

# **Appendix E**

## Opinion of Probable Construction Costs

**Fishpot Creek Watershed Project**  
**Main Stem - Clarkson Road to Fairview Drive**  
**319MS01 – Guide Vanes at Field Avenue**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	300	\$ 2	\$ 600
Surveying (Boundary and Topo)	Lump	1	\$ 3,000	\$ 3,000
Surveying (As-Builts)	Lump	1	\$ 800	\$ 800
SUBTOTAL COST OPINION =				\$ 4,400
CONTINGENCY = 15%				\$ 700
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 5,100</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Engineering Background and Field Data Collection, Reduction, Analysis and Design	\$ 9,700	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 13,000	
Geotechnical	\$ 2,500	
Construction Support	\$ 5,500	
SUBTOTAL COST OPINION =		\$ 30,700
CONTINGENCY = 15%		\$ 4,600
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 35,300</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	19	\$ 25	\$ 500
Embankment in Place	CY	19	\$ 10	\$ 200
Clearing Grubbing and Debris Removal	ACRE	0.2	\$ 5,000	\$ 1,100
Urban Forestry and Tree Protection	ACRE	0.05	\$ 30,000	\$ 1,400
Erosion and Sediment Control	LF	230	\$ 5	\$ 1,200
Energy Management Structures	EACH	4	\$ 5,000	\$ 20,000
Slope Stabilization	SY	75	\$ 50	\$ 3,700
Plants	EACH	835	\$ 0.5	\$ 400
Restoration	SY	111	\$ 3	\$ 300
Pavement	SY	67	\$ 100	\$ 6,700
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ 3,600	\$ 3,600
SUBTOTAL COST OPINION =				\$ 39,100
CONTINGENCY = 15%				\$ 5,900
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 45,000</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 85,400</b>
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**Fishpot Creek Watershed Project**  
**Main Stem - Clarkson Road to Fairview Drive**  
**319MS02 - Grade Stabilization and Sewer Lateral Protection**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	1200	\$ 2	\$ 2,400
Surveying (Boundary and Topo)	Lump	1	\$ 10,000	\$ 10,000
Surveying (As-Builts)	Lump	1	\$ 2,000	\$ 2,000
SUBTOTAL COST OPINION =				\$ 14,400
CONTINGENCY = 15%				\$ 2,200
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 16,600</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total
Engineering Background and Field Data Collection, Reduction, Analysis and Design	\$ 18,100
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 26,000
Geotechnical	\$ 3,500
Construction Support	\$ 10,700
SUBTOTAL COST OPINION =	
CONTINGENCY = 15%	
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>	
<b>\$ 67,000</b>	

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	148	\$ 25	\$ 3,700
Embankment in Place	CY	148	\$ 10	\$ 1,500
Clearing Grubbing and Debris Removal	ACRE	0.2	\$ 10,000	\$ 2,100
Urban Forestry and Tree Protection	ACRE	0.46	\$ 30,000	\$ 13,800
Erosion and Sediment Control	LF	540	\$ 5	\$ 2,700
Energy Management Structures	EACH	9	\$ 5,000	\$ 45,000
Slope Stabilization	SY	1,073	\$ 50	\$ 53,700
Plants	EACH	5,330	\$ 0.5	\$ 2,700
Restoration	SY	2,222	\$ 3	\$ 6,700
Pavement	SY	200	\$ 100	\$ 20,000
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ 15,200	\$ 15,200
SUBTOTAL COST OPINION =				\$ 167,100
CONTINGENCY = 15%				\$ 25,100
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 192,200</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 275,800</b>
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**Fishpot Creek Watershed Project**  
**Main Stem - Fairview Drive to West Skyline Drive**  
**319MS03 – Bankfull Floodplain Downstream of Fairview Drive Bridge**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	1000	\$ 2	\$ 2,000
Surveying (Boundary and Topo)	Lump	1	\$ 10,000	\$ 10,000
Surveying (As-Builts)	Lump	1	\$ 2,000	\$ 2,000
SUBTOTAL COST OPINION =				\$ 14,000
CONTINGENCY = 15%				\$ 2,100
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 16,100</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total
Engineering Background and Field Data Collection, Reduction, Analysis and Design	\$ 15,300
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 20,200
Geotechnical	\$ 3,500
Construction Support	\$ 9,100
SUBTOTAL COST OPINION =	
CONTINGENCY = 15%	
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>	
<b>\$ 55,300</b>	

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	2,778	\$ 25	\$ 69,400
Embankment in Place	CY	2,778	\$ 10	\$ 27,800
Clearing Grubbing and Debris Removal	ACRE	0.7	\$ 20,000	\$ 13,800
Urban Forestry and Tree Protection	ACRE	0.46	\$ 30,000	\$ 13,800
Erosion and Sediment Control	LF	2,100	\$ 5	\$ 10,500
Energy Management Structures	EACH	8	\$ 5,000	\$ 40,000
Slope Stabilization	SY	1,242	\$ 50	\$ 62,100
Plants	EACH	6,090	\$ 0.5	\$ 3,000
Restoration	SY	2,222	\$ 5	\$ 11,100
Pavement	SY	67	\$ 100	\$ 6,700
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ 25,800	\$ 25,800
SUBTOTAL COST OPINION =				\$ 284,000
CONTINGENCY = 15%				\$ 42,600
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 326,600</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 398,000</b>
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**Fishpot Creek Watershed Project**  
**Main Stem - Fairview Drive to West Skyline Drive**  
**319MS04- Re-shape *De facto* Turning Vane**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	Lump	1	\$ 1,000	\$ 1,000
Surveying (Boundary and Topo)	Lump	1	\$ 5,000	\$ 5,000
Surveying (As-Builts)	Lump	1	\$ 1,000	\$ 1,000
SUBTOTAL COST OPINION =				\$ 7,000
CONTINGENCY = 15%				\$ 1,100
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 8,100</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Engineering Background and Field Data Collection, Reduction, Analysis and Design	\$ 6,900	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 13,600	
Geotechnical	\$ 2,500	
Construction Support	\$ 2,800	
SUBTOTAL COST OPINION =		\$ 25,800
CONTINGENCY = 15%		\$ 3,900
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 29,700</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	74	\$ 25	\$ 1,900
Embankment in Place	CY	74	\$ 10	\$ 700
Clearing Grubbing and Debris Removal	ACRE	0.1	\$ 20,000	\$ 1,100
Urban Forestry and Tree Protection	ACRE	0.06	\$ 30,000	\$ 1,700
Erosion and Sediment Control	LF	130	\$ 5	\$ 700
Energy Management Structures	EACH	2	\$ 8,000	\$ 16,000
Slope Stabilization	SY	37	\$ 50	\$ 1,900
Plants	EACH	418	\$ 0.5	\$ 200
Restoration	SY	1,333	\$ 5	\$ 6,700
Pavement	SY	67	\$ 100	\$ 6,700
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ 3,800	\$ 3,800
SUBTOTAL COST OPINION =				\$ 41,400
CONTINGENCY = 15%				\$ 6,200
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 47,600</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 85,400</b>
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**Fishpot Creek Watershed Project**  
**Main Stem - Fairview Drive to West Skyline Drive**  
**319MS05 – Flood Proof Homes**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	800	\$ 2	
Surveying (Boundary and Topo)	Lump	1	\$ 8,000	
Surveying (As-Builts)	Lump	1	\$ 1,600	
SUBTOTAL COST OPINION =				\$ -
CONTINGENCY = 15%				\$ -
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ -</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total
Engineering Background and Field Data Collection, Reduction, Analysis and Design	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	
Geotechnical	
Construction Support	
SUBTOTAL COST OPINION =	
CONTINGENCY = 15%	
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>	
	<b>\$ -</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	19	\$ 25	
Embankment in Place	CY	19	\$ 10	
Clearing Grubbing and Debris Removal	ACRE	0.2	\$ 20,000	
Urban Forestry and Tree Protection	ACRE	0.05	\$ 30,000	
Erosion and Sediment Control	LF	230	\$ 5	
Energy Management Structures	EACH	4	\$ 5,000	
Slope Stabilization	SY	0	\$ 50	
Plants	EACH	500	\$ 0.5	
Restoration	SY	111	\$ 5	
Pavement	SY	67	\$ 50	
Storm Manhole	EACH	0	\$ 10,000	
Class III Reinforced Concrete Pipe	LF	0	\$ 150	
Box Culverts	LF	0	\$ 500	
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	
Structures Removal	LUMP	1	\$ -	
Mobilization and Bond	10%	1	\$ -	
SUBTOTAL COST OPINION =				\$ -
CONTINGENCY = 15%				\$ -
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ -</b>

<b>TOTAL COST OPINION FROM SSMIP=</b>	<b>\$ 83,000</b>
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**Fishpot Creek Watershed Project**  
**Main Stem - Fairview Drive to West Skyline Drive**  
**319MS06 – Relocate Utility Lines on Eroding Bank**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	0	\$ -	\$ -
Surveying (Boundary and Topo)	Lump	0	\$ -	\$ -
Surveying (As-Builts)	Lump	0	\$ -	\$ -
SUBTOTAL COST OPINION =				\$ -
CONTINGENCY = 15%				\$ -
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ -</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total
Engineering Background and Field Data Collection, Reduction, Analysis and Design	\$ -
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ -
Geotechnical	\$ -
Construction Support	\$ -
SUBTOTAL COST OPINION =	
CONTINGENCY = 15%	
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>	
<b>\$ -</b>	

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	0	\$ 25	\$ -
Embankment in Place	CY	0	\$ 10	\$ -
Clearing Grubbing and Debris Removal	ACRE	0.0	\$ 20,000	\$ -
Urban Forestry and Tree Protection	ACRE	0.00	\$ 30,000	\$ -
Erosion and Sediment Control	LF	0	\$ 5	\$ -
Energy Management Structures	EACH	0	\$ 5,000	\$ -
Slope Stabilization	SY	0	\$ 50	\$ -
Plants	EACH	0	\$ 0.5	\$ -
Restoration	SY	0	\$ 5	\$ -
Pavement	SY	0	\$ 50	\$ -
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Relocation	LUMP	1	\$ 15,000	\$ 15,000
Mobilization and Bond	10%	1	\$ 1,500	\$ 1,500
SUBTOTAL COST OPINION =				\$ 16,500
CONTINGENCY = 15%				\$ 2,500
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 19,000</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 19,000</b>
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**Fishpot Creek Watershed Project**  
**Main Stem - Fairview Drive to West Skyline Drive**  
**319MS07 – Armored Scour Pool, Bank, and Bed Protection**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	200	\$ 2	\$ 400
Surveying (Boundary and Topo)	Lump	1	\$ 6,000	\$ 6,000
Surveying (As-Builts)	Lump	1	\$ 1,200	\$ 1,200
SUBTOTAL COST OPINION =				\$ 7,600
CONTINGENCY = 15%				\$ 1,100
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 8,700</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Engineering Background and Field Data Collection, Reduction, Analysis and Design	\$ 12,400	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 17,000	
Geotechnical	\$ 2,500	
Construction Support	\$ 6,000	
SUBTOTAL COST OPINION =		\$ 37,900
CONTINGENCY = 15%		\$ 5,700
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 43,600</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	107	\$ 25	\$ 2,700
Embankment in Place	CY	107	\$ 10	\$ 1,100
Clearing Grubbing and Debris Removal	ACRE	0.9	\$ 20,000	\$ 18,400
Urban Forestry and Tree Protection	ACRE	0.11	\$ 30,000	\$ 3,400
Erosion and Sediment Control	LF	450	\$ 5	\$ 2,300
Energy Management Structures	EACH	3	\$ 5,000	\$ 15,000
Slope Stabilization	SY	298	\$ 50	\$ 14,900
Plants	EACH	1,842	\$ 0.5	\$ 900
Restoration	SY	444	\$ 5	\$ 2,200
Pavement	SY	67	\$ 100	\$ 6,700
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ 6,800	\$ 6,800
SUBTOTAL COST OPINION =				\$ 74,400
CONTINGENCY = 15%				\$ 11,200
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 85,600</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 137,900</b>
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**Fishpot Creek Watershed Project**  
**Main Stem - West Skyline Drive to Manchester Road**  
**319MS08 – Bankfull Floodplain and West Skyline Bridge**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	1400	\$ 2	\$ 2,800
Surveying (Boundary and Topo)	Lump	1	\$ 16,000	\$ 16,000
Surveying (As-Builts)	Lump	1	\$ 3,200	\$ 3,200
SUBTOTAL COST OPINION =				\$ 22,000
CONTINGENCY = 15%				\$ 3,300
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 25,300</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Engineering Data Collection, Reduction, Analysis and Design	\$ 71,100	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 42,400	
Geotechnical	\$ 15,000	
Construction Support	\$ 17,800	
SUBTOTAL COST OPINION =		\$ 146,300
CONTINGENCY = 15%		\$ 21,900
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 168,200</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	3,556	\$ 25	\$ 88,900
Embankment in Place	CY	3,556	\$ 10	\$ 35,600
Clearing Grubbing and Debris Removal	ACRE	11.0	\$ 5,000	\$ 55,100
Urban Forestry and Tree Protection	ACRE	0.55	\$ 30,000	\$ 16,500
Erosion and Sediment Control	LF	5,280	\$ 5	\$ 26,400
Energy Management Structures	EACH	6	\$ 5,000	\$ 30,000
Slope Stabilization	SY	1,789	\$ 50	\$ 89,400
Plants	EACH	8,300	\$ 0.5	\$ 4,100
Restoration	SY	111	\$ 5	\$ 600
Pavement	SY	133	\$ 100	\$ 13,300
Storm Manhole	EACH	1	\$ 10,000	\$ 10,000
Class III Reinforced Concrete Pipe	LF	50	\$ 150	\$ 7,500
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	3,840	\$ 115	\$ 441,600
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ 81,900	\$ 81,900
SUBTOTAL COST OPINION =				\$ 900,900
CONTINGENCY = 15%				\$ 135,100
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 1,036,000</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 1,229,500</b>
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**Fishpot Creek Watershed Project**  
**Main Stem - West Skyline Drive to Manchester Road**  
**319MS09 – Smith Drive Bridge**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	400	\$ 2	\$ 800
Surveying (Boundary and Topo)	Lump	1	\$ 10,000	\$ 10,000
Surveying (As-Builts)	Lump	1	\$ 2,000	\$ 2,000
SUBTOTAL COST OPINION =				\$ 12,800
CONTINGENCY = 15%				\$ 1,900
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 14,700</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Engineering Data Collection, Reduction, Analysis and Design	\$ 56,400	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 22,800	
Geotechnical	\$ 14,000	
Construction Support	\$ 12,300	
SUBTOTAL COST OPINION =		\$ 105,500
CONTINGENCY = 15%		\$ 15,800
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 121,300</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	185	\$ 25	\$ 4,600
Embankment in Place	CY	185	\$ 10	\$ 1,900
Clearing Grubbing and Debris Removal	ACRE	0.2	\$ 20,000	\$ 4,600
Urban Forestry and Tree Protection	ACRE	0.00	\$ 30,000	\$ -
Erosion and Sediment Control	LF	430	\$ 5	\$ 2,200
Energy Management Structures	EACH	5	\$ 5,000	\$ 25,000
Slope Stabilization	SY	596	\$ 50	\$ 29,800
Plants	EACH	3,683	\$ 0.5	\$ 1,800
Restoration	SY	889	\$ 5	\$ 4,400
Pavement	SY	0	\$ 50	\$ -
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	3,840	\$ 115	\$ 441,600
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ 51,600	\$ 51,600
SUBTOTAL COST OPINION =				\$ 567,500
CONTINGENCY = 15%				\$ 85,100
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 652,600</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 788,600</b>
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**Fishpot Creek Watershed Project**  
**Main Stem - Manchester Road to Ramsey Lane**  
**319MS10 - Manchester Road Bridge**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	800	\$ 2	\$ 1,600
Surveying (Boundary and Topo)	Lump	1	\$ 20,000	\$ 20,000
Surveying (As-Builts)	Lump	1	\$ 4,000	\$ 4,000
SUBTOTAL COST OPINION =				\$ 25,600
CONTINGENCY = 15%				\$ 3,800
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 29,400</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total
Engineering Data Collection, Reduction, Analysis and Design	\$ 59,000
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 26,600
Geotechnical	\$ 2,500
Construction Support	\$ 13,900
SUBTOTAL COST OPINION =	
CONTINGENCY = 15%	
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>	
<b>\$ 117,300</b>	

