

# RCOC

## Engineer's Opinion of Costs

<b>Project Number:</b> 49293 <b>Estimate Number:</b> 1 <b>Project Type:</b> Bridge Construction <b>Location:</b> Tienken Road Bridge over Stony Creek City of Rochester Hills, Oakland County, MI <b>Description:</b> Bridge replacement with associated approach work, sidewalk, and culvert extension	<b>Project Engineer:</b> Scott Wanagat, PE <b>Date Created:</b> 12/29/2009 <b>Fed/State #:</b> <b>Fed Item:</b> <b>Control Section:</b> MCS 63002
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Line	Pay Item	Description	Quantity	Units	Unit Price	Total
<b>Category: 0001 Road Participating</b>						
0001	1000001	Mobilization, Max. ____ Max. \$240,000	.40	LS	\$200,000.00	\$80,000.00
0002	2010001	Clearing	.20	Acre	\$5,815.73	\$1,163.15
0003	2030001	Culv, Rem, Less than 24 inch	2.00	Ea	\$200.00	\$400.00
0004	2030011	Dr Structure, Rem	3.00	Ea	\$150.00	\$450.00
0005	2030015	Sewer, Rem, Less than 24 inch	33.00	Ft	\$7.00	\$231.00
0006	2030016	Sewer, Rem, 24 inch to 48 inch	10.00	Ft	\$9.00	\$90.00
0007	2040006	Curb and Gutter, Rem	57.00	Ft	\$5.00	\$285.00
0008	2040008	Guardrail, Rem	175.00	Ft	\$2.00	\$350.00
0009	2040011	Pavt, Rem	2,736.00	Syd	\$5.50	\$15,048.00
0010	2040013	Sidewalk, Rem	68.00	Syd	\$5.00	\$340.00
0011	2050010	Embankment, CIP	1,704.00	Cyd	\$6.00	\$10,224.00
0012	2050016	Excavation, Earth	1,798.00	Cyd	\$6.00	\$10,788.00
0013	2050041	Subgrade Undercutting, Type II	100.00	Cyd	\$13.00	\$1,300.00
0014	2067021	_ Backfill, Select	1,867.00	Cyd	\$20.00	\$37,340.00
0015	2087001	_ Erosion Control, Silt Fence, Modified	2,000.00	Ft	\$3.50	\$7,000.00
0016	2087050	_ Erosion Control, Inlet Protection, Fabric Drop, Modified	1.00	Ea	\$100.00	\$100.00
0017	2087050	_ Erosion Control, Inlet Protection, Geotextile and Stone, Modified	7.00	Ea	\$61.00	\$427.00
0018	3027011	_ Aggregate Base, 4 inch, CIP, 21AA, Modified	663.00	Syd	\$6.00	\$3,978.00
0019	3027011	_ Aggregate Base, 6 inch, CIP, 21AA, Modified	52.00	Syd	\$7.00	\$364.00
0020	3027011	_ Aggregate Base, 8 inch, CIP, 21AA, Modified	2,666.00	Syd	\$8.00	\$21,328.00
0021	3067031	_ Aggregate for Maintaining Local Traffic	100.00	Ton	\$18.00	\$1,800.00
0022	3077011	_ Shoulder, CI II, 4 inch	5.00	Syd	\$10.00	\$50.00
0023	4010840	Culv End Sect, Conc, 12 inch	1.00	Ea	\$430.00	\$430.00

