

**PROJECT DESCRIPTION**

**GENERAL**

THIS PROJECT INVOLVES THE INSTALLATION OF A NEW TRAFFIC CONTROL SIGNAL AT THE INTERSECTION OF MD 63 (GREENCASTLE PIKE) AND THE PILOT TRAVEL CENTER EXIT IN WASHINGTON COUNTY, MARYLAND. MD 63 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

**INTERSECTION OPERATION**

THE INTERSECTION WILL OPERATE IN A NEMA THREE-PHASE, FULL-TRAFFIC-ACTUATED MODE WITH THE MD 63 APPROACHES OPERATING CONCURRENTLY AND THE PILOT TRAVEL CENTER EXIT APPROACH OPERATING ALONE.

EMERGENCY PRE-EMPTION PHASES WILL BE PROVIDED FOR THE NORTHBOUND AND SOUTHBOUND MD 63 APPROACHES.

**CONTROLLER REQUIREMENTS**

INSTALL A FULL-TRAFFIC-ACTUATED, EIGHT-PHASE CONTROLLER WITH ONE (1) FOUR-CHANNEL, TIME-DELAY-OUTPUT LOOP DETECTOR AMPLIFIERS, SYSTEM PACKAGE, MASTER CONTROLLER WITH TELEMETRY, VIDEO INTERFACE EQUIPMENT (1-4 CAMERAS), INTERSECTION MONITOR WITH BATTERY BACKUP FOR PHONE DROP AND ASSOCIATED HARNESSES 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-104.04-13 (LEFT TURN BAY CLOSURE)  
 STANDARD NO. MD-104.04-03 (LEFT LANE CLOSURE)      STANDARD NO. MD-104.04-15 (INTERSECTION LEFT LANE, TURN BAY)  
 STANDARD NO. MD-104.04-05 (RIGHT LANE CLOSURE)  
 STANDARD NO. MD-104.04-07 (CENTER LANE CLOSURE)

**PROJECT CONTACTS**

THE CONTACT PERSONS FOR SHA ARE AS FOLLOWS:

MR. GEORGE H. SMALL  
 ASSISTANT DISTRICT ENGINEER - TRAFFIC  
 PHONE: (301) 729-8444

MR. DAVID LARRICK  
 DISTRICT UTILITY ENGINEER  
 PHONE: (301) 729-8420

MR. GEORGE FRANKENBERRY  
 ASSISTANT DISTRICT ENGINEER - MAINTENANCE  
 PHONE: (301) 729-8457

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

**EQUIPMENT LIST "A"**

A. EQUIPMENT TO BE SUPPLIED BY THE SHA

ITEM NO.	QUANTITY	DESCRIPTION
9000	2 EACH	QUICK CONNECT BLOCK AND HARNESS FOR TELEMETRY INTERFACE PANEL
9016	1 EACH	FOUR-CHANNEL, TIME-DELAY-OUTPUT, LOOP DETECTOR AMPLIFIER
9044	1 EACH	EIGHT-PHASE, FULL-TRAFFIC-ACTUATED CONTROLLER WITH INTERSECTION MONITOR HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET
9045	1 EACH	CONTROLLER, MASTER ASC 10,000 WITH TELEMETRY
9086	1 EACH	VIDEO INTERFACE EQUIPMENT: 1-4 CAMERAS
9571	104 S.F.	SHEET ALUMINUM SIGNS TO CONSIST OF : - 1 EACH M95-1 (78 IN. x 24 IN.) - MAST ARM MOUNT - 1 EACH W9-2(4) MOD (30 IN. x 42 IN.) - MAST ARM MOUNT - 1 EACH R3-1 (30 IN. x 30 IN.) - MAST ARM MOUNT - 1 EACH R3-2 (30 IN. x 30 IN.) - MAST ARM MOUNT - 1 EACH R3-5(L) (30 IN. x 36 IN.) - MAST ARM MOUNT - 1 EACH R3-5(R) (30 IN. x 36 IN.) - MAST ARM MOUNT - 2 EACH R5-1 SIGN (30 IN. x 30 IN.) - GROUND MOUNT - 2 EACH R6-1(L) SIGN (36 IN. x 12 IN.) - GROUND MOUNT - 2 EACH R6-1(R) SIGN (36 IN. x 12 IN.) - GROUND MOUNT - 2 EACH W3-3 SIGN (36 IN. x 36 IN.) WITH "NEW" PANEL (24 IN. x 24 IN.) AND FLAG - GROUND MOUNT

