## Draft

## Attachment 2 6.5-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



U.S. Department of the Interior Bureau of Reclamation

BUREAU OF		TION ESTIMATE WORKS					SUMMARY SHEET 1 OF 1
FEATL			PROJE				
		Water Resources Investigation		Central Vall		ct - CA	
Feasib				Shasta Divis			
Main (	Concr	rete) Dam	REGION			TE LEVEL	Feasibility
			WOID:	SHAEF	PRICE	LEVEL:	Apr - 10
		Most Probable					
Summ	ary	6.5-ft Dam Raise					
T INT	ITEM						
PLANT ACCOUNT	PAY IT	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Main (concrete) Dam consists of:					
		6.5-ft mass & reinforced concrete raise of the existing	concrete	dam			
		between blocks 15 thru 70 (including top of dam d					
		Bridge over raised spillway (Included with spillway)					
		Extensions of the existing freight and passenger eleva	tor tower	۱ د			
	-	Electrical and mechanical features associated with the					
	-	and the elevator towers.					
	-	Extending/drilling foundation drains (Not Included)					
		Excavation/demolition/salvaging of existing features a	ssociated	with existing	g main da	am	
		Sheets 1 - 3: 86-68120	Ļ				\$6,047,852.0
		Elevator tower extensions, top of dam miscellaneous meta	I work				
	_	Sheets 4-6: 86-68130					\$23,484,400.0
	_	Dam raise, top of dam details, gallery					
		Sheets 7 - 10: 86-68410					\$4,246,200.0
		Top of dam & towers mechanical features					
	_	Sheet 11: 86-68430					\$725,700.0
		Top of dam & towers electrical features					
		Subtotal 1					\$34,504,152.00
		Mobilization	5%	+/-			\$1,750,000.0
		Subtotal 1 with Mobilization					\$36,254,152.0
		Escalation to Notice to Proceed (NTP): None assumed.	0%				\$0.0
		Subtotal 2 = Subtotal 1 with Mobilization + Escalation to NT	ſP				\$36,254,152.0
		Design Contingencies	10%	+/-			\$3,948,257.0
		Subtotal 3 = Subtotal 2 + Design Contingencies					\$40,202,409.0
		Allowance for Procurement Strategies (APS)	2.0%	+/-			\$797,591.0
		Type of solicitation assumed is: Request for Proposa					
		Subtotal 4 = Subtotal 3 + APS					\$41,000,000.0
		CONTRACT COST					\$41,000,000.0
		Construction Contingencies	20%	+/-			\$8,000,000.0
		FIELD COST					\$49,000,000.00
						+	
		Note: Escalation from published price level to notice to proceed is excluded. Es					
		Ref.: For appropriate use and terminology, see Reclamation Manual, Directives	and Standar	rds FAC; 09-01, 0			
		QUANTITIES				PRICES	
BY See Gro	un Shaat	CHECKED	BY	Grad Aking		CHECKED	Kelly Brom
See Gro	-			Greg Akins			Kelly Brom
DATE PRI	EPARED		DATE PRE				an Danalda ar
		See Group Sheets		12/07/10		D	an Donaldson

Shasta Lake Water Resources Investigation Feasibility Study Main (Concrete) Dam	PROJECT REGION: WOID: CODE 68120 68120 68120 68120	Central Vall Shasta Divi MP	sion ESTIM	ect - CA ATE LEVEL: LEVEL: UNIT PRICE	Feasibility Apr - 10
Feasibility Study       Most Probable       6.5-ft Dam Raise         Most Probable       6.5-ft Dam Raise         Main (Concrete) Dam       6.5-ft Dam Raise         Most Probable       6.5-ft Dam Raise         Main Quert       DESCRIPTION         Main Quert       Feasibility Study         Main Quert       DESCRIPTION         Main Quert       Feasibility Study         Main Quert       Feas	CODE 68120 68120 68120	Shasta Divi MP SHAEF	sion ESTIM PRICE	ATE LEVEL: LEVEL:	Apr - 10
Main (Concrete) Dam       Most Probable         bootstip         bootstip         bootstip       c.5-ft Dam Raise         bootstip	CODE 68120 68120 68120	MP SHAEF	ESTIM/ PRICE	LEVEL:	Apr - 10
Most Probable       6.5-ft Dam Raise         Image: Description       6.5-ft Dam Raise         Image: Description       1         Image: Description	CODE 68120 68120 68120	SHAEF	PRICE	LEVEL:	Apr - 10
Most Probable       6.5-ft Dam Raise         Image: Description       Description         Image: Description       Image: Description         Image: Description       Remove growt in solockout (8-inch deep, ea. side)         <	CODE 68120 68120 68120 68120	QUANTITY 7,700			
Methods       Description         Image: Section of the sect	68120 68120 68120	7,700		UNIT PRICE	AMOUNT
LynoodMainDESCRIPTIONImage: DescriptionImage: Description </th <th>68120 68120 68120</th> <th>7,700</th> <th>UNIT</th> <th>UNIT PRICE</th> <th>AMOUNT</th>	68120 68120 68120	7,700	UNIT	UNIT PRICE	AMOUNT
The following items should be removed from the         Existing Dam:         1         Gantry Crane Rails (214-D-8793 & -10216)         Saw cut grout in rail blockout (8-inch deep, ea. side)         Remove grout in blockout         Remove grout in blockout         Remove 90 splice pl., 224 splice bars, 1970 rail clips,         800 bearing plates, 224 splice bars w/bolts, nuts,         & washers, 2 contraction joint plates         Assume existing rail will be removed and salvaged         by Contractor.         2         Lighted Aluminum Guardrail (214-D-10071)         Remove guardrail from upstream face of dam         Assume lighted guardrail is removed and reinstalled         on downstream parapet of raised crest.	68120 68120 68120	7,700	UNIT	UNIT PRICE	AMOUNT
Existing Dam:1Gantry Crane Rails (214-D-8793 & -10216)Saw cut grout in rail blockout (8-inch deep, ea. side)Remove grout in blockoutRemove 175 lb/yd crane rail (3,850 ft)Remove 90 splice pl., 224 splice bars, 1970 rail clips,800 bearing plates, 224 splice bars w/bolts, nuts,& washers, 2 contraction joint platesAssume existing rail will be removed and salvagedby Contractor.2Lighted Aluminum Guardrail (214-D-10071)Remove guardrail from upstream face of damAssume lighted guardrail is removed and reinstalledon downstream parapet of raised crest.	68120 68120				
Existing Dam:1Gantry Crane Rails (214-D-8793 & -10216)Saw cut grout in rail blockout (8-inch deep, ea. side)Remove grout in blockoutRemove 175 lb/yd crane rail (3,850 ft)Remove 90 splice pl., 224 splice bars, 1970 rail clips,800 bearing plates, 224 splice bars w/bolts, nuts,& washers, 2 contraction joint platesAssume existing rail will be removed and salvagedby Contractor.2Lighted Aluminum Guardrail (214-D-10071)Remove guardrail from upstream face of damAssume lighted guardrail is removed and reinstalledon downstream parapet of raised crest.	68120 68120				
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Saw cut grout in rail blockout (8-inch deep, ea. side)         Remove grout in blockout         Remove grout in blockout         Remove 175 lb/yd crane rail (3,850 ft)         Remove 90 splice pl., 224 splice bars, 1970 rail clips,         800 bearing plates, 224 splice bars w/bolts, nuts,         & washers, 2 contraction joint plates         Assume existing rail will be removed and salvaged         by Contractor.         2         Lighted Aluminum Guardrail (214-D-10071)         Remove guardrail from upstream face of dam         Assume lighted guardrail is removed and reinstalled         on downstream parapet of raised crest.	68120 68120			1 1	
Saw cut grout in rail blockout (8-inch deep, ea. side)         Remove grout in blockout         Remove grout in blockout         Remove 175 lb/yd crane rail (3,850 ft)         Remove 90 splice pl., 224 splice bars, 1970 rail clips,         800 bearing plates, 224 splice bars w/bolts, nuts,         & washers, 2 contraction joint plates         Assume existing rail will be removed and salvaged         by Contractor.         2         Lighted Aluminum Guardrail (214-D-10071)         Remove guardrail from upstream face of dam         Assume lighted guardrail is removed and reinstalled         on downstream parapet of raised crest.	68120 68120				
Remove grout in blockout         Remove 175 lb/yd crane rail (3,850 ft)         Remove 90 splice pl., 224 splice bars, 1970 rail clips,         800 bearing plates, 224 splice bars w/bolts, nuts,         & washers, 2 contraction joint plates         Assume existing rail will be removed and salvaged         by Contractor.         Image: Contractor of the plate of	68120 68120		LF	\$7.80	\$60,060.00
Remove 175 lb/yd crane rail (3,850 ft)         Remove 90 splice pl., 224 splice bars, 1970 rail clips,         800 bearing plates, 224 splice bars w/bolts, nuts,         & washers, 2 contraction joint plates         Assume existing rail will be removed and salvaged         by Contractor.         Image: Contractor of the sector of t	68120	145	CY	\$350.00	\$50,750.00
Remove 90 splice pl., 224 splice bars, 1970 rail clips,         800 bearing plates, 224 splice bars w/bolts, nuts,         & washers, 2 contraction joint plates         Assume existing rail will be removed and salvaged         by Contractor.         2         Lighted Aluminum Guardrail (214-D-10071)         Remove guardrail from upstream face of dam         Assume lighted guardrail is removed and reinstalled         on downstream parapet of raised crest.		224,600	LBS	\$0.07	\$15,722.00
800 bearing plates, 224 splice bars w/bolts, nuts,         & washers, 2 contraction joint plates         Assume existing rail will be removed and salvaged         by Contractor.         2         Lighted Aluminum Guardrail (214-D-10071)         Remove guardrail from upstream face of dam         Assume lighted guardrail is removed and reinstalled         on downstream parapet of raised crest.	00120	224,600	LBS	\$0.35	\$8,610.0
& washers, 2 contraction joint plates         Assume existing rail will be removed and salvaged         by Contractor.         2         Lighted Aluminum Guardrail (214-D-10071)         Remove guardrail from upstream face of dam         Assume lighted guardrail is removed and reinstalled         on downstream parapet of raised crest.		24,000	LDS	φ0.35	φ0,010.00
Assume existing rail will be removed and salvaged         by Contractor.         2         Lighted Aluminum Guardrail (214-D-10071)         Remove guardrail from upstream face of dam         Assume lighted guardrail is removed and reinstalled         on downstream parapet of raised crest.					
by Contractor.         2         Lighted Aluminum Guardrail (214-D-10071)         Remove guardrail from upstream face of dam         Assume lighted guardrail is removed and reinstalled         on downstream parapet of raised crest.					
2       Lighted Aluminum Guardrail (214-D-10071)         Remove guardrail from upstream face of dam         Assume lighted guardrail is removed and reinstalled         on downstream parapet of raised crest.				<u> </u>	
Remove guardrail from upstream face of dam         Assume lighted guardrail is removed and reinstalled         on downstream parapet of raised crest.					
Remove guardrail from upstream face of dam         Assume lighted guardrail is removed and reinstalled         on downstream parapet of raised crest.					
Assume lighted guardrail is removed and reinstalled on downstream parapet of raised crest.	68120	2,860	LF	\$21.00	\$60,060.0
on downstream parapet of raised crest.					
3         Vehicle Barrier Gates (Bob Gee email dated 10/4/07)					
3 Vehicle Barrier Gates (Bob Gee email dated 10/4/07)					
Remove two vehicle barrier gates and controls	68120	2	EA	\$21,000.00	\$42,000.00
Assume reinstall Delta Barriers in raised crest of dam.					
See CLIN 20 of email from Bob Gee. (\$305,000)					
4 Miscellaneous Metalwork (214-D-9299 thru -9303)					
Remove and dispose of miscellaneous metalwork	68120	50,000	LBS	\$0.80	\$40,000.00
(hatches, doors, covers and manhole covers)	00120	50,000	LDS		\$40,000.0
Assume lead based paint on 50% of metalwork.					
5 Remove Freight & Passenger Elevator Towers:					
(Reference: 214-D-9743 thru -9745))					
Remove reinforced concrete (f'c = 5,500 psi)	68120	600	CY	\$1,200.00	\$720,000.0
Remove/dispose miscellaneous metalwork	68120	1,900	LBS	\$1.40	\$2,660.00
Assume lead based paint on 50% of metalwork.					
6 Remove Gate Service & Erection Platform Structure:				<u>├</u>	
(Reference: 214-D-10214 & -10362))		1	LS	\$22,000.00	\$22,000.00
Reinforced concrete columns, floors, and walls:	68120		LS CY	522,000.00	
Wood products:	68120	-		Included in Lump Sun	
(Plywood infill walls: 790 sq. ft)	00120	1	10		1
(Roofing: 420 sq. ft.)				<u>├</u>	
(Removable flooring 4"x8" timbers: 325 sq. ft.)				<u> </u>	
					<b>.</b>
Sheet Subtotal =					\$1,021,862.0
QUANTITIES				PRICES	
	BY	Grad Aking		CHECKED Kelly Bru	om
Gary Snyder Rodney Barthel		Greg Akins		Kelly Br	
ATE PREPARED PEER REVIEW D 4/9/2008 (updated 6/2010) Dick LaFond, P.E.	DATE PREPAR			PEER REVIEW	

BUREAU O		TION	ESTIMATE WOR		r.			SHEET_2_OF_13_
	-	Mator Bosourooo	Investigation	PROJECT				
	a Lake bility St	Water Resources	Investigation		Central Val Shasta Divi		ect - CA	
		rete) Dam		REGION:	MP		ATE LEVEL:	Feasibility
Wall	Conci	rete) Dam		WOID:	SHAEF		LEVEL:	•
		Most F	Probable		SHAEF	PRICE		Apr - 10
		WOStr						
	_		6.5-ft Dam Rais	e				
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		The fellowing items	hould be installed on the					
		Raised Dam:	should be installed on the					
		Raiseu Daili.						
	7	Gantry Crane Rails						
			ll 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
			backfill grout in blockout	68120	145	CY	\$380.00	\$55,100.00
			hardware will be required.				<b>\$000.00</b>	<i>\</i> \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
	8	Lighted Aluminum G	uardrail (214-D-10071)					
			rdrail on downstream parapet.	68120	2,860	LF	\$36.00	\$102,960.00
		Guardrail removed fro	• •					¢:02,000.00
	0	Vahiala Parriar Cata	(Pab Cas amail datad 10/4/07)	_				
	9		s (Bob Gee email dated 10/4/07)	68120	2	EA	¢220.000.00	¢440.000.00
			barrier gates and controls moved from existing dam.	00120	2	EA	\$220,000.00	\$440,000.00
			•					
	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
			n covers, water tight doors					
		and manhole covers						
		Assume galvaniz	ed steel.					
	11	Extend Freight & Pas	ssenger Elevator Towers:					
		Assume replace i	n-kind.					
		Furnish and place reir	forced 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
	12	Construct Two Gate	Service & Erection Platform Structu	ires:				
		Assume two struc	tures similar to existing one.					
		Furnish and place reir	forced 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		68120	840	SF	\$17.00	\$14,280.00
		Furnish and install me	•	68120	1,580	SF	\$17.00	\$26,860.00
		Furnish and install stru	uctural steel roof supports	68120	5,000	LBS	\$6.60	\$33,000.00
		Sheet Subtotal =						\$4,675,990.00
	<u> </u>		ANTITIES		1	<u> </u>	PRICES	ψ <del>4</del> ,070,990.00
BY			CHECKED	BY			CHECKED	
	Gary Sny	yder	Rodney Barthel		Greg Akins		Kelly B	rom
DATE PF	REPARED		PEER REVIEW	DATE PREPA			PEER REVIEW	
		8 (updated 6/2010)	Dick LaFond, P.E.		12/07/10		Dan Don	aldson

		IION ESTIMATE WORK					SHEET_3_ OF13
FEAT	-	Water Depources Investigation	PROJECT				
		Water Resources Investigation		Central Val		ect - CA	
	oility St		DECION	Shasta Div			
Main	(Conci	rete) Dam	REGION: WOID:	MP SHAEF		ATE LEVEL:	Feasibility
		Most Probable	WOID:	SHAEF	PRICE		Apr - 10
		6.5-ft Dam Raise	e				
PLANT ACCOUNT	РАҮ ІТЕМ	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		The following items should be installed on the					
		Raised Dam:					
	10	Extend evicting concrete Cate Heigt Structure	96 69120	1	10	¢290,000,00	¢290,000,00
	13	Extend existing concrete Gate Hoist Structure	86-68120	1	LS	\$280,000.00	\$280,000.0
		(Dwgs. 214-D-9388 & -9703)					
		(Assumed f'c = 4,000 psi reinforced concrete)					
		Concrete: 75 CY					
		Reinforcement: <b>11,100 Lbs</b> (based on 150 Lbs/CY)					
		Cement: 21 Tons (base on 0.282 Tons/CY ~ 6 sack mix	x)				
		#6 Adhesive anchored dowel bars 335 EA					
		(based on 1'-0" spacing two faces)					
			00.00100			<b>#70.000.00</b>	ARA 600 -
	14	Extend existing concrete Gate, Gate Hoist, and	86-68120	1	LS	\$70,000.00	\$70,000.00
		Stems Transfer Structure					
		(Dwgs. 214-D-9117 & 9701)					
		(Assumed f'c = 4,000 psi reinforced concrete)					
		Concrete: 21 CY					
		Reinforcement: 3,150 Lbs (based on 150 Lbs/CY)					
		Cement: 6.0 Tons (base on 0.282 Tons/CY ~ 6 sack mi	ix)				
		#6 Adhesive anchored dowel bars 124 EA					
		(based on 1'-0" spacing two faces)					
		This Sheet Subtotal =					\$350,000.0
		Sheet 1 of 3 Subtotal =					\$1,021,862.0
		Sheet 2 of 3 Subtotal =					\$4,675,990.0
				Total 86-68	120 ->		\$6,047,852.0
				10(a) 00-00	20 =>		ψ0,047,032.00
	•	QUANTITIES			•	PRICES	
BY		CHECKED	вү			CHECKED	
	Rodney			Greg Akins		Kelly B	rom
DATE PF	REPARED		DATE PREPAR			PEER REVIEW	
	6/4/2010			12/07/10		Dan Don	aldson

BUREAU O	F RECLAMA	TION	ESTIMATE W	ORKSHE	ET			SHEET_4_OF_13	
FEAT	URE:			PROJEC	Г:				
			ces Investigation		Central Va Shasta Di	-	oject - CA		
Feasibility Study <mark>Main (Concrete) Dam</mark>				REGION:	MP		ATE LEVEL:	Feasibility	
				WOID:		PRICE LEVEL:		Apr - 10	
		Мс	ost Probable						
			<b>;</b>						
Ę	Σ								
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
		EXCAVATION AND F	REMOVAL						
	1	Demolition, removal, a	and transportation of top of	86-68130	1	ls	\$760,000.00	\$760,000.00	
		dam materials to wast	te:						
		Upstream reinfo	rced concrete parapet wall						
		and curb:							
		377 c.y., 2	2485 If sawcutting (6-inch,						
		L=2485 lf)	, Depths: 1.25' horiz, 0.6' vert						
		6-inch sawcuts	for 2' x 2' end area at						
		upstream face:							
		2485 lf sav	wcuts along u/s face and crest,						
		total 4,970	) lf						
		Excavation of co	oncrete on u/s face (2' x 2'						
		end area):							
		2485 ft lor	ng, total volume 370 yd3						
		Downstream rei	nforced concrete parapet						
		wall (this is a ne	w item from the 18.5' raise):						
			2485 If sawcutting (6-inch,						
			), Depths: 1.25' horiz, 0.6' vert						
		Excavation of co	oncrete below 5-foot-						
		diameter access	s pipe:						
		2485 ft lo	ng, total volume 600 yd3						
		SURFACE PREPARA	- 100		+				
	2	High-pressure water i	et for existing dam crest	86-68130	1	ls	\$160,000.00	\$160,000.00	
			85', total area 96,915 ft2	00-00130	<u>+</u> '	15	φ100,000.00	φ100,000.00	
	3	Pressure grout existin		86-68130	1	ls	\$33,000.00	\$33,000.00	
			t3 of drains, 350 bags of	00-00100		13	φ00,000.00	φ00,000.00	
		cement			1				
				-				¢053 000 00	
			SUBTOTAL THIS SHEET				PRICES	\$953,000.00	
BY		6	CHECKED	ВҮ			CHECKED		
вү Thomas S	Scobell		R. L. Reynolds, P.E.		Greg Akins		CHECKED Kelly B	rom	
	REPARED	<u> </u>	PEER REVIEW / DATE	DATE PREPA				i dill	
07/12/10		,			12/07/10			aldson	
01/12/10					12/07/10		Dan Dona	naldson	

BUREAU O	F RECLAMA	TION	ESTIMATE W	ORKSHE	ET			SHEET _5_ OF _13	
FEAT	URE:			PROJECT	:				
	a Lake bility St		ces Investigation		Central Va Shasta Di	-	oject - CA		
		rete) Dam		REGION:	MP		ATE LEVEL:	Feasibility	
in an i		letey Dam		WOID:	SHAEF			Apr - 10	
		Ма	ost Probable	WOID.	SHALF	FRICE		Αρι - Τυ	
			6.5-ft Dam Raise						
	_								
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
		DRAIN HOLES							
	4	Mobilization and	demobilization for drilling 4-inch	86-68130	1	ls	\$10,000.00	\$10,000.00	
		drains (298)							
	5	Drilling 4-inch dra	ains on 10-ft centers from	86-68130	620	lf	\$130.00	\$80,600.00	
		existing dam	crest, elev. 1077.5, each hole						
		2.5 feet long	(248 holes)						
		DAM RAISE							
			e de construir e Públic de construir	00.00400	0.000		<b>#000.00</b>	<b>#0.400.000.00</b>	
	6		or dam monoliths between	86-68130	9,000	yd3	\$380.00	\$3,420,000.00	
			hs #15 and #71 (excluding						
			9 to #45 thru spillway). Vertical						
			en top of existing dam, elev.						
			ev. 1080.5 (anticipating						
			of 3- to 5-ft vertical lift, 50-ft						
			u/s-d/s matching existing Cr. Js,						
			Cr. Js, and no artificial cooling).						
		The concrete	e will have a minimum						
		compressive	e strength of 4000 psi at 365						
		days. Includ	es extending 5-inch formed						
		drains from e	elev. 1077.5 to the raised						
		concrete dar	n crest, elev. 1084.0 (with caps).						
	7	Furnishing and ha	andling cementitious materials -	86-68130	1,700	ton	\$140.00	\$238,000.00	
		for mass cor	ncrete; 50% pozzolan, 50%						
		cement (Typ	e II). Concrete is 4000 psi						
		at 365 days.							
L			SUBTOTAL THIS SHEET					\$3,748,600.00	
		G	UANTITIES				PRICES		
ВΥ			CHECKED	BY			CHECKED		
Thomas \$	Scobell		R. L. Reynolds, P.E.	(	Greg Akins		Kelly E	Brom	
DATE PF	REPARED	)	PEER REVIEW / DATE	DATE PREPAR	ED		PEER REVIEW		
07/12/10					12/07/10		Dan Don	Donaldson	

BUREAU OI	F RECLAMA	ΓΙΟΝ	ESTIMATE W	ORKSHE	ET			SHEET_6_OF_13
FEAT	URE:			PROJECT	:			
	a Lake bility St		ces Investigation		Central Va Shasta Di	-	oject - CA	
		rete) Dam		REGION:	MP		ATE LEVEL:	Feasibility
	(			WOID:	SHAEF			Apr - 10
		Mo	ost Probable		UNALI	11102		
			6.5-ft Dam Raise					
⊢	5							
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION		QUANTITY	UNIT	UNIT PRICE	AMOUNT
		DAM RAISE (cor	ntinued)					
	8	Structural concre	te for top of dam (including	86-68130	15,000	yd3	\$450.00	\$6,750,000.00
		roadway, up:	stream/downstream parapets,					
		and walkway	<ul><li>between dam monoliths #15</li></ul>					
		and #71 (exc	cluding monoliths #39 to #45					
		thru spillway	) above elev. 1080.5. Concrete					
		is 4000 psi a	t 28 days.					
	9	Furnishing and ha	andling cementitious materials -	86-68130	4,200	ton	\$140.00	\$588,000.00
		for structural	concrete [20% pozzolan, 80%					
		cement (Typ	e II)]. Concrete is 4000 psi at 28					
		days.						
	10	Furnishing and pl	lacing reinforcing bars for the:	86-68130				
		5-foot-diame	ter access pipe		135,000	lb	\$1.90	\$256,500.00
		Temperature	e steel for exposed structural		798,000	lb	\$1.90	\$1,516,200.00
		concrete	e surfaces					
	11	Furnishing and in	stalling 6-inch steel top of dam	86-68130	1,850	lf	\$190.00	\$351,500.00
		drains, 50 dr	ains; standard weight pipe,					
		19 lb/ft; 1 dr	ain per block					
	12	Excavating a 3-fo	oot diameter vertical shaft	86-68130	2	yd3	\$1,400.00	\$2,800.00
		through cond	crete, from the existing dam					
		crest to the h	noist gallery in Block 47, for					
		service as ar	n electrical conduit.					
			SUBTOTAL THIS SHEET				<u> </u>	\$9,465,000.00
		C	UANTITIES				PRICES	+-,,,,,-
BY			CHECKED	ВҮ			CHECKED	
Thomas S	Scobell		R. L. Reynolds, P.E.		Greg Akins		Kelly E	Brom
	REPARED		PEER REVIEW / DATE	DATE PREPAR			PEER REVIEW	
07/12/10					12/07/10		Dan Don	aldson

BUREAU OF		TION	ESTIMATE W					SHEET_7_OF_13
FEATU	JRE:			PROJECT	:			
			ces Investigation		Central Va Shasta Di	-	oject - CA	
	easibility Study Iain (Concrete) Dam				MP	ESTIM/	ATE LEVEL:	Feasibility
		•		WOID:	SHAEF	PRICE	LEVEL:	Apr - 10
		Мо	st Probable					•
			6.5-ft Dam Raise	•				
. 5	Σ							
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		POST-TENSION	ED ANCHORS IN MAIN DAM					
	13	Mobilization and	demobilization for drilling for	86-68130	1	ls	\$160,000.00	\$160,000.00
		post-tension	-					
	14	Drilling and surve	eying post-tension anchor holes	86-68130	10,850	lf	\$250.00	\$2,712,500.00
			2 inches diameter, each 77.5					
		feet long						
	15	Furnishing and in	stalling post-tension anchors	86-68130	11,760	lf	\$260.00	\$3,057,600.00
			, 84 feet long, 56 strands					
		0.6 inch dia.	epoxy coated strands					
	16		ondary grouting for post-	86-68130	11,760	lf	\$25.00	\$294,000.00
		tensioned an	ichors 140 holes, 8232 ft3					
		of grout	· · · · · · · · · · · · · · · · · · ·					
	17	Furnishing and ha	andling cementitious materials	86-68130	330	ton	\$350.00	\$115,500.00
			1 by volume mix = 0.85 bags/ft3					
		for anchors						
	18	Furnishing and in	stalling anchor head hardware	86-68130	140	pckg	\$11,500.00	\$1,610,000.00
		Package incl	udes: Steel bearing plate,					
		anchor head	and wedges, and grout pad					
	19	Testing:		86-68130	1	ls	\$620,000.00	\$620,000.00
		- Water te	st (entire length - all anchors)					
		- Proof te	sting (90% of anchors)					
		- Lift-off te	esting (20% of anchors)					
		- Perform	ance testing (10% of anchors)					
	20	Concrete in anch	or head blockouts:	86-68130	131	yd3	\$1,500.00	\$196,500.00
		140 blockout	s, 4000 psi concrete, 37 tons					
		cementitious	materials with 80% cement and					
		20% pozzola	n, 4.730 lbs reinforcement					
			SUBTOTAL THIS SHEE	г				\$8,766,100.00
		Q	UANTITIES				PRICES	
ВΥ			CHECKED	BY			CHECKED	
Thomas S	Scobell		R. L. Reynolds, P.E.	(	Greg Akins		Kelly E	Brom
DATE PR	EPARED		PEER REVIEW / DATE	DATE PREPAR	ED		PEER REVIEW	
07/12/10					12/07/10		Dan Dor	aldson

BUREAU OF	F RECLAMA	ΓΙΟΝ	ESTIMATE	NORKSHE	ET			SHEET_8_OF_13
FEAT	URE:			PROJECT	<b>:</b>			
			ces Investigation		Central Va Shasta Di	-	oject - CA	
	<sup>-</sup> easibility Study <mark>Main (Concrete) Dam</mark>				MP		ATE LEVEL:	Feasibility
		,		REGION: WOID:	SHAEF			Apr - 10
		Мо	ost Probable					
	6.5-ft Dam Raise							
<u>ل</u>	Σ							
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		CONTRACTION	JOINTS					
	21	Furnishing and in	stalling 12-inch PVC	86-68130	3,600	lf	\$28.00	\$100,800.00
		-	cross dam monolith contraction					
		· · · · ·	ound access pipe at contraction					
		joints						
	22	Mobilization and	demobilization for pressure	86-68130	1	ls	\$30,000.00	\$30,000.00
		grouting of c	ontraction joints (for monoliths					
		15-38, 46-71	)					
	23	Water test and pr	ressure grout system:	86-68130	1	ls	\$420,000.00	\$420,000.00
		Furnishing a	nd installing metal tubing &					
		fittings,	(1-1/2" std pipe; total 22,000 lbs)					
		Hookups to a	contraction joints (assume 3 per					
		joint) - (4	48 joints; total 144 hookups)					
	24	Furnishing and h	andling cement for grouting	86-68130	50	bag	\$18.00	\$900.00
		contraction j	oints (Type II, final mix 0.9:1;					
		0.7 bags/ft3;	0.24 ft3 per joint) - (Assume 6					
		times final vo	plume to cover waste)					
		This Sheet Subt	otal =					\$551,700.0
		Sheet 1 of 5 Sub						\$953,000.0
		Sheet 2 of 5 Sub						\$3,748,600.0
		Sheet 3 of 5 Sub						\$9,465,000.00
		Sheet 4 of 5 Sub	ototal =					\$8,766,100.00
					Total 86-6	8130 =>		\$23,484,400.00
		G	QUANTITIES		1		PRICES	
ВΥ			CHECKED	вү			CHECKED	
Thomas S	Scobell		R. L. Reynolds, P.E.		Greg Akins		Kelly E	Brom
DATE PR	EPARED		PEER REVIEW / DATE	DATE PREPAR			PEER REVIEW	
07/12/10					12/07/10		Dan Dor	aldson

BUREAU OF		NC	ESTIMATE WORK					SHEET_9_OF _13
FEATU				PROJE				
		Water Resources I	nvestigation		Central Val		et - CA	
Feasib					Shasta Divi			
Main (	Concre	ete) Dam		REGION:			TE LEVEL:	Feasibility
				WOID:	SHAEF	PRICE I	LEVEL:	Apr - 10
		Most F	Probable					
			6.5-ft Dam Rai	ise				
UNT	MEI							
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
⋖								
	1	Heating and Ventilat	ing (H&V) Equipment					
	· · ·							
		Assumed ventilation a	ir transferred from the elevator	8410				
		shafts through a i	motor-operated fire/smoke damper					
		located at each g	allery isolating fire door into two					
		roadway galleries	, each exhausted through a fan,					
		control damper, s	tationary louver, and screens.					
		Assumed transfe	r air will not require heating.					
			rs must be wired for control by					
			n system and smoke control					
		system.						
	1a		ted 1300-cfm at 0.375" wgsp	8410	2	ea	\$10,000.00	\$20,000.00
		with 1/2-hp 1200-	•					
			disconnect switch and					
		wall mounted star	ter and Hand-off-auto switch.					
	1b	F&I 24"x24" Combinat	tion Fire and smoke damper with	8410	2	ea	\$2,500.00	\$5,000.00
			nd resettable and reusable links.				<i><i><i></i></i></i>	<i></i>
	1c	F&I 24"x24" Control d	amper with motor actuator	8410	2	ea	\$2,100.00	\$4,200.00
	1d	F&I 24"x24" Stationary	y steel louvers with screens.	8410	2	ea	\$2,100.00	\$4,200.00
		Conduit and wiring for	H&V in 86-68430 estimate					
							+	
							+ +	
						-	+ +	
		Sheet Subtotal =						\$33,400.00
		QL	JANTITIES			F	PRICES	
BY			CHECKED	ВΥ			CHECKED	_
P. Schlein			R. Stephen		Greg Akins			Brom
DATE PRI			PEER REVIEW	DATE PREP			PEER REVIEW	
	10/4/200	7 (udated 6/2010)	J. Grass		12/07/10		Dan Do	onaldson

FEATURE:         Shasta Lake Water Resources Investigation         Feasibility Study         Main (Concrete) Dam         Most Probable         Based Division         REGION: MP ESTIMATE LEVEL:         Wold: SHAEF PRICE LEVEL:      <	
Shasta Division         Main (Concrete) Dam       Shasta Division         Most Probable         6.5-ft Dam Raise         CODE       QUANTITY       UNIT       UNIT         Laber Colspan="2">Shasta Division         REGION: MP       ESTIMATE LEVEL:         Most Probable         CODE       QUANTITY       UNIT       UNIT         Laber Colspan="2">Shasta Division         BEGION: MP       ESTIMATE LEVEL:         CODE       QUANTITY       UNIT       UNIT         Laber Colspan="2">Shasta Division         Shasta Division         CODE       QUANTITY       UNIT       UNIT         UNIT       CODE       QUANTITY       UNIT       UNIT         2       GANTRY CRANE:       CODE       QUANTITY       UNIT       UNIT         2       GANTRY CRANE:       CODE       QUANTITY       Q	
REGION: MP ESTIMATE LEVEL         Most Probable         Bit Most Probable         CODE       QUANTITY       UNIT       UNIT         List of the second	
Most Probable         CODE         QUANTITY         UNIT         UNIT           UNIT         DESCRIPTION         CODE         QUANTITY         UNIT         UNIT           2         GANTRY CRANE:	
Most Probable         6.5-ft Dam Raise           Image: Section of the section of t	Feasibility
6.5-ft Dam Raise           by or open of the second s	Apr - 10
Provided of the second secon	
2         GANTRY CRANE:         1         LS         See 86-6i           175# ASCE rail - 3700 ft         1         LS         See 86-6i           175# ASCE rail - 3700 ft         1         LS         See 86-6i           175# ASCE rail - 3700 ft         1         LS         See 86-6i           175# ASCE rail - 3700 ft         1         LS         See 86-6i           178" x 12" anchor bolts - 2000         1         1         LS           111/4" x 6" bolts+nuts - 700         1         1         1         LS           111/4" x 6" bolts+nuts - 700         1 </td <td></td>	
2         GANTRY CRANE:         1         LS         See 86-6i           175# ASCE rail - 3700 ft         1         LS         See 86-6i           175# ASCE rail - 3700 ft         1         LS         See 86-6i           175# ASCE rail - 3700 ft         1         LS         See 86-6i           175# ASCE rail - 3700 ft         1         LS         See 86-6i           178" x 12" anchor bolts - 2000         1         1         LS           111/4" x 6" bolts+nuts - 700         1         1         1         LS           111/4" x 6" bolts+nuts - 700         1 </td <td></td>	
2         GANTRY CRANE:         1         LS         See 86-6i           175# ASCE rail - 3700 ft         1         LS         See 86-6i           175# ASCE rail - 3700 ft         1         LS         See 86-6i           175# ASCE rail - 3700 ft         1         LS         See 86-6i           175# ASCE rail - 3700 ft         1         LS         See 86-6i           178" x 12" anchor bolts - 2000         1         1         LS           111/4" x 6" bolts+nuts - 700         1         1         1         LS           111/4" x 6" bolts+nuts - 700         1 </td <td>CE AMOUNT</td>	CE AMOUNT
Image: Constraint of the state of the sta	
175# ASCE rail - 3700 ft            steel rail clips - 2000            steel bearing plates - 800            7/8" x 12" anchor bolts - 2000            1-1/4" x 6" bolts+nuts - 700            steel splice plates - 100            2b       Rerope main (125T) and aux. (25T) hooks to       8410       1       LS       \$770,00         accommodate add'l 20.5 ft height               1" dia. rope (6 x 37 fiber core xip) for main rope               Assume 320 ft of lift x 6 parts = 1,920 ft of               3/4" dia. rope (6 x 37 fiber core xip) for aux. rope	
175# ASCE rail - 3700 ft            steel rail clips - 2000            steel bearing plates - 800            7/8" x 12" anchor bolts - 2000            1-1/4" x 6" bolts+nuts - 700            steel splice plates - 100            2b       Rerope main (125T) and aux. (25T) hooks to       8410       1       LS       \$770,00         accommodate add'l 20.5 ft height               1" dia. rope (6 x 37 fiber core xip) for main rope               Assume 320 ft of lift x 6 parts = 1,920 ft of               3/4" dia. rope (6 x 37 fiber core xip) for aux. rope               Assume replace drums for both main and aux.                20       Remove and relocate gantry crane at new       8410       1       LS       \$530,00	
Image: steel rail clips - 2000Image: steel bearing plates - 800Image: steel bearing plates - 8007/8" x 12" anchor bolts - 2000Image: steel splice plates - 700Image: steel splice plates - 7001 - 1/4" x 6" bolts+nuts - 700Image: steel splice plates - 100Image: steel splice plates - 1002bRerope main (125T) and aux. (25T) hooks to84101LS2bRerope main (125T) and aux. (25T) hooks to84101LSImage: steel splice plates - 100Image: steel splice plates - 100Image: steel splice plates - 100Image: steel splice plates - 1002bRerope main (125T) and aux. (25T) hooks to84101LS\$770,00Image: steel splice s	3120 Items
Image: steel bearing plates - 800Image: steel bearing plates - 800Image: steel s	
1       7/8" x 12" anchor bolts - 2000       Image: step of the s	
1-1/4" x 6" bolts+nuts - 700Image: Construct of the second se	
steel splice plates - 100Image: constraint of the splice plates - 100Image: constraint of the splice plates - 1002bRerope main (125T) and aux. (25T) hooks to84101LS\$770,00accommodate add'l 20.5 ft heightImage: constraint of the splite plates = 6,000 ft ofImage: constraint of the splite plates = 6,000 ft ofImage: constraint of the splite plates = 6,000 ft ofAssume 375 ft of lift x 16 parts = 6,000 ft ofImage: constraint of the splite plates = 6,000 ft ofImage: constraint of the splite plates = 6,000 ft ofImage: constraint of the splite plates = 1,920 ft ofImage: constraint of the splite plates = 1,920 ft ofImage: constraint of the splite plates = 1,920 ft ofImage: constraint of the splite plate drums for both main and aux.Image: constraint of the splite plates = 16,000 lbs.Image: constraint of the splite plates = 16,000 lbs.Image: constraint of the splite plate splite plate splite plate splite plates = 16,000 lbs.Image: constraint of the splites plates = 1,000 lbs.Image: constraint of the splites = 16,000 lbs.Image: constraint of the splites = 16,000 lbs.Image: constraint of the splites = 16,000 lbs.Image: constraint of the splites plates = 1,000 lbs.Image: constraint of the splites = 16,000 lbs.Image: constraint of the splites = 16,000 lbs.Image: constraint of the splites = 16,000 lbs.Image:	
Image: Control of the systemImage: Control of the systemImage: Control of the systemImage: Control of the system2bRerope main (125T) and aux. (25T) hooks to accommodate add'I 20.5 ft height84101LS\$770,00Image: Control of the systemImage: Contro	
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Assume 375 ft of lift x 16 parts = 6,000 ft ofImage: Construction of the systemImage: Construction of the system1" dia. rope (6 x 37 fiber core xip) for main ropeImage: Construction of the systemImage: Construction of the systemAssume 320 ft of lift x 6 parts = 1,920 ft ofImage: Construction of the systemImage: Construction of the system3/4" dia. rope (6 x 37 fiber core xip) for aux. ropeImage: Construction of the systemImage: Construction of the systemAssume replace drums for both main and aux.Image: Construction of the systemImage: Construction of the systemIma	
1" dia. rope (6 x 37 fiber core xip) for main ropeImage: constant of the state of th	
Assume 320 ft of lift x 6 parts = 1,920 ft of       Image: Constraint of the second seco	
3/4" dia. rope (6 x 37 fiber core xip) for aux. ropeImage: Core core core core core core core core c	
Assume replace drums for both main and aux.       Image: constant of the second s	
Image: structural steel, coated.       Image: structural steel, coated.       Image: structural steel, coated.       Image: structural steel, coated.         Image: structural steel, coated.       Image: structural steel, coated.       Image: structural steel, coated.       Image: structural steel, coated.         Image: structural steel, coated.       Image: st	
structural steel, coated.       Image: Coated steel, coated.         Image: Coated steel,	
Image: Constraint of the second se	
	0.00 \$530,000.0
top of dam location (chane dead wit – ood kips)	4000,000.0
Sheet Subtotal =	\$1,300,000.0
QUANTITIES PRICES	φτ,ουυ,υυυ.υ
BY CHECKED BY CHECKED	
A. Ritt R. Stephen Greg Akins	
DATE PREPARED     PEER REVIEW     DATE PREPARED     PEER REVIEW	Kelly Brom
	Kelly Brom
10/4/2007 (udated 6/2010) J. Grass 12/07/10	

