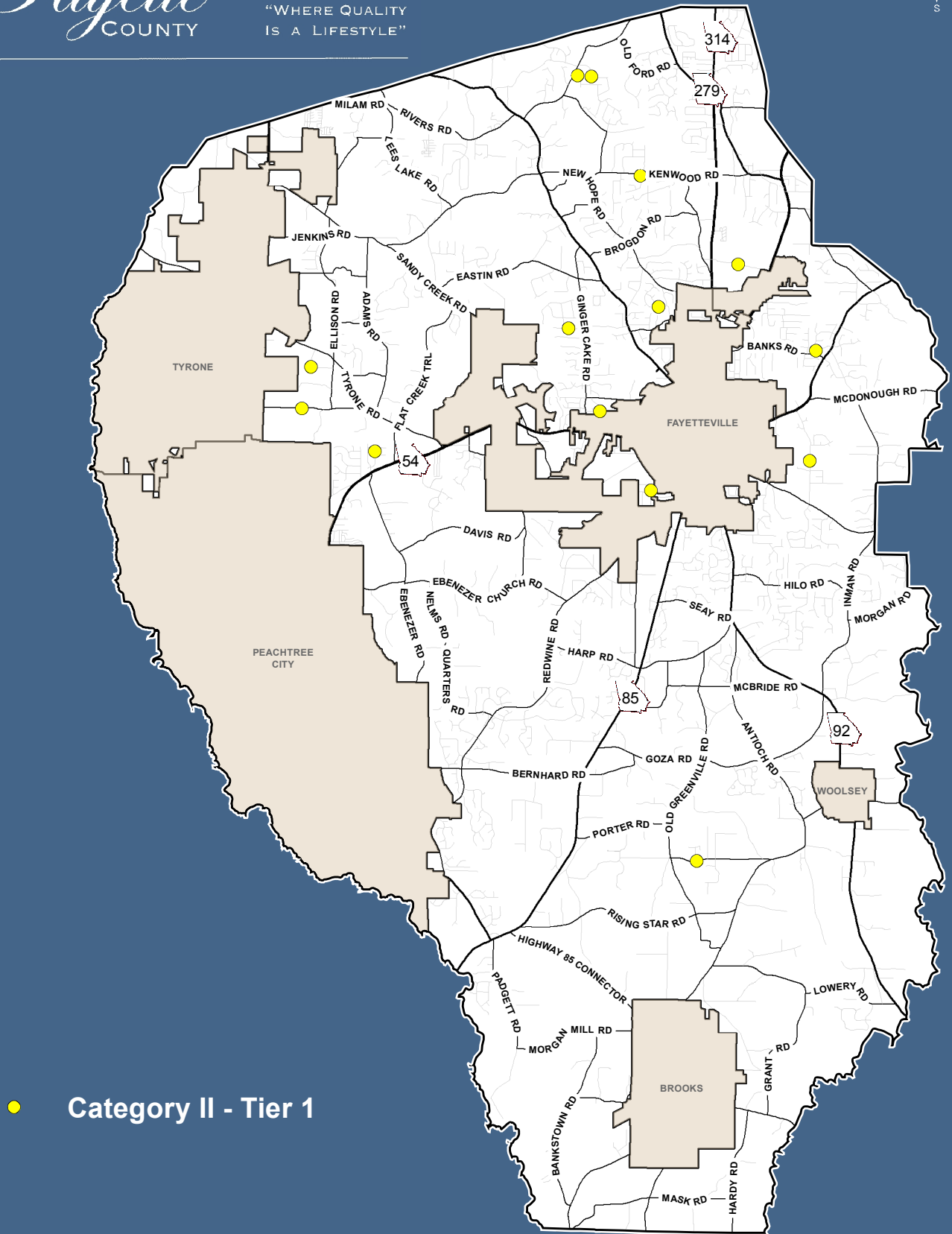




Fayette  
COUNTY

"WHERE QUALITY  
IS A LIFESTYLE"





## CATEGORY II - TIER 1

PROJECT NAME	PROJECT DESCRIPTION	ESTIMATED COST
514 Avalon Dr	48" RCP, 300'	\$169,118
215 Brandon Mill Cir - South	8'x4' RBC, 200'; system evaluation	\$437,648
266 Callaway Rd	trp 10'x4' RBC, 80'	\$533,218
364 Chappel Rd	dbl 8'x5' RBC, 70'	\$336,399
120 Deer Forest Trl	4'x3' RBC, 100'	\$145,508
315 Dogwood Trl	trp 7' x 7' RBC, 80'	\$595,879
120 Mercedes Trl	dbl 8'x4' RBC, 60'	\$224,070
130 Morning Dove Dr	dbl 10'x4' RBC, 70'	\$244,389
151 Patricia Ln	8'x4' RBC, 150'	\$295,527
199 Roberts Rd	7'x4' RBC, 85'	\$193,861
160 Scott Blvd	4'x2' RBC, 50'	\$99,114
175 Silver Leaf Dr	dbl 4'x3' RBC, 140'	\$247,827
503 Westbridge Dr	5'x3' RBC, 45'	\$89,733
517 Westbridge Dr	5'x3' RBC, 45'	\$93,082
<b>Tier 1 Subtotal</b>		<b>\$3,705,373</b>





General Information		Map	
Project ID			
Street Name	Avalon Dr		
Site Visit Date	6/11/2013		
Road Classification	Internal Local		
Project Notes			
Rural typical section			
Field Notes			
Design (Existing Site Features)			
Existing Road Laneage	2 - 12'		
Existing Shld Width (paved and grass) (feet)	4' (Grass)		
Existing Side Slopes	flat		
Existing Guardrail	None		
Depth fm Pavement to Top of Culvert (ft):	\$ 4.00		
Pipe Type and Size	30", 300' CMP		
Pipe Condition (1-5) (1 is new)	\$ 3.00		
Pavement Type/Condition		Asphalt/Good	
Environmental Features			
Wetlands	None		
Ditches	X		
Utilities (Visual Inspection)			
Electric	Aerial		
Cable	Aerial		
Phone	Aerial		
Gas	None		
Water	X		
Sewer	None		
Other			
Stage Construction Options			
Close Location to Traffic		X	
Maintain One Lane - No Temp Pavement			
Maintain One Lane - Temp Pavement			
Stage Construction Notes:			
Proposed Design			
Roadway Section	Typical		
Culvert Size & Material	48" round RCP, 300' length		
Utility Relocations	Water main		
Guardrail Replacement			
Miscellaneous Features			
Planning Cost Estimate			
Type	Notes	Total	
Design	Includes 10% Construction Cost and surveying needs	\$17,783	
Right of Way Cost	Assuming 2,000 sf outside of ROW	\$8,000	
Utility Relocation Cost	50 ft of water main	\$5,500	
Construction Cost	Applying 1/10 acre clearing and grubbing cost	\$127,834	
Environmental Permits	Assuming minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$169,118</b>	



**Photo 1:**



**Photo 2:**

Avalon Dr

**Photo Date:**

7/2/2013

**Taken By:**

David King

**Page:**

**1**

Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	4.87	\$ 600.00	\$ 3,363.20
Curb and Gutter (LF)	\$ 28.56	30.60	\$ -	\$ -
Drain Inlet (EA)		3,000.00	\$ -	\$ -
4" Sidewalk (SY)	\$ 13.56	36.90	\$ -	\$ -
Guardrail (LF)	\$ 4.88	49.09	\$ -	\$ -
End Anchorage (EA)		1,380.00	\$ -	\$ -
Subtotal				\$ 3,363.20
<b>Grading Complete (5% of Rwy Items &amp; Drng Total \$)</b>				<b>\$ 4,637.64</b>
<b>Roadway Total</b>				<b>\$ 8,000.84</b>
Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		10.38	\$ 600.00	\$ 6,228.00
30" CMP (LF)	\$ 19.62		\$ 300.00	\$ 5,886.00
48" RCP (LF)		193.20	\$ 300.00	\$ 57,960.00
Class A Conc (CY)		892.19	\$ 13.70	\$ 12,222.98
Steel (lb)		1.42	\$ -	\$ -
Pipe Bedding (CY)		48.60	\$ 66.67	\$ 3,240.00
Trench Backfill (CY)		2.99	\$ 477.04	\$ 1,425.40
Trench Compaction (CY)		6.36	\$ 381.63	\$ 2,427.18
<b>Drainage Total</b>				<b>\$ 89,389.55</b>
Signing and Marking		Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)		0.71	\$ -	\$ -
<b>Signing and Marking Total</b>				<b>\$ -</b>
Staging		Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)		10,260.00	\$ 0.10	\$ 1,026.00
Temporary Pavement				\$ -
Temporary Drainage (Stream Diversion)		4,428.00	\$ 1.00	\$ 4,428.00
<b>Staging Total</b>				<b>\$ 5,454.00</b>
Erosion Control		Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)		4.39	\$ 766.67	\$ 3,367.20
Temporary Grassing (AC)		855.60	\$ -	\$ -
Type C Silt Fence (LF)		4.24	\$ 600.00	\$ 2,541.60
Check Dam Type C Silt Fence (LF)		6.79	\$ 600.00	\$ 4,075.20
Erosion Control Mats (SY)		1.87	\$ 200.00	\$ 374.40
Landscape Mulch (SY)		3.58	\$ 200.00	\$ 715.20
Perm Grassing (AC)		1,402.20	\$ -	\$ -
Rip Rap Type 3 12" (SY)		60.98	\$ 66.67	\$ 4,065.60
Plastic Filter Fabric (SY)		5.72	\$ 66.67	\$ 381.60
4" Ditch Paving (SY)		54.65	\$ -	\$ -
<b>Erosion Control Total</b>				<b>\$ 15,520.80</b>
<b>Construction Cost Total</b>				<b>\$ 118,365.19</b>
<b>Traffic Control (8% of Construction Total \$)</b>				<b>\$ 9,469.22</b>
<b>Construction Cost Grand Total</b>				<b>\$ 127,834.41</b>
Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	55.00	\$ -	\$ -
Buried	\$ 16.50	82.50	\$ -	\$ -
Wooden Pole	\$ 82.50	605.00	\$ -	\$ -
Phone				
Aerial	\$ 11.00	27.50	\$ -	\$ -
Buried	\$ 16.50	55.00	\$ -	\$ -
Wooden Pole	\$ 82.50	605.00	\$ -	\$ -
Cable				
Aerial	\$ 11.00	27.50	\$ -	\$ -
Buried	\$ 16.50	55.00	\$ -	\$ -
Wooden Pole	\$ 82.50	605.00	\$ -	\$ -
Gas				
4" main	\$ 16.50	66.00	\$ -	\$ -
Water				
8" main	\$ 16.50	93.50	\$ 50.00	\$ 5,500.00
Relocate Fire Hydrant (EA)		2,609.22	\$ -	\$ -
Sewer				
12" main	\$ 16.50	82.50	\$ -	\$ -
Utility Relocation Total				\$ 5,500.00
Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost	
Permanent Easement		4.00	\$ 2,000.00	
ROW Total			\$ 8,000.00	





General Information		Map	
Project ID			
Street Name	Brandon Mill Cir - South		
Site Visit Date	5/22/13		
Road Classification	Minor road		
Project Notes			
Neighborhood drainage system evaluation and replacement. Urban typical section with valley gutter,			
Field Notes			
Design (Existing Site Features)			
Existing Road Laneage	2-10'		
Existing Shld Width (paved and grass) (feet)	4'		
Existing Side Slopes	flat		
Existing Guardrail	none		
Depth fm Pavement to Top of Culvert (ft):	4		
Pipe Type and Size	72" CMP		
Pipe Condition (1-5) (1 is new)	5 (Installation)		
Condition Notes: no headwall upstream or down; bends restrict capacity; signs of flooding; pipe condition due to installation			
Pavement Type/Condition	Asphalt/Good		
Environmental Features			
Wetlands	None		
Ditches	None		
Utilities (Visual Inspection)			
Electric	Buried		
Cable	Buried		
Phone	Buried		
Gas			
Water	Buried		
Sewer			
Other			
Stage Construction Options			
Close Location to Traffic		X	
Maintain One Lane - No Temp Pavement			
Maintain One Lane - Temp Pavement			
Stage Construction Notes: Close roadway;			
driveway over pipe; replacement impacts property to the right			
Proposed Design			
Roadway Section	Typical. Private driveway removal/replacement costed as 9' x 20' section of 4" sidewalk		
Culvert Size & Material	8' x 4' box, concrete, 200' length		
Utility Relocations	Electric, cable, phone, water		
Guardrail Replacement			
Miscellaneous Features	Assumed hydraulic analysis of existing system		
Planning Cost Estimate			
Type	Notes	Total	
System Evaluation		\$25,000	
Design	Includes 10% Construction Cost and surveying needs	\$42,841	
Right of Way Cost	Assuming project extends 7,500 sf beyond ROW	\$30,000	
Utility Relocation Cost	Buried utilities	\$26,400	
Construction Cost	Assuming 1/10 acre clearing and grubbing	\$303,407	
Environmental Permits	Assuming minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$437,648</b>	



Photo 1:



Photo 2:

Brandon Mill Cir - South

Photo Date:

6/13/2016

Taken By:

Tony Hicks

Page:

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**Roadway Construction, Utility Relocation and ROW Quantity Calculations**

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	200.00	\$ 1,121.07
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	20.00	\$ 1,183.20
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	13.56	\$ 36.90	20.00	\$ 1,009.20
Guardrail (LF)	4.884	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
Subtotal				\$ 3,313.47
Grading Complete (5% of Rwy Items & Drng Total \$)				\$ 12,502.20

**Roadway Total \$ 15,815.67**

Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	814.81	\$ 8,457.78
72" CMP (LF)	\$ 54.00		200.00	\$ 32,400.00
72" RCP		\$ 390.00	0.00	\$ -
Class A Conc (CY)		\$ 892.19	183.68	\$ 163,877.09
Steel (lb)		\$ 1.42	21835.00	\$ 30,918.36
Pipe Bedding (CY)		\$ 48.60	74.80	\$ 3,635.28
Trench Backfill (CY)		\$ 2.99	921.50	\$ 2,753.43
Trench Compaction (CY)		\$ 6.36	737.20	\$ 4,688.57

**Drainage Total \$ 246,730.51**

Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$ 0.71	0	\$ -

**Signing and Marking Total \$ -**

Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$ 10,260.00	0.10	\$ 1,026.00
Temporary Pavement			0
Temporary Drainage (Stream Diversion)	\$ 4,428.00	1.00	\$ 4,428.00

**Staging Total \$ 5,454.00**

Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$ 4.39	200.00	\$ 878.40
Temporary Grassing (AC)	\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)	\$ 4.24	800.00	\$ 3,388.80
Check Dam Type C Silt Fence (LF)	\$ 6.79	800.00	\$ 5,433.60
Erosion Control Mats (SY)	\$ 1.87	266.67	\$ 499.20
Landscape Mulch (SY)	\$ 3.58	266.67	\$ 953.60
Perm Grassing (AC)	\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)	\$ 60.98	26.67	\$ 1,626.24
Plastic Filter Fabric (SY)	\$ 5.72	26.67	\$ 152.64
4" Ditch Paving (SY)	\$ 54.65	0.00	\$ -

**Erosion Control Total \$ 12,932.48**

**Construction Cost Total \$ 280,932.66**

**Traffic Control (8% of Construction Total \$) \$ 22,474.61**

**Construction Cost Grand Total \$ 303,407.27**

Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
<b>Electric</b>				
Aerial	\$ 11.00	\$ 55.00		\$ -
Buried	\$ 16.50	\$ 82.50	75	\$ 7,425.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
<b>Phone</b>				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	75	\$ 5,362.50
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
<b>Cable</b>				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	75	\$ 5,362.50
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
<b>Gas</b>				
4" main	\$ 16.50	\$ 66.00		\$ -
<b>Water</b>				
8" main	\$ 16.50	\$ 93.50	75	\$ 8,250.00
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
<b>Sewer</b>				
12" main	\$ 16.50	\$ 82.50	0.00	\$ -

**Utility Relocation Total \$ 26,400.00**

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$ 4.00	7500	\$ 30,000.00

**ROW Total \$ 30,000.00**





General Information		Map	
<b>Project ID</b>			
<b>Street Name</b>	<b>266 Callaway Rd.</b>		
<b>Site Visit Date</b>	5/21/13		
<b>Road Classification</b>	Minor road		
<b>Project Notes</b>			
Rural Typical Section			
<b>Field Notes</b>			
<b>Design (Existing Site Features)</b>			
<b>Existing Road Laneage</b>	2 - 12'		
<b>Existing Shld Width (paved and grass) (feet)</b>	2' (Grass)		
<b>Existing Side Slopes</b>	2:1		
<b>Existing Guardrail</b>	None		
<b>Depth fm Pavement to Top of Culvert (ft):</b>	Assumed 3'		
<b>Pipe Type and Size</b>	60" CMP (egg)		
<b>Pipe Condition (1-5) (1 is new)</b>	4		
Condition Notes:			
<b>Pavement Type/Condition</b>	Asphalt/Good		
<b>Environmental Features</b>		<b>Stage Construction Options</b>	
<b>Wetlands</b>	None	<b>Close Location to Traffic</b>	X
<b>Ditches</b>	Noted	<b>Maintain One Lane - No Temp Pavement</b>	
		<b>Maintain One Lane - Temp Pavement</b>	
		Stage Construction Notes:	
		45 mph posted speed	
<b>Utilities (Visual Inspection)</b>			
<b>Electric</b>	Aerial		
<b>Cable</b>	None		
<b>Phone</b>	Aerial		
<b>Gas</b>	None		
<b>Water</b>	Buried		
<b>Sewer</b>	None		
<b>Other</b>			
<b>Proposed Design</b>			
<b>Roadway Section</b>			
<b>Culvert Size &amp; Material</b>	triple 10' x 4' box, concrete, 80' length. Cost of removing elliptical CMP assumed to be equal to circular CMP		
<b>Utility Relocations</b>	Water		
<b>Guardrail Replacement</b>	Need to install guardrail due to side slopes and culvert installation		
<b>Miscellaneous Features</b>	Zone A, Floodplain Analysis Required		
<b>Planning Cost Estimate</b>			
<b>Type</b>	<b>Notes</b>	<b>Total</b>	
<b>Design</b>	Includes 10% design cost and surveying needs	\$53,724	
<b>Right of Way Cost</b>	Assuming project extends 11,000 sf beyond ROW	\$44,000	
<b>Utility Relocation Cost</b>	Buried water main	\$8,250	
<b>Construction Cost</b>	Assuming 1/10 acre clearing and grubbing needed	\$412,243	
<b>Environmental Permits</b>	Includes Zone A Floodplain analysis	\$15,000	
<b>Total Planning Estimate</b>		<b>\$533,218</b>	





**Photo 1:**



**Photo 2:**

Callaway Road

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

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**Photo 3:**

Callaway Road



**Photo 4:**

**Photo Date:**

9/26/2012

**Taken By:**

Tony Hicks

**Page:**

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Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	864.00	\$ 4,843.01
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	0.00	\$ -
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	600.00	\$ 32,385.60
End Anchorage (EA)		\$ 1,380.00	2.00	\$ 2,760.00
<b>Subtotal</b>				<b>\$ 39,988.61</b>

Grading Complete (5% of Rwy Items & Drng Total \$) \$ 17,173.56

**Roadway Total \$ 57,162.17**

Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	853.33	\$ 8,857.60
60" CMP (LF)	\$ 24.60		80.00	\$ 5,904.00
84" RCP		\$ 142.52	0.00	\$ -
Class A Conc (CY)		\$ 892.19	262.44	\$ 234,145.82
Steel (lb)		\$ 1.42	30,224.00	\$ 42,797.18
Pipe Bedding (CY)		\$ 48.60	97.20	\$ 4,723.92
Trench Backfill (CY)		\$ 2.99	873.47	\$ 2,609.92
Trench Compaction (CY)		\$ 6.36	698.77	\$ 4,444.20

**Drainage Total \$ 303,482.64**

Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$ 0.71	0.00	\$ -

**Signing and Marking Total \$ -**

Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$ 10,260.00	0.10	\$ 1,026.00
Temporary Pavement			\$ -
Temporary Drainage (Stream Diversion)	\$ 4,428.00	1.00	\$ 4,428.00

**Staging Total \$ 5,454.00**

Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$ 4.39	224.00	\$ 983.81
Temporary Grassing (AC)	\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)	\$ 4.24	640.00	\$ 2,711.04
Check Dam Type C Silt Fence (LF)	\$ 6.79	640.00	\$ 4,346.88
Erosion Control Mats (SY)	\$ 1.87	213.33	\$ 399.36
Landscape Mulch (SY)	\$ 3.58	213.33	\$ 762.88
Perm Grassing (AC)	\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)	\$ 60.98	96.00	\$ 5,854.46
Plastic Filter Fabric (SY)	\$ 5.72	96.00	\$ 549.50
4" Ditch Paving (SY)	\$ 54.65	0.00	\$ -

**Erosion Control Total \$ 15,607.94**

**Construction Cost Total \$ 381,706.75**

Traffic Control (8% of Construction Total \$) \$ 30,536.54

**Construction Cost Grand Total \$ 412,243.29**

Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Phone				
Cable				
Gas				
4" main	\$ 16.50	\$ 66.00		\$ -
Water				
8" main	\$ 16.50	\$ 93.50	75.00	\$ 8,250.00
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
<b>Utility Relocation Total</b>				<b>\$ 8,250.00</b>

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$ 4.00	11,000.00	\$ 44,000.00
<b>ROW Total</b>			<b>\$ 44,000.00</b>



General Information		Map	
<b>Project ID</b>			
<b>Street Name</b>	<b>Chappell Rd.</b>		
<b>Site Visit Date</b>	5/21/13		
<b>Road Classification</b>	Minor arterial		
Project Notes			
Rural Typical Section			
Field Notes			
Design (Existing Site Features)			
<b>Existing Road Laneage</b>	2 - 12'		
<b>Existing Shld Width (paved and grass) (feet)</b>	1' - 2'		
<b>Existing Side Slopes</b>	1.5:1		
<b>Existing Guardrail</b>	None		
<b>Depth fm Pavement to Top of Culvert (ft):</b>	6'		
<b>Pipe Type and Size</b>	1-72" CMP		
<b>Pipe Condition (1-5) (1 is new)</b>	3		
Condition Notes:			
<b>Pavement Type/Condition</b>	Asphalt/Good		
Environmental Features			
<b>Wetlands</b>	Upstream (?)		
<b>Ditches</b>	Along road		
Utilities (Visual Inspection)			
<b>Electric</b>	Aerial		
<b>Cable</b>	Buried		
<b>Phone</b>	Buried		
<b>Gas</b>			
<b>Water</b>	Buried		
<b>Sewer</b>			
<b>Other</b>			
Proposed Design			
<b>Roadway Section</b>	Typical. For costing purposes, temporary road consists of 8" gravel fill		
<b>Culvert Size &amp; Material</b>	dbl 8' x 5' box, concrete, 70' length		
<b>Utility Relocations</b>	Cable, telephone, water		
<b>Guardrail Replacement</b>	Proposed Guardrail Installation due to proposed culvert(s) and side slopes		
<b>Miscellaneous Features</b>			
Planning Cost Estimate			
Type	Notes	Total	
<b>Design</b>	Includes 10% Construction Cost and surveying needs	\$28,964	
<b>Right of Way Cost</b>	Assuming project extends 16,250 sf beyond ROW	\$32,500	
<b>Utility Relocation Cost</b>	Buried utilities	\$25,300	
<b>Construction Cost</b>	Assuming 1/10 acre clearing and grubbing	\$239,635	
<b>Environmental Permits</b>	Permits, Zone A Floodplain Analysis	\$10,000	
<b>Total Planning Estimate</b>		<b>\$336,399</b>	





**Photo 1:**



**Photo 2:**

364 Chappell Road

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

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**Photo 3:**



**Photo 4:**

364 Chappell Road

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

**2**

Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	432.00	\$ 2,421.50
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	0.00	\$ -
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	625.00	\$ 33,735.00
End Anchorage (EA)		\$ 1,380.00	2.00	\$ 2,760.00
Subtotal				\$ 38,916.50
Grading Complete (5% of Rwy Items & Drng Total \$)				\$ 10,164.98
Roadway Total				\$ 49,081.49
Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	606.67	\$ 6,297.20
72" CMP (LF)	\$ 63.00		70.00	\$ 13,230.00
72" RCP (LF)		\$ 390.00	0.00	\$ -
Class A Conc (CY)		\$ 892.19	132.51	\$ 118,223.83
Steel (lb)		\$ 1.42	13,383.00	\$ 18,950.33
Pipe Bedding (CY)		\$ 48.60	48.00	\$ 2,332.80
Trench Backfill (CY)		\$ 2.99	662.33	\$ 1,979.05
Trench Compaction (CY)		\$ 6.36	529.87	\$ 3,369.95
Drainage Total				\$ 164,383.16
Signing and Marking		Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)		\$ 0.71	72.00	\$ 50.98
Signing and Marking Total				\$ 50.98
Staging		Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)		\$ 10,260.00	0.10	\$ 1,026.00
Temporary Gravel Road (SY)		\$ 15.42	977.78	\$ 15,077.33
Temporary Drainage (Stream Diversion)		\$ 4,428.00	1.00	\$ 4,428.00
Staging Total				\$ 20,633.29
Erosion Control		Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)		\$ 4.39	92.00	\$ 404.06
Temporary Grassing (AC)		\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)		\$ 4.24	280.00	\$ 1,186.08
Check Dam Type C Silt Fence (LF)		\$ 6.79	280.00	\$ 1,901.76
Erosion Control Mats (SY)		\$ 1.87	93.33	\$ 174.72
Landscape Mulch (SY)		\$ 3.58	93.33	\$ 333.76
Perm Grassing (AC)		\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)		\$ 60.98	48.00	\$ 2,927.23
Plastic Filter Fabric (SY)		\$ 5.72	48.00	\$ 274.75
4" Ditch Paving (SY)		\$ 54.65	0.00	\$ -
Erosion Control Total				\$ 7,202.37
Construction Cost Total				\$ 241,351.28
Traffic Control (8% of Construction Total \$)				\$ 19,308.10
Construction Cost Grand Total				\$ 260,659.38
Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00		\$ -
Buried	\$ 16.50	\$ 82.50	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	100.00	\$ 7,150.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	100.00	\$ 7,150.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Gas				
4" main	\$ 16.50	\$ 66.00		\$ -
Water				
8" main	\$ 16.50	\$ 93.50	100.00	\$ 11,000.00
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
Sewer			0.00	\$ -
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
Utility Relocation Total				\$ 25,300.00
Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost	
Permanent Easement	\$ 4.00	16,250.00	\$ 65,000.00	
ROW Total			\$ 65,000.00	



General Information		Map	
Project ID			
Street Name	120 Deer Forest Trail		
Site Visit Date	5/21/13		
Road Classification	Minor road		
Project Notes			
Urban Typical Section with Valley Gutter			
Field Notes			
Design (Existing Site Features)			
Existing Road Laneage	2 - 12'		
Existing Shld Width (paved and grass) (feet)	None		
Existing Side Slopes	Flat		
Existing Guardrail	None		
Depth fm Pavement to Top of Culvert (ft):	2		
Pipe Type and Size	36" CMP, 100'		
Pipe Condition (1-5) (1 is new)	5		
Condition Notes: Headwall failed on downstream side, active erosion, effectively 0% capacity			
Pavement Type/Condition	Asphalt/Good		
Environmental Features		Stage Construction Options	
Wetlands	None	Close Location to Traffic	X
Ditches	None	Maintain One Lane - No Temp Pavement	
		Maintain One Lane - Temp Pavement	
Utilities (Visual Inspection)		Stage Construction Notes:	
Electric	Buried		
Cable	Buried		
Phone	Buried		
Gas			
Water	Buried		
Sewer			
Other			
Proposed Design			
Roadway Section			
Culvert Size & Material	4' x 3' box, concrete, 100' length. Cost of removing headwalls assumed equal to removal of entire length of pipe.		
Utility Relocations	Electric, cable, phone, water		
Guardrail Replacement			
Miscellaneous Features			
Planning Cost Estimate			
Type	Notes	Total	
Design	Includes 10% Construction Cost and surveying needs	\$13,446	
Right of Way Cost	Assuming project extends 3,000 sf beyond ROW	\$20,000	
Utility Relocation Cost	Buried utilities	\$17,600	
Construction Cost	Assuming 1/10 acre clearing and grubbing	\$84,461	
Environmental Permits	Assuming minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$145,508</b>	





**Photo 1:**



**Photo 2:**

Deer Forest Trail

**Photo Date:**

5/21/2013

**Taken By:**

David King

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**Photo 3:**



**Photo 4:**

Deer Forest Trail

**Photo Date:**

5/21/2013

**Taken By:**

David King

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Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	144.00	\$ 807.17
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	20.00	\$ 1,183.20
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
<b>Subtotal</b>				<b>\$ 1,990.37</b>

<b>Grading Complete (5% of Rwy Items &amp; Drng Total \$)</b>	<b>\$ 3,158.26</b>
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<b>Roadway Total</b>	<b>\$ 5,148.63</b>
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Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	133.33	\$ 1,384.00
36" CMP (LF)	\$ 19.62		200.00	\$ 11,772.00
36" RCP		\$ 142.52	0.00	\$ -
Class A Conc (CY)		\$ 892.19	44.61	\$ 39,800.51
Steel (lb)		\$ 1.42	4,295.00	\$ 6,081.72
Pipe Bedding (CY)		\$ 48.60	22.70	\$ 1,103.22
Trench Backfill (CY)		\$ 2.99	127.97	\$ 382.36
Trench Compaction (CY)		\$ 6.36	102.37	\$ 651.09

<b>Drainage Total</b>	<b>\$ 61,174.91</b>
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Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$ 0.71	0.00	\$ -

<b>Signing and Marking Total</b>	<b>\$ -</b>
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Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$ 10,260.00	0.10	\$ 1,026.00
Temporary Pavement			\$ -
Temporary Drainage (Stream Diversion)	\$ 4,428.00	1.00	\$ 4,428.00

<b>Staging Total</b>	<b>\$ 5,454.00</b>
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Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$ 4.39	50.67	\$ 222.53
Temporary Grassing (AC)	\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)	\$ 4.24	400.00	\$ 1,694.40
Check Dam Type C Silt Fence (LF)	\$ 6.79	400.00	\$ 2,716.80
Erosion Control Mats (SY)	\$ 1.87	133.33	\$ 249.60
Landscape Mulch (SY)	\$ 3.58	133.33	\$ 476.80
Perm Grassing (AC)	\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)	\$ 60.98	16.00	\$ 975.74
Plastic Filter Fabric (SY)	\$ 5.72	16.00	\$ 91.58
4" Ditch Paving (SY)	\$ 54.65	0.00	\$ -

<b>Erosion Control Total</b>	<b>\$ 6,427.46</b>
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<b>Construction Cost Total</b>	<b>\$ 78,204.99</b>
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<b>Traffic Control (8% of Construction Total \$)</b>	<b>\$ 6,256.40</b>
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<b>Construction Cost Grand Total</b>	<b>\$ 84,461.39</b>
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Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00		\$ -
Buried	\$ 16.50	\$ 82.50	50.00	\$ 4,950.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	50.00	\$ 3,575.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	50.00	\$ 3,575.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Gas				
4" main	\$ 16.50	\$ 66.00		\$ -
Water				
8" main	\$ 16.50	\$ 93.50	50.00	\$ 5,500.00
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
Sewer			0.00	\$ -
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 17,600.00</b>

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$ 4.00	5,000.00	\$ 20,000.00
<b>ROW Total</b>			<b>\$ 20,000.00</b>

General Information		Map	
<b>Project ID</b>			
<b>Street Name</b>	<b>Dogwood Trail</b>		
<b>Site Visit Date</b>	5/22/13		
<b>Road Classification</b>	Minor arterial		
Project Notes			
Rural Typical Section			
Field Notes			
Design (Existing Site Features)			
<b>Existing Road Laneage</b>	2-12'		
<b>Existing Shld Width (paved and grass) (feet)</b>	1' - 2'		
<b>Existing Side Slopes</b>	1.5:1		
<b>Existing Guardrail</b>	None		
<b>Depth fm Pavement to Top of Culvert (ft):</b>	12		
<b>Pipe Type and Size</b>	2-120" CMP		
<b>Pipe Condition (1-5) (1 is new)</b>	4		
Condition Notes: Large down stream drop; home in down stream flood plain; bottom of pipe rusted through			
<b>Pavement Type/Condition</b>	Asphalt/Good		
Environmental Features			
<b>Wetlands</b>	None		
<b>Ditches</b>	Noted		
Utilities (Visual Inspection)			
<b>Electric</b>	Aerial		
<b>Cable</b>	Aerial		
<b>Phone</b>	Aerial		
<b>Gas</b>			
<b>Water</b>	Buried		
<b>Sewer</b>	Buried		
<b>Other</b>			
Proposed Design			
<b>Roadway Section</b>			
<b>Culvert Size &amp; Material</b>	triple 7' x 7' box, concrete, 80' length		
<b>Utility Relocations</b>	Electric, cable, phone, water, sewer		
<b>Guardrail Replacement</b>	Need Guardrail due to side slopes and culvert installation		
<b>Miscellaneous Features</b>	Zone AE Floodplain and Floodway Analysis required		
Planning Cost Estimate			
Type	Notes	Total	
<b>Design</b>	Includes 10% Construction Cost and surveying needs	\$55,456	
<b>Right of Way Cost</b>	Assuming project extends 13,900 sf beyond ROW	\$55,600	
<b>Utility Relocation Cost</b>	Aerial and buried utilities	\$37,263	
<b>Construction Cost</b>	Assuming 1/5 acre clearing and grubbing	\$429,561	
<b>Environmental Permits</b>	Permits, Zone AE flood study	\$18,000	
<b>Total Planning Estimate</b>		<b>\$595,879</b>	





**Photo 1:**



**Photo 2:**

Dogwood Trail

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

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**Photo 3:**



**Photo 4:**

Dogwood Trail

**Photo Date:**

5/21/2013

**Taken By:**

David King

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Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	1,104.00	\$ 6,188.29
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	0.00	\$ -
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	600.00	\$ 32,385.60
End Anchorage (EA)		\$ 1,380.00	4.00	\$ 5,520.00
<b>Subtotal</b>				<b>\$ 44,093.89</b>

Grading Complete (5% of Rwy Items & Drng Total \$) \$ 17,795.14

**Roadway Total \$ 61,889.03**

Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	2,112.59	\$ 21,928.71
120" CMP (LF)	\$ 90.00		160.00	\$ 43,200.00
120" RCP		\$ 142.52	0.00	\$ -
Class A Conc (CY)		\$ 892.19	212.60	\$ 189,679.17
Steel (lb)		\$ 1.42	23,893.00	\$ 33,832.49
Pipe Bedding (CY)		\$ 48.60	69.90	\$ 3,397.14
Trench Backfill (CY)		\$ 2.99	2,448.17	\$ 7,315.14
Trench Compaction (CY)		\$ 6.36	1,958.54	\$ 12,456.31

**Drainage Total \$311,808.96**

Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$ 0.71	92.00	\$ 65.14

**Signing and Marking Total \$ 65.14**

Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$ 10,260.00	0.20	\$ 2,052.00
Temporary Gravel Road (SY)	\$ 15.42	0.00	\$ -
Temporary Drainage (Stream Diversion)	\$ 4,428.00	2.00	\$ 8,856.00

**Staging Total \$ 11,038.27**

Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$ 4.39	143.11	\$ 628.54
Temporary Grassing (AC)	\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)	\$ 4.24	640.00	\$ 2,711.04
Check Dam Type C Silt Fence (LF)	\$ 6.79	640.00	\$ 4,346.88
Erosion Control Mats (SY)	\$ 1.87	213.33	\$ 399.36
Landscape Mulch (SY)	\$ 3.58	213.33	\$ 762.88
Perm Grassing (AC)	\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)	\$ 60.98	61.33	\$ 3,740.35
Plastic Filter Fabric (SY)	\$ 5.72	61.33	\$ 351.07
4" Ditch Paving (SY)	\$ 54.65	0.00	\$ -

**Erosion Control Total \$ 12,940.13**

**Construction Cost Total \$397,741.53**

**Traffic Control (8% of Construction Total \$) \$ 31,819.32**

**Construction Cost Grand Total \$429,560.85**

Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00	100.00	\$ 6,600.00
Buried	\$ 16.50	\$ 82.50	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	3.00	\$ 2,062.50
Phone				
Aerial	\$ 11.00	\$ 27.50	100.00	\$ 3,850.00
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50	100.00	\$ 3,850.00
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Gas				
4" main	\$ 16.50	\$ 66.00		\$ -
Water				
8" main	\$ 16.50	\$ 93.50	100.00	\$ 11,000.00
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
Sewer			0.00	\$ -
12" main	\$ 16.50	\$ 82.50	100.00	\$ 9,900.00
<b>Utility Relocation Total</b>				<b>\$ 37,262.50</b>

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$ 4.00	13,900.00	\$ 55,600.00
<b>ROW Total</b>			<b>\$ 55,600.00</b>



General Information		Map	
<b>Project ID</b>			
<b>Street Name</b>	<b>120 Merced Trail</b>		
<b>Site Visit Date</b>	5/22/13		
<b>Road Classification</b>	Internal Local		
<b>Project Notes</b>			
Urban typical with valley gutter; subdivision street			
<b>Field Notes</b>			
<b>Design (Existing Site Features)</b>			
<b>Existing Road Laneage</b>	2-12'		
<b>Existing Shld Width (paved and grass) (feet)</b>	4'		
<b>Existing Side Slopes</b>	flat		
<b>Existing Guardrail</b>	none		
<b>Depth fm Pavement to Top of Culvert (ft):</b>	5		
<b>Pipe Type and Size</b> (ellip. CMP)	2-48"x72",55'		
<b>Pipe Condition (1-5) (1 is new)</b>	5		
Condition Notes: Both up to 25% blocked, structurally unsound, sag in top of pipe, debris/rip rap in pipe			
<b>Pavement Type/Condition</b>	Asphalt/Good		
<b>Environmental Features</b>		<b>Stage Construction Options</b>	
<b>Wetlands</b>	None	<b>Close Location to Traffic</b>	
<b>Ditches</b>	None	<b>Maintain One Lane - No Temp Pavement</b>	X
		<b>Maintain One Lane - Temp Pavement</b>	
		Stage Construction Notes:	
<b>Utilities (Visual Inspection)</b>			
<b>Electric</b>	Buried		
<b>Cable</b>	Buried		
<b>Phone</b>	Buried		
<b>Gas</b>			
<b>Water</b>	Buried		
<b>Sewer</b>			
<b>Other</b>			
<b>Proposed Design</b>			
<b>Roadway Section</b>			
<b>Culvert Size &amp; Material</b>	dbl 8' x 4' box, concrete, 60' length. Cost of elliptical pipe removal assumed to equal to removal of round 60" CMP.		
<b>Utility Relocations</b>	Electric, cable, phone, water		
<b>Guardrail Replacement</b>			
<b>Miscellaneous Features</b>			
<b>Planning Cost Estimate</b>			
<b>Type</b>	<b>Notes</b>	<b>Total</b>	
<b>Design</b>	Includes 10% Construction Cost and surveying needs	\$21,679	
<b>Right of Way Cost</b>	Assuming project extends 2,000 sf beyond ROW	\$8,000	
<b>Utility Relocation Cost</b>	Buried utilities	\$17,600	
<b>Construction Cost</b>	Assuming 1/5 acre clearing and grubbing	\$166,790	
<b>Environmental Permits</b>	Assuming minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$224,070</b>	



**Photo 1:**



**Photo 2:**

**Mercedes Trail**

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

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**Photo 3:**



**Photo 4:**

Mercedes Trail

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

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Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	432.00	\$ 2,421.50
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	36.00	\$ 2,129.76
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
<b>Subtotal</b>				<b>\$ 4,551.26</b>
<b>Grading Complete (5% of Rwy Items &amp; Drng Total \$)</b>				<b>\$ 6,723.90</b>
<b>Roadway Total</b>				<b>\$ 11,275.17</b>
Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	400.00	\$ 4,152.00
60" CMP (LF)	\$ 24.60		110.00	\$ 8,118.00
60" RCP		\$ 259.20	0.00	\$ -
Class A Conc (CY)		\$ 892.19	108.16	\$ 96,499.05
Steel (lb)		\$ 1.42	11,182.00	\$ 15,833.71
Pipe Bedding (CY)		\$ 48.60	41.30	\$ 2,007.18
Trench Backfill (CY)		\$ 2.99	410.70	\$ 1,227.17
Trench Compaction (CY)		\$ 6.36	328.56	\$ 2,089.64
<b>Drainage Total</b>				<b>\$ 129,926.76</b>
Signing and Marking		Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)		\$ 0.71	72.00	\$ 50.98
<b>Signing and Marking Total</b>				<b>\$ 50.98</b>
Staging		Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)		\$ 10,260.00	0.20	\$ 2,052.00
Temporary Pavement				\$ -
Temporary Drainage (Stream Diversion)		\$ 4,428.00	1.00	\$ 4,428.00
<b>Staging Total</b>				<b>\$ 6,581.95</b>
Erosion Control		Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)		\$ 4.39	72.00	\$ 316.22
Temporary Grassing (AC)		\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)		\$ 4.24	240.00	\$ 1,016.64
Check Dam Type C Silt Fence (LF)		\$ 6.79	240.00	\$ 1,630.08
Erosion Control Mats (SY)		\$ 1.87	80.00	\$ 149.76
Landscape Mulch (SY)		\$ 3.58	80.00	\$ 286.08
Perm Grassing (AC)		\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)		\$ 60.98	48.00	\$ 2,927.23
Plastic Filter Fabric (SY)		\$ 5.72	48.00	\$ 274.75
4" Ditch Paving (SY)		\$ 54.65	0.00	\$ -
<b>Erosion Control Total</b>				<b>\$ 6,600.77</b>
<b>Construction Cost Total</b>				<b>\$ 154,435.62</b>
<b>Traffic Control (8% of Construction Total \$)</b>				<b>\$ 12,354.85</b>
<b>Construction Cost Grand Total</b>				<b>\$ 166,790.47</b>
Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00		\$ -
Buried	\$ 16.50	\$ 82.50	50.00	\$ 4,950.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	50.00	\$ 3,575.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	50.00	\$ 3,575.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Gas				
4" main	\$ 16.50	\$ 66.00		\$ -
Water				
8" main	\$ 16.50	\$ 93.50	50.00	\$ 5,500.00
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
Sewer			0.00	\$ -
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 17,600.00</b>
Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost	
Permanent Easement	\$ 4.00	2,000.00	\$ 8,000.00	
<b>ROW Total</b>			<b>\$ 8,000.00</b>	

General Information		Map	
<b>Project ID</b>			
<b>Street Name</b>	Morning Dove Dr.		
<b>Site Visit Date</b>	5/21/13		
<b>Road Classification</b>	Minor road		
Project Notes			
Urban typical section valley gutter			
Field Notes			
Design (Existing Site Features)			
<b>Existing Road Laneage</b>	2-12'		
<b>Existing Shld Width (paved and grass) (feet)</b>	4'		
<b>Existing Side Slopes</b>	flat		
<b>Existing Guardrail</b>	none		
<b>Depth fm Pavement to Top of Culvert (ft):</b>	2'		
<b>Pipe Type and Size</b>	1-72", 1-84"		
<b>Pipe Condition (1-5) (1 is new)</b>	4		
Condition Notes:			
<b>Pavement Type/Condition</b>	Asphalt/Good		
Environmental Features			
<b>Wetlands</b>	None identified		
<b>Ditches</b>	None		
Utilities (Visual Inspection)			
<b>Electric</b>	Buried		
<b>Cable</b>	Buried		
<b>Phone</b>	Buried		
<b>Gas</b>	Not Sighted		
<b>Water</b>	Buried		
<b>Sewer</b>	Buried		
<b>Other</b>			
Proposed Design			
<b>Roadway Section</b>	Replace in kind. For costing purposes, temporary road consists of 8" gravel fill		
<b>Culvert Size &amp; Material</b>	double 10' x 4' box, concrete, 70' length		
<b>Utility Relocations</b>	Electric, Cable, Phone, Water, Sewer		
<b>Guardrail Replacement</b>	No		
<b>Miscellaneous Features</b>			
Planning Cost Estimate			
Type	Notes	Total	
<b>Design</b>	Includes 10% Construction Cost and surveying needs	\$22,779	
<b>Right of Way Cost</b>	Assuming project does not extend beyond ROW	\$0	
<b>Utility Relocation Cost</b>	Buried utilities	\$33,825	
<b>Construction Cost</b>	Assuming 1/10 acre clearing and grubbing	\$177,785	
<b>Environmental Permits</b>	Assuming minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$244,389</b>	





