

**OPINION OF PROBABLE CONSTRUCTION COSTS - 100% DESIGN**

Project Area 15

Tucannon River Restoration

Item No.	Work Item	Unit	Quantity	Unit Cost	Line Cost	Notes
<b>1.00</b>	<b>General Requirements</b>					
1.01	Mobilization, including demobilization (10%)	LS	1	\$ 58,000	\$ 58,000	1
<b>2.00</b>	<b>Water/TESC/SPCC/Traffic Control Plans</b>				<b>\$ 3,500</b>	<b>2</b>
2.01	Care of Water Plan	LS	1	\$ 1,500	\$ 1,500	
2.02	Temporary Erosion and Sediment Control (TESC) Plan	LS	1	\$ 1,000	\$ 1,000	
2.03	Spill Prevention Control and Countermeasure (SPCC) Plan	LS	1	\$ 1,000	\$ 1,000	
<b>3.00</b>	<b>Site Preparation and TESC Measures</b>				<b>\$ 1,500</b>	<b>3</b>
3.01	Construction Entrances	EA	1	\$ 1,500	\$ 1,500	
3.02	Fence, Silt, install, maintain, remove	LF	-	\$ 8.00	\$ -	
<b>4.00</b>	<b>Single LWD, incl. LWD attached to ex. LWD</b>	<b>EA</b>	<b>53</b>	<b>\$ 792</b>	<b>\$ 41,976</b>	
4.01	Rootwad log, 1.5' dia. 25' L Log, 4.5' dia. 3' L RW	EA	53	\$ 600	\$ 31,800	4
4.02	Synthetic Manila Rope 1/2" dia.	LF	1,590	\$ 0.40	\$ 636	
4.03	Earthwork, excavation, backfill & compaction	CY	318	\$ -	\$ -	
4.04	Installation (labor & equipment)	EA	53	\$ 180	\$ 9,540	
<b>5.00</b>	<b>Bank Sediment Retention LWD (Piles)</b>	<b>EA</b>	<b>2</b>	<b>\$ 6,775</b>	<b>\$ 13,550</b>	
5.01	Rootwad log, 1.5' dia. 40' L Log, 4.5' dia. 3' L RW	EA	6	\$ 750	\$ 4,500	4
5.02	Log pole pile, Douglas Fir or Larch, 1.5' dia. 20' L	EA	8	\$ 500	\$ 4,000	
5.03	Steel reinforcement bar, #4 (1/2-inch), grade 60, plain	LF	100	\$ 0.5	\$ 50	
5.04	Earthwork, excavation, backfill & compaction	CY	60	\$ -	\$ -	
5.05	Installation (labor & equipment)	EA	2	\$ 2,500	\$ 5,000	
<b>6.00</b>	<b>Channel Sediment Retention LWD</b>	<b>EA</b>	<b>3</b>	<b>\$ 8,808</b>	<b>\$ 26,423</b>	
6.01	Rootwad log, 1.5' dia. 40' L Log, 4.5' dia. 3' L RW	EA	6	\$ 750	\$ 4,500	4
6.02	Rootwad log, 1.5' dia. 30' L Log, 4.5' dia. 3' L RW	EA	6	\$ 650	\$ 3,900	4
6.03	Log Pole, 1.25' dia., 15' L	EA	6	\$ 100	\$ 600	4
6.04	Log pole pile, Douglas Fir or Larch, 1.5' dia. 20' L	EA	15	\$ 500	\$ 7,500	
6.05	Steel reinforcement bar, #4 (1/2-inch), grade 60, plain	LF	165	\$ 0.5	\$ 83	
6.06	Earthwork, excavation, backfill & compaction	CY	144	\$ -	\$ -	
6.07	Installation (labor & equipment)	EA	3	\$ 3,280	\$ 9,840	
<b>7.00</b>	<b>Bank Barb LWD</b>	<b>EA</b>	<b>5</b>	<b>\$ 6,065</b>	<b>\$ 30,325</b>	
7.01	Earthwork, excavation, backfill & compaction	CY	200	\$ -	\$ -	
7.02	Rootwad log, 1.5' dia. 30' L Log, 4.5' dia. 3' L RW	EA	15	\$ 650	\$ 9,750	4
7.03	Log pole pile, Douglas Fir or Larch, 1.5' dia. 15' L	EA	20	\$ 400	\$ 8,000	4
7.04	Steel reinforcement bar, #4 (1/2-inch), grade 60, plain	LF	150	\$ 0.5	\$ 75	
7.05	Installation (labor & equipment)	EA	5	\$ 2,500	\$ 12,500	