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	3,333	\$ 25	\$ 83,300
Embankment in Place	CY	3,333	\$ 10	\$ 33,300
Clearing Grubbing and Debris Removal	ACRE	0.5	\$ 20,000	\$ 9,200
Urban Forestry and Tree Protection	ACRE	0.00	\$ 30,000	\$ -
Erosion and Sediment Control	LF	1,800	\$ 5	\$ 9,000
Energy Management Structures	EACH	6	\$ 7,500	\$ 45,000
Slope Stabilization	SY	1,590	\$ 50	\$ 79,500
Plants	EACH	11,155	\$ 0.5	\$ 5,600
Restoration	SY	222	\$ 5	\$ 1,100
Pavement (Asphalt Parking Lot)	SY	556	\$ 50	\$ 27,800
Storm Manhole	EACH	4	\$ 10,000	\$ 40,000
Class III Reinforced Concrete Pipe	LF	400	\$ 150	\$ 60,000
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	8,400	\$ 115	\$ 966,000
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ 136,000	\$ 136,000
SUBTOTAL COST OPINION =				\$ 1,495,800
CONTINGENCY = 15%				\$ 224,400
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 1,720,200</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 1,866,900</b>
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**Fishpot Creek Watershed Project**  
**Main Stem - Manchester Road to Ramsey Lane**  
**319MS11 – Reinforce Existing Knickpoint**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	400	\$ 2	\$ 800
Surveying (Boundary and Topo)	Lump	1	\$ 5,000	\$ 5,000
Surveying (As-Builts)	Lump	1	\$ 1,000	\$ 1,000
SUBTOTAL COST OPINION =				\$ 6,800
CONTINGENCY = 15%				\$ 1,000
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 7,800</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Engineering Data Collection, Reduction, Analysis and Design	\$ 9,800	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 14,900	
Geotechnical	\$ 2,500	
Construction Support	\$ 6,000	
SUBTOTAL COST OPINION =		\$ 33,200
CONTINGENCY = 15%		\$ 5,000
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 38,200</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	370	\$ 25	\$ 9,300
Embankment in Place	CY	370	\$ 10	\$ 3,700
Clearing Grubbing and Debris Removal	ACRE	0.2	\$ 20,000	\$ 4,600
Urban Forestry and Tree Protection	ACRE	0.00	\$ 30,000	\$ -
Erosion and Sediment Control	LF	230	\$ 5	\$ 1,200
Energy Management Structures	EACH	1	\$ 5,000	\$ 5,000
Slope Stabilization	SY	0	\$ 50	\$ -
Plants	EACH	250	\$ 0.5	\$ 100
Restoration	SY	111	\$ 5	\$ 600
Pavement	SY	67	\$ 100	\$ 6,700
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ 3,100	\$ 3,100
SUBTOTAL COST OPINION =				\$ 34,300
CONTINGENCY = 15%				\$ 5,100
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 39,400</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 85,400</b>
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**Fishpot Creek Watershed Project**  
**Main Stem - Manchester Road to Ramsey Lane**  
**319MS12 – Floodproof Structures at Old Ballwin Road**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	800	\$ 2	
Surveying (Boundary and Topo)	Lump	1	\$ 8,000	
Surveying (As-Builts)	Lump	1	\$ 1,600	
SUBTOTAL COST OPINION =				\$ -
CONTINGENCY = 15%				\$ -
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ -</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total
Engineering Background and Field Data Collection, Reduction, Analysis and Design	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	
Geotechnical	
Construction Support	
SUBTOTAL COST OPINION =	
CONTINGENCY = 15%	
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>	
	<b>\$ -</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	19	\$ 25	
Embankment in Place	CY	19	\$ 10	
Clearing Grubbing and Debris Removal	ACRE	0.2	\$ 20,000	
Urban Forestry and Tree Protection	ACRE	0.05	\$ 30,000	
Erosion and Sediment Control	LF	230	\$ 5	
Energy Management Structures	EACH	4	\$ 5,000	
Slope Stabilization	SY	0	\$ 50	
Plants	EACH	500	\$ 0.5	
Restoration	SY	111	\$ 5	
Pavement	SY	67	\$ 50	
Storm Manhole	EACH	0	\$ 10,000	
Class III Reinforced Concrete Pipe	LF	0	\$ 150	
Box Culverts	LF	0	\$ 500	
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	
Structures Removal	LUMP	1	\$ -	
Mobilization and Bond	10%	1	\$ -	
SUBTOTAL COST OPINION =				\$ -
CONTINGENCY = 15%				\$ -
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ -</b>

<b>TOTAL COST OPINION FROM SSMIP =</b>	<b>\$ 125,000</b>
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**Fishpot Creek Watershed Project**  
**Main Stem - Manchester Road to Ramsey Lane**  
**319MS13 – Protect Sanitary Line**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	400	\$ 2	\$ 800
Surveying (Boundary and Topo)	Lump	1	\$ 5,000	\$ 5,000
Surveying (As-Builts)	Lump	1	\$ 1,000	\$ 1,000
SUBTOTAL COST OPINION =				\$ 6,800
CONTINGENCY = 15%				\$ 1,000
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 7,800</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Engineering Data Collection, Reduction, Analysis and Design	\$ 9,800	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 14,900	
Geotechnical	\$ 2,500	
Construction Support	\$ 6,000	
SUBTOTAL COST OPINION =		\$ 33,200
CONTINGENCY = 15%		\$ 5,000
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 38,200</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	370	\$ 25	\$ 9,300
Embankment in Place	CY	370	\$ 10	\$ 3,700
Clearing Grubbing and Debris Removal	ACRE	0.2	\$ 20,000	\$ 4,600
Urban Forestry and Tree Protection	ACRE	0.00	\$ 30,000	\$ -
Erosion and Sediment Control	LF	230	\$ 5	\$ 1,200
Energy Management Structures	EACH	1	\$ 5,000	\$ 5,000
Slope Stabilization	SY	0	\$ 50	\$ -
Plants	EACH	250	\$ 0.5	\$ 100
Restoration	SY	111	\$ 5	\$ 600
Pavement	SY	67	\$ 100	\$ 6,700
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ 3,100	\$ 3,100
SUBTOTAL COST OPINION =				\$ 34,300
CONTINGENCY = 15%				\$ 5,100
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 39,400</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 85,400</b>
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**Fishpot Creek Watershed Project**  
**Main Stem - Ramsey Lane to Reis Road**  
**319MS14 – Add Bankfull Flow Capacity at Ramsey Lane**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	800	\$ 2	\$ 1,600
Surveying (Boundary and Topo)	Lump	1	\$ 15,000	\$ 15,000
Surveying (As-Builts)	Lump	1	\$ 3,000	\$ 3,000
SUBTOTAL COST OPINION =				\$ 19,600
CONTINGENCY = 15%				\$ 2,900
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 22,500</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Engineering Data Collection, Reduction, Analysis and Design	\$ 47,200	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 23,800	
Geotechnical	\$ 14,000	
Construction Support	\$ 10,700	
SUBTOTAL COST OPINION =		\$ 95,700
CONTINGENCY = 15%		\$ 14,400
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 110,100</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	800	\$ 25	\$ 20,000
Embankment in Place	CY	800	\$ 10	\$ 8,000
Clearing Grubbing and Debris Removal	ACRE	0.2	\$ 20,000	\$ 4,600
Urban Forestry and Tree Protection	ACRE	0.11	\$ 30,000	\$ 3,400
Erosion and Sediment Control	LF	830	\$ 5	\$ 4,200
Energy Management Structures	EACH	3	\$ 5,000	\$ 15,000
Slope Stabilization	SY	0	\$ 50	\$ -
Plants	EACH	2,500	\$ 0.5	\$ 1,300
Restoration	SY	444	\$ 5	\$ 2,200
Pavement	SY	267	\$ 100	\$ 26,700
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	320	\$ 750	\$ 240,000
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ 20,000	\$ 20,000
Mobilization and Bond	10%	1	\$ 34,500	\$ 34,500
SUBTOTAL COST OPINION =				\$ 379,900
CONTINGENCY = 15%				\$ 57,000
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 436,900</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 569,500</b>
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**Fishpot Creek Watershed Project**  
**Main Stem - Ramsey Lane to Reis Road**  
**319MS15 – Weirs Upstream of Reis Road**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	1000	\$ 2	\$ 2,000
Surveying (Boundary and Topo)	Lump	1	\$ 14,000	\$ 14,000
Surveying (As-Builts)	Lump	1	\$ 2,800	\$ 2,800
SUBTOTAL COST OPINION =				\$ 18,800
CONTINGENCY = 15%				\$ 2,800
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 21,600</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Engineering Data Collection, Reduction, Analysis and Design	\$ 17,100	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 26,300	
Geotechnical	\$ 4,000	
Construction Support	\$ 13,100	
SUBTOTAL COST OPINION =		\$ 60,500
CONTINGENCY = 15%		\$ 9,100
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 69,600</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	19	\$ 25	\$ 500
Embankment in Place	CY	19	\$ 10	\$ 200
Clearing Grubbing and Debris Removal	ACRE	0.2	\$ 20,000	\$ 4,600
Urban Forestry and Tree Protection	ACRE	0.05	\$ 30,000	\$ 1,400
Erosion and Sediment Control	LF	230	\$ 5	\$ 1,200
Energy Management Structures	EACH	12	\$ 5,000	\$ 60,000
Slope Stabilization	SY	1,491	\$ 50	\$ 74,500
Plants	EACH	6,958	\$ 0.5	\$ 3,500
Restoration	SY	111	\$ 5	\$ 600
Pavement	SY	67	\$ 100	\$ 6,700
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ 15,300	\$ 15,300
SUBTOTAL COST OPINION =				\$ 168,500
CONTINGENCY = 15%				\$ 25,300
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 193,800</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 285,000</b>
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**Fishpot Creek Watershed Project**  
**Main Stem - Ramsey Lane to Reis Road**  
**319MS16 – Reis Road Bridge**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	800	\$ 2	\$ 1,600
Surveying (Boundary and Topo)	Lump	1	\$ 17,000	\$ 17,000
Surveying (As-Builts)	Lump	1	\$ 3,400	\$ 3,400
SUBTOTAL COST OPINION =				\$ 22,000
CONTINGENCY = 15%				\$ 3,300
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 25,300</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total
Engineering Data Collection, Reduction, Analysis and Design	\$ 56,600
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 24,900
Geotechnical	\$ 15,000
Construction Support	\$ 10,700
SUBTOTAL COST OPINION =	
CONTINGENCY = 15%	
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>	
<b>\$ 123,300</b>	

