



APPENDIX A

Planning Level Cost Estimates

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Planning level cost estimates are listed in 2015 dollars for each improvement option. The planning level costs include estimates for right-of-way, preliminary engineering, construction engineering, construction, and indirect costs (IDC). In addition, an inflationary factor of 3 percent per year was applied to the planning level costs to account for estimated year of expenditure. Construction cost estimates were based on unit quantity estimates and price information determined from the MDT Preliminary Estimating Tool (PET). Cost ranges are provided in some cases, indicating unknown factors at the particular planning level stage.

1.0 SOUTHBOUND AUXILIARY LANE (RP 278.1 to 278.5)					\$ 1,900,000 TOT
			LENGTH (FT)	4000	
			WIDTH (FT)	20	
			SURFACING (IN)	5	
			BASE (IN)	18	
TYPE	UNITS	UNIT PRICE	QUANTITY	COST	
Excavation-Unclassified	CUYD	\$ 4.35	15762.00	\$	68,565
Excavation-Unclass Borrow	CUYD	\$ 5.09	1576.20	\$	8,023
Special Borrow-Excavation	CUYD	\$ 8.05	788.10	\$	6,344
Topsoil-Salvaging and Placing	CUYD	\$ 4.06	6802.54	\$	27,618
Crushed Aggregate Course	CUYD	\$ 21.69	7996.30	\$	173,440
Cover - Type 1	SQYD	\$ 0.54	8889.00	\$	4,800
Traffic Gravel	CUYD	\$ 14.61	592.59	\$	8,658
Commercial Mix-PG 64-28	TON	\$ 144.22	2719.22	\$	392,166
Emulsified Asphalt CRS-2P	TON	\$ 613.48	15.90	\$	9,754
Signs - Urban	MI	\$ 52,000.00	0.76	\$	39,394
Striping & Pavement Markings - Urban	MI	\$ 20,000.00	0.76	\$	15,152
Drainage Pipe - Rural	MI	\$ 82,000.00	0.76	\$	62,121
Temporary Erosion Control	MI	\$ 5,000.00	0.76	\$	3,788
Estimated Right-of-Way	ACRE	\$ -	0.00	\$	-
Traffic Control			5%	\$	40,991
	<i>Subtotal 1</i>			\$	860,814
Mobilization			10%	\$	86,081
	<i>Subtotal 2</i>			\$	946,895
Contingencies			20%	\$	189,379
	<i>Subtotal 3</i>			\$	1,136,274
Mid-term Inflation	% PER YEAR	3%	10	\$	390,783
	<i>Subtotal 4</i>			\$	1,527,057
Construction Engineering (CE)			10%	\$	152,706
	<i>Subtotal 5</i>			\$	1,679,763
Indirect Costs (IDC)			10.91%	\$	183,262
	Total			\$	1,863,025

2.0 INTERSTATE ALIGNMENT (RP 282.3 TO 283.0)					\$ 500,000 TOT
2(a) ROADWAY ILLUMINATION					
			LENGTH (FT)	3500	
			SPACING (FT)	240	
TYPE	UNITS	UNIT PRICE	QUANTITY	COST	
Standard-Stl Type 10-A-500-6	EACH	\$ 3,800.00	30	\$	114,000
Luminaire Assembly - 250 W S.V.	EACH	\$ 394.09	30	\$	11,823
Service Assembly-20 Amp	EACH	\$ 2,815.00	1	\$	2,815
Foundation Concrete	CUYD	\$ 832.52	16	\$	13,237
Conduit - Plastic 1.5"	LNFT	\$ 5.34	7000	\$	37,380
Conductor - Copper AWG8 - 600 V	LNFT	\$ 0.78	14000	\$	10,920
Conductor - Copper AWG10 - 600 V	LNFT	\$ 0.60	7000	\$	4,200
Cable - Copper 3AWG14 - 600 V	LNFT	\$ 1.15	100	\$	115
Estimated Right-of-Way	ACRE	\$ 15,000.00	0.00	\$	-
Traffic Control			5%	\$	9,724
	<i>Subtotal 1</i>			\$	204,214
Mobilization			10%	\$	20,421
	<i>Subtotal 2</i>			\$	224,636
Contingencies			20%	\$	44,927
	<i>Subtotal 3</i>			\$	269,563
Mid-term Inflation	% PER YEAR	3%	10	\$	92,707
	<i>Subtotal 4</i>			\$	362,270
Construction Engineering (CE)			10%	\$	36,227
	<i>Subtotal 5</i>			\$	398,497
Indirect Costs (IDC)			10.91%	\$	43,476
	Total			\$	441,973

