

**PROJECT DESCRIPTION**

**GENERAL**

THIS PROJECT INVOLVES THE RECONSTRUCTION OF THE EXISTING TRAFFIC CONTROL SIGNAL AT THE INTERSECTION OF MD 152 (MOUNTAIN ROAD/FALLSTON ROAD) AND MD 147 (HARFORD ROAD) IN HARFORD COUNTY, MARYLAND. MD 147 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

**INTERSECTION OPERATION**

THE INTERSECTION WILL OPERATE IN A NEMA SIX-PHASE, FULL-TRAFFIC-ACTUATED MODE WITH THE MD 152 APPROACHES OPERATING CONCURRENTLY AND THE MD 147 APPROACHES OPERATING CONCURRENTLY. EXCLUSIVE/PERMISSIVE LEFT-TURN PHASING IS PROVIDED FOR NORTHBOUND AND SOUTHBOUND MD 152 APPROACHES.

**CONTROLLER REQUIREMENTS**

INSTALL A FULL-TRAFFIC-ACTUATED, EIGHT-PHASE CONTROLLER WITH TWO (2) FOUR-CHANNEL, TIME-DELAY-OUTPUT LOOP DETECTOR AMPLIFIERS, VIDEO INTERFACE EQUIPMENT (1-4 CAMERAS), INTERSECTION MONITOR WITH BATTERY BACKUP FOR PHONE DROP AND ASSOCIATED HARNESSSES HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET.

**PHONE DROP**

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

**MAINTENANCE OF TRAFFIC**

THE FOLLOWING TRAFFIC CONTROL STANDARDS SHALL BE REFERENCED FOR THE PROJECT. ADDITIONAL TRAFFIC CONTROL STANDARDS MAY BE USED AS DIRECTED BY THE ENGINEER.

- STANDARD NO. MD-104.04-01 (SHOULDER WORK)
- STANDARD NO. MD-104.02-09 (FLAGGING OPERATION)
- STANDARD NO. MD-104.04-03 (LEFT LANE CLOSURE)
- STANDARD NO. MD-104.04-05 (RIGHT LANE CLOSURE)

**PROJECT CONTACTS**

THE CONTACT PERSONS FOR SHA ARE AS FOLLOWS:

MS. ERIN KUHN  
ASSISTANT DISTRICT ENGINEER - TRAFFIC  
PHONE: (410) 229-2381

MR. ROBERT SYNDER  
ASSISTANT CHIEF, TRAFFIC OPERATIONS DIVISION  
PHONE: (410) 787-7631

MR. ANDRE FUTRELL  
ASSISTANT DISTRICT ENGINEER - MAINTENANCE  
PHONE: (410) 229-2361

MR. RICHARD L. DAFF, SR.  
CHIEF, TRAFFIC OPERATIONS DIVISION  
PHONE: (410) 787-7630

MR. MIKE PASQUARIELLO  
DISTRICT UTILITY ENGINEER  
PHONE: (410) 229-2341

**EQUIPMENT LIST "A"**

A. EQUIPMENT TO BE SUPPLIED BY THE SHA

ITEM NO.	QUANTITY	DESCRIPTION
9044	1 EACH	EIGHT-PHASE, FULL-TRAFFIC-ACTUATED CONTROLLER WITH INTERSECTION MONITOR HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET
9570	104 S.F.	SHEET ALUMINUM SIGNS TO CONSIST OF (GROUND MOUNT):
- 1 EACH		ASSOCIATED SHIELD ASSEMBLY "NORTH, MD 147, RIGHT ARROW" (30 IN. x 48 IN.) - GROUND MOUNT
- 1 EACH		ASSOCIATED SHIELD ASSEMBLY "NORTH, MD 147, LEFT ARROW" (48 IN. x 72 IN.) - GROUND MOUNT
- 1 EACH		ASSOCIATED SHIELD ASSEMBLY "SOUTH, MD 147, RIGHT ARROW" (30 IN. x 48 IN.) - GROUND MOUNT
- 1 EACH		ASSOCIATED SHIELD ASSEMBLY "SOUTH, MD 147, LEFT ARROW" (48 IN. x 72 IN.) - GROUND MOUNT
- 1 EACH		M3-1 SIGN (24 IN. x 12 IN.), M1-5 SIGN (30 IN. x 24 IN.) AND M5-1 (21 IN. x 15 IN.) - GROUND MOUNT
- 1 EACH		M3-3 SIGN (24 IN. x 12 IN.), M1-5 SIGN (30 IN. x 24 IN.) AND M5-2 (21 IN. x 15 IN.) - GROUND MOUNT
- 1 EACH		M3-1 SIGN (24 IN. x 12 IN.), M1-5 SIGN (30 IN. x 24 IN.) AND M5-2 (21 IN. x 15 IN.) - GROUND MOUNT
9571	112 S.F.	SHEET ALUMINUM SIGNS TO CONSIST OF (POLE MOUNT):
- 4 EACH		D-3(1) SIGN (VARIABLE x 16 IN.) DUAL FACED - MAST ARM MOUNT
- 1 EACH		ASSOCIATED SHIELD ASSEMBLY "NORTH, MD 152, RIGHT ARROW" (30 IN. x 48 IN.) - POLE MOUNT
- 1 EACH		ASSOCIATED SHIELD ASSEMBLY "NORTH, MD 152, LEFT ARROW" (48 IN. x 72 IN.) - POLE MOUNT
- 1 EACH		ASSOCIATED SHIELD ASSEMBLY "SOUTH, MD 152, RIGHT ARROW" (30 IN. x 48 IN.) - POLE MOUNT
- 1 EACH		ASSOCIATED SHIELD ASSEMBLY "SOUTH, MD 152, LEFT ARROW" (48 IN. x 72 IN.) - POLE MOUNT

