020,632.00
		Sheet 2 of 3 Subtotal	l =					\$4,675,990.00
					Total 86-68	120 =>		\$6,476,622.00
TNAUG	ITIES			PRICES				
BY			CHECKED	вү			CHECKED	
	Rodney	Barthel	Brad VanOtterloo	Greg Akins			Kelly Brom	
DATE PR			PEER REVIEW	DATE PREPAR	ED		PEER REVIEW	
4/9/2008		6/2010)	Dick LaFond, P.E.	02/03/11			Dan Dor	naldson

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_4_ OF __11_

	F RECLAM		ESTIMATE WORK					SHEET_4_ OF11		
FEAT	URE:			PROJEC	T:					
Shast	ta Lak	e Water Resources	Investigation		Central Va	lley Pr	oject - CA			
Feasi	bility S	Study	•		Shasta Div	ision	•			
Main	(Cond	crete) Dam		REGION:	MP	ESTII	MATE LEVEL:	Feasibility		
		•		WOID:	SHAEF	PRIC	E LEVEL:	Apr - 10		
		Most F	Probable					•		
			18.5-ft Dam Rais	· O						
	_		10.5-It Daili Kais	5C						
PLANT ACCOUNT	PAY ITEM		DECORIDATION	0005	OLIANITITY	LINUT	LINIT PRIOF	AMOUNT		
PLA CCC	ΑΥΙ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT		
∢	ш									
			<u>.</u>							
		Excavation and rem	oval:							
	4	D 100		0.400			# 500,000,00	# 500.000.00		
	1		and transportation of top of dam	8130	1	ls	\$530,000.00	\$530,000.00		
		materials to waste:								
			ced concrete parapet wall and curb							
			sawcutting (6-inch, L=2485 lf),							
		Depths: 1.25' hor	iz, 0.6' vert							
			or 2' x 2' end area at upstream face							
		2485 If sawcuts a	along u/s face and crest, total 4,970 If							
			ncrete on u/s face (2' x 2' end area)							
		2485 ft long, tota	volume 370 yd3							
		Surface Preparation	:							
	2	High-pressure water j	et for existing dam crest surface	8130	1	ls	\$130,000.00	\$130,000.00		
		30' x 2485', total	area 74,550 ft2							
	3	Pressure grout existing	g roadway drains	8130	1	ls	\$33,000.00	\$33,000.00		
		48 drains, 350 ft3	of drains, 350 bags of cement							
		Drain Holes:								
	3	Mobilization and dem	obilization for drilling 4-inch drains	8130	1	ls	\$10,000.00	\$10,000.00		
	4	Drilling 4-inch drains	on 10-ft centers from existing dam	8130	620	lf	\$130.00	\$80,600.00		
		crest, elev. 1077.5, ea	ach hole 2.5 feet long (248 holes)							
	5	Drilling 4-inch drains t	rom existing dam crest (1 per block)	8130	325	lf	\$150.00	\$48,750.00		
		for surface drainage a	at d/s overhang; each 6.5 feet long							
		(50 holes)								
	6	Mass concrete for da	m monoliths between	8130	41,600	yd3	\$380.00	\$15,808,000.00		
		dam monoliths #15 ar	nd #71 (excluding monoliths #39							
		to #45 thru spillway).	Vertical limits between top							
		of existing dam, elev.	1077.5 to elev. 1092.5 (anticipating							
		placements of 5- to 7.	5-ft vertical lift, 50-ft wide & 30-ft							
		u/s-d/s matching exist	ting Cr. Js, keys across Cr. Js, and							
			The concrete will have a minimum							
			of 4000 psi at 365 days. Includes							
	extending 5-inch formed drains from elev. 1077.5 to the									
			crest, elev. 1096.0 (with caps).							
			, - F - /							
		Sheet Subtotal =						\$16,640,350.00		
			UANTITIES			•	PRICES	, ,		
вү			CHECKED	вү			CHECKED			
Eric Jone					Greg Akins		Kelly l	Brom		
	REPARE	D	PEER REVIEW	DATE PREPA			PEER REVIEW			
								naldson		
	11/9/2007 (updated 6/2010) Tom Hepler				09/09/10 Dan Donaldson					

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_5_ OF __11_

	OF RECLAM	ATION	ESTIMATE WORKS					SHEET_5_ OF11
FEAT	URE:			PROJEC [*]	Т:			
	ta Lake bility S	e Water Resources In Study	nvestigation		Central Va Shasta Div	•	oject - CA	
	-	rete) Dam		REGION:	MP		MATE LEVEL:	Eggeibility
IVIAIII	(Conc	orete) Dain						
		Mast Des	di abda	WOID:	SHAEF	PRIC	E LEVEL:	Apr - 10
		Most Pro	bable					
			18.5-ft Dam Raise	:				
ᆫᄫ	Σ							Feasibility Apr - 10 AMOUNT \$885,500.00 \$6,300,000.00 \$553,000.00 \$351,500.00 \$2,800.00 \$2,712,500.00 \$3,494,400.00 \$3,494,400.00
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Dam Raise (continued)						
		Daili Kaise (Continueu)	•					
	7	Eurniching and handling	cementitious materials - for mass	8130	7,700	tone	\$115.00	\$995 500 00
	,	concrete; 50% pozzolan,		0130	7,700	toris	\$115.00	φοου,500.00
		Concrete is 4000 psi at 3	1 21 /					
		Concrete is 4000 psi at 3	oos days					
	0	Structural concrete for to	on of dom (including roadway	9120	14.000	v42	\$450.00	\$6.200.000.00
	ğ		op of dam (including roadway,	8130	14,000	yus	\$450.00	φο,ουυ,υυυ.υι
			arapets, and walkway) between					
			#71 (excluding monoliths #39					
		to #45 thru spillway) abo						
		Concrete is 4000 psi at 2	28 days					
	0		and a stitle was an atomical and a standard	0400	2.050	4	0440.00	Φ Γ ΓΩ 000 0
	9		cementitious materials - for	8130	3,950	tons	\$140.00	\$553,000.00
			pozzolan, 80% cement (Type II)]					
		Concrete is 4000 psi at 2	28 days					
	10	Furnishing and placing re	einforcing bars for the:	8130				
		- Gallery			201,285		\$1.90	· · · · · · · · · · · · · · · · · · ·
		- Temperature steel for e	exposed structural concrete surfaces		798,000	lbs	\$1.90	\$1,516,200.00
	11	Furnishing and installing	6-inch steel top of dam drains	8130	1,850	lf	\$190.00	\$351,500.00
		50 drains; standard weig	ht pipe, 19 lb/ft; 1 drain per block					
	12	- V	ter vertical shaft through concrete,	8130	2	yd3	\$1,400.00	\$2,800.0
		•	est to the hoist gallery in Block 47,					
		for service as an electric	al conduit.					
		Post-Tensioned Ancho	rs in Main Dam					
	13	Mobilization and demobi	lization for drilling for	8130	1	ls	\$160,000.00	\$160,000.00
		post-tensioned anchors						
	14	Drilling and surveying po		8130	10,850	lf	\$250.00	\$2,712,500.00
		140 holes, 12 inches dia	meter, each 77.5 feet long					
	15	Furnishing and installing	•	8130	13,440	lf	\$260.00	\$3,494,400.00
		140 anchors, 96 feet long	•		1			
		0.6 inch dia. epoxy coat	ed strands		1			
					1			
		Sheet Subtotal =			+		+	¢16 350 3 <i>4</i> 4 <i>E</i> 4
			ANTITIES				PRICES	\$10,308,341.5 0
- >.c								
BY			HECKED	BY			CHECKED	_
	ric Jones Mark Steers				Greg Akins		Kelly I	Brom
DATE P	REPARE		ER REVIEW	DATE PREPA			PEER REVIEW	
	11/9/200	7 (updated 6/2010) To	m Hepler		02/03/11		Dan Dor	naldson

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_6_ OF __11_

BUREAU O	F RECLAMA	ATION	ESTIMATE WORKS	SHEET				SHEET_6_ OF11
FEAT	URE:			PROJECT				
	a Lake bility S	e Water Resources tudy	Investigation		Central Va Shasta Div	•	oject - CA	
	-	rete) Dam		REGION:	MP	ESTIN	MATE LEVEL:	Feasibility
	•	,		WOID:	SHAEF		E LEVEL:	Apr - 10
		Most F	Probable					-
			18.5-ft Dam Rais	е				
PLANT ACCOUNT	РАУ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
٩		Drimary and accorde	ry grouting post topological anchors	8130	13,440	Ιŧ	\$25.00	\$336,000.00
	10	140 holes, 9435 f	ry grouting post-tensioned anchors	6130	13,440	II	φ25.00	φ330,000.00
		140 110103, 3433 1	ilo di giodi					
	17	Furnishing and handli	ng cementitious materials for grout	8130	377	tons	\$350.00	\$131,950.00
			= 0.85 bags/ft3 for anchors	0.00	011	10110	ψοσο.σσ	Ψ101,000.00
		o.r.r by volume mix	0.00 bagonto foi anonoro					
	18	Furnishing and install	ing anchor head hardware	8130	140	pckg	\$12,500.00	\$1,750,000.00
		•	s: Steel bearing plate, anchor head			p s · · · · ·	, , , , , , , , , , , , , , , , , , ,	+ :,: = =,= = = =
		and wedges, an	<u> </u>					
			3 3 3					
	19	Testing:		8,130	1	ls	\$620,000.00	\$620,000.00
		- Water test (e	entire length - all anchors)					
		 Proof testing 	(90% of anchors)					
		- Lift-off testing	g (20% of anchors)					
		- Performance	testing (10% of anchors)					
	20	Concrete in anchor he	ead blockouts	8130	131	yd3	\$1,500.00	\$196,500.00
		140 blockouts, 4000 p	osi concrete, 37 tons cementitious					
		materials with 80% ce	ement and 20% pozzolan,					
		4.730 lbs reinforceme	ent					
		Contraction Joints						
	21		ing 12-inch PVC waterstops across	8130	5,409	lf	\$28.00	\$151,452.00
			tion joints and around utility gallery	0.00	5,100		720.00	+ ,
		at contraction joints						
		,						
	22	Mobilization and demo	obilization for pressure grouting	8130	1	ls	\$30,000.00	\$30,000.00
		of contraction joints (f	or monoliths 15-38, 46-71)					
	23	Water test and pressu	ure grout system:	8130	1	ls	\$420,000.00	\$420,000.00
		Furnishing and in	stalling metal tubing & fittings,					
		(1-1/2" std pi	pe; total 30,000 lbs)					
		Hookups to contr	action joints (assume 3 per joint)					
		(48 joints; tot	al 144 hookups)					
	24		ng cement for grouting contraction	8130	200	bags	\$18.00	\$3,600.00
		` • •	ix 0.9:1; 0.7 bags/ft3; 1 ft3 per joint)					
		(Assume 6 times final	volume to cover waste)					
		This Sheet Subtotal	=					\$3,639,502.00
	Sheet 1 of 3 Subtotal =							\$16,640,350.00
	Sheet 2 of 3 Subtotal =							\$16,358,341.50
		Chicot & Oi o Gubiola	• =		Total 86-68	3130 =>	,	\$36,638,193.50
		Q	UANTITIES		2 July 50 00		PRICES	+00,000,100.00
BY		-	CHECKED	вү			CHECKED	
Eric Jone	es		Mark Steers		Greg Akins		Kelly I	Brom
	REPAREI)	PEER REVIEW	DATE PREPAR	-		PEER REVIEW	
				naldson				
11/9/2007 (updated 6/2010) Tom Hepler 02/03/11 Dan Donaldson								

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_7_OF_11_

BUREAU OF F		NC	ESTIMATE WORK		_			SHEET7 OF11
FEATU	IRE:			PROJE(CT:			
Shasta	Lake \	Water Resources I	nvestigation		Central Vall	ey Projec	t - CA	
Feasibi			-		Shasta Divi	sion		
		ete) Dam		REGION:	MP	ESTIMA	TE LEVEL:	Feasibility
,		•		WOID:	SHAEF	PRICE I	LEVEL:	Apr - 10
		Most I	Probable					
			18.5-ft Dam Rai	se				
_	Σ		roto it Dain ria.					
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	1	Heating and Ventila	ting (H&V) Equipment					
		Assumed ventilation	air transferred from the elevator	8410				
			motor-operated fire/smoke damper	0410				
			gallery isolating fire door into two					
			s, each exhausted through a fan,					
		, ,						
			stationary louver, and screens.					
			er air will not require heating.					
			ers must be wired for control by					
		the dam fire alar	m system and smoke control					
		system.						
	10	ESI Contrifugal fon: r	atod 1200 ofm at 0.275" wash	8410	2	00	\$10,000.00	\$20,000.00
	la.		ated 1300-cfm at 0.375" wgsp	6410		ea	\$10,000.00	\$20,000.00
		with 1/2-hp 1200						
		· · · · · · · · · · · · · · · · · · ·	disconnect switch and					
		wall mounted sta	rter and Hand-off-auto switch.					
	1b		ition Fire and smoke damper with	8410	2	ea	\$2,500.00	\$5,000.00
	1-	E91 24"::24" Combrel o		0440	2		¢0.400.00	£4.200.00
	10	F&I 24"X24" Control C	lamper with motor actuator	8410	2	ea	\$2,100.00	\$4,200.00
	1d	F&I 24"x24" Stationar	y steel louvers with screens.	8410	2	ea	\$2,000.00	\$4,000.00
		Conduit and wiring fo	r H&V in 86-68430 estimate					
QUANT	ITIES	Sheet Subtotal =		PRICES	3			\$33,200.00
BY	5		CHECKED	BY	-		CHECKED	
BY P. Schlein			R. Stephen	Greg Akins				y Brom
DATE PRE	DVDED		PEER REVIEW	DATE PREP	APED		PEER REVIEW	, 510111
		(2010)			AKED			onaldoon
10/4/2007 ((uuated 6/	2010)	J. Grass	09/09/10			Dan D	onaldson

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_8_ OF _11 _

FEATU	RE:			PROJECT:				
		Water Resources Ir	nvestigation	Central Valley Project - CA Shasta Division REGION: MP ESTIMATE LEVEL: Feas				
Feasibi	-	_						
Main (0	Concre	ete) Dam		REGION:	MP	ESTIMA	TE LEVEL:	Feasibility
				WOID:	SHAEF	PRICE I	LEVEL:	Apr - 10
		Most P	Probable					
			18.5-ft Dam Raise					
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	2	GANTRY CRANE:						
	2a	Furnish and install nev	v crane rails:	8410	1	LS	See 86-68120	Items
		175# ASCE rail -	3700 ft					
		steel rail clips - 20						
		steel bearing plate						
		7/8" x 12" anchor						
		1-1/4" x 6" bolts+i						
		steel splice plates	s - 100					
	2b		nd aux. (25T) hooks to	8410	1	LS	\$770,000.00	\$770,000.00
		accommodate ad	lift x 16 parts = 6,000 ft of					
			7 fiber core xip) for main rope					
		• •	lift x 6 parts = 1,920 ft of					
			37 fiber core xip) for aux. rope					
		' '	drums for both main and aux.					
		•	per drum x 4 drums = 16,000 lbs.					
		structural steel, co						
		,						
	2c	Remove and relocate gantry crane at new		8410	1	LS	\$530,000.00	\$530,000.00
		top of dam location	on (crane dead wt = 600 kips)					
		Chaot Calling						#4 000 000 00
QUANT		Sheet Subtotal =		PRICES	S			\$1,300,000.00
BY	0		CHECKED	ву	_		CHECKED	
A. Ritt			R. Stephen	Greg Akins				elly Brom
DATE PRE	PARFD		PEER REVIEW	DATE PREF	PARED		PEER REVIEW	, 5.0
10/4/2007 (2010)	J. Grass	09/09/10				Donaldson
(- /					Dan	+

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_9_ OF _ 11_

FEATU	RE:			PROJECT:				
		Water Resources In	nvestigation	Central Valley Project - CA Shasta Division				
Feasibi			Ğ			-		
		ete) Dam		REGION:	MP	ESTIMA	TE LEVEL:	Feasibility
•		,		WOID:	SHAEF	PRICE L		Apr - 10
		Most F	Probable					4
			18.5-ft Dam Raise	,				
Ļ	Σ							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	2	ELEVATORS:						
	3		000 lbs. capacity elevators:					
		1-01 bottl of tile (2) 10,	ood lbs. capacity elevators.					
	3а	Remove machinery from	om existing machine room	8410	1	LS	\$69,000.00	\$69,000.00
	3b	Relocate machinery ir	nto new machine room	8410	1	LS	\$145,000.00	\$145,000.00
	3с	F&I hoist ropes to acc	ommodate add'l 20.5' lift	8410	4,000	ft	\$35.00	\$140,000.00
		(approx) 500 ft x	8 ropes - 1/2" diam					
	3d	F&I traveling (electrica	al) cable for 20.5' lift	8410	1,500	ft	\$230.00	\$345,000.00
	20	Col governor rope for	20 El roino	0410	1.000	ft	#2F 00	¢25,000,00
	3e F&I governor rope for 20.5' raise (approx) 1000 ft x 1 rope - 1/2" diam			8410	1,000	IL	\$35.00	\$35,000.00
	3f	F&I compensation rop	es for 20.5' raise	8410	4,000	ft	\$38.00	\$152,000.00
	<u> </u>	·	8 ropes - 1/2" diam	0110	1,000		ψοσ.σο	ψ.οΞ,οσσ.σσ
		(0.1212-0.00)						
	3g	F&I guide rail extension	ons for cars and	8410	2,000	lbs.	\$52.00	\$104,000.00
	counterweights for 20.5' raise							
		•	rails per cwt - 20.5' ea					
		approx 22.5 lbs/ft	==> 2000 lbs					
QUANT	ITIES	Sheet Subtotal =		PRICES	<u> </u>			\$990,000.00
	111 E 3		CHECKED		J		OUEOKED	
BY A. Ritt			CHECKED R. Stephen	BY Greg Akins			CHECKED Kell	ly Brom
DATE PRE	PARED		PEER REVIEW	DATE PREF	PARED		PEER REVIEW	
10/4/2007 (2010)	J. Grass	09/09/10				onaldson
,								

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_10_OF_11_

FEATU	RE:			PROJECT:				
Shasta	Lake \	Water Resources Ir	nvestigation	Central Valley Project - CA Shasta Division				
Feasibi			G					
	-	ete) Dam		REGION:	: MP	ESTIMA	TE LEVEL:	Feasibility
`		•		WOID:	SHAEF	PRICE L		Apr - 10
		Most P	Probable					•
			18.5-ft Dam Raise					
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	4	STORI OCS AND SU	unco.					
	4	STOPLOGS AND GU	IDES:					
	4a	F&I Stoplog guides		8410	94,000	lbs.	\$8.20	\$770,800.00
			carbon steel construction	0.110	0.,000		70	***************************************
		with protective co	ating					
			② 18,800 lbs per set					
		, ,						
	4b	F&I Stoplogs		8410	192,000	lbs.	\$6.00	\$1,152,000.00
		·	carbon steel construction					
		with protective co	ating					
		4 stoplogs @ 48,						
		Stonloge to be use	ed at Shasta are presently at					
		·	m. They are 258' - 2" tall,					
			The new raised height of Shasta					
			re a stacked height of					
			Four new logs used in conjunction					
			from Hungry Horse, would extend					
		the stacked heigh						
		the stacked heigh	1 10 293 - 0 .					
		This Sheet Subtotal :	_					¢4 022 900 00
		This Sheet Subtotal	-					\$1,922,800.00
		Sheet 1 of 4 Subtotal	l=					\$33,200.00
		Sheet 2 of 4 Subtotal						\$1,300,000.00
		Sheet 3 of 4 Subtotal						\$990,000.00
		Onoct of a Gubicital	· -					Ψοσο,σοσίσο
					Total 86-684	10 =>		\$4,246,000.00
					10141 00-004	10 ->		ψ 4 ,2 4 0,000.00
QUANT	ITIFC			PRICE	S			
	IIIES		OUEQUED.		J		OUEC':	
BY			CHECKED	BY			CHECKED	D
Wayne Dela			Ryan Stephen	Greg Akins				Brom
DATE PRE			PEER REVIEW	DATE PRE	PARED		PEER REVIEW	
10/4/2007 (udated 6/	2010)	John Grass	09/09/10			Dan Do	onaldson

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_11_ OF _ 11_

FEATURE:					PROJECT:						
Shasta Lake Water Resources Investigation Feasibility Study					Central Valle	ey Project	t - CA				
					Shasta Divis						
Main (C	Concre	ete) Dam		REGION:			TE LEVEL:	Feasibility			
				WOID:	SHAEF	PRICE L	.EVEL:	Apr - 10			
		Most F	Probable								
			18.5-ft Dam Rais	se							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT			
	1	Dam crest lighting (56	kw)	8430	110,000	SF	\$7.50	\$825,000.00			
	2	Rigid metal conduit		8430							
		1"			3,300		\$34.00	\$112,200.00			
		2"			3,100	FT	\$56.00	\$173,600.00			
	3	600 volt insulated cab	le, single-conductor, stranded-	8430							
		10 AWG			10,000	FT	\$0.55	\$5,500.00			
		2/0 AWG			13,000	Ft	\$8.30	\$107,900.00			
	4	Power receptacles (ga	antry crane)	8430							
		480 volt, 3-phase			18	EA	\$2,000.00	\$36,000.00			
	-	Dietwiktien newelle een	مام	0.420							
	5	Distribution panelboar	gs , 400 ampere bus with 400 A	8430	3	EA	\$12,000.00	\$36,000.00			
		main circuit b	•				4 12,000100	¥ 00,000.00			
		208Y/120 volt, 22 main circuit b	5 ampere bus with 225 A preaker		5	EA	\$6,900.00	\$34,500.00			
		Note:									
			equipment included in mechanical								
		countate.									
	This Sheet and Total 86-68430 =>							\$1,330,700.00			
QUANTITIES					P	RICES					
BY		, -	CHECKED	вү	0.22		CHECKED	le Drawn			
Mike Schult DATE PRE			C. Maurer PEER REVIEW	DATE PRE	Greg Akins		Kel PEER REVIEW	y Brom			
		(updated 6/2010)	G. Girgis		09/09/10			onaldson			

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SUMMARY SHEET 1 OF 1

BUREAU OF R		214	LOTHINATE WORKS		-			SUMMARY SHEET I OF I
FEATU				PROJECT	:			
Shasta	Lake \	Nater Resources Ir	nvestigation		Central Va	lley Proje	ct - CA	
Feasibi	easibility Study ght Wing (Concrete) Dam				Shasta Div	rision		
Right V	Ving (Concrete) Dam		REGION:	MP	ESTIMA	TE LEVEL:	Feasibility
				WOID:	SHAEF	PRICE L	EVEL:	Apr - 10
		Most P	Probable					-
Summa	ary		18.5-ft Dam Raise					
PLANT ACCOUNT	EM							
LAN COL	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
AC	Α/							
		Dialet Win or (Company)	a) Dam assistant					
		Right Wing (Concret						
			einforced concrete raise of the existing					
			ks 70 to right abutment, including top of dar		erdam durin	g constr (r	Not Included)).	
	Electrical and mechanical features associated with the							
		and the elev						
			g foundation drains					
		•	d right abutment storage area					
		Access roads						
		Excavation/demo	olition/salvaging of existing features as	sociated wit	h existing r	ight wing	dam	
		Sheet 1 and 2 - 86-68	130 (dam raise, top of dam details, galleri	es, and forme	ed drains)			\$3,797,480.00
					,			
		Sheet 3 - 86-68140 (a	ccess roads)					\$615,170.00
		(1	,					, , , , , , , , , , , , , , , , , , , ,
		Sheet 4 - 86-68430 (li	ghting electrical features)					\$47,640.00
		CHOCK 4 00 00 100 (III	grang olderida reatarde,					ψ 11 ,O 10.00
								.
		Subtotal 1						\$4,460,290.00
		Mobilization		5%	+/-			\$220,000.00
		Subtotal 1 with Mobi						\$4,680,290.00
			ce to Proceed (NTP): None assumed.	0%				\$0.00
		Subtotal 2 = Subtota	l 1 with Mobilization + Escalation to NTF					\$4,680,290.00
		Design Continger	ncies	10%	+/-			\$216,744.00
		Subtotal 3 = Subtota	l 2 + Design Contingencies					\$4,897,034.00
		Allowance for Pro	curement Strategies (APS)	2.0%	+/-			\$102,966.00
		Type of solici	tation assumed is: Request for Proposal					
		Subtotal 4 = Subtota	13 + APS					\$5,000,000.00
		CONTRACT COST						\$5,000,000.00
		Construction Con	tingencies	20%	+/-			\$1,300,000.00
		FIELD COST						\$6,300,000.00
								, ,
	Note: Escalation from published price level to notice to proceed is excluded. Esting			mates may includ	de discrenancie	es due to rou	ndina	
	Ref.: For appropriate use and terminology, see Reclamation Manual, Directives a			-			_	
			JANTITIES	a ctandards 17	, 55 67, 65-6		PRICES	
ΒV		40		вү			CHECKED	
				Grea Alde			Kally Prom	
			See Group Sheets		Greg Akins			Kelly Brom
DATE PRE	PARED		PEER REVIEW	DATE PREPAR			PEER REVIEW	oneldeen 0/0/40
			See Group Sheets		09/07/10		Dan D	onaldson - 9/9/10

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_1_OF_4_

BUREAU OF R		N	ESTIMATE WORKSH					SHEET1 OF4
FEATU	RE:			PROJEC1	Γ:			
Shasta	Lake V	Vater Resources Ir	nvestigation		Central Val	ley Proi	ect - CA	
Feasibil					Shasta Divi	-		
	ight Wing (Concrete) Dam				MP	ESTIM	ATE LEVEL:	Feasibility
Ĭ	•	,		WOID:	SHAEF	PRICE	LEVEL:	Apr - 10
		Most F	Probable					•
		WOStr	18.5-ft Dam Rai	80				
		ı	18.5-II Daiii Rai	se				
PLANT ACCOUNT	РАУ ІТЕМ							
PLA	ΑΥ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
₹	₽.							
		Excavation and rem	oval:			<u> </u>		
	1		and transportation of top of dam	8130	1	ls	\$100,000.00	\$100,000.00
			ench materials to waste:					
			of foundation (removing loose materials)					
		500 c.y. assumed	d, including asphalt pavement					
			or 2' x 2' end area at upstream face					
		75 If sawcuts alor	ng u/s face and crest, total 150 lf					
			ncrete on u/s face (2' x 2' end area)					
		75 ft long, total vo	olume 11 yd ³					
		Surface Preparation	:					
	2	High-pressure water j	et for existing dam crest surface	8130	1	ls	\$3,200.00	\$3,200.00
		30' x 75', total are	ea 2250 ft ²					
	3	Local use of slush gro	outing and dental concrete on rock	8130	1,000	yd ²	\$37.00	\$37,000.00
		Drain Holes:						
	4	Mobilization and dem	obilization for drilling 4-inch drains	8130	1	Is	\$30,000.00	\$30,000.00
	5	Drilling 4-inch drains	on 10-ft centers from existing dam	8130	20	lf	\$140.00	\$2,800.00
		crest, elev. 1077.5; ea	ach hole 2.5 feet long (7 holes)					
			•					
	6	Drilling 4-inch drains	on 10-ft centers from utility gallery,	8130	500	lf	\$260.00	\$130,000.00
		each hole 50 feet long	g into foundation (10 holes)					
		Dam Raise:						
	7	Mass concrete for rigi	ht wing dam monoliths between	8130	7,000	vd ³	\$320.00	\$2,240,000.00
			3 and #75-#77. Vertical limits		, = = =	,	, , , , , ,	, , , , , , , , , , , , , , , , , , , ,
			ng dam and right abutment					
		·	to elev. 1092.5 (anticipating					
			.5-ft vertical lift, 50-ft wide & 40-ft					
			ting Cr. Js, keys across Cr. Js, and					
	no artificial cooling). 4,000 psi at 365 days. Include 5" formed							
	drains from El. 1077.5 to new crest El. 1096.0 (with caps).							
		GIGINO HOITI EL TOTT.C	5 to How Groot Et. 1000.0 (with caps).					
		Sheet Subtotal =						\$2,543,000.00
			QUANTITIES			1	PRICES	Ψ <u>2</u> ,0π0,000.00
BV		•		BV				
BY	voidor		CHECKED Mark Stoom	ВҮ	Grog Akina		CHECKED	Prom
Jason Schn			Mark Steers	DATE	Greg Akins		Kelly	DIUIII
DATE PRE		Undeted C/CC4C)	PEER REVIEW	DATE PREPA			PEER REVIEW	0/0/40
	4/8/08 (Updated 6/2010) Tom Hepler				09/07/10		Dan Donald	son - 9/9/10

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_2_OF_4_

	ECLAMATIO	N	ESTIMATE WORKSF	1661				SHEET_2_ OF _4
FEATU	RE:			PROJEC	Γ:			
Shasta	Lake V	Vater Resources Inv	estigation		Central Vall	ev Proi	ect - CA	
					Shasta Divis			
Feasibility Study Right Wing (Concrete) Dam				REGION:			ATE LEVEL:	Feasibility
ixigiit v	ring (c	oncicle, balli		WOID:	SHAEF		LEVEL:	Apr - 10
		Moot Dr	ahahla	WOID:	SHAEF	PRICE	LEVEL:	Apr - 10
		Most Pr						
			18.5-ft Dam Ra	ise				
PLANT ACCOUNT	TEM							
PLA	PAY ITEM	D	ESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
Ă	<u>a</u> .					├──		
		Dam Raise (continued	1.		+		+	
		Dani Italse (continued	<i>j</i> .					
	8	Furnishing and handling	cementitious materials - mass	8130	1,316	tons	\$135.00	\$177,660.00
		concrete; 50% pozzolar						
		Concrete is 4000 psi at	365 days					
				2422		.3		***********
	9		op of dam (including roadway,	8130	1,750	yd°	\$380.00	\$665,000.00
			age area, u/s & d/s parapets, and monoliths 72-73 and 75-77 above elev. 10	102 5	+			
		waikway between dam	TIOTIOTICITY TELEVISION TO THE ABOVE CIEV. TO	332.3	_			
	10	Furnishing and handling	cementitious materials - for	8130	494	tons	\$170.00	\$83,980.00
			pozzolan, 80% cement (Type II)					
		Concrete is 4000 psi at	28 days.					
	4.4			0.100				
	11	Furnishing and placing - Gallery	reinforcing bars for the:	8130	18,600	lbo	\$1.70	\$31,620.00
			exposed structural concrete surfaces		97,000		\$1.70	\$164,900.00
		remperature steel for	expected structural controller surfaces		07,000	100	Ψ1.70	Ψ104,000.00
	12	Furnishing and installing	g 6-inch steel top of dam drains	8130	74	lf	\$200.00	\$14,800.00
		2 drains; standard weig	nt pipe, 19 lb/ft; 1 drain per block					
		Contraction Joints						
	13	Furnishing and installing	g 12-inch PVC waterstops	8130	530	If	\$32.00	\$16,960.00
	10		ntraction joints and around	0100		-	Ψ02.00	Ψ10,300.00
		utility gallery at contract						
			-					
	14		ilization for pressure grouting	8130	1	Is	\$27,000.00	\$27,000.00
		of contraction joints (for	monoliths 72-73, 75-77)					
	15	Water test and pressure	a arout system:	8130	1	ls	\$72,000.00	\$72,000.00
	10		alling metal tubing & fittings,	0100	+	13	Ψ12,000.00	Ψ12,000.00
			e; total 3000 lbs)					
			tion joints (assume 3 per joint)					
		(4 joints; total ′	2 hookups)					
	40	Eurniching and handling	coment for grouting contraction	8130	200	hogo	#20 00	ΦΕΩΩ ΩΩ
	10		g cement for grouting contraction 0.9:1; 0.7 bags/ft3; 1 ft3 per joint)	6130		bags	\$28.00	\$560.00
		(Assume 6 times final v			+		+	
			,					
		This Sheet Subtotal =					 	\$1,254,480.00
		Sheet 1 of 2 Subtotal =			+		+	\$2,543,000.00
		Shoot I of 2 Subtotal	•		+		+	Ψ ∠ ,υ 1 υ,υυυ.υυ
					1			
					P	100	<u> </u>	AA ===
					Total 86-681	130 =>	 	\$3,797,480.00
					+		+	
		ΛI	JANTITIES			<u> </u>	PRICES	
BY			HECKED	ВҮ			CHECKED	
ום	oidor			3 1	Greg Akins		Kelly	Brom
Jason Schn	Jason Schneider Mark Steers DATE PREPARED PEER REVIEW						i tony	
				DATE PREPA	RED		PEER REVIEW	

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_3_OF_4_

BUREAU OF I		ON	ESTIMATE WORKS		-			SHEET_3_ OF4
FEATU				PROJECT				
		Water Resources Ir	nvestigation		Central Valle	-	t - CA	
Feasibi	ility Stu	ıdy			Shasta Divis			Feasibility
Right \	Wing (Concrete) Dam		REGION:	MP		TE LEVEL:	
				WOID:	SHAEF	PRICE L	EVEL:	Apr - 10
		Most F	Probable					
			18.5-ft Dam R	aise				
ᆫᄫ	Σ							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
ACC	PA							
	1	Compacted backfill ro	ad embankment	8140	17,500	yd ³	\$21.00	\$367,500.00
	2	Excavation		8140	190	yd ³	\$33.00	\$6,270.00
	3	Asphalt Concrete (4" I	Depth)	8140	760	tons	\$190.00	\$144,400.00
	4	Aggregate Basecours	e (6" Depth)	8140	1,100	tons	\$50.00	\$55,000.00
	5	W-beam guardrail witl		8140	840	lf	\$50.00	\$42,000.00
			al beam railing terminal system					
			am guard railing connections					
		to bridge railings						
	This Sheet and Total 86-68140 =>							\$615,170.00
		C	QUANTITIES			Р	RICES	
вү			CHECKED	BY			CHECKED	
	Nicholas Clough, PE Mark Leavitt, PE				Greg Akins		Kelly B	rom
DATE PRE	PARED		PEER REVIEW	DATE PREPAR	RED		PEER REVIEW	
10/11/2007	(Updated	1 6/2010)	Jesus G. Romero, PE		09/07/10		Dan Donalds	on - 9/9/10

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_4_OF_4_

FEATU	ATURE:					:			
Shasta	nasta Lake Water Resources Investigation					Central Valle	y Project	- CA	
	sibility Study ht Wing (Concrete) Dam					Shasta Divis			
					REGION:	MP	-	E LEVEL:	Feasibility
. a.g.i.c	· · · · · · · · · · · · · · · · · · ·	Jonoroto, Jam			WOID:	SHAEF	PRICE LI		Apr - 10
					WOID.	SHALI	I KICL LI	LVLL.	Αρι - 10
		Most F	Probable						
				18.5-ft Dam Raise					
-	-			10.5-1t Daili Raisc					
PLANT ACCOUNT	PAY ITEM		DESCRIPTION		CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	1	Parapet lighting fixture	es		8430	20	EA	\$825.00	\$16,500.00
		120 volt, high pre			0.00			ψ020.00	ψ10,000.00
		0 .0,g p. 0							
	2	Rigid metal conduit			8430	700	FT	\$36.00	\$25,200.00
	_	1-inch			0.00	, , ,		V	Ψ=0,=00.00
		-							
	3	600 volt insulated cab	le, single conductor, s	stranded-	8430	2,200	FT	\$2.70	\$5,940.00
		10 AWG							
		10 AVVG							
			This Sheet and Tot	al 86-68430 ->			 		\$47,640.00
	This Sheet and Total 86-68430 =>						φ41,040.00		
	QUANTITIES				PR	ICES			
BY			CHECKED		BY		1 11	CHECKED	
ופ	M. Schuh	1	C. Maurer		וט	Greg Akins			ly Brom
DATE PRE		ı	PEER REVIEW		DATE PREPAR			PEER REVIEW	iy DIOIII
DATEPRE		(Updated 6/2010)	G. Girgis		DATE FREPAK	08/24/10			ıldson - 9/9/10
	3/23/07	(Opualeu 0/2010)	G. Giryls			00/44/ IU		Dan Dona	1143011 - 3/3/10

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SUMMARY SHEET 1 OF 1

BUREAU OF	RECLAMAT	ION ESTIMATE WORKSHEE	ΞT				SUMMARY SHEET 1 OF 1
FEATURE:				CT:			
Shasta	a Lake	Water Resources Investigation		Central Vall	ey Projec	ct - CA	
Feasib	ility St	udy		Shasta Divi	sion		
Left W	ing Da	am	REGION:	: MP	ESTIM <i>A</i>	TE LEVEL:	Feasibility
			WOID:	SHAEF	PRICE	LEVEL:	Apr - 10
		Most Probable					
Summ	arv	18.5-ft Dam Raise	ج				
		Total it Bulli Hallo	_				
PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Left Wing (ambankment) Dam consists of					
	+	Left Wing (embankment) Dam consists of:					
	+	18.5-ft embankment raise of the existing embankment dam between blocks 15 to left abutment (including tieing into	ovieting o	onerete cor) wall)		
	+	Electrical and mechanical features associated with existing		oncrete con	z waiij.		
		Access roads (state and county roads, rotunda)	access				
		Excavation/demolition/salvaging of existing features associated and county roads, rotunday	ated with a	vietina loft u	ing dam		
		Excavation/demonition/salvaging of existing features associa	ateu witii e	XISTING ICIT W	ling dam		
		Sheet 1 - 86-68140					\$1,027,900.00
	+	(access roads, parapet, sidewalks, curb & gutters, rotunda)					Ψ1,021,900.00
		(access roads, paraper, sidewains, curb & guillers, rollurida)					
		Sheet 2 - 86-68311					\$15,192,488.00
	+	(excavation/demolition/salvaging of existing features, embankm	ent dam & (ore wall exte	nsion)		Ψ15,192,400.00
		(excavation/demonition/salvaging of existing features, embanking	ent dam & t	Core wan exte	1131011)		
		Sheet 3 - 86-68430					\$39,190.0
	Sheet 3 - 86-68430 (top of left wing dam electrical features)						ψ39,190.00
		(top or lost willing dam clossifical roads)					
		Subtotal 1					\$16,259,578.00
		Mobilization	5%	+/-			\$810,000.00
		Subtotal 1 with Mobilization	070				\$17,069,578.00
		Escalation to Notice to Proceed (NTP): None assumed.	0%				\$0.00
		Subtotal 2 = Subtotal 1 with Mobilization + Escalation to NTP					\$17,069,578.00
		Design Contingencies	10%	+/-			\$1,554,891.00
		Subtotal 3 = Subtotal 2 + Design Contingencies					\$18,624,469.00
		Allowance for Procurement Strategies (APS)	2.0%	+/-			\$375,531.00
		Type of solicitation assumed is: Request for Proposal					•
		Subtotal 4 = Subtotal 3 + APS					\$19,000,000.00
		CONTRACT COST					\$19,000,000.00
		Construction Contingencies	20%	+/-			\$4,000,000.00
		FIELD COST					\$23,000,000.00
		Note: Escalation from published price level to notice to proceed is excluded. Estimates	may include d	l iscrepancies due	to rounding	l.	
		Ref.: For appropriate use and terminology, see Reclamation Manual, Directives and Sta	andards FAC;	09-01, 09-02 and	d 09-03.		
		QUANTITIES				PRICES	
вү		CHECKED	вү			CHECKED	
See Group Sheets See Group Sheets				Greg Akins			Kelly Brom
			DATE PRE	PARED		PEER REVIEW	
See Group Sheets				08/24/10		Da	an Donaldson

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_1_ OF _3_

BUNEAU OF K	ECLAMATIO	ESTIMATE WORKS	1661	EEI SHEET_1_OF					
FEATU	RE:		PROJE(CT:					
		Vater Resources Investigation		Central Valley Project - CA					
Feasibil				Shasta Divis	-				
Left Wi			REGION:			TE LEVEL:	Feasibility		
Leit Wil	ilg Dai	II .							
			WOID:	SHAEF	PRICE L	EVEL:	Apr - 10		
		Most Probable							
		18.5-ft Dam F	Raise						
⊨	>								
PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT		
<u> </u>	PAY	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AWOON		
					.3	4-10-0			
	Furnish and place reinforced concrete in retaining walls		8140	1,000	yd ³	\$740.00	\$740,000.00		
		(f'c = 4,000 psi @ 28 days)							
	2	Furnish and install reinforcement, (fy = 60 ksi)	8140	125,000	lbs	\$1.65	\$206,250.00		
	3	Furnishing and handling cement	8140	285	tons	\$190.00	\$54,150.00		
	4	Furnish and install W-beam guardrail with 6' wood post	8140	550	lf	\$50.00	\$27,500.00		
	7	includes two metal beam railing terminal system	0140	330	"	Ψ00.00	Ψ21,000.00		
		includes two metal beam railing terminal system							
				et and Total	86-68140	=>	\$1,027,900.00		
QUANTITIES			Tilla Office	ot und Total		PRICES	Ψ1,021,300.00		
BY		CHECKED	BY			CHECKED			
Jesus G Ro	mero	Nicholas Clough, PE		Greg Akins		Ke	elly Brom		
DATE PREI	PARED	PEER REVIEW	DATE PREF	PARED		PEER REVIEW			
5/14/2008 (เ	Updated 6	/2010) Dave K. Edwards, PE		08/24/10		Dan	Donaldson		
5/14/2008 (Updated 6/2010) Dave K. Edwards, PE									

