

# PROJECT UNIT COST ANALYSIS

## ESTIMATE OF QUANTITIES

PROJECT ID 2570-04-90

N. PORT WASHINGTON AV. - N. DR. MLK JR. DR. TO NORTH CITY LIMITS

LOCAL STREET

MILWAUKEE COUNTY

Item No.	Std. Bid Item No.	Description	Unit	Quantity	Excluded Costs	City Unit	City Total
71033	SPV.0060.001	Opticom 711 Detector w/ Selector Card	Each	1	\$ 2,160.25	\$ 2,586.10	\$ 2,586.10
71034	SPV.0060.002	Opticom 721 Detector w/ Selector Card	Each	2	\$ 4,430.50	\$ 2,646.67	\$ 5,293.34
71035	SPV.0060.003	Opticom Flood Lights	Each	5	\$ 208.15	\$ 213.57	\$ 1,067.84
71037	SPV.0105.001	Wireless Radio Interconnect Unit	LS	1	\$ 2,795.00	\$ 3,905.60	\$ 3,905.60
71052	SPV.0060.004	Solid State Controller Installed	Each	1	\$ 9,495.07	\$ 13,584.54	\$ 13,584.54
71055	658.0225	Backplates Signal Face 5 Section 12-inch	Each	1	\$ 55.00	\$ 86.42	\$ 86.42
71057	658.0215	Backplates Signal Face 3 Section 12-inch	Each	1	\$ 36.00	\$ 65.49	\$ 65.49
71060	658.0120	Traffic Signal Face 5-12 Inch Vertical	Each	4	\$ 1,976.36	\$ 944.53	\$ 3,778.10
71062	658.0110	Traffic Signal Face 3-12 Inch Vertical	Each	12	\$ 3,946.68	\$ 562.41	\$ 6,748.87
71066LC	658.0412	Pedestrian Signal Face 12-Inch	Each	6	\$ 927.54	\$ 322.05	\$ 1,932.29
71067	SPV.0060.005	Pedestrian Countdown Signal Face 12-Inch	Each	6	\$ 913.38	\$ 319.45	\$ 1,916.70
71081	SPV.0060.006	PV Traffic Signal Face 3-12 Inch (312M)	Each	3	\$ 3,123.99	\$ 1,447.17	\$ 4,341.52
71142	652.0605	Conduit Special 2-Inch	LF	105	\$ 6.30	\$ 7.66	\$ 804.48
71154	SPV.0090.001	Opticom Cable	LF	505	\$ 207.05	\$ 3.16	\$ 1,597.49
71161	SPV.0090.002	Cable Service 3 #4/1 #8 LTP	LF	235	\$ 613.35	\$ 5.07	\$ 1,191.54
71171	655.0260	Cable Traffic Signal 12-14 AWG	LF	65	\$ 63.05	\$ 3.79	\$ 246.17
71172	SPV.0090.003	Cable Traffic Signal 17-14 AWG	LF	765	\$ 1,132.20	\$ 4.34	\$ 3,321.25
71173	SPV.0090.004	Cable Traffic Signal 20-14 AWG	LF	560	\$ 795.20	\$ 4.27	\$ 2,393.83
71175	674.0400	Reinstall Cable	LF	870	\$ -	\$ 2.71	\$ 2,358.33
71177	SPV.0060.007	Install Secondary Riser	Each	1	\$ 6.50	\$ 110.56	\$ 110.56
71190	SPV.0060.008	Mast Arm Fabricated	Each	3	\$ 177.15	\$ 1,589.80	\$ 4,769.41
71191	SPV.0060.009	Mast Arm Pole	Each	3	\$ 4,881.33	\$ 2,324.96	\$ 6,974.87
71197	SPV.0060.010	Signal Standard 13'	Each	6	\$ 4,059.18	\$ 1,197.16	\$ 7,182.98
71198	SPV.0060.011	Signal Standard 1' Extension	Each	6	\$ 284.22	\$ 103.87	\$ 623.24
71199	SPV.0060.012	Signal Standard 2' Extension	Each	1	\$ 85.97	\$ 146.41	\$ 146.41
73294	SPV.0060.013	Socket 3' RSP	Each	49	\$ 1,318.59	\$ 49.37	\$ 2,419.09
73296	SPV.0060.014	Pipe 2"x9'6"	Each	42	\$ 1,294.44	\$ 37.89	\$ 1,591.43
73298	SPV.0060.015	Pipe 2"x11'0"	Each	7	\$ 138.18	\$ 25.69	\$ 179.83
73299	637.0202	Signs Reflective Type II	SF	405	\$ 2,474.55	\$ 13.58	\$ 5,500.48

**TOTAL CITY COST \$ 86,718.20**  
**TOTAL EXCLUDED COSTS \$ 47,605.18**

APPROVED BY:

ROBERT W. BRYSON  
CHIEF TRAFFIC AND LIGHTING ENGINEER

TRANSPORTATION SECTION  
TRAFFIC AND LIGHTING DESIGN UNIT  
JOSEPH C. BLAKEMAN  
REVISED: OCTOBER 21, 2011

\* Please note that the Total City Cost includes the embedded costs of mobilization, traffic control, mounting hardware, equipment removal, and construction staking electrical installations which are included in the times used for calculating City Unit Costs on the attached worksheets.

