

**Lower Chiwawa River Culverts
Culvert Cost Estimate Template**

Project Name: Gate Creek Lower Culvert - Road 6200-340
 Project #: 23-1261
 Date: 4/23/23
 Estimate By: Waterfall Engineering
 Stream: Gate Creek

Proposed Correction: Option 3: Remove existing culvert and install a 14' wide bottomless plate on concrete footings.

Description	Unit	CAD Quantity	Mult	Quantity	Cost	Amount	Sub Total	Notes
Mobilization								
Mobilize	L.S.	1			\$17,000.00	\$17,000		
Access	L.S.	1			\$1,000.00	\$1,000		
Stream Bypass	L.S.	1			\$3,000.00	\$3,000		
Traffic Bypass	L.S.	1			\$0.00	\$0		
Clear and Grub	L.S.	1			\$1,500.00	\$1,500		
Dewater (Pumps, Etc)	L.S.	1			\$3,000.00	\$3,000		
Fish Removal	L.S.	1			\$800.00	\$800		
Utilities	L.S.	1			\$0.00	\$0		
MOBILIZATION SUB TOTAL							\$26,300	
Excavate								
Excavation and Disposal, Culvert	C.Y.	350	1.2	420	\$22	\$9,240		
Excavation and Disposal, Culvert	C.Y.		1.2	0	\$22	\$0		
Rmv. & Disp. Culvert	ea.	1	1	1	\$400	\$400		
EXCAVATION SUBTOTAL							\$9,640	
Culvert Installation								
Bedding	C.Y.	20	1.2	24	\$65	\$1,560		
Streambed Gravel	C.Y.	44	1.2	53	\$75	\$3,960		
Sheetpile	sq ft			0	\$50	\$0		
Culvert 14' Wide by 7' High	L.F.	40	1.0	40	\$600	\$24,000		
Install Culvert	L.S.	1	1.0	1	\$30,000	\$30,000		
Concrete Footings	C.Y.	22	1.0	22	\$1,800	\$39,600		
Riprap	C.Y.	15	1.2	18	\$75	\$1,350		
Backfill, Compaction	C.Y.	115	1.3	150	\$65	\$9,718		Assumes 50% Reuse of Existing
CULVERT INSTALLATION SUBTOTAL							\$110,188	
Channel and Road Work								
Road Excavation and Disposal	C.Y.		1.3	0	\$25	\$0		
Road Fill	C.Y.	77	1.2	92	\$65	\$6,006		
Crushed Surfacing	C.Y.	72	1.2	86	\$65	\$5,616		
Pavement	Tons	0	1.1	0	\$900.00	\$0		
Concrete Fill	C.Y.		1.0	0	\$1,200	\$0		
Channel Excavation and Disposal	C.Y.	50	1.2	60	\$35	\$2,100		
Step/Pool Channel	C.Y.	20	1.2	24	\$75	\$1,800		
LWD	L.S.	1			\$3,000	\$3,000		
Restoration	L.S.	1			\$2,000	\$2,000		
CHANNEL AND ROAD WORK SUB TOTAL							\$20,522	
CONSTRUCTION SUB TOTAL							\$166,650	
Sales Tax		8.2%				\$13,665		Enter % in highlighted cell
Contingencies		15.0%				\$24,997		
CONSTRUCTION							\$205,312	
Engineering (60% Design to Construction)		10%				\$20,531		
Admin/Planning		10%				\$20,531		
Geotechnical Investigation and Design						\$6,000		
Backfill Compaction Testing						\$15,000		
PROJECT TOTAL							\$267,375	

Opinions of Probable Construction Cost

In providing opinions of probable construction cost, the Client understands that the Consultant (Waterfall Engineering) 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, express or implied that the bids or the negotiated cost of the Work will not vary from the Consultant's opinion of probable construction cost.

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Project Name: Gate Creek Lower Culvert - Road 6200-340
 Project #: 23-1261
 Date: 4/23/23
 Estimate By: Waterfall Engineering
 Stream: Gate Creek

Proposed Correction: Option 2: Remove existing culvert and install a 14' wide concrete

Description	Unit	CAD Quantity	Mult	Quantity	Cost	Amount	Sub Total	Notes
Mobilization								
Mobilize	L.S.	1			\$19,000.00	\$19,000		
Access	L.S.	1			\$1,000.00	\$1,000		
Stream Bypass	L.S.	1			\$3,000.00	\$3,000		
Traffic Bypass	L.S.	1			\$0.00	\$0		
Clear and Grub	L.S.	1			\$1,500.00	\$1,500		
Dewater (Pumps, Etc)	L.S.	1			\$3,000.00	\$3,000		
Fish Removal	L.S.	1			\$800.00	\$800		
Utilities	L.S.	1			\$0.00	\$0		
MOBILIZATION SUB TOTAL							\$28,300	
Excavate								
Excavation and Disposal, Culvert	C.Y.	445	1.2	534	\$22	\$11,748		
Excavation and Disposal, Culvert	C.Y.		1.2	0	\$22	\$0		
Rmv. & Disp. Culvert	ea.	1	1	1	\$400	\$400		
EXCAVATION SUBTOTAL							\$12,148	
Culvert Installation								
Bedding	C.Y.	15	1.2	18	\$65	\$1,170		
Streambed Gravel	C.Y.	87	1.2	104	\$75	\$7,830		
Sheetpile	sq ft		1.2	0	\$50	\$0		
Box Culvert 14' Wide by 10' High	L.F.	16	1.0	16	\$6,000	\$96,000		
Install Culvert	L.S.	1	1.0	1	\$20,000	\$20,000		
Concrete Footings	C.Y.		1.0	0	\$1,200	\$0		
Concrete Backwall	L.S.		1.0	0	\$12,000	\$0		
Backfill, Compaction	C.Y.	215	1.3	280	\$65	\$18,168		Assumes 50% Reuse of Existing
CULVERT INSTALLATION SUBTOTAL							\$143,168	
Channel and Road Work								
Road Excavation and Disposal	C.Y.		1.3	0	\$25	\$0		
Road Fill	C.Y.		1.2	0	\$65	\$0		
Crushed Surfacing	C.Y.	15	1.2	18	\$65	\$1,170		
Pavement	Tons	0	1.1	0	\$900.00	\$0		
Concrete Fill	C.Y.		1.0	0	\$1,200	\$0		
Channel Excavation and Disposal	C.Y.	50	1.2	60	\$35	\$2,100		
Step/Pool Channel	C.Y.	20	1.2	24	\$75	\$1,800		
LWD	L.S.	1			\$3,000	\$3,000		
Restoration	L.S.	1			\$2,000	\$2,000		
CHANNEL AND ROAD WORK SUB TOTAL							\$10,070	
CONSTRUCTION SUB TOTAL							\$193,686	
Sales Tax		8.2%				\$15,882		Enter % in highlighted cell
Contingencies		15.0%				\$29,053		
CONSTRUCTION							\$238,621	
Engineering (60% Design to Construction)		10%				\$23,862		
Admin/Planning		10%				\$23,862		
Geotechnical Investigation and Design						\$0		
Backfill Compaction Testing						\$0		
PROJECT TOTAL							\$286,345	

Opinions of Probable Construction Cost

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**Lower Chiwawa River Culverts
Culvert Cost Estimate Template**

Project Name: Gate Creek Lower Culvert - Road 6200-340
 Project #: 23-1261
 Date: 4/13/23
 Estimate By: Waterfall Engineering
 Stream: Gate Creek

Proposed Correction: Option 1: Remove existing culvert and install a 14' Span Plate Arch Culvert. Raise Road 1.2 feet.