Attachment 4 18.5-foot Raise and Reservoir Area Infrastructure

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_2_OF_3_

DOINE/10 OF 1	RECLAMATIC	ESTIMATE WORKSI								
FEATU	IRE:		PROJECT:							
Shasta Feasibi		Water Resources Investigation udy		Central Valley Shasta Divisi	-	- CA				
Left W	•	•	REGION:	MP		ATE LEVEL:	Feasibility			
	.		WOID:	SHAEF	PRICE		Apr - 10			
		Most Probable					- -			
		18.5-ft Dam Rais								
-	-	10.5-It Daili Nais	<u>-</u>			1				
PLANT ACCOUNT	РАҮ ІТЕМ	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT			
	1	Mobilization and Preparatory Work					See summary sheet			
		Excavation/removal/salvaging:								
	2	Remove guard shack and rotunda	86-68311	1	ls	250,000.00	\$250,000.00			
	3	Removal of parapet wall	86-68311	580	yd ³	410.00	\$237,800.00			
	4	Removal of sidewalks and curbs	86-68311	4,500	In ft	30.00	\$135,000.00			
	5	Remove roads (asphalt)	86-68311	1,700	yd ³	110.00	\$187,000.00			
	6	Remove vegetation, trees (~20)	86-68311	1	ls	13,000.00	\$13,000.00			
	7	Remove topsoil and stockpile	86-68311	114,000	ft ²	0.35	\$39,900.00			
	8	Foundation stripping (footprint area of raised embankment)	86-68311	250,000	ft ²	1.05	\$262,500.00			
		Concrete Core Wall			2					
		Corewall common excavation (compacted fill)	86-68311	5,300	yd ³	21.00	` '			
		Corewall removal (for weathering/key)	86-68311	35	yd ³	390.00	. ,			
		Corewall rock excavation	86-68311	1,000	yd ³	55.00	. ,			
		Extend access shaft vertically (6' diam) - 22 If extension	86-68311	15	yd ³	1,600.00	•			
		Reinforced concrete (extend wall laterally & vertically)	86-68311	1,250	yd ³	670.00				
		Foundation treatment, dental concrete etc.	86-68311	7,000	ft ²	2.70	. ,			
	15	Reinforcement for core wall (150 lb/cy)	86-68140	190,000	lb	1.65	\$313,500.00			
		Left Wing Dam Fill			.3					
		Embankment - clayey gravel	86-68311	9,100	yd ³	84.00	. ,			
		Embankment - filter/transition	86-68311	3,900	yd ³	94.00	. ,			
		Embankment - rockfill	86-68311	85,000	yd ³	94.00	` ' '			
		Embankment - Upstream riprap	86-68311	3,300	yd ³	110.00	` '			
		Embankment - Downstream riprap	86-68311	4,700	yd ³	110.00				
	21	Embankment - topsoil and seeding	86-68311	85,000	ft ²	0.65	\$55,250.00			
		MSE wall								
	22	Facing (shotcrete, precast concrete panel, etc)	86-68311	6,100	ft ²	40.00	\$244,000.00			
	23	Geogrid	86-68311	59,000	ft ²	0.60	\$35,400.00			
	24	Granular backfill - filter/transition material	86-68311	4,900	yd ³	85.00	\$416,500.00			
		Miscellaneous								
	25	Replace roadways - 6" asphalt, 8" base	86-68311	70,000	ft ²	7.80	\$546,000.00			
		Replace parapet wall	86-68311	600	yd ³	910.00				
		Replace Rotunda Monument (price from MWH)	86-68311	1	ls	275,000.00	` '			
		Replace sidewalks incl. curbs & gutters	86-68311	2,600	In ft	92.00				
	29 Replace sidewalks without curbs & gutters		86-68311	2,400	In ft	56.00	\$134,400.00			
	30 Reinforcement for parapet wall (200 lb/cy)		86-68140	120,000	lb	1.65	·			
31 Polypropylene fibers for sidewalk, curb, and gutters (1.5 l/cy)				560	lb	4.80	\$2,688.00			
				and Total 86	 -68311 :	=>	\$15,192,488.00			
QUANTITIES)						
BY CHECKED			вү			CHECKED				
Leif Dixon		Roger Torres	Greg Akins			Kelly Brom				
DATE PREPARED PEER REVIEW				ARED		PEER REVIEW				
10/9/2007 (Updated 6/2010) Becky Morfitt				08/24/10			an Donaldson			

ESTIMATE WORKSHEET BUREAU OF RECLAMATION SHEET_3_ OF _3_ **FEATURE**: PROJECT: Shasta Lake Water Resources Investigation **Central Valley Project - CA** Feasibility Study **Shasta Division Left Wing Dam** REGION: MP ESTIMATE LEVEL: **Feasibility** WOID: SHAEF PRICE LEVEL: Apr - 10 **Most Probable** 18.5-ft Dam Raise PLANT ACCOUNT PAY ITEM DESCRIPTION CODE QUANTITY **UNIT PRICE** UNIT **AMOUNT** 1 Parapet lighting fixtures \$14,040.00 8430 18 EA \$780.00 120 volt, 70 Watt, high pressure sodium 8430 600 FT 2 Rigid metal conduit \$34.00 \$20,400.00 1-inch 3 600 volt insulated cable, single conductor, stranded-8430 1,900 FT \$2.50 \$4,750.00 copper 10 AWG \$39,190.00 This Sheet and Total 86-68430 => **QUANTITIES PRICES** CHECKED CHECKED ΒY Mike Schuh C. Maurer Kelly Brom DATE PREPARED DATE PREPARED PEER REVIEW PEER REVIEW G. Girgis 4/14/2008 (Updated 6/2010) 08/24/10 Dan Donaldson

BUREAU OF RECLAMATION ESTIMATE WORKSHEET 1 OF 1

BUREAU OF		ION ESTIMATE V	VURNSHEE		СТ.			SUMMARY SHEET 1 OF 1
		Water Recourses Investigation		PROJE		av D== '-	4 64	
Snasta Feasib		Water Resources Investigation			Central Vall Shasta Divi		t - CA	
		antities		REGION:			TE LEVEL:	Feasibility
Орши	ay da	Most Probable		WOID:	SHAEF	PRICE I		Apr - 10
								T T
Summ	ary	18.5	-ft Dam Raise					
FF	EM							
PLANT ACCOUNT	PAY ITEM	DESCRIPTION		CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
ĕ	<u>a</u> .							
		OL						#00 F00 000 0
		Sheets 1 through 3 - 86-68130						\$29,599,330.0
		Sheets 4 and 5 - 86-68140						\$5.045.700.0
		Sneets 4 and 5 - 60-66140						\$5,945,700.0
		Sheet 6 - 86-68410						\$6,399,100.0
		Sheet 0 - 60-604 10						Ψ0,399,100.0
		Sheet 7 - 86-68420						\$29,224,800.0
		GIRCE 1 - 00 00420						ΨΖΟ,ΖΖ-Ψ,ΟΟΟ.Ο
		Sheet 8 - 86-68430						\$51,420.0
								Ψ01,120.0
		Subtotal 1						\$71,220,350.0
		Mobilization		5%	+/-			\$3,600,000.0
		Subtotal 1 with Mobilization						\$74,820,350.0
		Escalation to Notice to Proceed (NTP): None as		0%				
		Subtotal 2 = Subtotal 1 with Mobilization + Escalar	tion to NTP					\$74,820,350.0
		Design Contingencies		10%	+/-			\$7,533,602.0
		Subtotal 3 = Subtotal 2 + Design Contingencies		0.604				\$82,353,952.00
		Allowance for Procurement Strategies (APS)		2.0%	+/-			\$1,646,048.0
		Type of solicitation assumed is: Sealed Bid						#84 AAA AAA A
		Subtotal 4 = Subtotal 3 + APS CONTRACT COST						\$84,000,000.00
				200/	1.1			\$84,000,000.0
		Construction Contingencies FIELD COST		20%	+/-			\$16,000,000.0 \$100,000,000.0
		I ILLU GOST						φ ι ου, ουυ, ουυ. Οι
		Note: Escalation from published price level to notice to proceed is e	avaluded Estimates	nov ipolytele -1	inorononoles de	to rounding	l	
		Note: Escalation from published price level to notice to proceed is earlier. For appropriate use and terminology, see Reclamation Manual						
		QUANTITIES	a, Directives and Stat	idai da FAO, I	ਹਰ-ਹ1, ਹਰ - ਹ∠ d∏		PRICES	
BY		CHECKED		BV		•	CHECKED	
	oup Sheets			BY	Greg Akins			elly Brom
DATE PR		PEER REVIEW		DATE PREF			PEER REVIEW	eny DIOIII
	EFAKED	See Group Sheets			09/13/10			naldson - 7/20/10
		See Group Streets			UI 101 160		Dan Dor	naldson - 7/29/10

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_1_OF_8_

	RECLAMATI	ON	ESTIMATE WORKS					SHEET1 OF8
FEATU	IRE:			PROJEC	T:			
Shasta	Lake '	Water Resources Ir	nvestigation		Central Va	lley Pr	oject - CA	
Feasibi	ility Stu	ıdy			Shasta Div	rision	•	
		antities		REGION:	MP	ESTIN	MATE LEVEL:	Feasibility
•			Probable	WOID:	SHAEF	PRICE	ELEVEL:	Apr - 10
			18.5-ft Dam Rai	se				
FF	ITEM							
PLANT ACCOUNT	PAY IT		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Excavation/removal						
	1	Demolition, removal, a spillway crest, piers, a	and transportation of existing nd chute materials:	8130	1	ls	\$2,900,000.00	\$2,900,000.00
			stream reinforced concrete drum					
		'	075 yd3, 660 ft of 6" saw cuts]					
		· · · · · ·	vnstream crest between					
			8 and 1006.13 (NAVD29)					
			t of 6" saw cuts)					
		 Limited excavatio 	•					
		(840 yd3, 810ft	<u> </u>					
	Surface Preparation:							
	2	Backfill concrete exist	ng conduits, shafts, adits and	8130	1,020	vd3	\$155.00	\$158,100.00
			chambers and existing piers	0130	1,020	yus	\$133.00	φ138,100.00
		oponingo in arani gate	orialization and oxioting profes					
	3	Furnishing and handli	ng cementations materials	8130	290	tons	\$145.00	\$42,050.00
		[80% cement and 20%						, ,
	4	Mobilization and demo	obilization for drilling anchor bars and	8130	1	ls	Included in mobilizatio	n on summary sheet
		embedment for reinfor		0100	<u>'</u>	10	meidded iir mobilizatio	Tron summary sneet
		Spillway Crest Modif	ications:					
	5	Structural concrete for	spillway crest	8130	12,855	yd3	\$400.00	\$5,142,000.00
		[4000 psi compressiv						
	6	Furnishing and handli	ng cementations materials	8130	3,625	tons	\$145.00	\$525,625.00
		[80% cement and 20%						
	7	Furnishing and placing	g reinforcing bars	8130	180,500	lbs	\$1.80	\$324,900.00
	8	Drilling for anchor bars	s into spillwav crest	8130	5,250	lf	\$93.00	\$488,250.00
		-	le for #9 bar, 1500 holes 3.5 feet deep]	3.30	5,200		430.00	Ţ.33, <u>2</u> 3100
		Sheet Subtotal =						\$9,580,925.00
			UANTITIES		1		PRICES	ψθ,σου,θ2σ.00
вү		Q	CHECKED	ВҮ			CHECKED	
<i>6</i> 1	Jason So	chneider	Mark Steers, PE		Greg Akins		Kelly E	Brom
		on includi						7.VIII
DATE DO	DATE PREPARED PEER REVIEW 4/8/2008 Tom Hepler, PE			DATE PREPA	INED		PEER REVIEW	

ESTIMATE WORKSHEET BUREAU OF RECLAMATION SHEET_2_ OF __8 _ FEATURE: PROJECT: Shasta Lake Water Resources Investigation **Central Valley Project - CA** Feasibility Study **Shasta Division Spillway Quantities** REGION: MP ESTIMATE LEVEL: Feasibility **Most Probable** WOID: SHAEF PRICE LEVEL: Apr - 10 18.5-ft Dam Raise PLANT ACCOUNT PAY ITEM UNIT PRICE DESCRIPTION CODE QUANTITY UNIT **AMOUNT** Spillway Crest Piers: 12,030 yd3 9 Structural concrete for spillway piers 8130 \$500.00 \$6,015,000.00 [4000 psi compressive strength] 10 Furnishing and handling cementitious materials 8130 3,400 tons \$145.00 \$493,000.00 [80% cement and 20% pozzolan] 11 Furnishing and placing reinforcing bars 1,390,000 lbs \$2,502,000.00 8130 \$1.80 12 Drilling for reinforcement in existing piers 18,760 lf \$135.00 \$2,532,600.00 8130 [2-inch-diameter hole for #11 bar, 1720 holes, min. 5 feet deep] Spillway Aeration System: - DELETED 13 Structural concrete for spillway crest 8130 2,375 yd3 \$520.00 \$1,235,000.00 [4000 psi compressive strength] 14 Furnishing and handling cementitious materials 870 tons \$145.00 8130 \$126,150.00 [80% cement and 20% pozzolan] 15 Furnishing and placing reinforcing bars 8130 145,400 lbs \$1.80 \$261,720.00 16 Drilling for anchor bars into spillway chute 8130 2,365 If \$319,275.00 \$135.00 [1.5-inch-diameter hole for #9 bar, 675 holes, 3.5 feet deep] Post-Tensioned Anchors in Spillway Piers 1 Is 17 Mobilization and demobilization for drilling for 8130 \$160,000.00 \$160,000.00 post-tensioned anchors 18 Drilling and surveying post-tension anchor holes 8,400 lf \$2,184,000.00 8130 \$260.00 8 anchor units in each of the 5 internal piers 4 anchor units in each of the 2 end piers 48 holes, 12 inches diameter, each 100-feet in length 19 Furnishing and installing post-tension anchors 8,400 If \$270.00 \$2,268,000.00 8130 48 anchors, 100 feet long, 56 strands 0.6 inch dia epoxy coated strands Sheet Subtotal = \$18,096,745.00 **PRICES QUANTITIES** CHECKED CHECKED Mark Steers, PE Greg Akins Kelly Brom Jason Schneider

PEER REVIEW

Tom Hepler, PE

DATE PREPARED

4/8/2008

Attachment 4-24 Dra	aft – June 2013
---------------------	-----------------

Dan Donaldson - 7/29/10

PEER REVIEW

DATE PREPARED

09/13/10

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_3_OF_8_

FEATU		NI	ESTIMATE WORKS	PROJEC	T·			SHEET_3_ OF8
		Nater Resources I	nvestigation	FRUJEC	Central Va	llev Pr	oiect - CA	
Feasibi			TVCOligation		Shasta Div	-	oject - OA	
Spillwa	-	•		REGION:	MP		NATE LEVEL:	Feasibility
			Probable	WOID:	SHAEF		ELEVEL:	Apr - 10
			18.5-ft Dam Ra	ise				
PLANT ACCOUNT	РАҮ ІТЕМ		PECCENTION	0005	OLIANITITY	LINUT	LINIT PRIOF	AMOUNT
ACC	PAY		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	20	Primary and secondar	ny aroutina	8130	8,400	lf	\$26.00	\$218,400.00
	20	84 holes, 3370 ft		0100	0,400	"	Ψ20.00	Ψ2 10,400.00
		·	•					
	21	Furnishing and handli	ng cementitious materials for grout	8130	236	tons	\$360.00	\$84,960.00
		[0.7:1 by volume mix	= 0.85 bags/ft^3]					
	22	Furnishing and install	ing anchor head hardware	8130	84	pckg	\$13,500.00	\$1,134,000.00
		-	s: Steel bearing plate, anchor head	0.00	<u> </u>	pong	ψ10,000.00	ψ1,101,000.00
		and wedges, an						
	23	Testing for 48 anchor		8130	1	ls	\$350,000.00	\$350,000.00
		·	length - all anchors)					
		- Proof testing (90°	,					
		- Lift-off testing (2)	,					
		- Performance test	ing (10% of anchors)					
	24	Concrete in anchor he	ead blockouts	8130	79	yd3	\$1,700.00	\$134,300.00
			si concrete, 13 tons cement,	0.00	,,,	yuu	ψ1,7 σσ.σσ	Ψ101,000.00
		1,625 lbs reinforceme						
			-					
		Stilling Basin Modifi	cations					
	25	Excavation, rock, for	stilling basin extension	8130	0	yd3	\$0.00	\$0.00
	00	Other street and a sector for	n attition is a single automaton	0400		10	#0.00	ФО ОС
	26		r stilling basin extension	8130	0	yd3	\$0.00	\$0.00
			loor; avg 8.4' thick walls, 89' high 5 feet; assume new end sill					
			eased by 55 feet for 400,000 cfs jump					
		Basiii ichigai inore	sased by 33 leet for 400,000 cra jump					
	27	Structural concrete fo	r higher parapet walls for basin	8130	0	yd3	\$0.00	\$0.00
		Assume existing	parapet walls increased 3 feet					
		Total basin length	n is 447 (including extension)					
		Prevents wall ove	ertopping for 400,000 cfs release					
	20	Furnishing and handli	na comentitious meterials for bosin	0420	0	tono	#0.00	#0.00
	28	Furnishing and nandii	ng cementitious materials for basin	8130	0	tons	\$0.00	\$0.00
	29	Furnishing and placin	g reinforcing bars for basin	8130	0	lbs	\$0.00	\$0.00
		Sheet Subtotal =						\$1,921,660.00
		86-68130 Total =						\$29,599,330.00
			UANTITIES		1		PRICES	
вү			CHECKED	вү			CHECKED	
	Jason Sc	chneider	Mark Steers, PE		Greg Akins		Kelly B	rom
DATE PRE	PARED		PEER REVIEW	DATE PREPA	RED		PEER REVIEW	
	4/8/2008		Tom Hepler, PE		09/13/10		Dan Donaldso	on - 7/29/10

BUREAU OF		ION	ESTIMATE WORI					SHEET_4_ OF8	
FEATU				PROJEC	T:				
		Water Resources Ir	nvestigation		Central Va	-	oject - CA		
Feasib		antities		REGION:	Shasta Div		MATE LEVEL:	Feasibility	
Spillw	ay Qu		robable	WOID:			E LEVEL:	Apr - 10	
		WOSt F	Tobable	WOID:	ЭПАЕГ	PRICI	LEVEL:	Apr - 10	
			40 5 8 0	5 - '					
-	<	1	18.5-ft Dam F	Raise					
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
ACC	PA								
		Spillway Bridge:	I no manual of a victions builded.		4	1.0	#4 000 000 00	#4 000 000 00	
	-		I removal of existing bridge:		1	LS	\$1,800,000.00	\$1,800,000.00	
	1		je is 385 feet long by 40 feet						
	1		ing of steel stringers, floor						
			vo main girders with a cast-						
		•	rete deck. Total weight of						
		· · · · · · · · · · · · · · · · · · ·	ructure is 755,000 lbs. The						
	concrete deck volume is 425 cubic yards.								
			on joints weigh 50,000 lbs &						
			gh 30,000 lbs. The steel						
		superstructur	e is coated with lead based						
		paint. Total s	teel surface area ~ 45,000sf.						
		2 Furnish and in	stall PCI BT-72 Precast						
			concrete girders in the						
		following leng	_						
		L = 67 feet	guis.		10	ΓΛ	¢50,000,00	#600 000 0	
						EA	\$50,000.00	\$600,000.00	
		L = 62 feet				EA	\$50,000.00	\$600,000.00	
		L = 57 feet			12	EA	\$50,000.00	\$600,000.00	
		3. Furnish and pl	ace concrete in deck, curb		900	CY	\$1,250.00	\$1,125,000.00	
		and parapets	(f'c = 4,000 psi @ 28 days)						
					205.000	1.00	20.00	* 450 000 00	
		4. Furnish and in			225,000	LBS	\$2.00	\$450,000.00	
		reinforcemen	t, fy = 60,000 psi)						
						0) (20.400.00	****	
		·	ace concrete in end &		250	CY	\$2,400.00	\$600,000.00	
			diaphragms (f'c = 4,000 psi						
		@ 28 days)							
		6. Furnish and in	stall reinforcement in end &		37,500	LBS	\$1.80	\$67,500.00	
			diaphragms, fy = 60,000 psi		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		, 22	, - ,	
					1				
		Sheet Subtotal =						\$5,842,500.0	
			UANTITIES				PRICES		
вү			CHECKED	вү			CHECKED		
	Jesus G	6. Romero, PE	Jeff Baysinger, PE		Greg Akins		Kelly B	rom	
DATE PRI	EPARED		PEER REVIEW	DATE PREPA	RED		PEER REVIEW		
	5/20/200	08	Dave Edwards, PE		09/13/10		Dan Donaldson - 7/29/10		

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_5_OF_8_

FEATU	RE:			PROJECT:				
		Water Resources Ir	nvestigation		Central Va	llev Pro	piect - CA	
Feasibi			3		Shasta Div	-		
		antities		REGION:	MP		ATE LEVEL:	Feasibility
-	.,		Probable	WOID:			LEVEL:	Apr - 10
				WGID:	0			749. 10
			18.5-ft Dam Rai	se				
T INT	EM							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Spillway Bridge: (co	ntinue)					
		7. Remove, stocl	cpile and reinstall existing		1	LS	\$60,000.00	\$60,000.00
		downstream	parapet railing. This should					
		include expa	nsion or epoxy anchors.					
		(existing anc	hor spacing is unknown)					
			stall expansion joints, one at		80	LF	\$540.00	\$43,200.00
			the bridge. The expansion					
			consist of Steelflex strip seal					
			int, with rail elements SSCM2					
			eal elements, manufactured					
		by D.S. Brow	n or equal					
		0. Concrete and	reinforcement in spillway					
			ort bridge superstructure					
			separate worksheet by 8110)					
		(included in s	separate worksheet by 6110)					
		Object Code (c)						#400 000 00
		Sheet Subtotal =						\$103,200.00
		96-69140 Total						¢E 04E 700 00
		86-68140 Total =	UANTITIES				PRICES	\$5,945,700.00
вү		Q	CHECKED	BY			CHECKED	
ום	Лечие О	. Romero, PE	Jeff Baysinger, PE		Greg Akins		CHECKED Kelly	Brom
DATE PRE		. NOMEIU, FE	PEER REVIEW	DATE PREPA			PEER REVIEW	DIVIII
DATE PKE	5/20/200	8	Dave Edwards, PE	DATE PREPA	09/13/10		PEER REVIEW Dan Donalds	on - 7/29/10
	J. Z.U. Z.U.U	•	Davo Lumaido, i L		00/10/10		Dan Donalus	

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_6_OF_8_

FEATU	RE:			PROJECT:				
Shasta	Lake V	Vater Resources Ir	nvestigation		Central Va	lley Pro	oject - CA	
Feasibi	-	-			Shasta Div			
Spillwa	ıy Qua	ntities		REGION:	MP	ESTIM	ATE LEVEL:	Feasibility
		Most P	Probable	WOID:	SHAEF	PRICE	LEVEL:	Apr - 10
			18.5-ft Dam Raise	;				
PLANT ACCOUNT	TEM							
PLA	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
∢	ш							
	2	STODLOGS SEATS	AND CHIDES.					
		STOPLOGS, SEATS	AND GUIDES:					
	2a	Furnish and install nev	v stoplogs for one 45'-0" wide bay	8410	257,000	lhe	\$5.60	\$1,439,200.00
	Zu		carbon steel construction	0410	207,000	100.	ψ0.00	ψ1,400,200.00
		with protective co						
		Stoplogs 45'-0" x						
		, 0						
	2b Furnish and install		w stoplogs for one 50'-0" wide bay	8410	306,000	lbs.	\$5.60	\$1,713,600.00
			carbon steel construction					
		with protective co	ating					
		Stoplogs 50'-0" x	40'-9"					
	2c		w stoplogs for one 55'-0" wide bay	8410	348,000	lbs.	\$5.60	\$1,948,800.00
			carbon steel construction					
		with protective co						
		Stoplogs 55'-0" x	40'-9"					
				2.112	2 222		40.50	***
	2d		ee new stoplog lifting beams	8410	9,000	lbs.	\$6.50	\$58,500.00
	Welded structural carbon steel construction							
		with protective co	ating					
	20	Furnish and install nov	v stoplog seats and guides for	8410	118,000	lhe	\$10.50	\$1,239,000.00
	26		structural carbon steel	0410	110,000	105.	φ10.50	\$1,239,000.00
		construction with						
		- 489'-0" of embe						
		- 300'-0" of embe						
		86-68410 Total =						\$6,399,100.00
		Q	UANTITIES				PRICES	
вү			CHECKED	вү			CHECKED	
	Ryan Ste	phen	W. Delzer		Greg Akins		Kelly	Brom
DATE PRE	PARED		PEER REVIEW	DATE PREPA	RED		PEER REVIEW	
	4/22/2008	3	D. Hulse/J. Grass		09/13/10		Dan Donald	son - 7/29/10

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_7_OF_8_

BUREAU OF		ESTIMATE WORKSH		· T .			SHEET7 OF8
FEATU			PROJEC				
		Water Resources Investigation		Central Va	-	oject - CA	
Feasib			7501011	Shasta Div			
Spillwa	ay Qua	antities Mart Bashalla	REGION:	MP		ATE LEVEL:	Feasibility
		Most Probable	WOID:	SHAEF	PRICE	LEVEL:	Apr - 10
		18.5-ft Dam Raise	9				
TNUC	ITEM						
PLANT ACCOUNT	PAY	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
-							
	1	Remove Existing Drum Gates	8420	3,000,000	lbs	\$0.90	\$2,700,000.00
		- 3 - 110-feet x 28-feet steel drum gates					
		 Including building a supporting structure in the gate 					
		chamber to hold the gates in the raised position.					
		 Including disassembling and cutting the gates into 					
		smaller pieces to aid removal.					
		(1,000,000 lbs per gate, 3,000,000 lbs total)					
	2	Furnish and Install 6 New Sloping Fixed Wheel Gates	8420	3,315,600	lbs.	\$8.00	\$26,524,800.00
		- Furnish and install 2 new 55-feet wide by					
		48-feet high fixed wheel gates.					
		 Including fabrication, shipping, assembly 					
		and testing.					
		(420,000 lbs per gate, 840,000 lbs total)					
		(28,000 lbs per gate, 56,000 lbs total)					
		- Furnish and install 2 new 50-feet wide by					
		48-feet high fixed wheel gates.					
		- Including fabrication, shipping, assembly					
		and testing.					
		(380,000 lbs per gate, 760,000 lbs total)					
		(28,000 lbs per gate, 56,000 lbs total)					
		- Furnish and install 2 new 45-feet wide by					
		48-feet high fixed wheel gates.					
		- Including fabrication, shipping, assembly					
		and testing.					
		(345,000 lbs per gate, 690,000 lbs total)					
		(28,000 lbs per gate, 56,000 lbs total)					
		- Furnish and install tracks.					
		- Including fabrication, shipping, assembly					
		and embedment in the pier walls.					
		(6,800 lbs steel per beam, 12 beams for 6 gates,					
		81,600 lbs. total)					
		(10,000 lbs stainless steel per plate, 12 plates for					
		6 gates, 120,000 lbs. total)					
		- Furnish and install stainless steel sill plates.					
		- Including fabrication, shipping, assembly					
		and embedment in the spillway crest.					
		(2 - 55-feet long plates, 900 lbs per plate, 1800 lbs total)					
		(2 - 50-feet long plates, 1,000 lbs per plate, 2,000 lbs total)					
		(2 - 45-feet long plates, 1,100 lbs per plate, 2,200 lbs total)					
		- Furnish and install gate hoists, motor operators, and stems.					
		- Including fabrication, shipping, and assembly					
		(40,000 lbs. per gate, 240,000 lbs. total)			<u>L</u>		
		86-68420 Total =				221053	\$29,224,800.0
		QUANTITIES				PRICES	
BY		CHECKED	BY			CHECKED	
	Nathan I	Nakamoto Charlie Joyce		Greg Akins		Kelly B	rom
DATE PRI		PEER REVIEW	DATE PREPA			PEER REVIEW	
	4/23/200	Gary W. Rood		09/13/10		Dan Donaldso	n - 7/29/10

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_8_OF_8_

BUREAU OF		ON	ESTIMATE WORL		_			SHEET_8_ OF8
FEATU				PROJEC [*]	T:			
Shasta	Lake \	Water Resources In	nvestigation		Central Va	lley Pro	ject - CA	
Feasib	ility Stι	ıdy			Shasta Div	rision		
Spillwa	ay Qua	antities		REGION:	MP	ESTIM	ATE LEVEL:	Feasibility
		Most F	Probable	WOID:	SHAEF	PRICE	LEVEL:	Apr - 10
						_		
			18.5-ft Dam F	Raise				
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	1		, NEMA size 1 starter nagnetic circuit breaker	8430	6	EA	\$6,800.00	\$40,800.00
	2	Rigid metal conduit 3/4-inch		8430	300	FT	\$27.00	\$8,100.00
	3	600 volt insulated cah	le, single-conductor, stranded-					
	3		io, single conductor, stranded-					
		copper 12 AWG		8430	1,200	FT	\$2.10	\$2,520.00
		86-68430 Total =						\$51,420.00
			UANTITIES				PRICES	φ51,420.00
вү	Mike Sch		CHECKED Cory Maurer	ВҮ	Greg Akins		CHECKED Kelly Br	rom
DATE PRI	EPARED		PEER REVIEW	DATE PREPA	RED		PEER REVIEW	
	4/14/200	8	George Girgis		09/13/10		Dan Donaldso	n - 7/29/10

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SUMMARY SHEET 1 OF 1

FEATURE:			PROJECT:					
Shasta	Lake \	Water Resources In	nvestigation		Central Vall Shasta Divis	-	t - CA	
Feasibil Outlet				REGION:			TE LEVEL:	Feasibility
Outlot	· · · · · ·	•		WOID:	SHAEF	PRICE L		Apr-10
		Most Pro	bable					
Summa	ary		18.5-ft Dam Raise					
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Outlet Works consis	ts of:					
			olition/salvaging of existing features as	sociated v	vith the 4 lov	ver tier o	utlets	
			kisting tube valves with outlet gates.	- Joseph Land				
			nical features associated with new outlet gates					
		Electrical feature	es associated with new outlet gates					
	86-68130 Sheet (excavation of gate chamber, reinforced co							
		86-68130 Sheet (eyca	avation of gate chamber, reinforced concre	ate)				\$728,220.00
			-	, ie j				
		·	oval of existing mechanical equipment,					\$16,751,820.00
			allation of new outlet gates, gate bodies					
		ar	nd hydraulic equipment)					
	86-68430 Sheet (electrical equipment for new outlet gates)		trical equipment for new outlet gates)					\$33,760.00
		Subtotal						\$17,513,800.00
		Mobilization					5%	\$880,000.00
		Subtotal w/ Mobilizat	tion					\$18,393,800.00
		Design Continger	ncies				10%	\$2,171,833.00
		Allowance for Pro	ocurement Strategy				2%	\$434,367.00
			n assumed is: Request for Proposal					
		CONTRACT COST						\$21,000,000.00
		Construction Con	tingencies				20%	\$4,000,000.00
		FIELD COST						\$25,000,000.00
		Note: Escalation from a	ublished price level to notice to proceed is exclu	ded Estimat	tee may includ	a discrepan	cies due to rounding	
			e and terminology, see Reclamation Manual, Dir				Ť	
			JANTITIES	2011700 UNU	Staridardo I A	_, 55 51, 0	PRICES	
вү			CHECKED	вү			CHECKED	
See Grou	p Sheets		See Group Sheets	Jeff Morris				Brom - 7/29/10
DATE PRE	PARED		PEER REVIEW	DATE PREP	PARED		PEER REVIEW	
			See Group Sheets	7/28/2010			Dan Dor	naldson - 7/29/10

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_1_ OF _3_

BUREAU OF	RECLAMATI	ON	ESTIMATE WORK	SHEET				SHEET1 OF3	
FEATU	JRE:			PROJE(CT:				
Shasta	Lake	Water Resources In	nvestigation		Central Valle	y Proiec	ct - CA		
Feasib			ga		Shasta Divis	-			
Outlet				REGION: MP			ATE LEVEL:	Feasibility	
0 0.0.00				WOID:	SHAEF	PRICE		Apr-10	
		Most Pro	hahle	WOID.	OHALI	TRIOL	LLVLL.	Aprilo	
		Mostrio	18.5-ft Dam Rais	se					
⊢	5		roid it bailt itali						
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
AC PI	PA								
		Concrete Excavation	:						
	1	Concrete everyation f	or jet flow gets chroude (4 each)	8130	293	CV	£4.250.00	\$266.250.00	
	<u> </u>	Concrete excavation i	or jet flow gate shrouds (4 each)	0130	293	CT	\$1,250.00	\$366,250.00	
	2	Concrete excavation a	around the 36-inch-diameter	8130	52	CY	\$1,300.00	\$67,600.00	
		air vent pipes (4 each			-		, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	, ,	
		Deal-fill Comments							
	Backfill Concrete:								
	3	Backfill concrete arou	nd the gate shrouds (4 each)	8130	284	CY	\$800.00	\$227,200.0	
		[4000 psi compressiv	ve strength]						
	4		ng cementitious materials	8130	80	Tons	\$195.00	\$15,600.0	
		[80% cement and 20	% pozzolan 6 sacks/cy]						
		Outlet Works Gate S	upport Concrete:						
	5	Structural concrete for	the gate and shroud	8130	21	CY	\$2,400.00	\$50,400.00	
		supports (8 each)						. ,	
		[4000 psi compressiv	ve strength]						
	6	Furnishing and handli	ng cementitious materials	8130	6	Tons	\$195.00	\$1,170.0	
		[80% cement and 20	% pozzolan 6 sacks/cy]						
								-	
							1		
							+		
							+		
								.	
		01	IANITITIES		This Sheet a			\$728,220.00	
DV		Qt	JANTITIES CHECKED	DV		۲	CHECKED		
BY J. Schne	ider		M. R. Steers	BY Jeff Morris				om - 7/29/10	
DATE PRE			PEER REVIEW	DATE PREF	PARFD		PEER REVIEW	Kelly Brom - 7/29/10	
11/07/07			T. Hepler	7/28/2010				dson - 7/29/10	
				7/28/2010 Dan Dona					

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_2_OF_3_

BUREAU OF F	RECLAMATIC	ON	ESTIMATE WORKS					SHEET_2_ OF _3 _
FEATU	IRE:			PROJE(CT:			
Shasta	Lake \	Nater Resources Ir	nvestigation		Central Valle	y Project	t - CA	
Feasibi	ility Stu	ıdy	3		Shasta Divis	-		
Outlet	Works			REGION:	MP	ESTIMA [*]	TE LEVEL:	Feasibility
				WOID:	SHAEF	PRICE L	.EVEL:	Apr-10
		Most Pro	bable					•
			18.5-ft Dam Raise					
. 5	Σ							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	1	Remove outlet works t	ube valves @ El. 742.0	8420	576,000	lhs	\$0.85	\$489,600.00
			remove the 4 existing 102-inch	0.20	0.0,000		40.00	4 100,000.00
		diameter tube valv						
		(144,000 lbs. per						
		(144,000 lb3. pci	tabe varve)					
	2	Furnish and install nev	v outlet works gates @ El. 742.0	8420	375,400	lbs.	\$39.00	\$14,640,600.00
			I 4 new 96-inch diameter					
		jet-flow gates (No	te: Estimate based on combined steel and	SS				
		,	cturer's budgetary quote).					
		<u> </u>	rication, shipping, assembly					
		and testing.	, , , , , , , , , , , , , , , , , , , ,					
		<u> </u>	embly and reassembly of the					
			equired for installation					
			t-flow gate, combined steel and SS, 312,0	00 lbs tota	1)			
			I 1 new hydraulic power unit		- /			
		for jet flow-gates	Trillett Hydradile petrol drift					
		(1,000 lbs.)						
		,	I 4 new air shrouds - Stainless Steel					
			rication and shipping					
		- Approximate	9					
		- Length: 1						
		- Diameter						
			ckness: 9/16-inch					
			embly and reassembly of the					
			e required for installation					
			ation on the downstream end					
		T T	namber will be required r shroud, stainless steel, 62,400 lbs total)					
		(15,600 lbs per all	stilloud, stairliess steer, 62,400 lbs total)					
	3	Furnish and install coa	ster gate guide extensions - steel	8420	178,200	lbs.	\$9.10	\$1,621,620.00
		- Furnish and instal	I new guide extensions on					
			ace of the dam for the outlet					
		'	x 11.05-feet coaster gate.					
			oximately 30-feet of new guides					
			am face of the dam for each					
	set of existing guides							
	(9,900 lbs per set of steel guides for 18 sets of							
		existing guides)	V					
		3 3 7						
					This Sheet a	nd 86-68	420 Total =	\$16,751,820.00
		QU	ANTITIES				PRICES	
вү			CHECKED	вү			CHECKED	
N. Nakamo	oto		C. Joyce	Jeff Morris				m - 7/29/10
				DATE PREF	ARED		PEER REVIEW	
DATE PREPARED PEER REVIEW 10/15/07 D. Read			DATE PREPARED 7/28/2010 PEER REVIEW Dan Donaldson - 7/29/10					

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_3_OF_3_

BUREAU OF R		ON	ESTIMATE WOR					SHEET_3_ OF _3 _
FEATU	RE:			PROJE(CT:			
Shasta	Lake '	Water Resources Ir	nvestigation		Central Valle	ev Proiect	- CA	
Feasibil			gag		Shasta Divis			
Outlet \				REGION:				Feasibility
Outlet	VVOIR	•						
		Mont Due	la ala la	WOID:	SHAEF	PRICE L	EVEL:	Apr-10
		Most Pro						
			18.5-ft Dam R	aise				
PLANT ACCOUNT	E							
COL	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
AC P	Ą							
	1	Combination, reversin	g motor starter	8430	4	EA	\$7,000.00	\$28,000.00
			, NEMA size 1 starter					
			nagnetic circuit breaker					
		NEMA type 12 en	_					
		,,						
	2	Rigid metal conduit		8430				
		3/4-inch			160	FT	\$26.00	\$4,160.00
		<i>Gr</i> 1					Ψ20.00	ψ 1,100.00
	3	600 volt insulated cab	le, single-conductor, stranded-	8430	800	FT	\$2.00	\$1,600.00
	J	copper	io, single conductor, stranded	0400			Ψ2.00	ψ1,000.00
		12 AWG						
		12 AVVG						
							 	
							+	
							+	
					This Sheet a			\$33,760.00
		QL	JANTITIES			P	RICES	
вү			CHECKED	вү			CHECKED	
a contract of the contract of				Jeff Morris			Kelly Bro	m - 7/29/10
M. Schuh	M. Schuh C. Maurer							
M. Schuh			PEER REVIEW	DATE PREP	ARED		PEER REVIEW	

ESTIMATE WORKSHEET

BUREAU OF R		ON	ESTIMATE WORKSHE	El				SUMMARY SHEET 1 OF 1
FEATU	RE:			PROJECT	:			
Shasta Feasibil		Water Resources	Investigation		Central Val Shasta Divi		ct - CA	
			(TCD) Modification				TE LEVEL:	F 11 1114 -
rempe	ature	Control Device	(TCD) Modification	WOID:	MP			Feasibility
		Mast D	and abla	REGION:	SHAEF	UNIT PR	RICE LEVEL:	Apr-10
•		Most Pi		_				
Summa	ary		18.5-ft Dam Rais	e				
F 2	ΓΕΜ							
PLANT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
٩	ш							
		86-68120 Sheet (ex	cavation/demolition/salvaging, TCD extension)					\$12,715,256.20
		86-68430 Sheet (ele	ectrical features associated with TCD)					\$147,000.00
		86-68410 Sheet (me	echanical features associated with TCD)					\$6,967,500.00
		0.14.4.14						A40.000 === 0.00
		Subtotal 1						\$19,829,756.20
		Mobilization		5%	+/-			\$1,000,000.00
		Subtotal 1 with Mo						\$20,829,756.20
			otice to Proceed (NTP): None assumed.	0%				\$0.00
			tal 1 with Mobilization + Escalation to NTP					\$20,829,756.20
		Design Conting		10%	+/-			\$1,711,988.80
			tal 2 + Design Contingencies					\$22,541,745.00
			rocurement Strategies (APS)	2.0%	+/-			\$458,255.00
		i i	icitation assumed is: Request for Proposal					
		Subtotal 4 = Subto	tal 3 + APS					\$23,000,000.00
		CONTRACT COST						\$23,000,000.00
		Construction Co	ontingencies	20%	+/-			\$5,000,000.00
		FIELD COST						\$28,000,000.00
		Note: Escalation from pub	olished price level to notice to proceed is excluded. Estimate	s may include di	screpancies du	e to roundin	g.	
		Ref.: For appropriate use	and terminology, see Reclamation Manual, Directives and S	Standards FAC; (09-01, 09-02 aı	nd 09-03.		
		(QUANTITIES			Р	RICES	
BY CHECKED			BY			CHECKED		
See Group Sheets See Group Sheets				Greg Akins		к	elly Brom	
DATE PREPARED PEER REVIEW / DATE			DATE PREP			PEER REVIEW		
	- See Group Sheets				09/17/10		Dave M	1cKelvie - 8/9/10