Project ID: 2570-04-90						
Highway: N. Port Washington Av. - N. Dr. MLK Jr. Dr. to North City Limits						
County: Milwaukee						
Item Number: 71033						
Item: Opticom 711 Detector w/ Selector Card						
Quantity: 1						
Unit: Each						
Machinery Charges:	No. of Units	Class	Equipment	Total Hours	Hourly Rate	Total
	1		Aerial/Boom Truck	2	\$6.63	\$13.26
	Total Machinery Charges					\$13.26
Labor Costs:	Position			Total Hours	Hourly Rate	Total
	Electrical Worker			2	\$20.45	\$40.90
	Electrician			2	\$31.05	\$62.10
	Sub-Total Labor Cost					\$103.00
	Fringe Benefit Rate @ 87.90%					\$90.54
	Total Labor Cost					\$193.54
Material Costs:	Item			Amount	Price	Total
	Opticom 711 Detector w/ Selector Card			1	\$2,160.25	\$2,160.25
	Sub-Total Material Cost					\$2,160.25
	Indirect Cost Factor @ 10.14%					\$219.05
	Total Material Cost					\$2,379.30
	TOTAL COST					\$2,586.10
	Total Cost Per Unit					\$2,586.10
Total Excluded Cost					\$2,160.25	

Project ID: 2570-04-90						
Highway: N. Port Washington Av. - N. Dr. MLK Jr. Dr. to North City Limits						
County: Milwaukee						
Item Number: 71034						
Item: Opticom 721 Detector w/ Selector Card						
Quantity: 2						
Unit: Each						
Machinery Charges:	No. of Units	Class	Equipment	Total Hours	Hourly Rate	Total
	1		Aerial/Boom Truck	4	\$6.63	\$26.52
	Total Machinery Charges					\$26.52
Labor Costs:	Position			Total Hours	Hourly Rate	Total
	Electrical Worker			4	\$20.45	\$81.80
	Electrician			4	\$31.05	\$124.20
	Sub-Total Labor Cost					\$206.00
	Fringe Benefit Rate @ 87.90%					\$181.07
	Total Labor Cost					\$387.07
Material Costs:	Item			Amount	Price	Total
	Opticom 721 Detector w/ Selector Card			2	\$2,215.25	\$4,430.50
	Sub-Total Material Cost					\$4,430.50
	Indirect Cost Factor @ 10.14%					\$449.25
	Total Material Cost					\$4,879.75
	TOTAL COST					\$5,293.34
Total Cost Per Unit					\$2,646.67	
Total Excluded Cost					\$4,430.50	

Project ID: 2570-04-90						
Highway: N. Port Washington Av. - N. Dr. MLK Jr. Dr. to North City Limits						
County: Milwaukee						
Item Number: 71035						
Item: Opticom Flood Lights						
Quantity: 5						
Unit: Each						
Machinery Charges:	No. of Units	Class	Equipment	Total Hours	Hourly Rate	Total
	1		Aerial/Boom Truck	5	\$6.63	\$33.15
Total Machinery Charges						\$33.15
Labor Costs:	Position			Total Hours	Hourly Rate	Total
	Electrical Worker			5	\$20.45	\$102.25
Electrician			5	\$31.05	\$155.25	
Electrical Services Welder			7.5	\$22.82	\$171.15	
				Sub-Total Labor Cost		\$428.65
				Fringe Benefit Rate @ 87.90%		\$376.78
				Total Labor Cost		\$805.43
Material Costs:	Item			Amount	Price	Total
	Opticom Flood Lights			5	\$41.63	\$208.15
				Sub-Total Material Cost		\$208.15
				Indirect Cost Factor @ 10.14%		\$21.11
				Total Material Cost		\$229.26
				TOTAL COST		\$1,067.84
				Total Cost Per Unit		\$213.57
				Total Excluded Cost		\$208.15

Project ID: 2570-04-90						
Highway: N. Port Washington Av. - N. Dr. MLK Jr. Dr. to North City Limits						
County: Milwaukee						
Item Number: 71037						
Item: Wireless Radio Interconnect Unit						
Quantity: 1						
Unit: LS						
Machinery Charges:	No. of Units	Class	Equipment	Total Hours	Hourly Rate	Total
	1		Aerial/Boom Truck	8	\$6.63	\$53.04
Total Machinery Charges						\$53.04
Labor Costs:	Position			Total Hours	Hourly Rate	Total
	Electrical Worker			8	\$20.45	\$163.60
	Electrician			8	\$31.05	\$248.40
	Sub-Total Labor Cost					\$412.00
	Fringe Benefit Rate @ 87.90%					\$362.15
	Total Labor Cost					\$774.15
Material Costs:	Item			Amount	Price	Total
	Wireless Radio Interconnect Unit			1	\$2,795.00	\$2,795.00
	Sub-Total Material Cost					\$2,795.00
	Indirect Cost Factor @ 10.14%					\$283.41
	Total Material Cost					\$3,078.41
	TOTAL COST					\$3,905.60
	Total Cost Per Unit					\$3,905.60
Total Excluded Cost					\$2,795.00	

