DRILL HOLES

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BORDER REV: DATE: June 1, 2004

PROJECT DESCRIPTION

I. GENERAL

This project involves the modification of an existing Traffic Control Signal with interconnect at the intersection of MD 650 (New Hampshire Ave) and Oakview Drive in Montgomery County. Geometric improvements at this intersection require the relocation of two mast arm signal poles, a pedestal pole and the controller. Video detection and Countdown pedestrian heads with audible pushbuttons shall be installed. MD 650 (New Hampshire Ave) is assumed to run a north-south direction.

II. INTERSECTION OPERATION

1. The intersection shall continue to operate in a NEMA six-phase, semi-actuated mode, with the MD 650 (New Hampshire Ave) approaches running concurrently. Exclusive/Permissive left turn phases shall continue to be provided for both approaches of MD 650 (New Hampshire Ave). The right turn overlap phase for westbound Oakview Drive shall remian in operation. Countdown pedestrian phases with audible pushbutton actuation shall now operate across MD 650 (New Hampshire Ave) and also across Oakview Drive. The Farside sampling stations on both legs of MD 650 (New Hampshire Ave) and the east leg of Oakview Drive shall be maintained via video detection. The Oakview Drive approaches shall also continue to run concurrently.

2. A full-traffic-actuated, eight-phase controller with video interface, Central Control Unit, L.A.U. and L.A.U. Panel housed in a NEMA size "6" base-mounted cabinet shall be installed at this intersection.

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. Disconnecting and splicing of interconnect cable shall be performed by Montgomery County Forces. The contractor shall run the interconnect cable into the base of each cabinet and properly tag the cable. All controller cabinet wiring will be performed by Montgomery County Forces. 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.

EQUIPMENT LIST

A. EQUIPMENT TO BE SUPPLIED BY MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION AND INSTALLED BY THE CONTRACTOR

ITEM NO.	DESCRIPTION	QUANTITY
8088	R3-5R "RIGHT TURN ONLY" sign, (30" x 36") mast arm mounted.	1 Each
8088	R3-5L "LEFT TURN ONLY" sign, (30" x 36") mast arm mounted.	1 Each
8088	R10-11b "NO TURN ON RED" sign, (24"x24") mast arm mounted.	1 Each
Neg.	Pedestrian education R10-4(1) sign. (Note: Sign to read "PUSH BUTTON TO CROSS NEW HAMPSHIRE AVE".)	4 Each
Neg.	Pedestrian education R10-4(1) sign. (Note: Sign to read "PUSH BUTTON TO CROSS OAKVIEW DR".)	4 Each

B. EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR.

ITEM NO.	DESCRIPTION	QUANTITY
1001	Maintenance of Traffic	2 Day
2002	Test pit excavation.	10 C.Y.
7002	Selective Tree Trimming.	1 EA
8001	Concrete foundation.	18 C.Y.
8019	2" polyvinyl chloride electrical conduit (Schedule 80) (trenched).	25 L.F.
8023	3" polyvinyl chloride electrical conduit (Schedule 80) (trenched).	135 L.F.
8024	3" polyvinyl chloride electrical conduit (Schedule 80) (pushed). (To be bored).	100 L.F.
8027	4" polyvinyl chloride electrical conduit (Schedule 80) (trenched).	70 L.F.
8029	4" polyvinyl chloride electrical conduit (Schedule 80) (slotted).	300 L.F.
8030	4" polyvinyl chloride electrical conduit (Schedule 80) (2nd conduit within one slot or trench).	350 L.F.
8043	Ground rod, 3/4" diameter x 10' length with clamp.	9 Each
8052	12-pair telemetry cable - jelly-filled (underground).	270 L.F.
8064	2-conductor electrical cable (No. 14 A.W.G.).	1275 L.F.
8066	5-conductor electrical cable (No. 14 A.W.G.).	1420 L.F.
8067	7-conductor electrical cable (No. 14 A.W.G.).	1570 L.F.
8075	1-conductor electrical cable (No. 6 A.W.G.) stranded bare copper ground wire.	720 L.F.
8077	1-conductor electrical cable (No. 4 A.W.G.) THWN Copper	35 L.F.
8131	Traffic signal handbox (pullbox).	5 Each
8143	Relocate sign.	3 Each

EQUIPMENT LIST (CONT.)

B. EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR.

ITEM NO.	DESCRIPTION	QUANTITY
8148	Removal and salvage of signs less than 50 S.F.	3 Each
8152	Removal of electrical service.	1 Each
8154	Removal of existing interconnect cable, underground.	270 L.F.
8157	Removal and salvage of traffic signal mast arm and pole including foundation.	2 Each
8158	Removal and salvage of pedestal pole.	3 Each
8159	Removal and salvage of cabinet, base-mounted.	1 Each
8161	Removal of handbox.	4 Each
8162	Removal and salvage of any signal head.	19 Each
Neg.	Remove existing pavement markings.	470 L.F.
Neg.	12" white heat applied permanent preformed thermoplastic pavement marking.	630 L.F.
Neg.	24" white heat applied permanent preformed thermoplastic pavement marking.	155 L.F.
	27' steel pole with a 38' mast arm. (Note: Anchor bolts will be 1½" x 54".)	1 EA
	Steel pole with 15' T and twin 50'-70' mast arms. (Note: Anchor bolts will be 2" x 72".)	1 EA
	10' breakaway pedestal pole with transformer base.	5 EA
	Furnish and install 12" vehicular LED traffic signal head (R,Y,G)	6 Each
	Furnish and install 12" vehicular LED traffic signal head (R,Y,G,YA,GA) (left)	4 Each
	Furnish and install 12" vehicular LED traffic signal head (R,Y,G,YA,GA) (right)	2 Each
Neg.	Eight-phase, full-traffic-actuated, solid state digital controller with video interface, L.A.U., L.A.U. Panel and housed in a NEMA size "6" base-mounted cabinet.	1 Each
Neg.	5' breakaway pedestal pole with transformer base.	1 Each
Neg.	Furnish and install electrical cable - 3 wire, 1 conductor (No. 250 KCMIL)	155 L.F.
	Metered pedestal service	1 Each
	Relocate video detector.	4 Each
	2 wire Central Control unit	1 EA
	Audible/tactile pedestrian pushbutton station & signs.	8 EA
Neg.	Furnish and install 16" LED Countdown pedestrian signal head.	8 Each
Neg.	Control cable, video detection camera to controller	780 LF

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

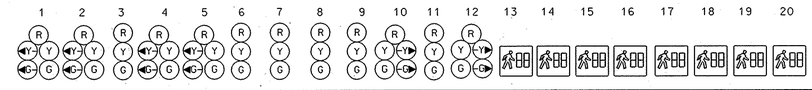
Mr. Ed Rodenhizer
Signal Shop
410-787-7652

Mr. Sonny Bailey
Sign Shop
410-787-7670

The power company representative is:

