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 and traffic surveillance at the intersection of MD 118 (Germantown Rd) and Middlebrook Road in Montgomery County. Countdown pedestrian signal heads with audible pushbuttons shall be installed across all legs of this intersection. MD 118 (Germantown Rd) is assumed to run a north-south direction.

II. INTERSECTION OPERATION

1. The intersection shall continue to operate in a NEMA eight-phase, semi-actuated mode, with the MD 118 (Germantown Rd) approaches running concurrently. The Exclusive left turn phases for both approaches of MD 118 (Germantown Rd) shall remain in operation. The pedestrian phases across MD 118 (Germantown Rd shall now be Countdown pedestrian phases with audible pushbutton actuation. The pedestrian phases on recall across Middlebrook Rd shall now be Countdown pedestrian phases with audible pushbuttons.. Farside sampling stations shall remain in operation on both legs of MD 118 (Germantown Rd) at this intersection. The Exclusive left turn phases for both approaches for Middlebrook Rd shall remain in operation. The Middlebrook Rd approaches shall also continue to run concurrently.

2. The existing full-traffic-actuated, eight-phase controller with video interface and all necessary equipment 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 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. 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 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 GERMANTOWN ROAD

a When pedestrian locates and presses pushbutton for an extended time, the pushbutton unit will be "Wait to cross Germantown Road at Middlebrook Road".

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

FOR MIDDLEBROOK ROAD

a When pedestrian locates and presses pushbutton for an extended time, the pushbutton unit will be "Wait to cross Middlebrook Road at Germantown 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 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
9570	Sheet aluminum signs to consist of: (ground mount)	13 SF
	Pedestrian education R10-3(1) sign. (Note: Sign to read "PUSHBUTTON TO CROSS CROSS GERMANTOWN RD".)	4 EA
	Pedestrian education R10-3(1) sign. (Note: Sign to read "PUSHBUTTON TO CROSS CROSS MIDDLEBROOK RD".)	4 EA
	R4-7 "KEEP RIGHT (symbolic)" sign. (24" x 30")	1 EA
9571	Sheet aluminum signs to consist of: (mast arm or pole mount)	50 SF
	GUIDE SHIELD ASSEMBLY (48"x75") pole mounted. M3-3 "SOUTH"(30"X15") M1-5 "MD 118"(48"X36") M6-1 "left arrow "(30"X24")	1 EA
	GUIDE SHIELD ASSEMBLY (48"x75") pole mounted. M3-1 "NORTH"(30"X15") M1-5 "MD 118"(48"X36") M6-1 "left arrow "(30"X24")	1 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.	4 C.Y.
2002	Test Pit Excavation	7 C.Y.
5002	Removal of existing permanent pavement line markings	290 L.F.
5004	12" heat applied white permanent preformed thermoplastic pavement marking.	250 L.F.
5005	24" heat applied white permanent preformed thermoplastic pavement marking.	55 L.F.
6001	Standard type A combination curb and gutter 12" gutter pan 8" depth.	195 L.F.
6002	4" concrete sidewalk.	1085 S.F.
8002	2 wire Central Control unit	1 EA
8008	Audible/tactile pedestrian pushbutton station & signs.	8 EA
8009	Breakaway Pedestal pole (5')	6 EA
8009	Breakaway Pedestal pole (10')	1 EA
8014	LED 16" countdown pedestrian signal head.	8 EA
8022	Remove and dispose of existing material and equipment per assignment.	1 EA
8035	Schedule 80 rigid PVC conduit up tp 4" - trenched.	110 L.F.
8037	Wood sign supports up to 4"x6".	16 L.F.
8038	Detectable warning surfaces	130 S.F.
8039	Install overhead or ground mounted sign (including hardware).	63 S.F.
8040	Remove and reinstall decorative brick sidewalk	500 S.F.
8041	No. 6 AWG stranded bare copper ground wire.	110 L.F.
8054	Electrical cable - 2 conductor (No. 14 AWG).	1770 L.F.
8056	Electrical cable - 5 conductor (No. 14 AWG).	1700 L.F.

