Draft

Attachment 3 12.5-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	RECLAMAT	ON	ESTIMATE WORKS	HEET				SUMMARY SHEET 1 OF 1
FEATU	JRE:			PROJE(CT:			
		Water Resources Ir	nvestigation		Central Vall	lev Projec	t - CA	
Feasib			TVC3ttgattori		Shasta Divi		I-OA	
	-	ete) Dam		REGION:			TE LEVEL:	Fossibility
wani (Concr	ctc) Dain		WOID:	SHAEF	PRICE L		
		Most P		WOID.	OHALI	I KIOL I		Αρι - 10
_		WOSt F	Probable					
Summ	ary		12.5-ft Dam Raise					
۲ ۲	Σ Щ							
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
AC	Ą							
		Main (concrete) Dam	consists of:					
		12.5-ft mass & re	einforced concrete raise of the existing	concrete	dam			
		between blo	cks 15 thru 70 (including top of dam de	etails).				
		Bridge over raise	ed spillway (Included with spillway)					
		Extensions of th	e existing freight and passenger eleva	tor towers	 ;			
		Electrical and me	echanical features associated with the	top of dai	m			
		and the elev						
		Extending/drillin	g foundation drains (Not Included)					
			olition/salvaging of existing features as	ssociated	with existin	a main da	ım	
			5 5 2 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5					
		Sheets 1 - 3 : 86-6812	20			1		\$6.292.852.00
			tensions, top of dam miscellaneous meta	l work				Ψ0,202,002.00
		Sheets 4-6: 86-68130	•	Work				\$29 711 901 50
			f dam details, gallery					Ψ20,711,001.00
		Sheets 7 - 10: 86-684						\$4.246.200.00
			vers mechanical features					Φ4,240,200.00
		Sheet 11: 86-68430	vers mechanical leatures					\$725 700 00
			rana alaatii aal faati maa					\$6,292,852.00 \$29,711,901.50 \$4,246,200.00 \$725,700.00 \$725,700.00 \$42,976,653.50 \$0.00 \$42,976,653.50 \$4,077,860.50 \$47,054,514.00 \$945,486.00 \$48,000,000.00
		rop of dam & tow	vers electrical features					
		Subtotal 1						
		Mobilization		5%	+/-			\$2,000,000.00
		Subtotal 1 with Mobi	lization					\$42,976,653.50
		Escalation to Noti	ice to Proceed (NTP): None assumed.	0%				\$0.00
		Subtotal 2 = Subtota	I 1 with Mobilization + Escalation to NT	P				\$42,976,653.50
		Design Continger	ncies	10%	+/-			\$4,077,860.50
		Subtotal 3 = Subtota	I 2 + Design Contingencies					\$47,054,514.00
		Allowance for Pro	ocurement Strategies (APS)	2.0%	+/-			\$945,486.00
		Type of solici	itation assumed is: Request for Proposal					
		Subtotal 4 = Subtota	I 3 + APS					\$48,000,000.00
		CONTRACT COST						\$48,000,000.00
		Construction Con	tingencies	20%	+/-			\$10,000,000.00
		FIELD COST	-			1		
						+		, ,
	1					+		
						+		
	+					+		
	+					+		
						+		
	1		shed price level to notice to proceed is excluded. Est					
			nd terminology, see Reclamation Manual, Directives	and Standard	Js FAC; 09-01, 0			
		QU	ANTITIES				PRICES	
вү			CHECKED	BY			CHECKED	
See Gro	See Group Sheets See Group Sheets				Greg Akins			Kelly Brom
	DATE PREPARED PEER REVIEW			DATE PREP	ARED		PEER REVIEW	
DATE PRE	EPARED		L FFIX IVEAIFAA	-/ · · · · · · · · · · · · · · · · · · ·				

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_1_ OF _13_

	RECLAMA	TION	ESTIMATE WORK		_		01	HEET1 OF13
FEAT				PROJEC1				
		Water Resources	Investigation		Central Val	-	ect - CA	
Feasib					Shasta Divi			
Main (Conc	rete) Dam		REGION:	MP		ATE LEVEL:	Feasibility
				WOID:	SHAEF	PRICE	LEVEL:	Apr - 10
		Most I	Probable					
			12.5-ft Dam Raise	·				
NT TNUC	TEM							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		The following items	should be removed from the					
		Existing Dam:	should be removed from the					
	1	Gantry Crane Rails	(214-D-8793 & -10216)					
		Saw cut grout in	rail blockout (8-inch deep, ea. side)	68120	7,700	LF	\$7.80	\$60,060.00
		Remove grout in	, , , , , , , , , , , , , , , , , , , ,	68120	145	CY	\$350.00	\$50,750.00
		Remove 175 lb/y	rd crane rail (3,850 ft)	68120	224,600	LBS	\$0.07	\$15,722.00
		Remove 90 splic	e pl., 224 splice bars, 1970 rail clips,	68120	24,600	LBS	\$0.35	\$8,610.00
		800 bearing pla	tes, 224 splice bars w/bolts, nuts,					
		· ·	ontraction joint plates					
			will be removed and salvaged					
		by Contractor.						
	2	Limbtod Aluminum C	Cuardrail (244 D 40074)					
			Guardrail (214-D-10071) il from upstream face of dam	68120	2,860	LF	\$21.00	\$60,060.00
			drail is removed and reinstalled	00120	2,000	LI	φ21.00	\$00,000.00
		on downstream parag						
		on downstream parag	oct of raised creat.					
	3	Vehicle Barrier Gate	es (Bob Gee email dated 10/4/07)					
			icle barrier gates and controls	68120	2	EA	\$21,000.00	\$42,000.00
			a Barriers in raised crest of dam.					
		See CLIN 20 of email	from Bob Gee. (\$305,000)					
			(0.4.5.000.4					
	4		lwork (214-D-9299 thru -9303)	00400	50,000	1.00	00.00	#40.000.00
			of miscellaneous metalwork	68120	50,000	LBS	\$0.80	\$40,000.00
		, , ,	ers and manhole covers)					
		Assume lead based p	paint on 50% of metalwork.					
	5	Remove Freight & P	assenger Elevator Towers:					
			D-9743 thru -9745))					
		,	oncrete (f'c = 5,500 psi)	68120	600	CY	\$1,200.00	\$720,000.00
			cellaneous metalwork	68120	1,900	LBS	\$1.40	\$2,660.00
		Assume lead based p	paint on 50% of metalwork.					
	6		ee & Erection Platform Structure:				000 000 00	4-2
		,	·D-10214 & -10362))	00105	1 55	LS	\$22,000.00	\$22,000.00
			columns, floors, and walls:	68120	55	CY	Included in Lump Sum	
		Wood products:	700 cg. ft)	68120	1	LS	Included in Lump Sum	
		(Plywood infill walls: (Roofing: 420 sq. ft.)	1 30 54. II)					
		<u> </u>	4"x8" timbers: 325 sq. ft.)					
		(Temovable hoofing	т лот шпірого. 020 оц. It. <i>j</i>				 	
								**
	Sheet Subtotal =					PRICES	\$1,021,862.00	
- · ·		QU	JANTITIES					
BY	Com: O-	vdor	CHECKED Redney Parthol	ВҮ	Cros Alder		CHECKED Kally Bron	2
DATE	Gary Sn		Rodney Barthel	DATE BREEK	Greg Akins		Kelly Bron	1
DATEPR	TE PREPARED 4/9/2008 (updated 6/2010) PEER REVIEW Dick LaFond, P.E.		DATE PREPARED 12/07/10 PEER REVIEW Dan Donaldson					

	F RECLAMA ^T	TION	ESTIMATE WOR					SHEET_2_ OF13
FEAT	URE:			PROJECT	Γ:			
Shasta	a Lake	Water Resources	Investigation		Central Val	ley Proj	ect - CA	
Feasil	oility St	udy			Shasta Divi	sion		
Main	(Conci	ete) Dam		REGION:	MP	ESTIM	ATE LEVEL:	Feasibility
		•		WOID:	SHAEF	PRICE	LEVEL:	Apr - 10
		Most F	Probable					•
			12.5-ft Dam Rais	0				
	_		12.5-It Daill Nais	C				
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		-						
			should be installed on the					
		Raised Dam:						
	_							
	/	Gantry Crane Rails	II 475 lb / ol again a gall (0.050 lb . ft)	00400	004.000	1.00	#0.00	#404 400 00
			Il 175 lb/yd crane rail (3,850 lin. ft)	68120	224,600	LBS	\$2.20	\$494,120.00
			Il 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	hardware will be required.					
		Links Almada						
	8		uardrail (214-D-10071)	00400	0.000		#00.00	* 400.000.00
			rdrail on downstream parapet.	68120	2,860	LF	\$36.00	\$102,960.00
		Guardrail removed fro	m existing dam.					
		Waliala Bandan Oata	(Dal Oan and Hard 140/4/07)					
	9		s (Bob Gee email dated 10/4/07)	00400			#000 000 00	#440.000.00
			e barrier gates and controls	68120	2	EA	\$220,000.00	\$440,000.00
		Gates and controls re	moved from existing dam.					
	10		work (214-D-9299 thru -9303)					
		•	n-kind plus add stoplog slot covers.					
			w miscellaneous metalwork	68120	61,400	LBS	\$8.50	\$521,900.00
			h covers, water tight doors					
		and manhole covers						
		Assume galvaniz	ed steel.					
	11		ssenger Elevator Towers:					
		Assume replace i						
			nforced concrete (f'c= 4,000 psi)	68120	900	CY	\$2,400.00	\$2,160,000.00
		Reinforcement (150#	/CY)	68120	135,000	LBS	\$1.90	\$256,500.00
		Cement (0.28T/CY)		68120	250	TONS	\$150.00	\$37,500.00
		Miscellaneous Metalw	ork	68120	2,000	LBS	\$8.40	\$16,800.00
		a – –						
	12		Service & Erection Platform Struct	ıres:				
			ctures similar to existing one.	00155		6 11	00.100.00	***
			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
			ork (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
		Furnish and install str	uctural steel roof supports	68120	5,000	LBS	\$6.60	\$33,000.00
					1			
		Sheet Subtotal =						\$4,675,990.00
		QU	ANTITIES				PRICES	
вү			CHECKED	вү			CHECKED	
	Gary Sny	vder	Rodney Barthel		Greg Akins		Kelly E	Brom
DATE PR	REPARED		PEER REVIEW	DATE PREPAI			PEER REVIEW	
			Dick LaFond, P.E.		12/07/10		Dan Don	aldson
	0, 2000	(= ====================================					Dan Don	

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_3_ OF _13_

FEATURE:		PROJECT	' :					
Shasta	a Lake	Water Resources	Investigation		Central Val	ley Proj	ect - CA	
Feasib			C		Shasta Divi			
Main (Concr	ete) Dam		REGION:	MP	ESTIM/	ATE LEVEL:	Feasibility
		•		WOID:	SHAEF	PRICE	LEVEL:	Apr - 10
		Most P	Probable					
			12.5-ft Dam Raise					
PLANT ACCOUNT	РАУ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
PI	PA							
		The following items shoul	ld be installed on the					
		Raised Dam:						
	13	Extend existing cond	crete Gate Hoist Structure	86-68120	1	LS	\$480,000.00	\$480,000.00
		(Dwgs. 214-D-9388 8	k -9703)					
		(Assumed f'c = 4,000) psi reinforced concrete)					
		Concrete: 136 C	Υ					
			20,400 Lbs (based on 150 Lbs/CY)					
			ns (base on 0.282 Tons/CY ~ 6 sack m	ix)				
			nored dowel bars 335 EA					
		(based on 1'-0" s	spacing two faces)					
	1.1	Extend existing cond	crete Gate, Gate Hoist, and	86-68120	1	LS	\$115,000.00	\$115,000.00
	14	Stems Transfer Stru		00-00120	ı	LO	\$115,000.00	φ115,000.00
		(Dwgs. 214-D-9117 8						
		· -) psi reinforced concrete)					
		Concrete: 37 CY						
			5,550 Lbs (based on 150 Lbs/CY)					
			ns (base on 0.282 Tons/CY ~ 6 sack m	ix)				
			nored dowel bars 124 EA					
			spacing two faces)					
			,					
		This Sheet Subtotal :	=					\$595,000.00
		Chart 4 of 2 Cubtotal						£4 004 000 00
		Sheet 1 of 3 Subtotal Sheet 2 of 3 Subtotal						\$1,021,862.00 \$4,675,990.00
		Sheet 2 of 3 Subtotal	! =					\$4,675,990.00
					Total 86-68	120 =>		\$6,292,852.00
			ANTITIES				DDIOE 2	
		QU	ANTITIES				PRICES	
BY	Dede	Danthal	CHECKED	BY	Ones Alde		CHECKED	Ducana
DATE	Rodney I		Brad VanOtterloo		Greg Akins			Brom
DATE PR			PEER REVIEW	DATE PREPAR			PEER REVIEW	noldoon
	6/4/2010		Alfred Bernstein, P.E.		12/07/10		Dan Do	naluson

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_4_ OF _13_

EE A T		HON	LOTHWATE WOR		·_			SHEET_4_ OF13
FEAT				PROJECT				
			ces Investigation		Central Val	lley Proj	ect - CA	
Feasib					Shasta Div	ision		
Main ((Conc	rete) Dam		REGION:	MP	ESTIM	ATE LEVEL:	Feasibility
				WOID:	SHAEF	PRICE	LEVEL:	Apr - 10
		Мо	est Probable					
			12.5-ft Dam Rais	e				
ΓË	M							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
ACC	PA							
		EXCAVATION A	ND REMOVAL					
			re identical to the most probable					
			ty level estimate for the 18.5-foot					
		dam rais	-					
		damian						
	1	Demolition remo	val, and transportation of top of	86-68130	1	ls	\$530,000.00	\$530,000.00
		dam materials to	•	00 00 100	<u>'</u>	1.0	ψοσσ,σσσ.σσ	Ψοσο,σοσ.σο
			inforced concrete parapet wall					
		and curb:	miloroca derioroto parapet wan					
			, 2485 If sawcutting (6-inch,					
			lf), Depths: 1.25' horiz, 0.6' vert					
			uts for 2' x 2' end area at					
		upstream fac						
			sawcuts along u/s face and crest,					
		total 4,9						
			of concrete on u/s face (2' x 2'					
			or concrete on u/s race (2 x 2					
		end area):	070 vd0					
		2485 π ι	ong, total volume 370 yd3					
		CUREAGE PRE	NAD ATION					
		SURFACE PREF						
			re identical to the most probable					
			ty level estimate for the 18.5-foot					
		dam rais	S e					

	2	-	ater jet for existing dam crest	86-68130	1	ls	\$135,000.00	\$135,000.00
	_		2485', total area 74,550 ft2	22.22.122			****	
	3		xisting roadway drains	86-68130	1	ls	\$33,000.00	\$33,000.00
			50 ft3 of drains, 350 bags of					
		cement				1		
						1		

			SUBTOTAL THIS SHEE	Т				\$698,000.00
		C	QUANTITIES				PRICES	
BY			CHECKED	вү			CHECKED	
Thomas S			R. L. Reynolds, P.E.	Greg Akins Kelly Brom			rom	
DATE PR)	PEER REVIEW	DATE PREPAR			PEER REVIEW	
07/12/10					12/07/10		Dan Don	aldson

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_5_ OF _13_

BUREAU OF		IION	LOTHNATE WO					SHEE1_5_ OF13
FEAT	URE:			PROJECT	•			
Shasta	a Lake	Water Resource	ces Investigation		Central Val	ley Proj	ect - CA	
	oility St		ŭ		Shasta Div			
		rete) Dam		REGION:	MP	ESTIM.	ATE LEVEL:	Feasibility Apr - 10 AMOUNT \$10,000.00 \$80,600.00 \$48,750.00 \$9,500,000.00
				WOID:	SHAEF		LEVEL:	
		Mo	st Probable					•
			12.5-ft Dam Ra	ise				
ᆫᄫ	Σ							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		DRAIN HOLES						
		Quantities ar	re identical to the most probable					
			ry level estimate for the 18.5-foot					
		dam rais	-					
	4	Mahilipatian and	domobilization for drilling 4 in ab	86-68130	4	la	¢40,000,00	\$40,000,00
	4		demobilization for drilling 4-inch	00-00130	I	ls	\$10,000.00	\$10,000.00
	_	drains (298)		00.00400	000	ıe	#400.00	#00.000.00
	5		ains on 10-ft centers from	86-68130	620	lf	\$130.00	\$80,600.00
			crest, elev. 1077.5, each hole					
		2.5 feet long	,	00.00400	005	16	#450.00	#40.750.00
	6		nins from existing dam crest	86-68130	325	lf	\$150.00	\$48,750.00
		` '	for surface drainage at d/s					
		overhang; ea	ach 6.5 feet long (50 holes)					
		DAM RAISE						
	7	Mass concrete fo	r dam monoliths between	86-68130	25,000	yd3	\$380.00	\$9,500,000.00
			ns #15 and #71 (excluding					
			9 to #45 thru spillway). Vertical					
			en top of existing dam, elev.					
			ev. 1086.5 (anticipating					
			of 5- to 7.5-ft vertical lift, 50-ft					
			u/s-d/s matching existing Cr. Js,					
		·	Cr. Js, and no artificial cooling).					
			e will have a minimum					
		· ·	strength of 4000 psi at 365					
		·	es extending 5-inch formed					
		drains from e	elev. 1077.5 to the raised					
		concrete dan	n crest, elev. 1090.0 (with caps).					
			0					A A C C C C C C C C C C
			SUBTOTAL THIS SHE	:E1			PRIOSO	\$9,639,350.00
		Q	UANTITIES				PRICES	
ВҮ			CHECKED	вү			CHECKED	_
Thomas S			R. L. Reynolds, P.E.	Greg Akins Kelly Brom			Brom	
	REPARED		PEER REVIEW	DATE PREPAR			PEER REVIEW	
07/12/10				12/07/10 Dan Donaldson				aldson

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_6_ OF _13_

FEAT	URE:			PROJECT	:			6/12E1_0_ 6/ _ 15 _
Shasta	a Lake	Water Resource	ces Investigation		Central Val	ley Proj	ect - CA	
	oility St		3		Shasta Divi	-		
		rete) Dam		REGION:	MP	ESTIM	ATE LEVEL:	Feasibility
	•	•		WOID:	SHAEF	PRICE	LEVEL:	Apr - 10
		Мо	st Probable					
			12.5-ft Dam Raise	Э				
PLANT ACCOUNT	РАУ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		DAM RAISE (cor	ntinued)					
	8		andling cementitious materials -	86-68130	4,750	ton	\$140.00	\$665,000.00
			crete; 50% pozzolan, 50%					
			e II). Concrete is 4000 psi					
		at 365 days.		00.00400	44.000		4.50.00	*********
	9		te for top of dam (including	86-68130	14,000	yd3	\$450.00	\$6,300,000.00
		• • •	stream/downstream parapets,					
			between dam monoliths #15					
			cluding monoliths #39 to #45					
) above elev. 1086.5. Concrete					
	10	is 4000 psi a	•	96 69120	2.050	ton	¢140.00	¢552,000,00
	10	Furnishing and handling cementitious materials -		86-68130	3,950	ton	\$140.00	\$553,000.00
		for structural concrete [20% pozzolan, 80% cement (Type II)]. Concrete is 4000 psi at 28						
			e ii)j. Concrete is 4000 psi at 26					
	11	days.	acing reinforcing bars for the:	86-68130				
	11	Gallery	acing reinforcing bars for the.	00-00130	201,285	lb	\$1.90	\$382,441.50
		•	steel for exposed structural		798,000	Ib	\$1.90	\$1,516,200.00
		·	e surfaces		7 90,000	lib.	ψ1.90	ψ1,310,200.00
	12		stalling 6-inch steel top of dam	86-68130	1,850	If	\$190.00	\$351,500.00
	12		ains; standard weight pipe,	00-00100	1,000	"	ψ100.00	Ψοστ,σοσ.σο
			ain per block					
	13		ot diameter vertical shaft	86-68130	2	yd3	\$1,400.00	\$2,800.00
			crete, from the existing dam	00 00 100	_	, ,	\$1,100.00	ΨΞ,000.00
			noist gallery in Block 47, for					
			n electrical conduit.					
			SUBTOTAL THIS SHEE	Т				\$9,770,941.50
		Q	UANTITIES				PRICES	
BY			CHECKED	вү			CHECKED	
Thomas S	Thomas Scobell R. L. Reynolds, P.E. Greg Akins Kelly Brom			Brom				
DATE PREPARED PEER REVIEW DATE PRE			DATE PREPAR	ED		PEER REVIEW		
07/12/10					12/07/10		Dan Don	aldson

BUREAU OF RECLAMATION ESTIMATE WORK

ESTIMATE WORKSHEET SHEET_7_OF_13_

FEAT	URE:			PROJECT	:			
Shasta	a Lake	Water Resource	ces Investigation		Central Val	ley Proje	ect - CA	
Feasib					Shasta Divi	sion		
Main ((Concr	ete) Dam		REGION:	MP		ATE LEVEL:	Feasibility
				WOID:	SHAEF	PRICE	LEVEL:	Apr - 10
		Мо	st Probable					
			12.5-ft Dam Rais	e				
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		POST-TENSION	ED ANCHORS IN MAIN DAM					
	14	Mobilization and o	demobilization for drilling for	86-68130	1	ls	\$160,000.00	\$160,000.00
		post-tension	ed anchors					
	15	Ť	ying post-tension anchor holes 2 inches diameter, each 77.5	86-68130	10,850	lf	\$250.00	\$2,712,500.00
		feet long						
	16		stalling post-tension anchors , 90 feet long, 56 strands	86-68130	12,600	lf	\$260.00	\$3,276,000.00
			epoxy coated strands					
	17	·	ondary grouting for post- ochors 140 holes, 8845 ft3	86-68130	12,600	lf	\$25.00	\$315,000.00
		of grout						
	18	8 Furnishing and handling cementitious materials		86-68130	355	ton	\$350.00	\$124,250.00
		for grout 0.7:	1 by volume mix = 0.85 bags/ft3					
		for anchors						
	19		stalling anchor head hardware	86-68130	140	pckg	\$11,500.00	\$1,610,000.00
			udes: Steel bearing plate,					
			and wedges, and grout pad					
	20	Testing:		86-68130	1	ls	\$620,000.00	\$620,000.00
			st (entire length - all anchors)					
			sting (90% of anchors)					
			esting (20% of anchors)					
	0.4		ance testing (10% of anchors)	00.00400	404	- 10	#4.500.00	#400 F00 00
	21		or head blockouts:	86-68130	131	yd3	\$1,500.00	\$196,500.00
			s, 4000 psi concrete, 37 tons materials with 80% cement and					
		20% pozzoia	n, 4.730 lbs reinforcement					
			SUBTOTAL THIS SHEE	T				\$9,014,250.00
		O	UANTITIES				PRICES	+0,0.11,200100
вү		•	CHECKED	ву			CHECKED	
Thomas S	Scobell		R. L. Reynolds, P.E.		Greg Akins		Kelly E	3rom
DATE PR			PEER REVIEW	PEER REVIEW	U -		PEER REVIEW	
07/12/10					12/07/10		Dan Dor	aldson

BUREAU OF RECLAMATION ESTIMATE WORKSHEET

DESCRIPTION

waterstops across dam monolith contraction joints and around utility gallery at contraction

grouting of contraction joints (for monoliths

Furnishing and installing metal tubing &

Hookups to contraction joints (assume 3 per joint) - (48 joints; total 144 hookups)

contraction joints (Type II, final mix 0.9:1; 0.7 bags/ft3; 0.58 ft3 per joint) - (Assume 6

fittings, (1-1/2" std pipe; total 27,000 lbs)

Most Probable

Shasta Lake Water Resources Investigation

CONTRACTION JOINTS

joints

15-38, 46-71)

This Sheet Subtotal =

Sheet 1 of 5 Subtotal =

Sheet 2 of 5 Subtotal =

Sheet 3 of 5 Subtotal = Sheet 4 of 5 Subtotal =

22 Furnishing and installing 12-inch PVC

23 Mobilization and demobilization for pressure

25 Furnishing and handling cement for grouting

times final volume to cover waste)

24 Water test and pressure grout system:

FEATURE:

PLANT ACCOUNT

Feasibility Study

PAY ITEM

Main (Concrete) Dam

SHEET_8_ OF __13 __ PROJECT: **Central Valley Project - CA Shasta Division** REGION: ESTIMATE LEVEL: **Feasibility** MP WOID: SHAEF PRICE LEVEL: Apr - 10 12.5-ft Dam Raise QUANTITY CODE UNIT **UNIT PRICE** AMOUNT 86-68130 4,900 \$28.00 lf \$137,200.00 86-68130 1 \$30,000.00 \$30,000.00 ls 1 86-68130 ls \$420,000.00 \$420,000.00 86-68130 120 \$18.00 \$2,160.00 bag \$589,360.00 \$698,000.00 \$9,639,350.00 \$9,770,941.50 \$9,014,250.00 \$29,711,901.50 Total 86-68130 =>

I		Q	UANTITIES			F	PRICES	
I	вү		CHECKED	BY CHECKED				
	Thomas Scobell		R. L. Reynolds, P.E.		Greg Akins		Kelly	y Brom
I	DATE PREPAR	ED	PEER REVIEW	DATE PREPARED		PEER REVIEW		
	07/12/10				12/07/10		Dan D	onaldson

ESTIMATE WORKSHEET BUREAU OF RECLAMATION SHEET_9_ OF __13__ FEATURE: PROJECT: Shasta Lake Water Resources Investigation **Central Valley Project - CA** Feasibility Study **Shasta Division** Main (Concrete) Dam ESTIMATE LEVEL: **Appraisal** REGION: MP WOID: SHAEF PRICE LEVEL: Apr - 10 **Most Probable** 12.5-ft Dam Raise PAY ITEM **DESCRIPTION** CODE QUANTITY UNIT **UNIT PRICE AMOUNT** 1 Heating and Ventilating (H&V) Equipment Assumed ventilation air transferred from the elevator 8410 shafts through a motor-operated fire/smoke damper located at each gallery isolating fire door into two roadway galleries, each exhausted through a fan, control damper, stationary louver, and screens. Assumed transfer air will not require heating. Fans and dampers must be wired for control by the dam fire alarm system and smoke control system. \$10,000.00 \$20,000.00 1a F&I Centrifugal fan: rated 1300-cfm at 0.375" wgsp 8410 2 ea with 1/2-hp 1200-rpm motor and factory mounted disconnect switch and wall mounted starter and Hand-off-auto switch. 1b F&I 24"x24" Combination Fire and smoke damper with 8410 2 \$2,500.00 \$5,000.00 ea motor-actuator and resettable and reusable links. 1c F&I 24"x24" Control damper with motor actuator 8410 \$2,100.00 \$4,200.00 2 \$4,200.00 1d F&I 24"x24" Stationary steel louvers with screens. 8410 \$2,100.00 ea Conduit and wiring for H&V in 86-68430 estimate Sheet Subtotal = \$33,400.00 **QUANTITIES PRICES** ΒY CHECKED ΒY CHECKED

Greg Akins

12/07/10

DATE PREPARED

P. Schlein

DATE PREPARED

10/4/2007 (udated 6/2010)

R. Stephen

J. Grass

PEER REVIEW

Kelly Brom

Dan Donaldson

PEER REVIEW

12.5-foot Raise and Reservoir Area Infrastructure

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_10_ OF _13_

Attachment 3

BUREAU OF		ON	ESTIMATE WORK					SHEET10 OF13
FEATU				PROJE	CT:			
		Water Resources I	nvestigation		Central Val		ct - CA	
Feasib	-	_			Shasta Divi			
Main (Concre	ete) Dam		REGION:	MP	ESTIM <i>A</i>	ATE LEVEL:	Appraisal
				WOID:	SHAEF	PRICE	LEVEL:	Apr - 10
		Most I	Probable					
			12.5-ft Dam Rais	e				
ᆞ늘	Ξ							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
AC P	ΡĀ							
	2	GANTRY CRANE:						
	2a	Furnish and install ne	ew crane rails:	8410	1	LS	See 86-68120 It	tems
		175# ASCE rail -						
		steel rail clips - 2						
		steel bearing pla						
		7/8" x 12" ancho						
		1-1/4" x 6" bolts+						
		steel splice plate	s - 100					
					_			
	2b	· · · · · · · · · · · · · · · · · · ·	and aux. (25T) hooks to	8410	1	LS	\$770,000.00	\$770,000.00
			dd'l 20.5 ft height					
			f lift x 16 parts = 6,000 ft of					
			37 fiber core xip) for main rope					
			f lift x 6 parts = 1,920 ft of					
			x 37 fiber core xip) for aux. rope					
			drums for both main and aux.					
			per drum x 4 drums = 16,000 lbs.					
		structural steel, o	coated.					
	0 -	D		0.440		1.0	# 500.000.00	#500.000.00
	20	Remove and relocate		8410	1	LS	\$530,000.00	\$530,000.00
		top of dam locati	on (crane dead wt = 600 kips)					
							+	
							+	
							+	
							+	
							+	
		Sheet Subtotal =						\$1,300,000.00
	1		UANTITIES				PRICES	ψ1,500,000.00
DV		Q		DV				
BY			CHECKED D. Clarker	вү	0		CHECKED	h. Dansa
A. Ritt				D	Greg Akins			ly Brom
DATE PRE		7 () 1 2 2 2 2 2 2 2 2 2	PEER REVIEW	DATE PREF			PEER REVIEW	
	10/4/200	7 (udated 6/2010)	J. Grass		12/07/10		Dan D	onaldson

FEATURE:
Shasta Lake Water Resources Investigation

FEATURE:
Central Valley Project - CA

FEATU	EATURE:			PROJECT:				
<u> </u>		Water Resources Ir	nvestigation		Central Valle	y Projec	t - CA	
Feasibi			gamen		Shasta Divis	-		
	-	ete) Dam		REGION:			TE LEVEL:	Appraisal
(,		WOID:	SHAEF	PRICE I		Apr - 10
		Most F	Probable	170121	•			
			12.5-ft Dam Ra	ico				
_	_		12.5-It Daill Ka	1156			1	
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	3	ELEVATORS:						
		For both of the (2) 10,	000 lbs. capacity elevators:					
	0-	Dama aya masahira mufu		0440	4	1.0	#CO 000 00	#CO 000 00
	3a	-	om existing machine room	8410	1	LS	\$69,000.00	\$69,000.00
		and store						
	3b	Relocate machinery ir	nto new machine room	8410	1	LS	\$145,000.00	\$145,000.00
	0.0	recedents macrimisty in		0110	·		ψο,σσσ.σσ	ψ ,
	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 (electricate	al) cable for 20.5' lift	8410	1,500	ft	\$230.00	\$345,000.00
	3e	F&I governor rope for		8410	1,000	ft	\$35.00	\$35,000.00
		(approx) 1000 ft x	x 1 rope - 1/2" diam					
	O.t.		and for 20 El rains	0.440	4.000	£L.	#20.00	#452.000.00
	31	F&I compensation rop		8410	4,000	ft	\$38.00	\$152,000.00
		(approx) 500 π x	8 ropes - 1/2" diam					
	30	F&I guide rail extension	one for care and	8410	2,000	lbs.	\$52.00	\$104,000.00
	3g	counterweights for		8410	2,000	105.	\$32.00	\$104,000.00
		-	rails per cwt - 20.5' ea					
		approx 22.5 lbs/ft						
		арргох 22.0 186/11	2000 100					
							+	
		Sheet Subtotal =						\$990,000.00
			JANTITIES			F	PRICES	+-30,000,00
вү		3.0	CHECKED	вү		-	CHECKED	
A. Ritt R. Stephen		J- '	Greg Akins			y Brom		
DATE PRE	PARED		PEER REVIEW	DATE PREF			PEER REVIEW	-
		' (udated 6/2010)	J. Grass		12/07/10			onaldson
		,	•	•				

12.5-foot Raise and Reservoir Area Infrastructure

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_12_OF_13_

FEATU	RE:			PROJECT:						
Shasta	Lake \	Water Resources Ir	nvestigation		Central Valle	y Projec	t - CA			
Feasibi	lity Stu	dy			Shasta Divis	-				
Main (C	Concre	ete) Dam		REGION: MP		ESTIMA	TE LEVEL:	Appraisal		
				WOID:	SHAEF	PRICE L	.EVEL:	Apr - 10		
		Most P	Probable			_				
			12.5-ft Dam Raise							
⊢ L	EM									
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT		
A	3									
		07001 000 4110 011	WD-50							
	4	STOPLOGS AND GU	IDES:							
	4a	F&I Stoplog guides		8410	94,000	lbs.	\$8.20	\$770,800.00		
	74		carbon steel construction	0410	54,000	100.	ψ0.20	ψττο,000.00		
		with protective co								
			② 18,800 lbs per set							
		<u> </u>	2							
	4b	F&I Stoplogs		8410	192,000	lbs.	\$6.00	\$1,152,000.00		
		Welded structural	carbon steel construction							
		with protective co	ating							
		4 stoplogs @ 48,	000 lbs per log							
			ed at Shasta are presently at							
		Hungry Horse Da	m. They are 258' - 2" tall,							
		stacked height. T	he new raised height of Shasta							
			e a stacked height of							
			Four new logs used in conjunction							
			from Hungry Horse, would extend							
		the stacked heigh	t to 293' - 0".							
		This Sheet Subtotal :	_					\$1,922,800.00		
		Tills Sileet Subtotal	<u>-</u>					\$1,922,600.00		
		Sheet 1 of 4 Subtotal	=					\$33,400.00		
		Sheet 2 of 4 Subtotal						\$1,300,000.00		
		Sheet 3 of 4 Subtotal						\$990,000.00		
								,		
					Total 86-684	10 =>		\$4,246,200.00		
		6 11	IANITITIES			-	PICES			
->-		QU	JANTITIES	5 16		٢	RICES			
BY		D. L.	CHECKED	BY	0		CHECKED	W. D.		
DATE			Ryan Stephen	DATE 555	Greg Akins			elly Brom		
DATE PRE			PEER REVIEW	DATE PRE			PEER REVIEW	2		
10/4/2007 (udated 6/	2010)	John Grass		12/07/10		Dan I	Donaldson		

12.5-foot Raise and Reservoir Area Infrastructure

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_13_ OF _ 13_

BUREAU OF		ON	ESTIMATE WOR					SHEET13 OF 13
FEATL	JRE:			PROJEC	CT:			
Shasta	Lake '	Water Resource	es Investigation		Central Valle	y Project	t - CA	
Feasib			•		Shasta Divis	-		
		ete) Dam		REGION:	MP	ESTIMA [®]	TE LEVEL:	Appraisal
`		•		WOID:	SHAEF	PRICE L	.EVEL:	Apr - 10
		Мо	st Probable					
				oioo				
		<u> </u>	12.5-ft Dam Ra	aise				
PLANT ACCOUNT	PAY ITEM							
PLA	ΑΥ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
٩	-							
	1	Dom groot lighting	~ (FG low)	8430	110,000	O.F.	¢2.00	\$220 000 00
	<u>'</u>	Dam crest lighting	g (50 kw)	0430	110,000	SF	\$2.00	\$220,000.00
	2	Rigid metal condu	uit	8430			+	
		1"	uit	6430	3,300	СТ	\$34.00	\$112,200.00
		2"			3,100		\$56.00	\$173,600.00
					0,100		φοσ.σσ	Ψ170,000.00
	3	600 volt insulated	I cable, single-conductor, stranded-	8430				
		copper						
		10 AWG			10,000	FT	\$0.55	\$5,500.00
		2/0 AWG			13,000		\$8.30	\$107,900.00
					· ·			
	4	Power receptacle	es (gantry crane)	8430				
		480 volt, 3-pl	hase, 200 ampere		18	EA	\$2,000.00	\$36,000.00
	5	Distribution panel	lboards	8430				
		480 volt, 3-pl	hase, 400 ampere bus with 400 A		3	EA	\$12,000.00	\$36,000.00
		main circ	cuit breaker					
			It, 225 ampere bus with 225 A		5	EA	\$6,900.00	\$34,500.00
		main circ	cuit breaker					
		Note:					+ +	
			eter equipment included in machanical					
		estimate.	ator equipment included in mechanical					
		<i>-</i> รแกลเซ.					+	
	+						+	
			This Sheet and Total 86-68430 =>	,			+	\$725,700.00
			Chock and Total 00-00400 =2				+	ψι 20,1 00.00
							+	
							+	
							+	
	1	1	QUANTITIES			P	RICES	
BY	Mike Sch	nuh	CHECKED	ву		•	CHECKED	
וט	wirke SCI	iuii	C. Maurer	ы	Greg Akins			Brom
DATE PRI	EDADED		PEER REVIEW	DATE PREP			PEER REVIEW	ыош
		' (updated 6/2010)	G. Girgis	DATE PREP	12/07/10			onaldson
	10/1/200/	(apadica 0/2010)	O. Oligio		12/0// 10		Dan Do	maiuson

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SUMMARY SHEET 1 OF 1

BUREAU OF I		IUN	ESTIMATE WORKS		_			SUMMARY SHEET 1 OF 1
FEATU	JRE:			PROJE	CT:			
Shasta	Lake	Water Resources Ir	nvestigation		Central Val	ley Projec	t - CA	
Feasibi			-		Shasta Divi			
		(Concrete) Dam		REGION:	MP	ESTIMA	TE LEVEL:	Feasibility
ŭ				WOID:	SHAEF	PRICE I		Apr - 10
		Most P	Probable					
_		MOO! I						
Summ	ary		12.5-ft Dam Raise					
⊢ ^L Z	M							
PLANT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
AC	PA							
		Right Wing (Concret	•					
			einforced concrete raise of the existing					
			ks 70 to right abutment, including top of da			ing constr	(Not Included)).	
		Electrical and m	echanical features associated with the	top of dan	1			
		and the elev	ator towers.					
		Extending/drillin	g foundation drains					
		Gantry Crane an	d right abutment storage area					
		Access roads						
		Excavation/demo	olition/salvaging of existing features as	sociated v	with existing	right win	g dam	
					·		Ĭ	
		Sheet 1 through 4 - 8	36-68130 (dam raise, top of dam details, g	alleries an	d formed dra	ains)		\$2,998,860.00
		Onect i till ough 4 ° c	or too (dan raise, top or dam details, g	anorics, an	a formed are	1110)		Ψ2,000,000.00
		Chapt 2 96 69140 (a	accord roads)					¢615 170 00
		Sheet 3 - 86-68140 (a	access roads)					\$615,170.00
		8 1						
		Sheet 4 - 86-68430 (II	ghting electrical features)					\$47,640.00
		Subtotal 1						\$3,661,670.00
		Mobilization		5%	+/-			\$185,000.00
		Subtotal 1 with Mobi	lization	0,0	•			\$3,846,670.00
			ice to Proceed (NTP): None assumed.	0%				\$0.00
			I 1 with Mobilization + Escalation to NT					\$3,846,670.00
		Design Continger		10%	+/-			\$3,846,670.00
				1070	+/-			•
			I 2 + Design Contingencies	0.00/	. 1			\$4,215,373.00
			ocurement Strategies (APS)	2.0%	+/-			\$84,627.00
			itation assumed is: Request for Proposal					.
		Subtotal 4 = Subtota	I 3 + APS					\$4,300,000.00
		CONTRACT COST						\$4,300,000.00
		Construction Con	tingencies	20%	+/-			\$900,000.00
		FIELD COST						\$5,200,000.00
		Note: Escalation from publis	shed price level to notice to proceed is excluded. Esti	mates may in	clude discrepan	cies due to re	ounding.	
			nd terminology, see Reclamation Manual, Directives a					
	•		JANTITIËS				RICES	
вү			CHECKED	вү			CHECKED	
See Grou	un Sheets	3	See Group Sheets	<u> </u>	Greg Akins			lly Brom
DATE PRE		•	PEER REVIEW	DATE PREF			PEER REVIEW	, 5.011
DATE PKE	LFAKED			DATE PREF				Danaldas =
			See Group Sheets		12/07/10		Dan	Donaldson

