TEN MILE RIVER - OMEGA DAM
Construct Fish Ladder

Designed By: CENAE
Estimated By: CENAE-MR

Prepared By: CENAE

Preparation Date: 08/31/04
Effective Date of Pricing: 08/31/04
Est Construction Time: 180 Days

Sales Tax: 0.0%

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Release 1.2

This project is to construct a 4' wide Denil Fishway at Omega Dam on Ten Mile River in East Providence RI. The 4' wide by 140'long, 8' high, fishway/fish ladder will be constructed of a reinforced concrete pile foundation, concrete slab and walls. The fishway will have approximately 45 oak water velocity baffles. The fishway will be constructed in the dam area under a train bridge. Assume a cofferdam structure will be required for 4 months of the contract period. Contractor may have option to use sheet pile or portable cofferdam system. This is a feasibility level estimate. Markups included in this estimate are as follows: 7% office overhead, 10% field overhead, 10% profit, 2% bond. There is a markup of 9% for cost growth. The scope and plans drawings are at feasibility level, therefore a 25% contingency is included.

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	QUANTY	UOM	CONTRACT	CONTINGN	ESCALATN	TOTAL COST	UNIT	NOTES
06 Denil Fishway	1.00		316,380	79,095	35,593	431,068	431068	
TOTAL TEN MILE RIVER - OMEGA DAM	1.00	EA	316,380	79,095	35,593	431,068	431068	

	QUANTY	UOM	CONTRACT	CONTINGN	ESCALATN	TOTAL COST	UNIT	NOTES
06 Denil Fishway								
06.01 Fishway	150.00	LF	69,626	17,406	7,833	94,865	632.43	
06.06 Foundation Piles	234.00	CF	27,402	6,850	3,083	37,335	159.55	
06.11 Mob. Demob. and Misc.	1.00	EA	102,039	25,510	11,479	139,029	139029	
06.16 Cofferdam	4000.00	SF	117,313	29,328	13,198	159,840	39.96	
TOTAL Denil Fishway	1.00		316,380	79,095	35,593	431,068	431068	
TOTAL TEN MILE RIVER - OMEGA DAM	1.00	EA	316,380	79,095	35,593	431,068	431068	

	QUANTY UOM	CONTRACT	CONTINGN	ESCALATN	TOTAL COST	UNIT	NOTES
06 Denil Fishway							
06.01 Fishway							
06.01. 5 Precast Slab	1.00	43,171	10,793	4,857	58,820	58820	
06.01.10 Cast in Place Walls	1.00	16,234	4,059	1,826	22,119	22119	
06.01.15 Wood Baffles	1.00	7,740	1,935	871	10,546	10546	
06.01.20 Excavate Plunge/Resting Pool	1.00	2,481	620	279	3,380	3379.97	
TOTAL Fishway	150.00 LF	69,626	17,406	7,833	94,865	632.43	
06.06 Foundation Piles							
06.06. 5 Pile Caps	1.00	27,402	6,850	3,083	37,335	37335	
TOTAL Foundation Piles	234.00 CF	27,402	6,850	3,083	37,335	159.55	
06.11 Mob. Demob. and Misc.							
06.11. 5 Mobilization	1.00	16,381	4,095	1,843	22,320	22320	
06.11.10 Demobilization	1.00	8,971	2,243	1,009	12,223	12223	
06.11.15 General Conditions	1.00	76,687	19,172	8,627	104,486	104486	
TOTAL Mob. Demob. and Misc.	1.00 EA	102,039	25,510	11,479	139,029	139029	
06.16 Cofferdam							
06.16. 5 Cofferdam & Dewatering	1.00	117,313	29,328	13,198	159,840	159840	
TOTAL Cofferdam	4000.00 SF	117,313	29,328	13,198	159,840	39.96	
TOTAL Denil Fishway	1.00	316,380	79,095	35,593	431,068	431068	
TOTAL TEN MILE RIVER - OMEGA DAM	1.00 EA	316,380	79,095	35,593	431,068	431068	

	QUANTY	UOM	DIRECT	FIELD OH	HOME OFC	PROFIT	BOND	TOTAL COST	UNIT
06 Denil Fishway	1.00		245,256	24,526	17,168	24,526	4,905	316,380	316380
TOTAL TEN MILE RIVER - OMEGA DAM	1.00	EA	245,256	24,526	17,168	24,526	4,905	316,380	316380
Contingency								79,095	
SUBTOTAL								395,476	
Escalation								35,593	
TOTAL INCL OWNER COSTS								431,068	

	QUANTY UOM	DIRECT	FIELD OH	HOME OFC	PROFIT	BOND	TOTAL COST	UNIT
06 Denil Fishway								
06.01 Fishway	150.00 LF	53,973	5,397	3,778	5,397	1,079	69,626	464.17
06.06 Foundation Piles	234.00 CF	21,242	2,124	1,487	2,124	425	27,402	117.10
06.11 Mob. Demob. and Misc.	1.00 EA	79,100	7,910	5,537	7,910	1,582	102,039	102039
06.16 Cofferdam	4000.00 SF	90,941	9,094	6,366	9,094	1,819	117,313	29.33
TOTAL Denil Fishway	1.00	245,256	24,526	17,168	24,526	4,905	316,380	316380
TOTAL TEN MILE RIVER - OMEGA DAM	1.00 EA	245,256	24,526	17,168	24,526	4,905	316,380	316380
Contingency							79,095	
SUBTOTAL							395,476	
Escalation							35,593	
TOTAL INCL OWNER COSTS							431,068	

	QUANTY UOM	DIRECT	FIELD OH	HOME OFC	PROFIT	BOND	TOTAL COST	UNIT
06 Denil Fishway								
06.01 Fishway								
06.01. 5 Precast Slab	1.00	33,466	3,347	2,343	3,347	669	43,171	43171
06.01.10 Cast in Place Walls	1.00	12,585	1,258	881	1,258	252	16,234	16234
06.01.15 Wood Baffles	1.00	6,000	600	420	600	120	7,740	7740.00
06.01.20 Excavate Plunge/Resting Pool	1.00	1,923	192	135	192	38	2,481	2480.71
TOTAL Fishway	150.00 LF	53,973	5,397	3,778	5,397	1,079	69,626	464.17
06.06 Foundation Piles								
06.06. 5 Pile Caps	1.00	21,242	2,124	1,487	2,124	425	27,402	27402
TOTAL Foundation Piles	234.00 CF	21,242	2,124	1,487	2,124	425	27,402	117.10
06.11 Mob. Demob. and Misc.								
06.11. 5 Mobilization	1.00	12,699	1,270	889	1,270	254	16,381	16381
06.11.10 Demobilization	1.00	6,954	695	487	695	139	8,971	8971.26
06.11.15 General Conditions	1.00	59,447	5,945	4,161	5,945	1,189	76,687	76687
TOTAL Mob. Demob. and Misc.	1.00 EA	79,100	7,910	5,537	7,910	1,582	102,039	102039
06.16 Cofferdam								
06.16. 5 Cofferdam & Dewatering	1.00	90,941	9,094	6,366	9,094	1,819	117,313	117313
TOTAL Cofferdam	4000.00 SF	90,941	9,094	6,366	9,094	1,819	117,313	29.33
TOTAL Denil Fishway	1.00	245,256	24,526	17,168	24,526	4,905	316,380	316380
TOTAL TEN MILE RIVER - OMEGA DAM	1.00 EA	245,256	24,526	17,168	24,526	4,905	316,380	316380
Contingency							79,095	
SUBTOTAL							395,476	
Escalation							35,593	
TOTAL INCL OWNER COSTS							431,068	

	QUANTY	UOM	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT
06 Denil Fishway	1.00		140,465	25,465	39,125	40,200	245,256	245256
TOTAL TEN MILE RIVER - OMEGA DAM	1.00	EA	140,465	25,465	39,125	40,200	245,256	245256
Prime Contractor's Field Overhead							24,526	
SUBTOTAL							269,782	
Prime's Home Office Expense							17,168	
SUBTOTAL							286,950	
Prime Contractor's Profit							24,526	
SUBTOTAL							311,475	
Prime Contractor's Bond							4,905	
TOTAL INCL INDIRECTS							316,380	
Contingency							79,095	
SUBTOTAL							395,476	
Escalation							35,593	
TOTAL INCL OWNER COSTS							431,068	