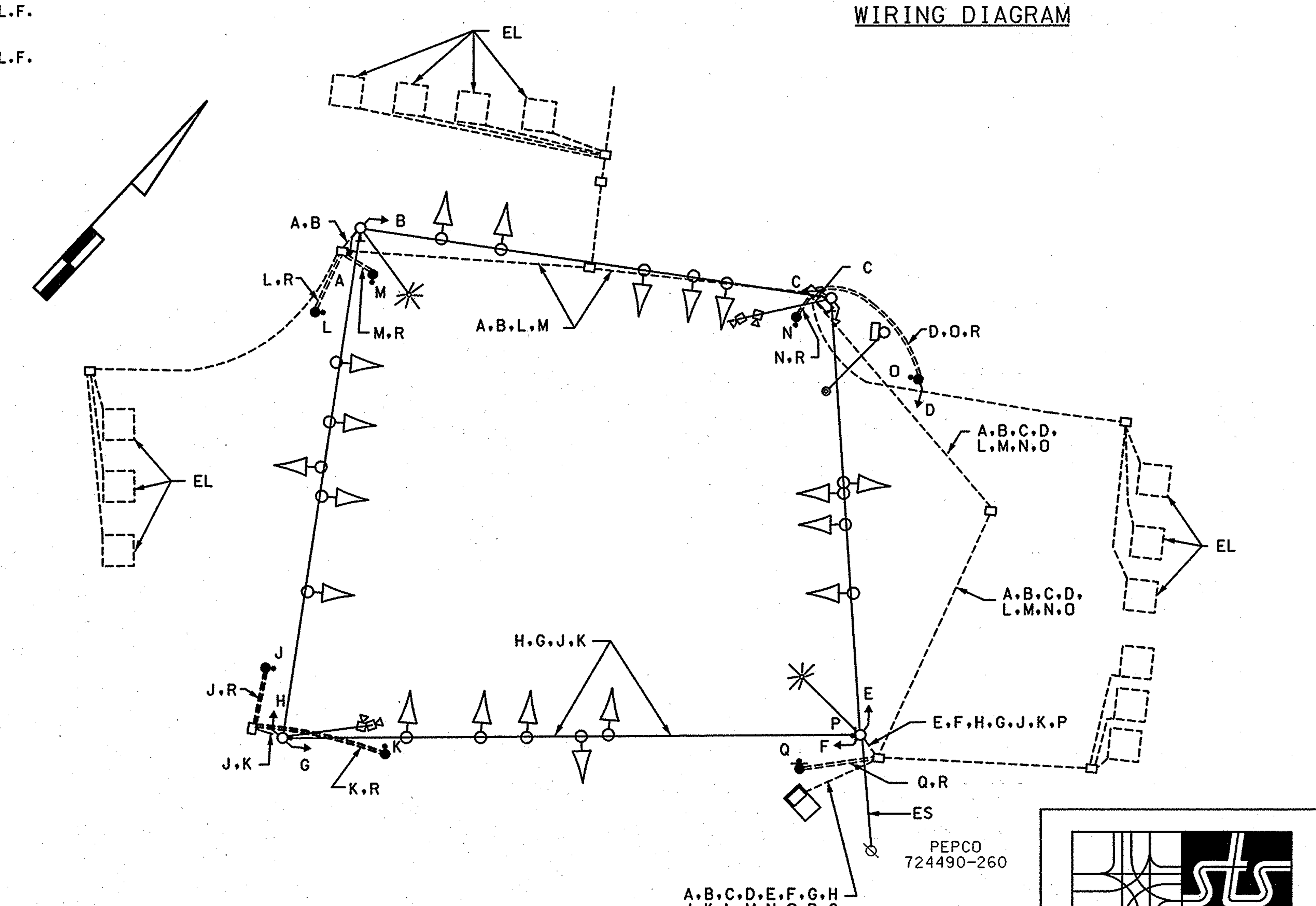
C. EQUIPMENT TO BE REMOVED

All removed signal 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	19	20	21	22	23	24	25	26	27
PHASE 1 & 5	◄G-	◄G-	R	R	◄G-	◄G-	◄G-	R	R	◄R-	◄R-	◄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	◄G-	◄G-	G	G	◄R-	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	DW	WK	WK	DW	DW	DW	DW	DW
1 & 6 CHANGE	◄Y-	◄Y-	G	G	◄R-	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	DW	WK	WK	DW	DW	DW	DW	DW
PHASE 2 & 5	◄R-	◄R-	R	R	◄G-	◄G-	◄G-	G	G	◄R-	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	WK	DW	DW	WK	DW	DW	DW	DW
2 & 5 CHANGE	◄R-	◄R-	R	R	◄Y-	◄Y-	◄Y-	G	G	◄R-	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	WK	DW	DW	WK	DW	DW	DW	DW
PHASE 2 & 6	◄R-	◄R-	G	G	◄R-	◄R-	◄R-	G	G	◄R-	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	WK	WK	WK	WK	DW	DW	DW	DW
PED CLEAR / COUNTDOWN	◄R-	◄R-	G	G	◄R-	◄R-	◄R-	G	G	◄R-	◄R-	◄R-	R	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-	◄R-	Y	Y	◄R-	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 3 & 7	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	◄G-	◄G-	◄G-	R	R	◄G-	◄G-	◄G-	R	R	DW	DW	DW	DW	DW	DW	DW	DW
CHANGES TO 3 & 8, 4 & 7 OR 4 & 8																											
PHASE 3 & 8	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	◄G-	◄G-	◄G-	G	G	◄R-	◄R-	◄R-	R	R	DW	DW	DW	DW	DW	DW	DW	DW
3 & 8 CHANGE	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	◄Y-	◄Y-	◄Y-	G	G	◄R-	◄R-	◄R-	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 4 & 7	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	◄G-	◄G-	◄G-	G	G	DW	DW	DW	DW	DW	DW	DW	DW
4 & 7 CHANGE	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	◄Y-	◄Y-	◄Y-	G	G	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 4 & 8	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	G	G	◄R-	◄R-	◄R-	G	G	DW	DW	DW	DW	DW	DW	DW	DW
