

**BRIDGE:** ATH-00691-05.170  
**DESCRIPTION:** Over Hamley Run  
**SFN:** 0505529



**CALCULATED BY:** MTJ  
**CHECKED BY:** AMR

**DATE:** 09/02/21  
**DATE:** 09/02/21

ITEM	ITEM EXT.	DESCRIPTION																														
202	11000	STRUCTURE REMOVED																														
Plan area of existing deck from survey = 558.00 ft^2 Cost to remove structure based on deck area = \$15/ft^2 Removal cost = \$8,400  Total Quantity = Lump																																
202	23500	WEARING COURSE REMOVED																														
Plan Area of Existing Deck = 558.00 ft^2  Total Quantity = 62 SY																																
503	11100	COFFERDAMS AND EXCAVATION BRACING																														
Retained Height Rear = 8.11 ft Retained Length Rear = 8.11 ft Retained Height Forward = 8.11 ft Retained Length Forward = 8.11 ft  Total Area = 263.09 sf COST/ SF = \$20.00 \$6,000.00  Total Quantity = Lump																																
503	21300	UNCLASSIFIED EXCAVATION																														
<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;"></th> <th style="width: 30%; text-align: center;">INLET</th> <th style="width: 30%; text-align: center;">OUTLET</th> </tr> </thead> <tbody> <tr> <td style="padding-left: 40px;">Area of footings =</td> <td style="text-align: center;">238.00 ft^2</td> <td style="text-align: center;">238.00 ft^2</td> </tr> <tr> <td style="padding-left: 40px;">Bottom of footing elevation =</td> <td style="text-align: center;">680.60</td> <td style="text-align: center;">680.50</td> </tr> <tr> <td style="padding-left: 40px;">Average ground elevation =</td> <td style="text-align: center;">684.00</td> <td style="text-align: center;">684.00</td> </tr> <tr> <td style="padding-left: 40px;">Volume =</td> <td style="text-align: center;">809.20 ft^3</td> <td style="text-align: center;">833.00 ft^3</td> </tr> <tr> <td colspan="3"> </td> </tr> <tr> <td style="padding-left: 40px;">Cutoff wall width =</td> <td style="text-align: center;">1.50 ft.</td> <td style="text-align: center;">1.50 ft.</td> </tr> <tr> <td style="padding-left: 40px;">Cutoff wall depth =</td> <td style="text-align: center;">2.50 ft.</td> <td style="text-align: center;">2.50 ft.</td> </tr> <tr> <td style="padding-left: 40px;">Cutoff wall length =</td> <td style="text-align: center;">31.11 ft.</td> <td style="text-align: center;">31.11 ft.</td> </tr> <tr> <td style="padding-left: 40px;">Volume =</td> <td style="text-align: center;">116.66 ft^3</td> <td style="text-align: center;">116.66 ft^3</td> </tr> </tbody> </table> <p style="margin-left: 40px;">Quantity at wingwalls = 70 CU YD</p> <p style="margin-left: 40px;">Plan area between existing abutment and box = 305.00 ft^2            Average ground elevation = 687</p> <p style="margin-left: 40px;">Quantity between proposed and existing = 72 CU YD</p> <p style="margin-left: 40px;">Total = 142 CU YD</p>				INLET	OUTLET	Area of footings =	238.00 ft^2	238.00 ft^2	Bottom of footing elevation =	680.60	680.50	Average ground elevation =	684.00	684.00	Volume =	809.20 ft^3	833.00 ft^3				Cutoff wall width =	1.50 ft.	1.50 ft.	Cutoff wall depth =	2.50 ft.	2.50 ft.	Cutoff wall length =	31.11 ft.	31.11 ft.	Volume =	116.66 ft^3	116.66 ft^3
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Cost based on volume = \$40/CY  
 Cost = \$5692

Total Quantity = Lump

509	10000	EPOXY COATED REINFORCING STEEL
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From design data sheet:  
 Wingwall reinforcing quantity = 786 #  
 Footing reinforcing quantity = 2,196 #  
 Headwall reinforcing quantity = 144 #  
  
 Total Quantity = 3,126 #

511	46010	CLASS QC1 CONCRETE, RETAINING/WINGWALL NOT INCLUDING FOOTING
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	<u>Wall #1</u>	<u>Wall #2</u>	<u>Wall #3</u>	<u>Wall #4</u>
Area of wingwall =	45.38 ft <sup>2</sup>	40.62 ft <sup>2</sup>	45.38 ft <sup>2</sup>	40.62 ft <sup>2</sup>
Width of wingwall =	1.00 ft.	1.00 ft.	1.00 ft.	1.00 ft.
Corner area =	0.41 ft <sup>2</sup>	0.00 ft <sup>2</sup>	0.41 ft <sup>2</sup>	0.00 ft <sup>2</sup>
Corner height =	6.00 ft.	10.00 ft.	10.00 ft.	10.00 ft.
 Total concrete volume =	 47.86 ft <sup>3</sup>	 40.62 ft <sup>3</sup>	 49.52 ft <sup>3</sup>	 40.62 ft <sup>3</sup>
 Total Quantity =	 7 CY			

