

## ESTIMATED ROADWAY QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
31	201-01 CLEARING AND GRUBBING	L.S.	1
	209-01.10 EROSION AND SILTATION CONTROL	L.S.	1
13	701-01.01 CONCRETE SIDEWALK (4")	S.F.	2650
13	701-02.01 CONCRETE CURB RAMP (RETROFIT)	S.F.	1200
	712-01 TRAFFIC CONTROL	L.S.	1
	712-04.01 FLEXIBLE DRUMS (CHANNELIZING)	EACH	100
	712-06 SIGNS (CONSTRUCTION)	S.F.	984
	712-08.03 ARROW BOARD (TYPE C)	EACH	2
1	714-25.09 ELECTRICAL CONNECTION (FOR MLGW COST ONLY)	EACH	2
1	717-01 MOBILIZATION	L.S.	1
2	725-02.79 FIBER SPLICE ENCLOSURE (WEATHER PROOF)	EACH	24
18	725-03.09 ETHERNET SWITCH (TYPE A)	EACH	18
19	725-03.10 ETHERNET SWITCH (TYPE B)	EACH	1
	725-03.28 RAILROAD FLAGMAN	DAY	10
15	725-03.60 CABLE MARKER	EACH	26
20	725-21.22 TERMINAL SERVER (SERIAL DEVICE SERVER)	EACH	1
4	725-21.88 BLUETOOTH DETECTION SYSTEM	EACH	3
3	725-21.91 RADAR DETECTION SYSTEM	EACH	7
3	725-21.96 RDS COMM CABLE	L.F.	460
14	725-21.97 SOLAR POWER FOR RDS	EACH	5
21	725-24.01 CABINET (TYPE A)	EACH	7
22	725-24.11 ITS COMMUNICATIONS HUB (INCLUDING PATCH PANEL)	EACH	1
16	730-01.02 REMOVAL OF SIGNAL EQUIPMENT	EACH	11
	730-03.21 INSTALL PULL BOX (TYPE B)	EACH	4
5	730-03.23 INSTALL PULL BOX (FIBER OPTIC-TYPE A)	EACH	62
6	730-03.24 INSTALL PULL BOX (FIBER OPTIC-TYPE B)	EACH	22
	730-03.31 FIBER DISTRIBUTION BOX	EACH	18
7	730-05.01 ELECTRICAL SERVICE CONNECTION	EACH	2
	730-08.01 SIGNAL CABLE - 3 CONDUCTOR	L.F.	40
	730-08.02 SIGNAL CABLE - 5 CONDUCTOR	L.F.	240
	730-08.03 SIGNAL CABLE - 7 CONDUCTOR	L.F.	265
8	730-08.40 INTERCONNECT CABLE - FIBER OPTIC (36-FIBER, SINGLE MODE)	L.F.	75900
8	730-08.41 INTERCONNECT CABLE - FIBER OPTIC (DROP CABLE, 6-FIBER, SINGLE MODE)	L.F.	1540
8	730-08.42 INTERCONNECT CABLE - FIBER OPTIC (DROP CABLE, 36-FIBER, SINGLE MODE)	L.F.	780
	730-11.01 STEEL CONDUIT RISER ASSEMBLY	EACH	3
23	730-11.10 RISER ASSEMBLY (BUILDING ENTRANCE)	EACH	1
	730-12.02 CONDUIT 2" DIAMETER (PVC)	L.F.	2800
	730-12.03 CONDUIT 3" DIAMETER (PVC)	L.F.	60
17	730-12.09 CONDUIT 3" DIAMETER (RGS)	L.F.	930
	730-12.13 CONDUIT 2" DIAMETER (JACK AND BORE)	L.F.	28200
	730-12.42 CURB MARKER (CURB MOUNTED CABLE MARKER)	EACH	140
9	730-13.02 VEHICLE DETECTOR (VIDEO)	EACH	11
10	730-13.03 VEHICLE DETECTOR (4 - CHANNEL, RACK MOUNT)	EACH	11
11	730-13.06 VEHICLE DETECTOR (OPTICALLY ACTIVATED PRIORITY CONTROL)	EACH	7
	730-14.01 SHIELDED DETECTOR CABLE	L.F.	120
	730-15.12 MODIFY CABINET (BASE-MOUNT ENTRANCE)	EACH	3
	730-15.15 MODIFY CABINET (INSTALL DUPLEX GFI OUTLET)	EACH	3
	730-15.32 CABINET (EIGHT PHASE BASE MOUNTED)	EACH	8
12	730-16.02 EIGHT PHASE ACTUATED CONTROLLER	EACH	8
	730-23.30 PEDESTAL POLE (ALUMINUM, 20' LENGTH)	EACH	7
	801-03 WATER (SEEDING & SODDING)	M.G.	12
	803-01 SODDING (NEW SOD)	S.Y.	1200
24	920-10.05 RAILROAD PROTECTIVE INSURANCE	LS	1