**Photo 1:**



**Photo 2:**

130 Morning Dove Drive

**Photo Date:**

5/17/1013

**Taken By:**

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**Page:**

**1**

Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	528.00	\$ 2,959.62
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	44.00	\$ 2,603.04
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
<b>Subtotal</b>				<b>\$ 5,562.66</b>

Grading Complete (5% of Rwy Items & Drng Total \$) \$ 6,949.20

Roadway Total \$ 12,511.86

Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	570.37	\$ 5,920.44
72" CMP (LF)	\$ 54.00		70.00	\$ 3,780.00
84" CMP	\$ 63.00		70.00	\$ 4,410.00
Class A Conc (CY)		\$ 892.19	106.88	\$ 95,357.05
Steel (lb)		\$ 1.42	11,505.00	\$ 16,291.08
Pipe Bedding (CY)		\$ 48.60	58.70	\$ 2,852.82
Trench Backfill (CY)		\$ 2.99	595.60	\$ 1,779.64
Trench Compaction (CY)		\$ 6.36	476.48	\$ 3,030.39

Drainage Total \$ 133,421.43

Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$ 0.71	0.00	\$ -

Signing and Marking Total \$ -

Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$ 10,260.00	0.10	\$ 1,026.00
Temporary Gravel Road (SY)	\$ 15.42	222.22	\$ 3,426.67
Temporary Drainage (Stream Diversion)	\$ 4,428.00	1.00	\$ 4,428.00

Staging Total \$ 8,880.67

Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$ 4.39	112.44	\$ 493.86
Temporary Grassing (AC)	\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)	\$ 4.24	420.00	\$ 1,779.12
Check Dam Type C Silt Fence (LF)	\$ 6.79	420.00	\$ 2,852.64
Erosion Control Mats (SY)	\$ 1.87	140.00	\$ 262.08
Landscape Mulch (SY)	\$ 3.58	140.00	\$ 500.64
Perm Grassing (AC)	\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)	\$ 60.98	58.67	\$ 3,577.73
Plastic Filter Fabric (SY)	\$ 5.72	58.67	\$ 335.81
4" Ditch Paving (SY)	\$ 54.65	0.00	\$ -

Erosion Control Total \$ 9,801.87

Construction Cost Total \$ 164,615.83

Traffic Control (8% of Construction Total \$) \$ 13,169.27

Construction Cost Grand Total \$ 177,785.10

Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00		\$ -
Buried	\$ 16.50	\$ 82.50	75.00	\$ 7,425.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	75.00	\$ 5,362.50
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	75.00	\$ 5,362.50
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Gas				
4" main	\$ 16.50	\$ 66.00		\$ -
Water				
8" main	\$ 16.50	\$ 93.50	75.00	\$ 8,250.00
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
Sewer			0.00	\$ -
12" main	\$ 16.50	\$ 82.50	75.00	\$ 7,425.00
<b>Utility Relocation Total</b>				<b>\$ 33,825.00</b>

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$ 4.00	0.00	\$ -
<b>ROW Total</b>			<b>\$ -</b>





General Information		Map	
<b>Project ID</b>			
<b>Street Name</b>	<b>Patricia Lane</b>		
<b>Site Visit Date</b>	5/22/13		
<b>Road Classification</b>	Minor road		
<b>Project Notes</b>			
Urban typical section with curb and gutter			
<b>Field Notes</b>			
<b>Design (Existing Site Features)</b>			
<b>Existing Road Laneage</b>	2 - 10'		
<b>Existing Shld Width (paved and grass) (feet)</b>	4'		
<b>Existing Side Slopes</b>	Flat		
<b>Existing Guardrail</b>	None		
<b>Depth fm Pavement to Top of Culvert (ft):</b>	2.5		
<b>Pipe Type and Size</b>	54" CMP		
<b>Pipe Condition (1-5) (1 is new)</b>	4		
Condition Notes: Joint failure, signs of rust, downstream plunge pool needed, eroded drop, holes from scour on top, rip rap/debris inside of pipe			
<b>Pavement Type/Condition</b>	Asphalt/Good		
<b>Environmental Features</b>			
<b>Wetlands</b>	None		
<b>Ditches</b>	None		
<b>Utilities (Visual Inspection)</b>			
<b>Electric</b>	Aerial		
<b>Cable</b>	Aerial		
<b>Phone</b>	Buried		
<b>Gas</b>			
<b>Water</b>			
<b>Sewer</b>			
<b>Other</b>			
<b>Proposed Design</b>			
<b>Roadway Section</b>			
<b>Culvert Size &amp; Material</b>	8' x 4' box, concrete, 150' length		
<b>Utility Relocations</b>	Pole next to pipe, phone, cable, electric		
<b>Guardrail Replacement</b>			
<b>Miscellaneous Features</b>			
<b>Planning Cost Estimate</b>			
<b>Type</b>	<b>Notes</b>	<b>Total</b>	
<b>Design</b>	Includes 10% Construction Cost and surveying needs	\$26,254	
<b>Right of Way Cost</b>	Assuming project extends 10,000 sf beyond ROW	\$40,000	
<b>Utility Relocation Cost</b>	Buried utilities, pole	\$6,738	
<b>Construction Cost</b>	Assuming 1/10 acre clearing and grubbing	\$212,536	
<b>Environmental Permits</b>	Assuming minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$295,527</b>	



**Photo 1:**



**Photo 2:**

151 Patricia Lane

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

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**Photo 3:**



**Photo 4:**

151 Patricia Lane

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

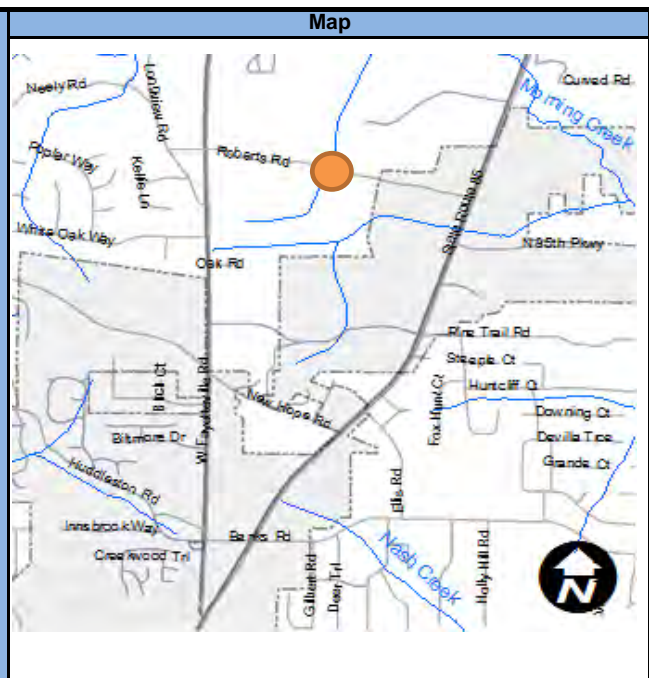
**2**



Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	200.00	\$ 1,121.07
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	0.00	\$ -
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
Subtotal				\$ 1,121.07
Grading Complete (5% of Rwy Items & Drng Total \$)				\$ 8,629.47
Roadway Total				\$ 9,750.54
Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	444.44	\$ 4,613.33
54" CMP (LF)	\$ 24.60		150.00	\$ 11,070.00
54" RCP		\$ 233.28	0.00	\$ -
Class A Conc (CY)		\$ 892.19	141.03	\$ 125,825.27
Steel (lb)		\$ 1.42	16,505.00	\$ 23,371.08
Pipe Bedding (CY)		\$ 48.60	56.30	\$ 2,736.18
Trench Backfill (CY)		\$ 2.99	477.03	\$ 1,425.38
Trench Compaction (CY)		\$ 6.36	381.63	\$ 2,427.15
Drainage Total				\$ 171,468.39
Signing and Marking		Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)		\$ 0.71	0.00	\$ -
Signing and Marking Total				\$ -
Staging		Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)		\$ 10,260.00	0.10	\$ 1,026.00
Temporary Pavement				\$ -
Temporary Drainage (Stream Diversion)		\$ 4,428.00	1.00	\$ 4,428.00
Staging Total				\$ 5,454.00
Erosion Control		Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)		\$ 4.39	144.44	\$ 634.40
Temporary Grassing (AC)		\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)		\$ 4.24	600.00	\$ 2,541.60
Check Dam Type C Silt Fence (LF)		\$ 6.79	600.00	\$ 4,075.20
Erosion Control Mats (SY)		\$ 1.87	200.00	\$ 374.40
Landscape Mulch (SY)		\$ 3.58	200.00	\$ 715.20
Perm Grassing (AC)		\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)		\$ 60.98	26.67	\$ 1,626.24
Plastic Filter Fabric (SY)		\$ 5.72	26.67	\$ 152.64
4" Ditch Paving (SY)		\$ 54.65	0.00	\$ -
Erosion Control Total				\$ 10,119.68
Construction Cost Total				\$ 196,792.61
Traffic Control (8% of Construction Total \$)				\$ 15,743.41
Construction Cost Grand Total				\$ 212,536.02
Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00		\$ -
Buried	\$ 16.50	\$ 82.50	25.00	\$ 2,475.00
Wooden Pole	\$ 82.50	\$ 605.00	1.00	\$ 687.50
Phone				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	25.00	\$ 1,787.50
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	25.00	\$ 1,787.50
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Gas				
4" main	\$ 16.50	\$ 66.00		\$ -
Water				
8" main	\$ 16.50	\$ 93.50	0.00	\$ -
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
Sewer			0.00	\$ -
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
Utility Relocation Total				\$ 6,737.50
Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost	
Permanent Easement	\$ 4.00	10,000.00	\$ 40,000.00	
ROW Total			\$ 40,000.00	

General Information	
Project ID	
Street Name	199 Roberts Road
Site Visit Date	5/21/13
Road Classification	County Local
Project Notes	
Local road with sub standard horizontal and vertical alignments	
Field Notes	
Design (Existing Site Features)	
Existing Road Laneage	2-10' (dirt/gravel)
Existing Shld Width (paved and grass) (feet)	None
Existing Side Slopes	flat
Existing Guardrail	None
Depth fm Pavement to Top of Culvert (ft):	None
Pipe Type and Size	None
Pipe Condition (1-5) (1 is new)	n/a
Condition Notes:	
Pavement Type/Condition	gravel dirt/ poor
Environmental Features	
Wetlands	Noted
Ditches	None
Utilities (Visual Inspection)	
Electric	Aerial
Cable	Aerial
Phone	Aerial
Gas	
Water	Buried
Sewer	
Other	



Stage Construction Options	
Close Location to Traffic	
Maintain One Lane - No Temp Pavement	X
Maintain One Lane - Temp Pavement	
Stage Construction Notes:	

Proposed Design	
Roadway Section	
Culvert Size & Material	7'x4' box, concrete, 85' length
Utility Relocations	Two utility poles. Aerial electric, cable, phone. Buried water main
Guardrail Replacement	
Miscellaneous Features	

Planning Cost Estimate		
Type	Notes	Total
Design	Includes 10% Construction Cost and surveying needs	\$17,381
Right of Way Cost	Assuming project extends 4,000 sf beyond ROW	\$16,000
Utility Relocation Cost	Aerial utilities, poles, and buried water main	\$26,675
Construction Cost	Assuming 1/10 acre clearing and grubbing	\$123,805
Environmental Permits	Assuming minimal environmental permitting required	\$10,000

<b>Total Planning Estimate</b>	<b>\$193,861</b>
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**Photo 1:**



**Photo 2:**

199 Roberts Road

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

**1**



Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	0.00	\$ -
Gravel Road (SY)		\$ 15.42	83.11	\$ 1,281.57
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	0.00	\$ -
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
<b>Subtotal</b>				<b>\$ 1,281.57</b>
<b>Grading Complete (5% of Rwy Items &amp; Drng Total \$)</b>				<b>\$ 4,773.36</b>
<b>Roadway Total</b>				<b>\$ 6,054.94</b>
Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	279.08	\$ 2,896.89
60" CMP (LF)	\$ 24.60		85.00	\$ 6,273.00
60" RCP		\$ 259.20	0.00	\$ -
Class A Conc (CY)		\$ 892.19	77.53	\$ 69,171.34
Steel (lb)		\$ 1.42	8,370.00	\$ 11,851.92
Pipe Bedding (CY)		\$ 48.60	29.00	\$ 1,409.40
Trench Backfill (CY)		\$ 2.99	319.85	\$ 955.72
Trench Compaction (CY)		\$ 6.36	255.88	\$ 1,627.42
<b>Drainage Total</b>				<b>\$ 94,185.68</b>
Signing and Marking		Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)		\$ 0.71	0.00	\$ -
<b>Signing and Marking Total</b>				<b>\$ -</b>
Staging		Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)		\$ 10,260.00	0.20	\$ 2,052.00
Temporary Pavement				\$ -
Temporary Drainage (Stream Diversion)		\$ 4,428.00	1.00	\$ 4,428.00
<b>Staging Total</b>				<b>\$ 6,480.00</b>
Erosion Control		Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)		\$ 4.39	119.00	\$ 522.65
Temporary Grassing (AC)		\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)		\$ 4.24	340.00	\$ 1,440.24
Check Dam Type C Silt Fence (LF)		\$ 6.79	340.00	\$ 2,309.28
Erosion Control Mats (SY)		\$ 1.87	113.33	\$ 212.16
Landscape Mulch (SY)		\$ 3.58	113.33	\$ 405.28
Perm Grassing (AC)		\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)		\$ 60.98	45.33	\$ 2,764.61
Plastic Filter Fabric (SY)		\$ 5.72	45.33	\$ 259.49
4" Ditch Paving (SY)		\$ 54.65	0.00	\$ -
<b>Erosion Control Total</b>				<b>\$ 7,913.70</b>
<b>Construction Cost Total</b>				<b>\$ 114,634.32</b>
<b>Traffic Control (8% of Construction Total \$)</b>				<b>\$ 9,170.75</b>
<b>Construction Cost Grand Total</b>				<b>\$ 123,805.07</b>
Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00	100.00	\$ 6,600.00
Buried	\$ 16.50	\$ 82.50	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	2.00	\$ 1,375.00
Phone				
Aerial	\$ 11.00	\$ 27.50	100.00	\$ 3,850.00
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50	100.00	\$ 3,850.00
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Gas				
4" main	\$ 16.50	\$ 66.00		\$ -
Water				
8" main	\$ 16.50	\$ 93.50	100.00	\$ 11,000.00
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
Sewer			0.00	\$ -
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 26,675.00</b>
Right of Way (Sq Ft)		Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement		\$ 4.00	4,000.00	\$ 16,000.00
<b>ROW Total</b>				<b>\$ 16,000.00</b>





General Information		Map	
<b>Project ID</b>			
<b>Street Name</b>	<b>Scott Blvd.</b>		
<b>Site Visit Date</b>	5/22/13		
<b>Road Classification</b>	Internal Local		
<b>Project Notes</b>			
Rural typical section. Point is close to FEMA Zone A flood boundary. Including cost of Zone A flood study based on limited location information.			
<b>Field Notes</b>			
<b>Design (Existing Site Features)</b>			
<b>Existing Road Laneage</b>	2-10.5'		
<b>Existing Shld Width (paved and grass) (feet)</b>	4' Grass		
<b>Existing Side Slopes</b>	6:1 to flat		
<b>Existing Guardrail</b>	None		
<b>Depth fm Pavement to Top of Culvert (ft):</b>	10 - 11		
<b>Pipe Type and Size</b>	18" CMP		
<b>Pipe Condition (1-5) (1 is new)</b>	5		
Condition Notes:			
<b>Pavement Type/Condition</b>	Asphalt/Good		
<b>Environmental Features</b>			
<b>Wetlands</b>	Upstream		
<b>Ditches</b>	Noted		
<b>Utilities (Visual Inspection)</b>			
<b>Electric</b>	Aerial		
<b>Cable</b>	Aerial		
<b>Phone</b>	Aerial		
<b>Gas</b>	None		
<b>Water</b>	Buried		
<b>Sewer</b>			
<b>Other</b>			
<b>Proposed Design</b>			
<b>Roadway Section</b>	Typical rural. Driveway removal/replacement costed as 20' x 9' concrete sidewalk		
<b>Culvert Size &amp; Material</b>	4' x 2' box, concrete, 50'		
<b>Utility Relocations</b>	Utility poles, aerial lectric, cable,phone, buried water		
<b>Guardrail Replacement</b>			
<b>Miscellaneous Features</b>	Series of three, 18" pipes. Upper two are within reasonable sizes, second one in series could be upsized to 24". Downstream-most culvert is primary replacement need.		
<b>Planning Cost Estimate</b>			
<b>Type</b>	<b>Notes</b>	<b>Total</b>	
<b>Design</b>	Includes 10% Construction Cost and surveying needs	\$17,008	
<b>Right of Way Cost</b>	Assuming project extends 2,000 sf beyond ROW	\$8,000	
<b>Utility Relocation Cost</b>	Aerial utilities, poles, and buried water main	\$14,025	
<b>Construction Cost</b>	Assuming 1/10 acre clearing and grubbing	\$45,081	
<b>Environmental Permits</b>	Permitting, Zone A flood study	\$15,000	
<b>Total Planning Estimate</b>		<b>\$99,114</b>	





**Photo 1:**



**Photo 2:**

160 Scott Blvd.

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

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**Photo 3:**



**Photo 4:**

160 Scott Blvd.

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

**2**

Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	126.00	\$ 706.27
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	0.00	\$ -
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	20.00	\$ 1,009.20
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
<b>Subtotal</b>				<b>\$ 1,715.47</b>

Grading Complete (5% of Rwy Items & Drng Total \$) \$ 1,550.79

Roadway Total \$ 3,266.27

Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	150.00	\$ 1,557.00
18" CMP (LF)	\$ 5.74		50.00	\$ 860.40
18" RCP		\$ 36.00	0.00	\$ -
Class A Conc (CY)		\$ 892.19	24.56	\$ 21,912.14
Steel (lb)		\$ 1.42	2,189.00	\$ 3,099.62
Pipe Bedding (CY)		\$ 48.60	11.60	\$ 563.76
Trench Backfill (CY)		\$ 2.99	161.90	\$ 483.76
Trench Compaction (CY)		\$ 6.36	129.52	\$ 823.75

Drainage Total \$ 29,300.43

Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$ 0.71	0.00	\$ -

Signing and Marking Total \$ -

Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$ 10,260.00	0.10	\$ 1,026.00
Temporary Pavement			\$ -
Temporary Drainage (Stream Diversion)	\$ 4,428.00	1.00	\$ 4,428.00

Staging Total \$ 5,454.00

Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$ 4.39	19.33	\$ 84.91
Temporary Grassing (AC)	\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)	\$ 4.24	200.00	\$ 847.20
Check Dam Type C Silt Fence (LF)	\$ 6.79	200.00	\$ 1,358.40
Erosion Control Mats (SY)	\$ 1.87	66.67	\$ 124.80
Landscape Mulch (SY)	\$ 3.58	66.67	\$ 238.40
Perm Grassing (AC)	\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)	\$ 60.98	16.00	\$ 975.74
Plastic Filter Fabric (SY)	\$ 5.72	16.00	\$ 91.58
4" Ditch Paving (SY)	\$ 54.65	0.00	\$ -

Erosion Control Total \$ 3,721.04

Construction Cost Total \$ 41,741.73

Traffic Control (8% of Construction Total \$) \$ 3,339.34

Construction Cost Grand Total \$ 45,081.07

Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00	50.00	\$ 3,300.00
Buried	\$ 16.50	\$ 82.50	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	2.00	\$ 1,375.00
Phone				
Aerial	\$ 11.00	\$ 27.50	50.00	\$ 1,925.00
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50	50.00	\$ 1,925.00
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Gas				
4" main	\$ 16.50	\$ 66.00	0.00	\$ -
Water				
8" main	\$ 16.50	\$ 93.50	50.00	\$ 5,500.00
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
Sewer			0.00	\$ -
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 14,025.00</b>

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$ 4.00	2,000.00	\$ 8,000.00
<b>ROW Total</b>			<b>\$ 8,000.00</b>



General Information		Map	
<b>Project ID</b>			
<b>Street Name</b>	Silver Leaf Drive		
<b>Site Visit Date</b>	5/21/13		
<b>Road Classification</b>	Internal Local		
<b>Project Notes</b>			
Urban typical w/ valley gutter. Point is close to FEMA Zone A flood boundary. Adding cost of Zone A flood study given limited location information			
<b>Field Notes</b>			
<b>Design (Existing Site Features)</b>			
<b>Existing Road Laneage</b>	2-12'		
<b>Existing Shld Width (paved and grass) (feet)</b>	10' Grass		
<b>Existing Side Slopes</b>	4:1		
<b>Existing Guardrail</b>	None		
<b>Depth fm Pavement to Top of Culvert (ft):</b>	5		
<b>Pipe Type and Size</b>	1-54" CMP		
<b>Pipe Condition (1-5) (1 is new)</b>	4		
Condition Notes:			
<b>Pavement Type/Condition</b>	Good		
<b>Environmental Features</b>			
<b>Wetlands</b>	X (downstream)		
<b>Ditches</b>	None		
<b>Utilities (Visual Inspection)</b>			
<b>Electric</b>	Aerial		
<b>Cable</b>	Buried		
<b>Phone</b>	Buried		
<b>Gas</b>	Buried		
<b>Water</b>	Buried		
<b>Sewer</b>			
<b>Other</b>			
<b>Stage Construction Options</b>			
<b>Close Location to Traffic</b>	X		
<b>Maintain One Lane - No Temp Pavement</b>			
<b>Maintain One Lane - Temp Pavement</b>			
Stage Construction Notes: Replace inlet on each side			
<b>Proposed Design</b>			
<b>Roadway Section</b>			
<b>Culvert Size &amp; Material</b>	dbl 4' x 3' box, concrete, 140'		
<b>Utility Relocations</b>	Phone, cable, gas, water		
<b>Guardrail Replacement</b>			
<b>Miscellaneous Features</b>			
<b>Planning Cost Estimate</b>			
<b>Type</b>	<b>Notes</b>	<b>Total</b>	
<b>Design</b>	Includes 10% Construction Cost and surveying needs	\$29,259	
<b>Right of Way Cost</b>	Assuming project extends 4,800 sf beyond ROW	\$19,200	
<b>Utility Relocation Cost</b>	Buried utilities	\$16,775	
<b>Construction Cost</b>	Assuming 1/10 acre clearing and grubbing	\$167,593	
<b>Environmental Permits</b>	Permitting, Zone A flood study	\$15,000	
<b>Total Planning Estimate</b>		<b>\$247,827</b>	





**Photo 1:**



**Photo 2:**

175 Silver Leaf Drive

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

**1**

Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	240.00	\$ 1,345.28
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	20.00	\$ 1,183.20
Drain Inlet (EA)		\$ 3,000.00	2.00	\$ 6,000.00
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
<b>Subtotal</b>				<b>\$ 8,528.48</b>
<b>Grading Complete (5% of Rwy Items &amp; Drng Total \$)</b>				<b>\$ 6,675.57</b>
<b>Roadway Total</b>				<b>\$ 15,204.05</b>
Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	544.44	\$ 5,651.33
54" CMP (LF)	\$ 24.60		140.00	\$ 10,332.00
54" RCP		\$ 217.35	0.00	\$ -
Class A Conc (CY)		\$ 892.19	92.81	\$ 82,803.97
Steel (lb)		\$ 1.42	13,265.00	\$ 18,783.24
Pipe Bedding (CY)		\$ 48.60	52.60	\$ 2,556.36
Trench Backfill (CY)		\$ 2.99	601.29	\$ 1,796.65
Trench Compaction (CY)		\$ 6.36	481.03	\$ 3,059.36
<b>Drainage Total</b>				<b>\$ 124,982.91</b>
Signing and Marking		Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)		\$ 0.71	0.00	\$ -
<b>Signing and Marking Total</b>				<b>\$ -</b>
Staging		Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)		\$ 10,260.00	0.10	\$ 1,026.00
Temporary Pavement				\$ -
Temporary Drainage (Stream Diversion)		\$ 4,428.00	1.00	\$ 4,428.00
<b>Staging Total</b>				<b>\$ 5,454.00</b>
Erosion Control		Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)		\$ 4.39	128.89	\$ 566.08
Temporary Grassing (AC)		\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)		\$ 4.24	560.00	\$ 2,372.16
Check Dam Type C Silt Fence (LF)		\$ 6.79	560.00	\$ 3,803.52
Erosion Control Mats (SY)		\$ 1.87	186.67	\$ 349.44
Landscape Mulch (SY)		\$ 3.58	186.67	\$ 667.52
Perm Grassing (AC)		\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)		\$ 60.98	26.67	\$ 1,626.24
Plastic Filter Fabric (SY)		\$ 5.72	26.67	\$ 152.64
4" Ditch Paving (SY)		\$ 54.65	0.00	\$ -
<b>Erosion Control Total</b>				<b>\$ 9,537.60</b>
<b>Construction Cost Total</b>				<b>\$ 155,178.56</b>
<b>Traffic Control (8% of Construction Total \$)</b>				<b>\$ 12,414.28</b>
<b>Construction Cost Grand Total</b>				<b>\$ 167,592.85</b>
Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00		\$ -
Buried	\$ 16.50	\$ 82.50	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	50.00	\$ 3,575.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	50.00	\$ 3,575.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Gas				
4" main	\$ 16.50	\$ 66.00	50.00	\$ 4,125.00
Water				
8" main	\$ 16.50	\$ 93.50	50.00	\$ 5,500.00
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
Sewer			0.00	\$ -
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 16,775.00</b>
Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost	
Permanent Easement	\$ 4.00	4,800.00	\$ 19,200.00	
<b>ROW Total</b>			<b>\$ 19,200.00</b>	





General Information		Map	
<b>Project ID</b>			
<b>Street Name</b>	<b>503 Westbridge Drive</b>		
<b>Site Visit Date</b>	5/22/13		
<b>Road Classification</b>	Internal Local		
<b>Project Notes</b>			
Urban typical section with Curb and gutter			
<b>Field Notes</b>			
<b>Design (Existing Site Features)</b>			
<b>Existing Road Laneage</b>	2-12'		
<b>Existing Shld Width (paved and grass) (feet)</b>	None		
<b>Existing Side Slopes</b>	Flat		
<b>Existing Guardrail</b>	None		
<b>Depth fm Pavement to Top of Culvert (ft):</b>	3		
<b>Pipe Type and Size (with headwall, 45°)</b>	48" CMP; 45'		
<b>Pipe Condition (1-5) (1 is new)</b>	4		
Condition Notes: Debris in channel; approx. 1.5' drop in last section of pipe; US filled/damaged to 3.5'			
<b>Pavement Type/Condition</b>	Good/Asphalt		
<b>Environmental Features</b>			
<b>Wetlands</b>	None		
<b>Ditches</b>	None		
<b>Utilities (Visual Inspection)</b>			
<b>Electric</b>	Buried		
<b>Cable</b>	Buried		
<b>Phone</b>	Buried		
<b>Gas</b>			
<b>Water</b>	Buried		
<b>Sewer</b>			
<b>Other</b>			
<b>Proposed Design</b>			
<b>Roadway Section</b>			
<b>Culvert Size &amp; Material</b>	5' x 3' box, concrete, 45' Length		
<b>Utility Relocations</b>	Electric, cable, phone, water		
<b>Guardrail Replacement</b>			
<b>Miscellaneous Features</b>			
<b>Planning Cost Estimate</b>			
<b>Type</b>	<b>Notes</b>	<b>Total</b>	
<b>Design</b>	Includes 10% Construction Cost and surveying needs	\$10,078	
<b>Right of Way Cost</b>	Assuming project extends 1,200 sf beyond ROW	\$4,800	
<b>Utility Relocation Cost</b>	Buried utilities	\$14,080	
<b>Construction Cost</b>	Assuming 1/10 acre clearing and grubbing	\$50,776	
<b>Environmental Permits</b>	Assuming minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$89,733</b>	



**Photo 1:**



**Photo 2:**

503 Westbridge Drive

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

**1**



Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$0.73	\$4.87	168.00	\$941.70
Curb and Gutter (LF)	\$28.56	\$30.60	20.00	\$1,183.20
Drain Inlet (EA)		\$3,000.00	0.00	\$0.00
4" Sidewalk (SY)	\$13.56	\$36.90	0.00	\$0.00
Guardrail (LF)	\$4.88	\$49.09	0.00	\$0.00
End Anchorage (EA)		\$1,380.00	0.00	\$0.00
<b>Subtotal</b>				<b>\$2,124.90</b>

Grading Complete (5% of Rwy Items & Drng Total \$) \$1,806.26

Roadway Total \$3,931.16

Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$10.38	93.33	\$968.80
48" CMP (LF)	\$24.60		45.00	\$3,321.00
48" RCP		\$193.20	0.00	\$0.00
Class A Conc (CY)		\$892.19	27.85	\$24,842.97
Steel (lb)		\$1.42	2,529.50	\$3,581.77
Pipe Bedding (CY)		\$48.60	12.20	\$592.92
Trench Backfill (CY)		\$2.99	85.80	\$256.37
Trench Compaction (CY)		\$6.36	68.64	\$436.55

Drainage Total \$34,000.39

Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$0.71	0.00	\$0.00

Signing and Marking Total \$0.00

Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$10,260.00	0.10	\$1,026.00
Temporary Pavement			\$0.00
Temporary Drainage (Stream Diversion)	\$4,428.00	1.00	\$4,428.00

Staging Total \$5,454.00

Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$4.39	16.33	\$71.74
Temporary Grassing (AC)	\$855.60	0.00	\$0.00
Type C Silt Fence (LF)	\$4.24	180.00	\$762.48
Check Dam Type C Silt Fence (LF)	\$6.79	180.00	\$1,222.56
Erosion Control Mats (SY)	\$1.87	60.00	\$112.32
Landscape Mulch (SY)	\$3.58	60.00	\$214.56
Perm Grassing (AC)	\$1,402.20	0.00	\$0.00
Rip Rap Type 3 12" (SY)	\$60.98	18.67	\$1,138.37
Plastic Filter Fabric (SY)	\$5.72	18.67	\$106.85
4" Ditch Paving (SY)	\$54.65	0.00	\$0.00

Erosion Control Total \$3,628.87

Construction Cost Total \$47,014.42

Traffic Control (8% of Construction Total \$) \$3,761.15

Construction Cost Grand Total \$50,775.57

Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$11.00	\$55.00		\$0.00
Buried	\$16.50	\$82.50	40.00	\$3,960.00
Wooden Pole	\$82.50	\$605.00		\$0.00
Phone				
Aerial	\$11.00	\$27.50		\$0.00
Buried	\$16.50	\$55.00	40.00	\$2,860.00
Wooden Pole	\$82.50	\$605.00		\$0.00
Cable				
Aerial	\$11.00	\$27.50		\$0.00
Buried	\$16.50	\$55.00	40.00	\$2,860.00
Wooden Pole	\$82.50	\$605.00		\$0.00
Gas				
4" main	\$16.50	\$66.00		\$0.00
Water				
8" main	\$16.50	\$93.50	40.00	\$4,400.00
Relocate Fire Hydrant (EA)		\$2,609.22		\$0.00
Sewer			0.00	\$0.00
12" main	\$16.50	\$82.50	0.00	\$0.00
<b>Utility Relocation Total</b>				<b>\$14,080.00</b>

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$4.00	1,200.00	\$4,800.00
<b>ROW Total</b>			<b>\$4,800.00</b>





General Information		Map	
<b>Project ID</b>			
<b>Street Name</b>	<b>517 Westbridge Drive</b>		
<b>Site Visit Date</b>	5/22/13		
<b>Road Classification</b>	Internal Local		
<b>Project Notes</b>			
Urban typical section with Curb and gutter			
<b>Field Notes</b>			
<b>Design (Existing Site Features)</b>			
<b>Existing Road Laneage</b>	2-12'		
<b>Existing Shld Width (paved and grass) (feet)</b>	None		
<b>Existing Side Slopes</b>	Flat		
<b>Existing Guardrail</b>	None		
<b>Depth fm Pavement to Top of Culvert (ft):</b>	3		
<b>Pipe Type and Size</b>	54" CMP		
<b>Pipe Condition (1-5) (1 is new)</b>	4		
Condition Notes: 0.5' drop; 1' of sand in pipe (45' pipe length); Capacity Issue			
<b>Pavement Type/Condition</b>			
<b>Environmental Features</b>			
<b>Wetlands</b>	None		
<b>Ditches</b>	None		
<b>Utilities (Visual Inspection)</b>			
<b>Electric</b>	Buried		
<b>Cable</b>	Buried		
<b>Phone</b>	Buried		
<b>Gas</b>			
<b>Water</b>	Buried		
<b>Sewer</b>			
<b>Other</b>			
<b>Stage Construction Options</b>			
<b>Close Location to Traffic</b>			
<b>Maintain One Lane - No Temp Pavement</b>		X	
<b>Maintain One Lane - Temp Pavement</b>			
Stage Construction Notes: Stage const. such that one lane is open at all times			
<b>Proposed Design</b>			
<b>Roadway Section</b>			
<b>Culvert Size &amp; Material</b>	5' x 3' box, concrete, 45' length		
<b>Utility Relocations</b>	Electric, cable, phone, water		
<b>Guardrail Replacement</b>			
<b>Miscellaneous Features</b>			
<b>Planning Cost Estimate</b>			
<b>Type</b>	<b>Notes</b>	<b>Total</b>	
<b>Design</b>	Includes 10% Construction Cost and surveying needs	\$10,091	
<b>Right of Way Cost</b>	Assuming project extends 2,000 sf beyond ROW	\$8,000	
<b>Utility Relocation Cost</b>	Buried utilities	\$14,080	
<b>Construction Cost</b>	Assuming 1/10 acre clearing and grubbing	\$50,911	
<b>Environmental Permits</b>	Assuming minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$93,082</b>	

517 Westbridge Drive

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

**1**



**Photo 1:**



**Photo 2:**



Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	168.00	\$ 941.70
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	20.00	\$ 1,183.20
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
Subtotal				\$ 2,124.90
Grading Complete (5% of Rwy Items & Drng Total \$)				\$ 1,812.24
Roadway Total				\$ 3,937.13
Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	99.17	\$ 1,029.35
54" CMP (LF)	\$ 24.60		45.00	\$ 3,321.00
54" RCP		\$ 233.28	0.00	\$ -
Class A Conc (CY)		\$ 892.19	27.85	\$ 24,842.97
Steel (lb)		\$ 1.42	2,529.50	\$ 3,581.77
Pipe Bedding (CY)		\$ 48.60	12.20	\$ 592.92
Trench Backfill (CY)		\$ 2.99	93.09	\$ 278.16
Trench Compaction (CY)		\$ 6.36	74.47	\$ 473.65
Drainage Total				\$ 34,119.83
Signing and Marking		Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)		\$ 0.71	0.00	\$ -
Signing and Marking Total				\$ -
Staging		Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)		\$ 10,260.00	0.10	\$ 1,026.00
Temporary Pavement				\$ -
Temporary Drainage (Stream Diversion)		\$ 4,428.00	1.00	\$ 4,428.00
Staging Total				\$ 5,454.00
Erosion Control		Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)		\$ 4.39	16.33	\$ 71.74
Temporary Grassing (AC)		\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)		\$ 4.24	180.00	\$ 762.48
Check Dam Type C Silt Fence (LF)		\$ 6.79	180.00	\$ 1,222.56
Erosion Control Mats (SY)		\$ 1.87	60.00	\$ 112.32
Landscape Mulch (SY)		\$ 3.58	60.00	\$ 214.56
Perm Grassing (AC)		\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)		\$ 60.98	18.67	\$ 1,138.37
Plastic Filter Fabric (SY)		\$ 5.72	18.67	\$ 106.85
4" Ditch Paving (SY)		\$ 54.65	0.00	\$ -
Erosion Control Total				\$ 3,628.87
Construction Cost Total				\$ 47,139.83
Traffic Control (8% of Construction Total \$)				\$ 3,771.19
Construction Cost Grand Total				\$ 50,911.02
Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00		\$ -
Buried	\$ 16.50	\$ 82.50	40.00	\$ 3,960.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	40.00	\$ 2,860.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	40.00	\$ 2,860.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Gas				
4" main	\$ 16.50	\$ 66.00		\$ -
Water				
8" main	\$ 16.50	\$ 93.50	40.00	\$ 4,400.00
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
Sewer			0.00	\$ -
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
Utility Relocation Total				\$ 14,080.00
Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost	
Permanent Easement	\$ 4.00	2,000.00	\$ 8,000.00	
ROW Total			\$ 8,000.00	

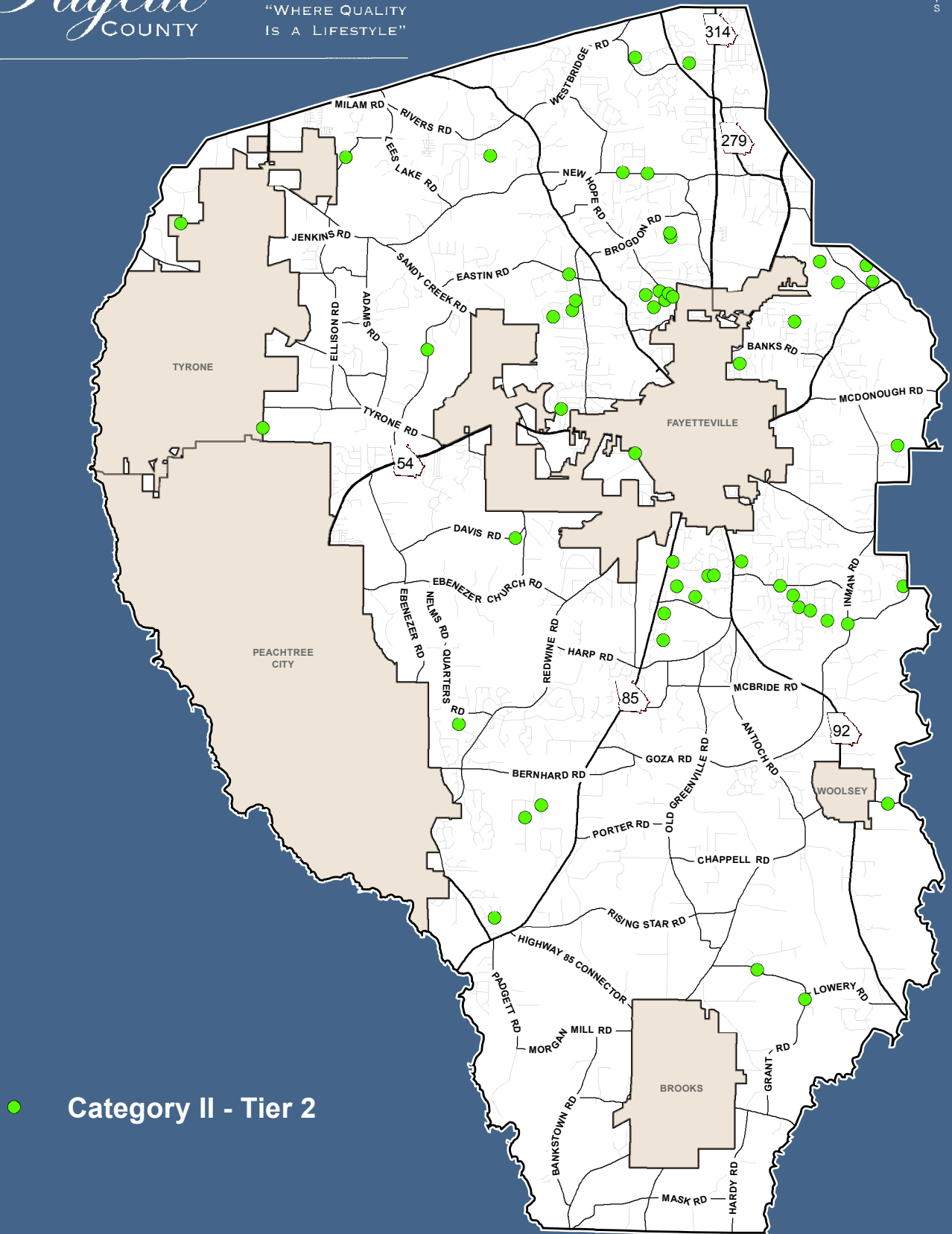






Fayette  
COUNTY

"WHERE QUALITY  
IS A LIFESTYLE"



● Category II - Tier 2





## CATEGORY II - TIER 2

PROJECT NAME	PROJECT DESCRIPTION	ESTIMATED COST
170 Angela Dr	2 X 30" RCP, 84'	\$59,084
165 North Bend Ct	2 x 42 " RCP, 272'	\$187,610
110 Branchwood Ct	48' RCP, 52'	\$58,323
140 Brandon Mill Cir - East	48", RCP, 500'	\$269,895
115 Brandon Mill Cir - North	48", RCP, 250'	\$187,332
225 Brandon Mill Cir - SW	8'x4' RBC, 175'	\$369,852
295 Brandon Mill Cir - West	48", RCP, 350'	\$230,615
115 Brockton Ct	60" RCP, 64'	\$105,739
223 Cedar Trl	48" RCP, 50'	\$58,206
Coastline Rd	trp 10'x8', 232'	\$539,571
171 County Line Ct	4'x3' RBC, 84'	\$116,051
178 Crabapple Ln	trp 8'x5' RBC, 70'	\$383,326
168 Cross Creek Trl	8'x5' RBC, 80'	\$562,174
130 Darren Dr	80' prestressed concrete beam bridg	\$383,630
118 Davis Rd	5 10'x4' RBC, 85'	\$871,871
308 Deauville Way	2 x 30 " RCP, 610 '	\$217,516
175 Deer Trl	36" RCP	\$88,923
161 Deerfield Ln	36" RCP, 64'	\$100,012
130 Deerfield Ln	36" RCP, 56'	\$98,924
325 Derby Dr	54" RCP, 75'	\$129,740
116 Downing Ct	4'x3' RBC, 45'	\$84,127
584 Flat Creek Trl	trp 10'x4' RBC, 70'	\$535,551
130 Greenfield Cir	5'x3' RBC, 45'	\$98,969
250 Greenfield Cir	2 x 42" RCP, 108'	\$100,073
165 Grandchester Way	60" RCP, 80'	\$159,475
250 Grant Rd	60" RCP, 48'	\$76,779
426 Grant Rd	60" RCP, 48'	\$76,779
226 Graves Rd	dbl 30" RCP, 70'	\$71,856
110 Gristmill Dr	6'x3' RBC, 80'	\$159,309
120 Heritage Way - North	48" RCP, 400"	\$240,898
160 Heritage Way - South	48" RCP, 200'	\$177,039
287 Hilo Rd	trp 24" RCP, 186'	\$69,108
448 Inman Rd	dbl 7' x 6' RBC, 77'	\$192,130
510 Janice Dr	dbl 6'x4' RBC, 70'	\$196,472
671 Kenwood Rd	60" RCP, 57'	\$96,178



## CATEGORY II - TIER 2

PROJECT NAME	PROJECT DESCRIPTION	ESTIMATED COST
547 Kenwood Rd	dbl 8'x5' RBC, 80'	\$229,611
200 Kingswood Dr	48" RCP, 92'	\$115,742
330 Merrydale Dr	60" RCP, 88'	\$110,280
110 Mark Ln	dbl 6'x4' RBC, 90'	\$249,037
130 Matthew Way	dbl 9'x4' RBC, 80'	\$322,809
145 Millers Oak Way	36" RCP, 322'	\$202,401
420 North Dr	5'x4' RBC, 80'	\$132,292
290 Oak St	42" RCP, 64'	\$66,563
220 Old Ivy	42" RCP, 142'	\$117,610
190 Ponderosa Dr	48" RCP, 40'	\$104,203
125 Ridge Brook Ct	48" RCP, 173'	\$159,342
545 Ridgemont Dr	36" RCP, 32 36" of HDPE, 260'	\$107,033
170 Ridge Way	48" RCP, 136'	\$228,742
Royal Ridge Way	dbl 8x5 RBC, 62'	\$214,176
120 Shoal Creek Rd	Trp 8' x 8'RBC, 184'	\$380,630
261 Trickum Creek Rd	trp 8' x 5' RBC, 70'	\$346,541
<b>Tier 2 Subtotal</b>		<b>\$10,440,149</b>
<b>2016 CATEGORY II TOTAL</b>		<b>\$14,145,522</b>





