DRILL HOLES

BORDER REV. DATE: June 1, 2004

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PROJECT DESCRIPTION

I. GENERAL

This project involves the reconstruction of an existing Traffic Control Signal with interconnect at the intersection of MD 355 (Rockville Pike) and MD 187 (Old Georgetown Rd) 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. MD 355 (Rockville Pike) is assumed to run a north-south direction.

II. INTERSECTION OPERATION

1. The intersection is to operate in a NEMA six-phase, semi-actuated mode, with the MD 355 (Rockville Pike) approaches running concurrently. An Exclusive/Permissive left turn phase shall be provided for the southbound approach of MD 355 (Rockville Pike). An Exclusive left turn phase shall be provided for the northbound approach of MD 355 (Rockville Pike). A Countdown pedestrian phase with audible pushbutton actuation shall be provided across the south leg of MD 355 (Rockville Pike). The Countdown pedestrian phases with audible pushbuttons across both approaches of MD 187 (Old Georgetown Rd) shall be on recall. The MD 187 (Old Georgetown Rd) approaches shall operate as a side street split phase.
2. 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.
3. 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

1. The Contractor shall be responsible for terminating all signal cables, excluding interconnect, to the appropriate terminals and shall properly label each cable.
2. 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.
3. 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.
4. 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.
5. Contractor shall pick up NEMA size "6" pole mounted cabinet from SHA signal shop deliver cabinet to Montgomery County signal shop. Montgomery County shall install necessary equipment into the cabinet. Contractor shall then pick up cabinet from Montgomery County signal shop and install at intersection.
6. APS will function as follows:

FOR MD 355 (ROCKVILLE PIKE)

a When pedestrian locates and presses pushbutton for an extended time, the pushbutton unit will be " Wait to cross Rockville Pike."

b. When WALK phase begins, the message will be a rapid tick which will last for the duration of the WALK phase.

FOR MD 187 (OLD GEORGETOWN RD)

a When pedestrian locates and presses pushbutton for an extended time, the pushbutton unit will be " Wait to cross Old Georgetown Road"

b. 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
Assistant District Engineer - Traffic
Phone: (301) 513-7358

Mr. Wayne Mowdy
Assistant District Engineer - Maintenance
Phone: (301) 513-7304

Mr. Augie Rebish
District Engineer - Utility
Phone: (301) 513-7350

Mr. Richard L. Daff, Sr.
Chief, Traffic Operations Division
Phone: (410) 787-7630

Mr. Ed Rodenhizer
Signal Shop
410-787-7652

Mr. Sonny Bailey
Sign Shop
410-787-7676

The power company representative is:

Mr. Steve Custer
PEPCO Customer Design
201 W Gude Dr.
Rockville, MD 20850
Phone: 301 548-4333

EQUIPMENT LIST

A. EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR

CAT NO.	DESCRIPTION			QUANTITY	
900000A	SPLICE CABINET (SUPPLIED BY MONTGOMERY COUNTY)			1	EA
900000A	NEMA SIZE "5" POLE MOUNTED CABINET			1	EA
971017	EIGHT PHASE (FULLY ACTUATED) CONTROLLER AND CABINET - BASE MOUNT			1	EA
973023	SHEET ALUMINIUM SIGNS			94	SF
	D3-2 "Old Georgetown Rd 11700 >/ Old Georgetown Rd <11700" sign, (dual faced) (variable x 16").	2	EA		
	D3-2 "Rockville Pike <11800 / Rockville Pike 11800>" sign, (dual faced) (variable x 16").	2	EA		
	R3-5L "LEFT TURN ONLY" sign, (30" x 36")	3	EA		
	R3-6 "LEFT TURN AND THRU" sign, (30" x 36")	1	EA		
	Pedestrian education R10-3(1) mod sign. (Note: Sign to read "PUSHBUTTON TO CROSS ROCKVILLE PIKE").	4	EA		

