



## **Appendix B: Bluestone Ditch Opinions of Probable Construction Cost**

**BLUE STONE DITCH ASSOCIATION****J-U-B Project No. 81-23-028****BLUE STONE DITCH ASSOCIATION WATER MANAGEMENT PLAN UPDATE****6/11/2024**

<b>Project Ranking</b>	<b>Related Project</b>	<b>Cost Description</b>	<b>Estimated Total Cost</b>
2	Compromised Undershot	Box Culvert Per 1000 Feet	\$2,994,000
3	Headgate Replacement	Turnout	\$11,900
3	Headgate Replacement	Flowmeter	\$13,000
3	Headgate Replacement	Weir Structure	\$11,100
5	Diversion Structure	Diversion Strucutre Modernization	\$2,066,000
7	Ditch Piping	Ditch Piping Per 1000 Feet	\$1,187,000
8	Canal Lining	Ditch Lining Per 1000 Feet	\$539,000

<div> <div>Engineer's Opinion of Probable Construction Cost</div> <div>Box Culvert Per 1000 Feet</div> <div>  </div> </div>					
Client:	Blue Stone Ditch Association				
J-U-B Project No:	81-23-028				
Date:	April 30, 2024				
				J-U-B ENGINEERS, INC.	
Item No.	Description	Quantity	Unit	Unit Price	Amount
	<b>General</b>				
1	Civil Design	1	LS	\$168,000.00	\$168,000
2	NEPA	1	LS	\$120,000.00	\$120,000
3	Construction Management	1	LS	\$168,000.00	\$168,000
	General Subtotal				\$456,000
	<b>Box Culvert</b>				
4	Mobilization	1	LS	\$168,000.00	\$168,000
5	Subgrade Excavation/Preparation	2,200	CY	\$50.00	\$110,000
6	Import and Place 3/4" Screened Gravel Base Material	4,300	CY	\$45.00	\$193,500
7	Cast in Place Concrete Box Culvert	700	CY	\$2,500.00	\$1,750,000
8	6" Underdrain Perforated Drain Pipe	1,000	LF	\$25.00	\$25,000
9	Import and Place Underdrain Fill Material	100	CY	\$55.00	\$5,500
10	Furnish and Install Underdrain Geotextile	6,000	SF	\$1.30	\$7,800
	Box Culvert Subtotal				\$2,260,000
	<b>Miscellaneous</b>				
11	Reseeding Project Area	1	LS	\$5,000.00	\$5,000.00
	Miscellaneous Subtotal				\$5,000.00
<b>Subtotal (rounded):</b>					<b>\$2,721,000</b>
Contingency (10%)					\$273,000
<b>Total:</b>					<b>\$2,994,000</b>

<div> <div>Engineer's Opinion of Probable Construction Cost</div> <div>Box Culvert Per 75 Feet</div> <div>  </div> </div>					
Client:	Blue Stone Ditch Association				
J-U-B Project No:	81-23-028				
Date:	April 30, 2024				
				J-U-B ENGINEERS, INC.	
Item No.	Description	Quantity	Unit	Unit Price	Amount
	<b>General</b>				
1	Civil Design	1	LS	\$30,000.00	\$30,000
2	NEPA	1	LS	\$120,000.00	\$120,000
3	Construction Management	1	LS	\$30,000.00	\$30,000
	General Subtotal				\$180,000
	<b>Box Culvert</b>				
4	Mobilization	1	LS	\$13,000.00	\$13,000
5	Subgrade Excavation/Preparation	170	CY	\$50.00	\$8,500
6	Import and Place 3/4" Screened Gravel Base Material	320	CY	\$45.00	\$14,400
7	Cast in Place Concrete Box Culvert	50	CY	\$2,500.00	\$125,000
8	6" Underdrain Perforated Drain Pipe	75	LF	\$25.00	\$1,875
9	Import and Place Underdrain Fill Material	10	CY	\$55.00	\$550
10	Furnish and Install Underdrain Geotextile	450	SF	\$1.30	\$585
	Box Culvert Subtotal				\$164,000
	<b>Miscellaneous</b>				
11	Reseeding Project Area	1	LS	\$500.00	\$500.00
	Miscellaneous Subtotal				\$500.00
<b>Subtotal (rounded):</b>					<b>\$345,000</b>
Contingency (10%)					\$35,000
<b>Total:</b>					<b>\$380,000</b>

**Engineer's Opinion of Probable Construction Cost**  
Turnout



**J-U-B ENGINEERS, INC.**

<b>Client:</b>	Blue Stone Ditch Association
<b>J-U-B Project No:</b>	81-23-028
<b>Date:</b>	April 30, 2024

