M4 02.36.2 8/08/2/6 USR T:\DGS\VDES\13_1000\
BORDER REV: DATE: June 1, 2004
DRILL HOLES
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PROJECT DESCRIPTION

I. GENERAL

This project involves the modification of an existing Traffic Control Signal with interconnect at the intersection of MD 28 (W Montgomery Ave) and Bullard Circle / Laird St in Montgomery County. LED traffic signal heads shal replace all existing signal heads. Countdown pedestrian signals shall be installed across Bullard Circle. Also, all pedestrian phases shall now have audible pushbuttons. MD 28 (W Montgomery Ave) is assumed to run an east-west direction.

II. INTERSECTION OPERATION

1. The intersection shall continue to operate in a NEMA four-phase, semi-actuated mode, with the MD 28 (W Montgomery Ave) approaches running concurrently. The Countdown pedestrian phase with pushbutton actuation across both legs of MD 28 (W Montgomery Ave) shall now have audible pushbuttons on actuation. MD 410 (East-West Hwy). Countdown pedestrian phase across Bullard Circle on recall shall now be provided. The Bullard Circle / Laird St approaches shall also continue to run concurrently.

2. The existing full-traffic-actuated, eight-phase controller with 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. 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 28 (W MONTGOMERY AVE)

a When pedestrian locates and presses the pushbutton for an extended time, the pushbutton unit will announce the following message " Wait to cross West Montgomery at Laird and Bullard."

b. When the WALK phase begins, the pushbutton unit will provide a rapid tick which will last for the duration of the WALK phase.

TO CROSS BULLARD CICRCLE

a When pedestrian locates and presses the pushbutton for an extended time, the pushbutton unit will announce the following message " Wait to cross Bullard at West Montgomery."

b. When the WALK phase begins, the pushbutton unit will provide 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 Distrlct Engineer - Traffic
Phone: (301) 513-7358

Mr. Richard L. Daff, Sr.
Chief, Traffic Operations Division
Phone: (410) 787-7630

Mr. Wayne Mowdy
Assistant District Engineer - Maintenance
Phone: (301) 513-7304

Keith Lord
Montgomery County Signal Shop
(301) 674-8965

Mr. Augie Rebish
District Engineer - Utility
Phone: (301) 513-7350

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)	8 SF
	Pedestrian education R10-3(1) sign. (Note: Sign to read "PUSHBUTTON TO CROSS BULLARD CIRCLE".)	4 EA
	Pedestrian education R10-3(1) sign. (Note: Sign to read "PUSHBUTTON TO CROSS W MONTGOMERY AVE".)	2 EA
	M4-6 "END" sign, (24"x12")	1 EA

B. EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR

ITEM NO.	DESCRIPTION	QUANTITY
1001	Maintenance of traffic per assignment.	1 EA
2001	Class 2 Excavation.	2 C.Y.
2002	Test Pit Excavation	2 C.Y.

EQUIPMENT LIST (CONT.)

B. EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR

ITEM NO.	DESCRIPTION	QUANTITY
5001	5" white lead free reflective thermoplastic pavement marking.	70 L.F.
5002	5" yellow lead free reflective thermoplastic pavement marking.	250 L.F.
5003	12" white lead free reflective thermoplastic pavement marking.	440 L.F.
5004	24" white lead free reflective thermoplastic pavement marking.	65 L.F.
5005	Removal of existing permanent pavement line markings	1100 L.F.
5006	Removal of existing permanent marking letters, symbols, arrows and numbers.	2 EA
6001	Depress curb & gutter.	25 L.F.
6002	Standard type A combination curb and gutter 12" gutter pan 8" depth.	110 L.F.
6003	4"concrete sidewalk.	390 S.F.
8002	12" red or green LED signal head section.	16 EA
8003	12" yellow LED signal head section.	8 EA
8006	2 wire Central Control unit	1 EA
8013	Adjust existing handhole to grade.	1 EA
8014	Audible/tactile pedestrian pushbutton station & signs.	6 EA
8015	Breakaway pedestal pole (10')	1 EA
8015	Breakaway pedestal pole (5')	1 EA
8024	LED 16" countdown pedestrian signal head.	3 EA
8028	Remove and dispose of existing equipment per assignment.	1 EA
8037	Detectable warning surfaces	50 S.F.
8038	Relocate existing sign.	7 SF
8039	Remove and reset decorative brick.	565 S.F.
8040	Concrete for signal foundation.	1 C.Y.
8043	No. 6 AWG stranded bare copper ground wire.	75 L.F.
8049	3" schedule 80 rigid polyvinyl chloride conduit - trenched.	35 L.F.
8054	1" liquid tight flexible non-metallic conduit for detector sleeve.	10 L.F.
8063	Install ground mounted sign.	8 SF
8075	Electrical cable - 2 conductor (aluminium shielded)	150 L.F.
8076	Electrical cable - 2 conductor (No. 14 AWG).	515 L.F.
8078	Electrical cable - 5 conductor (No. 14 AWG).	385 L.F.
8080	Loop wire encased in flexible tubing (No. 14 AWG).	410 L.F.
8081	Saw cut for signal (loop detector).	105 L.F.

