DRILL HOLES

BORDER REV: DATE: June 1, 2004

PROJECT DESCRIPTION

I. GENERAL

This project involves the reconstruction of an existing strain pole Traffic Control Signal with interconnect at the intersection of MD 355 (Rockville Pike) and Marinelli Road in Montgomery County. A new mast arm Traffic Signal with Countdown pedestrian signals, audible pushbuttons and video detection shall be installed at this location. MD 355 (Rockville Pike) is assumed to run a north-south direction.

II. INTERSECTION OPERATION

1. The intersection shall to operate in a NEMA eight-phase, semi-actuated mode, with the MD 355 (Rockville Pike) approaches running concurrently. Exclusive left turn phases shall continue to be provided for both approaches of MD355 (Rockville Pike). The pedestrian phases across both legs of MD 355 (Rockville Pike) shall now be Countdown pedestrian phases with audible pushbutton actuation. The pedestrian phases on recall across the Marinelli Road approaches shall now be Countdown pedestrian phases with audible pushbuttons. Far side sampling stations for both legs of MD 355 (Rockville Pike) shall be provided. Exclusive/Permissive left turn phases for both approaches of Marinelli Road shall be provided. The Marinelli Road approaches shall also continue to run concurrently.
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 Traffic Surveillance 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. Mike Kinney at (301) 674-8958 one week in advance of intended work for wiring of traffic surveillance camera.
5. 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.
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 MARINELLI ROAD

a When pedestrian locates and presses pushbutton for an extended time, the pushbutton unit will be " Wait to cross Marinelli 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 SUPPLIED BY S.H.A..

CAT NO.	DESCRIPTION	QUANTITY
971017	EIGHT PHASE (FULLY ACTUATED) CONTROLLER AND CABINET - BASE MOUNT	1 EA
973023	SHEET ALUMINIUM SIGNS	159 SF
	D3-2 "Marinelli Rd 5600 >/ Marinelli Rd <5600" sign, (dual faced) (variable x 16").	2 EA
	D3-2 "Rockville Pike <11600 " sign, (variable x 16").	1 EA
	D3-2 "Rockville Pike 11600> " sign, (variable x 16").	1 EA
	R3-5L "LEFT TURN ONLY" sign, (30" x 36")	3 EA
	R3-5R "RIGHT TURN ONLY" sign, (30" x 36")	1 EA
	R10-11b "NO TURN ON RED" sign, (24"x24").	1 EA
	Pedestrian education R10-3(1) mod sign. (Note: Sign to read "PUSHBUTTON TO CROSS ROCKVILLE PIKE").	4 EA
	Pedestrian education R10-3(1) mod sign. (Note: Sign to read "PUSHBUTTON TO CROSS MARINELLI RD")	4 EA

EQUIPMENT LIST (CONT.)

A. EQUIPMENT TO BE SUPPLIED BY S.H.A..

CAT NO.	DESCRIPTION	QUANTITY
	GUIDE SHIELD ASSEMBLY (48"x75") pole mounted. M3-3 "SOUTH"(30"X15") M1-5 "MD 355"(48"X36") M6-1 "left arrow "(30"X24")	1 EA
	GUIDE SHIELD ASSEMBLY (30"x51") pole mounted. M3-1 "NORTH"(24"X12") M1-5 "MD 355"(30"X24") M6-1 "right arrow "(21"X15")	1 EA
	GUIDE SHIELD ASSEMBLY (48"x75") pole mounted. M3-1 "NORTH"(30"X15") M1-5 "MD 355"(48"X36") M6-1 "left arrow "(30"X24")	1 EA
	GUIDE SHIELD ASSEMBLY (30"x51") pole mounted. M3-3 "SOUTH"(24"X12") M1-5 "MD 355"(30"X24") M6-1 "right arrow "(21"X15")	1 EA
	R4-7 "KEEP RIGHT" sign. (18" x 24)	2 EA

B. EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR

CAT NO.	DESCRIPTION	QUANTITY
120662	REMOVAL OF EXISTING PAVEMENT LINE MARKINGS - ANY WIDTH	1460 LF
203030	TEST PIT EXCAVATION	13 CY
201032	CLASS 2 EXCAVATION	6 CY
⚠1 ~~585625~~ 585621	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	860 ~~660~~ LF
⚠1 585625	24 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	200 ~~100~~ LF
⚠1 634300	STANDARD TYPE A COMBINATION CURB AND GUTTER 12 INCH GUTTER PAN 8 INCH DEPTH	105 ~~95~~ LF
⚠1 655105 ~~655104~~	5 ~~4~~ INCH CONCRETE SIDEWALK	1600 ~~830~~ SF
655120	DETECTABLE WARNING SURFACE FOR CURB RAMPS	108 SF
⚠1 800000A	ROADWAY PATCH	100 ~~SF~~ LF
800000A	16" COUNTDOWN PEDESTRIAN SIGNAL HEAD	8 EA
800000A	2 WIRE CONTROL UNIT	1 EA
800000A	AUDIBLE TACTILE PEDESTRIAN PUSHBUTTON STATION AND SIGNS	8 EA
800000A	INSTALL SPLICE CABINET	1 EA
⚠1 800000A	~~3 WIRE,~~ 1 CONDUCTOR (No. 250 KCMIL) ELECTRICAL CABLE	~~60~~ 195 ~~EA~~ LF
801004	CONCRETE FOR SIGNAL FOUNDATION	22.5 CY
802501	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE	710 LF
805125	2 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED	25 LF
805135	3 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED	170 LF
805140	4 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED	120 LF
805155	4 INCH SCHEDULE 80 RIGID PVC CONDUIT-SLOTTED	400 LF
807202	METERED SERVICE PEDESTAL	1 LF
811001	FURNISH AND INSTALL ELECTRICAL HANDHOLE	12 EA
813015	INSTALL OVERHEAD SIGN	159 EA
816001	VIDEO DETECTION CAMERA	4 SF
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
⚠1 818004	10 FOOT BREAKAWAY PEDESTAL POLE	~~7~~ 6 EA
818036	STEEL POLE WITH A SINGLE 50 FOOT MAST ARM (NOTE: 16' POLE WITH SPECIAL 15' "T" DIMENSION)	2 EA
818041	STEEL POLE WITH A SINGLE 60 FOOT MAST ARM (NOTE: 16' POLE WITH SPECIAL 15' "T" DIMENSION)	1 EA
818052	STEEL POLE WITH SINGLE 70 FOOT MAST ARM (NOTE: 16' POLE WITH SPECIAL 15' "T" DIMENSION)	1 EA
837001	GROUND ROD -3/4 INCH DIAMETER X 10 FOOT LENGTH	9 EA
860284	12 INCH LED VEHICULAR TRAFFIC SIGNAL HEAD SECTION	44 EA
861105	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)	1720 LF
861107	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)	1875 LF
861108	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)	2400 LF
861117	ELECTRICAL CABLE - 3 WIRE (NO. 4 AWG)	20 LF
871202	INSTALL CONTROLLER AND CABINET - BASE MOUNT	1 EA
⚠1 ~~873001~~ 800000	REMOVE AND SALVAGE EXISTING EQUIPMENT	1 ~~LS~~ 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.

