PROJECT DESCRIPTION

I. GENERAL

This project involves the modification of an existing mast arm Traffic Control Signal with street lighting at the intersection of MD 320 (Piney Branch Rd) and MD 410 (Philadelphia Ave) in Montgomery County. Countdown pedestrian signals with audible pushbuttons shall be installed at this intersection. MD 320 (Piney Branch Rd) is assumed to run a north-south direction.

II. INTERSECTION OPERATION

1. The intersection shall continue to operate in a NEMA four-phase, semi-actuated mode, with the MD 320 (Piney Branch Rd) approaches running concurrently. The pedestrian phase with pushbutton actuation across the north leg of MD 320 (Piney Branch Rd) shall now be a Countdown pedestrain phase with audible pushbutton actuation. A new Countdown pedestrian phase with audible pushbutton actuation shall be installed across the south leg of MD 320 (Piney Branch Rd). The pedestrian phases across MD 410 (Philadelphia Ave) shall now be Countdown pedestrian phases on recall with audible pushbuttons. The farside sampling station on the west leg of MD 410 (Philadelphia Ave) shall continue to be provided at this intersection. The MD 410 (Philadelphia Ave) approaches shall also continue to run concurrently.

2. The existing full-traffic-actuated, eight-phase controller with all necessary equipmemt housed in a NEMA size "6" base-mounted cabinet shall be utilized 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 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 Montgomery County Forces. Contact 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:

TO CROSS MD 320 (PINEY BRANCH RD)

a When pedestrian locates gnd presses pushbutton for an extended time, the pushbutton unit will be " Wait to cross Piney Branch Road at Philadelphia Avenue."

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

TO CROSS MD 410 (PHILADELPHIA AVENUE)

a When pedestrian locates gnd presses pushbutton for an extended time, the pushbutton unit will be " Wait to cross Philadelphia Avenue at Piney Branch Road."

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

5. Pushbuttons are to be located so that they can be activated by a person in a wheelchair reaching less than 18" from a 60" x 60" level landing area with a cross slope of less than or equal to 2%.

6. Location of Accessible Pedestrian signal pushbuttons must meet location requirements of MUTCD Section 4E.09 and Fig. 4 E.2 and the NCHRP publication, "Accesible Pedestrian signals: Guide to Best Practice". If not met, the Contractor is to stop work on pushbutton locations until a design Waiver is obtained, approved by the Director, Office of Traffic and Safety.

7. Pushbutton is to be located so that a pedestrian in a wheelchair located on the level landing area does not have to reach more than 18 inches.

8. The 10' separation between pushbuttons is to be measured face of pushbutton to face of pushbutton, not center of pole to center of pole.

9. Pushbutton arrows are to be parallel to the crossing for which they are intended.

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

Mr. Jeff Wentz
Assistant District Engineer - Traffic
Phone: (301) 513-7358

Mr. Raleigh Medley
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. Keith Lord
Montgomery County Signal Shop
(301) 674-8965

Mr. Sonny Bailey
Sign Shop
410-787-7676

EQUIPMENT LIST

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

ITEM NO.	DESCRIPTION	QUANTITY	
	Sheet aluminum signs to consist of: (ground mount)	8	SF
	R10-3(1) sign. (Note: Sign to read "PUSH BUTTON TO CROSS PINEY BRANCH RD).	4	EA
	R10-3(1) sign. (Note: Sign to read "PUSH BUTTON TO CROSS PHILADELPHIA AVE).	4	EA

EQUIPMENT LIST (cont.)

B. EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR

ITEM NO.	DESCRIPTION	QUANTITY	
1001	Maintenance of traffic per assignment.	2	EA
2001	Class 2 Excavation.	3	C.Y.
2002	Test Pit Excavation	6	C.Y.
5003	12" white lead free reflective thermoplastic pavement marking.	250	L.F.
5004	24" white lead free reflective thermoplastic pavement marking.	35	L.F.
5005	Removal of existing permanent pavement line markings	45	L.F.
6001	Depress curb & gutter.	75	L.F.
6002	Standard type A combination curb and gutter 12" gutter pan 8" depth.	130	L.F.
6003	4" concrete sidewalk.	710	S.F.
8006	2 wire Central Control unit	1	EA
8013	Adjust existing handhole to grade.	1	EA
8014	Audible/tactile pedestrian pushbutton station & signs.	8	EA
8015	Breakaway pedestal pole (10')	2	EA
8015	Breakaway pedestal pole (5')	4	EA
8016	Conduit bend in existng base.	1	EA
8024	LED 16" countdown pedestrian signal head.	8	EA
8028	Remove and dispose of existing equipment per assignment.	1	EA
8036	Electrical cable - 2 conductor (No. 12 AWG) tray cable.	155	L.F.
8037	Detectable warning surfaces	125	S.F.
8040	Concrete for signal foundation.	3	C.Y.
8043	No. 6 AWG stranded bare copper ground wire.	560	L.F.
8044	1" electrical conduit - galvanized sleeve.	15	L.F.
8049	3" schedule 80 rigid polyvinyl chloride conduit - trenched.	155	L.F.
8050	4" schedule 80 rigid polyvinyl chloride conduit - trenched.	40	L.F.
8053	4" schedule 80 rigid polyvinyl chloride conduit - slotted.	150	L.F.
8054	1" liquid tight flexible non-metallic conduit for detector sleeve.	15	L.F.
8062	Furnish and install electrical handhole.	4	EA
8063	Install ground mounted sign.	8	SF
8070	Ground rod $^3/_4$" dia. x 10' length.	2	EA
8075	Electrical cable - 2 conductor (aluminium shielded)	1565	L.F.
8076	Electrical cable - 2 conductor (No. 14 AWG).	1000	L.F.
8078	Electrical cable - 5 conductor (No. 14 AWG).	1000	L.F.
8079	Electrical cable - 7 conductor (No. 14 AWG).	1035	L.F.
8080	Loop wire encased in flexible tubing (No. 14 AWG).	1020	L.F.
8081	Saw cut for signal (loop detector).	265	L.F.