	QUANTY	UOM	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT
06 Denil Fishway								
06.01 Fishway	150.00	LF	23,492	17,966	12,515	0	53,973	359.82
06.06 Foundation Piles	234.00	CF	15,320	2,244	3,678	0	21,242	90.78
06.11 Mob. Demob. and Misc.	1.00	EA	71,913	5,255	1,933	0	79,100	79100
06.16 Cofferdam	4000.00	SF	29,741	0	21,000	40,200	90,941	22.74
TOTAL Denil Fishway	1.00		140,465	25,465	39,125	40,200	245,256	245256
TOTAL TEN MILE RIVER - OMEGA DAM	1.00	EA	140,465	25,465	39,125	40,200	245,256	245256
Prime Contractor's Field Overhead							24,526	
SUBTOTAL							269,782	
Prime's Home Office Expense							17,168	
SUBTOTAL							286,950	
Prime Contractor's Profit							24,526	
SUBTOTAL							311,475	
Prime Contractor's Bond							4,905	
TOTAL INCL INDIRECTS							316,380	
Contingency							79,095	
SUBTOTAL							395,476	
Escalation							35,593	
TOTAL INCL OWNER COSTS							431,068	

	QUANTY UOM	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT
06 Denil Fishway							
06.01 Fishway							
06.01. 5 Precast Slab	1.00	14,231	15,668	3,568	0	33,466	33466
06.01.10 Cast in Place Walls	1.00	6,649	1,738	4,198	0	12,585	12585
06.01.15 Wood Baffles	1.00	2,000	0	4,000	0	6,000	6000.00
06.01.20 Excavate Plunge/Resting Pool	1.00	613	560	750	0	1,923	1923.03
TOTAL Fishway	150.00 LF	23,492	17,966	12,515	0	53,973	359.82
06.06 Foundation Piles							
06.06. 5 Pile Caps	1.00	15,320	2,244	3,678	0	21,242	21242
TOTAL Foundation Piles	234.00 CF	15,320	2,244	3,678	0	21,242	90.78
06.11 Mob. Demob. and Misc.							
06.11. 5 Mobilization	1.00	9,736	2,627	336	0	12,699	12699
06.11.10 Demobilization	1.00	4,327	2,627	0	0	6,954	6954.46
06.11.15 General Conditions	1.00	57,850	0	1,597	0	59,447	59447
TOTAL Mob. Demob. and Misc.	1.00 EA	71,913	5,255	1,933	0	79,100	79100
06.16 Cofferdam							
06.16. 5 Cofferdam & Dewatering	1.00	29,741	0	21,000	40,200	90,941	90941
TOTAL Cofferdam	4000.00 SF	29,741	0	21,000	40,200	90,941	22.74
TOTAL Denil Fishway	1.00	140,465	25,465	39,125	40,200	245,256	245256
TOTAL TEN MILE RIVER - OMEGA DAM	1.00 EA	140,465	25,465	39,125	40,200	245,256	245256
Prime Contractor's Field Overhead						24,526	
SUBTOTAL						269,782	
Prime's Home Office Expense						17,168	
SUBTOTAL						286,950	
Prime Contractor's Profit						24,526	
SUBTOTAL						311,475	
Prime Contractor's Bond						4,905	
TOTAL INCL INDIRECTS						316,380	

	QUANTY	UOM	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT
Contingency							79,095	
SUBTOTAL							395,476	
Escalation							35,593	
TOTAL INCL OWNER COSTS							431,068	

No errors detected...

* * * END OF ERROR REPORT * * *

Fishway		QUANTY	UOM	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT
Precast Slab									
	Excavate & load, wheeled loader, 1.5 CY, -wet rock-for small job in river bed productivity adjusted to 50% of line item default.	40.00	CY	9.75 390	4.91 196	0.00 0	0.00 0	14.66 586	14.66
	Concrete in place,pump,650psi, incl forms,reinf,flexural on	32.00	CY	104.50 3,344	33.43 1,070	80.00 2,560	0.00 0	217.93 6,974	217.93
	Base course, crushed 3/4" stone, compacted, 12"D, large areas-small job in river bed, reduced productivity rate to %50 of line item productivity default rate.	125.00	SY	0.31 39	0.33 42	8.06 1,008	0.00 0	8.70 1,088	8.70
	Finishing floors, monolithic, float finish	560.00	SF	1.08 603	0.00 0	0.00 0	0.00 0	1.08 603	1.08
	Hauling, w/loading, 12 CY truck, 5 mile haul, soil	40.00	CY	6.38 255	9.00 360	0.00 0	0.00 0	15.38 615	15.38
	Crane for material handling-crane plus operator cost dump, loader, etc.	20.00	DAY	480.00 9,600	700.00 14,000	0.00 0	0.00 0	1180.00 23,600	1180.00
TOTAL	Precast Slab	1.00		14,231	15,668	3,568	0	33,466	33466
Cast in Place Walls									
	Concrete in place,pump,650psi, incl forms, reinf steel-	52.00	CY	104.50 5,434	33.43 1,738	80.00 4,160	0.00 0	217.93 11,332	217.93
	Finishing walls, break ties & patch voids- 50% reduction in productivity for small job in river bed.	1260.00	SF	0.96 1,215	0.00 0	0.03 38	0.00 0	0.99 1,252	0.99
TOTAL	Cast in Place Walls	1.00		6,649	1,738	4,198	0	12,585	12585

Fishway		QUANTY	UOM	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT
Wood Baffles									
	Wood Baffles, 2" x 8"- assume			2.00	0.00	4.00	0.00	6.00	
	oak baffles every 30" alo	1000.00	BF	2,000	0	4,000	0	6,000	6.00
TOTAL	Wood Baffles	1.00		2,000	0	4,000	0	6,000	6000.00
Excavate Plunge/Resting Pool									
	Hauling, w/loading, 12 CY truck,			13.03	18.39	0.00	0.00	31.42	
	5 mile haul, soil	20.00	CY	261	368	0	0	628	31.42
	Excavate & load, wheeled loader,			16.25	8.18	0.00	0.00	24.43	
	1.5 CY, -wet rock-for small job in river bed productivity adjusted to 50% of line item default.	20.00	CY	325	164	0	0	489	24.43
	Base course, crushed 1/12"			0.54	0.58	15.00	0.00	16.12	
	stone, compacted, 12"D, large areas- small job in river bed, reduced productivity rate to %50 of line item productivity default rate.	50.00	SY	27	29	750	0	806	16.12
TOTAL	Excavate Plunge/Resting Pool	1.00		613	560	750	0	1,923	1923.03
TOTAL	Fishway	150.00	LF	23,492	17,966	12,515	0	53,973	359.82

Foundation Piles

		QUANTY UOM	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT
Pile Caps								
	Placing conc, pile caps, under 5 CY, pumped-includes concrete-cut production rate by %50 for small job in river bed conditions. Access may be difficult.	9.00 CY	57.70 519	18.57 167	80.00 720	0.00 0	156.26 1,406	156.26
	Boring pile caps-Caisson,18"dia, 0.065CY/LF, to 50'D,wet gnd,pulled case/pmp, open,mach dr-cut production to %50 for smaller job in river bed conditions. Access may be difficult.	204.00 VLF	21.02 4,288	4.30 877	5.09 1,038	0.00 0	30.41 6,204	30.41
	Boring widened top of pile caps-Caisson,30"dia,0.182CY/LF, to 50'D, wet gnd,pulled case/pmp, open,mach dr. Access may be difficult.	24.00 VLF	161.70 3,881	33.08 794	14.26 342	0.00 0	209.04 5,017	209.04
	Rigs to bore pile cap tubes-Caisson, open, for mobilization, 50 mile radius, rig to 36"	2.00 EA	1328.97 2,658	202.94 406	0.00 0	0.00 0	1531.91 3,064	1531.91
	Reinforcing in place, footings, #4 to #7- reduced productivity factor by %50 for small job in river bed conditions.	3.00 TON	1324.53 3,974	0.00 0	525.66 1,577	0.00 0	1850.19 5,551	1850.19
TOTAL	Pile Caps	1.00	15,320	2,244	3,678	0	21,242	21242
TOTAL	Foundation Piles	234.00 CF	15,320	2,244	3,678	0	21,242	90.78