BUREAU OF F	RECLAMATION	ON	ESTIMATE WORKSI	HEET				SHEET1 OF9
FEATU	IRE:			PROJEC1	Γ:			
Shasta Feasibi		Water Resources Ii udv	nvestigation		Central Valle Shasta Divis	-	et - CA	
			ΓCD) Modification	REGION:	MP		E LEVEL:	Feasibility
		`	,	WOID:	SHAEF	PRICE LE	VEL:	Apr-10
		Most Pro	bable					- 4-
			18.5-ft Dam Raise					
–	-		10.5-1t Baill 1 talst	-				
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		STRUCTURAL NOTE	:e.					
			eous metalwork galvanized.					
			es and plates coated.					
		3. Assumed all items	•					
		4. For ICD Modificat	ions, see TM Figures TCD1 thru-TCD4.					
	1	Remove Existing Ho	ist Platform Steel:		759,700	LBS	\$0.60	\$455,820.0
		(Dwgs. 214-D-22190	thru -22196 & -22517 thru -22530)					
		Rolled steel W-sh	napes (ASTM A 36)	86-68120	260,625	LBS	Included above	
		Rolled steel C-, M	MC- and L-shapes (ASTM A 36)	86-68120	68,250	LBS	Included above	
			o 2") (ASTM A 36) (Plate Girders)	86-68120	430,825	LBS	Included above	
	2	Dispose/Salvage exi	sting Hoist Platform Steel:		20,200	LBS	\$0.07	\$1,414.0
		(Side gate hoist platf	form support steel, Dwg. 214-D-22196)					
		Rolled steel W-sh	napes (ASTM A 36)	86-68120	19,900	LBS	Included above	
		Rolled steel C-, M	IC- and L-shapes (ASTM A 36)	86-68120	300	LBS	Included above	
	3	Remove Existing Ho	ist Platform Miscellaneous Metalwork:		162,660	LBS	\$0.60	\$97,596.0
		(Dwgs. 214-D-22135	, -22384, -22386, -22389, & -22511)					
		Rolled C- and L-s	shapes (ASTM A36)	86-68120	2,000	LBS	Included above	
			5" @ 1-3/16" ctrs, Wt/SF = 15.50)	86-68120	9,690	SF	Included above	
		<u> </u>	3/16" @ 1-/16" ctrs, Wt/SF = 9.75)	86-68120	50	SF	Included above	
		Stair Treads (1-1/	/4" x 3/16" @ 9 3/4")	86-68120	340	LBS	Included above	
		,	Std. Pipe (ASTM A 53)	86-68120	8,825	LBS	Included above	
			td. Pipe (ASTM A 53)	86-68120	110	LBS	Included above	
			to 3/4") (ASTM A 36)	86-68120	700	LBS	Included above	
	4	Dispose/Salvage Exi	sting Hoist Platform Miscellaneous Meta	alwork:	12,570	LBS	\$0.10	\$1,257.0
		·	, -22384, -22386, -22389, & -22511)					
		, ,	shapes (ASTM A36)	86-68120	1,300	LBS	Included above	
			5" @ 1-3/16" ctrs, Wt/SF = 15.50)	86-68120	585	SF	Included above	
		• `	3/16" @ 1-/16" ctrs, Wt/SF = 9.75)	86-68120	50	SF	Included above	
		<u> </u>	/4" x 3/16" @ 9 3/4")	86-68120	340	LBS	Included above	
		,	Std. Pipe (ASTM A 53)	86-68120	1,120	LBS	Included above	
			td. Pipe (ASTM A 53)	86-68120	110	LBS	Included above	
			to 3/4") (ASTM A 36)	86-68120	140	LBS	Included above	
		, ,	, ,					
	5	Remove and Dispos	e Chain Link Fence:	86-68120	1	LS	\$520.00	\$520.0
		(Dwgs. 214-D-22135	,					
		7+1-ft fence (w/3 stra	and & 4-point barbed wire) 40 LF					
			Sheet Subtotal :	=				\$556,607.0
		Q	UANTITIES				PRICES	
ЗҮ	Doda	Porthol	CHECKED	ВҮ	Crog Alina		CHECKED	trom
	Rodney	Dai li lei	Brad VanOtterloo	DATE DE	Greg Akins		Kelly E	OLOTH
DATE PRE		6/20/10)	PEER REVIEW	DATE PREPARED PEER REVIEW			vio 9/0/40	
12/5/2007 ((updated (b/2U/1U)	Dick LaFond, P.E.		08/04/10		Dave McKel	vie - 8/9/10

BUREAU OF RECLAMATION ESTIMATE WORKSHEET 2 OF 9

BUREAU OF	RECLAMATION	ON	ESTIMATE WORKSH	IEET				SHEET_2_ OF9
FEATL	JRE:			PROJECT	`:			
		Water Resources II	nvestigation		Central Valle	y Projec	et - CA	
	ility Stu	•			Shasta Divis	ion		
Tempe	erature	Control Device (7	ΓCD) Modification	REGION:	MP	ESTIMAT	E LEVEL:	Feasibility
				WOID:	SHAEF	PRICE LE	VEL:	Apr-10
		Most Pro	bable					
			18.5-ft Dam Raise					
. 5	Σ							
PLANT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
AC	Ą							
		STRUCTURAL (Cont	inued)					
		Damassa Essiatina Tua	achine la Cota Cuidae (Cida CCA).		24 440	LDC	#0.00	#14 C4C 00
	0		ashrack Gate Guides (Side SS1):		24,410	LBS	\$0.60	\$14,646.00
		(Dwgs. 214-D-22150	napes (ASTM A 36)	86-68120	6,900	LBS	Included above	
			. , , ,	86-68120		LBS	Included above	
		Rolled Steel W-Si	napes (ASTM A 572/50)	00-00120	17,510	LBS	included above	
	7	Dispose/Salvage Exi	sting Trashrack Gate Guides:		24,410	LBS	\$0.07	\$1,708.70
		(Dwgs. 214-D-22150			,		¥ 0.0.	+ 1,1 0 0 11 0
		,	napes (ASTM A 36)	86-68120	6,900	LBS	Included above	
			napes (ASTM A 572/50)	86-68120	17,510	LBS	Included above	
			,		,			
	8	Furnish and Erect ne	ew Rigid Frame Steel:		561,950	LBS	\$5.60	\$3,146,920.00
		Rolled steel shap	es (ASTM A992)	86-68120	389,100	LB	Included above	
		Steel plate (3/4" t	o 2") (A572 Gr 50)	86-68120	172,850	LB	Included above	
	9	Modify existing Rigid		86-68120	1	LS	\$1,310,000.00	\$1,310,000.00
		<u> </u>	e 5/16" fillet) 1985 LF					
		•	(used 3/4") (ASTM A 36) 53,600 Lbs					
		Steel cover plate	(used 3/4") (ASTM A 572) 2,790 Lbs					
		Sand blast flange	surfaces: 27,890 Sq. Ft					
		Re-coat flange su	urfaces: 27,890 Sq. Ft					
	10	Reinstall existing Ho			739,500	LBS	\$1.40	\$1,035,300.00
			napes (ASTM A 36)	86-68120	240,725	LBS	Included above	
			MC- and L-shapes (ASTM A36)	86-68120	67,950	LBS	Included above	
		Steel plate (3/16"	to 3/4") (ASTM A36) (Plate Girders)	86-68120	430,825	LBS	Included above	
	44	Francish and speek no	Haist Dietform Ctaal.		40.000	1.00	¢7.00	#24F 020 00
	11		ew Hoist Platform Steel:	06 69100	49,290	LBS	\$7.00	\$345,030.00
			napes (ASTM A 992 Gr 50) o 2") (ASTM A36) (Mod Plate Girders)	86-68120 86-68120	2,560 8,000	LBS LBS	Included above Included above	
		• ` `	to 2") (ASTM A36) (Mod Plate Girders)	86-68120	38,730	LBS	Included above	
		Steel plate (3/6 t	02) (ASTWASO) (EL FIALE GIIDEIS)	80-08120	36,730	LBS	included above	
	12	Reinstall existing Mi	scellaneous Metalwork:		150,090	LBS	\$1.05	\$157,594.50
	12		nd L-shapes (ASTM A 36)	86-68120	700	LBS	Included above	Ψ107,004.00
			S" @ 1-3/16" ctrs, Wt/SF = 15.50)	86-68120	9,105	SF	Included above	
		Guardrail (1-1/2-i		86-68120	7,705	LBS	Included above	
		`	to 3/4") (ASTM A 36)	86-68120	560	LBS	Included above	
		2 2 2 2 2 2 2 2 2 2	, , , , , , , , , , , , , , , , , , , ,		220			
	13	F&I Waterproof Acce	ess Doors (Dam Crest-to-TCD)					
		•	ing 3'-6" x 7'-0", Assumed 20 psf)	86-68120	1,000	LBS	\$14.50	\$14,500.00
			Sheet Subtotal =				771050	\$6,025,699.20
		Q	UANTITIES				PRICES	
BY			CHECKED	BY			CHECKED	
	Rodney	Barthel	Brad VanOtterloo		Greg Akins		Kelly B	Brom
DATE PRI		(PEER REVIEW	DATE PREPARED PEER REVIEW		oi- 0/0/40		
	12/5/2007	(updated 6/20/10)	Dick LaFond, P.E.		08/04/10		Dave McKel	vie - 8/9/10

BUREAU OF I	RECLAMATIC	ESTIMATE WORKSI	HEET				SHEET_3_ OF9
FEATU	JRE:		PROJECT	-			
	Lake \	Water Resources Investigation		Central Valle Shasta Divis	-	ct - CA	
	•	Control Device (TCD) Modification	REGION:	MP	ESTIMAT	E LEVEL:	Feasibility
			WOID:	SHAEF	PRICE LE	VEL:	Apr-10
		Most Probable					
		18.5-ft Dam Raise	2				
5	Σ						
PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		STRUCTURAL (Continued)					
	14	F&I new Miscellaneous Metalwork:		30,950	LBS	\$6.60	\$204,270.00
		Grating (2" x 3/16" @ 1-3/16" ctrs, Wt/SF = 15.50)	86-68120	1,075	SF	Included above	+
		Grating (1-1/4" x 3/16" @ 1-/16" ctrs, Wt/SF = 9.75)	86-68120	200	SF	Included above	
		Guardrail (1-1/2-inch Std. pipe, ASTM A53)	86-68120	3,400	LBS	Included above	
		Ladders (1-1/2" Std. pipe, ASTM A53)	86-68120	1,455		Included above	
		Rolled steel C- and L-shapes (ASTM A 36)	86-68120	6,155	LBS	Included above	
		Steel plate (3/16" to 3/4") (ASTM A 36)	86-68120	1,325	LBS	Included above	
	15	F&I new steel Cladding Panels (Side SS1 & SS5):	86-68120	1	LS	\$890,000.00	\$890,000.00
		(Dwgs. 214-D-22317, -22320 & -22379) Steel shapes & plates 148,700 Lbs (assumed 37 psf)					
	16	F&I to Extend Side Cladding/Gate Guides (SS1 & SS5):	86-68120	1	LS	\$420,000.00	\$420,000.00
		(Dwgs. 214-D-22150, -22154, -22158, & -22162)				, ,	,
		Steel plates (1/2" to 1" Pl. A572 Gr 50 guides) 5,830 Lbs					
		Stainless steel wear strips (1/4" x 3", A304) 705 LF					
		Structural W-Shapes (ASTM A992 Gr 50) 44,370 Lbs					
	17	FOLIA Frank Front Cata Cuidas (Plata Cindons).	86-68120	1	LS	#2.000.000.00	#3 000 000 00
	17	F&I to Extend Front Gate Guides (Plate Girders):	86-68120	1	LS	\$3,000,000.00	\$3,000,000.00
		(Dwgs. 214-D-22411, -22197 thru -22201) Steel plates (1/2" to 1-3/8" Pl. A36) 329,050 Lbs					
		Stainless steel wear strips (1/4" x 3", A304) 2,650 LF					
		Stainless steel wear strips (1/4" x 3", A304) 2,050 LF Stainless steel wear strips (1/4" x 6", A304) 2,650 LF					
		Stairliess steel wear strips (1/4 x 6 , A304) 2,050 LF					
	18	Extend new Parapet to Conceal Hoist Equipment	86-68120	1	LS	\$175,000.00	\$175,000.00
		(Art wall - Concrete formed artistic features)					
		(Extend from EL. 1102.0 to El. 1107.8 for ~ 294 feet @ TCD's)					
		(Assumed f'c = 4,000 psi reinforced concrete)					
		Concrete: 89 CY					
		Reinforcement: 13,350 Lbs (based on 150 Lbs/CY)					
		Cement: 25 Tons (based on 0.282 Tons/CY)					
	40	FOL France and Weterman of Course in New Parence	00.00400	4	1.0	#2.000.00	фо 000 O
	19	F&I Frame and Waterproof Cover in New Parapet (Access to LL Parallel Shaft Speed Reducer)	86-68120	1	LS	\$2,000.00	\$2,000.00
		· · · · · · · · · · · · · · · · · · ·					
		(Required for O&M Activity, Assumed 2' x 2' opening) Rolled steel L-shapes (ASTM A 36) 60 Lbs				+	
		Steel plate (3/16) (ASTM A 36) 40 Lbs				+	
		Clock plate (or to) (NOTINEN OU) TO LOS					
		Sheet Subtotal :	=			DDIOSO	\$4,691,270.00
		QUANTITIES				PRICES	
BY CHECKED BY							
	Rodney			Greg Akins		Kelly E	srom
DATE PRE		PEER REVIEW	DATE PREPAR			PEER REVIEW	uia 0/0/40
12/5/2007	(updated 6	6/20/10) Dick LaFond, P.E.		08/04/10		Dave McKel	vie - 8/9/10

BUREAU OF	RECLAMATIC	ESTIMATE WORKSF					SHEET_4_ OF9	
FEATU	JRE:		PROJEC1	Γ:				
Shasta	Lake \	Water Resources Investigation		Central Valle	ev Projec	ct - CA		
Feasib		<u> </u>		Shasta Divis	-			
	•	Control Device (TCD) Modification	REGION:	MP	1	E LEVEL:	Feasibility	
rompo	or attar o	Control Dovice (10D) meanication	WOID:	SHAEF	PRICE LE			
		Most Probable	WOID.	SHAEF	PRICELE	VEL.	Apr-10	
		18.5-ft Dam Raise						
⊢₽	M							
PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
		STRUCTURAL (Continued)						
		onto o rottale (oominidad)						
		F&I Permanent New Rigid Frame Dam Connections (Corbel):						
		(6 DC's, SS1 thru SS5, at new RF main box girders)						
		(1 DC, Above LL Intake No. 1, at new RF main box girder)						
		(1 DO, Above LL ilitake No. 1, at new NF Ilialii box girder)			+			
	20	Furnish and Place Reinforced Concrete			+			
	20	(Place behind forms attached to face of dam)						
		(2.5-ft high x 3-ft wide x 1.5-ft deep/1 per Rigid Frame)	06 60100	2	CV	£11,000,00	#22 000 0	
		Concrete (Assumed f'c = 4,000 psi concrete)	86-68120 86-68120	1 100		\$11,000.00	\$33,000.00	
		Reinforcement (based on 150 Lbs/DC & fy = 60 ksi)		1,100	LBS	\$4.20	\$4,620.0	
		Cement (based on 0.282 Tons/CY ~ 6 sack mix)	86-68120	1	TON	\$140.00	\$140.00	
	21	F&I Rigid Frame Dam Connection Steel:		7,680	LBS	\$10.50	\$80,640.0	
		Steel plate (3/4" to 1") (ASTM A572 Gr. 50)	86-68120	6,540	LBS	Included above	, ,	
		Steel forgings (5" diameter pins, eyebolts, nuts,	86-68120	940	LBS	Included above		
		sleeve nuts) (ASTM A 668F)						
		Rolled steel L-shapes (ASTM A 36)	86-68120	200	LBS	Included above		
		remod steer 2 shapes (remintes)	00 00 120	200	220	moladed above		
	22	Drill 2.5-inch dia holes for 1-3/8 inch concrete anchor bolts,	86-68120	168	LF	\$165.00	\$27,720.00	
	22	F&I 1-3/8-inch dia. Williams Hollowcore	86-68120	28	EA	£1 500 00	\$42,000.00	
	23	(Epoxy coated R1H anchors w/6.0 foot embed)	00-00120	20		\$1,500.00	φ42,000.00	
		(Epoxy coated RTH afficilities w/o.0 foot embed)						
		ESI Hallow Care Angher Polew Evicting DC2 & DC14 Connec	tional					
		F&I Hollow Core Anchor Below Existing DC2 & DC14 Connec	tions.					
	24	Drill 3.5-inch dia. holes for 2-inch concrete anchor bolts,	86-68120	36	LF	¢220.00	#0.200.00	
	24	Drill 3.5-inch dia. holes for 2-inch concrete afficior boils,	00-00120	30	LF	\$230.00	\$8,280.00	
	25	F&I 2-inch dia. Williams Hollowcore	86-68120	6	EA	\$2,700.00	\$16,200.0	
		(Epoxy coated R1H anchors w/6.0 foot embed)						
	00	FOLNIOUS CITE CLEANING (OLD INTO THE PROPERTY (OCC)						
	26	F&I New Side Closure/Cladding Panels (SS5):			-			
		(Dwgs. 214-D-22379)	86-68120	1 100	LDC	PO 00	\$40 COO O	
		Steel shapes and plates (assume 20 psf, ASTM A 36)	+	1,400	LBS	\$9.00	\$12,600.0	
	1	Rolled steel L-shapes (ASTM A 36)	86-68120	750	LBS	\$9.00	\$6,750.00	
		Drill holes for anchors (min 6" emb, 1" dia. anchors)	86-68120	6	LF	Included below in an		
		F&I expansion anchors (Assumed 1" dia.)	86-68120	12	EA	\$250.00	\$3,000.00	
							.	
		Sheet Subtotal =				DD1050	\$234,950.00	
		QUANTITIES				PRICES		
вү		CHECKED	вү			CHECKED		
	Dick LaF	ond Brad VanOtterloo		Greg Akins		Kelly I	Brom	
DATE PRE	EPARED	PEER REVIEW	DATE PREPAR	RED		PEER REVIEW	:W	
				08/04/10		Dave McKe	lvie - 8/9/10	

BUREAU OF	RECLAMATIC	N	ESTIMATE WORKS	1EE I				SHEET_5_ OF _9_
FEATL	JRE:			PROJECT	•			
Shasta Feasib		Nater Resources li	nvestigation		Central Valle Shasta Divis		et - CA	
	•	•	ΓCD) Modification	REGION:	MP	ESTIMAT	E LEVEL:	Feasibility
		•	•	WOID:	SHAEF	PRICE LI	EVEL:	Apr-10
		Most Pro	bable					-
			18.5-ft Dam Raise	7				
	-		10.5 It Daili Naisc	<i>,</i>				
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		STRUCTURAL (Cont	tinued)					
		EOL Dataia Danas		00.00400				
		F&I Debris Boom:		86-68120				
	27	Extend existing Trolle	-					
		W-Shape structu	ral steel (ASTM A 992 Gr 50) (Coated)	86-68120	2,800	LBS	\$7.50	\$21,000.00
	28	Retrofit existing Trolle	•					
		•	al steel (ASTM A 36) (Coated)	86-68120	200	LBS	\$20.00	\$4,000.00
		•	at w/ 400# buoyancy	86-68120	4	EA	\$2,000.00	\$8,000.00
		(Rolyan Buoys a	and Floats, 800-558-8633)					
	29		Rope between Anchor Buoys and Trolleys					
		to take Main Anchor	Tension					
		1-1/2 inch diamet	ter 6x37 galv, extra improved plow	86-68120	1,600	LF	\$45.00	\$72,000.00
		steel, IWRC (7	Гуре I, Class 3)					
	30	Extend Mooring and N	Marker Lines to Anchors 1, 2, and 3					
		1-inch dia. 6x37 g	galv, extra improved plow steel, IWRC	86-68120	150	LF	\$47.00	\$7,050.00
		1-1/2 inch dia 6x3	37 galv, extra improved plow					
		steel, IWRC (T)	ype I, Class 3)	86-68120	100	LF	\$80.00	\$8,000.00
		,						
	31	F&I Debris Boom with	20-ft Precast Concrete Boomsticks	86-68120	65	EA	\$4,700.00	\$305,500.00
		Concrete per boo	omstick= 1.5 CY (incl. cement and WWF)					,
		•	per boom stick= 45 CF					
			e 1, Class 4, zinc-coated = 3 ft/stick					
		·, · , , ,	· · · · · · · · · · · · · · · · · · ·					
	32	F&I Anchor Mooring E	Buovs	86-68120	3	EA	\$5,500.00	\$16,500.00
		•	g buoy manufactured by Seaward Int'l	00 00 120			ψο,σσσ.σσ	Ψ10,000.00
		* '	pyancy (540-667-5191)					
		10,000 120 200	syamey (energy control)					
	33	F&I Anchor Marker Bu	IOVS	86-68120	3	EA	\$4,400.00	\$13,200.00
	- 00		g buoy manufactured by Seaward Int'l	00 00 120	J		ψ1,100.00	Ψ10,200.00
		* '	yancy (540-667-5191)					
		W/ 2,500 153 500 y	valies (0+0-007-0101)					
	3/	F&I Gate through Deb	oris Room					
	34		es ASTM A500, Gr B (galvanized)	86-68120	1,200	LBS	\$5.90	\$7,080.00
		•	at w/ 400# buoyancy	86-68120	1,200	EA	\$2,200.00	\$4,400.00
		•	and Floats, 800-558-8633)	30-00120			ΨΖ,ΖΟΟ.ΟΟ	φ+,400.00
		(Noiyan buoys	and 1 idats, 000-330-0033/					
			Chart Cultatal					\$466 700 00
			Sheet Subtotal =				DDICES	\$466,730.00
		Q	UANTITIES				PRICES	
вү			CHECKED	BY			CHECKED	
	Dick LaF	ond	R. J. Barthel		Greg Akins		Kelly B	rom
DATE PRE	DATE PREPARED PEER REVIEW		PEER REVIEW	DATE PREPARED PE			PEER REVIEW	
12/5/2007 (updated 6/20/10) Dick LaFond, P.E.		Dick LaFond, P.E.		08/04/10		Dave McKelv	rie - 8/9/10	

BUREAU OF F		JN	LOTIMATE WORKS					SHEE1_6_ OF _9 _
FEATU	IRE:			PROJECT	:			
Shasta	Lake \	Nater Resources Ir	nvestigation		Central Valle	v Proiec	t - CA	
Feasibi					Shasta Divis			
			CD) Modification	REGION:	MP	ESTIMATI	E I EVEL.	Feasibility
rempe	ature	Control Device (1	(CD) Modification					
				WOID:	SHAEF	PRICE LE	VEL:	Apr-10
		Most Pro						
			18.5-ft Dam Raise	;				
ᆫᄫ	Σ							
L AN OOU	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
PLANT ACCOUNT	PA		DESCRIPTION	CODE	QUANTITY	ONIT	ONIT FRICE	AMOUNT
		CTDUCTUDAL (Cont		+				
		STRUCTURAL (Cont	inuea)	-				
				22.22.422			AT 40 000 00	4= 40.000.00
	35		h Skimmer system to remove debris	86-68120	1	LS	\$740,000.00	\$740,000.00
			ransfer to land based dump trucks:					
			Series System including:					
			Model MS16-12000B					
		Shore Conveyor	Model #C-800 or #AC-800					
		Tilt-Deck Trailer	Model T-12T					
		Power Pack Mod	del P-220T					
		Manufactured by	United Marine International					
		Ph: 800-243-1406	6					
		Web: www.trashs	skimmer.com					
		This Sheet Subtotal:	=					\$740,000.00
		Sheet 1 of 6 Subtota	l =					\$556,607.00
		Sheet 2 of 6 Subtota	l =					\$6,025,699.20
		Sheet 3 of 6 Subtota	l =					\$4,691,270.00
		Sheet 4 of 6 Subtota	l =					\$234,950.00
		Sheet 5 of 6 Subtota	l =					\$466,730.00
								·
					Total 86-681	20 =>		\$12,715,256.20
					201311 00 001			Ţ.=,J,=00120
					<u> </u>			
		<u> </u>	UANTITIES				PRICES	
		Qi						
BY			CHECKED	BY			CHECKED	
	Dick LaF	ond	R. J. Barthel		Greg Akins			/ Brom
DATE PRE			PEER REVIEW	DATE PREPAR			PEER REVIEW	
12/5/2007 ((updated 6	6/20/10)	Dick LaFond, P.E.		08/04/10		Dave McK	čelvie - 8/9/10

BUREAU OF	RECLAMATION	ON	ESTIMATE WORKS	SHEET				SHEET_7_ OF9
FEATU	JRE:			PROJE	CT:			
	Lake '	Water Resources Ir udy	nvestigation		Central Valle Shasta Divis	t - CA		
		Control Device (1	CD) Modification	REGION:	MP	ESTIMATE	E LEVEL:	Feasibility
				WOID:	SHAEF	PRICE LE	VEL:	Apr-10
		Most Pro						
			18.5-ft Dam Rai	se				
FND	LEM							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
∢	ъ.						+	
	1	Remove existing elect	trical control equipment	8430	1	LS	\$17,000.00	\$17,000.00
	<u> </u>		control centers and 1 distribution	0.100			\$11,000.00	Ψ17,000.00
		switchboard						
							1	
	2		trical control equipment	8430	1	LS	\$110,000.00	\$110,000.00
			control centers and 1 distribution					
		switchboard					+	
	3	Extend existing power	feeder	8430				
			able, 1/c stranded-copper, 350 kcmil		300	FT	\$30.00	\$9,000.00
		Rigid steel condu	it, 3-inch		100	FT	\$110.00	\$11,000.00
							+	
							+	
							+	
		Assumptions: The ex-	isting TCD power source will be extende	d and reuses	<u> </u>		+ +	
	+	Assumptions. The ex	ising 100 power source will be extende	a and reused			+	
							+	
							+	
			This Sheet and Total for 86-68430 =>					\$147,000.00
		QI	JANTITIES			F	PRICES	
BY			CHECKED	BY CHECKED				
Mike Sch			Eric Vaughn	Greg Akins Kelly Brom			/ Brom	
DATE PRI		1.0/00/10	PEER REVIEW	DATE PRE			PEER REVIEW	
10/24/200	บ7 (Update	ed 6/30/10)	George Girgis		08/04/10		Dave McK	elvie - 8/9/10

BUREAU OF I	RECLAMATIO	ON	ESTIMATE WOR	VOHEEL				SHEET8 OF9
FEATU	JRE:			PROJE	CT:			
Shasta	Lake \	Water Resources I	nvestigation		Central Valle	v Project	t - CA	
Feasibi			gag		Shasta Divis	-		
	-	=	TCD) Modification	REGION:	MP	ESTIMATE	LEVEL	Feasibility
Tempe	ature	Control Device ((CD) Modification					
		Moot Dre	shahla	WOID:	SHAEF	PRICE LE	VEL:	Apr-10
		Most Pro						
	•		18.5-ft Dam R	aise				
PLANT ACCOUNT	Ε̈́Μ							
Z ZA COL	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
AOA	Δ							
		The following items	shall be removed from the					
		Temperature Contro	ol Device:					
	1	Trashrack, El. 1067.	7 to El. 1047.7 (214-D-22258)	8410	138,000	lbs.	\$0.40	\$55,200.00
		Remove existing	trashracks down to El. 1047.7					
			800 lbs. per panel					
		, ,	· ·					
	2	Trashrack, Shutter N	No. 1 (214-D-22262)	8410	24,000	lbs.	\$0.40	\$9,600.0
		Remove existing	-	0410	24,000	100.	ψοιο	Ψο,οοο.ο
			by cladding (8120)					
		vviii be replaced	by cladding (0120)					
	2	Trashrack, Shutter N	No. F. (214 D. 22261)	8410	33,000	lbs.	\$0.40	\$13,200.00
	3		-	0410	33,000	108.	φυ.40	\$13,200.00
		Remove existing						
		vviii be replaced	by cladding (8120)					
			should be installed on the					
		Temperature Contro	ol Device:					
				0.110				** *** ***
	4	Furnish and install r	-	8410	465,000	lbs.	\$6.30	\$2,929,500.00
		El. 1047.7 to El.						
			al carbon steel construction					
		Protective coating						
		5 Units @ 93,000) lbs. per unit					
		Sheet Subtotal =						\$3,007,500.0
			JANTITIES			_	PRICES	
вү			CHECKED	вү			CHECKED	
	Wayne D)elzer	Ryan Stephen	٥.	Greg Akins		Kelly B	rom
DATE PRE		- O.E.O.	PEER REVIEW	DATE PRE			PEER REVIEW	VIII
		1 6/30/10\		DATEPRE				io - 8/9/10
11/27/2007	(Updated	10/3U/1U)	John Grass		07/23/10		Dave McKelv	ie - 8/9/10

BUREAU OF F	RECLAMATION	\	ESTIMATE WORKS	HEEI				SHEET_9_ OF9_
FEATU	RE:			PROJE	CT:			
	Lake Wility Stud	/ater Resources Ir dy	nvestigation		Central Valle Shasta Divis		t - CA	
			ΓCD) Modification	REGION:	MP	ESTIMATI	E LEVEL:	Feasibility
				WOID:	SHAEF	PRICE LE	VEL:	Apr-10
		Most Pro	bable					
			18.5-ft Dam Raise					
⊢₽	Σ							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	5	TCD HOISTS:						
	5a	Remove from exi	sting location and store	8410	1	LS	\$280,000.00	\$280,000.00
			weight=57 kips/ea				,===,====	+===,====
		- 17x57 = 969 kip						
		•	sembly into components:					
		32 rope drum						
		20 sheave pa						
		17 worm-gea						
		17 electric m						
			naft reducer gearboxes					
		84 flexible co						
			ntation assemblies					
		68 wire ropes						
			bearings, supports					
		- *Dispose/slava						
		Biopodorolava	go ropos, aramo					
	5b	F&I new wire rope	es to accommodate	8410	1	LS	\$870,000.00	\$870,000.0
	0.0	·	height (each Hoist)	0			40.0,000.00	ψο. σ,σσσ.σ
			of 1.5" diam rope x 2 hoists					
			of 1.625" diam rope x 5 hoists					
			f 1.5" diam rope x 5 hoists					
			of 1.625" diam rope x 5 hoists					
		All rope is:	7.020 diam rope x o noists					
			VRC, XIP, galvanized					
			ed with speltered sockets					
		terminat	ed with spetiered sockets					
	5c	Replace existing	hoist drums (32)	8410	1	LS	\$2,200,000.00	\$2,200,000.0
	00	· · · · · · · · · · · · · · · · · · ·	ps/drum x 1 /hoist x 2 hoists	0410	<u>'</u>		Ψ2,200,000.00	Ψ2,200,000.0
			ps/drum x 2 /hoist x 5 hoists					
			s/drum x 2 /hoist x 5 hoists					
			bs/drum x 2 /hoist x 5 hoists					
			= 220,000 lbs (weights are for replacemen	t drums)				
		total Wi	ZZO,000 ISO (Wolging are for replacement	l dramo,				
	5d	Reassemble and	reinstall 17 hoists on new	8410	1	LS	\$610,000.00	\$610,000.00
		hoist deck					, vers, see	+=:=,====
			prox total weight					
			, · · · · · · · · · · · · · · · · · · ·					
			This Sheet Subtotal =					\$3,960,000.0
			Sheet 1 of 2 Subtotal =					\$3,007,500.00
			This Sheet and Total for 86-68410 =	 				\$6,967,500.0
		Ql	JANTITIES			1	PRICES	+ -, ,
вү			CHECKED	BY CHECKED				
Alex Ritt Ryan Stephen			Greg Akins Kelly Brom				rom	
DATE PREPARED PEER REVIEW			DATE PREPARED PEER REVIEW					
INE		6/30/10)						

	ATURE:								
FEATU	RE:			PROJE(CT:				
Shasta	Lake \	Water Resources Ir	nvestigation		Central Vall	ey Projec	t - CA		
Feasibi			•		Shasta Divis				
		and Penstocks		WOID:	SHAEF	ESTIMAT	E LEVEL:	Feasibility	
· ·				REGION:	MP		CE LEVEL:	Apr-10	
		Most Pro	bable						
Summa	arv		18.5-ft Dam Raise						
			1010 11 2 0111 1 10100						
TN OC	Ţ								
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
∢	ш								
		Powerplant and Pens							
			lic hoist systems						
		Furnish and inst	all 5 extra lengths of stainless steel ste	ms					
		Furnish and inst	all new guide tracks for the 15' x 19.05'	penstock	coaster gate	es			
		Remove existing	coaster gate oil pump controlboards						
		Reinstall existing	g coaster gate oil pump controlboards						
			coaster gate controlboard power feede	r					
		.	<u> </u>						
		96 69420 Chaot (roles	nata budraulia avatama)					\$740,000,00	
		66-66420 Sheet (reioc	cate hydraulic systems)					\$740,000.00	
		22 22 42 24 4 4						*	
			oval and reinstall of existing coaster oil pur					\$58,870.00	
		(ext	end existing coaster gate controlboard pov	wer feeder	s)				
		Subtotal 1						\$798,870.00	
		Mobilization		5%	+/-			\$40,000.00	
		Subtotal 1 with Mobi	lization					\$838,870.00	
		Design Continger	ncies	10%	+/-			\$83,887.00	
		Subtotal 2 = Subtotal	1 + Design Contingencies					\$922,757.00	
		Allowance for Pro	ocurement Strategies (APS)	2.0%	+/-			\$17,243.00	
			itation assumed is: Request for Proposal		-			+ · · · , — · · · · · ·	
		. , , , , , , , , , , , , , , , , , , ,							
		CONTRACT COST						\$940,000.00	
		Construction Con	tingencies	20%	+/-			\$210,000.00	
		FIELD COST	ungencies	20 70	17-			\$1,150,000.00	
		FIELD COST						\$1,150,000.00	
						1			
		+							
		Note: Escalation from published price level to notice to proceed is excluded. Es			clude discrenan	cies due to ro	undina.		
		<u> </u>	nd terminology, see Reclamation Manual, Directives a						
			JANTITIES	Claridard	, 00 0 1, 00		PRICES		
DV		Q(DV		•			
ВҮ	0:		CHECKED	BY			CHECKED		
See Grou			See Group Sheets	Jeff Morris				elly Brom	
DATE PRE	PARED		PEER REVIEW	DATE PREP	PARED		PEER REVIEW		
			See Group Sheets	07/22/10			Dan	Donaldson	

BUREAU OF	RECLAMATI	ON	ESTIMATE WC	RKSHE	ET.			SHEET _ 1_ OF _2 _
FEATU	JRE:			PROJE	CT:			
		Water Resources Ir	nvestigation		Central Valle	av Projec	et - CA	
Feasib			rvestigation		Shasta Divis	-) OA	
		and Penstocks		WOID:	SHAEF		TE LEVEL:	Feasibility
i owei	piant	and renstocks		REGION:	MP		RICE LEVEL:	
		Most Pro	babla	REGION:	IVIP	UNITER	ICE LEVEL:	Apr-10
		Wost Pro	18.5-ft Dam Raise					
	1		10.5-It Daili Raise	7		1		
PLANT ACCOUNT	РАҮ ІТЕМ							
PLA	λΥ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
∢	ш.							
					407.000		40.00	* 0.4 = 00000
	1	Relocate hydraulic ho			105,000	lbs	\$3.00	\$315,000.00
			the hydraulic cylinder hoist					
			19.05' penstock coaster gates.					
		5 Hoist systems (21,0	00 lbs. each)					
					40.500		*	
	2		extra lengths of stainless steel stems		12,500	lbs	\$14.00	\$175,000.00
			g stems to the relocated hoists					
		5 - 20-foot lengths of 6						
		stainless steel stems ((2,500 lbs. each)					
	3		w guide tracks for the 15' x 19.05'		1	LS	\$250,000.00	\$250,000.00
		penstock coaster gate						
			tracks, 20-feet long each					
		(51 lbs. per foot of trac	·					
			d with 1-1/2-inch diameter					
			orox. 200 sets of anchors					
		(24 lbs. per set of and	hor: 4,800 lbs total)					
					This Sheet a	nd 86-68	3420 Total =	\$740,000.00
		QL	JANTITIES				RICES	
вү			CHECKED	вү		-	CHECKED	
Nathan Na	kamoto		C. Sayer	Jeff Morris				/ Brom
DATE PRI			PEER REVIEW	DATE PREI	PARED		PEER REVIEW	
11/15/07			Don Read	07/22/10				onaldson
1 1/ 13/07			Don Noud	01122110			Dail Di	onaldoor!

FEATU	ATURE:				PROJECT:						
Shasta Feasibi		Water Resources Ir idv	nvestigation		Central Valle Shasta Divis		- CA				
		nd Penstocks		WOID:	SHAEF	ESTIMATE	ELEVEL:	Feasibility			
-				REGION:	MP	UNIT PRIC	E LEVEL:	Apr-10			
		Most Pro									
			18.5-ft Dam Raise								
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT			
	1	Remove existing coas	ter gate oil pump controlboards	8430	5	EA	\$4,000.00	\$20,000.00			
	2	Painetall existing coas	ster gate oil pump controlboards	8430	5	EA	\$5,800.00	\$29,000.00			
		Tremstan existing code	ner gate on pump controllogates	0400			ψο,σσσ.σσ	Ψ20,000.00			
	3	Extend existing coaste	er gate controlboard power feeder:	8430	150	FT	\$3.70	\$555.00			
		600 volt power cable,									
	4	Estand esisting accets		0.420	450	FT	£4.70	¢0.44€.00			
	4	600 volt power cable,	er gate controlboard power feeder: 6 AWG	8430	450	ГІ	\$4.70	\$2,115.00			
	5		er gate controlboard power feeder:	8430	150	FT	\$48.00	\$7,200.00			
		Rigid steel conduit, 1-i	inch								
					This Sheet a	ınd 86-684	20 Total =	\$58,870.00			
		QL	JANTITIES				RICES				
вү			CHECKED	вү			CHECKED				
Mike Schul			Cory Maurer	Jeff Morris			Kelly Brom				
12/12/07	ΓE PREPARED		PEER REVIEW George Girgis	DATE PREF 07/22/10	-AKEU		PEER REVIEW Dan D)onaldson			

Mobilization 5% +/- \$26 Subtotal 1 with Mobilization \$5,50 Design Contingencies 10% +/- \$55 Subtotal 2 = Subtotal 1 + Design Contingencies \$6,05 Allowance for Procurement Strategies (APS) 2.0% +/- \$14 Type of solicitation assumed is: Request for Proposal \$6,20 CONTRACT COST \$6,20 Construction Contingencies 20% +/- \$1,20	_1_ OF _1 _
Variable Price P	
Most Probable Summary	
Nost Probable Summary	bility
Summary	-10
Subtotal 1 Subtotal 2 Subtotal 1 Subtotal 1 Subtotal 1 Subtotal 1 Subtotal 2 Subtotal 1 Subtotal 1 Subtotal 1 Subtotal 1 Subtotal 2 Subtotal 1 Subtotal 1 Subtotal 2 Subtotal 1 Subtotal 2 Subtotal 1 Subtotal 3 Subtotal 1 Subtotal 3 Subtotal 4 Subtotal 3 Subtotal 4 Subtotal 3 Subtotal 4 Subtotal 4 Subtotal 5 Subtotal 6 Subtotal 6 Subtotal 6 Subtotal 6 Subtotal 7 Subtotal 7 Subtotal 7 Subtotal 8 Subtotal 8 Subtotal 9 Sub	
Subtotal 1 \$5,24 Mobilization 5% +/- \$26 Subtotal 1 with Mobilization \$10% +/- \$55 Design Contingencies 10% +/- \$55 Subtotal 2 = Subtotal 1 + Design Contingencies \$6,05 Allowance for Procurement Strategies (APS) 2.0% +/- \$14 Type of solicitation assumed is: Request for Proposal \$6,20 CONTRACT COST \$6,20 Construction Contingencies 20% +/- \$1,20 Subtotal 2 = Subtotal 1 + Design Contingencies 20% +/- \$1,20 Subtotal 2 = Subtotal 1 + Design Contingencies 20% +/- \$1,20 Subtotal 3 \$6,20 Subtotal 1 \$5,20 Subtotal 2 = Subtotal 1 + Design Contingencies 20% +/- \$1,20 Subtotal 2 = Subtotal 1 + Design Contingencies 20% +/- \$1,20 Subtotal 3 \$1,20 Subtotal 4 \$1,20 Subtotal 5 \$1,20 Subtotal 6 \$1,20 Subtotal 7 \$1,20 Subtotal 8 \$1,20 Subtotal 9 \$1,20 Subtotal 9 \$1,20 Subtotal 1 \$1,20 Subtotal 1 \$1,20 Subtotal 1 \$1,20 Subtotal 1 \$1,20 Subtotal 2 \$1,20 Subtotal 3 \$1,20 Subtotal 4 \$1,20 Subtotal 4 \$1,20 Subtotal 5 \$1,20 Subtotal 6 \$1,20 Subtotal 7 \$1,20 Subtotal 8 \$1,20 Subtotal 9 \$1,20 Subtot	
Mobilization 5% +/- \$26 Subtotal 1 with Mobilization \$5,50 Design Contingencies 10% +/- \$55 Subtotal 2 = Subtotal 1 + Design Contingencies \$6,05 \$6,05 Allowance for Procurement Strategies (APS) 2.0% +/- \$14 Type of solicitation assumed is: Request for Proposal \$6,20 CONTRACT COST \$6,20 Construction Contingencies 20% +/- \$1,20	TNL
Mobilization 5% +/- \$26 Subtotal 1 with Mobilization \$5,50 Design Contingencies 10% +/- \$55 Subtotal 2 = Subtotal 1 + Design Contingencies \$6,05 \$6,05 Allowance for Procurement Strategies (APS) 2.0% +/- \$14 Type of solicitation assumed is: Request for Proposal \$6,20 CONTRACT COST \$6,20 Construction Contingencies 20% +/- \$1,20	41,770.00
Subtotal 1 with Mobilization\$5,50Design Contingencies10%+/-\$55Subtotal 2 = Subtotal 1 + Design Contingencies\$6,05Allowance for Procurement Strategies (APS)2.0%+/-\$14Type of solicitation assumed is: Request for ProposalCONTRACT COST\$6,20Construction Contingencies20%+/-\$1,20	60,000.00
Design Contingencies 10% +/- \$55 Subtotal 2 = Subtotal 1 + Design Contingencies \$6,05 Allowance for Procurement Strategies (APS) 2.0% +/- \$14 Type of solicitation assumed is: Request for Proposal CONTRACT COST \$6,20 Construction Contingencies 20% +/- \$1,20	01,770.00
Subtotal 2 = Subtotal 1 + Design Contingencies \$6,05 Allowance for Procurement Strategies (APS) 2.0% +/- \$14 Type of solicitation assumed is: Request for Proposal CONTRACT COST \$6,20 Construction Contingencies 20% +/- \$1,20	50,177.00
Allowance for Procurement Strategies (APS) Type of solicitation assumed is: Request for Proposal CONTRACT COST Construction Contingencies 20% +/- \$1,20	51,947.00
Type of solicitation assumed is: Request for Proposal CONTRACT COST Construction Contingencies 20% +/- \$1,20	48,053.00
CONTRACT COST \$6,20 Construction Contingencies 20% +/- \$1,20	10,000.00
Construction Contingencies 20% +/- \$1,20	
Construction Contingencies 20% +/- \$1,20	00,000.00
	00,000.00
	00,000.00
Note: Escalation from published price level to notice to proceed is excluded. Estimates may include discrepancies due to roundi	ina.
Ref.: For appropriate use and terminology, see Reclamation Manual, Directives and Standards FAC; 09-01, 09-02 and 09-03.	··· · 3·
QUANTITIES PRICES	
BY CHECKED BY CHECKED	
Nick Clough, P.E. Mark Leavitt, PE Jeff Morris Kelly Brom	
DATE PREPARED PEER REVIEW / DATE DATE PREPARED PEER REVIEW	
May 6, 2010 Jesus G. Romero, PE 07/14/10 Dan Donaldson	