Description	Unit	CAD Quantity	Mult	Quantity	Cost	Amount	Sub Total	Notes
Mobilization								
Mobilize	L.S.	1			\$16,000.00	\$16,000		
Access	L.S.	1			\$1,000.00	\$1,000		
Stream Bypass	L.S.	1			\$3,000.00	\$3,000		
Traffic Bypass	L.S.	1			\$0.00	\$0		
Clear and Grub	L.S.	1			\$1,500.00	\$1,500		
Dewater (Pumps, Etc)	L.S.	1			\$3,000.00	\$3,000		
Fish Removal	L.S.	1			\$800.00	\$800		
Utilities	L.S.	1			\$0.00	\$0		
MOBILIZATION SUB TOTAL							\$25,300	
Excavate								
Excavation and Disposal, Culvert	C.Y.	310	1.2	372	\$22	\$8,184		
Excavation and Disposal, Culvert	C.Y.		1.2	0	\$22	\$0		
Rmv. & Disp. Culvert	ea.	1	1	1	\$400	\$400		
EXCAVATION SUBTOTAL							\$8,584	
Culvert Installation								
Bedding	C.Y.	90	1.2	108	\$65	\$7,020		
Streambed Gravel	C.Y.	43	1.2	52	\$75	\$3,870		
Sheetpile	sq ft		1.2	0	\$50	\$0		
Culvert 14' Span by 9' Rise	L.F.	40	1.0	40	\$900	\$36,000		
Install Culvert	L.S.	1	1.0	1	\$15,000	\$15,000		
Riprap	C.Y.	15	1.2	18	\$75	\$1,350		Ends of Culvert
Concrete Backwall	L.S.		1.0	0	\$12,000	\$0		
Backfill, Compaction	C.Y.	110	1.3	143	\$65	\$9,295		Assumes 50% Reuse of Existing
CULVERT INSTALLATION SUBTOTAL							\$72,535	
Channel and Road Work								
Road Excavation and Disposal	C.Y.		1.3	0	\$25	\$0		
Road Fill	C.Y.	77	1.2	92	\$65	\$6,006		
Crushed Surfacing	C.Y.	72	1.2	86	\$65	\$5,616		
Pavement	Tons	0	1.1	0	\$900.00	\$0		
Concrete Fill	C.Y.		1.0	0	\$1,200	\$0		
Channel Excavation and Disposal	C.Y.	50	1.2	60	\$35	\$2,100		Haul and Spoil Off Site
Step/Pool Channel	C.Y.	20	1.2	24	\$75	\$1,800		
LWD	L.S.	1			\$3,000	\$3,000		
Restoration	L.S.	1			\$2,000	\$2,000		
CHANNEL AND ROAD WORK SUB TOTAL							\$20,522	
CONSTRUCTION SUB TOTAL							\$126,941	
Sales Tax		8.2%				\$10,409		Enter % in highlighted cell
Contingencies		15.0%				\$19,041		
CONSTRUCTION							\$156,391	
Engineering (60% Design to Construction)		10%				\$15,639		
Admin/Planning		10%				\$15,639		
Geotechnical Investigation and Design						\$0		
Backfill Compaction Testing						\$0		
PROJECT TOTAL							\$187,670	

**Lower Chiwawa River Culverts
Culvert Cost Estimate Template**

Project Name: Gate Creek Upper Culvert
 Project #: 23-1261
 Date: 4/13/23
 Estimate By: Waterfall Engineering
 Stream: Gate Creek

**Proposed Correction: Option 3: Remove existing culvert and install a 14' wide
bottomless plate on concrete footings.**

Description	Unit	CAD Quantity	Mult	Quantity	Cost	Amount	Sub Total	Notes
Mobilization								
Mobilize	L.S.	1			\$40,000.00	\$40,000		
Access	L.S.	1			\$2,000.00	\$2,000		
Stream Bypass	L.S.	1			\$4,000.00	\$4,000		
Traffic Bypass	L.S.	1			\$35,000.00	\$35,000		
Clear and Grub	L.S.	1			\$2,000.00	\$2,000		
Dewater (Pumps, Etc)	L.S.	1			\$4,000.00	\$4,000		
Fish Removal	L.S.	1			\$800.00	\$800		
Utilities	L.S.	1			\$20,000.00	\$20,000		Assuming Utilities in Road

MOBILIZATION SUB TOTAL \$107,800

Excavate								
Excavation and Disposal, Culvert	C.Y.	1730	1.2	2076	\$22	\$45,672		
Excavation and Disposal, Culvert	C.Y.		1.2	0	\$22	\$0		
Rmv. & Disp. Culvert	ea.	1	1	1	\$800	\$800		

EXCAVATION SUBTOTAL \$46,472

Culvert Installation								
Bedding	C.Y.	40	1.2	48	\$65	\$3,120		
Streambed Gravel	C.Y.	130	1.2	156	\$75	\$11,700		
Sheetpile	sq ft		1.2	0	\$50	\$0		
Culvert 14' Wide by 7' High	L.F.	105	1.0	105	\$600	\$63,000		
Install Culvert	L.S.	1	1.0	1	\$30,000	\$30,000		
Concrete Footings	C.Y.	45	1.0	45	\$1,800	\$81,000		
Riprap	C.Y.	15	1.2	18	\$75	\$1,350		
Backfill, Compaction	C.Y.	900	1.3	1170	\$65	\$76,050		Assumes 50% Reuse of Existing

CULVERT INSTALLATION SUBTOTAL \$266,220

Channel and Road Work								
Road Excavation and Disposal	C.Y.		1.3	0	\$25	\$0		
Road Fill	C.Y.		1.2	0	\$65	\$0		
Crushed Surfacing	C.Y.	15	1.2	18	\$65	\$1,170		
Pavement	Tons	24	1.1	26	\$900.00	\$23,760		
Concrete Fill	C.Y.		1.0	0	\$1,200	\$0		
Channel Excavation and Disposal	C.Y.		1.2	0	\$35	\$0		
Streambed Mix	C.Y.		1.2	0	\$70	\$0		
LWD	L.S.				\$30,000	\$0		
Restoration	L.S.	1			\$4,000	\$4,000		

CHANNEL AND ROAD WORK SUB TOTAL \$28,930

CONSTRUCTION SUB TOTAL \$449,422

Sales Tax	8.2%	\$36,853	Enter % in highlighted cell
Contingencies	15.0%	\$67,413	

CONSTRUCTION			\$553,688
Engineering (60% Design to Construction)	7%	\$38,758	
Admin/Planning	5%	\$27,684	
Geotechnical Investigation and Design		\$6,000	
Backfill Compaction Testing		\$15,000	