Item No.	Description	Quantity	Unit	Unit Price	Amount
<b>General</b>					
1	Civil Design	1	LS	\$5,000.00	\$5,000
General Subtotal					\$5,000
<b>Turnout</b>					
2	Cast in Place Concrete	1.5	CY	\$2,500.00	\$3,750
3	10" Turnout Headgate	1	EA	\$1,300.00	\$1,300
4	10" Plastic Irrigation Pipe (P.I.P.)	6	LF	\$19.00	\$114
5	8" P.I.P.	5	LF	\$12.00	\$60
6	10" P.I.P. Tee	1	EA	\$110.00	\$110
7	10" P.I.P. Cap	1	EA	\$80.00	\$80
8	1/4" Punch Plate	1	EA	\$300.00	\$300
Turnout Subtotal					\$5,800
<b>Subtotal (rounded):</b>					<b>\$10,800</b>
Contingency (10%)					\$1,100
<b>Total:</b>					<b>\$11,900</b>

**Engineer's Opinion of Probable Construction Cost**  
Flowmeter



**J-U-B ENGINEERS, INC.**

<b>Client:</b>	Blue Stone Ditch Association
<b>J-U-B Project No:</b>	81-23-028
<b>Date:</b>	April 30, 2024

Item No.	Description	Quantity	Unit	Unit Price	Amount
<b>General</b>					
1	Civil Design	1	LS	\$5,000.00	\$5,000
	General Subtotal				\$5,000
<b>Flowmeter</b>					
2	Site Excavation/Preparation	50	CY	\$50.00	\$2,500
3	10" Propeller Flow Meter	1	EA	\$2,000.00	\$2,000
4	Concrete or HDPE Access Vault with Lid	1	LS	\$1,000.00	\$1,000
5	10" Plastic Irrigation Pipe (P.I.P.)	15	LF	\$19.00	\$285
6	3" Air Valve	1	EA	\$300.00	\$300
7	10" P.I.P. 45° Elbow	4	EA	\$110.00	\$440
8	10" P.I.P. Tee Fitting	2	EA	\$110.00	\$220
	Flowmeter Subtotal				\$6,800
<b>Subtotal (rounded):</b>					<b>\$11,800</b>
Contingency (10%)					\$1,200
<b>Total:</b>					<b>\$13,000</b>

**Engineer's Opinion of Probable Construction Cost**  
**Weir Structure**



**J-U-B ENGINEERS, INC.**

<b>Client:</b>	Blue Stone Ditch Association
<b>J-U-B Project No:</b>	81-23-028
<b>Date:</b>	April 30, 2024

Item No.	Description	Quantity	Unit	Unit Price	Amount
	<b>General</b>				
1	Civil Design	1	LS	\$5,000.00	\$5,000
	General Subtotal				\$5,000
	<b>Weir Structure</b>				
2	Cast in Place Concrete	1.7	CY	\$2,500.00	\$4,250
3	10" Plastic Irrigation Pipe (P.I.P.)	11	LF	\$19.00	\$209
4	10" P.I.P. Cap	1	EA	\$80.00	\$80
5	Weir Plate	1	EA	\$500.00	\$500
	Weir Structure Subtotal				\$5,040
<b>Subtotal (rounded):</b>					<b>\$10,100</b>
Contingency (10%)					\$1,000
<b>Total:</b>					<b>\$11,100</b>