General Information		Map	
Project ID			
Street Name	170 Angela Drive		
Site Visit Date	1/20/2016		
Road Classification	Minor road		
Project Notes			
Field Notes			
Design (Existing Site Features)			
Existing Road Laneage	2-11'		
Existing Shld Width (paved and grass) (feet)	4'		
Existing Side Slopes	4:1		
Existing Guardrail	None		
Depth fm Pavement to Top of Culvert (ft):	3'		
Pipe Type and Size	CMPs 2x30"		
Pipe Condition (1-5) (1 is new)	4-5		
Condition Notes: Two corrugated metal pipes 1.8' apart. Both have rusted out bottoms. No headwall			
Pavement Type/Condition	Asphalt/Good		
Environmental Features			
Wetlands			
Ditches	Roadside drainage ditches		
State Waters			
Utilities (Visual Inspection)			
Electric	Aerial		
Cable	Buried		
Phone	Aerial		
Gas	Unknown		
Water	Unknown		
Sewer	Unknown		
Other			
Proposed Design			
Roadway Section	Typical		
Culvert Size & Material	2x30" Round RCP with straight headwall		
Utility Relocations	Utility pole with electric and phone wires. Buried cable		
Guardrail Replacement			
Miscellaneous Features			
Planning Cost Estimate			
Type	Notes	Total	
Design	Includes 10% of Construction Cost and surveying needs	\$8,145	
Right of Way Cost	Project entirely in ROW	\$0	
Utility Relocation Cost		\$9,488	
Construction Cost		\$31,451	
Environmental Permits	Assuming minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$59,084</b>	





**Photo 1:** Upstream end of culverts looking southwest towards Angela Dr.



**Photo 2:** Downstream end of culverts

## Angela Drive

**Photo Date:**

1/20/2016

**Taken By:**

David Gibbs

**Page**

1



Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$0.73	\$4.87	209.00	\$1,171.51
Curb and Gutter (LF)	\$28.56	\$30.60	0.00	\$0.00
Drain Inlet (EA)		\$3,000.00	0.00	\$0.00
4" Sidewalk (SY)	\$13.56	\$36.90	0.00	\$0.00
Guardrail (LF)	\$4.88	\$49.09	0.00	\$0.00
End Anchorage (EA)		\$1,380.00	0.00	\$0.00
<b>Subtotal</b>				<b>\$1,171.51</b>

Grading Complete (5% of Rwy Items & Drng Total \$) **\$1,051.07**

**Roadway Total \$2,222.58**

Drainage	Removal Unit Cost	\$2.00	Amount	Total Cost
Trench Excavation (CY)		\$10.38	100.63	\$1,044.54
30" CMP	\$19.62		88.00	\$1,726.56
30" RCP		\$105.60	88.00	\$9,292.80
Class A Conc (CY)		\$892.19	7.24	\$6,459.44
Steel (lb)		\$1.42	0.00	\$0.00
Pipe Bedding (CY)		\$48.60	15.48	\$752.40
Trench Backfill (CY)		\$2.99	71.08	\$212.40
Trench Compaction (CY)		\$6.36	56.87	\$361.68

**Drainage Total \$19,849.81**

Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$0.71		\$0.00

**Signing and Marking Total \$0.00**

Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$10,260.00	0.01	\$141.32
Temporary Pavement			\$0.00
Temporary Drainage (Stream Diversion)	\$4,428.00	1.00	\$4,428.00

**Staging Total \$4,569.32**

Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$4.39	23.22	\$101.99
Temporary Grassing (AC)	\$855.60	0.00	\$0.00
Type C Silt Fence (LF)	\$4.24	176.00	\$745.54
Check Dam Type C Silt Fence (LF)	\$6.79	176.00	\$1,195.39
Erosion Control Mats (SY)	\$1.87	19.56	\$36.61
Landscape Mulch (SY)	\$3.58	0.00	\$0.00
Perm Grassing (AC)	\$1,402.20	0.00	\$0.00
Rip Rap Type 3 12" (SY)	\$60.98	6.00	\$365.90
Plastic Filter Fabric (SY)	\$5.72	6.00	\$34.34
4" Ditch Paving (SY)	\$54.65	0.00	\$0.00

**Erosion Control Total \$2,479.78**

**Construction Cost Total \$29,121.49**

**Traffic Control (8% of Construction Total \$) \$2,329.72**

**Construction Cost Grand Total \$31,451.21**

Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$11.00	\$55.00	50.00	\$3,300.00
Buried	\$16.50	\$82.50	0.00	\$0.00
Wooden Pole	\$82.50	\$605.00	1.00	\$687.50
Phone				
Aerial	\$11.00	\$27.50	50.00	\$1,925.00
Buried	\$16.50	\$55.00	0.00	\$0.00
Wooden Pole	\$82.50	\$605.00	0.00	\$0.00
Cable				
Aerial	\$11.00	\$27.50	0.00	\$0.00
Buried	\$16.50	\$55.00	50.00	\$3,575.00
Wooden Pole	\$82.50	\$605.00	0.00	\$0.00
Gas				
4" main	\$16.50	\$66.00	0.00	\$0.00
Water				
8" main	\$16.50	\$93.50	0.00	\$0.00
Sewer				
12" main	\$16.50	\$82.50	0.00	\$0.00
<b>Utility Relocation Total</b>				<b>\$9,487.50</b>

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$4.00	0.00	\$0.00
<b>ROW Total</b>			<b>\$0.00</b>



General Information		Map	
Project ID			
Street Name	165 North Bend Court		
Site Visit Date	2/4/2016		
Road Classification	Minor road		
Project Notes			
Field Notes			
Design (Existing Site Features)			
Existing Road Laneage	2-11.5'		
Existing Shld Width (paved and grass) (feet)	14'		
Existing Side Slopes	3:1		
Existing Guardrail	N/A		
Depth fm Pavement to Top of Culvert (ft):	5'		
Pipe Type and Size	42" CMP		
Pipe Condition (1-5) (1 is new)	3-4		
Condsirable rusting.			
Pavement Type/Condition	Asphalt/Good		
Environmental Features			
Wetlands			
Ditches			
State Waters			
Utilities (Visual Inspection)			
Electric	Aerial		
Cable	Unknown		
Phone	Aerial		
Gas	Unknown		
Water	Unknown		
Sewer	Unknown		
Other	Unknown		
Proposed Design			
Roadway Section	Typical		
Culvert Size & Material	2 x 42" round RCPs with straight headwalls.		
Utility Relocations	Utility pole and hung wires, possible water main		
Guardrail Replacement			
Miscellaneous Features			
Planning Cost Estimate			
Type	Notes	Total	
Design	Includes 10% Construction cost and surveying needs	\$16,011	
Right of Way Cost	Assuming project extends beyond ROW, 1/5 acre	\$34,848	
Utility Relocation Cost	Aerial phone and electric, utility pole, water main	\$16,638	
Construction Cost		\$110,113	
Environmental Permits	Assuming minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$187,610</b>	







**Photo 1:** Upstream end of culvert looking South towards North Bend Court



**Photo 2:** Downstream looking South towards North Bend Court.

**North Bend Court**

**Photo Date:**

2/4/2016

**Taken By:**

Christian Helfrich

**Page**

1

Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	276.00	\$ 1,547.07
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	40.00	\$ 2,366.40
Drain Inlet (EA)		\$ 3,000.00	2.00	\$ 6,000.00
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
<b>Subtotal</b>				<b>\$ 9,913.47</b>

Grading Complete (5% of Rwy Items & Drng Total \$) \$ 4,296.91

**Roadway Total \$ 14,210.38**

Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	472.22	\$ 4,901.67
42" CMP (LF)	\$ 24.60		176.00	\$ 12,988.80
42" RCP (LF)		\$ 142.52	272.00	\$ 38,766.53
Class A Conc (CY)		\$ 892.19	14.66	\$ 13,079.48
Steel (lb)		\$ 1.42	0.00	\$ -
Pipe Bedding (CY)		\$ 48.60	62.96	\$ 3,060.00
Trench Backfill (CY)		\$ 2.99	399.72	\$ 1,194.38
Trench Compaction (CY)		\$ 6.36	319.78	\$ 2,033.80

**Drainage Total \$ 76,024.64**

Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$ 0.71	0.00	\$ -

**Signing and Marking Total \$ -**

Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$ 10,260.00	0.25	\$ 2,565.00
Temporary Pavement			\$ -
Temporary Drainage (Stream Diversion)	\$ 4,428.00	1.00	\$ 4,428.00

**Staging Total \$ 6,993.00**

Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$ 4.39	150.67	\$ 661.73
Temporary Grassing (AC)	\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)	\$ 4.24	272.00	\$ 1,152.19
Check Dam Type C Silt Fence (LF)	\$ 6.79	272.00	\$ 1,847.42
Erosion Control Mats (SY)	\$ 1.87	0.00	\$ -
Landscape Mulch (SY)	\$ 3.58	0.00	\$ -
Perm Grassing (AC)	\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)	\$ 60.98	16.00	\$ 975.74
Plastic Filter Fabric (SY)	\$ 5.72	16.00	\$ 91.58
4" Ditch Paving (SY)	\$ 54.65	0.00	\$ -

**Erosion Control Total \$ 4,728.67**

**Construction Cost Total \$ 101,956.69**

Traffic Control (8% of Construction Total \$) \$ 8,156.54

**Construction Cost Grand Total \$ 110,113.23**

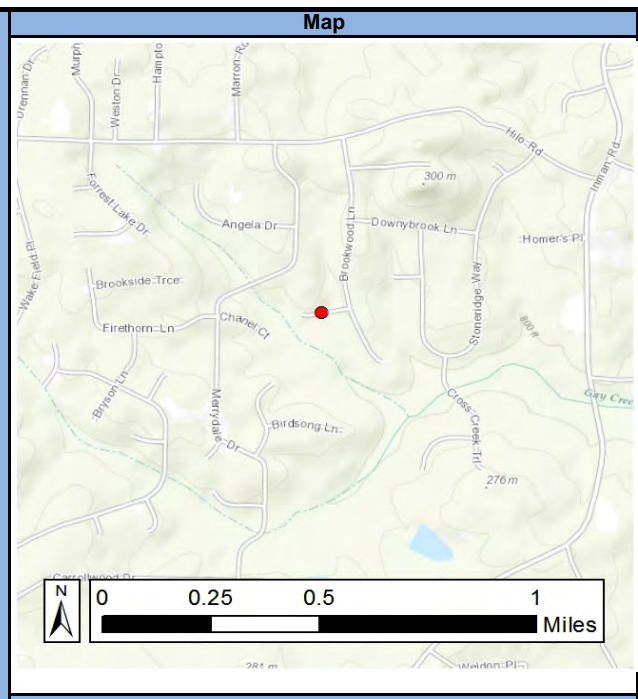
Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00	100.00	\$ 6,600.00
Buried	\$ 16.50	\$ 82.50	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	1.00	\$ 687.50
Phone				
Aerial	\$ 11.00	\$ 27.50	100.00	\$ 3,850.00
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Gas				
4" main	\$ 16.50	\$ 66.00	0.00	\$ -
Water				
8" main	\$ 16.50	\$ 93.50	50.00	\$ 5,500.00
Relocate Fire Hydrant (EA)		\$ 2,609.22	0.00	\$ -
Sewer				
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 16,637.50</b>

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$ 4.00	8712.00	\$ 34,848.00
<b>ROW Total</b>			<b>\$ 34,848.00</b>





General Information	
Project ID	
Street Name	110 Branchwood Ct
Site Visit Date	1/20/2016
Road Classification	Minor road
Project Notes	
Field Notes	
Design (Existing Site Features)	
Existing Road Laneage	2-12'
Existing Shld Width (paved and grass) (feet)	6.5'
Existing Side Slopes	1:1
Existing Guardrail	None
Depth fm Pavement to Top of Culvert (ft):	5.25'-6'
Pipe Type and Size	48" CMP
Pipe Condition (1-5) (1 is new)	4-5
Condition Notes: Rusted out bottom. No headwall.	
Pavement Type/Condition	Asphalt/Good
Environmental Features	
Wetlands	
Ditches	Drainage ditches upstream side
State Waters	
Utilities (Visual Inspection)	
Electric	Aerial
Cable	Unknown
Phone	Aerial
Gas	Unknown
Water	Unknown
Sewer	
Other	



Stage Construction Options	
Close Location to Traffic	
Maintain One Lane - No Temp Pavement	X
Maintain One Lane - Temp Pavement	
Stage Construction Notes:	

Proposed Design	
Roadway Section	Typical
Culvert Size & Material	48" round RCP with straight headwall
Utility Relocations	
Guardrail Replacement	
Miscellaneous Features	

Planning Cost Estimate		
Type	Notes	Total
Design	Includes 10% of Construction Cost and surveying needs	\$8,938
Right of Way Cost	Project entirely in ROW	\$0
Utility Relocation Cost	None identified	\$0
Construction Cost		\$39,384
Environmental Permits	Assuming minimal environmental permitting required	\$10,000

<b>Total Planning Estimate</b>	<b>\$58,323</b>
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**Photo 1:**  
Upstream end of culvert.



**Photo 2:** Downstream end of culvert looking northeast towards Branchwood Ct.

**Branchwood Court**

**Photo Date:**

1/20/2016

**Taken By:**

David Gibbs

**Page**

1

Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	144.00	\$ 807.17
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	0.00	\$ -
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
<b>Subtotal</b>				<b>\$ 807.17</b>
<b>Grading Complete (5% of Rwy Items &amp; Drng Total \$)</b>				<b>\$ 1,366.93</b>
<b>Roadway Total</b>				<b>\$ 2,174.10</b>
Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	138.67	\$ 1,439.36
48" CMP (LF)	\$ 24.60		52.00	\$ 1,279.20
48" RCP (LF)		\$ 193.20	52.00	\$ 10,046.40
Class A Conc (CY)		\$ 892.19	13.70	\$ 12,222.98
Steel (lb)		\$ 1.42	0.00	\$ -
Pipe Bedding (CY)		\$ 48.60	11.56	\$ 561.60
Trench Backfill (CY)		\$ 2.99	121.58	\$ 363.27
Trench Compaction (CY)		\$ 6.36	97.26	\$ 618.58
<b>Drainage Total</b>				<b>\$ 26,531.38</b>
Signing and Marking		Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)		\$ 0.71		\$ -
<b>Signing and Marking Total</b>				<b>\$ -</b>
Staging		Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)		\$ 10,260.00	0.04	\$ 423.97
Temporary Pavement				\$ -
Temporary Drainage (Stream Diversion)		\$ 4,428.00	1.00	\$ 4,428.00
<b>Staging Total</b>				<b>\$ 4,851.97</b>
Erosion Control		Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)		\$ 4.39	18.67	\$ 81.98
Temporary Grassing (AC)		\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)		\$ 4.24	208.00	\$ 881.09
Check Dam Type C Silt Fence (LF)		\$ 6.79	208.00	\$ 1,412.74
Erosion Control Mats (SY)		\$ 1.87	0.00	\$ -
Landscape Mulch (SY)		\$ 3.58	0.00	\$ -
Perm Grassing (AC)		\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)		\$ 60.98	8.00	\$ 487.87
Plastic Filter Fabric (SY)		\$ 5.72	8.00	\$ 45.79
4" Ditch Paving (SY)		\$ 54.65	0.00	\$ -
<b>Erosion Control Total</b>				<b>\$ 2,909.47</b>
<b>Construction Cost Total</b>				<b>\$ 36,466.92</b>
<b>Traffic Control (8% of Construction Total \$)</b>				<b>\$ 2,917.35</b>
<b>Construction Cost Grand Total</b>				<b>\$ 39,384.27</b>
Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00	0.00	\$ -
Buried	\$ 16.50	\$ 82.50	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Gas				
4" main	\$ 16.50	\$ 66.00	0.00	\$ -
Water				
8" main	\$ 16.50	\$ 93.50	0.00	\$ -
Sewer				
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ -</b>
Right of Way (Sq Ft)		Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement		\$ 4.00	0.00	\$ -
<b>ROW Total</b>				<b>\$ -</b>





General Information		Map	
<b>Project ID</b>			
<b>Street Name</b>	<b>Brandon Mill Cir - West</b>		
<b>Site Visit Date</b>	5/22/13		
<b>Road Classification</b>	Minor road		
<b>Project Notes</b>			
Urban typical section with valley gutter.			
<b>Field Notes</b>			
<b>Design (Existing Site Features)</b>			
<b>Existing Road Laneage</b>	2-10'		
<b>Existing Shld Width (paved and grass) (feet)</b>	4		
<b>Existing Side Slopes</b>	flat		
<b>Existing Guardrail</b>	none		
<b>Depth fm Pavement to Top of Culvert (ft):</b>	4		
<b>Pipe Type and Size</b>	48" CMP		
<b>Pipe Condition (1-5) (1 is new)</b>	4		
Condition Notes:			
<b>Pavement Type/Condition</b>	Asphalt/Good		
<b>Environmental Features</b>			
<b>Wetlands</b>	None		
<b>Ditches</b>	None		
<b>Utilities (Visual Inspection)</b>			
<b>Electric</b>	Buried		
<b>Cable</b>	Buried		
<b>Phone</b>	Buried		
<b>Gas</b>			
<b>Water</b>	Buried		
<b>Sewer</b>			
<b>Other</b>			
<b>Proposed Design</b>			
<b>Roadway Section</b>	Typical		
<b>Culvert Size &amp; Material</b>	48", RCP, 350' length		
<b>Utility Relocations</b>	Electric, cable, phone, water		
<b>Guardrail Replacement</b>			
<b>Miscellaneous Features</b>			
<b>Planning Cost Estimate</b>			
<b>Type</b>	<b>Notes</b>	<b>Total</b>	
<b>Design</b>	Includes 10% Construction Cost and surveying needs	\$19,474	
<b>Right of Way Cost</b>	Assuming project extends 7,500 sf beyond ROW	\$30,000	
<b>Utility Relocation Cost</b>	Buried utilities	\$26,400	
<b>Construction Cost</b>	Assuming 1/10 acre clearing and grubbing	\$144,741	
<b>Environmental Permits</b>	Assuming minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$230,615</b>	





**Photo 1:**



**Photo 2:**

Brandon Mill Cir - West

**Photo Date:**

7/2/2013

**Taken By:**

David King

**Page:**

**1**



Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	120	\$ 672.64
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	20	\$ 1,183.20
Drain Inlet (EA)		\$ 3,000.00		\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90		\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09		\$ -
End Anchorage (EA)		\$ 1,380.00		\$ -
Subtotal				\$ 1,855.84
Grading Complete (5% of Rwy Items & Drng Total \$)				\$ 5,597.18
Roadway Total				\$ 7,453.02
Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	972	\$ 10,091.67
48" CMP (LF)	\$ 24.60		350	\$ 8,610.00
48" RCP (LF)		\$ 193.20	350	\$ 67,620.00
Class A Conc (CY)		\$ 892.19	14	\$ 12,222.98
Steel (lb)		\$ 1.42	0	\$ -
Pipe Bedding (CY)		\$ 48.60	78	\$ 3,780.00
Trench Backfill (CY)		\$ 2.99	961	\$ 2,872.27
Trench Compaction (CY)		\$ 6.36	769	\$ 4,890.94
Drainage Total				\$ 110,087.85
Signing and Marking		Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)		\$ 0.71	0	\$ -
Signing and Marking Total				\$ -
Staging		Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)		\$ 10,260.00	0	\$ 1,026.00
Temporary Pavement				\$ -
Temporary Drainage (Stream Diversion)		\$ 4,428.00	1	\$ 4,428.00
Staging Total				\$ 5,454.00
Erosion Control		Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)		\$ 4.39	220	\$ 966.24
Temporary Grassing (AC)		\$ 855.60	0	\$ -
Type C Silt Fence (LF)		\$ 4.24	700	\$ 2,965.20
Check Dam Type C Silt Fence (LF)		\$ 6.79	700	\$ 4,754.40
Erosion Control Mats (SY)		\$ 1.87	233	\$ 436.80
Landscape Mulch (SY)		\$ 3.58	233	\$ 834.40
Perm Grassing (AC)		\$ 1,402.20	0	\$ -
Rip Rap Type 3 12" (SY)		\$ 60.98	16	\$ 975.74
Plastic Filter Fabric (SY)		\$ 5.72	16	\$ 91.58
4" Ditch Paving (SY)		\$ 54.65	0	\$ -
Erosion Control Total				\$ 11,024.37
Construction Cost Total				\$ 134,019.25
Traffic Control (8% of Construction Total \$)				\$ 10,721.54
Construction Cost Grand Total				\$ 144,740.79
Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00		\$ -
Buried	\$ 16.50	\$ 82.50	75	\$ 7,425.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	75	\$ 5,362.50
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	75	\$ 5,362.50
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Gas				
4" main	\$ 16.50	\$ 66.00		\$ -
Water				
8" main	\$ 16.50	\$ 93.50	75	\$ 8,250.00
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
Sewer			0	\$ -
12" main	\$ 16.50	\$ 82.50	0	\$ -
Utility Relocation Total				\$ 26,400.00
Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost	
Permanent Easement	\$ 4.00	7,500	\$ 30,000.00	
ROW Total			\$ 30,000.00	



General Information		Map	
<b>Project ID</b>			
<b>Street Name</b>	<b>Brandon Mill Cir - North</b>		
<b>Site Visit Date</b>	5/22/13		
<b>Road Classification</b>	Minor road		
<b>Project Notes</b>			
Urban typical section with valley gutter,			
<b>Field Notes</b>			
<b>Design (Existing Site Features)</b>			
<b>Existing Road Laneage</b>	2-10'		
<b>Existing Shld Width (paved and grass) (feet)</b>	4		
<b>Existing Side Slopes</b>	flat		
<b>Existing Guardrail</b>	none		
<b>Depth fm Pavement to Top of Culvert (ft):</b>	4		
<b>Pipe Type and Size</b>	48" CMP		
<b>Pipe Condition (1-5) (1 is new)</b>	3		
Condition Notes:			
<b>Pavement Type/Condition</b>	Asphalt/Good		
<b>Environmental Features</b>			
<b>Wetlands</b>	None		
<b>Ditches</b>	None		
<b>Utilities (Visual Inspection)</b>			
<b>Electric</b>	Buried		
<b>Cable</b>	Buried		
<b>Phone</b>	Buried		
<b>Gas</b>			
<b>Water</b>	Buried		
<b>Sewer</b>			
<b>Other</b>			
<b>Proposed Design</b>			
<b>Roadway Section</b>			
<b>Culvert Size &amp; Material</b>	48", RCP, 250' length		
<b>Utility Relocations</b>	Electric, cable, phone, water		
<b>Guardrail Replacement</b>			
<b>Miscellaneous Features</b>			
<b>Planning Cost Estimate</b>			
<b>Type</b>	<b>Notes</b>	<b>Total</b>	
<b>Design</b>	Includes 10% Construction Cost and surveying needs	\$15,539	
<b>Right of Way Cost</b>	Assuming 7,500 sf outside of ROW	\$30,000	
<b>Utility Relocation Cost</b>	Buried utilities	\$26,400	
<b>Construction Cost</b>	Applying 1/10 acre clearing and grubbing cost	\$105,392	
<b>Environmental Permits</b>	Assuming minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$187,332</b>	





**Photo 1:**



**Photo 2:**

Brandon Mill Cir - North

**Photo Date:**

7/2/2013

**Taken By:**

David King

**Page:**

**1**

Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	120.00	\$ 672.64
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	20.00	\$ 1,183.20
Drain Inlet (EA)		\$ 3,000.00		\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90		\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09		\$ -
End Anchorage (EA)		\$ 1,380.00		\$ -
<b>Subtotal</b>				<b>\$ 1,855.84</b>

Grading Complete (5% of Rwy Items & Drng Total \$) \$ 3,998.51

Roadway Total \$ 5,854.35

Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	500.00	\$ 5,190.00
48" CMP (LF)	\$ 24.60		250.00	\$ 6,150.00
48" RCP (LF)		\$ 193.20	250.00	\$ 48,300.00
Class A Conc (CY)		\$ 892.19	13.70	\$ 12,222.98
Steel (lb)		\$ 1.42	0.00	\$ -
Pipe Bedding (CY)		\$ 48.60	55.56	\$ 2,700.00
Trench Backfill (CY)		\$ 2.99	439.76	\$ 1,313.99
Trench Compaction (CY)		\$ 6.36	351.80	\$ 2,237.48

Drainage Total \$ 78,114.44

Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$ 0.71	0.00	\$ -

Signing and Marking Total \$ -

Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$ 10,260.00	0.10	\$ 1,026.00
Temporary Pavement			\$ -
Temporary Drainage (Stream Diversion)	\$ 4,428.00	1.00	\$ 4,428.00

Staging Total \$ 5,454.00

Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$ 4.39	153.33	\$ 673.44
Temporary Grassing (AC)	\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)	\$ 4.24	500.00	\$ 2,118.00
Check Dam Type C Silt Fence (LF)	\$ 6.79	500.00	\$ 3,396.00
Erosion Control Mats (SY)	\$ 1.87	166.67	\$ 312.00
Landscape Mulch (SY)	\$ 3.58	166.67	\$ 596.00
Perm Grassing (AC)	\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)	\$ 60.98	16.00	\$ 975.74
Plastic Filter Fabric (SY)	\$ 5.72	16.00	\$ 91.58
4" Ditch Paving (SY)	\$ 54.65	0.00	\$ -

Erosion Control Total \$ 8,162.77

Construction Cost Total \$ 97,585.57

Traffic Control (8% of Construction Total \$) \$ 7,806.85

Construction Cost Grand Total \$ 105,392.41

Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00		\$ -
Buried	\$ 16.50	\$ 82.50	75.00	\$ 7,425.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	75.00	\$ 5,362.50
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	75.00	\$ 5,362.50
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Gas				
4" main	\$ 16.50	\$ 66.00		\$ -
Water				
8" main	\$ 16.50	\$ 93.50	75.00	\$ 8,250.00
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
Sewer			0.00	\$ -
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 26,400.00</b>

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$ 4.00	7,500.00	\$ 30,000.00
<b>ROW Total</b>			<b>\$ 30,000.00</b>





General Information		Map											
Project ID													
Street Name	Brandon Mill Cir - East												
Site Visit Date	5/22/13												
Road Classification	Minor road												
Project Notes													
Urban typical section with valley gutter,													
Field Notes		<table border="1"> <thead> <tr> <th colspan="2">Stage Construction Options</th> </tr> </thead> <tbody> <tr> <td>Close Location to Traffic</td> <td>X</td> </tr> <tr> <td>Maintain One Lane - No Temp Pavement</td> <td></td> </tr> <tr> <td>Maintain One Lane - Temp Pavement</td> <td></td> </tr> <tr> <td colspan="2">Stage Construction Notes: Close roadway</td> </tr> </tbody> </table>		Stage Construction Options		Close Location to Traffic	X	Maintain One Lane - No Temp Pavement		Maintain One Lane - Temp Pavement		Stage Construction Notes: Close roadway	
Stage Construction Options													
Close Location to Traffic	X												
Maintain One Lane - No Temp Pavement													
Maintain One Lane - Temp Pavement													
Stage Construction Notes: Close roadway													
Design (Existing Site Features)													
Existing Road Laneage	2-10'												
Existing Shld Width (paved and grass) (feet)	4												
Existing Side Slopes	flat												
Existing Guardrail	none												
Depth fm Pavement to Top of Culvert (ft):	4												
Pipe Type and Size	48" CMP												
Pipe Condition (1-5) (1 is new)	3												
Condition Notes:													
Pavement Type/Condition	Asphalt/Good												
Environmental Features													
Wetlands	None												
Ditches	None												
Utilities (Visual Inspection)													
Electric	Buried												
Cable	Buried												
Phone	Buried												
Gas													
Water	Buried												
Sewer													
Other													
Proposed Design													
Roadway Section													
Culvert Size & Material	48", RCP, 500' length												
Utility Relocations	Electric, cable, phone, water												
Guardrail Replacement													
Miscellaneous Features													
Planning Cost Estimate													
Type	Notes	Total											
Design	Includes 10% Construction Cost and surveying needs	\$23,045											
Right of Way Cost	Assuming 7,500 sf outside of ROW	\$30,000											
Utility Relocation Cost	Buried utilities	\$26,400											
Construction Cost	Applying 1/10 acre clearing and grubbing cost	\$180,450											
Environmental Permits	Assuming minimal environmental permitting required	\$10,000											
<b>Total Planning Estimate</b>		<b>\$269,895</b>											



**Photo 1:**



**Photo 2:**

Brandon Mill Cir - East

**Photo Date:**

7/2/2013

**Taken By:**

David King

**Page:**

**1**



Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	120.00	\$ 672.64
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	20.00	\$ 1,183.20
Drain Inlet (EA)		\$ 3,000.00		\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90		\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09		\$ -
End Anchorage (EA)		\$ 1,380.00		\$ -
Subtotal				\$ 1,855.84
Grading Complete (5% of Rwy Items & Drng Total \$)				\$ 7,298.47
Roadway Total				\$ 9,154.31
Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	1,000.00	\$ 10,380.00
48" CMP (LF)	\$ 24.60		500.00	\$ 12,300.00
48" RCP (LF)		\$ 193.20	500.00	\$ 96,600.00
Class A Conc (CY)		\$ 892.19	13.70	\$ 12,222.98
Steel (lb)		\$ 1.42	0.00	\$ -
Pipe Bedding (CY)		\$ 48.60	111.11	\$ 5,400.00
Trench Backfill (CY)		\$ 2.99	892.84	\$ 2,667.82
Trench Compaction (CY)		\$ 6.36	714.28	\$ 4,542.80
Drainage Total				\$ 144,113.59
Signing and Marking		Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)		\$ 0.71	0.00	\$ -
Signing and Marking Total				\$ -
Staging		Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)		\$ 10,260.00	0.10	\$ 1,026.00
Temporary Pavement				\$ -
Temporary Drainage (Stream Diversion)		\$ 4,428.00	1.00	\$ 4,428.00
Staging Total				\$ 5,454.00
Erosion Control		Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)		\$ 4.39	320.00	\$ 1,405.44
Temporary Grassing (AC)		\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)		\$ 4.24	500.00	\$ 2,118.00
Check Dam Type C Silt Fence (LF)		\$ 6.79	500.00	\$ 3,396.00
Erosion Control Mats (SY)		\$ 1.87	166.67	\$ 312.00
Landscape Mulch (SY)		\$ 3.58	166.67	\$ 596.00
Perm Grassing (AC)		\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)		\$ 60.98	8.00	\$ 487.87
Plastic Filter Fabric (SY)		\$ 5.72	8.00	\$ 45.79
4" Ditch Paving (SY)		\$ 54.65	0.00	\$ -
Erosion Control Total				\$ 8,361.10
Construction Cost Total				\$ 167,083.01
Traffic Control (8% of Construction Total \$)				\$ 13,366.64
Construction Cost Grand Total				\$ 180,449.65
Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00		\$ -
Buried	\$ 16.50	\$ 82.50	75.00	\$ 7,425.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	75.00	\$ 5,362.50
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	75.00	\$ 5,362.50
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Gas				
4" main	\$ 16.50	\$ 66.00		\$ -
Water				
8" main	\$ 16.50	\$ 93.50	75.00	\$ 8,250.00
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
Sewer			0.00	\$ -
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
Utility Relocation Total				\$ 26,400.00
Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost	
Permanent Easement	\$ 4.00	7,500.00	\$ 30,000.00	
ROW Total			\$ 30,000.00	





General Information		Map	
Project ID			
Street Name	Brandon Mill Cir - SW		
Site Visit Date	5/22/13		
Road Classification	Minor road		
Project Notes			
Urban typical section with valley gutter,			
Field Notes			
Design (Existing Site Features)			
Existing Road Laneage	2-10'		
Existing Shld Width (paved and grass) (feet)	4		
Existing Side Slopes	flat		
Existing Guardrail	none		
Depth fm Pavement to Top of Culvert (ft):	4		
Pipe Type and Size	60" CMP		
Pipe Condition (1-5) (1 is new)	3		
Condition Notes: no headwall upstream or down			
Pavement Type/Condition	Asphalt/Good		
Environmental Features		Stage Construction Options	
Wetlands	None	Close Location to Traffic	X
Ditches	None	Maintain One Lane - No Temp Pavement	
		Maintain One Lane - Temp Pavement	
		Stage Construction Notes: Close roadway;	
Utilities (Visual Inspection)			
Electric	Buried		
Cable	Buried		
Phone	Buried		
Gas			
Water	Buried		
Sewer			
Other			
Proposed Design			
Roadway Section			
Culvert Size & Material	8' x 4' box, concrete, 175' length		
Utility Relocations	Electric, cable, phone, water		
Guardrail Replacement			
Miscellaneous Features			
Planning Cost Estimate			
Type	Notes	Total	
System Evaluation		\$25,000	
Design	Includes 10% Construction Cost and surveying needs	\$29,859	
Right of Way Cost	Assuming project extends 7,500 sf beyond ROW	\$30,000	
Utility Relocation Cost	Buried utilities	\$26,400	
Construction Cost	Assuming 1/10 acre clearing and grubbing	\$248,592	
Environmental Permits	Assuming minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$369,852</b>	



**Photo 1:**



**Photo 2:**

Brandon Mill Cir - Southwest

**Photo Date:**

7/2/2013

**Taken By:**

David King

**Page:**

**1**



Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	200.00	\$ 1,121.07
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	20.00	\$ 1,183.20
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
<b>Subtotal</b>				<b>\$ 2,304.27</b>

Grading Complete (5% of Rwy Items & Drng Total \$) \$ 10,148.25

Roadway Total \$ 12,452.51

Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	648.15	\$ 6,727.78
60" CMP (LF)	\$ 24.60		175.00	\$ 12,915.00
60" RCP (LF)		\$ 259.20	0.00	\$ -
Class A Conc (CY)		\$ 892.19	162.36	\$ 144,851.18
Steel (lb)		\$ 1.42	19,170.00	\$ 27,144.72
Pipe Bedding (CY)		\$ 48.60	65.60	\$ 3,188.16
Trench Backfill (CY)		\$ 2.99	722.36	\$ 2,158.42
Trench Compaction (CY)		\$ 6.36	577.89	\$ 3,675.38

Drainage Total \$ 200,660.64

Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$ 0.71	40.00	\$ 28.32

Signing and Marking Total \$ 28.32

Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$ 10,260.00	0.10	\$ 1,026.00
Temporary Pavement			\$ -
Temporary Drainage (Stream Diversion)	\$ 4,428.00	1.00	\$ 4,428.00

Staging Total \$ 5,510.64

Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$ 4.39	172.22	\$ 756.40
Temporary Grassing (AC)	\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)	\$ 4.24	700.00	\$ 2,965.20
Check Dam Type C Silt Fence (LF)	\$ 6.79	700.00	\$ 4,754.40
Erosion Control Mats (SY)	\$ 1.87	233.33	\$ 436.80
Landscape Mulch (SY)	\$ 3.58	233.33	\$ 834.40
Perm Grassing (AC)	\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)	\$ 60.98	26.67	\$ 1,626.24
Plastic Filter Fabric (SY)	\$ 5.72	26.67	\$ 152.64
4" Ditch Paving (SY)	\$ 54.65	0.00	\$ -

Erosion Control Total \$ 11,526.08

Construction Cost Total \$ 230,178.20

Traffic Control (8% of Construction Total \$) \$ 18,414.26

Construction Cost Grand Total \$ 248,592.45

Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00		\$ -
Buried	\$ 16.50	\$ 82.50	75.00	\$ 7,425.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	75.00	\$ 5,362.50
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	75.00	\$ 5,362.50
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Gas				
4" main	\$ 16.50	\$ 66.00		\$ -
Water				
8" main	\$ 16.50	\$ 93.50	75.00	\$ 8,250.00
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
Sewer			0.00	\$ -
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 26,400.00</b>

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$ 4.00	7,500.00	\$ 30,000.00
<b>ROW Total</b>			<b>\$ 30,000.00</b>



General Information		Map	
Project ID			
Street Name	115 Brockton Ct		
Site Visit Date	1/20/2016		
Road Classification	Minor road		
Project Notes			
Field Notes			
Design (Existing Site Features)			
Existing Road Laneage	2-10.5'		
Existing Shld Width (paved and grass) (feet)	15'		
Existing Side Slopes	1.5:1		
Existing Guardrail	None		
Depth fm Pavement to Top of Culvert (ft):	4'		
Pipe Type and Size	60" CMP		
Pipe Condition (1-5) (1 is new)	3-4		
Condition Notes: Rusted out bottom. Concrete headwall. Undercutting at upstream end. Existing blowout at storm drain inlet 1' x 1'			
Pavement Type/Condition	Asphalt/Good		
Environmental Features			
Wetlands			
Ditches			
State Waters			
Utilities (Visual Inspection)			
Electric	Aerial		
Cable	Buried		
Phone	Aerial		
Gas	Unknown		
Water	Unknown		
Sewer			
Other	Curb and gutter		
Proposed Design			
Roadway Section	Typical		
Culvert Size & Material	60" round RCP with straight headwall		
Utility Relocations	Removal/replacement drain inlets, buried cable		
Guardrail Replacement			
Miscellaneous Features			
Planning Cost Estimate			
Type	Notes	Total	
Design	10% of Construction Cost and any surveying needed	\$11,876	
Right of Way Cost	Assuming downstream end extends past ROW 1/20 acre	\$8,712	
Utility Relocation Cost		\$6,388	
Construction Cost		\$68,763	
Environmental Permits	Assuming minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$105,739</b>	







**Photo 1:** Upstream end of culvert.



**Photo 2:** Downstream end of culvert looking northeast towards Brockton Court.

**Brockton Court**

**Photo Date:**

1/20/2016

**Taken By:**

David Gibbs

**Page**

1

Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	154.00	\$ 863.22
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	40.00	\$ 2,366.40
Drain Inlet (EA)		\$ 3,000.00	2.00	\$ 6,000.00
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
<b>Subtotal</b>				<b>\$ 9,229.62</b>
<b>Grading Complete (5% of Rwy Items &amp; Drng Total \$)</b>				<b>\$ 2,601.85</b>
<b>Roadway Total</b>				<b>\$ 11,831.47</b>
Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	154.00	\$ 1,598.52
60" CMP (LF)	\$ 24.60		66.00	\$ 1,623.60
60" RCP (LF)		\$ 281.96	66.00	\$ 18,609.62
Class A Conc (CY)		\$ 892.19	21.58	\$ 19,253.42
Steel (lb)		\$ 1.42	0.00	\$ -
Pipe Bedding (CY)		\$ 48.60	17.11	\$ 831.60
Trench Backfill (CY)		\$ 2.99	110.28	\$ 329.52
Trench Compaction (CY)		\$ 6.36	88.22	\$ 561.11
<b>Drainage Total</b>				<b>\$ 42,807.39</b>
Signing and Marking		Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)		\$ 0.71		\$ -
<b>Signing and Marking Total</b>				<b>\$ -</b>
Staging		Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)		\$ 10,260.00	0.09	\$ 918.60
Temporary Pavement				\$ -
Temporary Drainage (Stream Diversion)		\$ 4,428.00	1.00	\$ 4,428.00
<b>Staging Total</b>				<b>\$ 5,346.60</b>
Erosion Control		Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)		\$ 4.39	34.22	\$ 150.30
Temporary Grassing (AC)		\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)		\$ 4.24	264.00	\$ 1,118.30
Check Dam Type C Silt Fence (LF)		\$ 6.79	264.00	\$ 1,793.09
Erosion Control Mats (SY)		\$ 1.87	0.00	\$ -
Landscape Mulch (SY)		\$ 3.58	0.00	\$ -
Perm Grassing (AC)		\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)		\$ 60.98	9.33	\$ 569.18
Plastic Filter Fabric (SY)		\$ 5.72	9.33	\$ 53.42
4" Ditch Paving (SY)		\$ 54.65	0.00	\$ -
<b>Erosion Control Total</b>				<b>\$ 3,684.30</b>
<b>Construction Cost Total</b>				<b>\$ 63,669.76</b>
<b>Traffic Control (8% of Construction Total \$)</b>				<b>\$ 5,093.58</b>
<b>Construction Cost Grand Total</b>				<b>\$ 68,763.34</b>
Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00	0.00	\$ -
Buried	\$ 16.50	\$ 82.50	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	50.00	\$ 3,575.00
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Gas				
4" main	\$ 16.50	\$ 66.00	0.00	\$ -
Water				
8" main	\$ 16.50	\$ 93.50	0.00	\$ -
Drain inlet		\$ 1,406.40	2.00	\$ 2,812.80
Sewer				
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 6,387.80</b>
Right of Way (Sq Ft)		Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement		\$ 4.00	2178.00	\$ 8,712.00
<b>ROW Total</b>				<b>\$ 8,712.00</b>





General Information		Map	
Project ID			
Street Name	223 Cedar Trail		
Site Visit Date	1/21/2016		
Road Classification	Minor road		
Project Notes			
Field Notes			
Design (Existing Site Features)			
Existing Road Laneage	2-13'		
Existing Shld Width (paved and grass) (feet)	1'		
Existing Side Slopes	2:1		
Existing Guardrail	None		
Depth fm Pavement to Top of Culvert (ft):	4'		
Pipe Type and Size	48" CMP		
Pipe Condition (1-5) (1 is new)	4-5		
Condition Notes: Rusted out bottoms, no headwalls. Streambed blowout on downstream side			
Pavement Type/Condition	Asphalt/Good		
Environmental Features			
Wetlands			
Ditches	Roadside drainage ditches		
State Waters			
Utilities (Visual Inspection)			
Electric	Unknown		
Cable	Unknown		
Phone	Unknown		
Gas	Unknown		
Water	Unknown		
Sewer			
Other			
Proposed Design			
Roadway Section	Typical		
Culvert Size & Material	48" round RCP with straight headwall		
Utility Relocations			
Guardrail Replacement			
Miscellaneous Features			
Planning Cost Estimate			
Type	Notes	Total	
Design	Includes 10% of Construction Cost and surveying needs	\$8,928	
Right of Way Cost	Project entirely in ROW	\$0	
Utility Relocation Cost	None identified	\$0	
Construction Cost		\$39,279	
Environmental Permits	Assuming minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$58,206</b>	





**Photo 1:** Upstream end of culvert.



**Photo 2:** Downstream end of culvert looking North towards Cedar Trail.

## Cedar Trail

**Photo Date:**

1/21/2016

**Taken By:**

David Gibbs

**Page**

1

Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	156.00	\$ 874.43
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	0.00	\$ -
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
Subtotal				\$ 874.43

Grading Complete (5% of Rwy Items & Drng Total \$) \$ 1,346.09

**Roadway Total \$ 2,220.52**

Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	115.56	\$ 1,199.47
48" CMP (LF)	\$ 24.60		52.00	\$ 1,279.20
48" RCP (LF)		\$ 193.20	52.00	\$ 10,046.40
Class A Conc (CY)		\$ 892.19	13.70	\$ 12,222.98
Steel (lb)		\$ 1.42	0.00	\$ -
Pipe Bedding (CY)		\$ 48.60	11.56	\$ 561.60
Trench Backfill (CY)		\$ 2.99	91.35	\$ 272.96
Trench Compaction (CY)		\$ 6.36	73.08	\$ 464.81

**Drainage Total \$ 26,047.41**

Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$ 0.71		\$ -

**Signing and Marking Total \$ -**

Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$ 10,260.00	0.08	\$ 769.50
Temporary Pavement			0
Temporary Drainage (Stream Diversion)	\$ 4,428.00	1.00	\$ 4,428.00

**Staging Total \$ 5,197.50**

Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$ 4.39	17.33	\$ 76.13
Temporary Grassing (AC)	\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)	\$ 4.24	208.00	\$ 881.09
Check Dam Type C Silt Fence (LF)	\$ 6.79	208.00	\$ 1,412.74
Erosion Control Mats (SY)	\$ 1.87	0.00	\$ -
Landscape Mulch (SY)	\$ 3.58	0.00	\$ -
Perm Grassing (AC)	\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)	\$ 60.98	8.00	\$ 487.87
Plastic Filter Fabric (SY)	\$ 5.72	8.00	\$ 45.79
4" Ditch Paving (SY)	\$ 54.65	0.00	\$ -