Project ID: 2570-04-90						
Highway: N. Port Washington Av. - N. Dr. MLK Jr. Dr. to North City Limits						
County: Milwaukee						
Item Number: 71052						
Item: Solid State Controller Installed						
Quantity: 1						
Unit: Each						
Machinery Charges:	No. of Units	Class	Equipment	Total Hours	Hourly Rate	Total
	1	Van		8	\$2.35	\$18.80
Total Machinery Charges						\$18.80
Labor Costs:	Position			Total Hours	Hourly Rate	Total
	Electrical Worker			8	\$20.45	\$163.60
Electrician			48	\$31.05	\$1,490.40	
Sub-Total Labor Cost						\$1,654.00
Fringe Benefit Rate @ 87.90%						\$1,453.87
Total Labor Cost						\$3,107.87
Material Costs:	Item			Amount	Price	Total
	Solid State Controller Installed			1	\$9,495.07	\$9,495.07
Sub-Total Material Cost						\$9,495.07
Indirect Cost Factor @ 10.14%						\$962.80
Total Material Cost						\$10,457.87
TOTAL COST						\$13,584.54
Total Cost Per Unit						\$13,584.54
Total Excluded Cost						\$9,495.07

Project ID:		2570-04-90				
Highway:		N. Port Washington Av. - N. Dr. MLK Jr. Dr. to North City Limits				
County:		Milwaukee				
Item Number:		71055				
Item:		Backplates Signal Face 5 Section 12-inch				
Quantity:		1				
Unit:		Each				
Machinery Charges:	No. of Units	Class	Equipment	Total Hours	Hourly Rate	Total
	1		Aerial/Boom Truck	0.25	\$6.63	\$1.66
	Total Machinery Charges					\$1.66
Labor Costs:	Position			Total Hours	Hourly Rate	Total
	Electrical Worker			0.25	\$20.45	\$5.11
	Electrician			0.25	\$31.05	\$7.76
	Sub-Total Labor Cost					\$12.87
	Fringe Benefit Rate @ 87.90%					\$11.31
	Total Labor Cost					\$24.18
Material Costs:	Item			Amount	Price	Total
	Backplates Signal Face 5 Section 12-inch			1	\$55.00	\$55.00
	Sub-Total Material Cost					\$55.00
	Indirect Cost Factor @ 10.14%					\$5.58
	Total Material Cost					\$60.58
	TOTAL COST					\$86.42
Total Cost Per Unit					\$86.42	
Total Excluded Cost					\$55.00	

Project ID: 2570-04-90						
Highway: N. Port Washington Av. - N. Dr. MLK Jr. Dr. to North City Limits						
County: Milwaukee						
Item Number: 71057						
Item: Backplates Signal Face 3 Section 12-inch						
Quantity: 1						
Unit: Each						
Machinery Charges:	No. of Units	Class	Equipment	Total Hours	Hourly Rate	Total
	1		Aerial/Boom Truck	0.25	\$6.63	\$1.66
	Total Machinery Charges					\$1.66
Labor Costs:	Position			Total Hours	Hourly Rate	Total
	Electrical Worker			0.25	\$20.45	\$5.11
	Electrician			0.25	\$31.05	\$7.76
	Sub-Total Labor Cost					\$12.87
	Fringe Benefit Rate @ 87.90%					\$11.31
	Total Labor Cost					\$24.18
Material Costs:	Item		Amount	Price	Total	
	Backplates Signal Face 3 Section 12-inch		1	\$36.00	\$36.00	
	Sub-Total Material Cost				\$36.00	
	Indirect Cost Factor @ 10.14%				\$3.65	
	Total Material Cost				\$39.65	
	TOTAL COST				\$65.49	
	Total Cost Per Unit				\$65.49	
Total Excluded Cost				\$36.00		

Project ID: 2570-04-90						
Highway: N. Port Washington Av. - N. Dr. MLK Jr. Dr. to North City Limits						
County: Milwaukee						
Item Number: 71060						
Item: Traffic Signal Face 5-12 Inch Vertical						
Quantity: 4						
Unit: Each						
Machinery Charges:	No. of Units	Class	Equipment	Total Hours	Hourly Rate	Total
	1		Aerial/Boom Truck	8	\$6.63	\$53.04
	Total Machinery Charges					\$53.04
Labor Costs:	Position			Total Hours	Hourly Rate	Total
	Electrical Worker			16	\$20.45	\$327.20
	Electrician			16	\$31.05	\$496.80
	Sub-Total Labor Cost					\$824.00
	Fringe Benefit Rate @ 87.90%					\$724.30
	Total Labor Cost					\$1,548.30
Material Costs:	Item			Amount	Price	Total
	Traffic Signal Face 5-12 Inch Vertical			4	\$494.09	\$1,976.36
	Sub-Total Material Cost					\$1,976.36
	Indirect Cost Factor @ 10.14%					\$200.40
	Total Material Cost					\$2,176.76
	TOTAL COST					\$3,778.10
	Total Cost Per Unit					\$944.53
Total Excluded Cost					\$1,976.36	

