

**PROJECT DESCRIPTION**

THIS PROJECT INVOLVES THE INSTALLATION OF A NEW TRAFFIC SIGNAL AT THE INTERSECTION OF MD 216 AND FULTON SCHOOL CAMPUS IN HOWARD COUNTY. MD 216 IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

**CONTROLLER OPERATION**

AN EIGHT-PHASE, FULLY ACTUATED NEMA CONTROLLER WITH ONE, 4-CHANNEL TIME-DELAY-OUTPUT, LOOP DETECTOR AMPLIFIERS HOUSED IN A BASE MOUNTED CABINET WILL BE INSTALLED AT THE INTERSECTION.

THE CONTROLLER WILL OPERATE AS A FOUR PHASE, FULL-TRAFFIC-ACTUATED CONTROLLER WITH AN EXCLUSIVE-PERMISSIVE LEFT TURN PHASE FOR EASTBOUND MD 216.

**SPECIAL NOTE**

UPON COMPLETION OF THIS PROJECT THE CONTRACTOR SHALL NOTIFY MR. ROBERT SNYDER OF THE SHA AT (410) 787-7635 TO ARRANGE FOR THE PHONE LINE INSTALLATION. THE CONTRACTOR IS TO PROVIDE MR. SNYDER WITH THE NEAREST STREET ADDRESS, ZIP CODE, AND PHONE NUMBER.

**PHASE CHART**

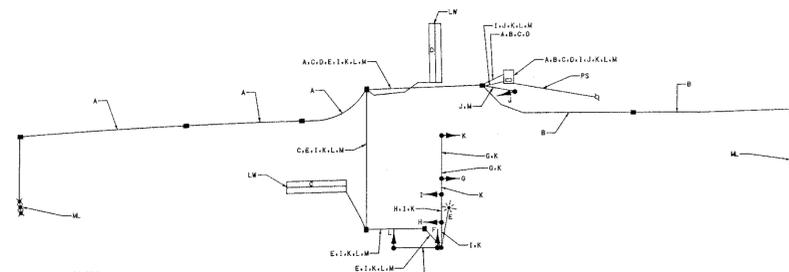
	1	2	3	4	5	6	7
	⊙	⊙	⊙	⊙	⊙	⊙	⊙
PHASE 1 & 6	⊙	⊙	G	R	R	R	R
1 & 6 CHANGE	⊙	⊙	G	R	R	R	R
PHASE 2 & 5	G	G	G	G	G	R	R
2 & 5 CHANGE	Y	Y	Y	Y	Y	R	R
PHASE 4	R	R	R	R	R	G	G
4 CHANGE	R	R	R	R	R	G	G
FLASHING OPERATION	FLY	FLY	FLY	FLY	FLY	FL/R	FL/R

**EQUIPMENT LIST "B" CONTINUED**

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY CONTRACTOR

ITEM NO.	QUANTITY	DESCRIPTION
8066	1 EA	FURNISH AND INSTALL CONTROL AND DISTRIBUTION EQUIPMENT
8082	1 EA	FURNISH AND INSTALL MAST ARM POLE AND TWIN 50 FT./70 FT. MAST ARMS
----	5 EA	FURNISH AND INSTALL 12 IN., ONE-WAY, THREE-SECTION (R,Y,G) VEHICLE TRAFFIC SIGNAL HEAD - MAST ARM MOUNT
----	2 EA	FURNISH AND INSTALL W3-3 SIGN (48 IN. X 48 IN.) WITH NEW PANEL-GROUND MOUNT
----	1 EA	FURNISH AND INSTALL 12 IN., ONE-WAY, FIVE-SECTION (R,Y,YA,G,GA) VEHICLE TRAFFIC SIGNAL HEAD - MAST ARM MOUNT
----	1 EA	FURNISH AND INSTALL R10-12 SIGN (36 IN. X 42 IN.) MAST ARM MOUNT
----	1 EA	FURNISH AND INSTALL BASE MOUNTED CABINET AND CONTROLLER
----	1 EA	FURNISH AND INSTALL FOUR CHANNEL TIME-DELAY-OUTPUT LOOP DETECTOR AMPLIFIER
----	1 EA	FURNISH AND INSTALL 8 IN./12 IN. ONE-WAY, FIVE-SECTION (R,Y,YA,G,GA) VEHICLE TRAFFIC SIGNAL HEAD-PEDESTAL MOUNT
----	1 EA	FURNISH AND INSTALL R3-5R SIGN (30 IN. X 36 IN.) MAST ARM MOUNT
----	1 EA	FURNISH AND INSTALL R3-5b(R) SIGN (60 IN. X 36 IN.) GROUND MOUNT
----	1 EA	FURNISH AND INSTALL "MD 216/EAST/WEST" SIGN (72 IN. X 24 IN.) MAST ARM MOUNT
----	1 EA	FURNISH AND INSTALL R1-2 SIGN (36 IN. X 36 IN.) GROUND MOUNT