	RECLAMATIC	NC	ESTIMATE WOR					SHEET_11_OF _ 13_
FEATU				PROJEC	CT:			
Shasta	a Lake \	Water Resources I	nvestigation		Central Valle	ey Projec	et - CA	
Feasib	ility Stu	ıdy			Shasta Divis	sion		
Main (	Concre	ete) Dam		<b>REGION:</b>	Feasibility			
				WOID:	SHAEF	PRICE I	LEVEL:	Apr - 10
		Most F	Probable					
			6.5-ft Dam F	Raise				
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
PL	РАҮ		DESCRIPTION	CODE	QUANTIT	UNIT	UNIT PRICE	AMOONT
	3	ELEVATORS:						
	_	For both of the $(2)$ 10,	000 lbs. capacity elevators:					
	30	Pemove machinery fr	om existing machine room	8410	1	LS	\$69,000.00	\$69,000.0
	38	· · · · · · · · · · · · · · · · · · ·		0410	1		\$09,000.00	φ09,000.0
	_	and store						
	3b	Relocate machinery in	nto new machine room	8410	1	LS	\$145,000.00	\$145,000.0
	3c	F&I hoist ropes to acc	ommodate add'l 20.5' lift	8410	4,000	ft	\$35.00	\$140,000.0
		· · · · · · · · · · · · · · · · · · ·	8 ropes - 1/2" diam					. ,
	3d	F&I traveling (electric	al) cable for 20.5' lift	8410	1,500	ft	\$230.00	\$345,000.0
					,			
	Зе	F&I governor rope for	20.5' raise	8410	1,000	ft	\$35.00	\$35,000.0
		(approx) 1000 ft	x 1 rope - 1/2" diam					
	_							
	3f	F&I compensation rop		8410	4,000	ft	\$38.00	\$152,000.0
	_	(approx) 500 ft x	8 ropes - 1/2" diam					
	3a	F&I guide rail extension	ons for cars and	8410	2,000	lbs.	\$52.00	\$104,000.0
		counterweights for			,			, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
			ails per cwt - 20.5' ea					
		approx 22.5 lbs/f						
		Sheet Subtotal =	JANTITIES				PRICES	\$990,000.0
ΒV				BY		F		
<b>BY</b> A. Ritt			CHECKED R. Stephen	BY	Greg Akins		CHECKED Kelly	Brom
	EPARFD		PEER REVIEW	DATE PREP	Ū			Lioni
		7 (udated 6/2010)	J. Grass		12/07/10			onaldson

BUREAU OF		N	ESTIMATE WORK					SHEET_12_OF_13_
FEATU				PROJE	CT:			
		Water Resources I	nvestigation		Central Valle	ey Projec	et - CA	
Feasib	ility Stu	ıdy			Shasta Divis	sion		
Main (	Concre	ete) Dam		REGION	: MP	ESTIMA	TE LEVEL:	Feasibility
				WOID:	SHAEF	PRICE I	LEVEL:	Apr - 10
		Most	Probable					
			6.5-ft Dam Ra	ise				
PLANT ACCOUNT	PAY ITEM							
PLA	PAY		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
4								
	4	STOPLOGS AND G	JIDES:					
	4a	F&I Stoplog guides		8410	94,000	lbs.	\$8.20	\$770,800.0
			al carbon steel construction					
		with protective co						
		5 sets of guides	@ 18,800 lbs per set					
		F&I Stoplogs		8410	192,000	lbs.	\$6.00	\$1,152,000.0
	40		al carbon steel construction	0410	192,000	105.	φ0.00	φτ, το <b>2,000.</b> 0
		with protective co						
		4 stoplogs @ 48						
		Stoplogs to be us	sed at Shasta are presently at					
		Hungry Horse Da	am. They are 258' - 2" tall,					
		stacked height.	The new raised height of Shasta					
		Dam would requ	ire a stacked height of					
		at least 292' - 0".	Four new logs used in conjunction					
		with the stoplogs	from Hungry Horse, would extend					
		the stacked heig	ht to 293' - 0".					
		This Sheet Subtotal						\$1,922,800.0
		This Sheet Subtotal	-					\$1,922,800.0
		Sheet 1 of 4 Subtota	ll =					\$33,400.0
		Sheet 2 of 4 Subtota	1 =					\$1,300,000.0
		Sheet 3 of 4 Subtota	ll =					\$990,000.0
					Total 86-684	10 =>		\$4,246,200.0
								<i><i><i></i>, <i></i>, <i></i>, <i></i>, <i></i>, <i></i>, <i></i>, <i></i>, <i></i>, <i></i></i></i>
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		Q	JANTITIES	_		F	PRICES	
BY			CHECKED	BY	<b>.</b>		CHECKED	
Wayne De			Ryan Stephen	<b>.</b>	Greg Akins			Brom
DATE PRI		_ , _ ,		DATE PRE				
	10/4/2007	7 (udated 6/2010)	John Grass		12/07/10		Dan Do	onaldson

BUREAU OF	RECLAMATI	ON	ESTIMATE WORK	SHEET				SHEET_13_ OF _ 13_
FEATL	JRE:			PROJEC	T:			
Shasta	Lake	Water Resources In	vestigation		Central Valle	ey Project	t - CA	
Feasib			3		Shasta Divis			
		ete) Dam		<b>REGION:</b>	MP	ESTIMA <sup>-</sup>	TE LEVEL:	Feasibility
		,		WOID:	SHAEF	PRICE L		Apr - 10
		Most P	robable		0.17.21			, ibi i c
			6.5-ft Dam Rais					
Ę	Σ		0.3-11 Dani Kala					
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	1	Dam crest lighting (56	kw)	8430	110,000	SF	\$2.00	\$220,000.00
	2	Rigid metal conduit		8430				
		1"		0400	3,300	FT	\$34.00	\$112,200.00
		2"			3,100		\$56.00	\$173,600.00
	3	600 volt insulated cable copper	e, single-conductor, stranded-	8430				
		10 AWG			10,000	FT	\$0.55	\$5,500.00
		2/0 AWG			13,000		\$8.30	\$107,900.00
								· · ·
	4	Power receptacles (ga	ntry crane)	8430				
		480 volt, 3-phase,	• •	0100	18	EA	\$2,000.00	\$36,000.00
		· · · ·						. ,
	5	5 Distribution panelboard		8430				
			400 ampere bus with 400 A		3	EA	\$12,000.00	\$36,000.00
		main circuit b					<b>*</b> 0.000.00	<b>\$24 500 00</b>
		208Y/120 volt, 225 main circuit bi	ampere bus with 225 A		5	EA	\$6,900.00	\$34,500.00
			eakei	-				
		Note:					ļļ.	
		Moving elevator e estimate.	quipment included in mechanical					
			This Sheet and Total 86-68430 =>					\$725,700.00
							RICES	
вv				PY		P		
<b>BY</b> Mike Schu	h		CHECKED C. Maurer	BY	Greg Akins		CHECKED	/ Brom
DATE PRI			PEER REVIEW					
DAIEPKI				DATE PREPARED PEER REVIEW				

FEATURE:       Shasta Lake Water Resources Investigation       PROJECT:       Central Valley Projection         Right Wing (Concrete) Dam       Most Probable       REGION:       MP       ESTIMA         Summary       6.5-ft Dam Raise       CODE       QUANTITY       UNIT         Most Probable       code       QUANTITY       UNIT         Most Probable       code       QUANTITY       UNIT         Mage: Strate	ATE LEVEL:       Feasibility         LEVEL:       Apr - 10         UNIT PRICE       AMOUNT         Image: Not Included)).       Image: Not Included)         Image: Not Included)       Image: Not Included)         Image: Not Included       Image: Not Included         Image: Not Included		
Feasibility Study         Shasta Division         Right Wing (Concrete) Dam         Most Probable         Summary       6.5-ft Dam Raise         Most Probable       CODE       QUANTITY       UNIT         Most Probable <th co<="" th=""><th>ATE LEVEL:       Feasibility         LEVEL:       Apr - 10         UNIT PRICE       AMOUNT         (Not Included)).      </th></th>	<th>ATE LEVEL:       Feasibility         LEVEL:       Apr - 10         UNIT PRICE       AMOUNT         (Not Included)).      </th>	ATE LEVEL:       Feasibility         LEVEL:       Apr - 10         UNIT PRICE       AMOUNT         (Not Included)).	
Shasta Division         Right Wing (Concrete) Dam         Most Probable         Summary       6.5-ft Dam Raise         Void       Zead       Quantity       Unit         Void       Zead       Geoce       Quantity       Unit         Void       Zead       Geoce       Quantity       Unit         Void       Sead       Secreterio       Geoce       Quantity       Unit         Void       Secreterio       Descreterio       Geoce	LEVEL: Apr - 10		
Most Probable         Summary       6.5-ft Dam Raise         Logon       QUANTITY       UNIT         UNIT       CODE       QUANTITY       UNIT         UNIT       Escription       CODE       QUANTITY       UNIT         Image: Constant of the state of	LEVEL: Apr - 10		
Most Probable         Summery       6.5-ft Dam Raise         Mode       QUANTITY       UNIT         Mode       CODE       QUANTITY       UNIT         Mode       Right Wing (Concrete) Dam consists of:       CODE       QUANTITY       UNIT         Mode       Right Wing (Concrete) Dam consists of:       CODE       QUANTITY       UNIT         Mode       Right Wing (Concrete) Dam consists of:       CODE       QUANTITY       UNIT         Mode       6.5-ft mass & reinforced concrete raise of the existing concrete dum during construction dum details (dum during dum dum during concrete dum during dum dum dum during dum dum during dum dum during dum	UNIT PRICE AMOUNT  UNIT PRICE  MOUNT  (Not Included)).  (Not Included)).  (Not Included)).  (Not Included)).  (Not Included)).  (Not Included).  (Not Included)		
Summary       6.5-ft Dam Raise         best       Description       code       QUANTITY       UNIT         Image: Code       Right Wing (Concrete) Dam consists of:       Image: Code       Image	(Not Included)). (Not Included). (No		
Mage       DESCRIPTION       CODE       QUANTITY       UNIT         Right Wing (Concrete) Dam consists of:       -	(Not Included)). (Not Included). (No		
Hype       DESCRIPTION       CODE       QUANTITY       UNIT         Right Wing (Concrete) Dam consists of:	(Not Included)). (Not Included). (No		
Right Wing (Concrete) Dam consists of:       Image: concrete dam details (concrete dam details dam detai	(Not Included)). (Not Included). (No		
6.5-ft mass & reinforced concrete raise of the existing concrete dam         between blocks 70 to right abutment, including top of dam details (cofferdam during constr         Electrical and mechanical features associated with the top of dam         and the elevator towers.         Extending/drilling foundation drains         Gantry Crane and right abutment storage area         Access roads         Excavation/demolition/salvaging of existing features associated with existing right win         Sheet 1 through 4 - 86-68130 (dam raise, top of dam details, galleries, and formed drains)         Sheet 3 - 86-68140 (access roads)	ng dam \$2,315,378.0 \$615,170.0		
between blocks 70 to right abutment, including top of dam details (cofferdam during constr         Electrical and mechanical features associated with the top of dam         and the elevator towers.         Extending/drilling foundation drains         Gantry Crane and right abutment storage area         Access roads         Excavation/demolition/salvaging of existing features associated with existing right win         Excavation/demolition/salvaging of existing features associated with existing right win         Sheet 1 through 4 - 86-68130 (dam raise, top of dam details, galleries, and formed drains)         Sheet 3 - 86-68140 (access roads)	ng dam \$2,315,378.0 \$615,170.0		
Electrical and mechanical features associated with the top of dam       Image: constraint of the second of the secon	ng dam \$2,315,378.0 \$615,170.0		
and the elevator towers.	\$2,315,378.0		
Image: Section of the section of th	\$2,315,378.0		
Gantry Crane and right abutment storage area       Image: Constraint of the storage area       Image: Constraint of the storage area         Access roads       Image: Constraint of the storage area       Image: Constraint of the storage area       Image: Constraint of the storage area         Excavation/demolition/salvaging of existing features associated with existing right win       Image: Constraint of the storage area       Image: Constraint of the storage area         Image: Constraint of the storage area       Image: Constraint of the storage area       Image: Constraint of the storage area       Image: Constraint of the storage area         Image: Constraint of the storage area       Image: Constraint of the storage area       Image: Constraint of the storage area       Image: Constraint of the storage area         Image: Constraint of the storage area       Image: Constraint of the storage area       Image: Constraint of the storage area       Image: Constraint of the storage area         Image: Constraint of the storage area       Image: Constraint of the storage area       Image: Constraint of the storage area       Image: Constraint of the storage area         Image: Constraint of the storage area       Image: Constraint of the storage area       Image: Constraint of the storage area       Image: Constraint of the storage area         Image: Constraint of the storage area       Image: Constraint of the storage area       Image: Constraint of the storage area       Image: Constraint of the storage area         Image: Con	\$2,315,378.0		
Access roads       Image: Constraint of the	\$2,315,378.0		
Access roads       Image: Constraint of the	\$2,315,378.0		
Image: Section of the section of th	\$2,315,378.0		
Image: Section of the section of th	\$2,315,378.0		
Sheet 3 - 86-68140 (access roads)         Image: Contract of the second sec	\$615,170.0		
Sheet 3 - 86-68140 (access roads)         Image: Constraint of the second s	\$615,170.0		
Image: select	\$47,640.0		
Sheet 4 - 86-68430 (lighting electrical features)       Image: Sheet 4 - 86-68430 (lighting electrical features)         Image: Sheet 4 - 86-68430 (lighting electrical features)       Image: Sheet 4 - 86-68430 (lighting electrical features)         Image: Sheet 4 - 86-68430 (lighting electrical features)       Image: Sheet 4 - 86-68430 (lighting electrical features)         Image: Sheet 4 - 86-68430 (lighting electrical features)       Image: Sheet 4 - 86-68430 (lighting electrical features)         Image: Sheet 4 - 86-68430 (lighting electrical features)       Image: Sheet 4 - 86-68430 (lighting electrical features)         Image: Sheet 4 - 86-68430 (lighting electrical features)       Image: Sheet 4 - 86-68430 (lighting electrical features)         Image: Sheet 4 - 86-68430 (lighting electrical features)       Image: Sheet 4 - 86-68430 (lighting electrical features)         Image: Sheet 4 - 86-68430 (lighting electrical features)       Image: Sheet 4 - 86-68430 (lighting electrical features)         Image: Sheet 4 - 86-68430 (lighting electrical features)       Image: Sheet 4 - 86-68430 (lighting electrical features)         Image: Sheet 4 - 86-68430 (lighting electrical features)       Image: Sheet 4 - 86-68430 (lighting electrical features)         Image: Sheet 4 - 86-68430 (lighting electrical features)       Image: Sheet 4 - 86-68430 (lighting electrical features)         Image: Sheet 4 - 86-68430 (lighting electrical features)       Image: Sheet 4 - 86-68430 (lighting electrical features)         Image: Sheet 4 - 86-68430 (lighting electrical features)	\$47,640.0		
Image: selection of the			
Image: Market in the second			
Image:			
Image:			
Subtotal 1	\$2,978,188.0		
Mobilization 5% +/-	\$150,000.0		
Subtotal 1 with Mobilization	\$3,128,188.0		
Escalation to Notice to Proceed (NTP): None assumed. 0%	\$0.0		
Subtotal 2 = Subtotal 1 with Mobilization + Escalation to NTP	\$3,128,188.0		
Design Contingencies 10% +/-	\$302,992.0		
Subtotal 3 = Subtotal 2 + Design Contingencies	\$3,431,180.0		
Allowance for Procurement Strategies (APS) 2.0% +/-	\$68,820.0		
Type of solicitation assumed is: Request for Proposal			
Subtotal 4 = Subtotal 3 + APS	\$3,500,000.0		
CONTRACT COST	\$3,500,000.0		
Construction Contingencies 20% +/-	\$700,000.0		
FIELD COST	\$4,200,000.0		
Note: Escalation from published price level to notice to proceed is excluded. Estimates may include discrepancies due to re	ounding.		
Ref.: For appropriate use and terminology, see Reclamation Manual, Directives and Standards FAC; 09-01, 09-02 and 09-			
QUANTITIES	PRICES		
BY CHECKED BY	CHECKED		
See Group Sheets Greg Akins Greg Akins	Kelly Brom		
DATE PREPARED PEER REVIEW DATE PREPARED	PEER REVIEW		
See Group Sheets 12/07/10	PEER REVIEW Dan Donaldson		

BUREAU OF		ION	ESTIMATE WOI					SHEET _1_ OF _6_
FEATU	JRE:			PROJEC	CT:			
Shasta Feasib			es Investigation		Central Valle Shasta Divis		et - CA	
		Concrete) Dan	n	<b>REGION</b> :			TE LEVEL:	Feasibility
		, ,	-	WOID:	SHAEF	PRICE		Apr - 10
		Мс	st Probable					
	_		6.5-ft Dam Raise	e				
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
ACC	PA							
		EXCAVATION AND F	REMOVAL					
		1 Demolition, removal, a	and transportation of top of	86-68130	1	ls	\$100,000.00	\$100,000.00
		dam and right abutme	nt bench materials to					
		waste:						
		Local excavatio	n of foundation (removing					
		loose mate	erials) 500 c.y. assumed,					
		including a	asphalt pavement					
		6-inch sawcuts	for 2' x 2' end area at					
		upstream	face 75 lf sawcuts along u/s					
		face and c	rest, total 150 lf					
		Excavation of co	oncrete on u/s face (2' x 2'					
		end area)	75 ft long, total volume 11 yd3					
		Excavation of co	oncrete below 5-foot-					
		diameter access	s pipe:					
		75 ft long,	total volume 20 yd3					
		SURFACE PREPARA	ATION					
		Quantities are id	lentical to the most probable					
		feasibility	evel estimate for the 18.5-foot					
		dam raise						
	2	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 on rock	outing and dental concrete	86-68130	1,000	yd2	\$37.00	\$37,000.00
			SUBTOTAL THIS SHEE	r				\$140,200.00
			QUANTITIES			PR	ICES	
вү			CHECKED	BY			CHECKED	
Thomas S	cobell		R. L. Reynolds, P.E.		Greg Akins		Kelly	Brom
DATE PRI	EPARED		PEER REVIEW / DATE	DATE PREP	ARED		PEER REVIEW	
07/15/10					12/07/10		Dan Do	naldson

BUREAU OF		ON	ESTIMATE WOF					SHEET_2_OF_6
FEATU	JRE:			PROJEC	CT:			
Shasta Feasib			es Investigation		Central Valle Shasta Divis		et - CA	
		Concrete) Dan	1	REGION:	MP		TE LEVEL:	Feasibility
<b>-</b>		· · · · · · · · · · · · · · · · · · ·		WOID:	SHAEF	PRICE		Apr - 10
		Мо	st Probable					
			6.5-ft Dam Raise					
. 5	Σ							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		DRAIN HOLES						
		Quantities a	e identical to the most probable					
		feasibilit	y level estimate for the 18.5-foot					
		dam rais	se					
	4	Mobilization and	demobilization for drilling	86-68130	1	ls	\$30,000.00	\$30,000.00
		4-inch drains	6					
	5	Drilling 4-inch dra	ains on 10-ft centers from	86-68130	20	lf	\$140.00	\$2,800.00
		existing dam	crest elev. 1077.5; each hole					
		2.5 feet long	(7 holes)					
	6	Drilling 4-inch dra	ains on 10-ft centers from utility	86-68130	500	lf	\$260.00	\$130,000.00
		gallery, each	hole 50 feet long into					
		foundation (1	10 holes)					
		DAM RAISE						
	7	Mass concrete fo	r right wing dam monoliths	86-68130	1,950	yd3	\$450.00	\$877,500.00
	· · ·		n monoliths #72-73 and #75-#77.		.,	900	÷ :00:00	<i></i> , <i></i>
			s between top of existing dam					
			utment bench, elev. 1077.5, to					
		· · · · · ·	(anticipating placements of 3-					
			ical lift, 50-ft wide & 40-ft					
			ning existing Cr. Js, keys across					
			o artificial cooling). 4,000 psi at					
		365 days. In	clude 5" formed drains from El.					
			w crest El. 1084.0 (with caps).					
	8		andling cementitious materials -	86-68130	365	ton	\$150.00	\$54,750.00
		mass concre	te; 50% pozzolan, 50% cement					
		(Type II). Co	ncrete is 4000 psi at 365 days					
			SUBTOTAL THIS SHEET					\$1,095,050.00
		(	QUANTITIES			PR	ICES	
вү			CHECKED	ВҮ			CHECKED	
Thomas So	cobell		R. L. Reynolds, P.E.		Greg Akins			Brom
DATE PRE	EPARED		PEER REVIEW / DATE	DATE PREP			PEER REVIEW	
07/15/10					12/07/10		Dan Do	onaldson

BUREAU OF		NC	ESTIMATE WOR					SHEET _3_ OF _6_
FEATU	JRE:			PROJEC	CT:			
Shasta Feasib			es Investigation		Central Valle Shasta Divis		ct - CA	
		Concrete) Dan	n	REGION:	MP		TE LEVEL:	Feasibility
		,		WOID:	SHAEF	PRICE		Apr - 10
		Mc	ost Probable		0.17.21			, ib. 10
			6.5-ft Dam Raise					
⊢	5							
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		DAM RAISE (co	ntinued)					
	0	Structural concre	te for top of dam (including	86-68130	1,800	vd3	\$380.00	\$684,000.00
	9			00-00130	1,800	yuu	\$300.00	\$004,000.00
			sed gantry crane storage area,					
		· · · · · · · · · · · · · · · · · · ·	apets, and walkway between hs 72-73 and 75-77 above elev.					
	40	1080.5.		00.00400	500	1	<b>#</b> 170.00	<b>*</b> 05 0 40 00
	10	-	andling cementitious materials -	86-68130	502	ton	\$170.00	\$85,340.00
			concrete; 20% pozzolan, 80%					
			e II). Concrete is 4000 psi at					
		28 days.		00.00400				
	11		lacing reinforcing bars for the:	86-68130	40.000		<b>.</b>	
		Gallery			12,000	lbs	\$1.70	\$20,400.00
		· · · · · · · · · · · · · · · · · · ·	e steel for exposed structural		97,000	lbs	\$1.70	\$164,900.00
			e surfaces					<u> </u>
	12		nstalling 6-inch steel top of dam	86-68130	74	lf	\$200.00	\$14,800.00
			ins; standard weight pipe, 19					
		lb/ft; 1 drain	per block.					
		CONTRACTION	JOINTS					
								<b>*</b> • • • <b>=</b> • • • •
	13		nstalling 12-inch PVC	86-68130	360	lf	\$32.00	\$11,520.00
			across dam monolith contraction					
			ound utility gallery at contraction					
	· · ·	joints						
	14		demobilization for pressure	86-68130	1	ls	\$27,000.00	\$27,000.00
			ontraction joints (for monoliths					
		72-73, 75-77	<b>/</b> )					
							┥───┤	
							┥───┤	
							┥───┤	
			SUBTOTAL THIS SHEET				+ +	\$1,007,960.00
			QUANTITIES				ICES	φ1,007,300.00
BV			CHECKED	BY		FR	CHECKED	
<b>BY</b> Thomas Se	cobell		R. L. Reynolds, P.E.	זמ	Greg Akins			Brom
								DIUIII
	EPARED		PEER REVIEW / DATE	DATE PREP			PEER REVIEW	naldaan
07/15/10				, i i i i i i i i i i i i i i i i i i i	12/07/10	12/07/10 Dan E		

BUREAU OF	RECLAMATIC	DN	ESTIMATE	WORKSHEE				SHEET _4_ OF _6_	
FEATU	JRE:			PROJEC	CT:				
Shasta Feasib			ces Investigation		Central Valle Shasta Divis		et - CA		
		Concrete) Da	m	REGION:	MP		TE LEVEL:	Feasibility	
ixigin v	wing (	concrete) Da		WOID:	SHAEF	PRICE		Apr - 10	
		M	ost Probable	WOID.	SHALF	FRICE		Api - 10	
		IVI	6.5-ft Dam	Paiso					
	_		0.5-11 Dain	Naise					
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
		CONTRACTION	JOINTS (continued)						
	15	Water test and p	pressure grout system:	86-68130	1	ls	\$72,000.00	\$72,000.00	
		Furnishing a	and installing metal tubing &						
		fittings	, (1-1/2" std pipe; total 2,300 lbs)						
		Hookups to	contraction joints (assume 3 per						
		joint) -	(4 joints; total 12 hookups)						
	16	Furnishing and I	handling cement for grouting	86-68130	6	bag	\$28.00	\$168.00	
		contraction	joints (Type II, final mix 0.9:1;						
		0.7 bags/ft3	; 0.36 ft3 per joint) - (Assume 6						
		times final v	volume to cover waste)						
		Subtotal this S	heet =					\$72,168.00	
		Subtotal Sheet	1 =					\$140,200.00	
		Subtotal Sheet	2 -					\$1,095,050.00	
			<b>-</b>					ψ1,035,050.00	
		Subtotal Sheet	3 =					\$1,007,960.00	
					Total 86-681			\$2,315,378.00	
			QUANTITIES			PR	ICES		
ВҮ			CHECKED	BY			CHECKED		
Thomas So	cobell		R. L. Reynolds, P.E.		Greg Akins		Kelly	Kelly Brom	
<b>DATE PRE</b> 07/15/10	EPARED		PEER REVIEW / DATE	DATE PREP	ARED 12/07/10		PEER REVIEW Dan Do	onaldson	

	RECLAMATIC	N	ESTIMATE W					SHEET_5_ OF _6
FEATU				PROJEC				
	Lake \ ility Stu	Water Resources Ii	nvestigation		Central Valle Shasta Divis		t - CA	
Right V	Ning (	Concrete) Dam		<b>REGION:</b>	MP		TE LEVEL:	Feasibility
			WOID:	SHAEF	PRICE		Apr - 10	
		Most F	Probable					
			6.5-ft Dam Ra	iise				
PLANT ACCOUNT	PAY ITEM							
PLA	PAY		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	1	Compacted backfill ro	ad embankment	8140	17,500	yd <sup>3</sup>	\$21.00	\$367,500.00
	2	Excavation		8140	190	yd <sup>3</sup>	\$33.00	\$6,270.00
	3	Asphalt Concrete (4"	Depth)	8140	760	tons	\$190.00	\$144,400.00
	4	Aggregate Basecours	e (6" Depth)	8140	1,100	tons	\$50.00	\$55,000.00
		W-beam guardrail with		8140	840		\$50.00	\$42,000.00
		includes two meta	al beam railing terminal system				\$30.00	φ+2,000.00
		to bridge railings	am guard railing connections					
			This Sheet and Total 86-6814	0 =>				\$615,170.0
		QUA	NTITIES			Р	RICES	
Y	Nicholas	Clough, PE	CHECKED Mark Leavitt, PE	ВҮ	Greg Akins		CHECKED Kelly B	rom
ATE PRE			PEER REVIEW	DATE PREPA			PEER REVIEW	
1	10/11/2007	7 (Updated 6/2010)	Jesus G. Romero, PE		12/07/10		Dan Don	aldson

BUREAU OF	RECLAMATIO	ON	ESTIMATE WORKS	SHEET			;	HEET_6_OF_6_
		Water Resources Ir Jdy	nvestigation	PROJECT	Central Valle Shasta Divis		- CA	
		Concrete) Dam		<b>REGION:</b>	MP	ESTIMA	TE LEVEL:	Feasibility
				WOID:	SHAEF	PRICE L	EVEL:	Apr - 10
		Most F	Probable					
⊢	~		6.5-ft Dam Ra					
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	1	Parapet lighting fixture		8430	20	EA	\$825.00	\$16,500.00
	- ·	120 volt, high pre		0430	20		φ023.00	\$10,500.00
	2	Rigid metal conduit		8430	700	FT	\$36.00	\$25,200.00
		1-inch						
	3	600 volt insulated cab copper	le, single conductor, stranded-	8430	2,200	FT	\$2.70	\$5,940.00
		10 AWG						
	_							
			This Sheet and Total 86-68430 =>					\$47,640.00
		Q	UANTITIES			PRIC		
BY	MON		CHECKED	BY			CHECKED	Durant
DATE PR	M. Schul	n	C. Maurer PEER REVIEW	DATE PREPAR	Greg Akins		Kelly PEER REVIEW	Brom
		(Updated 6/2010)	G. Girgis		12/07/10		Dan Dor	naldson

BUREAU OF F	RECLAMATIO	N	ESTIMATE WORKS	HEET				SUMMARY SHEET 1 OF 1
FEATU	RE:			PROJE	CT:			
Shasta	Lake	Water Resources Ir	vestigation		Central Vall	ey Projec	t - CA	
Feasibi			C C		Shasta Divi	sion		
Left W	ing Da	m		REGION	: MP	ESTIMA	TE LEVEL:	Feasibility
				WOID:	SHAEF	PRICE I	EVEL:	Apr - 10
		Most P	Probable					
Summa	ary		6.5-ft Dam Raise	•				
т ТN	ΕM							
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
ACA	4							
		- · ·	ent) Dam consists of:			_		
			nt raise of the existing embankment d					
			cks 15 to left abutment (including tiein	-		e core wa	ll).	
			echanical features associated with exis	sting acce	SS			
			tate and county roads, rotunda)					
		Excavation/demo	olition/salvaging of existing features as	ssociated	with existing	left wing	dam	
						_		
						_		
		86-68140 Shoot (2000	ss roads, parapet, sidewalks, curb & gutt	ere rotund	a)			\$218,425.00
			ss Toads, paraper, sidewarks, curb & guit		a)			φ210,425.00
		86-68311 Sheet (evca	vation/demolition/salvaging of					\$8,127,798.00
			ting features, embankment dam & core w	all extensi	<u>)</u>	_		φ0,127,790.00
		CAIS	ting reatures, embankment dam & core w			_		
		86-68430 Sheet (top c	f left wing dam electrical features)			_		\$39,190.00
			in left wing dam electrical leatures)					φ03,130.00
		Subtotal 1						\$8,385,413.00
		Mobilization		5%	+/-			\$420,000.00
		Subtotal 1 with Mobi	lization					\$8,805,413.00
			ce to Proceed (NTP): None assumed	0%				\$0.00
			1 with Mobilization + Escalation to NT	Ъ.				\$8,805,413.00
		Design Continger	ncies	10%	+/-			\$900,868.00
			I 2 + Design Contingencies					\$9,706,281.00
		Allowance for Pro	curement Strategies (APS)	2.0%	+/-			\$193,719.00
		Type of solici	tation assumed is: Request for Proposal					
		Subtotal 4 = Subtota	I 3 + APS					\$9,900,000.00
		CONTRACT COST						\$9,900,000.00
		Construction Con	tingencies	20%	+/-			\$2,100,000.00
		FIELD COST						\$12,000,000.00
			hed price level to notice to proceed is excluded. Est	•			-	
		Ref.: For appropriate use ar	d terminology, see Reclamation Manual, Directives	and Standard	Is FAC; 09-01, 09	9-02 and 09-	03.	
		QU	IANTITIES				PRICES	
BY	<i>c</i> .		CHECKED	BY	<b>A</b>		CHECKED	
See Grou			See Group Sheets		Greg Akins			Kelly Brom
DATE PRE	PARED		PEER REVIEW	DATE PRE			PEER REVIEW	Donaldson 10/0/10
			See Group Sheets		12/07/10		Dan L	Donaldson 12/8/10

BUREAU OF R	RECLAMATI	ON ESTIMATE WORK	SHEET				SHEET_1_OF _3_
FEATU			PROJE	CT:			
		Water Resources Investigation		Central Valle		t - CA	
Feasibil	lity Stu	Jdy		Shasta Divis			
Left Wi	ing Da	im	REGION:	MP		TE LEVEL:	Feasibility
		Mast Brabable	WOID:	SHAEF	PRICE L	EVEL:	Apr - 10
Summa	anv	Most Probable 6.5-ft Dam Rais					
	-						
PLANT ACCOUNT	РАҮ ІТЕМ	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	1	Furnish and place reinforced concrete in retaining walls	8140	115	yd <sup>3</sup>	\$950.00	\$109,250.00
		(f'c = 4,000 psi @ 28 days)					
	2	Furnish and install reinforcement, (fy = 60 ksi)	8140	14,500	lbs	\$1.80	\$26,100.00
			0.1.10		<u> </u>	<b>.</b>	<b>*-------------</b>
	3	Furnishing and handling cement	8140	285	tons	\$195.00	\$55,575.00
	4	Furnish and install W-beam guardrail with 6' wood post	8140	550	lf	\$50.00	\$27,500.00
		includes two metal beam railing terminal system	0140	550		\$30.00	φ27,500.00
					-		
			This Shee	et and Total			\$218,425.00
		QUANTITIES			P	RICES	
BY		CHECKED	BY	_	_	CHECKED	
Jesus G Ro	omero	Nicholas Clough, PE		Greg Akins		Kell	y Brom
DATE PRE	PARED	PEER REVIEW	DATE PREP			PEER REVIEW	
5/14/2008		Dave K. Edwards, PE		12/07/10		Dan Donal	dson 12/8/10

	RECLAMATIC	DN	ESTIMATE WORK					SHEET_2_OF3
FEATL				PROJEC				
		Nater Resources In	nvestigation		Central Valle		- CA	
	ility Stu			REGION:	Shasta Divisi			
	eft Wing Dam Most Probable				MP		TE LEVEL:	Feasibility
			)	WOID:	SHAEF	PRICE	LEVEL:	Apr - 10
Summ	arv	WOST F	6.5-ft Dam Raise					
	-		0.5-it Dam Kaise					
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	1	Mobilization and Prep	aratory Work					See summary sheet
		Excavation/removal/	salvaging					
	2	Remove guard shack		86-68311	1	ls	250,000.00	\$250,000.00
		Removal of parapet v		86-68311	580	yd <sup>3</sup>	410.00	\$237,800.00
	-	Removal of sidewalks		86-68311	4,500	In ft	30.00	\$237,800.00
		Remove roads (aspha		86-68311	1,700	vd <sup>3</sup>	110.00	\$187,000.00
		Remove vegetation, to	,	86-68311	1,700	ls	13,000.00	\$13,000.00
		Remove topsoil and s		86-68311	114,000	ft <sup>2</sup>	0.35	\$39,900.00
		· · · · · · · · · · · · · · · · · · ·	footprint area of raised embankment)	86-68311	210,000	ft <sup>2</sup>	1.05	\$220,500.00
	0			00-00311	210,000		1.00	φ220,000.00
		Concrete Core Wall						
	-		cavation (compacted fill)	86-68311	5,300	yd <sup>3</sup>	21.00	\$111,300.00
		Corewall removal (for		86-68311	35	yd <sup>3</sup>	390.00	\$13,650.00
		Corewall rock excava		86-68311	1,000	yd <sup>3</sup>	55.00	\$55,000.00
			rertically (6' diam) - 22 If extension	86-68311	15	yd <sup>3</sup>	1,600.00	\$24,000.00
	-	· · · · · · · · · · · · · · · · · · ·	extend wall laterally & vertically)	86-68311	750	yd <sup>3</sup>	700.00	\$525,000.00
	14	Foundation treatment,	, dental concrete etc.	86-68311	7,000	ft <sup>2</sup>	2.70	\$18,900.00
	15	Reinforcement for cor	e wall (150 lb/cy)	86-68140	114,000	lb	1.80	\$205,200.00
		Left Wing Dam Fill						
	16	Embankment - clayey	gravel	86-68311	6,600	yd <sup>3</sup>	85.00	\$561,000.00
	-	Embankment - filter/tra	<b>U</b>	86-68311	1,400	yd <sup>3</sup>	105.00	\$147,000.00
	18	Embankment - rockfill		86-68311	30,000	yd <sup>3</sup>	96.00	\$2,880,000.00
	19	Embankment - Upstre	am riprap	86-68311	1,200	yd <sup>3</sup>	120.00	\$144,000.00
	20	Embankment - Downs	stream riprap	86-68311	1,650	yd <sup>3</sup>	120.00	\$198,000.00
		Embankment - topsoil	• •	86-68311	85,000	ft <sup>2</sup>	0.70	\$59,500.00
		MSE wall						
	22		cast concrete panel, etc)	86-68311	1,000	ft <sup>2</sup>	45.00	\$45,000.00
		Geogrid		86-68311	9,700	ft <sup>2</sup>	0.80	\$7,760.00
	-	Granular backfill - filte	r/transition material	86-68311	800	yd <sup>3</sup>	95.00	\$76,000.00
		Miscellaneous						
		Replace roadways - 6	" asnhalt 8" hasa	86-68311	70,000	ft <sup>2</sup>	8.00	\$560,000.00
		Replace parapet wall	asphan, o vase	86-68311	<u>70,000</u> 600	yd <sup>3</sup>	910.00	
	-	· · · ·	nument (price from MWH)	86-68311	<u> </u>	yu Is	275,000.00	\$546,000.00 \$275,000.00
		Replace sidewalks inc		86-68311	2,600	IN ft	275,000.00 92.00	\$275,000.00
<u> </u>	-	Replace sidewalks mit	<u> </u>	86-68311	2,800	In ft	56.00	\$239,200.00
<u> </u>		Reinforcement for par	<u> </u>	86-68140	120,000	lb	1.80	\$216,000.00
			or sidewalk, curb, and gutters (1.5 l/cy)	86-68140	560	lb	4.80	\$2,688.00
				This Ol		00011		A0 400
	QUANTITIES		This Sheet	and Total 86		=> PRICES	\$8,127,798.00	
BY			BY		-	CHECKED		
Leif Dixon			Roger Torres		Greg Akins			lly Brom
			PEER REVIEW	DATE PREPA			PEER REVIEW	-
	ATE PREPARED PEER REVIEW /9/2007 Becky Morfitt			DATE PREPARED PEER REVIEW 12/07/10 Dan Donaldson 12/8/10			ldoop 12/9/10	

	EAU OF RECLAMATION							
FEATU				PROJE				
Shasta Feasibi		Nater Resources Ir	ivestigation		Central Valle Shasta Divis		- CA	
Left W				REGION:	MP		E LEVEL:	Feasibility
				WOID:	SHAEF	PRICE LI		Apr - 10
		Most P	robable					•
Summa	-		6.5-ft Dam Raise	•				
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	1	Parapet lighting fixture 120 volt, 70 Watt,	es high pressure sodium	8430	18	EA	\$780.00	\$14,040.00
	2	Rigid metal conduit 1-inch		8430	600	FT	\$34.00	\$20,400.00
	3	copper	le, single conductor, stranded-	8430	1,900	FT	\$2.50	\$4,750.00
		10 AWG						
			This Sheet and Total 86-68430 =>			PR	RICES	\$39,190.00
BY			CHECKED	вү			CHECKED	
– I Mike Schuł	<u>ו</u>		C. Maurer		Greg Akins			elly Brom
DATE PREPARED PEER REVIEW		PEER REVIEW G. Girgis	Greg Akins     Kelly Brom       DATE PREPARED     PEER REVIEW       12/07/10     Dan Donaldson 12/8/1				naldson 12/8/10	

BUREAU OF	RECLAMATI	ON	ESTIMATE WORKS	HEET		SUMMARY SHEET 1 OF 1		
FEATU	JRE:			PROJE	CT:			
Shasta	Lake	Water Resources Ir	nvestigation		Central Val	ey Projec	t - CA	
Feasibi			0		Shasta Divi			
Spillwa	ay Qua	antities		<b>REGION:</b>	MP	ESTIMA	TE LEVEL:	Feasibility
		Most P	Probable	WOID:	SHAEF	PRICE I	_EVEL:	Apr-10
Summ	ary		6.5-ft Dam Raise					
⊥ <sup>⊥</sup>	Σ							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
ACP	PA							
		Sheets 1 through 3 -	86-68130					\$25,761,382.00
			20140					<b>*</b> 5 045 700 00
		Sheets 4 and 5 - 86-6	8140					\$5,945,700.00
		<b>Sheet 6</b> 96 69440				_		¢6 200 400 00
		<b>Sheet 6</b> - 86-68410						\$6,399,100.00
		<b>Sheet 7</b> - 86-68420						\$29,224,800.00
		Sheet 7 - 00-00420						\$29,224,000.00
		<b>Sheet 8</b> - 86-68430						\$51,420.00
		Sheet 0 - 00-00430						\$31, <del>4</del> 20.00
						_		
		Subtotal 1						\$67,382,402.00
		Mobilization		5%	+/-			\$3,400,000.00
		Subtotal 1 with Mobi	lization					\$70,782,402.00
		Escalation to Noti	ce to Proceed (NTP): None assumed.	0%				
		Subtotal 2 = Subtota	1 1 with Mobilization + Escalation to NT	P				\$70,782,402.00
		Design Continger		10%	+/-			\$6,660,385.00
			I 2 + Design Contingencies					\$77,442,787.00
			curement Strategies (APS)	2.0%	+/-			\$1,557,213.00
			itation assumed is: Request for Proposal					
		Subtotal 4 = Subtota	I 3 + APS					\$79,000,000.00
		CONTRACT COST						\$79,000,000.00
		Construction Con	tingencies	20%	+/-			\$16,000,000.00
		FIELD COST						\$95,000,000.00
			hed price level to notice to proceed is excluded. Esti				-	
			nd terminology, see Reclamation Manual, Directives a	and Standard	s FAC; 09-01, 0		PRICES	
DY				DV		<b>F</b>		
BY	0	Oroup Sheats	CHECKED	BY	Once Alder		CHECKED	Kally Brow
		Group Sheets	See Group Sheets		Greg Akins			Kelly Brom
DATE PRE	-FARED		PEER REVIEW See Group Sheets	DATE PREF	12/07/10		PEER REVIEW Dan Donaldson	