Project ID: 2570-04-90						
Highway: N. Port Washington Av. - N. Dr. MLK Jr. Dr. to North City Limits						
County: Milwaukee						
Item Number: 71062						
Item: Traffic Signal Face 3-12 Inch Vertical						
Quantity: 12						
Unit: Each						
Machinery Charges:	No. of Units	Class	Equipment	Total Hours	Hourly Rate	Total
	1		Aerial/Boom Truck	12	\$6.63	\$79.56
Total Machinery Charges						\$79.56
Labor Costs:	Position			Total Hours	Hourly Rate	Total
	Electrical Worker			24	\$20.45	\$490.80
Electrician			24	\$31.05	\$745.20	
Sub-Total Labor Cost						\$1,236.00
Fringe Benefit Rate @ 87.90%						\$1,086.44
Total Labor Cost						\$2,322.44
Material Costs:	Item			Amount	Price	Total
	Traffic Signal Face 3-12 Inch Vertical			12	\$328.89	\$3,946.68
Sub-Total Material Cost						\$3,946.68
Indirect Cost Factor @ 10.14%						\$400.19
Total Material Cost						\$4,346.87
TOTAL COST						\$6,748.87
Total Cost Per Unit						\$562.41
Total Excluded Cost						\$3,946.68

Project ID: 2570-04-90						
Highway: N. Port Washington Av. - N. Dr. MLK Jr. Dr. to North City Limits						
County: Milwaukee						
Item Number: 71066LC						
Item: Pedestrian Signal Face 12-Inch						
Quantity: 6						
Unit: Each						
Machinery Charges:	No. of Units	Class	Equipment	Total Hours	Hourly Rate	Total
	1		Aerial/Boom Truck	6	\$6.63	\$39.78
	Total Machinery Charges					\$39.78
Labor Costs:	Position			Total Hours	Hourly Rate	Total
	Electrical Worker			9	\$20.45	\$184.05
	Electrician			9	\$31.05	\$279.45
	Sub-Total Labor Cost					\$463.50
	Fringe Benefit Rate @ 87.90%					\$407.42
	Total Labor Cost					\$870.92
Material Costs:	Item			Amount	Price	Total
	Pedestrian Signal Face 12-Inch			6	\$154.59	\$927.54
	Sub-Total Material Cost					\$927.54
	Indirect Cost Factor @ 10.14%					\$94.05
	Total Material Cost					\$1,021.59
	TOTAL COST					\$1,932.29
	Total Cost Per Unit					\$322.05
Total Excluded Cost					\$927.54	

Project ID: 2570-04-90						
Highway: N. Port Washington Av. - N. Dr. MLK Jr. Dr. to North City Limits						
County: Milwaukee						
Item Number: 71067						
Item: Pedestrian Countdown Signal Face 12-Inch						
Quantity: 6						
Unit: Each						
Machinery Charges:	No. of Units	Class	Equipment	Total Hours	Hourly Rate	Total
	1		Aerial/Boom Truck	6	\$6.63	\$39.78
	Total Machinery Charges					\$39.78
Labor Costs:	Position			Total Hours	Hourly Rate	Total
	Electrical Worker			9	\$20.45	\$184.05
	Electrician			9	\$31.05	\$279.45
	Sub-Total Labor Cost					\$463.50
	Fringe Benefit Rate @ 87.90%					\$407.42
	Total Labor Cost					\$870.92
Material Costs:	Item			Amount	Price	Total
	Pedestrian Countdown Signal Face 12-Inch			6	\$152.23	\$913.38
	Sub-Total Material Cost					\$913.38
	Indirect Cost Factor @ 10.14%					\$92.62
	Total Material Cost					\$1,006.00
	TOTAL COST					\$1,916.70
	Total Cost Per Unit					\$319.45
Total Excluded Cost					\$913.38	

Project ID: 2570-04-90						
Highway: N. Port Washington Av. - N. Dr. MLK Jr. Dr. to North City Limits						
County: Milwaukee						
Item Number: 71081						
Item: PV Traffic Signal Face 3-12 Inch (312M)						
Quantity: 3						
Unit: Each						
Machinery Charges:	No. of Units	Class	Equipment	Total Hours	Hourly Rate	Total
	1		Aerial/Boom Truck	4.5	\$6.63	\$29.84
Total Machinery Charges						\$29.84
Labor Costs:	Position			Total Hours	Hourly Rate	Total
	Electrical Worker			9	\$20.45	\$184.05
Electrician			9	\$31.05	\$279.45	
Sub-Total Labor Cost						\$463.50
Fringe Benefit Rate @ 87.90%						\$407.42
Total Labor Cost						\$870.92
Material Costs:	Item			Amount	Price	Total
	PV Traffic Signal Face 3-12 Inch (312M)			3	\$1,041.33	\$3,123.99
Sub-Total Material Cost						\$3,123.99
Indirect Cost Factor @ 10.14%						\$316.77
Total Material Cost						\$3,440.76
TOTAL COST						\$4,341.52
Total Cost Per Unit						\$1,447.17
Total Excluded Cost						\$3,123.99

Project ID: 2570-04-90						
Highway: N. Port Washington Av. - N. Dr. MLK Jr. Dr. to North City Limits						
County: Milwaukee						
Item Number: 71142						
Item: Conduit Special 2-Inch						
Quantity: 105						
Unit: LF						
<b>Machinery Charges:</b>	No. of Units	Class	Equipment	Total Hours	Hourly Rate	Total
	1		Construction Equip. - Large	9.77	\$7.85	\$76.69
	1		Dump Truck	9.77	\$3.63	\$35.47
	1		Compressor	9.77	\$1.04	\$10.16
	<b>Total Machinery Charges</b>					<b>\$122.32</b>
<b>Labor Costs:</b>	Position			Total Hours	Hourly Rate	Total
	Laborer Electrical Services (2)			19.53	\$18.40	\$359.35
	Sub-Total Labor Cost					\$359.35
	Fringe Benefit Rate @ 87.90%					\$315.87
	<b>Total Labor Cost</b>					<b>\$675.22</b>
<b>Material Costs:</b>	Item		Amount	Price	Total	
	Conduit Special 2-Inch		105	\$0.06	\$6.30	
	Sub-Total Material Cost					\$6.30
	Indirect Cost Factor @ 10.14%					\$0.64
	<b>Total Material Cost</b>					<b>\$6.94</b>
	<b>TOTAL COST</b>					<b>\$804.48</b>
	<b>Total Cost Per Unit</b>					<b>\$7.66</b>
	<b>Total Excluded Cost</b>					<b>\$6.30</b>

