DRILL HOLES

BORDER REV: DATE: June 1, 2004

PROJECT DESCRIPTION

I. GENERAL

This project involves the reconstruction of an existing Traffic Control Signal with street lighting at the intersection of MD 193 (University Blvd) and Gabel Street / Caddington Ave in Montgomery County. The existing strain pole Traffic Signal shall be replaced by a new mast arm Traffic Signal with video detection and Countdown pedestrian signal with audible pushbuttons. MD 193 (University Blvd) is assumed to run an east-west direction.

II. INTERSECTION OPERATION

1. The intersection shall continue to operate in a NEMA five-phase, semi-actuated mode, with the MD 193 (University Blvd) approaches running concurrently. The Exclusive/Permissive left turn phase for the eastbound approach of MD 193 (University Blvd) shall remain in operation. The pedestrian phase across the west leg of MD 193 (University Blvd) shall now be a Countdown pedestrian phase with audible pushbutton actuation. The pedestrian phases on recall across Gabel Street / Caddington Ave shall now be Countdown pedestrian phases with audible pushbuttons. The Gabel Street / Caddington Ave 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 Couny signal shop shall install montgomery County 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, to the appropriate terminals and shall properly label each cable.

2. All controller cabinet wiring will be performed by the Montgomery. 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. APS will function as follows:

FOR MD 193 (UNIVERSITY BLVD)

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

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

FOR GABEL STREET

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

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

FOR CADDINGTON AVENUE

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

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	NEMA SIZE "6" POLE MOUNTED CABINET	1 EA
971017	EIGHT PHASE (FULLY ACTUATED) CONTROLLER AND CABINET - BASE MOUNT	1 EA
973023	SHEET ALUMINIUM SIGNS	56 SF
	D3-2 "(arrow) Caddington Ave / Gabel Street (arrow)" sign, (variable x 32").	1 EA
	D3-2 "(arrow) Gabel Street / / Caddington Ave (arrow)" sign, (variable x 32").	1 EA
	D3-2 "University Blvd" sign, (variable x 16").	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 UNIVERSITY BLVD").	2 EA

EQUIPMENT LIST (cont')

A. EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR

CAT NO.	DESCRIPTION	
	Pedestrian education R10-3(1) mod sign. (Note: Sign to read "PUSHBUTTON TO CROSS CADDINGTON AVE").	2 EA
	Pedestrian education R10-3(1) mod sign. (Note: Sign to read "PUSHBUTTON TO CROSS GABEL STREET").	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	200 LF
203030	TEST PIT EXCAVATION	9 CY
585621	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	275 ~~75~~ LF
585625	**24 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES**	**60 LF**
634300	STANDARD TYPE A COMBINATION CURB AND GUTTER 12 INCH GUTTER PAN 8 INCH DEPTH	210 ~~300~~ LF
655105 ~~655104~~	5 ~~4~~ INCH CONCRETE SIDEWALK	1400 ~~1000~~ SF
655120	DETECTABLE WARNING SURFACE FOR CURB RAMPS	80 SF
800000A	16" COUNTDOWN PEDESTRIAN SIGNAL HEAD	6 EA
800000A	2 WIRE CONTROL UNIT	1 EA
800000A	AUDIBLE TACTILE PEDESTRIAN PUSHBUTTON STATION AND SIGNS	6 EA
800000A	INSTALL SPLICE CABINET	1 EA
800000A	~~3 WIRE~~ 1 CONDUCTOR (No. 250 KCMIL) ELECTRICAL CABLE	360 LF ~~120 EA~~
801004	CONCRETE FOR SIGNAL FOUNDATION	16 CY
802501	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE	910 LF
805011	1 INCH GALVANIZED CONDUIT - SLEEVE	25 LF
805118	4 INCH SCHEDULE 80 RIGID PVC CONDUIT-BORED	375 LF
805125	2 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED	60 LF
805135	3 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED	650 LF
805140	4 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED	120 LF
805155	4 INCH SCHEDULE 80 RIGID PVC CONDUIT-SLOTTED	165 LF
807202	METERED SERVICE PEDESTAL	1 LF
811001	FURNISH AND INSTALL ELECTRICAL HANDHOLE	9 EA
812002	**WOOD SIGN SUPPORT 6 INCH X 6 INCH**	**500 LF**
813015	INSTALL OVERHEAD SIGN	56 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
818030	STEEL POLE WITH SINGLE 38 FOOT MAST ARM (NOTE: 16' POLE WITH SPECIAL 15' "T" DIMENSION)	1 EA
818036	STEEL POLE WITH A SINGLE 50 FOOT MAST ARM (NOTE: 16' POLE WITH SPECIAL 15' "T" DIMENSION)	3 EA
833062	4 INCH DIAMETER POLYVINYL CHLORIDE CONDUIT, SCHEDULE 80, RISER	30 LF
837001	GROUND ROD - 3/4 INCH DIAMETER X 10 FOOT LENGTH	8 EA
860284	12 INCH LED VEHICULAR TRAFFIC SIGNAL HEAD SECTION	49 EA
861104	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG) ALUMINIUM SHLD	1050 LF
861105	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)	1400 LF
861107	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)	1550 LF
861108	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)	2400 LF
861116	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 AWG)	550 LF
861117	ELECTRICAL CABLE - 3 WIRE (NO. 4 AWG)	20 LF
862101	LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO. 14 AWG)	940 LF
862102	SAW CUT FOR LOOP DETECTOR	185 LF
871202	INSTALL CONTROLLER CABINET - BASE MOUNT	1 EA
~~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.