Line	Pay Item	Description	Quantity	Units	Unit Price	Total
0024	4010980	Culv, CSP Arch, CI A, 63 inch by 43 inch	12.00	Ft	\$200.00	\$2,400.00
0025	4017050	_ Drainage Marker Post, Wood	3.00	Ea	\$35.00	\$105.00
0026	4020004	Sewer, CI A, 12 inch, Tr Det A	78.00	Ft	\$30.00	\$2,340.00
0027	4020037	Sewer, CI A, 30 inch, Tr Det B	21.00	Ft	\$80.00	\$1,680.00
0028	4020600	Sewer, CI E, 12 inch, Tr Det B	70.00	Ft	\$30.00	\$2,100.00
0029	4030005	Dr Structure, 48 inch dia	6.00	Ea	\$1,520.00	\$9,120.00
0030	4030050	Dr Structure, Adj, Add Depth	15.00	Ft	\$130.00	\$1,950.00
0031	4030051	Dr Structure Cover	3,095.00	Lb	\$1.52	\$4,704.40
0032	4030053	Dr Structure Cover, Adj, Case 2	5.00	Ea	\$250.00	\$1,250.00
0033	4030064	Dr Structure, Tap, 12 inch	1.00	Ea	\$210.00	\$210.00
0034	4037001	_ DPW Structure Cover, Adj, Add Depth	8.00	Ft	\$200.00	\$1,600.00
0035	4037001	_ Utility Structure Cover, Adj, Add Depth	1.00	Ft	\$150.00	\$150.00
0036	4037050	_ DPW Structure Cover, Adj, Case 2	2.00	Ea	\$450.00	\$900.00
0037	4037050	_ Utility Structure Cover, Adj, Case 2	1.00	Ea	\$300.00	\$300.00
0038	4040033	Underdrain, Fdn, 6 inch	215.00	Ft	\$6.50	\$1,397.50
0039	4047001	_ Underdrain, 6 inch, Modified	1,700.00	Ft	\$6.45	\$10,965.00
0040	5020031	HMA, 3C	770.00	Ton	\$70.00	\$53,900.00
0041	5020032	HMA, 4C	308.00	Ton	\$90.00	\$27,720.00
0042	5020034	HMA, 13A	65.00	Ton	\$60.00	\$3,900.00
0043	5020035	HMA, 36A	65.00	Ton	\$65.00	\$4,225.00
0044	5020061	HMA Approach	73.00	Ton	\$90.00	\$6,570.00
0045	5027051	_ Pavt, Cleaning, Modified	.40	LS	\$4,000.00	\$1,600.00
0046	7067010	_ Modular Block Wall	1,530.00	Sft	\$30.00	\$45,900.00
0047	8010005	Driveway, Nonreinf Conc, 6 inch	28.00	Syd	\$30.00	\$840.00
0048	8020031	Curb and Gutter, Conc, Det D2	500.00	Ft	\$16.00	\$8,000.00
0049	8027001	_ Curb and Gutter, Conc, Det B2, Modified	957.00	Ft	\$17.00	\$16,269.00
0050	8027001	_ Curb and Gutter, Conc, Det B2, Modified (2')	80.00	Ft	\$18.00	\$1,440.00
0051	8027010	_ Concrete Pavers	271.00	Sft	\$9.00	\$2,439.00
0052	8027010	_ Concrete Pavers, Rem	271.00	Sft	\$3.00	\$813.00
0053	8037010	_ Detectable Warning, Retrofit, Modified	151.00	Sft	\$13.00	\$1,963.00
0054	8037010	_ Sidewalk Ramp, ADA, Modified	823.00	Sft	\$7.00	\$5,761.00
0055	8070000	Guardrail, Type B	288.00	Ft	\$18.00	\$5,184.00