**FOOTNOTES:**

1. ALLOWANCE TO COVER THE COST ASSOCIATED WITH POWER CONNECTION FOR THE TRAFFIC SIGNAL OR RDS UNIT FROM THE TRANSFORMER TO THE DEMARCATION POINT. THE UNIT PRICE BID FOR THIS ITEM WILL BE ADJUSTED BY SHELBY COUNTY TO MATCH THE FEE CHARGED BY MLGW FOR PROVIDING THE ELECTRICAL SERVICE CONNECTION.
2. SEE THE LATEST "CITY OF MEMPHIS - STANDARD CONSTRUCTION SPECIFICATIONS" FOR TECHNICAL REQUIREMENTS.
3. SEE PROJECT SPECIAL PROVISIONS FOR RADAR DETECTION EQUIPMENT.
4. SEE CITY OF MEMPHIS SPECIFICATIONS FOR "BLUETOOTH DETECTION SYSTEM". THE INSTALLATION AT EACH LOCATION SHALL INCLUDE BLUETOOTH SENSOR, NEMA ENCLOSURE, CONDUIT AND RISER FROM CONTROLLER CABINET TO SIGNAL POLE, POWER OVER ETHERNET SUBSYSTEM, ANTENNA, ETHERNET CABLE, AND ALL OTHER CABLING, CONNECTIONS AND HARDWARE TO COMPLETE THE INSTALLATION OF A FULLY FUNCTIONAL BLUETOOTH DETECTION SYSTEM ON THE EXISTING SIGNAL POLE WHICH IS DENOTED ON THE PLANS. THIS LUMP SUM ITEM ALSO INCLUDES THE BLUETOOTH SOFTWARE LICENSE FEE FOR ALL INSTALLED UNITS. THE LUMP SUM PRICE INCLUDES ALL SOFTWARE AND HARDWARE INSTALLATION AND INTEGRATION WORK TO PROVIDE A FULLY FUNCTIONAL BLUETOOTH SYSTEM THAT ALLOWS MONITORING AND RETRIEVAL OF TRAVEL TIME AND SPEED DATA REMOTELY.
5. QUAZITE BRAND (MODEL NO. PG2436BB24 WITH PG2436HH6L COVER) OR APPROVED EQUIVALENT. COST INCLUDES REPAIR OF LANDSCAPING, REMOVING EXISTING PULL BOX, AND OTHER MISCELLANEOUS WORK NECESSARY TO COMPLETE PULL BOX INSTALLATION.
6. QUAZITE BRAND (MODEL NO. PG3048BB36 WITH PG3048HS6L COVER) OR APPROVED EQUIVALENT. COST INCLUDES REPAIR OF LANDSCAPING, REMOVING EXISTING PULL BOX, AND OTHER MISCELLANEOUS WORK NECESSARY TO COMPLETE PULL BOX INSTALLATION.
7. CONTRACTOR RESPONSIBLE FOR ALL COST ASSOCIATED WITH POWER CONNECTION FOR TRAFFIC SIGNAL OR RDS UNIT FROM THE DEMARCATION POINT TO THE CABINET.
8. CONTRACTOR SHALL INSTALL A TRACER WIRE WITH THE FIBER OPTIC CABLE FOR ALL CONDUIT ROUTING. TRACER WIRE SHALL BE 10 AWG STRANDED COPPER CONDUCTOR CABLE WITH BOTH THHN AND THWN RATINGS AND YELLOW IN COLOR.
9. TO BE ITERIS VANTAGE SYSTEM OR APPROVED EQUIVALENT. INCLUDES DETECTION CAMERAS, PROCESSOR UNIT, CARD RACK, POWER SUPPLY UNIT, 10" COLOR LCD MONITOR, MOUSE, VIDEO REMOTE MANAGEMENT CARD WITH ETHERNET INTERFACE AND ALL OTHER CABLING, CONNECTIONS AND HARDWARE TO COMPLETE THE INSTALLATION OF A FULLY FUNCTIONAL VIDEO DETECTION SYSTEM.
10. INSTALL ONE (1) DETECTOR CARD PER INTERSECTION APPROACH WHERE ADVANCE DETECTION LOOPS ARE TO BE REPAIRED OR REPLACED. SEE INTERSECTION LAYOUT SHEETS.
