

DRILL HOLES

PROJECT DESCRIPTION

I. GENERAL

This project involves the reconstruction of an existing Traffic Control Signal with interconnect at the intersection of MD 396 (Massachusetts Ave) and Little Falls Parkway in Montgomery County. The existing strain pole structure shall be replaced by a new mast arm Traffic Signal with video detection and Countdown pedestrian signals with audible pushbuttons. MD 396 (Massachusetts Ave) is assumed to run an east-west direction.

II. INTERSECTION OPERATION

- The intersection shall continue to operate in a NEMA three-phase, semi-actuated mode, with the MD 396 (Massachusetts Ave) approach running concurrently. The pedestrian phase across the west leg of MD 396 (Massachusetts Ave) shall now be a Countdown pedestrian phase with audible pushbutton actuation. The pedestrian phase on recall across Little Falls Parkway shall now be a Countdown pedestrian phase with audible pushbuttons. Little Falls Parkway shall continue to operate in its own phase. The MD 396 (Massachusetts Ave) westbound right turn approach shall operate concurrently with Little Falls Parkway.
- A full-traffic-actuated, eight-phase controller with video interface, 2-wire Control Unit and all necessary equipment housed in a NEMA size "6" base-mounted cabinet shall be installed at this intersection.
- Montgomery County signal shop shall install APS control unit into controller cabinet. The Contractor shall deliver the Control Unit and audible pushbuttons to the Montgomery County Signal Shop for testing and programming.

III. SPECIAL NOTES

- The Contractor shall be responsible for terminating all signal cables, excluding interconnect, to the appropriate terminals and shall properly label each cable.
  - Disconnecting of interconnect cable shall be performed by Montgomery County Forces. The Contractor shall run these cables into the splice box and properly tag the cables. All splice box connections will be performed by Montgomery County Forces. Contact Mr. Keith Lord at (301) 279-1291 one week in advance of intended work for wiring of interconnect.
  - All controller cabinet wiring will be performed by the Montgomery County Signal Shop Contact Mr. Kamal Hamud at (240) 777-8761 seventy-two hours in advance of intended work.
  - All underground and overhead utilities shown on these plans are schematic only and may not be complete. The Contractor shall be responsible for notifying Miss Utility prior to construction so that all utilities may be located in the field. If the Contractor perceives that a conflict between the utilities and the traffic signal will occur, the Contractor shall notify the Project Engineer immediately so that the conflict may be resolved.
5. APS will function as follows:
- FOR MD 396 (MASSACHUSETTS AVE)
- When pedestrian locates and presses pushbutton for an extended time, the pushbutton unit will be "Wait to cross Massachusetts Avenue"
  - When WALK phase begins, the message will be a rapid tick which will last for the duration of the WALK phase.
- FOR LITTLE FALLS PARKWAY
- When pedestrian locates and presses pushbutton for an extended time, the pushbutton unit will be "Wait to cross Little Falls Parkway"
  - When WALK phase begins, the message will be a rapid tick which will last for the duration of the WALK phase.

The contact persons for District #3 (Montgomery County) are as follows:

- |   |   |
|---|---|
| Mr. Jeff Wentz<br>Assistant District Engineer - Traffic<br>Phone: (301) 513-7358        | Mr. Ed Rodenhizer<br>Signal Shop<br>410-787-7652  |
| Mr. Wayne Mowdy<br>Assistant District Engineer - Maintenance<br>Phone: (301) 513-7304   | Mr. Sonny Bailey<br>Sign Shop<br>410-787-7676   |
| Mr. Augie Rebish<br>District Engineer - Utility<br>Phone: (301) 513-7350                | The power company representative is:  |
| Mr. Richard L. Daff, Sr.<br>Chief, Traffic Operations Division<br>Phone: (410) 787-7630 | Mr. Steve Custer<br>PEPCO Customer Design<br>201 W Gude Dr.<br>Rockville, MD 20850<br>Phone: 301 548-4333 |

EQUIPMENT LIST

CAT NO.	DESCRIPTION	QUANTITY
971017	EIGHT PHASE (FULLY ACTUATED) CONTROLLER AND CABINET - BASE MOUNT	1 EA
973023	SHEET ALUMINIUM SIGNS	75 SF
	D3-2 "Little Falls Pkwy" sign, (dual faced) (variable x 16").	2 EA
	D3-2 "Massachusetts Ave" (variable x 16").	1 EA
	R3-2(2) "No Left Turn (Symbolic) / 7-9 AM / 4:30-6 PM / MONDAY-FRIDAY" sign, (24" x 36")	1 EA
	R3-6 "LEFT RIGHT ONLY" sign, (30" x 36")	1 EA
	R3-5L "LEFT TURN ONLY" sign, (30" x 36")	1 EA
	R10-11a (NO TURN ON RED)" sign, (30" x 24")	2 EA

EQUIPMENT LIST (cont.)