Project ID: 2570-04-90						
Highway: N. Port Washington Av. - N. Dr. MLK Jr. Dr. to North City Limits						
County: Milwaukee						
Item Number: 71154						
Item: Opticom Cable						
Quantity: 505						
Unit: LF						
<b>Machinery Charges:</b>	No. of Units	Class	Equipment	Total Hours	Hourly Rate	Total
	1		Construction Equip. - Large	12.63	\$7.85	\$99.15
	1		Dump Truck	12.63	\$3.63	\$45.85
	1		Trailer	12.63	\$0.18	\$2.27
	<b>Total Machinery Charges</b>					<b>\$147.27</b>
<b>Labor Costs:</b>	Position			Total Hours	Hourly Rate	Total
	Electrical Worker			12.63	\$20.45	\$258.28
	Electrician			12.63	\$31.05	\$392.16
	Sub-Total Labor Cost					\$650.44
	Fringe Benefit Rate @ 87.90%					\$571.74
	<b>Total Labor Cost</b>					<b>\$1,222.18</b>
<b>Material Costs:</b>	Item		Amount	Price	Total	
	Opticom Cable		505	\$0.41	\$207.05	
	Sub-Total Material Cost					\$207.05
	Indirect Cost Factor @ 10.14%					\$20.99
	<b>Total Material Cost</b>					<b>\$228.04</b>
	<b>TOTAL COST</b>					<b>\$1,597.49</b>
	<b>Total Cost Per Unit</b>					<b>\$3.16</b>
	<b>Total Excluded Cost</b>					<b>\$207.05</b>



Item Number: 71161						
Item: Cable Service 3 #4/1 #8 LTP						
Quantity: 235						
Unit: LF						
Machinery Charges:	No. of Units	Class	Equipment	Total Hours	Hourly Rate	Total
	1		Construction Equip. - Large	2.12	\$7.85	\$16.64
	1		Dump Truck	2.12	\$3.63	\$7.70
Total Machinery Charges						\$24.34
Labor Costs:	Position			Total Hours	Hourly Rate	Total
	Laborer Electrical Services			2.12	\$18.40	\$39.01
	City Laborer (3)			6.35	\$17.87	\$113.47
	Electrical Worker			2.12	\$20.45	\$43.35
	Electrician			2.12	\$31.05	\$65.83
	Sub-Total Labor Cost					\$261.66
	Fringe Benefit Rate @ 87.90%					\$230.00
Total Labor Cost						\$491.66
Material Costs:	Item			Amount	Price	Total
	Cable Service 3 #4/1 #8 LTP			235	\$2.61	\$613.35
	Sub-Total Material Cost					\$613.35
	Indirect Cost Factor @ 10.14%					\$62.19
	Total Material Cost					\$675.54
	TOTAL COST					\$1,191.54
	Total Cost Per Unit					\$5.07
Total Excluded Cost					\$613.35	

Project ID: 2570-04-90						
Highway: N. Port Washington Av. - N. Dr. MLK Jr. Dr. to North City Limits						
County: Milwaukee						
Item Number: 71171						
Item: Cable Traffic Signal 12-14 AWG						
Quantity: 65						
Unit: LF						
Machinery Charges:	No. of Units	Class	Equipment	Total Hours	Hourly Rate	Total
	1		Construction Equip. - Large	1.63	\$7.85	\$12.80
	1		Dump Truck	1.63	\$3.63	\$5.92
	1		Trailer	1.63	\$0.18	\$0.29
	Total Machinery Charges					\$19.01
Labor Costs:	Position			Total Hours	Hourly Rate	Total
	Electrical Worker			1.63	\$20.45	\$33.33
	Electrician			1.63	\$31.05	\$50.61
					Sub-Total Labor Cost	\$83.94
					Fringe Benefit Rate @ 87.90%	\$73.78
					Total Labor Cost	\$157.72
Material Costs:	Item			Amount	Price	Total
	Cable Traffic Signal 12-14 AWG			65	\$0.97	\$63.05
					Sub-Total Material Cost	\$63.05
					Indirect Cost Factor @ 10.14%	\$6.39
					Total Material Cost	\$69.44
					TOTAL COST	\$246.17
					Total Cost Per Unit	\$3.79
					Total Excluded Cost	\$63.05