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_1_OF_6_

FEAT	URE:			PROJECT	:			GHEET_1_ 01 0_
Shasta	a Lake	Water Resource	ces Investigation		Central Val	ley Proj	ject - CA	
Feasik	oility St	udy	_		Shasta Divi	ision		
Right	Wing	(Concrete) Da	m	REGION:	MP	ESTIM	ATE LEVEL:	Feasibility
				WOID:	SHAEF	PRICE	LEVEL:	Apr - 10
		Mo	st Probable					
			12.5-ft Dam Rais	е				
PLANT ACCOUNT	Ψ							
PLAN	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
_ A	<u> </u>							
		EXCAVATION AND F						
			dentical to the most probable					
			evel estimate for the 18.5-foot					
		dam raise						
	4	Damaditian namassal a	and topic an exterior of topic of	00.00400	4	l-	#400,000,00	#400 000 00
	1		and transportation of top of	86-68130	1	ls	\$100,000.00	\$100,000.00
		dam and right abutme	nt bench materials to					
		waste:	n of foundation (removing					
			erials) 500 c.y. assumed,					
			asphalt pavement					
			for 2' x 2' end area at					
			face 75 If sawcuts along u/s					
			rest, total 150 lf					
			oncrete on u/s face (2' x 2'					
			75 ft long, total volume 11 yd3					
		2.1.2.2.7	,					
		SURFACE PREPARA	ATION					
		Quantities are ic	lentical to the most probable					
		feasibility l	evel estimate for the 18.5-foot					
		dam raise						
	2	High-pressure water j	et for existing dam crest	86-68130	1	ls	\$3,200.00	\$3,200.00
		surface 30' x 75	', total area 2250 ft2					
	3	Local use of slush gro	outing and dental concrete	86-68130	1,000	yd2	\$37.00	\$37,000.00
		on rock						
		_	SUBTOTAL THIS SHEE	Т			PDIOCO	\$140,200.00
		C	UANTITIES				PRICES	
BY	S I - "		CHECKED	вү	0		CHECKED	
Thomas S			R. L. Reynolds, P.E.		Greg Akins		Kelly E	rom
DATE PR			PEER REVIEW / DATE	DATE PREPAR			PEER REVIEW	aldaan
07/15/10					12/07/10		Dan Dor	aiuson

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_2_OF_6_

FEAT	URE:			PROJEC1	:			0/1227 <u>-</u> 2-0/ <u>-0-</u>	
Shast	a Lake	Water Resource	ces Investigation		Central Val	ley Proj	ect - CA		
	bility S				Shasta Division				
Right	Wing	(Concrete) Da	m	REGION:	MP		ATE LEVEL:	Feasibility	
				WOID:	SHAEF	PRICE	LEVEL:	Apr - 10	
		Мо	est Probable						
			12.5-ft Dam Rais	е					
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
		DRAIN HOLES							
			dentical to the most probable						
			evel estimate for the 18.5-foot						
		dam raise							
		daniralse							
	4	Mobilization and demo	obilization for drilling	86-68130	1	ls	\$30,000.00	\$30,000.00	
		4-inch drains							
	5	Drilling 4-inch drains o	on 10-ft centers from	86-68130	20	lf	\$140.00	\$2,800.00	
		existing dam cre	est elev. 1077.5; each hole						
		2.5 feet long (7 l	holes)						
	6	Drilling 4-inch drains o	on 10-ft centers from utility	86-68130	500	lf	\$260.00	\$130,000.00	
		gallery, each ho	le 50 feet long into						
		foundation (10 h	noles)						
		DAM RAISE							
	7	Mass concrete for right	nt wing dam monoliths	86-68130	4,300	yd3	\$350.00	\$1,505,000.00	
	,		onoliths #72-73 and #75-#77.	00-00100	4,000	yuu	φοσ.σσ	ψ1,505,500.00	
			etween top of existing dam						
			ent bench, elev. 1077.5, to						
			nticipating placements of 5-						
		· ·	l lift, 50-ft wide & 40-ft						
			g existing Cr. Js, keys across						
			rtificial cooling). 4,000 psi at						
		365 days. Inclu	de 5" formed drains from El.						
		1077.5 to new c	rest El. 1090.0 (with caps).						
	8	Furnishing and handli	ng cementitious materials -	86-68130	800	ton	\$140.00	\$112,000.00	
		mass concrete;	50% pozzolan, 50% cement						
		(Type II). Concr	ete is 4000 psi at 365 days						
			SUBTOTAL THIS SHEE	т				\$1,779,800.00	
		Q	UANTITIES				PRICES		
BY			CHECKED	вү			CHECKED		
Thomas	Scobell		R. L. Reynolds, P.E.		Greg Akins		Kelly B	rom	
1	REPARED)	PEER REVIEW / DATE	DATE PREPAR			PEER REVIEW		
07/15/10					12/07/10		Dan Don	aldson	

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_3_OF_6_

FEAT	URE:			PROJECT:					
Shasta	a Lake	Water Resource	ces Investigation		Central Val	ley Proj	ect - CA		
	bility St				Shasta Division				
Right	Wing	(Concrete) Da	m	REGION:	MP		ATE LEVEL:	Feasibility	
				WOID:	SHAEF	PRICE	LEVEL:	Apr - 10	
		Мо	st Probable						
		_	12.5-ft Dam Rai	ise	_				
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
		DAM RAISE (continu	ned)						
	9	Structural concrete for	r top of dam (including	86-68130	1,750	yd3	\$380.00	\$665,000.00	
			gantry crane storage area,			,			
			ets, and walkway between						
			'2-73 and 75-77 above elev.						
		1086.5.							
	10	Furnishing and handli	ng cementitious materials -	86-68130	494	ton	\$170.00	\$83,980.00	
		for structural cor	ncrete; 20% pozzolan, 80%						
		cement (Type II)	. Concrete is 4000 psi at						
		28 days.							
	11	Furnishing and placing	g reinforcing bars for the:	86-68130					
		Gallery			18,600	lbs	\$1.70	\$31,620.00	
		Temperature ste	eel for exposed structural		97,000	lbs	\$1.70	\$164,900.00	
		concrete s	urfaces						
	12	Furnishing and installi	ng 6-inch steel top of dam	86-68130	74	lf	\$200.00	\$14,800.00	
		drains, 2 drains;	standard weight pipe, 19						
		lb/ft; 1 drain per	block.						
		CONTRACTION JOIN	NTS						
	13	Furnishing and installi	ng 12 inch PVC	86-68130	480	lf	\$32.00	\$15,360.00	
	13		ss dam monolith contraction	00-00130	400	"	ψ32.00	φ15,500.00	
		·	d utility gallery at contraction						
		joints	d dillity gallery at contraction						
	14	Mobilization and demo	obilization for pressure	86-68130	1	ls	\$27,000.00	\$27,000.00	
			raction joints (for monoliths						
		72-73, 75-77)							
								• • • • • • • • • • • • • • • • • • • •	
		_	SUBTOTAL THIS SH	EET			DDICES	\$1,002,660.00	
-10		Q	UANTITIES				PRICES		
BY	Cook -!!		CHECKED	вү	One of Aldres		CHECKED		
Thomas S			R. L. Reynolds, P.E.		Greg Akins		Kelly B	rom	
	REPARED		PEER REVIEW / DATE	DATE PREPAR			PEER REVIEW	aldean	
07/15/10					12/07/10		Dan Don	aiuson	

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_4_OF_6_

FEAT	JRE:			PROJEC	T:			SHEE1_4_ OF _ 6_
	a Lake		ces Investigation		Central Val Shasta Div		ect - CA	
Right	Wing	(Concrete) Da	m	REGION:			ATE LEVEL:	Feasibility
				WOID:	SHAEF	PRICE LEVEL:		Apr - 10
		Мо	st Probable					
			12.5-ft Dam	n Raise				
PLANT ACCOUNT	РАУ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		CONTRACTION JOIN	NTS (continued)					
	15	Water test and pressu	re grout system:	86-68130	1	ls	\$72,000.00	\$72,000.00
			nstalling metal tubing &					
		fittings, (1	-1/2" std pipe; total 2,700 lbs)					
		Hookups to cont	raction joints (assume 3 per					
		joint) - (4 jo	oints; total 12 hookups)					
	16	Furnishing and handli	ng cement for grouting	86-68130	15	bag	\$280.00	\$4,200.00
		contraction joints	s (Type II, final mix 0.9:1;					
		0.7 bags/ft3; 0.8	6 ft3 per joint) - (Assume 6					
		times final volun	ne to cover waste)					
		Subtotal this Sh	eet =					\$76,200.00
		Subtotal Sheet 1	=					\$140,200.00
		Subtotal Sheet 2	<u> </u>					\$1,779,800.00
			-					Ţ.,
		Subtotal Sheet 3	3 =					\$1,002,660.00
					Total 86-68	120		¢2 000 000 00
			UANTITIES		10(8) 80-68		PRICES	\$2,998,860.00
вү		<u> </u>	CHECKED	вү			CHECKED	
Thomas S DATE PR			R. L. Reynolds, P.E. PEER REVIEW / DATE	DATE PREPA	Greg Akins		Kelly E	Brom
07/15/10	LI ANED		I LEN NEVIEW / DATE	DATE FREP	12/07/10		Dan Dor	naldson

ESTIMATE WORKSHEET BUREAU OF RECLAMATION SHEET_5_ OF __6 _ FEATURE: PROJECT: Shasta Lake Water Resources Investigation **Central Valley Project - CA** Feasibility Study **Shasta Division** Right Wing (Concrete) Dam **REGION:** ESTIMATE LEVEL: MP **Feasibility** WOID: SHAEF PRICE LEVEL: Apr - 10 **Most Probable** 12.5-ft Dam Raise PLANT ACCOUNT PAY ITEM DESCRIPTION CODE QUANTITY UNIT **UNIT PRICE** AMOUNT 17,500 yd³ 1 Compacted backfill road embankment 8140 \$21.00 \$367,500.00 190 yd^3 \$6,270.00 2 Excavation 8140 \$33.00 3 Asphalt Concrete (4" Depth) 8140 760 tons \$190.00 \$144,400.00 4 Aggregate Basecourse (6" Depth) 1,100 tons \$50.00 \$55,000.00 8140 5 W-beam guardrail with 6' wood post 8140 840 If \$50.00 \$42,000.00 includes two metal beam railing terminal system and two metal beam guard railing connections to bridge railings \$615,170.00 This Sheet and Total 86-68140 => **QUANTITIES PRICES** CHECKED CHECKED ΒY ΒY Kelly Brom Nicholas Clough, PE Greg Akins Mark Leavitt, PE DATE PREPARED PEER REVIEW DATE PREPARED PEER REVIEW 10/11/2007 (Updated 6/2010)

12/07/10

Jesus G. Romero, PE

Dan Donaldson

12.5-foot Raise and Reservoir Area Infrastructure

ESTIMATE WORKSHEET BUREAU OF RECLAMATION SHEET_6_ OF __6 _ FEATURE: PROJECT: Shasta Lake Water Resources Investigation **Central Valley Project - CA** Feasibility Study **Shasta Division** Right Wing (Concrete) Dam **REGION:** MP ESTIMATE LEVEL: **Feasibility** WOID: **SHAEF** PRICE LEVEL: Apr - 10 **Most Probable** 12.5-ft Dam Raise PLANT ACCOUNT PAY ITEM QUANTITY UNIT PRICE CODE UNIT **AMOUNT** DESCRIPTION \$825.00 20 EA \$16,500.00 1 Parapet lighting fixtures 8430 120 volt, high pressure sodium \$36.00 2 Rigid metal conduit 8430 700 FT \$25,200.00 1-inch 3 600 volt insulated cable, single conductor, stranded-8430 2,200 FT \$2.70 \$5,940.00 copper 10 AWG This Sheet and Total 86-68430 => \$47,640.00 **QUANTITIES PRICES** CHECKED CHECKED ΒY ΒY M. Schuh C. Maurer Greg Akins Kelly Brom DATE PREPARED PEER REVIEW DATE PREPARED PEER REVIEW G. Girgis 9/25/07 (Updated 6/2010) 12/07/10 Dan Donaldson

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SUMMARY SHEET 1 OF 1

BUREAU OF I	RECLAMAT	ESTIMATE WORKS	HEET				SUMMARY SHEET 1 OF 1
FEATU	JRE:		PROJE	CT:			
•		Water Resources Investigation		Central Val	lev Proied	t - CA	
Feasibi		0		Shasta Divi	-		
Left W			REGION:			TE LEVEL:	Feasibility
		Most Probable	WOID:	SHAEF	PRICE		Apr - 10
				0117121			7.10 0
		40.5 % D					
Summ	ary	12.5-ft Dam Raise	9				
PLANT ACCOUNT	LEM						
PLAN	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
_ A	<u>a</u>						
		Left Wing (embankment) Dam consists of:					
		12.5-ft embankment raise of the existing embankment	dam				
		between blocks 15 to left abutment (including tiein	g into exis	ting concre	te core wa	all).	
		Electrical and mechanical features associated with exi	sting acces	ss			
		Access roads (state and county roads, rotunda)					
		Excavation/demolition/salvaging of existing features as	ssociated v	with existing	left wing	dam	
		86-68140 Sheet (access roads, parapet, sidewalks, curb & gutt	ers. rotund:	a)			\$296,650.00
		or control check (access reads) parapet, etaemante, care a gant	, , , , , , , , , , , , , , , , , , , ,	~/			Ψ200,000.00
		86-68311 Sheet (excavation/demolition/salvaging of					\$11,467,558.00
		existing features, embankment dam & core w	all extension	\n)			Ψ11,407,000.00
		existing leatures, embankment dam & core w	all exterision) (II)			
		OC CO420 Chart (tax of left wing days also trical factures)					¢20.400.00
		86-68430 Sheet (top of left wing dam electrical features)					\$39,190.00
		Subtotal 1					\$11,803,398.00
		Mobilization	5%	+/-			\$590,000.00
		Subtotal 1 with Mobilization					\$12,393,398.00
		Escalation to Notice to Proceed (NTP): None assumed.	0%				\$0.00
		Subtotal 2 = Subtotal 1 with Mobilization + Escalation to NT	Ъ				\$12,393,398.00
		Design Contingencies	10%	+/-			\$1,333,947.00
		Subtotal 3 = Subtotal 2 + Design Contingencies					\$13,727,345.00
		Allowance for Procurement Strategies (APS)	2.0%	+/-			\$272,655.00
		Type of solicitation assumed is: Request for Proposal					
		Subtotal 4 = Subtotal 3 + APS					\$14,000,000.00
		CONTRACT COST					\$14,000,000.00
		Construction Contingencies	20%	+/-			\$2,500,000.00
		FIELD COST	_5,5	- 1			\$16,500,000.00
							\$10,000,000.00
		Note: Escalation from published price level to notice to proceed is excluded. Es	timates may in	clude discrepan	cies due to r	ounding.	
		Ref.: For appropriate use and terminology, see Reclamation Manual, Directives	and Standard	s FAC; 09-01, 0	9-02 and 09-	03.	
		QUANTITIES			F	PRICES	
вү		CHECKED	вү			CHECKED	
See Grou	up Sheets			Greg Akins			elly Brom
DATE PRE			DATE PREF			PEER REVIEW	- ,
PATERKE	-1 41/50	See Group Sheets	PAIE FREE	12/07/10			Donaldson
		see Group sneets	1	12/0//10		⊔an	DOI I I I I I I I I I I I I I I I I I I

ESTIMATE WORKSHEET BUREAU OF RECLAMATION SHEET__1__ OF __3__ FEATURE: PROJECT: Shasta Lake Water Resources Investigation **Central Valley Project - CA** Feasibility Study **Shasta Division Left Wing Dam** ESTIMATE LEVEL: REGION: MP Feasibility **Most Probable** WOID: SHAEF PRICE LEVEL: Apr - 10 86-68140 12.5-ft Dam Raise PLANT ACCOUNT PAY ITEM DESCRIPTION AMOUNT CODE QUANTITY UNIT **UNIT PRICE** yd^3 1 Furnish and place reinforced concrete in retaining walls 200 \$170,000.00 8140 \$850.00 (f'c = 4,000 psi @ 28 days) 2 Furnish and install reinforcement, (fy = 60 ksi) 25,000 \$1.80 \$45,000.00 8140 lbs 3 Furnishing and handling cement 8140 285 \$190.00 \$54,150.00 tons 4 Furnish and install W-beam guardrail with 6' wood post 8140 550 \$50.00 \$27,500.00 lf includes two metal beam railing terminal system \$296,650.00 This Sheet and Total 86-68140 => **QUANTITIES PRICES** CHECKED CHECKED ΒY ΒY Nicholas Clough, PE Jesus G Romero Greg Akins Kelly Brom DATE PREPARED PEER REVIEW DATE PREPARED PEER REVIEW 5/14/2008 Dave K. Edwards, PE 12/07/10 Dan Donaldson

ESTIMATE WORKSHEET BUREAU OF RECLAMATION SHEET_2_ OF _3 PROJECT: FEATURE: Shasta Lake Water Resources Investigation Central Valley Project - CA **Shasta Division** Feasibility Study **Left Wing Dam REGION:** MP ESTIMATE LEVEL: **Feasibility Most Probable** WOID: **SHAEF** PRICE LEVEL: Apr - 10 86-68311 12.5-ft Dam Raise PLANT ACCOUNT ITEM CODE **DESCRIPTION** QUANTITY UNIT **UNIT PRICE AMOUNT** 1 Mobilization and Preparatory Work See summary sheet Excavation/removal/salvaging: 2 Remove guard shack and rotunda 86-68311 250,000.00 \$250,000.00 1 ls yd^3 86-68311 580 410.00 \$237,800.00 3 Removal of parapet wall 4 Removal of sidewalks and curbs 86-68311 In ft 30.00 \$135,000.00 4,500 yd^3 5 Remove roads (asphalt) 86-68311 1,700 110.00 \$187,000.00 13,000.00 6 Remove vegetation, trees (~20) 86-68311 ls \$13,000.00 114,000 ft² 7 Remove topsoil and stockpile 86-68311 0.35 \$39,900.00 ft² 8 Foundation stripping (footprint area of raised embankment) 210,000 1.05 \$220,500.00 86-68311 **Concrete Core Wall** yd³ 86-68311 9 Corewall common excavation (compacted fill) 5,300 21.00 \$111,300.00 10 Corewall removal (for weathering/key) 86-68311 35 yd³ 390.00 \$13,650.00 yd³ 11 Corewall rock excavation 86-68311 1,000 55.00 \$55,000.00 yd^3 86-68311 \$24,000.00 12 Extend access shaft vertically (6' diam) - 22 If extension 15 1,600.00 yd^3 86-68311 \$670,000.00 13 Reinforced concrete (extend wall laterally & vertically) 1,000 670.00 ft² 2.70 \$18,900.00 14 Foundation treatment, dental concrete etc. 86-68311 7,000 15 Reinforcement for core wall (150 lb/cv) 86-68140 152,000 1.65 \$250,800.00 Left Wing Dam Fill yd^3 16 Embankment - clayey gravel 86-68311 7,850 84.00 \$659,400.00 17 Embankment - filter/transition 86-68311 2,000 yd³ 100.00 \$200,000.00 yd^3 18 Embankment - rockfill 86-68311 57,400 95.00 \$5,453,000.00 yd^3 19 Embankment - Upstream riprap 86-68311 2,200 110.00 \$242,000.00 yd^3 20 Embankment - Downstream riprap 110.00 86-68311 3,200 \$352,000.00 ft² 0.65 21 Embankment - topsoil and seeding 86-68311 85,000 \$55,250.00 MSE wall ft² 22 Facing (shotcrete, precast concrete panel, etc) 86-68311 2,700 45.00 \$121,500.00 ft^2 86-68311 26,100 0.70 \$18,270.00 yd^3 24 Granular backfill - filter/transition material 86-68311 2,200 90.00 \$198,000.00 Miscellaneous ft² 25 Replace roadways - 6" asphalt, 8" base 86-68311 70,000 7.80 \$546,000.00 yd^3 910.00 26 Replace parapet wall 86-68311 600 \$546,000.00 27 Replace Rotunda Monument (price from MWH) 275.000.00 86-68311 \$275,000.00 1 ls 92.00 28 Replace sidewalks incl. curbs & gutters 86-68311 2,600 In ft \$239,200.00 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 \$198,000.00 31 Polypropylene fibers for sidewalk, curb, and gutters (1.5 l/cy) 4.80 \$2,688.00 86-68140 560 lb

	QUANTITIES		PRICES				
BY	CHECKED	вү	CHECKED				
Leif Dixon	Roger Torres	Greg Akins	Kelly Brom				
DATE PREPARED	PEER REVIEW	DATE PREPARED	PEER REVIEW				
10/9/2007	Becky Morfitt	12/07/10	Dan Donaldson				

This Sheet and Total 86-68311 =>

\$11,467,558.00

ESTIMATE WORKSHEET BUREAU OF RECLAMATION SHEET_3_ OF _3_ PROJECT: FEATURE: Shasta Lake Water Resources Investigation **Central Valley Project - CA** Feasibility Study **Shasta Division Left Wing Dam** MP ESTIMATE LEVEL: **Feasibility** REGION: **Most Probable** WOID: **SHAEF** PRICE LEVEL: Apr - 10 12.5-ft Dam Raise 86-68430 PLANT ACCOUNT PAY ITEM UNIT UNIT PRICE DESCRIPTION CODE QUANTITY **AMOUNT** \$14,040.00 1 Parapet lighting fixtures 8430 18 EA \$780.00 120 volt, 70 Watt, high pressure sodium 2 Rigid metal conduit 8430 600 FT \$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 This Sheet and Total 86-68430 => \$39,190.00 **QUANTITIES PRICES** ΒY ΒY CHECKED CHECKED Mike Schuh C. Maurer **Greg Akins** Kelly Brom DATE PREPARED DATE PREPARED PEER REVIEW PEER REVIEW

12/07/10

4/14/2008

G. Girgis

Dan Donaldson

ESTIMATE WORKSHEET BUREAU OF RECLAMATION SUMMARY SHEET 1 OF 1 FEATURE: PROJECT: Shasta Lake Water Resources Investigation **Central Valley Project - CA Shasta Division** Feasibility Study **Spillway Quantities REGION:** ESTIMATE LEVEL: MP **Feasibility Most Probable** WOID: **SHAEF** PRICE LEVEL: Apr-10 **Summary** 12.5-ft Dam Raise PLANT ACCOUNT **UNIT PRICE** DESCRIPTION CODE QUANTITY UNIT **AMOUNT** Sheets 1 through 3 - 86-68130 \$27,477,791.00 **Sheets 4 and 5 -** 86-68140 \$5,945,700.00 Sheet 6 - 86-68410 \$6,399,100.00 Sheet 7 - 86-68420 \$29,224,800.00 \$51,420.00 Sheet 8 - 86-68430 Subtotal 1 \$69,098,811.00 \$3,500,000.00 Mobilization 5% +/-Subtotal 1 with Mobilization \$72,598,811.00 Escalation to Notice to Proceed (NTP): None assumed. 0% Subtotal 2 = Subtotal 1 with Mobilization + Escalation to NTP \$72,598,811.00 **Design Contingencies** 10% +/-\$6,804,015.00 Subtotal 3 = Subtotal 2 + Design Contingencies \$79,402,826.00 Allowance for Procurement Strategies (APS) 2.0% +/-\$1,597,174.00 Type of solicitation assumed is: Request for Proposal Subtotal 4 = Subtotal 3 + APS \$81,000,000.00 CONTRACT COST \$81,000,000.00 **Construction Contingencies** 20% +/-\$17,000,000.00 FIELD COST \$98,000,000.00 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** CHECKED CHECKED BY

See Group Sheets

See Group Sheets

PEER REVIEW

Greg Akins

12/07/10

PEER REVIEW

Dan Donaldson

DATE PREPARED

See Group Sheets

DATE PREPARED

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_1_ OF _8 _

BUREAU OF R	RECLAMATIC	N	ESTIMATE WORK	79UEE1				SHEET1 OF8
FEATU	RE:			PROJEC	Γ:			
Shasta	Lake \	Nater Resourc	es Investigation		Central Valle	y Proie	ct - CA	
Feasibi			oo oo agaa on		Shasta Divis	-		
Spillwa				REGION:	MP		ATE LEVEL:	Feasibility
Оршис	iy Quu		ost Probable	WOID:	SHAEF	PRICE LEVEL:		Apr-10
		IVIC	ost Frobable	WOID:	SHAEF	PRICE	LEVEL:	Apr-10
			12.5-ft Dam Raise	9				
ΓÄ	Σ							
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Excavation/rem	oval					
	1	-	val, and transportation of	8130	1	ls	\$2,900,000.00	\$2,900,000.00
		<u> </u>	crest, piers, and chute materials:					
			of upstream reinforced concrete					
			ate supports. [1500 yd3, 660 ft of					
		6" saw	-					
			of downstream crest between	1				
		elevatio	n 1025.68 and 1006.13 (NAVD29)					
			d3, 375ft of 6" saw cuts)					
		Limited exca	vation of existing piers					
		(840 yd	3, 810 ft of 6" saw cuts)					
		Excavation of	of downstream chute between					
		elevatio	n 891.91 and 862.0 (NAVD29)					
		(3,400 y	rd3, 750 ft of 6" saw cuts)					
		Surface Prepara	· · · · · · · · · · · · · · · · · · ·					
	2	Backfill concrete	existing conduits, shafts, adits and	8130	1,020	vd3	\$155.00	\$158,100.00
	_		gate chambers and existing piers	0.00	1,020	,	\$100.00	Ψ.00,.00.00
		oponingo in aran	r gate chambers and existing piere					
	3	Furnishing and h	andling cementations materials	8130	290	tons	\$145.00	\$42,050.00
	J		d 20% pozzolan]	0100	230	10113	ψ143.00	Ψ+2,030.00
		100 % Cernent an	d 20 % pozzolanj					
	1	Mobilization and	demobilization for drilling anchor bars and	8130	1	ls	Included in mobilizati	on on ourmany choos
	4	embedment for re		0130	'	15	mciuded in mobilizati	on on summary snee
		embedment for f	emorcement					
		Spillway Crest N	Modifications:					
	5		te for spillway crest	8130	11,500	yd3	\$400.00	\$4,600,000.00
		[4000 psi compr	essive strength]					
	6	Furnishing and h	andling cementations materials	8130	3,150	tons	\$145.00	\$456,750.00
		[80% cement an	d 20% pozzolan]					
	7	Furnishing and p	lacing reinforcing bars	8130	155,000	lbs	\$1.80	\$279,000.00
	8	Drilling for ancho	r bars into spillway crest	8130	5,250	lf	\$93.00	\$488,250.00
		[1.5-inch-diamet	er hole for #9 bar, 1500 holes 3.5 feet deep	0]				
		Note: Quantity of	nanges from the 18.5' raise noted in bold					
			J. 1					
		Sheet Subtotal :						\$8,924,150.00
			QUANTITIES			Р	RICES	
вү			CHECKED	вү			CHECKED	
Thomas Sc	obell		R. L. Reynolds, P.E.		Greg Akins			Brom
DATE PRE			PEER REVIEW / DATE	DATE PREPAI			PEER REVIEW	
			I The state of the	1				

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_2_OF_8_

BUREAU OF F	RECLAMATIC	DN	ESTIMATE WORK	SHEET				SHEET2 OF8
FEATU	JRE:			PROJECT	Γ:			
Shasta Feasibi		Raise - 12.5-foo idy	ot Raise		Central Valle Shasta Divis		ct - CA	
Spillwa	-	-		REGION:	MP	ESTIM/	ATE LEVEL:	Feasibility
		Мо	est Probable	WOID:	SHAEF	PRICE	LEVEL:	Apr-10
Civil			12.5-ft Dam Raise					
	>		TEIO II DAITI NAIDO					
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Spillway Crest P	liare.					
		Opinway Orest i	1013.					
	9	Structural concre	te for spillway piers	8130	10,500	vd3	\$500.00	\$5,250,000.00
		[4000 psi compre			,	,	Ţ	+ -,=,
			<u> </u>					
	10	Furnishing and ha	andling cementitious materials	8130	2,900	tons	\$145.00	\$420,500.00
		[80% cement and	d 20% pozzolan]					
	11	Furnishing and pl	acing reinforcing bars	8130	1,200,000	lbs	\$1.80	\$2,160,000.00
	12		cement in existing piers	8130	18,760	lf	\$135.00	\$2,532,600.00
		[2-inch-diameter	hole for #11 bar, 1720 holes, min. 5 feet de	epj T				
		Spillway Aeratio	n Systom:					
		Spiliway Aeratio	ii System.					
	13	Structural concre	te for spillway crest	8130	2,375	vd3	\$520.00	\$1,235,000.00
		[4000 psi compre		0.00	2,0.0	y a c	ψ020.00	ψ 1,200,000.00
		Lucia Paragram						
	14	Furnishing and ha	andling cementitious materials	8130	870	tons	\$145.00	\$126,150.00
		[80% cement and	d 20% pozzolan]					
	15	Furnishing and pl	acing reinforcing bars	8130	145,400	lbs	\$1.80	\$261,720.00
	16	-	r bars into spillway chute	8130	2,365	lf	\$135.00	\$319,275.00
		[1.5-inch-diamete	er hole for #9 bar, 675 holes, 3.5 feet deep]					
		Post Tansianad	Anchero in Chillway Bioro					
		Post-Tensionea	Anchors in Spillway Piers					
	17	Mobilization and	demobilization for drilling for	8130	1	ls	\$160,000.00	\$160,000.00
		post-tensioned ar		0.00		10	Ψ100,000.00	ψ100,000.00
	18	Drilling and surve	eying post-tension anchor holes	8130	7,896	lf	\$260.00	\$2,052,960.00
		·	nits in each of the 5 internal piers					
		7 anchor un	its in each of the 2 end piers					
		84 holes, 12 inch	es diameter, each 94-feet in length					
	19	-	stalling post-tension anchors	8130	7,896	lf	\$270.00	\$2,131,920.00
			feet long, 56 strands					
		U.6 inch dia epox	xy coated strands					
		Note: Quantity of	nanges from the 18.5' raise noted in bold					
		Sheet Subtotal =						\$16,650,125.00
			EQUANTITIES			P	RICES	ψ10,030,123.00
вү			CHECKED	вү		•	CHECKED	
Thomas So	cobell		R. L. Reynolds, P.E.	<u> </u>	Greg Akins		Kelly	Brom
DATE PRE			PEER REVIEW / DATE	DATE PREPAI			PEER REVIEW	
07/20/10					12/07/10		Dan Do	naldson
07720/10					12/07/10		Dali Doi	laiusoii

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_3_OF_8_

84 holes, 5600 ft3 of grout 21 Furnishing and handling cementitious materials for grout [0.7:1 by volume mix = 0.85 bags/ft^3] 22 Furnishing and installing anchor head hardware 8130 84 pckg \$13, Package includes: Steel bearing plate, anchor head and wedges, and grout pad 23 Testing for 84 anchors Water test (entire length - all anchors) Proof testing (90% of anchors) Lift-off testing (20% of anchors) Performance testing (10% of anchors)	Apr-10
Feasibility Study Spillway Quantities Most Probable Most Probable 12.5-ft Dam Raise Civil 12.5-ft Dam Raise CODE QUANTITY UNIT UNIT UNIT PROBABLE 12.5-ft Dam Raise CODE QUANTITY UNIT UNIT PROBABLE 13.0 Primary and secondary grouting 8130 7,896 If 84 holes, 5600 ft3 of grout [0.7:1 by volume mix = 0.85 bags/ft^3] [10.7:1 by volume mix = 0.85 bags/ft^3] 22 Furnishing and handling cementitious materials for grout [10.7:1 by volume mix = 0.85 bags/ft^3] 22 Furnishing and installing anchor head hardware Package includes: Steel bearing plate, anchor head and wedges, and grout pad 23 Testing for 84 anchors - Water test (entire length - all anchors) - Proof testing (90% of anchors) - Proformance testing (10% of anchors) - Performance testing (10% of anchors) 24 Concrete in anchor head blockouts 8130 79 yd3 \$1,	Apr-10 RICE AMOUNT \$26.00 \$205,296.00
REGION: MP ESTIMATE LEVEL: WOID: SHAEF PRICE LEVEL:	Apr-10 RICE AMOUNT \$26.00 \$205,296.00
Most Probable WolD: SHAEF PRICE LEVEL:	Apr-10 RICE AMOUNT \$26.00 \$205,296.00
DESCRIPTION CODE QUANTITY UNIT UNIT PROPERTY	RICE AMOUNT \$26.00 \$205,296.00
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DESCRIPTION CODE QUANTITY UNIT PROPERTY OF THE PROPERTY OF	\$26.00 \$205,296.00
DESCRIPTION CODE QUANTITY UNIT PROPERTY OF THE PROPERTY OF	\$26.00 \$205,296.00
20 Primary and secondary grouting 8130 7,896 If 84 holes, 5600 ft3 of grout 21 Furnishing and handling cementitious materials for grout [0.7:1 by volume mix = 0.85 bags/ft^3] 22 Furnishing and installing anchor head hardware 8130 84 pckg \$13, Package includes: Steel bearing plate, anchor head and wedges, and grout pad 23 Testing for 84 anchors 8130 1 Is \$350, Water test (entire length - all anchors) Proof testing (90% of anchors) Lift-off testing (20% of anchors) Performance testing (10% of anchors) 24 Concrete in anchor head blockouts 8130 79 yd3 \$1, [84 blockouts, 4000 psi concrete, 22 tons cement,	\$26.00 \$205,296.00
84 holes, 5600 ft3 of grout 21 Furnishing and handling cementitious materials for grout [0.7:1 by volume mix = 0.85 bags/ft^3] 22 Furnishing and installing anchor head hardware Package includes: Steel bearing plate, anchor head and wedges, and grout pad 23 Testing for 84 anchors Water test (entire length - all anchors) - Proof testing (90% of anchors) - Lift-off testing (20% of anchors) - Performance testing (10% of anchors) 24 Concrete in anchor head blockouts 8130 79 yd3 \$1, [84 blockouts, 4000 psi concrete, 22 tons cement,	
84 holes, 5600 ft3 of grout 21 Furnishing and handling cementitious materials for grout [0.7:1 by volume mix = 0.85 bags/ft^3] 22 Furnishing and installing anchor head hardware Package includes: Steel bearing plate, anchor head and wedges, and grout pad 23 Testing for 84 anchors Water test (entire length - all anchors) - Proof testing (90% of anchors) - Lift-off testing (20% of anchors) - Performance testing (10% of anchors) 24 Concrete in anchor head blockouts [84 blockouts, 4000 psi concrete, 22 tons cement,	
21 Furnishing and handling cementitious materials for grout [0.7:1 by volume mix = 0.85 bags/ft^3] 22 Furnishing and installing anchor head hardware 8130 84 pckg \$13, Package includes: Steel bearing plate, anchor head and wedges, and grout pad 23 Testing for 84 anchors 8130 1 ls \$350, Water test (entire length - all anchors) Proof testing (90% of anchors) Lift-off testing (20% of anchors) Performance testing (10% of anchors) 24 Concrete in anchor head blockouts 8130 79 yd3 \$1, [84 blockouts, 4000 psi concrete, 22 tons cement,	360.00 \$79,920.00
[0.7:1 by volume mix = 0.85 bags/ft^3] 22 Furnishing and installing anchor head hardware 8130 84 pckg \$13, Package includes: Steel bearing plate, anchor head and wedges, and grout pad 23 Testing for 84 anchors 8130 1 Is \$350, - Water test (entire length - all anchors) - Proof testing (90% of anchors) - Lift-off testing (20% of anchors) - Performance testing (10% of anchors) 24 Concrete in anchor head blockouts 8130 79 yd3 \$1, [84 blockouts, 4000 psi concrete, 22 tons cement,	360.00 \$79,920.00
[0.7:1 by volume mix = 0.85 bags/ft^3] 22 Furnishing and installing anchor head hardware 8130 84 pckg \$13, Package includes: Steel bearing plate, anchor head and wedges, and grout pad 23 Testing for 84 anchors 8130 1 Is \$350, - Water test (entire length - all anchors) - Proof testing (90% of anchors) - Lift-off testing (20% of anchors) - Performance testing (10% of anchors) 24 Concrete in anchor head blockouts 8130 79 yd3 \$1, [84 blockouts, 4000 psi concrete, 22 tons cement,	300.00 \$79,920.00
22 Furnishing and installing anchor head hardware 8130 84 pckg \$13, Package includes: Steel bearing plate, anchor head and wedges, and grout pad 23 Testing for 84 anchors 8130 1 ls \$350, - Water test (entire length - all anchors) - Proof testing (90% of anchors) - Lift-off testing (20% of anchors) - Performance testing (10% of anchors) 24 Concrete in anchor head blockouts 8130 79 yd3 \$1, [84 blockouts, 4000 psi concrete, 22 tons cement,	
Package includes: Steel bearing plate, anchor head and wedges, and grout pad 23 Testing for 84 anchors 8130 1 Is \$350, - Water test (entire length - all anchors) - Proof testing (90% of anchors) - Lift-off testing (20% of anchors) - Performance testing (10% of anchors) 24 Concrete in anchor head blockouts 8130 79 yd3 \$1, [84 blockouts, 4000 psi concrete, 22 tons cement,	
Package includes: Steel bearing plate, anchor head and wedges, and grout pad 23 Testing for 84 anchors 8130 1 Is \$350, - Water test (entire length - all anchors) - Proof testing (90% of anchors) - Lift-off testing (20% of anchors) - Performance testing (10% of anchors) 24 Concrete in anchor head blockouts 8130 79 yd3 \$1, [84 blockouts, 4000 psi concrete, 22 tons cement,	,500.00 \$1,134,000.00
and wedges, and grout pad 23 Testing for 84 anchors - Water test (entire length - all anchors) - Proof testing (90% of anchors) - Lift-off testing (20% of anchors) - Performance testing (10% of anchors) 24 Concrete in anchor head blockouts [84 blockouts, 4000 psi concrete, 22 tons cement,	φ1,134,000.00
23 Testing for 84 anchors 8130 1 Is \$350, - Water test (entire length - all anchors) - Proof testing (90% of anchors) - Lift-off testing (20% of anchors) - Performance testing (10% of anchors) 24 Concrete in anchor head blockouts 8130 79 yd3 \$1, [84 blockouts, 4000 psi concrete, 22 tons cement,	
- Water test (entire length - all anchors) - Proof testing (90% of anchors) - Lift-off testing (20% of anchors) - Performance testing (10% of anchors) 24 Concrete in anchor head blockouts [84 blockouts, 4000 psi concrete, 22 tons cement,	
- Water test (entire length - all anchors) - Proof testing (90% of anchors) - Lift-off testing (20% of anchors) - Performance testing (10% of anchors) 24 Concrete in anchor head blockouts [84 blockouts, 4000 psi concrete, 22 tons cement,	,000.00 \$350,000.00
- Proof testing (90% of anchors) - Lift-off testing (20% of anchors) - Performance testing (10% of anchors) 24 Concrete in anchor head blockouts [84 blockouts, 4000 psi concrete, 22 tons cement,	φοσο,σσσ.σσ
- Lift-off testing (20% of anchors) - Performance testing (10% of anchors) 24 Concrete in anchor head blockouts [84 blockouts, 4000 psi concrete, 22 tons cement,	
- Performance testing (10% of anchors) 24 Concrete in anchor head blockouts [84 blockouts, 4000 psi concrete, 22 tons cement,	
24 Concrete in anchor head blockouts 8130 79 yd3 \$1, [84 blockouts, 4000 psi concrete, 22 tons cement,	
[84 blockouts, 4000 psi concrete, 22 tons cement,	
[84 blockouts, 4000 psi concrete, 22 tons cement,	,700.00 \$134,300.00
	,700.00 \$134,300.00
2,6 to like relimensements	
Stilling Basin Modifications	
25 Excavation, rock, for stilling basin extension 8130 0 yd3	\$0.00
	70.00
26 Structural concrete for stilling basin extension 8130 0 yd3	\$0.00
Assume 5' thick floor; avg 8.4' thick walls, 89' high	70.00
Basin width is 375 feet; assume new end sill	
Basin length increased by 55 feet for 400,000 cfs jump	
, , , , , , , , , , , , , , , , , , ,	
27 Structural concrete for higher parapet walls for basin 8130 0 yd3	\$0.00
Assume existing parapet walls increased 3 feet	
Total basin length is 447 (including extension)	
Prevents wall overtopping for 400,000 cfs release	
28 Furnishing and handling cementitious materials for basin 8130 0 tons	\$0.00
29 Furnishing and placing reinforcing bars for basin 8130 0 lbs	\$0.00
Note: Quantity changes from the 18.5' raise noted in bold	
Sheet Subtotal =	\$1,903,516.00
86-68130 Total =	\$27,477,791.00
QUANTITIES PRICES	
BY CHECKED BY CHECKED	
Thomas Scobell R. L. Reynolds, P.E. Greg Akins	Kelly Brom
DATE PREPARED PEER REVIEW / DATE DATE PREPARED PEER REVI	
07/20/10 12/07/10	EW