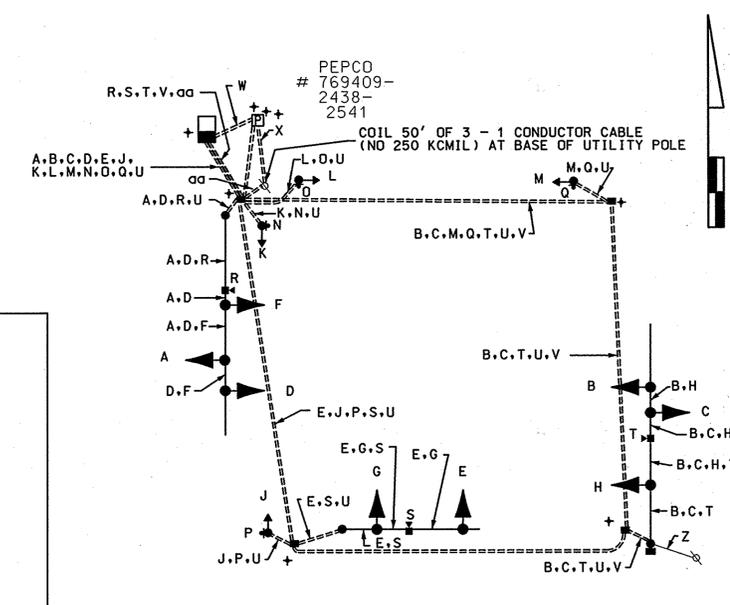
A. EQUIPMENT TO BE SUPPLIED BY S.H.A.		
CAT NO.	DESCRIPTION	QUANTITY
	Pedestrian education R10-3(1) mod sign. (Note: Sign to read "PUSHBUTTON TO CROSS MASSACHUSETTS AVE").	2 EA
	Pedestrian education R10-3(1) mod sign. (Note: Sign to read "PUSHBUTTON TO CROSS LITTLE FALLS PKWY").	2 EA
	M6-2 "Arrow" sign, (21" x 15").	1 EA
	S2-1 "SCHOOL", sign (36" x 36")	1 EA
B. EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR		
CAT NO.	DESCRIPTION	QUANTITY
120662	REMOVAL OF EXISTING PAVEMENT LINE MARKINGS - ANY WIDTH	435 SF
203030	TEST PIT EXCAVATION	9 CY
585621	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	245 SF
585625	24 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	60 SF
634300	STANDARD TYPE A COMBINATION CURB AND GUTTER	75 LF
655105	12 INCH GUTTER PAN 8 INCH DEPTH	5
655104	4 INCH CONCRETE SIDEWALK	600 4# SF
655120	DETECTABLE WARNING SURFACE FOR CURB RAMPS	46 SF
800000A	16" COUNTDOWN PEDESTRIAN SIGNAL HEAD	4 EA
800000A	2 WIRE CONTROL UNIT	1 EA
800000A	AUDIBLE TACTILE PEDESTRIAN PUSHBUTTON STATION AND SIGNS	4 EA
800000A	INSTALL SPLICE CABINET	1 EA
800000A	3-WIRE 1 CONDUCTOR (NO. 250 KCMIL) ELECTRICAL CABLE	65 LF 195
805050	3/4" WEATHERHEAD.	1 EA
806000A	CONCRETE FOR SIGNAL FOUNDATION	14 CY
801004	WOOD POST 4" X 4"	16 LF
802501	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE	510 LF
805118	4 INCH SCHEDULE 80 RIGID PVC CONDUIT-BORED	260 LF
805125	2 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED	30 LF
805135	3 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED	165 LF
805140	4 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED	25 LF
807202	METERED SERVICE PEDESTAL	1 EA
811001	FURNISH AND INSTALL ELECTRICAL HANDHOLE	4 EA
813014	INSTALL GROUND MOUNTED SIGN	11 SF
813015	INSTALL OVERHEAD SIGN	64 SF
816001	VIDEO DETECTION CAMERA	3 EA
816005	CONTROL CABLE, 250 FOOT, VIDEO DETECTION CAMERA TO CONTROLLER	3 EA
816015	VIDEO INTERFACE EQUIPMENT	1 EA
818004	10 FOOT BREAKAWAY PEDESTAL POLE	4 EA
818036	STEEL POLE WITH A SINGLE 50 FOOT MAST ARM	3 EA
837001	GROUND ROD - 3/4 INCH DIAMETER X 10 FOOT LENGTH	8 EA
860284	12 INCH LED VEHICULAR TRAFFIC SIGNAL HEAD SECTION	26 EA
861101	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)	285 LF
861107	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)	430 LF
861108	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)	855 LF
861117	ELECTRICAL CABLE - 3 WIRE (NO. 4 AWG)	25 LF
871202	INSTALL CONTROLLER CABINET - BASE MOUNT	1 EA
873001	REMOVE AND SALVAGE EXISTING EQUIPMENT	1 EA
C. EQUIPMENT TO BE REMOVED		
	Montgomery County Forces shall remove the controller and all auxiliary equipment from the controller cabinet. The cabinet and all other removed signal materials are to become property of the contractor.	
D. EQUIPMENT TO SUPPLIED BY MONTGOMERY COUNTY		
	Montgomery County splice cabinet	