	F RECLAMAT	1014	LOTIMATE	WURKSHE						
			ces Investigation	PROJECT	Central Valley Project - CA Shasta Division					
	-	oad Realignme	ent	REGION:	MP	ESTIMATE LEVEL:		Feasibility		
				WOID:	SHAEF	_	LEVEL:	Apr-10		
		Most	: Probable					•		
			18.5-ft Dam Ra	aise						
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT		
	1	Clearing and Gru	ubbing	86-68140	44,000	SY	\$0.75	\$33,000.00		
	2	Stripping (6" dep	th)	86-68140	7,400	CY	\$5.30	\$39,220.00		
	3 Excavation				35,000	CY	\$6.10	\$213,500.00		
	4 Compacted Backfill		86-68140	7,500	CY	\$13.50	\$101,250.00			
	5	Railroad Track (*	136lb/yd(linear), 2 rails, 8400 track feet)	86-68140	390	Tons	\$3,000.00	\$1,170,000.00		
	6	Concrete Railroa	nd Ties (9ftx10inx12in)	86-68140	4,200	EA	\$270.00	\$1,134,000.00		
	7	Ballast (22in-12ir	n depth at 135 lb/ft^3)	86-68140	13,500	Tons	\$40.00	\$540,000.00		
	8	Sub-Ballast (12"	depth at 135 lb/ft^3)	86-68140	13,000	Tons	\$40.00	\$520,000.00		
	9		ting Railroad Track rails, 8400 track feet)	86-68140	370	Tons	\$590.00	\$218,300.00		
	10	Removal of Timb	per Railroad Ties (9.5ftx12inx10in)	86-68140	5,100	EA	\$55.00	\$280,500.00		
	11	Removal of Balla	ast (12in-3in depth at 135 lb/ft^3)	86-68140	6,400	Tons	\$155.00	\$992,000.00		
			SUBTOTAL THIS SH	EET				\$5,241,770.00		
	QUANTITIES				PRICES					
BY			BY CHECKED							
	ck Clough, P.E. Mark Leavitt, PE			Jeff Morris Kelly E				Brom		
	TE PREPARED PEER REVIEW / DATE			DATE PREPARED PEER REVIEW						
May 6, 20)10		Jesus G. Romero, PE	07/14/10			Dan Don	aldson		

	F RECLAINA	11014	ESTIMATE W	OKKOHELI				SHEET _ 1_ OF _1 _		
FEAT	URE:			PROJECT:						
Shasta	hasta Lake Water Resources Investigation easibility Study				Central Valley Project - CA					
					Shasta Div	ision				
Doney	y Cree	k UPRR Bridge	e Replacement	WOID:	SHAEF	ESTIMATE LEVEL:		Feasibility		
				REGION:	MP	UNIT P	RICE LEVEL:	Apr-10		
		Most	Probable							
Sumn	nary		18.5-ft Dam R	aise						
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT		
		537.5, 5 ft long, t	five span structure, supported on dri	lled shafts						
		Sheet 1						\$2,036,800.00		
		Sheet 2						\$3,541,747.50		
		Sheet 3						\$3,401,262.50		
		Sheet 4						\$3,671,562.50		
		Sheet 5						\$2,297,700.00		
		Sheet 6						\$10,878,200.00		
		Sheet 7						\$5,188,000.00		
	Sheet 8							\$800,000.00		
								. ,		
		Subtotal 1						\$31,815,272.50		
		Mobilization		10%	+/-			\$3,200,000.00		
		Subtotal 1 with I	Mobilization					\$35,015,272.50		
		Design Cont	ingencies	15%	+/-			\$5,252,290.50		
			otal 1 + Design Contingencies					\$40,267,563.00		
		Allowance fo	or Procurement Strategies (APS)	2.0%	+/-			\$732,437.00		
		Type of	solicitation assumed is: Request for Pro	oposal						
		• • • • • • • • • • • • • • • • • • • •	·							
		CONTRACT COS	ST					\$41,000,000.00		
	Construction Contingencies			25%	+/-			\$10,000,000.00		
	FIELD COST							\$51,000,000.00		
	Note: E	scalation from pu	blished price level to notice to proceed	is excluded. Estim	nates may inc	lude disc	repancies due to ro	ounding.		
	Ref.: F	or appropriate use	and terminology, see Reclamation Ma	nual, Directives ar	nd Standards	FAC; 09	-01, 09-02 and 09-0	03.		
	QUANTITIES			PRICES						
BY	CHECKED		BY CHECKED							
Carly M. \	arly M. Wegher Jesus G. Romero P.E.		Jeff Morris Kelly Brom			y Brom				
	TE PREPARED PEER REVIEW / DATE		DATE PREPARED PEER REVIEW							
April 22, 2	2010		Joseph M. Gemperline	07/26/10 Dan Donaldson						

ESTIMATE WORKSHEET

BUREAU O	F RECLAMA	TION ESTIMATE W							
FEAT	URE:		PROJECT:						
		e Water Resources Investigation		Central Val		ect - CA			
Feasil		•		Shasta Divi					
Done	y Cree	ek UPRR Bridge Replacement	WOID:	SHAEF		ATE LEVEL:	Feasibility		
			REGION:	MP	UNIT P	RICE LEVEL:	Apr-10		
		Most Probable							
		18.5-ft Dam Raise	:						
PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT		
		The existing bridge will be replaced with a new bridge. The new bridge has 5 spans (108'-3", 107'-0", 107'-0". 107'-0", & 108'-3") with an overall length of 537'-6" (back to back of abutments). The superstructure consists of four 9'-0" deep steel plate girders with cast-in-place reinforced concrete deck. Piers and abutments are supported on drilled shafts.							
		Mobilization	86-68140	1	LS	Included on sheet 8.			
		Earthwork	86-68140	<u>'</u>	LS	included on sheet of			
		Excavation for structures (abutments+wingwalls)	86-68140	630	YD ³	Included below			
		Backfill about structures (abutments+wingwalls)	86-68140	2,200	YD^3	\$140.00	\$308,000.00		
		Compact backfill around structures (abutments+ww)	86-68140	2,200	YD ³	Included above			
		ABUTMENT #1 - Structure is stem wall (~50'H x 10'T x 25'W), beam seat type abutment supported on two, 6-foot diameter drilled shafts. Wingwalls (~33'L x 43'H x 3'T) are connected to stem wall and extend back, perpendicular to stem wall to form a "box" that contains and supports fill and railway subgrade (similar to the existing bridge).							
		Concrete for Abutment 1, f'c = 4,000 psi							
		Substructure (abutment and wingwalls)	86-68140	650	YD ³	\$1,500.00	\$975,000.00		
		Furnish & handle cementatious materials (.282T/cy)	86-68140	183	Tons	Included above	, ,		
		Furnishing & handling epoxy coated reinforcement	86-68140	162,500	LBS	\$2.40	\$390,000.00		
		@ 250 lbs/cy (fy = 60 ksi)					·		
		Drilled Shafts							
		6'-0" Diameter @ abutments, A _c = 28.27 ft ² /lf	86-68140	107	LF	\$3,400.00	\$363,800.00		
		Cost/lf includes mobilization for drilling, drilling, casing and removal of water if required, cement, concrete, reinforcement and integrity testing. Drilled shafts require 112 cy concrete, 32 tons cement, and 51,000 lbs epoxy coated reinforcement (~450 lbs/cy).							
		Rock excavation for drilled shaft (inside casing)	86-68140	112	YD^3	Included above			
		SUBTOTAL THIS SHEET					\$2,036,800.00		
	QUANTITIES			PRICES					
вү		CHECKED	BY CHECKED						
Roman M	1. Koltuniı	uk, P.E. Jesus G. Romero, PE	Jeff Morris Kelly Brom						
DATE PE	REPARE	PEER REVIEW / DATE	DATE PREPARED PEER REVIEW						
April 16,	2010	Nick Clough, PE	07/26/10 Dan Donaldson						

ESTIMATE WORKSHEET

SHEET _ 2_ OF _8_

BUREAU OF		11014	ESTIMATE W							
FEAT				PROJECT:						
	Shasta Lake Water Resources Investigation Feasibility Study				Central Valley Project - CA Shasta Division					
	•	•	e Replacement	WOID:	SHAEF	ESTIMATE LEVEL:		Feasibility		
,				REGION:	MP		RICE LEVEL:	Apr-10		
		Most	Probable	0.0				- 1		
			18.5-ft Dam Raise							
⊨	5									
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT		
		PIERS: Each pie	er consists of a single 14-foot diameter (A _c =							
		4	cy/lf) column/drilled shaft socketed into				 			
			servoir water surface on Shasta Dam							
			nout the year. A reservoir water surface							
	Elevation of 1012.5' is assumed for drilled shaft construction									
		PIFR 1 - Top of c	olumn El. 1080.0, Drilled shaft tip El.							
		· ·	ength (including drilled shaft), L _p ~208.0 lf.							
		Structural concr	rete for pier cap, f'c = 4,000 psi							
	Pier cap is 25' wide by 18' thick by 12' high				200	YD^3	\$1,200.00	\$240,000.00		
		Furnish & ha	ndle cementatious materials (.282T/cy)	86-68140	56	Tons	Included above			
			handling epoxy coated reinforcement	86-68140	60,000	LBS	\$3.90	\$234,000.00		
			bs/cy (fy = 60 ksi)		,		, , , , ,	, , , , , , , , , , , , , , , , , , , ,		
			, , ,							
		Structural concr f'c = 4,000 psi).	rete for pier (above El. 1012.5, L = 67.5 lf),	86-68140	382	YD ³	\$1,300.00	\$496,600.00		
		Furnish & ha	ndle cementatious materials (.282T/cy)	86-68140	108	Tons	Included above			
		Furnishing &	handling epoxy coated reinforcement	86-68140	85,950	LBS	\$3.90	\$335,205.00		
		@ 225	bs/cy (fy = 60 ksi)		·					
			rete for pier (below El. 1012.5, L = 21.5 lf),	86-68140	123	YD ³	\$370.00	\$45,510.00		
		Furnish & ha	ndle cementatious materials (.282T/cy)	86-68140	35	Tons	Included above			
			handling epoxy coated reinforcement	86-68140	27,675	LBS	\$3.90	\$107,932.50		
			os/cy (fy = 60 ksi)		, -		,	. ,		
		Ť.	= 14', f'c = 4,000 psi							
			th below OGS is 119 lf.	86-68140	119	LF	\$17,500.00	\$2,082,500.00		
			nobilization for drilling, drilling, casing and				* * * * * * * * * * * * * * * * * * *	+-,,		
	removal of water if required, cement concrete, reinforcement and integrity testing drilled shaft require 680 cy concrete,									
		· ·	and 153,000 lbs epoxy coated reinf (~225							
		lbs/cy).	for della dala fit (1001 de contra)	86-68140	202	VD3	la alcala di ete e			
	Rock excavation for drilled shaft (inside casing)				680	YD ³	Included above	¢2 544 747 50		
	SUBTOTAL THIS SHEET									
	QUANTITIES			PRICES						
BY			CHECKED	BY CHECKED						
	man M. Koltuniuk, P.E. Jesus G. Romero, PE			Jeff Morris Kelly Brom						
DATE PR		•	PEER REVIEW / DATE	DATE PREPARED PEER REVIEW						
April 16, 2	:010		Nick Clough, PE	07/26/10			Dan Donaldson			

ESTIMATE WORKSHEET

SHEET 3 OF 8

BUREAU OF		ESTIVIATE VV		SHEET _ 3_ OF _8_			
FEATI Shasta Feasib	a Lake	e Water Resources Investigation tudy	PROJECT:				
	•	k UPRR Bridge Replacement	WOID:	SHAEF	ision ESTIMATE LEVEL:		Feasibility
			REGION:	MP		RICE LEVEL:	Apr-10
		Most Probable					4
		18.5-ft Dam Raise					
ς.	Σ						
PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		PIER 2 - Top of column El. 1080.0, Drilled shaft tip El. 872.0'. Overall length (including drilled shaft), Lp ~208.0 lf.					
		Structural concrete for pier cap, f'c = 4,000 psi					
		Pier cap is 25' wide by 18' thick by 12' high	86-68140	200	YD^3	\$1,200.00	\$240,000.00
		Furnish & handle cementatious materials (.282T/cy)	86-68140	56	Tons	Included above	+ =,
		Furnishing & handling epoxy coated reinforcement	86-68140	60,000	LBS	\$3.90	\$234,000.00
		@ 300 lbs/cy (fy = 60 ksi)					
		Structural concrete for pier (above El. 1012.5, L = 67.5 lf), f'c = 4,000 psi).	86-68140	382	YD ³	\$1,300.00	\$496,600.00
		Furnish & handle cementatious materials (.282T/cy)	86-68140	108	Tons	Included above	
		Furnishing & handling epoxy coated reinforcement	86-68140	85,950	LBS	\$3.90	\$335,205.00
		@ 225 lbs/cy (fy = 60 ksi)					
		Structural concrete for pier (below El. 1012.5, L = 55.5 lf), f'c = 4,000 psi).	86-68140	317	YD ³	\$370.00	\$117,290.00
		Furnish & handle cementatious materials (.282T/cy)	86-68140	89	Tons	Included above	
		Furnishing & handling epoxy coated reinforcement	86-68140	71,325	LBS	\$3.90	\$278,167.50
		@ 225 lbs/cy (fy = 60 ksi)					
		Drilled Shaft, φ = 14', f'c = 4,000 psi					
		Drilled shaft length below OGS is 85 lf.	86-68140	85	LF	\$20,000.00	\$1,700,000.00
		Cost/lf includes mobilization for drilling, drilling, casing and removal of water if required, cement concrete, reinforcement and integrity testing drilled shaft require 485 cy concrete, 137 tons cement, and 110,000 lbs epoxy coated reinf (~225					
		lbs/cy).					
		Rock excavation for drilled shaft (inside casing)	86-68140	485	YD ³	Included above	
		SUBTOTAL THIS SHEET					\$3,401,262.50
		QUANTITIES				PRICES	
BY		CHECKED	вү			CHECKED	
Roman M	I. Koltuniı	ık, P.E. Jesus G. Romero, PE	Jeff Morris Kelly Brom				
DATE PR			DATE PREPARED PEER REVIEW				
April 16, 2	2010	Nick Clough, PE	07/26/10			Dan Donaldson	

ESTIMATE WORKSHEET

SHEET _4_ OF _8_

BUREAU OF	- RECLAMA	HON	ESTIMATE W	JKKOHEI	SHEET _4_ OF _8_			
FEAT	URE:			PROJECT:				
Shasta Feasib			ces Investigation		Central Val Shasta Divi	-	ect - CA	
	-	•	e Replacement	WOID: SHAEF ESTIMATE LEVEL:			ATE LEVEL:	Feasibility
	•	•	•	REGION:	MP	UNIT P	RICE LEVEL:	Apr-10
		Most	Probable					•
			18.5-ft Dam Raise					
⊨	⋝							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
			column El. 1080.0, Drilled shaft tip El. ength (including drilled shaft), Lp ~208.0 lf.					
		O72.0. Overall le	right (moduling drined shart), Ep -200.0 ii.					
		Structural concr	rete for pier cap, f'c = 4,000 psi					
		Pier cap is 2	5' wide by 18' thick by 12' high	86-68140	200	YD^3	\$1,200.00	\$240,000.00
		Furnish & ha	ndle cementatious materials (.282T/cy)	86-68140	56	Tons	Included above	
		Furnishing &	handling epoxy coated reinforcement	86-68140	60,000	LBS	\$3.90	\$234,000.00
		@ 300	bs/cy (fy = 60 ksi)					
		Structural concr	rete for pier (above El. 1012.5, L = 67.5 lf),	00 00440	202	YD ³	£4.200.00	£400,000,00
		f'c = 4,000 psi).	ete 101 pier (above El. 1012.3, E = 07.3 II),	86-68140	382	YD	\$1,300.00	\$496,600.00
		Furnish & ha	andle cementatious materials (.282T/cy)	86-68140	108	Tons	Included above	
			handling epoxy coated reinforcement	86-68140	85,950	LBS	\$3.90	\$335,205.00
		ŭ	bs/cy (fy = 60 ksi)		,			. ,
		04				3 (-3		
		f'c = 4,000 psi).	rete for pier (below El. 1012.5, L = 34.5 lf),	86-68140	197	YD ³	\$370.00	\$72,890.00
		Furnish & ha	ndle cementatious materials (.282T/cy)	86-68140	56	Tons	Included above	
		Furnishing &	handling epoxy coated reinforcement	86-68140	44,325	LBS	\$3.90	\$172,867.50
		@ 225	bs/cy (fy = 60 ksi)					
		Drilled Shaft, φ =	= 14', f'c = 4,000 psi					
			th below OGS is 106 lf.	86-68140	106	LF	\$20,000.00	\$2,120,000.00
			nobilization for drilling, drilling, casing and					
			if required, cement concrete, reinforcement ng drilled shaft require 605 cy concrete,					
		0,	and 136,000 lbs epoxy coated reinf (~225					
		lbs/cy).	and 150,000 lbs cpoxy coaled felili (*225					
	Rock excavation for drilled shaft (inside casing)		86-68140	605	YD ³	Included above		
			SUBTOTAL THIS SHEET					\$3,671,562.50
	QUANTITIES QUANTITIES			PRICES				
вү				BY CHECKED				
Roman M	Roman M. Koltuniuk, P.E. Jesus G. Romero, PE			Jeff Morris Kelly Brom				
DATE PR	EPARED	,	PEER REVIEW / DATE	DATE PREPARED PEER REVIEW			PEER REVIEW	
April 16, 2	2010		Nick Clough, PE	07/26/10			Dan Donaldson	

ESTIMATE WORKSHEET

SHEET_5_OF_8_

BUREAU OF		TION ESIIMAIE W							
FEAT	URE:		PROJECT:						
Shasta	a Lake	Water Resources Investigation							
Feasib	oility S	tudy		Shasta Divi	ision				
Doney	y Cree	k UPRR Bridge Replacement	WOID:	SHAEF	ESTIM.	ATE LEVEL:	Feasibility		
			REGION:	MP	UNIT P	RICE LEVEL:	Apr-10		
		Most Probable							
		18.5-ft Dam Raise)						
PLANT ACCOUNT	РАУ ІТЕМ	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT		
A O	4								
		DIED 4. Tag of colors El 4000 0. Della dela filla El							
		PIER 4 - Top of column El. 1080.0, Drilled shaft tip El. 920.0'. Overall length (including drilled shaft), Lp ∼160.0 lf.							
		Structural concrete for pier cap, f'c = 4,000 psi							
		Pier cap is 25' wide by 18' thick by 12' high	86-68140	200	YD^3	\$820.00	\$164,000.00		
		Furnish & handle cementatious materials (.282T/cy)	86-68140	56	Tons	Included above	<u> </u>		
		Furnishing & handling epoxy coated reinforcement	86-68140	60,000	LBS	\$3.00	\$180,000.00		
	@ 300 lbs/cy (fy = 60 ksi)								
		Structural concrete for pier (This pier concrete column/drilled shaft can be constructed entirely out of the influence of water surface El. 1012.5. L = 160-106 ~ 54 lf),	86-68140	308	YD ³	\$850.00	\$261,800.00		
		f'c = 4,000 psi).							
		Furnish & handle cementatious materials (.282T/cy)	86-68140	87	Tons	Included above			
		Furnishing & handling epoxy coated reinforcement	86-68140	69,300	LBS	\$3.00	\$207,900.00		
		@ 225 lbs/cy (fy = 60 ksi)							
		Drilled Shaft, φ = 14', f'c = 4,000 psi							
		Drilled shaft length below OGS is 106 lf.	86-68140	106	LF	\$14,000.00	\$1,484,000.00		
		Cost/If includes mobilization for drilling, drilling, casing and				7 1 1,000	+ 1,12 1,22 212		
		removal of water if required, cement concrete, reinforcement and integrity testing drilled shaft require 605 cy concrete,							
		-170 tons cement, and 136,000 lbs epoxy coated reinf (~225 lbs/cv)							
		Rock excavation for drilled shaft (inside casing)	86-68140	605	YD ³	Included above			
						+			
	SUBTOTAL THIS SHEET						\$2,297,700.00		
		QUANTITIES				PRICES			
BY		CHECKED	вү			CHECKED			
Roman M	I. Koltuniı	uk, P.E. Jesus G. Romero, PE	Jeff Morris			Kelly Brom			
DATE PR	REPARE	PEER REVIEW / DATE	DATE PREPARED PEER REVIEW			PEER REVIEW			
April 16, 2	2010	Nick Clough, PE	07/26/10 Dan Donaldson						

ESTIMATE WORKSHEET

SHEET_6_OF_8_

BUREAU OF	- KECLAIVIA	TION	ESTIMATE W	OKKSHE	SHEET _6_ OF _8_			
FEAT	EATURE:							
Shasta Feasil			ces Investigation		Central Val Shasta Divi		ect - CA	
Doney	y Cree	k UPRR Bridge	e Replacement	WOID:	SHAEF ESTIMATE LEVEL:		ATE LEVEL:	Feasibility
		•	•	REGION:	MP	UNIT P	RICE LEVEL:	Apr-10
		Most	Probable					•
			18.5-ft Dam Raise					
5	Σ							
PLANT ACCOUNT	РАУ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		ADLITMENT #2	Structure is atom well (~42'H v 10'T v					
			Structure is stem wall (~42'H x 10'T x type abutment supported on two, 6-foot					
		**	hafts. Wingwalls (~33'L x 43'H x 3'T) are					
			m wall and extend back, perpendicular to					
			a "box" that contains and supports fill and					
		railway subgrade	(similar to the existing bridge).					
		Concrete for Ab	utment 2, f'c = 4,000 psi					
				86-68140	570	YD ³	\$1,500.00	\$855,000.00
	Substructure (abutment and wingwalls) Furnish & handle cementatious materials (.282T/cy)				161	Tons	Included above	Ψ033,000.00
			86-68140 86-68140	142,500	LBS	\$2.40	\$342,000.00	
		<u> </u>	handling epoxy coated reinforcement os/cy (fy = 60 ksi)	00-00140	142,300	LDG	Ψ2.40	ψ342,000.00
		<u>@ 250 II</u>	537Cy (1y – 66 K31)					
		Drilled Shafts						
		6'-0" Diamete	er @ abutments, A _c = 28.27 ft ² /lf	86-68140	123	LF	\$3,400.00	\$418,200.00
		Cost/If includes m	nobilization for drilling, drilling, casing and					
			if required, cement, concrete,					
			d integrity testing. Drilled shafts require					
			37 tons cement, and 58,000 lbs epoxy					
			nent (~450 lbs/cy).	06 60140	129	YD ³	Included above	
		SUPERSTRUCT	for drilled shaft (inside casing)	86-68140	129	עץ	included above	
		SUPERSTRUCT	UKE					
		Steel for girders	Fy = 50 ksi, ASTM A709W	86-68140	2,250,000	LBS	\$3.70	\$8,325,000.00
		oteer for girdere,	1 9 00 101, 710 1111 711 00 11	00 00140	2,200,000	LBC	ψο σ	ψ0,020,000.00
		Structural concre	te, f' _c = 4,000 psi	86-68140	350	YD³	\$1,900.00	\$665,000.00
	Furnishing and handling cementatious material				99	Tons	Included above	
		Furnishing and pl	86-68140	105,000	LBS	\$2.60	\$273,000.00	
	(fy = 60 ksi, epoxy coated)							
	SUBTOTAL THIS SHEET						PRIOSC	\$10,878,200.00
-	QUANTITIES			PRICES				
ВҮ	. 12-11 .	t. D.E.	CHECKED	BY CHECKED				
Roman M. Koltuniuk, P.E. Jesus G. Romero, PE Jeff Morris Kelly Brom DATE PREPARED PEER REVIEW / DATE DATE DATE PREPARED PEER REVIEW								
)	PEER REVIEW / DATE	DATE PREPAR 07/26/10	(ED		PEER REVIEW	
April 16, 2	∠U IU		Nick Clough, PE	07720/10			Dan Donaldson	

ESTIMATE WORKSHEET

SHEET_7_OF_8_

BUREAU OF	RECLAMA	TION	ESTIMATE W	OKK2HEI	<u> </u>			SHEET _7_ OF _8_
FEAT	EATURE: hasta Lake Water Resources Investigation							
Shasta	a Lake	Water Resource	ces Investigation	Central Valley Project - CA				
Feasib	oility S	tudy	-					
Doney	Ooney Creek UPRR Bridge Replacement				SHAEF	ESTIM	ATE LEVEL:	Feasibility
		_	•	REGION:	MP	UNIT P	RICE LEVEL:	Apr-10
		Most	Probable					•
			18.5-ft Dam Raise					
. 늘	Σ							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
PI ACC	PA							
		Removal of Exis	ting Concrete and Reinforcement	86-68140	185	YD^3	\$400.00	\$74,000.00
		in Abutment 1	•				,	, , , , , , , , , , , , , , , , , , , ,
		Remove in b	locks weighing approximately 20 tons					
			dimensions of 6'5" x 6'5" x 6'5"					
		,	tons). Remove Abutment down to 3'					
		below ground	•					
		J. C. C. C.						
		Removal of Exis	ting Concrete and Reinforcement	86-68140	3,000	YD^3	\$1,200.00	\$3,600,000.00
		in Pier 1						
		Remove in b						
		(A block with						
		weighs 19.8						
		below ground	,					
		Ţ.						
		Removal of Exis	ting Concrete and Reinforcement	86-68140	1,200	YD^3	\$1,200.00	\$1,440,000.00
		in Pier 2			,			
		Remove in b	locks weighing approximately 20 tons					
		(A block with	dimensions of 6'5" x 6'5" x 6'5"					
		weighs 19.8	tons). Remove Pier down to 3'					
		below ground						
		Removal of Exis	ting Concrete and Reinforcement	86-68140	185	YD^3	\$400.00	\$74,000.00
		in Abutment 2						
		Remove in b	locks weighing approximately 20 tons					
		(A block with	dimensions of 6'5" x 6'5" x 6'5"					
	weighs 19.8 tons). Remove Abutment down to 3'							
	below ground surface.							
	SUBTOTAL THIS SHEE			ET \$5,188,000.0				
	QUANTITIES		PRICES					
вү			CHECKED	вү			CHECKED	
Carly M. \	urly M. Wegher Joseph M. Gemperline					Kelly Brom		
DATE PR	ATE PREPARED PEER REVIEW / DATE			DATE PREPARED CHECKED				
April 22, 2	2010		Jesus G. Romero P.E.	07/26/10			Dan Donaldson	

FEAT	URE:		PROJECT:							
Shasta	a Lake	Water Resources Investigation	Central Valley Project - CA							
Feasib				Shasta Div						
Doney	/ Cree	k UPRR Bridge Replacement	WOID:	SHAEF	ESTIM	ATE LEVEL:	Feasibility			
1		•	REGION:	MP		RICE LEVEL:	Apr-10			
		Most Probable					•			
		18.5-ft Dam Raise								
⊢	>									
PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT			
		Removal of Existing Steel Truss Bridge	86-68140	2,000,000	LBS	\$0.40	\$800,000.00			
		Bridge consists of members with riveted connections.		_,000,000		70	+000,000.00			
		The structural steel grade is unknown, but can								
		assume Fy=33 ksi. The existing steel appears to								
		be painted.								
		Do pairitou.								
	SUBTOTAL THIS SHEET			≡T \$800,000.0						
	QUANTITIES					PRICES				
вү		CHECKED	вү			CHECKED				
Carly M. \	Negher	Joseph M. Gemperline	Jeff Morris Kelly Brom							
DATE PR			DATE PREPARED CHECKED							
April 22, 2		Jesus G. Romero P.E.	07/26/10 CHECKED O7/26/10 Dan Donaldson							
77/111 ZZ, Z	-010	Jesus G. Nollielo F.L.	01120/10			Dan Donaldson				

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SUMMARY SHEET 1 OF 1

BUREAU OF F		ON	ESTIMATE WORKS					SUMMARY SHEET 1 OF 1
FEATU	IRE:			PROJE	CT:			
		Matar Dagayraga Ir	westigation			D '	. 04	
		Water Resources Ir	ivestigation		Central Vall		t - CA	
Feasibi	lity Stu	ıdy			Shasta Divi	sion		
Pit Riv	er Brid	dge Pier 3 and 4 Pi	rotection	REGION:	MP	ESTIMA	TE LEVEL:	Feasibility
				WOID:	SHAEF	PRICE I	EVEL:	Apr-10
		Most Pro	babla		0			7.4
		WOSt FIO	bable					
Summa	arv		18.5-ft Dam Raise					
PLANT ACCOUNT	PAY ITEM							
۲. ۵۵	<u>}</u>		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
A O	4							
		Pit River Bridge Mod	ification					
			earings on piers (#3 & #4) in deepest pa	art of old F	Pit River cha	nnel		
		(protection of bi	carings on piers (#3 & #4) in deepest pe	art or old r	it itivei cha	111101.		
		86-68140 Sheet (bridg	ge protection),					\$16,784,488.00
			,,,					, , , , , , , , , , , , , , , , , , , ,
		22 22 44 2 24 4 4 4 4 4						****
		86-68410 Sheet (bridg	ge protection)					\$309,350.00
		0						¢47.000.000.00
		Subtotal						\$17,093,838.00
		Mobilization					10%	\$1,700,000.00
							1070	4 - , · · · · , · · · · · · ·
		0-14-4-1-4-1-4-1-11-4	•					\$40.700.000.00
		Subtotal w/ Mobilizat	ion					\$18,793,838.00
		Design Continger	ncies				15%	\$2,828,966.00
		Ü						
		A.II					00/	#077 400 00
			curement Strategy				2%	\$377,196.00
		Type of solici	tation assumed is: Request for Proposal					
		CONTRACT COST						\$22,000,000.00
								. , ,
		0	4in ann aine				050/	#A AAA AAA AA
		Construction Con	ungencies				25%	\$6,000,000.00
		FIELD COST						\$28,000,000.00
								. ,
							1	
							1	
		Note: Escalation from publis	hed price level to notice to proceed is excluded. Esti	imates may in	clude discrepan	cies due to re	ounding.	
		Ref.: For appropriate use	and terminology, see Reclamation Manual, Di	rectives and	Standards FA	C; 09-01, 0	9-02 and 09-03.	
			JANTITIES				PRICES	
		પ્ર						
BY			CHECKED	BY			CHECKED	
See Grou	ıp Sheets		See Group Sheets	Jeff Morris			1	Kelly Brom
DATE PRE	PARED		PEER REVIEW	DATE PREF	PARED		PEER REVIEW	
			See Group Sheets	7/26/2010				n Donaldson
			OCC OTOUP OTICELS	112012010			Da	n Donaidson

BUREAU OF		ESIIWATE WORKS						
FEATU			PROJEC	CT:				
Shasta	Lake V	Vater Resources Investigation		Central Valle	y Projec	t - CA		
Feasib	ility Stu	dy		Shasta Divis	sion			
Pit Riv	er Brid	lge Pier 3 and 4 Protection	REGION:	MP	ESTIM <i>A</i>	TE LEVEL:	Feasibility	
			WOID:	SHAEF	PRICE I	LEVEL:	Apr-10	
		Most Probable						
		18.5-ft Dam Raise	<u> </u>					
⊢	5	reie it Baill Haie.						
PLANT ACCOUNT	РАҮ ІТЕМ	DESCRIPTION	CODE	QUANTITY	LINUT	UNIT PRICE	AMOUNT	
PP.	РАҮ	DESCRIPTION	CODE	QUANTITY	UNIT	UNII PRICE	AMOUNT	
		Pier 3						
	1		86-68140	1 100	LF	¢450.00	¢405 000 00	
	I	Core 4-inch diameter hole through existing pier for	00-00140	1,100	LF	\$450.00	\$495,000.00	
		3-#11 bundled bars. 60 holes are 15-feet long and 40						
		holes are 5 feet long. Total number of holes is 100 for						
		a total length of 900 + 200 = 1,100 lf						
	-		00.00440	4.470	05	A7.00	***	
	2	Surface preparation of existing concrete consisting of	86-68140	1,172	SF	\$7.00	\$8,204.00	
		low pressure water (pressure less that 5,000 psi)						
		cleaning. Perimeter is 146.5 feet, height is 8 feet.						
			22 22 4 4		. –	***	40.000.00	
	3	Hydrotite waterstop, CJ-0725-3K (Greenstreak)	86-68140	300	LF	\$20.00	\$6,000.00	
		5 · · · · · · · · · · · · · · · · · · ·	00.00440	0.000	0)/	00.400.00	44 000 000 00	
	4	Furnish and place concrete, f'c = 6,000 psi @ 28 days	86-68140	2,000	CY	\$2,400.00	\$4,800,000.00	
		(add 10% to estimate for mix proportion and						
		admixtures to increase water tightness)						
	5	Furnish and install 60 ksi epoxy coated reinforcement	86-68140	600,000	LBS	\$4.80	\$2,880,000.00	
	_				_			
	6	Furnishing and handling cement (.282 tons/cy)	86-68140	564	Tons	\$360.00	\$203,040.00	
	_		22.224.42					
	7	Furnishing sump pump, alarm system and piping	86-68140	2	EA	See Group 86-8	410 Sheets	
		Diam 4						
		Pier 4	00.00440	4.400	. –	#450.00	#405.000.00	
	8	Core 4-inch diameter hole through existing pier for	86-68140	1,100	LF	\$450.00	\$495,000.00	
		3-#11 bundled bars. 60 holes are 15-feet long and 40						
		holes are 5 feet long. Total number of holes is 100 for						
		a total length of 900 + 200 = 1,100 lf						
			00.00440	4.470	0.5	A7.00	00.004.00	
	9	Surface preparation of existing concrete consisting of	86-68140	1,172	SF	\$7.00	\$8,204.00	
		low pressure water (pressure less than 5,000 psi)						
		cleaning. Perimeter is 146.5 feet, height is 8 feet.						
	10	Furnish and place concrete, f'c = 6,000 @ 28 days	86-68140	2,000	CY	\$2,400.00	\$4,800,000.00	
		(add 10% to estimate for mix proportion and						
		admixtures to increase water tightness)	22.224.42				*********	
	11	Furnish and install 60 ksi epoxy coated reinforcement	86-68140	600,000	LBS	\$4.80	\$2,880,000.00	
			22.224.42		_		****	
	12	Furnishing and handling cement (.282 tons/cy)	86-68140	564	Tons	\$360.00	\$203,040.00	
		Forther or	00.0000			00	440.01	
	13	Furnishing sump pump, alarm system and piping	86-68140	2	EA	See Group 86-8	410 Sheets	
	4.4		22 22442		. –	***		
	14	Hydrotite waterstop, CJ-0725-3K (Greenstreak)	86-68140	300	LF	\$20.00	\$6,000.00	
				This Chast s	nd 06 60	21.40 Total -	¢46 704 400 00	
	QUANTITIES			This Sheet a		PRICES	\$16,784,488.00	
DV			DV					
BY	Pomoro DE	CHECKED Roman M. Koltuniuk, PE	BY Jeff Morris			CHECKED	ally Prom	
	us G. Romero, PE Roman M. Koltuniuk, PE TE PREPARED PEER REVIEW			ADED			elly Brom	
•			DATE PREP	ARED		PEER REVIEW	Donaldson	
11/16/2007		Nicholas Clough, PE	7/26/2010			Dan Donaldson		

BUREAU OF F	RECLAMATIO	N	ESTIMATE WORKS	HEET				SHE	ET_2_ OF _3 _
FEATU	JRE:			PROJECT	Γ:				
Shasta	Lake V	Vater Resources Ir	nvestigation		Central Vall	ley Projec	t - CA		
Feasibi			•		Shasta Divi	-			
Pit Riv	er Brid	lge Pier 3 and 4 Pi	rotection	REGION:	MP	ESTIMA	TE LEVEL:	F	easibility
		_		WOID:	SHAEF	PRICE I	_EVEL:		Apr-10
		Most Pro	bable						-
			18.5-ft Dam Raise						
	_		10.5-It Daili Naise	7					
PLANT ACCOUNT	РАҮ ІТЕМ		PERCENTION	0005	0111117171				
P 50	≻A≺		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE		AMOUNT
4									
		Pier 3							
			nd test the following						
			id test the following						
		components:							
	1	Cump pump: Cub	amoraible type, aget iron body	9440	2	ooob	¢10 500 00		¢24,000,00
	I		omersible type, cast iron body	8410	2	each	\$10,500.00		\$21,000.00
			sistant components, minimum rated						
			nance of 140 gal/min at 33 feet						
		•	loat or pressure switch,						
			cord & plug, single phase,						
		60 Hz, 115 Volts /	AC.						
	2		ng, ASTM B88, Type K, with						
			s steel pipe hangers and supports						
		4-inch		8410	20	lin ft	\$420.00		\$8,400.00
		5-inch		8410	65	lin ft	\$750.00		\$48,750.00
	3		er or bronze, ASME B16.18 or						
		ASME B16.22, Ty							
		4-inch 90 degr		8410	8	each	\$1,450.00		\$11,600.00
		5-inch 90 degr	ee elbow	8410	4	each	\$4,100.00		\$16,400.00
		4 x 4 x 5 reduc		8410	1	each	\$5,400.00		\$5,400.00
		4-inch ball valv	/e	8410	2	each	\$2,000.00		\$4,000.00
		5"-check valve	9	8410	1	each	\$4,200.00		\$4,200.00
	4		alarm, with single float operated switch,	8410	1	each	\$29,000.00		\$29,000.00
			ls and telemetry cabling to						
		telephone line on	bridge						
	5	2 protective grate	s constructed of 1/8" by 1 inch	8410	75	lbs	\$78.00		\$5,850.00
			each measuring 2.5 ft square by 1 inch						
			aced at 1 inch on center by 4 inches						
		on center with cut	outs for sump discharge and cord						
								ļ	
		Sheet Subtotal =					21052	\$	154,600.00
		QU	JANTITIES			PF	RICES		
BY				BY			CHECKED		
Randall Eg	Randall Egan Ryan Stephen			Jeff Morris			K	elly Bron	n
DATE PRE			PEER REVIEW	DATE PREPA	RED		PEER REVIEW		
11/19/	11/19/2007 Dave Hulse			7/26/2010			Dan	Donalds	son

DATE PREPARED

11/19/2007

PEER REVIEW

Dave Hulse

ESTIMATE WORKSHEET BUREAU OF RECLAMATION SHEET_3_ OF _3 _ FEATURE: PROJECT: Shasta Lake Water Resources Investigation **Central Valley Project - CA** Feasibility Study **Shasta Division** Pit River Bridge Pier 3 and 4 Protection ESTIMATE LEVEL: REGION: MP **Feasibility** 10-Apr WOID: SHAEF PRICE LEVEL: **Most Probable** 18.5-ft Dam Raise PLANT ACCOUNT PAY ITEM DESCRIPTION CODE QUANTITY UNIT **UNIT PRICE AMOUNT** Pier 4 Furnish, install, and test the following components: Sump pump: Submersible type, cast iron body 8410 \$10,500.00 \$21,000.00 each with corrosion resistant components, minimum rated operating performance of 140 gal/min at 33 feet head, automatic float or pressure switch, 20-foot electrical cord & plug, single phase, 60 Hz, 115 Volts AC. Pipe, copper tubing, ASTM B88, Type K, with insulated stainless steel pipe hangers and supports 4-inch 8410 20 lin ft \$420.00 \$8,400.00 5-inch 8410 65 lin ft \$750.00 \$48,750.00 Pipe fittings, copper or bronze, ASME B16.18 or ASME B16.22, Type K \$1,450.00 \$11,600.00 4-inch 90 degree elbow 8410 8 each \$4,100.00 \$16,400.00 5-inch 90 degree elbow 8410 4 each 4 x 4 x 5 reducing tee 8410 \$5,400.00 \$5,400.00 1 each 4-inch ball valve 8410 2 each \$2,000.00 \$4,000.00 5"-check valve 8410 1 each \$4,200.00 \$4,200.00 9 8410 1 \$29,000.00 \$29,000.00 High water level alarm, with single float operated switch, each associated controls and telemetry cabling to telephone line on bridge 10 2 protective grates constructed of 1/8" by 1 inch 8410 \$80.00 \$6,000.00 75 lbs galvanized steel each measuring 2.5 ft square by 1 inch deep with bars spaced at 1 inch on center by 4 inches on center with cutouts for sump discharge and cord This Sheet Subtotal = \$154,750.00 \$154,600.00 Sheet 1 Subtotal = \$309,350.00 Total 86-68410 => PRICES **QUANTITIES** CHECKED CHECKED BY ΒY Randall Egan Jeff Morris Ryan Stephen Kelly Brom