ESTIMATE WORKSHEET BUREAU OF RECLAMATION SHEET_4_ OF __8 FEATURE: PROJECT: Shasta Lake Water Resources Investigation **Central Valley Project - CA** Feasibility Study **Shasta Division** Feasibility **Spillway Quantities REGION:** MP ESTIMATE LEVEL: **Most Probable** WOID: SHAEF PRICE LEVEL: Apr-10 12.5-ft Dam Raise PLANT ACCOUNT CODE QUANTITY UNIT **UNIT PRICE** DESCRIPTION **AMOUNT** Spillway Bridge: 1. Demolition and removal of existing bridge: 1 LS \$1,800,000.00 \$1,800,000.00 Existing bridge is 385 feet long by 40 feet wide, consisting of steel stringers, floor beams and two main girders with a castin-place concrete deck. Total weight of steel superstructure is 755,000 lbs. The concrete deck volume is 425 cubic yards. The expansion joints weigh 50,000 lbs & bearings weigh 30,000 lbs. The steel superstructure is coated with lead based paint. Total steel surface area ~ 45,000sf. 2. Furnish and install PCI BT-72 Precast prestressed concrete girders in the following lengths: L = 67 feet 12 EA \$50,000.00 \$600,000.00 L = 62 feet \$50,000.00 \$600,000.00 12 EA \$600,000.00 L = 57 feet 12 EA \$50,000.00 900 CY \$1,125,000.00 3. Furnish and place concrete in deck, curb \$1,250.00 and parapets (f'c = 4,000 psi @ 28 days) 4. Furnish and install epoxy coated 225,000 LBS \$2.00 \$450,000.00 reinforcement, fy = 60,000 psi) 5. Furnish and place concrete in end & 250 CY \$2,400.00 \$600,000.00 intermediate diaphragms (f'c = 4,000 psi @ 28 days) 6. Furnish and install reinforcement in end & 37,500 LBS \$1.80 \$67,500.00 intermediate diaphragms, fy = 60,000 psi \$5,842,500.00 Sheet Subtotal = **QUANTITIES PRICES** CHECKED ΒY CHECKED Jesus G. Romero, PE Jeff Baysinger, PE Kelly Brom Greg Akins

DATE PREPARED

12/07/10

DATE PREPARED

5/20/2008 (Updaged 6/2010)

PEER REVIEW

Dave Edwards, PE

PEER REVIEW

Dan Donaldson

12.5-foot Raise and Reservoir Area Infrastructure

ESTIMATE WORKSHEET BUREAU OF RECLAMATION SHEET_5_ OF __8 _ PROJECT: FEATURE: Shasta Lake Water Resources Investigation **Central Valley Project - CA** Feasibility Study **Shasta Division Spillway Quantities REGION:** ESTIMATE LEVEL: MP **Feasibility Most Probable** WOID: **SHAEF** PRICE LEVEL: Apr-10 86-68140 12.5-ft Dam Raise PLANT ACCOUNT PAY ITEM DESCRIPTION CODE QUANTITY UNIT **UNIT PRICE** AMOUNT Spillway Bridge: (continue) 1 LS 7. Remove, stockpile and reinstall existing \$60,000.00 \$60,000.00 downstream parapet railing. This should include expansion or epoxy anchors. (existing anchor spacing is unknown) 80 LF \$540.00 \$43,200.00 8. Furnish and install expansion joints, one at each end of the bridge. The expansion joints should consist of Steelflex strip seal expansion joint, with rail elements SSCM2 and A2R-O seal elements, manufactured by D.S. Brown or equal 9. Concrete and reinforcement in spillway piers to support bridge superstructure (included in separate worksheet by 8110) \$103,200.00 Sheet Subtotal = 86-68140 Total = \$5,945,700.00 **PRICES QUANTITIES** CHECKED CHECKED ΒY Jesus G. Romero, PE Jeff Baysinger, PE Greg Akins Kelly Brom PEER REVIEW DATE PREPARED PEER REVIEW DATE PREPARED 5/20/2008 (Updaged 6/2010) Dave Edwards, PE 12/07/10 Dan Donaldson

ESTIMATE WORKSHEET BUREAU OF RECLAMATION SHEET_6_ OF __8 _ FEATURE: PROJECT: Shasta Lake Water Resources Investigation **Central Valley Project - CA** Feasibility Study **Shasta Division Spillway Quantities** ESTIMATE LEVEL: REGION: MP **Feasibility** WOID: **Most Probable SHAEF** PRICE LEVEL: Apr-10 12.5-ft Dam Raise PLANT ACCOUNT QUANTITY DESCRIPTION CODE UNIT **UNIT PRICE** AMOUNT 2 STOPLOGS, SEATS AND GUIDES: 8410 257,000 lbs. \$5.60 \$1,439,200.00 2a Furnish and install new stoplogs for one 45'-0" wide bay Welded structural carbon steel construction with protective coating Stoplogs 45'-0" x 40'-9" 306,000 lbs. 2b Furnish and install new stoplogs for one 50'-0" wide bay 8410 \$5.60 \$1,713,600.00 Welded structural carbon steel construction with protective coating Stoplogs 50'-0" x 40'-9" 2c Furnish and install new stoplogs for one 55'-0" wide bay 8410 348,000 lbs. \$5.60 \$1,948,800.00 Welded structural carbon steel construction with protective coating Stoplogs 55'-0" x 40'-9" 911,000 2d Furnish and install three new stoplog lifting beams 8410 9,000 lbs. \$58,500.00 \$6.50 Welded structural carbon steel construction with protective coating 2e Furnish and install new stoplog seats and guides for 8410 118,000 lbs. \$10.50 \$1,239,000.00 six bays. Welded structural carbon steel construction with protective coating - 489'-0" of embedded guides - 300'-0" of embedded seats

	86-68410 Total =					\$6,399,100.00			
		QUANTITIES		PRICES					
вү		CHECKED	вү		CHECKED				
Ryan Stephen		W. Delzer	Greg	Akins	Kelly Brom				
DATE PREPARED		PEER REVIEW	DATE PREPARED		PEER REVIEW				
4/22/2008 (Updaged 6/2010)		D. Hulse/J. Grass	12/07/1	0	Dan Donaldson				

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_7_OF_8_

BUREAU OF RECLAMATION ESTIMATE WORKSHEET								SHEET_7_ OF8
FEATURE: PROJECT:								
Shasta	Lake	Water Resources I	nvestigation	Central Valley Project - CA				
Feasibility Study Spillway Quantities Most Probable					Shasta Division			
					MP	ESTIMATE LEVEL:		Feasibility Apr-10
					SHAEF	PRICE LEVEL:		
								,
			12.5-ft Dam Raise					
-	5		12.5-It Daili Naise					
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
PL ACC	PAY		DESCRIPTION	CODE	QOANTITT	OWN	ONTPRICE	AWOONT
	1	Remove Existing Dru	m Gates	8420	3,000,000	lbs	\$0.90	\$2,700,000.0
		•	-feet steel drum gates		, ,		·	
			ilding a supporting structure in the gate					
			hold the gates in the raised position.					
			sassembling and cutting the gates into					
		<u> </u>	es to aid removal.					
			er gate, 3,000,000 lbs total)					
		(1,111)	gener, e,eee,eee					
	2	Furnish and Install 6	New Sloping Fixed Wheel Gates	8420	3,315,600	lbs.	\$8.00	\$26,524,800.0
			all 2 new 55-feet wide by					
		48-feet high fixed	d wheel gates.					
			prication, shipping, assembly and testing.					
		•	gate, 990,000 lbs total)					
		1	gate, 56,000 lbs total)					
			all 2 new 50-feet wide by					
		48-feet high fixed	<u> </u>					
		·	prication, shipping, assembly and testing.					
			gate, 900,000 lbs total)					
			gate, 56,000 lbs total)					
		, , ,	all 2 new 45-feet wide by					
		48-feet high fixed						
		·	prication, shipping, assembly and testing.					
			gate, 810,000 lbs total)					
		1	gate, 56,000 lbs total)					
		- Furnish and insta	,					
			prication, shipping, assembly					
			ment in the pier walls.					
			per beam, 12 beams for 6 gates,					
		81,600 lbs. t						
		·	less steel per plate, 12 plates for					
			0,000 lbs. total)					
			all stainless steel sill plates.					
			prication, shipping, assembly					
			ment in the spillway crest.					
			plates, 900 lbs per plate, 1800 lbs total)					
			plates, 1,000 lbs per plate, 2,000 lbs total)					
		· · · · · · · · · · · · · · · · · · ·	plates, 1,100 lbs per plate, 2,200 lbs total)					
		· · · · · · · · · · · · · · · · · · ·	all gate hoists, motor operators, and stems.	'				
			prication, shipping, and assembly					
			gate, 240,000 lbs. total)					
		, -,	, ,					
	86-68420 Total =							\$29,224,800.0
		QI	UANTITIES			F	PRICES	
CHECKED CHECKED							CHECKED	
Nathan Nakamoto Charlie Joyce					Greg Akins		Kelly	Brom
DATE PREPARED PEER REVIEW			PEER REVIEW				PEER REVIEW	
4/23/2008 (Updaged 6/2010) Gary W. Rood					12/07/10		Dan Do	naldson

ESTIMATE WORKSHEET SHEET_8_ OF __8 _ BUREAU OF RECLAMATION FEATURE: PROJECT: Shasta Lake Water Resources Investigation **Central Valley Project - CA** Feasibility Study **Shasta Division Spillway Quantities** ESTIMATE LEVEL: REGION: MP **Feasibility Most Probable** WOID: SHAEF PRICE LEVEL: Apr-10 12.5-ft Dam Raise PLANT ACCOUNT CODE QUANTITY UNIT UNIT PRICE AMOUNT DESCRIPTION \$40,800.00 1 Combination, reversing motor starter 8430 6 EA \$6,800.00 480 volt, 3-phase, NEMA size 1 starter 35 amp thermal-magnetic circuit breaker NEMA type 4 enclosure 2 Rigid metal conduit 8430 300 FT \$8,100.00 \$27.00 3/4-inch 3 600 volt insulated cable, single-conductor, strandedcopper 12 AWG 8430 1,200 FT \$2.10 \$2,520.00 \$51,420.00 86-68430 Total = **QUANTITIES PRICES** CHECKED CHECKED Cory Maurer Mike Schuh Greg Akins Kelly Brom PEER REVIEW DATE PREPARED PEER REVIEW DATE PREPARED 4/14/2008 (Updaged 6/2010) George Girgis 12/07/10 Dan Donaldson

ESTIMATE WORKSHEET BUREAU OF RECLAMATION SUMMARY SHEET 1 OF 1

BUREAU OF		IUN	ESTIMATE WORK		^			SUMMARY SHEET 1 OF
FEATU				PROJE	CT:			
Shasta	Lake	Water Resources	Investigation		Central Val	ley Projec	t - CA	
Feasib					Shasta Divi	ision		
Outlet	Work	S		REGION:	MP	ESTIMA	TE LEVEL:	Feasibility
				WOID:	SHAEF	PRICE L	.EVEL:	Apr-10
		Most Pr	obable					•
Summ	ary		12.5-ft Dam Rais	e				
. 5	Σ							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
PL ACC	PA.				4		0	
		Outlet Works consi	ets of					
			nolition/salvaging of existing features a	associated v	with the 4 lo	wer tier o	ıtlets	
			existing tube valves with outlet gates.	associated (WICH CITC 4 10	Wei tiel of		
			tures associated with new outlet gates.					
	+		res associated with new outlet gates	'				
		Electrical leatu	res associated with new outlet gates					
	-							
		86-68130 Sheet (exc	cavation of gate chamber, reinforced conc	rete)				\$728,220.0
		86-68420 Sheet (ren	noval of existing mechanical equipment,					\$16,751,820.0
		ins	stallation of new outlet gates, gate bodies					
		á	and hydraulic equipment)					
		86-68430 Sheet (ele	ctrical equipment for new outlet gates)					\$33,760.0
		Subtotal						\$17,513,800.0
								\$11,010,000.0
		Mobilization					5%	\$880,000.0
		Woomzation					070	Ψοσο,σσο.σ.
		Subtotal w/ Mobiliza	etion					\$18,393,800.0
		Subtotal W/ WODIII2	ation					φ10,393,000.00
		Design Continge	oneige				10%	\$2,171,833.0
		Design Continge	encies				1070	φ <u>2,171,033.0</u> 0
		Alleway of the D					00/	#40.4.007.0v
			rocurement Strategy				2%	\$434,367.0
		•	on assumed is: Request for Proposal					****
		CONTRACT COST						\$21,000,000.00
		Construction Co	ntingencies				20%	\$4,000,000.0
		FIELD COST						\$25,000,000.00
		Note: Escalation from p	published price level to notice to proceed is exc	luded. Estima	tes may includ	le discrepan	cies due to rounding	
			se and terminology, see Reclamation Manual, I				Ť	
	•		UANTITIES				PRICES	
вү		_	CHECKED	вү		'	CHECKED	
See Gro	un Shoot	9	See Group Sheets	Jeff Morris				lly Brom
		J			DARED			ny DIOIII
DATE PRE	EPAKED		PEER REVIEW	DATE PREF			PEER REVIEW	Damaldaar
			See Group Sheets	8/27/2010			Dan l	Donaldson

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_1_OF_3_

BUREAU OF I	RECLAMATI	ON	SHEET				SHEET1 OF3		
FEATURE:				PROJE	CT:				
	Shasta Lake Water Resources Investigation				Central Valle	ev Projec	ct - CA		
Feasibi			1100tigation		Shasta Divis	-			
Outlet				REGION:			ATE LEVEL:	Feasibility	
Outlot	110111			WOID:	SHAEF	PRICE		Apr-10	
		Most Pro	babla	WOID.	SHALI	FRICE	LEVEL.	Αρι-10	
		WOSt FIG	12.5-ft Dam Rais	۵					
	_	<u> </u>	12.5-It Daili Kais	<u>C</u>					
PLANT ACCOUNT	PAY ITEM								
PLA	¥		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
∢	ш								
		Concrete Excavation	1:						
				2.122		27.4			
	1	Concrete excavation f	or jet flow gate shrouds (4 each)	8130	293	CY	\$1,250.00	\$366,250.00	
	2		around the 36-inch-diameter	8130	52	CY	\$1,300.00	\$67,600.00	
		air vent pipes (4 each							
		Backfill Concrete:							
	3	Backfill concrete arou	nd the gate shrouds (4 each)	8130	284	CY	\$800.00	\$227,200.00	
		[4000 psi compressiv	ve strength]						
	4	Furnishing and handli	ng cementitious materials	8130	80	Tons	\$195.00	\$15,600.00	
		[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 compressive	ve strenath1						
		į rose per estripreseri							
	6	Furnishing and handli	ng cementitious materials	8130	6	Tons	\$195.00	\$1,170.00	
			% pozzolan 6 sacks/cy]				* 100100	+ 1,11 010	
		· ·							
								.	
					This Sheet a			\$728,220.00	
		QL	IANTITIES			P	RICES		
вү			CHECKED	BY			CHECKED		
J. Schne	ider		M. R. Steers	Jeff Morris			Kell	y Brom	
DATE PRE	PARED		PEER REVIEW	DATE PREF	PARED		PEER REVIEW		
11/07/07	·		T. Hepler	8/27/2010			Dan D	onaldson	
51701				5,21,2010			Dan D		

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_2_OF_3_

BUREAU OF	RECLAMATIO	NC	ESTIMATE WORKS	HEEI				SHEET_2_ OF _3
FEATU	JRE:			PROJEC	CT:			
Shasta	Lake \	Water Resources Investig	gation		Central Valle	ey Project	- CA	
Feasibi	ility Stu	ıdy			Shasta Divis	ion		
Outlet	Works	3		REGION:	MP	ESTIMA ^T	TE LEVEL:	Feasibility
				WOID:	SHAEF	PRICE L	EVEL:	Apr-10
		Most Probable	•					-
			12.5-ft Dam Raise					
. 5	Σ							
PLANT ACCOUNT	PAY ITEM	DESCRIF	PTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	1	Remove outlet works tube va	lves @ Fl 742 0	8420	576,000	lhs	\$0.85	\$489,600.00
	·	- Disassemble and remove		0420	070,000	100.	ψ0.00	Ψ+00,000.00
		diameter tube valves.	e the 4 existing 102-inch					
		(144,000 lbs. per tube va	alve)					
		(144,000 lbs. per tube va	1176)					
	2	Furnish and install new outlet	works gates @ El. 742.0	8420	375,400	lbs.	\$39.00	\$14,640,600.00
		- Furnish and install 4 new	/ 96-inch diameter					
			mate based on combined steel and	SS				
		gates per manufacturer's						
		- Including fabrication						
		and testing.	, <u>-</u>					
			and reassembly of the					
		gate will be required	-					
			ate, combined steel and SS, 312,0	00 lbs total)			
		- Furnish and install 1 new			/			
		for jet flow-gates	Thydradale power and					
		(1,000 lbs.)						
		,	air shrouds - Stainless Steel					
		- Including fabrication						
		- Approximate dimens						
		- Length: 18-feet						
		- Diameter: 10-fe						
		- Wall Thickness:						
			and reassembly of the					
		shroud will be requir						
		- Some excavation or						
		of the gate chamber	•					
		(15,600 lbs per all stirou	d, stainless steel, 62,400 lbs total)					
	3	Furnish and install coaster ga	ate guide extensions - steel	8420	178,200	lbs.	\$9.10	\$1,621,620.00
		- Furnish and install new g	guide extensions on					
		on the upstream face of	the dam for the outlet					
		works 11.05-feet x 11.05	i-feet coaster gate.					
		 Encase approximate 	ely 30-feet of new guides					
		in the upstream face	e of the dam for each					
		set of existing guide						
		(9,900 lbs per set of stee	el guides for 18 sets of					
		existing guides)						
					Thin Ohere's	nd 00 00	420 Tetal	#46 7E4 000 01
		QUANTI	TIFS		This Sheet a		PRICES	\$16,751,820.00
DV				DV		r		
BY	-4-	CHECK		BY			CHECKED	Decem
N. Nakamoto C. Joyce		Jeff Morris				Brom		
DATE PRE		PEER R		DATE PREP	ARED		PEER REVIEW	
10/15/07 D. Read 8/2			d	8/27/2010			Dan Do	naldson

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_3_OF_3_

FEATU					_			
				PROJEC				
		Water Resources Ir	nvestigation		Central Valle		t - CA	
Feasibil					Shasta Divis			Feasibility
Outlet \	Works	3		REGION:	MP	ESTIMA	TE LEVEL:	Feasibility
				WOID:	SHAEF	PRICE L	.EVEL:	Apr-10
		Most Pro	bable					
			12.5-ft Dam Ra	ise				
ᆫᄫ	≅							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	1	Combination, reversin		8430	4	EA	\$7,000.00	\$28,000.00
			, NEMA size 1 starter					
			nagnetic circuit breaker					
		NEMA type 12 en	closure					
	2	Rigid metal conduit		8430				
		3/4-inch		3-30	160	FT	\$26.00	\$4,160.00
							7-3:33	+ -,
	3		e, single-conductor, stranded-	8430	800	FT	\$2.00	\$1,600.00
		copper						
		12 AWG						
					This Sheet a			\$33,760.00
		QU	IANTITIES			F	PRICES	
вү			CHECKED	вү			CHECKED	
M. Schuh	1		C. Maurer	Jeff Morris			Kelly	Brom
		DATE PREP	ARED		PEER REVIEW			
DATE PREPARED 10/4/07 PEER REVIEW G. Girgis								

BUREAU OF RECLAMATION ESTIMATE WORKSHEET
SUMMARY SHEET 1 OF 1

BUREAU OF F	RECLAMAT	ION	ESTIMATE WORKSHE	<u> </u>		SUMMARY SHEET 1 OF 1		
FEATU	JRE:			PROJECT	:			
			es Investigation		Central Val Shasta Div		et - CA	
Feasibility Study Temperature Control Device (TCD) Modification WOID: MP ESTIMATE LEVEL:							TE I EVEL.	Feasibility
rempe	atur	Control Devic	e (10b) modification	REGION:	SHAEF	_		-
		Most	REGION: SHAEF UNIT PRICE LEVEL: Probable				ICE LEVEL:	Apr-10
Summa	arv	WOSt	12.5-ft Dam Rais	:e				
			12.5-11 Dain Nais					
PLANT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
PL	PAY		SESSIM NOV	3322	Q0/11/11/1	Ö	5 T. 152	7.111.00111
		96 69120 Shoot /	excavation/demolition/salvaging, TCD extension)					\$11,871,495.20
		00-00 120 SHEEL (excavation/demonition/salvaging, TCD extension)					\$11,671,495.20
		96 69430 Shoot /	algebrical factures associated with TCD)					¢147,000,00
		00-00430 Sheet (electrical features associated with TCD)					\$147,000.00
		06 60440 Chast	manakanian faatuura aanaaistad with TCD)					#C 007 500 00
		86-684 TU Sheet (mechanical features associated with TCD)					\$6,967,500.00
		Subtotal 1						\$18,985,995.20
		Mobilization		5%	+/-			\$950,000.00
		Subtotal 1 with I	Mobilization					\$19,935,995.20
			Notice to Proceed (NTP): None assumed.	0%				\$0.00
		Subtotal 2 = Sub	total 1 with Mobilization + Escalation to NTP					\$19,935,995.20
		Design Conti	ngencies	10%	+/-			\$1,625,412.80
			ototal 2 + Design Contingencies					\$21,561,408.00
			r Procurement Strategies (APS)	2.0%	+/-			\$438,592.00
		•	solicitation assumed is: Request for Proposal					
		Subtotal 4 = Sub	ototal 3 + APS					\$22,000,000.00
		CONTRACT COS	ST					\$22,000,000.00
			Contingencies	20%	+/-			\$5,000,000.00
		FIELD COST						\$27,000,000.00
		Note: Escalation from	published price level to notice to proceed is excluded. Estimate	s may include di	screpancies d	ue to roundin	g.	
		Ref.: For appropriate	use and terminology, see Reclamation Manual, Directives and S	Standards FAC; (09-01, 09-02 a	nd 09-03.		
			QUANTITIES			Р	RICES	
вү			CHECKED	вү			CHECKED	
See Group	Sheets		See Group Sheets	(Greg Akins		K	elly Brom
DATE PRE	PARED		PEER REVIEW / DATE	DATE PREP	ARED		PEER REVIEW / [DATE
			See Group Sheets		12/07/10		Dar	Donaldson

BUREAU OF F	RECLAMATI	ESTIMATE WORKSI	IEET				SHEET1 OF9
FEATU	JRE:		PROJEC1	Γ:			
		Water Resources Investigation		Central Valle	-	t - CA	
Feasibi		Control Device (TCD) Modification	REGION:	Shasta Divis			Facilities
rempe	ature	Control Device (1CD) Modification		MP	ESTIMATI		Feasibility
		Most Probable	WOID:	SHAEF	PRICE LE	VEL:	Apr-10
		Most Probable					
		12.5-ft Dam Raise	;				
눌	Ε̈́Μ						
PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		STRUCTURAL NOTES:					
		1. All new miscellaneous metalwork galvanized.					
		2. All new steel shapes and plates coated.					
		3. Assumed all items installed in dry.					
		4. For TCD Modifications, see TM Figures TCD1 thru-TCD4.					
	1	Remove Existing Hoist Platform Steel:		759,700	LBS	\$0.60	\$455,820.00
		(Dwgs. 214-D-22190 thru -22196 & -22517 thru -22530)					
		Rolled steel W-shapes (ASTM A 36)	86-68120	260,625	LBS	Included above	
		Rolled steel C-, MC- and L-shapes (ASTM A 36)	86-68120	68,250	LBS	Included above	
		Steel plate (3/8" to 2") (ASTM A 36) (Plate Girders)	86-68120	430,825	LBS	Included above	
	2	Dispose/Salvage existing Hoist Platform Steel:		20,200	LBS	\$0.07	\$1,414.00
		(Side gate hoist platform support steel, Dwg. 214-D-22196)					
		Rolled steel W-shapes (ASTM A 36)	86-68120	19,900	LBS	Included above	
		Rolled steel C-, MC- and L-shapes (ASTM A 36)	86-68120	300	LBS	Included above	
	3	Remove Existing Hoist Platform Miscellaneous Metalwork:		162,660	LBS	\$0.60	\$97,596.00
		(Dwgs. 214-D-22135, -22384, -22386, -22389, & -22511)					
		Rolled C- and L-shapes (ASTM A36)	86-68120	2,000	LBS	Included above	
		Grating (2" x 3/16" @ 1-3/16" ctrs, Wt/SF = 15.50)	86-68120	9,690	SF	Included above	
		Grating (1-1/4" x 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	
		Guardrails 1-1/2" Std. Pipe (ASTM A 53)	86-68120	8,825	LBS	Included above	
		Ladders 1-1/4" Std. Pipe (ASTM A 53)	86-68120	110	LBS	Included above	
		Steel plate (3/16" to 3/4") (ASTM A 36)	86-68120	700	LBS	Included above	
	4	Dispose/Salvage Existing Hoist Platform Miscellaneous Meta	alwork:	12,570	LBS	\$0.10	\$1,257.00
		(Dwgs. 214-D-22135, -22384, -22386, -22389, & -22511)					
		Rolled C- and L-shapes (ASTM A36)	86-68120	1,300	LBS	Included above	
		Grating (2" x 3/16" @ 1-3/16" ctrs, Wt/SF = 15.50)	86-68120	585	SF	Included above	
		Grating (1-1/4" x 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	
		Guardrails 1-1/2" Std. Pipe (ASTM A 53)	86-68120	1,120	LBS	Included above	
		Ladders 1-1/4" Std. Pipe (ASTM A 53)	86-68120	110	LBS	Included above	
		Steel plate (3/16" to 3/4") (ASTM A 36)	86-68120	140	LBS	Included above	
	5	Remove and Dispose Chain Link Fence:	86-68120	1	LS	\$520.00	\$520.00
		(Dwgs. 214-D-22135 & 40-D-5410)					
	7+1-ft fence (w/3 strand & 4-point barbed wire) 40 LF						
		Sheet Subtotal :	.				\$556,607.00
		QUANTITIES			F	RICES	
BY		CHECKED	вү			CHECKED	
	Rodney			Greg Akins		Kelly B	Brom
DATE PRE	PARED	PEER REVIEW	DATE PREPAR	RED		PEER REVIEW / DATE	
		Alfred Bernstein, P.E.		12/07/10		Dan Don	aldson

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_2_OF_9_

BUREAU OF	RECLAMATIO	ON	ESTIMATE WORKSH						
FEAT	JRE:			PROJECT	:				
	a Lake \ oility Stu	Water Resources I	nvestigation		Central Valle Shasta Divis	-	t - CA		
			ΓCD) Modification	REGION:	MP	ESTIMAT	E LEVEL:	Feasibility	
		•	•	WOID:	SHAEF	PRICE LE	VEL:	Apr-10	
		Most Pro	bable					•	
			12.5-ft Dam Raise						
∟ ½	Σ								
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
		STRUCTURAL (Conf	tinued)						
	6	Pomovo Existing Tra	ashrack Gate Guides (Side SS1):		24,410	LBS	\$0.60	\$14,646.00	
	0	(Dwgs. 214-D-22150	•		24,410	LBS	φυ.ου	φ14,040.00	
		` •	napes (ASTM A 36)	86-68120	6,900	LBS	Included above		
			napes (ASTM A 572/50)	86-68120	17,510	LBS	Included above		
		Rolled Steel W-Si	lapes (ASTIVI A 572/50)	00-00120	17,510	LBS	included above		
	7	Dispose/Salvage Ex	isting Trashrack Gate Guides:		24,410	LBS	\$0.07	\$1,708.70	
		(Dwgs. 214-D-22150	& -22154)						
		Rolled steel W-sl	napes (ASTM A 36)	86-68120	6,900	LBS	Included above		
		Rolled steel W-sl	napes (ASTM A 572/50)	86-68120	17,510	LBS	Included above		
	0	Furnish and Freet n	ow Digid Frama Staal		494,265	LBS	\$5.60	\$2.767.994.00	
	8		ew Rigid Frame Steel:	06 60400	•			\$2,767,884.00	
			pes (ASTM A992)	86-68120	321,415	LB	Included above		
		Steel plate (3/4" t	to 2") (A572 Gr 50)	86-68120	172,850	LB	Included above		
	9	Modify existing Rigi	d Frame Bracing:	86-68120	1	LS	\$1,310,000.00	\$1,310,000.00	
		Welding (assume	e 5/16" fillet) 1985 LF						
		Steel cover plate	(used 3/4") (ASTM A 36) 53,600 Lbs						
		Steel cover plate	(used 3/4") (ASTM A 572) 2,790 Lbs						
		Sand blast flange	e surfaces: 27,890 Sq. Ft						
		Re-coat flange su	urfaces: 27,890 Sq. Ft						
							2		
	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		
	11	Furnish and erect ne	ew Hoist Platform Steel:		49,290	LBS	\$7.00	\$345,030.00	
			napes (ASTM A 992 Gr 50)	86-68120	2,560	LBS	Included above	+++++++++++++++++++++++++++++++++++++	
			to 2") (ASTM A36) (Mod Plate Girders)	86-68120	8,000	LBS	Included above		
		. ` `	to 2") (ASTM A36) (LL Plate Girders)	86-68120	38,730	LBS	Included above		
		1 \			,				
	12	Reinstall existing Mi	scellaneous Metalwork:		150,090	LBS	\$1.05	\$157,594.50	
		Rolled steel C- a	nd L-shapes (ASTM A 36)	86-68120	700	LBS	Included above		
		Grating (2" x 3/16	6" @ 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		
	40	E91 Motornes of Asset	and Doors (Dam Creek to TCD)						
	13		ess Doors (Dam Crest-to-TCD) ning 3'-6" x 7'-0", Assumed 20 psf)	86-68120	1,000	LBS	\$14.50	\$14,500.00	
		(2 Doors, Each Open	ing 3-0 x 7-0 , Assumed 20 psi)	00-00120	1,000	LDO	\$14.50	\$14,500.00	
			Sheet Subtotal =					\$5,646,663.20	
		Q	UANTITIES			F	PRICES		
BY		D # 1	CHECKED	вү			CHECKED		
	Rodney	Barthel	Brad VanOtterloo		Greg Akins		Kelly B	rom	
DATE PR			PEER REVIEW	DATE PREPAR			PEER REVIEW / DATE		
	6/4/2010		Alfred Bernstein, P.E.		12/07/10		Dan Don	aldson	

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_3_ OF _9 _

BUREAU OF	RECLAMATIO	NC	ESTIMATE WORKSH	IEEI				SHEET_3_ OF _9 _
FEATURE:				PROJECT	:			
	a Lake \ oility Stu	Water Resources I Idy	nvestigation		Central Valle Shasta Divis	-	et - CA	
	-	•	ГСD) Modification	REGION:	MP		E LEVEL:	Feasibility
			•	WOID:	SHAEF	PRICE LE	VEL:	Apr-10
		Most Pro	bable					
			12.5-ft Dam Raise					
. 5	Σ							
PLANT ACCOUNT	РАУ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		STRUCTURAL (Cont	inund)					
		STRUCTURAL (COIN	rueu)					
	14	F&I new Miscellaneo	us Metalwork:		30,950	LBS	\$6.60	\$204,270.00
	17		" @ 1-3/16" ctrs, Wt/SF = 15.50)	86-68120	1,075	SF	Included above	Ψ20+,27 0.00
		<u> </u>	3/16" @ 1-/16" ctrs, Wt/SF = 9.75)	86-68120	200	SF	Included above	
		<u> </u>	nch Std. pipe, ASTM A53)	86-68120	3,400	LBS	Included above	
		,	Std. pipe, ASTM A53)	86-68120	1,455	LBS	Included above	
		,	nd L-shapes (ASTM A 36)	86-68120	6,155	LBS	Included above	
			to 3/4") (ASTM A 36)	86-68120	1,325	LBS	Included above	
	15	Egi now stool Claddi	ing Banala (Sida SS1 9 SS5).	96 69120	1	1.0	00 000 000	\$000 000 00
	15		ng Panels (Side SS1 & SS5):	86-68120	1	LS	\$880,000.00	\$880,000.00
		(Dwgs. 214-D-22317	•					
		Steel snapes & p	lates 129,135 Lbs (assumed 37 psf)					
	16	F&I to Extend Side C	cladding/Gate Guides (SS1 & SS5):	86-68120	1	LS	\$370,000.00	\$370,000.00
			, -22154, -22158, & -22162)				, ,	
			to 1" Pl. A572 Gr 50 guides) 5,035 Lbs					
		,	ear strips (1/4" x 3", A304) 610 LF					
			pes (ASTM A992 Gr 50) 38,310 Lbs					
	17	Egito Extend Front	Gate Guides (Plate Girders):	86-68120	1	LS	\$2,600,000.00	\$2,600,000.00
	17	(Dwgs. 214-D-22411		80-08120	<u>I</u>	LO	\$2,000,000.00	φ2,000,000.00
		` •	to 1-3/8" Pl. A36) 289,160 Lbs					
		• `	ear strips (1/4" x 3", A304) 2,280 LF					
			ear strips (1/4" x 6", A304) 2,280 LF					
		Stanliess steel We	ear strips (1/4 × 0 , A304) 2,200 Er					
	18	Extend new Paranet	to Conceal Hoist Equipment	86-68120	1	LS	\$175,000.00	\$175,000.00
	10	•	ormed artistic features)	00 00 120	•		ψ170,000.00	Ψ170,000.00
		`	2.0 to El. 1107.8 for ~ 294 feet @ TCD's)					
		,	O psi reinforced concrete)					
		Concrete: 89 CY	•					
			13,350 Lbs (based on 150 Lbs/CY)					
			s (based on 0.282 Tons/CY)					
	19	F&I Frame and Wate	rproof Cover in New Parapet	86-68120	1	LS	\$2,000.00	\$2,000.00
		(Access to LL Paralle	l Shaft Speed Reducer)					
		(Required for O&M A	ctivity, Assumed 2' x 2' opening)					
		Rolled steel L-sha	apes (ASTM A 36) 60 Lbs					
		Steel plate (3/16)	(ASTM A 36) 40 Lbs					
							+	
			Sheet Subtotal =					\$4,231,270.00
		Q	UANTITIES			F	PRICES	
BY			CHECKED	вү			CHECKED	
	Rodney	Barthel	Brad VanOtterloo		Greg Akins		Kelly B	rom
DATE PRI	EPARED		PEER REVIEW	DATE PREPAR	ED		PEER REVIEW / DATE	
			Alfred Bernstein, P.E.		12/07/10		Dan Don	aldson