**Erosion Control Total \$ 2,903.62**

**Construction Cost Total \$ 36,369.05**

**Traffic Control (8% of Construction Total \$) \$ 2,909.52**

**Construction Cost Grand Total \$ 39,278.58**

Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
<b>Electric</b>				
Aerial	\$ 11.00	\$ 55.00	0.00	\$ -
Buried	\$ 16.50	\$ 82.50	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
<b>Phone</b>				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
<b>Cable</b>				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
<b>Gas</b>				
4" main	\$ 16.50	\$ 66.00	0.00	\$ -
<b>Water</b>				
8" main	\$ 16.50	\$ 93.50	0.00	\$ -
<b>Sewer</b>				
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ -</b>

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$ 4.00	\$ -	\$ -
<b>ROW Total</b>			<b>\$ -</b>





General Information		Map	
Project ID			
Street Name	Coastline Road		
Site Visit Date	5/8/13		
Road Classification	Minor arterial		
Project Notes			
Rural Typical Section; Fish noted in stream/wetland			
Field Notes			
Design (Existing Site Features)			
Existing Road Laneage	2-12'		
Existing Shld Width (paved and grass) (feet)	6' Grass		
Existing Side Slopes	2:1		
Existing Guardrail	None		
Depth fm Pavement to Top of Culvert (ft):	3		
Pipe Type and Size	5-96" CMP		
Pipe Condition (1-5) (1 is new)	4		
Condition Notes:			
Pavement Type/Condition	Asphalt/Good		
Environmental Features			
Wetlands	Yes		
Ditches	Yes		
Utilities (Visual Inspection)			
Electric	Aerial		
Cable	None		
Phone	Aerial		
Gas	None		
Water	None		
Sewer	None		
Other			
Proposed Design			
Roadway Section			
Proposed Design	Triple 10' x 8' box culvert		
Utility Relocations	Electric, phone		
Guardrail Replacement	Need to add guardrail due to sideslopes and culvert installation		
Miscellaneous Features	Zone AE with Floodway, Floodplain Analysis Required		
Planning Cost Estimate			
Type	Notes	Total	
Design	Includes 10% Construction Cost and surveying needs	\$67,431	
Right of Way Cost	Assuming project extends 4,500 sf beyond ROW	\$18,000	
Utility Relocation Cost	Utility poles and aerial phone wires	\$11,825	
Construction Cost	1/2 acre clearing and grubbing, Guardrails	\$424,314	
Environmental Permits	Permits, Zone AE Floodway Analysis	\$18,000	
<b>Total Planning Estimate</b>		<b>\$539,571</b>	
Stage Construction Options			
Close Location to Traffic	X		
Maintain One Lane - No Temp Pavement			
Maintain One Lane - Temp Pavement			
Stage Construction Notes:			
Relocate if road cannot be closed			



**Photo 1:**



**Photo 2:**

Coastline Road

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

**1**





**Photo 3:**



**Photo 4:**

Coastline Road

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

**2**

Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	1,536.00	\$ 8,609.79
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	0.00	\$ -
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	140.00	\$ 7,556.64
End Anchorage (EA)		\$ 1,380.00	4.00	\$ 5,520.00
<b>Subtotal</b>				<b>\$ 21,686.43</b>

Grading Complete (5% of Rwy Items & Drng Total \$) \$ 16,929.86

Roadway Total \$ 38,616.29

Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	888.89	\$ 9,226.67
96" CMP (LF)	\$ 63.00		300.00	\$ 56,700.00
96" RCP		\$ 455.00	0.00	\$ -
Class A Conc (CY)		\$ 892.19	232.11	\$ 207,085.76
Steel (lb)		\$ 1.42	23,875.00	\$ 33,807.00
Pipe Bedding (CY)		\$ 48.60	61.60	\$ 2,993.76
Trench Backfill (CY)		\$ 2.99	878.84	\$ 2,625.99
Trench Compaction (CY)		\$ 6.36	703.08	\$ 4,471.56

Drainage Total \$ 316,910.73

Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$ 0.71	0.00	\$ -

Signing and Marking Total \$ -

Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$ 10,260.00	0.50	\$ 5,130.00
Temporary Pavement			\$ -
Temporary Drainage (Stream Diversion)	\$ 4,428.00	3.00	\$ 13,284.00

Staging Total \$ 18,414.00

Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$ 4.39	92.44	\$ 406.02
Temporary Grassing (AC)	\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)	\$ 4.24	1,000.00	\$ 4,236.00
Check Dam Type C Silt Fence (LF)	\$ 6.79	1,000.00	\$ 6,792.00
Erosion Control Mats (SY)	\$ 1.87	333.33	\$ 624.00
Landscape Mulch (SY)	\$ 3.58	333.33	\$ 1,192.00
Perm Grassing (AC)	\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)	\$ 60.98	85.33	\$ 5,203.97
Plastic Filter Fabric (SY)	\$ 5.72	85.33	\$ 488.45
4" Ditch Paving (SY)	\$ 54.65	0.00	\$ -

Erosion Control Total \$ 18,942.43

Construction Cost Total \$ 392,883.45

Traffic Control (8% of Construction Total \$) \$ 31,430.68

Construction Cost Grand Total \$ 424,314.13

Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00	100.00	\$ 6,600.00
Buried	\$ 16.50	\$ 82.50	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	2.00	\$ 1,375.00
Phone				
Aerial	\$ 11.00	\$ 27.50	100.00	\$ 3,850.00
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Gas				
4" main	\$ 16.50	\$ 66.00		\$ -
Water				
8" main	\$ 16.50	\$ 93.50	0.00	\$ -
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
Sewer			0.00	\$ -
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 11,825.00</b>

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$ 4.00	4,500.00	\$ 18,000.00
<b>ROW Total</b>			<b>\$ 18,000.00</b>



General Information		Map
<b>Project ID</b>		
<b>Street Name</b>	171 County Line Court	
<b>Site Visit Date</b>	2/4/2016	
<b>Road Classification</b>	Minor road	
<b>Project Notes</b>		
Existing culvert starts as 42" CMP parallel to road for 15', takes almost 90 degree turn under road and switches to a 30" CMP where it drains on the other side. Proposed design is one straight pipe		
<b>Field Notes</b>		
<b>Design (Existing Site Features)</b>		
<b>Existing Road Laneage</b>	2-11	
<b>Existing Shld Width (paved and grass) (feet)</b>	18'	
<b>Existing Side Slopes</b>	1:9	
<b>Existing Guardrail</b>	N/A	
<b>Depth fm Pavement to Top of Culvert (ft):</b>	2.5'	
<b>Pipe Type and Size</b>	42" to 30" CMP	
<b>Pipe Condition (1-5) (1 is new)</b>	3-4	
Rusted but in tact.		
<b>Pavement Type/Condition</b>	Asphalt/Good	
<b>Environmental Features</b>		
<b>Wetlands</b>		
<b>Ditches</b>		
<b>State Waters</b>		
<b>Utilities (Visual Inspection)</b>		
<b>Electric</b>	Buried	
<b>Cable</b>	Buried	
<b>Phone</b>	Unknown	
<b>Gas</b>	Unknown	
<b>Water</b>	Unknown	
<b>Sewer</b>	Unknown	
<b>Other</b>	Unknown	
<b>Proposed Design</b>		
<b>Roadway Section</b>	Typical	
<b>Culvert Size &amp; Material</b>	4' x 3' concrete box culvert with wingwalls. Existing drainageway alongside road before culvert inlet will be extended, near 90 degree pipe turn will be eliminated. Proposed pipe will run perpendicular to the road.	
<b>Utility Relocations</b>	Utility pole on top of upstream inlet will need relocating along with aerial wires and an exposed electrical wire on the ground across the pipe face.	
<b>Guardrail Replacement</b>		
<b>Miscellaneous Features</b>		
<b>Planning Cost Estimate</b>		
<b>Type</b>	<b>Notes</b>	<b>Total</b>
<b>Design</b>	Includes 10% Construction cost and surveying needs	\$11,140
<b>Right of Way Cost</b>	Assuming project extends beyond ROW, 1/10 acre	\$17,424
<b>Utility Relocation Cost</b>	Utility pole, aerial electric and cable wire, buried wire	\$16,088
<b>Construction Cost</b>		\$61,400
<b>Environmental Permits</b>	Assuming minimal environmental permitting required	\$10,000
<b>Total Planning Estimate</b>		<b>\$116,051</b>





**Photo 1:** Upstream end of culvert looking East along County Line Court.



**Photo 2:** Downstream end looking North towards County Line Court.

## County Line Court

**Photo Date:**

2/4/2016

**Taken By:**

Christian Helfrich

**Page**

1

Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	132.00	\$ 739.90
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	0.00	\$ -
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	24.00	\$ 1,295.42
End Anchorage (EA)		\$ 1,380.00	4.00	\$ 5,520.00
<b>Subtotal</b>				<b>\$ 7,555.33</b>

Grading Complete (5% of Rwy Items & Drng Total \$) \$ 2,339.25

Roadway Total \$ 9,894.58

Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	100.00	\$ 1,038.00
42" CMP (LF)	\$ 24.60		85.00	\$ 6,273.00
84" RCP		\$ 142.52	0.00	\$ -
Class A Conc (CY)		\$ 892.19	29.93	\$ 26,703.19
Steel (lb)		\$ 1.42	2659.00	\$ 3,765.14
Pipe Bedding (CY)		\$ 48.60	13.80	\$ 670.68
Trench Backfill (CY)		\$ 2.99	96.53	\$ 288.44
Trench Compaction (CY)		\$ 6.36	77.23	\$ 491.16

Drainage Total \$ 39,229.61

Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$ 0.71	24.00	\$ 16.99

Signing and Marking Total \$ 16.99

Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$ 10,260.00	0.05	\$ 513.00
Temporary Pavement			\$ -
Temporary Drainage (Stream Diversion)	\$ 4,428.00	1.00	\$ 4,428.00

Staging Total \$ 4,974.98

Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$ 4.39	200.00	\$ 878.40
Temporary Grassing (AC)	\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)	\$ 4.24	120.00	\$ 508.32
Check Dam Type C Silt Fence (LF)	\$ 6.79	120.00	\$ 815.04
Erosion Control Mats (SY)	\$ 1.87	0.00	\$ -
Landscape Mulch (SY)	\$ 3.58	0.00	\$ -
Perm Grassing (AC)	\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)	\$ 60.98	8.00	\$ 487.87
Plastic Filter Fabric (SY)	\$ 5.72	8.00	\$ 45.79
4" Ditch Paving (SY)	\$ 54.65	0.00	\$ -

Erosion Control Total \$ 2,735.42

Construction Cost Total \$ 56,851.59

Traffic Control (8% of Construction Total \$) \$ 4,548.13

Construction Cost Grand Total \$ 61,399.72

Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00	100.00	\$ 6,600.00
Buried	\$ 16.50	\$ 82.50	50.00	\$ 4,950.00
Wooden Pole	\$ 82.50	\$ 605.00	1.00	\$ 687.50
Phone				
Aerial	\$ 11.00	\$ 27.50	100.00	\$ 3,850.00
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Gas				
4" main	\$ 16.50	\$ 66.00	0.00	\$ -
Water				
8" main	\$ 16.50	\$ 93.50	0.00	\$ -
Relocate Fire Hydrant (EA)		\$ 2,609.22	0.00	\$ -
Sewer				
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 16,087.50</b>

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$ 4.00	4356.00	\$ 17,424.00
<b>ROW Total</b>			<b>\$ 17,424.00</b>





General Information		Map	
<b>Project ID</b>			
<b>Street Name</b>	<b>178 Crabapple Lane</b>		
<b>Site Visit Date</b>	5/22/13		
<b>Road Classification</b>	Minor arterial		
<b>Project Notes</b>			
Rural Typical Section			
<b>Field Notes</b>			
<b>Design (Existing Site Features)</b>			
<b>Existing Road Laneage</b>	2 - 9'-10'		
<b>Existing Shld Width (paved and grass) (feet)</b>	None		
<b>Existing Side Slopes</b>	1.5:1 to flat		
<b>Existing Guardrail</b>	None		
<b>Depth fm Pavement to Top of Culvert (ft):</b>	1.5' - 2'		
<b>Pipe Type and Size</b>	2 - 72" CMP		
<b>Pipe Condition (1-5) (1 is new)</b>	3		
Condition Notes: No Headwall			
<b>Pavement Type/Condition</b>	Gravel/Fair		
<b>Environmental Features</b>			
<b>Wetlands</b>	None		
<b>Ditches</b>	None		
<b>Utilities (Visual Inspection)</b>			
<b>Electric</b>	Aerial		
<b>Cable</b>	Aerial		
<b>Phone</b>	Aerial		
<b>Gas</b>			
<b>Water</b>			
<b>Sewer</b>			
<b>Other</b>			
<b>Proposed Design</b>			
<b>Roadway Section</b>			
<b>Culvert Size &amp; Material</b>	tpl 8' x 5' box, concrete, 70' length		
<b>Utility Relocations</b>	Electric, cable, phone		
<b>Guardrail Replacement</b>			
<b>Miscellaneous Features</b>	Zone A, Floodplain Analysis Required		
<b>Planning Cost Estimate</b>			
<b>Type</b>	<b>Notes</b>	<b>Total</b>	
<b>Design</b>	Includes 10% Construction Cost and surveying needs	\$42,332	
<b>Right of Way Cost</b>	Assuming project extends 3,000 sf beyond ROW	\$12,000	
<b>Utility Relocation Cost</b>	Aerial utilities	\$15,675	
<b>Construction Cost</b>	Assuming 1/10 acre clearing and grubbing	\$298,319	
<b>Environmental Permits</b>	Permits, Zone A Floodplain Analysis	\$15,000	
<b>Total Planning Estimate</b>		<b>\$383,326</b>	



**Photo 1:**



**Photo 2:**

Crabapple Lane

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

**1**





**Photo 3:**



**Photo 4:**

Crabapple Lane

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

**2**



Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	624.00	\$ 3,497.73
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	0.00	\$ -
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
<b>Subtotal</b>				<b>\$ 3,497.73</b>
<b>Grading Complete (5% of Rwy Items &amp; Drng Total \$)</b>				<b>\$ 11,931.25</b>
<b>Roadway Total</b>				<b>\$ 15,428.98</b>
Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	539.26	\$ 5,597.51
72" CMP (LF)	\$ 63.00		140.00	\$ 26,460.00
84" RCP		\$ 142.52	0.00	\$ -
Class A Conc (CY)		\$ 892.19	185.48	\$ 165,483.03
Steel (lb)		\$ 1.42	21,112.00	\$ 29,894.59
Pipe Bedding (CY)		\$ 48.60	69.30	\$ 3,367.98
Trench Backfill (CY)		\$ 2.99	535.44	\$ 1,599.90
Trench Compaction (CY)		\$ 6.36	428.35	\$ 2,724.32
<b>Drainage Total</b>				<b>\$ 235,127.33</b>
Signing and Marking		Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)		\$ 0.71	0.00	\$ -
<b>Signing and Marking Total</b>				<b>\$ -</b>
Staging		Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)		\$ 10,260.00	0.10	\$ 1,026.00
Temporary Gravel Road (SY)		\$ 15.42	69.33	\$ 1,069.12
Temporary Drainage (Stream Diversion)		\$ 4,428.00	2.00	\$ 8,856.00
<b>Staging Total</b>				<b>\$ 10,951.12</b>
Erosion Control		Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)		\$ 4.39	132.89	\$ 583.65
Temporary Grassing (AC)		\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)		\$ 4.24	560.00	\$ 2,372.16
Check Dam Type C Silt Fence (LF)		\$ 6.79	560.00	\$ 3,803.52
Erosion Control Mats (SY)		\$ 1.87	186.67	\$ 349.44
Landscape Mulch (SY)		\$ 3.58	186.67	\$ 667.52
Perm Grassing (AC)		\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)		\$ 60.98	104.00	\$ 6,342.34
Plastic Filter Fabric (SY)		\$ 5.72	104.00	\$ 595.30
4" Ditch Paving (SY)		\$ 54.65	0.00	\$ -
<b>Erosion Control Total</b>				<b>\$ 14,713.92</b>
<b>Construction Cost Total</b>				<b>\$ 276,221.35</b>
<b>Traffic Control (8% of Construction Total \$)</b>				<b>\$ 22,097.71</b>
<b>Construction Cost Grand Total</b>				<b>\$ 298,319.06</b>
Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00	100.00	\$ 6,600.00
Buried	\$ 16.50	\$ 82.50	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	2.00	\$ 1,375.00
Phone				
Aerial	\$ 11.00	\$ 27.50	100.00	\$ 3,850.00
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50	100.00	\$ 3,850.00
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Gas				
4" main	\$ 16.50	\$ 66.00		\$ -
Water				
8" main	\$ 16.50	\$ 93.50	0.00	\$ -
Relocate Fire Hydrant (EA)		\$ 2,609.22	0.00	\$ -
Sewer			0.00	\$ -
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 15,675.00</b>
Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost	
Permanent Easement	\$ 4.00	3,000.00	\$ 12,000.00	
<b>ROW Total</b>			<b>\$ 12,000.00</b>	

General Information		Map	
<b>Project ID</b>			
<b>Street Name</b>	<b>Cross Creek Trail</b>		
<b>Site Visit Date</b>	5/21/13		
<b>Road Classification</b>	Minor road		
<b>Project Notes</b>			
Rural Typical Section			
<b>Field Notes</b>			
<b>Design (Existing Site Features)</b>			
<b>Existing Road Laneage</b>	2 - 12'		
<b>Existing Shld Width (paved and grass) (feet)</b>	4' (Grass)		
<b>Existing Side Slopes</b>	6:1		
<b>Existing Guardrail</b>	None		
<b>Depth fm Pavement to Top of Culvert (ft):</b>	3		
<b>Pipe Type and Size</b>	4 - 72" CMP		
<b>Pipe Condition (1-5) (1 is new)</b>	4		
Condition Notes:			
<b>Pavement Type/Condition</b>	Asphalt/Good		
<b>Environmental Features</b>			
<b>Wetlands</b>	None		
<b>Ditches</b>	None		
<b>Utilities (Visual Inspection)</b>			
<b>Electric</b>	Aerial		
<b>Cable</b>	Aerial		
<b>Phone</b>	Aerial		
<b>Gas</b>			
<b>Water</b>	Buried		
<b>Sewer</b>			
<b>Other</b>			
<b>Proposed Design</b>			
<b>Roadway Section</b>	In kind replace. For costing purposes, temporary road consists of 8" gravel fill		
<b>Culvert Size &amp; Material</b>	quad 8' x 5' box, concrete, 80' length		
<b>Utility Relocations</b>	Electric, cable, phone, water		
<b>Guardrail Replacement</b>			
<b>Miscellaneous Features</b>			
<b>Planning Cost Estimate</b>			
<b>Type</b>	<b>Notes</b>	<b>Total</b>	
<b>Design</b>	Includes 10% Construction Cost and surveying needs	\$58,870	
<b>Right of Way Cost</b>	Assuming project extends 3,000 sf beyond ROW	\$12,000	
<b>Utility Relocation Cost</b>	Aerial utilities	\$17,600	
<b>Construction Cost</b>	Assuming 1/10 acre clearing and grubbing	\$463,704	
<b>Environmental Permits</b>	Assuming minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$562,174</b>	

Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	912.00	\$ 5,112.06
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	0.00	\$ -
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
Subtotal				\$ 5,112.06
Grading Complete (5% of Rwy Items & Drng Total \$)				\$ 19,033.58
Roadway Total				\$ 24,145.65
Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	1,013.33	\$ 10,518.40
72" CMP (LF)	\$ 63.00		320.00	\$ 60,480.00
84" RCP		\$ 142.52	0.00	\$ -
Class A Conc (CY)		\$ 892.19	278.58	\$ 248,545.73
Steel (lb)		\$ 1.42	29,610.00	\$ 41,927.76
Pipe Bedding (CY)		\$ 48.60	115.40	\$ 5,608.44
Trench Backfill (CY)		\$ 2.99	1,049.93	\$ 3,137.20
Trench Compaction (CY)		\$ 6.36	839.95	\$ 5,342.06
Drainage Total				\$ 375,559.59
Signing and Marking		Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)		\$ 0.71	152.00	\$ 107.62
Signing and Marking Total				\$ 107.62
Staging		Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)		\$ 10,260.00	0.10	\$ 1,026.00
Temporary Gravel Road (SY)		\$ 15.42	222.22	\$ 3,426.67
Temporary Drainage (Stream Diversion)		\$ 4,428.00	2.00	\$ 8,856.00
Staging Total				\$ 13,523.90
Erosion Control		Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)		\$ 4.39	236.44	\$ 1,038.46
Temporary Grassing (AC)		\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)		\$ 4.24	640.00	\$ 2,711.04
Check Dam Type C Silt Fence (LF)		\$ 6.79	640.00	\$ 4,346.88
Erosion Control Mats (SY)		\$ 1.87	213.33	\$ 399.36
Landscape Mulch (SY)		\$ 3.58	213.33	\$ 762.88
Perm Grassing (AC)		\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)		\$ 60.98	101.33	\$ 6,179.71
Plastic Filter Fabric (SY)		\$ 5.72	101.33	\$ 580.03
4" Ditch Paving (SY)		\$ 54.65	0.00	\$ -
Erosion Control Total				\$ 16,018.37
Construction Cost Total				\$ 429,355.12
Traffic Control (8% of Construction Total \$)				\$ 34,348.41
Construction Cost Grand Total				\$ 463,703.53
Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00	75.00	\$ 4,950.00
Buried	\$ 16.50	\$ 82.50	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	2.00	\$ 1,375.00
Phone				
Aerial	\$ 11.00	\$ 27.50	75.00	\$ 2,887.50
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50	75.00	\$ 2,887.50
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Gas				
4" main	\$ 16.50	\$ 66.00		\$ -
Water				
8" main	\$ 16.50	\$ 93.50	50.00	\$ 5,500.00
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
Sewer			0.00	\$ -
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
Utility Relocation Total				\$ 17,600.00
Right of Way (Sq Ft)		Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement		\$ 4.00	3,000.00	\$ 12,000.00
ROW Total				\$ 12,000.00





**Photo 1:**



**Photo 2:**

Cross Creek Trail

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

**1**





**Photo 3:**



**Photo 4:**

Cross Creek Trail

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

**2**



General Information		Map	
Project ID			
Street Name	Darren Drive		
Site Visit Date	5/8/13		
Road Classification	Minor road		
Project Notes			
Rural Typical Section			
Field Notes			
Design (Existing Site Features)			
Existing Road Laneage	2-10'		
Existing Shld Width (paved and grass) (feet)	2'		
Existing Side Slopes	2:1		
Existing Guardrail	None		
Depth fm Pavement to Top of Culvert (ft):	3		
Pipe Type and Size	3-96" CMP		
Pipe Condition (1-5) (1 is new)	3		
Condition Notes:			
Pavement Type/Condition	Asphalt/Good		
Environmental Features			
Wetlands	None		
Ditches	None		
Utilities (Visual Inspection)			
Electric	Yes		
Cable	Yes		
Phone	Yes		
Gas	Unknown		
Water	Yes		
Sewer	No		
Other			
Proposed Design			
Roadway Section	Replace in kind		
Proposed Design	Triple 8' x 8' box culvert		
Utility Relocations	Phone, cable		
Guardrail Replacement	Need to add guardrail due to sideslopes and culvert installation		
Miscellaneous Features	Zone AE Floodplain Analysis Required		
Planning Cost Estimate			
Type	Notes	Total	
Design	Includes 10% Construction Cost and surveying needs	\$42,264	
Right of Way Cost	Assuming project extends 3,750 sf beyond ROW	\$15,000	
Utility Relocation Cost	Buried phone and cable	\$10,725	
Construction Cost	1/3 acre clearing and grubbing, Guardrails	\$297,641	
Environmental Permits	Permits, Zone AE Floodway Analysis	\$18,000	
<b>Total Planning Estimate</b>		<b>\$383,630</b>	





**Photo 1:**



**Photo 2:**

**130 Darren Drive**

**Photo Date:**

6/03/2013

**Taken By:**

Tony Hicks

**Page:**

**1**

Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	1,040.00	\$ 5,829.55
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	0.00	\$ -
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	104.00	\$ 5,613.50
End Anchorage (EA)		\$ 1,380.00	4.00	\$ 5,520.00
<b>Subtotal</b>				<b>\$ 16,963.05</b>

Grading Complete (5% of Rwy Items & Drng Total \$) \$ 11,996.39

Roadway Total \$ 28,959.44

Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	755.56	\$ 7,842.67
96" CMP (LF)	\$ 63.00		70.00	\$ 13,230.00
96" RCP		\$ 455.00	0.00	\$ -
Class A Conc (CY)		\$ 892.19	184.86	\$ 164,929.87
Steel (lb)		\$ 1.42	19,942.00	\$ 28,237.87
Pipe Bedding (CY)		\$ 48.60	50.10	\$ 2,434.86
Trench Backfill (CY)		\$ 2.99	778.79	\$ 2,327.02
Trench Compaction (CY)		\$ 6.36	623.03	\$ 3,962.48

Drainage Total \$ 222,964.77

Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$ 0.71	0.00	\$ -

Signing and Marking Total \$ -

Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$ 10,260.00	0.33	\$ 3,385.80
Temporary Pavement			\$ -
Temporary Drainage (Stream Diversion)	\$ 4,428.00	2.00	\$ 8,856.00

Staging Total \$ 12,241.80

Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$ 4.39	86.67	\$ 380.64
Temporary Grassing (AC)	\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)	\$ 4.24	500.00	\$ 2,118.00
Check Dam Type C Silt Fence (LF)	\$ 6.79	500.00	\$ 3,396.00
Erosion Control Mats (SY)	\$ 1.87	166.67	\$ 312.00
Landscape Mulch (SY)	\$ 3.58	166.67	\$ 596.00
Perm Grassing (AC)	\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)	\$ 60.98	69.33	\$ 4,228.22
Plastic Filter Fabric (SY)	\$ 5.72	69.33	\$ 396.86
4" Ditch Paving (SY)	\$ 54.65	0.00	\$ -

Erosion Control Total \$ 11,427.73

Construction Cost Total \$ 275,593.74

Traffic Control (8% of Construction Total \$) \$ 22,047.50

Construction Cost Grand Total \$ 297,641.24

Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00	0.00	\$ -
Buried	\$ 16.50	\$ 82.50	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	75.00	\$ 5,362.50
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	75.00	\$ 5,362.50
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Gas				
4" main	\$ 16.50	\$ 66.00		\$ -
Water				
8" main	\$ 16.50	\$ 93.50	0.00	\$ -
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
Sewer			0.00	\$ -
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 10,725.00</b>

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$ 4.00	3,750.00	\$ 15,000.00
<b>ROW Total</b>			<b>\$ 15,000.00</b>





General Information		Map	
Project ID			
Street Name	118 Davis Road		
Site Visit Date	5/21/13		
Road Classification	Minor arterial		
Project Notes			
Field Notes			
Design (Existing Site Features)			
Existing Road Laneage	1-12'		
Existing Shld Width (paved and grass) (feet)	None		
Existing Side Slopes	1:1		
Existing Guardrail	None		
Depth fm Pavement to Top of Culvert (ft):	1		
Pipe Type and Size	2-48", 1-24"		
Pipe Condition (1-5) (1 is new)	4		
Condition Notes:			
Pavement Type/Condition	Gravel/fair		
Environmental Features			
Wetlands	Noted		
Ditches	None		
Utilities (Visual Inspection)			
Electric			
Cable			
Phone	Aerial Crossing		
Gas			
Water			
Sewer			
Other			
Proposed Design			
Roadway Section	Local gravel road specifications. For costing purposes the cost of a temporary gravel road has been doubled.		
Culvert Size & Material	five-barrel 10' x 4', concrete, 85' length. For costing purposes, concrete and steel unit values for a double and triple culvert for have been combined		
Utility Relocations	Aerial Phone		
Guardrail Replacement			
Miscellaneous Features	Zone A, Floodplain Analysis Required		
Planning Cost Estimate			
Type	Notes	Total	
Design	Includes 10% of Construction Cost and surveying needs	\$78,052	
Right of Way Cost	Assuming project extends into ROW 30,000 sf	\$120,000	
Utility Relocation Cost	Aerial utilities	\$3,300	
Construction Cost	Assuming 1/5 acre clearing and grubbing	\$655,519	
Environmental Permits	Permits, Zone A Floodplain Analysis	\$15,000	
<b>Total Planning Estimate</b>		<b>\$871,871</b>	





**Photo 1:**



**Photo 2:**

**Davis Road**

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

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**Photo 3:**



**Photo 4:**

Davis Road

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

**2**



Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	1,248.00	\$ 6,995.46
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	0.00	\$ -
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
<b>Subtotal</b>				<b>\$ 6,995.46</b>

Grading Complete (5% of Rwy Items & Drng Total \$) \$ 27,417.89

Roadway Total \$ 34,413.34

Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	1,133.33	\$ 11,764.00
24" CMP (LF)	\$ 16.38		85.00	\$ 4,176.90
48" CMP (LF)	\$ 24.78		170.00	\$ 12,637.80
42" RCP		\$ 142.52	0.00	\$ -
Class A Conc (CY)		\$ 892.19	471.27	\$ 420,456.98
Steel (lb)		\$ 1.42	53,117.00	\$ 75,213.67
Pipe Bedding (CY)		\$ 48.60	167.60	\$ 8,145.36
Trench Backfill (CY)		\$ 2.99	1,110.40	\$ 3,317.88
Trench Compaction (CY)		\$ 6.36	888.32	\$ 5,649.72

Drainage Total \$ 541,362.30

Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$ 0.71	208.00	\$ 147.26

Signing and Marking Total \$ 147.26

Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$ 10,260.00	0.20	\$ 2,052.00
Temporary Gravel Road (SY)	\$ 15.42	0.00	\$ -
Temporary Drainage (Stream Diversion)	\$ 4,428.00	2.00	\$ 8,856.00

Staging Total \$ 11,202.53

Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$ 4.39	421.78	\$ 1,852.45
Temporary Grassing (AC)	\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)	\$ 4.24	680.00	\$ 2,880.48
Check Dam Type C Silt Fence (LF)	\$ 6.79	680.00	\$ 4,618.56
Erosion Control Mats (SY)	\$ 1.87	226.67	\$ 424.32
Landscape Mulch (SY)	\$ 3.58	226.67	\$ 810.56
Perm Grassing (AC)	\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)	\$ 60.98	138.67	\$ 8,456.45
Plastic Filter Fabric (SY)	\$ 5.72	138.67	\$ 793.73
4" Ditch Paving (SY)	\$ 54.65	0.00	\$ -

Erosion Control Total \$ 19,836.54

Construction Cost Total \$ 606,961.98

Traffic Control (8% of Construction Total \$) \$ 48,556.96

Construction Cost Grand Total \$ 655,518.94

Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00	0.00	\$ -
Buried	\$ 16.50	\$ 82.50	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50	50.00	\$ 1,925.00
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	2.00	\$ 1,375.00
Cable				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Gas				
4" main	\$ 16.50	\$ 66.00		\$ -
Water				
8" main	\$ 16.50	\$ 93.50	0.00	\$ -
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
Sewer			0.00	\$ -
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 3,300.00</b>

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$ 4.00	30,000.00	\$ 120,000.00
<b>ROW Total</b>			<b>\$ 120,000.00</b>

General Information		Map
<b>Project ID</b>		
<b>Street Name</b>	<b>308 Deauville Way</b>	
<b>Site Visit Date</b>	2/4/2016	
<b>Road Classification</b>	Minor road	
<b>Project Notes</b>		
Cul de sac ends where multiple drainage areas converge (low point). Culvert services drainage way behind houses on north side of Deauville Way (opposite 308). Pipe passes under a private driveway and turn 45 degree to empty along side concrete spill way.		
<b>Field Notes</b>		
<b>Design (Existing Site Features)</b>		
<b>Existing Road Laneage</b>	2-13'	
<b>Existing Shld Width (paved and grass) (feet)</b>	N/A	
<b>Existing Side Slopes</b>	N/A	
<b>Existing Guardrail</b>	N/A	
<b>Depth fm Pavement to Top of Culvert (ft):</b>	2'	
<b>Pipe Type and Size</b>	18" CMP	
<b>Pipe Condition (1-5) (1 is new)</b>	3	
Upstream end of pipe almost completely blocked (see Photo 1).		
<b>Pavement Type/Condition</b>	Asphalt/Good	
<b>Environmental Features</b>		
<b>Wetlands</b>		
<b>Ditches</b>		
<b>State Waters</b>		
<b>Utilities (Visual Inspection)</b>		
<b>Electric</b>	Unknown	
<b>Cable</b>	Buried	
<b>Phone</b>	Unknown	
<b>Gas</b>	Unknown	
<b>Water</b>	Unknown	
<b>Sewer</b>	Unknown	
<b>Other</b>	Broadband buried	
<b>Stage Construction Options</b>		
<b>Close Location to Traffic</b>		
<b>Maintain One Lane - No Temp Pavement</b>		
<b>Maintain One Lane - Temp Pavement</b>		
Stage Construction Notes: <b>Private driveway needs to be considered</b>		
<b>Proposed Design</b>		
<b>Roadway Section</b>	Typical	
<b>Culvert Size &amp; Material</b>	2 x 30" round RCPs along current path with 45 degree bend. Additional excavation required to lower inlet 1' for upsizing purposes. Cost of removing each headwall assumed to be equal to removal of entire length of pipe.	
<b>Utility Relocations</b>	Buried cable and broadband wires	
<b>Guardrail Replacement</b>		
<b>Miscellaneous Features</b>		
<b>Planning Cost Estimate</b>		
<b>Type</b>	<b>Notes</b>	<b>Total</b>
<b>Design</b>	Includes 10% Construction Cost and surveying needs	\$17,481
<b>Right of Way Cost</b>	Assuming entire project is outside of ROW, 1/3 acre	\$58,080
<b>Utility Relocation Cost</b>	Buried cable, broadband	\$7,150
<b>Construction Cost</b>		\$124,805
<b>Environmental Permits</b>	Assuming minimal environmental permitting required	\$10,000
<b>Total Planning Estimate</b>		<b>\$217,516</b>



**Photo 1:** Upstream end of culvert looking South towards Deauville Way.



**Photo 2:** Downstream end looking West towards Deauville Way.

**Deauville Way**

**Photo Date:**

2/5/2016

**Taken By:**

Christian Helfrich

**Page**

**1**



Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	0.00	\$ -
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	9.50	\$ 479.37
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
<b>Subtotal</b>				<b>\$ 479.37</b>
<b>Grading Complete (5% of Rwy Items &amp; Drng Total \$)</b>				<b>\$ 4,837.77</b>
<b>Roadway Total</b>				<b>\$ 5,317.14</b>
Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	697.55	\$ 7,240.53
18" CMP (LF)	\$ 5.74		915.00	\$ 5,248.44
30" RCP (LF)		\$ 105.60	610.00	\$ 64,416.00
Class A Conc (CY)		\$ 892.19	9.92	\$ 8,850.50
Steel (lb)		\$ 1.42	18.04	\$ 25.55
Pipe Bedding (CY)		\$ 48.60	107.31	\$ 5,215.50
Trench Backfill (CY)		\$ 2.99	653.72	\$ 1,953.31
Trench Compaction (CY)		\$ 6.36	522.97	\$ 3,326.11
<b>Drainage Total</b>				<b>\$ 96,275.94</b>
Signing and Marking		Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)		\$ 0.71	0.00	\$ -
<b>Signing and Marking Total</b>				<b>\$ -</b>
Staging		Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)		\$ 10,260.00	0.10	\$ 1,026.00
Temporary Pavement				\$ -
Temporary Drainage (Stream Diversion)		\$ 4,428.00	1.00	\$ 4,428.00
<b>Staging Total</b>				<b>\$ 5,454.00</b>
Erosion Control		Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)		\$ 4.39	406.67	\$ 1,786.08
Temporary Grassing (AC)		\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)		\$ 4.24	610.00	\$ 2,583.96
Check Dam Type C Silt Fence (LF)		\$ 6.79	610.00	\$ 4,143.12
Erosion Control Mats (SY)		\$ 1.87	0.00	\$ -
Landscape Mulch (SY)		\$ 3.58	0.00	\$ -
Perm Grassing (AC)		\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)		\$ 60.98	0.00	\$ -
Plastic Filter Fabric (SY)		\$ 5.72	0.00	\$ -
4" Ditch Paving (SY)		\$ 54.65	0.00	\$ -
<b>Erosion Control Total</b>				<b>\$ 8,513.16</b>
<b>Construction Cost Total</b>				<b>\$115,560.24</b>
<b>Traffic Control (8% of Construction Total \$)</b>				<b>\$ 9,244.82</b>
<b>Construction Cost Grand Total</b>				<b>\$124,805.06</b>
Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00	0.00	\$ -
Buried	\$ 16.50	\$ 82.50	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	100.00	\$ 7,150.00
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Gas				
4" main	\$ 16.50	\$ 66.00	0.00	\$ -
Water				
8" main	\$ 16.50	\$ 93.50	0.00	\$ -
Relocate Fire Hydrant (EA)		\$ 2,609.22	0.00	\$ -
Sewer				
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 7,150.00</b>
Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost	
Permanent Easement	\$ 4.00	14,520.00	\$ 58,080.00	
<b>ROW Total</b>			<b>\$ 58,080.00</b>	



General Information	
Project ID	
Street Name	175 Deer Trail
Site Visit Date	
Road Classification	Internal Local
Project Notes	
Storm pipe is metal and over 30 years old and undersized causing road to flood repeatedly.	
Field Notes	
Design (Existing Site Features)	
Existing Road Laneage	2
Existing Shld Width (paved and grass) (feet)	NA - curb & gutter
Existing Side Slopes	NA - curb & gutter
Existing Guardrail	None
Depth fm Pavement to Top of Culvert (ft):	NA
Pipe Type and Size	CMP, 24-inch Dia.
Pipe Condition (1-5) (1 is new)	4
Condition Notes: Pipe and associated structures are in poor condition.	
Pavement Type/Condition	average
Environmental Features	
Wetlands	No
Ditches	NA
Utilities (Visual Inspection)	
Electric	Yes
Cable	Yes
Phone	Yes
Gas	Unknown
Water	Yes
Sewer	No
Other	



Stage Construction Options	
Close Location to Traffic	
Maintain One Lane - No Temp Pavement	
Maintain One Lane - Temp Pavement	
Stage Construction Notes: Minimal impacts to traffic and access can be maintained to all properties.	

