

PROJECT DESCRIPTION

I. GENERAL

This project involves the installation of a Traffic Control Signal with street lighting and interconnect at the intersection of MD 108 (Laytonville Road) and Volunteer Drive in Montgomery County. MD 108 (Laytonville Road) is assumed to run an east-west direction.

This is a part time signal that during normal operation shall display "Flashing Yellow" on MD 108 and flash "Red" on Volunteer Drive. Video detection shall be provided on all approaches, the MD 108 video detectors shall operate for sampling. The Volunteer Drive detection area shall be set back 60' behind the stopline, thus, vehicles won't be detected until approximately four are queued. At that time, the MD 108 signals will display "Yellow" and then "Red" and the Volunteer Drive signals will display "Green". This will create a part time signal scenario that is designed to operate as a full color signal only when events are letting out and several vehicles are departing the complex at the same time. Once the pre-emption has been activated, the signal will operate in full-color mode for a minimum of 30 minutes.

II. INTERSECTION OPERATION

- The intersection is to operate in a flashing mode. During the normal operation phase, the MD 108 (Laytonville Road) approaches shall flash "Yellow" while the Volunteer Drive approach shall operate in a flashing "Red" mode. During the Pre-emption phase, the intersection shall operate in a two-phase semi-actuated mode.
- A full-traffic-actuated, eight-phase controller with one (1) four channel, rack mount loop detector amplifiers, 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

- The Contractor shall be responsible for terminating all signal cables, excluding interconnect, to the appropriate terminals and shall properly label each cable.
- 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. Contact Mr. Bob Gonzales at (240) 777-8761 seventy-two hours in advance of intended work.
- 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 FURNISHED AND/OR INSTALLED BY THE CONTRACTOR

SPEC. NUMBER	DESCRIPTION	QUANTITY
8088	D3-2 "Volunteer DR" sign (variable x 18") mast arm mounted.	2 Each
8088	W3-3 NEW "SIGNAL AHEAD" sign, (48" x 48") ground mounted.	2 Each
8103	27' steel pole with a 50' (cut to 45') mast arm. (Note: Anchor bolts will be 1 3/4" x 90".)	1 Each
8104	27' steel pole with twin 50'-50' (cut to 38') mast arms. (Note: Anchor bolts will be 1 3/4" x 90".)	1 Each
8122	12", one-way, three-section (R,Y,G) traffic signal head with adjustable bracket for mast arm mounting and tunnel visors.	6 Each
8129	Eight-phase, full-traffic-actuated, solid state digital controller with rack mounted loop detector amplifiers, L.A.U., L.A.U. Panel and all necessary equipment housed in a NEMA size "6" base-mounted cabinet.	1 Each
-	Video detector camera w/ coaxial cable (to be installed by County Forces)	3 Each

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

Mr. Lee Starkloff  
Assistant District Engineer - Traffic  
Phone: (301) 513-7318

Mr. Raleigh Madley  
Assistant District Engineer - Maintenance  
Phone: (301) 513-7304

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

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

EQUIPMENT LIST

A. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR

SPEC. NUMBER	DESCRIPTION	QUANTITY
2002	Test pit excavation.	3 C.Y.
8001	Concrete foundation.	8 C.Y.
8019	2" polyvinyl chloride electrical conduit (Schedule 80) (trenched).	20 L.F.
8023	3" polyvinyl chloride electrical conduit (Schedule 80) (trenched).	265 L.F.
8024	3" polyvinyl chloride electrical conduit (Schedule 80) (pushed). (To be bored).	95 L.F.
8027	4" polyvinyl chloride electrical conduit (Schedule 80) (trenched).	25 L.F.
8028	4" polyvinyl chloride electrical conduit (Schedule 80) (pushed). (To be bored).	75 L.F.
8041	Control and distribution equipment.	1 Each
8043	Ground rod, 3/4" diameter x 10' length with clamp.	3 Each
8050	50-pair telemetry cable - self-supporting (overhead).	3125 L.F.
8063	Canoga 4-conductor electrical cable (No. 14 A.W.G.) (shielded).	520 L.F.
8066	5-conductor electrical cable (No. 14 A.W.G.).	100 L.F.
8067	7-conductor electrical cable (No. 14 A.W.G.).	585 L.F.
8070	2-conductor electrical cable (No. 12 A.W.G.) copper type TC.	275 L.F.
8075	1-conductor electrical cable (No. 6 A.W.G.) stranded bare copper ground wire.	225 L.F.
8094	15' lighting arm.	1 Each
8097	250W-HPS luminaire.	1 Each
8109	3" weatherhead.	1 Each
8131	Traffic signal handbox (pullbox).	5 Each
8139	Cut mast arm to needed length.	2 Each
Neg.	3" polyvinyl chloride electrical conduit (Schedule 80) (riser).	35 L.F.
Neg.	5" white heat applied permanent preformed thermoplastic pavement marking	1900 L.F.
Neg.	5" yellow heat applied permanent preformed thermoplastic pavement marking	400 L.F.
Neg.	24" white heat applied permanent preformed thermoplastic pavement marking	100 L.F.