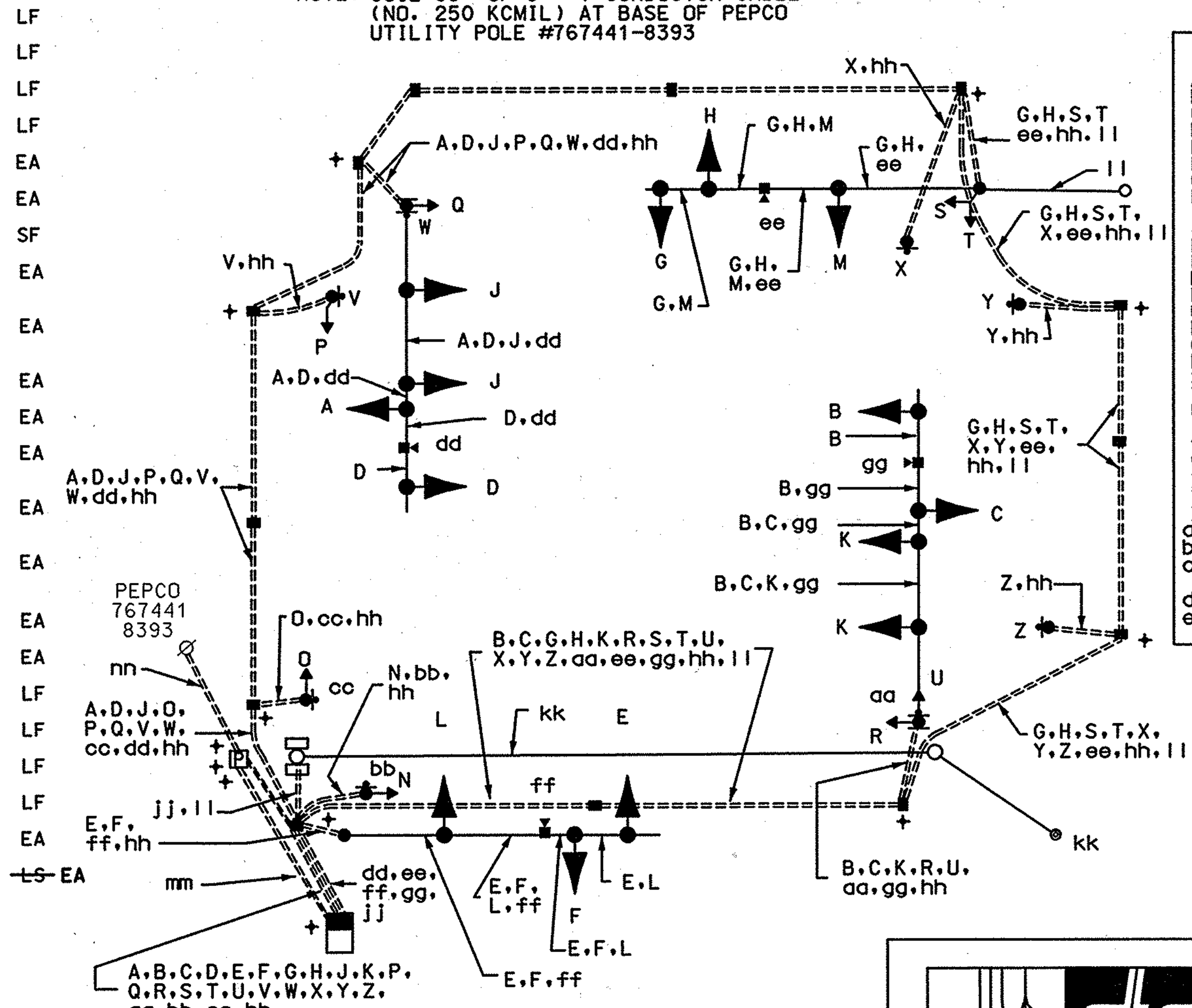
⚠1 ADDENDUM 1: DATE: 10-16-07

PHASE CHART

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
PHASE 1 & 5	◄G–	◄G–	R	R	◄G–	◄G–	R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
CHANGES TO PHASES 1 & 6, 2 & 5 OR 2 & 6																						
PHASE 1 & 6	◄R–	◄R–	R	R	◄G–	◄G–	G	G	R	R	R	R	R	R	WK	DW	DW	WK	DW	DW	DW	DW
1 & 6 CHANGE	◄R–	◄R–	R	R	◄Y–	◄Y–	G	G	R	R	R	R	R	R	WK	DW	DW	WK	DW	DW	DW	DW
PHASE 2 & 5	◄G–	◄G–	G	G	◄R–	◄R–	R	R	R	R	R	R	R	R	DW	WK	WK	DW	DW	DW	DW	DW
2 & 5 CHANGE	◄Y–	◄Y–	G	G	◄R–	◄R–	R	R	R	R	R	R	R	R	DW	WK	WK	DW	DW	DW	DW	DW
PHASE 2 & 6	◄R–	◄R–	G	G	◄R–	◄R–	G	G	R	R	R	R	R	R	WK	WK	WK	WK	DW	DW	DW	DW
PED CLEAR / COUNTDOWN	◄R–	◄R–	G	G	◄R–	◄R–	G	G	R	R	R	R	R	R	FL/DW	FL/DW	FL/DW	FL/DW	DW	DW	DW	DW
2 & 6 CHANGE	◄R–	◄R–	Y	Y	◄R–	◄R–	Y	Y	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 3 & 8	◄R–	◄R–	R	R/–G►	◄R–	◄R–	R	R	R	R	R	◄G–/G	◄G–/G	G	DW	DW	DW	DW	DW	DW	DW	DW
3 & 8 CHANGE	◄R–	◄R–	R	R/–Y►	◄R–	◄R–	R	R	R	R	R	◄Y–/G	◄Y–/G	G	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 4 & 8	◄R–	◄R–	R	R	◄R–	◄R–	R	R	G	G	G	G	G	G	DW	DW	DW	DW	DW	DW	DW	DW
4 & 8 CHANGE	◄R–	◄R–	R	R	◄R–	◄R–	R	R	Y	Y	Y	Y	Y	Y	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 3 & 8 ALT	◄R–	◄R–	R	R/–G►	◄R–	◄R–	R	R	R	R	R	◄G–/G	◄G–/G	G	DW	DW	DW	DW	WK	DW	DW	WK
3 & 8 ALT CHANGE	◄R–	◄R–	R	R/–Y►	◄R–	◄R–	R	R	R	R	R	◄Y–/G	◄Y–/G	G	DW	DW	DW	DW	WK	DW	DW	WK
PHASE 4 & 8 ALT	◄R–	◄R–	R	R	◄R–	◄R–	R	R	G	G	G	G	G	G	DW	DW	DW	DW	WK	WK	WK	WK
PED CLEAR / COUNTDOWN	◄R–	◄R–	R	R	◄R–	◄R–	R	R	G	G	G	G	G	G	DW	DW	DW	DW	FL/DW	FL/DW	FL/DW	FL/DW