**Engineer's Opinion of Probable Construction Cost**  
Diversion Structure Modernization



**J-U-B ENGINEERS, INC.**

**Client:** Blue Stone Ditch Association

**JUB Proj:** 81-23-028

**Date:** June 14, 2024

Item No.	Description	Quantity	Unit	Unit Price	Amount
<b>Indirect Costs</b>					
1	Civil Design	1	LS	\$104,000	\$104,000
2	NEPA	1	LS	\$120,000	\$120,000
3	Construction Management	1	LS	\$104,000	\$104,000
	General Subtotal				\$328,000
<b>Diversion Structure</b>					
4	Implement Care of Water and Construction Site Stormwater Management	1	LS	\$169,000	\$169,000
5	Mobilization	1	LS	\$100,000	\$100,000
6	Furnish, Deliver, and Stockpile or Excavate Suitable Backfill Material	1	LS	\$100,000	\$100,000
7	Furnish and Install Concrete Headwall	1	LS	\$400,000	\$400,000
8	Furnish and Install Slide Gates	2	EA	\$20,000	\$40,000
9	Furnish and Install 48" HDPE Pipe	1	LS	\$10,000	\$10,000
10	Design, Program, Furnish, and Install Control Panel, Appurtenances, and Concrete Pad	1	LS	\$60,000	\$60,000
11	Furnish and Install Trashrack, Grating, and other Structure Appurtenances	1	LS	\$50,000	\$50,000
12	Furnish and Install Flume Structure	1	EA	\$22,000	\$22,000
13	Furnish, Install, and Integrate Diversion Site Radio Transmitter	1	LS	\$10,000	\$10,000
14	Furnish, Deliver, and Stockpile Grade Control Boulders	900	CY	\$250	\$225,000
15	Install Grade Control Boulders	900	CY	\$30	\$27,000
16	Furnish and Install Grout in Boulder Grade Control Structure	60	CY	\$2,000	\$120,000
17	Install Alluvial Riffle Section	1,500	CY	\$20	\$30,000
18	Remove and Dispose of Existing Headwall Structure	1	LS	\$10,000	\$10,000
19	Final Site and Access Road Restoration	1	LS	\$20,000	\$20,000
	Diversion Structure Subtotal				\$1,393,000
<b>Subtotal (rounded):</b>					<b>\$1,721,000</b>
<b>Contingency (20%)</b>					<b>\$345,000</b>
<b>Total:</b>					<b>\$2,066,000</b>

**Engineer's Opinion of Probable Construction Cost**  
Ditch Piping Per 1000 Feet



**J-U-B ENGINEERS, INC.**

<b>Client:</b>	Blue Stone Ditch Association
<b>J-U-B Project No:</b>	81-23-028
<b>Date:</b>	April 30, 2024

Item No.	Description	Quantity	Unit	Unit Price	Amount
	<b>General</b>				
1	Civil Design	1	LS	\$62,000.00	\$62,000
2	NEPA	1	LS	\$120,000.00	\$120,000
3	Construction Management	1	LS	\$62,000.00	\$62,000
	General Subtotal				\$244,000
	<b>Ditch Piping</b>				
4	Mobilization	1	LS	\$62,000.00	\$62,000
5	Furnish and Install 60" Dual Wall Corrugated HDPE Pipe	1,000	LF	\$250.00	\$250,000
6	Import and Place 3/4" Screened Gravel Base Material	11,500	CY	\$45.00	\$517,500
	Ditch Piping Subtotal				\$829,500
	<b>Miscellaneous</b>				
7	Reseeding Project Area	1	LS	\$5,000.00	\$5,000.00
	Miscellaneous Subtotal				\$5,000.00
<b>Subtotal (rounded):</b>					<b>\$1,079,000</b>
Contingency (10%)					\$108,000
<b>Total:</b>					<b>\$1,187,000</b>



**Engineer's Opinion of Probable Construction Cost**  
Ditch Lining Per 1000 Feet



**J-U-B ENGINEERS, INC.**

<b>Client:</b>	Blue Stone Ditch Association
<b>J-U-B Project No:</b>	81-23-028
<b>Date:</b>	April 30, 2024

Item No.	Description	Quantity	Unit	Unit Price	Amount
<b>General</b>					
1	Civil Design	1	LS	\$24,000.00	\$24,000
2	NEPA	1	LS	\$120,000.00	\$120,000
3	Construction Management	1	LS	\$24,000.00	\$24,000
	General Subtotal				\$168,000
<b>Ditch Lining</b>					
4	Mobilization	1	LS	\$24,000.00	\$24,000
5	Subgrade Excavation/Preparation	600	CY	\$50.00	\$30,000
6	Import and Place 6" Pit Run Liner Base Material	400	CY	\$175.00	\$70,000
7	Impervious Liner w/ 30 mil PVC	22,750	SF	\$1.50	\$34,125
8	Geotextile Upper Layer 10oz	22,750	SF	\$1.30	\$29,575
9	Geotextile Lower Layer 12oz	22,750	SF	\$1.30	\$29,575
10	3" Shotcrete Lining	1,700	LF	\$40.00	\$68,000
11	6" Underdrain Perforated Drain Pipe	1,000	LF	\$15.00	\$15,000
12	Import and Place Underdrain Fill Material	100	CY	\$70.00	\$7,000
13	Furnish and Install Underdrain Geotextile	7,000	SF	\$1.30	\$9,100
	Ditch Lining Subtotal				\$317,000
<b>Miscellaneous</b>					
14	Reseeding Project Area	1	LS	\$5,000.00	\$5,000.00
	Miscellaneous Subtotal				\$5,000.00
<b>Subtotal (rounded):</b>					<b>\$490,000</b>
Contingency (10%)					\$49,000
<b>Total:</b>					<b>\$539,000</b>