2(b) RECONSTRUCT ROADWAY

\$ 20,000,000 TOT

LENGTH (FT)	5280
WIDTH (FT)	76
SURFACING (IN)	5
BASE (IN)	18

TYPE	UNITS	UNIT PRICE	QUANTITY	COST
Excavation-Unclassified	CUYD	\$ 4.35	79654.40	\$ 346,497
Excavation-Unclass Borrow	CUYD	\$ 5.09	7965.44	\$ 40,544
Special Borrow-Excavation	CUYD	\$ 8.05	3982.72	\$ 32,061
Topsoil-Salvaging and Placing	CUYD	\$ 4.06	8979.36	\$ 36,456
Crushed Aggregate Course	CUYD	\$ 21.69	19439.85	\$ 421,650
Cover - Type 1	SQYD	\$ 0.54	46934.00	\$ 25,344
Traffic Gravel	CUYD	\$ 14.61	3128.89	\$ 45,713
Commercial Mix-PG 64-28	TON	\$ 144.22	13012.71	\$ 1,876,693
Emulsified Asphalt CRS-2P	TON	\$ 613.48	83.80	\$ 51,410
Signs - Urban	MI	\$ 52,000.00	1.00	\$ 52,000
Striping & Pavement Markings - Urban	MI	\$ 20,000.00	1.00	\$ 20,000
Drainage Pipe - Rural	MI	\$ 82,000.00	1.00	\$ 82,000
Temporary Erosion Control	MI	\$ 5,000.00	1.00	\$ 5,000
New Bridge larger than 100 lineal feet	SQFT	\$ 114.00	26600.00	\$ 3,032,400
Remove large multiple span bridge	EACH	\$ 132,000.00	2.00	\$ 264,000
Estimated Right-of-Way	ACRE	\$ -	0.00	\$ -
Traffic Control			5%	\$ 316,588
	<i>Subtotal 1</i>			\$ 6,648,357
Mobilization			10%	\$ 664,836
	<i>Subtotal 2</i>			\$ 7,313,192
Contingencies			20%	\$ 1,462,638
	<i>Subtotal 3</i>			\$ 8,775,831
Long-term Inflation	% PER YEAR	3%	20	\$ 7,074,296
	<i>Subtotal 4</i>			\$ 15,850,127
Construction Engineering (CE)			10%	\$ 1,585,013
	<i>Subtotal 5</i>			\$ 17,435,139
Indirect Costs (IDC)			10.91%	\$ 1,902,174
Total				\$ 19,337,313

3.0 PAVEMENT REHABILITATION (RP 0.0 TO 1.4)

\$ 1,000,000 TOT

LENGTH (FT)	4372
WIDTH (FT)	48
SURFACING (IN)	2
BASE (IN)	0

TYPE	UNITS	UNIT PRICE	QUANTITY	COST
Cover - Type 1	SQYD	\$ 0.54	23317.00	\$ 12,591
Commercial Mix-PG 64-28	TON	\$ 144.22	2496.81	\$ 360,090
Emulsified Asphalt CRS-2P	TON	\$ 613.48	41.70	\$ 25,582
Cold Milling	SQYD	\$ 1.42	5829.12	\$ 8,277
Estimated Right-of-Way	ACRE	\$ -	0.00	\$ -
Traffic Control			5%	\$ 20,327
	<i>Subtotal 1</i>			\$ 426,868
Mobilization			10%	\$ 42,687
	<i>Subtotal 2</i>			\$ 469,554
Contingencies			20%	\$ 93,911
	<i>Subtotal 3</i>			\$ 563,465
Mid-term Inflation	% PER YEAR	3%	10	\$ 193,785
	<i>Subtotal 4</i>			\$ 757,250
Construction Engineering (CE)			10%	\$ 75,725
	<i>Subtotal 5</i>			\$ 832,975
Indirect Costs (IDC)			10.91%	\$ 90,878
Total				\$ 923,853

4.0 BRIDGE DECK TREATMENT (VARIOUS)

\$ 600,000 TOT

BRIDGE ID	WIDTH (FT)	LENGTH (FT)	AREA (SQFT)
100315000+00001	45	294	13231
100315000+03421	36	150	5394
100315000+03422	45	145	6494

TYPE	UNITS	UNIT PRICE	QUANTITY	COST
Bridge Deck Rehab*	SQFT	\$ 8.92	25120	\$ 223,946
Traffic Control			5%	\$ 11,197
	<i>Subtotal 1</i>			\$ 235,144
Mobilization			10%	\$ 23,514
	<i>Subtotal 2</i>			\$ 258,658
Contingencies			20%	\$ 51,732
	<i>Subtotal 3</i>			\$ 310,390
Mid-term Inflation	% PER YEAR	3%	10	\$ 106,748
	<i>Subtotal 4</i>			\$ 417,138
Construction Engineering (CE)			10%	\$ 41,714
	<i>Subtotal 5</i>			\$ 458,852
Indirect Costs (IDC)			10.91%	\$ 50,061

Total **\$ 508,913**

*Unit price calculated from project NHPB STWD(206).