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	667	\$ 25	\$ 16,700
Embankment in Place	CY	667	\$ 10	\$ 6,700
Clearing Grubbing and Debris Removal	ACRE	0.2	\$ 20,000	\$ 4,600
Urban Forestry and Tree Protection	ACRE	0.09	\$ 30,000	\$ 2,800
Erosion and Sediment Control	LF	1,630	\$ 5	\$ 8,200
Energy Management Structures	EACH	4	\$ 5,000	\$ 20,000
Slope Stabilization	SY	596	\$ 50	\$ 29,800
Plants	EACH	2,933	\$ 0.5	\$ 1,500
Restoration	SY	278	\$ 5	\$ 1,400
Pavement	SY	133	\$ 100	\$ 13,300
Storm Manhole	EACH	2	\$ 10,000	\$ 20,000
Class III Reinforced Concrete Pipe	LF	40	\$ 150	\$ 6,000
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	6,000	\$ 115	\$ 690,000
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ 82,100	\$ 82,100
SUBTOTAL COST OPINION =				\$ 903,100
CONTINGENCY = 15%				\$ 135,500
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 1,038,600</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 1,187,200</b>
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**Fishpot Creek Watershed Project**  
**Main Stem - Reis Road to Lindy Road**  
**319MS17 – Bankfull Floodplain between Reis Road and Lindy Drive**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	4000	\$ 2	\$ 8,000
Surveying (Boundary and Topo)	Lump	1	\$ 40,000	\$ 40,000
Surveying (As-Builts)	Lump	1	\$ 8,000	\$ 8,000
SUBTOTAL COST OPINION =				\$ 56,000
CONTINGENCY = 15%				\$ 8,400
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 64,400</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Engineering Data Collection, Reduction, Analysis and Design	\$ 49,500	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 55,900	
Geotechnical	\$ 10,000	
Construction Support	\$ 48,500	
SUBTOTAL COST OPINION =		\$ 163,900
CONTINGENCY = 15%		\$ 24,600
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 188,500</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	11,852	\$ 25	\$ 296,300
Embankment in Place	CY	11,852	\$ 10	\$ 118,500
Clearing Grubbing and Debris Removal	ACRE	3.7	\$ 20,000	\$ 73,500
Urban Forestry and Tree Protection	ACRE	1.84	\$ 30,000	\$ 55,100
Erosion and Sediment Control	LF	17,600	\$ 5	\$ 88,000
Energy Management Structures	EACH	35	\$ 5,000	\$ 175,000
Slope Stabilization	SY	15,901	\$ 50	\$ 795,000
Plants	EACH	71,804	\$ 0.5	\$ 35,900
Restoration	SY	8,889	\$ 5	\$ 44,400
Pavement	SY	600	\$ 100	\$ 60,000
Storm Manhole	EACH	8	\$ 10,000	\$ 80,000
Class III Reinforced Concrete Pipe	LF	400	\$ 150	\$ 60,000
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ 130,000	\$ 130,000
Mobilization and Bond	2%	1	\$ 40,200	\$ 40,200
SUBTOTAL COST OPINION =				\$ 2,051,900
CONTINGENCY = 15%				\$ 307,800
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 2,359,700</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 2,612,600</b>
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**Fishpot Creek Watershed Project**  
**Mian Stem - Lindy Road to Wren Avenue**  
**319MS19 – Bankfull Floodplain between Lindy Drive and Sulphur Springs Road**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	1400	\$ 2	\$ 2,800
Surveying (Boundary and Topo)	Lump	1	\$ 18,200	\$ 18,200
Surveying (As-Builts)	Lump	1	\$ 3,640	\$ 3,600
SUBTOTAL COST OPINION =				\$ 24,600
CONTINGENCY = 15%				\$ 3,700
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 28,300</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total
Engineering Data Collection, Reduction, Analysis and Design	\$ 35,600
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 38,000
Geotechnical	\$ 2,500
Construction Support	\$ 17,800
SUBTOTAL COST OPINION =	
CONTINGENCY = 15%	
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>	
<b>\$ 108,000</b>	

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	10,370	\$ 25	\$ 259,300
Embankment in Place	CY	10,370	\$ 10	\$ 103,700
Clearing Grubbing and Debris Removal	ACRE	1.0	\$ 20,000	\$ 19,300
Urban Forestry and Tree Protection	ACRE	0.64	\$ 30,000	\$ 19,300
Erosion and Sediment Control	LF	5,630	\$ 5	\$ 28,200
Energy Management Structures	EACH	16	\$ 5,000	\$ 80,000
Slope Stabilization	SY	2,783	\$ 50	\$ 139,100
Plants	EACH	12,772	\$ 0.5	\$ 6,400
Restoration	SY	3,111	\$ 5	\$ 15,600
Pavement	SY	400	\$ 100	\$ 40,000
Storm Manhole	EACH	4	\$ 10,000	\$ 40,000
Class III Reinforced Concrete Pipe	LF	100	\$ 150	\$ 15,000
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ 400,000	\$ 400,000
Mobilization and Bond	3%	1	\$ 35,000	\$ 35,000
SUBTOTAL COST OPINION =				\$ 1,200,900
CONTINGENCY = 15%				\$ 180,100
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 1,381,000</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 1,517,300</b>
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**Fishpot Creek Watershed Project**  
**Main Stem - Lindy Road to Wren Avenue**  
**319MS21 – Analysis of Sulphur Springs Approach and Knickzone**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	500	\$ 2	\$ 1,000
Surveying (Boundary and Topo)	Lump	1	\$ 5,000	\$ 5,000
Surveying (As-Builts)	Lump	1	\$ 1,000	\$ 1,000
SUBTOTAL COST OPINION =				\$ 7,000
CONTINGENCY = 15%				\$ 1,100
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 8,100</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Engineering Data Collection, Reduction, Analysis and Design	\$ 11,500	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 18,600	
Geotechnical	\$ 2,500	
Construction Support	\$ 7,200	
SUBTOTAL COST OPINION =		\$ 39,800
CONTINGENCY = 15%		\$ 6,000
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 45,800</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	185	\$ 25	\$ 4,600
Embankment in Place	CY	185	\$ 10	\$ 1,900
Clearing Grubbing and Debris Removal	ACRE	0.0	\$ 20,000	\$ 900
Urban Forestry and Tree Protection	ACRE	0.05	\$ 30,000	\$ 1,400
Erosion and Sediment Control	LF	430	\$ 5	\$ 2,200
Energy Management Structures	EACH	4	\$ 5,000	\$ 20,000
Slope Stabilization	SY	596	\$ 50	\$ 29,800
Plants	EACH	2,933	\$ 0.5	\$ 1,500
Restoration	SY	111	\$ 5	\$ 600
Pavement	SY	67	\$ 100	\$ 6,700
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ 7,000	\$ 7,000
SUBTOTAL COST OPINION =				\$ 76,600
CONTINGENCY = 15%				\$ 11,500
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 88,100</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 142,000</b>
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**Fishpot Creek Watershed Project**  
**Main Stem - Lindy Road to Wren Avenue**  
**319MS22 – Turning Vanes Upstream of the Wren Avenue Culvert**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	1000	\$ 2	\$ 2,000
Surveying (Boundary and Topo)	Lump	1	\$ 10,000	\$ 10,000
Surveying (As-Builts)	Lump	1	\$ 2,000	\$ 2,000
SUBTOTAL COST OPINION =				\$ 14,000
CONTINGENCY = 15%				\$ 2,100
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 16,100</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Engineering Data Collection, Reduction, Analysis and Design	\$ 18,900	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 21,100	
Geotechnical	\$ 2,500	
Construction Support	\$ 13,100	
SUBTOTAL COST OPINION =		\$ 55,600
CONTINGENCY = 15%		\$ 8,300
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 63,900</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	556	\$ 25	\$ 13,900
Embankment in Place	CY	556	\$ 10	\$ 5,600
Clearing Grubbing and Debris Removal	ACRE	0.2	\$ 20,000	\$ 4,600
Urban Forestry and Tree Protection	ACRE	0.46	\$ 30,000	\$ 13,800
Erosion and Sediment Control	LF	2,030	\$ 5	\$ 10,200
Energy Management Structures	EACH	10	\$ 5,000	\$ 50,000
Slope Stabilization	SY	596	\$ 50	\$ 29,800
Plants	EACH	2,933	\$ 0.5	\$ 1,500
Restoration	SY	2,222	\$ 5	\$ 11,100
Pavement	SY	67	\$ 100	\$ 6,700
Storm Manhole	EACH	2	\$ 10,000	\$ 20,000
Class III Reinforced Concrete Pipe	LF	50	\$ 150	\$ 7,500
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ 17,500	\$ 17,500
SUBTOTAL COST OPINION =				\$ 192,200
CONTINGENCY = 15%				\$ 28,800
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 221,000</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 301,000</b>
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**Fishpot Creek Watershed Project**  
**Main Stem - Wren Avenue to Big Bend Road**  
**319MS23 – Turning Vanes Downstream of the Wren Avenue Culvert**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	400	\$ 2	\$ 800
Surveying (Boundary and Topo)	Lump	1	\$ 4,000	\$ 4,000
Surveying (As-Builts)	Lump	1	\$ 800	\$ 800
SUBTOTAL COST OPINION =				\$ 5,600
CONTINGENCY = 15%				\$ 800
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 6,400</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total
Engineering Data Collection, Reduction, Analysis and Design	\$ 11,300
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 15,000
Geotechnical	\$ 2,500
Construction Support	\$ 6,000
SUBTOTAL COST OPINION =	
CONTINGENCY = 15%	
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>	
<b>\$ 40,000</b>	

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	93	\$ 25	\$ 2,300
Embankment in Place	CY	93	\$ 10	\$ 900
Clearing Grubbing and Debris Removal	ACRE	0.0	\$ 20,000	\$ 900
Urban Forestry and Tree Protection	ACRE	0.05	\$ 30,000	\$ 1,400
Erosion and Sediment Control	LF	230	\$ 5	\$ 1,200
Energy Management Structures	EACH	7	\$ 5,000	\$ 35,000
Slope Stabilization	SY	0	\$ 50	\$ -
Plants	EACH	250	\$ 0.5	\$ 100
Restoration	SY	111	\$ 5	\$ 600
Pavement	SY	67	\$ 100	\$ 6,700
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ 4,900	\$ 4,900
SUBTOTAL COST OPINION =				\$ 54,000
CONTINGENCY = 15%				\$ 8,100
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 62,100</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 108,500</b>
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**Fishpot Creek Watershed Project**  
**Main Stem - Wren Avenue to Big Bend Road**  
**319MS24 – Meander Migration Monitoring, Upstream of Big Bend Road**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	200	\$ -	\$ -
Surveying Topo and Pins	Lump	1	\$ 2,000	\$ 2,000
Re - Surveying Topo	Lump	1	\$ 1,000	\$ 1,000
SUBTOTAL COST OPINION =				\$ 3,000
CONTINGENCY = 15%				\$ 500
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 3,500</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total
Engineering Data Collection, Reduction, Analysis and Design	\$ 800
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ -
Geotechnical	\$ -
Construction Support	\$ -
SUBTOTAL COST OPINION =	
CONTINGENCY = 15%	
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>	
	<b>\$ 900</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	0	\$ 25	\$ -
Embankment in Place	CY	0	\$ 10	\$ -
Clearing Grubbing and Debris Removal	ACRE	0.0	\$ 20,000	\$ -
Urban Forestry and Tree Protection	ACRE	0.00	\$ 30,000	\$ -
Erosion and Sediment Control	LF	0	\$ 5	\$ -
Energy Management Structures	EACH	0	\$ 5,000	\$ -
Slope Stabilization	SY	0	\$ 50	\$ -
Plants	EACH	0	\$ 0.5	\$ -
Restoration	SY	0	\$ 5	\$ -
Pavement	SY	0	\$ 50	\$ -
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ -	\$ -
SUBTOTAL COST OPINION =				\$ -
CONTINGENCY = 15%				\$ -
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ -</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 4,400</b>
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**Fishpot Creek Watershed Project**  
**Main Stem - Big Bend Road to Holly Green Tributary**  
**319MS25 – Protect Stratford Ridge High Bank**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	800	\$ 2	\$ 1,600
Surveying (Boundary and Topo)	Lump	1	\$ 18,000	\$ 18,000
Surveying (As-Builts)	Lump	1	\$ 3,600	\$ 3,600
SUBTOTAL COST OPINION =				\$ 23,200
CONTINGENCY = 15%				\$ 3,500
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 26,700</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total
Engineering Data Collection, Reduction, Analysis and Design	\$ 18,000
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 20,100
Geotechnical	\$ 4,500
Construction Support	\$ 10,700
SUBTOTAL COST OPINION =	
CONTINGENCY = 15%	
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>	
<b>\$ 61,300</b>	