DATE PREPARED

7/26/2010

PEER REVIEW

Dan Donaldson

ESTIMATE WORKSHEET

SUMMARY SHEET 1 OF 1

			INDITLE				SUMMARY SHEET I OF I	
JRE:			PROJECT:					
a Lake	Water Resource	ces Investigation		Central Va	lley Proje	ect - CA		
ility St	udy			Shasta Div	ision			
mento	2 nd Crossing	UPRR Bridge	WOID:	SHAEF	ESTIM/	ATE LEVEL:	Feasibility	
			REGION:	MP	UNIT P	RICE LEVEL:	Apr-10	
	Most	Probable						
ary		18.5-ft Dam Raise						
M								
Σ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
Ą								
	982.0-ft long, nir	ne span structure supported on drilled	shafts					
	Sheet 1						\$1,301,400.00	
	Sheet 2						\$912,880.00	
	Sheet 3						\$2,318,035.00	
	Sheet 4						\$4,726,400.00	
	Sheet 5						\$4,955,600.00	
	Sheet 6						\$4,934,600.00	
	Sheet 7						\$4,693,400.00	
	Sheet 8						\$2,083,725.00	
	Sheet 9						\$819,520.00	
	Sheet 10						\$21,108,800.00	
	Sheet 11						\$8,590,700.00	
	Sheet 12						\$8,432,500.00	
	Sheet 13						\$1,320,000.00	
	Subtotal 1						\$66,197,560.00	
	Mobilization		10%	+/-			\$6,600,000.00	
	Subtotal 1 with I	Mobilization					\$72,797,560.00	
	Design Conti	ingencies	15%	+/-			\$10,919,634.00	
	Subtotal 2 = Subt	otal 1 + Design Contingencies					\$83,717,194.00	
	Allowance fo	r Procurement Strategies (APS)	2.0%	+/-			\$1,282,806.00	
	Type of	solicitation assumed is: Request for Prop	osal					
	CONTRACT COS	ST					\$85,000,000.00	
	Construction	Contingencies	25%	+/-			\$20,000,000.00	
	FIELD COST						\$105,000,000.00	
	Note: Escalation	from published price level to notice to pro	ceed is exclude	d. Estimates	may incl	ude discrepancies	due to rounding.	
Ref.: For appropriate use and terminology, see Reclamation			n Manual, Dire	ctives and St	andards	FAC; 09-01, 09-02	and 09-03.	
	Q	UANTITIES				PRICES		
Y CHECKED			BY CHECKED					
Carly M. Wegher Jesus G. Romero P.E.			Jeff Morris Kelly Brom - 7/29/			rom - 7/29/10		
EPARED		PEER REVIEW / DATE	DATE PREPAI	RED		PEER REVIEW		
		Joseph M. Gemperline	07/23/10			Dan Donaldson - 8/30/10		
	Vegher EPARED	ILake Water Resource ility Study mento 2 nd Crossing Most ary Sheet 1	ALAKE Water Resources Investigation ility Study mento 2 nd Crossing UPRR Bridge Most Probable ary	A Lake Water Resources Investigation ility Study mento 2 nd Crossing UPRR Bridge Most Probable ary 18.5-ft Dam Raise DESCRIPTION CODE 982.0-ft long, nine span structure supported on drilled shafts Sheet 1 Sheet 2 Sheet 3 Sheet 3 Sheet 4 Sheet 5 Sheet 6 Sheet 6 Sheet 7 Sheet 8 Sheet 9 Sheet 10 Sheet 11 Sheet 10 Sheet 11 Sheet 10 Sheet 10 Sheet 11 Sheet 10 Sheet 11 Sheet 10 Sheet 11 Sheet 12 Sheet 13 Subtotal 1 Mobilization Design Contingencies Allowance for Procurement Strategies (APS) Type of solicitation assumed is: Request for Proposal CONTRACT COST Construction Contingencies Allowance for Procurement Strategies (APS) Type of solicitation assumed is: Request for Proposal CONTRACT COST Construction Contingencies FIELD COST Note: Escalation from published price level to notice to proceed is exclude Ref: For appropriate use and terminology, see Reclamation Manual, Directed Ref: For appropriate use and terminology, see Reclamation Manual, Directed Ref: For appropriate use and terminology, see Reclamation Manual, Directed Ref: For appropriate use and terminology, see Reclamation Manual, Directed Ref: For appropriate use and terminology, see Reclamation Manual, Directed Ref: For appropriate use and terminology, see Reclamation Manual, Directed Reference Applied Morris Pepare Description: OUANTITIES Date PREPARED	ALAKE Water Resources Investigation Ility Study mento 2 nd Crossing UPRR Bridge Most Probable arry 18.5-ft Dam Raise DESCRIPTION CODE QUANTITY 982.0-ft long, nine span structure supported on drilled shafts Sheet 1 Sheet 2 Sheet 3 Sheet 4 Sheet 5 Sheet 6 Sheet 6 Sheet 7 Sheet 8 Sheet 9 Sheet 10 Sheet 11 Sheet 12 Sheet 12 Sheet 15 Sheet 10 Sheet 11 Sheet 2 Sheet 3 Sheet 10 Sheet 10 Sheet 11 Sheet 12 Sheet 15 Sheet 16 Sheet 17 Sheet 18 Sheet 19 Sheet 10 Sheet 10 Sheet 11 Sheet 12 Sheet 13 Subtotal 1 Sheet 12 Sheet 13 Subtotal 1 Sheet 16 Sheet 17 Sheet 18 Subtotal 1 Sheet 19 Sheet 19 Sheet 10 Sh	Alkake Water Resources Investigation illity Study mento 2 nd Crossing UPRR Bridge Most Probable ary 18.5-ft Dam Raise DESCRIPTION 18.5-ft Dam Raise CODE QUANTITY Sheet 1 Sheet 1 Sheet 3 Sheet 4 Sheet 5 Sheet 6 Sheet 6 Sheet 7 Sheet 8 Sheet 10 Sheet 10 Sheet 11 Sheet 12 Sheet 10 Sheet 10 Sheet 11 Sheet 10 Sheet 11 Sheet 10 Sheet 10 Sheet 10 Sheet 11 Sheet 10 She	Lake Water Resources Investigation litry Study mento 2 nd Crossing UPRR Bridge Most Probable arry 18.5-ft Dam Raise	

BUREAU OF RECLAMATION ESTIMATE WORKSHEET

SHEET__1__ OF __13__

BUREAU OF		ATION	ESTIMATE WORK	SHELL				SHEET1 OF13	
FEAT	URE:			PROJECT:					
Shasta Feasib			ces Investigation	Central Valley Project - CA Shasta Division					
		o 2 nd Crossing	LIPRR Bridge	WOID:	SHAEF	ATE LEVEL:	Feasibility		
Odera	mem	J Z Orossing	of the Bridge	REGION:	MP		RICE LEVEL:	Apr-10	
		Most	t Probable	KZOIOIII		0			
		Wice	18.5-ft Dam Raise						
⊢	5		10.0 It Baill Raise						
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
		new bridge has 9 135', 90' & 57') w back of abutmen steel plate girder foot spans, to 4-f	ge will be replaced with a new bridge. The spans (105', 55', 135', 135, 135', 135', vith an overall length of 982'-0" (back to ts). The superstructure consists of four s (varying in depth from 12-ft for the 135-toot for the 55-foot span) with cast-in-place ete deck. Piers and abutments are						
		Mobilization		86-68140	1	LS	Included on sheet	13.	
		Earthwork			-				
		Excavation for st	ructures (abutments+wingwalls)	86-68140	2,100	YD^3	\$50.00	\$105,000.00	
			uctures (abutments+wingwalls)	86-68140	1,900	YD^3	Included above	,,	
			around structures (abutments+ww)	86-68140	1,900	YD^3	Included above		
		'	,		,				
		diameter drilled s connected to ste stem wall to form	at type abutment supported on two, 6-foot shafts. Wingwalls (~33'L x 34'H x 3'T)are m wall and extend back, perpendicular to a "box" that contains and supports fill and e (similar to the existing Doney Creek UPRR						
		· ·	outment 1, f'c = 4,000 psi						
		Substructure	e (abutment and wingwalls)	86-68140	500	YD^3	\$1,200.00	\$600,000.00	
			andle cementatious materials (.282T/cy)	86-68140	141	Tons	Included above		
		Furnishing 8	handling epoxy coated reinforcement	86-68140	125,000	LBS	\$2.40	\$300,000.00	
			bs/cy (fy = 60 ksi)					·	
		Drilled Shafts							
		6'-0" Diamet	er @ abutments, A _c = 28.27 ft ² /lf	86-68140	78	LF	\$3,800.00	\$296,400.00	
		removal of water reinforcement an	mobilization for drilling, drilling, casing and if required, cement,, concrete, and integrity testing. Drilled shaft require 82 cons cement, and 37,000 lbs epoxy coated 450 lbs/cy).						
		,	for drilled shaft (inside casing)	86-68140	82	YD ³	Included above		
			SUBTOTAL THIS SHEET		- J <u>-</u>		1212222	\$1,301,400.00	
		·	QUANTITIES				PRICES	. ,,	
вү			CHECKED	вү			CHECKED		
Roman M			Jesus G. Romero, PE	Jeff Morris				om - 7/29/10	
DATE PR)	PEER REVIEW / DATE	DATE PREPAR	ED		PEER REVIEW		
4/16/2010)		Nick Clough, PE	07/23/10			Dan Donal	dson - 8/30/10	

BUREAU OF		TION	LOTHINATE WORK					SHEE1_2_ UF13
FEATU				PROJECT:				
Shasta	Lake	Water Resour	ces Investigation		Central Val	ley Proj	ect - CA	
Feasib	ility S	tudy			Shasta Div	ision		
Sacrar	mento	2 nd Crossing	UPRR Bridge	WOID:	SHAEF	ESTIM	ATE LEVEL:	Feasibility
				REGION:	MP	UNIT P	RICE LEVEL:	Apr-10
		Most	Probable					
			18.5-ft Dam Raise					
∟ 	Σ							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		12-foot & 16-foot location) sockete on Shasta Dam f	nsist of a single column/drilled shaft (8-foot, diameter depending on it's height and d into bedrock. The reservoir water surface luctuates throughout the year. An Elevation imed for drilled shaft construction.					
		column el 1079.5 (including drilled shaft can be cons	A_c = 50.27 ft ² /ft, V_c = 1.9 cy/lf. (Top of prilled shaft tip El. 973.0'). Overall length shaft), $L_p \sim 106.5$ lf. This column/drilled structed entirely out of the influence of					
		water surface El.	1012.5.					
		Structural conci	ete for pier cap, f'c = 4,000 psi					
		Pier cap is 2	5' wide by 14' thick by 22.5' high	86-68140	290	YD^3	\$660.00	\$191,400.00
		Furnish & ha	indle cementatious materials (.282T/cy)	86-68140	82	Tons	Included above	
		Furnishing &	handling epoxy coated reinforcement	86-68140	87,000	LBS	\$2.40	\$208,800.00
		@ 300	bs/cy (fy = 60 ksi)					
			rete for pier (above OGS, L _c = 64 lf), f'c =	86-68140	122	YD ³	\$1,600.00	\$195,200.00
		4,000 psi).						
		Furnish & ha	ndle cementatious materials (.282T/cy)	86-68140	34	Tons	Included above	
		Furnishing &	handling epoxy coated reinforcement	86-68140	42,700	LBS	\$2.40	\$102,480.00
		@ 350	bs/cy (fy = 60 ksi)					
		D 101 6 6						
		Drilled Shaft, f'c		00 00440	40		ΦE 000 00	#24F 000 00
			th below OGS is 42.5 lf. nobilization for drilling, drilling, casing and	86-68140	43	LF	\$5,000.00	\$215,000.00
		removal of water and integrity testi	if required, cement concrete, reinforcement ng drilled shaft require 82 cy concrete, 23 28,000 lbs epoxy coated reinforcement					
		Rock excavation	for drilled shaft (inside casing)	86-68140	82	YD ³	Included above	
			SUBTOTAL THIS SHEET					\$912,880.00
			QUANTITIES				PRICES	Ψο 12,000.00
вү		-		вү			CHECKED	
Roman M.	Koltuniu	ık, P.E.	Jesus G. Romero, PE	Jeff Morris			Kelly Brom	- 7/29/10
DATE PRI			PEER REVIEW / DATE	DATE PREPAR	ED		PEER REVIEW	
4/16/2010			Nick Clough, PE	07/23/10			Dan Donaldso	on - 8/30/10

ESTIMATE WORKSHEET

SHEET_3_ OF __13__

BUREAU OF	RECLAMA	TION ESTIMATE WORK	SUEEI				SHEET_3_ OF13
FEAT	URE:		PROJECT:				
Shasta	a Lake	Water Resources Investigation		Central Val	ley Proj	ect - CA	
Feasik	oility S	tudy		Shasta Divi	ision		
Sacra	mento	o 2 nd Crossing UPRR Bridge	WOID:	SHAEF	ESTIM.	ATE LEVEL:	Feasibility
			REGION:	MP	UNIT P	RICE LEVEL:	Apr-10
		Most Probable					
		18.5-ft Dam Raise					
PLANT ACCOUNT	РАҮ ІТЕМ	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
-							
		PIER 2 - ϕ = 12', A _c = 113.1 ft2/ft, V _c = 4.2 cy/lf. (Top of column el 1079.0, Drilled shaft tip El. 940.0'). Overall length (including drilled shaft), Lp ~ 139.0 lf.					
		Structural concrete for pier cap, f'c = 4,000 psi					
		Pier cap is 25' wide by 14' thick by 21' high	86-68140	275	YD^3	\$1,200.00	\$330,000.00
		Furnish & handle cementatious materials (.282T/cy)	86-68140	78	Tons	Included above	
		Furnishing & handling epoxy coated reinforcement	86-68140	82,500	LBS	\$3.90	\$321,750.00
		@ 300 lbs/cy (fy = 60 ksi)					
		Structural concrete for pier (above El. 1012.5, L = 66.5 lf), f'c = 4,000 psi).	86-68140	280	YD ³	\$1,400.00	\$392,000.00
		Furnish & handle cementatious materials (.282T/cy)	86-68140	79	Tons	Included above	
		Furnishing & handling epoxy coated reinforcement	86-68140	70,000	LBS	\$3.90	\$273,000.00
		@ 250 lbs/cy (fy = 60 ksi)					
		Structural concrete for pier (below El. 1012.5, L = 12.5 lf), f'c = 4,000 psi).	86-68140	53	YD ³	\$370.00	\$19,610.00
		Furnish & handle cementatious materials (.282T/cy)	86-68140	15	Tons	Included above	
		Furnishing & handling epoxy coated reinforcement	86-68140	13,250	LBS	\$3.90	\$51,675.00
		@ 250 lbs/cy (fy = 60 ksi)					
		Drilled Shaft, f'c = 4,000 psi					
		Drilled shaft length below OGS is 60 lf.	86-68140	60	LF	\$15,500.00	\$930,000.00
		Cost/If includes mobilization for drilling, drilling, casing and removal of water if required, cement concrete, reinforcement and integrity testing drilled shaft require 252 cy concrete, 71					
		tons cement, and 63,000 lbs epoxy coated reinforcement (250 lbs/cy).					
		Rock excavation for drilled shaft (inside casing)	86-68140	250	YD ³	Included above	
	SUBTOTAL THIS SHEET						\$2,318,035.00
		QUANTITIES				PRICES	
BY		CHECKED	BY			CHECKED	
Roman M			Jeff Morris			Kelly Brom	ı - 7/29/10
DATE PR			DATE PREPAR	ED		PEER REVIEW	
4/16/2010)	Nick Clough, PE	07/23/10			Dan Donalds	on - 8/30/10

SHEET_4_ OF __13__

BUREAU OF RECLAMATION ESTIMATE WORKSHEET

FEATURE: PROJECT: Shasta Lake Water Resources Investigation **Central Valley Project - CA** Feasibility Study **Shasta Division** SHAEF Sacramento 2nd Crossing UPRR Bridge WOID: **ESTIMATE LEVEL: Feasibility** REGION: MP UNIT PRICE LEVEL: Apr-10 **Most Probable** 18.5-ft Dam Raise PAY ITEM DESCRIPTION CODE QUANTITY UNIT UNIT PRICE **AMOUNT PIER 3** - φ = 16', A_c = 201.6 ft2/ft, V_c = 7.5 cy/lf. (Top of column el 1081.7, Drilled shaft tip El. 859.0'). Overall length (including drilled shaft), Lp ~ 223.0 lf. Structural concrete for pier cap, f'c = 4,000 psi YD^3 Pier cap is 25' wide by 18' thick by 12' high 86-68140 200 \$1,200.00 \$240,000.00 Furnish & handle cementatious materials (.282T/cy) 86-68140 Tons Included above 56 Furnishing & handling epoxy coated reinforcement 86-68140 60,000 LBS \$4.00 \$240,000.00 @ 300 lbs/cy (fy = 60 ksi)Structural concrete for pier (above El. 1012.5, L = 69 lf), YD^3 86-68140 520 \$1,100.00 \$572,000.00 f'c = 4,000 psi). Furnish & handle cementatious materials (.282T/cy) 86-68140 Included above 147 Tons Furnishing & handling epoxy coated reinforcement 86-68140 143,000 LBS \$572,000.00 \$4.00 @ 275 lbs/cy (fy = 60 ksi) Structural concrete for pier (below El. 1012.5, L = 84.0 lf), 86-68140 630 YD^3 \$380.00 \$239,400.00 f'c = 4,000 psi).Furnish & handle cementatious materials (.282T/cv) 86-68140 178 Tons Included above Furnishing & handling epoxy coated reinforcement 86-68140 173,250 \$693,000.00 LBS \$4.00 @ 275 lbs/cy (fy = 60 ksi) Drilled Shaft, f'c = 4,000 psi Drilled shaft length below OGS is 70 lf. 86-68140 70 LF \$31,000.00 \$2,170,000.00 Cost/If includes mobilization for drilling, drilling, casing and removal of water if required, cement concrete, reinforcement and integrity testing drilled shaft require 525 cy concrete, 148 tons cement, and 144,000 lbs epoxy coated reinforcement (275 lbs/cy). Rock excavation for drilled shaft (inside casing) 86-68140 525 YD^3 Included above **SUBTOTAL THIS SHEET** \$4,726,400.00 **QUANTITIES PRICES** CHECKED ΒY CHECKED Roman M. Koltuniuk, P.E. Jesus G. Romero, PE Jeff Morris Kelly Brom - 7/29/10 PEER REVIEW / DATE DATE PREPARED DATE PREPARED PEER REVIEW 4/16/2010 Nick Clough, PE 07/23/10 Dan Donaldson - 8/30/10

ESTIMATE WORKSHEET

BUREAU OF	RECLAMA	ATION	ESTIMATE WORK	SHEET				SHEET_5_ OF13
FEAT				PROJECT:				
Shasta Feasib			ces Investigation					
	-	o 2 nd Crossing	UPRR Bridge	WOID:	SHAEF ESTIMA		ATE LEVEL:	Feasibility
				REGION:	MP	UNIT P	RICE LEVEL:	Apr-10
		Most	Probable					
			18.5-ft Dam Raise					
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		column el 1081.7 (including drilled	A_c = 201.6 ft2/ft, V_c = 7.5 cy/lf. (Top of , Drilled shaft tip El. 834.0'). Overall length shaft), Lp ~ 248.0 lf.					
			ete for pier cap, f'c = 4,000 psi			3		
			5' wide by 18' thick by 12' high	86-68140	200	YD ³	\$1,200.00	\$240,000.00
			ndle cementatious materials (.282T/cy)	86-68140	56	Tons	Included above	#0.40.000.00
			handling epoxy coated reinforcement os/cy (fy = 60 ksi)	86-68140	60,000	LBS	\$4.00	\$240,000.00
		Structural concr	rete for pier (above El. 1012.5, L = 69 lf),	86-68140	520	YD ³	\$1,000.00	\$520,000.00
		Furnish & ha	ndle cementatious materials (.282T/cy)	86-68140	147	Tons	Included above	
		Furnishing &	handling epoxy coated reinforcement	86-68140	143,000	LBS	\$4.00	\$572,000.00
		@ 275	os/cy (fy = 60 ksi)					
		Structural concr	rete for pier (below El. 1012.5, L = 109.0).	86-68140	820	YD ³	\$380.00	\$311,600.00
		Furnish & ha	ndle cementatious materials (.282T/cy)	86-68140	231	Tons	Included above	
		Furnishing &	handling epoxy coated reinforcement	86-68140	225,500	LBS	\$4.00	\$902,000.00
		@ 275	os/cy (fy = 60 ksi)					
		Drilled Shaft, f'c	= 4,000 psi					
			th below OGS is 70 lf.	86-68140	70	LF	\$31,000.00	\$2,170,000.00
		removal of water and integrity testi	nobilization for drilling, drilling, casing and if required, cement concrete, reinforcement ng drilled shaft require 525 cy concrete, and 144,000 lbs epoxy coated 75 lbs/cy).					
		Rock excavation	for drilled shaft (inside casing)	86-68140	525	YD ³	Included above	
			SUBTOTAL THIS SHEET					\$4,955,600.00
		G	UANTITIES				PRICES	
BY			CHECKED	BY			CHECKED	
Roman M			Jesus G. Romero, PE	Jeff Morris	FD.		Kelly Brom	- 7/29/10
			PEER REVIEW / DATE Nick Clough, PE	DATE PREPAR 07/23/10	Eυ		PEER REVIEW Dan Donalds	0/20/40

ESTIMATE WORKSHEET

SHEET_6_ OF __13_

BUREAU OF	RECLAMA	TION	ESTIMATE WORK	2HEE I				SHEET_6_ OF13	
FEAT	URE:			PROJECT:					
Shasta	a Lake	Water Resource	ces Investigation		Central Val	ley Proj	ect - CA		
Feasib	oility S	tudy			Shasta Divi	sion			
		2 nd Crossing	UPRR Bridge	WOID:	SHAEF	ESTIM.	ATE LEVEL:	Feasibility	
0 0.01 0				REGION:	MP	UNIT P	RICE LEVEL:	Apr-10	
		Most	Probable						
			18.5-ft Dam Raise						
⊨	5		TOTO TO DATE TRAILED						
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
		column el 1080.7	A_c = 201.6 ft2/ft, V_c = 7.5 cy/lf. (Top of , Drilled shaft tip El. 834.0'). Overall length shaft), Lp ~ 247.0 lf.						
		Structural concr	rete for pier cap, f'c = 4,000 psi						
		Pier cap is 2	5' wide by 18' thick by 12' high	86-68140	200	YD^3	\$1,200.00	\$240,000.00	
		Furnish & ha	ndle cementatious materials (.282T/cy)	86-68140	56	Tons	Included above		
		Furnishing &	handling epoxy coated reinforcement	86-68140	60,000	LBS	\$4.00	\$240,000.00	
		@ 300	bs/cy (fy = 60 ksi)						
		Structural concr	rete for pier (above El. 1012.5, L = 68 lf),	86-68140	510	YD ³	\$1,000.00	\$510,000.00	
		Furnish & ha	indle cementatious materials (.282T/cy)	86-68140	144	Tons	Included above		
			handling epoxy coated reinforcement	86-68140	140,250	LBS	\$4.00	\$561,000.00	
			bs/cy (fy = 60 ksi)		·				
		Structural concr	rete for pier (below El. 1012.5, L = 109.0).	86-68140	820	YD ³	\$380.00	\$311,600.00	
		Furnish & ha	ndle cementatious materials (.282T/cy)	86-68140	231	Tons	Included above		
		Furnishing &	handling epoxy coated reinforcement	86-68140	225,500	LBS	\$4.00	\$902,000.00	
		@ 275	bs/cy (fy = 60 ksi)						
		Drilled Shaft, f'c	= 4,000 psi						
			th below OGS is 70 lf.	86-68140	70	LF	\$31,000.00	\$2,170,000.00	
			nobilization for drilling, drilling, casing and if required, cement concrete, reinforcement						
		and integrity testi	ng drilled shaft require 525 cy concrete, and 144,000 lbs epoxy coated						
		,	for drilled shaft (inside casing)	86-68140	525	YD ³	Included above		
			SUBTOTAL THIS SHEET					\$4,934,600.00	
		Q	UANTITIES				PRICES		
вү			CHECKED	вү			CHECKED		
Roman M	. Koltuniu	ık, P.E.	Jesus G. Romero, PE	Jeff Morris		_	Kelly Brom	ı - 7/29/10	
DATE PR	EPARED)	PEER REVIEW / DATE	DATE PREPAR	ED		PEER REVIEW		
4/16/2010)		Nick Clough, PE	07/23/10			Dan Donaldson - 8/30/10		

BUREAU OF		TION LOTHWATE WORL					SHEET_/_ UF _13_
FEAT Shasta Feasil	a Lake	e Water Resources Investigation	PROJECT:	Central Val	-	ect - CA	
		o 2 nd Crossing UPRR Bridge	WOID:	ATE LEVEL:	Feasibility		
Sacra	mento	D 2 Crossing OPKR Bridge	REGION:	SHAEF MP		RICE LEVEL:	Apr-10
		Most Probable	REGION.	IVIT	UNITE	RICE LEVEL.	Api-10
		18.5-ft Dam Raise					
—	-	10:3-it Daili Naise					
PLANT ACCOUNT	РАУ ІТЕМ	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		DIED C. 17 - 401 A - 004 C ft0/ft V - 7.5 cv/lf /Ton of					
		PIER 6 - ϕ = 16', A_c = 201.6 ft2/ft, V_c = 7.5 cy/lf. (Top of column el 1079.7, Drilled shaft tip El. 859.0'). Overall length (including drilled shaft), Lp ~ 221.0 lf.					
		Structural concrete for pier cap, f'c = 4,000 psi					
		Pier cap is 25' wide by 18' thick by 12' high	86-68140	200	YD^3	\$1,200.00	\$240,000.00
		Furnish & handle cementatious materials (.282T/cy)	86-68140	56	Tons	Included above	
		Furnishing & handling epoxy coated reinforcement	86-68140	60,000	LBS	\$4.00	\$240,000.00
		@ 300 lbs/cy (fy = 60 ksi)					
		Structural concrete for pier (above El. 1012.5, L = 67 lf), f'c = 4,000 psi).	86-68140	505	YD ³	\$1,100.00	\$555,500.00
		Furnish & handle cementatious materials (.282T/cy)	86-68140	142	Tons	Included above	
		Furnishing & handling epoxy coated reinforcement	86-68140	138,875	LBS	\$4.00	\$555,500.00
		@ 275 lbs/cy (fy = 60 ksi)					
		Structural concrete for pier (below El. 1012.5, L = 84.0 lf), f'c = 4,000 psi).	86-68140	630	YD ³	\$380.00	\$239,400.00
		Furnish & handle cementatious materials (.282T/cy)	86-68140	178	Tons	Included above	
		Furnishing & handling epoxy coated reinforcement	86-68140	173,250	LBS	\$4.00	\$693,000.00
		@ 275 lbs/cy (fy = 60 ksi)					
		Drilled Shaft, f'c = 4,000 psi					
		Drilled shaft length below OGS is 70 lf. Cost/lf includes mobilization for drilling, drilling, casing and removal of water if required, cement concrete, reinforcement and integrity testing drilled shaft require 525 cy concrete, 148 tons cement, and 144,000 lbs epoxy coated reinforcement (275 lbs/cy).	86-68140	70	LF	\$31,000.00	\$2,170,000.00
		Rock excavation for drilled shaft (inside casing)	86-68140	525	YD ³	Included above	
		SUBTOTAL THIS SHEET	Γ				\$4,693,400.00
	QUANTITIES					PRICES	
вү		CHECKED	вү			CHECKED	
Roman M	I. Koltuniı	uk, P.E. Jesus G. Romero, PE	Jeff Morris			Kelly Brom	- 7/29/10
DATE PR	REPARED	PEER REVIEW / DATE	DATE PREPAR	ED		PEER REVIEW	
4/16/2010)	Nick Clough, PE	07/23/10			Dan Donalds	on - 8/30/10

SHEET_8_ OF __13__

BUREAU OF RECLAMATION ESTIMATE WORKSHEET

FEATURE: PROJECT: Shasta Lake Water Resources Investigation **Central Valley Project - CA** Feasibility Study **Shasta Division** SHAEF Sacramento 2nd Crossing UPRR Bridge WOID: **ESTIMATE LEVEL: Feasibility** REGION: MP UNIT PRICE LEVEL: Apr-10 **Most Probable** 18.5-ft Dam Raise PAY ITEM DESCRIPTION CODE QUANTITY UNIT UNIT PRICE **AMOUNT PIER 7** - φ = 12', A_c = 113.1 ft2/ft, V_c = 4.2 cy/lf. (Top of column el 1079.0, Drilled shaft tip El. 940.0'). Overall length (including drilled shaft), Lp ~ 139.0 lf. Structural concrete for pier cap, f'c = 4,000 psi YD^3 Pier cap is 25' wide by 14' thick by 13.5' high 86-68140 175 \$1,200.00 \$210,000.00 Furnish & handle cementatious materials (.282T/cy) 86-68140 Tons Included above 49 Furnishing & handling epoxy coated reinforcement 86-68140 52,500 LBS \$3.90 \$204,750.00 @ 300 lbs/cy (fy = 60 ksi) Structural concrete for pier (above El. 1012.5, L = 66 lf), YD^3 86-68140 280 \$1,400.00 \$392,000.00 f'c = 4,000 psi). Furnish & handle cementatious materials (.282T/cy) 86-68140 79 Tons Included above Furnishing & handling epoxy coated reinforcement 86-68140 70,000 LBS \$273,000.00 \$3.90 @ 250 lbs/cy (fy = 60 ksi) Structural concrete for pier (below El. 1012.5, L = 13.0 lf), 86-68140 55 YD^3 \$370.00 \$20,350.00 f'c = 4,000 psi).Furnish & handle cementatious materials (.282T/cv) 86-68140 16 Tons Included above 13,750 \$53,625.00 Furnishing & handling epoxy coated reinforcement 86-68140 LBS \$3.90 @ 250 lbs/cy (fy = 60 ksi) Drilled Shaft, f'c = 4,000 psi Drilled shaft length below OGS is 60 lf. 86-68140 60 LF \$15,500.00 \$930,000.00 Cost/If includes mobilization for drilling, drilling, casing and removal of water if required, cement concrete, reinforcement and integrity testing drilled shaft require 252 cy concrete, 71 tons cement, and 63,000 lbs epoxy coated reinforcement (250 lbs/cy). 86-68140 YD^3 Rock excavation for drilled shaft (inside casing) 250 Included above **SUBTOTAL THIS SHEET** \$2,083,725.00 **PRICES QUANTITIES** CHECKED ΒY CHECKED Kelly Brom - 7/29/10 Roman M. Koltuniuk, P.E. Jesus G. Romero, PE Jeff Morris DATE PREPARED PEER REVIEW / DATE DATE PREPARED PEER REVIEW 4/16/2010 Nick Clough, PE 07/23/10 Dan Donaldson - 8/30/10

ESTIMATE WORKSHEET

SHEET_9_ OF __13__

BUREAU OF		ATION ESTIMATE WORK	SHEET				SHEET_9_ OF13	
FEAT	URE:		PROJECT:					
Shasta Feasil		e Water Resources Investigation		Central Val Shasta Divi		ect - CA		
		o 2 nd Crossing UPRR Bridge	WOID:	SHAEF	_	ATE LEVEL:	Feasibility	
Odora	mont	o E Grossing of the Bridge	REGION:	MP		RICE LEVEL:	Apr-10	
		Most Probable						
		18.5-ft Dam Raise						
⊨	5	Total Real Plans						
PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
		DIED 0 01 A - 50 0 4 50 5 V - 4 0 mills /Tan of						
		PIER 8 - ϕ = 8', A_c = 50.3.1 ft2/ft, V_c = 1.9 cy/lf. (Top of						
		column el 1079.0, Drilled shaft tip El. 973.0'). Overall length (including drilled shaft), Lp ~ 106.0 lf. This column/drilled						
		shaft can be constructed entirely out of the influence of						
		water surface El. 1012.5.						
		Structural concrete for pier cap, f'c = 4,000 psi						
		Pier cap is 25' wide by 14' thick by 17' high	86-68140	220	YD^3	\$660.00	\$145,200.00	
		Furnish & handle cementatious materials (.282T/cy)	86-68140	62	Tons	Included above		
		Furnishing & handling epoxy coated reinforcement	86-68140	66,000	LBS	\$2.40	\$158,400.00	
		@ 300 lbs/cy (fy = 60 ksi)						
		Structural concrete for pier (above OGS, L = 36 lf), f'c = 4,000 psi).	86-68140	68	YD ³	\$1,600.00	\$108,800.00	
		Furnish & handle cementatious materials (.282T/cy)	86-68140	19	Tons	Included above		
		Furnishing & handling epoxy coated reinforcement	86-68140	23,800	LBS	\$2.40	\$57,120.00	
		@ 350 lbs/cy (fy = 60 ksi)						
		Drilled Shaft, f'c = 4,000 psi						
		Drilled shaft length below OGS is 70 lf.	86-68140	70	LF	\$5,000.00	\$350,000.00	
		Cost/lf includes mobilization for drilling, drilling, casing and				+ 2,22222	+ ,	
		removal of water if required, cement concrete, reinforcement						
		and integrity testing drilled shaft require 135 cy concrete, 38 tons cement, and 48,000 lbs epoxy coated reinforcement						
		(350 lbs/cy).						
		Rock excavation for drilled shaft (inside casing)	86-68140	135	YD ³	Included above		
		1						
						+		
		SUBTOTAL THIS SHEET					\$819,520.00	
		QUANTITIES				PRICES		
вү	Y CHECKED			BY CHECKED				
	man M. Koltuniuk, P.E. Jesus G. Romero, PE			Jeff Morris Kelly Brom - 7/29/10				
DATE PR			DATE PREPARED PEER REVIEW					
4/16/2010)	Nick Clough, PE	07/23/10 Dan Donaldson - 8/30/10					

ESTIMATE WORKSHEET

SHEET__10__ OF __13__

BUREAU OF	- RECLAMA	ATION	ESTIMATE WORK	SHEET				SHEET10 OF13
FEAT	URE:			PROJECT:				
Shasta	a Lake	Water Resource	ces Investigation		Central Val	ley Proj	ect - CA	
Feasib	oility S	tudy	-		Shasta Divi	ision		
Sacra	mento	2 nd Crossing	UPRR Bridge	WOID:	SHAEF	ESTIM.	ATE LEVEL:	Feasibility
				REGION:	MP	UNIT P	RICE LEVEL:	Apr-10
		Most	Probable					·
			18.5-ft Dam Raise	:				
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		25'W), beam sea diameter drilled s connected to ster stem wall to form	Structure is stem wall (~50'H x 10'T x type abutment supported on two, 6-foot hafts. Wingwalls (~33'L x 40'H x 3'T) are m wall and extend back, perpendicular to a "box" that contains and supports fill and (similar to the existing bridge).					
		, ,	utment 2, f'c = 4,000 psi					
			(abutment and wingwalls)	86-68140	660	YD^3	\$1,200.00	\$792,000.00
			ndle cementatious materials (.282T/cy)	86-68140	186	Tons	Included above	ψ. σ <u>2</u> ,σσσ.σσ
			handling epoxy coated reinforcement	86-68140	165,000	LBS	\$2.40	\$396,000.00
			os/cy (fy = 60 ksi)	00 00	100,000		\$2.10	4000,000.00
		<u>@ 2</u> 00 !!	ourcy (iy to itol)					
		Drilled Shafts						
			er @ abutments, A _c = 28.3 ft ²	86-68140	51	LF	\$3,800.00	\$193,800.00
		removal of water reinforcement and cy concrete, 15 to	nobilization for drilling, drilling, casing and if required, cement,, concrete, d integrity testing. Drilled shaft require 54 ons cement, and 24,000 lbs epoxy coated					
		reinforcement (~4	**			3		
		Rock excavation	for drilled shaft (inside casing)	86-68140	54	YD ³	Included above	
		SUPERSTRUCT	URE					
		Steel for girders,	Fy = 50 ksi, ASTM A709W	86-68140	4,750,000	LBS	\$3.80	\$18,050,000.00
		Structural concre	te, f' _c = 4,000 psi	86-68140	650	YD³	\$1,800.00	\$1,170,000.00
		Furnishing and ha	andling cementatious material	86-68140	183	Tons	Included above	
		<u> </u>	acing reinforcment bars (300 lbs/cy)	86-68140	195,000	LBS	\$2.60	\$507,000.00
		(7) 30 1.01,	SUBTOTAL THIS SHEET	•				\$21,108,800.00
		·	UANTITIES				PRICES	. , ,
BY				вү			CHECKED	
Roman M	Roman M. Koltuniuk, P.E. Jesus G. Romero, PE		Jeff Morris			Kelly Brom - 7/29/10		
	DATE PREPARED PEER REVIEW / DATE		DATE PREPARED PEER REVIEW					
4/16/2010)		Nick Clough, PE	07/23/10			Dan Donalds	son - 8/30/10

BUREAU OF	F RECLAMA	ATION	ESTIMATE WORK	SHEET				SHEET11 OF13
FEAT	URE:			PROJECT:				
Shasta Feasik			ces Investigation		Central Vall Shasta Divi		ect - CA	
		2 nd Crossing	UPRR Bridge	WOID:	SHAEF	ESTIM.	ATE LEVEL:	Feasibility
Guora		o cooling	or an Bridge	REGION:	MP		RICE LEVEL:	Apr-10
		Most	Probable					·
			18.5-ft Dam Raise					
ΓÄ	Σ							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Removal of Exis	ting Concrete and Reinforcement	86-68140	100	YD^3	\$500.00	\$50,000.00
		in Abutment 1						
		Remove in b	locks weighing approximately 20 tons					
		(A block with	dimensions of 6'5" x 6'5" x 6'5"					
		weighs 19.8	tons). Remove Abutment down to 3'					
		below ground	d surface.					
		Removal of Exis	ting Concrete and Reinforcement	86-68140	390	YD^3	\$380.00	\$148,200.00
		in Pier 1						
		Remove in b	locks weighing approximately 20 tons					
		(A block with	dimensions of 6'5" x 6'5" x 6'5"					
		weighs 19.8	tons). Remove Pier down to 3'					
		below ground	d surface.					
		Removal of Exis	ting Concrete and Reinforcement	86-68140	1,750	YD^3	\$710.00	\$1,242,500.00
		in Pier 2						
		Remove in b	locks weighing approximately 20 tons					
		(A block with	dimensions of 6'5" x 6'5" x 6'5"					
		weighs 19.8	tons). Remove Pier down to 3'					
		below ground	d surface.					
			ting Concrete and Reinforcement	86-68140	5,500	YD ³	\$1,300.00	\$7,150,000.00
		in Pier 3						
			locks weighing approximately 20 tons					
		,	dimensions of 6'5" x 6'5" x 6'5"					
			tons). Remove Pier down to 3'					
		below ground						•
			SUBTOTAL THIS SHEET					\$8,590,700.00
		C	UANTITIES				PRICES	
BY	CHECKED		BY			CHECKED		
	arly M. Wegher Joseph M. Gemperline		Jeff Morris Kelly Brom - 7/29/10			- 7/29/10		
	TE PREPARED PEER REVIEW / DATE			DATE PREPARED PEER REVIEW				
4/21/2010	/21/2010 Jesus G. Romero P.E.			07/23/10			Dan Donalds	on - 8/30/10

BUREAU OF	RECLAMA	TION ESTIMATE WORK	SHEET				SHEET12 OF13
FEAT	URE:		PROJECT:				
Shasta	a Lake	Water Resources Investigation		Central Val	ley Proj	ect - CA	
Feasil				Shasta Div			
Sacra	mento	o 2 nd Crossing UPRR Bridge	WOID:	SHAEF	ESTIM	ATE LEVEL:	Feasibility
			REGION:	MP	UNIT P	RICE LEVEL:	Apr-10
		Most Probable					
		18.5-ft Dam Raise					
PLANT ACCOUNT	РАҮ ІТЕМ	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Removal of Existing Concrete and Reinforcement	86-68140	5,400	YD^3	\$1,300.00	\$7,020,000.00
		in Pier 4		,		, , , , , , , , , , , , , , , , , , , ,	, , , , , , , , , , , , , , , , , , , ,
		Remove in blocks weighing approximately 20 tons					
		(A block with dimensions of 6'5" x 6'5" x 6'5"					
		weighs 19.8 tons). Remove Pier down to 3'					
		below ground surface.					
		Removal of Existing Concrete and Reinforcement	86-68140	1,750	YD^3	\$710.00	\$1,242,500.00
		in Pier 5					
		Remove in blocks weighing approximately 20 tons					
		(A block with dimensions of 6'5" x 6'5" x 6'5"					
		weighs 19.8 tons). Remove Pier down to 3'					
		below ground surface.					
		Removal of Existing Concrete and Reinforcement	86-68140	350	YD ³	\$380.00	\$133,000.00
		in Pier 6					
		Remove in blocks weighing approximately 20 tons					
		(A block with dimensions of 6'5" x 6'5" x 6'5"					
		weighs 19.8 tons). Remove Pier down to 3'					
		below ground surface.					
		Removal of Existing Concrete and Reinforcement	86-68140	74	YD^3	\$500.00	\$37,000.00
		in Abutment 2					
		Remove in blocks weighing approximately 20 tons					
		(A block with dimensions of 6'5" x 6'5" x 6'5"					
		weighs 19.8 tons). Remove Abutment down to 3'					
		below ground surface.					
		SUBTOTAL THIS SHEET					\$8,432,500.00
		QUANTITIES				PRICES	
вү		CHECKED	BY			CHECKED	
Carly M. \		Joseph M. Gemperline	Jeff Morris			Kelly Brom	- 7/29/10
	TE PREPARED PEER REVIEW / DATE		DATE PREPARED PEER REVIEW				
4/21/2010)	Jesus G. Romero P.E.	07/23/10			Dan Donalds	on - 8/30/10