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_4_ OF _9 _

BUREAU OF F		ON .	EGTIMIZATE WORKS					SHEET_4_ OF _9
FEATU	IRE:			PROJECT	:			
Shasta	Lake \	Water Resources Ir	nvestigation		Central Valle	v Projec	t - CA	
Feasibi					Shasta Divis	-		
	•	•	CCD) Modification					
rempe	rature	Control Device (1	ΓCD) Modification	REGION:	MP	ESTIMATE		Feasibility
				WOID:	SHAEF	PRICE LE	VEL:	Apr-10
		Most Pro	bable					
			12.5-ft Dam Raise					
. 5	Σ							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		STRUCTURAL (Cont	inuad\					
		STRUCTURAL (COIL	inded)					
		Egi Bormanant Now	Rigid Frame Dam Connections (Corbel):					
		,	65, at new RF main box girders)					
		(1 DC, Above LL Inta	ake No. 1, at new RF main box girder)					
	20	Furnish and Place Re						
		,	attached to face of dam)					
		, •	e x 1.5-ft deep/1 per Rigid Frame)					
		Concrete (Assum	ned f'c = 4,000 psi concrete)	86-68120	3	CY	\$11,000.00	\$33,000.00
		Reinforcement (b	ased on 150 Lbs/DC & fy = 60 ksi)	86-68120	1,100	LBS	\$4.20	\$4,620.00
		Cement (based o	n 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	\$80,640.00
		Steel plate (3/4" to	o 1") (ASTM A572 Gr. 50)	86-68120	6,540	LBS	Included above	
			diameter pins, eyebolts, nuts,	86-68120	940	LBS	Included above	
			(ASTM A 668F)					
		,	apes (ASTM A 36)	86-68120	200	LBS	Included above	
		Troiled Steel E-Sile	apes (NoTM / Co)	00-00120	200	LDO	moladea above	
	22	Drill 2 5-inch dia holes	s for 1-3/8 inch concrete anchor bolts,	86-68120	168	LF	\$165.00	\$27,720.00
	22	Dilli 2.5-ilicii dia fioles	s tot 1-3/6 ilicii concrete aliciioi boits,	00-00120	100	LI	φ103.00	ΨΖ1,120.00
	22	F&I 1-3/8-inch dia. Wi	lliama Hallauraara	86-68120	28	EA	¢4 500 00	¢42.000.00
	23			00-00120	20	EA	\$1,500.00	\$42,000.00
		(Epoxy coaled R	1H anchors w/6.0 foot embed)					
		ESI Hallow Care And	chor Below Existing DC2 & DC14 Connec	tions:				
		rai nollow core and	Chor Below Existing DC2 & DC14 Connec	tions.				
	24	Drill 2 E inch die hele	a for 2 inch concrete ancher halts	86-68120	36	LF	¢220.00	#0.200.00
	24	Driii 3.5-inch dia. noie	s for 2-inch concrete anchor bolts,	80-08120	30	LF	\$230.00	\$8,280.00
	25	F&I 2-inch dia. William	ns Hollowcore	86-68120	6	EA	\$2,700.00	\$16,200.00
			1H anchors w/6.0 foot embed)	00 00 0			+= ,: 00:00	+ 10,20100
		(=	,					
	26	F&I New Side Closur	re/Cladding Panels (SS5):					
		(Dwgs. 214-D-22379)						
		` •	plates (assume 20 psf, ASTM A 36)	86-68120	1,060	LBS	\$9.00	\$9,540.00
			apes (ASTM A 36)	86-68120	565	LBS	\$9.00	\$5,085.00
			chors (min 6" emb, 1" dia. anchors)	86-68120	6	LF	Included below in a	·
			achors (Assumed 1" dia.)	86-68120	12	EA	\$250.00	\$3,000.00
		Fai expansion an	ictions (Assumed 1 dia.)	00-00120	12	EA	\$250.00	φ3,000.00
			Shoot Subtotal					¢220 225 00
		<u> </u>	Sheet Subtotal = UANTITIES			D	PRICES	\$230,225.00
		Q				٢		
BY	_		CHECKED	BY			CHECKED	_
	Rodney	Barthel	Brad VanOtterloo		Greg Akins			Brom
DATE PRE			PEER REVIEW	DATE PREPAR			PEER REVIEW / DATE	
	6/4/2010		Alfred Bernstein, P.E.		12/07/10		Dan Do	onaldson

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_5_ OF _9_

BUREAU OF		ON	ESTIMATE WORKSH						
FEATU	JRE:			PROJECT					
•	a Lake \ ility Stu	Water Resources Ir Idy	nvestigation		Central Valle Shasta Divis	•	t - CA		
•	•	Control Device (7	CD) Modification	REGION:	MP	ESTIMAT	E LEVEL:	Feasibility	
				WOID:	SHAEF	PRICE LE	VEL:	Apr-10	
		Most Pro	bable					•	
			12.5-ft Dam Raise						
	_		12.5-It Daili Naise	•					
PLANT ACCOUNT	РАУ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
		OTDUOTUDAL (O							
		STRUCTURAL (Cont	inuea)						
		Eal Dahria Daare		00.00400					
		F&I Debris Boom:		86-68120					
	07	- · · · · · - · ·							
	27	Extend existing Trolley		22.22.422	0.000		2= =0	***	
		vv-Shape structur	ral steel (ASTM A 992 Gr 50) (Coated)	86-68120	2,800	LBS	\$7.50	\$21,000.00	
	00	Detrofit eviction Tralle	for Electrica						
	28	Retrofit existing Trolle	•	00 00400	000	1.00	#00.00	#4.000.00	
			al steel (ASTM A 36) (Coated)	86-68120	200	LBS	\$20.00	\$4,000.00	
		·	t 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							
			er 6x37 galv, extra improved plow	86-68120	1,600	LF	\$45.00	\$72,000.00	
		steel, IWRC (T	Type I, Class 3)						
	30	Extend Mooring and M	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 (Ty	/pe 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	mstick= 1.5 CY (incl. cement and WWF)						
		Polystyrene foam	per boom stick= 45 CF						
		1-inch chain, Type	e 1, Class 4, zinc-coated = 3 ft/stick						
		, ,							
	32	F&I Anchor Mooring B	Suoys	86-68120	3	EA	\$5,500.00	\$16,500.00	
			g buoy manufactured by Seaward Int'l						
		,,	yancy (540-667-5191)						
		,	,						
	33	F&I Anchor Marker Bu	IOVS	86-68120	3	EA	\$4,400.00	\$13,200.00	
			buoy manufactured by Seaward Int'l				¥ 1,100100	+ 10, - 1010	
			rancy (540-667-5191)						
		,555 125 240 }	, \						
	34	F&I Gate through Deb	ris Boom						
	J-1		es ASTM A500, Gr B (galvanized)	86-68120	1,200	LBS	\$5.90	\$7,080.00	
		•	at w/ 400# buoyancy	86-68120	2	EA	\$2,200.00	\$4,400.00	
		•	and Floats, 800-558-8633)	30 00 120			Ψ2,200.00	ψ-,-του.ου	
		(Noiyan Daoys	ana i 10010, 000 000 0000j				+		
			Sheet Subtotal =			 	+	\$466,730.00	
		OI	UANTITIES				PRICES	ψ+υυ, ε 30.00	
DV.		Q		DV.		Г			
BY		.	CHECKED	вү			CHECKED		
	Rodney	Barthel	Brad VanOtterloo		Greg Akins		Kelly Br	om	
DATE PRI			PEER REVIEW	DATE PREPAR			PEER REVIEW / DATE		
	6/4/2010		Alfred Bernstein, P.E.		12/07/10		Dan Dona	onaldson	

ESTIMATE WORKSHEET BUREAU OF RECLAMATION SHEET_6_ OF __9 _ PROJECT: FEATURE: Shasta Lake Water Resources Investigation **Central Valley Project - CA** Feasibility Study **Shasta Division Temperature Control Device (TCD) Modification** REGION: MP ESTIMATE LEVEL: Feasibility WOID: SHAEF PRICE LEVEL: Apr-10 **Most Probable** 12.5-ft Dam Raise PLANT ACCOUNT PAY ITEM CODE QUANTITY UNIT **UNIT PRICE AMOUNT** DESCRIPTION STRUCTURAL (Continued) 35 Furnish Marine Trash Skimmer system to remove debris \$740,000.00 86-68120 LS \$740,000.00 from reservoir and transfer to land based dump trucks: TrashCat 12000 Series System including: Marineskimmer Model MS16-12000B Shore Conveyor Model #C-800 or #AC-800 Tilt-Deck Trailer Model T-12T Power Pack Model P-220T Manufactured by United Marine International Ph: 800-243-1406 Web: www.trashskimmer.com This Sheet Subtotal = \$740,000.00 \$556,607.00 Sheet 1 of 6 Subtotal = \$5,646,663.20 Sheet 2 of 6 Subtotal = Sheet 3 of 6 Subtotal = \$4,231,270.00 Sheet 4 of 6 Subtotal = \$230,225.00 \$466,730.00 Sheet 5 of 6 Subtotal = Total 86-68120 => \$11,871,495.20 **QUANTITIES PRICES** CHECKED CHECKED ΒY ΒY Rodney Barthel Brad VanOtterloo Kelly Brom DATE PREPARED PEER REVIEW DATE PREPARED PEER REVIEW / DATE

12/07/10

6/4/2010

Alfred Bernstein, P.E.

Dan Donaldson

ESTIMATE WORKSHEET BUREAU OF RECLAMATION SHEET__7__ OF __9 _ FEATURE: PROJECT: Shasta Lake Water Resources Investigation **Central Valley Project - CA** Feasibility Study **Shasta Division Temperature Control Device (TCD) Modification** REGION: MP ESTIMATE LEVEL: Feasibility WOID: SHAEF PRICE LEVEL: Apr-10 **Most Probable** 12.5-ft Dam Raise PLANT ACCOUNT PAY ITEM DESCRIPTION CODE QUANTITY UNIT UNIT PRICE AMOUNT 1 Remove existing electrical control equipment 8430 1 LS \$17,000.00 \$17,000.00 Includes 5 motor control centers and 1 distribution switchboard 2 Reinstall existing electrical control equipment 1 LS 8430 \$110,000.00 \$110,000.00 Includes 5 motor control centers and 1 distribution switchboard 3 Extend existing power feeder 8430 300 FT 600 volt power cable, 1/c stranded-copper, 350 kcmil \$30.00 \$9,000.00 Rigid steel conduit, 3-inch 100 FT \$110.00 \$11,000.00 Assumptions: The existing TCD power source will be extended and reused \$147,000.00 This Sheet and Total for 86-68430 => **QUANTITIES PRICES** CHECKED CHECKED Mike Schuh Eric Vaughn Greg Akins Kelly Brom DATE PREPARED PEER REVIEW DATE PREPARED PEER REVIEW / DATE

12/07/10

10/24/2007 - Updated 6/2010

George Girgis

Dan Donaldson

ESTIMATE WORKSHEET BUREAU OF RECLAMATION SHEET__8__ OF __9 _ FEATURE: PROJECT: Shasta Lake Water Resources Investigation **Central Valley Project - CA** Feasibility Study **Shasta Division Temperature Control Device (TCD) Modification** REGION: MP ESTIMATE LEVEL: Feasibility WOID: SHAEF PRICE LEVEL: Apr-10 **Most Probable** 12.5-ft Dam Raise PLANT ACCOUNT PAY ITEM DESCRIPTION CODE QUANTITY UNIT UNIT PRICE AMOUNT The following items shall be removed from the **Temperature Control 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 10 panels @ 13,800 lbs. per panel 2 Trashrack, Shutter No. 1 (214-D-22262) 8410 24,000 \$0.40 \$9,600.00 lbs. Remove existing trashrack Will be replaced by cladding (8120) 3 Trashrack, Shutter No. 5 (214-D-22261) 8410 33,000 \$0.40 \$13,200.00 lbs. Remove existing trashrack Will be replaced by cladding (8120) The following items should be installed on the Temperature Control Device: \$6.30 4 Furnish and install new barrier panels 8410 465,000 \$2,929,500.00 El. 1047.7 to El. 1094.7 Welded structural carbon steel construction Protective coating 5 Units @ 93,000 lbs. per unit Sheet Subtotal = \$3,007,500.00 **QUANTITIES PRICES**

ΒY

Greg Akins

11/10/10

DATE PREPARED

CHECKED

PEER REVIEW

Ryan Stephen

John Grass

Wayne Delzer

11/27/2007 - Updated 6/2010

DATE PREPARED

CHECKED

PEER REVIEW / DATE

Kelly Brom

Dan Donaldson

ESTIMATE WORKSHEET BUREAU OF RECLAMATION SHEET_9_ OF __ 9_ FEATURE: PROJECT: Shasta Lake Water Resources Investigation **Central Valley Project - CA** Feasibility Study **Shasta Division Temperature Control Device (TCD) Modification** REGION: MP ESTIMATE LEVEL: Feasibility WOID: SHAEF PRICE LEVEL: Apr-10 **Most Probable** 12.5-ft Dam Raise PLANT ACCOUNT PAY ITEM DESCRIPTION CODE QUANTITY UNIT UNIT PRICE AMOUNT 5 **TCD HOISTS**: \$280,000.00 Remove from existing location and store 8410 1 LS \$280,000.00 5a - 17 hoists total, weight=57 kips/ea - 17x57 = 969 kips total- includes disassembly into components: 32 rope drums 20 sheave pairs 17 worm-gear reducers 17 electric motors 32 parallel shaft reducer gearboxes 84 flexible couplings 17 instrumentation assemblies 68 wire ropes steel shafts, bearings, supports - *Dispose/slavage ropes, drums 5b F&I new wire ropes to accommodate 8410 LS \$870,000.00 \$870,000.00 additional 20.5 ft height (each Hoist) SG: 1000 ft of 1.5" diam rope x 2 hoists MG: 800 ft of 1.625" diam rope x 5 hoists UG: 650 ft of 1.5" diam rope x 5 hoists PR: 1400 ft of 1.625" diam rope x 5 hoists All rope is: 6x37, IWRC, XIP, galvanized terminated with speltered sockets 8410 LS \$2,200,000.00 5c Replace existing hoist drums (32) \$2,200,000.00 SG: 11000 lbs/drum x 1 /hoist x 2 hoists MG: 6000 lbs/drum x 2 /hoist x 5 hoists UG: 3200 lbs/drum x 2 /hoist x 5 hoists PR: 10500 lbs/drum x 2 /hoist x 5 hoists total wt = 220,000 lbs (weights are for replacement drums) 5d Reassemble and reinstall 17 hoists on new 8410 1 LS \$610,000.00 \$610,000.00 hoist deck

QL	JANTITIES	PRICES		
ву	CHECKED	вү	CHECKED	
Alex Ritt	Ryan Stephen	Greg Akins	Kelly Brom	
DATE PREPARED	PEER REVIEW	DATE PREPARED	PEER REVIEW / DATE	
11/27/2007 - Updated 6/2010	John Grass	12/07/10	Dan Donaldson	

This Sheet Subtotal =

Sheet 1 of 2 Subtotal =

This Sheet and Total for 86-68410 =

1000 kips approx total weight

\$3,960,000.00

\$3,007,500.00

\$6,967,500.00

ESTIMATE WORKSHEET BUREAU OF RECLAMATION SUMMARY SHEET 1 OF 1 FEATURE: PROJECT: Shasta Lake Water Resources Investigation **Central Valley Project - CA** Feasibility Study **Shasta Division** Powerplant and Penstocks ESTIMATE LEVEL: WOID: SHAEF Feasibility REGION: MP UNIT PRICE LEVEL: Apr-10 **Most Probable** 12.5-ft Dam Raise Summary PAY ITEM CODE QUANTITY UNIT AMOUNT DESCRIPTION **UNIT PRICE** Powerplant and Penstocks consists of: Relocate hydraulic hoist systems Furnish and install 5 extra lengths of stainless steel stems Furnish and install new guide tracks for the 15' x 19.05' penstock coaster gates Remove existing coaster gate oil pump controlboards Reinstall existing coaster gate oil pump controlboards Extend existing coaster gate controlboard power feeder 86-68420 Sheet (relocate hydraulic systems) \$740,000.00 86-68430 Sheet (removal and reinstall of existing coaster oil pump controlboards) \$58,870.00 (extend existing coaster gate controlboard power feeders) Subtotal 1 \$798,870.00 Mobilization 5% +/-\$40,000.00 Subtotal 1 with Mobilization \$838,870.00 **Design Contingencies** +/-\$83,887.00 10% Subtotal 2 = Subtotal 1 + Design Contingencies \$922,757.00 Allowance for Procurement Strategies (APS) +/-2.0% \$18,455.00 Type of solicitation assumed is: Request for Proposal Subtotal 3 = Subtotal 2 + APS \$941,212.00 **CONTRACT COST** \$940,000.00 **Construction Contingencies** 20% \$210,000.00 +/-\$1,150,000.00 FIELD COST

Ref.: For appropriate use and terminology, see Reclamation Manual, Directives and Standards FAC; 09-01, 09-02 and 09-03.								
QUANTITIES PRICES								
вү	BY CHECKED BY CHECKED							
See Group Sh	eets	See Group Sheets	Jeff Morris	Kelly Brom				
DATE PREPARED		PEER REVIEW	DATE PREPARED	PEER REVIEW				
		See Group Sheets	08/27/10	Dan Donaldson				

Note: Escalation from published price level to notice to proceed is excluded. Estimates may include discrepancies due to rounding.

ESTIMATE WORKSHEET BUREAU OF RECLAMATION SHEET _1_ OF _2_ FEATURE: PROJECT: Shasta Lake Water Resources Investigation **Central Valley Project - CA** Feasibility Study **Shasta Division Powerplant and Penstocks** WOID: SHAEF ESTIMATE LEVEL: Feasibility **REGION:** UNIT PRICE LEVEL: Apr-10 **Most Probable** 12.5-ft Dam Raise PLANT ACCOUNT PAY ITEM QUANTITY UNIT PRICE DESCRIPTION CODE UNIT AMOUNT Relocate hydraulic hoist systems 105,000 lbs \$3.00 \$315,000.00 Remove and reinstall the hydraulic cylinder hoist systems for the 15' x 19.05' penstock coaster gates. 5 Hoist systems (21,000 lbs. each) 2 Furnish and install 5 extra lengths of stainless steel stems 12,500 lbs \$14.00 \$175,000.00 to connect the existing stems to the relocated hoists 5 - 20-foot lengths of 6-1/2-inch diameter stainless steel stems (2,500 lbs. each) 1 LS Furnish and install new guide tracks for the 15' x 19.05' \$250,000.00 \$250,000.00 penstock coaster gates -10 new bronze guide tracks, 20-feet long each (51 lbs. per foot of track: 10,200 lbs total) Guide tracks anchored with 1-1/2-inch diameter steel anchor bolts, approx. 200 sets of anchors (24 lbs. per set of anchor: 4,800 lbs total)

				This Sheet and			420 Total =	\$740,000.00
		Ql	JANTITIES	PRICES				
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Nathan Na	kamoto		C. Sayer	Jeff Morris			Ke	lly Brom
DATE PRE	PARED		PEER REVIEW	DATE PREPARED			PEER REVIEW	
11/15/07	11/15/07 Don Read		08/27/10			Dan Donaldson		

ESTIMATE WORKSHEET BUREAU OF RECLAMATION SHEET _2_ OF FEATURE: PROJECT: Shasta Lake Water Resources Investigation **Central Valley Project - CA** Feasibility Study **Shasta Division Powerplant and Penstocks** WOID: ESTIMATE LEVEL: SHAEF Feasibility REGION: UNIT PRICE LEVEL: MP Apr-10 **Most Probable** 12.5-ft Dam Raise PAY ITEM CODE QUANTITY UNIT PRICE DESCRIPTION UNIT **AMOUNT** Remove existing coaster gate oil pump controlboards \$20,000.00 8430 5 EΑ \$4,000.00 8430 5 EΑ \$5,800.00 \$29,000.00 2 Reinstall existing coaster gate oil pump controlboards Extend existing coaster gate controlboard power feeder: FΤ \$555.00 8430 150 \$3.70 600 volt power cable, 8 AWG 4 Extend existing coaster gate controlboard power feeder: 8430 450 FΤ \$4.70 \$2,115.00 600 volt power cable, 6 AWG Extend existing coaster gate controlboard power feeder: 8430 150 \$48.00 \$7,200.00 FΤ Rigid steel conduit, 1-inch This Sheet and 86-68420 Total = \$58,870.00 **QUANTITIES PRICES** CHECKED CHECKED ΒY

Jeff Morris

08/27/10

DATE PREPARED

Mike Schuh

12/12/07

DATE PREPARED

Cory Maurer

PEER REVIEW

George Girgis

Kelly Brom

Dan Donaldson

PEER REVIEW

BUREAU OF RECLAMATION ESTIMATE WORKSHEET
SUMMARY SHEET 1 OF 1

BUREAU OI		ATION	ESTIMATE WO	KNOHEEI				SUMMARY SHEET 1 OF
FEAT	URE:			PROJECT:				
Shasta Feasil			ces Investigation		Central Va Shasta Div		ect - CA	
		oad Realignme	ent	WOID:	SHAEF		ATE LEVEL:	Feasibility
		· ·		REGION:	MP		RICE LEVEL:	Apr-10
		Most	Probable					-
Sumn	nary		12.5-ft Dam Ra	aise				
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
A O	Α							
		Subtotal 1						\$5,241,770.00
		Mobilization		5%	+/-			\$260,000.00
		Subtotal 1 with I						\$5,501,770.00
		Design Conti		10%	+/-			\$550,177.00
			otal 1 + Design Contingencies					\$6,051,947.00
			r Procurement Strategies (APS)	2.0%	+/-			\$121,039.00
		• • • • • • • • • • • • • • • • • • • •	solicitation assumed is: Request for Pro	posal				
		Subtotal 3 = Subt						\$6,172,986.00
		CONTRACT COS						\$6,200,000.00
			Contingencies	20%	+/-			\$1,200,000.0
		FIELD COST						\$7,400,000.00
					+	+		
						+		
		Note: Escalation from	nublished price level to notice to preced in such	dod Estimates marris	oludo diocres	noine due te	rounding	
			published price level to notice to proceed is excluuse and terminology, see Reclamation Manual, Di					
			use and terminology, see Reclamation Manual, Dil UANTITIES	rectives and Standard	13 FAO, 08-01, C		PRICES	
BV								
BY			BY CHECKED				y Brom	
		`	Mark Leavitt, PE	Jeff Morris				y Brom
DATE PF		J	PEER REVIEW / DATE	DATE PREPARED PEER REVIEW			and the second	
5/6/2010			Jesus G. Romero, PE	08/27/10			Dan D	onaldson

BUREAU OF RECLAMATION

ESTIMATE WORKSHEET

SHEET _1_ OF _1_

	F RECLAMAT	IION	LOTIMA	SHEET_1_OF_1_					
FEAT				PROJECT:					
	a Lake pility St		ces Investigation		Central Val Shasta Div	-	ect - CA		
UPRR	Railro	oad Realignme	ent	WOID:	SHAEF	SHAEF ESTIMATE LEVEL:		Feasibility	
				REGION:	MP	UNIT F	RICE LEVEL:	Apr-10	
		Most	Probable						
			12.5-ft Dam Rai	se					
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
	1	Clearing and Gru	bbing	86-68140	44,000	SY	\$0.75	\$33,000.00	
	2	Stripping (6" dept	th)	86-68140	7,400	CY	\$5.30	\$39,220.00	
	3	Excavation		86-68140	35,000	CY	\$6.10	\$213,500.00	
		Compacted Back		86-68140	7,500	CY	\$13.50	\$101,250.00	
			36lb/yd(linear), 2 rails, 8400 track feet)	86-68140	390		\$3,000.00	\$1,170,000.00	
			d Ties (9ftx10inx12in)	86-68140	4,200		\$270.00	\$1,134,000.00	
			depth at 135 lb/ft^3) depth at 135 lb/ft^3)	86-68140 86-68140	13,500	Tons Tons	\$40.00 \$40.00	\$540,000.00 \$520,000.00	
		,	ing Railroad Track	86-68140	370		\$590.00	\$218,300.00	
	9		rails, 8400 track feet)	55-55170	370	10110	ψ550.00	Ψ2 10,000.00	
	10	Removal of Timb	er Railroad Ties (9.5ftx12inx10in)	86-68140	5,100	EA	\$55.00	\$280,500.00	
	11	Removal of Balla	st (12in-3in depth at 135 lb/ft^3)	86-68140	6,400	Tons	\$155.00	\$992,000.00	
			SUBTOTAL THIS SHE	ET				\$5,241,770.00	
BY				ву			PRICES CHECKED		
DATE PR	Clough, P.E. Mark Leavitt, PE E PREPARED PEER REVIEW / DATE 010 Jesus G. Romero, PE		Jeff Morris DATE PREPA 08/27/10	RED		Kelly E PEER REVIEW Dan Don			
5/6/2010			Jesus G. Rullielu, PE	00/27/10			Dan Don	aiu5UII	

BUREAU OF RECLAMATION ESTIMATE WORKSHEET
SUMMARY SHEET 1 OF 1

	OF RECLAMA	ATION	ESTIMATE WC	MASHLLI				SUMMARY SHEET 1 OF 1
FEAT	URE:			PROJECT:				
Shast	ta Lake	e Water Resourc	ces Investigation		Central Va	lley Proje	ect - CA	
Feasi	ibility S	study			Shasta Div	ision		
Done	y Cree	ek UPRR Bridge	e Replacement	WOID:	OID: SHAEF ESTIMATE LEVEL:		ATE LEVEL:	Feasibility
		_	•	REGION:	MP		RICE LEVEL:	Apr-10
		Most	Probable					-
Sumi	mary		12.5-ft Dam Raise					
PLANT	РАУ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		537.5, 5 ft long, f	five span structure, supported on dri	illed 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						\$24.945.272.50
		Mobilization		10%	+/-			\$31,815,272.50 \$3,200,000.00
		Subtotal 1 with	Mobilization	10%	T/-			
		Design Conti		15%	+/-			\$35,015,272.50 \$5,252,290.50
			otal 1 + Design Contingencies	15%	T/-			\$40,267,563.00
			r Procurement Strategies (APS)	2.0%	+/-			\$805,352.00
			solicitation assumed is: Request for Pro		Τ/-			\$605,352.00
		Subtotal 3 = Subt	·	υμυδαι				\$41,072,045,00
		CONTRACT COS						\$41,072,915.00 \$41,000,000.00
			Contingencies	25%	+/-			\$10,000,000.00
		FIELD COST	Ооншиденова	2570	⊤/-			\$51,000,000.00
								7 - 1,000,000
	Note:	Escalation from pul	blished price level to notice to proceed	is excluded. Estim	ates may inc	lude disc	crepancies due to re	ounding.
	Ref.: F	or appropriate use	and terminology, see Reclamation Ma	nual, Directives ar	nd Standards	FAC; 09	0-01, 09-02 and 09-	03.
	QUANTITIES					PRICES		
вү	Y CHECKED			вү			CHECKED	
Carly M.	Wegher		Jesus G. Romero P.E.	Jeff Morris			Ke	ly Brom
	ATE PREPARED PEER REVIEW / DATE		DATE PREPARED PEER REVIEW					
4/22/201	10		Joseph M. Gemperline	08/27/10			Dan [Donaldson

ESTIMATE WORKSHEET

SHEET _1_ OF _8_

BUREAU OF				E WORKSHEET _1_ OF _8.					
FEAT	JRE:			PROJECT:					
Shasta Feasib			ces Investigation		Central Val Shasta Divi		ect - CA		
	-	-	e Replacement	WOID:			ATE LEVEL:	Feasibility	
		or =g		REGION:	MP		RICE LEVEL:	Apr-10	
		Most	Probable	KEGION.	1411	ONT	MOL LLVLL.	Αρι-το	
		WOSt	12.5-ft Dam Raise						
_	_		12.5-It Daili Naise						
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
		new bridge has 5 108'-3") with an c abutments). The steel plate girders	ge will be replaced with a new bridge. The spans (108'-3", 107'-0", 107'-0". 107'-0", & overall length of 537'-6" (back to back of superstructure consists of four 9'-0" deep is with cast-in-place reinforced concrete abutments are supported on drilled shafts.						
		Mobilization		86-68140	1	LS	Included on sheet 8.		
		Earthwork							
		Excavation for st	ructures (abutments+wingwalls)	86-68140	630	YD^3	Included below		
			uctures (abutments+wingwalls)	86-68140	2,200	YD^3	\$140.00	\$308,000.00	
			around structures (abutments+ww)	86-68140	2,200	YD^3	Included above	. ,	
		·	,						
		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 43'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).						
		Concrete for Ab	utment 1, f'c = 4,000 psi						
			(abutment and wingwalls)	86-68140	650	YD^3	\$1,500.00	\$975,000.00	
			andle cementatious materials (.282T/cy)	86-68140	183	Tons	Included above	* 0.1.0 , 0.0.000	
			handling epoxy coated reinforcement	86-68140	162,500	LBS	\$2.40	\$390,000.00	
			bs/cy (fy = 60 ksi)		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		, ,	, ,	
		Drilled Shafts							
		6'-0" Diamet	er @ abutments, A _c = 28.27 ft ² /lf	86-68140	107	LF	\$3,400.00	\$363,800.00	
		Cost/lf includes n removal of water reinforcement an 112 cy concrete,	nobilization for drilling, drilling, casing and if required, cement, concrete, d integrity testing. Drilled shafts require 32 tons cement, and 51,000 lbs epoxy nent (~450 lbs/cy).					·	
		Rock excavation	for drilled shaft (inside casing)	86-68140	112	YD^3	Included above		
			SUBTOTAL THIS SHEET					\$2,036,800.00	
		C	UANTITIES				PRICES		
вү			CHECKED	BY CHECKED					
Roman M	. Koltuniı	ık, P.E.	Jesus G. Romero, PE	Jeff Morris Kelly Brom			Brom		
DATE PR	EPARE		PEER REVIEW / DATE	DATE PREPARED PEER REVIEW					
4/16/2010			Nick Clough, PE	08/27/10			Dan Don	aldson	

BUREAU OF RECLAMATION

ESTIMATE WORKSHEET

SHEET _2_ OF _8_

	REAU OF RECLAMATION ESTIMA		WURKS	пссі			SHEET _2_ OF _8_
FEAT			PROJECT:				
Shasta Feasil		e Water Resources Investigation tudy		Central Val Shasta Div		ect - CA	
		ek UPRR Bridge Replacement	WOID:	SHAEF	ESTIM	ATE LEVEL:	Feasibility
	•	ong, five span structure, supported on drilled sha		MP		RICE LEVEL:	Apr-10
,		Most Probable					
		12.5-ft Dam Raise					
. 5	Σ						
PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		PIERS: Each pier consists of a single 14-foot diameter (A _c =				+	
		154 ft ² , $V_c = 5.7$ cy/lf) column/drilled shaft socketed into					
		bedrock. The reservoir water surface on Shasta Dam					
		fluctuates throughout the year. A reservoir water surface					
		Elevation of 1012.5' is assumed for drilled shaft construction.					
		PIER 1 - Top of column El. 1080.0, Drilled shaft tip El.					
		872.0'. Overall length (including drilled shaft), L _p ~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)					
		Chrystyral compared for rise (should El 4040 E. L 67 E.H.)			\ (53		
		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 = 21.5 lf), f'c = 4,000 psi).	86-68140	123	YD ³	\$370.00	\$45,510.00
		Furnish & handle cementatious materials (.282T/cy)	86-68140	35	Tons	Included above	
		Furnishing & handling epoxy coated reinforcement	86-68140	27,675	LBS	\$3.90	\$107,932.50
		@ 225 lbs/cy (fy = 60 ksi)					
		Drilled Shaft, φ = 14', f'c = 4,000 psi					
		Drilled shaft length below OGS is 119 lf.	86-68140	119	LF	\$17,500.00	\$2,082,500.00
		Cost/lf includes mobilization for drilling, drilling, casing and					
		removal of water if required, cement concrete, reinforcement					
		and integrity testing drilled shaft require 680 cy concrete, 192 tons cement, and 153,000 lbs epoxy coated reinf (~225					
		lbs/cy).					
		Rock excavation for drilled shaft (inside casing)	86-68140	680	YD ³	Included above	
	SUBTOTAL THIS SHEE						\$3,541,747.50
		QUANTITIES				PRICES	
BY		CHECKED	BY CHECKED				
	man M. Koltuniuk, P.E. Jesus G. Romero, PE		Jeff Morris Kelly Brom			Brom	
	TE PREPARED PEER REVIEW / DATE		DATE PREPARED 08/27/10 PEER REVIEW Dan Donaldso				
4/16/2010	Nick Clough, PE					Dan Don	aldson

BUREAU OF RECLAMATION

ESTIMATE WORKSHEET

SHEET _3_ OF _8_

	UREAU OF RECLAMATION ESTITIVE							SHEET_3_ OF _8_
FEAT				PROJECT:				
Shasta Feasib		Water Resources ltudy	nvestigation		Central Val Shasta Div		ect - CA	
		k UPRR Bridge Re	placement	WOID:	SHAEF	ESTIM	ATE LEVEL:	Feasibility
1	•	•	•	REGION:	MP		RICE LEVEL:	Apr-10
		Most Pro	bable					•
			12.5-ft Dam Raise					
ς.	Σ							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		•	n El. 1080.0, Drilled shaft tip El. (including drilled shaft), Lp ~208.0 lf.					
		Structural concrete f	or pier cap, f'c = 4,000 psi					
			le by 18' thick by 12' high	86-68140	200	YD^3	\$1,200.00	\$240,000.00
			cementatious materials (.282T/cy)	86-68140	56	Tons	Included above	
		Furnishing & hand	dling epoxy coated reinforcement	86-68140	60,000	LBS	\$3.90	\$234,000.00
		@ 300 lbs/cy	(fy = 60 ksi)					
						2		
		f'c = 4,000 psi).	or pier (above El. 1012.5, L = 67.5 lf),	86-68140	382	YD ³	\$1,300.00	\$496,600.00
		Furnish & handle	cementatious materials (.282T/cy)	86-68140	108	Tons	Included above	
		Furnishing & hand	dling epoxy coated reinforcement	86-68140	85,950	LBS	\$3.90	\$335,205.00
		@ 225 lbs/cy	(fy = 60 ksi)					
		Structural concrete f f'c = 4,000 psi).	or pier (below El. 1012.5, L = 55.5 lf),	86-68140	317	YD ³	\$370.00	\$117,290.00
		Furnish & handle	cementatious materials (.282T/cy)	86-68140	89	Tons	Included above	
		Furnishing & hand	dling 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 be		86-68140	85	LF	\$20,000.00	\$1,700,000.00
			zation for drilling, drilling, casing and					
		and integrity testing dr	uired, cement concrete, reinforcement illed shaft require 485 cy concrete, 110,000 lbs epoxy coated reinf (~225					
		Rock excavation for d	rilled shaft (inside casing)	86-68140	485	YD ³	Included above	
			SUBTOTAL THIS SHEET	•				\$3,401,262.50
	QUANTITIES				_		PRICES	
вү				BY CHECKED				
Roman M	I. Koltuniu	k, P.E. Jesus	s G. Romero, PE	Jeff Morris Kelly Brom				Brom
DATE PR	TE PREPARED PEER REVIEW / DATE		R REVIEW / DATE	DATE PREPARED PEER REVIEW				
4/16/2010			Clough, PE	08/27/10			Dan Don	aldson

ESTIMATE WORKSHEET

SHEET _4_ OF _8_

BUREAU OF		TION	ESTIMATE	WURKS				SHEET_4_OF_8_
FEAT	URE:			PROJECT:				
Shasta Feasib			ces Investigation		Central Val		ect - CA	
	•	•	e Replacement	WOID:			ATE LEVEL:	Feasibility
Dones	Ciec	K OF KIX Bridge	e Nepiacement		MP			
		Most	Duchahla	REGION:	IVIP	UNITP	RICE LEVEL:	Apr-10
		Wost	Probable 10.5 # Dam Baisa					
			12.5-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.					
		Structural conci	ete for pier cap, f'c = 4,000 psi					
			5' wide by 18' thick by 12' high	86-68140	200	YD ³	\$1,200.00	\$240,000.00
			andle 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)					+ ===1,=====
		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	indle 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
			bs/cy (fy = 60 ksi)		·			
		Structural concr 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	indle 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					
		Drilled shaft leng	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, and 136,000 lbs epoxy coated reinf (~225					
		Rock excavation	for drilled shaft (inside casing)	86-68140	605	YD ³	Included above	
			SUBTOTAL THIS SHEET	•				\$3,671,562.50
		C	UANTITIES				PRICES	
вү			CHECKED	вү			CHECKED	
Roman M	. Koltuniu	ık, P.E.	Jesus G. Romero, PE	Jeff Morris Kelly Brom			Brom	
DATE PR			PEER REVIEW / DATE	DATE PREPARED PEER REVIEW				
4/16/2010)		Nick Clough, PE	08/27/10			Dan Dor	naldson
							•	

ESTIMATE WORKSHEET

BUREAU OF	F RECLAMA	ATION	ESTIMATE	WORKS	HEET			SHEET _5_ OF _8_
FEAT	URE:			PROJECT:				
Shasta Feasik			ces Investigation		Central Val Shasta Divi		ect - CA	
	-	•	e Replacement	WOID:	SHAEF	ESTIM	ATE LEVEL:	Feasibility
1		J	•	REGION:	MP		RICE LEVEL:	Apr-10
		Most	Probable					
			12.5-ft Dam Raise					
⊢	>							
PLANT ACCOUNT	РАУ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		•	column El. 1080.0, Drilled shaft tip El. ength (including drilled shaft), Lp ~160.0 lf.					
		Structural conci	rete for pier cap, f'c = 4,000 psi					
			5' wide by 18' thick by 12' high	86-68140	200	YD ³	\$820.00	\$164,000.00
		· · · · · · · · · · · · · · · · · · ·	andle cementatious materials (.282T/cy)	86-68140	56	Tons	Included above	Ţ. Ţ
			handling epoxy coated reinforcement	86-68140	60,000	LBS	\$3.00	\$180,000.00
		•	bs/cy (fy = 60 ksi)				7 3 3 3	+ 100,000
		3 3 3 3 3						
		column/drilled sh	rete for pier (This pier concrete aft can be constructed entirely out of the	86-68140	308	YD ³	\$850.00	\$261,800.00
		influence of wate f'c = 4,000 psi).	r surface El. 1012.5. L = 160-106 ~ 54 lf),					
		Furnish & ha	andle 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	bs/cy (fy = 60 ksi)					
		Drilled Shaft, φ :	= 14', f'c = 4,000 psi					
			th below OGS is 106 lf.	86-68140	106	LF	\$14,000.00	\$1,484,000.00
		removal of water	nobilization for drilling, drilling, casing and if required, cement concrete, reinforcement ng drilled shaft require 605 cy concrete,					
		0 5	, and 136,000 lbs epoxy coated reinf (~225					
		Rock excavation	for drilled shaft (inside casing)	86-68140	605	YD ³	Included above	
			SUBTOTAL THIS SHEET	•				\$2,297,700.00
		C	QUANTITIES				PRICES	
вү			CHECKED	BY CHECKED				
Roman M	I. Koltuniı	ık, P.E.	Jesus G. Romero, PE	Jeff Morris Kelly Brom			Brom	
DATE PR)	PEER REVIEW / DATE	DATE PREPARED PEER REVIEW				
4/16/2010)		Nick Clough, PE	08/27/10 Dan Donaldson				naldson