Line	Pay Item	Description	Quantity	Units	Unit Price	Total
0056	8070010	Guardrail, Curved, Type B	25.00	Ft	\$20.00	\$500.00
0057	8070023	Guardrail Anch, Bridge, Det T2	4.00	Ea	\$1,500.00	\$6,000.00
0058	8070040	Guardrail Approach Terminal, Type 1B	3.00	Ea	\$1,800.00	\$5,400.00
0059	8070050	Guardrail Departing Terminal, Type B	1.00	Ea	\$650.00	\$650.00
0060	8070080	Guardrail Reflector	20.00	Ea	\$5.50	\$110.00
0061	8070095	Post, Mailbox	2.00	Ea	\$50.00	\$100.00
0062	8077001	_ Guardrail, Wood Back	75.00	Ft	\$25.00	\$1,875.00
0063	8087001	_ Fence, Wooden	216.00	Ft	\$5.00	\$1,080.00
0064	8100156	Post, Steel, 3 lb	233.00	Ft	\$6.00	\$1,398.00
0065	8100172	Post, Wood, Rem	10.00	Ea	\$115.00	\$1,150.00
0066	8100177	Sign, Type IIIA	3.00	Sft	\$12.00	\$36.00
0067	8100181	Sign, Type IIIB	74.00	Sft	\$15.54	\$1,149.96
0068	8100197	Sign, Type III, Erect, Salv	6.00	Ea	\$44.00	\$264.00
0069	8100202	Sign, Type III, Rem	16.00	Ea	\$15.00	\$240.00
0070	8110084	Pavt Mrkg, Sprayable Thermopl, 4 inch, Yellow	2,186.00	Ft	\$0.75	\$1,639.50
0071	8110088	Pavt Mrkg, Sprayable Thermopl, 6 inch, Yellow	92.00	Ft	\$0.75	\$69.00
0072	8117001	_ Pavt Mrkg, Cold Plastic, 12 inch, Crosswalk Line	97.00	Ft	\$4.00	\$388.00
0073	8117050	_ Marker, Flexible, Tubular	20.00	Ea	\$25.00	\$500.00
0074	8120007	Barricade, Type III, High Intensity, Double Sided, Lighted,Furn	10.00	Ea	\$112.72	\$1,127.20
0075	8120008	Barricade, Type III, High Intensity, Double Sided, Lighted,Oper	10.00	Ea	\$25.51	\$255.10
0076	8120050	Minor Traf Devices	.40	LS	\$25,000.00	\$10,000.00
0077	8120077	Pavt Mrkg, Longit, 6 inch or Less Width, Rem	138.00	Ft	\$0.35	\$48.30
0078	8120100	Plastic Drum, High Intensity, Furn	30.00	Ea	\$30.00	\$900.00
0079	8120101	Plastic Drum, High Intensity, Oper	30.00	Ea	\$20.00	\$600.00
0080	8120105	Sign Cover	10.00	Ea	\$20.69	\$206.90
0081	8120135	Sign, Type B, Temp, Prismatic, Furn	808.00	Sft	\$6.00	\$4,848.00
0082	8120136	Sign, Type B, Temp, Prismatic, Oper	734.00	Sft	\$2.00	\$1,468.00
0083	8127010	_ Sign, Type B, Temp, Prismatic, Special, Furn	667.00	Sft	\$6.00	\$4,002.00
0084	8127010	_ Sign, Type B, Temp, Prismatic, Special, Oper	606.00	Sft	\$2.00	\$1,212.00
0085	8160027	Mulch Blanket	685.00	Syd	\$1.00	\$685.00

Line	Pay Item	Description	Quantity	Units	Unit Price	Total
0086	8160042	Seeding, Mixture TUF	35.00	Lb	\$3.00	\$105.00
0087	8160055	Sodding	879.00	Syd	\$2.00	\$1,758.00
0088	8160061	Topsoil Surface, Furn, 3 inch	1,564.00	Syd	\$1.55	\$2,424.20
0089	8160090	Water, Sodding/Seeding	27.00	Unit	\$29.47	\$795.69
0090	8167011	_ Mulch Blanket, Modified	685.00	Syd	\$1.50	\$1,027.50
0091	8257050	_ Fire Hydrant Adjustment	1.00	Ea	\$600.00	\$600.00
0092	8257050	_ Valve Box, Adj, Case 2	1.00	Ea	\$300.00	\$300.00

**Category 0001 Total: \$476,094.40**

Line	Pay Item	Description	Quantity	Units	Unit Price	Total
<b>Category: 0002 Bridge Participating</b>						
0093	2040020	Structures, Rem (B01 of 63-02-10)	1.00	LS	\$50,000.00	\$50,000.00
0094	2060002	Backfill, Structure, CIP	1,014.00	Cyd	\$18.00	\$18,252.00
0095	2060010	Excavation, Fdn	1,524.00	Cyd	\$15.00	\$22,860.00
0096	4017001	_ Culv, Precast Three-Sided, 48 foot by 11 foot	40.00	Ft	\$3,600.00	\$144,000.00
0097	4040033	Underdrain, Fdn, 6 inch	160.00	Ft	\$6.50	\$1,040.00
0098	7047051	_ Cofferdam, Temp, Portable (B01 of 63-02-10)	1.00	LS	\$50,000.00	\$50,000.00
0099	7047051	_ Monitoring Vibrations (B01 of 63-02-10)	1.00	LS	\$30,000.00	\$30,000.00
0100	7060010	Substructure Conc	58.00	Cyd	\$550.00	\$31,900.00
0101	7060020	Superstructure Conc	31.00	Cyd	\$220.00	\$6,820.00
0102	7060022	Superstructure Conc, Form, Finish, and Cure (B01 of 63-02-10)	1.00	LS	\$13,175.00	\$13,175.00
0103	7060035	Reinforcement, Steel, Epoxy Coated	6,000.00	Lb	\$1.30	\$7,800.00
0104	7100001	Joint Waterproofing	10.00	Sft	\$5.00	\$50.00
0105	7110008	Bridge Railing, 2 Tube	100.00	Ft	\$140.00	\$14,000.00
0106	7117001	_ Bridge Barrier Railing, Type R4, Special - Installed	85.00	Ft	\$30.00	\$2,550.00
0107	7120084	Reinforcement, Mechanical Splice	455.00	Ea	\$25.00	\$11,375.00
0108	8137011	_ Riprap, Heavy, Modified	293.00	Syd	\$40.00	\$11,720.00
					<b>Category 0002 Total: \$415,542.00</b>	