	RECLAMATI	ON	ESTIMATE WORK					SHEET_1_OF_8_			
FEATU					PROJECT:						
		Water Resource	es Investigation		Central Valley Project - CA Shasta Division						
Feasibi		antities		REGION:	Shasta Divis MP			Faasibility			
Spillwa	ay Qua		st Probable	WOID:	SHAEF		ATE LEVEL: LEVEL:	Feasibility			
		WO	st Frobable	WOID:	SHAEF	PRICE	LEVEL:	Apr-10			
			6.5-ft Dam Rai								
∟ <sup>⊥</sup> Z	Z			50							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	I UNIT PRICE	AMOUNT			
		Excavation/remo	oval								
	1		val, and transportation of existing	8130	1	ls	\$2,900,000.00	\$2,900,000.00			
		· · · · · · · · · · · · · · · · · · ·	ers, and chute materials:								
			f upstream reinforced concrete drum								
		<b>e</b> 11	s. [2300 yd3, 660 ft of 6" saw cuts]								
			f downstream crest between								
			023.96 and 1006.13 (NAVD29)								
			375ft of 6" saw cuts)								
			vation of existing piers								
			00ft of 6" saw cuts)								
			f downstream chute between								
			1.91 and 862.0 (NAVD29)								
		(3,400 yd3,	, 750 ft of 6" saw cuts)								
		Surface Prepara	tion:								
		Paakfill concrete	existing conduits, shafts, adits and	8130	1 0 2 0	yd3	\$155.00	\$158,100.00			
	2		gate chambers and existing piers	0130	1,020	yus	\$155.00	\$156,100.00			
	3	Furnishing and ha	andling cementations materials	8130	290	tons	\$145.00	\$42,050.00			
		[80% cement and									
	4	Mobilization and o	demobilization for drilling anchor bars and	8130	1	ls	Included in mobiliza	tion on summary shee			
		embedment for re	einforcement								
		Spillway Crest M	Iodifications:								
	5		te for spillway crest	8130	10,000	yd3	\$400.00	\$4,000,000.00			
		[4000 psi compre	essive strength]								
	6	Furnishing and ha	andling cementations materials	8130	2,804	tons	\$145.00	\$406,580.00			
		[80% cement and			,			· · · · · · · · · ·			
	7	Furnishing and pl	acing reinforcing bars	8130	140,000	lbs	\$1.80	\$252,000.00			
	8	Drilling for anchor	r bars into spillway crest	8130	4,900	lf	\$93.00	\$455,700.00			
		[1.5-inch-diamete	er hole for #9 bar, 1400 holes 3.5 feet deep]								
		Sheet Subtotal =						\$8,214,430.00			
			QUANTITIES				PRICES	ψυ,214,430.00			
вү			CHECKED	BY			CHECKED				
Thomas Sc	cobell		R. L. Reynolds, P.E.		Greg Akins			y Brom			
			PEER REVIEW / DATE	DATE PREP			PEER REVIEW	,			
			=		12/07/10			onaldson			

BUREAU OF		DN ESTIMATE WORKS					SHEET_2_OF_8_
FEATU			PROJEC				
		Water Resources Investigation		Central Valle		t - CA	
Feasib	-	-		Shasta Divis		A	
Spillwa	ay Qua	antities Most Probable	REGION:	MP		TE LEVEL:	Appraisal
		Wost Probable	WOID:	SHAEF	PRICE I	_EVEL:	Apr-10
		6.5-ft Dam Raise					
⊢Z	N						
PLANT ACCOUNT	РАҮ ІТЕМ	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Spillway Crest Piers:					
	9	Structural concrete for spillway piers	8130	9,300	vd3	\$500.00	\$4,650,000.00
		[4000 psi compressive strength]	0100	0,000	Juo	<b>\$000.00</b>	\$ 1,000,000.00
	10	Furnishing and handling cementitious materials	8130	2,615	tons	\$145.00	\$379,175.00
		[80% cement and 20% pozzolan]					
	11	Europhing and placing rainforming here	8130	1 100 000	lha	¢1.90	¢1 080 000 00
		Furnishing and placing reinforcing bars	6130	1,100,000	IDS	\$1.80	\$1,980,000.00
	12	Drilling for reinforcement in existing piers	8130	19,500	lf	\$135.00	\$2,632,500.00
		[2-inch-diameter hole for #11 bar, 1770 holes, min. 5 feet deep]		,			
		Spillway Aeration System:					
	13	Structural concrete for spillway crest	8130	2,375	vd3	\$520.00	\$1,235,000.00
		[4000 psi compressive strength]	0100	2,070	yuu	<i>\\</i> 020.00	φ1,200,000.00
	14	Furnishing and handling cementitious materials	8130	870	tons	\$145.00	\$126,150.00
		[80% cement and 20% pozzolan]					
	15	Furnishing and placing reinforcing bars	8130	145 400	lba	¢1.00	¢261 720 00
	10		8130	145,400	IDS	\$1.80	\$261,720.00
	16	Drilling for anchor bars into spillway chute	8130	2,365	lf	\$135.00	\$319,275.00
		[1.5-inch-diameter hole for #9 bar, 675 holes, 3.5 feet deep]					
		Post-Tensioned Anchors in Spillway Piers					
	17	Mobilization and demobilization for drilling for	8130	1	ls	\$160,000.00	\$160,000.00
	1/	post-tensioned anchors	0100	I	13	\$100,000.00	φ100,000.00
	18	Drilling and surveying post-tension anchor holes	8130	7,392	lf	\$260.00	\$1,921,920.00
		14 anchor units in each of the 5 internal piers					
		7 anchor units in each of the 2 end piers 84 holes, 12 inches diameter, each 88-feet in length					
	19	Furnishing and installing post-tension anchors	8130	7,392	lf	\$270.00	\$1,995,840.00
		84 anchors, 88 feet long, 56 strands					
		0.6 inch dia epoxy coated strands					
		Sheet Subtotal =					\$15,661,580.00
		QUANTITIES	<u> </u>		F	PRICES	+ , , 100
ВΥ		CHECKED	ВΥ			CHECKED	
Thomas Se	cobell	R. L. Reynolds, P.E.		Greg Akins		Kelly	Brom
DATE PRI	EPARED	PEER REVIEW / DATE	DATE PREP			PEER REVIEW	
07/21/10				12/07/10		Dan Do	naldson

		ON	ESTIMATE WORK		\ <b>T</b> .			SHEET_3_ OF8		
FEATL		Mater Date		PROJECT:						
			es Investigation		Central Val		t - CA			
Feasib	-	-			Shasta Divi					
Spillwa	ay Qua	Intities		REGION:	MP		TE LEVEL:	Appraisal		
		Mo	ost Probable	WOID:	SHAEF	PRICE I	_EVEL:	Apr-10		
<b>–</b>	_		6.5-ft Dam Rais	e						
PLANT ACCOUNT	PAY ITEM			0005						
PL/	PAY		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT		
~										
	20	Primary and seco	and any grouting	8130	7,392	lf	\$26.00	\$192,192.00		
	20			0130	7,392		φ20.00	\$192,192.00		
		64 holes, 52	00 ft3 of grout							
	01	Funciobing and b	andling compatitions materials for anout	0420	200	1000	¢200.00	¢74.000.00		
	21		andling cementitious materials for grout	8130	208	tons	\$360.00	\$74,880.00		
		U.7.1 by volume	mix = 0.85 bags/ft^3]							
		E	etelline en ele esta esta enderera	0400	0.4		<b>#10 500 00</b>	<u></u>		
	22		stalling anchor head hardware	8130	84	pckg	\$13,500.00	\$1,134,000.00		
			ludes: Steel bearing plate, anchor head							
		and wedges	s, and grout pad	_						
		<b>• • • •</b>		<b>.</b>		- <u> </u>		*****		
	23	Testing for 84 and		8130	1	ls	\$350,000.00	\$350,000.00		
			entire length - all anchors)							
			(90% of anchors)							
			g (20% of anchors)							
		- Performance	e testing (10% of anchors)							
	24		or head blockouts	8130	79	yd3	\$1,700.00	\$134,300.00		
			00 psi concrete, 22 tons cement,							
		2,840 lbs reinfor	cement]							
		Stilling Basin Mo	odifications							
	25	Excavation, rock,	for stilling basin extension	8130	0	yd3		\$0.00		
	26	Structural concre	te for stilling basin extension	8130	0	yd3		\$0.00		
		Assume 5' th	iick floor; avg 8.4' thick walls, 89' high							
		Basin width i	s 375 feet; assume new end sill							
		Basin length	increased by 55 feet for 400,000 cfs jump							
	27	Structural concre	te for higher parapet walls for basin	8130	0	yd3		\$0.00		
		Assume exis	ting parapet walls increased 3 feet							
		Total basin le	ength is 447 (including extension)							
		Prevents wa	ll overtopping for 400,000 cfs release							
	28	Furnishing and h	andling cementitious materials for basin	8130	0	tons		\$0.00		
	29	Furnishing and pl	lacing reinforcing bars for basin	8130	0	lbs		\$0.00		
		Sheet Subtotal =	•					\$1,885,372.00		
		86-68130 Total =						\$25,761,382.00		
			QUANTITIES				PRICES			
ΒΥ			CHECKED	ΒΥ			CHECKED			
Thomas Se	cobell		R. L. Reynolds, P.E.		Greg Akins		Kelly	Brom		
	EPARED		PEER REVIEW / DATE	DATE PREP			PEER REVIEW	-		
D/ E							· · · · · · · · · · · · · · · · · · ·			

BUREAU OF		ION ESTIMATE WC					SHEET_4_ OF8
FEATL			PROJEC				
		Water Resources Investigation		Central Valle		t - CA	
Feasib				Shasta Divis			
Spillw	ay Qu	antities Most Probable	REGION: WOID:	MP		TE LEVEL:	Feasibility
		MOSt Probable	WOID:	SHAEF	PRICE	_EVEL:	Apr-10
			Deine				
, F	Σ	6.5-ft Dam	Raise				
PLANT ACCOUNT	РАҮ ІТЕМ	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	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 cast-					
		in-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		10	EA	\$50,000.00	\$600,000.00
		L = 62  feet			EA	\$50,000.00	\$600,000.00
		L = 57  feet			EA	\$50,000.00	\$600,000.00
		3. Furnish and place concrete in deck, curb		900	CY	\$1,250.00	\$1,125,000.00
		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)					+ ,
		E. Eurpich and place concrete in and 8		250	CY	\$2,400.00	\$600,000.00
		5. Furnish and place concrete in end & intermediate diaphragms (f'c = 4,000 psi		250	UT	\$2,400.00	\$600,000.00
		@ 28 days)					
		6. Furnish and install reinforcement in end &		37,500	LBS	\$1.80	\$67,500.00
		intermediate diaphragms, fy = 60,000 psi					
		Sheet Subtotal =					\$5,842,500.00
		QUANTITIES				PRICES	
ВҮ		CHECKED	BY	_		CHECKED	_
	Jesus G. Romero, PE Jeff Baysinger, PE			Greg Akins		Kelly	Brom
DATE PRI		PEER REVIEW	DATE PREP				
<u> </u>	5/20/20	08 (Updaged 6/2010) Dave Edwards, PE		12/07/10		Dan Doi	าลเตรอท

BUREAU OF		ION	ESTIMATE WORK					SHEET_5_OF_8	
FEATU				PROJE					
		Water Resources I	nvestigation		Central Valle		et - CA		
Feasib					Shasta Divis				
Spillwa	ay Qu	antities		REGION:	MP	ESTIMA	TE LEVEL:	Feasibility	
		Most F	Probable	WOID:	SHAEF	PRICE I	LEVEL:	Apr-10	
			6.5-ft Dam Rai						
⊢ t	×			50					
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
		Spillway Bridge: (co	ntinue)						
		7. Remove, stoc	kpile and reinstall existing		1	LS	\$60,000.00	\$60,000.00	
		downstream	parapet railing. This should						
		include expa	nsion or epoxy anchors.						
			hor spacing is unknown)						
		(erneanig erre							
		8 Furnish and in	stall expansion joints, one at		۵۵	LF	\$540.00	\$43,200.00	
					00		φ0+0.00	ψ+0,200.00	
	each end of the bridge. The expansion joints should consist of Steelflex strip seal						+		
						+			
	_		int, with rail elements SSCM2						
			eal elements, manufactured						
		by D.S. Brow	n or equal						
			reinforcement in spillway						
		piers to supp	ort bridge superstructure						
		(included in s	separate worksheet by 8110)						
							<u> </u>		
							ļ		
		Sheet Subtotal =						\$103,200.00	
								ψ100,200.00	
		86-68140 Total =						\$5,945,700.00	
		Q	JANTITIES				PRICES		
вү			CHECKED	вү			CHECKED		
	Jesus 6	B. Romero, PE	Jeff Baysinger, PE	- •	Greg Akins			Brom	
DATE PRI		,• <b></b>	PEER REVIEW	DATE PREF	-		PEER REVIEW		
		08 (Updaged 6/2010)	Dave Edwards, PE		12/07/10			naldson	
L	5,20,20	(opaagoa 0/2010)					Dan Do		

	RECLAMATIO	ON	ESTIMATE WORK					SHEET_6_OF_8_	
FEATU	JRE:			PROJE	CT:				
Shasta	a Lake V	Nater Resources I	nvestigation		<b>Central Valle</b>	y Projec	ct - CA		
Feasib	ility Stu	ıdy	-		Shasta Division				
		Intities		<b>REGION:</b>	MP	<b>ESTIM</b>	TE LEVEL:	Feasibility	
-			Probable	WOID:	SHAEF	PRICE		Apr-10	
		mostri		WOID.	UNALI			Api-iv	
			6.5-ft Dam Ra	ise					
L L	M								
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
	2	STOPLOGS, SEATS	AND GUIDES:						
	2a	Furnish and install ne	w stoplogs for one 45'-0" wide bay	8410	257,000	lbs.	\$5.60	\$1,439,200.00	
			I carbon steel construction						
	-	with protective co							
	_	Stoplogs 45'-0" x							
	2b	Furnish and install ne	w stoplogs for one 50'-0" wide bay	8410	306,000	lbs.	\$5.60	\$1,713,600.00	
		Welded structura	I carbon steel construction						
		with protective co	pating						
		Stoplogs 50'-0" x							
	2c	Furnish and install ne	w stoplogs for one 55'-0" wide bay	8410	348,000	lbs.	\$5.60	\$1,948,800.00	
		Welded structura	I carbon steel construction						
		with protective co	pating						
		Stoplogs 55'-0" x							
	2d	Furnish and install thr	ee new stoplog lifting beams	8410	9,000	lbs.	\$6.50	\$58,500.00	
			I carbon steel construction						
		with protective co	pating						
	2e		w stoplog seats and guides for	8410	118,000	lbs.	\$10.50	\$1,239,000.00	
			d structural carbon steel						
			protective coating						
		- 489'-0" of embe	edded guides						
		- 300'-0" of embe	edded seats						
	_								
				_					
					<u> </u>				
							+		
		86-68410 Total =						\$6,399,100.00	
		QI	JANTITIES				PRICES		
BY			CHECKED	ВҮ			CHECKED		
	Ryan Ste	phen	W. Delzer		Greg Akins		Kelly	Brom	
DATE PR	EPARED		PEER REVIEW	DATE PREF	PARED		PEER REVIEW		
	4/22/200	8 (Updaged 6/2010)	D. Hulse/J. Grass		12/07/10		Dan Do	naldson	

BUREAU OF F		ON ESTIMATE WORKS					SHEET_7_OF_8_
FEATU			PROJEC				
		Water Resources Investigation		Central Valle		t - CA	
Feasibi				Shasta Divis			-
Spillwa	ay Qua	antities	REGION:	MP		TE LEVEL:	Feasibility
		Most Probable	WOID:	SHAEF	PRICE L	EVEL:	Apr-10
Ę	Σ	6.5-ft Dam Raise					
PLANT ACCOUNT	РАҮ ІТЕМ	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT UNIT PRICE	AMOUNT
	1	Remove Existing Drum Gates	8420	3,000,000	lbs	\$0.90	\$2,700,000.00
		- 3 - 110-feet x 28-feet steel drum gates					+_,,
		<ul> <li>Including building a supporting structure in the gate</li> </ul>					
		chamber to hold the gates in the raised position.					
		<ul> <li>Including disassembling and cutting the gates into</li> </ul>					
		smaller pieces to aid removal.					
		(1,000,000 lbs per gate, 3,000,000 lbs total)					
		Furnish and Install C New Olaning Fixed Wheel Oster	0.400	2 000 000		¢0.00	¢20 524 000 00
	2	Furnish and Install 6 New Sloping Fixed Wheel Gates - Furnish and install 2 new 55-feet wide by	8420	3,000,000	IDS	\$8.00	\$26,524,800.00
		48-feet high fixed wheel gates.					
		- Including fabrication, shipping, assembly and testing.					
		(495,000 lbs per gate, 990,000 lbs total)					
		(28,000 lbs per gate, 56,000 lbs total)					
		- Furnish and install 2 new 50-feet wide by					
		48-feet high fixed wheel gates.					
		<ul> <li>Including fabrication, shipping, assembly and testing.</li> </ul>					
		(450,000 lbs per gate, 900,000 lbs total)					
		(28,000 lbs per gate, 56,000 lbs total)					
		- Furnish and install 2 new 45-feet wide by					
		48-feet high fixed wheel gates.					
		- Including fabrication, shipping, assembly and testing.					
		(405,000 lbs per gate, 810,000 lbs total)					
		(28,000 lbs per gate, 56,000 lbs total)					
		- Furnish and install tracks.					
		- Including fabrication, shipping, assembly					
		and embedment in the pier walls.					
		(6,800 lbs steel per beam, 12 beams for 6 gates,					
		81,600 lbs. total)					
		(10,000 lbs stainless steel per plate, 12 plates for					
		6 gates, 120,000 lbs. total)					
		- Furnish and install stainless steel sill plates.					
		- Including fabrication, shipping, assembly					
		and embedment in the spillway crest.					
		(2 - 55-feet long plates, 900 lbs per plate, 1800 lbs total)					
		(2 - 50-feet long plates, 1,000 lbs per plate, 2,000 lbs total)					
		(2 - 45-feet long plates, 1,100 lbs per plate, 2,200 lbs total)					
		<ul> <li>Furnish and install gate hoists, motor operators, and stems</li> </ul>					
		- Including fabrication, shipping, and assembly					
		(40,000 lbs. per gate, 240,000 lbs. total)					
		86-68420 Total =					\$29,224,800.00
	1	QUANTITIES			F	PRICES	Ψ <b>-</b> 0,227,000.00
BY		CHECKED	вү			CHECKED	
	Nathan	Nakamoto Charlie Joyce		Greg Akins			Brom
		PEER REVIEW	DATE PREP			PEER REVIEW	
ATE PREPARED PEER REVIEW 4/23/2008 (Updaged 6/2010) Gary W. Rood			12/07/10			naldson	

Most Probable       WOID:       SHAFF       PRICE LEVEL:       Application $5.5th Dam Raise  <$	BUREAU OF		ION	ESTIMATE WO					SHEET_8_ OF _8	
Share Division           Share Division           Share Division           Record Probable           Most Probable           Record Probable           Base Division           Record Probable           Base Division           Record Probable           Base Division           Base Division           Record Probable           Base Division           Record Probable           Code         Odde           Code         Odde           Code         Odde           Adv (01.3-phase, NEMA size 1 starter         Geode Code           Code         Odde           Code         Odde           So mol transmangedic circuit breaker           So divertification device           So distribute device single conductor, stranded- <th>FEATU</th> <th>JRE:</th> <th></th> <th></th> <th>PROJE</th> <th>CT:</th> <th></th> <th></th> <th></th>	FEATU	JRE:			PROJE	CT:				
Share Division           Share Division           Share Division           Record Probable           Most Probable           Record Probable           Base Division           Record Probable           Base Division           Record Probable           Base Division           Base Division           Record Probable           Base Division           Record Probable           Code         Odde           Code         Odde           Code         Odde           Adv (01.3-phase, NEMA size 1 starter         Geode Code           Code         Odde           Code         Odde           So mol transmangedic circuit breaker           So divertification device           So distribute device single conductor, stranded- <th>Shasta</th> <th>a Lake</th> <th>Water Resources</th> <th>Investigation</th> <th></th> <th colspan="5"></th>	Shasta	a Lake	Water Resources	Investigation						
Spill         Value         Nost Probable         REGION:         MP         ESTMATE LEVEL:         Yea           Not         Not         Shate         Record         Shate         Record         A           Spill         Spill <td< th=""><th></th><th></th><th></th><th>5</th><th></th><th></th><th></th><th></th></td<>				5						
Most Probable         WOID:         SHAEF         PRICE LEVEL:         Application           6.5-ft Dam Raise         6.5-ft Dam Raise	Spillw	av Qu	antities		REGION:	MP	ESTIMA	TE LEVEL:	Feasibility	
6.5-ft Dam Reise       1     Combination, reversing motor starter     8430     Cocc     QUMTY     UNT     UNT PRICE     AM       480 volt, 3-phase, NEMA Size 1 starter     8430     6.EA     \$6,800.00     S       35 amp thermal-magnetic circuit breaker     1     1     1     1       MEMA type 4 enclosure     8430     300     FT     \$27,00       33 amp thermal-magnetic circuit breaker     8430     300     FT     \$27,00       1     344-inch     1     1     1     1       1     344-inch     1     1     1     1       1     344-inch     1     1     1     1       1     12 AWG     8430     1,200     FT     \$27,00       1     12 AWG     8430     1,200     FT     \$27,00       1     12 AWG     8430     1,200     FT     \$2,00       1     12 AWG     1     1     1     1       1     12 AWG     1     1     1				Probable					Apr-10	
B     B     DESCRPTION     CODE     DUMITY     UNIT     UNIT     UNIT PRICE     AM       I     Combination, reversing motor starter     8430     C     EA     \$6,800.00     S       440 Volt. 3-phase, NEMA size 1 starter     35 am phramal-magnegic circuit breaker     I     I     I     I     S     I     S			moor		WOID.	UNALI	TRICE		Aprilo	
B     B     DESCRPTION     CODE     DUMITY     UNIT     UNIT     UNIT PRICE     AM       I     Combination, reversing motor starter     8430     C     EA     \$6,800.00     S       440 Volt. 3-phase, NEMA size 1 starter     35 am phramal-magnegic circuit breaker     I     I     I     I     S     I     S				6.5-ft Dam I	Raise					
Image: Normal space in the starter     0430     0     EA     \$6,800.00     \$       480 volt. 3-phase, NEMA size 1 starter     35 amp thermal-magnetic circuit breaker     1     1     1     1       2     Rigid metal conduit     8430     300     FT     \$27.00     1       34-inch     8430     300     FT     \$27.00     1       34-inch     8430     300     FT     \$27.00     1       34-inch     8430     1,200     FT     \$27.00     1       1     12 AWG     8430     1,200     FT     \$27.00       1     12 AWG     8430     1,200     FT     \$27.00       1     12 AWG     8430     1,200     FT     \$27.00       1     12 AWG     8430     1,200     FT     \$2.10       1     12 AWG     8430     1,200     FT	TI TNU	ĒM								
480 volt, 3-phase, NEMA size 1 stanter     Image 10 mma - mage 10 circuit treaker     Image 10 mma - mage 10 circuit treaker     Image 10 mma - mage 10 mm	PLAN	PAY IT		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
480 volt, 3-phase, NEMA size 1 starter     Image 10 mmm - mage 10 circuit treaker     Image 10 mmm - mage 10 circuit treaker     Image 10 mmm - mage 10 mm			1 Combination, revers	ing motor starter	8430	6	EA	\$6.800.00	\$40,800.00	
<form>  Image: state the the the the the the the the the t</form>					0.00			<i><b>+</b>0,000.00</i>	÷ : 0,000:00	
Image: base base base base base base base base										
Image: single conduit     8430     S0     FT     S27.00       3     300 viti nsulated cable, single-conductor, stranded-     Image: single conductor, single conductor, stranded-     Image: single conductor, single c										
3/34-inch     Ind				lclosure						
3/4-inch     in     in<			2 Pigid metal conduit		8430	300	ст	\$27.00	\$8,100.00	
Image: Signet or stranded or stranded or copper     Image: Signet or stranded or strand		4			0430	300		φ∠1.00	φο, τυυ.υι	
copper       in       in<       in       in			3/4-INCN							
copper       in       in<       in       in			3 600 volt insulated ca	able, single-conductor, stranded-						
12 AWG         8430         1,200         FT         \$2.10           I										
Image:					8430	1.200	FT	\$2.10	\$2,520.00	
QUANTITIES     PRICES       BY     CHECKED     BY     CHECKED						,				
QUANTITIES     PRICES       BY     CHECKED     BY     CHECKED										
QUANTITIES     PRICES       BY     CHECKED     BY     CHECKED										
QUANTITIES     PRICES       BY     CHECKED     BY     CHECKED										
QUANTITIES     PRICES       BY     CHECKED     BY     CHECKED										
QUANTITIES     PRICES       BY     CHECKED     BY     CHECKED										
QUANTITIES     PRICES       BY     CHECKED     BY     CHECKED										
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QUANTITIES     PRICES       BY     CHECKED     BY     CHECKED										
QUANTITIES     PRICES       BY     CHECKED     BY     CHECKED										
QUANTITIES     PRICES       BY     CHECKED     BY     CHECKED		_								
QUANTITIES     PRICES       BY     CHECKED     BY     CHECKED		-						+		
QUANTITIES     PRICES       BY     CHECKED     BY     CHECKED		+								
QUANTITIES     PRICES       BY     CHECKED     BY     CHECKED										
QUANTITIES     PRICES       BY     CHECKED     BY     CHECKED		+								
QUANTITIES     PRICES       BY     CHECKED     BY     CHECKED		+	86-68430 Total =						\$51,420.00	
BY CHECKED BY CHECKED						P	RICES			
	вү				BY					
		Mike So	huh			Grea Akins			Brom	
DATE PREPARED PEER REVIEW DATE PREPARED PEER REVIEW									-	
4/14/2008 (Updaged 6/2010) George Girgis 12/07/10 Dan Donaldson			08 (Updaged 6/2010)						aldson	

BUREAU OF		TION	ESTIMATE WORKS					SUMMARY SHEET 1 OF	
FEATL				PROJE					
		Water Resources In	vestigation		Central Vall		t - CA		
Feasib					Shasta Divi				
Outlet	Work			REGION:			TE LEVEL:	Feasibility	
		Most P	robable	WOID:	SHAEF	PRICE L	EVEL:	Apr-10	
Summ	arv		6.5-ft Dam Raise						
			0.5-It Dain Raise	,					
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
		Outlet Werke consist				_			
	-	Outlet Works consist							
			blition/salvaging of existing features as	sociated v	vith the 4 lo	wer tier of	utiets		
	-		isting tube valves with outlet gates.						
			ires associated with new outlet gates						
			es associated with new outlet gates						
		86-68130 Sheet (exca	vation of gate chamber, reinforced concre	ete)				\$728,220.00	
		86-68420 Sheet (remo	oval of existing mechanical equipment,					\$16,751,820.0	
			allation of new outlet gates, gate bodies					φ10,701,020.00	
			d hydraulic equipment)						
		86-68430 Sheet (elect	rical equipment for new outlet gates)					\$33,760.00	
		Subtotal						\$17,513,800.00	
		Mobilization					5%	\$880,000.00	
		Subtotal w/ Mobilizat	ion					\$18,393,800.0	
		Design Contingen	cies				10%	\$2,171,833.00	
		Allowance for Pro					2%	\$434,367.00	
		CONTRACT COST	n assumed is: Request for Proposal					\$21,000,000.00	
		Construction Cont	tingencies				20%	\$4,000,000.00	
		FIELD COST						\$25,000,000.00	
		Note: Escalation from put	blished price level to notice to proceed is exclu	ded. Estimat	es mav includ	e discrepan	Licies due to rounding		
			and terminology, see Reclamation Manual, Di		-				
			IANTITIES				PRICES		
BY			CHECKED	ВҮ			CHECKED		
			CHECKED See Group Sheets	<b>ВҮ</b> Jeff Morris				Ily Brom	
DATE PR			PEER REVIEW	DATE PREP			PEER REVIEW		
			See Group Sheets	8/27/2010				EW Dan Donaldson	

BUREAU OF	RECLAMATIO	ON	ESTIMATE WORI					SHEET_1_OF _3
FEATU				PROJE				
		Water Resources In	nvestigation		Central Valle		ct - CA	
Feasib				DEGION	Shasta Divis			
Outlet	WORKS		Probable	REGION:			TE LEVEL:	Feasibility
		WOSt F	TODADIE	WOID:	SHAEF	PRICE	LEVEL:	Apr-10
			6.5-ft Dam Ra	aise				
TI TINU	EM							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Concrete Excavatior	:					
	1	Concrete excavation f	or jet flow gate shrouds (4 each)	8130	293	CY	\$1,250.00	\$366,250.00
	2	Concrete excavation a air vent pipes (4 each	around the 36-inch-diameter	8130	52	CY	\$1,300.00	\$67,600.00
		Backfill Concrete:						
	3	Backfill concrete arou [4000 psi compressiv	nd the gate shrouds (4 each) /e strength]	8130	284	CY	\$800.00	\$227,200.00
	4		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 supports (8 each)	r the gate and shroud	8130	21	СҮ	\$2,400.00	\$50,400.00
		[4000 psi compressiv	ve strength]					
	6	Furnishing and handli	ng cementitious materials	8130	6	Tons	\$195.00	\$1,170.00
			% pozzolan 6 sacks/cy]					
					This Sheet a			\$728,220.00
		QL	JANTITIES			P	RICES	
BY			CHECKED	BY			CHECKED	
J. Schne			M. R. Steers	Jeff Morris				y Brom
DATE PRI 11/07/07				<b>DATE PREF</b> 8/27/2010			PEER REVIEW	onaldson
11/07/07			T. Hepler	0/27/2010			Dan D	UndiusUII

								SHEET_2_OF _3
				PROJE	CT:			
	Lake \	Nater Resources Ir	nvestigation		<b>Central Valle</b>	ey Project	- CA	
Feasibili	ity Stu	ldy	-		Shasta Divis	ion		
Outlet V		•		<b>REGION:</b>	MP	<b>ESTIMA</b> <sup>-</sup>	TE LEVEL:	Feasibility
			Probable	WOID:	SHAEF	PRICE L		Apr-10
				WOID.	ONALI			Aprilo
			6.5-ft Dam Raise					
	ĒM							
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	1	Remove outlet works	tube valves @ El. 742.0	8420	576,000	lbs.	\$0.85	\$489,600.00
			remove the 4 existing 102-inch					,
		diameter tube val						
		(144,000 lbs. per						
		(111,000 100. por						
	2	Furnish and install nev	v outlet works gates @ El. 742.0	8420	375,400	lhe	\$39.00	\$14,640,600.00
	2		Il 4 new 96-inch diameter	0420	373,400	103.	φ39.00	\$14,040,000.00
			te: Estimate based on combined steel and	199				
			cturer's budgetary quote).	100				
		-	rication, shipping, assembly					
		and testing.						
			embly and reassembly of the					
		¥	equired for installation					
		· · · · ·	t-flow gate, combined steel and SS, 312,0	00 lbs tota	1)			
			ll 1 new hydraulic power unit					
		for jet flow-gates						
		(1,000 lbs.)						
		<ul> <li>Furnish and insta</li> </ul>	ll 4 new air shrouds - Stainless Steel					
		<ul> <li>Including fab</li> </ul>	rication and shipping					
		- Approximate	dimensions					
		- Length:	18-feet					
		- Diamete	r: 10-feet					
		- Wall Thi	ckness: 9/16-inch					
		- Some disass	embly and reassembly of the					
			e required for installation					
			ation on the downstream end					
			namber will be required					
		v	r shroud, stainless steel, 62,400 lbs total)					
		(10,000 100 por el						
	3		aster gate guide extensions - steel Il new guide extensions on	8420	178,200	lbs.	\$9.10	\$1,621,620.00
			ace of the dam for the outlet					
							+	
			x 11.05-feet coaster gate.				+	
			oximately 30-feet of new guides				+	
		•	am face of the dam for each				<u> </u>	
<b>└───</b> ┤		set of existing					<u> </u>	
<b>└───</b> ┤			of steel guides for 18 sets of				<u> </u>	
		existing guides)						
					This Sheet a			\$16,751,820.00
		QL	JANTITIES			F	PRICES	
BY			CHECKED	BY			CHECKED	
N. Nakamot	to		С. Јоусе	Jeff Morris			Kelly	/ Brom
				DATE PREF	PARED		PEER REVIEW	
DATE PREF	TE PREPARED     PEER REVIEW       0/15/07     D. Read		DATE PREPARED     PEER REVIEW       8/27/2010     Dan Donaldson					

BUREAU OF	RECLAMAT	ON	ESTIMATE WOR					SHEET_3_OF _3
FEATU	JRE:			PROJE	CT:			
Shasta	Lake	Water Resources Ir	vestigation					
Feasib			5		Central Valle Shasta Divis			
Outlet	-	-		REGION	: MP	ESTIMA <sup>-</sup>	TE LEVEL:	Feasibility
			Probable	WOID:	SHAEF	PRICE L		Apr-10
					0			, p. 10
		-	6.5-ft Dam R	aise				
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
ACC	PAY		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Combination reversion	a motor starter	8430	4	EA	\$7,000.00	\$28,000.00
		Combination, reversin		0430	4	EA	\$7,000.00	φ20,000.00
			, NEMA size 1 starter					
			nagnetic circuit breaker					
		NEMA type 12 en	closure					
		Rigid metal conduit		8430				
		3/4-inch			160	FT	\$26.00	\$4,160.00
	3		le, single-conductor, stranded-	8430	800	FT	\$2.00	\$1,600.00
		copper						
		12 AWG						
	+							
					This Sheet a	nd <u>86</u> -684	430 Total =	\$33,760.00
		QL	JANTITIES			P	RICES	
ВΥ			CHECKED	BY			CHECKED	
M. Schu	h		C. Maurer	Jeff Morris			Kelly	y Brom
DATE PR	EPARED		PEER REVIEW	DATE PRE			PEER REVIEW	
10/4/07			G. Girgis	8/27/2010			Dan Do	onaldson

UREAU OF R		N	ESTIMATE WOR					SHEET_1_OF_
FEATU				PROJECT				
			es Investigation		Central Va		t - CA	
Feasibi			e (TCD) Modification		Shasta Div			
rempe	alure	e Control Devic		WOID:	MP			Feasibility
		Мо	ost Probable	REGION:	SHAEF		ICE LEVEL:	Apr-10
Summ	arv	IVIC	6.5-ft Dam Rais	٩				
	-							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		86-68120 Sheet (	(excavation/demolition/salvaging, TCD extension)					\$10,952,732.20
		86-68430 Sheet (	(electrical features associated with TCD)					\$147,000.00
		86-68410 Sheet (	(mechanical features associated with TCD)					\$6,967,500.00
		Subtotal 1						\$18,067,232.2
		Mobilization Subtotal 1 with I	Mahilization	5%	+/-			\$900,000.0
			Notice to Proceed (NTP): None assumed.	0%				<b>\$18,967,232.2</b> \$0.0
			ototal 1 with Mobilization + Escalation to NTP	0 /0				\$18,967,232.2
		Design Cont		10%	+/-			\$1,615,488.8
			ototal 2 + Design Contingencies	1070	• 7			\$20,582,721.0
			or Procurement Strategies (APS)	2.0%	+/-			\$417,279.0
			solicitation assumed is: Request for Proposal					
		Subtotal 4 = Sub	· · · ·					\$21,000,000.00
		CONTRACT CO						\$21,000,000.0
		-	Contingencies	20%	+/-			\$5,000,000.00
		FIELD COST						\$26,000,000.0
			published price level to notice to proceed is excluded. Estimate		-		j.	
		Ret.: For appropriate	use and terminology, see Reclamation Manual, Directives and S QUANTITIES	atandards ⊢AC; (	J9-01, 09-02 a		RICES	
BY				DV.		PI	CHECKED	
				BY	Grog Alling			elly Brom
See Group			See Group Sheets PEER REVIEW / DATE		Greg Akins			elly Brom
	PARED		FEER REVIEW / DATE	DATE PREP	AKED		PEER REVIEW / D	DATE

BUREAU OF R		ON	ESTIMATE WORKSH					SHEET_1_OF _9
FEATU				PROJECT				
Shasta Feasibil		Water Resources Inve	estigation		Central Valle Shasta Divis		t - CA	
		Control Device (TCI	D) Modification	REGION:	MP	ESTIMAT	E LEVEL:	Feasibility
i empe	latare			WOID:	SHAEF	PRICE LE		Apr-10
		Most Probab	le		••••			
			6.5-ft Dam Raise					
T TN	ITEM							
PLANT ACCOUNT	PAY IT	DES	SCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		STRUCTURAL NOTES:						
		1. All new miscellaneous meta	alwork galvanized					
		2. All new steel shapes and pl						
		3. Assumed all items installed						
		4. For TCD Modifications, see						
	1	Remove Existing Hoist	Platform Steel:		759,700	LBS	\$0.60	\$455,820.00
		(Dwgs. 214-D-22190 thru	u -22196 & -22517 thru -22530)					
		Rolled steel W-shape	es (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	Dianaga/Salvaga aviatin	a Hoist Plotform Stool		20.200	LBS	\$0.07	\$1,414.0
	2	Dispose/Salvage existin	n support steel, Dwg. 214-D-22196)		20,200	LDO	<b>Φ</b> 0.07	
		Rolled steel W-shape		86-68120	19,900	LBS	Included above	
		· · · · ·	and L-shapes (ASTM A 36)	86-68120	300	LBS	Included above	
				00 00 120		220		
	3	Remove Existing Hoist I	Platform Miscellaneous Metalwork:		162,660	LBS	\$0.60	\$97,596.00
		(Dwgs. 214-D-22135, -22	2384, -22386, -22389, & -22511)					
		Rolled C- and L-shap	bes (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	6" @ 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	I. Pipe (ASTM A 53)	86-68120	8,825	LBS	Included above	
		Ladders 1-1/4" Std. F	Pipe (ASTM A 53)	86-68120	110	LBS	Included above	
		Steel plate (3/16" to 3	3/4") (ASTM A 36)	86-68120	700	LBS	Included above	
					40.570	1.50	<b>0.10</b>	<u> </u>
	4		ng Hoist Platform Miscellaneous Meta	IWORK:	12,570	LBS	\$0.10	\$1,257.0
		Rolled C- and L-shap	2384, -22386, -22389, & -22511)	86-68120	1,300	LBS	Included above	
		· · · · ·	2 1-3/16" ctrs, Wt/SF = 15.50)	86-68120	585		Included above	
			6" @ 1-/16" ctrs, Wt/SF = 9.75)	86-68120	50	SF	Included above	
		Stair Treads (1-1/4" >		86-68120	340	LBS	Included above	
		Guardrails 1-1/2" Std	— ·	86-68120	1,120	LBS	Included above	
		Ladders 1-1/4" Std. F		86-68120	110	LBS	Included above	
		Steel plate (3/16" to 3	· · · ·	86-68120	140	LBS	Included above	
	5	Remove and Dispose Cl	hain Link Fence:	86-68120	1	LS	\$520.00	\$520.0
		(Dwgs. 214-D-22135 & 4	,					
		7+1-ft fence (w/3 strand a	& 4-point barbed wire) 40 LF					
			Sheet Subtotal =					\$556,607.0
		QUA	NTITIES		I	F	PRICES	¥000,007.00
вү			ECKED	BY CHECKED				
	Rodney	••••	d VanOtterloo	Greg Akins Kelly Brom			rom	
DATE PRE			ER REVIEW	DATE PREPAR	-		PEER REVIEW / DATE	
			ed Bernstein, P.E.	12/07/10 Dan Donaldson		aldson		