**EQUIPMENT LIST "B"**

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

ITEM NO.	QUANTITY	DESCRIPTION
1003	2 EACH	MAINTENANCE OF TRAFFIC
2002	4 C.Y.	TEST PIT EXCAVATION
8001	38 EACH	12 INCH LED SIGNAL HEAD SECTION
8007	2 EACH	ANY SIZE LIGHTING ARM (15 FT.) ON SIGNAL POLE WITH 250 WATT HPS LAMP & LUMINAIRE
8012	1 EACH	EMBEDDED METERED SERVICE PEDESTAL
8023	6 EACH	NON-INVASIVE DETECTOR (ANY LENGTH) LEAD IN CABLE UP TO 1000'
8024	1 EACH	REM & DISPOSE MAT & EQUIP PER ASSIGN
8025	2 EACH	TWIN MAST ARM POLE & 50' /50' MAST ARMS
8028	4 EACH	VIDEO DETECTION CAMERA & CABLE UP TO 500 FT
8032	2600 L.F.	DISCONNECT, PULL-BACK & REROUTE CABLES
8034	430 L.F.	SCHEDULE 80 RIGID PVC CONDUIT UP TO 4 INCHES - BORED
8036	255 L.F.	SCHEDULE 80 RIGID PVC CONDUIT UP TO 4 INCHES - TRENCHED
8037	144 L.F.	WOOD SIGN SUPPORTS UP TO 4' X 6'
8038	216 S.F.	INSTALL OVERHEAD OR GROUND MOUNTED SIGN (INCLUDING ALL HARDWARE)
8040	275 L.F.	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
8043	75 L.F.	ELECTRICAL CABLE 1-CONDUCTOR NO. 8 AWG - THHN/THWN
8044	2 EACH	FURNISH AND INSTALL ELECTRICAL HANDHOLE
8049	1 EACH	CUT, CLEAN, GALVANIZE AND CAP TRAFFIC SIGNAL STRUCTURE
8053	100 L.F.	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)
8054	1400 L.F.	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)
8055	425 L.F.	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 AWG) TC
8061	1 EACH	INSTALL CONTROLLER AND CABINET - BASE MOUNT