511	46510	CLASS QC1 CONCRETE, FOOTING
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	<u>Inlet</u>	<u>Outlet</u>
Area of footing =	158.30 ft <sup>2</sup>	158.30 ft <sup>2</sup>
Height of footing =	1.50 ft.	1.50 ft.
Area of cutoff wall =	46.67 ft <sup>2</sup>	46.67 ft <sup>2</sup>
Height of cutoff wall =	2.50 ft.	2.50 ft.
 Footing concrete volume =	 354.11 ft <sup>3</sup>	 354.11 ft <sup>3</sup>
 Average width of closure pour =	 1.67 ft.	 1.67 ft.
Thickness of closure pour =	1.00 ft.	1.00 ft.
Length of closure pour =	18.00 ft.	18.00 ft.
Volume =	30.00 ft <sup>3</sup>	30.00 ft <sup>3</sup>
 Total Quantity =	 29 CY	

511	46610	CLASS QC1 CONCRETE, HEADWALL
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	<u>Inlet</u>	<u>Outlet</u>
Headwall length =	18.00 ft.	18.00 ft.
Headwall height =	0.50 ft.	0.50 ft.
Headwall width =	1.00 ft.	1.00 ft.
 Total concrete volume =	 9.00 ft <sup>3</sup>	 9.00 ft <sup>3</sup>
 Total Quantity =	 1 CY	

512

10100

## SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

	<u>Wall #1</u>	<u>Wall #2</u>	<u>Wall #3</u>	<u>Wall #4</u>
Wall thickness =	1.00 ft.	1.00 ft.	1.00 ft.	1.00 ft.
Exposed Wall area =	24.67 ft <sup>2</sup>	18.54 ft <sup>2</sup>	24.67 ft <sup>2</sup>	18.54 ft <sup>2</sup>
Wall length across top =	8.49 ft.	6.33 ft.	8.49 ft.	6.33 ft.
Top of wall area =	8.49 ft <sup>2</sup>	6.33 ft <sup>2</sup>	8.49 ft <sup>2</sup>	6.33 ft <sup>2</sup>
Behind wall area =	4.25 ft <sup>2</sup>	3.17 ft <sup>2</sup>	4.25 ft <sup>2</sup>	3.17 ft <sup>2</sup>
Exposed height at end =	0.50	0.50	0.50	0.50
End area =	0.50 ft <sup>2</sup>	0.50 ft <sup>2</sup>	0.50 ft <sup>2</sup>	0.50 ft <sup>2</sup>
Total wingwall area =	37.91 ft <sup>2</sup>	28.54 ft <sup>2</sup>	37.91 ft <sup>2</sup>	28.54 ft <sup>2</sup>

	<u>Inlet</u>	<u>Outlet</u>
Headwall height =	0.50 ft.	0.50 ft.
Headwall thickness =	1.00 ft.	1.00 ft.
Headwall length =	18.00 ft.	18.00 ft.
Height behind wall =	0.50 ft.	0.50 ft.
Headwall area =	9.00 ft <sup>2</sup>	9.00 ft <sup>2</sup>
Top of headwall area =	18.00 ft <sup>2</sup>	18.00 ft <sup>2</sup>
Behind headwall area =	9.00 ft <sup>2</sup>	9.00 ft <sup>2</sup>
Total headwall area =	36.00 ft <sup>2</sup>	36.00 ft <sup>2</sup>

<u>Inside culvert</u>	
Leg height (without corner) =	2.00 ft.
Bottom width (without corner) =	14.00 ft.
Corner length =	1.41 ft.
Distance into culvert =	2.00 ft.
Total inside area =	94.56 ft <sup>2</sup>

Culvert face area = 28.00 ft<sup>2</sup>Total area = 355.44 ft<sup>2</sup>

Total Quantity = 40 SY

512

33000

## TYPE 2 WATERPROOFING

Height of culvert legs =	6.00 ft.
Length of culvert =	60.00 ft.
Culvert length minus wingwall thickness =	58.00 ft.
Amount of lap at wall corner =	1.00 ft.
Area =	720.00 ft <sup>2</sup>

Width of culvert =	18.00 ft.
Amount of lap =	2.00 ft.
Length =	58.00 ft.
Area =	1,160.00 ft.

Total Quantity = 80 SY

512

33010

## TYPE 3 WATERPROOFING

Width of culvert =	18.00 ft.
Amount of lap =	2.00 ft.
Length =	58.00 ft.
Area =	1,160.00 ft.

Total Quantity = 129 SY

516	13600	1" PREFORMED EXPANSION JOINT FILLER																				
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601	32204	ROCK CHANNEL PROTECTION, TYPE C WITH GEOTEXTILE FABRIC																				
		<p>From Site Plan:</p> <p>A1 = 409.00 sf</p> <p>A2 = 502.00 sf</p> <p>A3 = 374.00 sf</p> <p>Thickness = 18.00 in</p> <p>Total Quantity = 72 CY</p>																				
611	96391	16' X 4' CONDUIT, TYPE A, 706.05, AS PER PLAN																				
		Total Quantity = 60 ft																				
613	41300	LOW STRENGTH MORTAR BACKFILL (TYPE 2)																				
		<p>Cross section area = 39.00 ft<sup>2</sup></p> <p>Length = 55 ft</p> <p>Volume = 159 CU YD</p>																				