BUREAU OF		ION	ESTIMATE WORKSH					SHEET_2_ OF _9
FEATU				PROJECT				
Shasta Feasib		Water Resources Ir	nvestigation		Central Valle Shasta Divis		t - CA	
		e Control Device (1	CD) Modification	REGION:	MP		E LEVEL:	Feasibility
		(		WOID:	SHAEF	PRICE LE		Apr-10
		Most Prob	able					
			6.5-ft Dam Raise			_		
UNT	ITEM							
PLANT ACCOUNT	PAY I		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
∢	ш		in the d					
		STRUCTURAL (Cont	inded)					
	f	B Remove Existing Tra	shrack Gate Guides (Side SS1):		24,410	LBS	\$0.60	\$14,646.00
		(Dwgs. 214-D-22150	· · ·				<b></b>	<i>,</i>
			napes (ASTM A 36)	86-68120	6,900	LBS	Included above	
			napes (ASTM A 572/50)	86-68120	17,510	LBS	Included above	
					,			
	7	7 Dispose/Salvage Exi	sting Trashrack Gate Guides:		24,410	LBS	\$0.07	\$1,708.70
		(Dwgs. 214-D-22150						
		Rolled steel W-sh	napes (ASTM A 36)	86-68120	6,900	LBS	Included above	
		Rolled steel W-sh	napes (ASTM A 572/50)	86-68120	17,510	LBS	Included above	
	8	B Furnish and Erect ne	ew Rigid Frame Steel:		436,385	LBS	\$5.60	\$2,443,756.00
		Rolled steel shap	es (ASTM A992)	86-68120	263,535	LB	Included above	
		Steel plate (3/4" to	o 2") (A572 Gr 50)	86-68120	172,850	LB	Included above	
	<u></u>	Modify existing Rigid		86-68120	1	LS	\$1,310,000.00	\$1,310,000.00
	_	· · · · · · · · · · · · · · · · · · ·	e 5/16" fillet) 1985 LF					
			(used 3/4") (ASTM A 36) 53,600 Lbs					
			(used 3/4") (ASTM A 572) 2,790 Lbs					
	_	· · · · · ·	surfaces: 27,890 Sq. Ft					
		Re-coat flange su	ırfaces: 27,890 Sq. Ft					
	10	Reinstall existing Ho	ist Platform Steel		739,500	LBS	\$1.40	\$1,035,300.00
			napes (ASTM A 36)	86-68120	240,725	LBS	Included above	\$1,035,300.00
			IC- and L-shapes (ASTM A36)	86-68120	67,950	LBS	Included above	
			to 3/4") (ASTM A36) (Plate Girders)	86-68120	430,825	LBS	Included above	
	-			00 00 120	100,020	200		
	1'	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	· · · · · · · · · · · · · · · · · · ·
			o 2") (ASTM A36) (Mod Plate Girders)	86-68120	8,000	LBS	Included above	
		· · · · · ·	o 2") (ASTM A36) (LL Plate Girders)	86-68120	38,730	LBS	Included above	
	12	2 Reinstall existing Mi	scellaneous Metalwork:		150,090	LBS	\$1.05	\$157,594.50
		Rolled steel C- ar	nd L-shapes (ASTM A 36)	86-68120	700	LBS	Included above	
		Grating (2" x 3/16	" @ 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	
		Steel plate (3/16"	to 3/4") (ASTM A 36)	86-68120	560	LBS	Included above	
	13	-	ess Doors (Dam Crest-to-TCD)					<b>.</b>
		(2 Doors, Each Open	ing 3'-6" x 7'-0", Assumed 20 psf)	86-68120	1,000	LBS	\$14.50	\$14,500.00
			Sheet Subtotal =					\$5,322,535.20
	QUANTITIES					F	RICES	Ψ <b>0,0</b> 22,000.20
BY				BY CHECKED				
	Rodnev	Barthel	Brad VanOtterloo	BY CHECKED Greg Akins Kelly Brom			rom	
DATE PR	ATE PREPARED PEER REVIEW			DATE PREPARED PEER REVIEW / DATE				
6/4/2010 Alfred Bernstein, P.E.				12/07/10		Dan Dona	ldoon	

BUREAU OF	RECLAMATI	■ ESTIMATE WORKS	HEET				SHEET_3_ OF _9
FEATU	JRE:		PROJECT	:			
Shasta	Lake	Water Resources Investigation		Central Valle	ey Projec	t - CA	
Feasib	ility Stu	udy		Shasta Divis	ion		
Tempe	erature	Control Device (TCD) Modification	REGION:	MP	ESTIMAT	E LEVEL:	Feasibility
			WOID:	SHAEF	PRICE LE	VEL:	Apr-10
		Most Probable					
		6.5-ft Dam Raise	е				
	ITEM						
PLANT ACCOUNT	PAY IT	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		STRUCTURAL (Continued)					
	14	F&I new Miscellaneous Metalwork:		30,950	LBS	\$6.60	\$204,270.00
		Grating (2" x 3/16" @ 1-3/16" ctrs, Wt/SF = 15.50)	86-68120	1,075	SF	Included above	φ204,270.0
		Grating $(2 \times 3/16^{\circ} \oplus 13/16^{\circ} \oplus 13/16^{\circ} \oplus 13/16^{\circ})$ Grating $(1-1/4^{\circ} \times 3/16^{\circ} \oplus 1-1/16^{\circ} \text{ ctrs}, \text{ Wt/SF} = 9.75)$	86-68120	200	SF	Included above	
		Guardrail (1-1/2-inch Std. pipe, ASTM A53)	86-68120	3,400	LBS	Included above	
		Ladders (1-1/2" Std. pipe, ASTM A53)	86-68120	1,455	LBS	Included above	
		Rolled steel C- and L-shapes (ASTM A 36)	86-68120	6,155	LBS	Included above	
		Steel plate (3/16" to 3/4") (ASTM A 36)	86-68120	1,325	LBS	Included above	
		Steel plate (5/16/10/3/4/) (ASTIMA 36)	00-00120	1,525	LDO		
	15	F&I new steel Cladding Panels (Side SS1 & SS5):	86-68120	1	LS	\$660,000.00	\$660,000.0
		(Dwgs. 214-D-22317, -22320 & -22379)					
		Steel shapes & plates 109,600 Lbs (assumed 37 psf)					
	16	F&I to Extend Side Cladding/Gate Guides (SS1 & SS5):	86-68120	1	LS	\$300,000.00	\$300,000.0
		(Dwgs. 214-D-22150, -22154, -22158, & -22162)					
		Steel plates (1/2" to 1" Pl. A572 Gr 50 guides) 4,240 Lbs					
		Stainless steel wear strips (1/4" x 3", A304) 50 LF					
		Structural W-Shapes (ASTM A992 Gr 50) 32,250 Lbs					
	17	F&I to Extend Front Gate Guides (Plate Girders):	86-68120	1	LS	\$2,300,000.00	\$2,300,000.0
		(Dwgs. 214-D-22411, -22197 thru -22201)				+=,000,000000	+_,,
		Steel plates (1/2" to 1-3/8" Pl. A36) 249,275 Lbs					
		Stainless steel wear strips (1/4" x 3", A304) 1,920 LF					
		Stainless steel wear strips (1/4" x 6", A304) 1,920 LF					
	10	Extend new Parapet to Conceal Hoist Equipment	86-68120	1	LS	\$175,000.00	\$175,000.0
	10	(Art wall - Concrete formed artistic features)	80-08120	I		\$175,000.00	φ175,000.0
		(Extend from EL. 1102.0 to El. 1107.8 for ~ 294 feet @ TCD's)					
		(Assumed f'c = $4,000$ psi reinforced concrete)					
		Concrete: 89 CY					
		Reinforcement: 13,350 Lbs (based on 150 Lbs/CY)					
		Cement: 25 Tons (based on 0.282 Tons/CY)					
	19	F&I Frame and Waterproof Cover in New Parapet	86-68120	1	LS	\$2,000.00	\$2,000.0
		(Access to LL Parallel Shaft Speed Reducer)					
		(Required for O&M Activity, Assumed 2' x 2' opening)					
		Rolled steel L-shapes (ASTM A 36) 60 Lbs					
		Steel plate (3/16) (ASTM A 36) 40 Lbs					
			=		-		\$3,641,270.0
DY		QUANTITIES	DV		ŀ	PRICES	
BY	<b>.</b> .	CHECKED	BY	0		CHECKED	
Rodney Barthel Brad VanOtterloo			Greg Akins Kelly Brom			rom	
DATE PR		PEER REVIEW	DATE PREPAR			PEER REVIEW / DATE	
6/4/2010 Alfred Bernstein, P.E. 12/07/10 Dan Donaldson				aldson			

BUREAU OF R		DN	ESTIMATE WORKS					SHEET_4_ OF _9
FEATU	RE:			PROJECT	Г:			
Shasta Feasibil		Nater Resources Ir Idv	vestigation		Central Valle Shasta Divis		t - CA	
		<b>Control Device (T</b>	CD) Modification	REGION:	MP	ESTIMAT	E LEVEL:	Feasibility
			-	WOID:	SHAEF	PRICE LE	VEL:	Apr-10
		Most Prob	able					-
			6.5-ft Dam Rais	e				
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		STRUCTURAL (Conti	inued)					
		E81 Permanent New I	Rigid Frame Dam Connections (Corbe	<b>.</b>				
				).				
		1	5, at new RF main box girders) ke No. 1, at new RF main box girder)					
	20	Furnish and Place Rei	nforced Concrete					
		(Place behind forms	attached to face of dam)					
		``	e x 1.5-ft deep/1 per Rigid Frame)					
			ed f'c = 4,000 psi concrete)	86-68120	3	CY	\$11,000.00	\$33,000.0
			ased on 150 Lbs/DC & fy = 60 ksi)	86-68120	1,100	LBS	\$4.20	\$4,620.00
			n 0.282 Tons/CY ~ 6 sack mix)	86-68120	1	TON	\$140.00	\$140.0
			÷					
	21	F&I Rigid Frame Dam	Connection Steel:		7,680	LBS	\$10.50	\$80,640.0
		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)					
		Rolled steel L-sha	apes (ASTM A 36)	86-68120	200	LBS	Included above	
	22	Drill 2.5-inch dia holes	for 1-3/8 inch concrete anchor bolts,	86-68120	168	LF	\$165.00	\$27,720.00
	23	F&I 1-3/8-inch dia. Wil	liams Hollowcore	86-68120	28	EA	\$1,500.00	\$42,000.00
		(Epoxy coated R1	H anchors w/6.0 foot embed)					
		F&I Hollow Core Anc	hor Below Existing DC2 & DC14 Conn	ections:				
	24	Drill 3.5-inch dia. holes	s for 2-inch concrete anchor bolts,	86-68120	36	LF	\$230.00	\$8,280.0
	25	F&I 2-inch dia. William		86-68120	6	EA	¢0,700,00	¢16 200 0
	25		H anchors w/6.0 foot embed)	00-00120	0		\$2,700.00	\$16,200.00
	26	(Dwgs. 214-D-22379)	e/Cladding Panels (SS5):					
		· · · · · · · · · · · · · · · · · · ·	plates (assume 20 psf, ASTM A 36)	86-68120	725	LBS	\$9.00	\$6,525.00
		Rolled steel L-sha		86-68120	385	LBS	\$9.00	\$3,465.00
			hors (min 6" emb, 1" dia. anchors)	86-68120	6	LF	Included below in a	
			chors (Assumed 1" dia.)	86-68120	12	EA	\$250.00	\$3,000.0
			Sheet Subtotal	=				\$225,590.0
		QL	JANTITIES			F	PRICES	+,00010
вү			CHECKED	ВҮ			CHECKED	
	Rodney	Barthel	Brad VanOtterloo		Greg Akins		Kelly	Brom
DATE PRE	PARED		PEER REVIEW	DATE PREPARED PEER REVIEW / DATE				
	6/4/2010		Alfred Bernstein, P.E.	12/07/10 Dan Donaldson		onaldson		

BUREAU OF	RECLAMATIO	ESTIMATE WORKSH	IEET				SHEET_5_ OF _9
FEATU	JRE:		PROJECT				
		Water Resources Investigation		Central Valle		et - CA	
Feasib				Shasta Divis	ion		
Tempe	erature	Control Device (TCD) Modification	REGION:	MP	ESTIMAT	E LEVEL:	Feasibility
			WOID:	SHAEF	PRICE LE	VEL:	Apr-10
		Most Probable					
		6.5-ft Dam Raise	;				
	M						
PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
AC	<u> </u>						
		STRUCTURAL (Continued)					
		F&I Debris Boom:	86-68120				
			00-00120				
	27	Extend existing Trolley Rails on Dam Face:					
		W-Shape structural steel (ASTM A 992 Gr 50) (Coated)	86-68120	2,800	LBS	\$7.50	\$21,000.00
	28	Retrofit existing Trolleys for Floatation:					
		L-Shape structural steel (ASTM A 36) (Coated)	86-68120	200	LBS	\$20.00	\$4,000.00
		2436B Utility Float w/ 400# buoyancy	86-68120	4	EA	\$2,000.00	\$8,000.00
		(Rolyan Buoys and Floats, 800-558-8633)					
	20	Dup continuous Wire Dans between Ancher Dupys and Trellove					
	29	Run continuous Wire Rope between Anchor Buoys and Trolleys to take Main Anchor Tension					
		1-1/2 inch diameter 6x37 galv, extra improved plow	86-68120	1,600	LF	\$45.00	\$72,000.00
		steel, IWRC (Type I, Class 3)	00-00120	1,000		φ+3.00	\$72,000.00
	30	Extend Mooring and Marker Lines to Anchors 1, 2, and 3					
		1-inch dia. 6x37 galv, extra improved plow steel, IWRC	86-68120	150	LF	\$47.00	\$7,050.00
		1-1/2 inch dia 6x37 galv, extra improved plow					
		steel, IWRC (Type 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 boomstick= 1.5 CY (incl. cement and WWF) Polystyrene foam per boom stick= 45 CF					
		1-inch chain, Type 1, Class 4, zinc-coated = 3 ft/stick					
	32	F&I Anchor Mooring Buoys	86-68120	3	EA	\$5,500.00	\$16,500.00
		Type MB-Mooring buoy manufactured by Seaward Int'l					
		w/ 10,000 lbs buoyancy (540-667-5191)					
	33	F&I Anchor Marker Buoys	86-68120	3	EA	\$4,400.00	\$13,200.00
		Type MB-Mooring buoy manufactured by Seaward Int'l					
		w/ 2,500 lbs buoyancy (540-667-5191)				+ +	
	34	F&I Gate through Debris Boom				+	
		HSS hollow shapes ASTM A500, Gr B (galvanized)	86-68120	1,200	LBS	\$5.90	\$7,080.00
		2436C Utility Float w/ 400# buoyancy	86-68120	2	EA	\$2,200.00	\$4,400.00
		(Rolyan Buoys and Floats, 800-558-8633)					
	<b>_</b>					ļ	
		Sheet Subtotal =	-				\$466,730.00
		QUANTITIES			F	PRICES	
BY	<b>_</b> .	CHECKED	ВҮ	<b>_</b>		CHECKED	
D. / ·	Rodney		Greg Akins		Kelly Brom		
DATE PR		PEER REVIEW	DATE PREPAR			PEER REVIEW / DATE	aldson
	6/4/2010	Alfred Bernstein, P.E.	12/07/10 Dan Donaldson				aiu5011

BUREAU OF	RECLAMATI	ON	ESTIMATE WORKS	HEET				SHEET_6_ OF9
FEATU	JRE:			PROJECT	Г:			
Shasta	Lake	Water Resources I	nvestigation		Central Valle	ey Projec	ct - CA	
Feasib					Shasta Divis	sion		
Tempe	erature	Control Device (	<b>FCD) Modification</b>	REGION:	MP	ESTIMAT	E LEVEL:	Feasibility
				WOID:	SHAEF	PRICE LE	VEL:	Apr-10
		Most Prob						
			6.5-ft Dam Rais	e				
PLANT ACCOUNT	μ							
PLAN	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
AC	۵.							
		STRUCTURAL (Cont	linued)					
	25	Furnich Morine Tree	h Cleimmar avatam ta ramava dahria	86-68120	1	LS	\$740,000.00	\$740,000.00
			h Skimmer system to remove debris ransfer to land based dump trucks:	00-00120	1	L3	\$740,000.00	\$740,000.00
			Series System including:	_				
			Model MS16-12000B					
			r Model #C-800 or #AC-800					
		Tilt-Deck Trailer						
		Power Pack Mo						
		Manufactured by	United Marine International					
		Ph: 800-243-140						
		Web: www.trashs	skimmer.com					
				_				
				_				
				_				
				_				
		This Sheet Subtotal	=					\$740,000.00
		Sheet 1 of 6 Subtota	l =					\$556,607.00
		Sheet 2 of 6 Subtota	l =					\$5,322,535.20
		Sheet 3 of 6 Subtota	l =					\$3,641,270.00
		Sheet 4 of 6 Subtota	l =					\$225,590.00
		Sheet 5 of 6 Subtota	l =					\$466,730.00
	<b></b>			_				
					Total 86-681	20 =>		\$10,952,732.20
				_				
						-		
		Q		5.4		ŀ	PRICES	
ВҮ	Dealer	Douthol		BY	One of Alder		CHECKED	Dram
	Rodney	Darthei	Brad VanOtterloo PEER REVIEW		Greg Akins			Brom
DATE PRI	EPARED 6/4/2010	1	Alfred Bernstein, P.E.	DATE PREPAR	<b>RED</b> 12/07/10		PEER REVIEW / DATE	naldson
	0/4/2010	,			12/07/10		Dan Do	

BUREAU OF I	RECLAMAT	ON	ESTIMATE WORKS	HEET				SHEET_7_OF_9_	
FEATU	JRE:			PROJE	CT:				
Shasta	Lake	Water Resources Ir	vestigation		Central Valley Project - CA				
Feasibi			0		Shasta Divis				
	-	e Control Device (T	CD) Modification	REGION:	MP	ESTIMATE	LEVEL:	Feasibility	
		•	,	WOID:	SHAEF	PRICE LEV		Apr-10	
		Most Prob	able						
			6.5-ft Dam Rais	е					
L L	M								
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
	1	Remove existing elect	rical control equipment	8430	1	LS	\$17,000.00	\$17,000.00	
			control centers and 1 distribution	0400	•	20	φ17,000.00	φ17,000.00	
		switchboard							
				_					
		P Reinstall existing elect	rical control equipment	8430	1	LS	\$110,000.00	\$110,000.00	
		· · · · · · · · · · · · · · · · · · ·	control centers and 1 distribution	0400	•	20	\$110,000.00	φ110,000.00	
		switchboard							
		Extend existing power	feeder	8430					
			ble, 1/c stranded-copper, 350 kcmil	0400	300	FT	\$30.00	\$9,000.00	
		Rigid steel condu	· · ·		100		\$110.00	\$11,000.00	
								. ,	
				and					
		Assumptions: The exi	sting TCD power source will be extended						
			This Sheet and Total for 86-68430 =>					\$147,000.00	
						_			
		Ql	JANTITIES			Р	RICES		
BY Mike Sch	uh		CHECKED Eric Vaughn	BY	Greg Akins		CHECKED Kelly	Brom	
DATE PRE			PEER REVIEW	DATE PREI			PEER REVIEW / DAT		
		ted 2010	George Girgis		12/07/10			onaldson	

Feasibility	ake V y Stu		vestigation	PROJE	CT:			
Feasibility Tempera	y Stu		vestigation					
Tempera	-	Shasta Lake Water Resources Investigation Teasibility Study Temperature Control Device (TCD) Modification			Central Valle Shasta Divis		- CA	
	emperature Control Device (TCD) Modification Most Probable			REGION:	MP	ESTIMATE	LEVEL:	Feasibility
PLANT ACCOUNT		(		WOID:	SHAEF	PRICE LEV		Apr-10
PLANT ACCOUNT		Most Prob	able					
PLANT ACCOUNT			6.5-ft Dam Ra	aise				
PLA ACCO	TEM							
	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
			hall be removed from the					
		Temperature Control	Device:					
	1	Trashrack El 10677	to El. 1047.7 (214-D-22258)	8410	138,000	lbs.	\$0.40	\$55,200.00
	I		rashracks down to El. 1047.7	0410	100,000	103.	ψ0.+0	φ00,200.00
		10 panels @ 13,80						
		Treebreek Chutter N	- 4 (244 D 22202)	0.110	24.000	llee	£0.40	¢0,000,00
	2	Trashrack, Shutter No	· · · · ·	8410	24,000	lbs.	\$0.40	\$9,600.00
		Remove existing t						
		Will be replaced b						
	3	Trashrack, Shutter No	p. 5 (214-D-22261)	8410	33,000	lbs.	\$0.40	\$13,200.00
		Remove existing t	•					,
		Will be replaced b						
		The following items s	hould be installed on the					
		Temperature Control	Device:					
	4	Furnish and install ne	ew barrier panels	8410	465,000	lbs.	\$6.30	\$2,929,500.0
		El. 1047.7 to El. 10	•					. , ,
		Welded structural	carbon steel construction					
		Protective coating						
		5 Units @ 93,000	lbs. per unit					
		Sheet Subtotal =						\$3,007,500.0
<b>_</b>			ANTITIES				PRICES	
BY			CHECKED	BY			CHECKED	
	/ayne D		Ryan Stephen		Greg Akins		Kelly Brom	- 12/07/10
DATE PREPA	-		PEER REVIEW	DATE PRE	-		PEER REVIEW / DATE	
11/27/2007 - L			John Grass		12/07/10		Dan Dor	aldson

	MATION		ESTIMATE WORKS					SHEET_9_ OF _ 9_
FEATURE				PROJE	CT:			
Shasta Lak	ke W	ater Resources Inv	vestigation		Central Valle	ey Project	t - CA	
Feasibility	Stud	ly			Shasta Divis	sion		
-		Control Device (T	CD) Modification	REGION:	MP	ESTIMATE	E LEVEL:	Feasibility
-		•	·	WOID:	SHAEF		VEL:	Apr-10
		Most Proba	able					
			6.5-ft Dam Raise					
<u> </u>								
PLANT ACCOUNT PAY ITFM	j	r	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
PL/ ACC		L	JESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	5 7	TCD HOISTS:						
	51							
	5a	Domovo from ovio	ting logation and store	8410	1	LS	\$280,000,00	\$290 000 0
	ба		ting location and store	0410	1	L3	\$280,000.00	\$280,000.00
		- 17 hoists total, w	- · ·					
		- 17x57 = 969 kips						
			mbly into components:					
		32 rope drums						
		20 sheave pai						
		17 worm-gear						
		17 electric mo						
		32 parallel sha	aft reducer gearboxes					
		84 flexible cou	ıplings					
		17 instrumenta	ation assemblies					
		68 wire ropes						
		steel shafts, b	earings, supports					
		- *Dispose/slavage	e ropes, drums					
	5b	F&I new wire ropes	s to accommodate	8410	1	LS	\$870,000.00	\$870,000.0
		additional 20.5 ft h	eight (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					
			1.625" diam rope x 5 hoists					
		All rope is:						
		· · · · · · · · · · · · · · · · · · ·	RC, XIP, galvanized					
			d with speltered sockets					
	5c	Replace existing h	oist drums (32)	8410	1	LS	\$2,200,000.00	\$2,200,000.0
	00		/drum x 1 /hoist x 2 hoists	0410	I		φ2,200,000.00	φ2,200,000.0
			/drum x 2 /hoist x 5 hoists					
			/drum x 2 /hoist x 5 hoists					
			s/drum x 2 /hoist x 5 hoists					
				t druma)				
		total wt =	220,000 lbs (weights are for replacement	i arums)				
	<b>F</b> -1	Deecemble		0440			<b>#040.000.00</b>	#040.000 C
	5d		einstall 17 hoists on new	8410	1	LS	\$610,000.00	\$610,000.0
		hoist deck						
		1000 kips app	rox total weight				<u> </u>	
							<u>↓</u>	<b>.</b>
			This Sheet Subtotal =					\$3,960,000.0
								<b>.</b>
			Sheet 1 of 2 Subtotal =			<u> </u>		\$3,007,500.0
								• ·
			This Sheet and Total for 86-68410 =					\$6,967,500.0
		QU/	ANTITIES				PRICES	
BY			CHECKED	BY			CHECKED	
Alex	Ritt		Ryan Stephen		Greg Akins		Kelly Br	om
DATE PREPARI	ED	F	PEER REVIEW	DATE PREP			PEER REVIEW / DATE	
		Updated 6/2010	John Grass		12/07/10		Dan Dona	ldson

BUREAU OF		ION ESTIMATE W					SHEET _1_ OF _1_	
FEATU			PROJE	CT:				
Shasta	Lake	Water Resources Investigation		<b>Central Vall</b>	ey Projec	t - CA		
Feasibi				Shasta Divi	sion			
Power	plant a	and Penstocks	WOID:	SHAEF	ESTIMA	E LEVEL:	Feasibility	
			REGION:	MP	UNIT PR	CE LEVEL:	Apr-10	
		Most Probable						
Summ	ary	6.5-ft Dam Raise						
L L	M							
PLANT ACCOUNT	РАҮ ІТЕМ	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
		Powerplant and Penstocks consists of:						
		Relocate hydraulic hoist systems						
		Furnish and install 5 extra lengths of stainless steel ste	ems					
		Furnish and install new guide tracks for the 15' x 19.05'		coaster gat	es			
		Remove existing coaster gate oil pump controlboards		<u></u>				
		Reinstall existing coaster gate oil pump controlboards						
		Extend existing coaster gate controlboard power feede	r					
		Extend existing coaster gate controlboard power reede						
		96 69420 Shoot (releasts hudre dis sustaine)					<b>Φ7</b> 4 Ο Ο Ο Ο Ο Ο Ο Ο Ο Ο Ο Ο Ο Ο Ο Ο Ο Ο	
		86-68420 Sheet (relocate hydraulic systems)					\$740,000.00	
		86-68430 Sheet (removal and reinstall of existing coaster oil pu					\$58,870.00	
		(extend existing coaster gate controlboard po	wer feeder	s)				
		Subtotal 1					\$798,870.00	
		Mobilization	5%	+/-			\$40,000.00	
		Subtotal 1 with Mobilization					\$838,870.00	
		Design Contingencies	10%	+/-			\$83,887.00	
		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	
		FIELD COST	2070	.,			\$1,150,000.00	
							ψ1,150,000.00	
					_			
					_			
	<b> </b>							
	<b> </b>							
		Note: Escalation from published price level to notice to proceed is excluded. Esti	mates may in	clude discrepan	cies due to re	bundina.		
		Ref.: For appropriate use and terminology, see Reclamation Manual, Directives		•				
	1	QUANTITIES		_ , , ,		PRICES		
вv		CHECKED	вv					
BY			BY					
See Grou			Jeff Morris			Kelly Brom		
DATE PRE	EPARED	PEER REVIEW		PARED		PEER REVIEW		
		See Group Sheets	08/27/10			Dan Donaldson		

BUREAU OF		ON	ESTIMATE W					SHEET_1_OF_2
FEATU				PROJE	CT:			
Shasta	Lake	Water Resources I	nvestigation		<b>Central Valle</b>	ey Projec	ct - CA	
Feasib					Shasta Divis	sion		
Power	plant a	and Penstocks		WOID:	SHAEF	ESTIMA <sup>-</sup>	TE LEVEL:	Feasibility
				REGION:	MP	UNIT PR	ICE LEVEL:	Apr-10
		Most Prob	able					
			6.5-ft Dam Raise					
LZ	Σ							
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
PI	PA							
	1	Relocate hydraulic ho	ist systems		105,000	lbs	\$3.00	\$315,000.00
			the hydraulic cylinder hoist					<i>+,</i>
			19.05' penstock coaster gates.					
		5 Hoist systems (21,0	•			-		
	2	Furnish and install 5 c	extra lengths of stainless steel stems		12,500	lbe	\$14.00	\$175,000.00
	2				12,500	103	φ1 <del>4</del> .00	φττ5,000.00
			g stems to the relocated hoists					
		5 - 20-foot lengths of (						
		stainless steel stems						
	-						<b>#050 000 00</b>	<b>#050 000 0</b>
	3		w guide tracks for the 15' x 19.05'		1	LS	\$250,000.00	\$250,000.00
		penstock coaster gate						
			tracks, 20-feet long each					
		(51 lbs. per foot of trad						
		Guide tracks anchore	d with 1-1/2-inch diameter					
		steel anchor bolts, ap	prox. 200 sets of anchors					
		(24 lbs. per set of anc	hor: 4,800 lbs total)					
							+	
							+	
							────	
							ļ	
					This Sheet a	nd 86-68	3420 Total =	\$740,000.0
		QL	JANTITIES				PRICES	-
ВΥ			CHECKED	ВҮ			CHECKED	
D T Nathan Na	akamoto		C. Sayer	ы Jeff Morris			Kelly Brom	
			PEER REVIEW	DATE PREF				
					ARED		PEER REVIEW	aldaan
11/15/07	DATE PREPARED     PEER REVIEW       11/15/07     Don Read			08/27/10 Dan Donaldson				

BUREAU OF	RECLAMAT		NORKS	HEET			SHEET_2_OF_2
FEATU	JRE:		PROJE	CT:			
Shasta	Lake	Water Resources Investigation		Central Val	ley Project	t - CA	
Feasib				Shasta Divi			
		and Penstocks	WOID:	SHAEF		E LEVEL:	Feasibility
			REGION:	MP	_	CE LEVEL:	Apr-10
		Most Probable	REGION.	WIF			Apr-10
		6.5-ft Dam Rais	e				
⊢	5		-				
PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	1	Remove existing coaster gate oil pump controlboards	8430	5	EA	\$4,000.00	\$20,000.00
	2	Reinstall existing coaster gate oil pump controlboards	8430	5	EA	\$5,800.00	\$29,000.00
	3	Extend existing coaster gate controlboard power feeder: 600 volt power cable, 8 AWG	8430	150	FT	\$3.70	\$555.00
	4	Extend existing coaster gate controlboard power feeder: 600 volt power cable, 6 AWG	8430	450	FT	\$4.70	\$2,115.00
	5	Extend existing coaster gate controlboard power feeder:	8430	150	FT	\$48.00	\$7,200.00
		Rigid steel conduit, 1-inch					
							••••
				This Sheet			\$58,870.00
		QUANTITIES			F	PRICES	
ВΥ		CHECKED	BY			CHECKED	
Mike Schu		Cory Maurer	Jeff Morris			Kelly Brom	
DATE PRE	EPARED	PEER REVIEW	DATE PREI	PARED		PEER REVIEW	
12/12/07		George Girgis	08/27/10			Dan Do	naldson

FEATU		ON ESTIMATE W	υπηση				SHEET _1_ OF _1_
	RE:		PROJE				
Shasta Feasibil	Lake	Water Resources Investigation		Central Vall Shasta Divi		- CA	
		ad Realignment	REGION	MP		E LEVEL:	Feasibility
		5	WOID:	SHAEF	PRICE L		Apr-10
		Most Probable					•
Summa	ary	6.5-ft Dam Raise					
PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Subtotal 1					\$5,241,770.00
		Mobilization	5%	+/-			\$260,000.00
		Subtotal 1 with Mobilization	570	+/-			\$5,501,770.00
			10%	+/-			
		Design Contingencies Subtotal 2 = Subtotal 1 + Design Contingencies	10 70	±/-			\$550,177.00
			2.00/	. /			\$6,051,947.00
		Allowance for Procurement Strategies (APS)	2.0%	+/-			\$121,039.00
		Type of solicitation assumed is: Request for Proposal					¢c 470 000 00
		Subtotal 3 = Subtotal 2 + APS					\$6,172,986.00
		CONTRACT COST	000/	. /			\$6,200,000.00
		Construction Contingencies	20%	+/-			\$1,200,000.00
		FIELD COST					\$7,400,000.00
		Note: Escalation from published price level to notice to proceed is excluded. Esti	mates may in	clude discrepsi	Lies due to m	l	
		Ref.: For appropriate use and terminology, see Reclamation Manual, Directives a				-	
		QUANTITIES		5 i i i i i i i i i i i i i i i i i i i		RICES	
вү				BY CHECKED			
							lly Brom
	Nick Clough, P.E.     Mark Leavitt, PE       DATE PREPARED     PEER REVIEW / DATE		Jeff Morris DATE PREF				
05/06/10	PARED	PEER REVIEW / DATE Jesus G. Romero, PE	08/27/10	ARED			Donaldson

BUREAU OF	RECLAMATI	ON ESTIMATE W	ORKSHE	EET			SHEET_1_OF_1_
FEATU	JRE:		PROJEC	T:			
Shasta Feasib		Water Resources Investigation		Central Val Shasta Div		ct - CA	
		ad Realignment	REGION:	MP		E LEVEL:	Feasibility
			WOID:	SHAEF	PRICE L		Apr-10
		Most Probable					•
		6.5-ft Dam Raise			-		
PLANT ACCOUNT	РАҮ ІТЕМ	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	1	Clearing and Grubbing	86-68140	44,000	SY	\$0.75	\$33,000.00
	2	Stripping (6" depth)	86-68140	7,400	CY	\$5.30	\$39,220.00
	3	Excavation	86-68140	35,000	CY	\$6.10	\$213,500.00
	4	Compacted Backfill	86-68140	7,500	CY	\$13.50	\$101,250.00
	5	Railroad Track (136lb/yd(linear), 2 rails, 8400 track feet)	86-68140	390	Tons	\$3,000.00	\$1,170,000.00
	6	Concrete Railroad Ties (9ftx10inx12in)	86-68140	4,200	EA	\$270.00	\$1,134,000.00
	7	Ballast (22in-12in depth at 135 lb/ft^3)	86-68140	13,500	Tons	\$40.00	\$540,000.00
		Sub-Ballast (12" depth at 135 lb/ft^3)	86-68140	13,000	Tons	\$40.00	\$520,000.00
	g	Removal of Existing Railroad Track	86-68140	370	Tons	\$590.00	\$218,300.00
		(131 lb/yd, 2 rails, 8400 track feet)					
	10	Removal of Timber Railroad Ties (9.5ftx12inx10in)	86-68140	5,100	EA	\$55.00	\$280,500.00
	11	Removal of Ballast (12in-3in depth at 135 lb/ft^3)	86-68140	6,400	Tons	\$155.00	\$992,000.00
		SUBTOTAL THIS SHEET					\$5,241,770.00
		QUANTITIES			l Pl	RICES	ψυ,241,770.00
BY Nick Clour		CHECKED	BY Jeff Morris			CHECKED	Prom
DATE PRI	ck Clough, P.E.     Mark Leavitt, PE       ATE PREPARED     PEER REVIEW / DATE			RED		PEER REVIEW	Brom
05/06/10		Jesus G. Romero, PE	08/27/10			Dan Do	onaldson

BUREAU OF	RECLAMAT		ORKSH	EET			SHEET_1_OF_1_
FEATU	JRE:		PROJE				
	Lake	Water Resources Investigation	(	Central Val Shasta Divi		- CA	
	-	CUPRR Bridge Removal	WOID:	SHAEF		TE LEVEL:	Feasibility
Doney	0.001		REGION	MP		ICE LEVEL:	Apr-10
		Most Probable	REGION	IVII	UNITER		Api-IV
Summ	arv	6.5-ft Dam Raise					
PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		537.5-ft long - 5 span structure supported on drilled shafts					
		Sheet 1					\$2,036,800.00
		Sheet 2					\$3,541,747.50
		Sheet 3					\$3,401,262.50
		Sheet 4					\$3,671,562.50
		Sheet 5					\$2,297,700.00
		Sheet 6					\$10,878,200.00
		Sheet 7					\$5,188,000.00
		Sheet 8					\$800,000.00
		Subtotal 1					\$31,815,272.50
		Mobilization	0.1	+/-			\$3,200,000.00
		Subtotal 1 with Mobilization					\$35,015,272.50
		Design Contingencies	0.15	+/-			\$5,252,290.50
		Subtotal 2 = Subtotal 1 + Design Contingencies					\$40,267,563.00
		Allowance for Procurement Strategies (APS)	0.02	+/-			\$805,352.00
		Type of solicitation assumed is: Request for Proposal					
		Subtotal 3 = Subtotal 2 + APS					\$41,072,915.00
		CONTRACT COST					\$41,000,000.00
		Construction Contingencies	0.25	+/-			\$10,000,000.00
		FIELD COST					\$51,000,000.00
	Note: Es	scalation from published price level to notice to proceed is excluded. Estimates ma	y include disc	repancies due	to rounding.		
	Ref.: Fo	r appropriate use and terminology, see Reclamation Manual, Directives and Stand	lards FAC; 09	-01, 09-02 and	09-03.		
		QUANTITIES			Р	RICES	
вү		CHECKED	ВΥ			CHECKED	
Carly M. Wegher Jesus G. Romero P.E.				Jeff Morris Kelly Brom - 8			rom - 8/30/10
DATE PR	EPARED	PEER REVIEW / DATE	DATE PREP	ARED		PEER REVIEW	
04/22/10		Joseph M. Gemperline	08/27/10			Dan Dona	aldson 8/31/10

BUREAU OF	RECLAMAT	ION ESTIMATE WO	RKSHE	ET			SHEET_1_OF_8_
FEATU	JRE:		PROJEC	T:			
Shasta Feasib		Water Resources Investigation					
		v UPRR Bridge Removal	WOID:	SHAEF	<b>ESTIMA</b>	TE LEVEL:	Feasibility
-		-	<b>REGION:</b>	MP	UNIT PR	ICE LEVEL:	Apr-10
		Most Probable					
		6.5-ft Dam Raise					
L Z	Σ						
PLANT ACCOUNT	РАҮ ІТЕМ	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		The existing bridge will be replaced with a new bridge. The new bridge has 5 spans (108'-3", 107'-0", 107'-0", 107'-0", & 108'-3") with an overall length of 537'-6" (back to back of abutments). The superstructure consists of four 9'-0" deep steel plate girders with cast-in-place reinforced concrete deck.					
		Piers and abutments are supported on drilled shafts.					
		Mobilization	86-68140	1	LS	Included on sheet	8.
		Earthwork					
		Excavation for structures (abutments+wingwalls)	86-68140	630	YD <sup>3</sup>	Included below	
		Backfill about structures (abutments+wingwalls)	86-68140	2,200	YD <sup>3</sup>	\$140.00	\$308,000.00
		Compact backfill around structures (abutments+ww)	86-68140	2,200	YD <sup>3</sup>	Included above	
		ABUTMENT #1 - Structure is stem wall (~50'H x 10'T x 25'W), beam seat type abutment supported on two, 6-foot diameter drilled shafts. Wingwalls (~33'L x 43'H x 3'T) are connected to stem wall and extend back, perpendicular to stem wall to form a "box" that contains and supports fill and railway subgrade (similar to the existing bridge).					
		Concrete for Abutment 1, f'c = 4,000 psi					
		Substructure (abutment and wingwalls)	86-68140	650	YD <sup>3</sup>	\$1,500.00	\$975,000.00
		Furnish & handle cementatious materials (.282T/cy)	86-68140	183	Tons	Included above	. ,
		Furnishing & handling epoxy coated reinforcement	86-68140	162,500	LBS	\$2.40	\$390,000.00
		@ 250 lbs/cy (fy = 60 ksi)					
		Drilled Shafts					
		6'-0" Diameter @ abutments, A <sub>c</sub> = 28.27 ft <sup>2</sup> /lf	86-68140	107	LF	\$3,400.00	\$363,800.00
		Cost/If includes mobilization for drilling, drilling, casing and removal of water if required, cement, concrete, reinforcement and integrity testing. Drilled shafts require 112 cy concrete, 32 tons cement, and 51,000 lbs epoxy coated reinforcement (~450 lbs/cy).					
					0		
		Rock excavation for drilled shaft (inside casing)	86-68140	112	YD <sup>3</sup>	Included above	
							<b>#0.000.000</b>
						050	\$2,036,800.00
		QUANTITIES			PRI	CES	
BY	<b>17</b> -11-1-1	CHECKED	BY			CHECKED	
Roman M.			Jeff Morris			Kelly Brom	- 8/30/10
	EPARED	PEER REVIEW / DATE		ARED		PEER REVIEW	0/04/40
04/16/10		Nick Clough, PE	08/27/10			Dan Donaldso	on 8/31/10