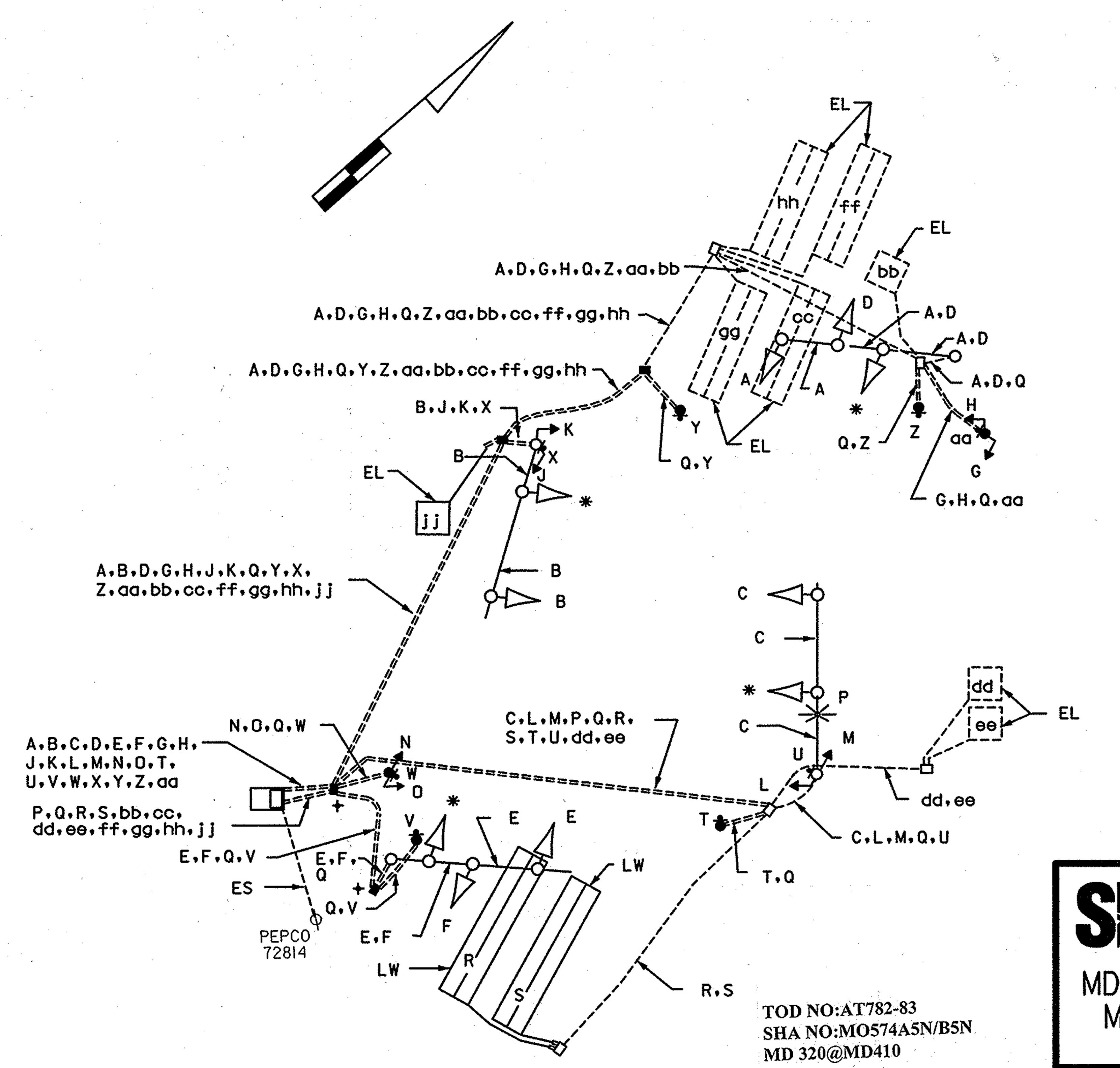
C. EQUIPMENT TO BE REMOVED

All removed materials are to become property of the contractor.

PHASE CHART

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
PHASE 2 & 6	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	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	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW	
PHASE 4 & 8	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	Y	Y	Y	Y	Y	Y	DW	DW	DW	DW	DW	DW	DW	DW	
PHASE 4 & 8 ALT	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	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	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/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 } 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)

G H J K L M N O } 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)

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

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

R S } 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G) ALUMINUM SHIELDED

T U V W X Y Z aa } 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)

bb cc dd ee ff gg hh } 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G) ALUMINUM SHIELDED SPLICED TO EXISTING LOOP WIRE

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

* - USE EXISTING CABLE

EL - LOOP WIRE (NO. 14 A.W.G.) EXISTING

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

ES - EXISTING UNDERGROUND SERVICE TO BE MAINTAINED BY PEPCO

+ - GROUND ROD

TOD NO:AT782-83
SHA NO:MO574A5N/B5N
MD 320@MD410

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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SHA
STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MD 320 (PINEY BRANCH ROAD) AND MD 410 (PHILADELPHIA AVENUE)
TAKOMA PARK, MARYLAND

GENERAL INFORMATION SHEET

SCALE NONE DATE 12/10/07 CONTRACT NO. AT7825185

DESIGNED BY RRZ
DRAWN BY RC
CHECKED BY [signature]
F.A.P. NO.
COUNTY MONTGOMERY
LOGMILE 15041004.96
TIMS NO. H247
TOD NO.

TS NO. 3880A DRAWING NO. 2 OF 2 SHEET NO. OF

PLOTTED: $DATETIME$
FILE: $FILE$

BORDER REV: DATE: June 1, 2004

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