5.0 DIAGRAMMATIC GUIDE SIGNING (10TH AVE S TO 14TH ST SW) **\$ 200,000 TOT**

TYPE	UNITS	UNIT PRICE	QUANTITY	COST / EA
Signs-Alum Refl Sheet IX	SQFT	\$ 31.61	\$ 600.00	\$ 18,966
Overhead Structure/Metal	EA	\$ 27,800.00	\$ 2.00	\$ 55,600
Traffic Control			5%	\$ 3,728
<i>Subtotal 1</i>				\$ 78,294
Mobilization			10%	\$ 7,829
<i>Subtotal 2</i>				\$ 86,124
Contingencies			20%	\$ 17,225
<i>Subtotal 3</i>				\$ 103,348
Short-term Inflation	% PER YEAR	3%	5	\$ 16,461
<i>Subtotal 4</i>				\$ 119,809
Construction Engineering (CE)			10%	\$ 11,981
<i>Subtotal 5</i>				\$ 131,790
Indirect Costs (IDC)			10.91%	\$ 14,378
Total				\$ 146,168

6.0 WESTBOUND AUXILIARY LANE (14TH ST SW TO 10TH AVE S) **\$ 2,000,000 TOT**

LENGTH (FT) 3500
 WIDTH (FT) 24
 SURFACING (IN) 5
 BASE (IN) 18

TYPE	UNITS	UNIT PRICE	QUANTITY	COST
Excavation-Unclassified	CUYD	\$ 4.35	24974.05	\$ 108,637
Excavation-Unclass Borrow	CUYD	\$ 5.09	2497.41	\$ 12,712
Special Borrow-Excavation	CUYD	\$ 8.05	1248.70	\$ 10,052
Topsoil-Salvaging and Placing	CUYD	\$ 4.06	5952.22	\$ 24,166
Crushed Aggregate Course	CUYD	\$ 21.69	7774.54	\$ 168,630
Cover - Type 1	SQYD	\$ 0.54	9334.00	\$ 5,040
Traffic Gravel	CUYD	\$ 14.61	622.22	\$ 9,091
Commercial Mix-PG 64-28	TON	\$ 144.22	2795.75	\$ 403,203
Emulsified Asphalt CRS-2P	TON	\$ 613.48	16.70	\$ 10,245
Cold Milling	SQYD	\$ 1.42	2333.33	\$ 3,313
Signs - Urban	MI	\$ 52,000.00	0.66	\$ 34,470
Striping & Pavement Markings - Urban	MI	\$ 20,000.00	0.66	\$ 13,258
Drainage Pipe - Rural	MI	\$ 82,000.00	0.66	\$ 54,356
Temporary Erosion Control	MI	\$ 5,000.00	0.66	\$ 3,314
Estimated Right-of-Way	ACRE	\$ -	0.00	\$ -
Traffic Control			5%	\$ 43,024
<i>Subtotal 1</i>				\$ 903,511
Mobilization			10%	\$ 90,351
<i>Subtotal 2</i>				\$ 993,862
Contingencies			20%	\$ 198,772
<i>Subtotal 3</i>				\$ 1,192,635
Mid-term Inflation	% PER YEAR	3%	10	\$ 410,167
<i>Subtotal 4</i>				\$ 1,602,802
Construction Engineering (CE)			10%	\$ 160,280
<i>Subtotal 5</i>				\$ 1,763,082
Indirect Costs (IDC)			10.91%	\$ 192,352
Total				\$ 1,955,434

7.0 WESTBOUND AUXILIARY LANE (FOX FARM RD TO 14TH ST SW) **\$ 1,200,000 TOT**

LENGTH (FT) 2500
 WIDTH (FT) 20
 SURFACING (IN) 5
 BASE (IN) 18

TYPE	UNITS	UNIT PRICE	QUANTITY	COST
Excavation-Unclassified	CUYD	\$ 4.35	9851.31	\$ 42,853
Excavation-Unclass Borrow	CUYD	\$ 5.09	985.13	\$ 5,014
Special Borrow-Excavation	CUYD	\$ 8.05	492.57	\$ 3,965
Topsoil-Salvaging and Placing	CUYD	\$ 4.06	4251.59	\$ 17,261
Crushed Aggregate Course	CUYD	\$ 21.69	1944.44	\$ 42,175
Cover - Type 1	SQYD	\$ 0.54	4997.69	\$ 2,699
Traffic Gravel	CUYD	\$ 14.61	370.37	\$ 5,411
Commercial Mix-PG 64-28	TON	\$ 144.22	1699.51	\$ 245,103
Emulsified Asphalt CRS-2P	TON	\$ 613.48	10.00	\$ 6,135
Cold Milling	SQYD	\$ 1.42	3333.33	\$ 4,733
Signs - Urban	MI	\$ 52,000.00	0.47	\$ 24,621
Striping & Pavement Markings - Urban	MI	\$ 20,000.00	0.47	\$ 9,470
Drainage Pipe - Urban	MI	\$ 240,000.00	0.47	\$ 113,636
Temporary Erosion Control	MI	\$ 5,000.00	0.47	\$ 2,367
Estimated Right-of-Way	ACRE	\$ -	0.00	\$ -
Traffic Control			5%	\$ 26,272
<i>Subtotal 1</i>				\$ 551,717