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	5,231	\$ 25	\$ 130,800
Embankment in Place	CY	5,231	\$ 10	\$ 52,300
Clearing Grubbing and Debris Removal	ACRE	0.4	\$ 20,000	\$ 7,300
Urban Forestry and Tree Protection	ACRE	0.37	\$ 30,000	\$ 11,000
Erosion and Sediment Control	LF	3,230	\$ 5	\$ 16,200
Energy Management Structures	EACH	8	\$ 5,000	\$ 40,000
Slope Stabilization	SY	2,108	\$ 25	\$ 52,700
Plants	EACH	9,737	\$ 0.5	\$ 4,900
Restoration	SY	111	\$ 5	\$ 600
Pavement	SY	67	\$ 100	\$ 6,700
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ 32,300	\$ 32,300
SUBTOTAL COST OPINION =				\$ 354,800
CONTINGENCY = 15%				\$ 53,200
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 408,000</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 496,000</b>
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**Fishpot Creek Watershed Project**  
**Main Stem - Big Bend Road to Holly Green Tributary**  
**319MS26 – Protect High Bank Downstream of Stratford Ridge**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	1000	\$ 2	\$ 2,000
Surveying (Boundary and Topo)	Lump	1	\$ 14,000	\$ 14,000
Surveying (As-Builts)	Lump	1	\$ 2,800	\$ 2,800
SUBTOTAL COST OPINION =				\$ 18,800
CONTINGENCY = 15%				\$ 2,800
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 21,600</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Engineering Data Collection, Reduction, Analysis and Design	\$ 11,900	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 18,000	
Geotechnical	\$ 2,500	
Construction Support	\$ 13,100	
SUBTOTAL COST OPINION =		\$ 45,500
CONTINGENCY = 15%		\$ 6,800
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 52,300</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	370	\$ 25	\$ 9,300
Embankment in Place	CY	370	\$ 10	\$ 3,700
Clearing Grubbing and Debris Removal	ACRE	0.0	\$ 20,000	\$ -
Urban Forestry and Tree Protection	ACRE	0.00	\$ 30,000	\$ -
Erosion and Sediment Control	LF	1,030	\$ 5	\$ 5,200
Energy Management Structures	EACH	6	\$ 5,000	\$ 30,000
Slope Stabilization	SY	0	\$ 50	\$ -
Plants	EACH	250	\$ 0.5	\$ 100
Restoration	SY	2,222	\$ 5	\$ 11,100
Pavement	SY	67	\$ 100	\$ 6,700
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ 6,600	\$ 6,600
SUBTOTAL COST OPINION =				\$ 72,700
CONTINGENCY = 15%				\$ 10,900
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 83,600</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 157,500</b>
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**Fishpot Creek Watershed Project**  
**Main Stem - Holly Green Tributary to Hanna Road**  
**319MS27 – Guide Vanes at Main Stem and Hollygreen Confluence**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	1000	\$ 2	\$ 2,000
Surveying (Boundary and Topo)	Lump	1	\$ 14,000	\$ 14,000
Surveying (As-Builts)	Lump	1	\$ 2,800	\$ 2,800
SUBTOTAL COST OPINION =				\$ 18,800
CONTINGENCY = 15%				\$ 2,800
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 21,600</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total
Engineering Data Collection, Reduction, Analysis and Design	\$ 13,700
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 18,100
Geotechnical	\$ 2,500
Construction Support	\$ 13,100
SUBTOTAL COST OPINION =	
CONTINGENCY = 15%	
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>	
<b>\$ 54,500</b>	

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	1,993	\$ 25	\$ 49,800
Embankment in Place	CY	1,993	\$ 10	\$ 19,900
Clearing Grubbing and Debris Removal	ACRE	0.1	\$ 20,000	\$ 1,800
Urban Forestry and Tree Protection	ACRE	0.05	\$ 30,000	\$ 1,400
Erosion and Sediment Control	LF	1,030	\$ 5	\$ 5,200
Energy Management Structures	EACH	6	\$ 5,000	\$ 30,000
Slope Stabilization	SY	0	\$ 50	\$ -
Plants	EACH	4,000	\$ 0.5	\$ 2,000
Restoration	SY	2,222	\$ 5	\$ 11,100
Pavement	SY	67	\$ 100	\$ 6,700
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ 12,800	\$ 12,800
SUBTOTAL COST OPINION =				\$ 140,700
CONTINGENCY = 15%				\$ 21,100
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 161,800</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 237,900</b>
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**Fishpot Creek Watershed Project**  
**Main Stem - Holly Green Tributary to Hanna Road**  
**319MS28 – Pepperdine Reach Bank Stabilization**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	1200	\$ 2	\$ 2,400
Surveying (Boundary and Topo)	Lump	1	\$ 24,000	\$ 24,000
Surveying (As-Builts)	Lump	1	\$ 4,800	\$ 4,800
SUBTOTAL COST OPINION =				\$ 31,200
CONTINGENCY = 15%				\$ 4,700
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 35,900</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Engineering Data Collection, Reduction, Analysis and Design	\$ 16,300	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 20,300	
Geotechnical	\$ 4,500	
Construction Support	\$ 15,400	
SUBTOTAL COST OPINION =		\$ 56,500
CONTINGENCY = 15%		\$ 8,500
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 65,000</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	1,852	\$ 25	\$ 46,300
Embankment in Place	CY	1,852	\$ 10	\$ 18,500
Clearing Grubbing and Debris Removal	ACRE	0.1	\$ 20,000	\$ 2,800
Urban Forestry and Tree Protection	ACRE	0.92	\$ 30,000	\$ 27,500
Erosion and Sediment Control	LF	2,430	\$ 5	\$ 12,200
Energy Management Structures	EACH	13	\$ 5,000	\$ 65,000
Slope Stabilization	SY	1,242	\$ 50	\$ 62,100
Plants	EACH	8,090	\$ 0.5	\$ 4,000
Restoration	SY	1,333	\$ 5	\$ 6,700
Pavement	SY	133	\$ 100	\$ 13,300
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	5%	1	\$ 12,900	\$ 12,900
SUBTOTAL COST OPINION =				\$ 271,300
CONTINGENCY = 15%				\$ 40,700
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 312,000</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 412,900</b>
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**Fishpot Creek Watershed Project**  
**Main Stem - Hanna Road to Meramec River Confluence**  
**319MS29 – Hanna Road Bridge Improvement**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	2000	\$ 2	\$ 4,000
Surveying (Boundary and Topo)	Lump	1	\$ 25,000	\$ 25,000
Surveying (As-Builts)	Lump	1	\$ 5,000	\$ 5,000
SUBTOTAL COST OPINION =				\$ 34,000
CONTINGENCY = 15%				\$ 5,100
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 39,100</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Engineering Data Collection, Reduction, Analysis and Design	\$ 70,700	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 28,500	
Geotechnical	\$ 15,000	
Construction Support	\$ 13,100	
SUBTOTAL COST OPINION =		\$ 127,300
CONTINGENCY = 15%		\$ 19,100
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 146,400</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	11,111	\$ 25	\$ 277,800
Embankment in Place	CY	11,111	\$ 10	\$ 111,100
Clearing Grubbing and Debris Removal	ACRE	2.1	\$ 20,000	\$ 41,300
Urban Forestry and Tree Protection	ACRE	0.34	\$ 30,000	\$ 10,300
Erosion and Sediment Control	LF	4,200	\$ 5	\$ 21,000
Energy Management Structures	EACH	4	\$ 5,000	\$ 20,000
Slope Stabilization	SY	745	\$ 50	\$ 37,300
Plants	EACH	6,354	\$ 0.5	\$ 3,200
Restoration	SY	1,111	\$ 5	\$ 5,600
Roadway (Including Removal of Existing Road)	SY	3,200	\$ 50	\$ 160,000
Storm Manhole	EACH	3	\$ 10,000	\$ 30,000
Class III Reinforced Concrete Pipe	LF	60	\$ 150	\$ 9,000
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	9,600	\$ 115	\$ 1,104,000
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	2%	1	\$ 36,600	\$ 36,600
SUBTOTAL COST OPINION =				\$ 1,867,200
CONTINGENCY = 15%				\$ 280,100
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 2,147,300</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 2,332,800</b>
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**Fishpot Creek Watershed Project**  
**Main Stem - Hanna Road to Meramec River Confluence**  
**319MS30 – Remove the Low Water Crossing Downstream of Hanna Road**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	1500	\$ 2	\$ 3,000
Surveying (Boundary and Topo)	Lump	1	\$ 20,000	\$ 20,000
Surveying (As-Builts)	Lump	1	\$ 4,000	\$ 4,000
SUBTOTAL COST OPINION =				\$ 27,000
CONTINGENCY = 15%				\$ 4,100
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 31,100</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Engineering Data Collection, Reduction, Analysis and Design	\$ 40,500	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 25,900	
Geotechnical	\$ 10,000	
Construction Support	\$ 19,000	
SUBTOTAL COST OPINION =		\$ 95,400
CONTINGENCY = 15%		\$ 14,300
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 109,700</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	1,481	\$ 25	\$ 37,000
Embankment in Place	CY	1,481	\$ 10	\$ 14,800
Clearing Grubbing and Debris Removal	ACRE	0.2	\$ 20,000	\$ 4,600
Urban Forestry and Tree Protection	ACRE	5.74	\$ 5,000	\$ 28,700
Erosion and Sediment Control	LF	4,200	\$ 5	\$ 21,000
Energy Management Structures	EACH	12	\$ 5,000	\$ 60,000
Slope Stabilization	SY	745	\$ 50	\$ 37,300
Plants	EACH	4,354	\$ 0.5	\$ 2,200
Restoration	SY	1,111	\$ 5	\$ 5,600
Pavement	SY	67	\$ 100	\$ 6,700
Storm Manhole	EACH	3	\$ 10,000	\$ 30,000
Class III Reinforced Concrete Pipe	LF	60	\$ 150	\$ 9,000
Box Culverts	LF	0	\$ 500	\$ -
Pedestrian Bridge	SF	1,200	\$ 115	\$ 138,000
Structures Removal	LUMP	1	\$ 10,000	\$ 10,000
Mobilization and Bond	2%	1	\$ 8,100	\$ 8,100
SUBTOTAL COST OPINION =				\$ 413,000
CONTINGENCY = 15%				\$ 62,000
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 475,000</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 615,800</b>
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**Fishpot Creek Watershed Project**  
**Main Stem - Hanna Road to Meramec River Confluence**  
**319MS31 – Sediment Transport Monitoring, Hollygreen Confluence to**  
**Vance Road**  
**Engineers opinion of survey costs**



Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	0	\$ -	\$ -
Surveying (Boundary and Topo)	Lump	0	\$ -	\$ -
Surveying (As-Builts)	Lump	0	\$ -	\$ -
SUBTOTAL COST OPINION =				\$ -
CONTINGENCY = 15%				\$ -
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ -</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Field Data Collection	\$ 3,900	
Report	\$ 6,900	
Geotechnical	\$ -	
Construction Support	\$ -	
SUBTOTAL COST OPINION =		\$ 10,800
CONTINGENCY = 15%		\$ 1,600
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 12,400</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	0	\$ 25	\$ -
Embankment in Place	CY	0	\$ 10	\$ -
Clearing Grubbing and Debris Removal	ACRE	0.0	\$ 20,000	\$ -
Urban Forestry and Tree Protection	ACRE	0.00	\$ 30,000	\$ -
Erosion and Sediment Control	LF	0	\$ 5	\$ -
Energy Management Structures	EACH	0	\$ 5,000	\$ -
Slope Stabilization	SY	0	\$ 50	\$ -
Plants	EACH	0	\$ 0.5	\$ -
Restoration	SY	0	\$ 5	\$ -
Pavement	SY	0	\$ 500	\$ -
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	2%	1	\$ -	\$ -
SUBTOTAL COST OPINION =				\$ -
CONTINGENCY = 15%				\$ -
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ -</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 12,400</b>
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**Fishpot Creek Watershed Project**  
**Valley Park Tributary (SSMIP Branch A)**  
**319VP1 – Crescent Road Two Stage Culvert**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	200	\$ 2	\$ 400
Surveying (Boundary and Topo)	Lump	1	\$ 5,000	\$ 5,000
Surveying (As-Builts)	Lump	1	\$ 1,000	\$ 1,000
SUBTOTAL COST OPINION =				\$ 6,400
CONTINGENCY = 15%				\$ 1,000
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 7,400</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Engineering Data Collection, Reduction, Analysis and Design	\$ 17,600	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 19,000	
Geotechnical	\$ 10,000	
Construction Support	\$ 3,600	
SUBTOTAL COST OPINION =		\$ 50,200
CONTINGENCY = 15%		\$ 7,500
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 57,700</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	185	\$ 25	\$ 4,600
Embankment in Place	CY	185	\$ 10	\$ 1,900
Clearing Grubbing and Debris Removal	ACRE	0.0	\$ 20,000	\$ 200
Urban Forestry and Tree Protection	ACRE	0.00	\$ 30,000	\$ -
Erosion and Sediment Control	LF	220	\$ 5	\$ 1,100
Energy Management Structures	EACH	2	\$ 5,000	\$ 10,000
Slope Stabilization	SY	75	\$ 50	\$ 3,700
Plants	EACH	535	\$ 0.5	\$ 300
Restoration	SY	222	\$ 5	\$ 1,100
Crescent Road Pavement	SY	200	\$ 30	\$ 6,000
Storm Manhole	EACH	1	\$ 10,000	\$ 10,000
Class III Reinforced Concrete Pipe	LF	40	\$ 150	\$ 6,000
Box Culverts	LF	200	\$ 500	\$ 100,000
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ 20,000	\$ 20,000
Mobilization and Bond	2%	1	\$ 3,300	\$ 3,300
SUBTOTAL COST OPINION =				\$ 168,200
CONTINGENCY = 15%				\$ 25,200
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 193,400</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 258,500</b>
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**Fishpot Creek Watershed Project**  
**Bromfield Tributary (SSMIP Branch C)**  
**319VP2 – Elevate and Grade Stabilize Crescent Valley Court Reach**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	500	\$ 2	\$ 1,000
Surveying (Boundary and Topo)	Lump	1	\$ 10,000	\$ 10,000
Surveying (As-Builts)	Lump	1	\$ 2,000	\$ 2,000
SUBTOTAL COST OPINION =				\$ 13,000
CONTINGENCY = 15%				\$ 2,000
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 15,000</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Engineering Data Collection, Reduction, Analysis and Design	\$ 16,700	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 23,100	
Geotechnical	\$ 3,500	
Construction Support	\$ 7,200	
SUBTOTAL COST OPINION =		\$ 50,500
CONTINGENCY = 15%		\$ 7,600
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 58,100</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	1,852	\$ 25	\$ 46,300
Embankment in Place	CY	1,852	\$ 10	\$ 18,500
Clearing Grubbing and Debris Removal	ACRE	0.6	\$ 20,000	\$ 11,500
Urban Forestry and Tree Protection	ACRE	0.23	\$ 30,000	\$ 6,900
Erosion and Sediment Control	LF	2,200	\$ 5	\$ 11,000
Energy Management Structures	EACH	10	\$ 5,000	\$ 50,000
Slope Stabilization	SY	497	\$ 50	\$ 24,800
Plants	EACH	3,236	\$ 0.5	\$ 1,600
Restoration	SY	444	\$ 5	\$ 2,200
Pavement	SY	27	\$ 100	\$ 2,700
Storm Manhole	EACH	2	\$ 10,000	\$ 20,000
Class III Reinforced Concrete Pipe	LF	60	\$ 150	\$ 9,000
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	5%	1	\$ 10,200	\$ 10,200
SUBTOTAL COST OPINION =				\$ 214,700
CONTINGENCY = 15%				\$ 32,200
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 246,900</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 320,000</b>
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**Fishpot Creek Watershed Project  
Bromfield Tributary (SSMIP Branch C)  
319VP3 – Grade Control Sewer Crossing**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	600	\$ 2	\$ 1,200
Surveying (Boundary and Topo)	Lump	1	\$ 6,000	\$ 6,000
Surveying (As-Builts)	Lump	1	\$ 1,200	\$ 1,200
SUBTOTAL COST OPINION =				\$ 8,400
CONTINGENCY = 15%				\$ 1,300
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 9,700</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Engineering Data Collection, Reduction, Analysis and Design	\$ 8,900	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 15,600	
Geotechnical	\$ 1,500	
Construction Support	\$ 3,600	
SUBTOTAL COST OPINION =		\$ 29,600
CONTINGENCY = 15%		\$ 4,400
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 34,000</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	74	\$ 25	\$ 1,900
Embankment in Place	CY	74	\$ 10	\$ 700
Clearing Grubbing and Debris Removal	ACRE	0.0	\$ 20,000	\$ 900
Urban Forestry and Tree Protection	ACRE	0.05	\$ 30,000	\$ 1,400
Erosion and Sediment Control	LF	210	\$ 5	\$ 1,100
Energy Management Structures	EACH	1	\$ 5,000	\$ 5,000
Slope Stabilization	SY	75	\$ 50	\$ 3,700
Plants	EACH	435	\$ 0.5	\$ 200
Restoration	SY	667	\$ 5	\$ 3,300
Pavement	SY	27	\$ 100	\$ 2,700
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ 2,100	\$ 2,100
SUBTOTAL COST OPINION =				\$ 23,000
CONTINGENCY = 15%				\$ 3,500
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 26,500</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 70,200</b>
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**Fishpot Creek Watershed Project  
Bromfield Tributary (SSMIP Branch C)  
319VP4 – Monitoring of Valley Park Tributary**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	0	\$ -	\$ -
Surveying (Boundary and Topo)	Lump	1	\$ -	\$ -
Surveying (As-Builts)	Lump	1	\$ -	\$ -
SUBTOTAL COST OPINION =				\$ -
CONTINGENCY = 15%				\$ -
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ -</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total
Engineering Data Collection, Reduction, Analysis and Design	\$ 4,600
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 500
Geotechnical	\$ -
Construction Support	\$ -
SUBTOTAL COST OPINION =	
CONTINGENCY = 15%	
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>	
	<b>\$ 5,900</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	0	\$ 25	\$ -
Embankment in Place	CY	0	\$ 10	\$ -
Clearing Grubbing and Debris Removal	ACRE	0.0	\$ 20,000	\$ -
Urban Forestry and Tree Protection	ACRE	0.00	\$ 30,000	\$ -
Erosion and Sediment Control	LF	0	\$ 5	\$ -
Energy Management Structures	EACH	0	\$ 5,000	\$ -
Slope Stabilization	SY	0	\$ 50	\$ -
Plants	EACH	0	\$ 0.5	\$ -
Restoration	SY	0	\$ 5	\$ -
Pavement	SY	0	\$ 500	\$ -
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	2%	1	\$ -	\$ -
SUBTOTAL COST OPINION =				\$ -
CONTINGENCY = 15%				\$ -
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ -</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 5,900</b>
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**Fishpot Creek Watershed Project**  
**Holly Green Tributary (SSMIP Branch B and B1)**  
**319HG1 – Scour Pool & Drop Structure Downstream of Holly Garden Court**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	100	\$ 2	\$ 200
Surveying (Boundary and Topo)	Lump	1	\$ 4,000	\$ 4,000
Surveying (As-Builts)	Lump	1	\$ 800	\$ 800
SUBTOTAL COST OPINION =				\$ 5,000
CONTINGENCY = 15%				\$ 800
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 5,800</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Engineering Data Collection, Reduction, Analysis and Design	\$ 10,500	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 18,500	
Geotechnical	\$ 1,500	
Construction Support	\$ 2,400	
SUBTOTAL COST OPINION =		\$ 32,900
CONTINGENCY = 15%		\$ 4,900
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 37,800</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	37	\$ 25	\$ 900
Embankment in Place	CY	37	\$ 10	\$ 400
Clearing Grubbing and Debris Removal	ACRE	0.0	\$ 20,000	\$ 500
Urban Forestry and Tree Protection	ACRE	0.02	\$ 30,000	\$ 700
Erosion and Sediment Control	LF	220	\$ 5	\$ 1,100
Energy Management Structures	EACH	3	\$ 7,000	\$ 21,000
Slope Stabilization	SY	37	\$ 100	\$ 3,700
Plants	EACH	268	\$ 0.5	\$ 100
Restoration	SY	111	\$ 5	\$ 600
Pavement	SY	27	\$ 100	\$ 2,700
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ 3,200	\$ 3,200
SUBTOTAL COST OPINION =				\$ 34,900
CONTINGENCY = 15%				\$ 5,200
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 40,100</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 83,700</b>
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**Fishpot Creek Watershed Project**  
**Holly Green Tributary (SSMIP Branch B and B1)**  
**319HG2 – Scour Pool Downstream of Brightfield Drive**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	100	\$ 2	\$ 200
Surveying (Boundary and Topo)	Lump	1	\$ 4,000	\$ 4,000
Surveying (As-Builts)	Lump	1	\$ 800	\$ 800
SUBTOTAL COST OPINION =				\$ 5,000
CONTINGENCY = 15%				\$ 800
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 5,800</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Engineering Data Collection, Reduction, Analysis and Design	\$ 10,900	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 18,500	
Geotechnical	\$ 1,500	
Construction Support	\$ 2,400	
SUBTOTAL COST OPINION =		\$ 33,300
CONTINGENCY = 15%		\$ 5,000
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 38,300</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	111	\$ 25	\$ 2,800
Embankment in Place	CY	111	\$ 10	\$ 1,100
Clearing Grubbing and Debris Removal	ACRE	0.0	\$ 20,000	\$ 500
Urban Forestry and Tree Protection	ACRE	0.02	\$ 30,000	\$ 700
Erosion and Sediment Control	LF	220	\$ 5	\$ 1,100
Energy Management Structures	EACH	3	\$ 5,000	\$ 15,000
Slope Stabilization	SY	75	\$ 50	\$ 3,700
Plants	EACH	435	\$ 0.5	\$ 200
Restoration	SY	222	\$ 5	\$ 1,100
Pavement	SY	67	\$ 100	\$ 6,700
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ 3,300	\$ 3,300
SUBTOTAL COST OPINION =				\$ 36,200
CONTINGENCY = 15%				\$ 5,400
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 41,600</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 85,700</b>
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**Fishpot Creek Watershed Project**  
**Holly Green Tributary (SSMIP Branch B and B1)**  
**319HG3 – Urban Forestry and Rock Weirs Along Hollyberry Drive**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	1000	\$ 2	\$ 2,000
Surveying (Boundary and Topo)	Lump	1	\$ 15,000	\$ 15,000
Surveying (As-Builts)	Lump	1	\$ 3,000	\$ 3,000
SUBTOTAL COST OPINION =				\$ 20,000
CONTINGENCY = 15%				\$ 3,000
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 23,000</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Engineering Data Collection, Reduction, Analysis and Design	\$ 13,900	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 24,000	
Geotechnical	\$ 3,500	
Construction Support	\$ 13,100	
SUBTOTAL COST OPINION =		\$ 54,500
CONTINGENCY = 15%		\$ 8,200
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 62,700</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	444	\$ 25	\$ 11,100
Embankment in Place	CY	444	\$ 10	\$ 4,400
Clearing Grubbing and Debris Removal	ACRE	0.1	\$ 20,000	\$ 2,200
Urban Forestry and Tree Protection	ACRE	0.46	\$ 30,000	\$ 13,800
Erosion and Sediment Control	LF	840	\$ 5	\$ 4,200
Energy Management Structures	EACH	10	\$ 5,000	\$ 50,000
Slope Stabilization	SY	0	\$ 50	\$ -
Plants	EACH	2,000	\$ 0.5	\$ 1,000
Restoration	SY	89	\$ 5	\$ 400
Pavement	SY	533	\$ 100	\$ 53,300
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ 14,000	\$ 14,000
SUBTOTAL COST OPINION =				\$ 154,400
CONTINGENCY = 15%				\$ 23,200
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 177,600</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 263,300</b>
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**Fishpot Creek Watershed Project**  
**Holly Green Tributary (SSMIP Branch B and B1)**  
**319HG4 – Grade Control Exposed Sanitary Sewer at Hollyberry Drive**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	600	\$ 2	\$ 1,200
Surveying (Boundary and Topo)	Lump	1	\$ 6,000	\$ 6,000
Surveying (As-Builts)	Lump	1	\$ 1,200	\$ 1,200
SUBTOTAL COST OPINION =				\$ 8,400
CONTINGENCY = 15%				\$ 1,300
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 9,700</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Engineering Data Collection, Reduction, Analysis and Design	\$ 8,900	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 15,600	
Geotechnical	\$ 1,500	
Construction Support	\$ 3,600	
SUBTOTAL COST OPINION =		\$ 29,600
CONTINGENCY = 15%		\$ 4,400
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 34,000</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	74	\$ 25	\$ 1,900
Embankment in Place	CY	74	\$ 10	\$ 700
Clearing Grubbing and Debris Removal	ACRE	0.0	\$ 20,000	\$ 900
Urban Forestry and Tree Protection	ACRE	0.05	\$ 30,000	\$ 1,400
Erosion and Sediment Control	LF	210	\$ 5	\$ 1,100
Energy Management Structures	EACH	1	\$ 5,000	\$ 5,000
Slope Stabilization	SY	75	\$ 50	\$ 3,700
Plants	EACH	435	\$ 0.5	\$ 200
Restoration	SY	667	\$ 5	\$ 3,300
Pavement	SY	27	\$ 100	\$ 2,700
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ 2,100	\$ 2,100
SUBTOTAL COST OPINION =				\$ 23,000
CONTINGENCY = 15%				\$ 3,500
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 26,500</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 70,200</b>
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**Fishpot Creek Watershed Project**  
**Holly Green Tributary (SSMIP Branch B and B1)**  
**319HG5 – Big Bend Road Culvert**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	300	\$ 2	\$ 600
Surveying (Boundary and Topo)	Lump	1	\$ 8,000	\$ 8,000
Surveying (As-Builts)	Lump	1	\$ 1,600	\$ 1,600
SUBTOTAL COST OPINION =				\$ 10,200
CONTINGENCY = 15%				\$ 1,500
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 11,700</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Engineering Data Collection, Reduction, Analysis and Design	\$ 16,500	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 21,300	
Geotechnical	\$ 10,000	
Construction Support	\$ 4,800	
SUBTOTAL COST OPINION =		\$ 52,600
CONTINGENCY = 15%		\$ 7,900
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 60,500</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	370	\$ 25	\$ 9,300
Embankment in Place	CY	370	\$ 10	\$ 3,700
Clearing Grubbing and Debris Removal	ACRE	0.0	\$ 20,000	\$ -
Urban Forestry and Tree Protection	ACRE	0.02	\$ 30,000	\$ 700
Erosion and Sediment Control	LF	600	\$ 5	\$ 3,000
Energy Management Structures	EACH	3	\$ 5,000	\$ 15,000
Slope Stabilization	SY	149	\$ 50	\$ 7,500
Plants	EACH	771	\$ 0.5	\$ 400
Restoration	SY	222	\$ 5	\$ 1,100
Pavement	SY	27	\$ 100	\$ 2,700
Storm Manhole	EACH	3	\$ 10,000	\$ 30,000
Class III Reinforced Concrete Pipe	LF	60	\$ 150	\$ 9,000
Box Culverts	LF	150	\$ 500	\$ 75,000
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	7%	1	\$ 11,000	\$ 11,000
SUBTOTAL COST OPINION =				\$ 168,400
CONTINGENCY = 15%				\$ 25,300
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 193,700</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 265,900</b>
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**Fishpot Creek Watershed Project**  
**Holly Green Tributary (SSMIP Branch B and B1)**  
**319HG6 – Erosion Control Along Cascade Terrace Drive**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	1000	\$ 2	\$ 2,000
Surveying (Boundary and Topo)	Lump	1	\$ 15,000	\$ 15,000
Surveying (As-Builts)	Lump	1	\$ 3,000	\$ 3,000
SUBTOTAL COST OPINION =				\$ 20,000
CONTINGENCY = 15%				\$ 3,000
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 23,000</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Engineering Data Collection, Reduction, Analysis and Design	\$ 17,700	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 23,900	
Geotechnical	\$ 3,500	
Construction Support	\$ 13,100	
SUBTOTAL COST OPINION =		\$ 58,200
CONTINGENCY = 15%		\$ 8,700
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 66,900</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	2,963	\$ 25	\$ 74,100
Embankment in Place	CY	2,963	\$ 10	\$ 29,600
Clearing Grubbing and Debris Removal	ACRE	0.4	\$ 20,000	\$ 7,300
Urban Forestry and Tree Protection	ACRE	0.46	\$ 30,000	\$ 13,800
Erosion and Sediment Control	LF	2,200	\$ 5	\$ 11,000
Energy Management Structures	EACH	16	\$ 5,000	\$ 80,000
Slope Stabilization	SY	1,491	\$ 50	\$ 74,500
Plants	EACH	8,708	\$ 0.5	\$ 4,400
Restoration	SY	667	\$ 5	\$ 3,300
Pavement	SY	267	\$ 100	\$ 26,700
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	4%	1	\$ 13,000	\$ 13,000
SUBTOTAL COST OPINION =				\$ 337,700
CONTINGENCY = 15%				\$ 50,700
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 388,400</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 478,300</b>
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**Fishpot Creek Watershed Project**  
**Holly Green Tributary (SSMIP Branch B and B1)**  
**319HG7 – Erosion Control Downstream of Arbor Crest Drive**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	1300	\$ 2	\$ 2,600
Surveying (Boundary and Topo)	Lump	1	\$ 15,000	\$ 15,000
Surveying (As-Builts)	Lump	1	\$ 3,000	\$ 3,000
SUBTOTAL COST OPINION =				\$ 20,600
CONTINGENCY = 15%				\$ 3,100
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 23,700</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total
Engineering Data Collection, Reduction, Analysis and Design	\$ 18,300
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 24,600
Geotechnical	\$ 3,500
Construction Support	\$ 16,600
SUBTOTAL COST OPINION =	
CONTINGENCY = 15%	
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>	
<b>\$ 72,500</b>	