A. EQUIPMENT TO BE FURNISHED BY S.H.A. (CONT')

CAT NO.	DESCRIPTION		
	Pedestrian education R10-3(1) mod sign. (Note: Sign to read "PUSHBUTTON TO CROSS OLD GEORGETOWN RD")	4	EA
	M4-13 "TO" sign, (8" x 24").	1	EA
	M1-1 "I-495" sign, (30" x 24').	1	EA
	M3-4 "WEST" sign, (30" x 12").	1	EA
	M6-2 "arrow (symbolic)" right diagonal sign, (15" x 21")	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	250	SF
	203030	TEST PIT EXCAVATION	11	CY
	585621	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	380	SF
	585625	24 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	50	SF
1	634300	STANDARD TYPE A COMBINATION CURB AND GUTTER 12 INCH GUTTER PAN 8 INCH DEPTH	110 ~~90~~	LF
1	655105 ~~655104~~	5 ~~4~~ INCH CONCRETE SIDEWALK	600 ~~440~~	SF
	655120	DETECTABLE WARNING SURFACE FOR CURB RAMPS	140	SF
	800000A	16" COUNTDOWN PEDESTRIAN SIGNAL HEAD	8	EA
	800000A	2 WIRE CONTROL UNIT	1	EA
	800000A	AUDIBLE TACTILE PEDESTRIAN PUSHBUTTON STATION AND SIGNS	6	EA
	800000A	INSTALL SPLICE CABINET	1	EA
1	800000A	~~3 WIRE,~~ 1 CONDUCTOR (No. 250 KCMIL) ELECTRICAL CABLE	~~65~~ 195	LF
1	800000A	3" ~~4"~~ WEATHERHEAD.	1	EA
	800000A	50-PAIR COMMUNICATION CABLE, JELLY-FILLED	125	LF
	801004	CONCRETE FOR SIGNAL FOUNDATION	15.4	CY
1	802145	ADJUST EXISTING HANDHOLE	1	EA
	802501	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE	510	LF
	805118	4 INCH SCHEDULE 80 RIGID PVC CONDUIT-BORED	210	LF
	805125	2 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED	30	LF
	805135	3 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED	50	LF
	805140	4 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED	25	LF
	805155	4 INCH SCHEDULE 80 RIGID PVC CONDUIT-SLOTTED	205	LF
	807202	METERED SERVICE PEDESTAL	1	EA
	811001	FURNISH AND INSTALL ELECTRICAL HANDHOLE	3	EA
	813014	INSTALL GROUND MOUNTED SIGN	11	SF
1	813015	INSTALL OVERHEAD SIGN	83 ~~81~~	SF
	816001	VIDEO DETECTION CAMERA	4	EA
	816005	CONTROL CABLE, 250 FOOT, VIDEO DETECTION CAMERA TO CONTROLLER	2	EA
	816010	CONTROL CABLE, 500 FOOT, VIDEO DETECTION CAMERA TO CONTROLLER	2	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	4	EA
	837001	GROUND ROD - 3/4 INCH DIAMETER X 10 FOOT LENGTH	10	EA
	860284	12 INCH LED VEHICULAR TRAFFIC SIGNAL HEAD SECTION	47	EA
	861101	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)	1300	LF
	861107	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)	1765	LF
	861108	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)	2060	LF
	861117	ELECTRICAL CABLE - 3 WIRE (NO. 4 AWG)	25	LF
	871202	INSTALL CONTROLLLER CABINET - BASE MOUNT	1	EA
1	~~873001~~ 800000	REMOVE AND SALVAGE EXISTING EQUIPMENT	1	EA

C. EQUIPMENT TO BE REMOVED

Montgomery County Forces shall remove the controller and all auxilliary equipment from the controller cabinet. The cabinet and all other removed signal materials are to become property of the contractor.

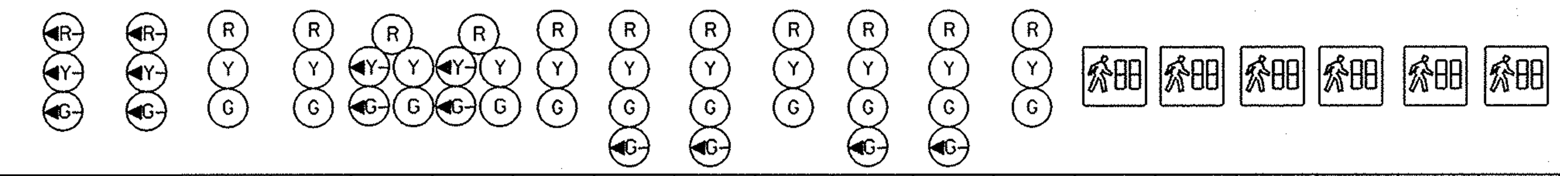
D. EQUIPMENT TO SUPPIIED BY MONTGOMERY COUNTY