BUREAU OF	RECLAMAT	ION ESTIMATE WO	ORKSHE	ET			SHEET _2_ OF _8_	
FEATU	RE:		PROJECT	:				
Shasta Feasib		Water Resources Investigation udy		Central Valle Shasta Divis		t - CA		
		k UPRR Bridge Removal	WOID:	SHAEF	ESTIMATE LEVEL:		Feasibility	
-		-	REGION:	MP	UNIT PRI	CE LEVEL:	Apr-10	
		Most Probable					•	
		6.5-ft Dam Raise						
	Σ							
PLANT ACCOUNT	РАҮ ІТЕМ	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
		<b>PIERS:</b> Each pier consists of a single 14-foot diameter ( $A_c$ =						
		154 ft <sup>2</sup> , V <sub>c</sub> = 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), $L_p \sim 208.0$ 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 <sup>3</sup>	\$1,200.00	\$240,000.00	
		Furnish & handle cementatious materials (.282T/cy)	86-68140	56	Tons	Included above		
		Furnishing & handling epoxy coated reinforcement	86-68140	60,000	LBS	\$3.90	\$234,000.00	
		@ 300 lbs/cy (fy = 60 ksi)		,			, , , , , , , , , , , , , , , , , , ,	
		Structural concrete for pier (above El. 1012.5, $L = 67.5$ lf), f'c = 4,000 psi).	86-68140	382	YD <sup>3</sup>	\$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 <sup>3</sup>	\$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, $\phi = 14'$ , 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/If includes mobilization for drilling, drilling, casing and						
		removal of water if required, cement concrete, reinforcement						
		<ul> <li>and integrity testing drilled shaft require 680 cy concrete, 192</li> <li>tons cement, and 153,000 lbs epoxy coated reinf (~225 lbs/cy).</li> </ul>						
		Rock excavation for drilled shaft (inside casing)	86-68140	680	YD <sup>3</sup>	Included above		
							¢0 E 44 7 47 50	
<b>—</b>		SUBTOTAL THIS SHEET					\$3,541,747.50	
DV.		QUANTITIES	DV		PRI	CES		
BY	K-H-1-	CHECKED	ВҮ	1-11-11		CHECKED	0/00/110	
Roman M				Jeff Morris		Kelly Brom	i - 8/30/10	
			DATE PREPA			PEER REVIEW Dan Donalds	on $8/31/10$	
4/16/2010		Nick Clough, PE		08/27/10		Dan Donalds	011 0/31/10	

BUREAU OF	RECLAMAT	ION ESTIMATE WO	ORKSHE	ET			SHEET _3_ OF _8_
FEATU	RE:		PROJECT	:			
Shasta Feasib		Water Resources Investigation udy		Central Valle Shasta Divis		t - CA	
		k UPRR Bridge Removal	WOID:	SHAEF	ESTIMATE LEVEL:		Feasibility
· ·		-	REGION:	MP	UNIT PRI	CE LEVEL:	Apr-10
		Most Probable					•
		6.5-ft Dam Raise					
PLANT ACCOUNT	РАҮ ІТЕМ	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>PIER 2 -</b> Top of column El. 1080.0, Drilled shaft tip El. 872.0'. Overall length (including drilled shaft), Lp ~208.0 lf.					
		Structural concrete for pier cap, f'c = 4,000 psi					
		Pier cap is 25' wide by 18' thick by 12' high	86-68140	200	YD <sup>3</sup>	\$1,200.00	\$240,000.00
		Furnish & handle cementatious materials (.282T/cy)	86-68140	56	Tons	Included above	
		Furnishing & handling epoxy coated reinforcement	86-68140	60,000	LBS	\$3.90	\$234,000.00
		@ 300 lbs/cy (fy = 60 ksi)		,		· · · ·	,
		Structural concrete for pier (above El. 1012.5, L = 67.5 lf), f'c = 4,000 psi).	86-68140	382	YD <sup>3</sup>	\$1,300.00	\$496,600.00
		Furnish & handle cementatious materials (.282T/cy)	86-68140	108	Tons	Included above	
		Furnishing & handling epoxy coated reinforcement	86-68140	85,950	LBS	\$3.90	\$335,205.00
		@ 225 lbs/cy (fy = 60 ksi)					
		Structural concrete for pier (below El. 1012.5, L = 55.5 lf), f'c = 4,000 psi).	86-68140	317	YD <sup>3</sup>	\$370.00	\$117,290.00
		Furnish & handle cementatious materials (.282T/cy)	86-68140	89	Tons	Included above	
		Furnishing & handling epoxy coated reinforcement	86-68140	71,325	LBS	\$3.90	\$278,167.50
		@ 225 lbs/cy (fy = 60 ksi)					
		Drilled Shaft, φ = 14', f'c = 4,000 psi					
		Drilled shaft length below OGS is 85 lf.	86-68140	85	LF	\$20,000.00	\$1,700,000.00
		Cost/lf includes mobilization for drilling, drilling, casing and removal of water if required, cement concrete, reinforcement and integrity testing drilled shaft require 485 cy concrete, 137 tons cement, and 110,000 lbs epoxy coated reinf (~225 lbs/cy).					
			86-68140	485	YD <sup>3</sup>	Included above	
		SUBTOTAL THIS SHEET					\$3,401,262.50
		QUANTITIES			PRI	CES	
ВΥ		CHECKED	ВҮ			CHECKED	
Roman M.				Jeff Morris		Kelly Brom	- 8/30/10
DATE PR		PEER REVIEW / DATE	DATE PREPA			PEER REVIEW	
4/16/2010		Nick Clough, PE		08/27/10		Dan Donalds	on 8/31/10

BUREAU OF F	RECLAMATI	ION ESTIMATE WO	ORKSHE	ET			SHEET _4_ OF _8_	
FEATUR	RE:		PROJECT					
Shasta Feasibi		Water Resources Investigation udy		Central Valle Shasta Divis		t - CA		
		v UPRR Bridge Removal	WOID:	SHAEF	ESTIMATE LEVEL:		Feasibility	
-			REGION:	MP	UNIT PRI	CE LEVEL:	Apr-10	
		Most Probable						
		6.5-ft Dam Raise						
PLANT ACCOUNT	РАҮ ІТЕМ	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
		<b>PIER 3 -</b> Top of column El. 1080.0, Drilled shaft tip El. 872.0'. Overall length (including drilled shaft), Lp ~208.0 lf.						
		Structural concrete for pier cap, f'c = 4,000 psi						
		Pier cap is 25' wide by 18' thick by 12' high	86-68140	200	YD <sup>3</sup>	\$1,200.00	\$240,000.00	
		Furnish & handle cementatious materials (.282T/cy)	86-68140	56	Tons	Included above	+,	
		Furnishing & handling epoxy coated reinforcement	86-68140	60,000	LBS	\$3.90	\$234,000.00	
		@ 300 lbs/cy (fy = 60 ksi)					, , , , , , , , , , , , , , , , , , ,	
		Structural concrete for pier (above El. 1012.5, $L = 67.5$ lf), f'c = 4,000 psi).	86-68140	382	YD <sup>3</sup>	\$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 = 34.5 lf), f'c = 4,000 psi).	86-68140	197	YD <sup>3</sup>	\$370.00	\$72,890.00	
		Furnish & handle 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 lbs/cy (fy = 60 ksi)						
		Drilled Shaft, φ = 14', f'c = 4,000 psi						
		Drilled shaft length below OGS is 106 lf.	86-68140	106	LF	\$20,000.00	\$2,120,000.00	
		Cost/If includes mobilization for drilling, drilling, casing and removal of water if required, cement concrete, reinforcement and integrity testing drilled shaft require 605 cy concrete, 170 tons cement, and 136,000 lbs epoxy coated reinf (~225 lbs/cy).						
			86-68140	605	YD <sup>3</sup>	Included above		
		SUBTOTAL THIS SHEET					\$3,671,562.50	
<b></b>		QUANTITIES			001	CES	φ <b>3,071,302.3</b> 0	
BY		CHECKED	вү		FKI	CHECKED		
Bi Roman M.	Koltuniuk		5,	Jeff Morris		Kelly Brom	- 8/30/10	
DATE PRE		PEER REVIEW / DATE	DATE PREPA			PEER REVIEW	- 5/50/10	
4/16/2010		Nick Clough, PE		08/27/10		Dan Donalds	on 8/31/10	

BUREAU OF	RECLAMAT	ION ESTIMATE WO	ORKSHE	ET			SHEET _5_ OF _8_
FEATU	RE:		PROJECT	:			
Shasta Feasib		Water Resources Investigation udv		Central Valle Shasta Divis		t - CA	
		k UPRR Bridge Removal	WOID:	SHAEF	ESTIMAT	E LEVEL:	Feasibility
· ·			REGION:	MP		CE LEVEL:	Apr-10
		Most Probable					
		6.5-ft Dam Raise					
PLANT ACCOUNT	РАҮ ІТЕМ	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>PIER 4 -</b> Top of column EI. 1080.0, Drilled shaft tip EI. 920.0'. Overall length (including drilled shaft), Lp ~160.0 lf.					
	-	Structural concrete for pier cap, f'c = 4,000 psi					
		Pier cap is 25' wide by 18' thick by 12' high	86-68140	200	YD <sup>3</sup>	\$820.00	\$164,000.00
		Furnish & handle cementatious materials (.282T/cy)	86-68140	200 56	Tons	Included above	φτ0 <del>4</del> ,000.00
	-	Furnishing & handling epoxy coated reinforcement	86-68140	60,000	LBS	\$3.00	\$180,000.00
		(a) 300  lbs/cy (fy = 60 ksi)	00-00140	00,000		\$3.00	\$180,000.00
	-						
		Structural concrete for pier (This pier concrete column/drilled	86-68140	308	YD <sup>3</sup>	\$850.00	\$261,800.00
		shaft can be constructed entirely out of the influence of water surface El. 1012.5. L = 160-106 $\sim$ 54 lf), fc = 4,000 psi).				4000.00	φ201,000.00
		Furnish & handle cementatious materials (.282T/cy)	86-68140	87	Tons	Included above	
		Furnishing & handling epoxy coated reinforcement	86-68140	69,300	LBS	\$3.00	\$207,900.00
		@ 225 lbs/cy (fy = 60 ksi)		,			+===;=====
		Drilled Shoft $\pm -14$ fie $\pm 4.000$ pci					
	_	Drilled Shaft, $\phi = 14'$ , f'c = 4,000 psi	86-68140	106	LF	¢14.000.00	£1 484 000 00
		Drilled shaft length below OGS is 106 lf. Cost/lf includes mobilization for drilling, drilling, casing and removal of water if required, cement concrete, reinforcement and integrity testing drilled shaft require 605 cy concrete, 170 tons cement, and 136,000 lbs epoxy coated reinf (~225 lbs/cy).		108		\$14,000.00	\$1,484,000.00
		Rock excavation for drilled shaft (inside casing)	86-68140	605	YD <sup>3</sup>	Included above	
		SUBTOTAL THIS SHEET					\$2,297,700.00
	1	QUANTITIES			PRI	CES	. ,,
BY						CHECKED	
Roman M.	man M. Koltuniuk, P.E. Jesus G. Romero, PE			Jeff Morris		Kelly Brom	ı - 8/30/10
DATE PR	PREPARED PEER REVIEW / DATE		DATE PREPA	ARED		PEER REVIEW	
4/16/2010		Nick Clough, PE		08/27/10		Dan Donalds	on 8/31/10

BUREAU OF	RECLAMAT	ION ESTIMATE WC	RKSHE	ET			SHEET _6_ OF _8_
FEATU	RE:		PROJECT	:			
Shasta Feasib		Water Resources Investigation udv		Central Valle Shasta Divis		t - CA	
		k UPRR Bridge Removal	WOID:	SHAEF		E LEVEL:	Feasibility
			REGION:	MP		CE LEVEL:	Apr-10
		Most Probable					
		6.5-ft Dam Raise					
. 5	Σ						
PLANT ACCOUNT	РАҮ ІТЕМ	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		ABUTMENT #2 - Structure is stem wall (~42'H x 10'T x 25'W), beam seat type abutment supported on two, 6-foot diameter drilled shafts. Wingwalls (~33'L x 43'H x 3'T) are connected to stem wall and extend back, perpendicular to stem wall to form a "box" that contains and supports fill and railway subgrade (similar to the existing bridge).					
		Concrete for Abutment 2, f'c = 4,000 psi					
		Substructure (abutment and wingwalls)	86-68140	570	YD <sup>3</sup>	\$1,500.00	\$855,000.00
		Furnish & handle cementatious materials (.282T/cy)	86-68140	161	Tons	Included above	+++++++++++++++++++++++++++++++++++++++
		Furnishing & handling epoxy coated reinforcement	86-68140	142,500	LBS	\$2.40	\$342,000.00
		@ 250 lbs/cy (fy = 60 ksi)					
		Drilled Shafts					
		6'-0" Diameter @ abutments, $A_c = 28.27 \text{ ft}^2/\text{lf}$	86-68140	123	LF	\$3,400.00	\$418,200.00
		Cost/lf includes mobilization for drilling, drilling, casing and removal of water if required, cement, concrete, reinforcement and integrity testing. Drilled shafts require 129 cy concrete, 37 tons cement, and 58,000 lbs epoxy coated reinforcement (~450 lbs/cy)					
		Rock excavation for drilled shaft (inside casing)	86-68140	129	YD <sup>3</sup>	Included above	
		SUPERSTRUCTURE					
		Steel for girders, Fy = 50 ksi, ASTM A709W	86-68140	2,250,000	LBS	\$3.70	\$8,325,000.00
		Structural concrete, f' <sub>c</sub> = 4,000 psi	86-68140	350	YD <sup>3</sup>	\$1,900.00	\$665,000.00
		Furnishing and handling cementatious material	86-68140	99	Tons	Included above	
			86-68140	105,000	LBS	\$2.60	\$273,000.00
				100,000		φ2.00	
		SUBTOTAL THIS SHEET					\$10,878,200.00
		QUANTITIES			PR	CES	
BY		CHECKED	BY			CHECKED	
Roman M	. Koltuniuł	k, P.E. Jesus G. Romero, PE		Jeff Morris		Kelly Brom	- 8/30/10
DATE PR	E PREPARED PEER REVIEW / DATE		DATE PREP	ARED		PEER REVIEW	
4/16/2010		Nick Clough, PE		08/27/10		Dan Donalds	on 8/31/10

BUREAU OF	RECLAMAT		ORKSHE	ET			SHEET _7_ OF _8_
FEATU	RE:		PROJECT:				
Shasta Feasib		Water Resources Investigation udv		Central Valle Shasta Divis		t - CA	
		k UPRR Bridge Removal	WOID:	SHAEF		E LEVEL:	Feasibility
· · · <b>,</b>			REGION:	MP		ICE LEVEL:	Apr-10
		Most Probable		IVII			Abi-in
		6.5-ft Dam Raise					
⊢	5						
PLANT ACCOUNT	РАҮ ІТЕМ	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Removal of Existing Concrete and Reinforcement	86-68140	185	YD <sup>3</sup>	\$400.00	\$74,000.00
		in Abutment 1					
		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.					
		Removal of Existing Concrete and Reinforcement	86-68140	3,000	YD <sup>3</sup>	\$1,200.00	\$3,600,000.00
		in Pier 1		-,		. ,	
		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	1,200	YD <sup>3</sup>	\$1,200.00	\$1,440,000.00
		in Pier 2					
		Remove in blocks weighing approximately 20 tons					
		(A block with dimensions of 6'5" x 6'5" x 6'5"					
		weighs 19.8 tons). Remove Pier down to 3'					
		below ground surface.					
		Removal of Existing Concrete and Reinforcement	86-68140	185	YD <sup>3</sup>	\$400.00	\$74,000.00
		in Abutment 2					
		Remove in blocks weighing approximately 20 tons					
		(A block with dimensions of 6'5" x 6'5" x 6'5"					
		weighs 19.8 tons). Remove Abutment down to 3'					
		below ground surface.					
							ļ
<u> </u>	SUBTOTAL THIS SHEE						\$5,188,000.00
	QUANTITIES			PRICES			
BY		CHECKED	ВҮ			CHECKED	
Carly M. V	Vegher	Joseph M. Gemperline		Jeff Morris		Kelly Brom	- 8/30/10
DATE PR			DATE PREPA	RED		PEER REVIEW	
4/22/2010		Jesus G. Romero P.E.		08/27/10		Dan Donalds	on 8/31/10

BUREAU OF	RECLAMAT	ION	ESTIMATE W	ORKSHE	ET			SHEET_8_OF_8_
FEATU	RE:			PROJECT	:			
Shasta Feasib		Water Resources Ii	nvestigation		Central Valle Shasta Divis		t - CA	
	-	k UPRR Bridge Rei	noval	WOID:	SHAEF		E LEVEL:	Feasibility
		ge i i ge i i ge i i ge		REGION:	MP		CE LEVEL:	Apr-10
		Most Pro	bable			•		
			6.5-ft Dam Rais	se				
	EM							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
				00.00440	0.000.000			#000 000 00
	_	Removal of Existing		86-68140	2,000,000	LBS	\$0.40	\$800,000.00
			f members with riveted connections.					
			el grade is unknown, but can					
		be painted.	si. The existing steel appears to					
		be painted.						
<u> </u>								
<u> </u>								
<u> </u>								
			SUBTOTAL THIS SHE	ET				\$800,000.00
		QUA				PRI	CES	<i>4000,000.00</i>
BY	QUANTITIES Y CHECKED			BY		1 10	CHECKED	
				Jeff Morris Kelly Brom - 8.			- 8/30/10	
	y M. Wegher Joseph M. Gemperline PEPREPARED PEER REVIEW / DATE			DATE PREP			PEER REVIEW	5,00,10
4/22/2010			s G. Romero P.E.		08/27/10		Dan Donaldso	on 8/31/10
7/22/2010		Jesu			00/27/10		Duri Donaiust	

BUREAU OF F	RECLAMATI	ON	ESTIMATE WORKS	HEET				SUMMARY SHEET 1 OF 1
FEATU	IRE:			PROJE	CT:			
		Water Resources Ir	nvestigation		Central Vall	ey Projec	t - CA	
Feasibi					Shasta Divi			
Pit Riv	er Bri	dge Pier 3 and 4 P	rotection	REGION			TE LEVEL:	Feasibility
				WOID:	AF399	PRICE L	EVEL:	Apr-10
		Most Pro	bable					
Summa	ary		6.5-ft Dam Raise					
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
م م								
		Pit River Bridge Mod	ification					
			earings on piers (#3 & #4) in deepest pa	rt of old P	Pit River char	nel.		
		(p						
		86-68140 Sheet (bridg	ge protection),					\$9,137,608.00
		86-68410 Sheet (bridg	ge protection)					\$309,350.00
		Subtotal						\$9,446,958.00
		Mobilization					10%	\$940,000.00
		Subtotal w/ Mobilizat	ion					\$10,386,958.00
		Design Continger	ncies				15%	\$1,423,272.00
		Allowance for Pro	curement Strategy				2%	\$189,770.00
		Type of solic CONTRACT COST	itation assumed is: Request for Proposal					\$12,000,000.00
		Construction Con	tingencies				25%	\$3,000,000.00
		FIELD COST	-					\$15,000,000.00
			thed price level to notice to proceed is excluded. Esti				-	
			and terminology, see Reclamation Manual, Di	rectives and	I Standards FA			
		QL	JANTITIES			Р	RICES	
BY				BY			CHECKED	
			· · · · · · · · · · · · · · · · · · ·	Jeff Morris				elly Brom
DATE PRE	e Group Sheets     See Group Sheets       FE PREPARED     PEER REVIEW        See Group Sheets			<b>DATE PRE</b> 10/6/2010	PARED		PEER REVIEW Dan	Donaldson

BUREAU OF F	RECLAMATIO	N	ESTIMATE WORK					SHEET_1_OF_3_
FEATU				PROJEC	T:			
		Vater Resources I	nvestigation		Central Valle		t - CA	
Feasibi		5			Shasta Divis			
Pit Riv	er Brid	lge Pier 3 and 4 P	rotection	<b>REGION:</b>	MP		TE LEVEL:	Feasibility
				WOID:	AF399	PRICE L	_EVEL:	Apr-10
		Most Pro						
	~		6.5-ft Dam Rais	se			I I	
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Pier 3						
	1	Core 4-inch diam	eter hole through existing pier for	86-68140	1,100	LF	\$450.00	\$495,000.00
		3-#11 bundled ba	ars. 60 holes are 15-feet long and 40					
		holes are 5 feet le	ong. Total number of holes is 100 for					
		a total length of 9	00 + 200 = 1,100 lf					
		-						
	2	Surface preparat	ion of existing concrete consisting of	86-68140	1,172	SF	\$7.00	\$8,204.00
			er (pressure less that 5,000 psi)		.,			
			eter is 146.5 feet, height is 8 feet.					
		eleannig. T ennie						
	3	Hydrotite waterst	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	1,030	CY	\$2,400.00	\$2,472,000.00
		•	estimate for mix proportion and	00-00140	1,000		φ2,400.00	φ2,472,000.00
			o increase water tightness)	_				
	5		Ill 60 ksi epoxy coated reinforcement	86-68140	309,000	LBS	\$4.80	¢1 492 200 00
	5		in our ksi epoxy coaled reinforcement	00-00140	309,000	LDO	<b>φ4.0</b> 0	\$1,483,200.00
	6	Furnishing and h	andling cement (.282 tons/cy)	86-68140	290	Tons	\$360.00	\$104,400.00
	7	Furnishing sump	pump, alarm system and piping	86-68140	2	EA	See Group 86-	8410 Sheets
		Pier 4						
	8		eter hole through existing pier for	86-68140	1,100	LF	\$450.00	\$495,000.00
	0		ars. 60 holes are 15-feet long and 40	80-08140	1,100		\$450.00	\$495,000.00
			ong. Total number of holes is 100 for					
		a total length of 9	00 + 200 = 1,100 lf					
	0	Curfo do proport	ing of eviating concrete consisting of	00.00140	4 4 7 0	0.5	¢7.00	<b>\$0.004.00</b>
	9		ion of existing concrete consisting of	86-68140	1,172	SF	\$7.00	\$8,204.00
		•	er (pressure less than 5,000 psi) eter is 146.5 feet, height is 8 feet.					
	10	Eurnich and place	e concrete, f'c = 6,000 @ 28 days	86-68140	1,030	CY	\$2,400.00	\$2,472,000.00
	10		estimate for mix proportion and	80-08140	1,030		\$2,400.00	φ2,472,000.00
	11		o increase water tightness) Il 60 ksi epoxy coated reinforcement	86-68140	309,000	LBS	\$4.80	\$1,483,200.00
					555,000	200	φ <del>.</del>	φ <i>1</i> , <del>4</del> 00,200.00
	12	Furnishing and h	andling cement (.282 tons/cy)	86-68140	290	Tons	\$360.00	\$104,400.00
	13	Furnishing sump	pump, alarm system and piping	86-68140	2	EA	See Group 86-	8410 Sheets
	14	Hydrotite waterst	op, CJ-0725-3K (Greenstreak)	86-68140	300	LF	\$20.00	\$6,000.00
								¢0.407.000.00
	QUANTITIES				This Sheet a		RICES	\$9,137,608.00
ВҮ			CHECKED	ВҮ		•	CHECKED	
<b>ы</b> т Jesus G. R	omero DE	:	Nicholas Clough, PE	ыт Jeff Morris				lly Brom
DATE PRE		-	PEER REVIEW	DATE PREP				
	-FARED							Donaldson
9/27/2010			10/6/2010			Dan I	Donaldson	

BUREAU OF R		N	ESTIMATE WORKS					SHEET_2_ OF _3	
FEATU				PROJECT					
		Vater Resources In	nvestigation		Central Val		t - CA		
Feasibil					Shasta Divi				
Pit Rive	er Brid	ge Pier 3 and 4 P	rotection	REGION:	MP		TE LEVEL:	Feasibility	
		Mast Dra	h a h la	WOID:	AF399	PRICE L	EVEL:	Apr-10	
		Most Pro							
⊢	5		6.5-ft Dam Raise						
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
		Pier 3							
			nd test the following						
		components:							
		·							
	1		omersible type, cast iron body	8410	2	each	\$10,500.00	\$21,000.0	
			sistant components, minimum rated						
			nance of 140 gal/min at 33 feet						
			loat or pressure switch,						
			cord & plug, single phase,						
		60 Hz, 115 Volts	AC.						
	2	Pine, conner tubi	ng, ASTM B88, Type K, with						
	2		s steel pipe hangers and supports						
		4-inch		8410	20	lin ft	\$420.00	\$8,400.0	
		5-inch		8410	65	lin ft	\$750.00	\$48,750.0	
								,	
	3	Pipe fittings, copp	per or bronze, ASME B16.18 or						
		ASME B16.22, Ty	уре К						
		4-inch 90 degr	ree elbow	8410	8	each	\$1,450.00	\$11,600.0	
		5-inch 90 degr	ree elbow	8410	4	each	\$4,100.00	\$16,400.0	
		4 x 4 x 5 reduc	cing tee	8410	1	each	\$5,400.00	\$5,400.0	
		4-inch ball valv		8410	2	each	\$2,000.00	\$4,000.0	
		5"-check valve	2	8410	1	each	\$4,200.00	\$4,200.0	
	4	High water level a	alarm, with single float operated switch,	8410	1	each	\$29,000.00	\$29,000.0	
		<b>v</b>	bls and telemetry cabling to	0410		each	φ29,000.00	φ29,000.0	
		telephone line on	• •						
	5		es constructed of 1/8" by 1 inch	8410	75	lbs	\$78.00	\$5,850.0	
			each measuring 2.5 ft square by 1 inch						
			baced at 1 inch on center by 4 inches						
		on center with cu	touts for sump discharge and cord						
						_			
		Sheet Subtotal =						\$ 154,600.0	
			JANTITIES			PF	RICES		
BY			CHECKED	BY			CHECKED		
Randall Ega			Jeff Morris			Kelly Brom			
DATE PREI	PARED		PEER REVIEW	DATE PREPARED			PEER REVIEW		
19-Nov			Dave Hulse	7/26/2010			Dan Donaldson		

BUREAU OF RE		ESTIMATE WORKS					SHEET_3_ OF _3	
FEATUR			PROJEC					
		Vater Resources Investigation		Central Val		t - CA		
Feasibilit				Shasta Divi				
Pit Rive	r Brid	ge Pier 3 and 4 Protection	REGION:	MP		TE LEVEL:	Feasibility	
			WOID:	AF399	PRICE	_EVEL:	10-Apr	
		Most Probable						
		6.5-ft Dam Raise	9					
PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
		Diar 4						
		Pier 4 Furnish, install, and test the following						
		components:						
		components.						
	6	Sump pump: Submersible type, cast iron body	8410	2	each	\$10,500.00	\$21,000.0	
		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.						
	7	Pipe, copper tubing, ASTM B88, Type K, with						
		insulated stainless steel pipe hangers and supports	0.110		line <b>f</b> t	¢ 400.00	<b>#0.400.0</b>	
		4-inch	8410		lin ft	\$420.00	\$8,400.0	
		5-inch	8410	65	lin ft	\$750.00	\$48,750.0	
	8	Pipe fittings, copper or bronze, ASME B16.18 or						
	0	ASME B16.22, Type K						
		4-inch 90 degree elbow	8410	8	each	\$1,450.00	\$11,600.0	
		5-inch 90 degree elbow	8410		each	\$4,100.00	\$16,400.0	
		4 x 4 x 5 reducing tee	8410		each	\$5,400.00	\$5,400.0	
		4-inch ball valve	8410		each	\$2,000.00	\$4,000.0	
		5"-check valve	8410		each	\$4,200.00	\$4,200.0	
			0410	1	Cacil	φ4,200.00	ψ <del>4</del> ,200.0	
	0	Ligh water level clarge with single fleet encroted switch	9410	1	aaab	¢20,000,00	¢20,000,0	
	9	High water level alarm, with single float operated switch, associated controls and telemetry cabling to	8410	1	each	\$29,000.00	\$29,000.0	
		telephone line on bridge			_			
	10	2 protective grates constructed of 1/8" by 1 inch	8410	75	lbs	\$80.00	\$6,000.0	
		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 =					\$154,750.0	
							φιση,/ 30.0	
		Sheet 1 Subtotal =					\$154,600.0	
				Total 86-68	410 =>		\$309,350.0	
		QUANTITIES			PI	RICES		
ВҮ		CHECKED	вү			CHECKED		
Randall Egar	n	Ryan Stephen	Jeff Morris				/ Brom	
-			DATE PREPARED			PEER REVIEW		
19-Nov-			<b>DATE PREPARED</b> 7/26/2010			Dan Donaldson		

BUREAU OF	RECLAMAT	ION ESTIMATE WO	RKSHE	ET			SHEET_1_OF_1_
FEATUR			PROJEC	T:		/alley Project - (	CA
		Vater Resources Investigation				Division	
Feasibil			WOID:	SHAEF	ESTIMATE LEVEL:		Feasibility
Sacram	iento 2	2 <sup>na</sup> Crossing UPRR Bridge	REGION:	MP		CE LEVEL:	Apr-10
		Most Probable					
Summ	ary	6.5-ft Dam Raise					
PLANT ACCOUNT	РАҮ ІТЕМ	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		982.0-ft long, nine span structure supported on drilled shaf	ts				
		Sheet 1					\$1,301,400.00
		Sheet 2					\$912,880.00
		Sheet 3					\$912,880.00
		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 Mobilization					\$72,797,560.00
		Design Contingencies	15%	+/-			\$10,919,634.00
		Subtotal 2 = Subtotal 1 + Design Contingencies					\$83,717,194.00
		Allowance for Procurement Strategies (APS)	2.0%	+/-			\$1,674,344.00
		Type of solicitation assumed is: Request for Proposal					
		Subtotal 3 = Subtotal 2 + APS					\$85,391,538.00
		CONTRACT COST					\$85,000,000.00
		Construction Contingencies	25%	+/-			\$20,000,000.00
		FIELD COST				<u> </u>	\$105,000,000.00
		Note: Escalation from published price level to notice to proceed			,		<b>v</b>
<b>—</b>		Ref.: For appropriate use and terminology, see Reclamation Ma	nual, Direc	ctives and St			and 09-03.
		QUANTITIES	вү		PI	RICES	
BY						CHECKED	
Carly M. W		Jesus G. Romero P.E.	Jeff Morris			Kelly Brom	
DATE PRE	PARED		DATE PREPARED         PEER REVIEW           08/27/10         Date				Donaldaar
4/21/2010						Dan	Donaldson

BUREAU OF	RECLAMAT	ION ESTIMATE WO	RKSHE	ET			SHEET _1_ OF _13_
FEATUF	RE:		PROJECT:	:			
Shasta Feasibi		Vater Resources Investigation		Central Valle Shasta Divis		t - CA	
		<sup>2<sup>na</sup></sup> Crossing UPRR Bridge	WOID:	SHAEF		E LEVEL:	Feasibility
			REGION:	MP		CE LEVEL:	Apr-10
		Most Probable			•		710
		6.5-ft Dam Raise					
. 5	×						
PLANT ACCOUNT	РАҮ ІТЕМ	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		The existing bridge will be replaced with a new bridge. The					
		The existing bridge will be replaced with a new bridge. The new bridge has 9 spans (105', 55', 135'. 135, 135', 135', 135', 90' & 57') with an overall length of 982'-0" (back to back of abutments). The superstructure consists of four steel plate					
		girders (varying in depth from 12-ft for the 135-foot spans, to 4-					
		foot for the 55-foot span) with cast-in-place reinforced concrete					
		deck. Piers and abutments are supported on drilled shafts.	86-68140				
	Mobilization			1	LS	Included on shee	et 13.
		Earthwork			N (5 3		
		Excavation for structures (abutments+wingwalls)	86-68140	2,100	YD <sup>3</sup>	\$50.00	\$105,000.00
		Backfill about structures (abutments+wingwalls)	86-68140	1,900	YD <sup>3</sup> YD <sup>3</sup>	Included above	
		Compact backfill around structures (abutments+ww)	86-68140	1,900	YD	Included above	
		<b>ABUTMENT #1</b> - Structure is stem wall (~44'H x 10'T x 25'W), beam seat type abutment supported on two, 6-foot diameter drilled shafts. Wingwalls (~33'L x 34'H x 3'T)are connected to stem wall and extend back, perpendicular to stem wall to form a "box" that contains and supports fill and railway subgrade (similar to the existing Doney Creek UPRR bridge).					
		Concrete for Abutment 1, f'c = 4,000 psi					
		Substructure (abutment and wingwalls)	86-68140	500	YD <sup>3</sup>	\$1,200.00	\$600,000.00
		Furnish & handle 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 lbs/cy (fy = 60 ksi)					
		Drilled Shafts					
		6'-0" Diameter @ abutments, $A_c = 28.27 \text{ ft}^2/\text{lf}$	86-68140	78	LF	\$3,800.00	\$296,400.00
		Cost/If includes mobilization for drilling, drilling, casing and removal of water if required, cement,, concrete, reinforcement					
		and integrity testing. Drilled shaft require 82 cy concrete, 23					
		tons cement, and 37,000 lbs epoxy coated reinforcement (~450					
		lbs/cv)	00.00440		YD <sup>3</sup>		
		Rock excavation for drilled shaft (inside casing) SUBTOTAL THIS SHEET	86-68140	82	YD	Included above	\$1,301,400.00
		QUANTITIES				RICES	φ1,301,400.00
вү		CHECKED	вү		P1	CHECKED	
Roman M.	Koltuniuk		Jeff Morris				y Brom
		PEER REVIEW / DATE		RED		PEER REVIEW	,
4/16/2010		Nick Clough, PE	08/27/10				Donaldson

BUREAU OF	RECLAMAT	ION	ESTIMATE WO	RKSHE	ET			SHEET_2_OF_13_
FEATU	RE:			PROJECT	:			
Shasta Feasibi		Vater Resources	Investigation		Central Valle Shasta Divis		t - CA	
Sacran	nento 2	2 <sup>na</sup> Crossing UPI	RR Bridge	WOID:	SHAEF		E LEVEL:	Feasibility
		<b>..</b>		REGION:	MP		CE LEVEL:	Apr-10
		Most	Probable	REGION.	IVIF			Api-10
		WIOSt	6.5-ft Dam Raise					
	-		0.0 11 2411 14100					
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		foot & 16-foot dia socketed into bec Dam fluctuates th	nsist of a single column/drilled shaft (8-foot, 12- meter depending on it's height and location) frock. The reservoir water surface on Shasta froughout the year. An Elevation of 1012.5' is ed shaft construction.					
	PIER 1 - $\phi$ = 8', A <sub>c</sub> = 50.27 ft²/ft, V <sub>c</sub> = 1.9 cy/lf. (Top of coluel 1079.5, Drilled shaft tip El. 973.0'). Overall length (includdrilled shaft), L <sub>p</sub> ~ 106.5 lf. This column/drilled shaft can bconstructed entirely out of the influence of water surface E							
		Structural concr	ete for pier cap, f'c = 4,000 psi					
			5' wide by 14' thick by 22.5' high	86-68140	290	YD <sup>3</sup>	\$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
			ps/cy (fy = 60 ksi)		.,		+=	+===;=====
		0.000						
		Structural concr 4,000 psi).	ete for pier (above OGS, $L_c$ = 64 lf), f'c =	86-68140	122	YD <sup>3</sup>	\$1,600.00	\$195,200.00
		Furnish & ha	ndle cementatious materials (.282T/cy)	86-68140	34	Tons	Included above	
		Furnishing &	handling epoxy coated reinforcement	86-68140	42,700	LBS	\$2.40	\$102,480.00
		@ 350	os/cy (fy = 60 ksi)					
		Drilled Shaft, f'c				· -		
	Drilled shaft length below OGS is 42.5 lf.           Cost/If includes mobilization for drilling, drilling, casing and           removal of water if required, cement concrete, reinforcement           and integrity testing drilled shaft require 82 cy concrete, 23 tor           cement, and 28,000 lbs epoxy coated reinforcement (~350			86-68140	43	LF	\$5,000.00	\$215,000.00
		Ibs/cv) Rock excavation	for drilled shaft (inside casing)	86-68140	82	YD <sup>3</sup>	Included above	
	+		SUBTOTAL THIS SHEET					\$912,880.00
	1		QUANTITIES			PF	RICES	÷••=,0001 <b>0</b> 0
вү			CHECKED	ВҮ		11	CHECKED	
Roman M.	Koltuniuk	. P.F.	Jesus G. Romero, PE	Jeff Morris				Brom
		., <b></b> .	PEER REVIEW / DATE	Jeff Morris Kelly Brom DATE PREPARED PEER REVIEW				
4/16/2010			Nick Clough, PE	08/27/10				onaldson
				00.27710			DailD	

BUREAU OF	RECLAMAT	ION	ESTIMATE WO	RKSHEE	ET			SHEET _3_ OF _13_
FEATU	RE:			PROJECT:				
Shasta Feasibi		Vater Resources dy	Investigation		Central Valle Shasta Divis		- CA	
		2 <sup>na</sup> Crossing UPI	RR Bridge	WOID:	SHAEF	ESTIMAT	E LEVEL:	Feasibility
				REGION:	MP	UNIT PRI	CE LEVEL:	Apr-10
		Most	Probable					•
			6.5-ft Dam Raise					
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
			$A_c$ = 113.1 ft2/ft, $V_c$ = 4.2 cy/lf. (Top of column shaft tip EI. 940.0'). Overall length (including ~ 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 <sup>3</sup>	\$1,200.00	\$330,000.00
	Furnish & handle cementatious materials (.282T/cy)           Furnishing & handling epoxy coated reinforcement			86-68140	78	Tons	Included above	
				86-68140	82,500	LBS	\$3.90	\$321,750.00
		@ 300	os/cy (fy = 60 ksi)					
		Structural concr = 4,000 psi).	ete for pier (above El. 1012.5, L = 66.5 lf), f'c	86-68140	280	YD <sup>3</sup>	\$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 = 4,000 psi).	ete for pier (below El. 1012.5, L = 12.5 lf), f'c	86-68140	53	YD <sup>3</sup>	\$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					
			h below OGS is 60 lf.	86-68140	60	LF	\$15,500.00	\$930,000.00
			nobilization for drilling, drilling, casing and					
			if required, cement concrete, reinforcement ng drilled shaft require 252 cy concrete, 71					
			63,000 lbs epoxy coated reinforcement (250					
		lbs/cv)						
		Rock excavation	for drilled shaft (inside casing)	86-68140	250	YD <sup>3</sup>	Included above	
								¢0 040 005 00
<b>—</b>			SUBTOTAL THIS SHEET					\$2,318,035.00
DV				DV		PF	RICES	
BY Domon M			BY			CHECKED	Drom	
Roman M.		ι, Υ.Ε.	Jesus G. Romero, PE PEER REVIEW / DATE	Jeff Morris Kelly Brom			DIOIII	
<b>DATE PRI</b> 4/16/2010			PEER REVIEW / DATE Nick Clough, PE	DATE PREPARED PEER REVIEW 08/27/10 Dan Donaldson		onaldson		
-10/2010				00121110			Dall D	

BUREAU OF	RECLAMAT	ION	ESTIMATE WO	RKSHEE	ET			SHEET _4_ OF _13_
FEATU	RE:			PROJECT:				
Shasta Feasibi		Vater Resources dv	Investigation		Central Valle Shasta Divis		t - CA	
		2 <sup>na</sup> Crossing UP	RR Bridge	WOID:	SHAEF	ESTIMAT	E LEVEL:	Feasibility
				REGION:	MP	UNIT PRI	CE LEVEL:	Apr-10
		Most	Probable					
			6.5-ft Dam Raise					
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
			$A_c$ = 201.6 ft2/ft, $V_c$ = 7.5 cy/lf. (Top of column shaft tip EI. 859.0'). Overall length (including ~ 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 <sup>3</sup>	\$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	os/cy (fy = 60 ksi)					
		Structural concr 4,000 psi).	ete for pier (above El. 1012.5, L = 69 lf), f'c =	86-68140	520	YD <sup>3</sup>	\$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	os/cy (fy = 60 ksi)					
		Structural concr = 4,000 psi).	ete for pier (below El. 1012.5, L = 84.0 lf), f'c	86-68140	630	YD <sup>3</sup>	\$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 II	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
			nobilization for drilling, drilling, casing and					
			if required, cement concrete, reinforcement ng drilled shaft require 525 cy concrete, 148					
		• • •	144,000 lbs epoxy coated reinforcement (275					
		lbs/cv)				2		
		Rock excavation	for drilled shaft (inside casing)	86-68140	525	YD <sup>3</sup>	Included above	
			SUBTOTAL THIS SHEET					¢ / 726 /00 00
	1							\$4,726,400.00
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BY Domon M	Kalturiu						CHECKED	Prom
Roman M.		λ, Γ.Ε.	Jesus G. Romero, PE	Jeff Morris Kelly Brom				
4/16/2010	PREPARED PEER REVIEW / DATE		DATE PREPARED PEER REVIEW		onaldson			
	0 Nick Clough, PE		08/27/10 Dan Donaldson					