Mob. Demob. and Misc.	QUANTY UOM	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT
Mobilization							
Outside Laborers, (Semi-Skilled)- assume three	360.00 HR	27.04 9,736	0.00 0	0.00 0	0.00 0	27.04 9,736	27.04
Sign, hi-intensity reflectorized, no posts, buy	24.00 SF	0.00 0	0.00 0	13.98 336	0.00 0	13.98 336	13.98
Misc Equipment moved to site/mob costs.-assume pickup, 12 yard dump, loader, etc.	80.00 HR	0.00 0	32.84 2,627	0.00 0	0.00 0	32.84 2,627	32.84
TOTAL Mobilization	1.00	9,736	2,627	336	0	12,699	12699
Demobilization							
Outside Laborers, (Semi-Skilled)- assume two	160.00 HR	27.04 4,327	0.00 0	0.00 0	0.00 0	27.04 4,327	27.04
Misc Equipment moved from site to home office.-assume 6 pieces of equipment similar to that mobilized.	80.00 HR	0.00 0	32.84 2,627	0.00 0	0.00 0	32.84 2,627	32.84
TOTAL Demobilization	1.00	4,327	2,627	0	0	6,954	6954.46
General Conditions							
Field superintendent (not engineer)-assume field super on job for six months 8 hours per day	6.00 MO	6492.34 38,954	0.00 0	0.00 0	0.00 0	6492.34 38,954	6492.34
Outside Laborers, (Semi-Skilled) - assume misc tasks during construction, such as handling materials, cleamup, setup safety equipment, etc.	120.00 HR	27.04 3,245	0.00 0	0.00 0	0.00 0	27.04 3,245	27.04
Surveyors- assume two surveyors for one week total to survey area, set elevations for the new denil fishway structure and check final construction as-built elevations.	80.00 HR	19.93 1,594	0.00 0	0.00 0	0.00 0	19.93 1,594	19.93

Mob. Demob. and Misc.

		QUANTY	UOM	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT
	Surveyors, Chief - assume forty hours required by Chief to field and office check work and record data, billing, time sheets etc.	40.00	HR	22.39 896	0.00 0	0.00 0	0.00 0	22.39 896	22.39
	Office trailer, rent per month, furnished, no hookups, 20' x 8'	6.00	MO	0.00 0	0.00 0	150.33 902	0.00 0	150.33 902	150.33
	Office and tool storage trailer at work site, rent per month.	6.00	MO	0.00 0	0.00 0	35.67 214	0.00 0	35.67 214	35.67
	Toilet, portable chemical, rent per month	6.00	EA	0.00 0	0.00 0	80.17 481	0.00 0	80.17 481	80.17
	Outside Electricians - assume 120 hours for electrician to set up temporary power for trailer, generators, tools, etc.	120.00	HR	40.18 4,822	0.00 0	0.00 0	0.00 0	40.18 4,822	40.18
	Carpenters - assume 120 hours for carpenter for miscellaneous carpentry such as stairs, platforms, forms, stagging, etc.	120.00	HR	35.83 4,300	0.00 0	0.00 0	0.00 0	35.83 4,300	35.83
	Equip. Operators, Light - assume 120 hours for equipment operator to move equipment, generators, material and debir around site.	120.00	HR	33.66 4,039	0.00 0	0.00 0	0.00 0	33.66 4,039	33.66
TOTAL	General Conditions	1.00		57,850	0	1,597	0	59,447	59447
TOTAL	Mob. Demob. and Misc.	1.00	EA	71,913	5,255	1,933	0	79,100	79100

Cofferdam

Cofferdam & Dewatering
Steel sheet piles used in estimate - contractor may us portable dam systems, cost approx 80% of sheet pile costs.

	QUANTY	UOM	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT
7' high x 300LF of Portable Dam			8.00	0.00	10.00	2.00	20.00	
System - based on planning -	2100.00	SF	16,800	0	21,000	4,200	42,000	20.00
Dewatering inside cofferdam for			0.00	0.00	0.00	300.00	300.00	
4 months of the of contract period	120.00	DAY	0	0	0	36,000	36,000	300.00
Outside Divers-to work intalling			63.17	0.00	0.00	0.00	63.17	
water diversion equip at dam	168.00	HR	10,612	0	0	0	10,612	63.17
Outside Divers Tenders			41.58	0.00	0.00	0.00	41.58	
	56.00	HR	2,328	0	0	0	2,328	41.58
TOTAL Cofferdam & Dewatering	1.00		29,741	0	21,000	40,200	90,941	90941
TOTAL Cofferdam	4000.00	SF	29,741	0	21,000	40,200	90,941	22.74
TOTAL Denil Fishway	1.00		140,465	25,465	39,125	40,200	245,256	245256
TOTAL TEN MILE RIVER - OMEGA DAM	1.00	EA	140,465	25,465	39,125	40,200	245,256	245256

TEN MILE RIVER - HUNTS MILL DAM
Demo Existing Misc. Structures
and Construct Fish Ladder

Designed By: CENAE
Estimated By: CENAE-MR

Prepared By: CENAE

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Release 1.2

This project is to construct a 4' wide Denil Fishway at Hunts Mill Dam on Ten Mile River in East Providence RI. The 4' wide by 140'long, 8' high, fishway/fish ladder will be constructed of a reinforced concrete pier foundation, concrete slab and walls. The demolition of some exising concrete and store water pipes, walls and cistern, walls, and steel water pipes and steel sheetpile are required prior to start of new construction. The fishway will have approximately 43 oak water velocity baffles. Assume a sheetpile or portable cofferdam system will be required for 4 months of the contract period. This is a feasibility level estimate. Markups included in this estimate are as follows: 7% office overhead, 10% field overhead, 10% profit, 2% bond. There is a 9% markup for cost growth. The scope and plan drawings are at feasibility level, therefore a 25% contingency is included.

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01. Fish Trap and Fishway
5. Cast in Place Slab.....1
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	QUANTY	UOM	CONTRACT	CONTINGN	ESCALATN	TOTAL COST	UNIT	NOTES
06 Denil Fishway	1.00		374,436	93,609	42,124	510,169	510169	
TOTAL TEN MILE RIVER - HUNTS MILL DAM	1.00	EA	374,436	93,609	42,124	510,169	510169	

	QUANTY	UOM	CONTRACT	CONTINGN	ESCALATN	TOTAL COST	UNIT	NOTES
06 Denil Fishway								
06.01 Fish Trap and Fishway	140.00	LF	72,695	18,174	8,178	99,047	707.48	
06.06 Foundation Piers	1124.00	CF	18,410	4,603	2,071	25,084	22.32	
06.11 Mob. Demob. and Misc.	1.00	EA	97,776	24,444	11,000	133,219	133219	
06.16 Cofferdam	4000.00	SF	93,804	23,451	10,553	127,808	31.95	
06.21 Demolition	1.00	EA	91,751	22,938	10,322	125,010	125010	
TOTAL Denil Fishway	1.00		374,436	93,609	42,124	510,169	510169	
TOTAL TEN MILE RIVER - HUNTS MILL DAM	1.00	EA	374,436	93,609	42,124	510,169	510169	