Project ID: 2570-04-90						
Highway: N. Port Washington Av. - N. Dr. MLK Jr. Dr. to North City Limits						
County: Milwaukee						
Item Number: 71172						
Item: Cable Traffic Signal 17-14 AWG						
Quantity: 765						
Unit: LF						
Machinery Charges:	No. of Units	Class	Equipment	Total Hours	Hourly Rate	Total
	1		Construction Equip. - Large	19.13	\$7.85	\$150.17
	1		Dump Truck	19.13	\$3.63	\$69.44
	1		Trailer	19.13	\$0.18	\$3.44
	Total Machinery Charges					\$223.05
Labor Costs:	Position			Total Hours	Hourly Rate	Total
	Electrical Worker			19.13	\$20.45	\$391.21
	Electrician			19.13	\$31.05	\$593.99
					Sub-Total Labor Cost	\$985.20
					Fringe Benefit Rate @ 87.90%	\$865.99
					Total Labor Cost	\$1,851.19
Material Costs:	Item			Amount	Price	Total
	Cable Traffic Signal 17-14 AWG			765	\$1.48	\$1,132.20
					Sub-Total Material Cost	\$1,132.20
					Indirect Cost Factor @ 10.14%	\$114.81
					Total Material Cost	\$1,247.01
					TOTAL COST	\$3,321.25
					Total Cost Per Unit	\$4.34
					Total Excluded Cost	\$1,132.20

Project ID: 2570-04-90						
Highway: N. Port Washington Av. - N. Dr. MLK Jr. Dr. to North City Limits						
County: Milwaukee						
Item Number: 71173						
Item: Cable Traffic Signal 20-14 AWG						
Quantity: 560						
Unit: LF						
Machinery Charges:	No. of Units	Class	Equipment	Total Hours	Hourly Rate	Total
	1		Construction Equip. - Large	14	\$7.85	\$109.90
	1		Dump Truck	14	\$3.63	\$50.82
	1		Trailer	14	\$0.18	\$2.52
Total Machinery Charges						\$163.24
Labor Costs:	Position			Total Hours	Hourly Rate	Total
	Electrical Worker			14	\$20.45	\$286.30
	Electrician			14	\$31.05	\$434.70
Sub-Total Labor Cost						\$721.00
Fringe Benefit Rate @ 87.90%						\$633.76
Total Labor Cost						\$1,354.76
Material Costs:	Item			Amount	Price	Total
	Cable Traffic Signal 20-14 AWG			560	\$1.42	\$795.20
Sub-Total Material Cost						\$795.20
Indirect Cost Factor @ 10.14%						\$80.63
Total Material Cost						\$875.83
TOTAL COST						\$2,393.83
Total Cost Per Unit						\$4.27
Total Excluded Cost						\$795.20

Project ID: 2570-04-90						
Highway: N. Port Washington Av. - N. Dr. MLK Jr. Dr. to North City Limits						
County: Milwaukee						
Item Number: 71175						
Item: Reinstall Cable						
Quantity: 870						
Unit: LF						
Machinery Charges:	No. of Units	Class	Equipment	Total Hours	Hourly Rate	Total
	1		Construction Equip. - Large	21.75	\$7.85	\$170.74
	1		Dump Truck	21.75	\$3.63	\$78.95
	1		Trailer	21.75	\$0.18	\$3.92
	Total Machinery Charges					\$253.61
Labor Costs:	Position			Total Hours	Hourly Rate	Total
	Electrical Worker			21.75	\$20.45	\$444.79
	Electrician			21.75	\$31.05	\$675.34
	Sub-Total Labor Cost					\$1,120.13
	Fringe Benefit Rate @ 87.90%					\$984.59
Total Labor Cost					\$2,104.72	
Material Costs:	Item	Amount	Price	Total		
	Reinstall Cable	870	\$0.00	\$0.00		
	Sub-Total Material Cost				\$0.00	
	Indirect Cost Factor @ 10.14%				\$0.00	
	Total Material Cost				\$0.00	
TOTAL COST					\$2,358.33	
Total Cost Per Unit					\$2.71	
Total Excluded Cost					\$0.00	

Project ID: 2570-04-90						
Highway: N. Port Washington Av. - N. Dr. MLK Jr. Dr. to North City Limits						
County: Milwaukee						
Item Number: 71177						
Item: Install Secondary Riser						
Quantity: 1						
Unit: Each						
Machinery Charges:	No. of Units	Class	Equipment	Total Hours	Hourly Rate	Total
	1		Aerial/Boom Truck	1	\$6.63	\$6.63
	Total Machinery Charges					\$6.63
Labor Costs:	Position			Total Hours	Hourly Rate	Total
	Electrical Worker			1	\$20.45	\$20.45
	Electrician			1	\$31.05	\$31.05
	Sub-Total Labor Cost					\$51.50
	Fringe Benefit Rate @ 87.90%					\$45.27
	Total Labor Cost					\$96.77
Material Costs:	Item		Amount	Price	Total	
	Install Secondary Riser		1	\$6.50	\$6.50	
	Sub-Total Material Cost				\$6.50	
	Indirect Cost Factor @ 10.14%				\$0.66	
	Total Material Cost				\$7.16	
	TOTAL COST				\$110.56	
Total Cost Per Unit				\$110.56		
Total Excluded Cost				\$6.50		