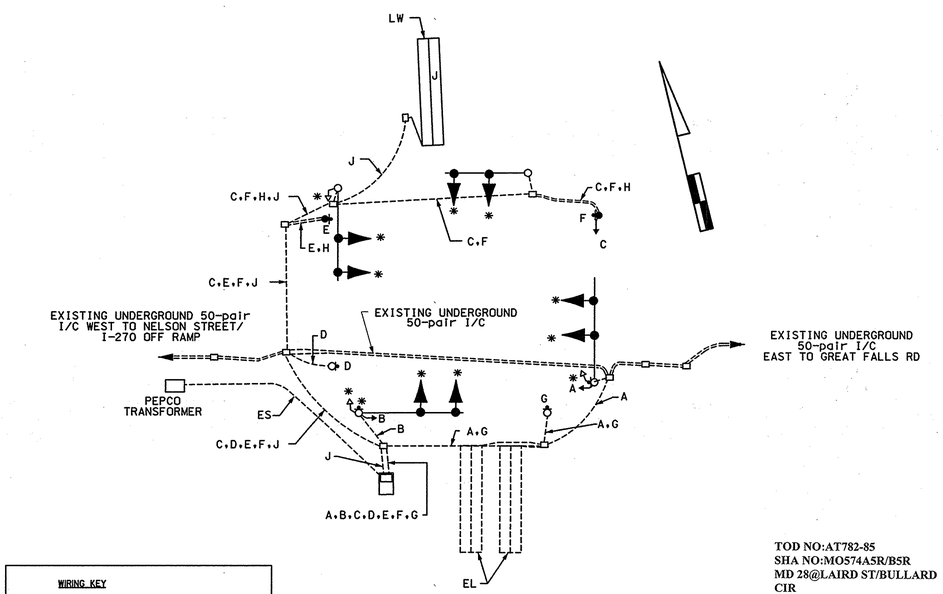
C. EQUIPMENT TO BE REMOVED

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
PHASE 2 & 6	G	G	G	G	R	R	R	R	WK	WK	DW	DW	DW	DW
PED CLEAR / COUNTDOWN	G	G	G	G	R	R	R	R	FL/DW	FL/DW	DW	DW	DW	DW
2 & 6 CHANGE	Y	Y	Y	Y	R	R	R	R	DW	DW	DW	DW	DW	DW
PHASE 4 & 8	R	R	R	R	G	G	G	G	DW	DW	DW	DW	DW	DW
4 & 8 CHANGE	R	R	R	R	Y	Y	Y	Y	DW	DW	DW	DW	DW	DW
PHASE 4 & 8 ALT	R	R	R	R	G	G	G	G	DW	DW	WK	WK	WK	WK
PED CLEAR / COUNTDOWN	R	R	R	R	G	G	G	G	DW	DW	FL/DW	FL/DW	FL/DW	FL/DW
4 & 8 ALT CHANGE	R	R	R	R	Y	Y	Y	Y	DW	DW	DW	DW	DW	DW
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	DARK	DARK	DARK	DARK	DARK	DARK

WIRING DIAGRAM



TOD NO:AT782-85
SHA NO:MO574A5R/B5R
MD 28@LAIRD ST/BULLARD CIR

WIRING KEY

A, B, C } 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)

D, E, F, G } 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)

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

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

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

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

* - USE EXISTING CABLE

ES - EXISTING UNDERGROUND ELECTRICAL SERVICE BY PEPCO

STREET TRAFFIC STUDIES, LTD.
400 Crain Hwy.-NW.
Glen Burnie, MD 21061
Ph (410) 590-5500
Fax (410) 590-6637
5360GI.DGN

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MD 28 AND LAIRD ST/ BULLARD CIRCLE

CITY OF ROCKVILLE

~~TRAFFIC SIGNAL PLAN~~ GI

SCALE NONE	DATE 2/26/08	CONTRACT NO. AT7825185	
DESIGNED BY R ZACHERL		COUNTY MONTGOMERY	
DRAWN BY ROB CICCHINI		LOGMILE 15002821.47	
CHECKED BY		TIMS NO. E991	
F.A.P. NO.		TOD NO.	
TS NO.1334BGI	DRAWING NO. 2 OF 2	SHEET NO. OF	

PLOTTED: @DATETIME@
FILE: @FILE@