	QUANTY UOM	CONTRACT	CONTINGN	ESCALATN	TOTAL COST	UNIT	NOTES
06 Denil Fishway							
06.01 Fish Trap and Fishway							
06.01. 5 Cast in Place Slab	1.00	37,718	9,430	4,243	51,391	51391	
06.01.10 Cast in Place Walls	1.00	27,149	6,787	3,054	36,990	36990	
06.01.15 Wood Baffles	1.00	4,644	1,161	522	6,327	6327.45	
06.01.20 Fish Trap	1.00	3,184	796	358	4,338	4338.21	
TOTAL Fish Trap and Fishway	140.00 LF	72,695	18,174	8,178	99,047	707.48	
06.06 Foundation Piers							
06.06. 5 Piers to Bedrock	1.00	18,410	4,603	2,071	25,084	25084	
TOTAL Foundation Piers	1124.00 CF	18,410	4,603	2,071	25,084	22.32	
06.11 Mob. Demob. and Misc.							
06.11. 5 Mobilization	1.00	16,381	4,095	1,843	22,320	22320	
06.11.10 Demobilization	1.00	11,762	2,941	1,323	16,026	16026	
06.11.15 General Conditions	1.00	69,632	17,408	7,834	94,874	94874	
TOTAL Mob. Demob. and Misc.	1.00 EA	97,776	24,444	11,000	133,219	133219	
06.16 Cofferdam							
06.16. 5 Cofferdam & Dewatering	1.00	93,804	23,451	10,553	127,808	127808	
TOTAL Cofferdam	4000.00 SF	93,804	23,451	10,553	127,808	31.95	
06.21 Demolition	1.00 EA	91,751	22,938	10,322	125,010	125010	
TOTAL Denil Fishway	1.00	374,436	93,609	42,124	510,169	510169	
TOTAL TEN MILE RIVER - HUNTS MILL DAM	1.00 EA	374,436	93,609	42,124	510,169	510169	

	QUANTY	UOM	DIRECT	FIELD OH	HOME OFC	PROFIT	BOND	TOTAL COST	UNIT
06 Denil Fishway	1.00		290,261	29,026	20,318	29,026	5,805	374,436	374436
TOTAL TEN MILE RIVER - HUNTS MILL DAM	1.00	EA	290,261	29,026	20,318	29,026	5,805	374,436	374436
Contingency								93,609	
SUBTOTAL								468,045	
Escalation								42,124	
TOTAL INCL OWNER COSTS								510,169	

	QUANTY	UOM	DIRECT	FIELD OH	HOME OFC	PROFIT	BOND	TOTAL COST	UNIT
06 Denil Fishway									
06.01 Fish Trap and Fishway	140.00	LF	56,353	5,635	3,945	5,635	1,127	72,695	519.25
06.06 Foundation Piers	1124.00	CF	14,272	1,427	999	1,427	285	18,410	16.38
06.11 Mob. Demob. and Misc.	1.00	EA	75,795	7,580	5,306	7,580	1,516	97,776	97776
06.16 Cofferdam	4000.00	SF	72,717	7,272	5,090	7,272	1,454	93,804	23.45
06.21 Demolition	1.00	EA	71,125	7,112	4,979	7,112	1,422	91,751	91751
TOTAL Denil Fishway	1.00		290,261	29,026	20,318	29,026	5,805	374,436	374436
TOTAL TEN MILE RIVER - HUNTS MILL DAM	1.00	EA	290,261	29,026	20,318	29,026	5,805	374,436	374436
Contingency								93,609	
SUBTOTAL								468,045	
Escalation								42,124	
TOTAL INCL OWNER COSTS								510,169	

	QUANTY UOM	DIRECT	FIELD OH	HOME OFC	PROFIT	BOND	TOTAL COST	UNIT
06 Denil Fishway								
06.01 Fish Trap and Fishway								
06.01. 5 Cast in Place Slab	1.00	29,239	2,924	2,047	2,924	585	37,718	37718
06.01.10 Cast in Place Walls	1.00	21,045	2,105	1,473	2,105	421	27,149	27149
06.01.15 Wood Baffles	1.00	3,600	360	252	360	72	4,644	4644.00
06.01.20 Fish Trap	1.00	2,468	247	173	247	49	3,184	3184.01
TOTAL Fish Trap and Fishway	140.00 LF	56,353	5,635	3,945	5,635	1,127	72,695	519.25
06.06 Foundation Piers								
06.06. 5 Piers to Bedrock	1.00	14,272	1,427	999	1,427	285	18,410	18410
TOTAL Foundation Piers	1124.00 CF	14,272	1,427	999	1,427	285	18,410	16.38
06.11 Mob. Demob. and Misc.								
06.11. 5 Mobilization	1.00	12,699	1,270	889	1,270	254	16,381	16381
06.11.10 Demobilization	1.00	9,118	912	638	912	182	11,762	11762
06.11.15 General Conditions	1.00	53,978	5,398	3,778	5,398	1,080	69,632	69632
TOTAL Mob. Demob. and Misc.	1.00 EA	75,795	7,580	5,306	7,580	1,516	97,776	97776
06.16 Cofferdam								
06.16. 5 Cofferdam & Dewatering	1.00	72,717	7,272	5,090	7,272	1,454	93,804	93804
TOTAL Cofferdam	4000.00 SF	72,717	7,272	5,090	7,272	1,454	93,804	23.45
06.21 Demolition	1.00 EA	71,125	7,112	4,979	7,112	1,422	91,751	91751
TOTAL Denil Fishway	1.00	290,261	29,026	20,318	29,026	5,805	374,436	374436
TOTAL TEN MILE RIVER - HUNTS MILL DAM	1.00 EA	290,261	29,026	20,318	29,026	5,805	374,436	374436
Contingency							93,609	
SUBTOTAL							468,045	
Escalation							42,124	
TOTAL INCL OWNER COSTS							510,169	

	QUANTY	UOM	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT
06 Denil Fishway	1.00		183,432	30,044	41,884	34,900	290,261	290261
TOTAL TEN MILE RIVER - HUNTS MILL DAM	1.00	EA	183,432	30,044	41,884	34,900	290,261	290261
Prime Contractor's Field Overhead							29,026	
SUBTOTAL							319,287	
Prime's Home Office Expense							20,318	
SUBTOTAL							339,605	
Prime Contractor's Profit							29,026	
SUBTOTAL							368,631	
Prime Contractor's Bond							5,805	
TOTAL INCL INDIRECTS							374,436	
Contingency							93,609	
SUBTOTAL							468,045	
Escalation							42,124	
TOTAL INCL OWNER COSTS							510,169	

	QUANTY	UOM	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT
06 Denil Fishway								
06.01 Fish Trap and Fishway	140.00	LF	26,287	16,593	13,473	0	56,353	402.52
06.06 Foundation Piers	1124.00	CF	7,666	1,188	5,417	0	14,272	12.70
06.11 Mob. Demob. and Misc.	1.00	EA	68,608	5,255	1,933	0	75,795	75795
06.16 Cofferdam	4000.00	SF	23,517	0	21,000	28,200	72,717	18.18
06.21 Demolition	1.00	EA	57,354	7,008	62	6,700	71,125	71125
TOTAL Denil Fishway	1.00		183,432	30,044	41,884	34,900	290,261	290261
TOTAL TEN MILE RIVER - HUNTS MILL DAM	1.00	EA	183,432	30,044	41,884	34,900	290,261	290261
Prime Contractor's Field Overhead							29,026	
SUBTOTAL							319,287	
Prime's Home Office Expense							20,318	
SUBTOTAL							339,605	
Prime Contractor's Profit							29,026	
SUBTOTAL							368,631	
Prime Contractor's Bond							5,805	
TOTAL INCL INDIRECTS							374,436	
Contingency							93,609	
SUBTOTAL							468,045	
Escalation							42,124	
TOTAL INCL OWNER COSTS							510,169	