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_13_ OF _13_

BUREAU OF	RECLAMA	TION ESTIMATE WORK	SUEEI				SHEET13 OF13
FEAT	URE:		PROJECT:				
Shasta	a Lake	Water Resources Investigation		Central Val	ley Proj	ect - CA	
Feasik				Shasta Divi	sion		
Sacra	mento	o 2 nd Crossing UPRR Bridge	WOID:	SHAEF	ESTIM/	ATE LEVEL:	Feasibility
			REGION:	MP	UNIT P	RICE LEVEL:	Apr-10
		Most Probable					
		18.5-ft Dam Raise					
PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Removal of Existing Steel Truss and Girder Bridge	86-68140	3,300,000	LBS	\$0.40	\$1,320,000.00
		Bridge approach spans consist of built up girders and the	e main spans	consist of bu	ilt up tru	ss members.	
		All members have riveted connections. The structural ste	eel grade is ur	nknown, but o	can assu	ıme Fy=33 ksi.	
		The existing steel appears to be painted.					
		SUBTOTAL THIS SHEET					\$1,320,000.00
		QUANTITIES				PRICES	
BY		CHECKED	вү			CHECKED	
Carly M. Wegher Joseph M. Gemperline Je		Jeff Morris			Kelly Bron	า - 7/29/10	
DATE PR			DATE PREPAR	ED		PEER REVIEW	
4/21/2010)	Jesus G. Romero P.E.	07/23/10			Dan Donalds	son - 8/30/10

ESTIMATE WORKSHEET

SUMMARY SHEET 1 OF 1

BUREAU OF	RECLAMA	TION	ESTIMATE WOR					SUMMARY SHEET 1 OF 1
FEAT	URE:			PROJECT	Γ:			
Shasta	a Lake	Water Resource	ces Investigation		Central Va	lley Proj	ect - CA	
Feasil	oility St	tudy	_		Shasta Div	ision		
Visito	r Cent	er Replaceme	nt	WOID:	SHAEF	ESTIM.	ATE LEVEL:	Feasibility
		•		REGION:	MP	UNIT P	RICE LEVEL:	Apr-10
		Most	Probable					
Sumn	nary		18.5-ft Dam Rai	se				
∟ \	M							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Sheet 1 - Site Wo	ork					156,210.00
		Sheet 2 - Site Wo						585,225.00
		Sheet 3 - Site Wo	ork					1,468,370.00
		Sheet 4 - Structur						378,500.00
		Sheet 5 - Structur						661,923.00
		Sheet 6 - Structur						447,473.60
		Sheet 7 - Structur	re					392,310.00
		Sheet 8 - Structur						1,167,850.00
		Sheet 9 - Pedestr						259,440.00
		Subtotal 1						\$5,517,301.60
		Mobilization		5%	+/-			\$280,000.00
		Subtotal 1 with I	Mobilization					\$5,797,301.60
		Escalation to	Notice to Proceed (NTP): None assume	ed. 0%				\$0.00
			ototal 1 with Mobilization + Escalation t					\$5,797,301.60
		Design Conti	ingencies	15%	+/-			\$869,360.40
		-	ototal 2 + Design Contingencies					\$6,666,662.00
		Allowance fo	r Procurement Strategies (APS)	2.0%	+/-			\$133,338.00
		Type of	solicitation assumed is: Request for Prop	osal				
		Subtotal 4 = Sub						\$6,800,000.00
		CONTRACT COS	ST					\$6,800,000.00
		Construction	Contingencies	20%	+/-			\$1,400,000.00
		FIELD COST	•					\$8,200,000.00
			from published price level to notice to pro				·	
			iate use and terminology, see Reclamatio	on Manual, Dire	ctives and St			and 09-03.
			UANTITIES				PRICES	
BY	Joe Gem	•	CHECKED	вү			CHECKED	
	J Neumaier JF Pattie			Greg Akins Kelly Brom			lly Brom	
DATE PR	REPARED		PEER REVIEW	DATE PREPARED PEER REVIEW				
				02/03/11			Dan I	Donaldson

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_1_ OF _9_

FEAT	IIRF:	TION	LOTHWATE WO	PROJECT:				SHEET_1_ OF _9_
Shasta			ces Investigation	r Robert	Central Val	-	ect - CA	
		er Replaceme	nt	WOID:	SHAEF		ATE LEVEL:	Feasibility
		•		REGION:	MP	UNIT P	RICE LEVEL:	Apr-10
		Most	Probable					
			18.5-ft Dam Ra	ise				
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Site Work Not in	cluded in these quatities:					
		Embankment fo	or dam raise, parapet					
		wall, Shasta Da	m Blvd. re-alignment, traffic					
		signs, and cove	red Pedestrain bridge.					
	1	Strip 3" existing a	sphalt and recycle	86-68120	1,420	yd3	\$12.00	\$17,040.00
	2	Strip 6" existing a	ggregate base material and					
		recycle		86-68120	2,840	yd3	\$8.00	\$22,720.00
	3	Excavation for pa	rking lot sub-grade	86-68120	3,150	yd3	\$8.00	\$25,200.00
	4		ankment for parking lot					
		subgrade, usinç	g material from excavation	86-68120	3,150	yd3	\$10.00	\$31,500.0
	5		k for visitor center footings total excavation for footings)	86-68120	1,350	yd3	\$12.00	\$16,200.0
		(assume o/+ or	total excavation for footings)	00-00120	1,000	yuo	Ψ12.00	Ψ10,200.00
	6	Common excava	ion for visitor center footings					
		(assume 1/4 of	total excavation for footings)	86-68120	450	yd3	\$7.00	\$3,150.0
	7	Compacted back	fill for visitor center building	86-68120	1,100	yd3	\$10.00	\$11,000.0
	8	12" thick gravel fi	ll under building floor slab	86-68120	300	yd3	\$58.00	\$17,400.00
	9	Strip 6" topsoil an	d stockpile on site	86-68120	210	yd3	\$15.00	\$3,150.00
	10	Remove and disp	ose concrete flatwork					
		and curbing		86-68120	160	yd3	\$10.00	\$1,600.00
	11	Remove and disp	ose parking lot light poles,					
		bases, and buri	ed electrical lines	86-68120	25	ea	\$290.00	\$7,250.00
			SUBTOTAL THIS SH	EET				\$156,210.00
		Q	UANTITIES				PRICES	
вү	Y CHECKED		вү			CHECKED		
JF Pattie			J Neumaier		Greg Akins		Kelly B	rom
DATE PR	REPARED		PEER REVIEW	DATE PREPAR	ED		PEER REVIEW	
03/10/10	Al Bernstein PE			07/23/10		Dan Donaldso	n - 9/17/10	

BUREAU OF	RECLAMAT	TION	ESTIMATE WO	RKSHEET				SHEET_2_ OF9
FEAT				PROJECT:				
			ces Investigation		Central Val	-	ect - CA	
	oility St			WOLD	Shasta Divi		A T	- ""
Visito	r Cent	er Replaceme	nt	WOID: REGION:	SHAEF		ATE LEVEL:	Feasibility
		Most	Probable	REGION:	MP	UNITP	RICE LEVEL:	Apr-10
		MOSt	18.5-ft Dam Ra	nise				
<u> </u>	Σ		10.0 K Bam Ne					
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	12	6" thick Aggregat	e base material under asphalt					
		pavement and	concrete flatwork	86-68120	2,400	yd3	\$70.00	\$168,000.00
	13	Reinforced concr	ete flatwork. Batch plant					
		within 1 mile of	job site	86-68120	130	yd3	\$360.00	\$46,800.00
	14	3" thick asphalt c	oncrete pavement	86-68120	1,100	yd3	\$230.00	\$253,000.00
	15	Place topsoil fron	n site stockpile	86-68120	200	yd3	\$20.00	\$4,000.00
	16	Furnish and place	e topsoil, commercial source	86-68120	400	yd3	\$56.00	\$22,400.00
	17		density re-cycled polyethylene					
		1 1 7	lar to Hancor, Inc. type-S					
		15" diam.		86-68120	1,500	ft	\$20.00	\$30,000.00
	18		density re-cycled polyethylene t riser and drain grate, similar					
			- type-S. 6' length, 12" diam.	86-68120	15	ea	\$175.00	\$2,625.00
	19	15" diam. HDPE	flared end sections	86-68120	9	ea	\$100.00	\$900.00
	20	1"-6" diam. river r	rock	86-68120	600	yd3	\$67.00	\$40,200.00
	21	12"-24" diam, boi	ulders, from government source					
	21	within 1 mile	Gidoro, from government source	86-68120	300	yd3	\$10.00	\$3,000.00
	22	7'X6" pre-cast co	ncrete parking bumpers	86-68120	130	ea	\$110.00	\$14,300.00
			SUBTOTAL THIS SH	EET				\$585,225.00
			UANTITIES		<u> </u>		PRICES	<u> </u>
вү	BY CHECKED			BY			CHECKED	
JF Pattie J Neumaier			Greg Akins Kelly Brom			rom		
	ATE PREPARED PEER REVIEW			DATE PREPAR			PEER REVIEW	
03/10/10			Al Bernstein PE		07/23/10		Dan Donaldson	

ESTIMATE WORKSHEET

SHEET_3_ OF __9_

BUREAU OF			LOTIMATE WOL					SHEE1_3_ OF _9_
FEAT				PROJECT:				
Shasta Feasib			ces Investigation		Central Val Shasta Divi	-	ect - CA	
	•	er Replaceme	nt	WOID:	SHAEF	ESTIM	ATE LEVEL:	Feasibility
		•		REGION:	MP		RICE LEVEL:	Apr-10
		Most	Probable					
			18.5-ft Dam Rai	se				
PLANT ACCOUNT	РАУ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	23	2" caliper decidud	ous shade trees and staking	86-68120	65	ea	\$350.00	\$22,750.00
	24	1" caliper decidu	ous trees and staking	86-68120	45	ea	\$290.00	\$13,050.00
	25	6' height conifero	us trees and guying	86-68120	40	ea	\$340.00	\$13,600.00
	26		stem. 10 zone valves, vacuum					
		·	aterals, 450 pvc drip emitters	86-68120	1	LS	\$35,000.00	\$35,000.00
	27	Broadcast seedir	ng .	86-68120	45,000	ft2	\$0.08	\$3,600.00
	28	6" thick topsoil pl	aced on green roof	86-68120	70	ft2	\$23.00	\$1,610.00
	29	Metal parking sha	ade canopy structures	86-68120	14,720	ft2	\$20.00	\$294,400.00
	30	Solar panels mou	inted on parking canopies					
		·	electrical equipment	86-68120	11,800	ft2	\$65.00	\$767,000.00
	31	·	er, power, and communication					
		line hook-ups to 300 feet of visit	o existing building. Within or center	86-68120	1	LS	\$195,000.00	\$195,000.00
	32	Pole mounted pa	rking lot lighting, bases, and					
		buried power lir		86-68120	25	ea	\$4,700.00	\$117,500.00
	33	Paint striping on	asphalt pavement, 4" wide	86-68120	7,000	ft	\$0.62	\$4,340.00
	34	Accessible parkir	ng symbols on pavement	86-68120	10	ea	\$52.00	\$520.00
			SUBTOTAL THIS SHE	ET				\$1,468,370.00
		C	UANTITIES		•	_	PRICES	
BY	CHECKED			вү	0		CHECKED	
JF Pattie					Greg Akins		Kelly E	srom
03/10/10	ATE PREPARED PEER REVIEW 8/10/10 AI Bernstein PE			DATE PREPARED PEER REVIEW			naldson	
00/10/10			ALDOHIBIEH I L		07/23/10 Dan Donaldson			

ESTIMATE WORKSHEET

SHEET_4_ OF _9_

	F RECLAMA	TION	ESTIMATE WOR					SHEET_4_ OF9	
FEAT	URE:			PROJECT	•				
Shast	a Lake	Water Resour	ces Investigation		Central Val	lev Pro	iect - CA		
	bility S		gamen		Shasta Divi	-	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
		ter Replaceme	nt	WOID:	SHAEF	_	ATE LEVEL:	FEASIBILITY	
VISILO	or Cerri	ter Kepiaceille	iit.	REGION:	MP		LEVEL:	Apr-10	
		Moot	Droboble	REGION.	IVIF	PRICE	LEVEL.	Apr-10	
		IVIOST	Probable 40.5 # Davis Dai						
			18.5-ft Dam Rais	se			1		
PLANT ACCOUNT	JEM								
LAP CO	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
AO	4								
		VISITOR CENTE	R STRUCTURE	86-68120	Lump Sum				
		BUILDING DESC	CRIPTION -						
		The new 11,	000 square foot Visitor Center will be hom	ne to exhibit					
		spaces, arch	ival storage, a 200-seat theater/conference	ce space, a					
		•	nop/cashier counter, staff offices, meeting	•					
			k/vending areas, dam security offices, toil						
		,	ns, and a four-story elevator with enclosed						
			deck at the upper level. The building stru						
			of diverse shapes creating a serpentine fl						
			a two-story serrated pyramidal core. Sus	•					
			ent elements such as natural diffused ligh				+		
			materials, green vegetative roofs, solar p						
		building oriei	ntation will be incorporated into the overal	i design concep	t.				
		BUILDING MATE	ERIALS EXTERIOR-						
	4			00.00400	4.000	610	A 50.00	****	
	1	Glass Curta		86-68120	4,000	ft2	\$50.00	\$200,000.00	
			ght weight, multi-cavity insulating						
		glass. (north	& west theater walls)						
		Similar to:							
		Serious Mate							
		PH: 800-797	7-8159						
		Website: wv	vw.Serious Windows.com						
	2	Exterior Met	tal Composite Skin	86-68120	5,100	ft2	\$35.00	\$178,500.00	
		Natural meta	l composite panels						
		north wa	all_elevator tower - 1200						
		south wa	all_elevator tower - 900						
		east wal	l elevator tower - 1100						
		west wa	Il elevator tower - 1400						
			nection walls - 500						
		13.10. 3011							
		Similar to:							
			ectural Products 'Reynobond'						
		PH: 478-374	•				+		
			vw.alcoaarchitecturalproducts.com				+		
		vvensite. Wv	Sheet Subtotal				+	\$378,500.00	
			QUANTITIES				PRICES	ψυ ευσυ.υυ	
рУ				BY.					
вү		aale=	CHECKED	ВҮ	Ones: Alder		CHECKED		
		eumaier	JF Pattie		Greg Akins		Kelly Brom		
DATE PE	REPARED)	PEER REVIEW	DATE PREPAR			PEER REVIEW		
			Al Bernstein PE		112312010		7/23/2010 Dan Donaldson		

ESTIMATE WORKSHEET

SHEET_5_ OF _9_

BUREAU OF		ION	ESTIMATE WO					SHEET_5_ OF9
FEAT	URE:			PROJECT	:			
			ces Investigation		Central Val	-	ject - CA	
	oility St				Shasta Divi			
Visito	r Cent	er Replaceme	nt	WOID:	SHAEF		ATE LEVEL:	FEASIBILITY
				REGION:	MP	PRICE	LEVEL:	Apr-10
		Most	Probable					
			18.5-ft Dam Ra	aise				
μŻ	M							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		0 " 1						
		Continued						
		<u> </u>		00.00400	.=.	6	200.00	***
	3	Glass Windo		86-68120	370	lin.ft	\$60.00	\$22,200.00
			ective to match glass curtain wall.					
			tower - 185					
			II offices - 80					
		-	office wall - 80					
		Tower c	onnecting walls - 25					
		Exterior Dod	ors	86-68120				
	4	Glsass 8' hig	h x 36" wide, reflective		10	ea	\$5,000.00	\$50,000.00
	5	Steel, Insulat	ted 8'X36"		4	ea	\$3,200.00	\$12,800.00
		Interior Doo	rs	86-68120				
	6	Steel, 8'X36"			17	ea	\$1,900.00	\$32,300.00
		,						,
	7	Roof Hatch	36" x 36", insulated	86-68120	1	ea	\$3,700.00	\$3,700.00
	,	- Noor Haton	oo x oo , modiated	00 00 120	<u>'</u>	- Ou	ψο,του.σο	ψο,,, σο.σο
	8	Steel Louve	rs (elevator tower)	86-68120	364	ft2	\$100.00	\$36,400.00
	J	Oteer Loave	13 (cicvator tower)	00-00120	004	1(2	Ψ100.00	φου, που.συ
	9	Metal Roofii	20	86-68120	13,545	ft2	\$19.00	\$257,355.00
	9		tower - 625	80-08120	13,343	112	\$19.00	\$257,355.00
		theater -	scia- 740					
		metaria	Scia- 740					
	40	D = 1 Ol = = =	Ola a a	00.00400	405	610	070.00	#04.00F.00
	10	Roof Cleres		86-68120	425	ft2	\$73.00	\$31,025.00
		16" high, insi	ulated					
						<i></i>		
	11	Vegatative (86-68120	4,236	ft2	\$30.00	\$127,080.00
		north roof - 1						
		south roof - 2	2295					
	12	Solar Panels						
		elevator towe	er roof - 625	86-68120	625	ft2	\$65.00	\$40,625.00
	13	Roof Soffit I	Panels	86-68120	3,588	ft2	\$13.50	\$48,438.00
			Sheet Subtotal					\$661,923.00
			QUANTITIES				PRICES	
вү			CHECKED	вү			CHECKED	
	J Neumaier JF Pattie			Greg Akins Kelly Brom				
DATE PR	TE PREPARED PEER REVIEW		DATE PREPARED			PEER REVIEW		
			Al Bernstein PE		2/3/2011		Dan Donaldson	
				-				

BUREAU OF	F RECLAMAT	ION .	ESTIMATE WOR					SHEET_6_ OF9
FEAT				PROJECT	:			
			ces Investigation		Central Val		ect - CA	
	oility St			WOLD	Shasta Divi		ATE EVE	EE A OIDII ITY
Visito	r Cent	er Replaceme	nt	WOID: REGION:	SHAEF MP		ATE LEVEL: LEVEL:	FEASIBILITY
		Most	Probable	REGION:	WP	PRICE	LEVEL:	Apr-10
		WOSE	18.5-ft Dam Rais	se				
ᆫᄫ	Σ							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		0 "						
		Continued						
	14	Structural T	heater Floor	86-68120	2,274	ft2	\$50.00	\$113,700.00
	14	24" deep	neater Floor	80-08120	2,214	112	φ30.00	φ113,700.00
		2+ dccp						
	15	Structural E	levator Floors	86-68120	1,456	ft2	\$40.00	\$58,240.00
		2nd floor, 12'	" deep - 552		,	_	,	, ,
		3rd floor, 12"	•					
		4th floor, 12"	deep - 487					
	16	Major Struct	tural Roof Members	86-68120	511	lin ft	\$200.00	\$102,200.00
		1-center stl s	upport beam -24" deep, 65 lin ft					
		2-side stl su	pport beams -24" deep, 186 lin ft					
		5-stl roof sup	port tension rods 2" dia, 260 lin ft					
		BUILDING MATE	ERIALS INTERIOR -					
	47	14		00.00400	0.400	640	#0.50	#04.000.00
	17	Interior Wall	O ga. steel studs @ 16' o.c.	86-68120	8,400	ft2	\$2.50	\$21,000.00
		·						
		1st floor	κρ' gypbd. ea. side , 10' high,					
			r & elevator floors- 2880					
		2110 1100	a dievator noors- 2000					
	18	Carpet Squa	res:	86-68120	8,290	ft2	\$6.60	\$54,714.00
		18"x 18" self		30 00 120	0,200		ψο.σσ	φοι,
		Theater	- 2475					
		VC Offic	es - 1975					
		Security	Offices - 920					
		Exhibit A	Area - 2920					
	19	Ceiling Tile:		86-68120	5,000	ft2	\$8.50	\$42,500.00
		24" x 24" acc	coustical w/mtl grid, seismic clps					
	20			00.00400	0.000	610	A .	***
	20	7.		86-68120	6,000	ft2	\$5.50	\$33,000.00
		5/8" type 'xp'						
	21	Painted Sur	face:	86-68120	18,433	ft2	\$1.20	\$22,119.60
	۷۱	walls - 16,60		00-00120	10,433	ILΣ	φ1.20	ΨΖΖ,119.00
		ceilings - 1,8					+	
		23111190 1,0	Sheet Subtotal					\$447,473.60
	QUANTITIES						PRICES	. , , , , , , ,
вү			CHECKED	вү			CHECKED	
	J Ne	eumaier	JF Pattie		Greg Akins		Kelly Brom	
DATE PR	REPARED		PEER REVIEW	DATE PREPAR			PEER REVIEW	
			Al Bernstein PE		7/23/2010		Dan Donaldson	

BUREAU OI	F RECLAMAT	TION	ESTIMATE WO					SHEET_7_ OF9_
FEAT				PROJECT	:			
			ces Investigation		Central Val		ect - CA	
	bility St				Shasta Div			
Visito	or Cent	er Replaceme	nt	WOID:	SHAEF		ATE LEVEL:	FEASIBILITY
		Most	Duchahla	REGION:	MP	PRICE	LEVEL:	Apr-10
		WOST	Probable 18.5-ft Dam Ra	nico				
⊢	5		10.5-It Daill Na	lise				
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		o						
		Continued						
	22	Hand & Gua	ard Railing:	86-68120	228	lin.ft	\$600.00	\$136,800.00
			minum rails w/glass panels,	00-00120	220	1111.10	Ψ000.00	ψ130,000.00
		46" high	milani rans wigiass pariets,				+	
		40 High						
		Similar to:						
			& Company, Inc					
		PH: 800-527						
			vw.juliusblum.com					
			,					
	23	Custom Cou	unters and Cabinetry:	86-68120	296	lin.ft	\$660.00	\$195,360.00
		cashier & inf	ormation counters - 40 lin ft					
		souvenir disp	olay cases - 50 lin ft					
		shelving disp	plays - 100 lin ft					
		kitchen base	& wall cabinets - 16 lin ft					
		work counter	rs in security office - 90 lin ft					
	24	Wall and Flo	oor tile:	86-68120	1,650	ft2	\$11.00	\$18,150.00
		wall tile - 12	00					
		floor tile - 45	50					
		BUILDING SPEC	CIALITY ELEMENTS -					
	25			86-68120	1	ea	\$42,000.00	\$42,000.00
			retractable screen mounted in a					
			busing, which will be fitted to a					
			gned bracket and attached to a					
		motorized ca	ble system in the ceiling.					
		Similar to:					+	
		Vutec, mode	LL ectric I-C					
		PH: 800-770					+	
			vw.vutec.com				 	
		170001101 777						
			Sheet Subtotal					\$392,310.00
			QUANTITIES				PRICES	
вү			CHECKED	BY			CHECKED	
	J Ne	eumaier	JF Pattie		Greg Akins		Kelly Brom	
DATE PE	REPARED		PEER REVIEW	DATE PREPAR			PEER REVIEW	
			Al Bernstein PE		7/23/2010		Dan Donaldson	

ESTIMATE WORKSHEET

BUREAU OI	F RECLAMATIO	ON	ESTIMATE WOI	RKSHEET				SHEET_8_ OF _9_		
FEAT	URE:			PROJECT						
	hasta Lake Water Resources Investigation				Central Valley Project - CA					
Feasil	bility Stu	udy		Shasta Division						
		er Replaceme	nt	WOID:	SHAEF	ESTIM	ATE LEVEL:	FEASIBILITY		
		•		REGION:	MP	PRICE	LEVEL:	Apr-10		
		Most	Probable					•		
			18.5-ft Dam Ra	ise						
ΓÄ	M									
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT		
	(Continued								
1	26	Toilet Room	s:	86-68120	560	ft2	\$85.00	\$47,600.00		
		Men/Women	/Janitor Closet							
		6 - wate	r closets							
		3 - urina	ls							
		2 - 3 bas	sin pre-formed lavatories							
		2 - pape	r towel dispr/trash recepticals							
			paper dispensers							
			gh x 72" mirrors							
			36" mop sink							
	07	Flavortano		00.00400	4		#40F 000 00	#40F 000 00		
	27	Elevator:	Intellege I traduciation A stories	86-68120	1	ea	\$195,000.00	\$195,000.00		
			loleless Hydraulic, 4 stops,							
			ar, 3500 lbs maximum load,							
			nachine room and 7'-6" deep pit.							
			ar, 3500 lbs maximum load,							
		6'-0"X 7'-6" m	nachine room and 7'-6" deep pit.							
		Similar to:								
		Otis Elevator	Company							
		PH: 303-298	3-9300							
		Website: wv	vw.otis.com							
	28	Flevator Sta	ircase (7 flights):	86-68120	6,700	lbs	\$12.50	\$83,750.00		
	20		@ 11' lg x 25#/lf =3500#	00 00120	0,700	100	ψ12.00	Ψοσ,7οσ.σσ		
			20#/lf =3200#							
	20	Theodon Cto	ina a a da conta mala	86-68120	0.050	lba	¢10.00	#CO FOO OO		
	29		rcase (custom):	86-68120	6,050	lbs	\$10.00	\$60,500.00		
			20#/lf =2300#							
			2 5'x5' x 20#/sf =2000# 2 35' lg x 25#/lf =1750#							
		z sungers @	200 lg X 20#/III = 17 30#							
	30	Cast in Plac	e Reinforced Concrete	86-68120	710	yd3	\$1,100.00	\$781,000.00		
		from on-si	te Batch Plant							
		Roof Suppor	t Structure and Footing - 181							
		Visitor Cente	r and Elevator Tower Footings							
		for Walls and	d Columns - 240							
		6 inch thick F	Floor Slabs - 149							
		Curved Exte	rior Walls, Columns,& Facias - 140							
			Sheet Subtotal					\$1,167,850.00		
			QUANTITIES				PRICES	÷ ., ,		
BY			CHECKED	вү			CHECKED			
<u> </u>	J Nei	umaier	JF Pattie		Greg Akins		Kelly Brom			
DATE PE	REPARED		PEER REVIEW	DATE PREPAR			PEER REVIEW			
			Al Bernstein PE		7/23/2010		Dan Donaldson			

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_9_OF_9_

BUREAU OF	RECLAMAT	ΓΙΟΝ	ESTIMATE WORK	OUEEI				SHEET9 OF9
FEAT	URE:			PROJECT	:			
	a Lake	Water Resources	Investigation		Central Val Shasta Divi	-	ect - CA	
	•	er Replacement		WOID:	SHAEF	ESTIM/	ATE LEVEL:	Feasibility
				REGION:	MP	UNIT P	RICE LEVEL:	Apr-10
		Most Pro	bable					-
			18.5-ft Dam Raise	9				
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
4		1" Zinc-Coated Steel	Structural Wire Rope ASTM A603-98	86-68140	460	ft	\$30.00	\$13,800.00
	2	5' dia drilled shaft into	common earth 10000 lbs reinforcement)	86-68140	80	ft	\$400.00	\$32,000.00
		(oo yao contrete	Todoo ibs reinioreementy					
	3	Concrete,f'c 4000psi (@28day	86-68140	112	yd3	\$1,100.00	\$123,200.00
	4	Cementitions Material		86-68140	32	tons	\$180.00	\$5,760.00
	5	Epoxy coated Reinfor	cement, fy= 60 ksi	86-68140	8,000	lbs	\$2.50	\$20,000.00
	6	Miscellaneous Metal \ (public safety gua		86-68140	3,000	lbs	\$9.60	\$28,800.00
	7	7 Permanent galvanized form under deck 18 gauge (As manufactured by Wheeling composite deck)		86-68140	1,200	ft2	\$22.00	\$26,400.00
	8	Studs 5" at 3' OC		86-68140	400	ea	\$18.00	\$7,200.00
	9	Elastomeric Bearing p		86-68140	2	ea	\$900.00	\$1,800.00
	10	1/2" Sponge rubber fil	ler	86-68140	16	ft2	\$30.00	\$480.00
		new visitor center over superstrucure is supprovers to the edges or bridge alignment consupproximately 100-feet consists of an 8-inch to composite with heade safety) that passes the superstructure may resuperstructure may resuperstructure in superstructure.	m Visitor Center Pedestrian Bridge will or the pumping plant access road onto corted by Zinc Coated steel rope (stays of the deck. Each tower is supported on sists of a single curve at a radius of about long, the bridge has been designed of hick reinforced concrete slab cast over danchor studs. The sides of the bridge of the bridge of the sphere test and vertical bars to presquire temporary shoring/supports since specified compressive strength.	the top of the r) extending for a 5-foot diame out 127 ft. The for a 100 lb/ft2 r a permanent e will have 42- event climbing	aised Shastam the top of eter, by 40-fo bridge has a live load. The galvanized sinch high put by children.	a Dam. T two reinf oot long o 10-foot e bridge steel dec blic safet Construc	he Bridge forced concrete drilled shaft. The clear width, and is superstructure k form made y guardrail (life ction of the	
		Sheet Subtotal =	ANTITIES				DDICES	\$259,440.00
		QU	ANTITIES				PRICES	
BY Joe Gemp	perline		CHECKED Nicholas Clough, PE	BY Greg Akins			CHECKED Kelly E	Brom
DATE PR			PEER REVIEW	DATE PREPAR	ED		PEER REVIEW	aldasa
	Δ	April 12, 2010	Jesus G. Romero, PE	07/23/10			Dan Don	aldson

BUREAU OF RECLAMATION ESTIMATE WORKSHEET 1 OF 1

BUREAU OF		TION	ESTIMATE WORKS					SUMMARY SHEET 1 OF 1
FEATU	JRE:			PROJE	CT:			
Shasta	Lake	Water Resources I	nvestigation		Central Val	ley Projec	ct - CA	
Feasib			O		Shasta Divi			
		lge Replacements		REGION:			TE LEVEL:	Feasibility
· omon	-	.go mopiacomomo		WOID:	SHAEF	PRICE		Apr - 10
		Most F	Probable	WOID.	OHALI	i Kiol	LL V LL.	Apr - 10
Summ	arv	MOSti	18.5-ft Dam Raise					
			10.5-It Daili Naise					
PLANT ACCOUNT	PAY ITEM							
PLA	¥		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
¥	Δ.							
		Reservoir area vehic	cle bridges:					
		Remove/Replace	e Charlie Creek Bridge					
		Remove/Replace	e Doney Creek Bridge					
			e McCloud River Bridge					
			e Didallas Creek Bridge					
			Bridge Demolition/Improvements					
		Tondoro Forty D	mage Demontion, improvements					
								<u> </u>
		MWH-001 Sheet (1)						\$22,470,800.00
		MWH-001 Sheet (2)						\$9,919,400.00
		MWH-001 Sheet (3)						\$1,618,500.00
								404 000 700 00
		Subtotal						\$34,008,700.00
		Mobilization & Ge	eneral Conditions					\$2,592,600.00
		Subtotal w/ Mobiliza	tion					\$36,601,300.00
		Design Continger	ncies				20%	\$7,362,000.00
		Allowance for Pro	ocurement Strategy				2%	\$736,000.00
		7 0	Journal of the state of the sta				- ~	4.00,000.00
		CONTRACT COST						\$44,700,000.00
		CONTINACTOOST						ψ++,100,000.00
		O a material dia management	Alian and a single				00/	#0 F00 000 00
		Construction Cor	iungendes				8%	\$3,500,000.00
								*
		FIELD COST						\$48,200,000.00
		Note: Escalation from public	shed price level to notice to proceed is excluded. Esti	mates mav in	clude discrenan	cies due to r	oundina.	
			nd terminology, see Reclamation Manual, Directives					
	1		JANTITIES	Staridard			PRICES	
DV		Q(DV				
ВҮ	a :		CHECKED	BY	D 6		CHECKED	
See Gro			See Group Sheets		D. Crone		J. Loucks	
DATE PRE	EPARED		PEER REVIEW	DATE PREF			PEER REVIEW	
			See Group Sheets		04/18/11		I. Buck	

BUREAU OF F	RECLAMATIO	ON	ESTIMATE WOR	RKSHEET					
FEATU	IRE:			PROJECT	PROJECT:				
Shasta Feasibi		Water Resources I	nvestigation		Central Valle Shasta Divis		t - CA		
		ge Replacements		REGION:	MP		TE LEVEL:	Feasibility	
		, ,		WOID:	SHAEF	PRICE I		Apr - 10	
		Most F	Probable		• <u>-</u> .	- 1110		7.40	
MWH-0	101		18.5-ft Dam	Raise					
			10.0 It Built	raise					
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
		New Bridge Constructi	ion						
		Charlie Creek Bridge							
	1	Charlie Creek Bridge Cofferdam 25 x 45 x 60	# 2 EA	MWH-001	16,800	sf	\$88.82	\$1.402.176.00	
	2	Pier Foundation Structur		MWH-001	1,200		\$53.17	\$1,492,176.00 \$63,804.00	
			Abutment Foundation Piles	MWH-001	1,080	cy If	\$138.76	\$149,860.80	
	3	Furnish/Install Class 140		MWH-001		lf	\$138.76 \$197.54	· , ,	
	5	Foundation Backfill	5	MWH-001	3,600 576		\$197.54 \$152.42	\$711,144.00 \$87,793.92	
	6				242	су			
		Pier Footer Concrete		MWH-001		су	\$752.83	\$182,184.86	
	7	Pier Concrete & Bent Ca	10	MWH-001	1,246	су	\$1,118.22	\$1,393,302.12	
	8	Abutment Concrete		MWH-001	174	су	\$875.49	\$152,335.26	
	9	Wing Wall Concrete Box Girder Concrete		MWH-001 MWH-001	44	су	\$1,705.83	\$75,056.52	
	10				1,957	Cy	\$2,529.12	\$4,949,487.84	
	11	Bridge Rail Concrete		MWH-001	1,564	lf Un n	\$140.65	\$219,976.60	
	12	Reinforcing Steel		MWH-001	1,143,422	lbs	\$1.24	\$1,417,843.2	
	13	Prestressing Steel		MWH-001	26,058	lbs	\$4.27	\$111,267.60	
	14	Bridge Approaches		MWH-001	1	ls 	\$57,571.38	\$57,571.38	
	15	Barrier Fence Railing		MWH-001	1,564	lf	\$42.75	\$66,861.00	
	16	Expansion Joints		MWH-001	1	ls	\$10,000.00	\$10,000.00	
	17 18	Bridge Misc. (Signage,S Demo Charlie Creek Brid		MWH-001 MWH-001	3,500	ls cy	\$150,000.00 \$138.16	\$150,000.00 \$483,560.00	
		Doney Creek Bridge							
	19	Cofferdam 25 x 45 x 80	2 ΕΔ	MWH-001	11,200	sf	\$90.00	\$1,008,000.00	
	20	Pier Foundation Structur		MWH-001	551	су	\$54.00	\$29,754.00	
	21		0 Abutment Foundation Piles	MWH-001	1,080	If	\$140.00	\$151,200.00	
	22	Furnish/Install CISS Pile		MWH-001	3,600	 If	\$200.00	\$720,000.00	
	23	Foundation Backfill	3	MWH-001	392	су	\$152.00	\$59,584.00	
	24	Pier Footer Concrete		MWH-001	242	су	\$760.00	\$183,920.0	
	25	Pier Concrete & Bent Ca	an	MWH-001	1,050	су	\$1,100.00	\$1,155,000.0	
	26	Abutment Concrete	~P	MWH-001	1,030	су	\$995.00	\$143,280.0	
	27	Wing Wall Concrete		MWH-001	44	су	\$1,700.00	\$74,800.00	
	28	Box Girder Concrete		MWH-001	1,902	су	\$2,530.00	\$4,812,060.0	
	29	Bridge Rail Concrete		MWH-001	1,520	Lf If	\$143.00	\$217,360.0	
	30	Reinforcing Steel		MWH-001	1,030,707	lbs	\$143.00	\$1,288,383.7	
	31	Prestressing Steel		MWH-001	25,320	lbs	\$4.00	\$1,288,383.7	
	32	Bridge Approaches		MWH-001	25,520	ls	\$58,000.00	\$58,000.00	
	33	Barrier Fence Railing		MWH-001	1,520	lf	\$58,000.00	\$65,360.0	
	34	Expansion Joints		MWH-001	1,020	ls	\$10,000.00	\$10,000.00	
	35	Bridge Misc. (Signage,S	trining Drainage\	MWH-001	1	ls	\$150,000.00	\$150,000.00	
	36	Demo Doney Creek B		MWH-001	3,300	су	\$142.00	\$468,600.00	
		Sheet Subtotal =						\$22,470,806.99	
			UANTITIES			F	PRICES	, , : :,300.0	
вү			CHECKED	вү			CHECKED		
			D. Hutchings		I. Buck		J. Loucks		
					-				
DATE PRE	PARED		PEER REVIEW	DATE PREPAR	ED		PEER REVIEW		

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_2_OF_3_

BUREAU OF F		NC	ESTIMATE WORKSH					SHEET2 OF3
FEATU	RE:			PROJECT	:			
Shasta	Lake \	Water Resources I	nvestigation		Central Valle	y Projec	et - CA	
Feasibi	lity Stu	ıdy	-		Shasta Divis	sion		
Vehicle	Bridg	ge Replacements		REGION:	MP	ESTIMA	TE LEVEL:	Feasibility
				WOID:	SHAEF	PRICE I	LEVEL:	Apr - 10
		Most I	Probable					
MWH-0	001		18.5-ft Dam Raise	:				
ᆫᅜ	Σ							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
A Q	A							
		New Construction						
		M 01 18: 8:1						
	1	McCloud River Bridge Cofferdam 30 x 45 x 50		NAVI 1 004	7 500	of	¢96.00	\$64F,000,00
	2			MWH-001	7,500 822	sf	\$86.00	\$645,000.00 \$42,744.00
		Pier Foundation Structur	0 Abutment Foundation Piles	MWH-001		СУ	\$52.00	
	3			MWH-001	1,080	lf If	\$135.00	\$145,800.00 \$304,000.00
	4 5	Furnish/Install CISS Pile Foundation Backfill	es .	MWH-001 MWH-001	1,600 522		\$190.00 \$150.00	· · · · · · · · · · · · · · · · · · ·
	6	Pier Footer Concrete		MWH-001	63	су	\$1,230.00	\$78,300.00 \$77,490.00
						су		
	7 8	Pier Concrete & Bent Ca Abutment Concrete	ap	MWH-001 MWH-001	331 243	су	\$1,230.00 \$770.00	\$407,130.0 \$187,110.0
					313	су		
	9	Retaining Walls		MWH-001		су	\$927.00	\$290,151.0
	10	Box Girder Concrete		MWH-001	1,397	СУ	\$3,150.00	\$4,400,550.0
	11	Bridge Rail Concrete		MWH-001	980	lf "	\$156.00	\$152,880.0
	12	Reinforcing Steel		MWH-001	803,089	lbs	\$1.20	\$963,706.8
	13	Prestressing Steel		MWH-001	0	lbs	\$0.00	\$0.0
	14	Bridge Approaches		MWH-001	1	ls ''	\$56,000.00	\$56,000.0
		Barrier Fence Railing		MWH-001	980		\$41.00	\$40,180.0
	16	Expansion Joints		MWH-001	1	ls	\$10,000.00	\$10,000.0
	17	Bridge Misc. (Signage,S		MWH-001	1	ls	\$150,000.00	\$150,000.0
	18	Demo McCloud River Br	ridge	MWH-001	2,300	су	\$135.00	\$310,500.0
		Didallas Creek Bridge						
	19	Cofferdam 30 x 45 x 50	oft 2 EA	MWH-001	0	sf	\$0.00	\$0.0
	20	Pier Foundation Structur	ral Excavation	MWH-001	435	су	\$53.00	\$23,055.0
	21	Furnish /Install Class 14	0 Abutment Foundation Piles	MWH-001	1,080	lf	\$144.00	\$155,520.0
	22	Furnish/Install CISS Pile	es .	MWH-001	0	lf	\$0.00	\$0.0
	23	Foundation Backfill		MWH-001	173	су	\$55.00	\$9,515.0
	24	Pier Footer Concrete		MWH-001	0	су	\$0.00	\$0.0
	25	Pier Concrete & Bent Ca	ар	MWH-001	0	су	\$0.00	\$0.0
	26	Abutment Concrete		MWH-001	243	су	\$840.00	\$204,120.0
	27	Retaining Walls		MWH-001	89	су	\$1,040.00	\$92,560.0
	28	Box Girder Concrete		MWH-001	286	су	\$2,100.00	\$600,600.0
	29	Bridge Rail Concrete		MWH-001	230	lf	\$165.00	\$37,950.0
	30	Reinforcing Steel		MWH-001	204,784	lbs	\$1.29	\$264,171.3
	31	Prestressing Steel		MWH-001	0	lbs	\$0.00	\$0.0
	32	Bridge Approaches		MWH-001	1	ls	\$60,000.00	\$60,000.0
	33	Barrier Fence Railing		MWH-001	230	lf	\$44.00	\$10,120.0
	34	Expansion Joints		MWH-001	1	ls	\$10,000.00	\$10,000.0
	35	Bridge Misc. (Signage,S	Striping Drainage)	MWH-001	1	ls	\$75,000.00	\$75,000.0
	36	Demo Didallas Creek Br		MWH-001	800	су	\$144.00	\$115,200.0
		Object Out of the						***
		Sheet Subtotal =	UANTITIES			E	PRICES	\$9,919,353.1
вү		Q	CHECKED	ву			CHECKED	
ı د	M. Xie			, i	I. Buck		J. Loucks	
	M. Xie D. Hutchings				Duon		J. LOUGING	
DATE PRE			PEER REVIEW	DATE PREPAR	FD		PEER REVIEW	