ESTIMATE WORKSHEET

SHEET_6_OF_8_

BUREAU OF	F RECLAMA	ATION	ESTIMATE	WORKS	HEEI			SHEET _6_ OF _8_
FEAT	URE:			PROJECT:				
Shasta	a Lake	Water Resource	ces Investigation		Central Val	ley Proj	ect - CA	
Feasik	oility S	tudy			Shasta Divi	sion		
Doney	y Cree	k UPRR Bridge	e Replacement	WOID:	SHAEF	ESTIM	ATE LEVEL:	Feasibility
				REGION:	MP	UNIT P	RICE LEVEL:	Apr-10
		Most	Probable					
			12.5-ft Dam Raise					
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY UNIT UNIT PRICE		AMOUNT	
		ARIITMENT #2	Structure is stem wall (~42'H x 10'T x					
		25'W), beam sea diameter drilled s	t 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					
		stem wall to form	a "box" that contains and supports fill and (similar to the existing bridge).					
		Concrete for Ah	utment 2, f'c = 4,000 psi					
			(abutment and wingwalls)	86-68140	570	YD ³	\$1,500.00	\$855,000.00
			andle cementatious materials (.282T/cy)	86-68140	161	Tons	Included above	4000,000.00
			handling epoxy coated reinforcement	86-68140	142,500	LBS	\$2.40	\$342,000.00
			bs/cy (fy = 60 ksi)	00 00 1 10	,555		ψ=σ	Ψο :=,οοο:σο
		<u> </u>	to the second					
		Drilled Shafts						
		6'-0" Diamete	er @ abutments, $A_c = 28.27 \text{ ft}^2/\text{lf}$	86-68140	123	LF	\$3,400.00	\$418,200.00
		removal of water reinforcement and 129 cy concrete,	nobilization for drilling, drilling, casing and if required, cement, concrete, d integrity testing. Drilled shafts require 37 tons cement, and 58,000 lbs epoxyment (~450 lbs/cy).					
		Rock excavation	for drilled shaft (inside casing)	86-68140	129	YD^3	Included above	
		SUPERSTRUCT	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					
		Steel for girders,	Fy = 50 ksi, ASTM A709W	86-68140	2,250,000	LBS	\$3.70	\$8,325,000.00
		Structural concre	te, f' _c = 4,000 psi	86-68140	350	YD³	\$1,900.00	\$665,000.00
		Furnishing and ha	andling cementatious material	86-68140	99	Tons	Included above	
		Furnishing and pl	lacing reinforcment bars (300 lbs/cy)	86-68140	105,000	LBS	\$2.60	\$273,000.00
			epoxy coated)					
			SUBTOTAL THIS SHEET					\$10,878,200.00
	QUANTITIES						PRICES	
BY			CHECKED	BY CHECKED				
Roman M	oman M. Koltuniuk, P.E. Jesus G. Romero, PE		Jeff Morris Kelly Brom			Brom		
DATE PREPARED PEER REVIEW / DATE DATE PI		DATE PREPARED PEER REVIEW						
4/16/2010)		Nick Clough, PE	08/27/10			Dan Dor	naldson

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_7_OF_8_

BUREAU OI		11014	LOTIMATE		!			SHEET _/_ OF _6_
FEAT				PROJECT:				
			ces Investigation		Central Val	ley Proj	ect - CA	
	oility St	•			Shasta Div	ision		
Doney	y Cree	k UPRR Bridge	e Replacement	WOID:	SHAEF	ESTIM	ATE LEVEL:	Feasibility
				REGION:	MP	UNIT P	RICE LEVEL:	Apr-10
		Most	Probable					
			12.5-ft Dam Raise					
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		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"					
		weighs 19.8	tons). Remove Abutment down to 3'					
		below ground	,					
		Ü						
		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	locks weighing approximately 20 tons					
			dimensions of 6'5" x 6'5" x 6'5"					
		,	tons). Remove Pier down to 3'					
		below ground	•					
		J						
		Removal of Exis	ting Concrete and Reinforcement	86-68140	1,200	YD^3	\$1,200.00	\$1,440,000.00
		in Pier 2			1,=11		+ 1,= 2 2 2 2	+ 1,111,111
			locks weighing approximately 20 tons					
			dimensions of 6'5" x 6'5" x 6'5"					
		,	tons). Remove Pier down to 3'					
		below ground	•					
		J 2 2						
		Removal of Exis	ting Concrete and Reinforcement	86-68140	185	YD^3	\$400.00	\$74,000.00
		in Abutment 2					,	, ,
			locks weighing approximately 20 tons					
			dimensions of 6'5" x 6'5" x 6'5"					
		,	tons). Remove Abutment down to 3'					
		below ground	,					
		J						
			SUBTOTAL THIS SHEET					\$5,188,000.00
	QUANTITIES					PRICES		
вү			CHECKED	вү			CHECKED	
	rly M. Wegher Joseph M. Gemperline		Jeff Morris Kelly Brom				Brom	
	TE PREPARED PEER REVIEW / DATE		DATE PREPARED PEER REVIEW					
4/22/2010			08/27/10			Dan Don	aldson	

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_8_OF_8_

BUREAU OF		ATION	·	SHEET_8_OF_8_			
FEAT	URE:		PROJECT:				
Shasta	a Lake	e Water Resources Investigation		Central Val	ley Proje	ect - CA	
Feasik				Shasta Divi			
		k UPRR Bridge Replacement	WOID:	SHAEF	ESTIM/	ATE LEVEL:	Feasibility
			REGION:	MP		RICE LEVEL:	Apr-10
		Most Probable	11_010111				
		12.5-ft Dam Raise					
⊢	5						
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.	80-08140	2,000,000	LBS	φ0.40	φουσ,σοσ.σο
		The structural steel grade is unknown, but can					
		assume Fy=33 ksi. The existing steel appears to					
		be painted.					
		SUBTOTAL THIS SHEET	•				\$800,000.00
	QUANTITIES					PRICES	+ - 3 - ,
вү		CHECKED	вү		'	CHECKED	
	Wegher	Joseph M. Gemperline	Jeff Morris				
	M. Wegher Joseph M. Gemperline E PREPARED PEER REVIEW / DATE		Jeff Morris Kelly Brom DATE PREPARED CHECKED				
		Jesus G. Romero P.E.	07/26/10	LU		Dan Donaldson	
4/22/2010	J	Jesus G. Komero P.E.	07720/10			Dan Donaidson	

BUREAU OF RECLAMATION ESTIMATE WORKSHEET 1 OF 1

BUREAU OF F	RECLAMATI	ON	ESTIMATE WORKS	HEEI				SUMMARY SHEET 1 OF 1
FEATU	IRE:			PROJEC	CT:			
		Water Resources	Investigation		Central Vall	lev Projec	t - CA	
Feasibi			Jouganon		Shasta Divi		U A	
		dge Pier 3 and 4 I	Protection	REGION:	MP		TE LEVEL:	Feasibility
	CI DIII	age i lei o alla + i	rototion	WOID:	AF399	PRICE L		Apr-10
		Most Pr	robablo	WOID.	Al 333	TRICE		Api-10
		WOSt PI						
Summa	ary		12.5-ft Dam Raise					
⊥ ¥	EM							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
AC	Ą							
		Pit River Bridge Mo	dification					
		(protection of	bearings on piers (#3 & #4) in deepest pa	art of old P	it River cha	nnel.		
		86-68140 Sheet (brid	dge protection),					\$12,527,848.00
		86-68410 Sheet (brid	dge protection)					\$309,350.0
		Subtotal						\$12,837,198.00
		Gustotai						ψ12,001,100.0t
		Mobilization					10%	\$1,300,000.00
		WOOMZation					10 /0	ψ1,000,000.00
		Subtotal w/ Mobiliza	ation					\$14,137,198.00
		Subtotal W/ WIODIII2	ation					\$14,137,190.00
		Design Continge	ancies				15%	\$2,084,825.00
		Design Continge	encies				13 /6	\$2,004,025.00
		Allowanaa for D	rocurement Strategy				20/	¢277 077 0
							2%	\$277,977.00
		· ·	icitation assumed is: Request for Proposal					\$46 F00 000 0
		CONTRACT COST						\$16,500,000.00
		Construction	antinganaiaa				050/	Φ4 E00 000 00
		Construction Co	onungencies				25%	\$4,500,000.00
		FIELD COST						#04 000 000 C
		FIELD COST						\$21,000,000.00
		-						
		-						
							<u> </u>	
		·	published price level to notice to proceed is exclu		-			ng.
			se and terminology, see Reclamation Manual, Di	rectives and	Standards FA			
		Q	UANTITIES			Р	RICES	
вү			CHECKED	вү			CHECKED	
			See Group Sheets	Jeff Morris			Ke	elly Brom
See Grou				DATE PREPARED PEER REVIEW				
	PARED		PEER REVIEW	DATE PREP	ARED		PEER REVIEW	

BUREAU OF RECLAMATION

ESTIMATE WORKSHEET

SHEET__1__ OF __3__

BUREAU OF F		ON	ESTIMATE WORK					SHEET1 OF3	
FEATU	RE:			PROJEC	T:				
Shasta	Lake \	Nater Resources Ir	nvestigation	Central Valley Project - CA					
Feasibi			3		Shasta Divis				
		lge Pier 3 and 4 P	rotection	REGION:	MP		TE LEVEL:	Feasibility	
				WOID:	AF399	PRICE I		Apr-10	
		Most Pro	habla	WOID.	AI 333	I KIOL I		Αρι-10	
		WOSt Pro							
			12.5-ft Dam Rais	se					
_ <u> </u>	Σ								
AN UO	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
PLANT ACCOUNT	PA								
		Pier 3							
	1		eter hole through existing pier for	86-68140	1,100	LF	\$450.00	\$495,000.00	
	I			00-00140	1,100	LF	φ450.00	φ495,000.00	
			rs. 60 holes are 15-feet long and 40						
			ong. Total number of holes is 100 for						
		a total length of 9	00 + 200 = 1,100 lf						
	2		on of existing concrete consisting of	86-68140	1,172	SF	\$7.00	\$8,204.00	
		low pressure wate	er (pressure less that 5,000 psi)						
		cleaning. Perime	ter is 146.5 feet, height is 8 feet.						
	3	Hydrotite watersto	op, CJ-0725-3K (Greenstreak)	86-68140	300	LF	\$20.00	\$6,000.00	
		·							
	4	Furnish and place	e concrete, f'c = 6,000 psi @ 28 days	86-68140	1,460	CY	\$2,400.00	\$3,504,000.00	
		,	estimate for mix proportion and	00 00 1 10	.,	<u> </u>	ψ=,::σσ::σσ	φο,σο 1,σοσ.σο	
		,	o increase water tightness)						
	-		<u> </u>	96 69140	429.000	LDC	¢4.90	¢2 402 400 00	
	5	Furnish and insta	Il 60 ksi epoxy coated reinforcement	86-68140	438,000	LBS	\$4.80	\$2,102,400.00	
	_					_			
	6	Furnishing and ha	andling cement (.282 tons/cy)	86-68140	412	Tons	\$360.00	\$148,320.00	
	7	Furnishing sump	pump, alarm system and piping	86-68140	2	EA	See Group 86-	8410 Sheets	
		Pier 4							
	8	Core 4-inch diam	eter hole through existing pier for	86-68140	1,100	LF	\$450.00	\$495,000.00	
		3-#11 bundled ba	rs. 60 holes are 15-feet long and 40						
		holes are 5 feet lo	ong. Total number of holes is 100 for						
			00 + 200 = 1,100 lf						
			.,						
	9	Surface preparati	on of existing concrete consisting of	86-68140	1,172	SF	\$7.00	\$8,204.00	
	J	' '	er (pressure less than 5,000 psi)	00-00140	1,172	O.	Ψ7.00	ψ0,204.00	
		•							
		cleaning. Penine	ter is 146.5 feet, height is 8 feet.						
						0) (
	10		e concrete, f'c = 6,000 @ 28 days	86-68140	1,460	CY	\$2,400.00	\$3,504,000.00	
		`	estimate for mix proportion and						
			o increase water tightness)						
	11	Furnish and insta	Il 60 ksi epoxy coated reinforcement	86-68140	438,000	LBS	\$4.80	\$2,102,400.00	
	12	Furnishing and ha	andling cement (.282 tons/cy)	86-68140	412	Tons	\$360.00	\$148,320.00	
	13	Furnishing sump	pump, alarm system and piping	86-68140	2	EA	See Group 86-	8410 Sheets	
							·		
	14	Hydrotite watersto	op, CJ-0725-3K (Greenstreak)	86-68140	300	LF	\$20.00	\$6,000.00	
		, a. o alo water of		22 33 140	000		\$20.00	ψ0,000.00	
					This Sheet and 86-68140 Total = \$12,527				
		Ql		Tino Silvet a		RICES	\$12,527,848.00		
DV		w.c	DV.						
BY	-	_	CHECKED	BY			CHECKED	H. Dunner	
Jesus G. R			Nicholas Clough, PE	Jeff Morris				lly Brom	
DATE PRE	PARED		PEER REVIEW	DATE PREPA	RED		PEER REVIEW		
9/27/2010			Joseph Gemperline, PE	10/6/2010			Dan	Donaldson	

BUREAU OF RECLAMATION

ESTIMATE WORKSHEET

SHEET_2_ OF _3 _

BUREAU OF F		ESTIMATE WO		F.			SHEET_2_ OF _3 _	
FEATU Shooto		Notor Decourses Investigation	PROJEC		D	4 04		
		Vater Resources Investigation		Central Valley Project - CA Shasta Division				
Feasibi		uy Ige Pier 3 and 4 Protection	REGION:	MP		TE LEVEL:	Feasibility	
1 10 1010	CI DIIC	ige i lei o and 4 i roteotion	WOID:	AF399	PRICE		Apr-10	
		Most Probable	WOID.	A1 000	i Kiol i		Aprilo	
		12.5-ft Dam	Raise					
⊨	5	12.0 K Baili	raioc					
PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
ACC	PĄ							
		Pier 3						
		Furnish, install, and test the following						
		components:						
	1	Sump pump: Submersible type, cast iron body	8410	2	each	\$10,500.00	\$21,000.00	
		with corrosion resistant components, minimum rated				4 10,000.00	+	
		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.						
	2	Pipe, copper tubing, ASTM B88, Type K, with						
		insulated stainless steel pipe hangers and supports		00	U - 66	# 400.00	#0.400.00	
		4-inch	8410	20	lin ft	\$420.00	\$8,400.00	
		5-inch	8410	65	lin ft	\$750.00	\$48,750.00	
	3	Pipe fittings, copper or bronze, ASME B16.18 or						
		ASME B16.22, Type K						
		4-inch 90 degree elbow	8410	8	each	\$1,450.00	\$11,600.00	
		5-inch 90 degree elbow	8410	4	each	\$4,100.00	\$16,400.00	
		4 x 4 x 5 reducing tee	8410	1	each	\$5,400.00	\$5,400.00	
		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	
	4	High water level alarm, with single float operated sw	vitch, 8410	1	each	\$29,000.00	\$29,000.00	
		associated controls and telemetry cabling to						
		telephone line on bridge						
	_	0 1 11 1 1 1 1 1 1 1 1 1	2442			470.00	* = 0=0 00	
	5	2 protective grates constructed of 1/8" by 1 inch galvanized steel each measuring 2.5 ft square by 1	8410	75	lbs	\$78.00	\$5,850.00	
		deep with bars spaced at 1 inch on center by 4 inch						
		on center with cutouts for sump discharge and cord						
		γ						
		Sheet Subtotal =					\$ 154,600.00	
QUANTITIES					Pi	RICES		
BY		CHECKED	вү			CHECKED		
Randall Eg		Ryan Stephen	Jeff Morris				ly Brom	
DATE PRE		PEER REVIEW	DATE PREPA	RED		PEER REVIEW) analda	
11/19/	2007	Dave Hulse	7/26/2010			Dan E	Oonaldson	

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: AF399 PRICE LEVEL: Most Probable 12.5-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 4-inch 90 degree elbow \$11,600.00 8410 8 \$1,450.00 each 5-inch 90 degree elbow \$4,100.00 \$16,400.00 8410 4 each 8410 \$5,400.00 \$5,400.00 4 x 4 x 5 reducing tee 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 ΒY ΒY Randall Egan Jeff Morris Ryan Stephen Kelly Brom DATE PREPARED PEER REVIEW DATE PREPARED PEER REVIEW 11/19/2007 Dave Hulse 7/26/2010 Dan Donaldson

BUREAU OF RECLAMATION

ESTIMATE WORKSHEET

SUMMARY SHEET 1 OF 1

	EATURE:					Centra	ntral Valley Project - CA		
Shast	a Lake	Water Resource	ces Investigation	Shas			Shasta Division		
Feasil	oility St	tudy		WOID:	SHAEF	ESTIM	ATE LEVEL:	Feasibility	
Sacra	mento	2 nd Crossing	UPRR Bridge	REGION:	MP	UNIT P	RICE LEVEL:	Apr-10	
		Most	Probable					•	
Sumn	nary		12.5-ft Dam Raise)					
_ \	Σ								
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
		982.0-ft long, nine span structure supported on drilled sh		nafts					
		,g,							
		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%	+/-			\$1,674,344.00	
		Type of	solicitation assumed is: Request for Propos	al					
		Subtotal 3 = Subt	otal 2 + APS					\$85,391,538.00	
		CONTRACT COS	ST					\$85,000,000.00	
		Construction	Contingencies	25%	+/-			\$20,000,000.00	
		FIELD COST						\$105,000,000.00	
						ude discrepancies o			
	Ref.: For appropriate use and terminology, see Reclamation			Manual, Direc	ctives and St			and 09-03.	
		Q	UANTITIES				PRICES		
BY			CHECKED	вү			CHECKED		
Carly M.			Jesus G. Romero P.E.	Jeff Morris			Kel	y Brom	
1	REPARED	1	PEER REVIEW / DATE	DATE PREPAR	RED		PEER REVIEW		
4/21/2010			Joseph M. Gemperline	08/27/10			Dan Donaldson		

BUREAU OF RECLAMATION

ESTIMATE WORKSHEET

SHEET__1__ OF __13__

BUREAU OF RECLAMATION ESTIMATE WOR				SHEET				SHEET1 OF13	
FEAT	URE:			PROJECT:					
Shasta Feasib			ces Investigation	Central Valley Project - CA Shasta Division					
Sacra	mento	2 nd Crossing	UPRR Bridge	WOID:	SHAEF	ESTIMATE LEVEL:		Feasibility	
		_	_	REGION:	MP	UNIT P	RICE LEVEL:	Apr-10	
		Most	Probable					·	
			12.5-ft Dam Raise						
ᆫᄫ	Σ								
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	Feasibility	
		The existing bride	ge will be replaced with a new bridge. The						
			spans (105', 55', 135', 135, 135', 135',						
		•	ith an overall length of 982'-0" (back to						
			s). The superstructure consists of four						
			(varying in depth from 12-ft for the 135-						
			oot for the 55-foot span) with cast-in-place						
			ete deck. Piers and abutments are						
		supported on drill	ed shafts.						
		Mobilization		86-68140	1	LS	Included on sheet	13.	
		Earthwork							
		Excavation for str	ructures (abutments+wingwalls)	86-68140	2,100	YD^3	\$50.00	\$105,000.00	
		Backfill about stru	uctures (abutments+wingwalls)	86-68140	1,900	YD^3	Included above		
		Compact backfill	around structures (abutments+ww)	86-68140	1,900	YD ³	Included above		
		25'W), beam sea diameter drilled s connected to ster stem wall to form	Structure is stem wall (~44'H x 10'T x type abutment supported on two, 6-foot hafts. 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 (similar to the existing Doney Creek UPRR						
		Concrete for Ab	utment 1, f'c = 4,000 psi						
		Substructure	(abutment and wingwalls)	86-68140	500	YD^3	\$1,200.00	\$600,000.00	
			ndle cementatious materials (.282T/cy)	86-68140	141	Tons	Included above		
		Furnishing &	handling epoxy coated reinforcement	86-68140	125,000	LBS	\$2.40	\$300,000.00	
		@ 250 II	os/cy (fy = 60 ksi)						
		Drilled Shafts	_						
			er @ abutments, A _c = 28.27 ft²/lf	86-68140	78	LF	\$3,800.00	\$296,400.00	
			nobilization for drilling, drilling, casing and						
			if required, cement,, concrete,						
			d integrity testing. Drilled shaft require 82 ons cement, and 37,000 lbs epoxy coated						
		reinforcement (~4							
		,		00.00440	22	VD3	la abodtt-		
	Rock excavation for drilled shaft (inside casing) SUBTOTAL THIS SHEET			86-68140	82	YD ³	Included above	\$1,301,400.00	
	QUANTITIES						PRICES	Ψ1,301,400.00	
вү			CHECKED	BY			CHECKED		
Roman M	Koltuniu	k PF	Jesus G. Romero, PE	Jeff Morris				y Brom	
DATE PR			PEER REVIEW / DATE	DATE PREPAR	ED		PEER REVIEW	, 5.011	
4/16/2010			Nick Clough, PE	08/27/10				onaldson	
			 	· •			24112		

BUREAU OF RECLAMATION

ESTIMATE WORKSHEET

SHEET_2_ OF __13__

BUREAU OF		IIION	LOTIMATE WORK	·				SHEE I2_ OF13
FEAT	JRE:			PROJECT:				
Shasta Feasib			ces Investigation	Central Valley Project - CA Shasta Division				
Sacra	mento	2 nd Crossing	UPRR Bridae	WOID: SHAEF ESTIM			ATE LEVEL:	Feasibility
		_	_	REGION:	MP		RICE LEVEL:	Apr-10
		Most	Probable	KEGIOI4.	1411	ONIT	NIOL LLVLL.	Aprilo
		MOSt	12.5-ft Dam Raise					
-	5		12.0 It Balli Naioc					
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		DIEDE, Dioro co	esist of a single solumn/drilled shoft (9 feet					
		•	nsist of a single column/drilled shaft (8-foot, diameter depending on it's height and					
			d into bedrock. The reservoir water surface					
		,	uctuates throughout the year. An Elevation					
			med for drilled shaft construction.					
		PIER 1 - ϕ = 8', A	$v_c = 50.27 \text{ ft}^2/\text{ft}, V_c = 1.9 \text{ cy/lf}. (Top of)$					
		column el 1079.5	, Drilled shaft tip El. 973.0'). Overall length					
			shaft), L _p ~ 106.5 lf. This column/drilled					
			structed entirely out of the influence of					
		water surface El.	1012.5.					
			ete for pier cap, f'c = 4,000 psi					
			5' wide by 14' thick by 22.5' high	86-68140	290	YD ³	\$660.00	\$191,400.00
			ndle cementatious materials (.282T/cy)	86-68140	82	Tons	Included above	
			handling epoxy coated reinforcement	86-68140	87,000	LBS	\$2.40	\$208,800.00
		@ 300 lb	os/cy (fy = 60 ksi)					
		Structural concr	ete for pier (above OGS, L _c = 64 lf), f'c =	86-68140	122	YD ³	\$1,600.00	\$195,200.00
		4,000 psi).	Ctc 101 pict (above 000, L _c = 04 ii), 10 =	00-00140	122	ם ז	\$1,000.00	\$195,200.00
		Furnish & ha	ndle cementatious materials (.282T/cy)	86-68140	34	Tons	Included above	
			handling epoxy coated reinforcement	86-68140	42,700	LBS	\$2.40	\$102,480.00
			os/cy (fy = 60 ksi)		,:		,=:::	, ,
			,					
		Drilled Shaft, f'c	= 4,000 psi					
			th below OGS is 42.5 lf.	86-68140	43	LF	\$5,000.00	\$215,000.00
			nobilization for drilling, drilling, casing and					
		•	if required, cement concrete, reinforcement					
		0 5	ng drilled shaft require 82 cy concrete, 23					
		tons cement, and 28,000 lbs epoxy coated reinforcement (~350 lbs/cy)						
		` */	for drilled shaft (inside casing)	86-68140	82	YD^3	Included above	
			, 0/					
			SUBTOTAL THIS SHEET					\$912,880.00
	QUANTITIES						PRICES	
вү			CHECKED	BY			CHECKED	
Roman M	. Koltuniu	ık, P.E.	Jesus G. Romero, PE	Jeff Morris			Kelly E	Brom
DATE PR)		DATE PREPAR	ED		PEER REVIEW	
4/16/2010 Nick Clough, PE			08/27/10 Dan Donaldson					

BUREAU OF RECLAMATION

ESTIMATE WORKSHEET

SHEET_3_ OF __13__

BUREAU OF	RECLAMA	TION	ESTIMATE WORK	SHEET				SHEET_3_ OF13	
FEAT	FEATURE:								
Shasta Feasib			ces Investigation						
	Sacramento 2 nd Crossing UPRR Bridge				Shasta Division WOID: SHAEF ESTIMATE LEVEL:				
0.010				REGION:	MP		RICE LEVEL:	Feasibility Apr-10	
		Most	Probable	KEGION.		OIIII I	MOL LLVLL.	Aprilo	
		moot	12.5-ft Dam Raise						
⊨	5		12.0 it ball italie						
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
		column el 1079.0	A_c = 113.1 ft2/ft, V_c = 4.2 cy/lf. (Top of , Drilled shaft tip El. 940.0'). Overall length shaft), Lp ~ 139.0 lf.						
		Structural concr	ete for pier cap, f'c = 4,000 psi						
		Pier cap is 2	5' wide by 14' thick by 21' high	86-68140	275	YD^3	\$1,200.00	\$330,000.00	
		Furnish & ha	ndle 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 II	os/cy (fy = 60 ksi)						
						2			
		Structural concr f'c = 4,000 psi).	rete for pier (above El. 1012.5, L = 66.5 lf),	86-68140	280	YD ³	\$1,400.00	\$392,000.00	
		Furnish & ha	ndle 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 II	os/cy (fy = 60 ksi)						
		Structural concr f'c = 4,000 psi).	rete for pier (below El. 1012.5, L = 12.5 lf),	86-68140	53	YD ³	\$370.00	\$19,610.00	
		Furnish & ha	ndle 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 II	os/cy (fy = 60 ksi)						
		Drilled Shaft, f'c	= 4,000 psi						
		Cost/lf includes memoval of water and integrity testi	th below OGS is 60 lf. hobilization for drilling, drilling, casing and if required, cement concrete, reinforcement ng drilled shaft require 252 cy concrete, 71 63,000 lbs epoxy coated reinforcement	86-68140	60	LF	\$15,500.00	\$930,000.00	
		Rock excavation	for drilled shaft (inside casing)	86-68140	250	YD ³	Included above		
			SUBTOTAL THIS SHEET					\$2,318,035.00	
	QUANTITIES						PRICES		
вү			CHECKED	вү			CHECKED		
Roman M	. Koltuniı	ık, P.E.	Jesus G. Romero, PE	Jeff Morris			Kelly E	Brom	
DATE PR	EPARE)	PEER REVIEW / DATE	DATE PREPAR	ED		PEER REVIEW		
4/16/2010)		Nick Clough, PE	08/27/10			Dan Dor	aldson	

BUREAU OF RECLAMATION

ESTIMATE WORKSHEET

SHEET_4_ OF __13__

BUREAU OF		TION	ESTIMATE WORK	SHEET				SHEET4 OF13	
FEAT	URE:			PROJECT:					
			ces Investigation		Central Val		ect - CA		
Feasib	•				Shasta Divi	sion			
Sacra	mento	2 nd Crossing	UPRR Bridge	WOID:	SHAEF	ESTIM	ATE LEVEL:	Feasibility	
				REGION:	MP	UNIT P	RICE LEVEL:	Apr-10	
		Most	Probable						
			12.5-ft Dam Raise						
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
		column el 1081.7	A_c = 201.6 ft2/ft, V_c = 7.5 cy/lf. (Top of , Drilled shaft tip El. 859.0'). Overall length shaft), Lp ~ 223.0 lf.						
		Structural concr	ete 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 lt	os/cy (fy = 60 ksi)						
		Structural concrete for pier (above El. 1012.5, L = 69 lf), f'c = 4,000 psi).		86-68140	520	YD ³	\$1,100.00	\$572,000.00	
		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 lk	os/cy (fy = 60 ksi)						
		Structural concr f'c = 4,000 psi).	ete for pier (below El. 1012.5, L = 84.0 lf),	86-68140	630	YD ³	\$380.00	\$239,400.00	
		Furnish & ha	ndle 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 lt	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	
	Cost/lf includes mobilization for drilling, drilling, casing and removal of water if required, cement concrete, reinforcemer 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 SHEE							\$4,726,400.00	
		Q	UANTITIES				PRICES		
вү			CHECKED	вү			CHECKED		
Roman M	oman M. Koltuniuk, P.E. Jesus G. Romero, PE		Jeff Morris			Kelly	Brom		
DATE PR	DATE PREPARED PEER REVIEW / DATE		DATE PREPAR	ED		PEER REVIEW			
4/16/2010	4/16/2010 Nick Clough, PE				08/27/10 Dan Donaldson				

BUREAU OF RECLAMATION

ESTIMATE WORKSHEET

SHEET_5_ OF __13__

BUREAU OF		TION	ESTIMATE WORK					SHEET_5_ OF13	
FEAT				PROJECT:					
	a Lake bility S		ces Investigation		Central Val Shasta Divi	-	ect - CA		
Sacra	mento	2 nd Crossing	UPRR Bridge	WOID:	SHAEF	ESTIM	ATE LEVEL:	Feasibility	
		•		REGION:	MP		RICE LEVEL:	Apr-10	
		Most	Probable	KEGIGIT.	••••	CIVII I	MOL LLVLL.	7.40. 10	
			12.5-ft Dam Raise						
⊨	>		12.0 K Balli Kaleo						
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
		column el 1081.7	A_c = 201.6 ft2/ft, V_c = 7.5 cy/lf. (Top of , Drilled shaft tip El. 834.0'). Overall length shaft), Lp ~ 248.0 lf.						
		Structural concr	rete for pier cap, f'c = 4,000 psi						
			5' wide by 18' thick by 12' high	86-68140	200	YD^3	\$1,200.00	\$240,000.00	
		Furnish & ha	indle 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 f'c = 4,000 psi).	rete for pier (above El. 1012.5, L = 69 lf),	86-68140	520	YD ³	\$1,000.00	\$520,000.00	
		Furnish & ha	indle 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	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						
		Drilled shaft lengt	th below OGS is 70 lf.	86-68140	70	LF	\$31,000.00	\$2,170,000.00	
	Cost/lf includes mobilization for drilling, drilling, casing and removal of water if required, cement concrete, reinforcement and integrity testing drilled shaft require 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					\$4,955,600.00	
	QUANTITIES QUANTITIES						PRICES	ψ-1,000,000.00	
вү		-	CHECKED	вү			CHECKED		
	oman M. Koltuniuk, P.E. Jesus G. Romero, PE		Jeff Morris Kelly Brom			Brom			
	ATE PREPARED PEER REVIEW / DATE		DATE PREPAR	ED		PEER REVIEW			
4/16/2010			Nick Clough, PE	08/27/10			Dan Don	aldson	
	6/2010 Nick Clough, PE						· · · · · · · · · · · · · · · · · · ·		

BUREAU OF RECLAMATION

ESTIMATE WORKSHEET

SHEET_6_ OF __13__

BUILAU OI	RECLAMA	THON	LOTIMATE WORK	O11LL1				SHEET_6_ OF13
FEAT	URE:			PROJECT:				
Shasta Feasib			ces Investigation		Central Val Shasta Div		ect - CA	
	-	2 nd Crossing	UPRR Bridge	WOID:	SHAEF	ESTIMA	ATE LEVEL:	Feasibility
				REGION:	MP		RICE LEVEL:	Apr-10
		Most	Probable	0.0				
			12.5-ft Dam Raise					
. 5	Σ							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		DIED 5	A = 204 C #2/# \/ = 7.5 av/# /Tap of					
		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	ete for pier cap, f'c = 4,000 psi					
			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	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
			handling epoxy coated reinforcement	86-68140	60,000	LBS	\$4.00	\$240,000.00
		@ 300 lb	os/cy (fy = 60 ksi)					
		Structural concrete f'c = 4,000 psi).	ete for pier (above El. 1012.5, L = 68 lf),	86-68140	510	YD ³	\$1,000.00	\$510,000.00
		Furnish & ha	ndle cementatious materials (.282T/cy)	86-68140	144	Tons	Included above	
		Furnishing &	handling epoxy coated reinforcement	86-68140	140,250	LBS	\$4.00	\$561,000.00
		@ 275 lb	os/cy (fy = 60 ksi)					
		Structural concre lf), f'c = 4,000 psi)	ete 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 lb	os/cy (fy = 60 ksi)					
		Drilled Shaft, f'c	= 4,000 psi					
			h below OGS is 70 lf.	86-68140	70	LF	\$31,000.00	\$2,170,000.00
		removal of water and integrity testir	nobilization for drilling, drilling, casing and if required, cement concrete, reinforcementing drilled shaft require 525 cy concrete, and 144,000 lbs epoxy coated '5 lbs/cy).					
		Rock excavation	for drilled shaft (inside casing)	86-68140	525	YD ³	Included above	
			SUBTOTAL THIS SHEET					\$4,934,600.00
	QUANTITIES						PRICES	
вү				вү			CHECKED	
Roman M	. Koltuniı	ık, P.E.	Jesus G. Romero, PE	Jeff Morris			Kelly E	Brom
DATE PR	ATE PREPARED PEER REVIEW / DATE			DATE PREPAR	ED		PEER REVIEW	
4/16/2010	/16/2010 Nick Clough, PE			08/27/10			Dan Dor	aldson

BUREAU OF RECLAMATION

ESTIMATE WORKSHEET

SHEET_7_ OF __13__

BUREAU OF	RECLAIMA	HON	LOTHINATE WORK					SHEET/ OF13	
FEAT	URE:			PROJECT:					
Shasta Feasib			ces Investigation		Central Val Shasta Divi		ect - CA		
	•	2 nd Crossing	UPRR Bridge	WOID:	SHAEF	ESTIM	ATE LEVEL:	Feasibility	
		.	3	REGION:	MP		RICE LEVEL:	Apr-10	
		Most	Probable	KEOIOIV.		Oldii I	MOL LLVLL.	7.0. 10	
		moot	12.5-ft Dam Raise						
⊢	5		12.0 R Barri Naide						
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
		column el 1079.7	A_c = 201.6 ft2/ft, V_c = 7.5 cy/lf. (Top of , Drilled shaft tip El. 859.0'). Overall length shaft), Lp ~ 221.0 lf.						
		Structural concr	ete for pier cap, f'c = 4,000 psi						
			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		
			handling epoxy coated reinforcement	86-68140	60,000	LBS	\$4.00	\$240,000.00	
		@ 300	bs/cy (fy = 60 ksi)						
		Structural concr f'c = 4,000 psi).	ete for pier (above El. 1012.5, L = 67 lf),	86-68140	505	YD ³	\$1,100.00	\$555,500.00	
		Furnish & ha	ndle 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 II	bs/cy (fy = 60 ksi)						
		Structural concr f'c = 4,000 psi).	rete for pier (below El. 1012.5, L = 84.0 lf),	86-68140	630	YD ³	\$380.00	\$239,400.00	
		Furnish & ha	ndle cementatious materials (.282T/cy)	86-68140	178	Tons	Included above		
			handling epoxy coated reinforcement	86-68140	173,250	LBS	\$4.00	\$693,000.00	
		@ 275	bs/cy (fy = 60 ksi)		·			. ,	
		Drilled Shaft, f'c							
		Drilled shaft lengt	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 SHEE							\$4,693,400.00	
	QUANTITIES						PRICES		
вү	CHECKED			BY			CHECKED		
Roman M	Roman M. Koltuniuk, P.E. Jesus G. Romero, PE			Jeff Morris			Kelly	Brom	
DATE PR	ATE PREPARED PEER REVIEW / DATE			DATE PREPAR	ED		PEER REVIEW		
4/16/2010	4/16/2010 Nick Clough, PE				08/27/10 Dan Donaldson				

BUREAU OF RECLAMATION

ESTIMATE WORKSHEET

SHEET_8_ OF __13__

BUREAU OF F	RECLAMA	HON	ESTIMATE WORK	SHELL				SHEET8 OF13
FEATU	IRE:			PROJECT:				
Shasta Feasibi			ces Investigation		Central Val Shasta Divi	-	ect - CA	
Sacran	nento	2 nd Crossing	UPRR Bridge	WOID:	SHAEF	ESTIM	ATE LEVEL:	Feasibility
0		_ 0.000g		REGION:	MP		RICE LEVEL:	Apr-10
		Most	Probable	REGION.	1411	CIVIT	NICE LEVEL.	Apr-10
		MOST						
			12.5-ft Dam Raise					
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		column el 1079.0	A_c = 113.1 ft2/ft, V_c = 4.2 cy/lf. (Top of , Drilled shaft tip El. 940.0'). Overall length shaft), Lp ~ 139.0 lf.					
		Structural concr	ete for pier cap, f'c = 4,000 psi					
			5' wide by 14' thick by 13.5' high	86-68140	175	YD^3	\$1,200.00	\$210,000.00
			ndle cementatious materials (.282T/cy)	86-68140	49	Tons	Included above	
			handling epoxy coated reinforcement	86-68140	52,500	LBS	\$3.90	\$204,750.00
			os/cy (fy = 60 ksi)		,			
		Ü						
		Structural concr f'c = 4,000 psi).	ete for pier (above El. 1012.5, L = 66 lf),	86-68140	280	YD ³	\$1,400.00	\$392,000.00
		Furnish & ha	ndle 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	os/cy (fy = 60 ksi)					
			,					
		Structural concr f'c = 4,000 psi).	ete for pier (below El. 1012.5, L = 13.0 lf),	86-68140	55	YD ³	\$370.00	\$20,350.00
		Furnish & ha	ndle cementatious materials (.282T/cy)	86-68140	16	Tons	Included above	
		Furnishing &	handling epoxy coated reinforcement	86-68140	13,750	LBS	\$3.90	\$53,625.00
		@ 250 II	os/cy (fy = 60 ksi)					
		Drilled Shaft, f'c	= 4,000 psi					
		Drilled shaft lengt	th below OGS is 60 lf.	86-68140	60	LF	\$15,500.00	\$930,000.00
			nobilization for drilling, drilling, casing and					
		and integrity testi	if required, cement concrete, reinforcement ng drilled shaft require 252 cy concrete, 71 63,000 lbs epoxy coated reinforcement					
		`	for drilled shaft (inside casing)	86-68140	250	YD ³	Included above	
			SUBTOTAL THIS SHEET					\$2,083,725.00
	QUANTITIES						PRICES	
BY	Y CHECKED						CHECKED	
Roman M. I	oman M. Koltuniuk, P.E. Jesus G. Romero, PE			Jeff Morris			Kelly E	Brom
	ATE PREPARED PEER REVIEW / DATE			DATE PREPAR	ED		PEER REVIEW	
4/16/2010	/16/2010 Nick Clough, PE				08/27/10 Dan Donaldson			