Proposed Design	
Roadway Section	Typical subdivision with curb & gutter
Culvert Size & Material	Replace existing pipe with 36-inch RCP, approximately 312 ft.
Utility Relocations	As needed
Guardrail Replacement	None
Miscellaneous Features	Upgrade inlets, headwalls and junction boxes

Planning Cost Estimate		
Type	Notes	Total
Design	Includes 10% Construction Cost and surveying needs	\$9,211
Right of Way Cost	Assuming project extends 12,000 sf beyond ROW	\$20,000
Utility Relocation Cost	Buried and aerial utilities	\$17,600
Construction Cost	See estimate sheet	\$42,112
Environmental Permits	None expected	
<b>Total Planning Estimate</b>		<b>\$88,923</b>





**Photo 1:**



**Photo 2:**

**175 Deer Trail**

**Photo Date:**

6/9/2016

**Taken By:**

Tony Hicks

**Page:**

**1**

Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	125.00	\$ 700.67
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	40.00	\$ 2,366.40
Drain Inlet (EA)		\$ 3,000.00	2.00	\$ 6,000.00
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	25.00	\$ 1,261.50
Guardrail (LF)	\$ 4.88	\$ 49.09		\$ -
End Anchorage (EA)		\$ 1,380.00		\$ -
<b>Subtotal</b>				<b>\$ 10,328.57</b>

Grading Complete (5% of Rwy Items & Drng Total \$) \$ 1,435.33

**Roadway Total \$ 11,763.90**

Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	72.59	\$ 753.51
36" CMP (LF)	\$ 16.38		168.00	\$ 2,751.84
36" RCP (LF)		\$ 134.40	56.00	\$ 7,526.40
Class A Conc (CY)		\$ 892.19	7.20	\$ 6,423.75
Steel (lb)		\$ 1.42	0.00	\$ -
Pipe Bedding (CY)		\$ 48.60	10.37	\$ 504.00
Trench Backfill (CY)		\$ 2.99	51.82	\$ 154.84
Trench Compaction (CY)		\$ 6.36	41.46	\$ 263.66

**Drainage Total \$ 18,378.01**

Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$ 0.71	0.00	\$ -

**Signing and Marking Total \$ -**

Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$ 10,260.00	0.10	\$ 1,026.00
Temporary Pavement			\$ -
Temporary Drainage (Stream Diversion)	\$ 4,428.00	1.00	\$ 4,428.00

**Staging Total \$ 5,454.00**

Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$ 4.39	17.22	\$ 75.64
Temporary Grassing (AC)	\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)	\$ 4.24	224.00	\$ 948.86
Check Dam Type C Silt Fence (LF)	\$ 6.79	224.00	\$ 1,521.41
Erosion Control Mats (SY)	\$ 1.87	74.67	\$ 139.78
Landscape Mulch (SY)	\$ 3.58	74.67	\$ 267.01
Perm Grassing (AC)	\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)	\$ 60.98	6.67	\$ 406.56
Plastic Filter Fabric (SY)	\$ 5.72	6.67	\$ 38.16
4" Ditch Paving (SY)	\$ 54.65	0.00	\$ -

**Erosion Control Total \$ 3,397.42**

**Construction Cost Total \$ 38,993.32**

Traffic Control (8% of Construction Total \$) \$ 3,119.47

**Construction Cost Grand Total \$ 42,112.79**

Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00		\$ -
Buried	\$ 16.50	\$ 82.50	50.00	\$ 4,950.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	50.00	\$ 3,575.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	50.00	\$ 3,575.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Gas				
4" main	\$ 16.50	\$ 66.00		\$ -
Water				
8" main	\$ 16.50	\$ 93.50	50.00	\$ 5,500.00
Relocate Fire Hydrant (EA)		\$ 2,609.22	0.00	\$ -
Sewer				
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 17,600.00</b>

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$ 4.00	5,000.00	\$ 20,000.00
<b>ROW Total</b>			<b>\$ 20,000.00</b>





General Information		Map	
<b>Project ID</b>			
<b>Street Name</b>	<b>130 Deerfield Lane</b>		
<b>Site Visit Date</b>	5/21/13		
<b>Road Classification</b>	Minor road		
<b>Project Notes</b>			
Replace 30-yr old CMP with RCP. Provide manhole access to pipe for inspection and maintenance. May impact a driveway. One of several pipe replacement projects in subdivision			
<b>Field Notes</b>			
<b>Design (Existing Site Features)</b>			
<b>Existing Road Laneage</b>	2-12.5'		
<b>Existing Shld Width (paved and grass) (feet)</b>	NA - curb & gutter		
<b>Existing Side Slopes</b>	NA - curb & gutter		
<b>Existing Guardrail</b>	NA - curb & gutter		
<b>Depth fm Pavement to Top of Culvert (ft):</b>	Assumed 3'		
<b>Pipe Type and Size</b>	CMP, 36"		
<b>Pipe Condition (1-5) (1 is new)</b>	5		
Condition Notes: Pipe and associated structures are old and in poor condition			
<b>Pavement Type/Condition</b>	Average		
<b>Environmental Features</b>			
<b>Wetlands</b>	None		
<b>Ditches</b>	None		
<b>Utilities (Visual Inspection)</b>			
<b>Electric</b>	Yes		
<b>Cable</b>	Yes		
<b>Phone</b>	Yes		
<b>Gas</b>	Unknown		
<b>Water</b>	Yes		
<b>Sewer</b>	No		
<b>Other</b>			
<b>Proposed Design</b>			
<b>Roadway Section</b>	Typical with curb and gutter. Road dimensions estimated with Google Earth. Driveway costed as 4" concrete sidewalk.		
<b>Culvert Size &amp; Material</b>	Replace existing pipe with 36" RCP, approximately 56'. Cost of headwall removal assumed equal to removal of entire length of pipe.		
<b>Utility Relocations</b>	Buried utilities		
<b>Guardrail Replacement</b>			
<b>Miscellaneous Features</b>	Previous inspection notes called for upgrading inlets, headwalls and junction boxes to modern design. Cost of pipe, headwalls, and inlets have been included in this design.		
<b>Planning Cost Estimate</b>			
<b>Type</b>	<b>Notes</b>	<b>Total</b>	
<b>Design</b>	Includes 10% Construction Cost and surveying needs	\$9,211	
<b>Right of Way Cost</b>	Assuming project extends 5,000 sf beyond ROW	\$20,000	
<b>Utility Relocation Cost</b>	Buried utilities	\$17,600	
<b>Construction Cost</b>	Assuming 1/10 acre clearing and grubbing	\$42,113	
<b>Environmental Permits</b>	Assuming minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$98,924</b>	
<b>Stage Construction Options</b>			
<b>Close Location to Traffic</b>			
<b>Maintain One Lane - No Temp Pavement</b>		X	
<b>Maintain One Lane - Temp Pavement</b>			
Stage Construction Notes:			
<b>Minimal impacts to traffic and access can be maintained to all properties.</b>			
Work may require repair to driveway			



**Photo 1:**



**Photo 2:**

**131 Deerfield Lane**

**Photo Date:**

1/27/2012

**Taken By:**

Tony Hicks

**Page:**

**1**

Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	125.00	\$ 700.67
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	40.00	\$ 2,366.40
Drain Inlet (EA)		\$ 3,000.00	2.00	\$ 6,000.00
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	25.00	\$ 1,261.50
Guardrail (LF)	\$ 4.88	\$ 49.09		\$ -
End Anchorage (EA)		\$ 1,380.00		\$ -
<b>Subtotal</b>				<b>\$ 10,328.57</b>

Grading Complete (5% of Rwy Items & Drng Total \$) \$ 1,435.33

**Roadway Total \$ 11,763.90**

Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	72.59	\$ 753.51
36" CMP (LF)	\$ 16.38		168.00	\$ 2,751.84
36" RCP (LF)		\$ 134.40	56.00	\$ 7,526.40
Class A Conc (CY)		\$ 892.19	7.20	\$ 6,423.75
Steel (lb)		\$ 1.42	0.00	\$ -
Pipe Bedding (CY)		\$ 48.60	10.37	\$ 504.00
Trench Backfill (CY)		\$ 2.99	51.82	\$ 154.84
Trench Compaction (CY)		\$ 6.36	41.46	\$ 263.66

**Drainage Total \$ 18,378.01**

Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$ 0.71	0.00	\$ -

**Signing and Marking Total \$ -**

Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$ 10,260.00	0.10	\$ 1,026.00
Temporary Pavement			\$ -
Temporary Drainage (Stream Diversion)	\$ 4,428.00	1.00	\$ 4,428.00

**Staging Total \$ 5,454.00**

Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$ 4.39	17.22	\$ 75.64
Temporary Grassing (AC)	\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)	\$ 4.24	224.00	\$ 948.86
Check Dam Type C Silt Fence (LF)	\$ 6.79	224.00	\$ 1,521.41
Erosion Control Mats (SY)	\$ 1.87	74.67	\$ 139.78
Landscape Mulch (SY)	\$ 3.58	74.67	\$ 267.01
Perm Grassing (AC)	\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)	\$ 60.98	6.67	\$ 406.56
Plastic Filter Fabric (SY)	\$ 5.72	6.67	\$ 38.16
4" Ditch Paving (SY)	\$ 54.65	0.00	\$ -

**Erosion Control Total \$ 3,397.42**

**Construction Cost Total \$ 38,993.32**

Traffic Control (8% of Construction Total \$) \$ 3,119.47

**Construction Cost Grand Total \$ 42,112.79**

Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00		\$ -
Buried	\$ 16.50	\$ 82.50	50.00	\$ 4,950.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	50.00	\$ 3,575.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	50.00	\$ 3,575.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Gas				
4" main	\$ 16.50	\$ 66.00		\$ -
Water				
8" main	\$ 16.50	\$ 93.50	50.00	\$ 5,500.00
Relocate Fire Hydrant (EA)		\$ 2,609.22	0.00	\$ -
Sewer				
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 17,600.00</b>

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$ 4.00	5,000.00	\$ 20,000.00
<b>ROW Total</b>			<b>\$ 20,000.00</b>





General Information		Map	
<b>Project ID</b>			
<b>Street Name</b>	<b>161 Deerfield Lane</b>		
<b>Site Visit Date</b>	5/21/13		
<b>Road Classification</b>	Minor road		
<b>Project Notes</b>			
Storm pipe in Beverly Manor subdivision is metal and over 30 years old. Typical catch basin construction does not allow for inspection or maintenance. Many junction boxes are masonry block and in poor condition.			
<b>Field Notes</b>			
<b>Design (Existing Site Features)</b>			
<b>Existing Road Laneage</b>	2-12.5'		
<b>Existing Shld Width (paved and grass) (feet)</b>	NA - curb & gutter		
<b>Existing Side Slopes</b>	NA - curb & gutter		
<b>Existing Guardrail</b>	NA - curb & gutter		
<b>Depth fm Pavement to Top of Culvert (ft):</b>	Assumed 3'		
<b>Pipe Type and Size</b>	CMP, 30"		
<b>Pipe Condition (1-5) (1 is new)</b>	5		
Condition Notes: Pipe and associated structures are old and in poor condition			
<b>Pavement Type/Condition</b>	Average		
<b>Environmental Features</b>			
<b>Wetlands</b>	None		
<b>Ditches</b>	None		
<b>Utilities (Visual Inspection)</b>			
<b>Electric</b>	Yes		
<b>Cable</b>	Yes		
<b>Phone</b>	Yes		
<b>Gas</b>	Unknown		
<b>Water</b>	Yes		
<b>Sewer</b>	No		
<b>Other</b>			
<b>Stage Construction Options</b>			
<b>Close Location to Traffic</b>			
<b>Maintain One Lane - No Temp Pavement</b>	X		
<b>Maintain One Lane - Temp Pavement</b>			
Stage Construction Notes:			
<b>Minimal impacts to traffic and access can be maintained to all</b>			
<b>Proposed Design</b>			
<b>Roadway Section</b>	Typical with curb and gutter. Road dimensions estimated with Google Earth.		
<b>Culvert Size &amp; Material</b>	Replace existing pipe with 36" RCP, approximately 64'. Cost of headwall removal assumed equal to removal of entire length of pipe.		
<b>Utility Relocations</b>	Assuming buried water line needs relocating.		
<b>Guardrail Replacement</b>			
<b>Miscellaneous Features</b>	Previous inspection notes called for upgrading inlets, headwalls and junction boxes to modern design. Cost of pipe, headwalls, and inlets have been included in this design.		
<b>Planning Cost Estimate</b>			
<b>Type</b>	<b>Notes</b>	<b>Total</b>	
<b>Design</b>	Includes 10% Construction Cost and surveying needs	\$9,310	
<b>Right of Way Cost</b>	Assuming projects extends 5,000 sf beyond ROW	\$20,000	
<b>Utility Relocation Cost</b>	Water main	\$17,600	
<b>Construction Cost</b>	Assuming 1/10 acre clearing and grubbing	\$43,102	
<b>Environmental Permits</b>	Assuming minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$100,012</b>	



**Photo 1:**



**Photo 2:**

**161 Deerfield Lane**

**Photo Date:**

6/17/2013

**Taken By:**

Tony Hicks

**Page:**

**1**



Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	125.00	\$ 700.67
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	40.00	\$ 2,366.40
Drain Inlet (EA)		\$ 3,000.00	2.00	\$ 6,000.00
4" Sidewalk (SY)	\$ 13.56	\$ 36.90		\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09		\$ -
End Anchorage (EA)		\$ 1,380.00		\$ -
<b>Subtotal</b>				<b>\$ 9,067.07</b>
<b>Grading Complete (5% of Rwy Items &amp; Drng Total \$)</b>				<b>\$ 1,458.44</b>
<b>Roadway Total</b>				<b>\$ 10,525.51</b>
Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	82.96	\$ 861.16
36" CMP (LF)	\$ 16.38		192.00	\$ 3,144.96
36" RCP (LF)		\$ 134.40	64.00	\$ 8,601.60
Class A Conc (CY)		\$ 892.19	7.20	\$ 6,423.75
Steel (lb)		\$ 1.42	0.00	\$ -
Pipe Bedding (CY)		\$ 48.60	11.85	\$ 576.00
Trench Backfill (CY)		\$ 2.99	61.21	\$ 182.89
Trench Compaction (CY)		\$ 6.36	48.97	\$ 311.43
<b>Drainage Total</b>				<b>\$ 20,101.78</b>
Signing and Marking		Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)		\$ 0.71	0.00	\$ -
<b>Signing and Marking Total</b>				<b>\$ -</b>
Staging		Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)		\$ 10,260.00	0.10	\$ 1,026.00
Temporary Pavement				\$ -
Temporary Drainage (Stream Diversion)		\$ 4,428.00	1.00	\$ 4,428.00
<b>Staging Total</b>				<b>\$ 5,454.00</b>
Erosion Control		Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)		\$ 4.39	21.67	\$ 95.16
Temporary Grassing (AC)		\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)		\$ 4.24	256.00	\$ 1,084.42
Check Dam Type C Silt Fence (LF)		\$ 6.79	256.00	\$ 1,738.75
Erosion Control Mats (SY)		\$ 1.87	85.33	\$ 159.74
Landscape Mulch (SY)		\$ 3.58	85.33	\$ 305.15
Perm Grassing (AC)		\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)		\$ 60.98	6.67	\$ 406.56
Plastic Filter Fabric (SY)		\$ 5.72	6.67	\$ 38.16
4" Ditch Paving (SY)		\$ 54.65	0.00	\$ -
<b>Erosion Control Total</b>				<b>\$ 3,827.94</b>
<b>Construction Cost Total</b>				<b>\$ 39,909.24</b>
<b>Traffic Control (8% of Construction Total \$)</b>				<b>\$ 3,192.74</b>
<b>Construction Cost Grand Total</b>				<b>\$ 43,101.98</b>
Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00		\$ -
Buried	\$ 16.50	\$ 82.50	50.00	\$ 4,950.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	50.00	\$ 3,575.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	50.00	\$ 3,575.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Gas				
4" main	\$ 16.50	\$ 66.00		\$ -
Water				
8" main	\$ 16.50	\$ 93.50	50.00	\$ 5,500.00
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
Sewer			0.00	\$ -
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 17,600.00</b>
Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost	
Permanent Easement	\$ 4.00	5,000.00	\$ 20,000.00	
<b>ROW Total</b>			<b>\$ 20,000.00</b>	



General Information		Map	
Project ID			
Street Name	325 Derby Drive		
Site Visit Date	1/20/2016		
Road Classification	Minor road		
<b>Project Notes</b>			
Streambank erosion intense at this site. Existing roadside CMP drainage pipe is emptying directly above culvert.			
<b>Field Notes</b>			
<b>Design (Existing Site Features)</b>			
Existing Road Laneage	2-13'		
Existing Shld Width (paved and grass) (feet)	10'		
Existing Side Slopes	3:1		
Existing Guardrail	None		
Depth fm Pavement to Top of Culvert (ft):	6.25'		
Pipe Type and Size	54" CMP		
Pipe Condition (1-5) (1 is new)	3		
Condition Notes: Concrete headwalls. Streambank blowout upstream and major blowout downstream			
Pavement Type/Condition	Asphalt/Good		
<b>Environmental Features</b>		<b>Stage Construction Options</b>	
Wetlands		Close Location to Traffic	
Ditches	Roadside drainage ditches	Maintain One Lane - No Temp Pavement	X
State Waters		Maintain One Lane - Temp Pavement	
		Stage Construction Notes: Clearing and grubbing, erosion control essential	
<b>Buried</b>			
Electric	Buried		
Cable	Buried		
Phone	Unknown		
Gas	Unknown		
Water	Unknown		
Sewer	Unknown		
Other	Broadband - Buried		
<b>Proposed Design</b>			
Roadway Section	Typical		
Culvert Size & Material	54" round RCP with straight headwall. Assuming cost of removing existing headwalls is equal to removal of entire existing pipe		
Utility Relocations	Removal/replacement of buried electric, cable, and broadband lines		
Guardrail Replacement			
Miscellaneous Features			
<b>Planning Cost Estimate</b>			
Type	Notes	Total	
Design	Includes 10% of Construction Cost and surveying needs	\$13,319	
Right of Way Cost	Assuming project extends past ROW, 1/20 acre	\$8,712	
Utility Relocation Cost		\$14,520	
Construction Cost		\$83,189	
Environmental Permits	Assuming minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$129,740</b>	







**Photo 1:** Upstream end of culvert looking East towards Derby Drive



**Photo 2:** Downstream end of culvert looking West towards Derby Drive

## Derby Drive

**Photo Date:**

1/20/2016

**Taken By:**

David Gibbs

**Page**

1

Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	169.00	\$ 947.30
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	0.00	\$ -
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
<b>Subtotal</b>				<b>\$ 947.30</b>
<b>Grading Complete (5% of Rwy Items &amp; Drng Total \$)</b>				<b>\$ 2,720.07</b>
<b>Roadway Total</b>				<b>\$ 3,667.37</b>
Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	217.81	\$ 2,260.87
54" CMP (LF)	\$ 24.60		154.00	\$ 11,365.20
54" RCP (LF)		\$ 281.96	77.00	\$ 21,711.23
Class A Conc (CY)		\$ 892.19	17.58	\$ 15,684.67
Steel (lb)		\$ 1.42	0.00	\$ -
Pipe Bedding (CY)		\$ 48.60	18.54	\$ 900.90
Trench Backfill (CY)		\$ 2.99	189.59	\$ 566.50
Trench Compaction (CY)		\$ 6.36	151.67	\$ 964.64
<b>Drainage Total</b>				<b>\$53,454.00</b>
Signing and Marking		Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)		\$ 0.71		\$ -
<b>Signing and Marking Total</b>				<b>\$ -</b>
Staging		Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)		\$ 10,260.00	0.25	\$ 2,565.00
Temporary Pavement				\$ -
Temporary Drainage (Stream Diversion)		\$ 4,428.00	2.00	\$ 8,856.00
<b>Staging Total</b>				<b>\$11,421.00</b>
Erosion Control		Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)		\$ 4.39	36.83	\$ 161.77
Temporary Grassing (AC)		\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)		\$ 4.24	616.00	\$ 2,609.38
Check Dam Type C Silt Fence (LF)		\$ 6.79	616.00	\$ 4,183.87
Erosion Control Mats (SY)		\$ 1.87	68.44	\$ 128.13
Landscape Mulch (SY)		\$ 3.58	68.44	\$ 244.76
Perm Grassing (AC)		\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)		\$ 60.98	17.33	\$ 1,057.06
Plastic Filter Fabric (SY)		\$ 5.72	17.33	\$ 99.22
4" Ditch Paving (SY)		\$ 54.65	0.00	\$ -
<b>Erosion Control Total</b>				<b>\$ 8,484.18</b>
<b>Construction Cost Total</b>				<b>\$77,026.54</b>
<b>Traffic Control (8% of Construction Total \$)</b>				<b>\$ 6,162.12</b>
<b>Construction Cost Grand Total</b>				<b>\$83,188.67</b>
Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00	0.00	\$ -
Buried	\$ 16.50	\$ 82.50	60.00	\$ 5,940.00
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	60.00	\$ 4,290.00
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	60.00	\$ 4,290.00
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Gas				
4" main	\$ 16.50	\$ 66.00	0.00	\$ -
Water				
8" main	\$ 16.50	\$ 93.50	0.00	\$ -
Sewer				
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$14,520.00</b>
Right of Way (Sq Ft)		Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement		\$ 4.00	2,178.00	\$ 8,712.00
<b>ROW Total</b>				<b>\$ 8,712.00</b>





General Information		Map	
Project ID			
Street Name	Downing Court		
Site Visit Date	5/21/13		
Road Classification	Minor road		
Fayette Co Notes			
Rural typical section			
Field Notes			
Design (Existing Site Features)			
Existing Road Laneage	2 - 12'		
Existing Shld Width (paved and grass) (feet)	4' (Grass)		
Existing Side Slopes	6:1		
Existing Guardrail	None		
Depth fm Pavement to Top of Culvert (ft):	2.00		
Pipe Type and Size	36" CMP, 45'		
Pipe Condition (1-5) (1 is new)	3		
Condition Notes:			
Pavement Type/Condition	Asphalt/Good		
Environmental Features		Stage Construction Options	
Wetlands	None	Close Location to Traffic	
Ditches	X	Maintain One Lane - No Temp Pavement	X
		Maintain One Lane - Temp Pavement	
Utilities (Visual Inspection)		Stage Construction Notes:	
Electric	Aerial		
Cable	Aerial		
Phone	Aerial		
Gas			
Water	Buried		
Sewer			
Other			
Proposed Design			
Roadway Section			
Culvert Size & Material	4' x 3' box, concrete, 45' length		
Utility Relocations	Water main		
Guardrail Replacement			
Miscellaneous Features	Velocity dissipators and entrance channel need to be included to accommodate hard turn from drainage upstream drainage ditch to culvert. Yard grading for resident on downstream, low side of culvert would mitigate garage/driveway flooding. Has been accounted for in applicable construction activities.		
Planning Cost Estimate			
Type	Notes	Total	
Design	Includes 10% Construction Cost and surveying needs	\$9,518	
Right of Way Cost	Assuming project extends 3,500 sf beyond ROW	\$14,000	
Utility Relocation Cost	Buried utilities	\$5,425	
Construction Cost	Assuming 1/10 acre clearing and grubbing	\$45,184	
Environmental Permits	Assuming minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$84,127</b>	





**Photo 1:**



**Photo 2:**

Downing Court

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

**1**



Downing Court



**Photo 3:**



**Photo 4:**

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

**2**



Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	144.00	\$ 807.17
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	0.00	\$ -
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
<b>Subtotal</b>				<b>\$ 807.17</b>
<b>Grading Complete (5% of Rwy Items &amp; Drng Total \$)</b>				<b>\$ 1,513.95</b>
<b>Roadway Total</b>				<b>\$ 2,321.12</b>
Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	90.00	\$ 934.20
36" CMP (LF)	\$ 19.62		45.00	\$ 2,648.70
84" RCP		\$ 142.52	0.00	\$ -
Class A Conc (CY)		\$ 892.19	24.43	\$ 21,791.69
Steel (lb)		\$ 1.42	2,045.50	\$ 2,896.43
Pipe Bedding (CY)		\$ 48.60	10.40	\$ 505.44
Trench Backfill (CY)		\$ 2.99	86.10	\$ 257.27
Trench Compaction (CY)		\$ 6.36	68.88	\$ 438.08
<b>Drainage Total</b>				<b>\$ 29,471.80</b>
Signing and Marking		Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)		\$ 0.71	24.00	\$ 16.99
<b>Signing and Marking Total</b>				<b>\$ 16.99</b>
Staging		Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)		\$ 10,260.00	0.10	\$ 1,026.00
Temporary Pavement				\$ -
Temporary Drainage (Stream Diversion)		\$ 4,428.00	1.00	\$ 4,428.00
<b>Staging Total</b>				<b>\$ 5,487.98</b>
Erosion Control		Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)		\$ 4.39	21.00	\$ 92.23
Temporary Grassing (AC)		\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)		\$ 4.24	180.00	\$ 762.48
Check Dam Type C Silt Fence (LF)		\$ 6.79	180.00	\$ 1,222.56
Erosion Control Mats (SY)		\$ 1.87	60.00	\$ 112.32
Landscape Mulch (SY)		\$ 3.58	60.00	\$ 214.56
Perm Grassing (AC)		\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)		\$ 60.98	32.00	\$ 1,951.49
Plastic Filter Fabric (SY)		\$ 5.72	32.00	\$ 183.17
4" Ditch Paving (SY)		\$ 54.65	0.00	\$ -
<b>Erosion Control Total</b>				<b>\$ 4,538.81</b>
<b>Construction Cost Total</b>				<b>\$ 41,836.70</b>
<b>Traffic Control (8% of Construction Total \$)</b>				<b>\$ 3,346.94</b>
<b>Construction Cost Grand Total</b>				<b>\$ 45,183.64</b>
Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00		\$ -
Buried	\$ 16.50	\$ 82.50		\$ -
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00		\$ -
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00		\$ -
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Gas				
4" main	\$ 16.50	\$ 66.00		\$ -
Water				
8" main	\$ 16.50	\$ 93.50	50.00	\$ 5,500.00
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
Sewer			0.00	\$ -
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 5,500.00</b>
Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost	
Permanent Easement	\$ 4.00	3,500.00	\$ 14,000.00	
<b>ROW Total</b>			<b>\$ 14,000.00</b>	

General Information		Map	
Project ID			
Street Name	Flat Creek Trail		
Site Visit Date	5/22/13		
Road Classification	Minor arterial		
Project Notes			
Rural typical section			
Field Notes			
Design (Existing Site Features)			
Existing Road Laneage	2-12'		
Existing Shld Width (paved and grass) (feet)	None		
Existing Side Slopes	1:1		
Existing Guardrail	None		
Depth fm Pavement to Top of Culvert (ft):	6		
Pipe Type and Size (No headwall)	2- 60"x84" (ellip.)		
Pipe Condition (1-5) (1 is new)	3		
Condition Notes: 2 parallel streams			
Pavement Type/Condition	Asphalt/Good		
Environmental Features			
Wetlands	Yes		
Ditches	None		
Utilities (Visual Inspection)			
Electric	Aerial Crossing		
Cable	Aerial Crossing		
Phone	Aerial Crossing		
Gas			
Water	Buried		
Sewer			
Other			
Proposed Design			
Roadway Section			
Culvert Size & Material	triple 10' x 4' box, concrete, 70' length. Cost of removing existing elliptical CMPs considered equivalent to cost of removing 72" round CMPs		
Utility Relocations	Water		
Guardrail Replacement	Need to provide guardrail due to side slopes and culvert installations		
Miscellaneous Features	Zone A, Floodplain Analysis required,		
Planning Cost Estimate			
Type	Notes	Total	
Design	Includes 10% Construction Cost, wetland surveying	\$53,868	
Right of Way Cost	Assuming project extends 10,500 sf beyond ROW	\$42,000	
Utility Relocation Cost	Water main	\$11,000	
Construction Cost	Assuming 1/5 acre clearing and grubbing	\$413,683	
Environmental Permits	Permits, Zone A Floodplain Analysis	\$15,000	
<b>Total Planning Estimate</b>		<b>\$535,551</b>	





**Photo 1:**



**Photo 2:**

**Flat Creek Trail**

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

**1**



Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	1,536.00	\$ 8,609.79
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	0.00	\$ -
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	600.00	\$ 32,385.60
End Anchorage (EA)		\$ 1,380.00	2.00	\$ 2,760.00
<b>Subtotal</b>				<b>\$ 43,755.39</b>

Grading Complete (5% of Rwy Items & Drng Total \$) \$ 17,059.82

Roadway Total \$ 60,815.22

Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	1,348.15	\$ 13,993.78
72" CMP (LF)	\$ 54.00		140.00	\$ 22,680.00
72" RCP		\$ 142.52	0.00	\$ -
Class A Conc (CY)		\$ 892.19	232.53	\$ 207,460.48
Steel (lb)		\$ 1.42	26,567.00	\$ 37,618.87
Pipe Bedding (CY)		\$ 48.60	85.30	\$ 4,145.58
Trench Backfill (CY)		\$ 2.99	1,429.22	\$ 4,270.50
Trench Compaction (CY)		\$ 6.36	1,143.37	\$ 7,271.86

Drainage Total \$ 297,441.07

Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$ 0.71	128.00	\$ 90.62

Signing and Marking Total \$ 90.62

Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$ 10,260.00	0.20	\$ 2,052.00
Temporary Pavement			\$ -
Temporary Drainage (Stream Diversion)	\$ 4,428.00	2.00	\$ 8,856.00

Staging Total \$ 11,089.25

Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$ 4.39	163.56	\$ 718.34
Temporary Grassing (AC)	\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)	\$ 4.24	560.00	\$ 2,372.16
Check Dam Type C Silt Fence (LF)	\$ 6.79	560.00	\$ 3,803.52
Erosion Control Mats (SY)	\$ 1.87	186.67	\$ 349.44
Landscape Mulch (SY)	\$ 3.58	186.67	\$ 667.52
Perm Grassing (AC)	\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)	\$ 60.98	85.33	\$ 5,203.97
Plastic Filter Fabric (SY)	\$ 5.72	85.33	\$ 488.45
4" Ditch Paving (SY)	\$ 54.65	0.00	\$ -

Erosion Control Total \$ 13,603.39

Construction Cost Total \$ 383,039.55

Traffic Control (8% of Construction Total \$) \$ 30,643.16

Construction Cost Grand Total \$ 413,682.72

Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00		\$ -
Buried	\$ 16.50	\$ 82.50		\$ -
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00		\$ -
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00		\$ -
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Gas				
4" main	\$ 16.50	\$ 66.00		\$ -
Water				
8" main	\$ 16.50	\$ 93.50	100.00	\$ 11,000.00
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
Sewer			0.00	\$ -
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 11,000.00</b>

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$ 4.00	10,500.00	\$ 42,000.00
<b>ROW Total</b>			<b>\$ 42,000.00</b>



General Information		Map													
Project ID															
Street Name	250 Grant Road														
Site Visit Date	5/22/13														
Road Classification	Minor arterial														
Project Notes															
Rural typical section															
Field Notes		<table border="1"> <thead> <tr> <th colspan="2">Stage Construction Options</th> </tr> </thead> <tbody> <tr> <td>Close Location to Traffic</td> <td>X</td> </tr> <tr> <td>Maintain One Lane - No Temp Pavement</td> <td></td> </tr> <tr> <td>Maintain One Lane - Temp Pavement</td> <td></td> </tr> <tr> <td colspan="2">Stage Construction Notes: Close roadway</td> </tr> <tr> <td colspan="2">One lane closure</td> </tr> </tbody> </table>		Stage Construction Options		Close Location to Traffic	X	Maintain One Lane - No Temp Pavement		Maintain One Lane - Temp Pavement		Stage Construction Notes: Close roadway		One lane closure	
Stage Construction Options															
Close Location to Traffic	X														
Maintain One Lane - No Temp Pavement															
Maintain One Lane - Temp Pavement															
Stage Construction Notes: Close roadway															
One lane closure															
Design (Existing Site Features)															
Existing Road Laneage	2-12'														
Existing Shld Width (paved and grass) (feet)	2'														
Existing Side Slopes	0.13														
Existing Guardrail	none														
Depth fm Pavement to Top of Culvert (ft):	Assumed 3'														
Pipe Type and Size	60" CMP														
Pipe Condition (1-5) (1 is new)	4-5														
Condition Notes:															
Pavement Type/Condition	Asphalt/Good														
Environmental Features															
Wetlands	None														
Ditches	None														
Stream	Yes														
Utilities (Visual Inspection)															
Electric	Yes														
Cable	Yes														
Phone	Yes														
Gas	Unknown														
Water	Yes														
Sewer	None														
Other															
Proposed Design															
Roadway Section	Typical														
Culvert Size & Material	Replace with 48' of 60" RCP,														
Utility Relocations	As needed														
Guardrail Replacement	None														
Miscellaneous Features															
Planning Cost Estimate															
Type	Notes	Total													
Design	Includes 10% Construction Cost and surveying needs	\$10,116													
Right of Way Cost	Assuming project does not extend beyond ROW	\$0													
Utility Relocation Cost	Buried water main	\$5,500													
Construction Cost	Applying 1/10 acre clearing and grubbing cost	\$51,162													
Environmental Permits	Assuming minimal environmental permitting required	\$10,000													
<b>Total Planning Estimate</b>		<b>\$76,779</b>													





**Photo 1:**



**Photo 2:**

**250 Grant Road**

**Photo Date:**

6/22/2016

**Taken By:**

Tony Hicks

**Page:**

**1**

Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	168.00	\$ 941.70
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	0.00	\$ -
Drain Inlet (EA)		\$ 3,000.00		\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90		\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09		\$ -
End Anchorage (EA)		\$ 1,380.00		\$ -
<b>Subtotal</b>				<b>\$ 941.70</b>

Grading Complete (5% of Rwy Items & Drng Total \$) \$ 1,815.49

Roadway Total \$ 2,757.18

Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	118.22	\$ 1,227.15
60" CMP (LF)	\$ 24.60		48.00	\$ 1,180.80
60" RCP (LF)		\$ 259.20	48.00	\$ 12,441.60
Class A Conc (CY)		\$ 892.19	21.58	\$ 19,253.42
Steel (lb)		\$ 1.42	0.00	\$ -
Pipe Bedding (CY)		\$ 48.60	12.44	\$ 604.80
Trench Backfill (CY)		\$ 2.99	81.76	\$ 244.30
Trench Compaction (CY)		\$ 6.36	65.41	\$ 416.00

Drainage Total \$35,368.06

Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$ 0.71	0.00	\$ -

Signing and Marking Total \$ -

Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$ 10,260.00	0.10	\$ 1,026.00
Temporary Pavement			\$ -
Temporary Drainage (Stream Diversion)	\$ 4,428.00	1.00	\$ 4,428.00

Staging Total \$ 5,454.00

Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$ 4.39	18.67	\$ 81.98
Temporary Grassing (AC)	\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)	\$ 4.24	192.00	\$ 813.31
Check Dam Type C Silt Fence (LF)	\$ 6.79	192.00	\$ 1,304.06
Erosion Control Mats (SY)	\$ 1.87	64.00	\$ 119.81
Landscape Mulch (SY)	\$ 3.58	64.00	\$ 228.86
Perm Grassing (AC)	\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)	\$ 60.98	18.67	\$ 1,138.37
Plastic Filter Fabric (SY)	\$ 5.72	18.67	\$ 106.85
4" Ditch Paving (SY)	\$ 54.65	0.00	\$ -

Erosion Control Total \$ 3,793.25

Construction Cost Total \$47,372.49

Traffic Control (8% of Construction Total \$) \$ 3,789.80

Construction Cost Grand Total \$51,162.29

Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00		\$ -
Buried	\$ 16.50	\$ 82.50		\$ -
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00		\$ -
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00		\$ -
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Gas				
4" main	\$ 16.50	\$ 66.00		\$ -
Water				
8" main	\$ 16.50	\$ 93.50	50.00	\$ 5,500.00
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
Sewer			0.00	\$ -
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 5,500.00</b>

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$ 4.00	0.00	\$ -
<b>ROW Total</b>			<b>\$ -</b>

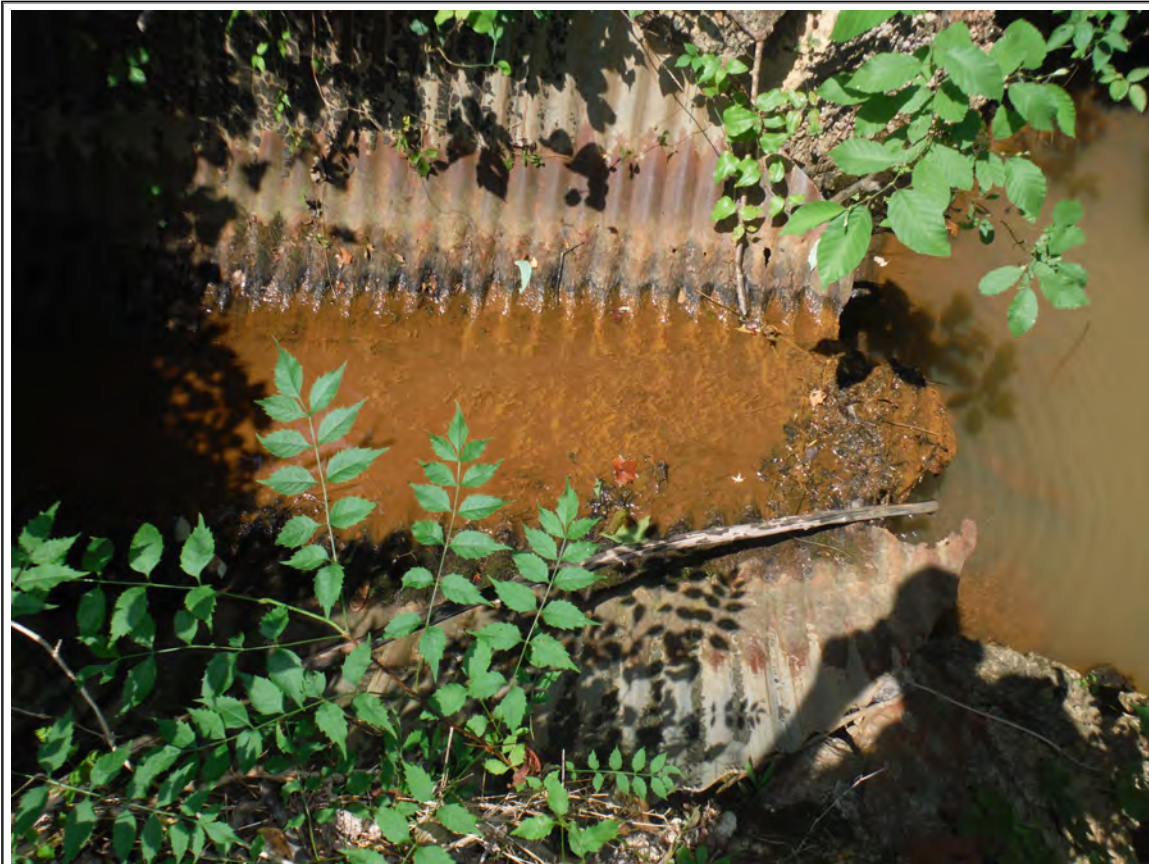




General Information		Map	
Project ID			
Street Name	426 Grant Road		
Site Visit Date	5/22/13		
Road Classification	Minor arterial		
<b>Project Notes</b>			
Urban typical section with valley gutter			
<b>Field Notes</b>			
<b>Design (Existing Site Features)</b>			
Existing Road Laneage	2-12'		
Existing Shld Width (paved and grass) (feet)	2'		
Existing Side Slopes	0.13		
Existing Guardrail	none		
Depth fm Pavement to Top of Culvert (ft):	Assumed 3'		
Pipe Type and Size	60" CMP		
Pipe Condition (1-5) (1 is new)	4-5		
Condition Notes:			
Pavement Type/Condition	Asphalt/Good		
<b>Environmental Features</b>		<b>Stage Construction Options</b>	
Wetlands	None	Close Location to Traffic	X
Ditches	None	Maintain One Lane - No Temp Pavement	
Stream	Yes	Maintain One Lane - Temp Pavement	
		Stage Construction Notes: Close roadway	
		One lane closure	
<b>Utilities (Visual Inspection)</b>			
Electric	Yes		
Cable	Yes		
Phone	Yes		
Gas	Unknown		
Water	Yes		
Sewer	None		
Other			
<b>Proposed Design</b>			
Roadway Section	Typical		
Culvert Size & Material	Replace with 48' of 60" RCP,		
Utility Relocations	As needed		
Guardrail Replacement	None		
Miscellaneous Features			
<b>Planning Cost Estimate</b>			
Type	Notes	Total	
Design	Includes 10% Construction Cost and surveying needs	\$10,116	
Right of Way Cost	Assuming project does not extend beyond ROW	\$0	
Utility Relocation Cost	Buried water main	\$5,500	
Construction Cost	Applying 1/10 acre clearing and grubbing cost	\$51,162	
Environmental Permits	Assuming minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$76,779</b>	



**Photo 1:**



**Photo 2:**

**426 Grant Rpad**

**Photo Date:**

6/03/2016

**Taken By:**

Tony Hicks

**Page:**

**1**

Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	168.00	\$ 941.70
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	0.00	\$ -
Drain Inlet (EA)		\$ 3,000.00		\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90		\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09		\$ -
End Anchorage (EA)		\$ 1,380.00		\$ -
<b>Subtotal</b>				<b>\$ 941.70</b>

Grading Complete (5% of Rwy Items & Drng Total \$) \$ 1,815.49

Roadway Total \$ 2,757.18

Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	118.22	\$ 1,227.15
60" CMP (LF)	\$ 24.60		48.00	\$ 1,180.80
60" RCP (LF)		\$ 259.20	48.00	\$ 12,441.60
Class A Conc (CY)		\$ 892.19	21.58	\$ 19,253.42
Steel (lb)		\$ 1.42	0.00	\$ -
Pipe Bedding (CY)		\$ 48.60	12.44	\$ 604.80
Trench Backfill (CY)		\$ 2.99	81.76	\$ 244.30
Trench Compaction (CY)		\$ 6.36	65.41	\$ 416.00

Drainage Total \$35,368.06

Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$ 0.71	0.00	\$ -

Signing and Marking Total \$ -

Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$ 10,260.00	0.10	\$ 1,026.00
Temporary Pavement			\$ -
Temporary Drainage (Stream Diversion)	\$ 4,428.00	1.00	\$ 4,428.00

Staging Total \$ 5,454.00

Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$ 4.39	18.67	\$ 81.98
Temporary Grassing (AC)	\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)	\$ 4.24	192.00	\$ 813.31
Check Dam Type C Silt Fence (LF)	\$ 6.79	192.00	\$ 1,304.06
Erosion Control Mats (SY)	\$ 1.87	64.00	\$ 119.81
Landscape Mulch (SY)	\$ 3.58	64.00	\$ 228.86
Perm Grassing (AC)	\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)	\$ 60.98	18.67	\$ 1,138.37
Plastic Filter Fabric (SY)	\$ 5.72	18.67	\$ 106.85
4" Ditch Paving (SY)	\$ 54.65	0.00	\$ -

Erosion Control Total \$ 3,793.25

Construction Cost Total \$47,372.49

Traffic Control (8% of Construction Total \$) \$ 3,789.80

Construction Cost Grand Total \$51,162.29

Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00		\$ -
Buried	\$ 16.50	\$ 82.50		\$ -
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00		\$ -
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00		\$ -
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Gas				
4" main	\$ 16.50	\$ 66.00		\$ -
Water				
8" main	\$ 16.50	\$ 93.50	50.00	\$ 5,500.00
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
Sewer			0.00	\$ -
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 5,500.00</b>

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$ 4.00	0.00	\$ -
ROW Total			\$ -





General Information		Map	
Project ID			
Street Name	226 Graves Road		
Site Visit Date	1/21/2016		
Road Classification	Minor arterial		
Project Notes			
Field Notes			
Design (Existing Site Features)			
Existing Road Laneage	1-9', 2-12'		
Existing Shld Width (paved and grass) (feet)	6'		
Existing Side Slopes	4:1		
Existing Guardrail	None		
Depth fm Pavement to Top of Culvert (ft):	4.5'		
Pipe Type and Size	30" CMP		
Pipe Condition (1-5) (1 is new)	4-5		
Condition Notes: Deformed/slightly closed. No headwall on upstream side, concrete headwall downstream.			
Pavement Type/Condition	Asphalt/Good		
Environmental Features			
Wetlands			
Ditches			
State Waters			
Buried			
Electric	Aerial		
Cable	Unknown		
Phone	Aerial		
Gas	Unknown		
Water	Unknown		
Sewer	Unknown		
Other			
Proposed Design			
Roadway Section	Typical arterial		
Culvert Size & Material	2 x 30" round RCPs with straight headwall. Cost of removing existing headwall assumed equal to the removal of entire length of pipe.		
Utility Relocations			
Guardrail Replacement			
Miscellaneous Features			
Planning Cost Estimate			
Type	Notes	Total	
Design	Includes 10% of Construction Cost and surveying needs	\$10,169	
Right of Way Cost	Assuming entire project within ROW	\$0	
Utility Relocation Cost	None identified	\$0	
Construction Cost		\$51,687	
Environmental Permits	Assuming minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$71,856</b>	





**Photo 1:** Upstream end of culvert looking South towards Graves Road.



**Photo 2:** Downstream end of culvert.

**Graves Road**

**Photo Date:**

1/21/2016

**Taken By:**

David Gibbs

**Page**

**1**



Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	313.50	\$ 1,757.27
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	0.00	\$ -
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
<b>Subtotal</b>				<b>\$ 1,757.27</b>

Grading Complete (5% of Rwy Items & Drng Total \$) \$ 1,601.52

Roadway Total \$ 3,358.80

Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	202.67	\$ 2,103.68
30" CMP (LF)	\$ 19.62		146.00	\$ 5,729.04
30" RCP (LF)		\$ 105.60	146.00	\$15,417.60
Class A Conc (CY)		\$ 892.19	4.98	\$ 4,443.10
Steel (lb)		\$ 1.42	0.00	\$ -
Pipe Bedding (CY)		\$ 48.60	25.33	\$ 1,231.20
Trench Backfill (CY)		\$ 2.99	166.99	\$ 498.96
Trench Compaction (CY)		\$ 6.36	133.59	\$ 849.63

Drainage Total \$30,273.20

Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$ 0.71	47.50	\$ 33.63

Signing and Marking Total \$ 33.63

Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$ 10,260.00	0.03	\$ 256.50
Temporary Pavement			\$ -
Temporary Drainage (Stream Diversion)	\$ 4,428.00	2.00	\$ 8,856.00

Staging Total \$ 9,146.13

Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$ 4.39	41.17	\$ 180.80
Temporary Grassing (AC)	\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)	\$ 4.24	288.00	\$ 1,219.97
Check Dam Type C Silt Fence (LF)	\$ 6.79	288.00	\$ 1,956.10
Erosion Control Mats (SY)	\$ 1.87	0.00	\$ -
Landscape Mulch (SY)	\$ 3.58	0.00	\$ -
Perm Grassing (AC)	\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)	\$ 60.98	25.33	\$ 1,544.93
Plastic Filter Fabric (SY)	\$ 5.72	25.33	\$ 145.01
4" Ditch Paving (SY)	\$ 54.65	0.00	\$ -

Erosion Control Total \$ 5,046.80

Construction Cost Total \$47,858.56

Traffic Control (8% of Construction Total \$) \$ 3,828.68

Construction Cost Grand Total \$51,687.25

Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00	0.00	\$ -
Buried	\$ 16.50	\$ 82.50	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Gas				
4" main	\$ 16.50	\$ 66.00	0.00	\$ -
Water				
8" main	\$ 16.50	\$ 93.50	0.00	\$ -
Sewer				
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ -</b>

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$ 4.00	0.00	\$ -
<b>ROW Total</b>			<b>\$ -</b>



General Information		Map	
Project ID			
Street Name	130 Greenfield Circle		
Site Visit Date	2/4/2016		
Road Classification	Minor road		
<b>Project Notes</b>			
Pipe empties into small impoundment.			
<b>Field Notes</b>			
<b>Design (Existing Site Features)</b>			
Existing Road Laneage	2-12.5'		
Existing Shld Width (paved and grass) (feet)	15'		
Existing Side Slopes	4-5:1		
Existing Guardrail	N/A		
Depth fm Pavement to Top of Culvert (ft):	3'		
Pipe Type and Size	36" CMP		
Pipe Condition (1-5) (1 is new)	4		
Substantial rusting. Rip rap embankment blowout on downstream side.			
Pavement Type/Condition	Asphalt/Good		
<b>Environmental Features</b>			
Wetlands			
Ditches			
State Waters			
Other	Small private impoundment		
<b>Utilities (Visual Inspection)</b>			
Electric	Unknown		
Cable	Buried		
Phone	Unknown		
Gas	Unknown		
Water	Unknown		
Sewer	Unknown		
Other	Broadband buried		
<b>Stage Construction Options</b>			
Close Location to Traffic			
Maintain One Lane - No Temp Pavement	X		
Maintain One Lane - Temp Pavement			
Stage Construction Notes: Impoundment on downstream end will need temporary damming			
<b>Proposed Design</b>			
Roadway Section			
Culvert Size & Material	5' x 3' concrete box culvert with wingwalls		
Utility Relocations	Buried cable and broadband. Possible fire hydrant relocation (90' from culvert on downstream side).		
Guardrail Replacement			
Miscellaneous Features			
<b>Planning Cost Estimate</b>			
Type	Notes	Total	
Design	Includes 10% Construction cost and surveying needs	\$18,802	
Right of Way Cost	Assuming project lies entirely within ROW	\$0	
Utility Relocation Cost	Assuming a total of 100' of buried utilities	\$7,150	
Construction Cost		\$63,018	
Environmental Permits	Assuming minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$98,969</b>	





**Photo 1:** Upstream end of culvert looking West towards Greenfield Circle.



**Photo 2:** Downstream end looking East towards Greenfield Circle.

## Greenfield Circle

**Photo Date:**

2/4/2016

**Taken By:**

Christian Helfrich

**Page**

1

Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	175.00	\$ 980.93
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	40.00	\$ 2,366.40
Drain Inlet (EA)		\$ 3,000.00	2.00	\$ 6,000.00
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
<b>Subtotal</b>				<b>\$ 9,347.33</b>