Mobilization				10%	\$	55,172
	<i>Subtotal 2</i>				\$	606,889
Contingencies				20%	\$	121,378
	<i>Subtotal 3</i>				\$	728,267
Mid-term Inflation		% PER YEAR	3%	10	\$	250,463
	<i>Subtotal 4</i>				\$	978,730
Construction Engineering (CE)				10%	\$	97,873
	<i>Subtotal 5</i>				\$	1,076,603
Indirect Costs (IDC)				10.91%	\$	117,457
	Total				\$	1,194,060

8.0 LENGTHEN SOUTHBOUND OFF-RAMP (10TH AVE S INTERCHANGE) \$ 260,000 TOT

LENGTH (FT)	550
WIDTH (FT)	20
SURFACING (IN)	5
BASE (IN)	18

TYPE	UNITS	UNIT PRICE	QUANTITY	COST	
Excavation-Unclassified	CUYD	\$ 4.35	2167.29	\$ 9,428	
Excavation-Unclass Borrow	CUYD	\$ 5.09	216.73	\$ 1,103	
Special Borrow-Excavation	CUYD	\$ 8.05	108.36	\$ 872	
Topsoil-Salvaging and Placing	CUYD	\$ 4.06	935.35	\$ 3,798	
Crushed Aggregate Course	CUYD	\$ 21.69	1099.49	\$ 23,848	
Cover - Type 1	SQYD	\$ 0.54	1223.00	\$ 660	
Traffic Gravel	CUYD	\$ 14.61	81.48	\$ 1,190	
Commercial Mix-PG 64-28	TON	\$ 144.22	373.89	\$ 53,922	
Emulsified Asphalt CRS-2P	TON	\$ 613.48	2.20	\$ 1,350	
Cold Milling	SQYD	\$ 1.42	733.33	\$ 1,041	
Signs - Urban	MI	\$ 52,000.00	0.10	\$ 5,417	
Striping & Pavement Markings - Urban	MI	\$ 20,000.00	0.10	\$ 2,083	
Drainage Pipe - Rural	MI	\$ 82,000.00	0.10	\$ 8,542	
Temporary Erosion Control	MI	\$ 5,000.00	0.10	\$ 521	
Estimated Right-of-Way	ACRE	\$ -	0.00	\$ -	
Traffic Control			5%	\$ 5,689	
	<i>Subtotal 1</i>			\$ 119,464	
Mobilization			10%	\$ 11,946	
	<i>Subtotal 2</i>			\$ 131,411	
Contingencies			20%	\$ 26,282	
	<i>Subtotal 3</i>			\$ 157,693	
Mid-term Inflation		% PER YEAR	3%	10	\$ 54,233
	<i>Subtotal 4</i>			\$ 211,926	
Construction Engineering (CE)			10%	\$ 21,193	
	<i>Subtotal 5</i>			\$ 233,118	
Indirect Costs (IDC)			10.91%	\$ 25,433	
	Total			\$ 258,552	

9.0 MODIFY LANE MERGE (WEST OF CENTRAL AVE INTERCHANGE) \$ 20,000 TOT

LENGTH (MI)	500.0
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TYPE	UNITS	UNIT PRICE	QUANTITY	COST	
Signs - Urban	MILE	\$ 52,000.00	0.09	\$ 4,924	
Striping & Pavement Markings - Urban	MILE	\$ 20,000.00	0.09	\$ 1,894	
Traffic Control			5%	\$ 341	
	<i>Subtotal 1</i>			\$ 7,159	
Mobilization			10%	\$ 716	
	<i>Subtotal 2</i>			\$ 7,875	
Contingencies			20%	\$ 1,575	
	<i>Subtotal 3</i>			\$ 9,450	
Short-term Inflation		% PER YEAR	3%	5	\$ 1,505
	<i>Subtotal 4</i>			\$ 10,955	
Construction Engineering (CE)			10%	\$ 1,096	
	<i>Subtotal 5</i>			\$ 12,051	
Indirect Costs (IDC)			10.91%	\$ 1,315	
	Total			\$ 13,365	

10.0 FEASIBILITY ANALYSIS (EMERSON JUNCTION) \$ 250,000 TOT

	<i>Subtotal 1</i>				\$	180,000
Mid-term Inflation		% PER YEAR	3%	10	\$	61,905
	Total				\$	241,905