4 & 8 CHANGE	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	Y	Y	◄R-	◄R-	◄R-	Y	Y	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 3 & 8 ALT	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	◄G-	◄G-	◄G-	G	G	◄R-	◄R-	◄R-	R	R	DW	DW	DW	DW	DW	WK	WK	DW
3 & 8 CHANGE ALT	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	◄Y-	◄Y-	◄Y-	G	G	◄R-	◄R-	◄R-	R	R	DW	DW	DW	DW	DW	WK	WK	DW
PHASE 4 & 7 ALT	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	◄G-	◄G-	◄G-	G	G	DW	DW	DW	DW	WK	DW	DW	WK
4 & 7 CHANGE ALT	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	◄Y-	◄Y-	◄Y-	G	G	DW	DW	DW	DW	WK	DW	DW	WK
PHASE 4 & 8 ALT	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	G	G	◄R-	◄R-	◄R-	G	G	DW	DW	DW	DW	WK	WK	WK	WK
PED CLEAR / COUNTDOWN	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	G	G	◄R-	◄R-	◄R-	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	R	◄R-	◄R-	◄R-	Y	Y	◄R-	◄R-	◄R-	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/◄R-	FL/Y	FL/Y	FL/◄R-	FL/◄R-	FL/◄R-	FL/R	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 } 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)

J K L M N O P Q } 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)

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

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

ES - EXISTING OVERHEAD SERVICE TO BE MAINTAINED BY PEPCO

TOD NO: AT910-24
SHA NO: MO579A5C/B5C
MD118AND MD119

SHA
STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MD 118 AT MIDDLEBROOK ROAD

GENERAL INFORMATION SHEET

SCALE NONE DATE 10/23/07 CONTRACT NO. AT9105185

DESIGNED BY JWA COUNTY MONTGOMERY
DRAWN BY RC LOGMILE 15011805.57
CHECKED BY ______ TIMS NO. I118
F.A.P. NO. ______ TOD NO. ______

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400 Crain Hwy.,N.W.
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FILE: $FILE$

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