PROJECT TOTAL \$641,130

Opinions of Probable Construction Cost

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**Lower Chiwawa River Culverts
Culvert Cost Estimate Template**

Project Name: Gate Creek Upper Culvert
 Project #: 23-1261
 Date: 4/13/23
 Estimate By: Waterfall Engineering
 Stream: Gate Creek

Proposed Correction: Option 2: Remove existing culvert and install a 14' wide concrete

Description	Unit	CAD Quantity	Mult	Quantity	Cost	Amount	Sub Total	Notes
Mobilization								
Mobilize	L.S.	1			\$80,000.00	\$80,000		
Access	L.S.	1			\$2,000.00	\$2,000		
Stream Bypass	L.S.	1			\$4,000.00	\$4,000		
Traffic Bypass	L.S.	1			\$35,000.00	\$35,000		
Clear and Grub	L.S.	1			\$2,000.00	\$2,000		
Dewater (Pumps, Etc)	L.S.	1			\$4,000.00	\$4,000		
Fish Removal	L.S.	1			\$800.00	\$800		
Utilities	L.S.	1			\$20,000.00	\$20,000		Assuming Utilities in Road
MOBILIZATION SUB TOTAL							\$147,800	
Excavate								
Excavation and Disposal, Culvert	C.Y.	1820	1.2	2184	\$22	\$48,048		
Excavation and Disposal, Culvert	C.Y.		1.2	0	\$22	\$0		
Rmv. & Disp. Culvert	ea.	1	1	1	\$800	\$800		
EXCAVATION SUBTOTAL							\$48,848	
Culvert Installation								
Bedding	C.Y.	30	1.2	36	\$65	\$2,340		
Streambed Gravel	C.Y.	156	1.2	187	\$75	\$14,040		
Sheetpile	sq ft		1.2	0	\$50	\$0		
Culvert 14' Wide by 9' High	L.F.	90	1.0	90	\$6,000	\$540,000		
Install Culvert	L.S.	1	1.0	1	\$40,000	\$40,000		
Concrete Footings	C.Y.		1.0	0	\$1,200	\$0		
Concrete Backwall	L.S.		1.0	0	\$12,000	\$0		
Backfill, Compaction	C.Y.	900	1.3	1170	\$65	\$76,050		Assumes 50% Reuse of Existing
CULVERT INSTALLATION SUBTOTAL							\$672,430	
Channel and Road Work								
Road Excavation and Disposal	C.Y.		1.3	0	\$25	\$0		
Road Fill	C.Y.		1.2	0	\$65	\$0		
Crushed Surfacing	C.Y.	15	1.2	18	\$65	\$1,170		
Pavement	Tons	24	1.1	26	\$900.00	\$23,760		
Concrete Fill	C.Y.		1.0	0	\$1,200	\$0		
Channel Excavation and Disposal	C.Y.		1.2	0	\$35	\$0		
Streambed Mix	C.Y.		1.2	0	\$70	\$0		
LWD	L.S.				\$30,000	\$0		
Restoration	L.S.	1			\$4,000	\$4,000		
CHANNEL AND ROAD WORK SUB TOTAL							\$28,930	
CONSTRUCTION SUB TOTAL							\$898,008	
Sales Tax		8.2%				\$73,637		Enter % in highlighted cell
Contingencies		15.0%				\$134,701		
CONSTRUCTION							\$1,106,346	
Engineering (60% Design to Construction)		7%				\$77,444		
Admin/Planning		5%				\$55,317		
Geotechnical Investigation and Design						\$6,000		
Backfill Compaction Testing						\$15,000		
PROJECT TOTAL							\$1,260,107	

Opinions of Probable Construction Cost

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**Lower Chiwawa River Culverts
Culvert Cost Estimate Template**

Project Name: Gate Creek Upper Culvert - Road 6200
 Project #: 23-1261
 Date: 4/13/23
 Estimate By: Waterfall Engineering
 Stream: Gate Creek

Proposed Correction: Option 1: Remove existing culvert and install a 14' Span Plate Arch

Description	Unit	CAD Quantity	Mult	Quantity	Cost	Amount	Sub Total	Notes
Mobilization								
Mobilize	L.S.	1			\$35,000.00	\$35,000		
Access	L.S.	1			\$2,000.00	\$2,000		
Stream Bypass	L.S.	1			\$4,000.00	\$4,000		
Traffic Bypass	L.S.	1			\$35,000.00	\$35,000		
Clear and Grub	L.S.	1			\$2,000.00	\$2,000		
Dewater (Pumps, Etc)	L.S.	1			\$4,000.00	\$4,000		
Fish Removal	L.S.	1			\$800.00	\$800		
Utilities	L.S.	1			\$20,000.00	\$20,000		Assuming Utilities in Road
MOBILIZATION SUB TOTAL							\$102,800	
Excavate								
Excavation and Disposal, Culvert	C.Y.	1440	1.2	1728	\$22	\$38,016		
Excavation and Disposal, Culvert	C.Y.		1.2	0	\$22	\$0		
Rmv. & Disp. Culvert	ea.	1	1	1	\$800	\$800		
EXCAVATION SUBTOTAL							\$38,816	
Culvert Installation								
Bedding	C.Y.	208	1.2	250	\$65	\$16,224		
Streambed Gravel	C.Y.	136	1.2	163	\$75	\$12,240		
Sheetpile	sq ft		1.2	0	\$50	\$0		
Culvert 14' Span by 9' Rise	L.F.	105	1.0	105	\$900	\$94,500		
Install Culvert	L.S.	1	1.0	1	\$30,000	\$30,000		
Riprap	C.Y.	15	1.2	18	\$75	\$1,350		Ends of Culvert
Concrete Backwall	L.S.		1.0	0	\$12,000	\$0		
Backfill, Compaction	C.Y.	700	1.3	910	\$65	\$59,150		Assumes 50% Reuse of Existing
CULVERT INSTALLATION SUBTOTAL							\$213,464	
Channel and Road Work								
Road Excavation and Disposal	C.Y.		1.3	0	\$25	\$0		
Road Fill	C.Y.		1.2	0	\$65	\$0		
Crushed Surfacing	C.Y.	15	1.2	18	\$65	\$1,170		
Pavement	Tons	24	1.1	26	\$900.00	\$23,760		
Concrete Fill	C.Y.		1.0	0	\$1,200	\$0		
Channel Excavation and Disposal	C.Y.		1.2	0	\$35	\$0		
Streambed Mix	C.Y.		1.2	0	\$70	\$0		
LWD	L.S.				\$30,000	\$0		
Restoration	L.S.	1			\$4,000	\$4,000		
CHANNEL AND ROAD WORK SUB TOTAL							\$28,930	
CONSTRUCTION SUB TOTAL							\$384,010	
Sales Tax		8.2%				\$31,489		Enter % in highlighted cell
Contingencies		15.0%				\$57,602		
CONSTRUCTION							\$473,100	
Engineering (60% Design to Construction)		7%				\$33,117		
Admin/Planning		5%				\$23,655		
Geotechnical Investigation and Design						\$6,000		
Backfill Compaction Testing						\$15,000		
PROJECT TOTAL							\$550,872	