11.0 INTERSECTION IMPROVEMENTS (GORE HILL INTERCHANGE)

CONCEPT A - ROUNDABOUTS WITH INTERSECTIONS RELOCATED \$ 7,700,000 TOT

LENGTH (FT) 4000
 WIDTH (FT) 32
 SURFACING (IN) 5
 BASE (IN) 18

TYPE	UNITS	UNIT PRICE	QUANTITY	COST
Excavation-Unclassified	CUYD	\$ 4.35	33084.98	\$ 143,920
Excavation-Unclass Borrow	CUYD	\$ 5.09	99254.94	\$ 505,208
Special Borrow-Excavation	CUYD	\$ 8.05	1654.25	\$ 13,317
Topsoil-Salvaging and Placing	CUYD	\$ 4.06	6802.54	\$ 27,618
Crushed Aggregate Course	CUYD	\$ 21.69	10662.96	\$ 231,280
Cover - Type 1	SQYD	\$ 0.54	14223.00	\$ 7,680
Commercial Mix-PG 64-28	TON	\$ 144.22	4147.00	\$ 598,080
Emulsified Asphalt CRS-2P	TON	\$ 613.48	59.00	\$ 36,195
Cold Milling	SQYD	\$ 1.42	5333.33	\$ 7,573
Signs - Urban	MI	\$ 52,000.00	0.76	\$ 39,394
Striping & Pavement Markings - Urban	MI	\$ 20,000.00	0.76	\$ 15,152
Drainage Pipe - Urban	MI	\$ 240,000.00	0.76	\$ 181,818
Concrete Roundabout - One Lane	EA	\$ 750,000.00	2.00	\$ 1,500,000
Estimated Right-of-Way	ACRE	\$ 15,000.00	4.02	\$ 60,262
Traffic Control			5%	\$ 165,362
	<i>Subtotal 1</i>			\$ 3,532,858
Mobilization			10%	\$ 353,286
	<i>Subtotal 2</i>			\$ 3,886,144
Contingencies			20%	\$ 777,229
	<i>Subtotal 3</i>			\$ 4,663,373
Mid-term Inflation	% PER YEAR	3%	10	\$ 1,603,810
	<i>Subtotal 4</i>			\$ 6,267,184
Construction Engineering (CE)			10%	\$ 626,718
	<i>Subtotal 5</i>			\$ 6,893,902
Indirect Costs (IDC)			10.91%	\$ 752,125
	Total			\$ 7,646,027

CONCEPT B - FIVE-LEGGED ROUNDABOUTS \$ 7,600,000 TOT

LENGTH (FT) 3000
 WIDTH (FT) 32
 SURFACING (IN) 5
 BASE (IN) 18

TYPE	UNITS	UNIT PRICE	QUANTITY	COST
Excavation-Unclassified	CUYD	\$ 4.35	24813.73	\$ 107,940
Excavation-Unclass Borrow	CUYD	\$ 5.09	74441.19	\$ 378,906
Special Borrow-Excavation	CUYD	\$ 8.05	1240.69	\$ 9,988
Topsoil-Salvaging and Placing	CUYD	\$ 4.06	5101.91	\$ 20,714
Crushed Aggregate Course	CUYD	\$ 21.69	7997.22	\$ 173,460
Cover - Type 1	SQYD	\$ 0.54	10667.00	\$ 5,760
Commercial Mix-PG 64-28	TON	\$ 144.22	3110.25	\$ 448,560
Emulsified Asphalt CRS-2P	TON	\$ 613.48	19.10	\$ 11,717
Cold Milling	SQYD	\$ 1.42	4000.00	\$ 5,680
Signs - Urban	MI	\$ 52,000.00	0.57	\$ 29,545
Striping & Pavement Markings - Urban	MI	\$ 20,000.00	0.57	\$ 11,364
Drainage Pipe - Urban	MI	\$ 240,000.00	0.57	\$ 136,364
Concrete Roundabout - One Lane	EA	\$ 1,000,000.00	2.00	\$ 2,000,000
Estimated Right-of-Way	ACRE	\$ 15,000.00	0.10	\$ 1,500
Traffic Control			5%	\$ 167,000
	<i>Subtotal 1</i>			\$ 3,508,497
Mobilization			10%	\$ 350,850
	<i>Subtotal 2</i>			\$ 3,859,347
Contingencies			20%	\$ 771,869
	<i>Subtotal 3</i>			\$ 4,631,216
Mid-term Inflation	% PER YEAR	3%	10	\$ 1,592,751
	<i>Subtotal 4</i>			\$ 6,223,967
Construction Engineering (CE)			10%	\$ 622,397
	<i>Subtotal 5</i>			\$ 6,846,363
Indirect Costs (IDC)			10.91%	\$ 746,938
	Total			\$ 7,593,302