SEQUENCE OF OPERATION SHEET

MD 108  
RUNS IN AN  
EAST-WEST  
DIRECTION

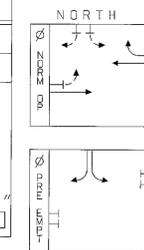
TRAFFIC OPERATIONS SECTION  
DIVISION OF TRAFFIC ENGINEERING  
MONTGOMERY COUNTY, MARYLAND

MD 108 (LAYTONVILLE RD) AND  
VOLUNTEER DR

INTERSECTION: NO.

SIGNAL NO.	SIGNAL HEAD INDICATIONS					
	1,2,3,4,5,6					
TOTAL:	6					
LEGEND	(R)	(Y)	(Y)	(Y)	(Y)	(Y)
OPTICALLY LIMITED	(R)	(Y)	(Y)	(Y)	(Y)	(Y)
R RED	(R)	(Y)	(Y)	(Y)	(Y)	(Y)
Y YELLOW	(Y)	(Y)	(Y)	(Y)	(Y)	(Y)
G GREEN	(G)	(G)	(G)	(G)	(G)	(G)
ARROW	(A)	(A)	(A)	(A)	(A)	(A)
F FLASHING	(F)	(F)	(F)	(F)	(F)	(F)
	12"	12"	12"	12"	12"	9" or 12"

PHASING



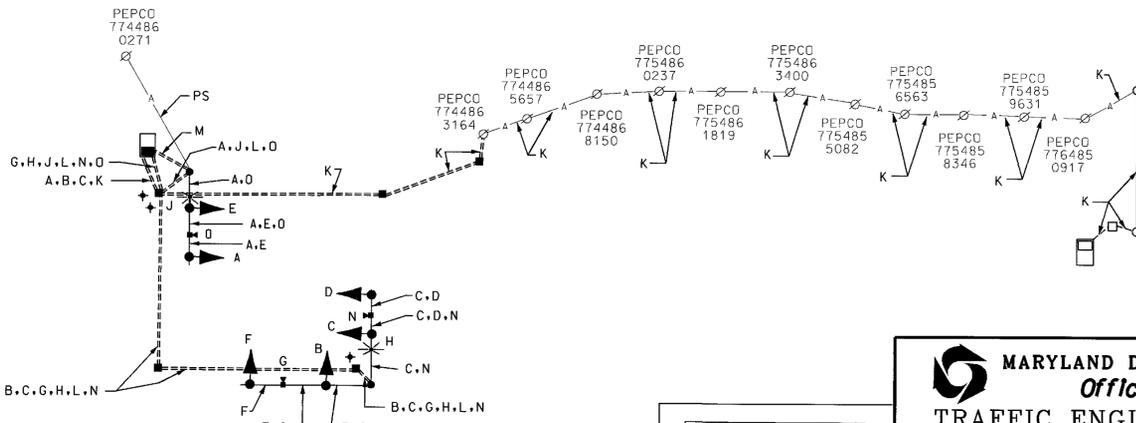
SIGNAL NO.	SEQUENCE OF OPERATION						F A S H
	1	2	3	4	5	6	
1	FL/Y	Y	R	R	R	R	FL/Y
2	FL/Y	Y	R	R	R	R	FL/Y
3	FL/Y	Y	R	R	R	R	FL/Y
4	FL/Y	Y	R	R	R	R	FL/Y
5	FL/R	FL/R	FL/R	G	Y	R	FL/R
6	FL/R	FL/R	FL/R	G	Y	R	FL/R
PHASE	NORMAL OPERATION	ALL RED	PRE-EMPT OPERATION	ALL RED			

NOTES:

ONCE THE PRE-EMPTION HAS BEEN ACTIVATED, THE SIGNAL WILL OPERATE IN FULL-COLOR MODE FOR A MINIMUM OF 30 MINUTES.

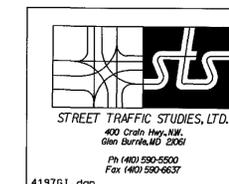
SUBMITTED: \_\_\_\_\_ CHECKED: \_\_\_\_\_ APPROVED: \_\_\_\_\_  
IN SERVICE BY: \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_

WIRING DIAGRAM



WIRING KEY

- A } 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- C } 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- D } 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- F } 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- G - CANOGA 4-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.) SHIELDED AND COAXIAL CABLE (INCIDENTAL WITH PURCHASE OF CAMERA)
- H } 2-CONDUCTOR TRAY
- J } CABLE (NO. 12 A.W.G.)
- K - 12-PAIR VOICE GRADE INTERCONNECT CABLE (OVERHEAD)
- L - STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
- M - 3-CONDUCTOR ELECTRICAL CABLE (NO. 4 A.W.G.)
- PS - PROPOSED OVERHEAD SERVICE TO BE INSTALLED BY PEPCO
- + - GROUND ROD



**MARYLAND DOT - STATE HIGHWAY ADMINISTRATION**  
**Office of Traffic & Safety**  
**TRAFFIC ENGINEERING DESIGN DIVISION**  
MD 108 (LAYTONVILLE RD) AND VOLUNTEER DR  
(OLNEY BOYS AND GIRLS CLUB)

DRAWN BY: ROB CICCHINI	F.A.P. NO. _____	TS NO. _____
CHECKED BY: R. ZACHERL	S.H.A. NO. _____	SHEET NO. 3 OF 4
SCALE: NONE	COUNTY: MONTGOMERY	T.I.M.S. NO. E761
DATE: 7/8/02	LOG MILE: _____	