Line	Pay Item	Description	Quantity	Units	Unit Price	Total
<b>Category: 0003 Road Non-Participating</b>						
0109	2050010	Embankment, CIP	121.00	Cyd	\$6.00	\$726.00
0110	2050016	Excavation, Earth	52.00	Cyd	\$6.00	\$312.00
0111	2067021	_ Backfill, Select	990.00	Cyd	\$20.00	\$19,800.00
0112	3027011	_ Aggregate Base, 4 inch, CIP, 21AA, Modified	218.00	Syd	\$6.00	\$1,308.00
0113	3027011	_ Aggregate Base, 6 inch, CIP, 21AA, Modified	42.00	Syd	\$7.00	\$294.00
0114	4040033	Underdrain, Fdn, 6 inch	170.00	Ft	\$6.50	\$1,105.00
0115	5020034	HMA, 13A	22.00	Ton	\$60.00	\$1,320.00
0116	5020035	HMA, 36A	22.00	Ton	\$65.00	\$1,430.00
0117	7067010	_ Modular Block Wall	1,828.00	Sft	\$30.00	\$54,840.00
0118	8087001	_ Fence, Wooden	184.00	Ft	\$5.00	\$920.00
0119	8160027	Mulch Blanket	561.00	Syd	\$1.00	\$561.00
0120	8160042	Seeding, Mixture TUF	28.00	Lb	\$3.00	\$84.00
0121	8160061	Topsoil Surface, Furn, 3 inch	561.00	Syd	\$1.55	\$869.55
0122	8160090	Water, Sodding/Seeding	2.00	Unit	\$29.47	\$58.94
0123	8167011	_ Mulch Blanket, Modified	561.00	Syd	\$1.50	\$841.50
0124	8190026	Conduit, DB, 1, 1 1/4 inch	10.00	Ft	\$15.00	\$150.00
0125	8190030	Conduit, DB, 1, 4 inch	75.00	Ft	\$10.00	\$750.00
0126	8190032	Conduit, DB, 2, 3 inch	10.00	Ft	\$20.00	\$200.00
0127	8190260	Hh, Round	2.00	Ea	\$1,000.00	\$2,000.00
0128	8200140	Span Wire	1.00	Ea	\$700.00	\$700.00
0129	8207050	_ Case Sign, Two Way, 24 inch by 30 inch, Non-Illuminated, RCOC	2.00	Ea	\$1,400.00	\$2,800.00
0130	8207050	_ Strain Pole, Steel, Anchor Base, 30 foot, RCOC	2.00	Ea	\$3,600.00	\$7,200.00
0131	8207050	_ Strain Pole, Steel, Anchor, Fdn, RCOC	2.00	Ea	\$3,000.00	\$6,000.00
<b>Category 0003 Total:</b>						<b>\$104,269.99</b>

Line	Pay Item	Description	Quantity	Units	Unit Price	Total
<b>Category: 0004 Bridge Non-Participating</b>						
0132	7117001	_ Bridge Barrier Railing, Type R4, Special - Refurbished	128.00	Ft	\$65.00	\$8,320.00
0133	7117050	_ Bridge Name Plate, Modified	1.00	Ea	\$1,000.00	\$1,000.00
<b>Category 0004 Total:</b>						<b>\$9,320.00</b>

Line	Pay Item	Description	Quantity	Units	Unit Price	Total
<b>Estimate Total:</b>						<b>\$1,005,226.39</b>