CONCEPT C - ROUNDABOUTS WITH INTERSECTIONS SHIFTED \$ 5,200,000 TOT

LENGTH (FT) 1750
 WIDTH (FT) 32
 SURFACING (IN) 5
 BASE (IN) 18

TYPE	UNITS	UNIT PRICE	QUANTITY	COST
Excavation-Unclassified	CUYD	\$ 4.35	14474.68	\$ 62,965
Excavation-Unclass Borrow	CUYD	\$ 5.09	43424.04	\$ 221,028
Special Borrow-Excavation	CUYD	\$ 8.05	723.73	\$ 5,826
Topsoil-Salvaging and Placing	CUYD	\$ 4.06	2976.11	\$ 12,083
Crushed Aggregate Course	CUYD	\$ 21.69	4665.05	\$ 101,185
Cover - Type 1	SQYD	\$ 0.54	6223.00	\$ 3,360
Commercial Mix-PG 64-28	TON	\$ 144.22	1814.31	\$ 261,660
Emulsified Asphalt CRS-2P	TON	\$ 613.48	11.20	\$ 6,871
Cold Milling	SQYD	\$ 1.42	2333.33	\$ 3,313
Signs - Urban	MI	\$ 52,000.00	0.33	\$ 17,235
Striping & Pavement Markings - Urban	MI	\$ 20,000.00	0.33	\$ 6,629
Drainage Pipe - Urban	MI	\$ 240,000.00	0.33	\$ 79,545
Concrete Roundabout - One Lane	EA	\$ 750,000.00	2.00	\$ 1,500,000
Estimated Right-of-Way	ACRE	\$ 15,000.00	0.10	\$ 1,500
Traffic Control			5%	\$ 114,085
				<i>Subtotal 1</i>
				\$ 2,397,286
Mobilization			10%	\$ 239,729
				<i>Subtotal 2</i>
				\$ 2,637,014
Contingencies			20%	\$ 527,403
				<i>Subtotal 3</i>
				\$ 3,164,417
Mid-term Inflation	% PER YEAR	3%	10	\$ 1,088,295
				<i>Subtotal 4</i>
				\$ 4,252,712
Construction Engineering (CE)			10%	\$ 425,271
				<i>Subtotal 5</i>
				\$ 4,677,984
Indirect Costs (IDC)			10.91%	\$ 510,368
				Total
				\$ 5,188,352

CONCEPT D - TRAFFIC SIGNALS WITHOUT REALIGNMENT \$ 5,200,000 \$ 6,700,000 TOT

Widen bridge New bridge

LENGTH (FT)	1500
WIDTH (FT)	32
SURFACING (IN)	5
BASE (IN)	18

TYPE	UNITS	UNIT PRICE	QUANTITY	COST
Excavation-Unclassified	CUYD	\$ 4.35	12406.87	\$ 53,970
Excavation-Unclass Borrow	CUYD	\$ 5.09	1240.69	\$ 6,315
Special Borrow-Excavation	CUYD	\$ 8.05	620.34	\$ 4,994
Topsoil-Salvaging and Placing	CUYD	\$ 4.06	2550.95	\$ 10,357
Crushed Aggregate Course	CUYD	\$ 21.69	5194.60	\$ 112,671
Cover - Type 1	SQYD	\$ 0.54	7726.00	\$ 4,172
Commercial Mix-PG 64-28	TON	\$ 144.22	2195.48	\$ 316,632
Emulsified Asphalt CRS-2P	TON	\$ 613.48	13.90	\$ 8,527
Cold Milling	SQYD	\$ 1.42	2000.00	\$ 2,840
Signs - Urban	MI	\$ 52,000.00	0.28	\$ 14,773
Striping & Pavement Markings - Urban	MI	\$ 20,000.00	0.28	\$ 5,682
Drainage Pipe - Urban	MI	\$ 240,000.00	0.28	\$ 68,182
Signals	EA	\$ 350,000.00	2.00	\$ 700,000
				<i>Road Construction Subtotal</i>
				\$ 1,309,114
New Bridge larger than 100 lineal feet	SQFT	\$ 114.00	13000.00	\$ 1,482,000
Remove large multiple span bridge	LS	\$ 132,000.00	1.00	\$ 132,000
Estimated Right-of-Way	ACRE	\$ 15,000.00	0.00	\$ -
Traffic Control			5%	\$ 146,156
				<i>Subtotal 1</i>
				\$ 3,069,270
Mobilization			10%	\$ 306,927
				<i>Subtotal 2</i>
				\$ 3,376,197
Contingencies			20%	\$ 675,239
				<i>Subtotal 3</i>
				\$ 4,051,437
Mid-term Inflation	% PER YEAR	3%	10	\$ 1,393,355
				<i>Subtotal 4</i>
				\$ 5,444,792
Construction Engineering (CE)			10%	\$ 544,479
				<i>Subtotal 5</i>
				\$ 5,989,271
Indirect Costs (IDC)			10.91%	\$ 653,429
				Total (new bridge)
				\$ 6,642,701
				<i>Road Construction Subtotal (from above)</i>
				\$ 1,309,114
Widen existing bridge	SQFT	\$ 150.00	6500.00	\$ 975,000
Estimated Right-of-Way	ACRE	\$ 15,000.00	0.00	\$ -
Traffic Control			5%	\$ 114,206
				<i>Subtotal 1</i>
				\$ 2,398,320
Mobilization			10%	\$ 239,832
				<i>Subtotal 2</i>
				\$ 2,638,152
Contingencies			20%	\$ 527,630
				<i>Subtotal 3</i>
				\$ 3,165,783
Mid-term Inflation	% PER YEAR	3%	10	\$ 1,088,764
				<i>Subtotal 4</i>
				\$ 4,254,547
Construction Engineering (CE)			10%	\$ 425,455
				<i>Subtotal 5</i>
				\$ 4,680,002
Indirect Costs (IDC)			10.91%	\$ 510,588
				Total (widen bridge)
				\$ 5,190,590