	QUANTY UOM	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT
06 Denil Fishway							
06.01 Fish Trap and Fishway							
06.01. 5 Cast in Place Slab	1.00	12,296	12,733	4,210	0	29,239	29239
06.01.10 Cast in Place Walls	1.00	11,665	3,343	6,038	0	21,045	21045
06.01.15 Wood Baffles	1.00	1,200	0	2,400	0	3,600	3600.00
06.01.20 Fish Trap	1.00	1,126	517	825	0	2,468	2468.22
TOTAL Fish Trap and Fishway	140.00 LF	26,287	16,593	13,473	0	56,353	402.52
06.06 Foundation Piers							
06.06. 5 Piers to Bedrock	1.00	7,666	1,188	5,417	0	14,272	14272
TOTAL Foundation Piers	1124.00 CF	7,666	1,188	5,417	0	14,272	12.70
06.11 Mob. Demob. and Misc.							
06.11. 5 Mobilization	1.00	9,736	2,627	336	0	12,699	12699
06.11.10 Demobilization	1.00	6,491	2,627	0	0	9,118	9117.98
06.11.15 General Conditions	1.00	52,381	0	1,597	0	53,978	53978
TOTAL Mob. Demob. and Misc.	1.00 EA	68,608	5,255	1,933	0	75,795	75795
06.16 Cofferdam							
06.16. 5 Cofferdam & Dewatering	1.00	23,517	0	21,000	28,200	72,717	72717
TOTAL Cofferdam	4000.00 SF	23,517	0	21,000	28,200	72,717	18.18
06.21 Demolition	1.00 EA	57,354	7,008	62	6,700	71,125	71125
TOTAL Denil Fishway	1.00	183,432	30,044	41,884	34,900	290,261	290261
TOTAL TEN MILE RIVER - HUNTS MILL DAM	1.00 EA	183,432	30,044	41,884	34,900	290,261	290261
Prime Contractor's Field Overhead						29,026	
SUBTOTAL						319,287	
Prime's Home Office Expense						20,318	
SUBTOTAL						339,605	
Prime Contractor's Profit						29,026	
SUBTOTAL						368,631	
Prime Contractor's Bond						5,805	

	QUANTY	UOM	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT
TOTAL INCL INDIRECTS							374,436	
Contingency							93,609	
SUBTOTAL							468,045	
Escalation							42,124	
TOTAL INCL OWNER COSTS							510,169	

Fish Trap and Fishway		QUANTY	UOM	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT
Cast in Place Slab									
	Excavate & load, wheeled loader, 1.5 CY, -wet rock-for small job in river bed productivity adjusted to 50% of line item default.	88.00	CY	858	432	0	0	1,290	14.66
	Concrete in place,pump,650psi, incl forms,reinf,flexural on	32.00	CY	3,040	973	2,560	0	6,573	205.39
	Base course, crushed 3/4" stone, compacted, 12"D, large areas-small job in river bed, reduced productivity rate to %50 of line item productivity default rate.	110.00	SY	34	37	1,650	0	1,720	15.64
	Finishing floors, monolithic, float finish	560.00	SF	603	0	0	0	603	1.08
	Hauling, w/loading, 12 CY truck, 5 mile haul, soil	88.00	CY	561	792	0	0	1,353	15.38
	Crane for material handling-crane plus operator cost dump, loader, etc.	15.00	DAY	7,200	10,500	0	0	17,700	1180.00
TOTAL	Cast in Place Slab	1.00		12,296	12,733	4,210	0	29,239	29239
Cast in Place Walls									
	Concrete in place,pump,650psi, incl forms, reinf steel-	75.00	CY	10,450	3,343	6,000	0	19,793	263.91
	Finishing walls, break ties & patch voids- 50% reduction in productivity for small job in river bed.	1260.00	SF	1,215	0	38	0	1,252	0.99
TOTAL	Cast in Place Walls	1.00		11,665	3,343	6,038	0	21,045	21045
Wood Baffles									
	Wood Baffles, 2" x 8"- assume oak baffles every 30"	600.00	BF	1,200	0	2,400	0	3,600	6.00
TOTAL	Wood Baffles	1.00		1,200	0	2,400	0	3,600	3600.00
Fish Trap									
	Hauling, w/loading, 12 CY truck, 5 mile haul, soil	10.00	CY	85	120	0	0	205	20.51

Fish Trap and Fishway	QUANTY	UOM	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT
Excavate & load, wheeled loader, 1.5 CY, -wet rock-for small job in river bed productivity adjusted to 50% of line item default.	10.00	CY	159	80	0	0	239	23.90
Base course, crushed 3/4" stone, compacted, 12"D, large areas- small job in river bed, reduced productivity rate to %50 of line item productivity default rate.	23.00	SY	46	50	345	0	441	19.16
Concrete in place,pump,650psi, incl forms,reinf,flexural on	6.00	CY	836	267	480	0	1,583	263.91
TOTAL Fish Trap	1.00		1,126	517	825	0	2,468	2468.22
TOTAL Fish Trap and Fishway	140.00	LF	26,287	16,593	13,473	0	56,353	402.52

Foundation Piers		QUANTY	UOM	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT
Piers to Bedrock									
	Placing conc, pile caps, under 5 CY, pumped-includes concrete-cut production rate by %50 for small job in river bed conditions. Access may be difficult.	48.00	CY	3,693	1,188	3,840	0	8,721	181.69
	Reinforcing in place, footings, #4 to #7- reduced productivity factor by %50 for small job in river bed conditions.	3.00	TON	3,974	0	1,577	0	5,551	1850.19
TOTAL	Piers to Bedrock	1.00		7,666	1,188	5,417	0	14,272	14272
TOTAL	Foundation Piers	1124.00	CF	7,666	1,188	5,417	0	14,272	12.70

Mob. Demob. and Misc.		QUANTY	UOM	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT
Mobilization									
	Outside Laborers, (Semi-Skilled)- assume three	360.00	HR	9,736	0	0	0	9,736	27.04
	Sign, hi-intensity reflectorized, no posts, buy	24.00	SF	0	0	336	0	336	13.98
	Misc Equipment moved to site/mob costs.-assume pickup, 12 yard dump, loader, etc.	80.00	HR	0	2,627	0	0	2,627	32.84
TOTAL	Mobilization	1.00		9,736	2,627	336	0	12,699	12699
Demobilization									
	Outside Laborers, (Semi-Skilled)- assume three	240.00	HR	6,491	0	0	0	6,491	27.04
	Misc Equipment moved from site to home office.-assume 6 pieces of equipment similar to that mobilized.	80.00	HR	0	2,627	0	0	2,627	32.84
TOTAL	Demobilization	1.00		6,491	2,627	0	0	9,118	9117.98
General Conditions									
	Field personnel, general superintendent-assume field super on job for six months.	6.00	MO	38,954	0	0	0	38,954	6492.34
	Outside Laborers, (Semi-Skilled) - assume miscellaneous tasks	80.00	HR	2,164	0	0	0	2,164	27.04
	Surveyors- assume two surveyors for one week total to survey area and set elevations for the structure.	80.00	HR	1,594	0	0	0	1,594	19.93
	Surveyors, Chief - assume forty hours required by Chief to field and office check work and record data, billing, time sheets etc.	40.00	HR	896	0	0	0	896	22.39
	Office trailer, rent per month, furnished, no hookups, 20' x 8'	6.00	MO	0	0	902	0	902	150.33
	Office trailer, for AC, rent per month, add	6.00	MO	0	0	214	0	214	35.67
	Toilet, portable chemical, rent per month	6.00	EA	0	0	481	0	481	80.17
	Outside Electricians - assume two week for electrician to set temporary power for office trailer and other equipment on site.	80.00	HR	3,215	0	0	0	3,215	40.18
	Carpenters - assume 120 hours for carpenter for miscellaneous	80.00	HR	2,867	0	0	0	2,867	35.83

Mob. Demob. and Misc.	QUANTY	UOM	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT
Equip. Operators, Light - assume 120 hours equipment operator	80.00	HR	2,693	0	0	0	2,693	33.66
TOTAL General Conditions	1.00		52,381	0	1,597	0	53,978	53978
TOTAL Mob. Demob. and Misc.	1.00	EA	68,608	5,255	1,933	0	75,795	75795