BUREAU OF	RECLAMAT	ION	ESTIMATE WO	RKSHEE	T			SHEET _5_ OF _13_
FEATU	RE:			PROJECT:				
Shasta Feasibi		Vater Resources dv	Investigation		Central Valle Shasta Divis		t - CA	
		2 <sup>na</sup> Crossing UP	RR Bridge	WOID:	SHAEF	ESTIMAT	E LEVEL:	Feasibility
				REGION:	MP	UNIT PRI	CE LEVEL:	Apr-10
		Most	Probable					
			6.5-ft Dam Raise					
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
			$A_c$ = 201.6 ft2/ft, $V_c$ = 7.5 cy/lf. (Top of column shaft tip El. 834.0'). Overall length (including ~ 248.0 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 <sup>3</sup>	\$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 II	os/cy (fy = 60 ksi)					
		Structural concr 4,000 psi).	ete for pier (above El. 1012.5, L = 69 lf), f'c =	86-68140	520	YD <sup>3</sup>	\$1,000.00	\$520,000.00
		Furnish & ha	ndle cementatious materials (.282T/cy)	86-68140	147	Tons	Included above	
		Furnishing &	handling epoxy coated reinforcement	86-68140	143,000	LBS	\$4.00	\$572,000.00
		@ 275	os/cy (fy = 60 ksi)					
		<b>Structural concr</b> f'c = 4,000 psi).	ete for pier (below El. 1012.5, L = 109.0 lf),	86-68140	820	YD <sup>3</sup>	\$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 II	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
			nobilization for drilling, drilling, casing and					
			if required, cement concrete, reinforcement ng drilled shaft require 525 cy concrete, 148					
		0,	144,000 lbs epoxy coated reinforcement (275					
		lbs/cv)						
		Rock excavation	for drilled shaft (inside casing)	86-68140	525	YD <sup>3</sup>	Included above	
								¢ 4 055 000 00
<b>—</b>			SUBTOTAL THIS SHEET					\$4,955,600.00
DV				DV		PF	RICES	
BY Domon M	Kalturalist			BY			CHECKED	Dram
	nan M. Koltuniuk, P.E. Jesus G. Romero, PE		Jeff Morris Kelly Brom		000			
<b>DATE PRI</b> 4/16/2010				DATE PREPARED PEER REVIEW		onaldson		
+/10/2010	0 Nick Clough, PE			08/27/10 Dan Donaldson			Undiusui	

BUREAU OF	RECLAMAT	ION	ESTIMATE WO	RKSHEE	ET			SHEET _6_ OF _13_
FEATU	RE:			PROJECT:				
Shasta Feasibi		Vater Resources dv	Investigation		Central Valle Shasta Divis		t - CA	
		2 <sup>na</sup> Crossing UPI	RR Bridge	WOID:	SHAEF	ESTIMAT	E LEVEL:	Feasibility
				REGION:	MP	UNIT PRI	CE LEVEL:	Apr-10
		Most	Probable					•
			6.5-ft Dam Raise					
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
			$A_c$ = 201.6 ft2/ft, $V_c$ = 7.5 cy/lf. (Top of column shaft tip El. 834.0'). Overall length (including ~ 247.0 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 <sup>3</sup>	\$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	os/cy (fy = 60 ksi)					
		Structural concr 4,000 psi).	<b>ete for pier</b> (above El. 1012.5, L = 68 lf), f'c =	86-68140	510	YD <sup>3</sup>	\$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	os/cy (fy = 60 ksi)					
		<b>Structural concr</b> f'c = 4,000 psi).	ete for pier (below El. 1012.5, L = 109.0 lf),	86-68140	820	YD <sup>3</sup>	\$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 II	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
			nobilization for drilling, drilling, casing and					
			if required, cement concrete, reinforcement ng drilled shaft require 525 cy concrete, 148					
		0,	144,000 lbs epoxy coated reinforcement (275					
		lbs/cv)						
		Rock excavation	for drilled shaft (inside casing)	86-68140	525	YD <sup>3</sup>	Included above	
								¢4 004 000 00
<b>—</b>			SUBTOTAL THIS SHEET					\$4,934,600.00
DV			QUANTITIES	DV		PF	RICES	
BY Domon M	Kalturalist			BY			CHECKED	
Roman M.		ι, <b>Γ.Ε</b> .	Jesus G. Romero, PE	Jeff Morris Kelly Brom		у БГОШ		
<b>DATE PRI</b> 4/16/2010	E PREPARED PEER REVIEW / DATE		Nick Clough, PE	DATE PREPARED PEER REVIEW 08/27/10 Dan Donaldson		onaldson		
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BUREAU OF	RECLAMAT	ION	ESTIMATE WO	RKSHEE	ET			SHEET _7_ OF _13_
FEATU	RE:			PROJECT:				
Shasta Feasibi		Vater Resources	Investigation		Central Valle Shasta Divis		t - CA	
		2 <sup>na</sup> Crossing UP	RR Bridge	WOID:	SHAEF		E LEVEL:	Feasibility
		_	-	REGION:	MP	UNIT PRI	CE LEVEL:	Apr-10
		Most	Probable					
			6.5-ft Dam Raise					
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
			$A_c$ = 201.6 ft2/ft, $V_c$ = 7.5 cy/lf. (Top of column shaft tip EI. 859.0'). Overall length (including ~ 221.0 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 <sup>3</sup>	\$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 II	os/cy (fy = 60 ksi)					
		Structural concr 4,000 psi).	ete for pier (above El. 1012.5, L = 67 lf), f'c =	86-68140	505	YD <sup>3</sup>	\$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	os/cy (fy = 60 ksi)					
		Structural concr = 4,000 psi).	ete for pier (below El. 1012.5, L = 84.0 lf), f'c	86-68140	630	YD <sup>3</sup>	\$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	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
			nobilization for drilling, drilling, casing and					
			if required, cement concrete, reinforcement					
		<b>.</b> .	ng drilled shaft require 525 cy concrete, 148 144,000 lbs epoxy coated reinforcement (275					
		lbs/cv)						
		Rock excavation	for drilled shaft (inside casing)	86-68140	525	YD <sup>3</sup>	Included above	
								¢4 000 400 00
<b>—</b>	1	<u> </u>	SUBTOTAL THIS SHEET					\$4,693,400.00
DV				DV		PF	RICES	
BY Domon M	Kaltur			BY			CHECKED	Dram
Roman M.		, Г.E.	Jesus G. Romero, PE	Jeff Morris Kelly Brom		/ D(0111		
<b>DATE PR</b> 4/16/2010				DATE PREPARED PEER REVIEW		onaldson		
+/10/2010	10 Nick Clough, PE		08/27/10 Dan Donaldson			unalusul		

BUREAU OF	RECLAMAT	ION	ESTIMATE WO	RKSHEE	T			SHEET _8_ OF _13_
FEATU	RE:			PROJECT:				
Shasta Feasibi		Vater Resources dv	Investigation		Central Valle Shasta Divis		t - CA	
		2 <sup>na</sup> Crossing UP	RR Bridge	WOID:	SHAEF	ESTIMAT	E LEVEL:	Feasibility
				REGION:	MP	UNIT PRI	CE LEVEL:	Apr-10
		Most	Probable					
			6.5-ft Dam Raise					
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
			$A_c = 113.1$ ft2/ft, $V_c = 4.2$ cy/lf. (Top of column shaft tip EI. 940.0'). Overall length (including ~ 139.0 lf.					
		Structural concr	rete for pier cap, f'c = 4,000 psi					
		Pier cap is 2	5' wide by 14' thick by 13.5' high	86-68140	175	YD <sup>3</sup>	\$1,200.00	\$210,000.00
		Furnish & ha	ndle cementatious materials (.282T/cy)	86-68140	49	Tons	Included above	
		Furnishing &	handling epoxy coated reinforcement	86-68140	52,500	LBS	\$3.90	\$204,750.00
		@ 300	bs/cy (fy = 60 ksi)					
		Structural concr 4,000 psi).	rete for pier (above El. 1012.5, L = 66 lf), f'c =	86-68140	280	YD <sup>3</sup>	\$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	bs/cy (fy = 60 ksi)					
		Structural concr = 4,000 psi).	rete for pier (below El. 1012.5, L = 13.0 lf), f'c	86-68140	55	YD <sup>3</sup>	\$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	bs/cy (fy = 60 ksi)					
		Drilled Shaft, f'c	= 4,000 psi					
			th below OGS is 60 lf.	86-68140	60	LF	\$15,500.00	\$930,000.00
			nobilization for drilling, drilling, casing and					
			if required, cement concrete, reinforcement ng drilled shaft require 252 cy concrete, 71					
			63,000 lbs epoxy coated reinforcement (250					
		lbs/cv)						
		Rock excavation	for drilled shaft (inside casing)	86-68140	250	YD <sup>3</sup>	Included above	
								¢0 000 705 00
<b>—</b>			SUBTOTAL THIS SHEET					\$2,083,725.00
DV				DV		PF	RICES	
BY Domon M	Kalturation			BY			CHECKED	Prom
Roman M.		κ, Υ.Ε.	Jesus G. Romero, PE PEER REVIEW / DATE	Jeff Morris Kelly Brom		N BIOM		
<b>DATE PR</b> 4/16/2010				DATE PREPARED PEER REVIEW		onaldson		
+/10/2010	) Nick Clough, PE		08/27/10 Dan Donaldson					

BUREAU OF	RECLAMAT	ION	ESTIMATE WO	RKSHE	T			SHEET_9_OF_13_
FEATUF	RE:			PROJECT:				
Shasta Feasibi		Vater Resources	Investigation		Central Valle Shasta Divis		: - CA	
Sacran	nento 2	2 <sup>na</sup> Crossing UPF	RR Bridge	WOID:	SHAEF	ESTIMAT	E LEVEL:	Feasibility
		-	-	REGION:	MP		CE LEVEL:	Apr-10
		Most	Probable					
			6.5-ft Dam Raise					
⊢ <sup>⊥</sup> Z	M							
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
			$_{c}$ = 50.3.1 ft2/ft, V <sub>c</sub> = 1.9 cy/lf. (Top of column					
		el 1079.0, Drilled drilled shaft), Lp constructed entire	shaft tip EI. 973.0'). Overall length (including ~ 106.0 lf. This column/drilled shaft can be ely out of the influence of water surface EI.					
		1012 5 Structural concre	ete for pier cap, f'c = 4,000 psi					
			5' wide by 14' thick by 17' high	86-68140	220	YD <sup>3</sup>	\$660.00	\$145,200.00
			ndle cementatious materials (.282T/cy)	86-68140	62	Tons	Included above	\$110,200.00
			handling epoxy coated reinforcement	86-68140	66,000	LBS	\$2.40	\$158,400.00
			ps/cy (fy = 60  ksi)				+=	<i><i><i>ϕ</i>:00,100100</i></i>
		Ŭ						
		Structural concrete 4,000 psi).	ete for pier (above OGS, L = 36 lf), f'c =	86-68140	68	YD <sup>3</sup>	\$1,600.00	\$108,800.00
		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 lb	os/cy (fy = 60 ksi)					
		Drilled Shaft, f'c	= 4,000 psi					
			h below OGS is 70 lf.	86-68140	70	LF	\$5,000.00	\$350,000.00
			obilization for drilling, drilling, casing and					. ,
			if required, cement concrete, reinforcement					
			ng drilled shaft require 135 cy concrete, 38 48,000 lbs epoxy coated reinforcement (350					
		lbs/cv)	40,000 lbs epoxy coaled reinforcement (350					
		Rock excavation	for drilled shaft (inside casing)	86-68140	135	YD <sup>3</sup>	Included above	
			SUBTOTAL THIS SHEET					\$819,520.00
	-		QUANTITIES			PF	RICES	
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Roman M.	Koltuniuk	κ, Ρ.Ε.	Jesus G. Romero, PE	Jeff Morris Kelly Bro		Brom		
			DATE PREPARED PEER REVIEW					
4/16/2010			08/27/10			Dan Do	onaldson	

BUREAU OF	RECLAMAT	ION	ESTIMATE WO	RKSHE	ET			SHEET _10_ OF _13_
FEATUR	RE:			PROJECT	:			
Shasta Feasibi		Vater Resources dv	Investigation		Central Valle Shasta Divis		t - CA	
Sacran	nento 2	2 <sup>na</sup> Crossing UPI	RR Bridge	WOID:	SHAEF	ESTIMATE LEVEL:		Feasibility
		_	-	REGION:	MP		CE LEVEL:	Apr-10
		Most	Probable					p
			6.5-ft Dam Raise					
L ۲	×							
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		A DUTMENT #0						
		beam seat type a drilled shafts. Wi stem wall and ext	Structure is stem wall (~50'H x 10'T x 25'W), butment supported on two, 6-foot diameter ngwalls (~33'L x 40'H x 3'T) are connected to end back, perpendicular to stem wall to form ins and supports fill and railway subgrade					
		(similar to the exis						
		Concrete for Ab	utment 2, f'c = 4,000 psi					
			(abutment and wingwalls)	86-68140	660	YD <sup>3</sup>	\$1,200.00	\$792,000.00
		Furnish & ha	ndle cementatious materials (.282T/cy)	86-68140	186	Tons	Included above	
		Furnishing &	handling epoxy coated reinforcement	86-68140	165,000	LBS	\$2.40	\$396,000.00
			os/cy (fy = 60 ksi)					
		Drilled Shafts						
		6'-0" Diamete	er @ abutments, $A_c = 28.3 \text{ ft}^2$	86-68140	51	LF	\$3,800.00	\$193,800.00
		removal of water and integrity testi	nobilization for drilling, drilling, casing and if required, cement,, concrete, reinforcement ng. Drilled shaft require 54 cy concrete, 15 24,000 lbs epoxy coated reinforcement (~450					
			for drilled shaft (inside casing)	86-68140	54	YD <sup>3</sup>	Included above	
		SUPERSTRUCT	JRE					
		Steel for girders,	Fy = 50 ksi, ASTM A709W	86-68140	4,750,000	LBS	\$3.80	\$18,050,000.00
		Structural concret	te, f' <sub>c</sub> = 4,000 psi	86-68140	650	YD3	\$1,800.00	\$1,170,000.00
		Furnishing and ha	andling cementatious material	86-68140	183	Tons	Included above	
			acing reinforcment bars (300 lbs/cy)	86-68140	195,000	LBS	\$2.60	\$507,000.00
		(ty = 60 ksi, e	epoxy coated) SUBTOTAL THIS SHEET					\$21 100 000 00
<b>—</b>								\$21,108,800.00
DV			QUANTITIES	DV		PF	RICES	
BY Domon M	Kalturated			BY			CHECKED	
	nan M. Koltuniuk, P.E. Jesus G. Romero, PE		Jeff Morris Kelly Brom			y Brom		
	PREPARED PEER REVIEW / DATE		DATE PREPARED PEER REVIEW		lonaldeon			
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BUREAU OF		ON ESTIMATE WO		т			SHEET _11_ OF _13_
FEATUF	RE:		PROJECT:				
Shasta Feasibil		Vater Resources Investigation dy		Central Valle Shasta Divis		: - CA	
		<sup>ra</sup> Crossing UPRR Bridge	WOID:	SHAEF	ESTIMAT	E LEVEL:	Feasibility
			REGION:	MP		CE LEVEL:	Apr-10
		Most Probable					
		6.5-ft Dam Raise	<b>;</b>				
L LN	M						
PLANT ACCOUNT	РАҮ ІТЕМ	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Removal of Existing Concrete and Reinforcement	86-68140	100	YD <sup>3</sup>	\$500.00	\$50,000.00
		in Abutment 1					
		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.					
		Removal of Existing Concrete and Reinforcement	86-68140	390	YD <sup>3</sup>	\$380.00	\$148,200.00
		in Pier 1				+000.00	<i>\</i> , <u>_</u>
		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 <sup>3</sup>	\$710.00	\$1,242,500.00
		in Pier 2					
		Remove in blocks weighing approximately 20 tons					
		(A block with dimensions of 6'5" x 6'5" x 6'5"					
		weighs 19.8 tons). Remove Pier down to 3'					
		below ground surface.					
		Removal of Existing Concrete and Reinforcement	86-68140	5,500	YD <sup>3</sup>	\$1,300.00	\$7,150,000.00
		in Pier 3					
		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'					
	ļ	below ground surface.					
		SUBTOTAL THIS SHEET	-				\$8,590,700.00
	QUANTITIES				PF	RICES	+=,===,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
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DATE PRE		PEER REVIEW / DATE	DATE PREPA	RED		PEER REVIEW	
4/21/2010		Jesus G. Romero P.E.	08/27/10 PEER REVIEW Dan Donaldson		onaldson		

BUREAU OF		ON ESTIMATE WO		T			SHEET _12_OF _13_
FEATUF	RE:		PROJECT:				
Shasta Feasibil		Vater Resources Investigation dy		Central Valle Shasta Divis		: - CA	
		2 <sup>ria</sup> Crossing UPRR Bridge	WOID:	SHAEF	ESTIMAT	E LEVEL:	Feasibility
			REGION:	MP		CE LEVEL:	Apr-10
		Most Probable					
		6.5-ft Dam Raise	<b>;</b>				
т ти	EM						
PLANT ACCOUNT	РАҮ ІТЕМ	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Removal of Existing Concrete and Reinforcement	86-68140	5,400	YD <sup>3</sup>	\$1,300.00	\$7,020,000.00
		in Pier 4					
		Remove in blocks weighing approximately 20 tons					
		(A block with dimensions of 6'5" x 6'5" x 6'5"					
		weighs 19.8 tons). Remove Pier down to 3'					
		below ground surface.					
		Removal of Existing Concrete and Reinforcement	86-68140	1,750	YD <sup>3</sup>	\$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 <sup>3</sup>	\$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 <sup>3</sup>	\$500.00	\$37,000.00
		in Abutment 2					
		Remove in blocks weighing approximately 20 tons					
		(A block with dimensions of 6'5" x 6'5" x 6'5"					
		weighs 19.8 tons). Remove Abutment down to 3'					
		below ground surface.					
		SUBTOTAL THIS SHEET	-				\$8,432,500.00
	QUANTITIES				PF	RICES	<i>+-,</i> ,
вү		CHECKED	ВҮ			CHECKED	
Carly M. W	/eaher	Joseph M. Gemperline	Jeff Morris				Brom
DATE PRE		PEER REVIEW / DATE	DATE PREPA	RED		PEER REVIEW	
4/21/2010		Jesus G. Romero P.E.	08/27/10 PEER REVIEW Dan Donaldson		onaldson		

BUREAU OF	RECLAMAT	ION	ESTIMATE W	ORKSHE	ET			SHEET _13_ OF _13_
FEATU	RE:			PROJECT	:			
Shasta Feasibi		Vater Resources dy	Investigation		Central Valle Shasta Divis		- CA	
Sacran	nento 2	2 <sup>na</sup> Crossing UP	RR Bridge	WOID:	SHAEF	ESTIMAT	E LEVEL:	Feasibility
				<b>REGION:</b>	MP		CE LEVEL:	Apr-10
		Most	t Probable					-
			6.5-ft Dam Rai	se				
	M							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Removal of Exis	sting Steel Truss and Girder Bridge	86-68140	3,300,000	LBS	\$0.40	\$1,320,000.00
		Bridge appro	pach spans consist of built up girders and the	e main spans o	consist of buil	t up truss i	members.	
		All members	have riveted connections. The structural ste	eel grade is un	known, but ca	an assume	e Fy=33 ksi.	
		The existing steel appears to be painted.						
							ļ	
			SUBTOTAL THIS SHE	ET				\$1,320,000.00
			QUANTITIES			PF	RICES	
BY			CHECKED	BY			CHECKED	
Carly M. V			Joseph M. Gemperline	Jeff Morris			Kelly	y Brom
DATE PRI			PEER REVIEW / DATE	DATE PREP	ARED		PEER REVIEW	
4/21/2010			Jesus G. Romero P.E.	08/27/10			Dan D	onaldson

BUREAU OF		ION ESTIMATE WO					SHEET_1_OF_1_
FEATL	JRE:		PROJE	CT:			
Shasta Feasib		Water Resources Investigation		Central Val Shasta Div		:	
		er Replacement	WOID:	SHAEF	ESTIMATE	LEVEL:	Feasibility
			REGION:	MP	UNIT PRIC		Apr-10
		Most Probable					
Summ	ary	6.5-ft Dam Rais	e				
PLANT ACCOUNT	РАҮ ІТЕМ	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Sheet 1 - Site Work					156,210.00
		Sheet 2 - Site Work					585,180.00
		Sheet 3 - Site Work					1,468,280.00
		Sheet 4 - Structure			_		333,875.00
		Sheet 5 - Structure			_		650,665.00
		Sheet 6 - Structure			_		447,473.60
		Sheet 7 - Structure			_		392,310.00
		Sheet 8 - Structure					1,138,112.50
		Subtotal 1					\$5,172,106.10
		Mobilization	5%	+/-			\$260,000.00
		Subtotal 1 with Mobilization					\$5,432,106.10
		Escalation to Notice to Proceed (NTP): None assumed.	0%				\$0.00
		Subtotal 2 = Subtotal 1 with Mobilization + Escalation to N	ΓP				\$5,432,106.10
		Design Contingencies	15%	+/-			\$842,955.90
		Subtotal 3 = Subtotal 2 + Design Contingencies					\$6,275,062.00
		Allowance for Procurement Strategies (APS)	2.0%	+/-			\$124,938.00
		Type of solicitation assumed is: Request for Proposa	1				
		Subtotal 4 = Subtotal 3 + APS					\$6,400,000.00
		CONTRACT COST					\$6,400,000.00
		Construction Contingencies	20%	+/-			\$1,200,000.00
		FIELD COST					\$7,600,000.00
		Note: Escalation from published price level to notice to proceed	t is exclude	d Estimates	may include	discrenancies d	ue to rounding
		Ref.: For appropriate use and terminology, see Reclamation M					
		QUANTITIES				RICES	
BY	Joe Ger		BY			CHECKED	
	J Neuma			Greg Akins			elly Brom
DATE PR		PEER REVIEW / DATE	DATE PREF			PEER REVIEW / DA	

BUREAU OF		ON	ESTIMATE WO					SHEET _1_ OF _8_
FEATU	JRE:			PROJECT:				
			es Investigation		Central Valle Shasta Divis			
Feasib Visitor		er Replacemen	t	WOID:	SHAEF	ESTIMAT	FIFVFI	Feasibility
VISICO	Cente			REGION:	MP		CE LEVEL:	Apr-10
		Most	Probable					
			6.5-ft Dam Rais	e				
E.	Σ							
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	am 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
		<b>.</b>						
	2		ggregate base material and			10	<b>.</b>	<u> </u>
		recycle		86-68120	2,840	yd3	\$8.00	\$22,720.00
		Execution for pa	irking lot sub-grade	86-68120	3,150	yd3	\$8.00	\$25,200.00
				00-00120	3,150	yus	φ0.00	\$25,200.00
	4	Compacted emba	ankment for parking lot					
			g material from excavation	86-68120	3,150	yd3	\$10.00	\$31,500.00
					-,	,		<i> </i>
	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		tion for visitor center footings					
		(assume 1/4 of	total excavation for footings)	86-68120	450	yd3	\$7.00	\$3,150.00
			en e				<b>.</b>	
	7	Compacted back	fill for visitor center building	86-68120	1,100	yd3	\$10.00	\$11,000.00
		12" thick gravel fi	Il under building floor slab	86-68120	300	yd3	\$58.00	\$17,400.00
	C			00-00120	500	yuə	φ38.00	\$17,400.00
	c	Strip 6" topsoil ar	nd stockpile on site	86-68120	210	yd3	\$15.00	\$3,150.00
						juo	<b></b>	<i><b>v</b>vvvvvvvvvvvvv</i>
	10	Remove and disc	oose concrete flatwork					
		and curbing		86-68120	160	yd3	\$10.00	\$1,600.00
	11	Remove and disp	oose parking lot light poles,					
		bases, and bur	ed electrical lines	86-68120	25	ea	\$290.00	\$7,250.00
				_			ļ	<b>•</b> / <b>-</b> • • • • •
L			SUBTOTAL THIS SHEE	T		<u> </u>		\$156,210.00
	QUANTITIES				PR	RICES		
BY			BY	0		CHECKED	D	
JF Pattie			Greg Akins Kelly Bro					
<b>DATE PRE</b> 06/28/10	FARED		PEER REVIEW / DATE Al Bernstein P.E. 6/28/10		12/07/10			⊑ naldson
00/20/10				1	12/01/10		L Dan Do	

BUREAU OF R		DN	ESTIMATE \					SHEET _2_ OF _8_
FEATU				PROJECT:				
Shasta Feasibil			es Investigation		Central Valle Shasta Divis			
		r Replacemen	t	WOID:	SHAEF	ESTIMATI	E LEVEL:	Feasibility
				<b>REGION:</b>	MP		CE LEVEL:	Apr-10
		Most	Probable					
			6.5-ft Dam Ra	aise				
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		6" thick Aggrogat						
	12		e base material under asphalt	86-68120	2,400	1.42	¢70.00	¢169.000.00
		pavement and	concrete flatwork	00-00120	2,400	yd3	\$70.00	\$168,000.00
	13	Reinforced concr	ete flatwork. Batch plant					
	10	within 1 mile of		86-68120	130	yd3	\$360.00	\$46,800.00
						<b>j</b>		<del>+</del> ,
	14	3" thick asphalt c	oncrete pavement	86-68120	1,100	yd3	\$230.00	\$253,000.00
	15	Place topsoil from	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	Corrugated high-	density re-cycled polyethylene					
			lar to Hancor, Inc. type-S					
		15" diam.		86-68120	1,500	ft	\$20.00	\$30,000.00
	18	Corrugated high-	density re-cycled polyethylene					
		storm drain inle	t riser and drain grate, similar					
		to Hancor, Inc.	- 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
	10			00 00 120	0		<b>\$00.00</b>	4000.00
	20	1"-6" diam. river	rock	86-68120	600	yd3	\$67.00	\$40,200.00
	21	12" 24" diam bo	ulders, from government source					
	21	within 1 mile		86-68120	300	yd3	\$10.00	\$3,000.00
						<u> </u>	<i> </i>	<i></i>
	22	7'X6" pre-cast co	ncrete parking bumpers	86-68120	130	ea	\$110.00	\$14,300.00
			SUBTOTAL THIS SH	IFFT				\$585,180.00
	QUANTITIES					l PR		ψυσυ, του.ου
BY				BY			CHECKED	
JF Pattie					Greg Akins			Brom
	ATE PREPARED PEER REVIEW / DATE		DATE PREPARED PEER REVIEW / DATE					
06/28/10			Al Bernstein P.E. 6/28/10		12/07/10		Dan Do	naldson

BUREAU OF RECLAMATION	N	ESTIMATE WO					SHEET_3_OF_8_
FEATURE:			PROJECT	1			
Shasta Lake V Feasibility Stu	Water Resource Idv	s Investigation		Central Valle Shasta Divis		:	
	r Replacement		WOID:	SHAEF	ESTIMAT	E LEVEL:	Feasibility
	•		REGION:	MP		CE LEVEL:	Apr-10
	Most	Probable					
		6.5-ft Dam Raise					
PLANT ACCOUNT PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
23	2" caliper deciduo	us shade trees and staking	86-68120	65	еа	\$350.00	\$22,750.00
24	1" caliper deciduo	us trees and staking	86-68120	45	еа	\$290.00	\$13,050.00
25	6' height coniferou	s trees and guying	86-68120	40	еа	\$340.00	\$13,600.00
26	Drip irrigation syst	em. 10 zone valves, vacuum					
		oxes, drains, controller					
	10,000 ft. pvc lat	erals, 450 pvc drip emitters	86-68120	1	LS	\$35,000.00	\$35,000.00
27	Broadcast seedinç	]	86-68120	45,000	ft2	\$0.08	\$3,600.00
28	6" thick topsoil pla	ced on green roof	86-68120	70	ft2	\$22.00	\$1,540.00
29	Metal parking sha	de canopy structures	86-68120	14,720	ft2	\$20.00	\$294,400.00
30	Solar panels mour	nted on parking canopies					
	with associated	electrical equipment	86-68120	11,800	ft2	\$65.00	\$767,000.00
31		r, power, and communication					
	· · · · · ·	existing building. Within	00.00400	4		#105 000 00	<b>#</b> 405 000 00
	300 feet of visito		86-68120	1	LS	\$195,000.00	\$195,000.00
32	Pole mounted par	king lot lighting, bases, and					
	buried power line	es	86-68120	25	ea	\$4,700.00	\$117,500.00
33	Paint striping on a	sphalt pavement, 4" wide	86-68120	7,000	ft	\$0.62	\$4,340.00
34	Accessible parking	g symbols on pavement	86-68120	10	еа	\$50.00	\$500.00
		SUBTOTAL THIS SHEET					\$1,468,280.00
· · · · ·	Ω	UANTITIES			PF	RICES	÷.,100,200100
BY				BY CHECKED			
JF Pattie	Pattie R Dham 6/28/10			Greg Akins		Kelly	y Brom
<b>DATE PREPARED</b> 06/28/10	TE PREPARED PEER REVIEW / DATE		DATE PREPA	<b>RED</b> 12/07/10		PEER REVIEW / DAT	<b>E</b> onaldson

BUREAU OF	RECLAMATI	ON	ESTIMATE WORK	SHEET				SHEET_4_ OF _ 8_
FEATU	JRE:			PROJEC	:T:			
Shasta	Lake	Water Resource	es Investigation		Central Valle	ev Project		
Feasib			5		Shasta Divis			
		er Replacemen	f	WOID:	SHAEF		TE LEVEL:	Feasibility
VISICOI	ociii		•	REGION:	MP	PRICE L		Apr-10
		Meet	Droboble	REGION.	IVIF			Api-10
		WOSt	Probable					
			6.5-ft Dam Ra	lise				
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		VISITOR CENTE	R STRUCTURE	86-68120	Lump Sum			
		BUILDING DESC						
			000 square foot Visitor Center will be home	to exhibit				
			ival storage, a 200-seat theater/conference					
	1		nop/cashier counter, staff offices, meeting/		<u> </u>			
	1		<pre>//vending areas, dam security offices, toile</pre>					
			is, and a four-story elevator with enclosed					
	observation deck at the upper level. The building st							
			of diverse shapes creating a serpentine flo					
			a two-story serrated pyramidal core. Susta					
			ent elements such as natural diffused lighti					
		construction	materials, green vegetative roofs, solar pa	ls, green vegetative roofs, solar panels, and				
		building orier	ntation will be incorporated into the overall	design concept	•			
		BUILDING MATE	RIALS EXTERIOR-					
		Glass Curta	in Wall:	86-68120	4,000	ft2	\$50.00	\$200,000.00
			ght weight, multi-cavity insulating	00 00 120	4,000	1(2	φ00.00	φ200,000.00
			& west theater walls)					
		Similar to:						
		Serious Mate	viale					
		PH: 800-797						
			/w.Serious Windows.com					
	2		al Composite Skin	86-68120	3,825	ft2	\$35.00	\$133,875.00
			l composite panels					
			II_elevator tower - 900					
	<b> </b>		all_elevator tower - 675					
			I_elevator tower - 825					
			II_elevator tower - 1050					
		tower co	nnection walls - 375					
		Similar to:					+	
			ectural Products 'Reynobond'					
	1	PH: 478-374						
			/w.alcoaarchitecturalproducts.com					
			Sheet Subtotal					\$333,875.00
			QUANTITIES			P	RICES	
BY			CHECKED	BY	One - Allin			
D 4				<b>P</b> ·	Greg Akins		Kelly Brom	
DATE PRI	PARED		PEER REVIEW	DATE PREP			PEER REVIEW	
			12/7/2010 Dan Donaldson					

BUREAU OF F	RECLAMATIO	N	ESTIMATE WOR	RKSHEET				SHEET_5_ OF 8
FEATU	RE:			PROJEC	T:			
Shasta	Lake V	Vater Resource	es Investigation		Central Valle	ey Project		
Feasibi	lity Stu	dy	-		Shasta Divis			
	-	r Replacemen	t	WOID:	SHAEF	ESTIMA	TE LEVEL:	Feasibility
				<b>REGION:</b>	MP	PRICE L	EVEL:	Apr-10
		Most	Probable					
			6.5-ft Dam	Raise				
⊢ TN	M							
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
AC AC	<u> </u>							
		Continued						
		Continued						
	3	Glass Wind	ow Bands	86-68120	318	lin.ft	\$60.00	\$19,080.00
			ective to match glass curtain wall.					+ ,
			tower - 139					
			ll offices - 80					
			office wall - 80					
		Tower c	onnecting walls - 19					
		Exterior Do		86-68120				
	4		h x 36" wide, reflective		<u> </u>	ea	\$5,000.00	\$50,000.00
	5	Steel, Insulat	leu 8 x 36		4	ea	\$3,200.00	\$12,800.00
		Interior Doo	rs	86-68120				
	6	Steel, 8'X36"		00-00120	17	ea	\$1,900.00	\$32,300.00
							¢ 1,000.00	÷02,000.00
	7	Roof Hatch	36" x 36", insulated	86-68120	1	ea	\$3,700.00	\$3,700.00
		<u> </u>		00.00400		(10)		
	8	Steel Louve	rs (elevator tower)	86-68120	364	ft2	\$95.00	\$34,580.00
	9	Metal Roofi	20	86-68120	13,545	ft2	\$19.00	\$257,355.00
	5		tower - 625	00-00120	10,040	112	\$13.00	φ207,000.00
		theater -						
			scia- 740					
	10	Roof Cleres		86-68120	425	ft2	\$73.00	\$31,025.00
		16" high, ins	ulated					
				00.00100	1.000	(10)		
	11	Vegatative C north roof - 1		86-68120	4,236	ft2	\$30.00	\$127,080.00
		south roof - 2						
		300011001 - 2						
	12	Solar Panels	5					
		elevator towe		86-68120	625	ft2	\$65.00	\$40,625.00
		theater roof -	- 5065					. ,
	13	Roof Soffit I		86-68120	3,120	ft2	\$13.50	\$42,120.00
			Sheet Subtotal			<u> </u>		\$650,665.00
DV			QUANTITIES	DV		Р		
BY CHECKED JF Pattie R Dham			BY	Greg Akins		CHECKED Kelly Brom		
		ລແເບ	PEER REVIEW	DATE PREPA			PEER REVIEW	
	ATE PREPARED     PEER REVIEW       6/28/2010     Al Bernstein P.E.		DATE FREPA					

BUREAU OF	RECLAMATIO	N	ESTIMATE WOR	KSHEET				SHEET_6_ OF 8
FEATU	JRE:			PROJEC	T:			
	i Lake V ility Stu		es Investigation		Central Valle Shasta Divis			
		r Replacemen	+	WOID:	SHAEF		E LEVEL:	Feasibility
VISICO	Ocific	ricplacemen		REGION:	MP			Apr-10
		Most	Probable	REGION.	WII			
		most	6.5-ft Dam F	Raise				
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Continued						
	14	Structural T 24" deep	heater Floor	86-68120	2,274	ft2	\$50.00	\$113,700.00
	15	Structural F	levator Floors	86-68120	1,456	ft2	\$40.00	\$58,240.00
	10	2nd floor, 12		00 00 120	1,400		φ+0.00	\$00,240.00
		3rd floor, 12"	•					
		4th floor, 12"	deep - 487					
	10	Malan Church		00.00100	<b>E</b> 4 4	lin fi		<b>*</b> 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	16		tural Roof Members upport beam -24" deep, 65 lin ft	86-68120	511	lin ft	\$200.00	\$102,200.00
			pport beams -24" deep, 05 lin ft					
			port tension rods 2" dia, 260 lin ft					
		BUILDING MATE	ERIALS INTERIOR -					
	17	Interior Wal		86-68120	8,400	ft2	\$2.50	\$21,000.00
			0 ga. steel studs @ 16' o.c.					
		1st floor	xp' gypbd. ea. side , 10' high,					
			r & elevator floors- 2880					
		2.1.0.1.00						
	18			86-68120	8,290	ft2	\$6.60	\$54,714.00
		18"x 18" self						
		Theater						
			es - 1975 Offices - 920					
			Area - 2920					
	19			86-68120	5,000	ft2	\$8.50	\$42,500.00
		24" x 24" acc	coustical w/mtl grid, seismic clps					
	20	Gypsum Bo	ard Ceiling:	86-68120	6,000	ft2	\$5.50	\$33,000.00
		5/8" type 'xp'			-,			+ ,
	21	Painted Sur		86-68120	18,433	ft2	\$1.20	\$22,119.60
		walls - 16,60 ceilings - 1,8					-	
		Cennigs - 1,0	Sheet Subtotal					\$447,473.60
			QUANTITIES			P	RICES	
ВΥ				BY			CHECKED	
	JF Pattie R Dham				Greg Akins		Kelly Brom	
DATE PR				DATE PREPA			PEER REVIEW	
	6/28/2010 Al Bernstein P.E.				12/7/2010		Dan Donaldson	

BUREAU OF	RECLAMATIO	DN	ESTIMATE WOR	KSHEET				SHEET_7_OF_8_	
FEATU	JRE:			PROJEC	T:				
			es Investigation		Central Valle				
	ility Stu				Shasta Divis				
VISITO	Cente	r Replacemen	t	WOID:	SHAEF			Feasibility	
		Meet	Deskahls	REGION:	MP	PRICE L	EVEL:	Apr-10	
		WOST	Probable 6.5-ft Dam F	Raise					
. 5	Σ		0.0-11 Dain 1						
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
		Continued							
	22	Hand & Gua	rd Bailing:	86-68120	228	lin.ft	\$600.00	\$136,800.00	
			ninum rails w/glass panels,	00-00120	220		\$000.00	\$130,000.00	
		46" high							
		Similar to:							
			& Company, Inc						
		PH: 800-527							
		Website: ww	vw.juliusblum.com						
	23		unters and Cabinetry:	86-68120	296	lin ft	\$660.00	\$195,360.00	
			ormation counters - 40 lin ft						
			blay cases - 50 lin ft						
			plays - 100 lin ft						
			& wall cabinets - 16 lin ft s in security office - 90 lin ft						
	24			86-68120	1,650	ft2	\$11.00	\$18,150.00	
		wall tile - 12							
		floor tile - 45	50						
		BUILDING SPEC	IALITY ELEMENTS -						
	25			86-68120	1	ea	\$42,000.00	\$42,000.00	
			retractable screen mounted in a						
			gned bracket and attached to a						
			ble system in the ceiling.						
			, , , , , , , , , , , , , , , , , , , ,						
		<u>Similar to:</u>							
		Vutec, mode							
		PH: 800-770							
		Website: ww	vw.vutec.com						
	<b>_</b>		Shoot Subtotal					¢202 240 24	
			Sheet Subtotal QUANTITIES			P	RICES	\$392,310.00	
BY			BY			CHECKED			
	JF Pattie R Dham			Greg Akins		Kelly Brom			
DATE PR	E PREPARED PEER REVIEW		DATE PREPA	RED		PEER REVIEW			
	6/28/2010		Al Bernstein P.E.		12/7/2010		Dan Donaldson		

FEATURE: Shasta Lak Feasibility S Visitor Cer	e Water Study	lacemen	es Investigation t	:		ey Project					
Shasta Lak Feasibility S Visitor Cer	e Water Study	lacemen	-		Central Valle	ey Project					
Feasibility S Visitor Cer	Study	lacemen	-	:		Central Valley Project					
Visitor Cer			t		Shaeta Hiivie						
			t				E LEVEL:				
PLANT ACCOUNT PAY ITEM		Most		WOID:	SHAEF			Feasibility			
PLANT ACCOUNT ACCOUNT PAY ITEM		Most		REGION:	MP	PRICE LI	EVEL:	Apr-10			
PLANT ACCOUNT ACCOUNT PAY ITEM			Probable								
PLANT ACCOUNT PAY ITEM			6.5-ft Dam F	Raise		_					
	Continued		DESCRIPTION	CODE	QUANTITY	UNIT UNIT PRICE		AMOUNT			
	Contir	nued									
	26 <b>T</b>	oilet Room	IS:	86-68120	560	ft2	\$85.00	\$47,600.00			
	N	len/Women	/Janitor Closet					, ,,			
		6 - water	r closets								
		3 - urina									
			sin pre-formed lavatories								
			r towel dispr/trash recepticals								
			paper dispensers								
			gh x 72" mirrors								
			36" mop sink								
	_	1 00 X									
	27 <b>E</b>	levator:		86-68120	1	ea	\$195,000.00	\$195,000.00			
			loleless Hydraulic, 3 stops,	00 00 120	•	Cu	\$133,000.00	\$135,000.00			
			ar, 3500 lbs maximum load,								
			hachine room and 7'-6" deep pit.								
			ar, 3500 lbs maximum load,								
			hachine room and 7'-6" deep pit.								
	s	imilar to:									
		tis Elevator	Company								
		H: 303-298									
			vw.otis.com								
	28 <b>E</b>	levator Sta	ircase (5 flights):	86-68120	5,025	lbs	\$12.50	\$62,812.50			
			@ 11' lg x 25#/lf =3500#	00 00 120	0,020	100	φ12.00	φ02,012.00			
			20#/lf =3200#								
			rcase (custom):	86-68120	6,050	lbs	\$10.00	\$60,500.00			
			20#/lf =2300#								
			) 5'x5' x 20#/sf =2000#								
	2	stringers @	0 35' lg x 25#/lf =1750#								
	30 <b>C</b>	ast in Plac	e Reinforced Concrete	86-68120	702	yd3	\$1,100.00	\$772,200.00			
			te Batch Plant	00 00 120	102	Juo	φ1,100.00	<i><i>QTT2,200.00</i></i>			
			t Structure and Footing - 181								
			r and Elevator Tower Footings								
			nd Columns -232								
	6		Floor Slabs - 154								
			rior Walls, Columns,& Facias - 140								
			Sheet Subtotal					\$1,138,112.50			
	QUANTITIES				PI	RICES	φι,130,112.30				
BY				BY		r i	CHECKED				
	JF Pattie R Dham		ы	Greg Akins		Kelly Brom					
			DATE PREPA			PEER REVIEW					
	ATE PREPARED     PEER REVIEW       6/28/2010     AI Bernstein P.E.			12/7/2010		Dan Donaldson					