ΒY

M. Xie

4/18/2011

DATE PREPARED

ESTIMATE WORKSHEET BUREAU OF RECLAMATION SHEET_3_ OF _3 _ PROJECT: FEATURE: Shasta Lake Water Resources Investigation **Central Valley Project - CA** Feasibility Study **Shasta Division Vehicle Bridge Replacements** MP ESTIMATE LEVEL: REGION: **Feasibility** WOID: **SHAEF** PRICE LEVEL: Apr - 10 **Most Probable MWH-001** 18.5-ft Dam Raise PLANT ACCOUNT DESCRIPTION CODE QUANTITY UNIT UNIT PRICE AMOUNT **New Bridge Construction** Fenders Ferry Bridge Cofferdam 10 x 40 x 50ft MWH-001 5,000 \$85.00 \$425,000.00 1 sf 2 Super Structure Support MWH-001 50 vf \$3,300.00 \$165,000.00 \$93,000.00 Remove Portions of Steel Tower MWH-001 ls \$93,000.00 **Drill Bond Dowels** \$54,000.00 4 MWH-001 540 lf \$100.00 MWH-001 \$1,560.00 \$358,800.00 5 Pier Concrete 230 су \$75,000.00 6 Structural Steel Reset MWH-001 1 \$75,000.00 ls Reinforcing Steel MWH-001 66,400 lb \$1.20 \$79,680.00 7 \$67,000.00 8 Lead Paint Containment MWH-001 1 \$67,000.00 ls Demo Second Creek Bridge MWH-001 \$301,000.00 \$301,000.00 ls Sheet Subtotal = \$1,618,480.00 **QUANTITIES PRICES**

BY

DATE PREPARED

D. Crone

04/18/11

CHECKED

R. Filgas

D. Hutchings

PEER REVIEW

CHECKED

J. Loucks

I. Buck

PEER REVIEW

BUREAU OF RECLAMATION ESTIMATE WORKSHEET 1 OF 1

BUREAU OF I	DEF RECLAMATION ESTIMATE WOF			KSHEET	SUMMARY SHEET 1 OF 1			
FEATU	JRE:			PROJE(CT:			
		Water Resources I	nvestigation		Central Val	t - CA		
Feasibi			gae		Shasta Divi			
		rea Vegetation Cle	earing	REGION:			TE LEVEL:	Feasibility
			9	WOID:	SHAEF	PRICE		Apr - 10
		Most I	Probable		·	111102		
Summ	arv	Moot	18.5-ft Dam R	aise				
	T .		10.0 K Baili 10	aioo				
PLANT ACCOUNT	PAY ITEM		PEOPLIPTION	0005	OLIANITITY		LINUT DDIOE	AMOUNT
P. CCC	γA<		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
4	_							
		B	•					
		Reservoir area clear						
		Overstory Remo						
		Complete Veget	ation Removal					
		MWH-002 Sheet (1)						\$13,161,900.00

		Subtotal						\$13,162,000.00
		Mobilization/Gen	eral Conditions				5%	\$658,100.00
		Subtotal w/ Mobiliza	tion					\$13,820,100.00
		Design Continge	ncies				20%	\$2,800,000.00
		Allowance for Pr	ocurement Strategy				2%	\$280,000.00
		CONTRACT COST						\$16,900,000.00
								. , , ,
		Construction Cor	ntingencies				8%	\$1,300,000.00
		22112112131113011	3					+ -,000,000.00
		FIELD COST						\$18,200,000.00
							 	ψ. υ,2υυ,υυυ.υυ
							+	
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			shed price level to notice to proceed is exclude					
			nd terminology, see Reclamation Manual, Direc	tives and Standards	s FAC; 09-01, 0	9-02 and 09-		
		QI	JANTITIES				PRICES	
вү			CHECKED	BY			CHECKED	
See Grou	up Sheet	s	See Group Sheets		T. Brown		J. Loucks	
DATE PRE	PARED		PEER REVIEW	DATE PREF	PARED		PEER REVIEW	
			See Group Sheets		04/20/11		I. Buck	

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_1_ OF _1_

	IRF:			PROJECT:						
FEATU				PROJECT	:					
Shasta	Lake \	Water Resources Ir	nvestigation		Central Valle	y Projec	t - CA			
Feasibi	lity Stu	ıdy			Shasta Divis	ion				
Reserv	oir Ar	ea Vegetation Cle	aring	REGION:	MP	ESTIMA	TE LEVEL:	Feasibility		
				WOID:	SHAEF	PRICE L	.EVEL:	Apr - 10		
		Most F	Probable					·		
MWH-0	002		18.5-ft Dam Raise							
TN.	Ε̈́Μ									
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT		
		Reservoir Clearing								
		Overstory Removal		MWH-002	496	ac	\$14,673.36	\$7,277,986.56		
		Complete Vegetation Re	moval	MWH-002	336	ac	\$17,511.65	\$5,883,914.40		
		Complete vegetation Re	HIIOVAI	WWWH-002	330	ac	\$17,511.05	ф 5,665,914.40		
		Sheet Subtotal =						\$13,161,900.96		
	•		UANTITIES				PRICES	. , ,		
BY				вү			CHECKED			
	I. Buck		C. Wallace		T. Brown		J. Loucks			
DATE PRE			PEER REVIEW	DATE PREPAR			PEER REVIEW			
	4/21/2011				04/20/11		I. Buck			

BUREAU OF RECLAMATION ESTIMATE WORKSHEET 1 OF 1

Feasibility Reservoir Summary	ake V y Studir Are	ea Dikes		PROJE REGION: WOID:	Central Vall Shasta Divi	sion		
Feasibility Reservoir Summary	y Studir Are	dy ea Dikes		REGION:	Central Vall Shasta Divi	sion		
Feasibility Reservoir Summary	y Studir Are	dy ea Dikes			Shasta Divi	sion		
Reservoir Summary	y WAX ITEM	ea Dikes	No. Lot Lo				TE E\/E	
Summary	PAY ITEM À		No. Co. Co.				TE LEVEL:	Feasibility
	РАУ ІТЕМ	Most P	Most Probable			PRICE		Apr - 10
	РАУ ІТЕМ	Most i	ronanie	110121	SHAEF			7.61
	РАУ ІТЕМ		18.5-ft Dam Rais	20				
PLANT			10.0 It Baill Nais					
PL/			DECORPTION	0005	OLIANITITY		LINIT PRIOF	ANACHINIT
d			DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Reservoir area dikes						
			rubbing, precompaction and earthwo	orks				
			re and shell materials					
		Miscellaneous di	rainage improvements					
		MWH-003 Sheet (1)						\$2,966,900.00
		MWH-003 Sheet (2)						\$766,200.00
		MWH-003 Sheet (3)						\$2,082,900.00
		MWH-003 Sheet (4)						\$7,674,500.00
		Subtotal						\$13,490,500.00
								, , , , , , , , , , , , , , , , , , , ,
		Mobilization/Gene	eral Conditions					\$4,242,410.00
								+ 1,- 1-, 110100
		Subtotal w/ Mobilizat	ion					\$17,733,000.00
								411,100,000.00
		Design Contingen	ncies				20%	\$3,515,000.00
		Design Contangen	10100				2070	Ψο,ο το,οσο.σο
		Allowance for Pro	curement Strategy				2%	\$352,000.00
		Allowance for 1 to	curement strategy				2 /0	ψ332,000.00
		CONTRACT COST						\$21,600,000.00
		CONTRACTOOST						Ψ21,000,000.00
		Construction Con	tingencies				8%	\$1,800,000.00
		Constituction Con	ungendes				O /0	φ1,000,000.00
		FIELD COST						\$22 ADD DDD DD
		I IELD COST						\$23,400,000.00
							+	
							+	
							1	
			hed price level to notice to proceed is excluded. E					
			d terminology, see Reclamation Manual, Directive	es and Standard	s FAC; 09-01, 0	9-02 and 09-		
			ANTITIES				PRICES	
вү			CHECKED	BY			CHECKED	
See Group SI	Sheets		See Group Sheets		T. Brown		J. Loucks	
DATE PREPAR	ARED		PEER REVIEW	DATE PREF	PARED		PEER REVIEW	
			See Group Sheets		04/21/11		I. Buck	

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_1_ OF _4_

BUREAU OF F	FRECLAMATION ESTIMATE WORK			RKSHEET	SHEET1 OF4			
FEATU	IRE:		PROJECT	:				
Shasta Feasibi		Water Resources Inv มdv	restigation		Central Valle Shasta Divis	-	t - CA	
		ea Dikes		REGION:	MP		TE LEVEL:	Feasibility
	· · · · · ·			WOID:	SHAEF	PRICE		Apr - 10
		Most Pr	ohahla	WOID.	OHALI	TRIOL		Apr - 10
		WOStFI		. .				
MWH-0)03		18.5-ft Dam	Raise				
FF	ĒM							
PLANT ACCOUNT	PAY ITEM	D	ESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Excavation & Grading						
		Doney Creek Dike						
	1	Site Clearing & Grubbing B	elow Dikes	MWH-003	7.22	ac	\$7,600.00	\$54,872.00
	2		n Unlisted Items Allowance)	MWH-003	1.22	ls	\$7,420.00	\$7,420.00
		,	·		0.000			. ,
	3	Top Soil/Shear Key Excava	ation	MWH-003	9,890	су	\$10.00	\$98,900.00
	4	V-Ditch Excavation		MWH-003	300	су	\$29.00	\$8,700.00
	5	Import/Place/Compact Dra		MWH-003	1,660	су	\$45.00	\$74,700.00
	6	Embankment Precompacti		MWH-003	22,800	sy	\$0.10	\$2,280.00
	7	Import/Place/Compact She	ell Materials	MWH-003	0	су	\$0.00	\$0.00
	8	Import/Place/Compact Cor	e Materials	MWH-003	70,000	су	\$14.00	\$980,000.00
	9	Import/Place/Compact Filte	er Sand	MWH-003	3,380	су	\$46.00	\$155,480.0
	10 Import/Place Rip Rap			MWH-003	5,920	-	\$100.00	\$592,000.0
	11 Install 42" CMP			MWH-003	1,100	lf	\$132.00	\$145,200.0
	12 Install Flap Gates			MWH-003	4	ea	\$3,230.00	\$12,920.0
	13	Replace Top Soil Materials		MWH-003	7,200	су	\$11.00	\$79,200.0
	14	Cast-In Place Concrete for		MWH-003	708	су	\$497.00	\$351,876.0
	15	Reinforcing Steel	Trotaining Train	MWH-003	123,900	lb	\$1.80	\$223,020.00
		Antlers Dike						
	16		alou Dikee	MWH-003	0.92		£40 500 00	\$0,660,00
		Site Clearing & Grubbing B			0.92	ac	\$10,500.00	\$9,660.0
	17	,	n Unlisted Items Allowance)	MWH-003	1	ls	\$1,850.00	\$1,850.0
	18	Top Soil/Shear Key Excava	ation	MWH-003	340	су	\$15.00	\$5,100.0
	19	V-Ditch Excavation		MWH-003	40	су	\$82.00	\$3,280.0
	20	Import/Place/Compact Dra		MWH-003	90	су	\$50.00	\$4,500.0
	21	Embankment Precompacti	on	MWH-003	2,000	sy	\$0.20	\$400.0
	22	Import/Place/Compact She	ell Materials	MWH-003	0	су	\$0.00	\$0.0
	23	Import/Place/Compact Cor	e Materials	MWH-003	4,610	су	\$14.00	\$64,540.0
	24	Import/Place/Compact Filte	er Sand	MWH-003	210	су	\$46.00	\$9,660.00
	25	Import/Place Rip Rap		MWH-003	759	су	\$100.00	\$75,900.0
	26	Install 42" CMP		MWH-003	0	lf	\$0.00	\$0.0
	27	Install Flap Gates		MWH-003	0	ea	\$0.00	\$0.00
	28	Replace Top Soil Materials		MWH-003	340	су	\$16.00	\$5,440.00
		Sheet Subtotal =						\$2,966,898.00
			ANTITIES			-	PRICES	Ψ£,500,090.00
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BY	Λ NI:= -! -	-		ВҮ	T Drown			
DATE ===	A. Nishir		. Stewart		T. Brown		J. Loucks	
DATE PRE			EER REVIEW	DATE PREPAR			PEER REVIEW	
4	4/21/2011	Т	. Brown		04/21/11		I. Buck	

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_2_OF_4_

BUREAU OF F		ON	ESTIMATE WORK					SHEET_2_ OF _4
FEATU	RE:			PROJECT	:			
Shasta	Lake '	Water Resources	Investigation		Central Valle	y Proiec	et - CA	
Feasibi			<u> </u>		Shasta Divis			
		ea Dikes		REGION:	MP		TE LEVEL:	Feasibility
				WOID:	SHAEF	PRICE I		Apr - 10
		Most	Probable					
MWH-0	003		18.5-ft Dam R	aise				
_ <u> </u>	Σ							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
AO P	PA							
		Excavation & Grading	9				+	
		North Railroad Emba					244.000.00	* 40.550.0
	1	Site Clearing & Grubbin		MWH-003	1.15		\$11,800.00	\$13,570.0
	2	·	ed in Unlisted Items Allowance)	MWH-003	1 454	ls	\$7,420.00	\$7,420.0
	3	Top Soil Excavation &	Shear Key Excavation	MWH-003	1,454	су	\$14.00	\$20,356.0
	4	V-Ditch Excavation		MWH-003	49	-	\$38.00	\$1,862.0
	5	Import/Place/Compact		MWH-003	0	су	\$0.00	\$0.0
	6	Embankment Precomp		MWH-003	3,000	су	\$0.20	\$600.0
	7	Import/Place/Compact		MWH-003	0	-,	\$0.00	\$0.0
	8	Import/Place/Compact		MWH-003	16,375	·	\$14.00	\$229,250.0
	9	Import/Place/Compact	Filter Sand	MWH-003	770	,	\$46.00	\$35,420.0
	10	Import/Place Rip Rap		MWH-003	410	,	\$100.00	\$41,000.0
	11	Install 42" CMP		MWH-003	350	су	\$133.00	\$46,550.0
	12	Install Flap Gates		MWH-003	0	lf	\$0.00	\$0.0
	13	Replace Top Soil Mate	rials	MWH-003	1,150	су	\$11.00	\$12,650.0
		Middle Railroad Emb						
	14	Site Clearing & Grubbin		MWH-003	2.88	ac	\$8,600.00	\$24,768.0
	15	Misc Removals (Includ	ed in Unlisted Items Allowance)	MWH-003	1	ls	\$7,420.00	\$7,420.0
	16	Top Soil Excavation &	shear key Excavation	MWH-003	3,865	су	\$9.80	\$37,877.0
	17	V-Ditch Excavation		MWH-003	120	су	\$32.00	\$3,840.0
	18	Import/Place/Compact	Drain Materials	MWH-003	0	су	\$0.00	\$0.0
	19	Embankment Precomp		MWH-003	6,800	су	\$0.10	\$680.0
	20	Import/Place/Compact	Shell Materials	MWH-003	0	sy	\$0.00	\$0.0
	21	Import/Place/Compact	Core Materials	MWH-003	12,750	су	\$15.00	\$191,250.0
	22	Import/Place/Compact	Filter Sand	MWH-003	600	су	\$46.00	\$27,600.0
	23	Import/Place Rip Rap		MWH-003	320	су	\$104.00	\$33,280.0
	24	Install 42" CMP		MWH-003	0	су	\$0.00	\$0.0
	25	Install Flap Gates		MWH-003	0	lf	\$0.00	\$0.0
	26	Replace Top Soil Mate	rials	MWH-003	2,800	су	\$11.00	\$30,800.0
						 		
						1		
		Sheet Subtotal =						\$766,193.0
	I		QUANTITIES			F	PRICES	ψ1 00, 1 30.0
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٥,	A Niehih	nara			T. Brown		J. Loucks	
	A. Nishihara S. Stewart							
DATE BBE	E PREPARED PEER REVIEW		DATE PREPAR	⊢ I)		PEER REVIEW		

Sheet Subtotal =

A. Nishihara

DATE PREPARED

QUANTITIES

CHECKED

S. Stewart

T. Brown

PEER REVIEW

ESTIMATE WORKSHEET SHEET_3_ OF __4 _ BUREAU OF RECLAMATION PROJECT: FEATURE: Shasta Lake Water Resources Investigation **Central Valley Project - CA** Feasibility Study **Shasta Division Reservoir Area Dikes Feasibility** REGION: MP **ESTIMATE LEVEL:** WOID: **SHAEF** PRICE LEVEL: Apr - 10 **Most Probable MWH-003** 18.5-ft Dam Raise PLANT ACCOUNT TEM DESCRIPTION CODE QUANTITY UNIT UNIT PRICE AMOUNT **Excavation & Grading South Railroad Embankment** \$60,334.00 1 Site Clearing & Grubbing Below Dikes MWH-003 6.22 \$9,700.00 ac 2 Misc Removals (Included in Unlisted Items Allowance) MWH-003 \$7,420.00 \$7,420.00 ls 3 Top Soil Excavation & Shear Key Excavation MWH-003 8,326 \$11.00 \$91,586.00 су 4 V-Ditch Excavation MWH-003 177 \$30.00 \$5,310.00 су Import/Place/Compact Drain Materials 5 MWH-003 0 су \$0.00 \$0.00 \$3,920.00 Embankment Precompaction MWH-003 19,600 \$0.20 6 су \$0.00 7 Import/Place/Compact Shell Materials MWH-003 0 \$0.00 sy MWH-003 Import/Place/Compact Core Materials 97,375 \$14.00 \$1,363,250.00 8 су Import/Place/Compact Filter Sand 9 MWH-003 4,570 \$47.00 \$214,790.00 су MWH-003 \$255,840.00 10 Import/Place Rip Rap 2,460 \$104.00 су Install 42" CMP MWH-003 \$0.00 \$0.00 11 0 су MWH-003 \$0.00 12 Install Flap Gates 0 lf \$0.00 Replace Top Soil Materials MWH-003 6,700 \$12.00 \$80,400.00 13 су

Attachment 4-96	Draft – June 2013

\$2,082,850.00

PRICES

T. Brown

4/21/11

DATE PREPARED

CHECKED

J. Loucks

I. Buck

PEER REVIEW

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_4_ OF _4

BUREAU OF		ON	ESTIMATE WORK	SHEEL					
FEATU	JRE:			PROJECT	:				
Shasta Feasib		Water Resources Ii udy	nvestigation		Central Valle Shasta Divis	-	t - CA		
	•	ea Dikes		REGION:	MP		TE LEVEL:	Feasibility	
				WOID:	SHAEF	PRICE I	_EVEL:	Apr - 10	
		Most F	robable					•	
MWH-	003		18.5-ft Dam Ra	nise					
			10.0 11 24111110						
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
		Excavation & Grading							
	4	Bridge Bay Dike West	Dalaw Dikas	NAVA (L 000	2.20		¢4.740.00	#2.000.00	
	2	Site Clearing & Grubbing	I in Unlisted Items Allowance)	MWH-003 MWH-003	2.20	ac Is	\$1,740.00 \$7,420.00	\$3,828.00 \$7,420.00	
	3	Top Soil/Shear Key Exca	•	MWH-003	15,200	Cy	\$7,420.00	\$117,040.0	
	4	V-Ditch Excavation	valion	MWH-003	80	СУ	\$37.00	\$2,960.00	
	5	Import/Place/Compact D	rain Materials	MWH-003	790	СУ	\$45.00	\$35,550.00	
	6	Embankment Precompa		MWH-003	10,000	СУ	\$0.10	\$1,000.0	
	7	Import/Place/Compact S		MWH-003	0	sy	\$0.00	\$0.0	
	8	Import/Place/Compact C		MWH-003	43,900	су	\$14.00	\$614,600.00	
	9	Import/Place/Compact F		MWH-003	24,310	су	\$46.00	\$1,118,260.0	
	10	Import/Place Rip Rap		MWH-003	23,630	cy	\$80.00	\$1,890,400.0	
	11	Install 42" CMP		MWH-003	350	cy	\$133.00	\$46,550.0	
	12	Install Flap Gates		MWH-003	3	lf	\$3,230.00	\$9,690.0	
	13	Replace Top Soil Materia	ıls	MWH-003	15,200	су	\$11.00	\$167,200.0	
	14	Specialty Jet Grouting Ed	quipment Mobilization	MWH-003	1	ea	\$60,197.00	\$60,197.0	
	15	Jet Grouting Material (10	2, 5'D columns with 1' overlap)	MWH-003	2,650	су	\$649.00	\$1,719,850.00	
		Bridge Bay Dike East							
	16	Site Clearing & Grubbing	Below Dikes	MWH-003	1.12	ac	\$10,200.00	\$11,424.00	
	17	, , ,	I in Unlisted Items Allowance)	MWH-003	1	ls	\$4,020.00	\$4,020.0	
	18	Top Soil/Shear Key Exca	vation	MWH-003	16,800	су	\$8.80	\$147,840.0	
	20	V-Ditch Excavation		MWH-003	80	су	\$52.00	\$4,160.0	
	21	Import/Place/Compact D	rain Materials	MWH-003	380	су	\$55.00	\$20,900.0	
	22	Embankment Precompa	ction	MWH-003	5,300	sy	\$0.20	\$1,060.0	
	23	Import/Place/Compact S	hell Materials	MWH-003	0	су	\$0.00	\$0.0	
	24	Import/Place/Compact C	ore Materials	MWH-003	32,000	су	\$15.00	\$480,000.0	
	25	Import/Place/Compact F	lter Sand	MWH-003	7,720	су	\$46.00	\$355,120.0	
	26	Import/Place Rip Rap		MWH-003	7,440	су	\$81.00	\$602,640.0	
	28	Install 42" CMP		MWH-003	300	lf	\$136.00	\$40,800.0	
	29	Install Flap Gates		MWH-003	3	ea	\$3,480.00	\$10,440.0	
	30	Replace Top Soil Materia	als	MWH-003	16,800	су	\$12.00	\$201,600.0	
		Sheet Subtotal =						\$7,674,549.00	
			JANTITIES			F	PRICES		
BY			CHECKED	вү			CHECKED		
	A. Nishih	nara	S. Stewart		T. Brown		J. Loucks		
DATE PRI	EPARED		PEER REVIEW	DATE PREPAR	ED		PEER REVIEW		
ı	4/21/2011		T. Brown		04/21/11		I. Buck		

Attachment 4

ESTIMATE WORKSHEET

SUMMARY SHEET 1 OF 1

	ECLAMAT	ION	ESTIMATE WOR					SUMMARY SHEET 1 OF 1
FEATUR	RE:			PROJEC	CT:			
Shasta I	Lake	Water Resources I	nvestigation		Central Vall	ey Proiec	t - CA	
Feasibili			3		Shasta Divi			
Pit 7 Mc	odific	ations		REGION:	MP		TE LEVEL:	Feasibility
				WOID:	SHAEF	PRICE L		Apr - 10
		Most F	Probable					•
Summa	ıry		18.5-ft Dam R	aise				
, <u></u>	Ξ							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
AC P	PA							
		Pit 7 Mechanical Mo	difications					
		MWH-004 Sheet (1)						\$149,980.00
		Subtotal						\$149,980.00
		Mobilization/Gen	eral Conditions				10%	\$15,000.00

		Subtotal w/ Mobiliza	tion					\$165,000.00
		Danier Orași					050/	#40.000.00
		Design Continger	ncies				25%	\$42,000.00
		Allannana fan Do	on the state of th				00/	#0.000.00
		Allowance for Pro	ocurement Strategy				2%	\$3,000.00
		CONTRACT COST						\$340 000 00
		CONTRACT COST						\$210,000.00
		Construction Cor	tingencies	 			8%	\$20,000.00
		Jonali dellon Col	iningoriolos				U /0	ΨΖΟ,ΟΟΟ.ΟΟ
		FIELD COST						\$230,000.00
								Ψ=00,000.00
				 				
		Note: Escalation from publis	shed price level to notice to proceed is exclude	d. Estimates mav inc	clude discrepan	cies due to re	ounding.	
			nd terminology, see Reclamation Manual, Direct					
			JANTITIËS		, , ,		RICES	
вү			CHECKED	вү		-	CHECKED	
See Group	o Sheets	5	See Group Sheets		I. Buck		J. Loucks	
DATE PREP			PEER REVIEW	DATE PREP			PEER REVIEW	
			See Group Sheets	E NE	04/21/11		C. Wallace	
				<u> </u>				

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_1_ OF _1_

	ECLAMATIC	N	ESTIMATE WORKSI					SHEET1 OF1
FEATU	RE:			PROJECT	:			
Shasta l Feasibil		Water Resources Ir	nvestigation		Central Vall Shasta Divi		t - CA	
Pit 7 Mo				REGION:	MP		TE LEVEL:	Feasibility
				WOID:	SHAEF	PRICE L		Apr - 10
		Most F	Probable					- 1
MWH-0	04		18.5-ft Dam Raise					
			10.5-1t Baill (Kalst					
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Mechanical Modificatio	ons					
	1	6" Check Valve		MWH-004	2	EA	\$4,000.00	\$8,000.00
		6" "Red Valve" at end of	pipe	MWH-004	1	EA	\$4,500.00	\$4,500.00
		6" Gate Valve		MWH-004	2	EA	\$3,500.00	\$7,000.00
		8" 90 Deg. Elbow		MWH-004	1	EA	\$360.00	\$360.00
		8" 180 Deg. Bend		MWH-004	1	EA	\$360.00	\$360.00
	6	8" Pipe		MWH-004	22	LF	\$160.00	\$3,520.00
	7	8" Check Valve		MWH-004	2	EA	\$4,500.00	\$9,000.00
	8	8" "Red Valve" at end of	pipe	MWH-004	1	EA	\$6,000.00	\$6,000.00
		8" Gate Valve		MWH-004	2	EA	\$6,000.00	\$12,000.00
	10	10" 90 Deg. Elbow		MWH-004	1	EA	\$450.00	\$450.00
	11	10" 180 Deg. Bend		MWH-004	1	EA	\$450.00	\$450.00
	12	10" Pipe		MWH-004	22	LF	\$200.00	\$4,400.00
	13	4" Check Valve		MWH-004	4	EA	\$2,500.00	\$10,000.00
	14	4" Gate Valve		MWH-004	2	EA	\$3,000.00	\$6,000.00
	15	6" Pipe		MWH-004	200	LF	\$120.00	\$24,000.00
	16	6" Gate Valve		MWH-004	4	EA	\$3,000.00	\$12,000.00
	17	6" Tee (Steel)		MWH-004	2	EA	\$270.00	\$540.00
	18	Water Level Sensors		MWH-004	4	EA	\$350.00	\$1,400.00
	19	Air Compressor System	(250 cfm + 7500 gal tank)	MWH-004	1	ls	\$40,000.00	\$40,000.00
		Shoot Subtatal						¢4.40.000.00
		Sheet Subtotal =	UANTITIES				PRICES	\$149,980.00
DV		Q		DV		•		
BY	M. Xie		CHECKED D. Hutchings	вү	I. Buck		CHECKED J. Loucks	
DATE PREPARED 4/21/2011			PEER REVIEW	DATE PREPARED 04/21/11 PEER REVIEW C. Wallace				

BUREAU OF RECLAMATION ESTIMATE WORKSHEET 1 OF 1

BUREAU OF I		ION	ESTIMATE WORKS		SUMMARY SHEET 1 OF 1			
FEATU	IRE:			PROJE(CT:			
Shasta	Lake	Water Resources In	nvestigation		Central Val	ley Proiec	t - CA	
Feasibi					Shasta Divi			
			movals / Relocations)	REGION:	MP	ESTIMA	TE LEVEL:	Feasibility
		•	,	WOID:	SHAEF	PRICE I		Apr - 10
		Most F	Probable					•
Summ	arv		18.5-ft Dam Raise	9				
			100 11 2 4 11 11 14 10 10	-				
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
P. Co.	PAY		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Dagamusin anaa naan	ation facilities consists of:					
			relocating boating ramps					
			oration of camp grounds / RV Sites					
			cation of miscellanous structures					
		New Recreation	Facilities					
		MWH-005 Sheet (1)						\$14,346,600.00
		MWH-005 Sheet (2)						\$55,384,700.00
		MWH-005 Sheet (3)						\$18,306,200.00
		MWH-005 Sheet (4)						\$20,127,200.00
		Subtotal						\$108,164,700.00
		Mobilization/Gene	eral Conditions					\$7,889,860.00
		Subtotal w/ Mobilizat	tion					\$116,055,000.00
								, ,
		Design Continger	ncies				20%	\$23,223,000.00
								,
		Allowance for Pro	ocurement Strategy				2%	\$2,322,000.00
			3,					, -,,
		CONTRACT COST						\$141,600,000.00
								VIII,000,000
		Construction Con	tingencies				8%	\$11,300,000.00
		2558.058.011.0011					2,0	\$, 555 ,666
		FIELD COST						\$152,900,000.00
								Ţ. <u>0</u> 2,300,000,00
		Note: Escalation from public	shed price level to notice to proceed is excluded. Es	timates movin	clude discrenes	cies due to "	Junding	
		 	and terminology, see Reclamation Manual, Directives					
			JANTITIES	ana Standard	5 1 AO, UB-U1, U		RICES	
		પા		516		F		
ВҮ	61	-	CHECKED	вү	E 0-1		CHECKED	
See Grou			See Group Sheets		E. Cabero		J. Loucks	
DATE PRE	PARED		PEER REVIEW	DATE PREF			PEER REVIEW	
			See Group Sheets		04/18/11		I. Buck	

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_1_OF_4_

BUREAU OF		ION	ESTIMATE WOR					SHEET_1_ OF4
FEATU				PROJECT	:			
Shasta	Lake	Water Resources Ir	nvestigation		Central Valle	ey Project	: - CA	
Feasibi					Shasta Divis			
Reserv	oir Ar	ea Recreation (Re	movals / Relocations)	REGION:	MP	TE LEVEL:	Feasibility	
				WOID:	SHAEF	PRICE L	EVEL:	Apr - 10
		Most F	Probable					
MWH-0	005		18.5-ft Dam	Raise				
卢턴	Σ							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
AC P	Ą							
		Selective Demolition &	Replacement					
		Public Boat Ramps						
	1	Boat Ramp / Parking Are		MWH-005	136,539	·	\$15.00	\$2,048,085.00
	2	Boat Ramp / Parking Are		MWH-005	299,488		\$21.00	\$6,289,248.00
	3	Boat Ramp / Parking Are		MWH-005	31,720		\$43.00	\$1,363,960.00
	4 5	Parking Area Asphaltic C Boat Ramp Concrete Pa		MWH-005 MWH-005	17,035 2,034		\$135.00 \$366.00	\$2,299,725.00 \$744,444.00
	6	Boat Ramp / Parking Are		MWH-005	355,927		\$1.70	\$605,075.90
	7	Demo Marina Area Non-i	-	MWH-005	1,776		\$1.70 \$15.00	\$26,640.00
	8	Demo Marina Area Restr	•	MWH-005	600		\$17.00	\$10,200.00
	9	New Marina Area Non-Fl		MWH-005	1,776		\$345.00	\$612,720.00
	10	New Marina Area Restro		MWH-005	600		\$555.00	\$333,000.00
	11	Local Road Construction		MWH-005	111	tns	\$48.00	\$5,328.00
	12	Local Road Construction		MWH-005	45	tns	\$181.00	\$8,145.00
			•					
		+						
		+						
		+						
		<u> </u>						
		Sheet Subtotal =						\$14,346,570.90
			JANTITIES			Р	RICES	
BY		·	CHECKED	ву			CHECKED	
	I. Buck		C. Wallace		E. Cabero		J. Loucks	
DATE PRE	PARED		PEER REVIEW	DATE PREPAR			PEER REVIEW	
	4/18/2011	1			04/18/11		I. Buck	

DATE PREPARED

4/18/2011

PEER REVIEW

ESTIMATE WORKSHEET BUREAU OF RECLAMATION SHEET_2_ OF _4 _ FEATURE: PROJECT: Shasta Lake Water Resources Investigation **Central Valley Project - CA** Feasibility Study **Shasta Division** Reservoir Area Recreation (Removals / Relocations) **REGION:** MP **ESTIMATE LEVEL: Feasibility** WOID: **SHAEF** PRICE LEVEL: Apr - 10 **Most Probable MWH-005** 18.5-ft Dam Raise PLANT ACCOUNT ITEM DESCRIPTION CODE QUANTITY UNIT UNIT PRICE **AMOUNT** Selective Demolition & Replacement Marinas Boat Ramp / Parking Area Excavation MWH-005 567,144 \$8.00 \$4,537,152.00 cys 2 Boat Ramp / Parking Area Fill MWH-005 393,534 \$15.00 \$5,903,010.00 cys MWH-005 Boat Ramp / Parking Area Aggregate Base \$2,492,538.00 57,966 \$43.00 3 tns \$4,171,420.00 Parking Area Asphaltic Concrete MWH-005 31,130 4 tns \$134.00 Boat Ramp Concrete Paving MWH-005 1,420 \$347.00 \$492,740.00 cys Boat Ramp / Parking Area Concrete Retaining Walls MWH-005 16,638 \$977.00 \$16,255,326.00 cys Boat Ramp / Parking Area Reinforcing Steel MWH-005 3,160,118 \$1.40 \$4,424,165.20 lbs Demo Marina Area Non-floating Structures MWH-005 43,091 \$646,365.00 sf \$15.00 9 Demo Marina Area Restrooms MWH-005 617 \$15.00 \$9,255.00 sf 10 Demo Marina Area Other Land Structures MWH-005 3,791 \$9.10 \$34,498.10 sf MWH-005 36,993 \$384.00 \$14,205,312.00 11 New Marina Area Floating Structures sf \$1,152,522.00 12 New Marina Area Non-Floating Structures MWH-005 6,098 \$189.00 sf \$342,435.00 New Marina Area Restrooms MWH-005 617 \$555.00 13 sf MWH-005 \$678,589.00 14 New Marina Area Other Land Structures 3,791 sf \$179.00 15 Demo/Move Dock Anchors MWH-005 22 ea \$836.00 \$18,392.00 New Boat-In Sites MWH-005 5 \$4,200.00 \$21,000.00 sf \$55,384,719.30 Sheet Subtotal = **QUANTITIES PRICES** CHECKED CHECKED ΒY ΒY I. Buck C. Wallace E. Cabero J. Loucks

DATE PREPARED

04/18/11

PEER REVIEW

I. Buck

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_3_OF_4_

	UREAU OF RECLAMATION ESTIMATE WORKS									
FEATU	JRE:			PROJECT	:					
Shasta	Lake \	Water Resources Ir	nvestigation		Central Valle	ey Projec	t - CA			
Feasibi	ility Stu	ıdy			Shasta Divis	sion				
Reserv	oir Ar	ea Recreation (Re	movals / Relocations)	REGION:						
				WOID:	SHAEF	PRICE L	EVEL:	Apr - 10		
		Most P	Probable							
MWH-0	005		18.5-ft Dam Rai	se						
⊢ Z	Σ									
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT		
		Selective Demolition &	Paniscoment							
			·							
		Campgrounds / Day Us								
	1	Boat Ramp / Parking Are		MWH-005	3,987	cys	\$33.00	\$131,571.00		
	2	Boat Ramp / Parking Are		MWH-005	4,405	tns	\$43.00	\$189,415.00		
	3	Parking Area Asphaltic C		MWH-005	2,365	tns	\$136.00	\$321,640.0		
	4	· · · · · · · · · · · · · · · · · · ·	ea Concrete Retaining Walls	MWH-005	2,949	cys	\$963.00	\$2,839,887.0		
	5	Boat Ramp / Parking Are	<u> </u>	MWH-005	516,098	lbs	\$1.40	\$722,537.2		
	6	Demo Marina Area Non-	<u> </u>	MWH-005	3,861	sf	\$15.00	\$57,915.0		
	7	Demo Marina Area Restr		MWH-005	2,381	sf	\$16.00	\$38,096.0		
	8	New Marina Area Non-Fl	<u> </u>	MWH-005	4,311	sf	\$191.00	\$823,401.0		
	9	New Marina Area Restro		MWH-005	1,931	sf	\$555.00	\$1,071,705.0		
	10	On-Site Modification to P		MWH-005	14	ea	\$8,870.00	\$124,180.0		
	11	On-Site Modification to C		MWH-005	30	ea	\$13,850.00	\$415,500.0		
	12	On-Site Modification to R		MWH-005	28	ea	\$17,010.00	\$476,280.0		
	13	On-Site Modification to B	oat-In Sites	MWH-005	31	ea	\$6,240.00	\$193,440.0		
	14	Demo Picnic Sites		MWH-005	10	ea	\$2,840.00	\$28,400.0		
	15	Demo Campsites		MWH-005	88	ea	\$2,990.00	\$263,120.0		
	16	Demo Boat-In Sites		MWH-005	20	ea	\$2,030.00	\$40,600.0		
	17	New Picnic Sites		MWH-005	10	ea	\$6,040.00	\$60,400.0		
	18	New Campsites		MWH-005	88	ea	\$10,840.00	\$953,920.0		
	19	New Boat-In Sites		MWH-005	15	ea	\$4,200.00	\$63,000.0		
	20	New Trails		MWH-005	236,544	sf	\$2.10	\$496,742.4		
	21	New Trailheads		MWH-005	2	ea	\$8,710.00	\$17,420.0		
	22	Local Road Construction		MWH-005	40,863	cys	\$5.20	\$212,487.6		
	23	Local Road Construction	Fill	MWH-005	255,331	cys	\$29.00	\$7,404,599.0		
	24	Local Road Construction	Aggregate Base	MWH-005	13,627	tns	\$43.00	\$585,961.0		
	25	Local Road Construction	Asphaltic Concrete	MWH-005	5,489	tns	\$141.00	\$773,949.0		
		1								
		Sheet Subtotal =	JANTITIES			F	PRICES	\$18,306,166.2		
		QI				F				
ВҮ	I. Buck		CHECKED C. Wallace	ВҮ	E. Cabero		CHECKED J. Loucks			
DATE PRE			PEER REVIEW	DATE PREPAR			PEER REVIEW			
	4/18/2011				04/18/11		I. Buck			

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_4_OF_4_

	RECLAMATI	ON	ESTIMATE WORKS					SHEET_4_ OF _4 _	
FEAT	URE:			PROJECT	:				
	a Lake ' oility Stu	Water Resources Ir	vestigation		Central Valley Project - CA Shasta Division				
	-	-	movals / Relocations)	REGION:					
10001	7011 741	ca reorbation (reo	movale, relocations,	WOID:	SHAEF	PRICE		Feasibility Apr - 10	
		Most P	robable	WOID.	SHALI	PRICE		Apr - 10	
MWH-	-005	WOStr	18.5-ft Dam Rai	se					
			1010 10 2 0111 1 101						
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
		Selective Demolition &	Replacement						
		Resort Areas & Other N	on-Marina Commercial Recreation				+		
		USFS Fire/Ranger Facil							
	1	Boat Ramp / Parking Are		MWH-005	31,250	cys	\$21.00	\$656,250.0	
	2	Boat Ramp / Parking Are		MWH-005	1,350		\$44.00	\$59,400.0	
	3	Parking Area Asphaltic C		MWH-005	725		\$155.00	\$112,375.0	
	4	Boat Ramp Concrete Pay		MWH-005	123		\$366.00	\$45,018.0	
	5	Boat Ramp / Parking Are		MWH-005	21,389	,	\$1.70	\$36,361.3	
	6	Demo Marina Area Non-f		MWH-005	108,129		\$10.00	\$1,081,290.	
	7	Demo Swimming Pool	isating structures	MWH-005	8,160	_	\$8.70	\$70,992.	
	8	New Marina Area Non-Flo	pating Structures	MWH-005	68,929	_	\$198.00	\$13,647,942.	
	9	New Swimming Pool	odding of dotal or	MWH-005	8,160		\$66.00	\$538,560.	
	10	Demo/Move Dock Ancho	rs	MWH-005	1	ea	\$5,520.00	\$5,520.	
	11	Demo Campsites		MWH-005	19		\$2,930.00	\$55,670.	
	12	Demo RV Sites		MWH-005	88	_	\$2,960.00	\$260,480.	
	13	New Campsites		MWH-005	19	_	\$10,900.00	\$207,100.	
	14	New RV Sites		MWH-005	88	_	\$14,130.00	\$1,243,440.	
	15	Local Road Construction	Excavation	MWH-005	11,052		\$5.20	\$57,470.4	
	16	Local Road Construction		MWH-005	57,577		\$29.00	\$1,669,733.0	
	17	Local Road Construction		MWH-005	3,686		\$43.00	\$158,498.0	
	18	Local Road Construction		MWH-005	1,484		\$149.00	\$221,116.0	
		Sheet Subtotal =						\$20,127,215.	
		Ql	JANTITIES			F	PRICES		
Υ	I. Buck		CHECKED C. Wallace	вү	E. Cabero		CHECKED J. Loucks		
ATE PR	REPARED		PEER REVIEW	DATE PREPAR			PEER REVIEW		
	4/18/2011				04/18/11		I. Buck		

BUREAU OF RECLAMATION ESTIMATE WORKSHEET 1 OF 1

BUREAU OF		TION	ESTIMATE WOR		_	SUMMARY SHEET 1 OF 1		
FEATU	JRE:			PROJE	CT:			
Shasta	Lake	Water Resources II	nvestigation		Central Val	t - CA		
Feasib	ility St	udy			Shasta Divi	sion		
			ng Area Improvements	REGION:	MP	ESTIM <i>A</i>	TE LEVEL:	Feasibility
				WOID:	SHAEF	PRICE	LEVEL:	Apr - 10
		Most F	Probable					·
Summ	ary		18.5-ft Dam R	aise				
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
PL ACC	PA		2233 13.1	3322	Q0/11/11/1	5	5	,
		Reservoir area vehic	de roads:					
			e Lakeshore Drive					
			e Turntable Bay Area					
		Remove/Replace	-					
		•	e Jones Valley & Silverthorn Areas					
			e Salt Creek Road					
		Misc Parking Ar						
		Wilst Falking An	eas					
		MMH OOG Chart (4)						¢14 040 000 00
		MWH-006 Sheet (1)						\$14,010,600.00
		MWH-006 Sheet (2)						\$4,063,000.00
		MWH-006 Sheet (3)						\$6,539,300.00
		0.1.1.1						****
		Subtotal						\$24,612,900.00
		14 1 111 11 0 0 0						4000 500 00
		Mobilization & Ge	eneral Conditions					\$829,500.00
		0.14.4.1						***
		Subtotal w/ Mobiliza	tion					\$25,442,400.00
		Design Continger	ncies				20%	\$5,052,000.00
		Allowance for Pro	ocurement Strategy				2%	\$505,000.00
								•
		CONTRACT COST						\$31,000,000.00
		Construction Con	itingencies				8%	\$2,500,000.00
		FIELD COST						\$33,500,000.00
		1						
		Note: Escalation from publis	shed price level to notice to proceed is exclude	d. Estimates may in	clude discrepan	cies due to r	ounding.	
			nd terminology, see Reclamation Manual, Direc	tives and Standard	s FAC; 09-01, 0	9-02 and 09-		
		Ql	JANTITIES				PRICES	
BY			CHECKED	BY			CHECKED	
See Gro	up Sheets	s	See Group Sheets		P. Smith		J. Loucks	
DATE PRI	EPARED		PEER REVIEW	DATE PREF	PARED		PEER REVIEW	
			See Group Sheets		04/18/11		I. Buck	
				-				