11. TO BE GTT OPTICOM SYSTEM OR APPROVED EQUIVALENT. INCLUDES OPTICAL DETECTORS, CONFIRMATION LAMPS (PAR 90), POLE-MOUNTED BEACONS, FOUR-CHANNEL PHASE SELECTOR, CARD RACK (OPTICOM 760) AND ALL CABLING, CONNECTIONS AND HARDWARE TO COMPLETE THE INSTALLATION OF A FULLY-FUNCTIONAL PREEMPTION SYSTEM, INCLUDING FIELD FINE-TUNING.
12. THE TRAFFIC SIGNAL CONTROLLER SHALL BE AN EAGLE EPAC M52 KEYBOARD UNIT OR APPROVED EQUIVALENT WITH NTCIP COMPLIANT SOFTWARE AND SEPAC, BUILT-IN ETHERNET PORT AND BUILT-IN STRETCH AND DELAY FEATURES FOR EACH PHASE. THE TRAFFIC CONTROLLER INSTALLATION ALONG WITH ALL AUXILIARY EQUIPMENT TO BE INSTALLED IN THE CABINET SHALL BE MANUFACTURED, SUPPLIED AND INSTALLED IN ACCORDANCE WITH THE LATEST CITY OF MEMPHIS TRAFFIC SIGNAL CONTROLLER AND CABINET SPECIFICATIONS. THE INSTALLATION SHALL HAVE A 12-CHANNEL MALFUNCTION MONITOR UNIT INSTALLED AS MODEL EDI SSM12LEIP.
13. FOR USE WHERE AND AS DIRECTED BY THE ENGINEER. INCLUDES REMOVAL OF EXISTING CURB RAMP, SIDEWALK, CURB, AND GUTTER AS REQUIRED, AND CONSTRUCTION OF NEW SIDEWALK AND RAMP WITH LANDING AREA AND TRANSITIONS.
14. ITEM TO INCLUDED ALL MATERIALS AND LABOR NECESSARY FOR INSTALLATION AND CONNECTION OF SOLAR POWER TO RDS UNIT.
15. FOR POST TYPE CABLE MARKERS USED IN INTERCHANGES AND OPEN AREAS.
16. ITEM TO INCLUDED REMOVAL OF ALL EXISTING SIGNAL EQUIPMENT AS SHOWN IN PLANS. INCLUDES BUT IS NOT LIMITED TO REMOVAL OF SIGNAL CABINET, WIRING, ETC. MEASURED ON A PER EACH INTERSECTION WHERE EQUIPMENT REMOVAL IS REQUIRED.
17. ITEM TO INCLUDE ALL MATERIALS NECESSARY TO ATTACH CONDUIT TO BRIDGE. INCLUDES WRAP AROUND CABLE MARKERS AT 100 FOOT SPACING.
18. SEE CITY OF MEMPHIS SPECIFICATIONS FOR "RUGGEDIZED ETHERNET CABINET SWITCH".
19. SEE CITY OF MEMPHIS SPECIFICATIONS FOR "RUGGEDIZED ETHERNET HUB SWITCH".
20. SEE CITY OF MEMPHIS SPECIFICATIONS FOR "SERIAL DEVICE SERVER".
21. SEE PROJECT SPECIAL PROVISIONS FOR UTILITY CABINETS.
22. SEE CITY OF MEMPHIS SPECIFICATIONS FOR "FIELD HUB CABINET".
23. INCLUDES RISER ASSEMBLY, BUILDING ENTRANCE ENCLOSURE, AND WALL PENETRATION.
24. LUMP SUM ITEM TO INCLUDE ALL COSTS RELATED TO PROCURING AND MAINTAINING FOR THE DURATION OF THE PROJECT RAILROAD PROTECTIVE LIABILITY (RPL) INSURANCE AS MAY BE REQUIRED BY THE RAILROAD(S) HAVING FACILITIES WITHIN THE PROJECT LIMITS. INSURANCE COVERAGE SHALL BE OF THE FORM AND LIMITS REQUIRED BY THE VARIOUS RAILROAD COMPANIES. PAYMENT WILL BE MADE IN AN AMOUNT EQUAL TO THE ACTUAL COST OF THE RPL POLICIES AS DOCUMENTED BY INVOICES FROM THE INSURER WITH PROOF OF PAYMENT.
31. FOR TREE TRIMMING AS DIRECTED BY THE ENGINEER

\*\* - SEE SUPPLEMENTAL PROJECT PLANS "SHELBY COUNTY CMAQ ADA IMPROVEMENTS SIGNAL SYSTEM PROJECT SET #10" FOR FOOTNOTES 25 - 30.