BUREAU OF F		10N	ESTIMATE WORK					SUMMARY SHEET 1 OF
FEATU				PROJEC	CT:			
		Water Resources Ir	nvestigation		Central Val		t - CA	
Feasibi					Shasta Divi			
Vehicle	e Brid	ge Replacements		<b>REGION:</b>	MP		TE LEVEL:	Feasibility
				WOID:	SHAEF	PRICE I	_EVEL:	Apr - 10
		Most F	Probable					
Summa	ary		6.5-ft Dam Rai	se				
PLANT ACCOUNT	ME							
COL	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
A P	G							
		Reservoir area vehic	le bridges:					
		Remove/Replace	e Charlie Creek Bridge					
		Remove/Replace	e Doney Creek Bridge					
		Remove/Replace	e McCloud River Bridge					
		Fenders Ferry B	ridge Demolition/Improvements					
		MWH-001 Sheet (1)						\$12,850,100.0
		MWH-001 Sheet (2)				-		\$5,552,900.0
		MWH-001 Sheet (2)				_		\$3,512,800.0
						_		φ3,512,600.0
						_		
						_		
		Subtotal						\$21,915,800.0
		Mobilization & Ge	neral Conditions				10%	\$2,190,000.0
		Subtotal w/ Mobilizat	ion					\$24,105,800.0
		Design Continger	ncies				20%	\$4,813,000.0
								· //
		Allowance for Pro	curement Strategy				2%	\$481,000.0
						_		<i> </i>
		CONTRACT COST						\$29,400,000.0
						-		<b>₩</b> 20,-100,000.00
		Construction Con	tingencies				8%	\$2,400,000.00
			แกษอกษอง				0 /0	φ2,400,000.00
						_		¢24 000 000 04
		FIELD COST						\$31,800,000.00
						_		
						_		
						_		
						_		
							l	
			hed price level to notice to proceed is excluded.					
			nd terminology, see Reclamation Manual, Directiv	es and Standards	FAC; 09-01, 0			
		QL	JANTITIES			P	RICES	
ВΥ	CHECKED		BY			CHECKED		
See Grou	See Group Sheets See Group Sheets			I. Buck		J. Loucks		
DATE PRE	PARED		PEER REVIEW	DATE PREP	ARED		PEER REVIEW	
	See Group Sheets			12/20/10		C. Wallace		

	ECLAMATI	ON	ESTIMATE WORK					SHEET_1_OF _3
FEATU				PROJECT				
		Water Resources Ir	nvestigation		Central Valle		t - CA	
Feasibili					Shasta Divis			
Vehicle	Brid	ge Replacements		REGION:	MP		TE LEVEL:	Feasibility
				WOID:	SHAEF	PRICE I	_EVEL:	Apr - 10
		Most F	Probable					
MWH-0	01		6.5-ft Dam Ra	se				
PLANT ACCOUNT	ITEM							
PLAI	PAY I		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
<	Ц							
		Now Pridge Constructi	on.					
		New Bridge Constructi	011					
		Charlie Creek Bridge						
	1		ater Based Support Ewuip	MWH-001	1	ls	\$100,000.00	\$100,000.0
	2	Temporary Measures / C	· · · ·	MWH-001	1	ls	\$100,000.00	\$100,000.0
	3	Pier Foundation Structura		MWH-001	1,200	cys	\$55.00	\$66,000.0
	4	Furnish/Install Class 140	Fdn Piles	MWH-001	1,080	lf	\$250.00	\$270,000.0
	5	Furnish/Insall CISS Piles		MWH-001	3,600	lf	\$400.00	\$1,440,000.0
	6	Foundation Backfill		MWH-001	576	cys	\$40.00	\$23,040.0
	7	F/P/S/F Foundation Cond	crete	MWH-001	724	cys	\$500.00	\$361,825.0
	8	F/PS/F Pier Concrete		MWH-001	918	cys	\$800.00	\$734,240.0
	9	F/P/S/F Abutment Concr	ete	MWH-001	353	cys	\$650.00	\$229,450.0
	10	F/P/S/F Box Grider Conc	crete	MWH-001	1,412	cys	\$800.00	\$1,129,600.0
	11	F/P/S/F Bridge Rail Barri	er Concrete	MWH-001	212	cys	\$1,200.00	\$254,160.0
	12	Reinforcing Steel (Epoxy	Coated)	MWH-001	1,124,000	lbs	\$1.50	\$1,686,000.0
	13	Prestressting Steel		MWH-001	26,000	lbs	\$3.00	\$78,000.0
	14	Approach Paving		MWH-001	1	ls	\$100,000.00	\$100,000.0
	15	Barrier Fence Railing		MWH-001	782	lf	\$30.00	\$23,460.0
	16	Expansion Joints		MWH-001	1	ls	\$10,000.00	\$10,000.0
	17	Bridge Misc. (Signage, S	triping, Anti-Graffiti Coating)	MWH-001	1	ls	\$10,000.00	\$10,000.0
		Doney Creek Bridge						<u> </u>
	18		ater Based Support Ewuip	MWH-001	1	ls	\$100,000.00	\$100,000.0
	19	Temporary Measures / C		MWH-001	1	ls	\$100,000.00	\$100,000.0
	20	Pier Foundation Structura		MWH-001	550	cys lf	\$55.00	\$30,250.0
	21	Furnish/Install Class 140 Furnish/Insall CISS Piles		MWH-001	1,080 3,600	lf	\$250.00	\$270,000.0 \$1,440,000.0
	22 23	Foundation Backfill		MWH-001 MWH-001	480		\$400.00 \$40.00	\$19,200.0
	23	F/P/S/F Foundation Cond	croto	MWH-001	681	cys	\$500.00	
	24	F/PS/F Pier Concrete		MWH-001	863	cys cys	\$300.00	\$340,300.0 \$690,560.0
	26	F/P/S/F Abutment Concr	ete	MWH-001	332	cys	\$650.00	\$215,800.0
	20	F/P/S/F Box Grider Conc		MWH-001	1,328	cys	\$800.00	\$1,062,400.0
	28	F/P/S/F Bridge Rail Barri		MWH-001	1,320	cys	\$1,200.00	\$239,040.0
	29	Reinforcing Steel (Epoxy		MWH-001	1,006,000	lbs	\$1.50	\$1,509,000.0
	30	Prestressting Steel		MWH-001	25,000	lbs	\$3.00	\$75,000.0
	31	Approach Paving		MWH-001	1	ls	\$100,000.00	\$100,000.0
	32	Barrier Fence Railing		MWH-001	760	lf	\$30.00	\$22,800.0
	33	Expansion Joints		MWH-001	1	ls	\$10,000.00	\$10,000.0
	34	· · ·	triping, Anti-Graffiti Coating)	MWH-001	1	ls	\$10,000.00	\$10,000.0
		Sheet Subtotal =				_		\$12,850,125.0
		Q	UANTITIES			F	RICES	
CHECKED			ВҮ			CHECKED		
,	M. Xie D. Hutchings				I. Buck		J. Loucks	
			PEER REVIEW		DATE PREPARED PEER REVIEW 12/20/10 C. Wallace			

BUREAU OF	RECLAMAT	ION	ESTIMATE WC	RKSHEET				SHEET_2_ OF _3
FEAT	JRE:			PROJECT				
Shasta	a Lake	Water Resources In	nvestigation		Central Valle	ey Projec	t - CA	
	oility St		0		Shasta Divis			
		ge Replacements		REGION:	MP	ESTIMA	TE LEVEL:	Feasibility
				WOID:	SHAEF	PRICE I	_EVEL:	Apr - 10
		Most F	Probable			•		
MWH-	001		6.5-ft Dar	n Raise				
L T	Σ							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		New Construction						
		New Construction						
		McCloud River Bridge						
	1		ater Based Support Ewuip	MWH-001	1	ls	\$50,000.00	\$50,000.0
	2	Temporary Measures / C		MWH-001	1	ls	\$50,000.00	\$50,000.0
	3	Pier Foundation Structura	al Excavation	MWH-001	820	cys	\$55.00	\$45,100.0
	4	Furnish/Install Class 140	Fdn Piles	MWH-001	1,080	lf	\$250.00	\$270,000.0
	5	Furnish/Insall CISS Piles		MWH-001	1,600	lf	\$400.00	\$640,000.0
	6	Foundation Backfill		MWH-001	636	cys	\$40.00	\$25,440.0
	7	F/P/S/F Foundation Cond	crete	MWH-001	476	cys	\$500.00	\$237,800.0
	8	F/PS/F Pier Concrete		MWH-001	603	cys	\$800.00	\$482,560.0
	9	F/P/S/F Abutment Concr		MWH-001	232	cys	\$650.00	\$150,800.0
	10	F/P/S/F Box Grider Cond		MWH-001	928	cys	\$800.00	\$742,400.0
	11 12	F/P/S/F Bridge Rail Barri		MWH-001 MWH-001	139 757,000	cys Ibs	\$1,200.00 \$1.50	\$167,040.0 \$1,135,500.0
	12	Reinforcing Steel (Epoxy Prestressting Steel	Coaled)	MWH-001	757,000 0	lbs	\$1.50	\$1,135,500.0 \$0.0
	13	Approach Paving		MWH-001	1	ls	\$100,000.00	\$100,000.0
	15	Barrier Fence Railing		MWH-001	490	lf	\$30.00	\$14,700.0
	16	Expansion Joints		MWH-001	1	ls	\$10,000.00	\$10,000.0
	17		triping, Anti-Graffiti Coating)	MWH-001	1	ls	\$10,000.00	\$10,000.0
		Didallas Creek Bridge						
	18		ater Based Support Ewuip	MWH-001	1	ls	\$50,000.00	\$50,000.0
	19	Temporary Measures / C		MWH-001	1	ls	\$50,000.00	\$50,000.0
	20	Pier Foundation Structura		MWH-001	440	cys	\$55.00	\$24,200.0
	21	Furnish/Install Class 140	Fdn Piles	MWH-001	1,080		\$250.00	\$270,000.0
	22	Furnish/Insall CISS Piles		MWH-001	0	lf	\$400.00	\$0.0
	23	Foundation Backfill		MWH-001	216	cys	\$40.00	\$8,640.0
	24	F/P/S/F Foundation Cond	crete	MWH-001	156	cys	\$500.00	\$77,900.0
	25	F/PS/F Pier Concrete	ata	MWH-001	198	cys	\$800.00	\$158,080.0
	26 27	F/P/S/F Abutment Concr F/P/S/F Box Grider Conc		MWH-001 MWH-001	76 304	cys	\$650.00 \$800.00	\$49,400.0 \$243,200.0
	27	F/P/S/F Box Grider Cond F/P/S/F Bridge Rail Barri		MWH-001	46	cys	\$800.00	\$243,200.0
	28	Reinforcing Steel (Epoxy		MWH-001	208,000	cys Ibs	\$1,200.00	\$54,720.0
	30	Prestressting Steel		MWH-001	208,000		\$3.00	\$312,000.0
	31	Approach Paving		MWH-001	1	ls	\$100,000.00	\$100,000.0
	32	Barrier Fence Railing		MWH-001	115		\$30.00	\$3,450.0
	33	Expansion Joints		MWH-001	1	ls	\$10,000.00	\$10,000.0
	34	Bridge Misc. (Signage, S	triping, Anti-Graffiti Coating)	MWH-001	1	ls	\$10,000.00	\$10,000.0
		Sheet Subtotal =						\$5,552,930.0
QUANTITIES					F	RICES		
ВΥ	Y CHECKED			ВҮ			CHECKED	
	M. Xie D. Hutchings			I. Buck		J. Loucks		
DATE PR	TE PREPARED PEER REVIEW		DATE PREPAR	ED		PEER REVIEW		
	6/15/2008 R. Filgas			12/20/10		C. Wallace		

BUREAU OF	RECLAMAT	ION ESTIMATE WORKSH	HEET				SHEET_3_ OF _3
FEATU	JRE:		PROJECT	:			
Shasta Feasibi		Water Resources Investigation		Central Valle Shasta Divis		t - CA	
		ge Replacements	REGION:	MP		TE LEVEL:	Feasibility
	o Dina		WOID:	SHAEF	PRICE L		Apr - 10
		Most Probable	WOID.	UNALI			
	004						
MWH-(		6.5-ft Dam Raise	•				
	ITEM	DECODIDITION	0005				
PLANT ACCOUNT	ΡΑΥ	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		New Bridge Construction					
		Fenders Ferry Bridge					
	1	Access Requirements/Water Based Support Ewuip	MWH-001	1	-	\$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	,	\$100.00	\$7,500.00
	4	Drill & Bond Dowels	MWH-001	540	-	\$60.00	\$32,400.00
	5 6	F/P/S/F Structural Concrete Concrete Surface Preparation	MWH-001 MWH-001	230 2,150	-	\$1,000.00 \$20.00	\$230,000.00 \$43,000.00
	7	Reinforcing Steel (Epoxy Coated)	MWH-001	66,400	lbs	\$20.00	\$43,000.00
	8	Remove Portion of Steel Tower	MWH-001	1	ls	\$100,000.00	\$99,000.00
	9	Structural Steel	MWH-001	130	-	\$10.00	\$1,300.00
	10	Lead Paint Containment	MWH-001	1	ls	\$50,000.00	\$50,000.00
		Existing Bridge Demolition					
	11	Demolish Charlie Creek Bridge	MWH-001	3,500	cys	\$250.00	\$875,000.00
	12	Demolish Doney Creek Bridge	MWH-001	3,300	-	\$250.00	\$825,000.00
	13	Demolish McCloud Creek Bridge	MWH-001	2,300	cys	\$250.00	\$575,000.00
	14	Demolish Didallas Creek Bridge	MWH-001	800		\$250.00	\$200,000.00
	15	Demolish Second Creek Bridge	MWH-001	1	ls	\$224,000.00	\$224,000.00
		Sheet Subtotal =			-		\$3,512,800.0
5)/		QUANTITIES	DV/		F	RICES	
BY	M. Xie	CHECKED D. Hutchings	BY CHECKED I. Buck J. Loucks				
	E PREPARED PEER REVIEW 6/15/2008 R. Filgas		DATE PREPAR	<b>ED</b> 12/20/10		<b>PEER REVIEW</b> C. Wallace	

BUREAU OF RE	ECLAMAT	10N	ESTIMATE WOR					SUMMARY SHEET 1 OF 1
FEATU	RE:			PROJE	CT:			
Shasta I	Lake	Water Resources In	nvestigation		Central Val	ley Projec	t - CA	
Feasibili			-		Shasta Divi	sion		
Reservo	oir Ai	rea Vegetation Cle	aring	<b>REGION:</b>	MP	ESTIMA	TE LEVEL:	Feasibility
				WOID:	SHAEF	PRICE I	EVEL:	Apr - 10
		Most F	Probable					
Summa	iry		6.5-ft Dam Ra	ise				
	Σ							
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
<	ш							
		Reservoir area clear	ing:					
		Remote tree cut	ting/skidding/helicopter removal					
		Brush removal	<u> </u>					
			g/skidding/staging			-		
		Burn remote sla						
		Burn remote sia	si piles			_		
		MWH-002 Sheet (1)						\$2,709,900.0
								<i>\\\\\\\\\\\\\\</i>
								<b>.</b>
		Subtotal						\$2,710,000.00
		Mobilization/Gene	eral Conditions				10%	\$270,000.00
		Subtotal w/ Mobilizat	tion					\$2,980,000.00
		Design Continger	acies				25%	\$759,000.00
							2070	<i><i><i></i></i></i>
		Allowance for Pro	ocurement Strategy				2%	\$61,000.00
		CONTRACT COST						\$3,800,000.0
								<i><b>40,000,000</b></i>
		Construction Con	tingencies				8%	\$300,000.00
		FIELD COST						\$4,100,000.00
								<b>φ</b> <del>4</del> ,100,000.00
		Note: Escalation from publis	shed price level to notice to proceed is excluded.	Estimates may inc	clude discrepan	icies due to re	ounding.	
		Ref.: For appropriate use an	nd terminology, see Reclamation Manual, Directi			9-02 and 09-	03.	
		QL	JANTITIES			P	RICES	
BY	CHECKED		BY			CHECKED		
See Group	ee Group Sheets See Group Sheets			I. Buck		J. Loucks		
DATE PREF	PARED		PEER REVIEW	DATE PREP	ARED		PEER REVIEW	
	See Group Sheets		See Group Sheets		12/20/10		C. Wallace	

BUREAU OF		'ION	ESTIMATE WOR					SHEET_1_0F _1
FEATU	JRE:			PROJECT	:			
Shasta Feasib		Water Resources I	nvestigation		Central Valle Shasta Divis		t - CA	
Reserv	voir A	rea Vegetation Cle	aring	REGION:	MP		TE LEVEL:	Feasibility
				WOID:	SHAEF			Apr - 10
		Most F	Probable					
MWH-	002		6.5-ft Dam Rais	e				
UNT	ME							
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Reservoir Clearing						
		Remote Areas						
	1	Remote Tree Cutting Cre	ew	MWH-002	710	hr	\$250.00	\$177,500.00
	2	Tree Removal Via Helico	ppter	MWH-002	710	hr	\$3,300.00	\$2,343,000.00
	3	Shore Staging Crew		MWH-002	710	hr	\$125.00	\$88,750.00
	4	Brush Clearing (Machine	)	MWH-002	20	ac	\$2,500.00	\$50,000.00
	5	Brush Burining		MWH-002	20	hr	\$250.00	\$5,000.00
		Local Areas						
	7	Tree Cutting/Staging Cre		MWH-002	90	hr	\$250.00	\$22,500.00
	8	Brush Clearing (Machine	)	MWH-002	7	ac	\$3,300.00	\$23,100.00
		Shoot Subtatal		_				¢0 700 050 00
		Sheet Subtotal =	ANTITIES			F	PRICES	\$2,709,850.00
ВΥ			CHECKED	BY			CHECKED	
	I. Buck		C. Wallace		I. Buck		J. Loucks	
			PEER REVIEW	DATE PREPAR				
	E PREPARED         PEER REVIEW           11/23/2010			12/20/10		C. Wallace		

BUREAU OF	RECLAMAT	<b>FION</b>	ESTIMATE WO	RKSHEET				SUMMARY SHEET 1 OF 1
FEATU	JRE:			PROJEC	CT:			
Shasta	a Lake	Water Resources I	nvestigation		Central Val	ley Projec	t - CA	
Feasib					Shasta Divi			
Reser	voir A	rea Dikes		<b>REGION:</b>	MP		TE LEVEL:	Feasibility
				WOID:	SHAEF	PRICE	LEVEL:	Apr - 10
_		Most	Probable					
Summ	ary		6.5-ft Dam	Raise				
PLANT ACCOUNT	LEM							
PLAI	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
A						_		
						_		
		Reservoir area dikes		()		_		
			grubbing, precompaction and ear pre and shell materials	thworks				
						-		
			Irainage improvements			-		
						_		
	-							
		MWH-003 Sheet (1)						\$0.0
		MWH-003 Sheet (2)						\$1,881,900.0
		MWH-003 Sheet (3)				-		\$5,589,900.0
		MWH-003 Sheet (4)				-		\$898,500.0
								\$000,000.0
						-		
						-		
						-		
		Subtotal						\$8,370,300.0
								+ = ; = : = ; = : = : = :
		Mobilization/Gen	eral Conditions				10%	\$840,000.0
								+ ,
		Subtotal w/ Mobiliza	tion					\$9,210,000.0
								· · · · · · · · · · · · · · ·
		Design Continge	ncies				25%	\$2,306,000.0
		Allowance for Pro	ocurement Strategy				2%	\$184,000.0
		CONTRACT COST						\$11,700,000.0
		Construction Cor	ntingencies				8%	\$900,000.00
		FIELD COST						\$12,600,000.0
			shed price level to notice to proceed is exclu		-			
			nd terminology, see Reclamation Manual, Di	rectives and Standards	FAC; 09-01, 0			
		Q	JANTITIES			P	RICES	
BY			CHECKED	BY			CHECKED	
See Gro	oup Sheet	S	See Group Sheets		I. Buck		J. Loucks	
DATE PR	EPARED		PEER REVIEW	DATE PREP	ARED		PEER REVIEW	
			See Group Sheets		12/20/10		C. Wallace	

BUREAU OF RE		ON	ESTIMATE WO		•			SHEET_1_OF_4
		Water Deseurees	nyestigation	PROJECT		N/ Dra!		
Snasta L Feasibili		Water Resources I	nvestigation		Central Valle Shasta Divis		t - CA	
		ea Dikes		REGION:	MP		TE LEVEL:	Feasibility
		ca Dires		WOID:	SHAEF	PRICE		Apr - 10
		Most	Probable		010/121			, ib. 10
MWH-00	13		6.5-ft Dam F	aise				
			0.0 11 Daili 1					
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Excavation & Grading						
		Doney Creek Dike					<b>*</b> 2 <b>*</b> 22 <b>*</b> 2	
	1	Site Clearing & Grubbing		MWH-003	0	ac	\$3,500.00	\$0.0
	2		d in Unlisted Items Allowance)	MWH-003	0	ls	\$30,000.00	\$0.0
	3	Top Soil Excavation		MWH-003	0	су	\$10.00	\$0.0
	4	Shear Key Excavation		MWH-003	0	су	\$20.00	\$0.0
	5	V-Ditch Excavation		MWH-003	0	су	\$15.00	\$0.0
	6	Drain Excavation		MWH-003	0	су	\$15.00	\$0.0
	7	Embankment Precompa		MWH-003	0	sy	\$1.50	\$0.0
	8	Import/Place/Compact S		MWH-003	0	су	\$40.00	\$0.0
	9	Import/Place/Compact (		MWH-003	0	су	\$50.00	\$0.0
	10	Import/Place/Compact F		MWH-003	0	су	\$60.00	\$0.0
	11	Import/Place Rip Rap Install 36" CMP		MWH-003 MWH-003	0	cy lf	\$80.00 \$200.00	\$0.0
	12	Install 42" CMP		MWH-003	0	lf		\$0.0
	13 14			MWH-003	0		\$250.00 \$7,500.00	\$0.0 \$0.0
	14	Install Flap Gates	ala	MWH-003	0	ea	\$10.00	\$0.0
	15	Replace Top Soil Materi Cast-In Place Concrete		MWH-003	0	су	\$10.00	\$0.0
	17	Reinforcing Steel		MWH-003	0	cy Ib	\$1.50	\$0.0
		Antlers Dike						
	18	Site Clearing & Grubbing	n Below Dikes	MWH-003	0	20	\$3,500.00	\$0.0
	19		d in Unlisted Items Allowance)	MWH-003	0	ac Is	\$30,000.00	\$0.0 \$0.0
	20	Top Soil Excavation	d in Onlisted items Allowance)	MWH-003	0		\$10.00	\$0.0 \$0.0
	20	Shear Key Excavation		MWH-003	0	cy cy	\$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
	23	Embankment Precompa	action	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 (		MWH-003	0	су	\$50.00	\$0.0
	20	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	lf	\$250.00	\$0.0
	31	Install Flap Gates		MWH-003	0	ea	\$7,500.00	\$0.0
	32	Replace Top Soil Materi	als	MWH-003	0	су	\$10.00	\$0.0
		Sheet Subtotal =				<u> </u>		\$0.0
QUANTITIES			PRICES					
BY CHECKED				BY			CHECKED	
	A. Nishihara P. Richards		•	I. Buck		J. Loucks		
		hara	PER REVIEW	DATE PREPARI			PEER REVIEW	

BUREAU OF		UN	ESTIMATE WO	PROJECT	•			SHEET_2_OF_4
		Water Resources I	nvestigation			W Proise	+ - CΛ	
Feasib			nvestigation		Central Valle Shasta Divis		et - CA	
		ea Dikes		REGION:	MP		TE LEVEL:	Feasibility
INCSCI V		ed Dikes		WOID:	SHAEF			Apr - 10
		Most	Probable	WOID.	UNALI			Αρι - Τυ
	002	WOSti		aiaa				
MWH-0			6.5-ft Dam R	aise				
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Excavation & Grading						
		North Railroad Emban						
	1	Site Clearing & Grubbing		MWH-003	1.15	ac	\$3,500.00	\$4,025.
	2		d in Unlisted Items Allowance)	MWH-003	1	ls	\$30,000.00	\$30,000.
	3	Top Soil Excavation		MWH-003	1,150	су	\$10.00	\$11,500.
	4	Shear Key Excavation		MWH-003	304	су	\$20.00	\$6,080. \$725
	5	V-Ditch Excavation		MWH-003	49	су	\$15.00	\$735.
	6	Drain Excavation	-41	MWH-003	0	су	\$15.00	\$0.
	7	Embankment Precompa		MWH-003	3,000	sy	\$1.50	\$4,500.
	8 9	Import/Place/Compact S Import/Place/Compact C		MWH-003 MWH-003	0 16,375	су	\$40.00 \$50.00	\$0. \$919 750
	9 10	Import/Place/Compact C		MWH-003	767	су	\$50.00	\$818,750. \$46,000.
	10	Import/Place Rip Rap		MWH-003	410	су	\$80.00	\$40,000.
	12	Install 36" CMP		MWH-003	410	cy If	\$200.00	\$32,800. \$0.
	12	Install 42" CMP		MWH-003	350	lf	\$200.00	\$0. \$87,500
	13	Install Flap Gates		MWH-003	0	ea	\$7,500.00	\$07,500. \$0.
	15	Replace Top Soil Materi	als	MWH-003	1,150	су	\$10.00	\$11,500.
		Middle Railroad Emba	akment					
	16	Site Clearing & Grubbing		MWH-003	2.88	ac	\$3,500.00	\$10,080.
	17		d in Unlisted Items Allowance)	MWH-003	1	ls	\$30,000.00	\$30,000.
	18	Top Soil Excavation		MWH-003	2,800	cy	\$10.00	\$28,000
	19	Shear Key Excavation		MWH-003	1,065	су	\$20.00	\$21,300
	20	V-Ditch Excavation		MWH-003	120	су	\$15.00	\$1,800
	21	Drain Excavation		MWH-003	0	су	\$15.00	\$0
	22	Embankment Precompa	ction	MWH-003	6,800	sy	\$1.50	\$10,200
	23	Import/Place/Compact S		MWH-003	0	су	\$40.00	\$0.
	24	Import/Place/Compact C		MWH-003	12,750	су	\$50.00	\$637,500
	25	Import/Place/Compact F	ilter Sand	MWH-003	600	су	\$60.00	\$36,000
	26	Import/Place Rip Rap		MWH-003	320	су	\$80.00	\$25,600.
	27	Install 36" CMP		MWH-003	0	lf	\$200.00	\$0.
	28	Install 42" CMP		MWH-003	0	lf	\$250.00	\$0.
	29	Install Flap Gates		MWH-003	0	ea	\$7,500.00	\$0.
	30	Replace Top Soil Materi	als	MWH-003	2,800	су	\$10.00	\$28,000.
		Choot Cubtotal						¢4 004 070
	1	Sheet Subtotal =	ANTITIES			E	PRICES	\$1,881,870.
V		<u>v</u> U	CHECKED	PY		F	CHECKED	
BY	A. Nishił	hara	P. Richards	BY	I. Buck		J. Loucks	
DATE PRE	_	iui a	P. Richards PEER REVIEW	DATE PREPAR			PEER REVIEW	
				DATE PREPAR				

BUREAU OF		ON	ESTIMATE WORK					SHEET_3_OF_4_
FEATL				PROJECT		_		
		Water Resources Inv	restigation		Central Valle		t - CA	
Feasib		ea Dikes			Shasta Divis			
Reserv	voir Ar	ea Dikes		REGION: WOID:	MP	ESTIMATE LEVEL: PRICE LEVEL:		Feasibility
		Most Pro	obable		SHAEF	PRICE	LEVEL:	Apr - 10
MWH-	003	MOStrik	6.5-ft Dam Raise	9				
	-							
PLANT ACCOUNT	PAY ITEM	D	ESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Excavation & Grading						
		South Railroad Embankm	nent					
	1	Site Clearing & Grubbing B		MWH-003	6.22	ac	\$3,500.00	\$21,770.0
	2	Misc Removals (Included in		MWH-003	1	ls	\$30,000.00	\$30,000.0
	3	Top Soil Excavation	,	MWH-003	6,700	су	\$10.00	\$67,000.0
	4	Shear Key Excavation		MWH-003	1,626	су	\$20.00	\$32,520.0
	5	V-Ditch Excavation		MWH-003	177	су	\$15.00	\$2,655.0
	6	Drain Excavation		MWH-003	0	су	\$15.00	\$0.0
	7	Embankment Precompaction	on	MWH-003	19,600	sy	\$1.50	\$29,400.0
	8	Import/Place/Compact She	II Materials	MWH-003	0	су	\$40.00	\$0.0
	9	Import/Place/Compact Core	e Materials	MWH-003	97,375	су	\$50.00	\$4,868,750.0
	10	Import/Place/Compact Filte	er Sand	MWH-003	4,567	су	\$60.00	\$274,000.0
	11	Import/Place Rip Rap		MWH-003	2,460	су	\$80.00	\$196,800.0
	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 Materials		MWH-003	6,700	су	\$10.00	\$67,000.0
		Sheet Subtotal =						\$5,589,895.0
		QUAI	NTITIES			F	PRICES	
ЗY		C	HECKED	ВҮ			CHECKED	
	A. Nishih	nara P.	Richards		I. Buck		J. Loucks	
DATE PRI	EPARED	PI	EER REVIEW	DATE PREPAR	<b>ED</b> 12/20/10		<b>PEER REVIEW</b> C. Wallace	

BUREAU OF		ION	ESTIMATE WOR	PROJECT	•			SHEET_4_OF_4_
		Water Resources I	westigation	FRUJEUI		Ny Brain-	+ - CΛ	
	a Lake		Ivestigation		Central Valle Shasta Divis		<b>T - CA</b>	
	-	r <mark>ea Dikes</mark>		REGION:	MP	-	TE LEVEL:	Feasibility
Neser		ea Dikes		WOID:	SHAEF	PRICE		Apr - 10
		Most F	Probable	WOID:	JIALI			Api - 10
MWH-(	003		6.5-ft Dam Rais	se				
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Excavation & Grading						
		Bridge Bay Dike West						
	1	Site Clearing & Grubbing	Below Dikes	MWH-003	0.79	ac	\$3,500.00	\$2,765.0
	2	Misc Removals (Included	in Unlisted Items Allowance)	MWH-003	1	ls	\$30,000.00	\$30,000.0
	3	Top Soil Excavation		MWH-003	1,470	су	\$10.00	\$14,700.0
	4	Shear Key Excavation		MWH-003	360	су	\$20.00	\$7,200.0
	5	V-Ditch Excavation		MWH-003	42	су	\$15.00	\$630.0
	6	Drain Excavation		MWH-003	250	су	\$15.00	\$3,750.0
	7	Embankment Precompa	ction	MWH-003	1,300	sy	\$1.50	\$1,950.0
	8	Import/Place/Compact S		MWH-003	0	су	\$40.00	\$0.0
	9	Import/Place/Compact C	ore Materials	MWH-003	2,838	су	\$50.00	\$141,875.0
	10	Import/Place/Compact F	ilter Sand	MWH-003	178	су	\$60.00	\$10,666.6
	11	Import/Place Rip Rap		MWH-003	230	су	\$80.00	\$18,400.0
	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		ea	\$7,500.00	\$0.0
	15	Replace Top Soil Materia		MWH-003	1,470	су	\$10.00	\$14,700.0
	16	Specialty Jet Grouting E	• •	MWH-003	1	ls	\$50,000.00	\$50,000.0
	17	Jet Grouting Material (10	2, 5'D columns with 1' overlap)	MWH-003	2,500	су	\$200.00	\$500,000.0
		Bridge Bay Dike East						
	16	Site Clearing & Grubbing	Below Dikes	MWH-003	0.41	ac	\$3,500.00	\$1,435.0
	17		d in Unlisted Items Allowance)	MWH-003	1	ls	\$30,000.00	\$30,000.0
	18	Top Soil Excavation	,	MWH-003	660	су	\$10.00	\$6,600.0
	19	Shear Key Excavation		MWH-003	166	су	\$20.00	\$3,320.0
	20	V-Ditch Excavation		MWH-003	21	су	\$15.00	\$319.5
	21	Drain Excavation		MWH-003	80	су	\$15.00	\$1,200.0
	22	Embankment Precompa	ction	MWH-003	600	sy	\$1.50	\$900.0
	23	Import/Place/Compact S	hell Materials	MWH-003	0	су	\$40.00	\$0.0
	24	Import/Place/Compact C	ore Materials	MWH-003	900	су	\$50.00	\$45,000.0
	25	Import/Place/Compact F	ilter Sand	MWH-003	56	су	\$60.00	\$3,333.3
	26	Import/Place Rip Rap		MWH-003	40	су	\$80.00	\$3,200.0
	27	Install 36" CMP		MWH-003	0	lf	\$200.00	\$0.0
	28	Install 42" CMP		MWH-003	0	lf	\$250.00	\$0.0
	29	Install Flap Gates		MWH-003	0	ea	\$7,500.00	\$0.0
	30	Replace Top Soil Materia	als	MWH-003	660	су	\$10.00	\$6,600.0
		Sheet Subtotal =						\$898,544.5
	_	QU	ANTITIES			F	PRICES	
BY			CHECKED	вү			CHECKED	
	A. Nishił	hara	P. Richards		I. Buck		J. Loucks	
DATE PR	EPARED		PEER REVIEW	DATE PREPAR	ED		PEER REVIEW	
	12/13/2010	0	-		12/20/10		C. Wallace	

BUREAU OF I		ON	ESTIMATE WORK					SUMMARY SHEET 1 OF 1
FEATU				PROJE				
		Water Resources Ir	nvestigation		Central Val		t - CA	
Feasibi	ility Sti	Jdy		DEOLON	Shasta Div			
Pit 7 M	IOdific	ations		REGION:			TE LEVEL:	Feasibility
		Maat	)	WOID:	SHAEF	PRICE I	_EVEL:	Apr - 10
Summ	arv	WOST F	Probable 6.5-ft Dam Rais	20				
	1		0.5-11 Dam Nat					
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Pit 7 Mechanical Mod	difications	_		_		
						_		
						-		
		MWH-004 Sheet (1)						\$135,000.00
						_		
						_		
				_				
						_		
				_		_		
		Subtotal						\$135,000.00
		Subtotal						\$155,000.00
		Mobilization/Gene	eral Conditions				10%	\$14,000.00
							10,0	<i>\\\\\\\\\\\\\</i>
		Subtotal w/ Mobilizat	tion					\$149,000.00
		Design Continger	ncies				25%	\$38,000.00
		Allowance for Pro	ocurement Strategy			_	2%	\$3,000.00
						_		•
		CONTRACT COST						\$190,000.00
		Construction Con	tingonoioo	_		_	8%	\$10,000,00
		Construction Con				_	0 70	\$10,000.00
		FIELD COST		_		-		\$200,000.00
						_		φ200,000.00
			shed price level to notice to proceed is excluded. E					
			nd terminology, see Reclamation Manual, Directive	es and Standard	s FAC; 09-01, 0			
		વા	JANTITIES			Р	RICES	
ВҮ			CHECKED	ВҮ			CHECKED	
See Grou			See Group Sheets		I. Buck		J. Loucks	
DATE PRE	EPARED		PEER REVIEW	DATE PREI				
			See Group Sheets		12/20/10		C. Wallace	

BUREAU OF		10N	ESTIMATE W					SHEET_1_OF_1_
FEATU	JRE:			PROJECT				
Shasta	a Lake	Water Resources In	nvestigation		Central Vall	ley Projec	ct - CA	
Feasib	ility St	udy	0		Shasta Divi			
Pit 7 N	<i>l</i> odific	ations		<b>REGION:</b>	MP	ESTIMA	TE LEVEL:	Feasibility
				WOID:	SHAEF	PRICE	LEVEL:	Apr - 10
		Most F	Probable					
MWH-	004		6.5-ft Dam Ra	aise				
л т N	Σ							
PLANT ACCOUNT	РАҮ ІТЕМ		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Mechanical Modificatio	ons					
	1	6" Check Valve		MWH-004	2	EA	\$4,000.00	\$8,000.00
	2	6" "Red Valve" at end of	pipe	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	pipe	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
	16	6" Gate Valve		MWH-004	4	EA	\$3,000.00	\$12,000.00
	17	6" Tee (Steel)		MWH-004	2	EA	\$270.00	\$540.00
	18	Water Level Sensors		MWH-004	4	EA	\$350.00	\$1,400.00
	19		(170 cfm + 5000 gal tank)	MWH-004		ls	\$25,000.00	\$25,000.00
							420,000.00	¢20,000.0
		Sheet Subtotal =						\$134,980.00
			NTITIES			F	PRICES	. ,
BY			CHECKED	BY			CHECKED	
	M. Xie		D. Hutchings		I. Buck		J. Loucks	
DATE PR	EPARED 6/15/2008	0	<b>PEER REVIEW</b> R. Filgas	DATE PREPAR	ED 12/20/10		PEER REVIEW C. Wallace	

BUREAU OF		ION ESTIMATE WORK					SUMMARY SHEET 1 OF 1
FEATU			PROJE				
		Water Resources Investigation		Central Val		ct - CA	
Feasib				Shasta Div			
Reserv	oir A	rea Recreation (Removals / Relocations)	REGION:	MP		TE LEVEL:	Feasibility
			WOID:	SHAEF	PRICE	LEVEL:	Apr - 10
-		Most Probable					
Summ	ary	6.5-ft Dam Rais	se				
PLANT ACCOUNT	PAY ITEM						
PLA	ЪΑΥΙ	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
∢	<u> </u>						
					_	_	
		Reservoir area recreation facilities consists of:					
		Demolishing or relocating boating ramps			_		
		Removal or restoration of camp grounds / RV Sites			_	_	
		Removal or relocation of miscellanous structures			_		
		New Recreation Facilities					
					_		
		MWH-005 Sheet (1)					\$7,934,700.00
		MWH-005 Sheet (2)					\$47,624,300.00
		MWH-005 Sheet (3)					\$9,170,400.00
		MWH-005 Sheet (4)					\$14,932,600.00
		Subtotal					\$70,662,000,00
		Subtotal	_				\$79,662,000.00
		Mahiliantian (Opported Opportivity				400/	#7 070 000 0
		Mobilization/General Conditions			_	10%	\$7,970,000.00
					_		
		Subtotal w/ Mobilization					\$87,632,000.00
					_		
		Design Contingencies			_	25%	\$21,915,000.00
		Allowance for Procurement Strategy				2%	\$1,753,000.00
		CONTRACT COST					\$111,300,000.00
		Construction Contingencies				8%	\$8,900,000.00
		FIELD COST					\$120,200,000.00
	1	Note: Escalation from published price level to notice to proceed is excluded. E	stimates may in	clude discrener	icies due to r	ounding	
		Ref.: For appropriate use and terminology, see Reclamation Manual, Directive				-	
	1					RICES	1
DY			D.V		F		
BY	0	CHECKED	BY	L Durah		CHECKED	
	See Group Sheets See Group Sheets		I. Buck J. Loucks			-	
DATE PRI	EPARED	PEER REVIEW	DATE PREP				
	- See Group Sheets			12/20/10		C. Wallace	