Cofferdam	QUANTY	UOM	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT
Cofferdam & Dewatering								
Contractor may have option to use sheet piles or portable coffercam system- assume cofferdam required for 4 months of the contract period. Portable system will cost approximately %80 of a sheet pile dam.								
Dewatering inside cofferday for 4 months of contract period	120.00	DAY	0	0	0	24,000	24,000	200.00
Outside Divers	80.00	HR	5,053	0	0	0	5,053	63.17
Outside Divers Tenders	40.00	HR	1,663	0	0	0	1,663	41.58
7' high x 300LF of Portable Dam System - based on planning quote from Porta Dam Company - other cost is for crane	2100.00	SF	16,800	0	21,000	4,200	42,000	20.00
TOTAL Cofferdam & Dewatering	1.00		23,517	0	21,000	28,200	72,717	72717
TOTAL Cofferdam	4000.00	SF	23,517	0	21,000	28,200	72,717	18.18

Demolition	QUANTY	UOM	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT
Cutout dml, conc, walls, bar reinforced, over 6 CF- demo of existing concrete, stone and brick walls, cistern and large water supply pipes are required prior to new construction.	3674.00	CF	50,047	3,781	0	0	53,828	14.65
Haul w/loadi, steel pipe 12 CY truck, 5 mile 1, 3 cy per load- old steel water and sewer pipes must be demolished and hauled for diposal.	27.00	CY	383	540	0	0	923	34.18
Torch cutting steel, 1" thick plate-cut pipe, beams and sht pi - cutting of steel sheetpile, and steel beams will be required prior to removal and disposal.	100.00	LF	451	0	17	0	468	4.68
Plumbing dml, piping, metal, average 36" dia -cutting up sewer and water pipes prior to removal and disposal.	160.00	LF	1,046	480	0	0	1,526	9.54
Saw cutting, conc walls, plain, per inch of depth- cutting concrete areas of walls to be demolished and disposed of.	150.00	LF	906	378	45	0	1,329	8.86
Crane, truck mnt, 55 ton cap., per day for crane service -needed to remove demo debri from stream and move equipment and materials for construction of fishway.	5.00	DA	3,000	0	0	6,000	9,000	1800.00
Demo sheet piling, stl, 20' exc,27 PSF- existing old sheetpile must be removed prior to construction of fishway.	1.00	TON	330	150	0	0	480	480.44
Haul w/loadi, conc, 12 CY truck, 5 mile haul, rock-3 cy per load- hauling demo material such as concrete, stone, rock, brick and steel pipe.	140.00	CY	1,191	1,680	0	700	3,571	25.51
TOTAL Demolition	1.00	EA	57,354	7,008	62	6,700	71,125	71125
TOTAL Denil Fishway	1.00		183,432	30,044	41,884	34,900	290,261	290261
TOTAL TEN MILE RIVER - HUNTS MILL DAM	1.00	EA	183,432	30,044	41,884	34,900	290,261	290261

TEN MILE RIVER - TURNER DAM
Construct Fish Ladder

Designed By: CENAE
Estimated By: CENAE-MR

Prepared By: CENAE

Preparation Date: 08/31/04
Effective Date of Pricing: 08/31/04
Est Construction Time: 180 Days

Sales Tax: 0.0%

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Release 1.2

This project is to construct a 4' wide Denil Fishway at Turner Dam on Ten Mile River in East Providence RI. The 4' wide by 140'long, 11' high, fishway/fish ladder will be constructed of a reinforced concrete pile cap foundation, concrete slab and walls. The fishway will have approximately 45 oak water velocity baffles. Assume a sheet pile or portable cofferdam system will be required for 4 months of the contract period. This is a feasibility level estimate. Markups included in this estimate are as follows: 7% office overhead, 10% field overhead, 10% profit, 2% bond. There is a 9% markup for cost growth. The scope and plans drawings are at feasibility level, therefore a 25% contingency is included.

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No Backup Reports...

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	QUANTY	UOM	CONTRACT	CONTINGN	ESCALATN	TOTAL COST	UNIT	NOTES
06 Denil Fishway	1.00		331,963	82,991	37,346	452,300	452300	
TOTAL TEN MILE RIVER - TURNER DAM	1.00	EA	331,963	82,991	37,346	452,300	452300	

	QUANTY	UOM	CONTRACT	CONTINGN	ESCALATN	TOTAL COST	UNIT	NOTES
06 Denil Fishway								
06.01 Fishway	140.00	LF	80,517	20,129	9,058	109,704	783.60	
06.06 Foundation Piles	8.00	EA	34,167	8,542	3,844	46,553	5819.10	
06.11 Mob. Demob. and Misc.	1.00	EA	99,966	24,991	11,246	136,204	136204	
06.16 Cofferdam	4000.00	SF	117,313	29,328	13,198	159,840	39.96	
TOTAL Denil Fishway	1.00		331,963	82,991	37,346	452,300	452300	
TOTAL TEN MILE RIVER - TURNER DAM	1.00	EA	331,963	82,991	37,346	452,300	452300	

	QUANTY	UOM	CONTRACT	CONTINGN	ESCALATN	TOTAL COST	UNIT	NOTES
06 Denil Fishway								
06.01 Fishway								
06.01. 5 Precast Slab	1.00		48,685	12,171	5,477	66,333	66333	
06.01.10 Cast in Place Walls	1.00		22,378	5,594	2,518	30,490	30490	
06.01.15 Wood Baffles	1.00		7,740	1,935	871	10,546	10546	
06.01.20 Excavate Plunge/Resting Pool	1.00		1,714	428	193	2,335	2334.89	
TOTAL Fishway	140.00	LF	80,517	20,129	9,058	109,704	783.60	
06.06 Foundation Piles								
06.06. 5 Pile Caps	1.00		34,167	8,542	3,844	46,553	46553	
TOTAL Foundation Piles	8.00	EA	34,167	8,542	3,844	46,553	5819.10	
06.11 Mob. Demob. and Misc.								
06.11. 5 Mobilization	1.00		16,381	4,095	1,843	22,320	22320	
06.11.10 Demobilization	1.00		8,971	2,243	1,009	12,223	12223	
06.11.15 General Conditions	1.00		74,613	18,653	8,394	101,661	101661	
TOTAL Mob. Demob. and Misc.	1.00	EA	99,966	24,991	11,246	136,204	136204	
06.16 Cofferdam								
06.16. 5 Cofferdam & Dewatering	1.50		117,313	29,328	13,198	159,840	106560	
TOTAL Cofferdam	4000.00	SF	117,313	29,328	13,198	159,840	39.96	
TOTAL Denil Fishway	1.00		331,963	82,991	37,346	452,300	452300	
TOTAL TEN MILE RIVER - TURNER DAM	1.00	EA	331,963	82,991	37,346	452,300	452300	

	QUANTY UOM	DIRECT	FIELD OH	HOME OFC	PROFIT	BOND	TOTAL COST	UNIT
06 Denil Fishway	1.00	257,336	25,734	18,014	25,734	5,147	331,963	331963
TOTAL TEN MILE RIVER - TURNER DAM	1.00 EA	257,336	25,734	18,014	25,734	5,147	331,963	331963
Contingency							82,991	
SUBTOTAL							414,954	
Escalation							37,346	
TOTAL INCL OWNER COSTS							452,300	

	QUANTY	UOM	DIRECT	FIELD OH	HOME OFC	PROFIT	BOND	TOTAL COST	UNIT
06 Denil Fishway									
06.01 Fishway	140.00	LF	62,416	6,242	4,369	6,242	1,248	80,517	575.12
06.06 Foundation Piles	8.00	EA	26,486	2,649	1,854	2,649	530	34,167	4270.90
06.11 Mob. Demob. and Misc.	1.00	EA	77,493	7,749	5,425	7,749	1,550	99,966	99966
06.16 Cofferdam	4000.00	SF	90,941	9,094	6,366	9,094	1,819	117,313	29.33
TOTAL Denil Fishway	1.00		257,336	25,734	18,014	25,734	5,147	331,963	331963
TOTAL TEN MILE RIVER - TURNER DAM	1.00	EA	257,336	25,734	18,014	25,734	5,147	331,963	331963
Contingency								82,991	
SUBTOTAL								414,954	
Escalation								37,346	
TOTAL INCL OWNER COSTS								452,300	