**EQUIPMENT LIST "C"**

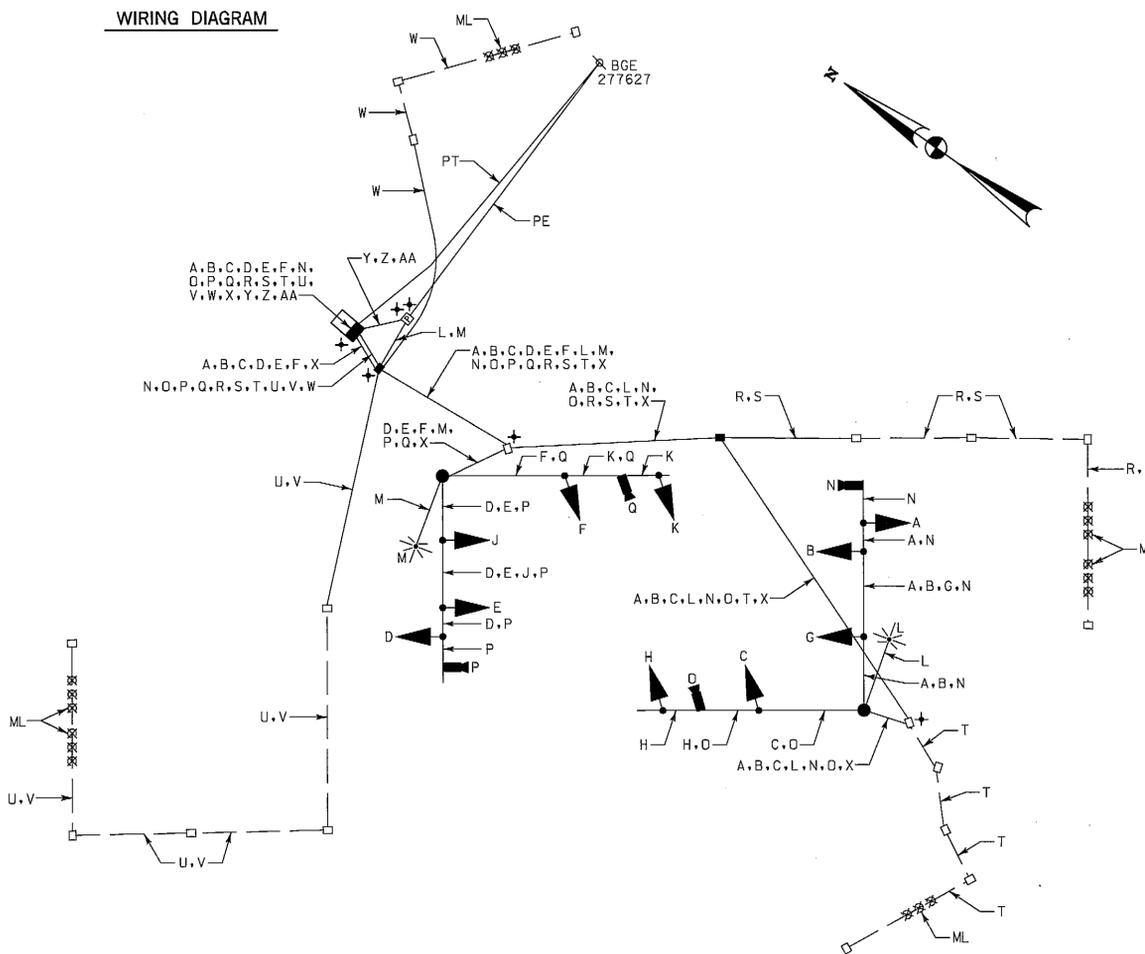
C. EQUIPMENT TO BE REMOVED AND RETURNED TO SHA

SHA FORCES SHALL REMOVE THE CONTROLLER AND ALL AUXILIARY EQUIPMENT FROM THE CONTROLLER CABINET. THE CABINET AND ALL OTHER MATERIALS TO BE REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

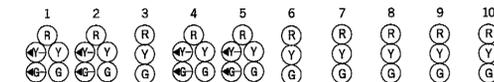
**WIRING DIAGRAM**

**WIRING KEY**

- A B C D E F } 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- G H J K } 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- L M } 2-CONDUCTOR ELECTRICAL CABLE (NO. 12 A.W.G.) - TRAY CABLE
- N O P Q } VIDEO CAMERA DETECTION LEAD-IN CABLE
- R S T U V W } EXISTING MICROLOOP PROBE LEAD-IN
- X } STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
- Y Z AA } 1-CONDUCTOR ELECTRICAL CABLE (NO. 8 A.W.G.)
- ML - EXISTING MICROLOOP PROBE SET
- PT - PROPOSED UNDERGROUND TELEPHONE SERVICE
- PE - PROPOSED UNDERGROUND ELECTRICAL SERVICE
- + - 3/4 IN. X 10 FT. GROUND ROD



**PHASE CHART**



PHASE 1 AND 5	1	2	3	4	5	6	7	8	9	10
PHASE 1 AND 5	R	R	R	R	R	R	R	R	R	R
1 AND 5 CHANGE	←G	←G	G	R	R	R	R	R	R	R
PHASE 1 + 6	G	G	G	R	R	R	R	R	R	R
1 + 6 CHANGE	←Y	←Y	Y	R	R	R	R	R	R	R
PHASE 2 + 5	R	R	R	G	G	G	R	R	R	R
2 + 5 CHANGE	R	R	R	←Y	←Y	Y	R	R	R	R
PHASE 2 + 6	G	G	G	G	G	G	R	R	R	R
2 + 6 CHANGE	Y	Y	Y	Y	Y	Y	R	R	R	R
PHASE 4 + 8	R	R	R	R	R	R	G	G	G	G
4 + 8 CHANGE	R	R	R	R	R	R	Y	Y	Y	Y
FLASHING OPERATION	FLY	FLY	FLY	FLY	FLY	FLY	FLR	FLR	FLR	FLR

TOD NO: XX353-31  
SHA NO: HA382A56/K56  
MD 152 @ MD 147

**SHA** STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
OFFICE OF TRAFFIC & SAFETY  
TRAFFIC ENGINEERING DESIGN DIVISION  
MD 152 (Mountain Road/Fallston Road) and MD 147 (Harford Road)  
Fallston, Maryland

**GENERAL INFORMATION SHEET**

SCALE	NONE	ADVERTISED DATE	3/10/2011	CONTRACT NO.	XX353168
DESIGNED BY	S. Bloss	COUNTY	Harford		
DRAWN BY	S. Bloss	LOGMILE	12014701.87		
CHECKED BY	N. Leary	TIMS NO.	K819		
F.A.P. NO.		TOD NO.			
TS NO.	966 F	DRAWING	TSP-3	OF	3
		SHEET NO.	3	OF	3



**WHITMAN, REQUARDT & ASSOCIATES, LLP**  
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