Grading Complete (5% of Rwy Items & Drng Total \$) \$ 2,351.05

Roadway Total \$ 11,698.38

Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	110.83	\$ 1,150.45
18" CMP	\$ 5.74		171.00	\$ 980.86
30" RCP		\$ 105.60	0.00	\$ -
Class A Conc (CY)		\$ 892.19	33.07	\$ 29,500.20
Steel (lb)		\$ 1.42	3149.90	\$ 4,460.26
Pipe Bedding (CY)		\$ 48.60	15.30	\$ 743.58
Trench Backfill (CY)		\$ 2.99	103.80	\$ 310.15
Trench Compaction (CY)		\$ 6.36	83.04	\$ 528.12

Drainage Total \$ 37,673.61

Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$ 0.71	21.00	\$ 14.87

Signing and Marking Total \$ 14.87

Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$ 10,260.00	0.05	\$ 513.00
Temporary Pavement			\$ -
Temporary Drainage (Stream Diversion)	\$ 4,428.00	1.00	\$ 4,428.00

Staging Total \$ 4,955.87

Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$ 4.39	24.89	\$ 109.31
Temporary Grassing (AC)	\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)	\$ 4.24	228.00	\$ 965.81
Check Dam Type C Silt Fence (LF)	\$ 6.79	228.00	\$ 1,548.58
Erosion Control Mats (SY)	\$ 1.87	25.33	\$ 47.42
Landscape Mulch (SY)	\$ 3.58	25.33	\$ 90.59
Perm Grassing (AC)	\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)	\$ 60.98	18.67	\$ 1,138.37
Plastic Filter Fabric (SY)	\$ 5.72	18.67	\$ 106.85
4" Ditch Paving (SY)	\$ 54.65	0.00	\$ -

Erosion Control Total \$ 4,006.93

Construction Cost Total \$ 58,349.65

Traffic Control (8% of Construction Total \$) \$ 4,667.97

Construction Cost Grand Total \$ 63,017.62

Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00	0.00	\$ -
Buried	\$ 16.50	\$ 82.50	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	100.00	\$ 7,150.00
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Gas				
4" main	\$ 16.50	\$ 66.00	0.00	\$ -
Water				
8" main	\$ 16.50	\$ 93.50	0.00	\$ -
Relocate Fire Hydrant (EA)		\$ 2,609.22	0.00	\$ -
Sewer				
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 7,150.00</b>

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$ 4.00	0.00	\$ -
<b>ROW Total</b>			<b>\$ -</b>





General Information		Map	
Project ID			
Street Name	250 Greenfield Circle		
Site Visit Date	2/4/2016		
Road Classification	Minor road		
Project Notes			
Field Notes			
Design (Existing Site Features)			
Existing Road Laneage	2-12'		
Existing Shld Width (paved and grass) (feet)	14'		
Existing Side Slopes	3:1		
Existing Guardrail	N/A		
Depth fm Pavement to Top of Culvert (ft):	5'		
Pipe Type and Size	2-36" CMPs		
Pipe Condition (1-5) (1 is new)	4-5		
Considerable rusting. One pipe blocked by debris. Water running under the other pipe as well as through.			
Pavement Type/Condition	Asphalt/Good		
Environmental Features			
Wetlands			
Ditches			
State Waters			
Utilities (Visual Inspection)			
Electric	Unknown		
Cable	Unknown		
Phone	Unknown		
Gas	Unknown		
Water	Unknown		
Sewer	Unknown		
Other	Unknown		
Proposed Design			
Roadway Section	Typical		
Culvert Size & Material	2 x 42" round RCPs with straight headwalls.		
Utility Relocations	May need to relocate fire hydrant (70' from culvert, downstream side).		
Guardrail Replacement			
Miscellaneous Features			
Planning Cost Estimate			
Type	Notes	Total	
Design	Includes 10% Construction cost and surveying needs	\$19,098	
Right of Way Cost	Assuming project lies entirely within ROW	\$0	
Utility Relocation Cost	None positively identified	\$0	
Construction Cost		\$65,976	
Environmental Permits	Includes permitting and Zone A Floodway study	\$15,000	
<b>Total Planning Estimate</b>		<b>\$100,073</b>	





**Photo 1:** Upstream end of culvert looking West towards Greenfield Circle.



**Photo 2:** Downstream end looking East towards Greenfield Circle.

## Greenfield Circle

**Photo Date:**

2/4/2016

**Taken By:**

Christian Helfrich

**Page**

1

Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	288.00	\$ 1,614.34
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	40.00	\$ 2,366.40
Drain Inlet (EA)		\$ 3,000.00	2.00	\$ 6,000.00
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
<b>Subtotal</b>				<b>\$ 9,980.74</b>

Grading Complete (5% of Rwy Items & Drng Total \$) \$ 2,505.82

Roadway Total \$ 12,486.55

Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	237.50	\$ 2,465.25
36" CMP (LF)	\$ 19.62		108.00	\$ 6,356.88
42" RCP (LF)		\$ 142.52	108.00	\$ 15,392.59
Class A Conc (CY)		\$ 892.19	14.66	\$ 13,079.48
Steel (lb)		\$ 1.42	0.00	\$ -
Pipe Bedding (CY)		\$ 48.60	25.00	\$ 1,215.00
Trench Backfill (CY)		\$ 2.99	201.39	\$ 601.75
Trench Compaction (CY)		\$ 6.36	161.11	\$ 1,024.67

Drainage Total \$ 40,135.63

Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$ 0.71	0.00	\$ -

Signing and Marking Total \$ -

Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$ 10,260.00	0.15	\$ 1,539.00
Temporary Pavement			\$ -
Temporary Drainage (Stream Diversion)	\$ 4,428.00	1.00	\$ 4,428.00

Staging Total \$ 5,967.00

Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$ 4.39	40.00	\$ 175.68
Temporary Grassing (AC)	\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)	\$ 4.24	108.00	\$ 457.49
Check Dam Type C Silt Fence (LF)	\$ 6.79	108.00	\$ 733.54
Erosion Control Mats (SY)	\$ 1.87	12.00	\$ 22.46
Landscape Mulch (SY)	\$ 3.58	12.00	\$ 42.91
Perm Grassing (AC)	\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)	\$ 60.98	16.00	\$ 975.74
Plastic Filter Fabric (SY)	\$ 5.72	16.00	\$ 91.58
4" Ditch Paving (SY)	\$ 54.65	0.00	\$ -

Erosion Control Total \$ 2,499.41

Construction Cost Total \$ 61,088.59

Traffic Control (8% of Construction Total \$) \$ 4,887.09

Construction Cost Grand Total \$ 65,975.68

Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00	0.00	\$ -
Buried	\$ 16.50	\$ 82.50	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Gas				
4" main	\$ 16.50	\$ 66.00	0.00	\$ -
Water				
8" main	\$ 16.50	\$ 93.50	0.00	\$ -
Relocate Fire Hydrant (EA)		\$ 2,609.22	0.00	\$ -
Sewer				
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ -</b>

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$ 4.00	0.00	\$ -
<b>ROW Total</b>			<b>\$ -</b>





General Information		Map	
Project ID			
Street Name	110 Gristmill Drive		
Site Visit Date	5/21/13		
Road Classification	Minor road		
Project Notes			
Urban Typical Section with curb and gutter along sidewalks			
Field Notes			
Design (Existing Site Features)			
Existing Road Laneage	2-12'		
Existing Shld Width (paved and grass) (feet)	grass 6'		
Existing Side Slopes	N/A		
Existing Guardrail	None		
Depth fm Pavement to Top of Culvert (ft):	6'		
Pipe Type and Size	48"-CMP		
Pipe Condition (1-5) (1 is new)	5 (Installation)		
Condition Notes: Concrete Headwall at Ends			
Pavement Type/Condition	Asphalt/Good		
Environmental Features			
Wetlands	None		
Ditches	None		
Utilities (Visual Inspection)			
Electric	Buried		
Cable	Buried		
Phone	Buried		
Gas	Buried		
Water	Buried		
Sewer	Buried		
Other			
Stage Construction Options			
Close Location to Traffic			
Maintain One Lane - No Temp Pavement			X
Maintain One Lane - Temp Pavement			
Stage Construction Notes:			
If replacement with round pipe then phase construction to have at least one lane in each direction at all times			
Proposed Design			
Roadway Section	Replace urban section w/ sidewalks		
Culvert Size & Material	6' x 3' box, concrete, 80' length. Cost of removing headwalls assumed to be equal to removal of entire length of pipe.		
Utility Relocations	Electric, cable, phone, gas, water, sewer		
Guardrail Replacement			
Miscellaneous Features	Alignment needs to be altered or downstream pipe and grading needs alterations to correct crossing flow paths that has caused downstream pipe cover to be washed away. Has been accounted for in construction cost estimate		
Planning Cost Estimate			
Type	Notes	Total	
Design	Includes 10% Construction Cost and surveying needs	\$14,967	
Right of Way Cost	Assuming project extends 2,000 sf beyond ROW	\$8,000	
Utility Relocation Cost	Buried utilities	\$26,675	
Construction Cost	Assuming 1/10 acre clearing and grubbing	\$99,668	
Environmental Permits	Assuming minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$159,309</b>	





**Photo 1:**



**Photo 2:**

Gristmill Drive

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

**1**





**Photo 3:**



**Photo 4:**

Gristmill Drive

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

**2**

Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	192.00	\$ 1,076.22
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	30.00	\$ 1,774.80
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	30.00	\$ 1,513.80
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
<b>Subtotal</b>				<b>\$ 4,364.82</b>

Grading Complete (5% of Rwy Items & Drng Total \$) \$ 3,858.83

Roadway Total \$ 8,223.65

Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	325.93	\$ 3,383.11
48" CMP (LF)	\$ 24.60		160.00	\$ 11,808.00
48" RCP		\$ 193.20	0.00	\$ -
Class A Conc (CY)		\$ 892.19	51.64	\$ 46,072.59
Steel (lb)		\$ 1.42	5,258.00	\$ 7,445.33
Pipe Bedding (CY)		\$ 48.60	24.30	\$ 1,180.98
Trench Backfill (CY)		\$ 2.99	361.77	\$ 1,080.98
Trench Compaction (CY)		\$ 6.36	289.42	\$ 1,840.71

Drainage Total \$ 72,811.69

Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$ 0.71	0.00	\$ -

Signing and Marking Total \$ -

Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$ 10,260.00	0.10	\$ 1,026.00
Temporary Pavement			\$ -
Temporary Drainage (Stream Diversion)	\$ 4,428.00	1.00	\$ 4,428.00

Staging Total \$ 5,454.00

Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$ 4.39	59.73	\$ 262.35
Temporary Grassing (AC)	\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)	\$ 4.24	320.00	\$ 1,355.52
Check Dam Type C Silt Fence (LF)	\$ 6.79	320.00	\$ 2,173.44
Erosion Control Mats (SY)	\$ 1.87	106.67	\$ 199.68
Landscape Mulch (SY)	\$ 3.58	106.67	\$ 381.44
Perm Grassing (AC)	\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)	\$ 60.98	21.33	\$ 1,300.99
Plastic Filter Fabric (SY)	\$ 5.72	21.33	\$ 122.11
4" Ditch Paving (SY)	\$ 54.65	0.00	\$ -

Erosion Control Total \$ 5,795.53

Construction Cost Total \$ 92,284.88

Traffic Control (8% of Construction Total \$) \$ 7,382.79

Construction Cost Grand Total \$ 99,667.67

Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00		\$ -
Buried	\$ 16.50	\$ 82.50	50.00	\$ 4,950.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	50.00	\$ 3,575.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	50.00	\$ 3,575.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Gas				
4" main	\$ 16.50	\$ 66.00	50.00	\$ 4,125.00
Water				
8" main	\$ 16.50	\$ 93.50	50.00	\$ 5,500.00
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
Sewer			0.00	\$ -
12" main	\$ 16.50	\$ 82.50	50.00	\$ 4,950.00
<b>Utility Relocation Total</b>				<b>\$ 26,675.00</b>

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$ 4.00	2,000.00	\$ 8,000.00
<b>ROW Total</b>			<b>\$ 8,000.00</b>

General Information		Map	
<b>Project ID</b>			
<b>Street Name</b>	<b>Heritage Way - North</b>		
<b>Site Visit Date</b>	5/22/13		
<b>Road Classification</b>	Minor road		
<b>Project Notes</b>			
Urban typical section with valley gutter,			
<b>Field Notes</b>			
<b>Design (Existing Site Features)</b>			
<b>Existing Road Laneage</b>	2-10'		
<b>Existing Shld Width (paved and grass) (feet)</b>	4		
<b>Existing Side Slopes</b>	flat		
<b>Existing Guardrail</b>	none		
<b>Depth fm Pavement to Top of Culvert (ft):</b>	4		
<b>Pipe Type and Size</b>	48" CMP		
<b>Pipe Condition (1-5) (1 is new)</b>	3		
Condition Notes:			
<b>Pavement Type/Condition</b>	Asphalt/Good		
<b>Environmental Features</b>			
<b>Wetlands</b>	None		
<b>Ditches</b>	None		
<b>Utilities (Visual Inspection)</b>			
<b>Electric</b>	Buried		
<b>Cable</b>	Buried		
<b>Phone</b>	Buried		
<b>Gas</b>			
<b>Water</b>	Buried		
<b>Sewer</b>			
<b>Other</b>			
<b>Proposed Design</b>			
<b>Roadway Section</b>			
<b>Culvert Size &amp; Material</b>	48", RCP, 400' length		
<b>Utility Relocations</b>	Electric, cable, phone, water		
<b>Guardrail Replacement</b>			
<b>Miscellaneous Features</b>			
<b>Planning Cost Estimate</b>			
<b>Type</b>	<b>Notes</b>	<b>Total</b>	
<b>Design</b>	Includes 10% Construction Cost and surveying needs	\$20,409	
<b>Right of Way Cost</b>	Assuming 7,500 sf outside of ROW	\$30,000	
<b>Utility Relocation Cost</b>	Buried utilities	\$26,400	
<b>Construction Cost</b>	Applying 1/10 acre clearing and grubbing cost	\$154,090	
<b>Environmental Permits</b>	Assuming minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$240,898</b>	

Stage Construction Options	
<b>Close Location to Traffic</b>	X
<b>Maintain One Lane - No Temp Pavement</b>	
<b>Maintain One Lane - Temp Pavement</b>	

Stage Construction Notes: Close roadway;







**Photo 1:**



**Photo 2:**

Heritage Way - North

**Photo Date:**

7/2/2013

**Taken By:**

David King

**Page:**

**1**

Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	120.00	\$ 672.64
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	20.00	\$ 1,183.20
Drain Inlet (EA)		\$ 3,000.00		\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90		\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09		\$ -
End Anchorage (EA)		\$ 1,380.00		\$ -
<b>Subtotal</b>				<b>\$ 1,855.84</b>

Grading Complete (5% of Rwy Items & Drng Total \$) \$ 6,160.49

Roadway Total \$ 8,016.33

Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	977.78	\$ 10,149.33
48" CMP (LF)	\$ 24.60		400.00	\$ 9,840.00
48" RCP (LF)		\$ 193.20	400.00	\$ 77,280.00
Class A Conc (CY)		\$ 892.19	13.70	\$ 12,222.98
Steel (lb)		\$ 1.42	0.00	\$ -
Pipe Bedding (CY)		\$ 48.60	88.89	\$ 4,320.00
Trench Backfill (CY)		\$ 2.99	933.83	\$ 2,790.29
Trench Compaction (CY)		\$ 6.36	747.07	\$ 4,751.33

Drainage Total \$ 121,353.93

Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$ 0.71	0.00	\$ -

Signing and Marking Total \$ -

Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$ 10,260.00	0.10	\$ 1,026.00
Temporary Pavement			\$ -
Temporary Drainage (Stream Diversion)	\$ 4,428.00	1.00	\$ 4,428.00

Staging Total \$ 5,454.00

Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$ 4.39	253.33	\$ 1,112.64
Temporary Grassing (AC)	\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)	\$ 4.24	400.00	\$ 1,694.40
Check Dam Type C Silt Fence (LF)	\$ 6.79	400.00	\$ 2,716.80
Erosion Control Mats (SY)	\$ 1.87	133.33	\$ 249.60
Landscape Mulch (SY)	\$ 3.58	133.33	\$ 476.80
Perm Grassing (AC)	\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)	\$ 60.98	24.00	\$ 1,463.62
Plastic Filter Fabric (SY)	\$ 5.72	24.00	\$ 137.38
4" Ditch Paving (SY)	\$ 54.65	0.00	\$ -

Erosion Control Total \$ 7,851.23

Construction Cost Total \$ 142,675.49

Traffic Control (8% of Construction Total \$) \$ 11,414.04

Construction Cost Grand Total \$ 154,089.53

Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00		\$ -
Buried	\$ 16.50	\$ 82.50	75.00	\$ 7,425.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	75.00	\$ 5,362.50
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	75.00	\$ 5,362.50
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Gas				
4" main	\$ 16.50	\$ 66.00		\$ -
Water				
8" main	\$ 16.50	\$ 93.50	75.00	\$ 8,250.00
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
Sewer			0.00	\$ -
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 26,400.00</b>

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$ 4.00	7,500.00	\$ 30,000.00
<b>ROW Total</b>			<b>\$ 30,000.00</b>





General Information		Map	
<b>Project ID</b>			
<b>Street Name</b>	<b>Heritage Way - South</b>		
<b>Site Visit Date</b>	5/22/13		
<b>Road Classification</b>	Minor road		
<b>Project Notes</b>			
Urban typical section with valley gutter			
<b>Field Notes</b>			
<b>Design (Existing Site Features)</b>			
<b>Existing Road Laneage</b>	2-10'		
<b>Existing Shld Width (paved and grass) (feet)</b>	4		
<b>Existing Side Slopes</b>	flat		
<b>Existing Guardrail</b>	none		
<b>Depth fm Pavement to Top of Culvert (ft):</b>	4		
<b>Pipe Type and Size</b>	48" CMP		
<b>Pipe Condition (1-5) (1 is new)</b>	3		
Condition Notes:			
<b>Pavement Type/Condition</b>	Asphalt/Good		
<b>Environmental Features</b>			
<b>Wetlands</b>	None		
<b>Ditches</b>	None		
<b>Utilities (Visual Inspection)</b>			
<b>Electric</b>	Buried		
<b>Cable</b>	Buried		
<b>Phone</b>	Buried		
<b>Gas</b>			
<b>Water</b>	Buried		
<b>Sewer</b>			
<b>Other</b>			
<b>Proposed Design</b>			
<b>Roadway Section</b>			
<b>Culvert Size &amp; Material</b>	48", RCP, 200' length		
<b>Utility Relocations</b>	Electric, cable, phone, water		
<b>Guardrail Replacement</b>			
<b>Miscellaneous Features</b>			
<b>Planning Cost Estimate</b>			
<b>Type</b>	<b>Notes</b>	<b>Total</b>	
<b>Design</b>	Includes 10% Construction Cost and surveying needs	\$14,604	
<b>Right of Way Cost</b>	Assuming 7,500 sf outside of ROW	\$30,000	
<b>Utility Relocation Cost</b>	Buried utilities	\$26,400	
<b>Construction Cost</b>	Applying 1/10 acre clearing and grubbing cost	\$96,035	
<b>Environmental Permits</b>	Assuming minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$177,039</b>	

Stage Construction Options	
<b>Close Location to Traffic</b>	X
<b>Maintain One Lane - No Temp Pavement</b>	
<b>Maintain One Lane - Temp Pavement</b>	

Stage Construction Notes: Close roadway;





**Photo 1:**



**Photo 2:**

Heritage Way - South

**Photo Date:**

7/2/2013

**Taken By:**

David King

**Page:**

**1**

Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	120.00	\$ 672.64
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	20.00	\$ 1,183.20
Drain Inlet (EA)		\$ 3,000.00		\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90		\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09		\$ -
End Anchorage (EA)		\$ 1,380.00		\$ -
<b>Subtotal</b>				<b>\$ 1,855.84</b>

Grading Complete (5% of Rwy Items & Drng Total \$) \$ 3,384.02

**Roadway Total \$ 5,239.86**

Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	444.44	\$ 4,613.33
48" CMP (LF)	\$ 24.60		200.00	\$ 4,920.00
48" RCP (LF)		\$ 193.20	200.00	\$ 38,640.00
Class A Conc (CY)		\$ 892.19	13.70	\$ 12,222.98
Steel (lb)		\$ 1.42	0.00	\$ -
Pipe Bedding (CY)		\$ 48.60	44.44	\$ 2,160.00
Trench Backfill (CY)		\$ 2.99	404.69	\$ 1,209.22
Trench Compaction (CY)		\$ 6.36	323.75	\$ 2,059.08

**Drainage Total \$65,824.61**

Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$ 0.71	0.00	\$ -

**Signing and Marking Total \$ -**

Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$ 10,260.00	0.10	\$ 1,026.00
Temporary Pavement			\$ -
Temporary Drainage (Stream Diversion)	\$ 4,428.00	1.00	\$ 4,428.00

**Staging Total \$ 5,454.00**

Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$ 4.39	120.00	\$ 527.04
Temporary Grassing (AC)	\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)	\$ 4.24	800.00	\$ 3,388.80
Check Dam Type C Silt Fence (LF)	\$ 6.79	800.00	\$ 5,433.60
Erosion Control Mats (SY)	\$ 1.87	266.67	\$ 499.20
Landscape Mulch (SY)	\$ 3.58	266.67	\$ 953.60
Perm Grassing (AC)	\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)	\$ 60.98	24.00	\$ 1,463.62
Plastic Filter Fabric (SY)	\$ 5.72	24.00	\$ 137.38
4" Ditch Paving (SY)	\$ 54.65	0.00	\$ -

**Erosion Control Total \$12,403.23**

**Construction Cost Total \$88,921.71**

Traffic Control (8% of Construction Total \$) \$ 7,113.74

**Construction Cost Grand Total \$96,035.45**

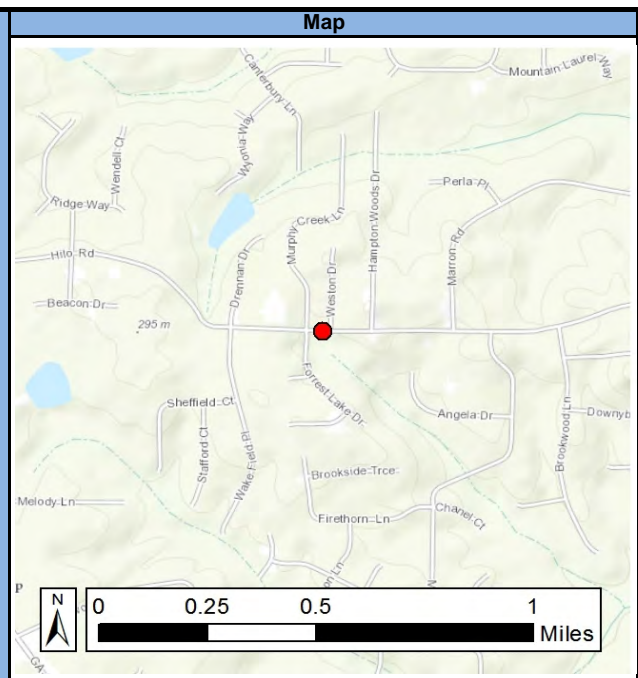
Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00		\$ -
Buried	\$ 16.50	\$ 82.50	75.00	\$ 7,425.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	75.00	\$ 5,362.50
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	75.00	\$ 5,362.50
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Gas				
4" main	\$ 16.50	\$ 66.00		\$ -
Water				
8" main	\$ 16.50	\$ 93.50	75.00	\$ 8,250.00
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
Sewer			0.00	\$ -
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$26,400.00</b>

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$ 4.00	7,500.00	\$ 30,000.00
<b>ROW Total</b>			<b>\$30,000.00</b>





General Information	
Project ID	
Street Name	287 Hilo Road
Site Visit Date	1/20/2016
Road Classification	Minor arterial
Project Notes	
Existing upstream inlet consists of makeshift corrugated metal headwall.	
Field Notes	
Design (Existing Site Features)	
Existing Road Laneage	3-12.5'
Existing Shld Width (paved and grass) (feet)	10'
Existing Side Slopes	4:1
Existing Guardrail	None
Depth fm Pavement to Top of Culvert (ft):	1.00
Pipe Type and Size	CMP 1-18" 1-24"
Pipe Condition (1-5) (1 is new)	3-4
Condition Notes: Two corrugated metal pipes 2.5' apart	
Pavement Type/Condition	Asphalt/Good
Environmental Features	
Wetlands	
Ditches	Roadside drainage ditches
State Waters	
Utilities (Visual Inspection)	
Electric	Aerial 50' away
Cable	Unknown
Phone	Aerial 50' away
Gas	Unknown
Water	Buried
Sewer	
Other	Fire Hydrant



Stage Construction Options	
Close Location to Traffic	
Maintain One Lane - No Temp Pavement	X
Maintain One Lane - Temp Pavement	

Stage Construction Notes:

Proposed Design	
Roadway Section	Typical
Culvert Size & Material	3 24" round RCPs with straight headwall. Cost of removing makeshift headwall include in pipe removal cost
Utility Relocations	Relocation of fire hydrant and water main
Guardrail Replacement	
Miscellaneous Features	

Planning Cost Estimate		
Type	Notes	Total
Design	Includes 10% of Construction Cost and surveying needs	\$9,322
Right of Way Cost	Project entirely within ROW	\$0
Utility Relocation Cost	Fire hydrant and water main	\$6,569
Construction Cost		\$43,217
Environmental Permits	Assuming minimal environmental permitting required	\$10,000

<b>Total Planning Estimate</b>	<b>\$69,108</b>
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**Photo 1:** Upstream end of culverts looking South towards Hilo Road.



**Photo 2:** Downstream end of culverts.

## Hilo Road

**Photo Date:**

1/20/2016

**Taken By:**

David Gibbs

**Page**

1



Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	450.00	\$ 2,522.40
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	12.00	\$ 709.92
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
<b>Subtotal</b>				<b>\$ 3,232.32</b>
<b>Grading Complete (5% of Rwy Items &amp; Drng Total \$)</b>				<b>\$ 1,479.90</b>
<b>Roadway Total</b>				<b>\$ 4,712.22</b>
Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	179.11	\$ 1,859.17
24" CMP (LF)	\$ 16.38		134.00	\$ 6,584.76
24" RCP (LF)		\$ 54.00	186.00	\$ 10,044.00
Class A Conc (CY)		\$ 892.19	6.20	\$ 5,531.57
Steel (lb)		\$ 1.42	0.00	\$ -
Pipe Bedding (CY)		\$ 48.60	27.56	\$ 1,339.20
Trench Backfill (CY)		\$ 2.99	124.69	\$ 372.58
Trench Compaction (CY)		\$ 6.36	99.75	\$ 634.43
<b>Drainage Total</b>				<b>\$ 26,365.71</b>
Signing and Marking		Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)		\$ 0.71	36.00	\$ 25.49
<b>Signing and Marking Total</b>				<b>\$ 25.49</b>
Staging		Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)		\$ 10,260.00	0.05	\$ 513.00
Temporary Pavement				\$ -
Temporary Drainage (Stream Diversion)		\$ 4,428.00	1.00	\$ 4,428.00
<b>Staging Total</b>				<b>\$ 4,966.49</b>
Erosion Control		Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)		\$ 4.39	32.67	\$ 143.47
Temporary Grassing (AC)		\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)		\$ 4.24	248.00	\$ 1,050.53
Check Dam Type C Silt Fence (LF)		\$ 6.79	248.00	\$ 1,684.42
Erosion Control Mats (SY)		\$ 1.87	0.00	\$ -
Landscape Mulch (SY)		\$ 3.58	0.00	\$ -
Perm Grassing (AC)		\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)		\$ 60.98	16.00	\$ 975.74
Plastic Filter Fabric (SY)		\$ 5.72	16.00	\$ 91.58
4" Ditch Paving (SY)		\$ 54.65	0.00	\$ -
<b>Erosion Control Total</b>				<b>\$ 3,945.74</b>
<b>Construction Cost Total</b>				<b>\$ 40,015.65</b>
<b>Traffic Control (8% of Construction Total \$)</b>				<b>\$ 3,201.25</b>
<b>Construction Cost Grand Total</b>				<b>\$ 43,216.90</b>
Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00	0.00	\$ -
Buried	\$ 16.50	\$ 82.50	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Gas				
4" main	\$ 16.50	\$ 66.00	0.00	\$ -
Water				
8" main	\$ 16.50	\$ 93.50	36.00	\$ 3,960.00
Relocate Fire Hydrant (EA)		\$ 2,609.22	1.00	\$ 2,609.22
Sewer				
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 6,569.22</b>
Right of Way (Sq Ft)		Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement		\$ 4.00	0.00	\$ -
<b>ROW Total</b>				<b>\$ -</b>



General Information		Map	
Project ID			
Street Name	448 Inman Road		
Site Visit Date	2/4/2016		
Road Classification	Minor arterial		
<b>Project Notes</b>			
Gay Creek crossing. Substantial flow. Downstream roadside blowout has been refilled.			
<b>Field Notes</b>			
<b>Design (Existing Site Features)</b>			
Existing Road Laneage	2-12'		
Existing Shld Width (paved and grass) (feet)	6'		
Existing Side Slopes	2:1		
Existing Guardrail	N/A		
Depth fm Pavement to Top of Culvert (ft):	3'		
Pipe Type and Size	2-84" CMPs		
Pipe Condition (1-5) (1 is new)	3-4		
Rusted out bottoms.			
Pavement Type/Condition	Asphalt/Good		
<b>Environmental Features</b>			
Wetlands			
Ditches			
State Waters			
<b>Utilities (Visual Inspection)</b>			
Electric	Aerial		
Cable	Unknown		
Phone	Aerial		
Gas	Unknown		
Water	Unknown		
Sewer	Unknown		
Other	Unknown		
<b>Stage Construction Options</b>			
<b>Close Location to Traffic</b>			
Maintain One Lane - No Temp Pavement		X	
Maintain One Lane - Temp Pavement			
Stage Construction Notes: Aerial utility lines above potential staging area hang low, need relocating			
<b>Proposed Design</b>			
Roadway Section	Typical		
Culvert Size & Material	Double 7' x 6' barrel concrete box culvert		
Utility Relocations	Aerial electrical and phone wires, utility pole		
Guardrail Replacement	Suggest guardrails over crossing, none currently in place.		
Miscellaneous Features			
<b>Planning Cost Estimate</b>			
Type	Notes	Total	
Design	Includes 10% Construction cost and surveying needs	\$26,433	
Right of Way Cost	Assuming project lies entirely within ROW	\$0	
Utility Relocation Cost	Aerial phone and electric, utility pole	\$16,363	
Construction Cost		\$139,334	
Environmental Permits	Assuming minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$192,130</b>	





**Photo 1:** Upstream end of culvert looking East towards Inman Road.



**Photo 2:** Downstream end looking South towards North Bend Court.

**Inman Road**

**Photo Date:**

2/4/2016

**Taken By:**

Christian Helfrich

**Page**

**1**

Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	384.00	\$ 2,152.45
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	0.00	\$ -
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	64.00	\$ 3,454.46
End Anchorage (EA)		\$ 1,380.00	4.00	\$ 5,520.00
<b>Subtotal</b>				<b>\$ 11,126.91</b>

Grading Complete (5% of Rwy Items & Drng Total \$) \$ 5,581.49

Roadway Total \$ 16,708.41

Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	239.56	\$ 2,486.59
84" CMP (LF)	\$ 63.00		77.00	\$ 14,553.00
84" RCP		\$ 142.52	0.00	\$ -
Class A Conc (CY)		\$ 892.19	78.22	\$ 69,790.07
Steel (lb)		\$ 1.42	7,504.95	\$ 10,627.01
Pipe Bedding (CY)		\$ 48.60	24.00	\$ 1,166.40
Trench Backfill (CY)		\$ 2.99	232.78	\$ 695.54
Trench Compaction (CY)		\$ 6.36	186.22	\$ 1,184.37

Drainage Total \$ 100,502.98

Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$ 0.71	64.00	\$ 45.31

Signing and Marking Total \$ 45.31

Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$ 10,260.00	0.15	\$ 1,539.00
Temporary Pavement			\$ -
Temporary Drainage (Stream Diversion)	\$ 4,428.00	1.00	\$ 4,428.00

Staging Total \$ 6,057.62

Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$ 4.39	199.11	\$ 874.50
Temporary Grassing (AC)	\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)	\$ 4.24	154.00	\$ 652.34
Check Dam Type C Silt Fence (LF)	\$ 6.79	154.00	\$ 1,045.97
Erosion Control Mats (SY)	\$ 1.87	51.33	\$ 96.10
Landscape Mulch (SY)	\$ 3.58	51.33	\$ 183.57
Perm Grassing (AC)	\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)	\$ 60.98	42.67	\$ 2,601.98
Plastic Filter Fabric (SY)	\$ 5.72	42.67	\$ 244.22
4" Ditch Paving (SY)	\$ 54.65	0.00	\$ -

Erosion Control Total \$ 5,698.68

Construction Cost Total \$ 129,013.00

Traffic Control (8% of Construction Total \$) \$ 10,321.04

Construction Cost Grand Total \$ 139,334.04

Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00	150.00	\$ 9,900.00
Buried	\$ 16.50	\$ 82.50	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	1.00	\$ 687.50
Phone				
Aerial	\$ 11.00	\$ 27.50	150.00	\$ 5,775.00
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Gas				
4" main	\$ 16.50	\$ 66.00	0.00	\$ -
Water				
8" main	\$ 16.50	\$ 93.50	0.00	\$ -
Relocate Fire Hydrant (EA)		\$ 2,609.22	0.00	\$ -
Sewer				
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 16,362.50</b>

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$ 4.00	0.00	\$ -
<b>ROW Total</b>			<b>\$ -</b>





General Information		Map	
<b>Project ID</b>			
<b>Street Name</b>	<b>510 Janice Drive</b>		
<b>Site Visit Date</b>	5/22/13		
<b>Road Classification</b>	Internal Local		
<b>Project Notes</b>			
Rural Typical Section			
<b>Field Notes</b>			
<b>Design (Existing Site Features)</b>			
<b>Existing Road Laneage</b>	2 - 10'		
<b>Existing Shld Width (paved and grass) (feet)</b>	1' (Grass)		
<b>Existing Side Slopes</b>	6:1		
<b>Existing Guardrail</b>	None		
<b>Depth fm Pavement to Top of Culvert (ft):</b>	2		
<b>Pipe Type and Size</b>	1 - 60" CMP		
<b>Pipe Condition (1-5) (1 is new)</b>	3		
Condition Notes: Signs of rust, but no evidence of structural loss; downstream debris potentially limiting capacity - maintenance to clear debris			
<b>Pavement Type/Condition</b>	Asphalt/Good		
<b>Environmental Features</b>			
<b>Wetlands</b>	None		
<b>Ditches</b>	None		
<b>2 Streams</b>			
<b>Utilities (Visual Inspection)</b>			
<b>Electric</b>	Aerial		
<b>Cable</b>	Aerial		
<b>Phone</b>	Aerial		
<b>Gas</b>			
<b>Water</b>	Buried		
<b>Sewer</b>			
<b>Other</b>			
<b>Stage Construction Options</b>			
<b>Close Location to Traffic</b>			
<b>Maintain One Lane - No Temp Pavement</b>		X	
<b>Maintain One Lane - Temp Pavement</b>			
Stage Construction Notes: Stage Construction to have one lane open			
<b>Proposed Design</b>			
<b>Roadway Section</b>			
<b>Culvert Size &amp; Material</b>	double 6' x 4' box, concrete, 70' length		
<b>Utility Relocations</b>	Water main and possible aerial facility relocation		
<b>Guardrail Replacement</b>			
<b>Miscellaneous Features</b>	Zone A, Floodplain Analysis Required		
<b>Planning Cost Estimate</b>			
<b>Type</b>	<b>Description</b>	<b>Total</b>	
<b>Design</b>	Includes 10% Construction Cost and surveying needs	\$25,547	
<b>Right of Way Cost</b>	Assuming project extends 2,500 sf beyond ROW	\$10,000	
<b>Utility Relocation Cost</b>	Aerial and buried utilities	\$15,455	
<b>Construction Cost</b>	Assuming 1/10 acre clearing and grubbing	\$130,470	
<b>Environmental Permits</b>	Permits, Zone A Floodplain Analysis	\$15,000	
<b>Total Planning Estimate</b>		<b>\$196,472</b>	



**Photo 1:**



**Photo 2:**

Janice Drive

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

**1**





**Photo 3:**



**Photo 4:**

Janice Drive

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

**2**



Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	280.00	\$ 1,569.49
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	0.00	\$ -
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
<b>Subtotal</b>				<b>\$ 1,569.49</b>

Grading Complete (5% of Rwy Items & Drng Total \$) \$ 5,202.98

Roadway Total \$ 6,772.47

Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	290.37	\$ 3,014.04
60" CMP (LF)	\$ 24.60		70.00	\$ 5,166.00
60" RCP		\$ 259.20	0.00	\$ -
Class A Conc (CY)		\$ 892.19	86.48	\$ 77,156.42
Steel (lb)		\$ 1.42	9,154.00	\$ 12,962.06
Pipe Bedding (CY)		\$ 48.60	37.30	\$ 1,812.78
Trench Backfill (CY)		\$ 2.99	294.55	\$ 880.12
Trench Compaction (CY)		\$ 6.36	235.64	\$ 1,498.68

Drainage Total \$ 102,490.11

Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$ 0.71	0.00	\$ -

Signing and Marking Total \$ -

Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$ 10,260.00	0.10	\$ 1,026.00
Temporary Pavement			\$ -
Temporary Drainage (Stream Diversion)	\$ 4,428.00	1.00	\$ 4,428.00

Staging Total \$ 5,454.00

Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$ 4.39	77.78	\$ 341.60
Temporary Grassing (AC)	\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)	\$ 4.24	280.00	\$ 1,186.08
Check Dam Type C Silt Fence (LF)	\$ 6.79	280.00	\$ 1,901.76
Erosion Control Mats (SY)	\$ 1.87	31.11	\$ 58.24
Landscape Mulch (SY)	\$ 3.58	31.11	\$ 111.25
Perm Grassing (AC)	\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)	\$ 60.98	37.33	\$ 2,276.74
Plastic Filter Fabric (SY)	\$ 5.72	37.33	\$ 213.70
4" Ditch Paving (SY)	\$ 54.65	0.00	\$ -

Erosion Control Total \$ 6,089.37

Construction Cost Total \$ 120,805.95

Traffic Control (8% of Construction Total \$) \$ 9,664.48

Construction Cost Grand Total \$ 130,470.42

Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00	60.00	\$ 3,960.00
Buried	\$ 16.50	\$ 82.50	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	2.00	\$ 1,375.00
Phone				
Aerial	\$ 11.00	\$ 27.50	60.00	\$ 2,310.00
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50	60.00	\$ 2,310.00
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Gas				
4" main	\$ 16.50	\$ 66.00		\$ -
Water				
8" main	\$ 16.50	\$ 93.50	50.00	\$ 5,500.00
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
Sewer			0.00	\$ -
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 15,455.00</b>

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$ 4.00	2,500.00	\$ 10,000.00
<b>ROW Total</b>			<b>\$ 10,000.00</b>

General Information		Map	
Project ID			
Street Name	671 Kenwood Road		
Site Visit Date	1/21/2016		
Road Classification	Minor arterial		
Project Notes			
Field Notes			
Design (Existing Site Features)			
Existing Road Laneage	2-11'		
Existing Shld Width (paved and grass) (feet)	2'		
Existing Side Slopes	1.5:1		
Existing Guardrail	None		
Depth fm Pavement to Top of Culvert (ft):	10'		
Pipe Type and Size	60" CMP		
Pipe Condition (1-5) (1 is new)	4-5		
Condition Notes: Deformed/compressed (pipe size hard to determine). No headwalls. Washout on downstream side, water surface 2' below culvert			
Pavement Type/Condition	Asphalt/Good		
Environmental Features			
Wetlands			
Ditches	Roadside drainage ditches		
State Waters			
Buried			
Electric	Aerial		
Cable	Buried		
Phone	Aerial		
Gas			
Water			
Sewer			
Other			
Stage Construction Options			
Close Location to Traffic			
Maintain One Lane - No Temp Pavement	X		
Maintain One Lane - Temp Pavement			
Stage Construction Notes: Utility pole and electricity meter boxes in possible construction staging area			
Proposed Design			
Roadway Section	Typical		
Culvert Size & Material	60" round RCP with straight headwalls		
Utility Relocations	Potential removal/replacement of utility pole and buried cable line		
Guardrail Replacement			
Miscellaneous Features			
Planning Cost Estimate			
Type	Notes	Total	
Design	Includes 10% of Construction Cost and surveying needs	\$11,280	
Right of Way Cost	Project assumed to be entirely in ROW	\$0	
Utility Relocation Cost	Potential removal/replacement	\$12,100	
Construction Cost		\$62,798	
Environmental Permits	Assuming minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$96,178</b>	





**Photo 1:** Upstream end of culvert looking South towards Kenwood Road.



**Photo 2:** Downstream end of culvert.

**Kenwood Road**

**Photo Date:**

1/21/2016

**Taken By:**

David Gibbs

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**2**



Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	154.00	\$ 863.22
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	0.00	\$ -
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
<b>Subtotal</b>				<b>\$ 863.22</b>
<b>Grading Complete (5% of Rwy Items &amp; Drng Total \$)</b>				<b>\$ 2,127.89</b>
<b>Roadway Total</b>				<b>\$ 2,991.12</b>
Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	236.44	\$ 2,454.29
60" CMP (LF)	\$ 24.60		57.00	\$ 1,402.20
60" RCP (LF)		\$ 281.96	57.00	\$ 16,071.95
Class A Conc (CY)		\$ 892.19	21.58	\$ 19,253.42
Steel (lb)		\$ 1.42	0.00	\$ -
Pipe Bedding (CY)		\$ 48.60	14.78	\$ 718.20
Trench Backfill (CY)		\$ 2.99	222.22	\$ 663.98
Trench Compaction (CY)		\$ 6.36	177.77	\$ 1,130.63
<b>Drainage Total</b>				<b>\$ 41,694.67</b>
Signing and Marking		Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)		\$ 0.71		\$ -
<b>Signing and Marking Total</b>				<b>\$ -</b>
Staging		Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)		\$ 10,260.00	0.20	\$ 2,052.00
Temporary Pavement				\$ -
Temporary Drainage (Stream Diversion)		\$ 4,428.00	1.00	\$ 4,428.00
<b>Staging Total</b>				<b>\$ 6,480.00</b>
Erosion Control		Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)		\$ 4.39	27.22	\$ 119.56
Temporary Grassing (AC)		\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)		\$ 4.24	456.00	\$ 1,931.62
Check Dam Type C Silt Fence (LF)		\$ 6.79	456.00	\$ 3,097.15
Erosion Control Mats (SY)		\$ 1.87	50.67	\$ 94.85
Landscape Mulch (SY)		\$ 3.58	50.67	\$ 181.18
Perm Grassing (AC)		\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)		\$ 60.98	23.33	\$ 1,422.96
Plastic Filter Fabric (SY)		\$ 5.72	23.33	\$ 133.56
4" Ditch Paving (SY)		\$ 54.65	0.00	\$ -
<b>Erosion Control Total</b>				<b>\$ 6,980.88</b>
<b>Construction Cost Total</b>				<b>\$ 58,146.66</b>
<b>Traffic Control (8% of Construction Total \$)</b>				<b>\$ 4,651.73</b>
<b>Construction Cost Grand Total</b>				<b>\$ 62,798.40</b>
Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00	75.00	\$ 4,950.00
Buried	\$ 16.50	\$ 82.50	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	1.00	\$ 687.50
Phone				
Aerial	\$ 11.00	\$ 27.50	75.00	\$ 2,887.50
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	50.00	\$ 3,575.00
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Gas				
4" main	\$ 16.50	\$ 66.00	0.00	\$ -
Water				
8" main	\$ 16.50	\$ 93.50	0.00	\$ -
Sewer				
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 12,100.00</b>
Right of Way (Sq Ft)		Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement		\$ 4.00	0.00	\$ -
<b>ROW Total</b>				<b>\$ -</b>