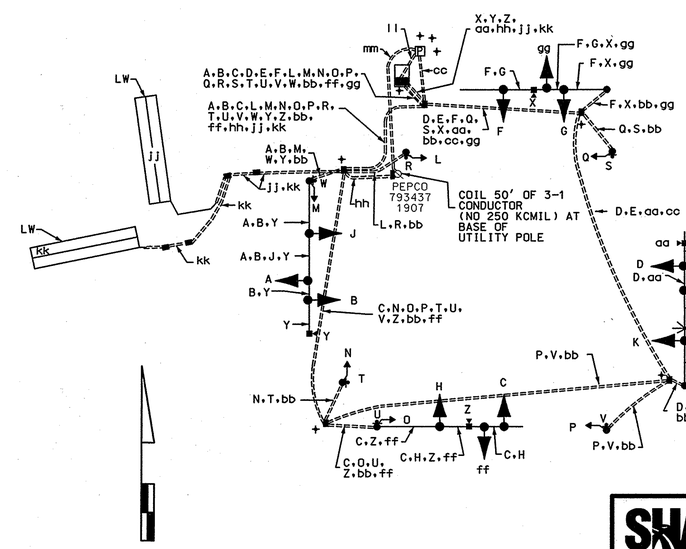
D. EQUIPMENT TO SUPPLIED BY MONTGOMERY COUNTY

Montgomery County splice cabinet

PHASE CHART

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
PHASE 1 & 6	G-/G	G-/G	G	R	R	R	R	R	R	R	R	R	DW	WK	WK	DW	DW	DW
1 & 6 CHANGE	Y-/G	Y-/G	G	R	R	R	R	R	R	R	R	R	DW	WK	WK	DW	DW	DW
PHASE 2 & 6	G	G	G	G	G	G	R	R	R	R	R	R	WK	WK	WK	WK	DW	DW
PED CLEAR / COUNTDOWN	G	G	G	G	G	G	R	R	R	R	R	R	FL/DW	FL/DW	FL/DW	FL/DW	DW	DW
2 & 6 CHANGE	Y	Y	Y	Y	Y	Y	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW
PHASE 4 & 8	R	R	R	R	R	R	G	G	G	G	G	G	DW	DW	DW	DW	DW	DW
4 & 8 CHANGE	R	R	R	R	R	R	Y	Y	Y	Y	Y	Y	DW	DW	DW	DW	DW	DW
PHASE 4 & 8 ALT	R	R	R	R	R	R	G	G	G	G	G	G	DW	DW	DW	DW	WK	WK
PED CLEAR / COUNTDOWN	R	R	R	R	R	R	G	G	G	G	G	G	DW	DW	DW	DW	FL/DW	FL/DW
4 & 8 ALT CHANGE	R	R	R	R	R	R	Y	Y	Y	Y	Y	Y	DW	DW	DW	DW	DW	DW
FLASHING OPERATION	FL/Y	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,L,M,N,O,P,Q,R,S,T,U,V,W,ff,gg } 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)

G,H,J,K,X,Y,Z,bb,cc,dd,ee,gg } 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)

T,U,V,W } 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)

X,Y,Z } CONTROL CABLE (CAMERA TO COMTROLLRE) 250'

aa- CONTROL CABLE (CAMERA TO COMTROLLRE) 500'

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

cc- 2-CONDUCTOR TRAY CABLE (NO. 12 A.W.G)

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

jj, kk } 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G) ALUMINUM SHIELDED

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

mm- 3-1 CONDUCTOR ELECTRICAL CABLE (NO 250 KCMIL

LW- LOOP WIRE (NO. 14 A.W.G.)

+ - GROUND ROD

⚠1 ADDENDUM 1: DATE: 10-16-07

REVISION "A"

STREET TRAFFIC STUDIES, LTD.
400 Crain Hwy. NW.
Glen Burnie, MD 21061
Ph (410) 590-5520
Fax (410) 590-6637

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PLOTTED: @DATETIME@
FILE: @FILE@

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MD 193 (UNIVERSITY BLVD) AND GABEL STREET / CADDINGTON AVENUE

GENERAL INFORMATION SHEET

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

DESIGNED BY JWA
DRAWN BY RC
CHECKED BY
F.A.P. NO. AC-STPG-000A(241)E

COUNTY MONTGOMERY
LOGMILE 15019303.19
TIMS NO. I105
TOD NO.

TS NO.	DRAWING NO. 2 OF 4	SHEET NO. 35 OF 42

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