Montgomery County splice cabinet

1 ADDENDUM 1: DATE: 10-16-07

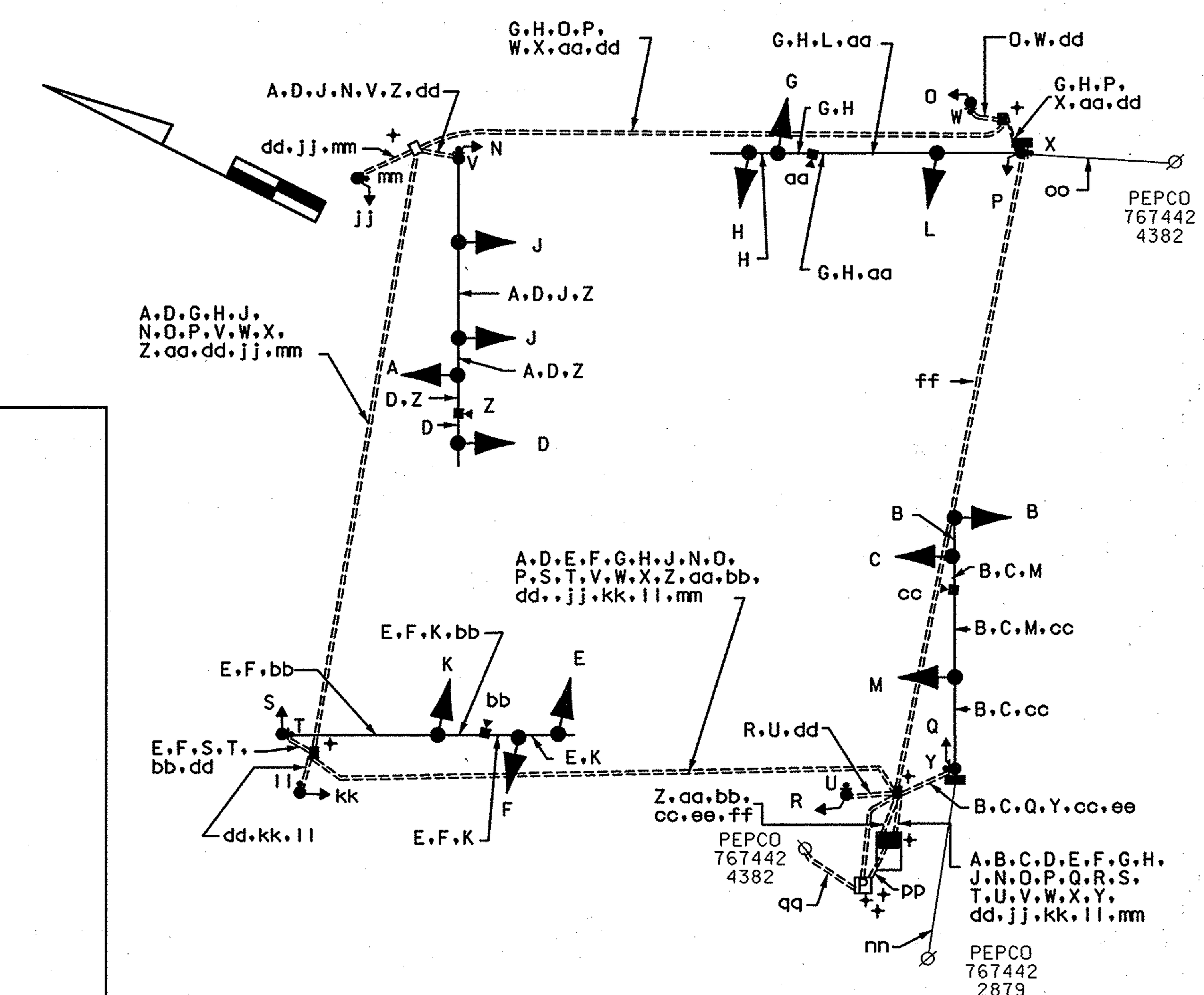
EA

PHASE CHART



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
PHASE 1 & 5	←G-	←G-	G	G	R	R	R	R	R	R	R	R	R	DW	WK	WK	DW	DW	DW
1 & 5 CHANGE	←Y-	←Y-	G	G	R	R	R	R	R	R	R	R	R	DW	WK	WK	DW	DW	DW
PHASE 2 & 5	←R-	←R-	G	G	G	G	G	R	R	R	R	R	R	WK	WK	WK	WK	DW	DW
PED CLEAR / COUNTDOWN	←R-	←R-	G	G	G	G	G	R	R	R	R	R	R	FL/DW	FL/DW	FL/DW	FL/DW	DW	DW
2 & 5 CHANGE	←R-	←R-	Y	Y	G	G	G	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW
PHASE 2 & 6	←R-	←R-	R	R	←G-/G	←G-/G	G	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW
2 & 6 CHANGE	←R-	←R-	R	R	←Y-/Y	←Y-/Y	Y	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW
PHASE 3	←R-	←R-	R	R	R	R	R	R	R	R	G/←G-	G/←G-	G	DW	DW	DW	DW	DW	DW
3 CHANGE	←R-	←R-	R	R	R	R	R	R	R	R	Y	Y	Y	DW	DW	DW	DW	DW	DW
PHASE 4	←R-	←R-	R	R	R	R	R	G/←G-	G/←G-	G	R	R	R	DW	DW	DW	DW	DW	DW
4 CHANGE	←R-	←R-	R	R	R	R	R	Y	Y	Y	R	R	R	DW	DW	DW	DW	DW	DW
PHASE 4 ALT	←R-	←R-	R	R	R	R	R	G/←G-	G/←G-	G	R	R	R	DW	DW	DW	DW	WK	WK
PED CLEAR / COUNTDOWN	←R-	←R-	R	R	R	R	R	G/←G-	G/←G-	G	R	R	R	DW	DW	DW	DW	FL/DW	FL/DW
4 ALT CHANGE	←R-	←R-	R	R	R	R	R	Y	Y	Y	R	R	R	DW	DW	DW	DW	DW	DW
FLASHING OPERATION	FL/←R-	FL/←R-	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	DARK	DARK	DARK	DARK	DARK	DARK

WIRING DIAGRAM



WIRING KEY