General Information		Map	
<b>Project ID</b>			
<b>Street Name</b>	<b>547 Kenwood Road</b>		
<b>Site Visit Date</b>	5/22/13		
<b>Road Classification</b>	Minor Arterial		
Project Notes			
Rural Typical Section			
Field Notes			
Design (Existing Site Features)			
<b>Existing Road Laneage</b>	2-12'		
<b>Existing Shld Width (paved and grass) (feet)</b>	None		
<b>Existing Side Slopes</b>	1:1		
<b>Existing Guardrail</b>	None		
<b>Depth fm Pavement to Top of Culvert (ft):</b>	2		
<b>Pipe Type and Size</b>	96" CMP		
<b>Pipe Condition (1-5) (1 is new)</b>	3		
Condition Notes: Rusted severely on upstream and downstream ends; 3' + drop on downstream end, interior structure ok, debris/maintenance needed			
<b>Pavement Type/Condition</b>	Asphalt/Good		
Environmental Features			
<b>Wetlands</b>	None		
<b>Ditches</b>	Noted		
Utilities (Visual Inspection)			
<b>Electric</b>	Aerial		
<b>Cable</b>	Aerial		
<b>Phone</b>	Aerial		
<b>Gas</b>			
<b>Water</b>	Buried		
<b>Sewer</b>			
<b>Other</b>			
Proposed Design			
<b>Roadway Section</b>			
<b>Culvert Size &amp; Material</b>	8' x 5' box, concrete, 80' length		
<b>Utility Relocations</b>			
<b>Guardrail Replacement</b>	Guardrail due to culvert and side slopes		
<b>Miscellaneous Features</b>			
Planning Cost Estimate			
Type	Notes	Total	
<b>Design</b>	Includes 10% Construction Cost and surveying needs	\$22,646	
<b>Right of Way Cost</b>	Assuming project extends 7,500 sf beyond ROW	\$15,000	
<b>Utility Relocation Cost</b>	Buried utilities	\$5,500	
<b>Construction Cost</b>	Assuming 1/10 acre clearing and grubbing	\$176,464	
<b>Environmental Permits</b>	Assuming minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$229,611</b>	

Stage Construction Options	
<b>Close Location to Traffic</b>	X
<b>Maintain One Lane - No Temp Pavement</b>	
<b>Maintain One Lane - Temp Pavement</b>	

Stage Construction Notes: 35 mph posted







**Photo 1:**



**Photo 2:**

Kenwood Road

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

**1**

Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	432.00	\$ 2,421.50
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	0.00	\$ -
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	500.00	\$ 26,988.00
End Anchorage (EA)		\$ 1,380.00	2.00	\$ 2,760.00
<b>Subtotal</b>				<b>\$ 32,169.50</b>

Grading Complete (5% of Rwy Items & Drng Total \$) \$ 7,142.00

Roadway Total \$ 39,311.51

Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	586.67	\$ 6,089.60
96" CMP (LF)	\$ 72.00		80.00	\$ 17,280.00
96" RCP		\$ 142.52	0.00	\$ -
Class A Conc (CY)		\$ 892.19	74.23	\$ 66,230.68
Steel (lb)		\$ 1.42	9,406.00	\$ 13,318.90
Pipe Bedding (CY)		\$ 48.60	54.70	\$ 2,658.42
Trench Backfill (CY)		\$ 2.99	630.63	\$ 1,884.33
Trench Compaction (CY)		\$ 6.36	504.51	\$ 3,208.66

Drainage Total \$ 110,670.59

Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$ 0.71	72.00	\$ 50.98

Signing and Marking Total \$ 50.98

Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$ 10,260.00	0.10	\$ 1,026.00
Temporary Pavement			\$ -
Temporary Drainage (Stream Diversion)	\$ 4,428.00	1.00	\$ 4,428.00

Staging Total \$ 5,555.95

Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$ 4.39	112.00	\$ 491.90
Temporary Grassing (AC)	\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)	\$ 4.24	320.00	\$ 1,355.52
Check Dam Type C Silt Fence (LF)	\$ 6.79	320.00	\$ 2,173.44
Erosion Control Mats (SY)	\$ 1.87	106.67	\$ 199.68
Landscape Mulch (SY)	\$ 3.58	106.67	\$ 381.44
Perm Grassing (AC)	\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)	\$ 60.98	48.00	\$ 2,927.23
Plastic Filter Fabric (SY)	\$ 5.72	48.00	\$ 274.75
4" Ditch Paving (SY)	\$ 54.65	0.00	\$ -

Erosion Control Total \$ 7,803.97

Construction Cost Total \$ 163,393.00

Traffic Control (8% of Construction Total \$) \$ 13,071.44

Construction Cost Grand Total \$ 176,464.44

Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00		\$ -
Buried	\$ 16.50	\$ 82.50	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Gas				
4" main	\$ 16.50	\$ 66.00		\$ -
Water				
8" main	\$ 16.50	\$ 93.50	50.00	\$ 5,500.00
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
Sewer			0.00	\$ -
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 5,500.00</b>

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$ 4.00	3,750.00	\$ 15,000.00
<b>ROW Total</b>			<b>\$ 15,000.00</b>





General Information		Map	
Project ID			
Street Name	200 Kingswood Drive		
Site Visit Date	1/20/2016		
Road Classification	Minor road		
Project Notes			
Field Notes			
<b>Design (Existing Site Features)</b>			
Existing Road Laneage	2-12'		
Existing Shld Width (paved and grass) (feet)	12'		
Existing Side Slopes	8:1		
Existing Guardrail	None		
Depth fm Pavement to Top of Culvert (ft):	4.5'		
Pipe Type and Size	48" CMP		
Pipe Condition (1-5) (1 is new)	4-5		
Condition Notes: Rusted out bottoms. Concrete headwall and sluice/exaggerated inlet			
Pavement Type/Condition	Asphalt/Good		
<b>Environmental Features</b>			
Wetlands			
Ditches	Roadside drainage ditches		
State Waters			
<b>Utilities (Visual Inspection)</b>			
Electric	Unknown		
Cable	Buried		
Phone	Unknown		
Gas	Unknown		
Water	Buried		
Sewer	Unknown		
Other			
<b>Stage Construction Options</b>			
Close Location to Traffic			
Maintain One Lane - No Temp Pavement		X	
Maintain One Lane - Temp Pavement			
Stage Construction Notes:			
<b>Proposed Design</b>			
Roadway Section	Typical		
Culvert Size & Material	48" round RCP with straight headwalls. Cost of removing each existing headwall and small spillway equal to removal of entire length of pipe.		
Utility Relocations	Removal/replacement of fire hydrand and buried water, cable lines		
Guardrail Replacement			
Miscellaneous Features			
<b>Planning Cost Estimate</b>			
Type	Notes	Total	
Design	Includes 10% Construction Cost and surveying needs	\$11,512	
Right of Way Cost	Assume project extends past ROW, 1/10 acre	\$17,424	
Utility Relocation Cost		\$11,684	
Construction Cost		\$65,122	
Environmental Permits	Assuming minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$115,742</b>	





**Photo 1:** Upstream end of culvert.



**Photo 2:** Downstream end of culvert looking North towards Kingswood Drive.

**Kingswood Drive**

**Photo Date:**

1/20/2016

**Taken By:**

David Gibbs

**Page**

**1**

Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	144.00	\$ 807.17
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	0.00	\$ -
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
<b>Subtotal</b>				<b>\$ 807.17</b>

Grading Complete (5% of Rwy Items & Drng Total \$) \$ 2,209.38

Roadway Total \$ 3,016.54

Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	194.22	\$ 2,016.03
48" CMP (LF)	\$ 24.60		368.00	\$ 9,052.80
48" RCP (LF)		\$ 193.20	92.00	\$ 17,774.40
Class A Conc (CY)		\$ 892.19	13.70	\$ 12,222.98
Steel (lb)		\$ 1.42	0.00	\$ -
Pipe Bedding (CY)		\$ 48.60	20.44	\$ 993.60
Trench Backfill (CY)		\$ 2.99	163.51	\$ 488.58
Trench Compaction (CY)		\$ 6.36	130.81	\$ 831.96

Drainage Total \$ 43,380.35

Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$ 0.71		\$ -

Signing and Marking Total \$ -

Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$ 10,260.00	0.20	\$ 2,052.00
Temporary Pavement			\$ -
Temporary Drainage (Stream Diversion)	\$ 4,428.00	1.00	\$ 4,428.00

Staging Total \$ 6,480.00

Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$ 4.39	45.33	\$ 199.10
Temporary Grassing (AC)	\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)	\$ 4.24	552.00	\$ 2,338.27
Check Dam Type C Silt Fence (LF)	\$ 6.79	552.00	\$ 3,749.18
Erosion Control Mats (SY)	\$ 1.87	61.33	\$ 114.82
Landscape Mulch (SY)	\$ 3.58	61.33	\$ 219.33
Perm Grassing (AC)	\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)	\$ 60.98	12.00	\$ 731.81
Plastic Filter Fabric (SY)	\$ 5.72	12.00	\$ 68.69
4" Ditch Paving (SY)	\$ 54.65	0.00	\$ -

Erosion Control Total \$ 7,421.20

Construction Cost Total \$ 60,298.09

Traffic Control (8% of Construction Total \$) \$ 4,823.85

Construction Cost Grand Total \$ 65,121.94

Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00	0.00	\$ -
Buried	\$ 16.50	\$ 82.50	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	50.00	\$ 3,575.00
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Gas				
4" main	\$ 16.50	\$ 66.00	0.00	\$ -
Water				
8" main	\$ 16.50	\$ 93.50	50.00	\$ 5,500.00
Relocate Fire Hydrant (EA)		\$ 2,609.22	1.00	\$ 2,609.22
Sewer				
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 11,684.22</b>

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$ 4.00	4356.00	\$ 17,424.00
<b>ROW Total</b>			<b>\$ 17,424.00</b>





General Information		Map	
<b>Project ID</b>			
<b>Street Name</b>	<b>115 Mark Lane</b>		
<b>Site Visit Date</b>	5/22/13		
<b>Road Classification</b>	Minor road		
<b>Project Notes</b>			
Urban typical with Curb and Gutter			
<b>Field Notes</b>			
<b>Design (Existing Site Features)</b>			
<b>Existing Road Laneage</b>	2 - 10'		
<b>Existing Shld Width (paved and grass) (feet)</b>	4'		
<b>Existing Side Slopes</b>	Flat		
<b>Existing Guardrail</b>	None		
<b>Depth fm Pavement to Top of Culvert (ft):</b>	5		
<b>Pipe Type and Size</b>	60" CMP		
<b>Pipe Condition (1-5) (1 is new)</b>	4		
Condition Notes: Not straight, joint damage; downstream sediment (1/2' of sediment 90' length)			
<b>Pavement Type/Condition</b>	Asphalt/Good		
<b>Environmental Features</b>			
<b>Wetlands</b>	X (Upstream)		
<b>Ditches</b>	None		
<b>Utilities (Visual Inspection)</b>			
<b>Electric</b>	Buried		
<b>Cable</b>	Buried		
<b>Phone</b>	Buried		
<b>Gas</b>			
<b>Water</b>	Buried		
<b>Sewer</b>			
<b>Other</b>			
<b>Stage Construction Options</b>			
<b>Close Location to Traffic</b>			
<b>Maintain One Lane - No Temp Pavement</b>		X	
<b>Maintain One Lane - Temp Pavement</b>			
Stage Construction Notes:			
<b>Proposed Design</b>			
<b>Roadway Section</b>			
<b>Culvert Size &amp; Material</b>	Double 6x4' box, concrete, 90'		
<b>Utility Relocations</b>	Electric, cable, phone, water		
<b>Guardrail Replacement</b>			
<b>Miscellaneous Features</b>			
<b>Planning Cost Estimate</b>			
<b>Type</b>	<b>Notes</b>	<b>Total</b>	
<b>Design</b>	Includes 10% Construction Cost and surveying needs	\$30,040	
<b>Right of Way Cost</b>	Assuming project extends 4,000 sf beyond ROW	\$16,000	
<b>Utility Relocation Cost</b>	Buried utilities	\$17,600	
<b>Construction Cost</b>	Assuming 1/10 acre clearing and grubbing	\$175,397	
<b>Environmental Permits</b>	Assuming minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$249,037</b>	



**Photo 1:**



**Photo 2:**

Mark Lane

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

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**Photo 3:**



**Photo 4:**

Mark Lane

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

**2**

Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	280.00	\$ 1,569.49
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	56.00	\$ 3,312.96
Drain Inlet (EA)		\$ 3,000.00	2.00	\$ 6,000.00
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
<b>Subtotal</b>				<b>\$ 10,882.45</b>

Grading Complete (5% of Rwy Items & Drng Total \$) \$ 7,106.65

Roadway Total \$ 17,989.10

Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	513.33	\$ 5,328.40
60" CMP (LF)	\$ 24.60		90.00	\$ 6,642.00
60" RCP		\$ 259.20	0.00	\$ -
Class A Conc (CY)		\$ 892.19	107.46	\$ 95,874.52
Steel (lb)		\$ 1.42	11,682.00	\$ 16,541.71
Pipe Bedding (CY)		\$ 48.60	47.70	\$ 2,318.22
Trench Backfill (CY)		\$ 2.99	562.86	\$ 1,681.81
Trench Compaction (CY)		\$ 6.36	450.28	\$ 2,863.81

Drainage Total \$ 131,250.48

Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$ 0.71	56.00	\$ 39.65

Signing and Marking Total \$ 39.65

Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$ 10,260.00	0.10	\$ 1,026.00
Temporary Pavement			\$ -
Temporary Drainage (Stream Diversion)	\$ 4,428.00	1.00	\$ 4,428.00

Staging Total \$ 5,533.30

Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$ 4.39	108.89	\$ 478.24
Temporary Grassing (AC)	\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)	\$ 4.24	360.00	\$ 1,524.96
Check Dam Type C Silt Fence (LF)	\$ 6.79	360.00	\$ 2,445.12
Erosion Control Mats (SY)	\$ 1.87	120.00	\$ 224.64
Landscape Mulch (SY)	\$ 3.58	120.00	\$ 429.12
Perm Grassing (AC)	\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)	\$ 60.98	37.33	\$ 2,276.74
Plastic Filter Fabric (SY)	\$ 5.72	37.33	\$ 213.70
4" Ditch Paving (SY)	\$ 54.65	0.00	\$ -

Erosion Control Total \$ 7,592.51

Construction Cost Total \$ 162,405.03

Traffic Control (8% of Construction Total \$) \$ 12,992.40

Construction Cost Grand Total \$ 175,397.43

Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00		\$ -
Buried	\$ 16.50	\$ 82.50	50.00	\$ 4,950.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	50.00	\$ 3,575.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	50.00	\$ 3,575.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Gas				
4" main	\$ 16.50	\$ 66.00		\$ -
Water				
8" main	\$ 16.50	\$ 93.50	50.00	\$ 5,500.00
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
Sewer			0.00	\$ -
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 17,600.00</b>

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$ 4.00	4,000.00	\$ 16,000.00
<b>ROW Total</b>			<b>\$ 16,000.00</b>







**Photo 1:**

Mathew Way



**Photo 2:**

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

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**Photo 3:**



**Photo 4:**

**Mathew Way**

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

**2**

Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	400.00	\$ 2,242.13
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	40.00	\$ 2,366.40
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
<b>Subtotal</b>				<b>\$ 4,608.53</b>

Grading Complete (5% of Rwy Items & Drng Total \$) \$ 10,314.95

Roadway Total \$ 14,923.48

Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	651.85	\$ 6,766.22
72" CMP (LF)	\$ 54.00		120.00	\$ 19,440.00
72" RCP		\$ 390.00	0.00	\$ -
Class A Conc (CY)		\$ 892.19	159.95	\$ 142,705.47
Steel (lb)		\$ 1.42	17,018.00	\$ 24,097.49
Pipe Bedding (CY)		\$ 48.60	60.70	\$ 2,950.02
Trench Backfill (CY)		\$ 2.99	709.67	\$ 2,120.50
Trench Compaction (CY)		\$ 6.36	567.74	\$ 3,610.80

Drainage Total \$ 201,690.50

Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$ 0.71	0.00	\$ -

Signing and Marking Total \$ -

Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$ 10,260.00	0.10	\$ 1,026.00
Temporary Pavement			\$ -
Temporary Drainage (Stream Diversion)	\$ 4,428.00	1.00	\$ 4,428.00

Staging Total \$ 5,454.00

Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$ 4.39	133.33	\$ 585.60
Temporary Grassing (AC)	\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)	\$ 4.24	320.00	\$ 1,355.52
Check Dam Type C Silt Fence (LF)	\$ 6.79	320.00	\$ 2,173.44
Erosion Control Mats (SY)	\$ 1.87	106.67	\$ 199.68
Landscape Mulch (SY)	\$ 3.58	106.67	\$ 381.44
Perm Grassing (AC)	\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)	\$ 60.98	53.33	\$ 3,252.48
Plastic Filter Fabric (SY)	\$ 5.72	53.33	\$ 305.28
4" Ditch Paving (SY)	\$ 54.65	0.00	\$ -

Erosion Control Total \$ 8,253.44

Construction Cost Total \$ 230,321.42

Traffic Control (8% of Construction Total \$) \$ 18,425.71

Construction Cost Grand Total \$ 248,747.14

Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00		\$ -
Buried	\$ 16.50	\$ 82.50	50.00	\$ 4,950.00
Wooden Pole	\$ 82.50	\$ 605.00	1.00	\$ 687.50
Phone				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	50.00	\$ 3,575.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	50.00	\$ 3,575.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Gas				
4" main	\$ 16.50	\$ 66.00		\$ -
Water				
8" main	\$ 16.50	\$ 93.50	50.00	\$ 5,500.00
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
Sewer			0.00	\$ -
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 18,287.50</b>

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$ 4.00	2,100.00	\$ 8,400.00
<b>ROW Total</b>			<b>\$ 8,400.00</b>



General Information		Map	
Project ID			
Street Name	330 Merrydale Drive		
Site Visit Date	1/20/2016		
Road Classification	Minor road		
Project Notes			
Field Notes			
Design (Existing Site Features)			
Existing Road Laneage	2-11.5'		
Existing Shld Width (paved and grass) (feet)	8.5'		
Existing Side Slopes	3:1		
Existing Guardrail	None		
Depth fm Pavement to Top of Culvert (ft):	9.00		
Pipe Type and Size	60" CMP		
Pipe Condition (1-5) (1 is new)	3		
Condition Notes: Light rusted bottom. No headwall			
Pavement Type/Condition	Asphalt/Good		
Environmental Features			
Wetlands			
Ditches	Roadside drainage ditches		
State Waters			
Utilities (Visual Inspection)			
Electric	Aerial		
Cable	Unknown		
Phone	Aerial		
Gas	Unknown		
Water	Unknown		
Sewer	Unknown		
Other			
Proposed Design			
Roadway Section	Typical		
Culvert Size & Material	60" round RCP with straight headwalls		
Utility Relocations	Utility pole near downstream culvert may need to be relocated		
Guardrail Replacement			
Miscellaneous Features			
Planning Cost Estimate			
Type	Notes	Total	
Design	Includes 10% of Construction Cost and surveying needs	\$12,324	
Right of Way Cost	Project assumed to be entirely in ROW	\$0	
Utility Relocation Cost	Potential relocation of utility pole, aerial cables	\$14,713	
Construction Cost		\$73,243	
Environmental Permits	Assuming minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$110,280</b>	





**Photo 1:** Upstream end of culvert.



**Photo 2:** Downstream end of culvert looking northwest towards Merrydale Drive.

**330 Merrydale Drive**

**Photo Date:**

1/20/2016

**Taken By:**

David Gibbs

**Page**

**1**

Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	161.00	\$ 902.46
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	0.00	\$ -
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
<b>Subtotal</b>				<b>\$ 902.46</b>
<b>Grading Complete (5% of Rwy Items &amp; Drng Total \$)</b>				<b>\$ 2,720.19</b>
<b>Roadway Total</b>				<b>\$ 3,622.65</b>
Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	342.22	\$ 3,552.27
60" CMP (LF)	\$ 24.60		88.00	\$ 2,164.80
60" RCP (LF)		\$ 281.96	88.00	\$ 24,812.83
Class A Conc (CY)		\$ 892.19	21.58	\$ 19,253.42
Steel (lb)		\$ 1.42	0.00	\$ -
Pipe Bedding (CY)		\$ 48.60	22.81	\$ 1,108.80
Trench Backfill (CY)		\$ 2.99	323.08	\$ 965.36
Trench Compaction (CY)		\$ 6.36	258.46	\$ 1,643.82
<b>Drainage Total</b>				<b>\$ 53,501.30</b>
Signing and Marking		Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)		\$ 0.71		\$ -
<b>Signing and Marking Total</b>				<b>\$ -</b>
Staging		Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)		\$ 10,260.00	0.15	\$ 1,539.00
Temporary Pavement				\$ -
Temporary Drainage (Stream Diversion)		\$ 4,428.00	1.00	\$ 4,428.00
<b>Staging Total</b>				<b>\$ 5,967.00</b>
Erosion Control		Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)		\$ 4.39	50.56	\$ 222.04
Temporary Grassing (AC)		\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)		\$ 4.24	352.00	\$ 1,491.07
Check Dam Type C Silt Fence (LF)		\$ 6.79	352.00	\$ 2,390.78
Erosion Control Mats (SY)		\$ 1.87	0.00	\$ -
Landscape Mulch (SY)		\$ 3.58	0.00	\$ -
Perm Grassing (AC)		\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)		\$ 60.98	9.33	\$ 569.18
Plastic Filter Fabric (SY)		\$ 5.72	9.33	\$ 53.42
4" Ditch Paving (SY)		\$ 54.65	0.00	\$ -
<b>Erosion Control Total</b>				<b>\$ 4,726.50</b>
<b>Construction Cost Total</b>				<b>\$ 67,817.45</b>
<b>Traffic Control (8% of Construction Total \$)</b>				<b>\$ 5,425.40</b>
<b>Construction Cost Grand Total</b>				<b>\$ 73,242.85</b>
Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00	100.00	\$ 6,600.00
Buried	\$ 16.50	\$ 82.50	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	1.00	\$ 687.50
Phone				
Aerial	\$ 11.00	\$ 27.50	100.00	\$ 3,850.00
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	50.00	\$ 3,575.00
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Gas				
4" main	\$ 16.50	\$ 66.00	0.00	\$ -
Water				
8" main	\$ 16.50	\$ 93.50	0.00	\$ -
Sewer				
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 14,712.50</b>
Right of Way (Sq Ft)		Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement		\$ 4.00	0.00	\$ -
<b>ROW Total</b>				<b>\$ -</b>





General Information		Map	
<b>Project ID</b>			
<b>Street Name</b>	<b>145 Millers Oak Way</b>		
<b>Site Visit Date</b>	2/4/2016		
<b>Road Classification</b>	Minor road		
<b>Project Notes</b>			
Almost entire project lies outside of ROW on private parcels. Culvert path passes under private driveway for approximately 40'; owners will need to be accommodated.			
<b>Field Notes</b>			
<b>Design (Existing Site Features)</b>			
<b>Existing Road Laneage</b>	2-10		
<b>Existing Shld Width (paved and grass) (feet)</b>	2'		
<b>Existing Side Slopes</b>	40:1-30:1		
<b>Existing Guardrail</b>	N/A		
<b>Depth fm Pavement to Top of Culvert (ft):</b>	1.25'		
<b>Pipe Type and Size</b>	24" CMP		
<b>Pipe Condition (1-5) (1 is new)</b>	3-4		
Rusted, heavy debris buildup.			
<b>Pavement Type/Condition</b>	Asphalt/Good		
<b>Environmental Features</b>			
<b>Wetlands</b>			
<b>Ditches</b>			
<b>State Waters</b>			
<b>Utilities (Visual Inspection)</b>			
<b>Electric</b>	Buried		
<b>Cable</b>	Buried		
<b>Phone</b>	Unknown		
<b>Gas</b>	Unknown		
<b>Water</b>	Unknown		
<b>Sewer</b>	Unknown		
<b>Other</b>	Unknown		
<b>Stage Construction Options</b>			
<b>Close Location to Traffic</b>			
<b>Maintain One Lane - No Temp Pavement</b>		<b>X</b>	
<b>Maintain One Lane - Temp Pavement</b>			
<b>Stage Construction Notes:</b>			
Lampost and electrical box in potential culvert path, upstream side of street. Cable box on downstream side of street.			
<b>Proposed Design</b>			
<b>Roadway Section</b>	Typical		
<b>Culvert Size &amp; Material</b>	36" round RCP with straight headwalls. Additional excavation and grading required to lower upstream inlet by 1' for upsizing purposes. Length of installed pipe may be 10-15' shorter for proper headwall installation downstream (Photo 2)		
<b>Utility Relocations</b>	Lampost (costed as utility pole), electric utility box (costed as utility pole), and buried electric and cable wires		
<b>Guardrail Replacement</b>			
<b>Miscellaneous Features</b>			
<b>Planning Cost Estimate</b>			
<b>Type</b>	<b>Notes</b>	<b>Total</b>	
<b>Design</b>	Includes 10% Construction cost and surveying needs	\$16,401	
<b>Right of Way Cost</b>	Assuming project extends beyond ROW, 1/4 acre	\$43,560	
<b>Utility Relocation Cost</b>	Buried electric and cable, utility box, lampost	\$18,425	
<b>Construction Cost</b>		\$114,014	
<b>Environmental Permits</b>	Assuming minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$202,401</b>	





**Photo 1:** Upstream end of culvert looking North towards Millers Oak Way.



**Photo 2:** Downstream end looking North towards Millers Oak Way.

**145 Millers Oak Way**

**Photo Date:**

2/4/2016

**Taken By:**

Christian Helfrich

**Page**

**1**



Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	115.00	\$ 644.61
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	40.00	\$ 2,366.40
Drain Inlet (EA)		\$ 3,000.00	2.00	\$ 6,000.00
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	22.22	\$ 1,121.33
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
<b>Subtotal</b>				<b>\$ 10,132.35</b>
<b>Grading Complete (5% of Rwy Items &amp; Drng Total \$)</b>				<b>\$ 4,493.50</b>
<b>Roadway Total</b>				<b>\$ 14,625.84</b>
Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	566.48	\$ 5,880.08
24" CMP (LF)	\$ 16.38		342.00	\$ 16,805.88
36" RCP (LF)		\$ 134.40	322.00	\$ 43,276.80
Class A Conc (CY)		\$ 892.19	7.20	\$ 6,423.75
Steel (lb)		\$ 1.42	0.00	\$ -
Pipe Bedding (CY)		\$ 48.60	59.63	\$ 2,898.00
Trench Backfill (CY)		\$ 2.99	551.40	\$ 1,647.57
Trench Compaction (CY)		\$ 6.36	441.12	\$ 2,805.50
<b>Drainage Total</b>				<b>\$ 79,737.58</b>
Signing and Marking		Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)		\$ 0.71	0.00	\$ -
<b>Signing and Marking Total</b>				<b>\$ -</b>
Staging		Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)		\$ 10,260.00	0.20	\$ 2,052.00
Temporary Pavement				\$ -
Temporary Drainage (Stream Diversion)		\$ 4,428.00	1.00	\$ 4,428.00
<b>Staging Total</b>				<b>\$ 6,480.00</b>
Erosion Control		Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)		\$ 4.39	166.11	\$ 729.56
Temporary Grassing (AC)		\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)		\$ 4.24	322.00	\$ 1,363.99
Check Dam Type C Silt Fence (LF)		\$ 6.79	322.00	\$ 2,187.02
Erosion Control Mats (SY)		\$ 1.87	0.00	\$ -
Landscape Mulch (SY)		\$ 3.58	0.00	\$ -
Perm Grassing (AC)		\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)		\$ 60.98	6.67	\$ 406.56
Plastic Filter Fabric (SY)		\$ 5.72	6.67	\$ 38.16
4" Ditch Paving (SY)		\$ 54.65	0.00	\$ -
<b>Erosion Control Total</b>				<b>\$ 4,725.30</b>
<b>Construction Cost Total</b>				<b>\$ 105,568.72</b>
<b>Traffic Control (8% of Construction Total \$)</b>				<b>\$ 8,445.50</b>
<b>Construction Cost Grand Total</b>				<b>\$ 114,014.21</b>
Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00	0.00	\$ -
Buried	\$ 16.50	\$ 82.50	100.00	\$ 9,900.00
Wooden Pole	\$ 82.50	\$ 605.00	2.00	\$ 1,375.00
Phone				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	100.00	\$ 7,150.00
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Gas				
4" main	\$ 16.50	\$ 66.00	0.00	\$ -
Water				
8" main	\$ 16.50	\$ 93.50	0.00	\$ -
Relocate Fire Hydrant (EA)		\$ 2,609.22	0.00	\$ -
Sewer				
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 18,425.00</b>
Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost	
Permanent Easement	\$ 4.00	10890.00	\$ 43,560.00	
<b>ROW Total</b>			<b>\$ 43,560.00</b>	



General Information		Map							
Project ID									
Street Name	420 North Drive								
Site Visit Date	5/22/13								
Road Classification	Internal Local								
Project Notes									
Urban typical with Valley gutter									
Field Notes									
Design (Existing Site Features)									
Existing Road Laneage	2-11'								
Existing Shld Width (paved and grass) (feet)	6'								
Existing Side Slopes	flat								
Existing Guardrail	none								
Depth fm Pavement to Top of Culvert (ft):	5								
Pipe Type and Size	60" CMP, 80'								
Pipe Condition (1-5) (1 is new)	3								
Condition Notes: No headwall; signs of sag towards downstream end, sediment approximately 1" deep									
Pavement Type/Condition	Asphalt/Good								
Environmental Features		<b>Stage Construction Options</b> <table border="1"> <tr> <td>Close Location to Traffic</td> <td>X</td> </tr> <tr> <td>Maintain One Lane - No Temp Pavement</td> <td></td> </tr> <tr> <td>Maintain One Lane - Temp Pavement</td> <td></td> </tr> </table>		Close Location to Traffic	X	Maintain One Lane - No Temp Pavement		Maintain One Lane - Temp Pavement	
Close Location to Traffic	X								
Maintain One Lane - No Temp Pavement									
Maintain One Lane - Temp Pavement									
Wetlands	None	Stage Construction Notes:							
Ditches	None								
Utilities (Visual Inspection)									
Electric	Buried								
Cable	Buried								
Phone	Buried								
Gas									
Water	Buried								
Sewer									
Other									
Proposed Design									
Roadway Section									
Culvert Size & Material	5' x 4' box, concrete, 80'								
Utility Relocations	Street light near structure, electric, cable, phone, water. Applying cost of electric utility wooden pole removal for street light.								
Guardrail Replacement									
Miscellaneous Features									
Planning Cost Estimate									
Type	Notes	Total							
Design	Includes 10% Construction Cost and surveying needs	\$13,230							
Right of Way Cost	Assuming project extends 3,000 sf beyond ROW	\$12,000							
Utility Relocation Cost	Buried utilities	\$14,768							
Construction Cost	Assuming 1/10 acre clearing and grubbing	\$82,295							
Environmental Permits	Assuming minimal environmental permitting required	\$10,000							
<b>Total Planning Estimate</b>		<b>\$132,292</b>							





**Photo 1:**



**Photo 2:**

420 North Drive

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

**1**





**Photo 3:**



**Photo 4:**

420 North Drive

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

**2**

Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	154.00	\$ 863.22
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	20.00	\$ 1,183.20
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
<b>Subtotal</b>				<b>\$ 2,046.42</b>
<b>Grading Complete (5% of Rwy Items &amp; Drng Total \$)</b>				<b>\$ 3,394.65</b>
<b>Roadway Total</b>				<b>\$ 5,441.07</b>
Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	228.15	\$ 2,368.18
60" CMP (LF)	\$ 24.60		80.00	\$ 5,904.00
60" RCP		\$ 259.20	0.00	\$ -
Class A Conc (CY)		\$ 892.19	53.51	\$ 47,740.98
Steel (lb)		\$ 1.42	4,806.00	\$ 6,805.30
Pipe Bedding (CY)		\$ 48.60	21.30	\$ 1,035.18
Trench Backfill (CY)		\$ 2.99	246.77	\$ 737.36
Trench Compaction (CY)		\$ 6.36	197.42	\$ 1,255.59
<b>Drainage Total</b>				<b>\$ 65,846.58</b>
Signing and Marking		Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)		\$ 0.71	0.00	\$ -
<b>Signing and Marking Total</b>				<b>\$ -</b>
Staging		Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)		\$ 10,260.00	0.10	\$ 1,026.00
Temporary Pavement				\$ -
Temporary Drainage (Stream Diversion)		\$ 4,428.00	1.00	\$ 4,428.00
<b>Staging Total</b>				<b>\$ 5,454.00</b>
Erosion Control		Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)		\$ 4.39	45.11	\$ 198.13
Temporary Grassing (AC)		\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)		\$ 4.24	320.00	\$ 1,355.52
Check Dam Type C Silt Fence (LF)		\$ 6.79	320.00	\$ 2,173.44
Erosion Control Mats (SY)		\$ 1.87	106.67	\$ 199.68
Landscape Mulch (SY)		\$ 3.58	106.67	\$ 381.44
Perm Grassing (AC)		\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)		\$ 60.98	18.67	\$ 1,138.37
Plastic Filter Fabric (SY)		\$ 5.72	18.67	\$ 106.85
4" Ditch Paving (SY)		\$ 54.65	0.00	\$ -
<b>Erosion Control Total</b>				<b>\$ 5,553.42</b>
<b>Construction Cost Total</b>				<b>\$ 82,295.08</b>
<b>Traffic Control (8% of Construction Total \$)</b>				<b>\$ 6,583.61</b>
<b>Construction Cost Grand Total</b>				<b>\$ 88,878.68</b>
Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00		\$ -
Buried	\$ 16.50	\$ 82.50	40.00	\$ 3,960.00
Wooden Pole	\$ 82.50	\$ 605.00	1.00	\$ 687.50
Phone				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	40.00	\$ 2,860.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	40.00	\$ 2,860.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Gas				
4" main	\$ 16.50	\$ 66.00		\$ -
Water				
8" main	\$ 16.50	\$ 93.50	40.00	\$ 4,400.00
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
Sewer			0.00	\$ -
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 14,767.50</b>
Right of Way (Sq Ft)		Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement		\$ 4.00	3,000.00	\$ 12,000.00
<b>ROW Total</b>				<b>\$ 12,000.00</b>



General Information		Map	
<b>Project ID</b>			
<b>Street Name</b>	<b>290 Oak Street</b>		
<b>Site Visit Date</b>	1/21/2016		
<b>Road Classification</b>	Minor road		
<b>Project Notes</b>			
Major blowout near private driveway culvert 15' x 5', exposed utility lines			
<b>Field Notes</b>			
<b>Design (Existing Site Features)</b>			
<b>Existing Road Laneage</b>	2-11'		
<b>Existing Shld Width (paved and grass) (feet)</b>	10'		
<b>Existing Side Slopes</b>	4:1		
<b>Existing Guardrail</b>	None		
<b>Depth fm Pavement to Top of Culvert (ft):</b>	5.00		
<b>Pipe Type and Size</b>	30" CMP		
<b>Pipe Condition (1-5) (1 is new)</b>	4-5		
Condition Notes: Rusted out bottom. No headwalls, surrounded by a lot of rip rap upstream side, also a roadside drainage pipe that empties at culvert. Major streambed/bank blowout downstream			
<b>Pavement Type/Condition</b>	Asphalt/Good		
<b>Environmental Features</b>			
<b>Wetlands</b>			
<b>Ditches</b>	Roadside drainage ditches		
<b>State Waters</b>			
<b>Buried</b>			
<b>Electric</b>	Aerial		
<b>Cable</b>	Unknown		
<b>Phone</b>	Aerial		
<b>Gas</b>	Unknown		
<b>Water</b>	Unknown		
<b>Sewer</b>	Unknown		
<b>Other</b>			
<b>Proposed Design</b>			
<b>Roadway Section</b>	Typical		
<b>Culvert Size &amp; Material</b>	42" round RCP with straight headwalls		
<b>Utility Relocations</b>	Relocation of utility pole, aerial wires		
<b>Guardrail Replacement</b>			
<b>Miscellaneous Features</b>	Major blowout near private driveway culvert that contributes to upstream end of culvert. 15' x 5' hole with exposed utilities		
<b>Planning Cost Estimate</b>			
<b>Type</b>	<b>Notes</b>	<b>Total</b>	
<b>Design</b>	Includes 10% of Construction Cost and surveying needs	\$9,150	
<b>Right of Way Cost</b>	Project assumed to be entirely in ROW	\$0	
<b>Utility Relocation Cost</b>		\$5,913	
<b>Construction Cost</b>		\$41,500	
<b>Environmental Permits</b>	Minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$66,563</b>	





**Photo 1:** Upstream end of culvert looking North towards Oak Street.



**Photo 2:** Downstream end of culvert.

**290 Oak Street**

**Photo Date:**

1/21/2016

**Taken By:**

David Gibbs

**Page**

**1**

Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	121.00	\$ 678.25
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	0.00	\$ -
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
<b>Subtotal</b>				<b>\$ 678.25</b>
<b>Grading Complete (5% of Rwy Items &amp; Drng Total \$)</b>				<b>\$ 1,155.40</b>
<b>Roadway Total</b>				<b>\$ 1,833.64</b>
Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	123.85	\$ 1,285.58
30" CMP (LF)	\$ 19.66		64.00	\$ 1,257.98
42" RCP (LF)		\$ 142.52	64.00	\$ 9,121.54
Class A Conc (CY)		\$ 892.19	10.40	\$ 9,278.76
Steel (lb)		\$ 1.42	0.00	\$ -
Pipe Bedding (CY)		\$ 48.60	13.04	\$ 633.60
Trench Backfill (CY)		\$ 2.99	105.53	\$ 315.32
Trench Compaction (CY)		\$ 6.36	84.42	\$ 536.92
<b>Drainage Total</b>				<b>\$22,429.70</b>
Signing and Marking		Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)		\$ 0.71		\$ -
<b>Signing and Marking Total</b>				<b>\$ -</b>
Staging		Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)		\$ 10,260.00	0.25	\$ 2,565.00
Temporary Pavement				\$ -
Temporary Drainage (Stream Diversion)		\$ 4,428.00	1.00	\$ 4,428.00
<b>Staging Total</b>				<b>\$ 6,993.00</b>
Erosion Control		Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)		\$ 4.39	25.67	\$ 112.73
Temporary Grassing (AC)		\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)		\$ 4.24	512.00	\$ 2,168.83
Check Dam Type C Silt Fence (LF)		\$ 6.79	512.00	\$ 3,477.50
Erosion Control Mats (SY)		\$ 1.87	56.89	\$ 106.50
Landscape Mulch (SY)		\$ 3.58	56.89	\$ 203.43
Perm Grassing (AC)		\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)		\$ 60.98	16.50	\$ 1,006.24
Plastic Filter Fabric (SY)		\$ 5.72	16.50	\$ 94.45
4" Ditch Paving (SY)		\$ 54.65	0.00	\$ -
<b>Erosion Control Total</b>				<b>\$ 7,169.68</b>
<b>Construction Cost Total</b>				<b>\$38,426.02</b>
<b>Traffic Control (8% of Construction Total \$)</b>				<b>\$ 3,074.08</b>
<b>Construction Cost Grand Total</b>				<b>\$41,500.10</b>
Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00	50.00	\$ 3,300.00
Buried	\$ 16.50	\$ 82.50	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	1.00	\$ 687.50
Phone				
Aerial	\$ 11.00	\$ 27.50	50.00	\$ 1,925.00
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Gas				
4" main	\$ 16.50	\$ 66.00	0.00	\$ -
Water				
8" main	\$ 16.50	\$ 93.50	0.00	\$ -
Sewer				
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 5,912.50</b>
Right of Way (Sq Ft)		Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement		\$ 4.00	0.00	\$ -
<b>ROW Total</b>				<b>\$ -</b>





General Information		Map	
Project ID			
Street Name	220 Old Ivy		
Site Visit Date	1/20/2016		
Road Classification	Minor road		
<b>Project Notes</b>			
Culvert path is diagonal under a slight bend in road. Upstream inlet is a vertical concrete inlet that will need to be removed. Pedestrian dirt trail passes over downstream outlet near a children's playground			
<b>Field Notes</b>			
<b>Design (Existing Site Features)</b>			
Existing Road Laneage	2-12.5'		
Existing Shld Width (paved and grass) (feet)	15'		
Existing Side Slopes	20:1		
Existing Guardrail	None		
Depth fm Pavement to Top of Culvert (ft):	3'		
Pipe Type and Size	42" CMP		
Pipe Condition (1-5) (1 is new)	4		
Condition Notes: Rusted out bottom. Concrete headwall downstream.			
Pavement Type/Condition	Asphalt/Good		
<b>Environmental Features</b>		<b>Stage Construction Options</b>	
Wetlands		Close Location to Traffic	
Ditches		Maintain One Lane - No Temp Pavement	X
State Waters		Maintain One Lane - Temp Pavement	
		Stage Construction Notes:	
<b>Utilities (Visual Inspection)</b>			
Electric	Aerial		
Cable	Aerial		
Phone	Aerial		
Gas	Unknown		
Water	Buried		
Sewer	Unknown		
Other			
<b>Proposed Design</b>			
Roadway Section	Typical		
Culvert Size & Material	42" round RCP with straight headwalls. Removal of upstream vertical inlet costed as manhole removal. Cost of removing headwall assumed equal to removal of entire length of pipe.		
Utility Relocations			
Guardrail Replacement	Wooden fence posts for trail over downstream outlet removal/replacement costed as guardrails.		
Miscellaneous Features			
<b>Planning Cost Estimate</b>			
Type	Notes	Total	
Design	Includes 10% of Construction Cost and surveying needs	\$20,192	
Right of Way Cost	Project assumed to be entirely in ROW, County owned parcel	\$0	
Utility Relocation Cost	Possible water main removal/replacement	\$5,500	
Construction Cost		\$76,918	
Environmental Permits	Includes Zone A Floodway study	\$15,000	
<b>Total Planning Estimate</b>		<b>\$117,610</b>	



**Photo 1:** View from downstream end towards Old Ivy.



**Photo 2:** Upstream inlet looking West towards Old Ivy.

**220 Old Ivy**

**Photo Date:**

1/20/2016

**Taken By:**

David Gibbs

**Page**

**1**



Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	137.50	\$ 770.73
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	14.00	\$ 828.24
Drain Inlet (EA)		\$ 3,000.00	2.00	\$ 6,000.00
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	6.67	\$ 336.40
Guardrail (LF)	\$ 4.88	\$ 49.09	24.00	\$ 1,295.42
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
<b>Subtotal</b>				<b>\$ 9,230.80</b>
<b>Grading Complete (5% of Rwy Items &amp; Drng Total \$)</b>				<b>\$ 2,718.35</b>
<b>Roadway Total</b>				<b>\$ 11,949.14</b>
Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	289.26	\$ 3,002.51
Remove Manhole (EA)		\$ 2,069.81	1.00	\$ 2,069.81
42" CMP (LF)	\$ 24.60		284.00	\$ 6,986.40
42" RCP (LF)		\$ 142.52	142.00	\$ 20,238.41
Class A Conc (CY)		\$ 892.19	10.40	\$ 9,278.76
Steel (lb)		\$ 1.42	0.00	\$ -
Pipe Bedding (CY)		\$ 48.60	28.93	\$ 1,405.80
Trench Backfill (CY)		\$ 2.99	266.77	\$ 797.11
Trench Compaction (CY)		\$ 6.36	213.42	\$ 1,357.33
<b>Drainage Total</b>				<b>\$ 45,136.12</b>
Signing and Marking		Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)		\$ 0.71		\$ -
<b>Signing and Marking Total</b>				<b>\$ -</b>
Staging		Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)		\$ 10,260.00	0.20	\$ 2,052.00
Temporary Pavement				\$ -
Temporary Drainage (Stream Diversion)		\$ 4,428.00	1.00	\$ 4,428.00
<b>Staging Total</b>				<b>\$ 6,480.00</b>
Erosion Control		Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)		\$ 4.39	71.50	\$ 314.03
Temporary Grassing (AC)		\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)		\$ 4.24	568.00	\$ 2,406.05
Check Dam Type C Silt Fence (LF)		\$ 6.79	568.00	\$ 3,857.86
Erosion Control Mats (SY)		\$ 1.87	63.11	\$ 118.14
Landscape Mulch (SY)		\$ 3.58	63.11	\$ 225.69
Perm Grassing (AC)		\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)		\$ 60.98	11.00	\$ 670.82
Plastic Filter Fabric (SY)		\$ 5.72	11.00	\$ 62.96
4" Ditch Paving (SY)		\$ 54.65	0.00	\$ -
<b>Erosion Control Total</b>				<b>\$ 7,655.55</b>
<b>Construction Cost Total</b>				<b>\$ 71,220.81</b>
<b>Traffic Control (8% of Construction Total \$)</b>				<b>\$ 5,697.66</b>
<b>Construction Cost Grand Total</b>				<b>\$ 76,918.48</b>
Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00	0.00	\$ -
Buried	\$ 16.50	\$ 82.50	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Gas				
4" main	\$ 16.50	\$ 66.00	0.00	\$ -
Water				
8" main	\$ 16.50	\$ 93.50	50.00	\$ 5,500.00
Sewer				
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 5,500.00</b>
Right of Way (Sq Ft)		Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement		\$ 4.00	0.00	\$ -
<b>ROW Total</b>				<b>\$ -</b>