**EQUIPMENT LIST "C"**

C. EQUIPMENT TO BE REMOVED AND RETURNED TO SHA

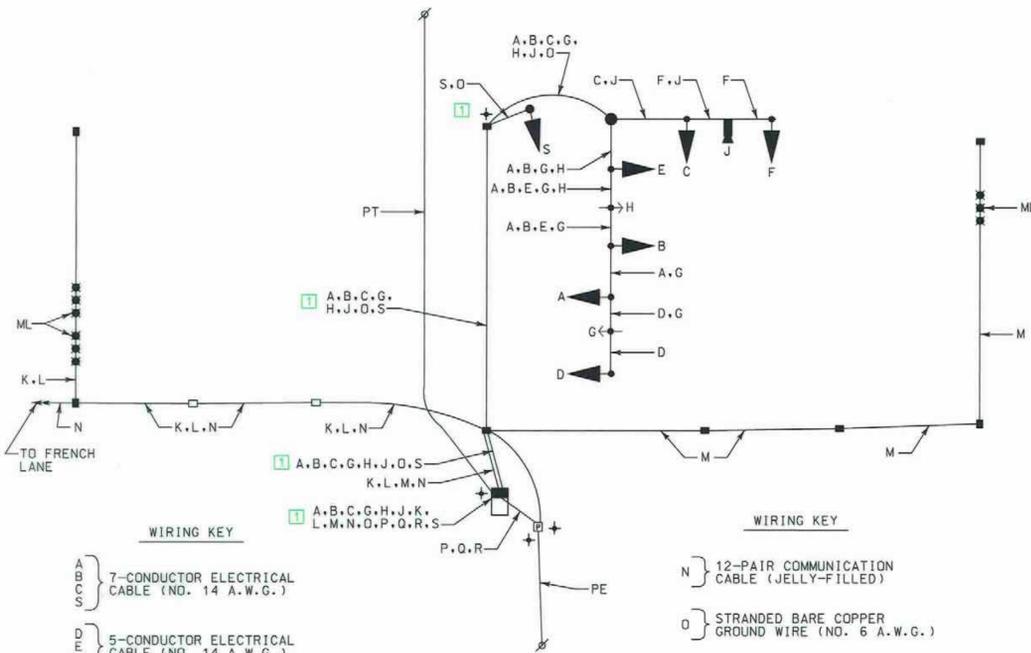
ALL REMOVED SIGNAL MATERIALS SHALL BECOME PROPERTY OF THE CONTRACTOR

**EQUIPMENT LIST "B"**

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

ITEM NO.	QUANTITY	DESCRIPTION
1003	1 EACH	MAINTENANCE OF TRAFFIC
2002	4 C.Y.	TEST PIT EXCAVATION
5003	3 EACH	REMOVAL OF EXISTING PERMANENT PAVEMENT MARKING LETTERS, SYMBOLS, ARROWS AND NUMBERS
5004	395 L.F.	5" HEAT APPLIED WHITE OR YELLOW PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES
5005	210 L.F.	REMOVAL OF EXISTING PERMANENT PAVEMENT LINE MARKINGS - ANY WIDTH
5007	115 L.F.	24 INCH HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
5008	32 S.F.	WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LEGENDS AND SYMBOLS
8008	1 EACH	BREAKAWAY PEDESTAL POLE (ANY SIZE)
8020	3 EACH	NONINVASIVE DETECTOR (ANY LENGTH) LEAD IN CABLE UP TO 1000 FT
8021	1 EACH	REM & DISPOSE MAT & EQUIP PER ASSIGN
8022	1 EACH	TWIN MAST ARM POLE & 50 FT/60 FT MAST ARMS ANY 'T' DIMENSION
8025	1 EACH	VIDEO DETECTION CAMERA & CABLE UP TO 500 FT
8026	6 L.F.	1 INCH DETECTOR SLEEVE GALVANIZED OR FLEXIBLE LIQUID TIGHT
8027	630 L.F.	12 - PAIR COMMUNICATION CABLE, SELF-SUPPORTING OR JELLY FILLED
8030	320 L.F.	DISCONNECT, PULL-BACK & REROUTE CABLES
8032	345 L.F.	SCHEDULE 80 RIGID PVC CONDUIT UP TO 4 INCHES - BORED
8034	740 L.F.	SCHEDULE 80 RIGID PVC CONDUIT UP TO 4 INCHES - TRENCHED
8035	68 L.F.	WOOD SIGN SUPPORTS UP TO 4 X 6
8036	104 S.F.	INSTALL OVERHEAD OR GROUND MOUNTED SIGN (INCLUDING ALL HARDWARE)
8038	160 L.F.	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
8041	1 EACH	METERED SERVICE PEDESTAL EMBEDDED