- A B C D E F G H } 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)
- J K L M N O P Q R S jj kk } 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)
- T U V W X Y ll mm } 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)
- Z aa } CONTROL CABLE (CAMERA TO CONTROLLER) 500'
- bb cc } CONTROL CABLE (CAMERA TO CONTROLLER) 250'
- dd - STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
- ee - 12-PAIR VOICE GRADE INTERCONNECT CABLE (JELLY FILLED)
- ff - 50-PAIR VOICE GRADE INTERCONNECT CABLE (JELLY FILLED)
- nn - EXISTING 12-PAIR AND 25-PAIR INTERCONNECT CABLE
- oo - EXISTING 50-PAIR INTERCONNECT CABLE
- pp - 3-1 CONDUCTOR ELECTRICAL CABLE (NO. 4 A.W.G.)
- qq - 3-1 CONDUCTOR ELECTRICAL CABLE (NO 250 KCMIL)
- + - GROUND ROD

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

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STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MD 355 (ROCKVILLE PIKE) AND MD 187 (OLD GEORGETOWN ROAD)

GENERAL INFORMATION SHEET

SCALE NONE DATE 6/18/07 CONTRACT NO. MO2825185

DESIGNED BY JWA COUNTY MONTGOMERY
DRAWN BY RC LOGMILE 15018705.32
CHECKED BY TIMS NO. F891
F.A.P. NO. AC-STPG-000A(241)E TOD NO.

TS NO. 3262C DRAWING NO. 2 OF 3 SHEET NO. 32 OF 42

PLOTTED: $DATETIME$
FILE: $FILE$

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