	QUANTY	UOM	DIRECT	FIELD OH	HOME OFC	PROFIT	BOND	TOTAL COST	UNIT
06 Denil Fishway									
06.01 Fishway									
06.01. 5 Precast Slab	1.00		37,740	3,774	2,642	3,774	755	48,685	48685
06.01.10 Cast in Place Walls	1.00		17,347	1,735	1,214	1,735	347	22,378	22378
06.01.15 Wood Baffles	1.00		6,000	600	420	600	120	7,740	7740.00
06.01.20 Excavate Plunge/Resting Pool	1.00		1,328	133	93	133	27	1,714	1713.68
TOTAL Fishway	140.00	LF	62,416	6,242	4,369	6,242	1,248	80,517	575.12
06.06 Foundation Piles									
06.06. 5 Pile Caps	1.00		26,486	2,649	1,854	2,649	530	34,167	34167
TOTAL Foundation Piles	8.00	EA	26,486	2,649	1,854	2,649	530	34,167	4270.90
06.11 Mob. Demob. and Misc.									
06.11. 5 Mobilization	1.00		12,699	1,270	889	1,270	254	16,381	16381
06.11.10 Demobilization	1.00		6,954	695	487	695	139	8,971	8971.26
06.11.15 General Conditions	1.00		57,840	5,784	4,049	5,784	1,157	74,613	74613
TOTAL Mob. Demob. and Misc.	1.00	EA	77,493	7,749	5,425	7,749	1,550	99,966	99966
06.16 Cofferdam									
06.16. 5 Cofferdam & Dewatering	1.50		90,941	9,094	6,366	9,094	1,819	117,313	78209
TOTAL Cofferdam	4000.00	SF	90,941	9,094	6,366	9,094	1,819	117,313	29.33
TOTAL Denil Fishway	1.00		257,336	25,734	18,014	25,734	5,147	331,963	331963
TOTAL TEN MILE RIVER - TURNER DAM	1.00	EA	257,336	25,734	18,014	25,734	5,147	331,963	331963
Contingency								82,991	
SUBTOTAL								414,954	
Escalation								37,346	
TOTAL INCL OWNER COSTS								452,300	

	QUANTY	UOM	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT
06 Denil Fishway	1.00		148,151	27,570	41,414	40,200	257,336	257336
TOTAL TEN MILE RIVER - TURNER DAM	1.00	EA	148,151	27,570	41,414	40,200	257,336	257336
Prime Contractor's Field Overhead							25,734	
SUBTOTAL							283,069	
Prime's Home Office Expense							18,014	
SUBTOTAL							301,083	
Prime Contractor's Profit							25,734	
SUBTOTAL							326,816	
Prime Contractor's Bond							5,147	
TOTAL INCL INDIRECTS							331,963	
Contingency							82,991	
SUBTOTAL							414,954	
Escalation							37,346	
TOTAL INCL OWNER COSTS							452,300	

	QUANTY	UOM	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT
06 Denil Fishway								
06.01 Fishway	140.00	LF	28,925	19,553	13,939	0	62,416	445.83
06.06 Foundation Piles	8.00	EA	19,180	2,763	4,543	0	26,486	3310.78
06.11 Mob. Demob. and Misc.	1.00	EA	70,306	5,255	1,933	0	77,493	77493
06.16 Cofferdam	4000.00	SF	29,741	0	21,000	40,200	90,941	22.74
TOTAL Denil Fishway	1.00		148,151	27,570	41,414	40,200	257,336	257336
TOTAL TEN MILE RIVER - TURNER DAM	1.00	EA	148,151	27,570	41,414	40,200	257,336	257336
Prime Contractor's Field Overhead							25,734	
SUBTOTAL							283,069	
Prime's Home Office Expense							18,014	
SUBTOTAL							301,083	
Prime Contractor's Profit							25,734	
SUBTOTAL							326,816	
Prime Contractor's Bond							5,147	
TOTAL INCL INDIRECTS							331,963	
Contingency							82,991	
SUBTOTAL							414,954	
Escalation							37,346	
TOTAL INCL OWNER COSTS							452,300	

	QUANTY UOM	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT
06 Denil Fishway							
06.01 Fishway							
06.01. 5 Precast Slab	1.00	16,577	16,488	4,675	0	37,740	37740
06.01.10 Cast in Place Walls	1.00	10,080	2,829	4,439	0	17,347	17347
06.01.15 Wood Baffles	1.00	2,000	0	4,000	0	6,000	6000.00
06.01.20 Excavate Plunge/Resting Pool	1.00	267	236	825	0	1,328	1328.43
TOTAL Fishway	140.00 LF	28,925	19,553	13,939	0	62,416	445.83
06.06 Foundation Piles							
06.06. 5 Pile Caps	1.00	19,180	2,763	4,543	0	26,486	26486
TOTAL Foundation Piles	8.00 EA	19,180	2,763	4,543	0	26,486	3310.78
06.11 Mob. Demob. and Misc.							
06.11. 5 Mobilization	1.00	9,736	2,627	336	0	12,699	12699
06.11.10 Demobilization	1.00	4,327	2,627	0	0	6,954	6954.46
06.11.15 General Conditions	1.00	56,243	0	1,597	0	57,840	57840
TOTAL Mob. Demob. and Misc.	1.00 EA	70,306	5,255	1,933	0	77,493	77493
06.16 Cofferdam							
06.16. 5 Cofferdam & Dewatering	1.50	29,741	0	21,000	40,200	90,941	60627
TOTAL Cofferdam	4000.00 SF	29,741	0	21,000	40,200	90,941	22.74
TOTAL Denil Fishway	1.00	148,151	27,570	41,414	40,200	257,336	257336
TOTAL TEN MILE RIVER - TURNER DAM	1.00 EA	148,151	27,570	41,414	40,200	257,336	257336
Prime Contractor's Field Overhead						25,734	
SUBTOTAL						283,069	
Prime's Home Office Expense						18,014	
SUBTOTAL						301,083	
Prime Contractor's Profit						25,734	
SUBTOTAL						326,816	
Prime Contractor's Bond						5,147	
TOTAL INCL INDIRECTS						331,963	

	QUANTY	UOM	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT
Contingency							82,991	
SUBTOTAL							414,954	
Escalation							37,346	
TOTAL INCL OWNER COSTS							452,300	

Fishway		QUANTY	UOM	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT
Precast Slab									
	Excavate & load, wheeled loader, 1.5 CY, -wet rock-for small job in river bed productivity adjusted to 50% of line item default.	40.00	CY	9.75 390	4.91 196	0.00 0	0.00 0	14.66 586	14.66
	Concrete in place,pump,650psi, incl forms,reinf,flexural on	35.00	CY	160.77 5,627	51.43 1,800	80.00 2,800	0.00 0	292.20 10,227	292.20
	Base course, crushed 3/4" stone, compacted, 12"D, large areas-small job in river bed, reduced productivity rate to %50 of line item productivity default rate.	125.00	SY	0.31 39	0.33 42	15.00 1,875	0.00 0	15.64 1,955	15.64
	Finishing floors, monolithic, float finish	560.00	SF	1.08 603	0.00 0	0.00 0	0.00 0	1.08 603	1.08
	Hauling, w/loading, 12 CY truck, 5 mile haul, soil	50.00	CY	6.38 319	9.00 450	0.00 0	0.00 0	15.38 769	15.38
	Crane for material handling-crane plus operator cost dump, loader, etc.	20.00	DAY	480.00 9,600	700.00 14,000	0.00 0	0.00 0	1180.00 23,600	1180.00
TOTAL	Precast Slab	1.00		16,577	16,488	4,675	0	37,740	37740
Cast in Place Walls									
	Concrete in place,pump,650psi, incl forms, reinf steel-	55.00	CY	160.77 8,842	51.43 2,829	80.00 4,400	0.00 0	292.20 16,071	292.20
	Finishing walls, break ties & patch voids- 50% reduction in productivity for small job in river bed.	1284.00	SF	0.96 1,238	0.00 0	0.03 39	0.00 0	0.99 1,276	0.99
TOTAL	Cast in Place Walls	1.00		10,080	2,829	4,439	0	17,347	17347