	RECLAMAT	ION	ESTIMATE WOR				S	SHEET_1_OF_4_
FEAT	URE:			PROJECT	:			
		Water Resources Ir	nvestigation		Central Valle Shasta Divis		t - CA	
	oility St		movals / Relocations)	REGION:	MP		TE LEVEL:	Feasibility
Reser			movais / Kelocations)	WOID:	SHAEF	PRICE		Apr - 10
		Most F	robable	WOID.	JIALI		* _ L.	Api - 10
MWH-	005	Mosti	6.5-ft Dam F	Paise				
			0.5-11 Dain 1	(disc				
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Selective Demolition &	Replacement					
		Public Boat Ramps			100 500		<b>.</b>	<u> </u>
	1	Boat Ramp / Parking Are		MWH-005	136,539	,	\$10.00	\$1,365,387.0
	2	Boat Ramp / Parking Are		MWH-005	46,505		\$15.00	\$697,580.6
	3	Boat Ramp / Parking Are		MWH-005	31,720		\$45.00	\$1,427,400.0
	4	Parking Area Asphaltic C		MWH-005	17,035		\$150.00	\$2,555,250.0
	5	Boat Ramp Concrete Pa		MWH-005	2,034		\$350.00	\$711,900.0
	6		a Concrete Retaining Walls	MWH-005	0	- ,-	\$650.00	\$0.0
	7	Boat Ramp / Parking Are	· · · · · · · · · · · · · · · · · · ·	MWH-005	355,927		\$1.50	\$533,890.5
	8	Demo Marina Area Non-	•	MWH-005	1,776		\$10.00	\$17,760.0
	9	Demo Marina Area Resti		MWH-005	600		\$10.00	\$6,000.0
	10	Demo Marina Area Othe	r Land Structures	MWH-005	0		\$7.50	\$0.0
	11	Demo Swimming Pool		MWH-005	0		\$5.00	\$0.0
	12	New Marina Area Floatin	-	MWH-005	0		\$450.00	\$0.0
	13	New Marina Area Non-Fl	<b>·</b>	MWH-005	1,776		\$300.00	\$532,800.0
	14	New Marina Area Restro		MWH-005	600		\$125.00	\$75,000.0
	15	New Marina Area Other I	_and Structures	MWH-005	0	sf	\$225.00	\$0.0
	16	New Swimming Pool		MWH-005	0	sf	\$30.00	\$0.0
	17	Demo/Move Dock Ancho	rs	MWH-005	0	ea	\$1,000.00	\$0.0
	18	On-Site Modification to P		MWH-005	0	ea	\$8,000.00	\$0.0
	19	On-Site Modification to C	ampsites	MWH-005	0	ea	\$14,000.00	\$0.0
	20	On-Site Modification to R	V Sites	MWH-005	0	ea	\$16,500.00	\$0.0
	21	On-Site Modification to B	oat-In Sites	MWH-005	0	ea	\$7,100.00	\$0.0
	22	Demo Picnic Sites		MWH-005	0	ea	\$4,000.00	\$0.0
	23	Demo Campsites		MWH-005	0	ea	\$5,000.00	\$0.0
	24	Demo RV Sites		MWH-005	0	ea	\$5,000.00	\$0.0
	25	Demo Boat-In Sites		MWH-005	0	ea	\$3,600.00	\$0.0
	26	New Picnic Sites		MWH-005	0	ea	\$4,000.00	\$0.0
	27	New Campsites		MWH-005	0	ea	\$9,000.00	\$0.0
	28	New RV Sites		MWH-005	0	ea	\$11,500.00	\$0.0
	29	New Boat-In Sites		MWH-005	0	ea	\$3,500.00	\$0.0
	30	New Trails		MWH-005	0	sf	\$2.00	\$0.0
	31	New Trailheads		MWH-005	0	ea	\$10,000.00	\$0.0
	32	Local Road Construction	Excavation	MWH-005	0	cys	\$10.00	\$0.0
	33	Local Road Construction	Fill	MWH-005	0	cys	\$15.00	\$0.0
	34	Local Road Construction	Aggregate Base	MWH-005	111	tns	\$45.00	\$4,995.0
	35	Local Road Construction	Asphaltic Concrete	MWH-005	45	tns	\$150.00	\$6,750.0
		Sheet Subtotal =						\$7,934,713.1
		Q	JANTITIES				RICES	
BY	I. Buck		CHECKED C. Wallace	BY	I. Buck		CHECKED J. Loucks	
DATE PR	EPARED		PEER REVIEW	DATE PREPAR	ED		PEER REVIEW	
	12/9/2010	0			12/20/10		C. Wallace	

BUREAU OF		ION ESTIMATE WOR					SHEET_2_ OF _4
FEATL	JRE:		PROJECT	:			
Shasta Feasib		Water Resources Investigation		Central Valle Shasta Divis		t - CA	
	-	rea Recreation (Removals / Relocations)	<b>REGION:</b>	MP		TE LEVEL:	Feasibility
Reserv			WOID:	SHAEF	PRICE		Apr - 10
		Most Probable	WOID.	JIALI		*	Αρι - ΤΟ
MWH-	005	6.5-ft Dam F	Daisa				
	_		<b>Naise</b>				
PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Selective Demolition & Replacement					
	1	Marinas Boat Ramp / Parking Area Excavation	MWH-005	567 144	0)/5	\$10.00	\$5,671,440.0
	2	Boat Ramp / Parking Area Excavation	MWH-005	567,144 545,771	cys cys	\$10.00	\$5,671,440.0
	3	Boat Ramp / Parking Area Aggregate Base	MWH-005	57,966	tns	\$20.00	\$2,608,470.0
	4	Parking Area Asphaltic Concrete	MWH-005	31,130	tns	\$150.00	\$4,669,500.0
	5	Boat Ramp Concrete Paving	MWH-005	1,420	cys	\$350.00	\$497,000.0
	6	Boat Ramp / Parking Area Concrete Retaining Walls	MWH-005	3,264	cys	\$650.00	\$2,121,600.0
	7	Boat Ramp / Parking Area Reinforcing Steel	MWH-005	819,655	lbs	\$1.50	\$1,229,482.5
	8	Demo Marina Area Non-floating Structures	MWH-005	43,091	sf	\$10.00	\$430,910.0
	9	Demo Marina Area Restrooms	MWH-005	617	sf	\$10.00	\$6,170.0
	10	Demo Marina Area Other Land Structures	MWH-005	3,791	sf	\$7.50	\$28,432.5
	11	Demo Swimming Pool	MWH-005	0	sf	\$5.00	\$0.0
	12	New Marina Area Floating Structures	MWH-005	36,993	sf	\$450.00	\$16,646,850.0
	13	New Marina Area Non-Floating Structures	MWH-005	6,098	sf	\$300.00	\$1,829,400.0
	14	New Marina Area Restrooms	MWH-005	617	sf	\$125.00	\$77,125.0
	15	New Marina Area Other Land Structures	MWH-005	3,791	sf	\$225.00	\$852,975.0
	16 17	New Swimming Pool Demo/Move Dock Anchors	MWH-005 MWH-005	0	sf	\$30.00	\$0.0
	17	On-Site Modification to Picnic Sites		22 0	ea	\$1,000.00 \$8,000.00	\$22,000.0
	10	On-Site Modification to Campsites	MWH-005 MWH-005	0	ea	\$14,000.00	\$0.0 \$0.0
	20	On-Site Modification to RV Sites	MWH-005	0	ea ea	\$16,500.00	\$0.0
	20	On-Site Modification to Boat-In Sites	MWH-005	0	ea	\$7,100.00	\$0.0
	22	Demo Picnic Sites	MWH-005	0	ea	\$4,000.00	\$0.0
	23	Demo Campsites	MWH-005	0	ea	\$5,000.00	\$0.0
	24	Demo RV Sites	MWH-005	0	ea	\$5,000.00	\$0.0
	25	Demo Boat-In Sites	MWH-005	0	ea	\$3,600.00	\$0.0
	26	New Picnic Sites	MWH-005	0	ea	\$4,000.00	\$0.0
	27	New Campsites	MWH-005	0	ea	\$9,000.00	\$0.0
	28	New RV Sites	MWH-005	0	ea	\$11,500.00	\$0.0
	29	New Boat-In Sites	MWH-005	5	ea	\$3,500.00	\$17,500.0
	30	New Trails	MWH-005	0	sf	\$2.00	\$0.0
	31	New Trailheads	MWH-005	0	ea	\$10,000.00	\$0.0
	32	Local Road Construction Excavation	MWH-005 MWH-005	0	cys	\$10.00 \$15.00	\$0.0
	33 34	Local Road Construction Fill Local Road Construction Aggregate Base	MWH-005	0	cys tns	\$15.00	\$0.0 \$0.0
	35	Local Road Construction Asphaltic Concrete	MWH-005	0	tns	\$150.00	\$0.0
							¢ 47 004 075 0
		Sheet Subtotal =			<u> </u>		\$47,624,275.0
		QUANTITIES			21	RICES	
ВҮ	I. Buck	CHECKED C. Wallace		I. Buck		CHECKED J. Loucks	
DATE PR	EPARED         PEER REVIEW           12/9/2010         12/9/2010		DATE PREPAR	<b>ED</b> 12/20/10		PEER REVIEW C. Wallace	

	RECLAMAT	ION ESTIMATE WOR				5	SHEET_3_ OF _4
FEAT			PROJECT				
	a Lake bility St	Water Resources Investigation		Central Valle Shasta Divis		t - CA	
		rea Recreation (Removals / Relocations)	REGION:	MP		TE LEVEL:	Feasibility
		(	WOID:	SHAEF	PRICE		Apr - 10
		Most Probable	WOID.	JIALI			
	005		Deine				
MWH-		6.5-ft Dam	Raise			· · · · ·	
PLANT ACCOUNT	РАҮ ІТЕМ	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Selective Demolition & Replacement					
		Campgrounds / Day Use / Boat-In Facilities					
	1	Boat Ramp / Parking Area Excavation	MWH-005	0	cys	\$10.00	\$0.
	2	Boat Ramp / Parking Area Fill	MWH-005	2,066	cys	\$15.00	\$30,995.
	3	Boat Ramp / Parking Area Aggregate Base	MWH-005	4,405	tns	\$45.00	\$198,225.
	4	Parking Area Asphaltic Concrete	MWH-005	2,365	tns	\$150.00	\$354,750
	5	Boat Ramp Concrete Paving	MWH-005	0	cys	\$350.00	\$0.
	6	Boat Ramp / Parking Area Concrete Retaining Walls	MWH-005	457	cys	\$650.00	\$297,050
	7	Boat Ramp / Parking Area Reinforcing Steel	MWH-005	79,959	lbs	\$1.50	\$119,938.
	8	Demo Marina Area Non-floating Structures	MWH-005	3,861	sf	\$10.00	\$38,610
	9	Demo Marina Area Restrooms	MWH-005	2,381	sf	\$10.00	\$23,810.
	10 11	Demo Marina Area Other Land Structures Demo Swimming Pool	MWH-005 MWH-005	0	sf sf	\$7.50 \$5.00	\$0. \$0.
	12	New Marina Area Floating Structures	MWH-005	0	si	\$5.00	\$0. \$0.
	12	New Marina Area Non-Floating Structures	MWH-005	4,311	sí	\$300.00	\$1,293,300
	14	New Marina Area Restrooms	MWH-005	1,931	sf	\$125.00	\$241,375
	15	New Marina Area Other Land Structures	MWH-005	0	sf	\$225.00	\$0.
	16	New Swimming Pool	MWH-005	0	sf	\$30.00	\$0.
	17	Demo/Move Dock Anchors	MWH-005	0		\$1,000.00	\$0.
	18	On-Site Modification to Picnic Sites	MWH-005	10		\$8,000.00	\$80,903.
	19	On-Site Modification to Campsites	MWH-005	13	ea	\$14,000.00	\$186,774.
	20	On-Site Modification to RV Sites	MWH-005	28	ea	\$16,500.00	\$462,000
	21	On-Site Modification to Boat-In Sites	MWH-005	14	ea	\$7,100.00	\$97,878.
	22	Demo Picnic Sites	MWH-005	7	ea	\$4,000.00	\$28,894
	23	Demo Campsites	MWH-005	74	ea	\$5,000.00	\$367,811
	24	Demo RV Sites	MWH-005	0	ea	\$5,000.00	\$0
	25	Demo Boat-In Sites	MWH-005	9		\$3,600.00	\$32,018
	26	New Picnic Sites	MWH-005	7	ea	\$4,000.00	\$28,894
	27	New Campsites	MWH-005	74	ea	\$9,000.00	\$662,059
	28 29	New RV Sites New Boat-In Sites	MWH-005 MWH-005	0	ea	\$11,500.00 \$3,500.00	\$0. \$13,629.
	30	New Trails	MWH-005	4 165,581	ea sf	\$3,500.00	\$13,629. \$331,161.
	30	New Trailheads	MWH-005	2		\$2.00	\$20,000.
	32	Local Road Construction Excavation	MWH-005	29,389	cys	\$10,000.00	\$293,890.
	33	Local Road Construction Fill	MWH-005	195,556	cys	\$15.00	\$2,933,340.
	34	Local Road Construction Aggregate Base	MWH-005	9,800	tns	\$45.00	\$441,000.
	35	Local Road Construction Asphaltic Concrete	MWH-005	3,947	tns	\$150.00	\$592,050.
		Sheet Subtotal =					\$9,170,357. <sup>4</sup>
					PF	RICES	ψσ, ι τ 0,357.4
ΒΥ		CHECKED	BY			CHECKED	
	I. Buck	C. Wallace		I. Buck		J. Loucks	
DATE PR	EPARED		DATE PREPAR			PEER REVIEW	
	12/9/2010			12/20/10		C. Wallace	

BUREAU OF	RECLAMAT	ION ESTIMATE WORK	SHEET				SHEET_4_ OF _4
FEATU	JRE:		PROJECT	:			
	a Lake oility St	Water Resources Investigation		Central Valle Shasta Divis		et - CA	
	-	•	DECION				
Reser	voir Ai	rea Recreation (Removals / Relocations)	REGION:				Feasibility
		Most Probable	WOID:	SHAEF	PRICE	LEVEL:	Apr - 10
		Most Probable					
MWH-		6.5-ft Dam Ra	ise				
PLANT ACCOUNT	РАҮ ІТЕМ	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Selective Demolition & Replacement					
		Resort Areas & Other Non-Marina Commercial Recreation					
		USFS Fire/Ranger Facilities & Leased Cabins					
	1	Boat Ramp / Parking Area Excavation	MWH-005	0	cys	\$10.00	\$0.0
	2	Boat Ramp / Parking Area Fill	MWH-005	12,956	cys	\$15.00	\$194,343.7
	3	Boat Ramp / Parking Area Aggregate Base	MWH-005	1,350	tns	\$45.00	\$60,750.0
	4 5	Parking Area Asphaltic Concrete Boat Ramp Concrete Paving	MWH-005 MWH-005	725 0	tns	\$150.00 \$350.00	\$108,750.0
	6	Boat Ramp / Parking Area Concrete Retaining Walls	MWH-005	0	cys cys	\$550.00	\$0.0 \$0.0
	7	Boat Ramp / Parking Area Reinforcing Steel	MWH-005	0	lbs	\$1.50	\$0.0
	8	Demo Marina Area Non-floating Structures	MWH-005	74,606	sf	\$10.00	\$746,064.0
	9	Demo Marina Area Restrooms	MWH-005	0	sf	\$10.00	\$0.0
	10	Demo Marina Area Other Land Structures	MWH-005	0	sf	\$7.50	\$0.0
	11	Demo Swimming Pool	MWH-005	4,281	sf	\$5.00	\$21,403.3
	12	New Marina Area Floating Structures	MWH-005	0	sf	\$450.00	\$0.0
	13	New Marina Area Non-Floating Structures	MWH-005	41,006	sf	\$300.00	\$12,301,922.2
	14	New Marina Area Restrooms	MWH-005	0	sf	\$125.00	\$0.0
	15	New Marina Area Other Land Structures	MWH-005	0	sf	\$225.00	\$0.0
	16	New Swimming Pool	MWH-005	4,281	sf	\$30.00	\$128,420.2
	17	Demo/Move Dock Anchors	MWH-005	1	ea	\$1,000.00	\$1,000.0
	18	On-Site Modification to Picnic Sites	MWH-005	0		\$8,000.00	\$0.0
	19 20	On-Site Modification to Campsites On-Site Modification to RV Sites	MWH-005 MWH-005	0	ea	\$14,000.00 \$16,500.00	\$0.0 \$0.0
	20	On-Site Modification to Boat-In Sites	MWH-005	0	ea ea	\$7,100.00	\$0.0
	21	Demo Picnic Sites	MWH-005	0	ea	\$4,000.00	\$0.0
	22	Demo Campsites	MWH-005	8	ea	\$5,000.00	\$42,246.5
	20	Demo RV Sites	MWH-005	39	ea	\$5,000.00	\$195,668.0
	25	Demo Boat-In Sites	MWH-005	0	ea	\$3,600.00	\$0.0
	26	New Picnic Sites	MWH-005	0	ea	\$4,000.00	\$0.0
	27	New Campsites	MWH-005	8	ea	\$9,000.00	\$76,043.7
	28	New RV Sites	MWH-005	39	ea	\$11,500.00	\$450,036.4
	29	New Boat-In Sites	MWH-005	0	ea	\$3,500.00	\$0.0
	30	New Trails	MWH-005	0	sf	\$2.00	\$0.0
	31	New Trailheads	MWH-005	0	ea	\$10,000.00	\$0.0
	32	Local Road Construction Excavation	MWH-005	4,915	cys	\$10.00	\$49,150.0
	33	Local Road Construction Fill	MWH-005	25,604	cys	\$15.00 \$45.00	\$384,060.0
	34 35	Local Road Construction Aggregate Base Local Road Construction Asphaltic Concrete	MWH-005 MWH-005	1,639 660	tns tns	\$45.00	\$73,755.0 \$99,000.0
		Sheet Subtotal =					\$14,932,613.24
		QUANTITIES			PF	RICES	
BY	I. Buck	CHECKED C. Wallace	BY	I. Buck		CHECKED J. Loucks	
DATE PR	EPARED 12/9/2010	0 PEER REVIEW	DATE PREPAR	ED 12/20/10		PEER REVIEW C. Wallace	

BUREAU OF RE		ION	ESTIMATE WORI					SUMMARY SHEET 1 OF 1	
FEATUF				PROJE					
		Water Resources I	nvestigation		Central Valley Project - CA				
Feasibili					Shasta Div				
Major R	oad	Relocations/Parki	ng Area Improvements	<b>REGION:</b>			ATE LEVEL:	Feasibility	
				WOID:	SHAEF	PRICE	LEVEL:	Apr - 10	
		Most F	Probable						
Summa	ry		6.5-ft Dam Ra	lise					
L L	EM								
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
ACA	Ρ								
		Reservoir area vehic	le roads:						
		Remove/Replace	e Lakeshore Drive						
		Remove/Replace	e Turntable Bay Area						
		Remove/Replace	e Gilman Road						
		Remove/Replace	e Salt Creek Road						
		Misc Parking Ar	eas						
		MWH-006 Sheet (1)				1		\$7,833,300.00	
		MWH-006 Sheet (2)						\$1,544,900.00	
		MWH-006 Sheet (3)						\$970,300.00	
						_		φ970,300.00	
						_			
						_			
						_			
						_			
		Subtotal				_		\$10,348,500.00	
						_			
		Mobilization & Ge	eneral Conditions				10%	\$1,030,000.00	
		Subtotal w/ Mobiliza	tion					\$11,378,500.00	
		Design Continger	ncies				20%	\$2,292,000.00	
		Allowance for Pro	ocurement Strategy				2%	\$229,000.00	
		CONTRACT COST						\$13,900,000.00	
		Construction Cor	itingencies				8%	\$1,100,000.00	
								. , ,	
		FIELD COST				1		\$15,000,000.00	
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$\vdash$		Note: Esselation for the			aluala -l'	alar dur t	a un alizar		
			shed price level to notice to proceed is excluded	•	•				
			nd terminology, see Reclamation Manual, Direct	ves and Standards	s FAC; 09-01, 0				
		QL	JANTITIES			P	PRICES		
BY			CHECKED	BY			CHECKED		
See Group	Sheets	3	See Group Sheets		I. Buck		J. Loucks		
DATE PREP	PARED		PEER REVIEW	DATE PREP	ARED		PEER REVIEW		
			See Group Sheets		12/20/10		C. Wallace		

		ON	ESTIMATE WORK					SHEET_1_OF_3_
FEATU				PROJECT:				
		Water Resources Inv	restigation		Central Valley	-	CA	
Feasib		2			Shasta Divisio			
Major	Road	Relocations/Parking	J Area Improvements	REGION:	MP		TE LEVEL:	Feasibility
				WOID:	SHAEF	PRICE L	_EVEL:	Apr - 10
		Most Pr						
MWH-(	006		6.5-ft Dam Ra	ise				
PLANT ACCOUNT	LEM							
PLAN	РАҮ ІТЕМ	D	ESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
Ac	<u>م</u>							
		New Road Construction						
		Lakeshore Drive					<u> </u>	<u></u>
	1		Concrete Pavement/Base Materials	MWH-006	4	ac	\$3,500.00	\$14,000
	2	Clearing & Grubbing (New Establish Traffic Controls	Alingment)	MWH-006 MWH-006	4	ac	\$1,500.00 \$35,000.00	\$6,000 \$35,000
	4	Excavation to Embankmen	*	MWH-006	46,100	ls	\$35,000.00	\$35,000 \$691,500
	5	Embankment Fill	t	MWH-006	95,875	су	\$15.00	\$1,917,500
	6	Aggregate Base Course		MWH-006	7,588	cy tn	\$20.00	\$455,280
	7	Aggregate base course Asphaltic Concrete		MWH-006	3,694	tn	\$120.00	\$443,280
	8	Road Striping		MWH-006	8,075	lf	\$2.50	\$20,187
	9	Culvert Pipe -36" CMP		MWH-006	295	 If	\$216.00	\$63,720
	10	Culvert Pipe -48" CMP		MWH-006	75	 If	\$288.00	\$21,600
	11	Culvert Pipe -54" CMP		MWH-006	300	lf	\$324.00	\$97,200
	12	Culvert Pipe -60" CMP		MWH-006	240	lf	\$360.00	\$86,400
	13	Culvert Pipe -72" CMP		MWH-006	110	lf	\$432.00	\$47,520
	14	Culvert Pipe - 84" CMP		MWH-006	215	lf	\$504.00	\$108,360
	15	Misc Roadway Signage		MWH-006	1	ls	\$10,000.00	\$10,000
	16	Guardrail		MWH-006	400	lf	\$35.00	\$14,000
	17	Concrete Retaining Walls		MWH-006	0	су	\$850.00	\$C
	18	Concrete Retaining Walls I	Rebar	MWH-006	0	lbs	\$1.50	\$0
	19	Geotextile Fabric		MWH-006	0	sf	\$0.50	\$0
	20	Filter Bed Material Type I		MWH-006	0	су	\$60.00	\$0
	21	Rip Rap Type II		MWH-006	0	су	\$85.00	\$0
		Turntable Bay Area						
	22	· · · · · · · · · · · · · · · · · · ·	Concrete Pavement/Base Materials	MWH-006	2	ac	\$3,500.00	\$7,000
	23	Clearing & Grubbing (New	Alingment)	MWH-006	2	ac	\$1,500.00	\$3,000
	24	Establish Traffic Controls		MWH-006	1	ls	\$35,000.00	\$35,000
	25	Excavation to Embankmen	t	MWH-006	19,000	су	\$15.00	\$285,000
	26	Embankment Fill		MWH-006	71,500	су	\$20.00	\$1,430,000
	27	Aggregate Base Course		MWH-006	4,517	tn	\$60.00	\$271,026
	28	Asphaltic Concrete		MWH-006	0	tn K	\$120.00	\$0
	29 30	Road Striping		MWH-006	0	lf If	\$2.50 \$216.00	\$0 \$0
	30 31	Culvert Pipe -36" CMP Culvert Pipe -48" CMP		MWH-006 MWH-006	0	lf lf	\$216.00	\$0 \$0
	31	Culvert Pipe -48 CMP		MWH-006	0	lf	\$288.00	\$0 \$0
	32	Culvert Pipe -54 CMP		MWH-006	0	lf	\$324.00	\$0 \$0
	33	Culvert Pipe -72" CMP		MWH-006	0	lf	\$380.00	<del>پر</del> \$0
	35	Culvert Pipe - 84" CMP		MWH-006	0	lf	\$504.00	<u>\$0</u> \$0
	36	Misc Roadway Signage		MWH-006	1	ls	\$5,000.00	\$5,000
	37	Guardrail		MWH-006	0	lf	\$35.00	φ0,000 \$C
	38	Concrete Retaining Walls		MWH-006	409	су	\$850.00	\$347,650
	39	Concrete Retaining Walls I	Rebar	MWH-006	71,575	lbs	\$1.50	\$107,362
	40	Geotextile Fabric		MWH-006	275,410	sf	\$0.50	\$137,705
	41	Filter Bed Material Type I		MWH-006	5,100	су	\$60.00	\$306,000
	42	Rip Rap Type II		MWH-006	10,200	су	\$85.00	\$867,000
		Sheet Subtotal =						\$7,833,291
		QU	ANTITIES			Ρ	RICES	
βY			HECKED	ВҮ			CHECKED	
	I. Buck	c	. Wallace		. Buck		J. Loucks	
	EPARED	P		· · · · · · · · · · · · · · · · · · ·	Ð		PEER REVIEW	

	RECLAMATI	ON	ESTIMATE WORK					SHEET_2_OF_3_
FEAT				PROJECT		_		
		Water Resources In	nvestigation		Central Valley	-	CA	
	bility Stu		ag Aroa Improvomente		Shasta Divisio			
wajor	Road	Relocations/Parki	ng Area Improvements	REGION: WOID:	MP SHAEF	PRICE	TE LEVEL:	Feasibility
		Most F	Probable	WOID:	SHAEF	PRICE		Apr - 10
		WOStr						
MWH-			6.5-ft Dam Ra	lise				
PLANT ACCOUNT	ITEM							
PLA	PAY I		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
<	-		-					
		New Road Constructio	n					
	_	Gilman Drive						
	1		t Concrete Pavement/Base Materials	MWH-006	0	ac	\$3,500.00	\$0.
	2	Clearing & Grubbing (Ne		MWH-006	0		\$1,500.00	\$0. \$0.
	3	Establish Traffic Controls		MWH-006	0	ls	\$35,000.00	\$0.0
	4	Excavation to Embankm		MWH-006	0		\$15.00	\$0.0
	5	Embankment Fill		MWH-006	0	су	\$20.00	\$0.0
	6	Aggregate Base Course		MWH-006	0	-	\$60.00	\$0.
	7	Asphaltic Concrete		MWH-006	0		\$120.00	\$0.
	8	Road Striping		MWH-006	0	lf	\$2.50	\$0.0
	9	Culvert Pipe -36" CMP		MWH-006	0	lf	\$216.00	\$0.
	10	Culvert Pipe -48" CMP		MWH-006	0	lf	\$288.00	\$0.
	11	Culvert Pipe -54" CMP		MWH-006	0	_	\$324.00	\$0.0
	12	Culvert Pipe -60" CMP		MWH-006	0	_	\$360.00 \$432.00	\$0. \$0.
	13 14	Culvert Pipe -72" CMP Culvert Pipe - 84" CMP		MWH-006 MWH-006	0		\$504.00	\$0. \$0.
	15	Misc Roadway Signage		MWH-006	0		\$10,000.00	\$0.
	16	Guardrail		MWH-006	0	lf	\$35.00	\$0.
	17	Concrete Retaining Wall		MWH-006	0		\$850.00	\$0.
	18	Concrete Retaining Wall	s Rebar	MWH-006	0	lbs	\$1.50	\$0.0
	19 20	Geotextile Fabric Filter Bed Material Type	1	MWH-006 MWH-006	0	sf cy	\$0.50 \$60.00	\$0.0 \$0.0
	20	Rip Rap Type II	1	MWH-006	0		\$85.00	\$0.0
						- ,		
		Jones Valley & Silverth						
	22		t Concrete Pavement/Base Materials	MWH-006	1	ac	\$3,500.00 \$1,500.00	\$2,820. \$1,209.
	23 24	Clearing & Grubbing (Ne Establish Traffic Controls		MWH-006 MWH-006	1	ac Is	\$1,500.00	\$1,209.
	25	Excavation to Embankm		MWH-006	0	-	\$15.00	\$0.
	26	Embankment Fill		MWH-006	41,250	су	\$20.00	\$825,000.
	27	Aggregate Base Course		MWH-006	1,732	tn	\$60.00	\$103,920.
	28	Asphaltic Concrete		MWH-006	649	tn K	\$120.00	\$77,880.
	29 30	Road Striping Culvert Pipe -36" CMP		MWH-006 MWH-006	1,950 0	lf lf	\$2.50 \$216.00	\$4,875. \$0.
	31	Culvert Pipe -48" CMP		MWH-006	170	lf	\$288.00	\$48,960.
	32	Culvert Pipe -54" CMP		MWH-006	0	-	\$324.00	\$0.
	33	Culvert Pipe -60" CMP		MWH-006	0	lf	\$360.00	\$0.
	34	Culvert Pipe -72" CMP		MWH-006	235	-	\$432.00	\$101,520.
	35	Culvert Pipe - 84" CMP		MWH-006	0		\$504.00	\$0.
	36 37	Misc Roadway Signage Guardrail		MWH-006 MWH-006	1	ls If	\$5,000.00 \$35.00	\$5,000. \$0.
	37	Concrete Retaining Wall	S	MWH-006	0		\$850.00	
	39	Concrete Retaining Wall		MWH-006	0	- ,	\$1.50	\$0.
	40	Geotextile Fabric		MWH-006	71,182	sf	\$0.50	\$35,591.
	41	Filter Bed Material Type	I	MWH-006	1,318	су	\$60.00	\$79,080.
	42	Rip Rap Type II		MWH-006	2,636		\$85.00	\$224,060.
		Sheet Subtotal =						\$1,544,915.
	QUANTITIES					P	RICES	
BY			CHECKED	ВҮ			CHECKED	
	I. Buck		C. Wallace		I. Buck		J. Loucks	
DATE PR	EPARED		PEER REVIEW	DATE PREPARI	ED		PEER REVIEW	
	11/23/2010	)		0	12/20/10		C. Wallace	

BUREAU OF R		ON ESTIMATE WORKS					SHEET_3_ OF _3 _
FEATU	RE:		PROJECT				
Shasta	Lake	Water Resources Investigation		Central Valley	Project -	· CA	
Feasibi	lity Stu	Jdy		Shasta Divisio	n		
<b>Major</b> F	Road F	Relocations/Parking Area Improvements	<b>REGION:</b>	MP	ESTIMA	TE LEVEL:	Feasibility
-			WOID:	SHAEF	PRICE L	_EVEL:	Apr - 10
		Most Probable					
мжнос	06	6.5-ft Dam Ra	se				
T T NI	ITEM						
PLANT ACCOUNT	PAY ITI	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		New Road Construction					
		Salt Creek Road					
	1	Remove Existing Asphalt Concrete Pavement/Base Materials	MWH-006	0	ac	\$3,500.00	\$0.0
	2	Clearing & Grubbing (New Alingment)	MWH-006	0	ac	\$1,500.00	\$0.0
	3	Establish Traffic Controls	MWH-006	0	ls	\$35,000.00	\$0.0
	4	Excavation to Embankment	MWH-006	0		\$15.00	\$0.0
	5	Embankment Fill	MWH-006	0	,	\$20.00	\$0.0
	6	Aggregate Base Course	MWH-006	0	-	\$60.00	\$0.0
	7	Asphaltic Concrete	MWH-006	0	-	\$120.00	\$0.0
	8 9	Road Striping Culvert Pipe -36" CMP	MWH-006	0	-	\$2.50 \$216.00	\$0.0 \$0.0
	9 10	Culvert Pipe -38 CMP Culvert Pipe -48" CMP	MWH-006 MWH-006	0	-	\$218.00	\$0.0
	10	Culvert Pipe -54" CMP	MWH-006	0	-	\$324.00	\$0.0
	12	Culvert Pipe -60" CMP	MWH-006	0		\$360.00	\$0.0
	13	Culvert Pipe -72" CMP	MWH-006	0		\$432.00	\$0.0
	14	Culvert Pipe - 84" CMP	MWH-006	0	lf	\$504.00	\$0.0
	15	Misc Roadway Signage	MWH-006	0	-	\$10,000.00	\$0.0
	16	Guardrail	MWH-006	0	-	\$35.00	\$0.0
	17	Concrete Retaining Walls	MWH-006	0	су	\$850.00	\$0.0
	18	Concrete Retaining Walls Rebar	MWH-006	0	lbs	\$1.50	\$0.0
	19	Geotextile Fabric	MWH-006	0	sf	\$0.50	\$0.0
	20	Filter Bed Material Type I	MWH-006	0	су	\$60.00	\$0.0
	21	Rip Rap Type II	MWH-006	0	су	\$85.00	\$0.0
		Remaining Road Segments					
	22	Remove Existing Asphalt Concrete Pavement/Base Materials	MWH-006	0	ac	\$3,500.00	\$0.0
	23 24	Clearing & Grubbing (New Alingment)	MWH-006 MWH-006	0	ac	\$1,500.00	\$0.0
	24 25	Establish Traffic Controls Excavation to Embankment	MWH-006	15	ls	\$35,000.00 \$15.00	\$35,000.0 \$225.0
	25	Embankment Fill	MWH-006	34,231	cy cy	\$15.00	\$684,625.0
	27	Aggregate Base Course	MWH-006	843		\$60.00	\$50,580.0
	28	Asphaltic Concrete	MWH-006	315		\$120.00	\$37,800.0
	29	Road Striping	MWH-006	1,194	lf	\$2.50	\$2,985.0
	30	Culvert Pipe -36" CMP	MWH-006	0	lf	\$216.00	\$0.0
	31	Culvert Pipe -48" CMP	MWH-006	0	lf	\$288.00	\$0.0
	32	Culvert Pipe -54" CMP	MWH-006	0		\$324.00	\$0.0
	33	Culvert Pipe -60" CMP	MWH-006	0	-	\$360.00	\$0.0
	34	Culvert Pipe -72" CMP	MWH-006	0	-	\$432.00	\$0.0
	35	Culvert Pipe - 84" CMP	MWH-006	0		\$504.00	\$0.0
	36 37	Misc Roadway Signage Guardrail	MWH-006 MWH-006	1 0	ls If	\$5,000.00 \$35.00	\$5,000.0
	37	Concrete Retaining Walls	MWH-006	0	су	\$35.00	\$0.0 \$0.0
	39	Concrete Retaining Walls Rebar	MWH-006	0	lbs	\$850.00	\$0.0
	40	Geotextile Fabric	MWH-006	32,365	sf	\$1.50	\$0.0 \$16,182.5
	41	Filter Bed Material Type I	MWH-006	599	су	\$60.00	\$35,940.0
	42	Rip Rap Type II	MWH-006	1,199	су	\$85.00	\$101,915.0
		Sheet Subtotal =					\$970,252.5
					P	RICES	φ910,202.5
ΒΥ		CHECKED	BY		•	CHECKED	
	I. Buck	C. Wallace	I. Buck J. Loucks				
DATE PRE						PEER REVIEW	

BUREAU OF RECLAN		ESTIMATE WORKS					SUMMARY SHEET 1 OF 1
FEATURE:			PROJE				
	e Water Resources I	nvestigation		Central Val		t - CA	
Feasibility S				Shasta Divi			
Reservoir	Area Utilities (Remo	ovals & Relocations)	REGION:				Feasibility
			WOID:	SHAEF	PRICE L	EVEL:	Apr - 10
<b>C</b>	Most	Probable					
Summary		6.5-ft Dam Raise	2				
PLANT ACCOUNT PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	Reservoir area utilit	ies consists of:					
	Demolishing or	relocating u/g utilities or wells					
	Removal or res	toration of wastewater facilities					
	Removal or relo	ocation of power distribution facilities					
		tment Plant Costs					
	MWH-007 Sheet (1)						\$15,219,402.00
	Subtotal						\$15,219,402.00
							<i><i><i></i></i></i>
	Mobilization/Gen	eral Conditions				10%	\$1,520,000.00
	Subtotal w/ Mobiliza	tion					\$16,739,000.0
	Design Continge	ncies				25%	\$4,223,000.0
	Allowance for Pr	ocurement Strategy			_	2%	\$338,000.0
	CONTRACT COST				_		\$21,300,000.00
	Construction Co	ntingencies				8%	\$1,700,000.00
	FIELD COST				_		\$23,000,000.00
	Note: Escalation from publ	ished price level to notice to proceed is excluded. Es	timates may inc	clude discropor		Junding	
		isned price level to notice to proceed is excluded. Es and terminology, see Reclamation Manual, Directives					
		UANTITIES	and Standards	5 - 70, 09-01, 0		RICES	
	Q				٢		
BY See Group She	ets	CHECKED See Group Sheets	ВҮ	J Loucks		CHECKED E. Cabero	
DATE PREPARE	D	PEER REVIEW See Group Sheets	DATE PREP	ARED 623//2008		PEER REVIEW D. Crone	

FEAT	F RECLAMAT	ION	ESTIMATE WORKS		·-			SHEET_1_0F_1_
		Water Posouroos Ir	westigation	FRUJEUI		N Drains		
	a Lake bility St	Water Resources Ir	ivestigation		Central Valle Shasta Divis		t - CA	
	-	2	vals & Relocations)	REGION:	MP		TE LEVEL:	Feasibility
			vals a relocations,	WOID:	SHAEF	PRICE		Apr - 10
		Most P	Probable	WOID.	UNALI			
MWH-	-007		6.5-ft Dam Rais	20				
PLANT ACCOUNT	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Selective Demolishion	& Replacement					
		All Areas			0.740		<b>.</b>	
	1	Demolish Buildings (Res	· ·	MWH-007	8,712		\$6.00	\$52,272.0
	2		Pipes <6" (Abandon In Place)	MWH-007	4,455		\$6.00	\$26,730.0
	3	Demoliish Potable Water		MWH-007	4,455		\$18.00	\$80,190.0
	4	Relocate Potable Water	•	MWH-007	7,210		\$90.00	\$648,900.0
	5	Demolish Wells (200' ar		MWH-007	7	ea	\$550.00	\$3,850.0
	6	Relocate Wells (200' at 1		MWH-007	6		\$10,000.00	\$60,000.0
	7	Demolish Tanks (2500 g	,	MWH-007	1	ea	\$1,875.00	\$1,875.0
	8	Demolish Potable Water	•	MWH-007	2		\$3,500.00	\$7,000.0
	10	Relocate Potable Water	•	MWH-007 MWH-007	2		\$25,000.00	\$50,000.0
	10		ell System (200' at 15 gpm)	MWH-007			\$550.00 \$10,000.00	\$4,400.0 \$60,000.0
	12		II System (200' at 15 gpm)	MWH-007	2,340	ea If	\$10,000.00	\$56,160.0
	12	Demolish Wastewater Pi Relocate Wastewater Pi	,	MWH-007	430	lf	\$24.00	\$50,100.0
	13	Demolish Wastewater Pi		MWH-007 MWH-007	430		\$120.00	
			•					\$7,000.0
	15 16		nk/Leach Field (Including Local Piping)	MWH-007	155 2		\$750.00 \$3,500.00	\$116,250.0
	17		k/Leach Field (Including Local Piping) each Field (Including Local Piping)	MWH-007 MWH-007	2 56		\$3,500.00	\$7,000.0
	17		each Field (Including Local Piping)	MWH-007	12		\$1,000.00	\$56,000.0 \$54,000.0
	18	Relocate Holding Tank w		MWH-007	12		\$4,500.00	\$54,000.0
	20	Demolish Vault Pit		MWH-007	2	ea	\$2,500.00	\$5,000.0
	20	Relocate Valve Pit		MWH-007	2		\$2,500.00	\$15,000.0
	21	Demolish Low Voltage P	ower Wires	MWH-007	21,227	lf	\$7,500.00	\$106,135.0
	23	Relocate Low Voltage Po		MWH-007	22,520		\$10.00	\$225,200.0
	23	Demolish High Voltage F		MWH-007	5,170		\$10.00	\$51,700.0
	25	Relocate High Voltage P		MWH-007	7,740		\$20.00	\$154,800.0
	26	Demolish Power Towers		MWH-007	6	ea	\$15,000.00	\$90,000.0
	27	Relocate Power Towers		MWH-007	6	ea	\$125,000.00	\$750,000.0
	28	Demolish U/G Telecomm	nunications Wire	MWH-007	23,575		\$1.00	\$23,575.0
	29	Relocate U/G Telecomm		MWH-007	27,925		\$5.00	\$139,625.0
	30	Demolish U/G Fiberoptic		MWH-007	3,640		\$1.00	\$3,640.0
	31	Relocate U/G Fiberoptic		MWH-007	4,300	lf	\$5.00	\$21,500.0
	32	Demolish U/G Tanks	-	MWH-007	,000 6		\$1,500.00	\$9,000.0
	33	Relocate U/G Tanks		MWH-007	6		\$8,750.00	\$52,500.0
	34	Demolish Misc Tanks		MWH-007	1	ea	\$2,000.00	\$2,000.0
	35	Relocate Misc Tanks		MWH-007	1	ea	\$10,000.00	\$10,000.0
	36	Close Mine Entrances		MWH-007	2		\$5,000.00	\$10,000.0
	37		Plant Costs (Appendix B - Utilities Report)	MWH-007	1	ls	\$12,204,000.00	\$12,204,000.0
		Sheet Subtotal =						\$15,219,402.0
			JANTITIES			PF	RICES	φτ <b>υ,</b> Ζτ9,402.0
3Y			CHECKED	ВҮ			CHECKED	
	I. Buck		C. Wallace	51	J. Loucks		I. Buck	
	REPARED		PEER REVIEW	DATE PREPAR			PEER REVIEW	
					01/19/11		C. Wallace	

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