**WIRING DIAGRAM**



**WIRING KEY**

- A-B MICRO-LOOP PROBE
- C-D 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.) ALUMINUM SHIELDED
- E 2 CONDUCTOR ELECTRICAL CABLE (NO. 12 A.W.G.)
- F-H 5 CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- I-L 7 CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- M STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
- LW LOOP WIRE (NO. 14 A.W.G.)
- PS PROPOSED ELECTRIC SERVICE
- ML MICRO-LOOP PROBE

**EQUIPMENT LIST "A"**

A. EQUIPMENT TO BE FURNISHED BY SHA AND INSTALLED BY CONTRACTOR

ITEM NO.	QUANTITY	DESCRIPTION
	NONE	

**EQUIPMENT LIST "B"**

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY CONTRACTOR  
ALL EQUIPMENT SHALL HAVE CATALOG CUTS SUBMITTED TO THE SHA QOTS FOR APPROVAL PRIOR TO INSTALLATION.

ITEM NO.	QUANTITY	DESCRIPTION
1001	1 EA	MAINTENANCE OF TRAFFIC
2001	3 CY	TEST PIT EXCAVATION
5001	100 LF	FURNISH AND INSTALL 5 IN. YELLOW HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING
5002	180 LF	FURNISH AND INSTALL 5 IN. WHITE HEAT APPLIED PERMANENT PREFORM THERMOPLASTIC PAVEMENT MARKING
5004	60 LF	FURNISH AND INSTALL 24 IN. HEAT APPLIED PERMANENT PREFORM THERMOPLASTIC PAVEMENT MARKING
5005	4 EA	FURNISH AND INSTALL HEAT APPLIED PERMANENT PREFORM THERMOPLASTIC PAVEMENT MARKING LETTERS
5006	2 EA	FURNISH AND INSTALL HEAT APPLIED PERMANENT PREFORM THERMOPLASTIC PAVEMENT MARKING ARROW
5007	350 LF	REMOVE EXISTING PAVEMENT MARKINGS
8001	8 CY	FURNISH AND INSTALL CONCRETE FOR SIGNAL FOUNDATION
8003	1 EA	FURNISH AND INSTALL 14 FT. BREAKAWAY PEDESTAL POLE
8006	2 EA	CLEAN, CUT, GALVANIZE AND CAP MAST ARM
8016	1 EA	FURNISH AND INSTALL MICRO-LOOP PROBE WITH 500 FT. LEAD-IN
8017	1 EA	FURNISH AND INSTALL MICRO-LOOP PROBE WITH 1000 FT. LEAD-IN
8021	300 LF	FURNISH AND INSTALL SAW CUT FOR SIGNAL (LOOP DETECTOR)
8023	30 LF	FURNISH AND INSTALL 1 IN. LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR SLEEVE
8024	780 LF	FURNISH AND INSTALL 2 IN. SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED
8027	65 LF	FURNISH AND INSTALL 3 IN. SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED
8029	130 LF	FURNISH AND INSTALL 3 IN. SCHEDULE 80 RIGID PVC CONDUIT-BORED
8030	30 LF	FURNISH AND INSTALL 4 IN. SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED
8033	9 EA	FURNISH AND INSTALL ELECTRICAL HANDHOLE
8034	3 EA	FURNISH AND INSTALL GROUND ROD - 3/4" X 10'
8040	920 LF	FURNISH AND INSTALL LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO. 14 A.W.G.)
8041	260 LF	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (ALUMINUM SHIELDED)
8044	90 LF	FURNISH AND INSTALL ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 A.W.G.)
8045	900 LF	FURNISH AND INSTALL ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 A.W.G.)
8046	270 LF	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 A.W.G.)
8048	240 LF	FURNISH AND INSTALL NO. 6 A.W.G. STRANDED BARE COPPER GROUND WIRE
8049	45 LF	FURNISH AND INSTALL ELECTRICAL CABLE - 1 CONDUCTOR (NO. 4 A.W.G.) THHN/THWN
8051	80 LF	FURNISH AND INSTALL WOOD SIGN SUPPORTS 4 IN. X 6 IN.
8055	1 EA	FURNISH AND INSTALL 250 WATT HPS LUMINAIRE WITH PHOTOCCELL
8056	1 EA	FURNISH AND INSTALL 15 FT. LIGHTING BRACKET ARM FOR TRAFFIC SIGNAL STRUCTURE