8043	90 L.F.	ELECTRICAL CABLE 1-CONDUCTOR NO. 4 AWG-THHN/THWN
8045	8 EACH	FURNISH AND INSTALL ELECTRICAL HANDHOLE
8046	1 EACH	DISCRIMINATOR MODULE, 4 CHANNEL, NO. 764
8048	2 EACH	OPTICOM NO. 721 DETECTOR EYE
8050	21 EACH	12 INCH LED SIGNAL HEAD SECTION
8051	410 L.F.	FURNISH AND INSTALL 4 CONDUCTOR OPTICOM CABLE
8052	1 EACH	CUT, CLEAN, GALVANIZE AND CAP TRAFFIC SIGNAL STRUCTURE
8056	65 L.F.	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)
8057	690 L.F.	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)
8059	530 L.F.	LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO. 14 AWG)
8060	150 L.F.	SAW CUT FOR SIGNAL (LOOP DETECTOR)
8065	1 EACH	INSTALL CONTROLLER AND CABINET - BASE MOUNT

**WIRING DIAGRAM**



**PHASE CHART**

	1	2	3	4	5	6	7
PHASE 2 + 6	G	G	G	G	R	R	R
2 + 6 CHANGE	Y	Y	Y	Y	R	R	R
PHASE 4	R	R	R	R	G	G	G
4 CHANGE	R	R	R	R	Y	Y	Y
EMERGENCY PRE-EMPTION 1 & 2	G	G	G	G	R	R	R
FLASHING OPERATION	FLY	FLY	FLY	FLY	FLR	FLR	FLR

GREEN ENGINEERING NO. 1  
 REVISED WIRING DIAGRAM,  
 PHASE CHART AND QUANTITIES  
 4/29/2009

**SHA** STATE OF MARYLAND  
 DEPARTMENT OF TRANSPORTATION  
 STATE HIGHWAY ADMINISTRATION  
 OFFICE OF TRAFFIC & SAFETY  
 TRAFFIC ENGINEERING DESIGN DIVISION  
 MD 63 (Greencastle Pike) and  
 Pilot Travel Center Exit

**GENERAL INFORMATION SHEET**

SCALE: NONE	ADVERTISED DATE: 4/24/2009	CONTRACT NO.: XX4245185
DESIGNED BY: S. Bloss	COUNTY: Washington	
DRAWN BY: S. Bloss	LOGMILE: 21006310.62	
CHECKED BY: N. Leavy	TMS NO.: J783	
F.A.P. NO.:	TOD NO.:	
TS NO. TS-4716	DRAWING TSP-3	OF 3 SHEET NO. 3 OF 3

**WR&A**  
 WHITMAN, REQUARDT & ASSOCIATES, LLP  
 801 South Caroline Street, Baltimore, Maryland 21231

BY: Sblloss