BUREAU OF RECLAMATION

ESTIMATE WORKSHEET

SHEET_9_ OF __13__

BUREAU OF	- RECLAMA	ATION	ESTIMATE WORK	CIILLI				SHEET9 OF13
FEAT				PROJECT:				
Shasta Feasik			ces Investigation		Central Val Shasta Divi		ect - CA	
Sacra	mento	o 2 nd Crossing	UPRR Bridge	WOID:	SHAEF	ESTIM.	ATE LEVEL:	Feasibility
		_	_	REGION:	MP	UNIT P	RICE LEVEL:	Apr-10
		Most	Probable					-
			12.5-ft Dam Raise					
∟ ¦	Σ				E QUANTITY UNIT UNIT PRICE			
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		DIED 9 (0 - 8' A	$v_c = 50.3.1 \text{ ft2/ft}, V_c = 1.9 \text{ cy/lf}. \text{ (Top of)}$					
		· · · · · · · · · · · · · · · · · · ·	, Drilled shaft tip El. 973.0'). Overall length					
			shaft), Lp ~ 106.0 lf. This column/drilled					
			structed entirely out of the influence of					
		water surface El.	1012.5.					
		Structural concr	ete for pier cap, f'c = 4,000 psi					
			5' wide by 14' thick by 17' high	86-68140	220	YD^3	\$660.00	\$145,200.00
		Furnish & ha	indle 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	bs/cy (fy = 60 ksi)					
			rete for pier (above OGS, L = 36 lf), f'c =	86-68140	68	YD^3	\$1,600.00	\$108,800.00
		4,000 psi).						
		Furnish & ha	ndle 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 II	bs/cy (fy = 60 ksi)					
		Drilled Shaft, f'c	· •					
			th below OGS is 70 lf.	86-68140	70	LF	\$5,000.00	\$350,000.00
		•	nobilization for drilling, drilling, casing and if required, cement concrete, reinforcement					
			ng drilled shaft require 135 cy concrete, 38					
		0 5	48,000 lbs epoxy coated reinforcement					
		(350 lbs/cy).						
		Rock excavation	for drilled shaft (inside casing)	86-68140	135	YD ³	Included above	
			To a miles or any (morale case ng)	00 00 1 10				
			SUBTOTAL THIS SHEET					\$819,520.00
		C	UANTITIES				PRICES	
BY			CHECKED	вү			CHECKED	
Roman M	man M. Koltuniuk, P.E. Jesus G. Romero, PE		Jeff Morris Kelly Brom			Brom		
	TE PREPARED PEER REVIEW / DATE		DATE PREPAR	ED		PEER REVIEW		
4/16/2010)		Nick Clough, PE	08/27/10			Dan Don	aldson

BUREAU OF RECLAMATION

ESTIMATE WORKSHEET

SHEET__10__ OF __13__

BUREAU OF		HON	LOTIMATE WORK					SHEET_10_ OF13
	a Lake		ces Investigation	PROJECT:	Central Val		ect - CA	
Feasib	•	•			Shasta Divi			
Sacra	mento	2 nd Crossing	UPRR Bridge	WOID:	SHAEF		ATE LEVEL:	Feasibility
				REGION:	MP	UNIT P	RICE LEVEL:	Apr-10
		Most	Probable 10.5 # Dans Pains					
	_		12.5-ft Dam Raise					
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		ABUTMENT #2 -	Structure is stem wall (~50'H x 10'T x					
			t 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).					
		Concrete for Ab	utment 2, f'c = 4,000 psi					
		Substructure	86-68140	660	YD ³	\$1,200.00	\$792,000.00	
		Furnish & ha	86-68140	186	Tons	Included above		
		Furnishing &	86-68140	165,000	LBS	\$2.40	\$396,000.00	
		@ 250 lk	os/cy (fy = 60 ksi)					
		Drilled Shafts						
			er @ abutments, A _c = 28.3 ft ²	86-68140	51	LF	\$3,800.00	\$193,800.00
			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	150 lbs/cy).					
		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 he	andling cementatious material	86-68140	183	Tons	Included above	
		armorning and the	anding cementations material	00-00140	103	10115	moluded above	
			acing reinforcment bars (300 lbs/cy)	86-68140	195,000	LBS	\$2.60	\$507,000.00
	(fy = 60 ksi, epoxy coated) SUBTOTAL THIS SHEE							\$21,108,800.00
		Ω	UANTITIES				PRICES	Ψ2 1, 100,000.00
вү		<u> </u>	CHECKED	вү			CHECKED	
	oman M. Koltuniuk, P.E. Jesus G. Romero, PE		Jeff Morris Kelly Brom			Brom		
	PEER REVIEW / DATE			DATE PREPARED PEER REVIEW				
4/16/2010	4/16/2010 Nick Clough, PE			08/27/10 Dan Donaldson				

BUREAU OF RECLAMATION

ESTIMATE WORKSHEET

SHEET__11__ OF __13__

BUREAU OF		TION	ESTIMATE WORK	SHEET				SHEET11 OF13	
FEAT	URE:			PROJECT:					
Shasta Feasil			ces Investigation		Central Val Shasta Divi		ect - CA		
Sacra	mento	2 nd Crossing	UPRR Bridge	WOID:	SHAEF ESTIMATE LEVEL:		ATE LEVEL:	Feasibility	
		_	_	REGION:	MP	UNIT P	RICE LEVEL:	Apr-10	
		Most	Probable					•	
			12.5-ft Dam Raise						
_	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						
			dimensions of 6'5" x 6'5" x 6'5"						
		weighs 19.8	tons). Remove Abutment down to 3'						
		below ground							
		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"						
			tons). Remove Pier down to 3'						
		below ground	d surface.						
				22.22442		\r_3	4=10.00	*	
			ting Concrete and Reinforcement	86-68140	1,750	YD ³	\$710.00	\$1,242,500.00	
		in Pier 2	la de constable de constable 20 tana						
			locks weighing approximately 20 tons						
		`	dimensions of 6'5" x 6'5" x 6'5"						
			tons). Remove Pier down to 3'						
		below ground	d surface.						
		Removal of Exis	ting Concrete and Reinforcement	86-68140	5,500	YD ³	\$1,300.00	\$7,150,000.00	
		in Pier 3	ting concrete and itemporations	00 00140	0,000	10	ψ1,000.00	Ψ7,100,000.00	
			locks weighing approximately 20 tons						
			dimensions of 6'5" x 6'5" x 6'5"						
			tons). Remove Pier down to 3'						
		below ground	,						
		Ŭ ·							
			SUBTOTAL THIS SHEET	•				\$8,590,700.00	
		Q	UANTITIES				PRICES		
BY			CHECKED	вү			CHECKED		
Carly M. \	ly M. Wegher Joseph M. Gemperline		Joseph M. Gemperline	Jeff Morris			Kelly E	Brom	
DATE PR	TE PREPARED PEER REVIEW / DATE			DATE PREPARED PEER REVIEW / DATE					
4/21/2010	4/21/2010 Jesus G. Romero P.E.			08/27/10 Dan Donaldson				aldson	

BUREAU OF RECLAMATION

ESTIMATE WORKSHEET

SHEET__12__ OF __13__

BUREAU OF		TION ESTIMATE WORK					SHEET12 OF13
FEAT	URE:		PROJECT:				
Shasta Feasib		Water Resources Investigation tudy		Central Val Shasta Divi		ject - CA	
Sacra	mento	2 nd Crossing UPRR Bridge	WOID:	SHAEF	ESTIM.	ATE LEVEL:	Feasibility
			REGION:	MP	UNIT P	PRICE LEVEL:	Apr-10
		Most Probable					
		12.5-ft Dam Raise					
PLANT ACCOUNT	PAY ITEM	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	00 00 1 10	5,100		¥ 1,555.55	+1,020,000100
		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				700000	+ 01,00000
		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	ŢĊ, .32,000100
вү		CHECKED	вү			CHECKED	
	Wegher	Joseph M. Gemperline	Jeff Morris			Kelly I	Brom
	y M. Wegher Joseph M. Gemperline PEER REVIEW / DATE			ED		PEER REVIEW / DATE	5.0111
4/21/2010			DATE PREPARED 08/27/10 PEER REVIEW / DATE Dan Donaldson			naldson	

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_13_ OF _13_

BUREAU OF	KECLAWA	TION	LOTHINATE WOR	· · · · · ·				SHEE1_13_ OF _13_
FEAT	URE:			PROJECT:				
Shasta	a Lake	Water Resource	ces Investigation		Central Val	ley Proj	ect - CA	
Feasib	oility St	tudy	-		Shasta Divi	ision		
Sacra	mento	2 nd Crossing	UPRR Bridge	WOID:	SHAEF	ESTIM	ATE LEVEL:	Feasibility
		3		REGION:	MP	UNIT P	RICE LEVEL:	Apr-10
		Most	Probable					•
			12.5-ft Dam Raise					
ᆞᄂ	Σ							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
ACC PI	ΡĄ							
		Removal of Exis	ting Steel Truss and Girder Bridge	86-68140	3,300,000	LBS	\$0.40	\$1,320,000.00
		Bridge appro	ach spans consist of built up girders and t	ne main spans	consist of bu	ilt up tru	ss members.	
		All members	have riveted connections. The structural s	teel grade is u	nknown, but	can assu	ıme Fy=33 ksi.	
		The existing	steel appears to be painted.					
			SUBTOTAL THIS SHEE	Т				\$1,320,000.00
		Q	UANTITIES				PRICES	
вү			CHECKED	вү			CHECKED	
Carly M. V	rly M. Wegher Joseph M. Gemperline		Jeff Morris			Kelly Brom	ı - 7/29/10	
	TE PREPARED PEER REVIEW / DATE		DATE PREPAR	RED		PEER REVIEW		
4/21/2010)		Jesus G. Romero P.E.	07/23/10			Dan Donalds	on - 8/30/10

BUREAU OF RECLAMATION ESTIMATE WORKSHEET 1 OF 1

FEAT	TURE:		PROJECT	Γ:				
	a Lake bility S		ces Investigation		Central Va Shasta Div		ect - CA	
Visito	r Cen	ter Replaceme	nt	WOID:	SHAEF	ESTIM	ATE LEVEL:	Feasibility
		•		REGION:	MP	UNIT P	RICE LEVEL:	Apr-10
		Most	Probable					-
Sumn	nary		12.5-ft Dam Rais	e	_			
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Sheet 1 - Site Wo	ork					156,210.00
		Sheet 2 - Site Wo						585,180.00
		Sheet 3 - Site Wo						1,468,280.00
		Sheet 4 - Structu						414,375.00
		Sheet 5 - Structu						651,245.00
		Sheet 6 - Structu	re					447,073.60
		Sheet 7 - Structu	re					392,310.00
		Sheet 8 - Structu	re					1,197,587.50
		Subtotal 1						\$5,312,261.10
		Mobilization		5%	+/-			\$270,000.00
		Subtotal 1 with I	Mobilization					\$5,582,261.10
		Escalation to	Notice to Proceed (NTP): None assumed	d. 0%				\$0.00
		Subtotal 2 = Sub	ototal 1 with Mobilization + Escalation to	NTP				\$5,582,261.10
		Design Cont	ingencies	15%	+/-			\$789,346.90
		Subtotal 3 = Sub	ototal 2 + Design Contingencies					\$6,371,608.00
		Allowance fo	or Procurement Strategies (APS)	2.0%	+/-			\$128,392.00
			solicitation assumed is: Request for Prop	osal				
		Subtotal 4 = Sub						\$6,500,000.00
		CONTRACT CO						\$6,500,000.00
			Contingencies	20%	+/-			\$1,400,000.00
		FIELD COST						\$7,900,000.00
	Note: Escalation from published price level to notice to proc				d. Estimates	may incl	ude discrepancies	due to rounding.
Ref.: For appropriate use and terminology, see Reclamation							· · · · · · · · · · · · · · · · · · ·	
QUANTITIES							PRICES	
вү	Y Joe Gemperline CHECKED J Neumaier JF Pattie			ВҮ	Greg Akins		CHECKED Ke	ly Brom
DATE PI	DATE PREPARED PEER REVIEW		DATE PREPA	DATE PREPARED PEER REVIEW Dan Donaldson			Donaldson	

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_1_ OF _8_

BUREAU OF		TION	LOTHINATE WO					SHEET_1_ OF _8_	
	a Lake		ces Investigation	PROJECT:	Central Val		ect - CA		
Feasib Visito	•	udy <mark>er Replaceme</mark>	nt	WOID:	Shasta Divi		ATE LEVEL:	Feasibility	
		•		REGION:	MP		RICE LEVEL:	Apr-10	
		Most	Probable	KEGIGIK.		OIIII I	MOL LLVLL.	7.6	
			12.5-ft Dam R	aise					
⊨	5		12.0 it Baili i	4100					
PLANT ACCOUNT	РАҮ ІТЕМ		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	ered 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	Compacted emba							
		subgrade, using	g material from excavation	86-68120	3,150	yd3	\$10.00	\$31,500.00	
	5	Excavation in roc	k for visitor center footings						
		(assume 3/4 of	total excavation for footings)	86-68120	1,350	yd3	\$12.00	\$16,200.00	
	6	Common excava	tion for visitor center footings						
		(assume 1/4 of	total excavation for footings)	86-68120	450	yd3	\$7.00	\$3,150.00	
	7	Compacted back	fill for visitor center building	86-68120	1,100	yd3	\$10.00	\$11,000.00	
	8	12" thick gravel fi	ll under building floor slab	86-68120	300	yd3	\$58.00	\$17,400.00	
	9	Strip 6" topsoil ar	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	
	QUANTITIES						PRICES		
BY			вү			CHECKED			
JF Pattie				Greg Akins		Kelly E	Brom		
	E PREPARED PEER REVIEW		DATE PREPARED PEER REVIEW			aldeon			
00/28/10	6/28/10 Al Bernstein P.E.				12/07/10 Dan Donaldson				

	RECLAMAT	TON	ESTIMATE WOR	RKSHEET				SHEET_2_ OF8_	
FEAT				PROJECT:					
	a Lake pility St		ces Investigation		Central Val Shasta Divi	-	ect - CA		
Visito	r Cent	er Replaceme	nt	WOID:	SHAEF	ESTIMA	ATE LEVEL:	Feasibility	
				REGION:	MP	UNIT P	RICE LEVEL:	Apr-10	
		Most	Probable						
			12.5-ft Dam Ra	ise					
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
	12	6" thick Aggregat	e base material under asphalt						
			concrete flatwork	86-68120	2,400	yd3	\$70.00	\$168,000.00	
	13	Reinforced concr	rete 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 lar to Hancor, Inc. type-S	86-68120	1,500	ft	\$20.00	\$30,000.00	
	18		density re-cycled polyethylene						
			- 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	\$95.00	\$855.00	
	20	1"-6" diam. river ı	rock	86-68120	600	yd3	\$67.00	\$40,200.00	
	21	12"-24" diam. boı	ulders, from government source						
		within 1 mile		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 SHE	ET				\$585,180.00	
		C	QUANTITIES				PRICES	, ,	
BY JF Pattie	CHECKED			BY CHECKED Greg Akins Kelly I				Brom	
DATE PR 06/28/10	PREPARED PEER REVIEW			DATE PREPAR			PEER REVIEW Dan Don		

BUREAU OF RECLAMATION

ESTIMATE WORKSHEET

SHEET_3_ OF __8_

BUREAU OF		ION	LOTHWATE WORK					SHEE1_3_ OF _8_
FEAT				PROJECT:				
Shasta Feasib			ces Investigation		Central Val Shasta Divi		ect - CA	
Visito	r Cent	er Replaceme	nt	WOID:	SHAEF	ESTIM.	ATE LEVEL:	Feasibility
		-		REGION:	MP	UNIT P	RICE LEVEL:	Apr-10
		Most	Probable					
			12.5-ft Dam Raise					
PLANT ACCOUNT	РАҮ 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 decidud	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		tem. 10 zone valves, vacuum					
		·	aterals, 450 pvc drip emitters	86-68120	1	LS	\$35,000.00	\$35,000.00
	27	Broadcast seedin	g	86-68120	45,000	ft2	\$0.08	\$3,600.00
	28	6" thick topsoil pla	aced on green roof	86-68120	70	ft2	\$22.00	\$1,540.00
	29	Metal parking sha	ade canopy structures	86-68120	14,720	ft2	\$20.00	\$294,400.00
	30	·	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		rking lot lighting, bases, and	00.00400	0.7		04.700.00	0447.500.00
		buried power lir		86-68120	25	ea	\$4,700.00	\$117,500.00
			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	\$50.00	\$500.00
			SUBTOTAL THIS SHEET	•				\$1,468,280.00
		C	UANTITIES				PRICES	ψ., ,100,200.00
вү			CHECKED	вү			CHECKED	
JF Pattie			R Dham		Greg Akins			Brom
DATE PR	EPARED		PEER REVIEW	DATE PREPAR			PEER REVIEW	
06/28/10			Al Bernstein P.E.		12/07/10		Dan Do	naldson

FEATURE: SHEET_4_OF_8_
PROJECT:

FEAT	URE:			PROJECT	PROJECT:				
Shasta Feasib			ces Investigation		Central Val Shasta Divi		ject - CA	'	
Visito	r Cent	er Replaceme	nt	WOID:	SHAEF	ESTIM	ATE LEVEL:	Feasibility	
		•		REGION:	MP		LEVEL:	Apr-10	
		Most	Probable					·	
			12.5-ft Dam F	Raise					
⊢ TN	EM								
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
		VIOLED DELITE		00.00400					
		VISITOR CENTE	R STRUCTURE	86-68120					
		BUILDING DESC	CRIPTION -						
		<u> </u>	000 square foot Visitor Center will be	home to exhibit					
			ival storage, a 200-seat theater/confe						
			hop/cashier counter, staff offices, mee	•					
			k/vending areas, dam security offices,						
			ns, and a four-story elevator with enclo						
		observation	deck at the upper level. The building	structure will be a					
		composition	of diverse shapes creating a serpenting	ne flow pattern					
		accented by	a two-story serrated pyramidal core.	Sustainable and					
			ent elements such as natural diffused						
			materials, green vegetative roofs, sola						
		building orier	ntation will be incorporated into the over	erall design concep	t.				
		BUILDING MATE	ERIALS EXTERIOR-						
	1	Glass Curta	in Wall·	86-68120	4,000	ft2	\$50.00	\$200,000.00	
	'		ght weight, multi-cavity insulating	00-00120	4,000	1(2	\$30.00	\$200,000.00	
			& west theater walls)						
		9.0.001 (1.01.11	,						
		Similar to:							
		Serious Mate	erials						
		PH: 800-797	7-8159						
		Website: wv	vw.Serious Windows.com						
	2		tal Composite Skin	86-68120	6,125	ft2	\$35.00	\$214,375.00	
			Il composite panels						
			all_elevator towers - 1500						
		<u> </u>	all_elevator towers - 1125						
			Il_elevator towers - 1375 Il_elevator towers - 1750						
			onnection walls - 375						
		Similar to:							
		Alcoa Archite PH: 478-374	ectural Products 'Reynobond'						
			vw.alcoaarchitecturalproducts.com						
		1.00010. WV	Sheet Subtotal					\$414,375.00	
			QUANTITIES				PRICES		
BY		Pattio	CHECKED R Dham 6/28/10	BY	Grea Akina		CHECKED Kelly Brom		
DATE PR	JF Pattie R Dham 6/28/10 FE PREPARED PEER REVIEW			DATE PREPAR	Greg Akins		Kelly Brom PEER REVIEW		
	6/28/2010		Al Bernstein P.E. 6/28/10		12/7/2010		Dan Donaldson		

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_5_OF_8_

	RECLAMATI	ON ESTIMATE WOR					SHEET_5_ OF8
FEAT	URE:		PROJECT	:			
	a Lake ' oility Stu	Water Resources Investigation udy		Central Val Shasta Div		ect - CA	
Visito	r Cente	er Replacement	WOID:	SHAEF	ESTIM	ATE LEVEL:	Feasibility
			REGION:	MP		LEVEL:	Apr-10
		Most Probable					•
		12.5-ft Dam Rai	se				
ᆫᄫ	Σ						
PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	(Continued					
	3	Glass Window Bands	86-68120	411	lin.ft	\$60.00	\$24,660.00
		48" high, reflective to match glass curtain wall.					
		elevator tower - 232					
		back wall offices - 80					
		security office wall - 80					
		Tower connecting walls - 19					
		Exterior Doors	86-68120				
	4	Glsass 8' high x 36" wide, reflective	00-00120	9	ea	\$5,000.00	\$45,000.00
	5	Steel, Insulated 8'X36"		4	ea	\$3,200.00	\$12,800.00
				-		, , , , , , , , , , , , , , , , , , ,	4,
		Interior Doors	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
		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	00 00			45,1.00.00	+0,1.00.00
	8	Steel Louvers (elevator tower)	86-68120	364	ft2	\$95.00	\$34,580.00
	9	Metal Roofing	86-68120	13,545	ft2	\$19.00	\$257,355.00
	Ü	elevator tower - 625	00 00 120	10,010		ψ10.00	Ψ207,000.00
		theater - 12180					
		metal fascia- 740					
	10	Roof Clerestory Glass	86-68120	425	ft2	\$73.00	\$31,025.00
		16" high, insulated					
	11	Vagatativa Croon Boof	86-68120	4,236	ft2	\$30.00	¢127.000.00
	11	Vegatative Green Roof north roof - 1941	00-00120	4,230	ΠZ	\$30.00	\$127,080.00
		south roof - 2295					
		354411561 2235					
	12	Solar Panels			_		
		elevator tower roof - 625	86-68120	625	ft2	\$65.00	\$40,625.00
		theater roof - 5065					
	13	Roof Soffit Panels	86-68120	3,120	ft2	\$13.50	\$42,120.00
		Sheet Subtotal		·			\$651,245.00
DV.		QUANTITIES	ВҮ			PRICES	
BY	CHECKED JF Pattie R Dham			Greg Akins		CHECKED Kelly Brom	
DATE PR	EPARED	PEER REVIEW	DATE PREPARED PEER REVIEW				
	6/28/2010	Al Bernstein P.E.		12/7/2010		Dan Donaldson	

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_6_ OF _8_

	RECLAMATIC	DN	ESTIMATE WO					SHEET_6_ OF8
FEAT				PROJECT				
	a Lake V oility Stu		ces Investigation		Central Val Shasta Divi	-	ect - CA	
Visito	r Cente	r Replacemei	nt	WOID:	SHAEF	ESTIM	ATE LEVEL:	Feasibility
				REGION:	MP	PRICE	LEVEL:	Apr-10
		Most	Probable					
			12.5-ft Dam Ra	ise				
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	C	Continued						
	14	Structural T	heater Floor	86-68120	2,274	ft2	\$50.00	\$113,700.00
		24" deep						
	15	Structural E	levator Floors	86-68120	1,446	ft2	\$40.00	\$57,840.00
		2nd floor, 12'	•					
		3rd floor, 12"	deep - 447					
	16	Maior Struct	tural Roof Members	86-68120	511	lin ft	\$200.00	\$102,200.00
			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					
	E	BUILDING MATE	RIALS INTERIOR -					
	17	Interior Wall	Systems:	86-68120	8,400	ft2	\$2.50	\$21,000.00
			0 ga. steel studs @ 16' o.c.					
		w/5/8" type 'x	κρ' gypbd. ea. side , 10' high,					
		1st floor						
		2nd floor	r & elevator floors- 2880					
	18	Carpet Squa		86-68120	8,290	ft2	\$6.60	\$54,714.00
		18"x 18" self						
		Theater						
			es - 1975					
		•	Offices - 920 Area - 2920					
	19	Ceiling Tile:	coustical w/mtl grid, seismic clps	86-68120	5,000	ft2	\$8.50	\$42,500.00
		24 X 24 acc	oustical within grid, seisiffic cips					
	20	Gypsum Boa 5/8" type 'xp'		86-68120	6,000	ft2	\$5.50	\$33,000.00
	21	Painted Surf		86-68120	18,433	ft2	\$1.20	\$22,119.60
		walls - 16,600						
		ceilings - 1,8	Sheet Subtotal					\$447,073.60
			QUANTITIES				PRICES	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
вү	CHECKED JF Pattie R Dham			ВҮ	Greg Akins		CHECKED Kelly Brom	
DATE PR	EPARED 8/28/2010		PEER REVIEW Al Bernstein P.E.	DATE PREPAR			PEER REVIEW Dan Donaldson	
	-							

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_7_OF_8_

BUREAU OF		ION	ESTIMATE WC					SHEET_7_ OF8
FEAT				PROJECT	:			
	a Lake oility Stu		ces Investigation		Central Val Shasta Divi		ect - CA	
Visito	r Cente	er Replaceme	nt	WOID:	SHAEF	ESTIM.	ATE LEVEL:	Feasibility
		•		REGION:	MP		LEVEL:	Apr-10
		Most	Probable					-
			12.5-ft Dam R	aise				
⊢ 	Σ							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Continued						
	22	Hand & Gua	ard Pailing	86-68120	228	lin.ft	\$600.00	\$136,800.00
	22		minum rails w/glass panels,	80-08120	220	1111.11	\$600.00	\$130,000.00
		46" high	minum raiis wygiass paneis,					
		Similar to:						
		Julius Blum 8	& Company, Inc					
		PH: 800-527	7-6293					
		Website: wv	vw.juliusblum.com					
	23	Custom Co.	unters and Cabinetry:	86-68120	296	lin ft	\$660.00	\$195,360.00
	20		ormation counters - 40 lin ft	00-00120	230	111110	\$000.00	φ193,300.00
			play cases - 50 lin ft					
			plays - 100 lin ft					
			& wall cabinets - 16 lin ft					
		work counter	rs in security office - 90 lin ft					
	0.4	\\\-\\\-\\\\-\\\\\-\\\\\\\\\\\\\\\\\\\		00.00400	4.050	#0		
	24	Wall and Flo		86-68120	1,650	ft2	\$11.00	\$18,150.00
		wall tile - 12 floor tile - 45						
		11001 tile - 45	50					
		BUILDING SPEC	CIALITY ELEMENTS -					
	25	Theodon Con		00.00400	1		440,000,00	440.000.00
	25	Theater Scr	een: retractable screen mounted in a	86-68120	1	ea	\$42,000.00	\$42,000.00
			ousing, which will be fitted to a					
			gned bracket and attached to a					
		`	able system in the ceiling.					
			-					
		Similar to:						
		Vutec, mode						
		PH: 800-770						
		vvebsite: wv	vw.vutec.com					
			Sheet Subtotal QUANTITIES				PRICES	\$392,310.00
BY			CHECKED	BY			CHECKED	
	JF Pattie R Dham			Greg Akins		Kelly Brom		
DATE PR			PEER REVIEW	DATE PREPAR			PEER REVIEW	
(6/28/2010		Al Bernstein P.E.		12/7/2010		Dan Donaldson	

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_8_OF_8_

BUREAU OF		ION	ESTIMATE WO		·_			SHEET_8_ OF8
FEAT				PROJECT				
	a Lake pility St		ces Investigation		Central Val Shasta Div		ject - CA	
Visito	r Cente	er Replacemei	nt	WOID:	SHAEF	ESTIM	ATE LEVEL:	Feasibility
		-		REGION:	MP	PRICE	LEVEL:	Apr-10
		Most	Probable					-
			12.5-ft Dam Ra	aise				
ᆫᄫ	Σ							
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Continued						
	26	Toilet Room	s:	86-68120	560	ft2	\$85.00	\$47,600.00
		Men/Women	/Janitor Closet					
		6 - water	closets					
		3 - urina	ls					
		2 - 3 bas	in pre-formed lavatories					
		2 - pape	r towel dispr/trash recepticals					
		6 - toilet	paper dispensers					
		2 - 42"hi	gh x 72" mirrors					
		1 - 36" x	36" mop sink					
	27	Elevator:		86-68120	1	ea	\$195,000.00	\$195,000.00
		Telescopic H	oleless Hydraulic, 3 stops,					
			ar, 3500 lbs maximum load,					
		6'-0"x 7'-6" m	achine room and 7'-6" deep pit.					
			ar, 3500 lbs maximum load,					
		6'-0"x 7'-6" m	achine room and 7'-6" deep pit.					
		0: " 1						
		Similar to:	•					
		Otis Elevator	· ' '					
		PH: 303-298						
		Website: ww	/W.Otis.com					
	28	Elevator Sta	ircase (5 flights):	86-68120	8,375	lbs	\$12.50	\$104,687.50
	20		@ 11' lg x 25#/lf =3500#	00-00120	0,373	103	\$12.50	\$104,067.50
			20#/lf =3200#					
		701 @+ 19 x	20#/11 -3200#					
	29	Theater Stai	rcase (custom):	86-68120	6,050	lbs	\$10.00	\$60,500.00
			20#/If =2300#	00 00 120	0,000	1.00	¥10.00	φου,σου.σο
			5'x5' x 20#/sf =2000#					
			35' lg x 25#/lf =1750#					
		<u> </u>						
	30	Cast in Place	e Reinforced Concrete	86-68120	718	yd3	\$1,100.00	\$789,800.00
			t Structure and Footing - 181					
			r and Elevator Tower Footings					
			nd Columns - 240					
			loor Slabs - 157 lior Walls, Columns,& Facias - 140					
		Curved Exter	ioi vvaiis, Coiuitiiis,& FaClas - 140					
			Sheet Subtotal				DDIOEC	\$1,197,587.50
DV			QUANTITIES	PV			PRICES CHECKED	
BY	CHECKED JF Pattie R Dham			BY	Greg Akins		CHECKED Kelly Brom	
DATE PR	PREPARED PEER REVIEW			DATE PREPAR			PEER REVIEW	
•	6/28/2010		Al Bernstein P.E.		12/7/2010		Dan Donaldson	

BUREAU OF RECLAMATION

ESTIMATE WORKSHEET

SUMMARY SHEET 1 OF 1

BUREAU OF		ION ESTIMATE WORKS							
FEATU	JRE:		PROJE(CT:					
Shasta	Lake	Water Resources Investigation		Central Val	ley Projec	ct - CA			
Feasib				Shasta Divi					
		lge Replacements	REGION:			ATE LEVEL:	Feasibility		
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			WOID:	SHAEF	PRICE		Apr - 10		
		Most Probable							
Summ	arv	12.5-ft Dam Rais	e						
	_		-						
PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT		
PL.	PAY	DESCRIPTION	CODE	QUANTITI	ONIT	ONIT PRICE	AMOONT		
		Reservoir area vehicle bridges:							
		Remove/Replace Charlie Creek Bridge							
		Remove/Replace Doney Creek Bridge							
		Remove/Replace McCloud River Bridge							
		Fenders Ferry Bridge Demolition/Improvements							
		renders rerry bridge bemontion/improvements							
					+				
		MWH-001 Sheet (1)					\$12,850,100.00		
		MWH-001 Sheet (2)					\$5,552,900.00		
		MWH-001 Sheet (3)					\$3,512,800.00		
		MWV11-001 Sheet (3)					φ3,312,000.00		
		Subtotal					\$21,915,800.00		
		Gustotai					Ψ21,313,000.00		
		Mobilization & General Conditions				10%	\$2,190,000.00		
		Mobilization a Contral Containon				1070	Ψ2,100,000.00		
		Subtotal w/ Mobilization					\$24,105,800.00		
		Cubicial W Mobilization					Ψ24,100,000.00		
		Design Contingencies				20%	\$4,813,000.00		
		Design Contingenties				2070	Ψ4,010,000.00		
		Allowance for Procurement Strategy				2%	\$481,000.00		
		7 movarioe for 1 rodulement chategy				270	Ψ-101,000.00		
		CONTRACT COST					\$29,400,000.00		
							Ψ 2 0,400,000.00		
		Construction Contingencies				8%	\$2,400,000.00		
						3,0	+=, .55,555.50		
		FIELD COST					\$31,800,000.00		
							,,,		
		Note: Escalation from published price level to notice to proceed is excluded. Es	timates mav in	clude discrepan	cies due to r	ounding.			
		Ref.: For appropriate use and terminology, see Reclamation Manual, Directives							
	•	QUANTITIES		, -,-		RICES			
вү		CHECKED	вү		•	CHECKED			
See Gro	up Sheet			I. Buck		J. Loucks			
DATE PRE			DATE PREF			PEER REVIEW			
	-1 4450	See Group Sheets	PATERRE	12/20/10		C. Wallace			
		oee Group Grieers		12120110		O. VVallaCE			

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_1_ OF _3 _

BUREAU OF I	RECLAMATIO	ON	ESTIMATE WORKS	(SHEET SHEET_1_				
FEATU	JRE:			PROJECT	:			
Shasta Feasibi		Nater Resources I	nvestigation		Central Valle Shasta Divis	-	t - CA	
		ge Replacements		REGION:	MP		TE LEVEL:	Feasibility
Vernor	c Bilaş	ge replacements		WOID:	SHAEF	PRICE		Apr - 10
		Most I	Probable	WOID.	SHAEF	PRICE	LEVEL.	Apr - 10
		WOST						
MWH-0	001		12.5-ft Dam Rais	е				
FN	ITEM							
PLANT ACCOUNT	PAY I		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		New Bridge Construct	ion					
		Charlie Creek Bridge						
	1	Access Requirements/W	Vater Based Support Ewuip	MWH-001	1	ls	\$100,000.00	\$100,000.00
	2	Temporary Measures / 0	Cofferdam Work	MWH-001	1	ls	\$100,000.00	\$100,000.00
	3	Pier Foundation Structur	ral Excavation	MWH-001	1,200	cys	\$55.00	\$66,000.00
	4	Furnish/Install Class 140) Fdn Piles	MWH-001	1,080	lf	\$250.00	\$270,000.00
	5	Furnish/Insall CISS Piles	6	MWH-001	3,600	lf	\$400.00	\$1,440,000.00
	6	Foundation Backfill		MWH-001	576	cys	\$40.00	\$23,040.00
	7	F/P/S/F Foundation Con	crete	MWH-001	724	cys	\$500.00	\$361,825.00
	8	F/PS/F Pier Concrete		MWH-001	918	cys	\$800.00	\$734,240.00
	9	F/P/S/F Abutment Conc	rete	MWH-001	353	cys	\$650.00	\$229,450.00
	10	F/P/S/F Box Grider Con-		MWH-001	1,412	cys	\$800.00	\$1,129,600.00
		F/P/S/F Bridge Rail Barr		MWH-001	212	cys	\$1,200.00	\$254,160.00
	12	Reinforcing Steel (Epoxy		MWH-001	1,124,000	lbs	\$1.50	\$1,686,000.00
	13	Prestressting Steel	y Coaled)	MWH-001	26,000	lbs	\$3.00	\$78,000.00
		Approach Paving		MWH-001	26,000	ls	\$100,000.00	\$100,000.00
					700		· /	
	15	Barrier Fence Railing		MWH-001	782	lf '-	\$30.00	\$23,460.00
	16	Expansion Joints		MWH-001	1	ls	\$10,000.00	\$10,000.00
	17	Bridge Misc. (Signage, S	Striping, Anti-Graffiti Coating)	MWH-001	1	ls	\$10,000.00	\$10,000.00
		Doney Creek Bridge						
	18	·	Vater Based Support Ewuip	MWH-001	1	ls	\$100,000.00	\$100,000.00
	19	Temporary Measures / 0		MWH-001	1	ls	\$100,000.00	\$100,000.00
	20	Pier Foundation Structur	al Excavation	MWH-001	550	cys	\$55.00	\$30,250.00
	21	Furnish/Install Class 140) Fdn Piles	MWH-001	1,080	lf	\$250.00	\$270,000.00
	22	Furnish/Insall CISS Piles	S	MWH-001	3,600	lf	\$400.00	\$1,440,000.00
	23	Foundation Backfill		MWH-001	480	cys	\$40.00	\$19,200.00
	24	F/P/S/F Foundation Con	crete	MWH-001	681	cys	\$500.00	\$340,300.00
	25	F/PS/F Pier Concrete		MWH-001	863	cys	\$800.00	\$690,560.00
	26	F/P/S/F Abutment Conc	rete	MWH-001	332	cys	\$650.00	\$215,800.00
	27	F/P/S/F Box Grider Con	crete	MWH-001	1,328	cys	\$800.00	\$1,062,400.00
	28	F/P/S/F Bridge Rail Barr	rier Concrete	MWH-001	199	cys	\$1,200.00	\$239,040.00
	29	Reinforcing Steel (Epoxy	y Coated)	MWH-001	1,006,000	lbs	\$1.50	\$1,509,000.00
	30	Prestressting Steel		MWH-001	25,000	lbs	\$3.00	\$75,000.00
	31	Approach Paving		MWH-001	1	ls	\$100,000.00	\$100,000.00
	32	Barrier Fence Railing		MWH-001	760	lf	\$30.00	\$22,800.00
	33	Expansion Joints		MWH-001	1	ls	\$10,000.00	\$10,000.00
	34	Bridge Misc. (Signage, S	Striping, Anti-Graffiti Coating)	MWH-001	1	ls	\$10,000.00	\$10,000.00
		Sheet Subtotal =						\$12,850,125.00
	QUANTITIES					F	PRICES	
			CHECKED	вү			CHECKED	
BY	M. Xie D. Hutchings			I. Buck J. Loucks				
ВҮ	M. Xie		D. Hutchings		I. Buck		J. Loucks	
BY DATE PRE			D. Hutchings PEER REVIEW	DATE PREPAR			J. Loucks PEER REVIEW	