4 & 8 ALT CHANGE	◄R–	◄R–	R	R	◄R–	◄R–	R	R	Y	Y	Y	Y	Y	Y	DW	DW	DW	DW	DW	DW	DW	DW
FLASHING OPERATION	FL/◄R	FL/◄R	FL/Y	FL/Y	FL/◄R	FL/◄R	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	DARK	DARK	DARK	DARK	DARK	DARK	DARK	DARK

WIRING DIAGRAM

⚠1 NOTE: COIL 50' ~~35'~~ OF 3 - 1 CONDUCTOR CABLE (NO. 250 KCMIL) AT BASE OF PEPCO UTILITY POLE #767441-8393



WIRING KEY

A–H – 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)

J–U – 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)

V, W, X, Y, Z, aa, bb, cc – 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)

dd, ee – CONTROL CABLE (CAMERA TO CONTROLLER) 500'

ff, gg – CONTROL CABLE (CAMERA TO CONTROLLER) 250'

hh- STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)

jj- 12-PAIR VOICE GRADE INTERCONNECT CABLE (JELLY FILLED)

kk- EXISTING TRAFFIC SURVEILLANCE CAMERA CABLE

⚠1 ll- ~~3-1 CONDUCTOR~~ ELECTRICAL CABLE ~~(NO. 8 A.W.G.)~~ for bus sign (DISCONNECT AND PULL BACK)

mm- 3-1 CONDUCTOR ELECTRICAL CABLE (NO. 4 A.W.G.)

nn- 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

5189gi.dgn T-55

PLOTTED: $DATETIME$
FILE: $FILE$

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MD 355 (ROCKVILLE PIKE) AND MARINELLI ROAD

GENERAL INFORMATION SHEET

SCALE NONE DATE 6/18/07 CONTRACT NO.

DESIGNED BY JWA | COUNTY MONTGOMERY
DRAWN BY RC | LOGMILE 15035506.17
CHECKED BY | TIMS NO. H997
F.A.P. NO. AC-STPG-000A(241)E | TOD NO.

TS NO. 3162E | DRAWING NO. 2 OF 3 | SHEET NO. 41 OF 42

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