Opinions of Probable Construction Cost

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**Lower Chiwawa River Culverts
Culvert Cost Estimate Template**

Project Name: Grouse Creek Lower Culvert - Road 6200-340
 Project #:
 Date: 7/15/22
 Estimate By: Waterfall Engineering
 Stream: Grouse Creek

**Proposed Correction: Option 3: Remove existing culvert and install a 14' wide
bottomless plate on concrete footings.**

Description	Unit	CAD Quantity	Mult	Quantity	Cost	Amount	Sub Total	Notes
Mobilization								
Mobilize	L.S.	1			\$23,000.00	\$23,000		
Access	L.S.	1			\$1,000.00	\$1,000		
Stream Bypass	L.S.	1			\$3,000.00	\$3,000		
Traffic Bypass	L.S.	1			\$0.00	\$0		
Clear and Grub	L.S.	1			\$1,500.00	\$1,500		
Dewater (Pumps, Etc)	L.S.	1			\$3,000.00	\$3,000		
Fish Removal	L.S.	1			\$800.00	\$800		
Utilities	L.S.	1			\$0.00	\$0		
MOBILIZATION SUB TOTAL							\$32,300	
Excavate								
Excavation and Disposal, Culvert	C.Y.	680	1.2	816	\$45	\$36,720		
Excavation and Disposal, Culvert	C.Y.		1.2	0	\$22	\$0		
Rmv. & Disp. Culvert	ea.	1	1	1	\$400	\$400		
EXCAVATION SUBTOTAL							\$37,120	
Culvert Installation								
Bedding	C.Y.	20	1.2	24	\$65	\$1,560		
Streambed Gravel	C.Y.	60	1.2	72	\$75	\$5,400		
Sheetpile	sq ft		1.2	0	\$50	\$0		
Culvert 14' Wide by 7' High	L.F.	60	1.0	60	\$400	\$24,000		
Install Culvert	L.S.	1	1.0	1	\$35,000	\$35,000		
Concrete Footings	C.Y.	13	1.0	13	\$1,400	\$18,200		
Riprap	C.Y.	15	1.2	18	\$75	\$1,350		
Backfill, Compaction	C.Y.	300	1.3	390	\$65	\$25,350		Assumes 50% Reuse of Existing
CULVERT INSTALLATION SUBTOTAL							\$110,860	
Channel and Road Work								
Road Excavation and Disposal	C.Y.		1.3	0	\$25	\$0		
Road Fill	C.Y.		1.2	0	\$65	\$0		
Crushed Surfacing	C.Y.	74	1.2	89	\$65	\$5,772		
Pavement	Tons	0	1.1	0	\$900.00	\$0		
Concrete Fill	C.Y.		1.0	0	\$1,200	\$0		
Channel Excavation and Disposal	C.Y.		1.2	0	\$35	\$0		
Step/Pool Channel	C.Y.		1.2	0	\$75	\$0		
LWD	L.S.				\$3,000	\$0		
Restoration	L.S.	1			\$2,000	\$2,000		
CHANNEL AND ROAD WORK SUB TOTAL							\$7,772	
CONSTRUCTION SUB TOTAL							\$188,052	
Sales Tax		8.2%				\$15,420		Enter % in highlighted cell
Contingencies		15.0%				\$28,208		
CONSTRUCTION							\$231,680	
Engineering (60% Design to Construction)		15%				\$34,752		
Admin/Planning		15%				\$34,752		
Geotechnical Investigation and Design						\$20,000		
Backfill Compaction Testing						\$15,000		
PROJECT TOTAL							\$336,184	

Opinions of Probable Construction Cost

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**Lower Chiwawa River Culverts
Culvert Cost Estimate Template**

Project Name: Grouse Creek Lower Culvert - Road 6200-340
 Project #:
 Date: 7/15/22
 Estimate By: Waterfall Engineering
 Stream: Grouse Creek

Proposed Correction: Option 1: Remove existing culvert and install a 14' Span Plate Arch Culvert. Raise Road 0.5 feet.

Description	Unit	CAD Quantity	Mult	Quantity	Cost	Amount	Sub Total	Notes
Mobilization								
Mobilize	L.S.	1			\$22,000.00	\$22,000		
Access	L.S.	1			\$1,000.00	\$1,000		
Stream Bypass	L.S.	1			\$3,000.00	\$3,000		
Traffic Bypass	L.S.	1			\$0.00	\$0		Assumes Road Closure
Clear and Grub	L.S.	1			\$1,500.00	\$1,500		
Dewater (Pumps, Etc)	L.S.	1			\$3,000.00	\$3,000		
Fish Removal	L.S.	1			\$800.00	\$800		
Utilities	L.S.	1			\$0.00	\$0		
MOBILIZATION SUB TOTAL							\$31,300	
Excavate								
Excavation and Disposal, Culvert	C.Y.	652	1.2	782	\$45	\$35,208		
Excavation and Disposal, Culvert	C.Y.		1.2	0	\$22	\$0		
Rmv. & Disp. Culvert	ea.	1	1	1	\$400	\$400		
EXCAVATION SUBTOTAL							\$35,608	
Culvert Installation								
Bedding	C.Y.	136	1.2	163	\$65	\$10,608		
Streambed Gravel	C.Y.	83	1.2	100	\$75	\$7,470		
Sheetpile	sq ft		1.2	0	\$50	\$0		
Culvert 14' Span by 9' Rise	L.F.	60	1.0	60	\$900	\$54,000		
Install Culvert	L.S.	1	1.0	1	\$20,000	\$20,000		
Riprap	C.Y.	15	1.2	18	\$75	\$1,350		Ends of Culvert
Concrete Backwall	L.S.		1.0	0	\$12,000	\$0		
Backfill, Compaction	C.Y.	150	1.3	195	\$65	\$12,675		Assumes 50% Reuse of Existir
CULVERT INSTALLATION SUBTOTAL							\$106,103	
Channel and Road Work								
Road Excavation and Disposal	C.Y.		1.3	0	\$45	\$0		
Road Fill	C.Y.	0	1.2	0	\$65	\$0		
Crushed Surfacing	C.Y.	74	1.2	89	\$65	\$5,772		
Pavement	Tons	0	1.1	0	\$900.00	\$0		
Concrete Fill	C.Y.		1.0	0	\$1,200	\$0		
Channel Excavation and Disposal	C.Y.		1.2	0	\$35	\$0		Haul and Spoil Off Site
Step/Pool Channel	C.Y.		1.2	0	\$75	\$0		
LWD	L.S.				\$3,000	\$0		
Restoration	L.S.	1			\$2,000	\$2,000		
CHANNEL AND ROAD WORK SUB TOTAL							\$7,772	
CONSTRUCTION SUB TOTAL							\$180,783	
Sales Tax		8.2%				\$14,824		Enter % in highlighted cell
Contingencies		15.0%				\$27,117		
CONSTRUCTION							\$222,725	
Engineering (60% Design to Construction)		12%				\$26,727		
Admin/Planning		12%				\$26,727		
Geotechnical Investigation and Design						\$0		
Backfill Compaction Testing						\$0		
PROJECT TOTAL							\$276,179	

Opinions of Probable Construction Cost

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**Lower Chiwawa River Culverts
Culvert Cost Estimate Template**

Project Name: Grouse Creek Lower Culvert - Road 6200-340
 Project #:
 Date: 7/15/22
 Estimate By: Waterfall Engineering
 Stream: Grouse Creek

Proposed Correction: Option 2: Remove existing culvert abandon road and restore new channel.