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<b>8.00</b>	<b>Channel Barb LWD</b>	<b>EA</b>	<b>5</b>	<b>\$ 6,130</b>	<b>\$ 30,650</b>	
8.01	Earthwork, excavation, bulk	CY	250	\$ -	\$ -	
8.02	Rootwad log, 1.5' dia. 15' L Log, 4.5' dia. 3' L RW	EA	40	\$ 500	\$ 20,000	4
8.03	Log Pole, 1.5' dia., 15' L	EA	20	\$ 150	\$ 3,000	4
8.04	Steel reinforcement bar, #4 (1/2-inch), grade 60, plain	LF	400	\$ 0.5	\$ 200	
8.05	Earthwork, backfill, native	CY	250	\$ -	\$ -	
8.06	Slash and small woody debris	CY	10	\$ 30	\$ 300	
					\$ -	
8.07	Installation (labor & equipment)	EA	5	\$ 1,430	\$ 7,150	
<b>9.00</b>	<b>Bank Roughness LWD</b>	<b>EA</b>	<b>1</b>	<b>\$ 8,550</b>	<b>\$ 8,550</b>	
9.01	Rootwad log, 1.5' dia. 15' L Log, 4.5' dia. 3' L RW	EA	12	\$ 500	\$ 6,000	4
9.02	Remove, stockpile, and reuse large angular rock	CY	10	\$ 5	\$ 50	
9.03	Installation (labor & equipment)	EA	1	\$ 2,500	\$ 2,500	
<b>10.00</b>	<b>Wood Entrapment LWD</b>	<b>EA</b>	<b>2</b>	<b>\$ 14,953</b>	<b>\$ 29,905</b>	
10.01	Earthwork, excavation, backfill & compaction	CY	260	\$ -	\$ -	
10.02	Rootwad log, 1.5' dia. 30' L Log, 4.5' dia. 3' L RW	EA	16	\$ 650	\$ 10,400	4
10.03	Log pole pile, Douglas Fir or Larch, 1.5' dia. 25' L	EA	16	\$ 500	\$ 8,000	4
10.04	Steel reinforcement bar, #4 (1/2-inch), grade 60, plain	LF	170	\$ 1	\$ 85	
10.05	Installation (labor & equipment)	EA	2	\$ 5,710	\$ 11,420	
<b>11.00</b>	<b>Side Channel Spanning LWD</b>	<b>EA</b>	<b>1</b>	<b>\$ 21,828</b>	<b>\$ 21,828</b>	
11.01	Rootwad log, 2' dia. 40' L Log, 6' dia. 4' L RW	EA	9	\$ 950	\$ 8,550	4
11.02	Log Pole, 1.5' dia., 30' L	EA	10	\$ 300	\$ 3,000	4
11.03	Slash and small woody debris	CY	75	\$ 30	\$ 2,250	
11.04	Boulder, 5' intermediate dia.	EA	8	\$ 250	\$ 2,000	
11.05	Concrete anchor, four-way expansion type, 3/4"-10 thread	EA	8	\$ 6	\$ 48	
11.06	Steel eye bolt, for lifting, galvanized, 3/4"-10 thread, 3" L	EA	8	\$ 25	\$ 200	
11.07	Chain, 1/2-inch trade size, grade 40/43, hot-galvanized	LF	80	\$ 7.5	\$ 600	
11.08	Coupling Links, figure-eight style, for 1/2-inch chain	EA	16	\$ 30	\$ 480	
11.09	Steel reinforcement bar, #4 (1/2-inch), grade 60, plain	LF	140	\$ 0.5	\$ 70	
11.10	Earthwork, excavation, backfill & compaction	CY	58	\$ -	\$ -	
11.11	Installation (labor & equipment)	EA	1	\$ 4,630	\$ 4,630	