Project ID: 2570-04-90						
Highway: N. Port Washington Av. - N. Dr. MLK Jr. Dr. to North City Limits						
County: Milwaukee						
Item Number: 71190						
Item: Mast Arm Fabricated						
Quantity: 3						
Unit: Each						
Machinery Charges:	No. of Units	Class	Equipment	Total Hours	Hourly Rate	Total
	1		Aerial/Boom Truck	3	\$6.63	\$19.89
	Total Machinery Charges					\$19.89
Labor Costs:	Position			Total Hours	Hourly Rate	Total
	Electrical Worker			3	\$20.45	\$61.35
	Electrician			3	\$31.05	\$93.15
	Machinist			45	\$25.19	\$1,133.55
	Blacksmith			45	\$25.24	\$1,135.80
	Sub-Total Labor Cost					\$2,423.85
	Fringe Benefit Rate @ 87.90%					\$2,130.56
	Total Labor Cost					\$4,554.41
Material Costs:	Item		Amount	Price	Total	
	Mast Arm Fabricated		3	\$59.05	\$177.15	
	Sub-Total Material Cost					\$177.15
	Indirect Cost Factor @ 10.14%					\$17.96
	Total Material Cost					\$195.11
	TOTAL COST					\$4,769.41
	Total Cost Per Unit					\$1,589.80
Total Excluded Cost					\$177.15	

Project ID: 2570-04-90						
Highway: N. Port Washington Av. - N. Dr. MLK Jr. Dr. to North City Limits						
County: Milwaukee						
Item Number: 71191						
Item: Mast Arm Pole						
Quantity: 3						
Unit: Each						
Machinery Charges:	No. of Units	Class	Equipment	Total Hours	Hourly Rate	Total
	1		Aerial/Boom Truck	9	\$6.63	\$59.67
	Total Machinery Charges					\$59.67
Labor Costs:	Position			Total Hours	Hourly Rate	Total
	Electrical Worker			9	\$20.45	\$184.05
	Electrician			9	\$31.05	\$279.45
	Special Laborer Electrical Services			9	\$19.75	\$177.75
	Special Laborer Electrical Services			9	\$19.75	\$177.75
	Sub-Total Labor Cost					\$819.00
	Fringe Benefit Rate @ 87.90%					\$719.90
Total Labor Cost					\$1,538.90	
Material Costs:	Item		Amount	Price	Total	
	Mast Arm Pole		3	\$1,627.11	\$4,881.33	
	Sub-Total Material Cost				\$4,881.33	
	Indirect Cost Factor @ 10.14%				\$494.97	
	Total Material Cost				\$5,376.30	
	TOTAL COST				\$6,974.87	
	Total Cost Per Unit				\$2,324.96	
Total Excluded Cost				\$4,881.33		

Project ID:	2570-04-90					
Highway:	N. Port Washington Av. - N. Dr. MLK Jr. Dr. to North City Limits					
County:	Milwaukee					
Item Number:	71197					
Item:	Signal Standard 13'					
Quantity:	6					
Unit:	Each					
Machinery Charges:	No. of Units	Class	Equipment	Total Hours	Hourly Rate	Total
	1		Aerial/Boom Truck	15	\$6.63	\$99.45
	Total Machinery Charges					\$99.45
Labor Costs:	Position			Total Hours	Hourly Rate	Total
	Electrical Worker			27	\$20.45	\$552.15
	Electrician			27	\$31.05	\$838.35
	Sub-Total Labor Cost					\$1,390.50
	Fringe Benefit Rate @ 87.90%					\$1,222.25
	Total Labor Cost					\$2,612.75
Material Costs:	Item			Amount	Price	Total
	Signal Standard 13'			6	\$676.53	\$4,059.18
	Sub-Total Material Cost					\$4,059.18
	Indirect Cost Factor @ 10.14%					\$411.60
	Total Material Cost					\$4,470.78
	TOTAL COST					\$7,182.98
	Total Cost Per Unit					\$1,197.16
Total Excluded Cost					\$4,059.18	

Project ID:	2570-04-90					
Highway:	N. Port Washington Av. - N. Dr. MLK Jr. Dr. to North City Limits					
County:	Milwaukee					
Item Number:	71198					
Item:	Signal Standard 1' Extension					
Quantity:	6					
Unit:	Each					
Machinery Charges:	No. of Units	Class	Equipment	Total Hours	Hourly Rate	Total
	1		Aerial/Boom Truck	3	\$6.63	\$19.89
	Total Machinery Charges					\$19.89
Labor Costs:	Position			Total Hours	Hourly Rate	Total
	Electrical Worker			3	\$20.45	\$61.35
	Electrician			3	\$31.05	\$93.15
	Sub-Total Labor Cost					\$154.50
	Fringe Benefit Rate @ 87.90%					\$135.81
	Total Labor Cost					\$290.31
Material Costs:	Item			Amount	Price	Total
	Signal Standard 1' Extension			6	\$47.37	\$284.22
	Sub-Total Material Cost					\$284.22
	Indirect Cost Factor @ 10.14%					\$28.82
	Total Material Cost					\$313.04
	TOTAL COST					\$623.24
	Total Cost Per Unit					\$103.87
Total Excluded Cost					\$284.22	