Description	Unit	CAD Quantity	Mult	Quantity	Cost	Amount	Sub Total	Notes
Mobilization								
Mobilize	L.S.	1			\$4,000.00	\$4,000		
Access	L.S.	1			\$500.00	\$500		
Stream Bypass	L.S.	1			\$1,500.00	\$1,500		
Traffic Bypass	L.S.	1			\$0.00	\$0		
Clear and Grub	L.S.	1			\$1,500.00	\$1,500		
Dewater (Pumps, Etc)	L.S.	1			\$2,000.00	\$2,000		
Fish Removal	L.S.	1			\$800.00	\$800		
Utilities	L.S.	1			\$0.00	\$0		
MOBILIZATION SUB TOTAL							\$10,300	
Excavate								
Excavation and Disposal, Culvert	C.Y.	193	1.2	232	\$45	\$10,422		
Excavation and Disposal, Culvert	C.Y.		1.2	0	\$22	\$0		
Rmv. & Disp. Culvert	ea.	1	1	1	\$400	\$400		
EXCAVATION SUBTOTAL							\$10,822	
Culvert Installation								
Bedding	C.Y.		1.2	0	\$65	\$0		
Streambed Gravel	C.Y.	25	1.2	30	\$75	\$2,250		
Sheetpile	sq ft		1.2	0	\$50	\$0		
Box Culvert 14' Wide by 10' High	L.F.		1.0	0	\$6,000	\$0		
Install Culvert	L.S.		1.0	0	\$20,000	\$0		
Concrete Footings	C.Y.		1.0	0	\$1,200	\$0		
Concrete Backwall	L.S.		1.0	0	\$12,000	\$0		
Backfill, Compaction	C.Y.		1.3	0	\$65	\$0		Assumes 50% Reuse of Existing
CULVERT INSTALLATION SUBTOTAL							\$2,250	
Channel and Road Work								
Road Excavation and Disposal	C.Y.		1.3	0	\$25	\$0		
Road Fill	C.Y.		1.2	0	\$65	\$0		
Crushed Surfacing	C.Y.	10	1.2	12	\$65	\$780		
Pavement	Tons	0	1.1	0	\$900.00	\$0		
Concrete Fill	C.Y.		1.0	0	\$1,200	\$0		
Channel Excavation and Disposal	C.Y.		1.2	0	\$35	\$0		
Step/Pool Channel	C.Y.		1.2	0	\$75	\$0		
LWD	L.S.	1			\$5,000	\$5,000		
Restoration	L.S.	1			\$2,000	\$2,000		
CHANNEL AND ROAD WORK SUB TOTAL							\$7,780	
CONSTRUCTION SUB TOTAL							\$31,152	
Sales Tax		8.2%				\$2,554		Enter % in highlighted cell
Contingencies		15.0%				\$4,673		
CONSTRUCTION							\$38,379	
Engineering (60% Design to Construction)		20%				\$7,676		
Admin/Planning		20%				\$7,676		
Geotechnical Investigation and Design						\$0		
Backfill Compaction Testing						\$0		
PROJECT TOTAL							\$53,731	

Opinions of Probable Construction Cost

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**Lower Chiwawa River Culverts
Culvert Cost Estimate Template**

Project Name: Grouse Creek Upper Culvert
 Project #:
 Date: 7/15/22
 Estimate By: Waterfall Engineering
 Stream: Grouse Creek

Proposed Correction: Option 3: Remove existing culvert and install a 14' wide

Description	Unit	CAD Quantity	Mult	Quantity	Cost	Amount	Sub Total	Notes
Mobilization								
Mobilize	L.S.	1			\$55,000.00	\$55,000		
Access	L.S.	1			\$2,000.00	\$2,000		
Stream Bypass	L.S.	1			\$4,000.00	\$4,000		
Traffic Bypass	L.S.	1			\$80,000.00	\$80,000		
Clear and Grub	L.S.	1			\$2,000.00	\$2,000		
Dewater (Pumps, Etc)	L.S.	1			\$4,000.00	\$4,000		
Fish Removal	L.S.	1			\$800.00	\$800		
Utilities	L.S.	1			\$20,000.00	\$20,000		Assuming Utilities in Road
MOBILIZATION SUB TOTAL							\$167,800	
Excavate								
Excavation and Disposal, Culvert	C.Y.	3000	1.2	3600	\$22	\$79,200		
Excavation and Disposal, Culvert	C.Y.		1.2	0	\$22	\$0		
Rmv. & Disp. Culvert	ea.	1	1	1	\$800	\$800		
EXCAVATION SUBTOTAL							\$80,000	
Culvert Installation								
Bedding	C.Y.	35	1.2	42	\$65	\$2,730		
Streambed Gravel	C.Y.	120	1.2	144	\$75	\$10,800		
Sheetpile	sq ft		1.2	0	\$50	\$0		
Culvert 14' Wide by 7' High	L.F.	100	1.0	100	\$600	\$60,000		
Install Culvert	L.S.	1	1.0	1	\$30,000	\$30,000		
Concrete Footings	C.Y.	21	1.0	21	\$1,400	\$29,400		
Riprap	C.Y.	15	1.2	18	\$75	\$1,350		
Backfill, Compaction	C.Y.	1400	1.3	1820	\$65	\$118,300		Assumes 50% Reuse of Existing
CULVERT INSTALLATION SUBTOTAL							\$252,580	
Channel and Road Work								
Road Excavation and Disposal	C.Y.		1.3	0	\$25	\$0		
Road Fill	C.Y.		1.2	0	\$65	\$0		
Crushed Surfacing	C.Y.	15	1.2	18	\$65	\$1,170		
Pavement	Tons	24	1.1	26	\$900.00	\$23,760		
Concrete Fill	C.Y.		1.0	0	\$1,200	\$0		
Channel Excavation and Disposal	C.Y.	90	1.2	108	\$35	\$3,780		
Streambed Mix	C.Y.	25	1.2	30	\$70	\$2,100		
LWD	L.S.				\$30,000	\$0		
Restoration	L.S.	1			\$4,000	\$4,000		
CHANNEL AND ROAD WORK SUB TOTAL							\$34,810	
CONSTRUCTION SUB TOTAL							\$535,190	
Sales Tax		8.2%				\$43,886		Enter % in highlighted cell
Contingencies		15.0%				\$80,279		
CONSTRUCTION							\$659,354	
Engineering (60% Design to Construction)		7%				\$46,155		
Admin/Planning		6%				\$39,561		
Geotechnical Investigation and Design						\$6,000		
Backfill Compaction Testing						\$15,000		
PROJECT TOTAL							\$766,070	