General Information		Map	
<b>Project ID</b>			
<b>Street Name</b>	<b>190 Ponderosa Drive</b>		
<b>Site Visit Date</b>	Beverly Manor S/D		
<b>Road Classification</b>	Minor road		
<b>Project Notes</b>			
Replace 30-yr old CMP with RCP. Replace flumes with curb inlets and provide manhole access to pipe for inspection and maintenance. One of several pipe replacement projects in subdivision			
<b>Field Notes</b>			
<b>Design (Existing Site Features)</b>			
<b>Existing Road Laneage</b>	2-13		
<b>Existing Shld Width (paved and grass) (feet)</b>	NA - curb & gutter		
<b>Existing Side Slopes</b>	NA - curb & gutter		
<b>Existing Guardrail</b>	NA - curb & gutter		
<b>Depth fm Pavement to Top of Culvert (ft):</b>	Assumed 3'		
<b>Pipe Type and Size</b>	CMP, 48"		
<b>Pipe Condition (1-5) (1 is new)</b>	5		
Condition Notes: Pipe and associated structures are old and in poor condition			
<b>Pavement Type/Condition</b>	Average		
<b>Environmental Features</b>			
<b>Wetlands</b>	None		
<b>Ditches</b>	None		
<b>Utilities (Visual Inspection)</b>			
<b>Electric</b>	Yes		
<b>Cable</b>	Yes		
<b>Phone</b>	Yes		
<b>Gas</b>	Unknown		
<b>Water</b>	Yes		
<b>Sewer</b>	No		
<b>Other</b>			
<b>Stage Construction Options</b>			
<b>Close Location to Traffic</b>			
<b>Maintain One Lane - No Temp Pavement</b>		X	
<b>Maintain One Lane - Temp Pavement</b>			
Stage Construction Notes:			
Minimal impacts to traffic and access can be maintained to all properties.			
<b>Proposed Design</b>			
<b>Roadway Section</b>	Typical with curb and gutter. Road dimensions estimated with Google Earth.		
<b>Culvert Size &amp; Material</b>	Replace existing pipe with 48" RCP, approximately 40'. Cost of headwall removal assumed equal to removal of entire length of pipe.		
<b>Utility Relocations</b>	Buried utilities		
<b>Guardrail Replacement</b>			
<b>Miscellaneous Features</b>	Previous inspection notes called for upgrading inlets, headwalls and junction boxes to modern design. Manhole access was not considered in this design		
<b>Planning Cost Estimate</b>			
<b>Type</b>	<b>Notes</b>	<b>Total</b>	
<b>Design</b>	Includes 10% Construction Cost and surveying needs	\$9,691	
<b>Right of Way Cost</b>	Assuming project extends 5,000 sf beyond ROW	\$20,000	
<b>Utility Relocation Cost</b>	Buried utilities	\$17,600	
<b>Construction Cost</b>	Assuming 1/10 acre clearing and grubbing	\$46,912	
<b>Environmental Permits</b>	Assuming minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$104,203</b>	





**Photo 1:**



**Photo 2:**

**190 Ponderosa Drive**

**Photo Date:**

6/03/2013

**Taken By:**

Tony Hicks

**Page:**

**1**

Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	156.00	\$ 874.43
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	40.00	\$ 2,366.40
Drain Inlet (EA)		\$ 3,000.00	2.00	\$ 6,000.00
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09		\$ -
End Anchorage (EA)		\$ 1,380.00		\$ -
<b>Subtotal</b>				<b>\$ 9,240.83</b>
<b>Grading Complete (5% of Rwy Items &amp; Drng Total \$)</b>				<b>\$ 1,683.48</b>
<b>Roadway Total</b>				<b>\$ 10,924.32</b>
Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	71.11	\$ 738.13
48" CMP (LF)	\$ 24.60		120.00	\$ 2,952.00
48" RCP (LF)		\$ 193.20	40.00	\$ 7,728.00
Class A Conc (CY)		\$ 892.19	13.70	\$ 12,222.98
Steel (lb)		\$ 1.42	0.00	\$ -
Pipe Bedding (CY)		\$ 48.60	8.89	\$ 432.00
Trench Backfill (CY)		\$ 2.99	44.05	\$ 131.62
Trench Compaction (CY)		\$ 6.36	35.24	\$ 224.13
<b>Drainage Total</b>				<b>\$ 24,428.86</b>
Signing and Marking		Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)		\$ 0.71	0.00	\$ -
<b>Signing and Marking Total</b>				<b>\$ -</b>
Staging		Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)		\$ 10,260.00	0.10	\$ 1,026.00
Temporary Pavement				\$ -
Temporary Drainage (Stream Diversion)		\$ 4,428.00	1.00	\$ 4,428.00
<b>Staging Total</b>				<b>\$ 5,454.00</b>
Erosion Control		Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)		\$ 4.39	9.33	\$ 40.99
Temporary Grassing (AC)		\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)		\$ 4.24	160.00	\$ 677.76
Check Dam Type C Silt Fence (LF)		\$ 6.79	160.00	\$ 1,086.72
Erosion Control Mats (SY)		\$ 1.87	53.33	\$ 99.84
Landscape Mulch (SY)		\$ 3.58	53.33	\$ 190.72
Perm Grassing (AC)		\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)		\$ 60.98	8.00	\$ 487.87
Plastic Filter Fabric (SY)		\$ 5.72	8.00	\$ 45.79
4" Ditch Paving (SY)		\$ 54.65	0.00	\$ -
<b>Erosion Control Total</b>				<b>\$ 2,629.70</b>
<b>Construction Cost Total</b>				<b>\$ 43,436.87</b>
<b>Traffic Control (8% of Construction Total \$)</b>				<b>\$ 3,474.95</b>
<b>Construction Cost Grand Total</b>				<b>\$ 46,911.82</b>
Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00		\$ -
Buried	\$ 16.50	\$ 82.50	50.00	\$ 4,950.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	50.00	\$ 3,575.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	50.00	\$ 3,575.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Gas				
4" main	\$ 16.50	\$ 66.00		\$ -
Water				
8" main	\$ 16.50	\$ 93.50	50.00	\$ 5,500.00
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
Sewer			0.00	\$ -
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 17,600.00</b>
Right of Way (Sq Ft)		Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement		\$ 4.00	5,000.00	\$ 20,000.00
<b>ROW Total</b>				<b>\$ 20,000.00</b>





General Information		Map	
Project ID			
Street Name	125 Ridge Brook Court		
Site Visit Date	1/21/2016		
Road Classification	Minor road		
<b>Project Notes</b>			
CULVERT PASSES UNDER PRIVATE DRIVE (almost parallel). Owners need to be accommodated.			
<b>Field Notes</b>			
<b>Design (Existing Site Features)</b>			
Existing Road Laneage	2-12'		
Existing Shld Width (paved and grass) (feet)	10'		
Existing Side Slopes	6:1		
Existing Guardrail	None		
Depth fm Pavement to Top of Culvert (ft):	5'		
Pipe Type and Size	48" CMP		
Pipe Condition (1-5) (1 is new)	4-5		
Condition Notes: Rusted out bottoms, concrete headwalls. Separation of pipe from headwall opening. Small amount of rip rap at downstream end			
Pavement Type/Condition	Asphalt/Good		
<b>Environmental Features</b>		<b>Stage Construction Options</b>	
Wetlands		Close Location to Traffic	
Ditches	Roadside drainage ditches	Maintain One Lane - No Temp Pavement	X
State Waters		Maintain One Lane - Temp Pavement	
		Stage Construction Notes:	
<b>Buried</b>			
Electric	Aerial		
Cable	Unknown		
Phone	Aerial		
Gas	Unknown		
Water	Unknown		
Sewer	Unknown		
Other			
<b>Proposed Design</b>			
Roadway Section	Typical		
Culvert Size & Material	48" round RCP with straight headwalls. Cost of removing both existing headwalls assumed equal to the removal of the entire length of pipe.		
Utility Relocations			
Guardrail Replacement			
Miscellaneous Features	Private driveway removal and reconstruction costed as 4" concrete sidewalk.		
<b>Planning Cost Estimate</b>			
Type	Notes	Total	
Design	Includes 10% of Construction Cost and surveying needs	\$22,629	
Right of Way Cost	Assume project extends past ROW, 1/10 acre	\$17,424	
Utility Relocation Cost	None identified	\$0	
Construction Cost		\$101,289	
Environmental Permits	Includes Zone AE Floodway study	\$18,000	
<b>Total Planning Estimate</b>		<b>\$159,342</b>	





**Photo 1:** Upstream end of culvert.



**Photo 2:** Downstream end looking East towards Ridge Brook Court.

**125 Ridge Brook Court**

**Photo Date:**

1/21/2016

**Taken By:**

David Gibbs

**Page**

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Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	144.00	\$ 807.17
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	52.00	\$ 3,076.32
Drain Inlet (EA)		\$ 3,000.00	2.00	\$ 6,000.00
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	70.00	\$ 3,532.20
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
<b>Subtotal</b>				<b>\$ 13,415.69</b>
<b>Grading Complete (5% of Rwy Items &amp; Drng Total \$)</b>				<b>\$ 3,801.20</b>
<b>Roadway Total</b>				<b>\$ 17,216.88</b>
Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	380.00	\$ 3,944.40
48" CMP (LF)	\$ 24.60		342.00	\$ 8,413.20
48" RCP (LF)		\$ 193.20	173.00	\$ 33,423.60
Class A Conc (CY)		\$ 892.19	13.70	\$ 12,222.98
Steel (lb)		\$ 1.42	0.00	\$ -
Pipe Bedding (CY)		\$ 48.60	38.00	\$ 1,846.80
Trench Backfill (CY)		\$ 2.99	341.41	\$ 1,020.14
Trench Compaction (CY)		\$ 6.36	273.13	\$ 1,737.11
<b>Drainage Total</b>				<b>\$ 62,608.23</b>
Signing and Marking		Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)		\$ 0.71		\$ -
<b>Signing and Marking Total</b>				<b>\$ -</b>
Staging		Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)		\$ 10,260.00	0.10	\$ 1,026.00
Temporary Pavement				\$ -
Temporary Drainage (Stream Diversion)		\$ 4,428.00	1.00	\$ 4,428.00
<b>Staging Total</b>				<b>\$ 5,454.00</b>
Erosion Control		Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)		\$ 4.39	98.00	\$ 430.42
Temporary Grassing (AC)		\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)		\$ 4.24	684.00	\$ 2,897.42
Check Dam Type C Silt Fence (LF)		\$ 6.79	684.00	\$ 4,645.73
Erosion Control Mats (SY)		\$ 1.87	0.00	\$ -
Landscape Mulch (SY)		\$ 3.58	0.00	\$ -
Perm Grassing (AC)		\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)		\$ 60.98	8.00	\$ 487.87
Plastic Filter Fabric (SY)		\$ 5.72	8.00	\$ 45.79
4" Ditch Paving (SY)		\$ 54.65	0.00	\$ -
<b>Erosion Control Total</b>				<b>\$ 8,507.23</b>
<b>Construction Cost Total</b>				<b>\$ 93,786.34</b>
<b>Traffic Control (8% of Construction Total \$)</b>				<b>\$ 7,502.91</b>
<b>Construction Cost Grand Total</b>				<b>\$ 101,289.25</b>
Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00	0.00	\$ -
Buried	\$ 16.50	\$ 82.50	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Gas				
4" main	\$ 16.50	\$ 66.00	0.00	\$ -
Water				
8" main	\$ 16.50	\$ 93.50	0.00	\$ -
Sewer				
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ -</b>
Right of Way (Sq Ft)		Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement		\$ 4.00	4356.00	\$ 17,424.00
<b>ROW Total</b>				<b>\$ 17,424.00</b>





General Information		Map	
Project ID			
Street Name	170 Ridge Way		
Site Visit Date	1/20/2016		
Road Classification	Minor road		
Project Notes			
Water meter and gazebo near culvert path on downstream side.			
Field Notes			
Design (Existing Site Features)			
Existing Road Laneage	2-13'		
Existing Shld Width (paved and grass) (feet)	100'		
Existing Side Slopes	20:1		
Existing Guardrail	None		
Depth fm Pavement to Top of Culvert (ft):	4.5'		
Pipe Type and Size	36" CMP		
Pipe Condition (1-5) (1 is new)	4-5		
Condition Notes: Rusted out bottom on downstream side. No headwall. MAJOR streambed blowout.			
Pavement Type/Condition	Asphalt/Good		
Environmental Features			
Wetlands			
Ditches			
State Waters			
Utilities (Visual Inspection)			
Electric	Aerial		
Cable	Unknown		
Phone	Aerial		
Gas	Unknown		
Water	Buried		
Sewer	Unknown		
Other			
Proposed Design			
Roadway Section	Typical		
Culvert Size & Material	48" round RCP with straight headwalls		
Utility Relocations	Utility pole and aerial wires need relocating. Possible water main relocation.		
Guardrail Replacement			
Miscellaneous Features			
Planning Cost Estimate			
Type	Notes	Total	
Design	Includes 10% of Construction Cost and surveying needs	\$18,959	
Right of Way Cost	Assume project extends past ROW, 1/4 acre	\$43,560	
Utility Relocation Cost	Utility pole and aerial wires, potential water main	\$16,638	
Construction Cost		\$139,586	
Environmental Permits	Assuming minimal environmental permitting required	\$10,000	
<b>Total Planning Estimate</b>		<b>\$228,742</b>	



**Photo 1:** Upstream end of culvert.



**Photo 2:** Downstream end of culvert looking east towards Ridge Way.

**170 Ridge Way**

**Photo Date:**

1/20/2016

**Taken By:**

David Gibbs

**Page**

**1**



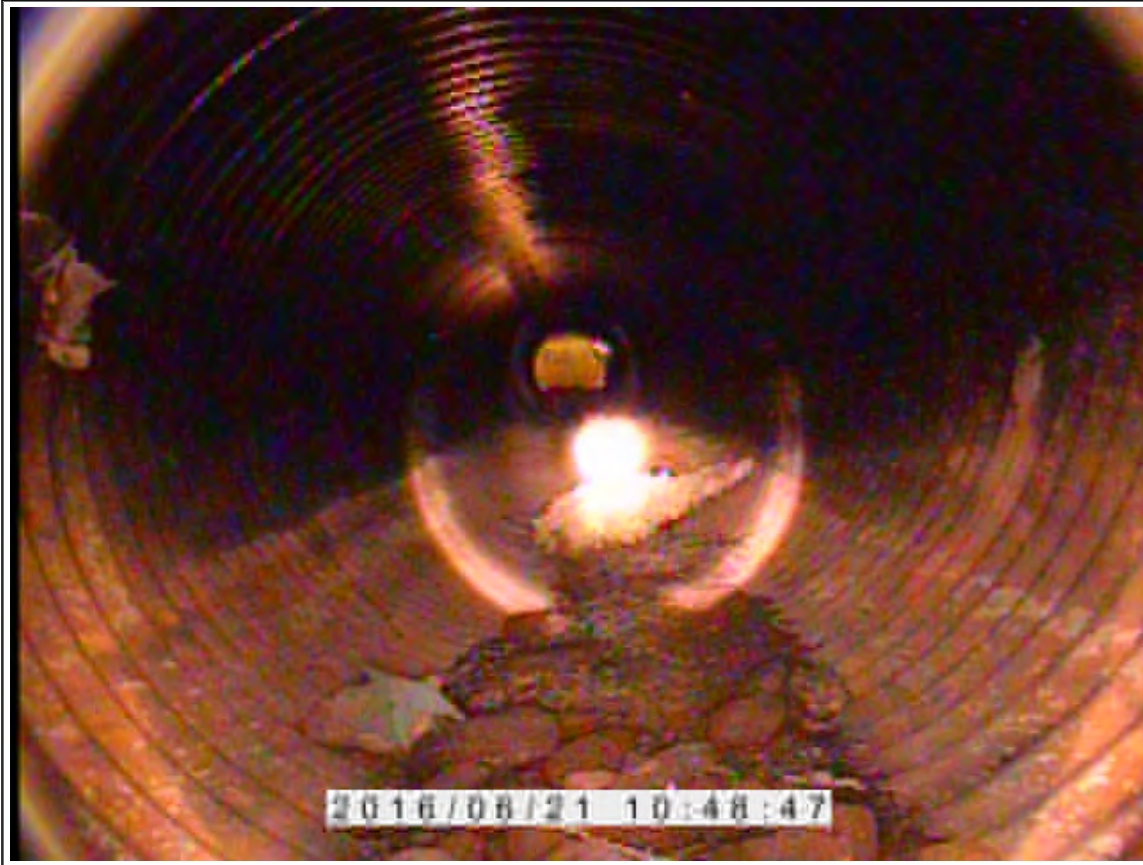
Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	156.00	\$ 874.43
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	52.00	\$ 3,076.32
Drain Inlet (EA)		\$ 3,000.00	2.00	\$ 6,000.00
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
<b>Subtotal</b>				<b>\$ 9,950.75</b>
<b>Grading Complete (5% of Rwy Items &amp; Drng Total \$)</b>				<b>\$ 5,367.75</b>
<b>Roadway Total</b>				<b>\$ 15,318.50</b>
Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	615.78	\$ 6,391.77
36" CMP (LF)	\$ 24.60		326.00	\$ 8,019.60
48" RCP (LF)		\$ 193.20	326.00	\$ 62,983.20
Class A Conc (CY)		\$ 892.19	13.70	\$ 12,222.98
Steel (lb)		\$ 1.42	0.00	\$ -
Pipe Bedding (CY)		\$ 48.60	72.44	\$ 3,520.80
Trench Backfill (CY)		\$ 2.99	528.22	\$ 1,578.31
Trench Compaction (CY)		\$ 6.36	422.57	\$ 2,687.57
<b>Drainage Total</b>				<b>\$ 97,404.23</b>
Signing and Marking		Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)		\$ 0.71		\$ -
<b>Signing and Marking Total</b>				<b>\$ -</b>
Staging		Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)		\$ 10,260.00	0.25	\$ 2,565.00
Temporary Pavement				\$ -
Temporary Drainage (Stream Diversion)		\$ 4,428.00	1.00	\$ 4,428.00
<b>Staging Total</b>				<b>\$ 6,993.00</b>
Erosion Control		Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)		\$ 4.39	200.00	\$ 878.40
Temporary Grassing (AC)		\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)		\$ 4.24	652.00	\$ 2,761.87
Check Dam Type C Silt Fence (LF)		\$ 6.79	652.00	\$ 4,428.38
Erosion Control Mats (SY)		\$ 1.87	72.44	\$ 135.62
Landscape Mulch (SY)		\$ 3.58	72.44	\$ 259.06
Perm Grassing (AC)		\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)		\$ 60.98	16.00	\$ 975.74
Plastic Filter Fabric (SY)		\$ 5.72	16.00	\$ 91.58
4" Ditch Paving (SY)		\$ 54.65	0.00	\$ -
<b>Erosion Control Total</b>				<b>\$ 9,530.66</b>
<b>Construction Cost Total</b>				<b>\$ 129,246.39</b>
<b>Traffic Control (8% of Construction Total \$)</b>				<b>\$ 10,339.71</b>
<b>Construction Cost Grand Total</b>				<b>\$ 139,586.10</b>
Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00	100.00	\$ 6,600.00
Buried	\$ 16.50	\$ 82.50	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	1.00	\$ 687.50
Phone				
Aerial	\$ 11.00	\$ 27.50	100.00	\$ 3,850.00
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Gas				
4" main	\$ 16.50	\$ 66.00	0.00	\$ -
Water				
8" main	\$ 16.50	\$ 93.50	50.00	\$ 5,500.00
Sewer				
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 16,637.50</b>
Right of Way (Sq Ft)		Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement		\$ 4.00	10890.00	\$ 43,560.00
<b>ROW Total</b>				<b>\$ 43,560.00</b>



General Information		Map	
Project ID			
Street Name	545 Ridgemont Drive		
Site Visit Date	5/21/13		
Road Classification	Minor road		
<b>Project Notes</b>			
Urban Typical Section with Valley Gutter			
<b>Field Notes</b>			
<b>Design (Existing Site Features)</b>			
Existing Road Laneage	2 - 12'		
Existing Shld Width (paved and grass) (feet)	None		
Existing Side Slopes	Flat		
Existing Guardrail	None		
Depth fm Pavement to Top of Culvert (ft):	4		
Pipe Type and Size	36" CMP, 290'		
Pipe Condition (1-5) (1 is new)	5		
Condition Notes:			
Pavement Type/Condition	Asphalt/Good		
<b>Environmental Features</b>			
Wetlands	None		
Ditches	None		
<b>Utilities (Visual Inspection)</b>			
Electric	Buried		
Cable	Buried		
Phone	Buried		
Gas			
Water	Buried		
Sewer			
Other			
<b>Stage Construction Options</b>			
Close Location to Traffic			
Maintain One Lane - No Temp Pavement	X		
Maintain One Lane - Temp Pavement			
Stage Construction Notes:			
<b>Proposed Design</b>			
Roadway Section			
Culvert Size & Material	36" RCP, 32 36" of HDPE, 260'.		
Utility Relocations	Electric, cable, phone, water		
Guardrail Replacement			
Miscellaneous Features			
<b>Planning Cost Estimate</b>			
Type	Notes	Total	
Design	Includes 10% Construction Cost and surveying needs	\$10,785	
Right of Way Cost	Assuming project extends 3,000 sf beyond ROW	\$20,800	
Utility Relocation Cost	Buried utilities	\$17,600	
Construction Cost	Assuming 1/10 acre clearing and grubbing	\$57,848	
Environmental Permits	Assuming minimal environmental permitting required	\$0	
<b>Total Planning Estimate</b>		<b>\$107,033</b>	





**Photo 1:**



**Photo 2:**

**545 Ridgemount**

**Photo Date:**

6/21/2016

**Taken By:**

Tony Hicks

**Page:**

**1**

**Roadway Construction, Utility Relocation and ROW Quantity Calculations**

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	144.00	\$ 807.17
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	20.00	\$ 1,183.20
Drain Inlet (EA)		\$ 3,000.00	2.00	\$ 6,000.00
4" Sidewalk (SY)	13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	4.884	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
Subtotal				\$ 7,990.37

Grading Complete (5% of Rwy Items & Drng Total \$) \$ 2,349.34

**Roadway Total \$ 10,339.71**

Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	133.33	\$ 1,384.00
36" CMP (LF)	\$ 19.62		296.00	\$ 5,807.52
36" RCP		\$ 142.52	36.00	\$ 5,130.86
36" HPDE		\$ 114.02	200.00	\$ 22,803.84
Class A Conc (CY)		\$ 892.19	0.00	\$ -
Steel (lb)		\$ 1.42	0.00	\$ -
Pipe Bedding (CY)		\$ 48.60	22.70	\$ 1,103.22
Trench Backfill (CY)		\$ 2.99	296.00	\$ 884.45
Trench Compaction (CY)		\$ 6.36	296.00	\$ 1,882.56

**Drainage Total \$ 38,996.45**

Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$ 0.71	0	\$ -

**Signing and Marking Total \$ -**

Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$ 10,260.00	0.10	\$ 1,026.00
Temporary Pavement			\$ 0
Temporary Drainage (Stream Diversion)	\$ 4,428.00	0.00	\$ -

**Staging Total \$ 1,026.00**

Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$ 4.39	100.00	\$ 439.20
Temporary Grassing (AC)	\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)	\$ 4.24	400.00	\$ 1,694.40
Check Dam Type C Silt Fence (LF)	\$ 6.79	0.00	\$ -
Erosion Control Mats (SY)	\$ 1.87	0.00	\$ -
Landscape Mulch (SY)	\$ 3.58	0.00	\$ -
Perm Grassing (AC)	\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)	\$ 60.98	16.00	\$ 975.74
Plastic Filter Fabric (SY)	\$ 5.72	16.00	\$ 91.58
4" Ditch Paving (SY)	\$ 54.65	0.00	\$ -

**Erosion Control Total \$ 3,200.93**

**Construction Cost Total \$ 53,563.09**

**Traffic Control (8% of Construction Total \$) \$ 4,285.05**

**Construction Cost Grand Total \$ 57,848.14**

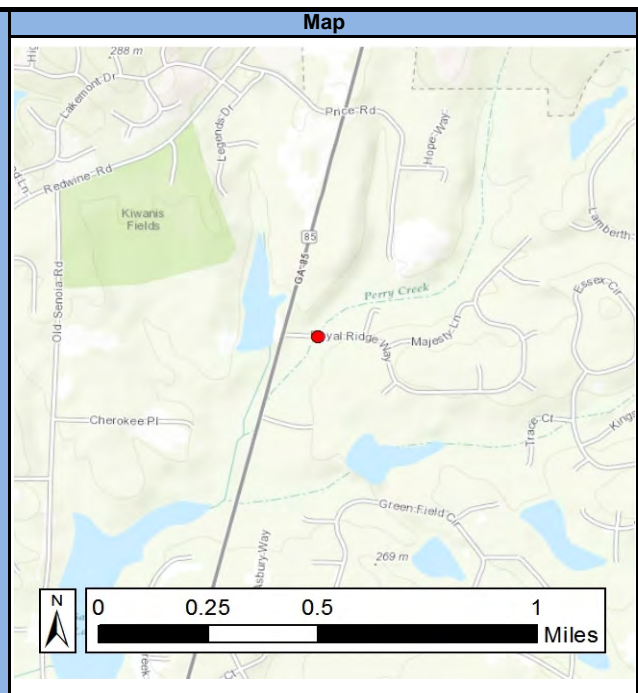
Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
<b>Electric</b>				
Aerial	\$ 11.00	\$ 55.00		\$ -
Buried	\$ 16.50	\$ 82.50	50	\$ 4,950.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
<b>Phone</b>				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	50	\$ 3,575.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
<b>Cable</b>				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	50	\$ 3,575.00
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
<b>Gas</b>				
4" main	\$ 16.50	\$ 66.00		\$ -
<b>Water</b>				
8" main	\$ 16.50	\$ 93.50	50	\$ 5,500.00
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
<b>Sewer</b>				
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 17,600.00</b>

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$ 4.00	5200	\$ 20,800.00
<b>ROW Total</b>			<b>\$ 20,800.00</b>





General Information	
Project ID	
Street Name	Royal Ridge Way
Site Visit Date	1/20/2016
Road Classification	Minor road
Project Notes	
Field Notes	
Design (Existing Site Features)	
Existing Road Laneage	2-11.5'
Existing Shld Width (paved and grass) (feet)	5'
Existing Side Slopes	3.5:1
Existing Guardrail	None
Depth fm Pavement to Top of Culvert (ft):	4'
Pipe Type and Size	2-66" CMP
Pipe Condition (1-5) (1 is new)	4
Condition Notes: Two corrugated metal pipes about 1' apart. Filled with sediment. No headwalls	
Pavement Type/Condition	Asphalt/Good
Environmental Features	
Wetlands	
Ditches	Roadside drainage ditches
State Waters	
Buried	
Electric	Aerial
Cable	Unknown
Phone	Aerial
Gas	Unknown
Water	Unknown
Sewer	Unknown
Other	



Stage Construction Options	
Close Location to Traffic	
Maintain One Lane - No Temp Pavement	X
Maintain One Lane - Temp Pavement	
Stage Construction Notes: Sediment buildup in existing pipes needs removal.	

Proposed Design	
Roadway Section	Typical, 18" concrete gutters
Culvert Size & Material	Double 8' x 5' barrel box culvert with wingwalls
Utility Relocations	Assuming utility pole safe distance from site (about 60')
Guardrail Replacement	
Miscellaneous Features	

Planning Cost Estimate		
Type	Notes	Total
Design	Includes 10% of Construction Cost and surveying needs	\$29,198
Right of Way Cost	Assuming entire project within ROW	\$0
Utility Relocation Cost	Assuming not needed	\$0
Construction Cost		\$166,976
Environmental Permits	Includes Zone AE Floodway study	\$18,000

<b>Total Planning Estimate</b>	<b>\$214,174</b>
--------------------------------	------------------





**Photo 1:**



**Photo 2:**

**Royal Ridge Way**

**Photo Date:**

11/02/2015

**Taken By:**

Tony Hicks

**Page:**

**1**





**Photo 3:**



**Photo 4:**

Royal Ridge Way

**Photo Date:**

02/02/2016

**Taken By:**

**Page:**

**2**



Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	468.00	\$ 2,623.30
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	36.00	\$ 2,129.76
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
<b>Subtotal</b>				<b>\$ 4,753.06</b>

Grading Complete (5% of Rwy Items & Drng Total \$) \$ 6,839.26

Roadway Total \$ 11,592.32

Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	413.33	\$ 4,290.40
72" CMP	\$ 54.00		124.00	\$ 6,696.00
72" RCP		\$ 105.60	0.00	\$ -
Class A Conc (CY)		\$ 892.19	111.22	\$ 99,230.93
Steel (lb)		\$ 1.42	11533.80	\$ 16,331.86
Pipe Bedding (CY)		\$ 48.60	42.70	\$ 2,075.22
Trench Backfill (CY)		\$ 2.99	421.97	\$ 1,260.84
Trench Compaction (CY)		\$ 6.36	337.57	\$ 2,146.97

Drainage Total \$ 132,032.22

Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$ 0.71	54.00	\$ 38.23

Signing and Marking Total \$ 38.23

Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$ 10,260.00	0.10	\$ 1,026.00
Temporary Pavement			\$ -
Temporary Drainage (Stream Diversion)	\$ 4,428.00	1.00	\$ 4,428.00

Staging Total \$ 5,492.23

Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$ 4.39	72.00	\$ 316.22
Temporary Grassing (AC)	\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)	\$ 4.24	248.00	\$ 1,050.53
Check Dam Type C Silt Fence (LF)	\$ 6.79	248.00	\$ 1,684.42
Erosion Control Mats (SY)	\$ 1.87	0.00	\$ -
Landscape Mulch (SY)	\$ 3.58	0.00	\$ -
Perm Grassing (AC)	\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)	\$ 60.98	36.00	\$ 2,195.42
Plastic Filter Fabric (SY)	\$ 5.72	36.00	\$ 206.06
4" Ditch Paving (SY)	\$ 54.65	0.00	\$ -

Erosion Control Total \$ 5,452.66

Construction Cost Total \$ 154,607.66

Traffic Control (8% of Construction Total \$) \$ 12,368.61

Construction Cost Grand Total \$ 166,976.27

Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00	0.00	\$ -
Buried	\$ 16.50	\$ 82.50	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50	0.00	\$ -
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Gas				
4" main	\$ 16.50	\$ 66.00	0.00	\$ -
Water				
8" main	\$ 16.50	\$ 93.50	0.00	\$ -
Relocate Fire Hydrant (EA)		\$ 2,609.22	0.00	\$ -
Sewer				
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ -</b>

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$ 4.00	0.00	\$ -
<b>ROW Total</b>			<b>\$ -</b>

General Information		Map									
<b>Project ID</b>											
<b>Street Name</b>	120 Shoal Creek Rd.										
<b>Site Visit Date</b>	5/21/13										
<b>Road Classification</b>	Internal Local										
<b>Project Notes</b>											
Rural Typical Section		<b>Stage Construction Options</b>									
<b>Field Notes</b>		<table border="1"> <tr> <td><b>Close Location to Traffic</b></td> <td></td> </tr> <tr> <td><b>Maintain One Lane - No Temp Pavement</b></td> <td>X</td> </tr> <tr> <td><b>Maintain One Lane - Temp Pavement</b></td> <td></td> </tr> <tr> <td colspan="2">Stage Construction Notes:</td> </tr> </table>		<b>Close Location to Traffic</b>		<b>Maintain One Lane - No Temp Pavement</b>	X	<b>Maintain One Lane - Temp Pavement</b>		Stage Construction Notes:	
<b>Close Location to Traffic</b>											
<b>Maintain One Lane - No Temp Pavement</b>	X										
<b>Maintain One Lane - Temp Pavement</b>											
Stage Construction Notes:											
<b>Design (Existing Site Features)</b>											
<b>Existing Road Laneage</b>	2-10'										
<b>Existing Shld Width (paved and grass) (feet)</b>	2' Grass										
<b>Existing Side Slopes</b>	2:1										
<b>Existing Guardrail</b>	None										
<b>Depth fm Pavement to Top of Culvert (ft):</b>	3										
<b>Pipe Type and Size</b>	3-96" CMP										
<b>Pipe Condition (1-5) (1 is new)</b>	3										
Condition Notes:											
<b>Pavement Type/Condition</b>	Asphalt/Good										
<b>Environmental Features</b>											
<b>Wetlands</b>	Yes										
<b>Ditches</b>	None										
<b>Contrib. Stream (2)</b>											
<b>Utilities (Visual Inspection)</b>											
<b>Electric</b>	Aerial										
<b>Cable</b>	Buried										
<b>Phone</b>	Aerial										
<b>Gas</b>	None										
<b>Water</b>	None										
<b>Sewer</b>	None										
<b>Other</b>											
<b>Proposed Design</b>											
<b>Roadway Section</b>	Replace in kind										
<b>Proposed Design</b>	Triple 8' x 8' box culvert										
<b>Utility Relocations</b>	Telephone and Cable										
<b>Guardrail Replacement</b>	Guardrail may be needed based on culvert length										
<b>Miscellaneous Features</b>	Zone A, Floodplain Analysis Required										
<b>Planning Cost Estimate</b>											
<b>Type</b>	<b>Notes</b>	<b>Total</b>									
<b>Design</b>	Includes 10% Construction Cost and surveying needs	\$42,264									
<b>Right of Way Cost</b>	Assuming project extends 3,750 sf beyond ROW	\$15,000									
<b>Utility Relocation Cost</b>	Buried phone and cable	\$10,725									
<b>Construction Cost</b>	1/3 acre clearing and grubbing, Guardrails	\$297,641									
<b>Environmental Permits</b>	Permits, Zone A Floodway Analysis	\$15,000									
<b>Total Planning Estimate</b>		<b>\$380,630.36</b>									





**Photo 1:**



**Photo 2:**

120 Shoal Creek Road

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

**1**





**Photo 3:**



**Photo 4:**

120 Shoal Creek Road

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

**2**

Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	1,040.00	\$ 5,829.55
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	0.00	\$ -
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	104.00	\$ 5,613.50
End Anchorage (EA)		\$ 1,380.00	4.00	\$ 5,520.00
<b>Subtotal</b>				<b>\$ 16,963.05</b>

Grading Complete (5% of Rwy Items & Drng Total \$) \$ 11,996.39

Roadway Total \$ 28,959.44

Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	755.56	\$ 7,842.67
96" CMP (LF)	\$ 63.00		70.00	\$ 13,230.00
96" RCP		\$ 455.00	0.00	\$ -
Class A Conc (CY)		\$ 892.19	184.86	\$ 164,929.87
Steel (lb)		\$ 1.42	19,942.00	\$ 28,237.87
Pipe Bedding (CY)		\$ 48.60	50.10	\$ 2,434.86
Trench Backfill (CY)		\$ 2.99	778.79	\$ 2,327.02
Trench Compaction (CY)		\$ 6.36	623.03	\$ 3,962.48

Drainage Total \$ 222,964.77

Signing and Marking	Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)	\$ 0.71	0.00	\$ -

Signing and Marking Total \$ -

Staging	Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)	\$ 10,260.00	0.33	\$ 3,385.80
Temporary Pavement			\$ -
Temporary Drainage (Stream Diversion)	\$ 4,428.00	2.00	\$ 8,856.00

Staging Total \$ 12,241.80

Erosion Control	Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)	\$ 4.39	86.67	\$ 380.64
Temporary Grassing (AC)	\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)	\$ 4.24	500.00	\$ 2,118.00
Check Dam Type C Silt Fence (LF)	\$ 6.79	500.00	\$ 3,396.00
Erosion Control Mats (SY)	\$ 1.87	166.67	\$ 312.00
Landscape Mulch (SY)	\$ 3.58	166.67	\$ 596.00
Perm Grassing (AC)	\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)	\$ 60.98	69.33	\$ 4,228.22
Plastic Filter Fabric (SY)	\$ 5.72	69.33	\$ 396.86
4" Ditch Paving (SY)	\$ 54.65	0.00	\$ -

Erosion Control Total \$ 11,427.73

Construction Cost Total \$ 275,593.74

Traffic Control (8% of Construction Total \$) \$ 22,047.50

Construction Cost Grand Total \$ 297,641.24

Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00		\$ -
Buried	\$ 16.50	\$ 82.50	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	0.00	\$ -
Phone				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	75.00	\$ 5,362.50
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50		\$ -
Buried	\$ 16.50	\$ 55.00	75.00	\$ 5,362.50
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Gas				
4" main	\$ 16.50	\$ 66.00		\$ -
Water				
8" main	\$ 16.50	\$ 93.50	0.00	\$ -
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
Sewer			0.00	\$ -
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 10,725.00</b>

Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost
Permanent Easement	\$ 4.00	3,750.00	\$ 15,000.00
<b>ROW Total</b>			<b>\$ 15,000.00</b>



General Information		Map	
Project ID			
Street Name	261 Trickum Creek Rd		
Site Visit Date	6/11/13		
Road Classification	County Local		
Project Notes			
Rural Typical Section			
Field Notes			
Design (Existing Site Features)			
Existing Road Laneage	2-10'		
Existing Shld Width (paved and grass) (feet)			
Existing Side Slopes			
Existing Guardrail			
Depth fm Pavement to Top of Culvert (ft):			
Pipe Type and Size	3- 7' CMP, 70'		
Pipe Condition (1-5) (1 is new)	2		
Condition Notes: No Headwall			
Pavement Type/Condition	Gravel/Fair		
Environmental Features			
Wetlands	Yes		
Ditches	None		
Utilities (Visual Inspection)			
Electric	Aerial		
Cable	Aerial		
Phone	Aerial		
Gas			
Water			
Sewer			
Other			
Proposed Design			
Roadway Section	Road dimensions from Google Earth		
Culvert Size & Material	Triple 8' x 5' box culvert, 70'		
Utility Relocations	Utility poles, aerial electric, cable, phone		
Guardrail Replacement			
Miscellaneous Features	Zone AE with Floodway, Floodplain Analysis Required		
Planning Cost Estimate			
Type	Notes	Total	
Design	Includes 10% Construction Cost and surveying needs	\$38,381	
Right of Way Cost	Assuming project extends 3,000 sf beyond ROW	\$15,675	
Utility Relocation Cost	Utility poles, aerial utilities	\$15,675	
Construction Cost	Assuming 1/5 acre clearing and grubbing	\$258,810	
Environmental Permits	Permits, Floodplain Analysis	\$18,000	
<b>Total Planning Estimate</b>		<b>\$346,541</b>	





**Photo 1:**



**Photo 2:**

Trickum Creek Road

**Photo Date:**

5/21/2013

**Taken By:**

David King

**Page:**

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Roadway Construction, Utility Relocation and ROW Quantity Calculations

Roadway Construction	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Pavement (SF)	\$ 0.73	\$ 4.87	1,144.00	\$ 6,412.50
Temporary Gravel Road (SY)		\$ 15.42	222.22	\$ 3,426.67
Curb and Gutter (LF)	\$ 28.56	\$ 30.60	20.00	\$ 1,183.20
Drain Inlet (EA)		\$ 3,000.00	0.00	\$ -
4" Sidewalk (SY)	\$ 13.56	\$ 36.90	0.00	\$ -
Guardrail (LF)	\$ 4.88	\$ 49.09	0.00	\$ -
End Anchorage (EA)		\$ 1,380.00	0.00	\$ -
<b>Subtotal</b>				<b>\$ 11,022.37</b>
<b>Grading Complete (5% of Rwy Items &amp; Drng Total \$)</b>				<b>\$ 10,385.83</b>
<b>Roadway Total</b>				<b>\$ 21,408.20</b>
Drainage	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Trench Excavation (CY)		\$ 10.38	881.48	\$ 9,149.78
84" CMP (LF)	\$ 63.00		210.00	\$ 39,690.00
84" RCP		\$ 455.00	0.00	\$ -
Class A Conc (CY)		\$ 892.19	132.51	\$ 118,223.83
Steel (lb)		\$ 1.42	13,383.00	\$ 18,950.33
Pipe Bedding (CY)		\$ 48.60	69.30	\$ 3,367.98
Trench Backfill (CY)		\$ 2.99	905.44	\$ 2,705.46
Trench Compaction (CY)		\$ 6.36	724.35	\$ 4,606.88
<b>Drainage Total</b>				<b>\$ 196,694.26</b>
Signing and Marking		Installation Unit Cost	Amount	Total Cost
Permanent Striping (LF)		\$ 0.71	0.00	\$ -
<b>Signing and Marking Total</b>				<b>\$ -</b>
Staging		Installation Unit Cost	Amount	Total Cost
Clearing and Grubbing (Acre)		\$ 10,260.00	0.20	\$ 2,052.00
Temporary Pavement				\$ -
Temporary Drainage (Stream Diversion)		\$ 4,428.00	2.00	\$ 8,856.00
<b>Staging Total</b>				<b>\$ 10,908.00</b>
Erosion Control		Installation Unit Cost	Amount	Total Cost
Fine Grading and Seeding (SY)		\$ 4.39	138.67	\$ 609.02
Temporary Grassing (AC)		\$ 855.60	0.00	\$ -
Type C Silt Fence (LF)		\$ 4.24	420.00	\$ 1,779.12
Check Dam Type C Silt Fence (LF)		\$ 6.79	420.00	\$ 2,852.64
Erosion Control Mats (SY)		\$ 1.87	140.00	\$ 262.08
Landscape Mulch (SY)		\$ 3.58	140.00	\$ 500.64
Perm Grassing (AC)		\$ 1,402.20	0.00	\$ -
Rip Rap Type 3 12" (SY)		\$ 60.98	69.33	\$ 4,228.22
Plastic Filter Fabric (SY)		\$ 5.72	69.33	\$ 396.86
4" Ditch Paving (SY)		\$ 54.65	0.00	\$ -
<b>Erosion Control Total</b>				<b>\$ 10,628.59</b>
<b>Construction Cost Total</b>				<b>\$ 239,639.05</b>
<b>Traffic Control (8% of Construction Total \$)</b>				<b>\$ 19,171.12</b>
<b>Construction Cost Grand Total</b>				<b>\$ 258,810.17</b>
Utility Relocation	Removal Unit Cost	Installation Unit Cost	Amount	Total Cost
Electric				
Aerial	\$ 11.00	\$ 55.00	100.00	\$ 6,600.00
Buried	\$ 16.50	\$ 82.50	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00	2.00	\$ 1,375.00
Phone				
Aerial	\$ 11.00	\$ 27.50	100.00	\$ 3,850.00
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Cable				
Aerial	\$ 11.00	\$ 27.50	100.00	\$ 3,850.00
Buried	\$ 16.50	\$ 55.00	0.00	\$ -
Wooden Pole	\$ 82.50	\$ 605.00		\$ -
Gas				
4" main	\$ 16.50	\$ 66.00		\$ -
Water				
8" main	\$ 16.50	\$ 93.50	0.00	\$ -
Relocate Fire Hydrant (EA)		\$ 2,609.22		\$ -
Sewer			0.00	\$ -
12" main	\$ 16.50	\$ 82.50	0.00	\$ -
<b>Utility Relocation Total</b>				<b>\$ 15,675.00</b>
Right of Way (Sq Ft)	Cost/ Sq Ft	Sq Ft	Total Cost	
Permanent Easement	\$ 4.00	3,000.00	\$ 12,000.00	
<b>ROW Total</b>			<b>\$ 12,000.00</b>	