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_1_ OF _3

	ECLAMATI	ON	ESTIMATE WOR					SHEET_1_ OF _3 _
FEATU	RE:			PROJECT	:			
Shasta	Lake	Water Resources	Investigation		Central Valley	Project -	- CA	
Feasibil			G		Shasta Divisio	-		
	•	•	ing Area Improvements	REGION:	MP	TE LEVEL:	Feasibility	
•				WOID:	SHAEF	PRICE I	LEVEL:	Apr - 10
		Most I	Probable					•
MWH-0	06		18.5-ft Dam R	aise				
			10.0 11 24 1	u.00				
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		New Road Construction	on					
		Lakeshore Drive						
	1	Remove Existing Aspha	alt Concrete Pavement/Base Materials	MWH-006	7	ac	\$49,591.00	\$347,137.0
	2	Clearing & Grubbing (N		MWH-006	7	ac	\$12,342.00	\$86,394.0
	3	Establish Traffic Contro		MWH-006		ls	\$132,505.00	\$132,505.0
	4	Excavation to Embankr		MWH-006	55,500		\$20.00	\$1,110,000.0
			nent			су	<u> </u>	
	5	Embankment Fill		MWH-006	149,250	су	\$34.00	\$5,074,500.0
	6	Aggregate Base Cours	e	MWH-006	13,526	tn	\$50.00	\$676,300.0
	7	Asphaltic Concrete		MWH-006	6,873	tn	\$135.00	\$927,855.0
	8	Road Striping		MWH-006	13,743	lf	\$1.00	\$13,743.
	9	Culvert Pipe -36" CMP		MWH-006	295	lf	\$160.00	\$47,200.
	10	Culvert Pipe -48" CMP		MWH-006	225	lf	\$189.00	\$42,525.
	11	Culvert Pipe -54" CMP		MWH-006	300	lf	\$217.00	\$65,100.
	12	Culvert Pipe -60" CMP		MWH-006	240	If	\$251.00	\$60,240.
	13	Culvert Pipe -72" CMP		MWH-006	110	If	\$303.00	\$33,330.
	14	Culvert Pipe - 84" CMP		MWH-006	215	ır If	\$355.00	\$76,325.
		'		MWH-006	213		\$32,836.00	
	15	Misc Roadway Signage	•		<u> </u>	ls		\$32,836.
	16	Guardrail		MWH-006	650	lf	\$42.00	\$27,300.
	17	Geotextile Fabric		MWH-006	56,058	sf	\$1.00	\$56,058.
	18	Filter Bed Material Type	e l	MWH-006	1,153	су	\$95.00	\$109,535.
	19	Rip Rap Type II		MWH-006	2,076	су	\$90.00	\$186,840.
	20	Seed Sideslopes		MWH-006	12.62	ac	\$1,313.00	\$16,570.0
	21	RR X-ing & RR flaggers	S	MWH-006	1	ls	\$134,507.00	\$134,507.0
		Turntable Bay Area						
	22	Remove Existing Aspha	alt Concrete Pavement/Base Materials	MWH-006	2	ac	\$27,507.00	\$55,014.0
	23	Clearing & Grubbing (N	lew Alinament)	MWH-006	2	ac	\$12,342.00	\$24,684.0
	24	Establish Traffic Contro	·	MWH-006	1	ls	\$16,133.00	\$16,133.
	25	Excavation to Embankr		MWH-006	19,000	су	\$20.00	\$380,000.
	26	Embankment Fill	none	MWH-006	71,500		\$32.00	\$2,288,000.
					· · · · · · · · · · · · · · · · · · ·	су	<u> </u>	
	27	Aggregate Base Course		MWH-006	4,517	tn	\$37.00	\$167,129.
	28	Misc Roadway Signage		MWH-006	1	ls	\$19,702.00	\$19,702.
	29	Concrete Retaining Wa		MWH-006	270	су	\$1,130.00	\$305,100.
	30	Concrete Retaining Wa	ills Rebar	MWH-006	71,575	lbs	\$1.00	\$71,575.
	31	Geotextile Fabric		MWH-006	275,410	sf	\$1.00	\$275,410.
	32	Filter Bed Material Type	e I	MWH-006	5,667	су	\$74.00	\$419,358.
	33	Rip Rap Type II		MWH-006	10,200	су	\$71.00	\$724,200.
	34	Seed Sideslopes		MWH-006	6	ac	\$1,313.00	\$7,457.
		Sheet Subtotal =						\$14,010,562.
			UANTITIES			F	PRICES	, , , , , , , , , ,
Υ			CHECKED	вү		_	CHECKED	
•	I Ruck				P. Smith		J. Loucks	
I. Buck C. Wallace						J. LOUGING		
ATE PRE			PEER REVIEW	DATE PREPAR	ED.		PEER REVIEW	

BUREAU OF	RECLAMATI	ION ESTIMATE WORK	SHEET	SHEET_2_ OF3			
FEAT	JRE:		PROJECT:				
	Lake	Water Resources Investigation	(Central Valley Shasta Divisio	-	- CA	
		Relocations/Parking Area Improvements	REGION:	MP		ATE LEVEL:	Feasibility
		The control of the co	WOID:	SHAEF		LEVEL:	Apr - 10
		Most Probable	WOID.	OHALI	i Kiol		Apr 10
MWH-	006	18.5-ft Dam Ra	ise				
		10.0 11 Bulli 114					
PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		New Road Construction					
		Gilman Drive					
	1	Remove Existing Asphalt Concrete Pavement/Base Materials	MWH-006	1	ac	\$45,712.00	\$45,712.0
	2	Clearing & Grubbing (New Alingment)	MWH-006	1	ac	\$12,342.00	\$12,342.0
	3	Establish Traffic Controls	MWH-006	1	ls	\$10,756.00	\$10,756.0
	4	Embankment Fill	MWH-006	28,500	су	\$33.00	\$940,500.0
	5	Aggregate Base Course	MWH-006	1,144	tn	\$46.00	\$52,624.0
	6	Asphaltic Concrete	MWH-006	544	tn	\$134.00	\$72,896.0
	7	Road Striping	MWH-006	1,246	lf	\$1.00	\$1,246.0
	8	Culvert Pipe -60" CMP	MWH-006	180	lf	\$245.00	\$44,100.0
	9	Misc Roadway Signage	MWH-006	1	ls	\$13,135.00	\$13,135.0
	10	Guardrail	MWH-006	220	lf	\$42.00	\$9,240.0
	11	Concrete Retaining Walls	MWH-006	143	су	\$1,172.00	\$167,596.0
	12	Concrete Retaining Walls Rebar	MWH-006	25,025	lbs	\$1.00	\$25,025.0
	13	Seed Sideslopes	MWH-006	1.14	ac	\$1,313.00	\$1,496.8
		Jones Valley & Silverthorn Areas					
	14	Remove Existing Asphalt Concrete Pavement/Base Materials	MWH-006	2	ac	\$37,414.00	\$74,828.0
	15	Clearing & Grubbing (New Alingment)	MWH-006	2	ac	\$12,342.00	\$24,684.0
	16	Establish Traffic Controls	MWH-006	1	ls	\$10,756.00	\$10,756.0
	17 18	Excavation to Embankment Embankment Fill	MWH-006 MWH-006	1,500 54,500	cy	\$75.00 \$25.00	\$112,500.0 \$1,362,500.0
	19	Aggregate Base Course	MWH-006	3,089	cy tn	\$38.00	\$1,302,300.0
	20	Asphaltic Concrete	MWH-006	1,382	tn	\$124.00	\$171,368.0
	21	Road Striping	MWH-006	3,562	lf	\$1.00	\$3,562.0
	22	Culvert Pipe -48" CMP	MWH-006	260	lf	\$163.00	\$42,380.0
	23	Culvert Pipe -60" CMP	MWH-006	210	lf ''	\$220.00	\$46,200.0
	24 25	Culvert Pipe -72" CMP Misc Roadway Signage	MWH-006 MWH-006	235	lf Is	\$266.00 \$13,135.00	\$62,510.0 \$13,135.0
	26	Geotextile Fabric	MWH-006	120,367	sf	\$1.00	\$120,367.0
	27	Filter Bed Material Type I	MWH-006	2,477	су	\$74.00	\$183,298.0
	28	Rip Rap Type II	MWH-006	4,458	су	\$71.00	\$316,518.0
	29	Seed Sideslopes	MWH-006	3.27	ac	\$1,313.00	\$4,293.5
		Sheet Subtotal =					\$4,062,950.3
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	I. Buck C. Wallace		P. Smith J. Loucks				
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	4/18/2011		04/18/11 I. Buck				

BUREAU OF	RECLAMATI	ION ESTIMATE WORK	SHEE I				SHEET_3_ OF _3 _
FEATU	JRE:		PROJECT	:			
		Water Resources Investigation		Central Valley	Project	- CA	
Feasib		<u> </u>		Shasta Divisio	-	- OA	
	-	Relocations/Parking Area Improvements	REGION:	MP	1	ATE LEVEL:	Feasibility
Major	Noau	Relocations/r arking Area improvements	WOID:	SHAEF	PRICE		Apr - 10
		Most Probable	WOID.	SHALF	PRICE	LEVEL.	Арі - 10
MWH0	06	18.5-ft Dam Rai	20				
		16.5-It Daili Ra	SE				
PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		New Road Construction					
		Salt Creek Road					
	1	Remove Existing Asphalt Concrete Pavement/Base Materials	MWH-006	1	ac	\$28,211.00	\$28,211.0
	2	Clearing & Grubbing (New Alingment)	MWH-006	1	ac	\$12,342.00	\$12,342.0
	3	Establish Traffic Controls	MWH-006	1	ls	\$10,756.00	\$10,756.0
	4	Excavation to Embankment	MWH-006	5,450	су	\$21.00	\$114,450.0
	5	Embankment Fill	MWH-006	34,563	су	\$32.00	\$1,106,016.0
	6	Aggregate Base Course	MWH-006	2,758	tn	\$60.00	\$165,480.0
	7	Culvert Pipe -24" CMP	MWH-006	40	lf	\$167.00	\$6,680.0
	8	Culvert Pipe -36" CMP	MWH-006	65	lf	\$179.00	\$11,635.0
	9	Culvert Pipe -60" CMP	MWH-006	325	lf	\$279.00	\$90,675.0
	10	Culvert Pipe -72" CMP	MWH-006	125	lf	\$337.00	\$42,125.0
	11	Misc Roadway Signage	MWH-006	1	ls	\$13,135.00	\$13,135.0
	12	Seed Sideslopes	MWH-006	4.69	ac	\$1,313.00	\$6,157.9
	13	Remaining Road Segments Remove Existing Asphalt Concrete Pavement/Base Materials	MWH-006	2	20	\$43,951.00	\$87,902.0
	14	Clearing & Grubbing (New Alingment)	MWH-006	2	ac	\$12,342.00	\$24,684.0
	15	Establish Traffic Controls	MWH-006	1	ac Is	\$12,342.00	\$150,940.C
	16	Excavation to Embankment	MWH-006	620	су	\$30.00	\$18,600.0
	17	Embankment Fill	MWH-006	89,251	су	\$42.00	\$3,748,542.0
	18	Aggregate Base Course	MWH-006	3,329	tn	\$40.00	\$133,160.0
	19	Asphaltic Concrete	MWH-006	1,018	tn	\$126.00	\$128,268.0
	20	Road Striping	MWH-006	3,939	If	\$1.00	\$3,939.0
	21	Culvert Pipe -18" CMP	MWH-006	30	lf	\$113.00	\$3,390.0
	22	Culvert Pipe -24" CMP	MWH-006	30	ır If	\$133.00	\$3,990.0
	23	Culvert Pipe -48" CMP	MWH-006	206	 If	\$167.00	\$34,402.0
	24	Culvert Pipe -72" CMP	MWH-006	80	If	\$272.00	\$21,760.0
	25	Misc Roadway Signage	MWH-006	1	ls	\$26,269.00	\$26,269.0
	26	Guardrail	MWH-006	380	If	\$42.00	\$15,960.0
	27	Geotextile Fabric	MWH-006	98,216	sf	\$1.00	\$98,216.0
	28	Filter Bed Material Type I	MWH-006	2,021	су	\$78.00	\$157,638.0
	29	Rip Rap Type II	MWH-006	3,638	су	\$74.00	\$269,212.0
	30	Seed Sideslopes	MWH-006	3.62	ac	\$1,313.00	\$4,753.0
		Sheet Subtotal =					\$6,539,288.0
		QUANTITIES			l	PRICES	
BY				D. Constitu		CHECKED	
DATE PR	I. Buck C. Wallace FE PREPARED PEER REVIEW			P. Smith ED		J. Loucks PEER REVIEW	
	4/18/2011		DATE PREPAR	04/18/11		I. Buck	

BUREAU OF I		ION	ESTIMATE WORKS					SUMMARY SHEET 1 OF 1
FEATU	IRE:			PROJE(CT:			
Shasta	Lake	Water Resources In	nvestigation		Central Vall	ey Proiec	t - CA	
Feasibi					Shasta Divi			
			vals / Relocations)	REGION:			TE LEVEL:	Feasibility
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		Most F	Probable	110151	0			740. 10
Summ	arv	Most i	18.5-ft Dam Raise	2				
			10.5-1t Balli Kalst	,				
PLANT ACCOUNT	PAY ITEM							
PLA CCC	γ¥		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
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		Reservoir area utiliti						
			relocating u/g utilities or wells					
			oration of wastewater facilities					
		Removal or relo	cation of power distribution facilities					
		New Water Treat	tment Plant Costs					
		MWH-007 Sheet (1)						\$20,987,500.0
		,						, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
		Subtotal						\$20,987,500.00
		Mobilization/Gene	eral Conditions					\$839,381.00
		Subtotal w/ Mobilizat	tion					\$21,827,000.00
		Design Continger	ncies				20%	\$4,339,000.00
		Allowance for Pro	ocurement Strategy				2%	\$434,000.00
			<u> </u>					. ,
		CONTRACT COST						\$26,600,000.00
								4 20,000,000.0
		Construction Con	atingencies				8%	\$2,200,000.00
		Jon Struction Con	ining on old				5 /0	Ψ2,200,000.00
		FIELD COST						\$28,800,000.00
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	Note: Escalation from published price level to notice to proceed is excluded. Es							
		Ref.: For appropriate use ar	and Standards	s FAC; 09-01, 0				
QUANTITIES						Р	RICES	
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	See Group Sheets See Group Sheets			P. Smith		J. Loucks		
	ATE PREPARED PEER REVIEW		DATE PREPARED PEER REVIEW					
			1	04/18/11		I. Buck		
	See Group Sheets			04/18/11 I. Buck				

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_1_OF_1_

BUREAU OF	RECLAMATIO	ON	ESTIMATE WORK	SHEET	SHEET1 OF1			
FEATU	JRE:			PROJECT	·			
Shasta Feasibi		Water Resources In	vestigation		Central Valle Shasta Divis	-	et - CA	
	-	-	vals / Relocations)	REGION:	MP		TE LEVEL:	Feasibility
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		Most D	robable	WOID.	SHAEF	FRICE	LEVEL.	Арі - 10
		WOSt P						
MWH-0	007		18.5-ft Dam Ra	ise				
T IN	ĒM							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Selective Demolition &	Replacement					
			•					
		All Areas						
	1	Demolish Buildings (Resi	dential/Commercial)	MWH-007	26,960	sf	\$9.00	\$242,640.00
	2	,	Pipes <6" (Abandon In Place)	MWH-007	7,395	If	\$3.00	\$22,185.00
	3	Demolish Potable Water	,	MWH-007	7,395	lf	\$7.00	\$51,765.00
	4	Relocate Potable Water F	,	MWH-007	11,045	lf	\$91.00	\$1,005,095.00
	5	Demolish Wells Commer	•	MWH-007	25	ea	\$2,630.00	\$65,750.00
	6	Relocate Wells Commerc		MWH-007	10	ea	\$17,092.00	\$170,920.00
	7	Demolish All Tanks	olal/Resideritial	MWH-007	10			
						ea	\$7,809.00	\$78,090.00
	8	New Tanks	Durana Otatiana	MWH-007	10	ea	\$184,572.00	\$1,845,720.00
	9	Demolish Potable Water	<u>'</u>	MWH-007	3	ea	\$3,215.00	\$9,645.00
	10	Relocate Potable Water F	·	MWH-007	3	ea	\$5,862.00	\$17,586.00
	11	Demolish Wastewater Pip		MWH-007	2,370	lf .r.	\$8.00	\$18,960.00
	12	Relocate Wastewater Pip		MWH-007	430	lf	\$85.00	\$36,550.00
	13		ık/Leach Field (Including Local Piping)	MWH-007	190	ea	\$1,579.00	\$300,010.00
	14	Relocate Residential Tan	k/Leach Field (Including Local Piping)	MWH-007	2	ea	\$28,813.00	\$57,626.00
	15		ach Field (Including Local Piping)	MWH-007	76	ea	\$1,579.00	\$120,004.00
	16	New Resort Tank/Leach	Field (Including Local Piping)	MWH-007	17	ea	\$28,547.00	\$485,299.00
	17	Relocate Holding Tank w	ith Pump Replacement	MWH-007	1	ea	\$49,925.00	\$49,925.00
	18	Demolish Low Voltage Po	ower Wires	MWH-007	31,045	lf	\$3.00	\$93,135.00
	19	New Low Voltage Power	Wires	MWH-007	30,050	lf	\$10.00	\$300,500.00
	20	Demolish High Voltage P	ower Wires	MWH-007	5,140	lf	\$70.00	\$359,800.00
	21	New High Voltage Power	Wires	MWH-007	7,740	lf	\$141.00	\$1,091,340.00
	22	Demolish Telecommunica	ations Wire	MWH-007	31,245	lf	\$3.00	\$93,735.00
	23	New Telecommunications	s Wire	MWH-007	33,380	lf	\$6.00	\$200,280.00
	24	Demolish Fiberoptics		MWH-007	5,180	lf	\$4.00	\$20,720.00
	25	New Fiberoptics		MWH-007	5,840	lf	\$8.00	\$46,720.00
	26	Wastewater Treatment P	lant Costs (Appendix B - Utilities Report)	MWH-007	1	ls	\$14,203,519.00	\$14,203,519.00
		Shoot Subtotal -						\$20 097 E40 00
	Sheet Subtotal = QUANTITIES				-	PRICES	\$20,987,519.00	
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D. 1 == == =	I. Buck		C. Wallace	 : -	P. Smith		J. Loucks	
			PEER REVIEW	DATE PREPAR				
4/18/2011					04/18/11		I. Buck	

BUREAU OF RECLAMATION

ESTIMATE WORKSHEET

SUMMARY SHEET 1 OF 1

Subtotal \$823,200. Mobilization/General Conditions \$10% \$80,000. Subtotal w/ Mobilization \$903,200. Design Contingencies \$20% \$179,000. Allowance for Procurement Strategy \$2% \$18,000. CONTRACT COST \$1,100,000. CONTRACT COST \$1,100,000. FIELD COST \$1,200,000. FIELD COST \$1,200,000. FIELD COST \$1,200,000. Roft: For appropriatie use and terminology, see Reclamation Manual, Directives and Standards FAC; 09-01, 09-02 and 09-03. QUANTITIES PRICES BY CHECKED BY CHECKED BY CHECKED BY CHECKED LOUGKS DATE PREPARED PEER REVIEW DATE PREPARED PEER REVIEW	BUREAU OF F		TION	ESTIMATE						SUMMARY SHEET 1 OF 1
Feasibility Study Most Probable Summary 18.5-ft Dam Raise Secretary Most Probable Summary 18.5-ft Dam Raise Summary 18.5-ft Dam Raise Summary Summary Summary Summary 18.5-ft Dam Raise Summary	FEATU	IRE:				PROJE	CT:			
Feasibility Study Most Probable Summary 18.5-ft Dam Raise Secretary Most Probable Summary 18.5-ft Dam Raise Summary Summary 18.5-ft Dam Raise Summary	Shasta	Lake	Water Resources	Investigation			Central Vall	ey Projec	t - CA	
Reservoir Area Recreation Enhancement (PP-5 Only Most Probable) Summary 18.5-ft Dam Raise 18.5-ft Dam Rai				-				-		
Most Probable Summary 18.5-ft Dam Raise Summary 19.5-ft Dam Raise 19.5-ft	Reserv	oir A	rea Recreation E	nhancement		REGION:			TE LEVEL:	Feasibility
Summary 18.5-ft Dam Raise Reservoir area recreation enhancement consists of: 18 miles of new trails and 6 trailheads 19 miles of new trails and 6 trailheads 10 miles of new trails and 6 trailheads 10 miles of new trails and 6 trailheads 11 miles of new trails and 6 trailheads 12 miles of new trails and 6 trailheads 13 miles of new trails and 6 trailheads 14 miles of new trails and 6 trailheads 15 miles of new trails and 6 trailheads 16 miles of new trails and 6 trailheads 17 miles of new trails and 6 trailheads 18 miles of new trails and 6 trailheads 18 miles of new trails and 6 trailheads 19 miles of new trails and 6 trailheads 10 miles of new trails and 6 trailheads 11 miles of new trails and 6 trailheads 12 miles of new trails and 6 trailheads 13 miles of new trails and 6 trailheads 14 miles of new trails and 6 trailheads 15 miles of new trails and 6 trailheads 16 miles of new trails and 6 trailheads 17 miles of new trails and 6 trailheads 18 miles of new trails and 6 trailheads 18 miles of new trails and 6 trailheads 19 miles of new trails and 6 trailheads 10 miles of new trails and 6 trailheads			_							•
Submitted Substitution Substit	0. 00	, <u>,</u>	Most	Probable		WOID.	OTIALI	i ition		Aprilo
Reservoir area recreation enhancement consists of: 18 miles of new trails and 6 trailheads NWMH-008 Sheet (1) Subtotal Subtotal Mobilization/General Conditions Subtotal Mobilization/General Conditions Design Contingencies Allowance for Procurement Strategy Allowance for Procurement Strategy CONTRACT COST CONTRACT COST Sign Construction Contingencies CONTRACT COST Sign Contract Cost FIELD COST Sign Contract Cost Note: Escalation from published price level to notice to proceed is excluded; Estimates may include discorpancies due to rounding. Note: Escalation from published price level to notice to proceed is excluded; Estimates may include discorpancies due to rounding. Rest: For appropriate use and terminology, see Recterration Manual, Directives and Standards FAC; 90:41, 09:02 and 09:02. Best Group Sivests See Group Sivests DATE PREPARED PEER REVEW	Summ	arv	WOS		am Daice					
Reservoir area recreation enhancement consists of: 18 miles of new trails and 6 trailheads New York of the second of of the secon				10.5-11 D	ani Naisc					
Reservoir area recreation enhancement consists of: 18 miles of new trails and 6 trailheads New York of the second of of the secon	F 2	TEM								
Reservoir area recreation enhancement consists of: 18 miles of new trails and 6 trailheads 18 miles of new trails and 6 trailheads MWH-008 Sheet (1) Se23,200. MWH-008 Sheet (1) Subtotal Subtotal Mobilization/General Conditions 10% Se32,200. Mobilization/General Conditions 10% Se32,200. Subtotal W Mobilization Subtotal W Mobilization Pessign Contingencies 20% S179,000. Allowance for Procurement Strategy CONTRACT COST S1,100,000. Construction Contingencies 8% S100,000. FIELD COST Note: Escalation from published price level to notice to proceed as excluded. Estimaties may include discrepancies due to rounding. Ref. For appropriate use and terminology, see Recurrention Manual, Directives and Standards RAC, 90 (1), 000 22 and 90 03. CUANTITIES PRICES BY CHECKED BY CHECKED CHECKED PER REVIEW PER REVIEW PER REVIEW	PLA	ΑΥΙ		DESCRIPTION		CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
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18 miles of new trails and 8 trailheads										
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Subtotal \$823,200. Mobilization/General Conditions \$10% \$80,000. Subtotal w/ Mobilization \$903,200. Design Contingencies \$20% \$179,000. Allowance for Procurement Strategy \$2% \$18,000. CONTRACT COST \$1,100,000. CONTRACT COST \$1,100,000. FIELD COST \$1,100,000. Note: Escalation from published price level to notice to proceed is excluded. Estimates may include discrepancies due to rounding. Ref.: For appropriate use and terminology, see Reclamation Manual. Directives and Standards FAC; 09-01, 09-02 and 09-03. QUANTITIES PRICES BY CHECKED See Group Sheets See Group Sheets PEER REVIEW DATE PREPARED PEER REVIEW										
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Mobilization/General Conditions 10% \$80,000. Subtotal w/ Mobilization \$903,200. Design Contingencies 20% \$179,000. Allowance for Procurement Strategy 2% \$18,000. CONTRACT COST \$1,100,000. Construction Contingencies 8% \$110,000. FIELD COST \$8% \$11,200,000. FIELD COST \$1,200,000. Note: Escalation from published price level to notice to proceed is excluded. Estimates may include discrepancies due to rounding. Ref: For appropriate use and terminology, see Reclamation Manual, Directives and Standards FAC; 09-01, 09-02 and 09-03. QUANTITIES PRICES BY See Group Sheets See Group Sheets E. Cabero J. Loucks DATE PREPARED PEER REVIEW										
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ESTIMATE WORKSHEET BUREAU OF RECLAMATION SHEET__1__ OF __1 __ FEATURE: PROJECT: Shasta Lake Water Resources Investigation **Central Valley Project - CA** Feasibility Study **Shasta Division** Reservoir Area Recreation Enhancement ESTIMATE LEVEL: Feasibility REGION: MP **CP-5 Only** WOID: SHAEF PRICE LEVEL: Apr - 10 **Most Probable** 800-HWM 18.5-ft Dam Raise PLANT ACCOUNT DESCRIPTION UNIT PRICE CODE QUANTITY UNIT AMOUNT Construction of new trails and trailheads Clearing, grubing, and grading for 18 miles of trails; Misc signage 1 New Trails MWH-008 367,044 \$770,792.40 sf \$2.10 \$52,380.00 2 New Trailheads MWH-008 6 \$8,730.00 ea

Sheet Subtotal =						\$823,172.40
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I. Buck	C. Wallace	E. Cabero J. Loucks			J. Loucks	
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FEATUF Shasta L Feasibili Gravel A CP-4 an	_ake ity Sti	Water Resources I	nvestigation	PROJE			4 04	
Shasta I Feasibili Gravel	_ake ity Sti		nvestigation				4 04	
Gravel A			3		Central Vall Shasta Divi		t - CA	
				REGION:			TE LEVEL:	Feasibility
J. 7 an				WOID:	SHAEF	PRICE		Apr - 10
	u 01		Probable	WOID.	OHALI	INOLI	V	Apr - 10
Summa	rv	WOSti	18.5-ft Dam Ra	ise				
			10.0 It Buill Na	100				
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Crovel Assumentation						
		Gravel Augmentation	O tons of gravel over 10 years along Upper S	Sacramente Div	or			
			Bluff Diversion Dam.	Sacramento Kiv	CI			
		upstream from Red	Biuli Diversion Dam.					
		MWH-009 Sheet (1)						\$2,847,300.00
		Subtotal						\$2,847,300.00
		Mobilization/Gen	eral Conditions					\$78,000.00
		Subtotal w/ Mobiliza	tion					\$2,925,300.00
		Design Continger	ncies				20%	\$613,000.00
		Allowance for Pro	ocurement Strategy				2%	\$61,000.00
		CONTRACT COST						\$3,600,000.00
		Construction Cor	ntingencies				8%	\$300,000.00
		FIELD COST						\$3,900,000.00
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			shed price level to notice to proceed is excluded. nd terminology, see Reclamation Manual, Directive				_	
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	Y CHECKED See Group Sheets See Group Sheets			ВҮ	R. Schiller		J. Loucks	
	TE PREPARED PEER REVIEW See Group Sheets			DATE PREPARED PEER REVIEW 04/20/11 I. Buck				

BUREAU OF RECLAMATION ESTIMATE VYORKS							SHEET1 OF1	
FEATU	RE:			PROJECT				
		Water Resources Ir				v Project	· - CA	
			ivestigation		Central Valle		I-CA	
Feasibi					Shasta Divis			
Gravel	Augm	entation		REGION:	MP	ESTIMA	TE LEVEL:	Feasibility
CP-4 a	nd CP	-5 Only		WOID:	SHAEF	PRICE L	.EVEL:	Apr - 10
		•	Probable					
		WOSt F	TODADIE					
MWH-0	009		18.5-ft Dam Raise					
⊢	-							
PLANT ACCOUNT	PAY ITEM							
A C	 		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
_ A	<u> </u>							
		Gravel Augmentation						
		Graver Augmentation						
	1	Gravel Placement with E	arthwork	MWH-009	24,081	су	\$52.80	\$1,271,476.80
	2	Clearing/Grubbing for Ac	cess Road	MWH-009	0.52	ac	\$1,780.00	\$925.60
	3	Excavation to Embankm		MWH-009	2,800		\$17.20	\$48,160.00
			Ciil			су		
	4	Embankment Fill		MWH-009	3,500	су	\$22.90	\$80,150.00
	5	Aggregate Base Course	(12 ft wide, 8in thick)	MWH-009	756	tn	\$35.50	\$26,838.00
	6	Gravel Placement with D	Dumptruck	MWH-009	11,382	су	\$49.60	\$564,547.20
	7	Clearing/Grubbing for Ac	·	MWH-009	0.64	ac	\$1,780.00	\$1,139.20
	8	Excavation to Embankm	ent	MWH-009	1,900	су	\$17.20	\$32,680.00
	9	Embankment Fill		MWH-009	2,375	су	\$22.90	\$54,387.50
	10	Aggregate Base Course	(12 ft wide, 8in thick)	MWH-009	513	tn	\$35.50	\$18,211.50
	11	In-River Direct Gravel Pl	· · · · · · · · · · · · · · · · · · ·	MWH-009	11,699	су	\$62.10	\$726,507.90
	12	Clearing/Grubbing for Ac		MWH-009	0.06	ac	\$1,780.00	\$106.80
	13	Excavation to Embankm	ent	MWH-009	400	су	\$17.20	\$6,880.00
	14	Embankment Fill		MWH-009	500	су	\$22.90	\$11,450.00
	15	Aggregate Base Course	(12 ft wide 8in thick)	MWH-009	108	tn	\$35.50	\$3,834.00
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		Sheet Subtotal =						\$2,847,294.50
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BUREAU OF RECLAMATION ESTIMATE WORKSHEET SUMMARY SHEET 1 OF 1

FEATURE:					CT:			
		Water Resources Ir	nvestigation		Central Valle	ey Projec	t - CA	
Feasibil			G		Shasta Divis	-		
		rian and Floodpla	in Habitat	REGION:	MP	ESTIMA	TE LEVEL:	Feasibility
CP-4 ar	nd CP	•		WOID:	SHAEF	PRICE L	.EVEL:	Apr - 10
		Most P	Probable					
Summa	ary		18.5-ft Dam Raise					
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
			ian and floodplain habitat restoration					
			ong historic Sacramento River side chanr		greater than	4,000 to 6	,000 cfs	
			embankment with two 36-inch diameter cu	ulverts				
			aquatic vegetation					
			parian vegetation: cottonwood, willow, box	elder, valle	y oak, wester	n sycamo	re, elderbery, a	nd understory brush.
		Temporary irrigati	ion and fensing					
		MWH-010 Sheet (1)						\$1,203,700.00
		WWW O TO CHECK (1)						ψ1,200,100.00
		Subtotal						\$1,203,700.00
		Mobilization/Gene	eral Conditions					\$100,000.00
		0-14-4-1-4-18-4						* 4 *** *** *** ***
		Subtotal w/ Mobilizat	ion					\$1,303,700.00
		Dooign Contingon	noine				20%	\$269,000.00
		Design Continger	icies				20%	\$209,000.00
		Allowance for Pro	ocurement Strategy				2%	\$27,000.00
		Allowariector Fro	odiement oudlogy				270	Ψ21,000.00
		CONTRACT COST						\$1,600,000.00
								,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
		Construction Con	tingencies				8%	\$100,000.00
		FIELD COST						\$1,700,000.00
						<u> </u>		
			shed price level to notice to proceed is excluded. Esti					
Ref.: For appropriate use and terminology, see Reclamation Manual, Directives QUANTITIES				and Standard	s FAC; 09-01, 09	-∪∠ and 09-(PRICES	
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BY Soo Grou	n Shoots		CHECKED See Group Sheets	ВҮ	P. Smith		CHECKED J. Loucks	
			PEER REVIEW	DATE PREI			J. LOUCKS PEER REVIEW	
	ANED		See Group Sheets	DATE PREI	04/21/11		I. Buck	
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BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_1_ OF __1_

BUREAU OF R	RECLAMATION	ON	ESTIMATE WORKS	HEET	SHEET1 OF1			
FEATU	RE:			PROJECT	:			
Shasta Feasibi		Water Resources I	nvestigation		Central Valle Shasta Divis	-	t - CA	
		arian and Floodpla	in Habitat	REGION:	MP		TE LEVEL:	Feasibility
		-5 Only	an rabitat	WOID:	SHAEF	PRICE		Apr - 10
Oi -4 ai		•	Probable	WOID.	SHALI	FRICE	LVLL.	Арт - ТО
	40	WOSt						
MWH-0	110	1	18.5-ft Dam Rais	se				
PLANT ACCOUNT	E							
PLA CCO	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
- 9	3							
		Reading Island ripar	ian and floodplain habitat restoration					
	1	Invasive Aquatic Vegeta	tion Removal (0.8 mi x 30ft)	MWH-010	2.91	ac	\$6,000.00	\$17,460.00
	2	Levy Excavation (3:1 cut	()	MWH-010	7,901	су	\$29.00	\$229,129.00
	3	Channel Excavation (ma	•	MWH-010	15,644	су	\$35.00	\$547,540.00
	4	Riparian Vegetation Rep	lanting (Up to 4 years)	MWH-010	2	ac	\$33,000.00	\$75,570.00
	5	Temporary Irrigation (Up	to 4 years)	MWH-010	1	ls	\$75,281.00	\$75,281.00
	6	Temporary Site Fencing	(Up to 4 years)	MWH-010	7,392	lf	\$35.00	\$258,720.00
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		Sheet Subtotal =	LIANITITICO			<u> </u>	PIOCO	\$1,203,700.00
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	I. Buck C. Wallace			P. Smith		J. Loucks		
DATE PRE	TE PREPARED PEER REVIEW		DATE PREPAR			PEER REVIEW		
	04/21/11			04/21/11 I. Buck				

BUREAU OF		TION	ESTIMATE WOR					SUMMARY SHEET 1 OF 1
FEATL	JRE:			PROJE(CT:			
		Water Resources In	nvestigation		Central Vall	ov Projec	4 - CA	
			rivestigation			-	i - CA	
Feasib	ility St	uay			Shasta Divi			
		nhancement & Trib		REGION:	MP		TE LEVEL:	Feasibility
Aquati	ic Hab	itat Enhanacemen	t	WOID:	SHAEF	PRICE I	LEVEL:	Apr - 10
CP-5 C	nly	Most F	Probable					
Summ			18.5-ft Dam R	aise				
			10.0 11 24111 11	aioo				
PLANT ACCOUNT	PAY ITEM							
PLA CC	ΑΥ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
- OA	9							
		Structural and veget	ative nearshore warm-water fish h	abitat enhance	ment			
			nittent stream crossing culvert repl					
		r cremmar and intern	intent stream crossing curvert repr	acement				
		MWH-011 Sheet (1)						\$7,735,100.00
		Subtotal						\$7,735,100.00
		Mobilization/Gen	eral Conditions					\$632,208.00
		WODINZATION/ GEN	erai Conditions					Ψ032,200.00
								*
		Subtotal w/ Mobiliza	tion					\$8,367,308.00
		Design Continger	ncies				20%	\$1,666,000.00
		Allowance for Pro	ocurement Strategy				2%	\$167,000.00
		Allowance for Fig	ocurement Strategy				2 /0	\$107,000.00
		CONTRACT COST						\$10,200,000.00
		Construction Cor	ntingencies				8%	\$800,000.00
			-					, , , , , , , , , , , , , , , , , , , ,
		FIELD COST						\$11,000,000.00
	1	I ILLD COST						φιι,υυυ,υυυ.υυ
	1					1	-	
	<u>L</u>					<u></u>		
		Note: Foodstier from 1.11	shed price level to notice to proceed is exclude	d Fatherster const		alaa diis te		
						_		
			nd terminology, see Reclamation Manual, Direc	ctives and Standards	s FAC; 09-01, 0			
		Ql	JANTITIES			P	RICES	
вү	CHECKED						CHECKED	
	see Group Sheets See Group Sheets			BY CHECKED E. Cabero C. Wallace				
DATEPRI	ATE PREPARED PEER REVIEW			DATE PREPARED PEER REVIEW				
	See Group Sheets				04/20/11		I. Buck	
	See Group Sheets							

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_1_ OF __1_

BUREAU OF	RECLAMATI	ON	ESTIMATE WORK	SHEET				SHEET1 OF1	
FEATU	JRE:			PROJECT	:				
Shasta Feasib		Water Resources Ir udv	nvestigation		Central Valle Shasta Divis	-	t - CA		
		hancement & Trib	utary	REGION:	MP		TE LEVEL:	Feasibility	
		itat Enhanacemen	-	WOID:	SHAEF	PRICE I		Apr - 10	
CP-5 C			robable	WOID.	OTIALI	i moz i		7451 10	
MWH-	•	most i	18.5-ft Dam Ra	nino					
			16.5-IL Daill Ra	aise					
PLANT ACCOUNT	PAY ITEM								
PLA	ΑΥΙ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
⋖	ш								
		a							
		Structural and veget	ative nearshore warm-water fish hab	itat enhancement	<u> </u>				
	4	M 10 D 101 1	DI .	NAU 1 044	100		044.070.00	** 407.000.00	
	1	Manzanita Brush Structu		MWH-011	100	ac	\$41,270.00	\$4,127,000.00	
		3,500 locations thro	ughout reservoir		100		****	***	
	2	Manzanita Brush O&M		MWH-011	100	ac	\$629.00	\$62,900.00	
		10-year period					****	*****	
	3	Willow Planting		MWH-011	14	ac	\$62,800.00	\$879,200.00	
			own zone on relatively level terrain				4		
	4	Willow O&M		MWH-011	14	ac	\$4,490.00	\$62,860.00	
		5-year period							
	5	Native Grass Seeding		MWH-011	16	ac	\$6,120.00	\$97,920.00	
			own zone on relatively level terrain						
	6	Willow O&M		MWH-011	16	ac	\$3,930.00	\$62,880.00	
		10-year lifespan							
		Perennial Stream Cro	ossings						
	1	FS 35N08 Sugarload Cre		MWH-011	1	ls	\$645,650.00	\$645,650.00	
	2	FS 35N60 McCloud (Site	,	MWH-011	1	ls	\$262,100.00	\$262,100.00	
	3	FS 35N60 Ellery Creek (·	MWH-011	1	ls	\$357,710.00	\$357,710.00	
	4	FS 35N60 Moore Creek	(Site 5)	MWH-011	1	ls	\$126,100.00	\$126,100.00	
		Intormittant Stream	Prancismo						
		Intermittent Stream (Jossings						
	Е	FC 25N47 Calt Crook (Ci	40.63	MWH-011		la	¢424_400_00	£121 400 00	
	5	FS 35N17 Salt Creek (Si	,	MWH-011	1	ls	\$131,400.00	\$131,400.00	
	6	FS 35N17 Salt Creek (Si	·		<u>I</u>	ls	\$93,370.00	\$93,370.00	
	7	FS 35N08 Sugarloaf Cre		MWH-011	1	ls	\$134,010.00	\$134,010.00	
	8	FS 35N60 McCloud Arm	` '	MWH-011	1	ls	\$93,370.00	\$93,370.00	
	9	FS 35N60 McCloud Arm		MWH-011	1	ls	\$93,370.00	\$93,370.00	
	10	FS 35N60 McCloud Arm	,	MWH-011	1	ls	\$93,370.00	\$93,370.00	
	11	FS 35N60 McCloud Arm	,	MWH-011	1	ls	\$93,370.00	\$93,370.00	
	12	FS 35N60 McCloud Arm	,	MWH-011	1	ls	\$93,370.00 \$131,770.00	\$93,370.00 \$131,770.00	
	13	FS 35N60 McCloud Arm	,	MWH-011	1	ls	\$131,770.00	\$131,770.00	
	14	FS 35N60 McCloud Arm	(Site 18)	MWH-011	1	ls	\$93,370.00	\$93,370.00	
		 							
							+		
							+		
		Sheet Subtotal =						\$7.735.090.00	
			JANTITIES			F	PRICES	Ţ. j. 00,000100	
BY			CHECKED	вү		-	CHECKED		
	I. Buck		C. Wallace		E. Cabero		C. Wallace		
DATE PRE			PEER REVIEW	DATE PREPARI			PEER REVIEW		
			···		04/21/11		I. Buck	HECKED Wallace EER REVIEW	
	04/21/11				U4/Z1/T1 I. BUCK				