Opinions of Probable Construction Cost

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**Lower Chiwawa River Culverts
Culvert Cost Estimate Template**

Project Name: Grouse Creek Upper Culvert
 Project #:
 Date: 7/15/22
 Estimate By: Waterfall Engineering
 Stream: Grouse Creek

Proposed Correction: Option 2: Remove existing culvert and install a 14' wide concrete

Description	Unit	CAD Quantity	Mult	Quantity	Cost	Amount	Sub Total	Notes
Mobilization								
Mobilize	L.S.	1			\$100,000.00	\$100,000		
Access	L.S.	1			\$2,000.00	\$2,000		
Stream Bypass	L.S.	1			\$4,000.00	\$4,000		
Traffic Bypass	L.S.	1			\$80,000.00	\$80,000		
Clear and Grub	L.S.	1			\$2,000.00	\$2,000		
Dewater (Pumps, Etc)	L.S.	1			\$4,000.00	\$4,000		
Fish Removal	L.S.	1			\$800.00	\$800		
Utilities	L.S.	1			\$20,000.00	\$20,000		Assuming Utilities in Road
MOBILIZATION SUB TOTAL							\$212,800	
Excavate								
Excavation and Disposal, Culvert	C.Y.	3000	1.2	3600	\$22	\$79,200		
Excavation and Disposal, Culvert	C.Y.		1.2	0	\$22	\$0		
Rmv. & Disp. Culvert	ea.	1	1	1	\$800	\$800		
EXCAVATION SUBTOTAL							\$80,000	
Culvert Installation								
Bedding	C.Y.	60	1.2	72	\$65	\$4,680		
Streambed Gravel	C.Y.	190	1.2	228	\$75	\$17,100		
Sheetpile	sq ft		1.2	0	\$50	\$0		
Culvert 14' Wide by 9' High	L.F.	100	1.0	100	\$6,000	\$600,000		
Install Culvert	L.S.	1	1.0	1	\$45,000	\$45,000		
Concrete Footings	C.Y.		1.0	0	\$1,200	\$0		
Concrete Backwall	L.S.		1.0	0	\$12,000	\$0		
Backfill, Compaction	C.Y.	1200	1.3	1560	\$65	\$101,400		Assumes 50% Reuse of Existin
CULVERT INSTALLATION SUBTOTAL							\$768,180	
Channel and Road Work								
Road Excavation and Disposal	C.Y.		1.3	0	\$25	\$0		
Road Fill	C.Y.		1.2	0	\$65	\$0		
Crushed Surfacing	C.Y.	15	1.2	18	\$65	\$1,170		
Pavement	Tons	24	1.1	26	\$900.00	\$23,760		
Concrete Fill	C.Y.		1.0	0	\$1,200	\$0		
Channel Excavation and Disposal	C.Y.	90	1.2	108	\$35	\$3,780		
Streambed Mix	C.Y.	25	1.2	30	\$70	\$2,100		
LWD	L.S.				\$30,000	\$0		
Restoration	L.S.	1			\$4,000	\$4,000		
CHANNEL AND ROAD WORK SUB TOTAL							\$34,810	
CONSTRUCTION SUB TOTAL							\$1,095,790	
Sales Tax		8.2%				\$89,855		Enter % in highlighted cell
Contingencies		15.0%				\$164,369		
CONSTRUCTION							\$1,350,013	
Engineering (60% Design to Construction)		6%				\$81,001		
Admin/Planning		6%				\$81,001		
Geotechnical Investigation and Design						\$6,000		
Backfill Compaction Testing						\$15,000		
PROJECT TOTAL							\$1,533,015	

Opinions of Probable Construction Cost

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**Lower Chiwawa River Culverts
Culvert Cost Estimate Template**

Project Name: Grouse Creek Upper Culvert - Road 6200
 Project #:
 Date: 7/15/22
 Estimate By: Waterfall Engineering
 Stream: Grouse Creek

Proposed Correction: Option 1: Remove existing culvert and install a 14' Span Plate Arch

Description	Unit	CAD Quantity	Mult	Quantity	Cost	Amount	Sub Total	Notes
Mobilization								
Mobilize	L.S.	1			\$60,000.00	\$60,000		
Access	L.S.	1			\$2,000.00	\$2,000		
Stream Bypass	L.S.	1			\$4,000.00	\$4,000		
Traffic Bypass	L.S.	1			\$80,000.00	\$80,000		
Clear and Grub	L.S.	1			\$2,000.00	\$2,000		
Dewater (Pumps, Etc)	L.S.	1			\$4,000.00	\$4,000		
Fish Removal	L.S.	1			\$800.00	\$800		
Utilities	L.S.	1			\$20,000.00	\$20,000		Assuming Utilities in Road
MOBILIZATION SUB TOTAL							\$172,800	
Excavate								
Excavation and Disposal, Culvert	C.Y.	2785	1.2	3342	\$22	\$73,524		
Excavation and Disposal, Culvert	C.Y.		1.2	0	\$22	\$0		
Rmv. & Disp. Culvert	ea.	1	1	1	\$800	\$800		
EXCAVATION SUBTOTAL							\$74,324	
Culvert Installation								
Bedding	C.Y.	208	1.2	250	\$65	\$16,224		
Streambed Gravel	C.Y.	120	1.2	144	\$75	\$10,800		
Sheetpile	sq ft		1.2	0	\$50	\$0		
Culvert 14' Span by 9' Rise	L.F.	100	1.0	100	\$900	\$90,000		
Install Culvert	L.S.	1	1.0	1	\$30,000	\$30,000		
Riprap	C.Y.	15	1.2	18	\$75	\$1,350		Ends of Culvert
Concrete Backwall	L.S.		1.0	0	\$12,000	\$0		
Backfill, Compaction	C.Y.	1050	1.3	1365	\$65	\$88,725		Assumes 50% Reuse of Existing
CULVERT INSTALLATION SUBTOTAL							\$237,099	
Channel and Road Work								
Road Excavation and Disposal	C.Y.		1.3	0	\$25	\$0		
Road Fill	C.Y.		1.2	0	\$65	\$0		
Crushed Surfacing	C.Y.	30	1.2	36	\$65	\$2,340		
Pavement	Tons	32	1.1	35	\$900.00	\$31,680		
Concrete Fill	C.Y.		1.0	0	\$1,200	\$0		
Channel Excavation and Disposal	C.Y.	90	1.2	108	\$35	\$3,780		
Streambed Mix	C.Y.	25	1.2	30	\$70	\$2,100		
LWD	L.S.				\$30,000	\$0		
Restoration	L.S.	1			\$4,000	\$4,000		
CHANNEL AND ROAD WORK SUB TOTAL							\$43,900	
CONSTRUCTION SUB TOTAL							\$528,123	
Sales Tax		8.2%				\$43,306		Enter % in highlighted cell
Contingencies		15.0%				\$79,218		
CONSTRUCTION							\$650,648	
Engineering (60% Design to Construction)		6%				\$39,039		
Admin/Planning		5%				\$32,532		
Geotechnical Investigation and Design						\$6,000		
Backfill Compaction Testing						\$15,000		
PROJECT TOTAL							\$743,219	

Opinions of Probable Construction Cost

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**Lower Chiwawa River Culverts
Culvert Cost Estimate Template**

Project Name: Pole Creek - FS Road 6305-111
 Project #: 23-1261
 Date: 4/10/23
 Estimate By: Waterfall Engineering
 Stream: Pole Creek

Proposed Correction: Option 1: Remove existing culvert and install a 18' wide by 9' Rise Bottomless Structural Plate Culvert on concrete footings.