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Item No.	Work Item	Unit	Quantity	Unit Cost	Line Cost	Notes
<b>12.00</b>	<b>Channel Spanning Roughness LWD</b>	<b>EA</b>	<b>1</b>	<b>\$ 15,708</b>	<b>\$ 15,708</b>	
12.01	Rootwad log, 2' dia. 50' L Log, 6' dia. 4' L RW	EA	3	\$ 1,000	\$ 3,000	4
12.02	Log pole, 2' dia., 40' L	EA	4	\$ 500	\$ 2,000	4
12.03	Boulder, 5.5' intermediate dia.	EA	13	\$ 300	\$ 3,900	
12.04	Concrete anchor, four-way expansion type, 3/4"-10 thread	EA	13	\$ 6	\$ 78	
12.05	Steel eye bolt, for lifting, galvanized, 3/4"-10 thread, 3" L	EA	13	\$ 25	\$ 325	
12.06	Chain, 1/2-inch trade size, grade 40/43, hot-galvanized	LF	130	\$ 7.5	\$ 975	
12.07	Coupling Links, figure-eight style, for 1/2-inch chain	EA	26	\$ 30	\$ 780	
12.08	Steel reinforcement bar, #4 (1/2-inch), grade 60, plain	LF	40	\$ 0.5	\$ 20	
12.09	Installation (labor & equipment)	EA	1	\$ 4,630	\$ 4,630	
<b>13.00</b>	<b>Channel Grade ELJ</b>	<b>EA</b>	<b>1</b>	<b>\$ 22,160</b>	<b>\$ 22,160</b>	
13.01	Earthwork, excavation, bulk	CY	55	\$ -	\$ -	
13.02	Log pole, 2' dia., 40' L	EA	6	\$ 500	\$ 3,000	4
13.03	Rootwad log, 1.5' dia. 20' L Log, 4.5' dia. 3' L RW	EA	8	\$ 550	\$ 4,400	4
13.04	Log Pole, 1.5' dia., 20' L	EA	2	\$ 200	\$ 400	4
13.05	Slash and small woody debris	CY	10	\$ 30	\$ 300	
13.06	Steel reinforcement bar, #4 (1/2-inch), grade 60, plain	LF	100	\$ 1	\$ 50	
13.07	Boulder, 3.5' intermediate dia.	EA	48	\$ 170	\$ 8,160	
13.08	Earthwork, backfill, native	CY	55	\$ -	\$ -	
13.09	Installation (labor & equipment)	EA	1	\$ 5,850	\$ 5,850	
<b>14.00</b>	<b>Bar Apex ELJ</b>	<b>EA</b>	<b>6</b>	<b>\$ 33,655</b>	<b>\$ 201,930</b>	
14.01	Earthwork, excavation, bulk	CY	3,060	\$ -	\$ -	
14.02	Log Pole, 2' dia., 35' L	EA	12	\$ 450	\$ 5,400	4
14.03	Log Pole, 1.5' dia., 35' L	EA	108	\$ 350	\$ 37,800	4
14.04	Rootwad log, 1.5' dia. 25' L Log, 4.5' dia. 3' L RW	EA	90	\$ 600	\$ 54,000	4
14.05	Log Pole, 1.5' dia., 25' L	EA	90	\$ 250	\$ 22,500	
14.06	Slash and small woody debris	CY	90	\$ 30	\$ 2,700	
14.07	Steel reinforcement bar, #4 (1/2-inch), grade 60, plain	LF	660	\$ 1	\$ 330	
14.08	Earthwork, backfill, native	CY	3,060	\$ -	\$ -	
14.09	Installation (labor & equipment)	EA	6	\$ 13,200	\$ 79,200	

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Item No.	Work Item	Unit	Quantity	Unit Cost	Line Cost	Notes
<b>15.00</b>	<b>Excavation of Proposed Main Channel (existing side channel)</b>	<b>CY</b>	<b>4,410</b>		<b>\$ 71,150</b>	
15.01	Earthwork, excavation and reuse as ballast for structures	CY	4,410	\$ 15.0	\$ 66,150	
15.02	Clearing and Grubbing	AC	1	\$ 5,000.0	\$ 5,000	
<b>16.00</b>	<b>Care of Water Work</b>				<b>\$ 54,100</b>	<b>3</b>
16.01	Fence, fish exclusion, temporary	EA	10	\$ 250	\$ 2,500	
16.02	Temporary flow diversion, native gravel berm	EA	10	\$ 1,500	\$ 15,000	
16.03	Fish rescue and recovery	EA	10	\$ 1,500	\$ 15,000	
16.04	Dewatering, pumping	EA	18	\$ 1,200	\$ 21,600	
<b>17.00</b>	<b>Vegetation Restoration</b>				<b>\$ 6,000</b>	
17.01	Selective planting, riparian enhancement	AC	1.2	\$ 5,000	\$ 6,000	
<b>SUMMARY</b>						
	Construction Subtotal				\$ 637,255	5
	Contingencies (10%)				\$ 63,800	6
	Columbia County sales tax (7.9%)				\$ 55,383	7
	<b>Project Construction Total</b>				<b>\$ 756,438</b>	<b>8-13</b>

**Notes and abbreviations:**

- Mobilization is assumed to be 10% of the pre-tax subtotal.
- Costs do not include traffic control plan or traffic control measures. It is assumed it will not be necessary.
- The extent of site preparation and TESC Measures along with requirements for care of water work will be defined by the permits.
- Rootwad and log pole lengths are for procurement purposes, all materials are cut to fit. It is assumed that material longer than what is required will be cut to fit and the excess used in other portions of the feature or structure.
- Construction subtotal includes mobilization.
- Contingencies account for site condition and cost (products, labor equipment) uncertainty.
- Sales tax is applied to the 'Construction Subtotal' and 'Contingencies'.
- Costs are in 2013 dollars.
- Survey work required for construction is not included in this opinion.
- Construction quality assurance oversight activities by the Engineer required for construction is not included in this opinion.
- Engineering design/permitting, legal, and administrative costs are not included in this opinion.
- Costs for maintaining project post-construction are not included in this opinion (e.g. irrigation and planting protection measures).
- In providing opinions of probable construction cost, the Client understands that the Consultant has no control over the cost or availability of labor, equipment or materials, or over market condition or the Contractor's method of pricing, and the Consultant's opinions of probable construction costs are made on the basis of the Consultant's professional judgment and experience. The Consultant makes no warranty, expressed or implied that the bids or the negotiated cost of the Work will not vary from the Consultant's opinion of probable construction cost.

AC - Acre, CY - Cubic Yard, Dia. - Diameter, EA - Each, LF - Linear Foot, LS - Lump Sum, SY - Square Yard, YR - Year  
LWD - Large Woody Debris  
ELJ - Engineered Log Jam

Cap. - Capacity  
RW - Rootwad