Fishway		QUANTY	UOM	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT
Wood Baffles									
	Wood Baffles, 2" x 8"- assume oak baffles every 30" alo	1000.00	BF	2.00 2,000	0.00 0	4.00 4,000	0.00 0	6.00 6,000	6.00
	TOTAL Wood Baffles	1.00		2,000	0	4,000	0	6,000	6000.00
Excavate Plunge/Resting Pool									
	Hauling, w/loading, 12 CY truck, 5 mile haul, soil	15.00	CY	6.38 96	9.00 135	0.00 0	0.00 0	15.38 231	15.38
	Excavate & load, wheeled loader, 1.5 CY, -wet rock-for small job in river bed productivity adjusted to 50% of line item default.	15.00	CY	9.75 146	4.91 74	0.00 0	0.00 0	14.66 220	14.66
	Base course, crushed 1/12" stone, compacted, 12"D, large areas- small job in river bed, reduced productivity rate to %50 of line item productivity default rate.	55.00	SY	0.46 25	0.50 27	15.00 825	0.00 0	15.96 878	15.96
	TOTAL Excavate Plunge/Resting Pool	1.00		267	236	825	0	1,328	1328.43
	TOTAL Fishway	140.00	LF	28,925	19,553	13,939	0	62,416	445.83

Foundation Piles	QUANTY	UOM	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT
Pile Caps								
Placing conc, pile caps, under 5 CY, pumped-includes concrete-cut production rate by %50 for small job in river bed conditions. Access may be difficult.			57.70	18.57	80.00	0.00	156.26	
	9.00	CY	519	167	720	0	1,406	156.26
Boring pile caps-Caisson,18"dia,0.065CY/LF, to 50'D,wet gnd,pulled case/pmp, open,mach dr-cut production to %50 for smaller job in river bed conditions. Access may be difficult.			21.02	4.30	5.09	0.00	30.41	
	240.00	VLF	5,045	1,032	1,222	0	7,299	30.41
Boring widened top of pile caps-Caisson,30"dia,0.182CY/LF,t caps-Caisson,30"dia,0.182CY/LF, to 50'D,wet gnd,pulled case/pmp, open,mach dr. Access may be difficult.			161.70	33.08	14.26	0.00	209.04	
	35.00	VLF	5,660	1,158	499	0	7,316	209.04
Rigs to bore pile cap tubes-Caisson, open, for mobilization, 50 mile radius, rig to 36"			1328.97	202.94	0.00	0.00	1531.91	
	2.00	EA	2,658	406	0	0	3,064	1531.91
Reinforcing in place, footings, #4 to #7- reduced productivity factor by %50 for small job in river bed conditions.			1324.53	0.00	525.66	0.00	1850.19	
	4.00	TON	5,298	0	2,103	0	7,401	1850.19
TOTAL Pile Caps	1.00		19,180	2,763	4,543	0	26,486	26486
TOTAL Foundation Piles	8.00	EA	19,180	2,763	4,543	0	26,486	3310.78

Mob. Demob. and Misc.	QUANTY	UOM	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT
Mobilization								
Outside Laborers, (Semi-Skilled)- assume three	360.00	HR	27.04 9,736	0.00 0	0.00 0	0.00 0	27.04 9,736	27.04
Sign, hi-intensity reflectorized, no posts, buy	24.00	SF	0.00 0	0.00 0	13.98 336	0.00 0	13.98 336	13.98
Misc Equipment moved to site/mob costs.-assume pickup, 12 yard dump, loader, etc.	80.00	HR	0.00 0	32.84 2,627	0.00 0	0.00 0	32.84 2,627	32.84
TOTAL Mobilization	1.00		9,736	2,627	336	0	12,699	12699
Demobilization								
Outside Laborers, (Semi-Skilled)- assume two	160.00	HR	27.04 4,327	0.00 0	0.00 0	0.00 0	27.04 4,327	27.04
Misc Equipment moved from site to home office.-assume 6 pieces of equipment similar to that mobilized.	80.00	HR	0.00 0	32.84 2,627	0.00 0	0.00 0	32.84 2,627	32.84
TOTAL Demobilization	1.00		4,327	2,627	0	0	6,954	6954.46
General Conditions								
Field personnel, general superintendent-assume field super on job for six months.	6.00	MO	6492.34 38,954	0.00 0	0.00 0	0.00 0	6492.34 38,954	6492.34
Outside Laborers, (Semi-Skilled) - assume miscellaneous taks required during construction.	120.00	HR	27.04 3,245	0.00 0	0.00 0	0.00 0	27.04 3,245	27.04
Surveyors- assume two surveyors for one week total to survey area and set elevations for the structure.	80.00	HR	19.93 1,594	0.00 0	0.00 0	0.00 0	19.93 1,594	19.93
Surveyors, Chief - assume forty hours required by Chief to field and office check work and record data, billing, time sheets etc.	40.00	HR	22.39 896	0.00 0	0.00 0	0.00 0	22.39 896	22.39

Mob. Demob. and Misc.

	QUANTY	UOM	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT
Office trailer, rent per month, furnished, no hookups, 20' x 8'	6.00	MO	0.00 0	0.00 0	150.33 902	0.00 0	150.33 902	150.33
Office trailer, for AC, rent per month, add	6.00	MO	0.00 0	0.00 0	35.67 214	0.00 0	35.67 214	35.67
Toilet, portable chemical, rent per month	6.00	EA	0.00 0	0.00 0	80.17 481	0.00 0	80.17 481	80.17
Outside Electricians - assume two weeks for electrician to set up temporary power for office trailer and other equipment on site.	80.00	HR	40.18 3,215	0.00 0	0.00 0	0.00 0	40.18 3,215	40.18
Carpenters - assume 80 hours for carpenter for miscellaneous	120.00	HR	35.83 4,300	0.00 0	0.00 0	0.00 0	35.83 4,300	35.83
Equip. Operators, Light - assume 80 hours for equipment operator	120.00	HR	33.66 4,039	0.00 0	0.00 0	0.00 0	33.66 4,039	33.66
TOTAL General Conditions	1.00		56,243	0	1,597	0	57,840	57840
TOTAL Mob. Demob. and Misc.	1.00	EA	70,306	5,255	1,933	0	77,493	77493

Cofferdam

Cofferdam & Dewatering
Contractor may have option to use sheet piles or portable cofferdam system.
Portable system will cost approximately 80% of sheet pile dam.

	QUANTY	UOM	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT
Dewatering inside cofferdam for			0.00	0.00	0.00	300.00	300.00	
4 months of contract period	120.00	DAY	0	0	0	36,000	36,000	300.00
Outside Divers			63.17	0.00	0.00	0.00	63.17	
	168.00	HR	10,612	0	0	0	10,612	63.17
Outside Divers Tenders			41.58	0.00	0.00	0.00	41.58	
	56.00	HR	2,328	0	0	0	2,328	41.58
7' high x 300LF of Portable Dam			8.00	0.00	10.00	2.00	20.00	
System - based on planning	2100.00	SF	16,800	0	21,000	4,200	42,000	20.00
TOTAL Cofferdam & Dewatering	1.50		29,741	0	21,000	40,200	90,941	60627
TOTAL Cofferdam	4000.00	SF	29,741	0	21,000	40,200	90,941	22.74
TOTAL Denil Fishway	1.00		148,151	27,570	41,414	40,200	257,336	257336
TOTAL TEN MILE RIVER - TURNER DAM	1.00	EA	148,151	27,570	41,414	40,200	257,336	257336