Description	Unit	CAD Quantity	Mult	Quantity	Cost	Amount	Sub Total	Notes
Mobilization								
Mobilize	L.S.	1			\$90,000.00	\$90,000		
Access	L.S.	1			\$2,000.00	\$2,000		
Stream Bypass	L.S.	1			\$4,000.00	\$4,000		
Traffic Bypass	L.S.	1			\$2,000.00	\$2,000		Road Closure
Clear and Grub	L.S.	1			\$20,000.00	\$20,000		Tree Process and Removal
Dewater (Pumps, Etc)	L.S.	1			\$6,000.00	\$6,000		
Fish Removal	L.S.	1			\$800.00	\$800		
Utilities	L.S.	1			\$0.00	\$0		
MOBILIZATION SUB TOTAL							\$124,800	
Excavate								
Excavation and Disposal, Culvert	C.Y.	4530	1.2	5436	\$45	\$244,620		Spoil Near and and Reuse
Excavation and Disposal, Culvert	C.Y.		1.2	0	\$22	\$0		
Rmv. & Disp. Culvert	ea.	1	1	1	\$1,000	\$1,000		
EXCAVATION SUBTOTAL							\$245,620	
Culvert Installation								
Bedding	C.Y.	60	1.2	72	\$75	\$5,400		
Streambed Gravel	C.Y.	350	1.2	420	\$85	\$35,700		
Sheetpile	sq ft		1.2	0	\$50	\$0		
Culvert 18' Span by 9' Rise	L.F.	100	1.0	100	\$600	\$60,000		
Install Culvert	L.S.	1	1.0	1	\$60,000	\$60,000		
Concrete Footings	C.Y.	68	1.0	68	\$1,600	\$108,800		
Riprap	C.Y.	80	1.2	96	\$85	\$8,160		
Backfill, Compaction	C.Y.	1300	1.3	1690	\$75	\$126,750		Assumes 70% Reuse
CULVERT INSTALLATION SUBTOTAL							\$404,810	
Channel and Road Work								
Road Excavation and Disposal	C.Y.		1.3	0	\$25	\$0		
Drainage Dips	L.S.	2	1	2	\$1,500	\$3,000		
Crushed Surfacing	C.Y.	70	1.2	84	\$65	\$5,460		
Pavement	Tons	0	1.1	0	\$900.00	\$0		
Concrete Fill	C.Y.		1.0	0	\$1,200	\$0		
Channel Excavation and Disposal	C.Y.	270	1.2	324	\$85	\$27,540		
Streambed Mix	C.Y.	0	1.2	0	\$70	\$0		Included in Culvert
LWD	L.S.	1			\$25,000	\$25,000		
Restoration	L.S.	1			\$6,000	\$6,000		
CHANNEL AND ROAD WORK SUB TOTAL							\$67,000	
CONSTRUCTION SUB TOTAL							\$842,230	
Sales Tax		8.3%				\$69,905		Enter % in highlighted cell
Contingency		15.0%				\$126,335		
CONSTRUCTION							\$1,038,470	
Engineering (60% Design to Construction)		7%				\$72,693		
Admin/Planning		7%				\$72,693		
Geotechnical Investigation and Design						\$30,000		
Backfill Compaction Testing						\$35,000		
PROJECT TOTAL							\$1,248,855	

Opinions of Probable Construction Cost

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**Lower Chiwawa River Culverts
Culvert Cost Estimate Template**

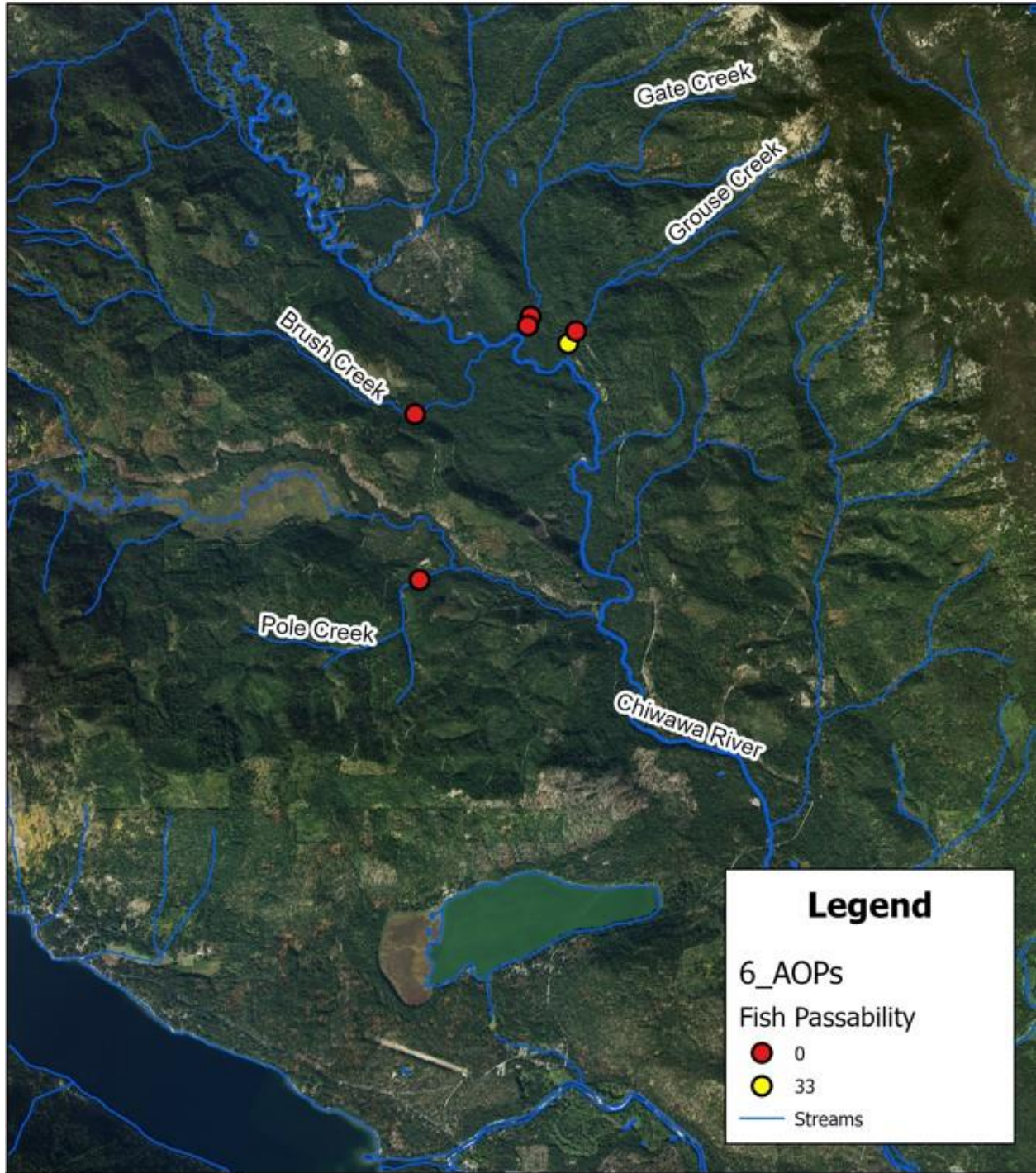
Project Name: Pole Creek - FS Road 6305-111
 Project #: 23-1261
 Date: 4/10/23
 Estimate By: Waterfall Engineering
 Stream: Pole Creek