PHASE CHART

	1	2	3	4	5	6	7	8	9	10	11	12
PHASE 1 ALT	R	R	R	R	R	R	R	R	WK	WK	DW	DW
PHASE 2 (PED CLEAR / COUNTDOWN)	G	G	G	G	G	G	R	R	FL/DW	FL/DW	DW	DW
PHASE 2	G	G	G	G	G	G	R	R	DW	DW	DW	DW
2 CHANGE	Y	Y	Y	Y	Y	Y	R	R	DW	DW	DW	DW
PHASE 4	R	R	R	R	R	R/G	G	G	DW	DW	DW	DW
4 CHANGE	R	R	R	R	R	R/Y	Y	Y	DW	DW	DW	DW
PHASE 4 ALT	R	R	R	R	R	R/G	G	G	DW	DW	WK	WK
PED CLEAR / COUNTDOWN	R	R	R	R	R	R/G	G	G	DW	DW	FL/DW	FL/DW
4 ALT CHANGE	R	R	R	R	R	R/Y	Y	Y	DW	DW	DW	DW
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	DARK	DARK	DARK	DARK

NOTE: PHASE 1 ONLY OCCURS IF PUSHBUTTON IS PUSHED.

WIRING DIAGRAM



WIRING KEY

- 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- CONTROL CABLE (CAMERA TO CONTROLLER) 250'
- U - STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
- V - 12-PAIR VOICE GRADE INTERCONNECT CABLE (JELLY FILLED)
- W - 3-1 CONDUCTOR ELECTRICAL CABLE (NO. 4 A.W.G.)
- X - 3-1 CONDUCTOR ELECTRICAL CABLE (NO 250 KCMIL)
- Z - EXISTING INTERCONNECT CABLE REROUTED BY MONTGOMERY COUNTY
- aa - GROUND ROD

**SHA** STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION

**MD 396 (MASSACHUSETTS AVE) AND LITTLE FALLS PARKWAY**

GENERAL INFORMATION SHEET

SCALE NONE DATE 6/18/07 CONTRACT NO. M02825185

DESIGNED BY JWA COUNTY MONTGOMERY  
DRAWN BY RC LOGMILE 15039601.54  
CHECKED BY F.A.P. NO. AC-STPG-000A(241)E TMS NO. H433  
TOD NO.

TS NO. DRAWING NO. 2 OF 3 SHEET NO. 20 OF 42

REVISION "B"

STREET TRAFFIC STUDIES, LTD.  
400 Crain Hwy., NW  
Glen Burnie, MD 21061  
Ph (410) 590-5500  
Fax (410) 590-6637

ADDENDUM 1: DATE 10-16-07

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