**EQUIPMENT LIST "C"**

C. EXISTING EQUIPMENT TO BE REMOVED BY THE CONTRACTOR AND DELIVERED TO THE STATE HIGHWAY ADMINISTRATION, 7491 CONNELLEY DRIVE, HANOVER, MARYLAND 21076. THE CONTRACTOR SHALL NOTIFY THE SHA AT (410) 787-7652 AT LEAST THREE DAYS IN ADVANCE OF DELIVERY.

ITEM NO.	QUANTITY	DESCRIPTION
	NONE	

**CONTACT PERSONS FOR DISTRICT 7 ARE AS FOLLOWS:**

- |   |   |
|---|---|
| MR. ROBERT FISHER<br>DISTRICT ENGINEER<br>(301) 624-8102                      | MR. JIM BUCKALEW<br>ASSISTANT DISTRICT ENGINEER - UTILITIES<br>(301) 729-8436 |
| MR. JOHN CONCANNON<br>ASSISTANT DISTRICT ENGINEER - TRAFFIC<br>(301) 624-8141 | MR. LEON KERNS<br>ASSISTANT DISTRICT ENGINEER - MAINTENANCE<br>(301) 624-8106 |

**CONTACTS FOR OFFICE OF TRAFFIC AND SAFETY**

- |  |  |
|--|--|
| MR. RICHARD DAFF SR.<br>CHIEF, TRAFFIC OPERATIONS<br>(410) 787-7630                    | MR. EUGENE BAILEY<br>TEAM LEADER SIGN OPERATIONS<br>(410) 787-7676               |
| MR. ROBERT SNYDER<br>ASSISTANT DIVISION CHIEF,<br>TRAFFIC OPERATIONS<br>(410) 787-7631 | MR. DAVID SCHWARTZ<br>SUPPLY OFFICE IV (SIGNAL SHOP WAREHOUSE)<br>(410) 787-7668 |
| MR. ED RODENHIZER<br>TEAM LEADER SIGNAL OPERATIONS<br>(410) 787-7652                   |  |

**MARYLAND DOT - STATE HIGHWAY ADMINISTRATION**  
Office of Traffic & Safety  
TRAFFIC ENGINEERING DESIGN DIVISION  
GENERAL INFORMATION SHEET  
MD 216 AND FULTON SCHOOL CAMPUS

DRAWN BY: T.M.Z	F.A.P. NO.	TS NO.	
CHECKED BY: K.W.S	S.H.A. NO.	4092 GI	SHEET NO.
SCALE: NONE	COUNTY: HARFORD	T.I.M.S. NO.	
DATE: 2-5-01	LOG MILE: 13021604.74	E216	2 OF 2