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_2_OF_3_

	RECLAMATIO	ON	ESTIMATE WORKS			SHEET_2_ OF _3 _		
FEATU	RE:			PROJECT	:			
Shasta	Lake \	Water Resources I	nvestigation		Central Valle	y Projec	ct - CA	
Feasibi			G		Shasta Divis			
	-	ge Replacements		REGION:	MP	ESTIMA	ATE LEVEL:	Feasibility
		,		WOID:	SHAEF	PRICE		Apr - 10
		Most F	Probable		0117121			7.61 .0
		Most i						
MWH-0	01		12.5-ft Dam Rai	se				
N U	ITEM							
PLANT ACCOUNT	PAY I		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		New Construction						
	1	McCloud River Bridge	/ater Based Support Ewuip	MWH-001	1	ls	\$50,000.00	\$50,000.00
					<u></u>			
	2	Temporary Measures / C		MWH-001	1	ls	\$50,000.00	\$50,000.00
	3	Pier Foundation Structur		MWH-001	820	cys	\$55.00	\$45,100.00
	4	Furnish/Install Class 140		MWH-001	1,080	lf	\$250.00	\$270,000.00
	5	Furnish/Insall CISS Piles	8	MWH-001	1,600	lf	\$400.00	\$640,000.00
	6	Foundation Backfill		MWH-001	636	cys	\$40.00	\$25,440.00
	7	F/P/S/F Foundation Con	crete	MWH-001	476	cys	\$500.00	\$237,800.00
	8	F/PS/F Pier Concrete		MWH-001	603	cys	\$800.00	\$482,560.00
		F/P/S/F Abutment Conci		MWH-001	232	cys	\$650.00	\$150,800.00
		F/P/S/F Box Grider Cond		MWH-001	928	cys	\$800.00	\$742,400.00
		F/P/S/F Bridge Rail Barr		MWH-001	139	cys	\$1,200.00	\$167,040.00
	12	Reinforcing Steel (Epoxy	/ Coated)	MWH-001	757,000	lbs 	\$1.50	\$1,135,500.00
	13	Prestressting Steel		MWH-001	0	lbs	\$3.00	\$0.00
	14 15	Approach Paving Barrier Fence Railing		MWH-001 MWH-001	490	ls	\$100,000.00 \$30.00	\$100,000.00 \$14,700.00
		Expansion Joints		MWH-001	490 1	ls	\$10,000.00	\$10,000.00
		•	Striping, Anti-Graffiti Coating)	MWH-001	1	ls	\$10,000.00	\$10,000.00
			outputg, that craims country		<u> </u>		V 10,000.00	+.0,000.00
		Didallas Creek Bridge						
	18	Access Requirements/W	/ater Based Support Ewuip	MWH-001	1	ls	\$50,000.00	\$50,000.00
	19	Temporary Measures / 0		MWH-001	1	ls	\$50,000.00	\$50,000.00
	20	Pier Foundation Structur		MWH-001	440	cys	\$55.00	\$24,200.00
	21	Furnish/Install Class 140		MWH-001	1,080	lf 	\$250.00	\$270,000.00
	22	Furnish/Insall CISS Piles	3	MWH-001	0	lf	\$400.00	\$0.00
	23	Foundation Backfill	arata	MWH-001	216 156	cys	\$40.00	\$8,640.00 \$77,900.00
		F/P/S/F Foundation Con F/PS/F Pier Concrete	UGU	MWH-001 MWH-001	198	cys cys	\$500.00 \$800.00	\$77,900.00 \$158,080.00
		F/P/S/F Abutment Conci	rete	MWH-001	76	cys	\$650.00	\$49,400.00
		F/P/S/F Box Grider Cond		MWH-001	304	cys	\$800.00	\$243,200.00
	28	F/P/S/F Bridge Rail Barr		MWH-001	46	cys	\$1,200.00	\$54,720.00
	29	Reinforcing Steel (Epoxy		MWH-001	208,000	lbs	\$1.50	\$312,000.00
	30	Prestressting Steel	•	MWH-001	0	lbs	\$3.00	\$0.00
	31	Approach Paving		MWH-001	1	ls	\$100,000.00	\$100,000.00
	32	Barrier Fence Railing	-	MWH-001	115	lf	\$30.00	\$3,450.00
	33	Expansion Joints		MWH-001	1	ls	\$10,000.00	\$10,000.00
	34	Bridge Misc. (Signage, S	Striping, Anti-Graffiti Coating)	MWH-001	1	ls	\$10,000.00	\$10,000.00
		Chaot Cubtatal						¢€
		Sheet Subtotal = Q	UANTITIES			F	PRICES	\$5,552,930.00
				BY CHECKED				
BY					I. Buck			
	M. Xie		D. Hutchings		I. DUCK		J. LOUCKS	
BY DATE PRE	M. Xie		PEER REVIEW	DATE PREPAR			J. Loucks PEER REVIEW	

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_3_OF_3_

	RECLAMATI	ON ESTIMATE WO						
FEATU	JRE:		PROJEC1	:				
Shasta	Lake '	Water Resources Investigation		Central Valle	y Projec	t - CA		
Feasibi	ility Stu	udy		Shasta Divis	ion			
Vehicle	e Brid	ge Replacements	REGION:	MP	ESTIMA	TE LEVEL:	Feasibility	
			WOID:	SHAEF	PRICE I	LEVEL:	Apr - 10	
		Most Probable						
MWH-0	001	12.5-ft Dam	ı Raise					
NT UNT	TEM							
PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
		New Bridge Construction						
		Fenders Ferry Bridge						
	1	Access Requirements/Water Based Support Ewuip	MWH-001	1	ls	\$100,000.00	\$100,000.00	
	2	Temporary Measures / Superstructure Support	MWH-001	1	ls	\$150,000.00	\$150,000.00	
	3	Pier Foundation Structural Excavation	MWH-001	75	cys	\$100.00	\$7,500.00	
	4	Drill & Bond Dowels	MWH-001	540	lf	\$60.00	\$32,400.00	
	5	F/P/S/F Structural Concrete	MWH-001	230	cys	\$1,000.00	\$230,000.00	
	6	Concrete Surface Preparation	MWH-001	2,150	sf	\$20.00	\$43,000.00	
	7	Reinforcing Steel (Epoxy Coated)	MWH-001	66,400	lbs	\$1.50	\$99,600.00	
	8	Remove Portion of Steel Tower	MWH-001	1	ls	\$100,000.00	\$100,000.00	
	9	Structural Steel	MWH-001	130	lbs	\$10.00	\$1,300.0	
	10	Lead Paint Containment	MWH-001	1	ls	\$50,000.00	\$50,000.00	
		Existing Bridge Demolition						
		Existing Bridge Bellioition						
	11	Demolish Charlie Creek Bridge	MWH-001	3,500	cys	\$250.00	\$875,000.00	
	12	Demolish Doney Creek Bridge	MWH-001	3,300	cys	\$250.00	\$825,000.00	
	13	Demolish McCloud Creek Bridge	MWH-001	2,300	cys	\$250.00	\$575,000.0	
	14	Demolish Didallas Creek Bridge	MWH-001	800	cys	\$250.00	\$200,000.0	
	15	Demolish Second Creek Bridge	MWH-001	1	ls	\$224,000.00	\$224,000.00	
		Sheet Subtotal =					\$3,512,800.00	
	QUANTITIES				F	PRICES		
BY						CHECKED		
	M. Xie	D. Hutchings		I. Buck		J. Loucks		
DATE PRE		PEER REVIEW	DATE PREPAR			PEER REVIEW		
	6/15/2008	R. Filgas		12/20/10		C. Wallace		

BUREAU OF RECLAMATION ESTIMATE WORKSHEET

FEATURE: PROJECT: Shasta Lake Water Resources Investigation **Central Valley Project - CA** Feasibility Study **Shasta Division** Reservoir Area Vegetation Clearing **REGION:** MP ESTIMATE LEVEL: **Feasibility** WOID: **SHAEF** PRICE LEVEL: Apr - 10 **Most Probable** 12.5-ft Dam Raise Summary PAY ITEM QUANTITY UNIT PRICE DESCRIPTION CODE UNIT **AMOUNT** Reservoir area clearing: Remote tree cutting/skidding/helicopter removal **Brush removal** Local tree cutting/skidding/staging Burn remote slash piles \$4,309,100.00 MWH-002 Sheet (1) \$4,309,000.00 Subtotal Mobilization/General Conditions 10% \$430,000.00 Subtotal w/ Mobilization \$4,739,000.00 Design Contingencies 25% \$1,168,000.00 2% \$93,000.00 Allowance for Procurement Strategy CONTRACT COST \$6,000,000.00 \$500,000.00 **Construction Contingencies** 8% FIELD COST \$6,500,000.00 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** CHECKED ΒY CHECKED ΒY See Group Sheets See Group Sheets I. Buck J. Loucks DATE PREPARED PEER REVIEW DATE PREPARED PEER REVIEW C. Wallace See Group Sheets 12/20/10

SUMMARY SHEET 1 OF 1

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 Vegetation Clearing** REGION: ESTIMATE LEVEL: MP **Feasibility** WOID: **SHAEF** PRICE LEVEL: Apr - 10 **Most Probable MWH-002** 12.5-ft Dam Raise PLANT ACCOUNT PAY ITEM QUANTITY UNIT UNIT PRICE DESCRIPTION CODE **AMOUNT** Reservoir Clearing Remote Areas MWH-002 \$282,500.00 1 Remote Tree Cutting Crew 1,130 hr \$250.00 2 Tree Removal Via Helicopter MWH-002 1,130 \$3,300.00 \$3,729,000.00 hr \$141,250.00 3 Shore Staging Crew MWH-002 1,130 hr \$125.00 Brush Clearing (Machine) MWH-002 \$75,000.00 4 30 ac \$2,500.00 Brush Burining MWH-002 30 \$250.00 \$7,500.00 5 hr Local Areas 7 Tree Cutting/Staging Crew MWH-002 150 hr \$250.00 \$37,500.00 Brush Clearing (Machine) MWH-002 11 \$3,300.00 \$36,300.00 ac \$4,309,050.00 Sheet Subtotal = **PRICES QUANTITIES** ΒY CHECKED ΒY CHECKED I. Buck C. Wallace I. Buck J. Loucks DATE PREPARED DATE PREPARED PEER REVIEW PEER REVIEW 11/23/2010 12/20/10 C. Wallace

BUREAU OF RECLAMATION ESTIMATE WORKSHEET 1 OF 1

BUREAU OF	RECLAMAT	ION	ESTIMATE WO					SUMMARY SHEET 1 OF	
FEATL	JRE:			PROJEC	CT:				
Shasta	Lake	Water Resource	s Investigation		Central Val	ey Projec	t - CA		
Feasib			ŭ		Shasta Divi				
		rea Dikes		REGION:	MP	ESTIMA	TE LEVEL:	Feasibility	
				WOID:	SHAEF	PRICE L		Apr - 10	
		Mos	st Probable					•	
Summ	ary		12.5-ft Dam	Raise					
	T .								
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
PL ACC	PAY		BEOOK!! FION	OODL	QOANTITT	Olvii	ONTTRIOL	AMOON	
	+	Reservoir area di	kas cansists of:						
	+		& grubbing, precompaction and ear	thworks					
			core and shell materials	tiiworks					
			s drainage improvements						
		Wilscellarieou	is dramage improvements						
	+								
		.	4)					#770 000 0	
		MWH-003 Sheet (•					\$779,900.00	
		MWH-003 Sheet (,					\$1,881,900.00	
		MWH-003 Sheet (•					\$5,589,900.00	
		MWH-003 Sheet (4)					\$1,374,100.00	
		Subtotal						\$9,625,800.00	
		Mobilization/G	Seneral Conditions				10%	\$960,000.00	
		Subtotal w/ Mobil	ization					\$10,586,000.00	
								. , ,	
		Design Contin	gencies				25%	\$2,606,000.00	
		2 congri contan					2070	ΨΞ,000,000.0	
		Allowance for	Procurement Strategy				2%	\$208,000.00	
		7 110 1700 101	Troduction chalcegy				270	Ψ200,000.00	
		CONTRACT COS	т					\$13,400,000.00	
		OONTHACT CCC	·					Ψ13,400,000.00	
		Construction (Contingencies				8%	\$1,100,000.00	
		Constituction	on any on old				0 /0	ψ1,100,000.00	
	+	FIELD COST						\$14,500,000.00	
		I ILLD COST						ψ14,500,000.00	
	-								
		Note: E. J. C.	ablight of artist for the state of the state			-1			
			sublished price level to notice to proceed is exclu				_		
			se and terminology, see Reclamation Manual, Di	rectives and Standards	FAC; 09-01, 0				
			QUANTITIES			Р	RICES		
BY			CHECKED	вү			CHECKED		
See Gro	up Sheets	3	See Group Sheets		I. Buck		J. Loucks		
DATE PRI	EPARED		PEER REVIEW	DATE PREP	ARED		PEER REVIEW		
			See Group Sheets		12/20/10		C. Wallace		

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_1_ OF _4_

BUREAU OF F	RECLAMATIO	ON	ESTIMATE WOR	KSHEET				SHEET1 OF4
FEATU	IRE:			PROJECT	:			
Shasta	Lake \	Water Resources Ir	nvestigation		Central Valle	y Projec	t - CA	
Feasibi	lity Stu	ıdy	_		Shasta Divis	ion		
Reserv	oir Ar	ea Dikes		REGION:	MP	ESTIMA	TE LEVEL:	Feasibility
				WOID:	SHAEF	PRICE L	.EVEL:	Apr - 10
		Most F	Probable					-
MWH-0	103		12.5-ft Dam I	Raise				
			12.0 K Baili 1	raise				
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Excavation & Grading						
		Doney Creek Dike						
	1	Site Clearing & Grubbing	A Polow Dikon	MWH-003	1.50		\$3,500.00	\$5,250.0
	1		·		1.50	ac		
	2	· ·	d in Unlisted Items Allowance)	MWH-003	•	ls	\$30,000.00	\$30,000.0
	3	Top Soil Excavation		MWH-003	2,500	су	\$10.00	\$25,000.0
	4	Shear Key Excavation		MWH-003	543	су	\$20.00	\$10,860.0
	5	V-Ditch Excavation		MWH-003	65	су	\$15.00	\$973.5
	6	Drain Excavation		MWH-003	0	су	\$15.00	\$0.0
	7	Embankment Precompa		MWH-003	3,200	sy	\$1.50	\$4,800.0
	8	Import/Place/Compact S		MWH-003	2,600	су	\$40.00	\$104,000.0
	9	Import/Place/Compact C		MWH-003	8,313	су	\$50.00	\$415,625.0
	10	Import/Place/Compact F	ilter Sand	MWH-003	1,333	су	\$60.00	\$80,000.0
	11	Import/Place Rip Rap		MWH-003	980	су	\$80.00	\$78,400.0
	12	Install 36" CMP		MWH-003	0	lf	\$200.00	\$0.0
	13	Install 42" CMP		MWH-003	0	lf	\$250.00	\$0.0
	14	Install Flap Gates		MWH-003	0	ea	\$7,500.00	\$0.0
	15	Replace Top Soil Materia	als	MWH-003	2,500	су	\$10.00	\$25,000.0
	16	Cast-In Place Concrete f	for Retaining Wall	MWH-003	0	су	\$650.00	\$0.00
	17	Reinforcing Steel		MWH-003	0	lb	\$1.50	\$0.00
		Antlers Dike						
	18	Site Clearing & Grubbing	Below Dikes	MWH-003	0	ac	\$3,500.00	\$0.0
	19	Misc Removals (Included	d in Unlisted Items Allowance)	MWH-003	0	ls	\$30,000.00	\$0.0
	20	Top Soil Excavation	,	MWH-003	0	су	\$10.00	\$0.0
	21	Shear Key Excavation		MWH-003	0	су	\$20.00	\$0.0
	22	V-Ditch Excavation		MWH-003	0	су	\$15.00	\$0.0
	23	Drain Excavation		MWH-003	0	су	\$15.00	\$0.0
	24	Embankment Precompa	ction	MWH-003	0	sy	\$1.50	\$0.0
	25	Import/Place/Compact S		MWH-003	0	су	\$40.00	\$0.0
	26	Import/Place/Compact C		MWH-003	0	су	\$50.00	\$0.0
	27	Import/Place/Compact F		MWH-003	0	су	\$60.00	\$0.0
	28	Import/Place Rip Rap		MWH-003	0	су	\$80.00	\$0.0
	29	Install 36" CMP		MWH-003	0	lf	\$200.00	\$0.0
	30	Install 42" CMP		MWH-003	0	 If	\$250.00	\$0.0
	31	Install Flap Gates		MWH-003	0	ea	\$7,500.00	\$0.0
	32	Replace Top Soil Materia	als	MWH-003	0	су	\$10.00	\$0.0
		Sheet Subtotal =						\$779,908.5
		QI			F	RICES		
3Y	CHECKED			вү			CHECKED	
	A. Nishihara P. Richards				I. Buck		J. Loucks	
DATE PRE	PARED		PEER REVIEW	DATE PREPAR	ED		PEER REVIEW	
4	2/13/2010		-		12/20/10		C. Wallace	

ESTIMATE WORKSHEET BUREAU OF RECLAMATION SHEET_2_ OF _4__ PROJECT: FEATURE:

Shasta Feasib	Lake	Water Resources I	nvestigation	Central Valley Project - CA Shasta Division REGION: MP ESTIMATE LEVEL: Fea				
		rea Dikes		REGION:	MP		TE LEVEL:	Feasibility
IXC3CI	VOII AI	ica Direcs		WOID:	SHAEF	PRICE L		Apr - 10
		Most F	Probable	WOID.	OHALI	INOLI		Αρι - 10
MWH-	003	moot 1	12.5-ft Dam	Raise				
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
AG	9							
		Excavation & Grading						
		North Railroad Emban	kment					
	1	Site Clearing & Grubbing	g Below Dikes	MWH-003	1.15	ac	\$3,500.00	\$4,025.0
	2	Misc Removals (Include	d in Unlisted Items Allowance)	MWH-003	1	ls	\$30,000.00	\$30,000.0
	3	Top Soil Excavation		MWH-003	1,150	су	\$10.00	\$11,500.0
	4	Shear Key Excavation		MWH-003	304	су	\$20.00	\$6,080.0
	5	V-Ditch Excavation		MWH-003	49	су	\$15.00	\$735.0
	6	Drain Excavation		MWH-003	0	су	\$15.00	\$0.0
	7	Embankment Precompa		MWH-003	3,000	sy	\$1.50	\$4,500.0
	8	Import/Place/Compact S		MWH-003	0	су	\$40.00	\$0.0
	9	Import/Place/Compact C		MWH-003	16,375	су	\$50.00	\$818,750.0
	10	Import/Place/Compact F	ilter Sand	MWH-003	767	су	\$60.00	\$46,000.0
	11	Import/Place Rip Rap		MWH-003	410	су	\$80.00	\$32,800.0
	12	Install 36" CMP		MWH-003	0	lf	\$200.00	\$0.0
	13	Install 42" CMP		MWH-003	350	lf	\$250.00	\$87,500.0
	14	Install Flap Gates		MWH-003	0	ea	\$7,500.00	\$0.0
	15	Replace Top Soil Materia	als	MWH-003	1,150	су	\$10.00	\$11,500.0
	40	Middle Railroad Embar		1 MA(I L 000	0.00		40.500.00	040,000,0
	16	Site Clearing & Grubbing		MWH-003	2.88	ac	\$3,500.00	\$10,080.0
	17	,	d in Unlisted Items Allowance)	MWH-003	1	ls	\$30,000.00	\$30,000.0
	18	Top Soil Excavation		MWH-003	2,800	су	\$10.00	\$28,000.0
	19	Shear Key Excavation		MWH-003	1,065	су	\$20.00	\$21,300.0
	20	V-Ditch Excavation		MWH-003	120	су	\$15.00	\$1,800.0
	21	Drain Excavation	-41	MWH-003	0	су	\$15.00	\$0.0
	22	Embankment Precompa		MWH-003	6,800	sy	\$1.50	\$10,200.0
	23	Import/Place/Compact S		MWH-003	0	су	\$40.00	\$0.0
	24	Import/Place/Compact C		MWH-003	12,750 600	су	\$50.00	\$637,500.0
	25	Import/Place/Compact F	iller Sand	MWH-003		су	\$60.00	\$36,000.0
	26	Import/Place Rip Rap		MWH-003	320	СУ	\$80.00	\$25,600.0
	27 28	Install 36" CMP Install 42" CMP		MWH-003 MWH-003	0	If If	\$200.00 \$250.00	\$0.0 \$0.0
	29	Install Flap Gates		MWH-003	0		\$7,500.00	\$0.0
		·	ala			ea		
	30	Replace Top Soil Materia	ais	MWH-003	2,800	су	\$10.00	\$28,000.0
	Sheet Subtotal =					\$1,881,870.0		
	QUANTITIES					F	RICES	
CHECKED CHECKED			вү			CHECKED		
	A. Nishihara P. Richards				I. Buck		J. Loucks	
DATE PR	EPARED		PEER REVIEW	DATE PREPAR			PEER REVIEW	
	 12/13/2010	0	_		12/20/10		C. Wallace	

Sheet Subtotal =						\$1,881,870.00
QI	JANTITIES			Р	RICES	
ву	CHECKED	вү			CHECKED	
A. Nishihara	P. Richards	I. Buck			J. Loucks	
DATE PREPARED	PEER REVIEW	DATE PREPAR	ED		PEER REVIEW	
12/13/2010	-		12/20/10		C. Wallace	

ESTIMATE WORKSHEET BUREAU OF RECLAMATION SHEET_3_ OF __4 _ FEATURE: PROJECT: Shasta Lake Water Resources Investigation **Central Valley Project - CA** Feasibility Study **Shasta Division Reservoir Area Dikes REGION:** MP **ESTIMATE LEVEL: Feasibility** WOID: **SHAEF** PRICE LEVEL: Apr - 10 **Most Probable MWH-003** 12.5-ft Dam Raise PLANT ACCOUNT TEM DESCRIPTION CODE QUANTITY UNIT UNIT PRICE AMOUNT **Excavation & Grading South Railroad Embankment** 1 Site Clearing & Grubbing Below Dikes MWH-003 6.22 \$3,500.00 \$21,770.00 ac 2 Misc Removals (Included in Unlisted Items Allowance) MWH-003 \$30,000.00 \$30,000.00 ls 3 Top Soil Excavation MWH-003 6,700 \$10.00 \$67,000.00 су Shear Key Excavation MWH-003 1,626 \$20.00 \$32,520.00 су 5 V-Ditch Excavation \$2,655.00 MWH-003 177 су \$15.00 MWH-003 \$15.00 \$0.00 6 **Drain Excavation** 0 су \$29,400.00 7 Embankment Precompaction MWH-003 19,600 \$1.50 sy Import/Place/Compact Shell Materials MWH-003 \$40.00 \$0.00 8 0 су Import/Place/Compact Core Materials \$4,868,750.00 9 MWH-003 97,375 \$50.00 су MWH-003 \$274,000.00 10 Import/Place/Compact Filter Sand 4,567 \$60.00 су Import/Place Rip Rap MWH-003 2,460 \$196,800.00 11 \$80.00 су Install 36" CMP MWH-003 \$0.00 12 0 lf \$200.00 Install 42" CMP MWH-003 0 lf \$250.00 \$0.00 13 Install Flap Gates MWH-003 0 \$7,500.00 \$0.00 14 ea Replace Top Soil Materials MWH-003 6,700 \$10.00 \$67,000.00 15 су Sheet Subtotal = \$5,589,895.00 **QUANTITIES PRICES** CHECKED ВΥ CHECKED A. Nishihara P. Richards I. Buck J. Loucks DATE PREPARED PEER REVIEW DATE PREPARED PEER REVIEW C. Wallace 12/20/10

12.5-foot Raise and Reservoir Area Infrastructure Attachment 3

	RECLAMATION	ON	ESTIMATE WOR					SHEET_4_ OF _4 _
FEAT				PROJECT	:			
		Water Resources Ir	nvestigation		Central Valle	-	et - CA	
	ility Stu	-			Shasta Divis			
Reser	voir Ar	ea Dikes		REGION:	MP	ESTIMA	TE LEVEL:	Feasibility
				WOID:	SHAEF	PRICE	LEVEL:	Apr - 10
		Most F	robable					
MWH-	003		12.5-ft Dam R	Raise				
PLANT ACCOUNT	ITEM							
PLA	PAY I		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
₹	<u>.</u>							
		Excavation & Grading						
		Exouvation & Ordanig						
		Bridge Bay Dike West						
	1	Site Clearing & Grubbing	Below Dikes	MWH-003	1.38	ac	\$3,500.00	\$4,830.00
	2	Misc Removals (Included	I in Unlisted Items Allowance)	MWH-003	1	ls	\$30,000.00	\$30,000.00
	3	Top Soil Excavation		MWH-003	3,540	су	\$10.00	\$35,400.00
	4	Shear Key Excavation		MWH-003	508	су	\$20.00	\$10,160.00
	5	V-Ditch Excavation		MWH-003	59	су	\$15.00	\$885.00
	6	Drain Excavation		MWH-003	860	су	\$15.00	\$12,900.00
	7	Embankment Precompa	ction	MWH-003	3,300	sy	\$1.50	\$4,950.00
	8	Import/Place/Compact S	hell Materials	MWH-003	0	су	\$40.00	\$0.00
	9	Import/Place/Compact C	ore Materials	MWH-003	7,050	су	\$50.00	\$352,500.00
	10	Import/Place/Compact F	lter Sand	MWH-003	611	су	\$60.00	\$36,666.6
	11	Import/Place Rip Rap		MWH-003	780	су	\$80.00	\$62,400.00
	12	Install 36" CMP		MWH-003	0	lf	\$200.00	\$0.00
	13	Install 42" CMP		MWH-003	0	lf	\$250.00	\$0.00
	14	Install Flap Gates		MWH-003	0	ea	\$7,500.00	\$0.00
	15	Replace Top Soil Materia		MWH-003	3,540	су	\$10.00	\$35,400.00
	16	Specialty Jet Grouting Ed	•	MWH-003	1	ls	\$50,000.00	\$50,000.00
	17	Jet Grouting Material (10	2, 5'D columns with 1' overlap)	MWH-003	2,500	су	\$200.00	\$500,000.00
		Bridge Bay Dike East						
	16	Site Clearing & Grubbing	Below Dikes	MWH-003	0.63	ac	\$3,500.00	\$2,205.00
	17	Misc Removals (Included	I in Unlisted Items Allowance)	MWH-003	1	ls	\$30,000.00	\$30,000.00
	18	Top Soil Excavation		MWH-003	1,440	су	\$10.00	\$14,400.00
	19	Shear Key Excavation		MWH-003	196	су	\$20.00	\$3,920.00
	20	V-Ditch Excavation		MWH-003	26	су	\$15.00	\$396.00
	21	Drain Excavation		MWH-003	340	су	\$15.00	\$5,100.00
	22	Embankment Precompa	ction	MWH-003	1,300	sy	\$1.50	\$1,950.00
	23	Import/Place/Compact S		MWH-003	0	су	\$40.00	\$0.00
	24	Import/Place/Compact C		MWH-003	2,763	су	\$50.00	\$138,125.00
	25	Import/Place/Compact F	Iter Sand	MWH-003	244	су	\$60.00	\$14,666.67
	26	Import/Place Rip Rap		MWH-003	160	су	\$80.00	\$12,800.00
	27	Install 36" CMP		MWH-003	0	lf	\$200.00	\$0.00
	28	Install 42" CMP		MWH-003	0	lf	\$250.00	\$0.00
	29	Install Flap Gates		MWH-003	0	ea	\$7,500.00	\$0.00
	30	Replace Top Soil Materia	als	MWH-003	1,440	су	\$10.00	\$14,400.00
		Sheet Subtotal =						\$1,374,054.3
QUANTITIES						F	PRICES	
CHECKED CHECKED			вү			CHECKED		
A. Nishihara P. Richards				I. Buck		J. Loucks		
DATE PR				DATE PREPAR	ED		PEER REVIEW	
1	12/13/2010 -				12/20/10		C. Wallace	

BUREAU OF RECLAMATION ESTIMATE WORKSHEET

FEATURE: PROJECT: Shasta Lake Water Resources Investigation **Central Valley Project - CA** Feasibility Study **Shasta Division** Pit 7 Modifications ESTIMATE LEVEL: REGION: MP **Feasibility** WOID: SHAEF PRICE LEVEL: Apr - 10 **Most Probable** 12.5-ft Dam Raise Summary PAY ITEM UNIT PRICE DESCRIPTION CODE QUANTITY UNIT **AMOUNT** Pit 7 Mechanical Modifications \$139,980.00 MWH-004 Sheet (1) \$139,980.00 Subtotal Mobilization/General Conditions 10% \$14,000.00 Subtotal w/ Mobilization \$154,000.00 Design Contingencies 25% \$43,000.00 Allowance for Procurement Strategy 2% \$3,000.00 CONTRACT COST \$200,000.00 **Construction Contingencies** \$10,000.00 8% FIELD COST \$210,000.00 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** CHECKED ΒY CHECKED ΒY See Group Sheets See Group Sheets I. Buck J. Loucks DATE PREPARED PEER REVIEW PEER REVIEW DATE PREPARED C. Wallace See Group Sheets 12/20/10

SUMMARY SHEET 1 OF 1

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_1_ OF _1_

FEATURE: Shasta Lake V Feasibility Stu	Vater Resources Inv	vectigation	PROJECT				
	Vater Resources Inv	voctigation					
. Jajining Olu		estigation		Central Vall Shasta Divi		t - CA	
Pit 7 Modifica			REGION:	MP		TE LEVEL:	Feasibility
			WOID:	SHAEF	PRICE L		Apr - 10
	Most Pr	obable					4
MWH-004		12.5-ft Dam Rai	80				
		12.5-11 Baill Nai	30				
PLANT ACCOUNT PAY ITEM	D	ESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	Mechanical Modification	s					
1	6" Check Valve		MWH-004	2	EA	\$4,000.00	\$8,000.00
2	6" "Red Valve" at end of pi	ре	MWH-004	1	EA	\$4,500.00	\$4,500.00
3	6" Gate Valve		MWH-004	2	EA	\$3,500.00	\$7,000.00
4	8" 90 Deg. Elbow		MWH-004	1	EA	\$360.00	\$360.00
5	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 pi	ре	MWH-004	1	EA	\$6,000.00	\$6,000.00
9	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
	6" Gate Valve		MWH-004	4	EA	\$3,000.00	\$12,000.00
	6" Tee (Steel)		MWH-004	2	EA	\$270.00	\$540.00
	Water Level Sensors		MWH-004	4	EA	\$350.00	\$1,400.00
	Air Compressor System (2	200 cfm + 6000 gal tank)	MWH-004	1	ls	\$30,000.00	\$30,000.00
	Sheet Subtotal =						\$139,980.00
		ANTITIES			F	RICES	, , , , , , , , , , , , , , , , , , , ,
ву	Y CHECKED					CHECKED	
M. Xie	M. Xie D. Hutchings			I. Buck		J. Loucks	
DATE PREPARED		EER REVIEW	DATE PREPAR			PEER REVIEW	

BUREAU OF RECLAMATION

ESTIMATE WORKSHEET

SUMMARY SHEET 1 OF 1

FEATU	RE:			PROJE(CT:			
Shasta	Lake	Water Resources Inves	tigation		Central Vall	ev Proiec	t - CA	
Feasibi					Shasta Divi			
Reserv	oir A	rea Recreation (Remov	als / Relocations)	REGION:	MP		TE LEVEL:	Feasibility
i (CSCI V	Oli Al	rea reoreation (remov	ais / itelocations)	WOID:	SHAEF	PRICE		Apr - 10
		Most Duck	abla	WOID:	SHAEF	PRICE	LEVEL.	Apr - 10
		Most Prob						
Summa	ary		12.5-ft Dam Raise					
PLANT ACCOUNT	E							
COL	PAY ITEM	DESC	RIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
AC	₫							
		Reservoir area recreation	facilities consists of:					
		Demolishing or reloc						
			on of camp grounds / RV Sites					
			n of miscellanous structures			+		
		New Recreation Faci	lities					
		MWH-005 Sheet (1)						\$8,648,800.00
		MWH-005 Sheet (2)						\$50,197,900.00
		MWH-005 Sheet (3)						\$11,128,500.00
		` '						\$19,616,500.00
		MWH-005 Sheet (4)						\$19,616,500.00
		Subtotal						\$89,591,700.00
								4 4 4 4 4 4 4 4 - 4
		Mobilization/General C	Conditions				10%	\$8,960,000.00
		Wobilization/General C	Conditions				10 /0	\$0,900,000.00
		Contracted and Mark Historian						#00 FF0 000 00
		Subtotal w/ Mobilization						\$98,552,000.00
		Design Contingencies					25%	\$24,674,000.00
		Allowance for Procure	ment Strategy				2%	\$1,974,000.00
		CONTRACT COST						\$125,200,000.00
								. ,
		Construction Continge	ncies				8%	\$10,000,000.00
		2 22 a data ii daniii igo	-				1 7,3	÷ : 5,555,555.00
		FIELD COST						\$135,200,000.00
		I IELD COST				+	+	φ ι აυ,∠υυ,υυυ.υυ
		Note: Escalation from published p	rice level to notice to proceed is excluded. Esti	mates may inc	clude discrepan	cies due to re	ounding.	
			ninology, see Reclamation Manual, Directives					
	•		TITIES		, -		RICES	
вү				вү		•	CHECKED	
					I Buok			
	See Group Sheets See Group Sheets				I. Buck		J. Loucks	
DATE PRE	PARED		R REVIEW Group Sheets	DATE PREP	12/20/10		PEER REVIEW	
		0					C. Wallace	

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_1_ OF _4_

BUREAU OF F	RECLAMATIC	N	ESTIMATE WOR	RKSHEET				SHEET1 OF4
FEATU	IRE:			PROJECT	:			
Shasta Feasibi		Nater Resources Ii idv	nvestigation		Central Valle Shasta Divis	-	t - CA	
	-		movals / Relocations)	REGION:	MP		TE LEVEL:	Feasibility
		(110	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	WOID:	SHAEF	PRICE L		Apr - 10
		Most F	Probable	WOID.	OTIALI	i moz i		Apr 10
MWH-0	NOE	most i	12.5-ft Dam	Paigo				
	<i>J</i> U5		12.5-II Daiii	Raise		<u> </u>		
PLANT ACCOUNT	PAY ITEM							
PLA	ΑΥΙ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
∢	ш							
		Selective Demolition &	Replacement					
	4	Public Boat Ramps		NA// L 005	100 500		040.00	04 005 007 00
		Boat Ramp / Parking Are		MWH-005	136,539	cys	\$10.00	\$1,365,387.00
		Boat Ramp / Parking Are		MWH-005	94,111	cys	\$15.00	\$1,411,671.80
		Boat Ramp / Parking Are		MWH-005	31,720	tns	\$45.00	\$1,427,400.00
	4	Parking Area Asphaltic C		MWH-005	17,035	tns	\$150.00	\$2,555,250.00
	5	Boat Ramp Concrete Pa		MWH-005	2,034	cys	\$350.00	\$711,900.00
		·	ea Concrete Retaining Walls	MWH-005	0	cys	\$650.00	\$0.00
	7	Boat Ramp / Parking Are	•	MWH-005	355,927	lbs	\$1.50	\$533,890.50
	8	Demo Marina Area Non-	•	MWH-005	1,776	sf	\$10.00	\$17,760.00
	9	Demo Marina Area Rest		MWH-005	600	sf	\$10.00	\$6,000.00
	10	Demo Marina Area Othe	r Land Structures	MWH-005	0	sf	\$7.50	\$0.00
	11	Demo Swimming Pool		MWH-005	0	sf	\$5.00	\$0.00
	12	New Marina Area Floatin	•	MWH-005	0	sf	\$450.00	\$0.00
	13	New Marina Area Non-Fl	oating Structures	MWH-005	1,776	sf	\$300.00	\$532,800.00
	14	New Marina Area Restro	oms	MWH-005	600	sf	\$125.00	\$75,000.00
		New Marina Area Other	Land Structures	MWH-005	0	sf	\$225.00	\$0.00
	16	New Swimming Pool		MWH-005	0	sf	\$30.00	\$0.00
	17	Demo/Move Dock Ancho	ors	MWH-005	0	ea	\$1,000.00	\$0.00
	18	On-Site Modification to P	Picnic Sites	MWH-005	0	ea	\$8,000.00	\$0.00
	19	On-Site Modification to C	campsites	MWH-005	0	ea	\$14,000.00	\$0.00
	20	On-Site Modification to F	RV Sites	MWH-005	0	ea	\$16,500.00	\$0.00
	21	On-Site Modification to B	soat-In Sites	MWH-005	0	ea	\$7,100.00	\$0.00
	22	Demo Picnic Sites		MWH-005	0	ea	\$4,000.00	\$0.00
	23	Demo Campsites		MWH-005	0	ea	\$5,000.00	\$0.00
	24	Demo RV Sites		MWH-005	0	ea	\$5,000.00	\$0.00
	25	Demo Boat-In Sites		MWH-005	0	ea	\$3,600.00	\$0.00
	26	New Picnic Sites		MWH-005	0	ea	\$4,000.00	\$0.00
	27	New Campsites		MWH-005	0	ea	\$9,000.00	\$0.00
	28	New RV Sites		MWH-005	0	ea	\$11,500.00	\$0.00
	29	New Boat-In Sites		MWH-005	0	ea	\$3,500.00	\$0.00
	30	New Trails		MWH-005	0	sf	\$2.00	\$0.00
	31	New Trailheads		MWH-005	0	ea	\$10,000.00	\$0.00
	32	Local Road Construction	Excavation	MWH-005	0	cys	\$10.00	\$0.00
	33	Local Road Construction	Fill	MWH-005	0	cys	\$15.00	\$0.00
	34	Local Road Construction	Aggregate Base	MWH-005	111	tns	\$45.00	\$4,995.00
	35	Local Road Construction	Asphaltic Concrete	MWH-005	45	tns	\$150.00	\$6,750.00
		Sheet Subtotal =						\$8,648,804.30
		QI	UANTITIES			F	RICES	
BY CHECKED			вү			CHECKED		
I. Buck C. Wallace				I. Buck		J. Loucks		
DATE PRE	PARED		PEER REVIEW	DATE PREPAR	ED		PEER REVIEW	
	PREPARED PEER REVIEW 12/9/2010				12/20/10		C. Wallace	