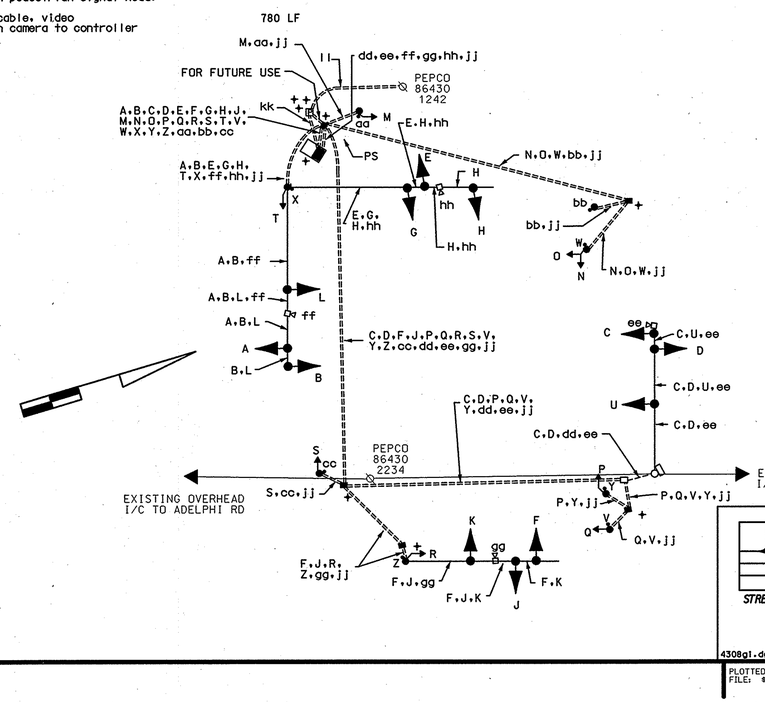
Mr. Steve Custer
PEPCO Customer Design
201 W Guide Dr.,
Rockville, MD 20850
Phone: 301 548-4333

PHASE CHART



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PHASE 1 & 5	◄G-/R	◄G-/R	R	◄G-/R	◄G-/R	R	R	R	R	R/-G►	R	R/-G►	DW	DW	DW	DW	DW	DW	DW	DW
CHANGES TO PHASES 1 & 6, 2 & 5 OR 2 & 6																				
PHASE 1 & 6	◄G-/G	◄G-/G	G	R	R	R	R	R	R	R	R	R	DW	WK	WK	DW	DW	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	DW	DW
PHASE 2 & 5	R	R	R	◄G-/G	◄G-/G	G	R	R	R	R/-G►	R	R/-G►	WK	DW	DW	WK	DW	DW	DW	DW
2 & 5 CHANGE	R	R	R	◄Y-/G	◄Y-/G	G	R	R	R	R/-Y►	R	R/-Y►	WK	DW	DW	WK	DW	DW	DW	DW
PHASE 2 & 6	G	G	G	G	G	G	R	R	R	R	R	R	WK	WK	WK	WK	DW	DW	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	DW	DW
2 & 6 CHANGE	Y	Y	Y	Y	Y	Y	R	R	R	R	R	R	DW	DW	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	DW	DW
4 & 8 CHANGE	R	R	R	R	R	R	Y	Y	Y	Y	Y	Y	DW	DW	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	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	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	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	DARK	DARK

WIRING DIAGRAM



WIRING KEY

A, B, C, D, E, F, G, H, J — 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)

K, M, N, O, P, Q, R, S, T, 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 - 12-PAIR VOICE GRADE INTERCONNECT CABLE (JELLY FILLED)

ee, ff, gg, hh — COAXIAL CABLE AND CONTROL CABLE FOR VIDEO DETECTOR.

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

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

ll - 3-1 CONDUCTOR ELECTRICAL CABLE (NO. 250 KCMIL)

+ - GROUND ROD

SHA No.: BW797M83

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MD 650 (NEW HAMPSHIRE AVE) AND OAKVIEW DRIVE

STREET TRAFFIC STUDIES, LTD.
400 Crain Hwy. NW.
Glen Burnie, MD 21061
Ph (410) 590-5920
Fax (410) 590-5937

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PLOTTED: $DATETIME$
FILE: $FILE$

SCALE NONE	DATE 3/13/06	CONTRACT NO.	
DESIGNED BY R ZACHERL		COUNTY MONTGOMERY	
DRAWN BY R CICCHINI		LOGMILE 15065000.61	
CHECKED BY		TIMS NO. H300	
F.A.P. NO.		TOD NO.	
TS NO. 2QF-GI	DRAWING NO. OF	SHEET NO. 2 OF 3	

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