Project ID:	2570-04-90					
Highway:	N. Port Washington Av. - N. Dr. MLK Jr. Dr. to North City Limits					
County:	Milwaukee					
Item Number:	71199					
Item:	Signal Standard 2' Extension					
Quantity:	1					
Unit:	Each					
Machinery Charges:	No. of Units	Class	Equipment	Total Hours	Hourly Rate	Total
	1		Aerial/Boom Truck	0.5	\$6.63	\$3.32
	Total Machinery Charges					\$3.32
Labor Costs:	Position			Total Hours	Hourly Rate	Total
	Electrical Worker			0.5	\$20.45	\$10.23
	Electrician			0.5	\$31.05	\$15.53
	Sub-Total Labor Cost					\$25.76
	Fringe Benefit Rate @ 87.90%					\$22.64
	Total Labor Cost					\$48.40
	Material Costs:	Item			Amount	Price
Signal Standard 2' Extension			1	\$85.97	\$85.97	
Sub-Total Material Cost					\$85.97	
Indirect Cost Factor @ 10.14%					\$8.72	
Total Material Cost					\$94.69	
TOTAL COST					\$146.41	
Total Cost Per Unit					\$146.41	
Total Excluded Cost					\$85.97	

Project ID: 2570-04-90						
Highway: N. Port Washington Av. - N. Dr. MLK Jr. Dr. to North City Limits						
County: Milwaukee						
Item Number: 73294						
Item: Socket 3' RSP						
Quantity: 49						
Unit: Each						
Machinery Charges:	No. of Units	Class	Equipment	Total Hours	Hourly Rate	Total
	1		Pick-up Truck	24.5	\$2.35	\$57.58
Total Machinery Charges						\$57.58
Labor Costs:	Position			Total Hours	Hourly Rate	Total
	Traffic Sign Worker II			24.5	\$19.75	\$483.88
Sub-Total Labor Cost						\$483.88
Fringe Benefit Rate @ 87.90%						\$425.33
Total Labor Cost						\$909.21
Material Costs:	Item			Amount	Price	Total
	Socket 3' RSP			49	\$26.91	\$1,318.59
Sub-Total Material Cost						\$1,318.59
Indirect Cost Factor @ 10.14%						\$133.71
Total Material Cost						\$1,452.30
TOTAL COST						\$2,419.09
Total Cost Per Unit						\$49.37
Total Excluded Cost						\$1,318.59

Project ID: 2570-04-90						
Highway: N. Port Washington Av. - N. Dr. MLK Jr. Dr. to North City Limits						
County: Milwaukee						
Item Number: 73296						
Item: Pipe 2"x9'6"						
Quantity: 42						
Unit: Each						
Machinery Charges:	No. of Units	Class	Equipment	Total Hours	Hourly Rate	Total
	1		Pick-up Truck	4.2	\$2.35	\$9.87
Total Machinery Charges						\$9.87
Labor Costs:	Position			Total Hours	Hourly Rate	Total
	Traffic Sign Worker II			4.2	\$19.75	\$82.95
Sub-Total Labor Cost						\$82.95
Fringe Benefit Rate @ 87.90%						\$72.91
Total Labor Cost						\$155.86
Material Costs:	Amount	Price	Total			
	42	\$30.82	\$1,294.44			
Sub-Total Material Cost						\$1,294.44
Indirect Cost Factor @ 10.14%						\$131.26
Total Material Cost						\$1,425.70
TOTAL COST						\$1,591.43
Total Cost Per Unit						\$37.89
Total Excluded Cost						\$1,294.44

Project ID: 2570-04-90						
Highway: N. Port Washington Av. - N. Dr. MLK Jr. Dr. to North City Limits						
County: Milwaukee						
Item Number: 73298						
Item: Pipe 2"x11'0"						
Quantity: 7						
Unit: Each						
Machinery Charges:	No. of Units	Class	Equipment	Total Hours	Hourly Rate	Total
	1		Pick-up Truck	0.7	\$2.35	\$1.65
	Total Machinery Charges					\$1.65
Labor Costs:	Position			Total Hours	Hourly Rate	Total
	Traffic Sign Worker II			0.7	\$19.75	\$13.83
	Sub-Total Labor Cost					\$13.83
	Fringe Benefit Rate @ 87.90%					\$12.16
Total Labor Cost					\$25.99	
Material Costs:	Item	Amount	Price	Total		
	Pipe 2"x11'0"	7	\$19.74	\$138.18		
	Sub-Total Material Cost					\$138.18
	Indirect Cost Factor @ 10.14%					\$14.01
Total Material Cost					\$152.19	
TOTAL COST					\$179.83	
Total Cost Per Unit					\$25.69	
Total Excluded Cost					\$138.18	

Project ID: 2570-04-90  
 Highway: N. Port Washington Av. - N. Dr. MLK Jr. Dr. to North City Limits  
 County: Milwaukee

Item Number: 73299  
 Item: Signs Reflective Type II  
 Quantity: 405  
 Unit: SF

Machinery Charges:	No. of Units	Class	Equipment	Total Hours	Hourly Rate	Total
	1		Pick-up Truck	44.55	\$2.35	\$104.69
Total Machinery Charges						\$104.69
Labor Costs:	Position			Total Hours	Hourly Rate	Total
	Painter			20.25	\$26.73	\$541.28
Traffic Sign Worker II			44.55	\$19.75	\$879.86	
Sub-Total Labor Cost						\$1,421.14
Fringe Benefit Rate @ 87.90%						\$1,249.18
Total Labor Cost						\$2,670.32
Material Costs:	Item			Amount	Price	Total
	Signs Reflective Type II			405	\$6.11	\$2,474.55
Sub-Total Material Cost						\$2,474.55
Indirect Cost Factor @ 10.14%						\$250.92
Total Material Cost						\$2,725.47
TOTAL COST						\$5,500.48
Total Cost Per Unit						\$13.58
Total Excluded Cost						\$2,474.55