Proposed Correction: Option 3: Remove existing culvert and install a 80' Span by 30' Wide Bridge and Modify Approaches with Guardrails

Description	Unit	CAD Quantity	Mult	Quantity	Cost	Amount	Sub Total	Notes
Mobilization								
Mobilize	L.S.	1			\$100,000.00	\$100,000		
Access	L.S.	1			\$2,000.00	\$2,000		
Stream Bypass	L.S.	1			\$4,000.00	\$4,000		
Traffic Bypass	L.S.	1			\$2,000.00	\$2,000		
Clear and Grub	L.S.	1			\$20,000.00	\$20,000		Signs for road closure
Dewater (Pumps, Etc)	L.S.	1			\$6,000.00	\$6,000		
Fish Removal	L.S.	1			\$800.00	\$800		
Utilities	L.S.	1			\$0.00	\$0		Need to verify
MOBILIZATION SUB TOTAL							\$134,800	
Excavate								
Excavation and Disposal, Culvert	C.Y.	3011	1.2	3613	\$45	\$162,594		
Excavation and Disposal, Culvert	C.Y.		1.2	0	\$22	\$0		
Rmv. & Disp. Culvert	ea.	1	1	1	\$800	\$800		
EXCAVATION SUBTOTAL							\$163,394	
Bridge Installation								
Bedding	C.Y.	30	1.2	36	\$75	\$2,700		
Streambed Gravel	C.Y.	100	1.2	120	\$85	\$10,200		
Sheetpile	sq ft		1.2	0	\$50	\$0		
Bridge (80X30)	sq ft	2400	1.0	2400	\$180	\$432,000		
Install Bridge	L.S.	1	1.0	1	\$80,000	\$80,000		
Concrete Footings	C.Y.	22	1.0	22	\$2,400	\$52,800		
Concrete Backwalls	C.Y.	7	1.0	7	\$2,400	\$16,800		
Riprap	C.Y.	90	1.2	108	\$85	\$9,180		
Backfill, Compaction	C.Y.	153	1.3	199	\$75	\$14,918		
CULVERT INSTALLATION SUBTOTAL							\$618,598	
Channel and Road Work								
Road Excavation and Disposal	C.Y.	2000	1.3	2600	\$95	\$190,000		Relocate Road and Slopes to Match Bridge
Drainage Dips	L.S.	2	1	2	\$1,500	\$3,000		
Crushed Surfacing	C.Y.	250	1.2	300	\$65	\$19,500		Raise Road
Pavement	Tons	0	1.1	0	\$900.00	\$0		
Guard Rail	L.S.	1	1.0	1	\$40,000	\$40,000		
Channel Excavation and Disposal	C.Y.	270	1.2	324	\$85	\$27,540		
Streambed Mix	C.Y.	70	1.2	84	\$70	\$5,880		
LWD	L.S.	1			\$25,000	\$25,000		
Restoration	L.S.	1			\$6,000	\$6,000		
CHANNEL AND ROAD WORK SUB TOTAL							\$316,920	
CONSTRUCTION SUB TOTAL							\$1,233,712	
Sales Tax		8.3%				\$102,398		Enter % in highlighted cell
Contingency		20.0%				\$246,742		
CONSTRUCTION							\$1,582,852	
Engineering (60% Design to Construction)		8%				\$126,628		
Admin/Planning		8%				\$126,628		
Geotechnical Investigation and Design						\$40,000		
Backfill Compaction Testing								
PROJECT TOTAL							\$1,876,108	

Opinions of Probable Construction Cost

In providing opinions of probable construction cost, the Client understands that the Consultant (Waterfall Engineering) 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, express or implied that the bids or the negotiated cost of the Work will not vary from the Consultant's opinion of probable construction cost.

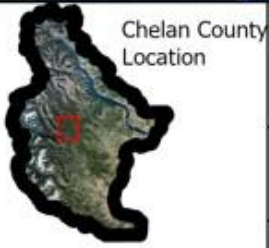


Legend

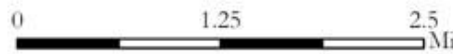
6_AOPs

Fish Passability

- 0
- 33
- Streams



Six AOPs for Lower Chiwawa Tributaries



Coordinate System: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet





Brush outlet



File Code: 1500

Date: October 21, 2022

Kate Terrell
Mid Columbia Fish and Wildlife Conservation Office
Habitat Restoration and Conservation Program
7501 Icicle Road
Leavenworth, WA 98826

Dear Fish and Wildlife Service,

The Wenatchee River Ranger District (WRRD) of the US Forest Service is writing to express its support for Cascade Fisheries in seeking funding to correct six fish passage barriers within district boundaries. The barriers are undersized culverts that inhibit or completely block fish passage to upstream habitat. The barriers are located on Brush Creek, Pole Creek, Gate Creek (2), and Grouse Creek (2), all of which are tributaries to the Chiwawa River.

The creeks identified in this proposal provide habitat to multiple species listed under the Endangered Species Act (ESA) including spring chinook, steelhead, and bull trout. They are also home to Westslope cutthroat trout, a species of conservation concern. The correction of the barriers in this proposal would improve access to a total of 5.66 miles of upstream habitat, providing meaningful ecological benefit to the species listed above and providing the associated benefit to the public.

WRRD biologists and Cascade Fisheries staff worked together to develop a list of priority fish passage barriers in the lower Chiwawa watershed. This area is a top priority for project implementation for both the WRRD and Cascade Fisheries. To date, our partnership has worked together to correct three barriers in the watershed, with three more planned for implementation in 2023, and another eleven (including the six identified in this proposal) planned for future years. WRRD and Cascade Fisheries staff have developed a strong working relationship with clear expectations established through the design and construction phases.

Restoration of aquatic resources and associated ESA-listed species in the lower Chiwawa is among the top priorities for the WRRD. We wholly support Cascade Fisheries in their efforts to seek funding for these projects, allowing us to continue our partnership with them to improve resources on public lands.

Sincerely,

ERICA TAECKER
District Ranger