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	3,704	\$ 25	\$ 92,600
Embankment in Place	CY	3,704	\$ 10	\$ 37,000
Clearing Grubbing and Debris Removal	ACRE	0.5	\$ 20,000	\$ 9,200
Urban Forestry and Tree Protection	ACRE	0.55	\$ 30,000	\$ 16,500
Erosion and Sediment Control	LF	2,200	\$ 5	\$ 11,000
Energy Management Structures	EACH	22	\$ 5,000	\$ 110,000
Slope Stabilization	SY	1,789	\$ 50	\$ 89,400
Plants	EACH	10,450	\$ 0.5	\$ 5,200
Restoration	SY	1,111	\$ 5	\$ 5,600
Pavement	SY	67	\$ 100	\$ 6,700
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	4%	1	\$ 15,300	\$ 15,300
SUBTOTAL COST OPINION =				\$ 398,500
CONTINGENCY = 15%				\$ 59,800
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 458,300</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 554,500</b>
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**Fishpot Creek Watershed Project**  
**Holly Green Tributary (SSMIP Branch B and B1)**  
**319HG8 – Channel Migration Monitoring Near Elm Crossing Court**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	0	\$ -	\$ -
Surveying (Boundary and Topo)	Lump	0	\$ -	\$ -
Surveying (As-Builts)	Lump	0	\$ -	\$ -
SUBTOTAL COST OPINION =				\$ -
CONTINGENCY = 15%				\$ -
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ -</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total
Engineering Data Collection, Reduction, Analysis and Design	\$ 4,300
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 500
Geotechnical	\$ -
Construction Support	\$ -
SUBTOTAL COST OPINION =	
CONTINGENCY = 15%	
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>	
	<b>\$ 5,500</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	0	\$ 25	\$ -
Embankment in Place	CY	0	\$ 10	\$ -
Clearing Grubbing and Debris Removal	ACRE	0.0	\$ 20,000	\$ -
Urban Forestry and Tree Protection	ACRE	0.00	\$ 30,000	\$ -
Erosion and Sediment Control	LF	0	\$ 5	\$ -
Energy Management Structures	EACH	0	\$ 5,000	\$ -
Slope Stabilization	SY	0	\$ 50	\$ -
Plants	EACH	0	\$ 0.5	\$ -
Restoration	SY	0	\$ 5	\$ -
Pavement	SY	0	\$ 100	\$ -
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	2%	1	\$ -	\$ -
SUBTOTAL COST OPINION =				\$ -
CONTINGENCY = 15%				\$ -
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ -</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 5,500</b>
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**Fishpot Creek Watershed Project**  
**New Ballwin Tributary**  
**319NB01 - Guide Vanes at Turfwood Drive**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	500	\$ 2	\$ 1,000
Surveying (Boundary and Topo)	Lump	1	\$ 5,000	\$ 5,000
Surveying (As-Builts)	Lump	1	\$ 1,000	\$ 1,000
SUBTOTAL COST OPINION =				\$ 7,000
CONTINGENCY = 15%				\$ 1,100
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 8,100</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Engineering Data Collection, Reduction, Analysis and Design	\$ 14,800	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 24,200	
Geotechnical	\$ 3,500	
Construction Support	\$ 7,200	
SUBTOTAL COST OPINION =		\$ 49,700
CONTINGENCY = 15%		\$ 7,500
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 57,200</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	556	\$ 25	\$ 13,900
Embankment in Place	CY	556	\$ 10	\$ 5,600
Clearing Grubbing and Debris Removal	ACRE	0.2	\$ 20,000	\$ 4,600
Urban Forestry and Tree Protection	ACRE	0.23	\$ 30,000	\$ 6,900
Erosion and Sediment Control	LF	1,500	\$ 5	\$ 7,500
Energy Management Structures	EACH	10	\$ 5,000	\$ 50,000
Slope Stabilization	SY	373	\$ 50	\$ 18,600
Plants	EACH	1,727	\$ 0.5	\$ 900
Restoration	SY	556	\$ 5	\$ 2,800
Pavement	SY	111	\$ 100	\$ 11,100
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ 12,200	\$ 12,200
SUBTOTAL COST OPINION =				\$ 134,100
CONTINGENCY = 15%				\$ 20,100
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 154,200</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 219,500</b>
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**Fishpot Creek Watershed Project**  
**New Ballwin Tributary**  
**319NB02 – Erosion Control and Raise Channel at Great Hill Drive**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	1000	\$ 2	\$ 2,000
Surveying (Boundary and Topo)	Lump	1	\$ 20,000	\$ 20,000
Surveying (As-Builts)	Lump	1	\$ 4,000	\$ 4,000
SUBTOTAL COST OPINION =				\$ 26,000
CONTINGENCY = 15%				\$ 3,900
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 29,900</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Engineering Data Collection, Reduction, Analysis and Design	\$ 40,300	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 32,200	
Geotechnical	\$ 7,500	
Construction Support	\$ 13,100	
SUBTOTAL COST OPINION =		\$ 93,100
CONTINGENCY = 15%		\$ 14,000
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 107,100</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	7,407	\$ 25	\$ 185,200
Embankment in Place	CY	7,407	\$ 10	\$ 74,100
Clearing Grubbing and Debris Removal	ACRE	2.3	\$ 20,000	\$ 45,900
Urban Forestry and Tree Protection	ACRE	0.46	\$ 30,000	\$ 13,800
Erosion and Sediment Control	LF	2,500	\$ 5	\$ 12,500
Energy Management Structures	EACH	20	\$ 5,000	\$ 100,000
Slope Stabilization	SY	2,485	\$ 50	\$ 124,200
Plants	EACH	14,180	\$ 0.5	\$ 7,100
Restoration	SY	667	\$ 5	\$ 3,300
Pavement	SY	250	\$ 100	\$ 25,000
Storm Manhole	EACH	2	\$ 10,000	\$ 20,000
Class III Reinforced Concrete Pipe	LF	100	\$ 150	\$ 15,000
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	4%	1	\$ 25,000	\$ 25,000
SUBTOTAL COST OPINION =				\$ 651,100
CONTINGENCY = 15%				\$ 97,700
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 748,800</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 885,800</b>
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**Fishpot Creek Watershed Project**  
**New Ballwin Tributary**  
**319NB03 – Grade Control Towerwood Confluence**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	600	\$ 2	\$ 1,200
Surveying (Boundary and Topo)	Lump	1	\$ 6,000	\$ 6,000
Surveying (As-Builts)	Lump	1	\$ 1,200	\$ 1,200
SUBTOTAL COST OPINION =				\$ 8,400
CONTINGENCY = 15%				\$ 1,300
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 9,700</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Engineering Data Collection, Reduction, Analysis and Design	\$ 8,900	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 16,200	
Geotechnical	\$ 2,500	
Construction Support	\$ 3,600	
SUBTOTAL COST OPINION =		\$ 31,200
CONTINGENCY = 15%		\$ 4,700
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 35,900</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	93	\$ 25	\$ 2,300
Embankment in Place	CY	93	\$ 10	\$ 900
Clearing Grubbing and Debris Removal	ACRE	0.0	\$ 20,000	\$ 900
Urban Forestry and Tree Protection	ACRE	0.05	\$ 30,000	\$ 1,400
Erosion and Sediment Control	LF	210	\$ 5	\$ 1,100
Energy Management Structures	EACH	2	\$ 5,000	\$ 10,000
Slope Stabilization	SY	75	\$ 50	\$ 3,700
Plants	EACH	435	\$ 0.5	\$ 200
Restoration	SY	444	\$ 5	\$ 2,200
Pavement	SY	222	\$ 100	\$ 22,200
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ 4,500	\$ 4,500
SUBTOTAL COST OPINION =				\$ 49,400
CONTINGENCY = 15%				\$ 7,400
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 56,800</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 102,400</b>
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**Fishpot Creek Watershed Project**  
**New Ballwin Tributary**  
**319NB04 – Grade Control Exposed Sewer Line Upstream of Rustic Valley Drive Cu**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	600	\$ 2	\$ 1,200
Surveying (Boundary and Topo)	Lump	1	\$ 6,000	\$ 6,000
Surveying (As-Builts)	Lump	1	\$ 1,200	\$ 1,200
SUBTOTAL COST OPINION =				\$ 8,400
CONTINGENCY = 15%				\$ 1,300
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 9,700</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Engineering Data Collection, Reduction, Analysis and Design	\$ 8,900	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 15,600	
Geotechnical	\$ 2,500	
Construction Support	\$ 3,600	
SUBTOTAL COST OPINION =		\$ 30,600
CONTINGENCY = 15%		\$ 4,600
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 35,200</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	93	\$ 25	\$ 2,300
Embankment in Place	CY	93	\$ 10	\$ 900
Clearing Grubbing and Debris Removal	ACRE	0.0	\$ 20,000	\$ 900
Urban Forestry and Tree Protection	ACRE	0.05	\$ 30,000	\$ 1,400
Erosion and Sediment Control	LF	210	\$ 5	\$ 1,100
Energy Management Structures	EACH	2	\$ 5,000	\$ 10,000
Slope Stabilization	SY	224	\$ 50	\$ 11,200
Plants	EACH	1,106	\$ 0.5	\$ 600
Restoration	SY	444	\$ 5	\$ 2,200
Pavement	SY	133	\$ 100	\$ 13,300
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ 4,400	\$ 4,400
SUBTOTAL COST OPINION =				\$ 48,300
CONTINGENCY = 15%				\$ 7,200
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 55,500</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 100,400</b>
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**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	600	\$ 2	\$ 1,200
Surveying (Boundary and Topo)	Lump	1	\$ 6,000	\$ 6,000
Surveying (As-Builts)	Lump	1	\$ 1,200	\$ 1,200
SUBTOTAL COST OPINION =				\$ 8,400
CONTINGENCY = 15%				\$ 1,300
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 9,700</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Engineering Data Collection, Reduction, Analysis and Design	\$ 8,900	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 15,600	
Geotechnical	\$ 2,500	
Construction Support	\$ 3,600	
SUBTOTAL COST OPINION =		\$ 30,600
CONTINGENCY = 15%		\$ 4,600
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 35,200</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	111	\$ 25	\$ 2,800
Embankment in Place	CY	111	\$ 10	\$ 1,100
Clearing Grubbing and Debris Removal	ACRE	0.0	\$ 20,000	\$ 900
Urban Forestry and Tree Protection	ACRE	0.05	\$ 30,000	\$ 1,400
Erosion and Sediment Control	LF	210	\$ 5	\$ 1,100
Energy Management Structures	EACH	2	\$ 5,000	\$ 10,000
Slope Stabilization	SY	149	\$ 50	\$ 7,500
Plants	EACH	771	\$ 0.5	\$ 400
Restoration	SY	333	\$ 5	\$ 1,700
Pavement	SY	133	\$ 100	\$ 13,300
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ 4,000	\$ 4,000
SUBTOTAL COST OPINION =				\$ 44,200
CONTINGENCY = 15%				\$ 6,600
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 50,800</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 95,700</b>
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**Fishpot Creek Watershed Project**  
**New Ballwin Tributary**  
**319NB06 – Monitoring Along Vernal Hill Court**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	0	\$ -	\$ -
Surveying (Boundary and Topo)	Lump	0	\$ -	\$ -
Surveying (As-Builts)	Lump	0	\$ -	\$ -
SUBTOTAL COST OPINION =				\$ -
CONTINGENCY = 15%				\$ -
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ -</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total
Engineering Data Collection, Reduction, Analysis and Design	\$ 4,300
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 500
Geotechnical	\$ -
Construction Support	\$ -
SUBTOTAL COST OPINION =	
CONTINGENCY = 15%	
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>	
	<b>\$ 5,500</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	0	\$ 25	\$ -
Embankment in Place	CY	0	\$ 10	\$ -
Clearing Grubbing and Debris Removal	ACRE	0.0	\$ 20,000	\$ -
Urban Forestry and Tree Protection	ACRE	0.00	\$ 30,000	\$ -
Erosion and Sediment Control	LF	0	\$ 5	\$ -
Energy Management Structures	EACH	0	\$ 5,000	\$ -
Slope Stabilization	SY	0	\$ 50	\$ -
Plants	EACH	0	\$ 0.5	\$ -
Restoration	SY	0	\$ 5	\$ -
Pavement	SY	0	\$ 100	\$ -
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	2%	1	\$ -	\$ -
SUBTOTAL COST OPINION =				\$ -
CONTINGENCY = 15%				\$ -
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ -</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 5,500</b>
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**Fishpot Creek Watershed Project**  
**New Ballwin Tributary**  
**319NB07 – Grade Control Exposed Sewer and Rock Toe High Bank at**  
**Briarhill Court**  
**Engineers opinion of survey costs**



Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	200	\$ 2	\$ 400
Surveying (Boundary and Topo)	Lump	1	\$ 4,000	\$ 4,000
Surveying (As-Builts)	Lump	1	\$ 800	\$ 800
SUBTOTAL COST OPINION =				\$ 5,200
CONTINGENCY = 15%				\$ 800
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 6,000</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total
Engineering Data Collection, Reduction, Analysis and Design	\$ 11,400
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 15,700
Geotechnical	\$ 2,500
Construction Support	\$ 3,600
SUBTOTAL COST OPINION =	
CONTINGENCY = 15%	
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>	
<b>\$ 38,200</b>	

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	370	\$ 25	\$ 9,300
Embankment in Place	CY	370	\$ 10	\$ 3,700
Clearing Grubbing and Debris Removal	ACRE	0.0	\$ 20,000	\$ 900
Urban Forestry and Tree Protection	ACRE	0.05	\$ 30,000	\$ 1,400
Erosion and Sediment Control	LF	410	\$ 5	\$ 2,100
Energy Management Structures	EACH	3	\$ 5,000	\$ 15,000
Slope Stabilization	SY	149	\$ 50	\$ 7,500
Plants	EACH	771	\$ 0.5	\$ 400
Restoration	SY	333	\$ 5	\$ 1,700
Pavement	SY	133	\$ 100	\$ 13,300
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ 5,500	\$ 5,500
SUBTOTAL COST OPINION =				\$ 60,800
CONTINGENCY = 15%				\$ 9,100
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 69,900</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 114,100</b>
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**Fishpot Creek Watershed Project**  
**New Ballwin Tributary**  
**319NB08 – Confluence Grade Control at Ferris Park and New Ballwin**  
**Tributaries**  
**Engineers opinion of survey costs**



Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	200	\$ 2	\$ 400
Surveying (Boundary and Topo)	Lump	1	\$ 5,000	\$ 5,000
Surveying (As-Builts)	Lump	1	\$ 1,000	\$ 1,000
SUBTOTAL COST OPINION =				\$ 6,400
CONTINGENCY = 15%				\$ 1,000
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 7,400</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total
Engineering Data Collection, Reduction, Analysis and Design	\$ 9,900
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 16,300
Geotechnical	\$ 2,500
Construction Support	\$ 3,600
SUBTOTAL COST OPINION =	
CONTINGENCY = 15%	
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>	
	<b>\$ 37,100</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	93	\$ 25	\$ 2,300
Embankment in Place	CY	93	\$ 10	\$ 900
Clearing Grubbing and Debris Removal	ACRE	0.0	\$ 20,000	\$ 900
Urban Forestry and Tree Protection	ACRE	0.05	\$ 30,000	\$ 1,400
Erosion and Sediment Control	LF	210	\$ 5	\$ 1,100
Energy Management Structures	EACH	2	\$ 5,000	\$ 10,000
Slope Stabilization	SY	199	\$ 50	\$ 9,900
Plants	EACH	994	\$ 0.5	\$ 500
Restoration	SY	444	\$ 5	\$ 2,200
Pavement	SY	133	\$ 100	\$ 13,300
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ 4,300	\$ 4,300
SUBTOTAL COST OPINION =				\$ 46,800
CONTINGENCY = 15%				\$ 7,000
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 53,800</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 98,300</b>
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**Fishpot Creek Watershed Project  
New Ballwin Tributary  
319NB09 – Bank Stabilization at Reis Road**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	1000	\$ 2	\$ 2,000
Surveying (Boundary and Topo)	Lump	1	\$ 10,000	\$ 10,000
Surveying (As-Builts)	Lump	1	\$ 2,000	\$ 2,000
SUBTOTAL COST OPINION =				\$ 14,000
CONTINGENCY = 15%				\$ 2,100
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 16,100</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Engineering Data Collection, Reduction, Analysis and Design	\$ 19,600	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 21,700	
Geotechnical	\$ 3,500	
Construction Support	\$ 13,100	
SUBTOTAL COST OPINION =		\$ 57,900
CONTINGENCY = 15%		\$ 8,700
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 66,600</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	351	\$ 25	\$ 8,800
Embankment in Place	CY	351	\$ 10	\$ 3,500
Clearing Grubbing and Debris Removal	ACRE	0.1	\$ 20,000	\$ 2,300
Urban Forestry and Tree Protection	ACRE	0.23	\$ 30,000	\$ 6,900
Erosion and Sediment Control	LF	1,500	\$ 5	\$ 7,500
Energy Management Structures	EACH	12	\$ 5,000	\$ 60,000
Slope Stabilization	SY	596	\$ 50	\$ 29,800
Plants	EACH	2,733	\$ 0.5	\$ 1,400
Restoration	SY	222	\$ 5	\$ 1,100
Pavement	SY	640	\$ 15	\$ 9,600
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ 13,100	\$ 13,100
SUBTOTAL COST OPINION =				\$ 144,000
CONTINGENCY = 15%				\$ 21,600
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 165,600</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 248,300</b>
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**Fishpot Creek Watershed Project**  
**New Ballwin Tributary**  
**319NB10 – Bank Stabilization and Urban Forestry Upstream of Old**  
**Ballwin Tributary Confluence**  
**Engineers opinion of survey costs**



Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	500	\$ 2	\$ 1,000
Surveying (Boundary and Topo)	Lump	1	\$ 8,000	\$ 8,000
Surveying (As-Builts)	Lump	1	\$ 1,600	\$ 1,600
SUBTOTAL COST OPINION =				\$ 10,600
CONTINGENCY = 15%				\$ 1,600
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 12,200</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total
Engineering Data Collection, Reduction, Analysis and Design	\$ 14,300
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 20,000
Geotechnical	\$ 3,500
Construction Support	\$ 7,200
SUBTOTAL COST OPINION = \$ 45,000	
CONTINGENCY = 15% \$ 6,800	
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST = \$ 51,800</b>	

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	141	\$ 25	\$ 3,500
Embankment in Place	CY	141	\$ 10	\$ 1,400
Clearing Grubbing and Debris Removal	ACRE	0.0	\$ 20,000	\$ 900
Urban Forestry and Tree Protection	ACRE	0.46	\$ 30,000	\$ 13,800
Erosion and Sediment Control	LF	1,500	\$ 5	\$ 7,500
Energy Management Structures	EACH	4	\$ 5,000	\$ 20,000
Slope Stabilization	SY	199	\$ 50	\$ 9,900
Plants	EACH	944	\$ 0.5	\$ 500
Restoration	SY	556	\$ 5	\$ 2,800
Pavement	SY	111	\$ 100	\$ 11,100
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ 7,100	\$ 7,100
SUBTOTAL COST OPINION =				\$ 78,500
CONTINGENCY = 15%				\$ 11,800
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 90,300</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 154,300</b>
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**Fishpot Creek Watershed Project**  
**Old Ballwin Tributary**  
**319OB1 – Grade Control Knick Zone along Golfwood Drive**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	500	\$ 2	\$ 1,000
Surveying (Boundary and Topo)	Lump	1	\$ 8,000	\$ 8,000
Surveying (As-Builts)	Lump	1	\$ 1,600	\$ 1,600
SUBTOTAL COST OPINION =				\$ 10,600
CONTINGENCY = 15%				\$ 1,600
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 12,200</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total
Engineering Data Collection, Reduction, Analysis and Design	\$ 16,700
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 22,400
Geotechnical	\$ 3,500
Construction Support	\$ 7,200
SUBTOTAL COST OPINION =	
CONTINGENCY = 15%	
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>	
<b>\$ 57,300</b>	

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	389	\$ 25	\$ 9,700
Embankment in Place	CY	389	\$ 10	\$ 3,900
Clearing Grubbing and Debris Removal	ACRE	0.0	\$ 20,000	\$ 900
Urban Forestry and Tree Protection	ACRE	0.23	\$ 30,000	\$ 6,900
Erosion and Sediment Control	LF	1,500	\$ 5	\$ 7,500
Energy Management Structures	EACH	7	\$ 5,000	\$ 35,000
Slope Stabilization	SY	209	\$ 50	\$ 10,400
Plants	EACH	989	\$ 0.5	\$ 500
Restoration	SY	444	\$ 5	\$ 2,200
Pavement	SY	133	\$ 100	\$ 13,300
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ 9,000	\$ 9,000
SUBTOTAL COST OPINION =				\$ 99,300
CONTINGENCY = 15%				\$ 14,900
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 114,200</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 183,700</b>
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**Fishpot Creek Watershed Project**  
**Old Ballwin Tributary**  
**319OB2 – Grade Control Incising Reach and Protect Sanitary Sewer**  
**Downstream of Talbert Court**  
**Engineers opinion of survey costs**



Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	500	\$ 2	\$ 1,000
Surveying (Boundary and Topo)	Lump	1	\$ 8,000	\$ 8,000
Surveying (As-Builts)	Lump	1	\$ 1,600	\$ 1,600
SUBTOTAL COST OPINION =				\$ 10,600
CONTINGENCY = 15%				\$ 1,600
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 12,200</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Engineering Data Collection, Reduction, Analysis and Design	\$ 15,000	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 19,400	
Geotechnical	\$ 3,500	
Construction Support	\$ 7,200	
SUBTOTAL COST OPINION =		\$ 45,100
CONTINGENCY = 15%		\$ 6,800
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 51,900</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	167	\$ 25	\$ 4,200
Embankment in Place	CY	167	\$ 10	\$ 1,700
Clearing Grubbing and Debris Removal	ACRE	0.0	\$ 20,000	\$ 900
Urban Forestry and Tree Protection	ACRE	0.23	\$ 30,000	\$ 6,900
Erosion and Sediment Control	LF	1,500	\$ 5	\$ 7,500
Energy Management Structures	EACH	3	\$ 5,000	\$ 15,000
Slope Stabilization	SY	224	\$ 50	\$ 11,200
Plants	EACH	1,056	\$ 0.5	\$ 500
Restoration	SY	444	\$ 5	\$ 2,200
Pavement	SY	67	\$ 100	\$ 6,700
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ 5,700	\$ 5,700
SUBTOTAL COST OPINION =				\$ 62,500
CONTINGENCY = 15%				\$ 9,400
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 71,900</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 136,000</b>
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**Fishpot Creek Watershed Project**  
**Ferris Park Tributary**  
**319FP1 – Grade Control Ferris Park Tributary**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	2000	\$ 2	\$ 4,000
Surveying (Boundary and Topo)	Lump	1	\$ 20,000	\$ 20,000
Surveying (As-Builts)	Lump	1	\$ 4,000	\$ 4,000
SUBTOTAL COST OPINION =				\$ 28,000
CONTINGENCY = 15%				\$ 4,200
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 32,200</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Engineering Data Collection, Reduction, Analysis and Design	\$ 20,200	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 31,500	
Geotechnical	\$ 3,500	
Construction Support	\$ 24,900	
SUBTOTAL COST OPINION =		\$ 80,100
CONTINGENCY = 15%		\$ 12,000
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 92,100</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	1,574	\$ 25	\$ 39,400
Embankment in Place	CY	1,574	\$ 10	\$ 15,700
Clearing Grubbing and Debris Removal	ACRE	0.5	\$ 20,000	\$ 9,200
Urban Forestry and Tree Protection	ACRE	0.46	\$ 30,000	\$ 13,800
Erosion and Sediment Control	LF	4,500	\$ 5	\$ 22,500
Energy Management Structures	EACH	15	\$ 5,000	\$ 75,000
Slope Stabilization	SY	745	\$ 50	\$ 37,300
Plants	EACH	3,404	\$ 0.5	\$ 1,700
Restoration	SY	889	\$ 5	\$ 4,400
Pavement	SY	267	\$ 100	\$ 26,700
Storm Manhole	EACH	2	\$ 10,000	\$ 20,000
Class III Reinforced Concrete Pipe	LF	200	\$ 150	\$ 30,000
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	5%	1	\$ 14,800	\$ 14,800
SUBTOTAL COST OPINION =				\$ 310,500
CONTINGENCY = 15%				\$ 46,600
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 357,100</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 481,400</b>
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**Fishpot Creek Watershed Project**  
**Towerwood Tributary**  
**319TW1 – Grade Control Upstream of Great Hills Drive**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	500	\$ 2	\$ 1,000
Surveying (Boundary and Topo)	Lump	1	\$ 10,000	\$ 10,000
Surveying (As-Builts)	Lump	1	\$ 2,000	\$ 2,000
SUBTOTAL COST OPINION =				\$ 13,000
CONTINGENCY = 15%				\$ 2,000
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 15,000</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total
Engineering Data Collection, Reduction, Analysis and Design	\$ 16,000
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 24,800
Geotechnical	\$ 3,500
Construction Support	\$ 7,200
SUBTOTAL COST OPINION =	
CONTINGENCY = 15%	
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>	
<b>\$ 59,200</b>	

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	6	\$ 25	\$ 100
Embankment in Place	CY	6	\$ 10	\$ 100
Clearing Grubbing and Debris Removal	ACRE	0.1	\$ 20,000	\$ 1,800
Urban Forestry and Tree Protection	ACRE	0.09	\$ 30,000	\$ 2,800
Erosion and Sediment Control	LF	1,500	\$ 5	\$ 7,500
Energy Management Structures	EACH	5	\$ 5,000	\$ 25,000
Slope Stabilization	SY	373	\$ 50	\$ 18,600
Plants	EACH	1,727	\$ 0.5	\$ 900
Restoration	SY	444	\$ 5	\$ 2,200
Pavement	SY	44	\$ 100	\$ 4,400
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ 6,300	\$ 6,300
SUBTOTAL COST OPINION =				\$ 69,700
CONTINGENCY = 15%				\$ 10,500
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 80,200</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 154,400</b>
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**Fishpot Creek Watershed Project**  
**Towerwood Tributary**  
**319TW2 – Drop Structure Downstream of Great Hills Drive**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	500	\$ 2	\$ 1,000
Surveying (Boundary and Topo)	Lump	1	\$ 6,000	\$ 6,000
Surveying (As-Builts)	Lump	1	\$ 1,200	\$ 1,200
SUBTOTAL COST OPINION =				\$ 8,200
CONTINGENCY = 15%				\$ 1,200
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 9,400</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total
Engineering Data Collection, Reduction, Analysis and Design	\$ 18,700
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 19,400
Geotechnical	\$ 3,500
Construction Support	\$ 7,200
SUBTOTAL COST OPINION =	
CONTINGENCY = 15%	
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>	
<b>\$ 56,100</b>	

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	111	\$ 25	\$ 2,800
Embankment in Place	CY	111	\$ 10	\$ 1,100
Clearing Grubbing and Debris Removal	ACRE	0.0	\$ 20,000	\$ 900
Urban Forestry and Tree Protection	ACRE	0.05	\$ 30,000	\$ 1,400
Erosion and Sediment Control	LF	1,500	\$ 5	\$ 7,500
Energy Management Structures	EACH	3	\$ 5,000	\$ 15,000
Slope Stabilization	SY	398	\$ 50	\$ 19,900
Plants	EACH	1,839	\$ 0.5	\$ 900
Restoration	SY	556	\$ 5	\$ 2,800
Pavement	SY	27	\$ 100	\$ 2,700
Storm Manhole	EACH	1	\$ 10,000	\$ 10,000
Class III Reinforced Concrete Pipe	LF	50	\$ 150	\$ 7,500
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ 10,000	\$ 10,000
Mobilization and Bond	10%	1	\$ 8,300	\$ 8,300
SUBTOTAL COST OPINION =				\$ 90,800
CONTINGENCY = 15%				\$ 13,600
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 104,400</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 169,900</b>
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**Fishpot Creek Watershed Project  
Bromfield Tributary (SSMIP Branch C)  
319BF1 – Grade Stabilization and Two Stage Channel**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	800	\$ 2	\$ 1,600
Surveying (Boundary and Topo)	Lump	1	\$ 8,000	\$ 8,000
Surveying (As-Builts)	Lump	1	\$ 1,600	\$ 1,600
SUBTOTAL COST OPINION =				\$ 11,200
CONTINGENCY = 15%				\$ 1,700
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 12,900</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Engineering Data Collection, Reduction, Analysis and Design	\$ 21,600	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 18,600	
Geotechnical	\$ 3,500	
Construction Support	\$ 10,700	
SUBTOTAL COST OPINION =		\$ 54,400
CONTINGENCY = 15%		\$ 8,200
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 62,600</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	1,778	\$ 25	\$ 44,400
Embankment in Place	CY	1,778	\$ 10	\$ 17,800
Clearing Grubbing and Debris Removal	ACRE	0.3	\$ 20,000	\$ 6,900
Urban Forestry and Tree Protection	ACRE	0.28	\$ 30,000	\$ 8,300
Erosion and Sediment Control	LF	2,600	\$ 5	\$ 13,000
Energy Management Structures	EACH	6	\$ 5,000	\$ 30,000
Slope Stabilization	SY	447	\$ 50	\$ 22,400
Plants	EACH	3,012	\$ 0.5	\$ 1,500
Restoration	SY	1,111	\$ 5	\$ 5,600
Pavement	SY	67	\$ 100	\$ 6,700
Storm Manhole	EACH	1	\$ 10,000	\$ 10,000
Class III Reinforced Concrete Pipe	LF	20	\$ 150	\$ 3,000
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	10%	1	\$ 17,000	\$ 17,000
SUBTOTAL COST OPINION =				\$ 186,600
CONTINGENCY = 15%				\$ 28,000
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 214,600</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 290,100</b>
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**Fishpot Creek Watershed Project**  
**Bromfield Tributary (SSMIP Branch C)**  
**319BF2 – Channel Interventions and Urban Forestry**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	2000	\$ 2	\$ 4,000
Surveying (Boundary and Topo)	Lump	1	\$ 25,000	\$ 25,000
Surveying (As-Builts)	Lump	1	\$ 5,000	\$ 5,000
SUBTOTAL COST OPINION =				\$ 34,000
CONTINGENCY = 15%				\$ 5,100
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ 39,100</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total	
Engineering Data Collection, Reduction, Analysis and Design	\$ 26,300	
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 24,800	
Geotechnical	\$ 3,500	
Construction Support	\$ 24,900	
SUBTOTAL COST OPINION =		\$ 79,500
CONTINGENCY = 15%		\$ 11,900
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>		<b>\$ 91,400</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	3,167	\$ 25	\$ 79,200
Embankment in Place	CY	3,167	\$ 10	\$ 31,700
Clearing Grubbing and Debris Removal	ACRE	0.9	\$ 20,000	\$ 18,400
Urban Forestry and Tree Protection	ACRE	0.92	\$ 30,000	\$ 27,500
Erosion and Sediment Control	LF	8,200	\$ 5	\$ 41,000
Energy Management Structures	EACH	11	\$ 5,000	\$ 55,000
Slope Stabilization	SY	1,491	\$ 50	\$ 74,500
Plants	EACH	9,708	\$ 0.5	\$ 4,900
Restoration	SY	1,111	\$ 5	\$ 5,600
Pavement	SY	67	\$ 100	\$ 6,700
Storm Manhole	EACH	3	\$ 10,000	\$ 30,000
Class III Reinforced Concrete Pipe	LF	60	\$ 150	\$ 9,000
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ 30,000	\$ 30,000
Mobilization and Bond	2%	1	\$ 8,300	\$ 8,300
SUBTOTAL COST OPINION =				\$ 421,800
CONTINGENCY = 15%				\$ 63,300
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ 485,100</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 615,600</b>
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**Fishpot Creek Watershed Project**  
**Larkhill Tributary**  
**319LH1 – Winchester Detention Pond**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	0	\$ -	\$ -
Surveying (Boundary and Topo)	Lump	0	\$ -	\$ -
Surveying (As-Builts)	Lump	0	\$ -	\$ -
SUBTOTAL COST OPINION =				\$ -
CONTINGENCY = 15%				\$ -
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ -</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total
Engineering Data Collection, Reduction, Analysis and Design	\$ -
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ -
Geotechnical	\$ -
Construction Support	\$ -
SUBTOTAL COST OPINION =	
CONTINGENCY = 15%	
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>	
<b>\$ -</b>	

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	0	\$ 25	\$ -
Embankment in Place	CY	0	\$ 10	\$ -
Clearing Grubbing and Debris Removal	ACRE	0.0	\$ 20,000	\$ -
Urban Forestry and Tree Protection	ACRE	0.00	\$ 30,000	\$ -
Erosion and Sediment Control	LF	0	\$ 5	\$ -
Energy Management Structures	EACH	0	\$ 5,000	\$ -
Slope Stabilization	SY	0	\$ 50	\$ -
Plants	EACH	0	\$ 0.5	\$ -
Restoration	SY	0	\$ 5	\$ -
Pavement	SY	0	\$ 100	\$ -
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	2%	1	\$ -	\$ -
SUBTOTAL COST OPINION =				\$ -
CONTINGENCY = 15%				\$ -
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ -</b>

<b>TOTAL COST OPINION FROM FIS 29 =</b>	<b>\$ 362,000</b>
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**Fishpot Creek Watershed Project**  
**Red Start Tributary**  
**319RS1 – Monitoring Red Start Tributary**



**Engineers opinion of survey costs**

Description	Unit	Quantity	Unit Cost	Sub Total
Surveying (Long Profile)	LF	0	\$ -	\$ -
Surveying (Boundary and Topo)	Lump	0	\$ -	\$ -
Surveying (As-Builts)	Lump	0	\$ -	\$ -
SUBTOTAL COST OPINION =				\$ -
CONTINGENCY = 15%				\$ -
<b>TOTAL OPINION OF SURVEYING COST =</b>				<b>\$ -</b>

**Engineers opinion of engineering and construction observation costs**

Description	Sub Total
Engineering Data Collection, Reduction, Analysis and Design	\$ 4,300
Contract Documents, Easement Plats and Scripts, Permitting, Meetings	\$ 500
Geotechnical	\$ -
Construction Support	\$ -
SUBTOTAL COST OPINION =	
CONTINGENCY = 15%	
<b>TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =</b>	
	<b>\$ 5,500</b>

**Engineers opinion of concept level construction cost**

Description	Unit	Quantity	Unit Cost	Sub Total
Excavation	CY	0	\$ 25	\$ -
Embankment in Place	CY	0	\$ 10	\$ -
Clearing Grubbing and Debris Removal	ACRE	0.0	\$ 20,000	\$ -
Urban Forestry and Tree Protection	ACRE	0.00	\$ 30,000	\$ -
Erosion and Sediment Control	LF	0	\$ 5	\$ -
Energy Management Structures	EACH	0	\$ 5,000	\$ -
Slope Stabilization	SY	0	\$ 50	\$ -
Plants	EACH	0	\$ 0.5	\$ -
Restoration	SY	0	\$ 5	\$ -
Pavement	SY	0	\$ 100	\$ -
Storm Manhole	EACH	0	\$ 10,000	\$ -
Class III Reinforced Concrete Pipe	LF	0	\$ 150	\$ -
Box Culverts	LF	0	\$ 500	\$ -
Bridge (Including Removal of Existing Bridge or Culvert)	SF	0	\$ 115	\$ -
Structures Removal	LUMP	1	\$ -	\$ -
Mobilization and Bond	2%	1	\$ -	\$ -
SUBTOTAL COST OPINION =				\$ -
CONTINGENCY = 15%				\$ -
<b>TOTAL OPINION OF CONSTRUCTION COST =</b>				<b>\$ -</b>

<b>TOTAL SURVEYING, ENGINEERING AND CONSTRUCTION COST OPINION =</b>	<b>\$ 5,500</b>
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