CONCEPT E - TRAFFIC SIGNALS WITH INTERSECTION RELOCATED		\$ 7,600,000		\$ 9,000,000 TOT	
		Widen bridge		New bridge	
		LENGTH (FT)	4500		
		WIDTH (FT)	32		
		SURFACING (IN)	5		
		BASE (IN)	18		
TYPE	UNITS	UNIT PRICE	QUANTITY	COST	
Excavation-Unclassified	CUYD	\$ 4.35	37220.00	\$	161,907
Excavation-Unclass Borrow	CUYD	\$ 5.09	3722.00	\$	18,945
Special Borrow-Excavation	CUYD	\$ 8.05	1861.00	\$	14,981
Topsoil-Salvaging and Placing	CUYD	\$ 4.06	7652.86	\$	31,071
Crushed Aggregate Course	CUYD	\$ 21.69	13191.82	\$	286,131
Cover - Type 1	SQYD	\$ 0.54	18932.00	\$	10,223
Commercial Mix-PG 64-28	TON	\$ 144.22	5305.73	\$	765,192
Emulsified Asphalt CRS-2P	TON	\$ 613.48	32.90	\$	20,183
Cold Milling	SQYD	\$ 1.42	6000.00	\$	8,520
Signs - Urban	MI	\$ 52,000.00	0.85	\$	44,318
Striping & Pavement Markings - Urban	MI	\$ 20,000.00	0.85	\$	17,045
Drainage Pipe - Urban	MI	\$ 240,000.00	0.85	\$	204,545
Signals	EA	\$ 350,000.00	2.00	\$	700,000
	<i>Road Construction Subtotal</i>			\$	2,283,062
New Bridge larger than 100 lineal feet	SQFT	\$ 114.00	13000.00	\$	1,482,000
Remove large multiple span bridge	LS	\$ 132,000.00	1.00	\$	132,000
Estimated Right-of-Way	ACRE	\$ 15,000.00	4.02	\$	60,262
Traffic Control			5%	\$	194,853
	<i>Subtotal 1</i>			\$	4,152,177
Mobilization			10%	\$	415,218
	<i>Subtotal 2</i>			\$	4,567,395
Contingencies			20%	\$	913,479
	<i>Subtotal 3</i>			\$	5,480,874
Mid-term Inflation	% PER YEAR	3%	10	\$	1,884,962
	<i>Subtotal 4</i>			\$	7,365,836
Construction Engineering (CE)			10%	\$	736,584
	<i>Subtotal 5</i>			\$	8,102,420
Indirect Costs (IDC)			10.91%	\$	883,974
	Total (new bridge)			\$	8,986,394
	<i>Road Construction Subtotal (from above)</i>			\$	2,283,062
Widen existing bridge	SQFT	\$ 150.00	6500.00	\$	975,000
Estimated Right-of-Way	ACRE	\$ 15,000.00	4.02	\$	60,262
Traffic Control			5%	\$	162,903
	<i>Subtotal 1</i>			\$	3,481,227
Mobilization			10%	\$	348,122.73
	<i>Subtotal 2</i>			\$	3,829,350
Contingencies			20%	\$	765,870
	<i>Subtotal 3</i>			\$	4,595,220
Mid-term Inflation	% PER YEAR	3%	10	\$	1,580,371
	<i>Subtotal 4</i>			\$	6,175,591
Construction Engineering (CE)			10%	\$	617,559
	<i>Subtotal 5</i>			\$	6,793,151
Indirect Costs (IDC)			10.91%	\$	741,133
	Total (widen bridge)			\$	7,534,283