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** 12.5-ft Dam Raise ITEM PLANT ACCOUNT DESCRIPTION CODE QUANTITY UNIT **UNIT PRICE AMOUNT** Selective Demolition & Replacement Marinas Boat Ramp / Parking Area Excavation MWH-005 567,144 \$10.00 \$5,671,440.00 cys MWH-005 2 Boat Ramp / Parking Area Excavation to Waste 430,584 \$20.00 \$8,611,680.00 cys Boat Ramp / Parking Area Aggregate Base MWH-005 \$2,608,470.00 57,966 \$45.00 3 tns \$4,669,500.00 Parking Area Asphaltic Concrete MWH-005 31,130 4 tns \$150.00 5 Boat Ramp Concrete Paving MWH-005 1,420 \$350.00 \$497,000.00 cys 6 Boat Ramp / Parking Area Concrete Retaining Walls MWH-005 8,609 \$650.00 \$5,595,850.00 cys Boat Ramp / Parking Area Reinforcing Steel MWH-005 1,755,062 \$1.50 \$2,632,593.00 lbs Demo Marina Area Non-floating Structures \$430,910.00 MWH-005 43,091 sf \$10.00 9 Demo Marina Area Restrooms MWH-005 617 \$10.00 \$6,170.00 sf Demo Marina Area Other Land Structures MWH-005 3,791 \$7.50 \$28,432.50 10 sf \$0.00 11 Demo Swimming Pool MWH-005 0 \$5.00 sf New Marina Area Floating Structures \$16,646,850.00 12 MWH-005 36,993 \$450.00 sf \$1,829,400.00 New Marina Area Non-Floating Structures MWH-005 6,098 \$300.00 13 sf MWH-005 14 New Marina Area Restrooms 617 sf \$125.00 \$77,125.00 \$852,975.00 15 New Marina Area Other Land Structures MWH-005 3,791 sf \$225.00 **New Swimming Pool** MWH-005 \$30.00 \$0.00 16 0 sf \$22,000.00 Demo/Move Dock Anchors 17 MWH-005 22 \$1,000.00 ea MWH-005 18 On-Site Modification to Picnic Sites 0 \$8,000.00 \$0.00 ea 19 On-Site Modification to Campsites MWH-005 0 \$14,000.00 \$0.00 ea \$0.00 On-Site Modification to RV Sites 20 MWH-005 0 \$16,500.00 ea \$7,100.00 \$0.00 On-Site Modification to Boat-In Sites MWH-005 0 21 ea 22 Demo Picnic Sites MWH-005 0 \$4,000.00 \$0.00 ea \$5,000.00 23 **Demo Campsites** MWH-005 0 \$0.00 ea \$5,000.00 24 Demo RV Sites MWH-005 0 \$0.00 ea Demo Boat-In Sites \$0.00 25 MWH-005 0 ea \$3,600.00 26 **New Picnic Sites** MWH-005 0 \$4,000.00 \$0.00 ea 27 **New Campsites** MWH-005 0 \$0.00 \$9,000.00 ea New RV Sites \$0.00 28 MWH-005 0 \$11,500.00 ea 29 New Boat-In Sites MWH-005 5 \$3,500.00 \$17,500.00 ea **New Trails** MWH-005 0 \$0.00 30 sf \$2.00 \$10,000.00 31 New Trailheads MWH-005 0 \$0.00 ea 32 Local Road Construction Excavation MWH-005 0 cys \$10.00 \$0.00 33 Local Road Construction Fill MWH-005 0 \$15.00 \$0.00 cys Local Road Construction Aggregate Base MWH-005 \$45.00 \$0.00 34 0 tns Local Road Construction Asphaltic Concrete MWH-005 0 \$150.00 \$0.00 tns Sheet Subtotal = \$50,197,895.50 **PRICES QUANTITIES**

ΒY

DATE PREPARED

I. Buck

12/20/10

CHECKED

C. Wallace

PEER REVIEW

ΒY

I. Buck

12/9/2010

DATE PREPARED

CHECKED

PEER REVIEW

J. Loucks

C. Wallace

ESTIMATE WORKSHEET BUREAU OF RECLAMATION SHEET_3_ 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** 12.5-ft Dam Raise PLANT QUANTITY DESCRIPTION CODE UNIT **UNIT PRICE AMOUNT** PΑY Selective Demolition & Replacement Campgrounds / Day Use / Boat-In Facilities Boat Ramp / Parking Area Excavation MWH-005 \$10.00 \$0.00 0 cys 2 Boat Ramp / Parking Area Fill MWH-005 \$15.00 \$52,877.75 3,525 cys 3 Boat Ramp / Parking Area Aggregate Base MWH-005 4,405 \$45.00 \$198,225.00 tns 4 Parking Area Asphaltic Concrete MWH-005 2,365 tns \$150.00 \$354,750.00 Boat Ramp Concrete Paving MWH-005 \$350.00 \$0.00 5 0 cys Boat Ramp / Parking Area Concrete Retaining Walls 1,412 \$917,800.00 MWH-005 \$650.00 cys Boat Ramp / Parking Area Reinforcing Steel MWH-005 247,145 \$1.50 \$370,717.50 lbs Demo Marina Area Non-floating Structures MWH-005 3,861 \$10.00 \$38,610.00 sf 2,381 \$23,810.00 9 Demo Marina Area Restrooms MWH-005 \$10.00 sf \$0.00 Demo Marina Area Other Land Structures MWH-005 10 0 \$7.50 sf 11 Demo Swimming Pool MWH-005 0 sf \$5.00 \$0.00 MWH-005 New Marina Area Floating Structures 0 \$450.00 \$0.00 sf New Marina Area Non-Floating Structures MWH-005 \$1,293,300.00 13 4,311 \$300.00 sf New Marina Area Restrooms MWH-005 1,931 \$241,375.00 14 sf \$125.00 15 New Marina Area Other Land Structures MWH-005 0 sf \$225.00 \$0.00 **New Swimming Pool** MWH-005 0 \$30.00 \$0.00 16 sf 17 Demo/Move Dock Anchors MWH-005 0 \$1,000.00 \$0.00 ea 18 On-Site Modification to Picnic Sites MWH-005 12 \$8,000.00 \$95,262.72 ea On-Site Modification to Campsites MWH-005 21 \$14,000.00 \$294,470.40 ea \$462,000.00 On-Site Modification to RV Sites MWH-005 28 \$16,500.00 20 On-Site Modification to Boat-In Sites 21 MWH-005 22 ea \$7,100.00 \$154,316.51 22 Demo Picnic Sites MWH-005 9 \$4,000.00 \$34,022.40 ea **Demo Campsites** 80 \$5,000.00 \$401,145.60 MWH-005 ea Demo RV Sites 24 MWH-005 0 \$5,000.00 \$0.00 ea 25 Demo Boat-In Sites MWH-005 14 \$3,600.00 \$50,480.64 ea 26 New Picnic Sites MWH-005 9 \$4,000.00 \$34,022.40 ea MWH-005 \$722,062.08 27 **New Campsites** 80 \$9,000.00 ea 28 New RV Sites MWH-005 0 \$11,500.00 \$0.00 ea

	QI	UANTITIES			Р	RICES	
BY		CHECKED	BY			CHECKED	
I. Buck		C. Wallace		I. Buck		J. Loucks	
DATE PREPARED		PEER REVIEW	DATE PREPARI	ED		PEER REVIEW	
12/9/2010)			12/20/10		C. Wallace	

MWH-005

MWH-005

MWH-005

MWH-005

MWH-005

MWH-005

MWH-005

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201,062

34,865

224,084

11,627

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\$2.00

\$10.00

\$15.00

\$45.00

\$150.00

\$31,578.40

\$402,124.80

\$20,000.00

\$348,650.00

\$523,215.00

\$702,450.00

\$11,128,526.20

\$3,361,260.00

29

30

31

32

33

34

New Boat-In Sites

Sheet Subtotal =

Local Road Construction Excavation

Local Road Construction Aggregate Base

Local Road Construction Asphaltic Concrete

Local Road Construction Fill

New Trailheads

New Trails

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_4_OF_4_

BUREAU OF		∪IN .	LOTIMATE WORK					SHEET_4_ OF4
FEATU	JRE:			PROJECT	:			
Shasta	Lake \	Water Resources In	nvestigation		Central Valle	y Projec	et - CA	
Feasib			-		Shasta Divis	-		
	-	-	emovals / Relocations)	REGION:	MP		TE LEVEL:	Feasibility
rteser t	Zii Ai	ca recordation (rec	inovais / Relocations)	WOID:	SHAEF	PRICE		-
				WOID:	SHAEF	PRICE	LEVEL:	Apr - 10
		Most F	Probable					
MWH-(005		12.5-ft Dam Ra	aise				
PLANT ACCOUNT	EM							
A O	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
AC P	Δ							
		0 1 11 0 1111 0						
		Selective Demolition &	Replacement					
		Resort Areas & Other N	Non-Marina Commercial Recreation					
		USFS Fire/Ranger Faci						
	1	Boat Ramp / Parking Are		MWH-005	0	cys	\$10.00	\$0.00
	2	Boat Ramp / Parking Are		MWH-005	22,103	cys	\$15.00	\$331,546.88
	3	Boat Ramp / Parking Are		MWH-005	1,350	tns	\$45.00	\$60,750.00
	4	Parking Area Asphaltic C		MWH-005	725	tns	\$150.00	\$108,750.00
	5	Boat Ramp Concrete Pa		MWH-005	0	cys	\$350.00	\$0.00
	6	Boat Ramp / Parking Are	ea Concrete Retaining Walls	MWH-005	0	cys	\$650.00	\$0.00
	7	Boat Ramp / Parking Are	ea Reinforcing Steel	MWH-005	0	lbs	\$1.50	\$0.00
	8	Demo Marina Area Non-	floating Structures	MWH-005	90,587	sf	\$10.00	\$905,868.55
	9	Demo Marina Area Rest	rooms	MWH-005	0	sf	\$10.00	\$0.00
	10	Demo Marina Area Othe	r Land Structures	MWH-005	0	sf	\$7.50	\$0.00
	11	Demo Swimming Pool		MWH-005	6,072	sf	\$5.00	\$30,360.1
	12	New Marina Area Floatin	ng Structures	MWH-005	0	sf	\$450.00	\$0.00
	13	New Marina Area Non-F	loating Structures	MWH-005	52,787	sf	\$300.00	\$15,836,056.5
	14	New Marina Area Restro	ooms	MWH-005	0	sf	\$125.00	\$0.00
	15	New Marina Area Other	Land Structures	MWH-005	0	sf	\$225.00	\$0.00
	16	New Swimming Pool		MWH-005	6,072	sf	\$30.00	\$182,160.73
	17	Demo/Move Dock Ancho		MWH-005	1	ea	\$1,000.00	\$1,000.00
	18	On-Site Modification to F		MWH-005	0	ea	\$8,000.00	\$0.00
	19	On-Site Modification to C	<u> </u>	MWH-005	0	ea	\$14,000.00	\$0.00
	20	On-Site Modification to F		MWH-005	0		\$16,500.00	\$0.00
	21	On-Site Modification to E	Boat-In Sites	MWH-005	0		\$7,100.00	\$0.00
	22	Demo Picnic Sites		MWH-005	0		\$4,000.00	\$0.00
	23	Demo Campsites		MWH-005	13	ea	\$5,000.00	\$66,606.40
	24	Demo RV Sites		MWH-005	62	ea	\$5,000.00	\$308,492.80
	25	Demo Boat-In Sites		MWH-005	0	ea	\$3,600.00	\$0.00
	26	New Picnic Sites		MWH-005	0	ea	\$4,000.00	\$0.00
	27	New Campsites		MWH-005	13 62	ea	\$9,000.00	\$119,891.52 \$700.533.44
	28 29	New RV Sites New Boat-In Sites		MWH-005 MWH-005	62	ea	\$11,500.00 \$3,500.00	\$709,533.44
	30	New Boat-In Sites New Trails		MWH-005	0		\$3,500.00	\$0.00 \$0.00
	31	New Trails New Trailheads		MWH-005	0		\$10,000.00	\$0.00
	32	Local Road Construction	Excavation	MWH-005	7,749	cys	\$10,000.00	\$77,490.00
	33	Local Road Construction		MWH-005	40,368	cys	\$10.00	\$605,520.00
	34	Local Road Construction		MWH-005	2,584	tns	\$45.00	\$116,280.00
	35	Local Road Construction		MWH-005	1,041	tns	\$150.00	\$156,150.00
		and the second second			.,5.1	0	Ţ.00.00	Ţ.55,100.00
		Sheet Subtotal =						\$19,616,456.95
		Q	UANTITIES			F	PRICES	
вү				вү			CHECKED	
	I. Buck C. Wallace				I. Buck		J. Loucks	
DATE PRE	TE PREPARED PEER REVIEW			DATE PREPAR			PEER REVIEW	
	12/9/2010				12/20/10		C. Wallace	

BUREAU OF RECLAMATION

ESTIMATE WORKSHEET

SUMMARY SHEET 1 OF 1

BUREAU OF		ION	ESTIMATE WOR					SUMMARY SHEET 1 OF 1
FEATU	JRE:			PROJE(CT:			
Shasta	Lake	Water Resources II	nvestigation		Central Val	ev Proiec	t - CA	
Feasib			gag		Shasta Divi			
			ng Area Improvements	REGION:	MP		TE LEVEL:	Feasibility
Major	Noud	rtorodations/r arkii	ig Area improvements	WOID:	SHAEF	PRICE		
		Most F	Nucleo de la	WOID:	SHAEF	PRICE	_EVEL:	Apr - 10
		Wost F	Probable					
Summ	ary		12.5-ft Dam R	aise				
PLANT ACCOUNT	PAY ITEM							
L'AN COL	<u></u>		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
AC A	₫							
		Reservoir area vehic	le roads:					
			e Lakeshore Drive					
		<u> </u>	e Turntable Bay Area					
						+		
		Remove/Replace						
			e Salt Creek Road					
		Misc Parking Ar	eas					
		MWH-006 Sheet (1)						\$9,948,900.00
		MWH-006 Sheet (2)						\$2,554,900.00
		MWH-006 Sheet (3)						\$3,347,700.00
								ψο,ο,. σσ.σσ
		Subtotal						\$15,851,500.00
		Mobilization & Ge	eneral Conditions				10%	\$1,590,000.00
		Subtotal w/ Mobiliza	tion					\$17,441,500.00
								411,111,000
		Design Continger	ncies				20%	\$3,508,000.00
		Design Continger	icies				20 70	ψ3,300,000.00
		Allawan as for Dus					00/	#0F4 000 00
		Allowance for Pro	ocurement Strategy				2%	\$351,000.00
		CONTRACT COST						\$21,300,000.00
		Construction Con	tingencies				8%	\$1,700,000.00
		FIELD COST						\$23,000,000.00
						+		
		Note: Facilities from 1.11	shad mila laval to matter to many discount.	d Fatinget	alicala elle errere	alaa diis te		
			shed price level to notice to proceed is exclude					
			nd terminology, see Reclamation Manual, Dire	cuves and Standards	s FAC; 09-01, 0			
		Ql	JANTITIES			Р	RICES	
BY CHECKED				BY			CHECKED	
See Gro	See Group Sheets See Group Sheets				I. Buck		J. Loucks	
DATE PRE	PARED		PEER REVIEW	DATE PREP	ARED		PEER REVIEW	
			See Group Sheets	<u></u> _ <u>L</u>	12/20/10		C. Wallace	

BUREAU OF RECLAMATION

ESTIMATE WORKSHEET

SHEET__1__ OF __3 __

FEATL			LOTHWATE WORK	PROJECT	•.			SHEE I1_ OF3
				PROJECT				
		Water Resources I	nvestigation		Central Valley	-	CA	
Feasib	-	•			Shasta Divisio	n		
Major	Road F	Relocations/Parki	ng Area Improvements	REGION:	MP	ESTIMA	TE LEVEL:	Feasibility
				WOID:	SHAEF	PRICE L	EVEL:	Apr - 10
		Most F	Probable					
		Most						
MWH-	006		12.5-ft Dam Rai	se				
PLANT ACCOUNT	E							
S IAN	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
AC P	Æ							
		New Road Construction	n en					
		New Road Constitution	,					
		Lakeshore Drive						
	1		It Concrete Pavement/Base Materials	MWH-006	7	ac	\$3,500.00	\$24,500.00
	2	Clearing & Grubbing (Ne	ew Alingment)	MWH-006	7	ac	\$1,500.00	\$10,500.00
	3	Establish Traffic Control	s	MWH-006	1	ls	\$35,000.00	\$35,000.00
	4	Excavation to Embankm	ent	MWH-006	55,100	су	\$15.00	\$826,500.00
	5	Embankment Fill		MWH-006	145,875	су	\$20.00	\$2,917,500.00
	6	Aggregate Base Course		MWH-006	12,975	tn	\$60.00	\$778,500.00
	7	Asphaltic Concrete		MWH-006	6,647	tn	\$120.00	\$797,640.00
	8	Road Striping		MWH-006	13,063	If	\$2.50	\$32,657.50
	9 Culvert Pipe -36" CMP			MWH-006	295	If	\$216.00	\$63,720.00
	·							
	10	Culvert Pipe -48" CMP		MWH-006	75	lf If	\$288.00	\$21,600.00
	11	Culvert Pipe -54" CMP		MWH-006	300	lf 	\$324.00	\$97,200.00
	12	Culvert Pipe -60" CMP		MWH-006	240	lf	\$360.00	\$86,400.00
	13	Culvert Pipe -72" CMP		MWH-006	110	lf	\$432.00	\$47,520.00
	14	Culvert Pipe - 84" CMP		MWH-006	215	lf	\$504.00	\$108,360.00
	15 Misc Roadway Signage			MWH-006	1	ls	\$10,000.00	\$10,000.00
	16	Guardrail		MWH-006	650	lf	\$35.00	\$22,750.00
	17	Concrete Retaining Wall	s	MWH-006	0	су	\$850.00	\$0.00
	18	Concrete Retaining Wall		MWH-006	0	lbs	\$1.50	\$0.00
	19	Geotextile Fabric		MWH-006	56,058	sf	\$0.50	\$28,029.00
	20	Filter Bed Material Type	1	MWH-006	1,038		\$60.00	\$62,280.00
			I			су		
	21	Rip Rap Type II		MWH-006	2,076	су	\$85.00	\$176,460.00
		Turntable Bay Area						
	22	Remove Existing Aspha	It Concrete Pavement/Base Materials	MWH-006	2	ac	\$3,500.00	\$7,000.00
	23	Clearing & Grubbing (Ne	ew Alingment)	MWH-006	2	ac	\$1,500.00	\$3,000.00
	24	Establish Traffic Control	s	MWH-006	1	ls	\$35,000.00	\$35,000.00
	25	Excavation to Embankm	ent	MWH-006	19,000	су	\$15.00	\$285,000.00
	26	Embankment Fill		MWH-006	71,500	су	\$20.00	\$1,430,000.00
	27	Aggregate Base Course		MWH-006	4,517	tn	\$60.00	\$271,026.00
	28	Asphaltic Concrete		MWH-006	0	tn	\$120.00	\$0.00
		·						·
	29	Road Striping		MWH-006	0	lf If	\$2.50	\$0.00
	30	Culvert Pipe -36" CMP		MWH-006	0	lf .c	\$216.00	\$0.00
	31	Culvert Pipe -48" CMP		MWH-006	0	If	\$288.00	\$0.00
	32	Culvert Pipe -54" CMP		MWH-006	0	lf	\$324.00	\$0.00
	33	Culvert Pipe -60" CMP		MWH-006	0	lf	\$360.00	\$0.00
	34	Culvert Pipe -72" CMP		MWH-006	0	lf	\$432.00	\$0.00
	35	Culvert Pipe - 84" CMP		MWH-006	0	lf	\$504.00	\$0.00
	36	Misc Roadway Signage		MWH-006	1	ls	\$5,000.00	\$5,000.00
	37	Guardrail		MWH-006	0	If	\$35.00	\$0.00
	38	Concrete Retaining Wall	de	MWH-006	409	cy	\$850.00	\$347,650.00
	39	Concrete Retaining Wall		MWH-006	71,575	lbs	\$1.50	\$107,362.50
			o ivenai					
	40	Geotextile Fabric		MWH-006	275,410	sf	\$0.50	\$137,705.00
	41	Filter Bed Material Type	1	MWH-006	5,100	су	\$60.00	\$306,000.00
	42	Rip Rap Type II		MWH-006	10,200	су	\$85.00	\$867,000.00
		Sheet Subtotal =						\$9,948,860.00
		Q	UANTITIES			P	RICES	
вү				ву			CHECKED	
	I. Buck		C. Wallace		I. Buck		J. Loucks	
DATE PRI			PEER REVIEW	DATE PREPAR			PEER REVIEW	
	EPARED 11/23/2010	1	I LLIX IXE VIL VV	DATE FREFAR	12/20/10		C. Wallace	
	11/23/2010	,			12/20/10		O. VVallaCC	

BUREAU OF RECLAMATION

ESTIMATE WORKSHEET

SHEET_2_ OF _3 _

BUREAU OF F		ON	ESTIMATE WORK					SHEET_2_ OF3
FEATU				PROJECT				
		Water Resources I	nvestigation		Central Valley	-	CA	
Feasibi					Shasta Divisio			
Major F	Road F	Relocations/Parki	ng Area Improvements	REGION:	MP		TE LEVEL:	Feasibility
				WOID:	SHAEF	PRICE L	_EVEL:	Apr - 10
		Most F	Probable					
MWH-0	006		12.5-ft Dam Ra	ise				
r F	EM							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
A A	3							
		New Road Construction	n					
		Gilman Drive						
	1	-	t Concrete Pavement/Base Materials	MWH-006	1	ac	\$3,500.00	\$3,500.00
	2	Clearing & Grubbing (Ne		MWH-006	1	ac	\$1,500.00	\$1,500.00
	3	Establish Traffic Control		MWH-006	1	ls	\$35,000.00	\$35,000.00
	4	Excavation to Embankm	ent	MWH-006	0	су	\$15.00	\$0.00
	5	Embankment Fill		MWH-006	28,500	су	\$20.00	\$570,000.00
	6	Aggregate Base Course		MWH-006	1,144	tn	\$60.00	\$68,640.00
	7	Asphaltic Concrete		MWH-006	544	tn	\$120.00	\$65,280.00
	8	Road Striping		MWH-006	1,246	lf .r.	\$2.50	\$3,115.00
	9	Culvert Pipe -36" CMP		MWH-006	0	lf .r.	\$216.00	\$0.00
	10 11	Culvert Pipe -48" CMP Culvert Pipe -54" CMP		MWH-006 MWH-006	0	lf If	\$288.00 \$324.00	\$0.00 \$0.00
	12	Culvert Pipe -60" CMP		MWH-006	180	If	\$360.00	\$64,800.00
	13	Culvert Pipe -72" CMP		MWH-006	0	If	\$432.00	\$0.00
	14	Culvert Pipe - 84" CMP		MWH-006	0	lf	\$504.00	\$0.00
	15	Misc Roadway Signage		MWH-006	1	ls	\$10,000.00	\$10,000.00
	16	Guardrail		MWH-006	200	lf	\$35.00	\$7,000.00
	17	Concrete Retaining Wall		MWH-006	163	cy	\$850.00	\$138,380.00
	18	Concrete Retaining Wall Geotextile Fabric	s Rebar	MWH-006 MWH-006	28,490	lbs	\$1.50 \$0.50	\$42,735.00 \$0.00
	19 20	Filter Bed Material Type	I	MWH-006	0	sf cy	\$60.00	\$0.00
	21	Rip Rap Type II		MWH-006	0	су	\$85.00	\$0.00
		Jones Valley & Silverth					40.000	
	22	<u> </u>	t Concrete Pavement/Base Materials	MWH-006	1	ac	\$3,500.00	\$2,820.00
	23 24	Clearing & Grubbing (Ne Establish Traffic Control		MWH-006 MWH-006	1	ac Is	\$1,500.00 \$35,000.00	\$1,209.00 \$35,000.00
	25	Excavation to Embankm		MWH-006	0	су	\$35,000.00	\$33,000.00
	26	Embankment Fill		MWH-006	41,250	cy	\$20.00	\$825,000.00
	27	Aggregate Base Course		MWH-006	1,732	tn	\$60.00	\$103,920.00
	28	Asphaltic Concrete		MWH-006	649	tn	\$120.00	\$77,880.00
	29	Road Striping		MWH-006	1,950	lf .c	\$2.50	\$4,875.00
	30 31	Culvert Pipe -36" CMP Culvert Pipe -48" CMP		MWH-006 MWH-006	0 170	lf If	\$216.00 \$288.00	\$0.00 \$48,960.00
	32	Culvert Pipe -48 CMP Culvert Pipe -54" CMP		MWH-006	0	If	\$288.00	\$48,960.00
	33	Culvert Pipe -60" CMP		MWH-006	0	If	\$360.00	\$0.00
	34	Culvert Pipe -72" CMP		MWH-006	235	If	\$432.00	\$101,520.00
	35	Culvert Pipe - 84" CMP		MWH-006	0	If	\$504.00	\$0.00
	36	Misc Roadway Signage		MWH-006	1	ls	\$5,000.00	\$5,000.00
	37	Guardrail		MWH-006	0	If	\$35.00	\$0.00
	38	Concrete Retaining Wall		MWH-006	0	cy 	\$850.00	\$0.00
	39	Concrete Retaining Wall	s Rebar	MWH-006	0	lbs	\$1.50	\$0.00
	40	Geotextile Fabric		MWH-006	71,182	sf	\$0.50	\$35,591.00
	41	Filter Bed Material Type	I	MWH-006	1,318	су	\$60.00	\$79,080.00
	42	Rip Rap Type II		MWH-006	2,636	су	\$85.00	\$224,060.00
		Sheet Subtotal =						\$2,554,865.00
			UANTITIES			P	RICES	ψ ∠, JJ4,G03.UU
DV		Q		DV.		F)		
BY	I Buok		CHECKED C. Wallace	ВҮ	I. Buck		CHECKED J. Loucks	
DATE				DATE BRES				
	PREPARED PEER REVIEW			DATE PREPAR	12/20/10		PEER REVIEW C. Wallace	
ı	1/23/2010	,			12/20/10		O. VValiaCE	

BUREAU OF RECLAMATION

ESTIMATE WORKSHEET

SHEET_3_ OF _3 _

BUREAU OF RECLAMATION ESTIMATE WORKSHIE										
FEATU	RE:			PROJECT	:					
Shasta	Shasta Lake Water Resources Investigation				Central Valley Project - CA					
Feasibility Study										
	-	•			Shasta Divisio					
Major Road Relocations/Parking Area Improvements				REGION:	MP	ESTIMA	TE LEVEL:	Feasibility		
				WOID:	SHAEF	PRICE L	EVEL:	Apr - 10		
		Most F	Probable		· · · · · ·			7.10		
		IVIOST F	Probable							
MWH00	06		12.5-ft Dam Ra	ise						
TN V	띹									
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT		
₹	<u>С</u>									
		New Road Constructio	<u>n</u>							
		Salt Creek Road								
	1		t Concrete Pavement/Base Materials	MWH-006	1	ac	\$3,500.00	\$3,500.00		
	2	Clearing & Grubbing (Ne		MWH-006	1	ac	\$1,500.00	\$1,500.00		
	3	Establish Traffic Control		MWH-006	1	ls	\$35,000.00	\$35,000.00		
	4	Excavation to Embankm	ent	MWH-006	4,050	су	\$15.00	\$60,750.00		
	5	Embankment Fill		MWH-006	34,563	су	\$20.00	\$691,250.00		
	6	Aggregate Base Course		MWH-006	2,336	tn	\$60.00	\$140,160.00		
	7	Asphaltic Concrete		MWH-006	0	tn	\$120.00	\$0.00		
	8	Road Striping		MWH-006	0	lf	\$2.50	\$0.00		
	9	Culvert Pipe -36" CMP		MWH-006	65	lf	\$216.00	\$14,040.00		
	10	Culvert Pipe -48" CMP		MWH-006	0	lf	\$288.00	\$0.00		
	11	Culvert Pipe -54" CMP		MWH-006	0	lf	\$324.00	\$0.00		
	12	Culvert Pipe -60" CMP		MWH-006	325	lf	\$360.00	\$117,000.00		
	13	Culvert Pipe -72" CMP		MWH-006	125	lf	\$432.00	\$54,000.00		
	14	Culvert Pipe - 84" CMP		MWH-006	0	lf	\$504.00	\$0.00		
	15	· · · · · · · · · · · · · · · · · · ·		MWH-006	1		\$10,000.00	\$10,000.00		
		Misc Roadway Signage				ls				
	16	Guardrail		MWH-006	0		\$35.00	\$0.00		
	17	Concrete Retaining Wall		MWH-006	0		\$850.00	\$0.00		
	18	Concrete Retaining Wall	s Rebar	MWH-006	0		\$1.50	\$0.00		
	19	Geotextile Fabric		MWH-006	0	sf	\$0.50	\$0.00		
	20	Filter Bed Material Type	I	MWH-006	0	- 7	\$60.00	\$0.00		
	21	Rip Rap Type II		MWH-006	0	су	\$85.00	\$0.00		
		Remaining Road Segm	ents							
	19	Remove Existing Asphal	t Concrete Pavement/Base Materials	MWH-006	1	ac	\$3,500.00	\$3,500.00		
	20	Clearing & Grubbing (Ne	w Alingment)	MWH-006	1	ac	\$1,500.00	\$1,500.00		
	21	Establish Traffic Controls	S	MWH-006	1	ls	\$35,000.00	\$35,000.00		
	22	Excavation to Embankm	ent	MWH-006	120	су	\$15.00	\$1,800.00		
	23	Embankment Fill		MWH-006	76,126	су	\$20.00	\$1,522,525.00		
	24	Aggregate Base Course		MWH-006	1,866	tn	\$60.00	\$111,960.00		
	25	Asphaltic Concrete		MWH-006	529	tn	\$120.00	\$63,480.00		
	26	Road Striping		MWH-006	2,280	lf	\$2.50	\$5,700.00		
	27	Culvert Pipe -36" CMP		MWH-006	0	lf	\$216.00	\$0.00		
	28	Culvert Pipe -48" CMP		MWH-006	206	lf	\$288.00	\$59,328.00		
	29	Culvert Pipe -54" CMP		MWH-006	0	 If	\$324.00	\$0.00		
	30	Culvert Pipe -60" CMP		MWH-006	0		\$360.00	\$0.00		
	31	Culvert Pipe -72" CMP		MWH-006	0		\$432.00	\$0.00		
	32	Culvert Pipe - 84" CMP		MWH-006	0		\$504.00	\$0.00		
	33	Misc Roadway Signage		MWH-006	1	ls	\$5,000.00	\$5,000.00		
	34	Guardrail		MWH-006	180	lf	\$3,000.00	\$5,000.00 \$6,300.00		
	35	Concrete Retaining Wall	e e	MWH-006	180			\$0.00		
					0	cy lbs	\$850.00 \$1.50	· · · · · · · · · · · · · · · · · · ·		
	36	Concrete Retaining Wall	s venai	MWH-006	-		\$1.50	\$0.00		
	37	Geotextile Fabric	1	MWH-006	84,977	sf	\$0.50	\$42,488.50		
	38	Filter Bed Material Type	I	MWH-006	1,574	су	\$60.00	\$94,440.00		
	39	Rip Rap Type II		MWH-006	3,147	су	\$85.00	\$267,495.00		
		Ohant Out total						6004774		
		Sheet Subtotal =						\$3,347,716.50		
		Q	UANTITIES		P			RICES		
вү			CHECKED	вү				CHECKED		
	I. Buck		C. Wallace		I. Buck		J. Loucks			
			PEER REVIEW	DATE PREPARED			PEER REVIEW			
	1/23/2010)			12/20/10		C. Wallace			
,	•		•							

BUREAU OF RECLAMATION ESTIMATE WORKSHEET

FEATURE: PROJECT: Shasta Lake Water Resources Investigation **Central Valley Project - CA** Feasibility Study **Shasta Division** Reservoir Area Utilities (Removals & Relocations) REGION: MP ESTIMATE LEVEL: **Feasibility** WOID: **SHAEF** PRICE LEVEL: Apr - 10 **Most Probable** 12.5-ft Dam Raise Summary PAY ITEM QUANTITY DESCRIPTION CODE UNIT UNIT PRICE **AMOUNT** Reservoir area utilities consists of: Demolishing or relocating u/g utilities or wells Removal or restoration of wastewater facilities Removal or relocation of power distribution facilities **New Water Treatment Plant Costs** \$15,651,700.00 MWH-007 Sheet (1) \$15,651,700.00 Subtotal Mobilization/General Conditions 10% \$1,570,000.00 Subtotal w/ Mobilization \$17,222,000.00 **Design Contingencies** 25% \$4,331,000.00 \$347,000.00 Allowance for Procurement Strategy 2% CONTRACT COST \$21,900,000.00 \$1,700,000.00 **Construction Contingencies** 8% FIELD COST \$23,600,000.00 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** CHECKED ΒY CHECKED ΒY See Group Sheets See Group Sheets I. Buck J. Loucks DATE PREPARED PEER REVIEW DATE PREPARED PEER REVIEW C. Wallace See Group Sheets 12/20/10

SUMMARY SHEET 1 OF 1

BUREAU OF RECLAMATION ESTIMATE WORKSHEET SHEET_1_ OF __1_

BUREAU OF R	RECLAMATIC	DN	ESTIMATE WORKS	SHEET				SHEET1 OF1
FEATU	RE:			PROJECT	•			
Shasta Feasibil		Nater Resources Ii idy	nvestigation		Central Valle Shasta Divis	-	t - CA	
Reservoir Area Utilities (Removals & Relocations)				REGION:	MP		TE LEVEL:	Feasibility
Aloa Cantico (Itemovaio a Itelocationo)			WOID:	SHAEF	PRICE L		Apr - 10	
		Most F	Probable					
MWH-0	07		12.5-ft Dam Rais	20				
			12.0 10 00111 11010	50				
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Selective Demolition &	Replacement					
		All Areas						
	1	Demolish Buildings (Res	idential/Commercial)	MWH-007	21,452	sf	\$6.00	\$128,712.00
	2	,	Pipes <6" (Abandon In Place)	MWH-007	5,610	If	\$6.00	\$33,660.00
	3	Demolish Potable Water	, , ,	MWH-007	5,610	If	\$18.00	\$100,980.00
	4	Relocate Potable Water		MWH-007	8,450	If	\$90.00	\$760,500.00
	5	Demolish Wells (200' ar	'	MWH-007	10	ea	\$550.00	\$5,500.00
	6	Relocate Wells (200' at 1	• •	MWH-007	6	ea	\$10,000.00	\$60,000.00
	7	Demolish Tanks (2500 g	<u> </u>	MWH-007	1	ea	\$1,875.00	\$1,875.00
	8	Demolish Potable Water	•	MWH-007	2	ea	\$3,500.00	\$7,000.00
	9	Relocate Potable Water	•	MWH-007	2	ea	\$25,000.00	\$50,000.00
	10		ell System (200' at 15 gpm)	MWH-007	17	ea	\$550.00	\$9,350.00
	11		Il System (200' at 15 gpm)	MWH-007	7	ea	\$10,000.00	\$70,000.00
	12	Demolish Wastewater Pi		MWH-007	2,340	If	\$24.00	\$56,160.00
	13	Relocate Wastewater Pi	. ,	MWH-007	430	If	\$120.00	\$51,600.00
	14	Demolish Wastewater Pi		MWH-007	2	ea	\$3,500.00	\$7,000.00
	15		nk/Leach Field (Including Local Piping)	MWH-007	167	ea	\$750.00	\$125,250.00
	16		nk/Leach Field (Including Local Piping)	MWH-007	2		\$3,500.00	\$7,000.00
	17		each Field (Including Local Piping)	MWH-007	72	ea	\$1,000.00	\$72,000.00
	18		each Field (Including Local Piping)	MWH-007	17	ea	\$4,500.00	\$76,500.00
	19	Relocate Holding Tank w		MWH-007	1	ea	\$2,500.00	\$2,500.00
	20	Demolish Vault Pit	narr amp replacement	MWH-007	2	ea	\$2,500.00	\$5,000.00
	21	Relocate Valve Pit		MWH-007	2	ea	\$7,500.00	\$15,000.00
	22	Demolish Low Voltage P	ower Wires	MWH-007	28,565	If	\$5.00	\$142,825.00
	23	Relocate Low Voltage Po		MWH-007	28,565	If	\$10.00	\$285,650.00
	24	Demolish High Voltage F		MWH-007	5,140	If	\$10.00	\$51,400.00
	25	Relocate High Voltage P		MWH-007	7,740	lf	\$20.00	\$154,800.00
	26	Demolish Power Towers		MWH-007	6	ea	\$15,000.00	\$90,000.00
	27	Relocate Power Towers		MWH-007	6	ea	\$125,000.00	\$750,000.00
	28	Demolish U/G Telecomn	nunications Wire	MWH-007	27,810	If	\$1.00	\$27,810.00
	29	Relocate U/G Telecomm		MWH-007	30,205	If	\$5.00	\$151,025.00
	30	Demolish U/G Fiberoptic		MWH-007	5,180	If	\$1.00	\$5,180.00
	31	Relocate U/G Fiberoptic		MWH-007	5,840	lf	\$5.00	\$29,200.00
	32	Demolish U/G Tanks		MWH-007	9	ea	\$1,500.00	\$13,500.00
	33	Relocate U/G Tanks		MWH-007	9	ea	\$8,750.00	\$78,750.00
	34	Demolish Misc Tanks		MWH-007	1	ea	\$2,000.00	\$2,000.00
	35	Relocate Misc Tanks		MWH-007	1	ea	\$10,000.00	\$10,000.00
	36	Close Mine Entrances		MWH-007	2	ea	\$5,000.00	\$10,000.00
	37		Plant Costs (Appendix B - Utilities Report)	MWH-007	1	ls	\$12,204,000.00	\$12,204,000.00
		Sheet Subtotal =						\$15,651,727.00
QUANTITIES				PRICES				
вү			CHECKED	вү				
	I. Buck		C. Wallace		I. Buck J. Louck			
DATE PREPARED PEER REVIEW			PEER REVIEW	DATE PREPARED PEER REVIEW			PEER REVIEW	
1/19/2011				12/20/10		C. Wallace		

Attachment 3		

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12.5-foot Raise and Reservoir Area Infrastructure