## STANDARD ROADWAY DRAWINGS

**DWG. NO REV. DESCRIPTION**

### TDOT ROADWAY DESIGN STANDARDS

#### ROADWAY AND PAVEMENT APPURTENANCES

RP-S-7 06-04-13 DETAILS FOR STANDARD CONCRETE SIDEWALKS

#### TRAFFIC CONTROL

T-FAB-1	05-27-97	FLASHING YELLOW ARROW BOARD
T-FO-2		FIBER OPTIC UNDERGROUND ENTRANCE DETAILS
T-FO-4		FIBER OPTIC PULL BOX, CABINET & POLE DETAILS
T-L-1	12-04-13	STANDARD LIGHTING FOUNDATION DETAILS
T-SG-2	07-29-04	LOOP LEAD-INS, CONDUIT AND PULL BOXES
T-SG-3A		ALTERNATE DETECTION DETAILS
T-SG-10	06-11-14	MAST ARM POLE AND STRAIN POLES FOUNDATION DETAILS
T-WZ-10	04-02-12	ADVANCE ROAD WORK SIGNING ON HIGHWAYS AND FREEWAYS
T-WZ-11	03-13-09	ONE LANE CLOSURE DETAIL ON DIVIDED HIGHWAYS
T-WZ-18	03-13-09	SHOULDER CLOSURE DETAIL FOR FREEWAYS AND DIVIDED HIGHWAYS
T-WZ-50	04-02-12	TRAFFIC CONTROL FOR SIGNALS ONLY PROJECTS ON 2 OR 3 LANE MAJOR ROUTES
T-WZ-51	04-02-12	TRAFFIC CONTROL FOR SIGNALS ONLY PROJECTS ON 4 OR 5 LANE MAJOR ROUTES
T-WZ-52	04-02-12	TRAFFIC CONTROL FOR SIGNALS ONLY PROJECTS ON 4 OR 5 LANE MAJOR AND MINOR ROUTES
T-WZ-53	04-02-12	TRAFFIC CONTROL FOR SIGNALS ONLY PROJECTS ON 4 OR MORE LANE DIVIDED MAJOR ROUTES
T-WZ-54	04-02-12	TRAFFIC CONTROL FOR SIGNALS ONLY PROJECTS ON 4 OR MORE LANE DIVIDED MAJOR ROUTES AND 4 OR MORE LANE MINOR ROUTES
T-WZ-55	06-30-14	SIDEWALK TRAFFIC CONTROL

### CITY OF MEMPHIS DESIGN STANDARDS

#### TRAFFIC SIGNAL DETAILS

T/S-1	CONTROLLER CABINET AND RISER INSTALLATION DETAILS
T/S-4	SIGNAL HEAD MOUNTING STANDARDS
T/S-7	GROUNDING AND BOUNDING
T/S-8	FOUNDATION DETAILS
T/S-9	PULL BOXES, SPLICING, AND CABLE DETAILS

#### CIVIL DETAILS

7A	CURB RAMP WITH DETECTABLE WARNING SURFACE FOR NEW CONSTRUCTION
8	CURB RAMP IN EXISTING CONDITIONS

REVISIONS		
DATE	DESCRIPTIONS	APPROVED



△ REV 1/25/2016: ITEM, QUANTITY AND FOOTNOTE REVISIONS PER ADDENDUM #2.  
 △ REV 2/1/2016: ITEM, QUANTITY AND FOOTNOTE REVISIONS PER ADDENDUM #3.

DIVISION OF PUBLIC WORKS  
 CONGESTION MANAGEMENT PROGRAM  
 SIGNAL SYSTEM PROJECT SET #10  
 SHELBY COUNTY, TN.  
**ESTIMATED QUANTITIES &  
 STANDARD DRAWINGS**

SURVEY: N/A DATE: N/A BOOK: N/A  
 DRAFTED: \_\_\_\_\_ DATE: 05/14 SCALE: N.T.S.  
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