12.0 INTERSECTION IMPROVEMENTS (CENTRAL AVE INTERCHANGE)

WITH TRAFFIC SIGNALS \$ 8,100,000 TOT

		LENGTH (FT)	2640		
		WIDTH (FT)	72		
		SURFACING (IN)	5		
TYPE	UNITS	UNIT PRICE	QUANTITY	COST	
Crushed Aggregate Course	CUYD	\$ 21.69	14294.64	\$	310,051
Cover - Type 1	SQYD	\$ 0.54	27416.00	\$	14,805
Commercial Mix-PG 64-28	TON	\$ 144.22	7339.48	\$	1,058,500
Emulsified Asphalt CRS-2P	TON	\$ 613.48	49.10	\$	30,122
Cold Milling	SQYD	\$ 1.42	3520.00	\$	4,998
Signs - Urban	MI	\$ 52,000.00	0.50	\$	26,000
Striping & Pavement Markings - Urban	MI	\$ 20,000.00	0.50	\$	10,000
Drainage Pipe - Urban	MI	\$ 240,000.00	0.50	\$	120,000
Signals	EA	\$ 350,000.00	3.00	\$	1,050,000
Estimated Right-of-Way	ACRE	\$ -	0.00	\$	-
Traffic Control			5%	\$	131,224
	<i>Subtotal 1</i>			\$	2,755,699

Mobilization				10%	\$	275,570
	<i>Subtotal 2</i>				\$	3,031,269
Contingencies				20%	\$	606,254
	<i>Subtotal 3</i>				\$	3,637,523
Long-term Inflation		% PER YEAR	3%	20	\$	2,932,248
	<i>Subtotal 4</i>				\$	6,569,771
Construction Engineering (CE)				10%	\$	656,977
	<i>Subtotal 5</i>				\$	7,226,748
Indirect Costs (IDC)				10.91%	\$	788,438
	Total				\$	8,015,186

WITH ROUNDABOUTS **\$ 10,600,000 TOT**

LENGTH (FT) 2640
WIDTH (FT) 72
SURFACING (IN) 5

TYPE	UNITS	UNIT PRICE	QUANTITY	COST	
Crushed Aggregate Course	CUYD	\$ 21.69	10706.67	\$ 232,228	
Cover - Type 1	SQYD	\$ 0.54	20240.00	\$ 10,930	
Commercial Mix-PG 64-28	TON	\$ 144.22	5418.42	\$ 781,445	
Emulsified Asphalt CRS-2P	TON	\$ 613.48	36.20	\$ 22,208	
Cold Milling	SQYD	\$ 1.42	3520.00	\$ 4,998	
Signs - Urban	MI	\$ 52,000.00	0.50	\$ 26,000	
Striping & Pavement Markings - Urban	MI	\$ 20,000.00	0.50	\$ 10,000	
Drainage Pipe - Urban	MI	\$ 240,000.00	0.50	\$ 120,000	
Concrete Roundabout - One Lane	EA	\$ 750,000.00	3.00	\$ 2,250,000	
Estimated Right-of-Way	ACRE	\$ -	0.00	\$ -	
Traffic Control			5%	\$ 172,890	
	<i>Subtotal 1</i>			\$ 3,630,699	
Mobilization			10%	\$ 363,070	
	<i>Subtotal 2</i>			\$ 3,993,768	
Contingencies			20%	\$ 798,754	
	<i>Subtotal 3</i>			\$ 4,792,522	
Long-term Inflation		% PER YEAR	3%	20	\$ 3,863,306
	<i>Subtotal 4</i>			\$ 8,655,828	
Construction Engineering (CE)			10%	\$ 865,583	
	<i>Subtotal 5</i>			\$ 9,521,411	
Indirect Costs (IDC)			10.91%	\$ 1,038,786	
	Total			\$ 10,560,197	

13.0 INTERSECTION IMPROVEMENTS (FOX FARM ROAD INTERSECTION) **\$ 30,000 TOT**

TYPE	UNITS	UNIT PRICE	QUANTITY	COST	
Remove Median Curb	LNFT	\$ 3.08	1000.00	\$ 3,080	
Remove Concrete	SQYD	\$ 3.84	500.00	\$ 1,920	
Sig-Traf 3 Col-1 Way 12-12-12	EACH	\$ 820.14	1.00	\$ 820	
Sig-Standard Type 2-A-900-0	EACH	\$ 1,250.00	1.00	\$ 1,250	
Remove and Reset Existing Pole	EACH	\$ 350.00	1.00	\$ 350	
Striping & Pavement Markings - Urban	MI	\$ 20,000.00	0.14	\$ 2,841	
Estimated Right-of-Way	ACRE	\$ -	0.00	\$ -	
Traffic Control			5%	\$ 513	
	<i>Subtotal 1</i>			\$ 10,774	
Mobilization			10%	\$ 1,077	
	<i>Subtotal 2</i>			\$ 11,852	
Contingencies			20%	\$ 2,370	
	<i>Subtotal 3</i>			\$ 14,222	
Short-term Inflation		% PER YEAR	3%	5	\$ 2,265
	<i>Subtotal 4</i>			\$ 16,487	
Construction Engineering (CE)			10%	\$ 1,649	
	<i>Subtotal 5</i>			\$ 18,136	
Indirect Costs (IDC)			10.91%	\$ 1,979	
	Total			\$ 20,114	