

**PROJECT DESCRIPTION**

**GENERAL**

THIS PROJECT INVOLVES THE RECONSTRUCTION OF THE EXISTING TRAFFIC CONTROL SIGNAL AND REPLACEMENT OF INTERCONNECT CABLE AT THE INTERSECTION OF MD 26 (LIBERTY ROAD) AND PIKESWOOD DRIVE IN BALTIMORE COUNTY, MARYLAND. MD 26 IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

**INTERSECTION OPERATION**

THE INTERSECTION WILL OPERATE IN A NEMA SIX-PHASE, FULL-TRAFFIC-ACTUATED MODE WITH THE MD 26 APPROACHES OPERATING CONCURRENTLY AND THE PIKESWOOD DRIVE APPROACHES OPERATING CONCURRENTLY. EXCLUSIVE/PERMISSIVE LEFT-TURN PHASING IS PROVIDED FOR BOTH MD 26 APPROACHES.

AN ALTERNATE PEDESTRIAN PHASE IS PROVIDED ACROSS BOTH LEGS OF MD 26 AND PEDESTRIAN INDICATIONS ARE PROVIDED ACROSS THE NORTH LEG OF PIKESWOOD DRIVE.

**CONTROLLER REQUIREMENTS**

INSTALL A FULL-TRAFFIC-ACTUATED, EIGHT-PHASE CONTROLLER WITH SYSTEM PACKAGE AND THREE (3) FOUR-CHANNEL, TIME-DELAY-OUTPUT LOOP DETECTOR AMPLIFIERS HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET.

**MAINTENANCE OF TRAFFIC**

THE FOLLOWING TRAFFIC CONTROL STANDARDS SHALL BE REFERENCED FOR THE PROJECT.

- STANDARD NO. MD-104.00 - 104.00-30
- STANDARD NO. MD-104.37-01 (LEFT LANE CLOSURE)
- STANDARD NO. MD-104.38-01 (RIGHT LANE CLOSURE)
- STANDARD NO. MD-104.41-01 (INTERSECTION FAR-RIGHT LANE CLOSURE)
- STANDARD NO. MD-104.43-01 (SHOULDER WORK)

**PROJECT CONTACTS**

THE CONTACT PERSONS FOR SHA ARE AS FOLLOWS:

MR. RANDALL SCOTT  
ASSISTANT DISTRICT ENGINEER - TRAFFIC  
PHONE: (410) 321-2780

MR. SUENETTE POPE  
DISTRICT UTILITY ENGINEER  
PHONE: (410) 321-2841

MR. STEVE MARCISZEWSKI  
ASSISTANT DISTRICT ENGINEER - MAINTENANCE  
PHONE: (410) 321-2761

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

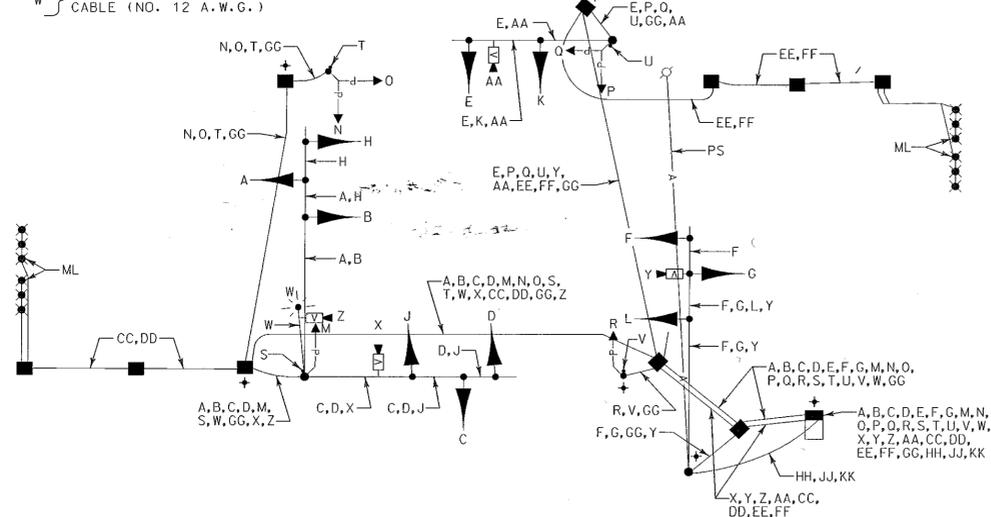
**WIRING DIAGRAM**

**WIRING KEY**

- A B C D E F G } 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- H J K L } 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- M N O P Q R } 3-CONDUCTOR ELECTRICAL CABLE (NO. 12 A.W.G.)
- S T U V } 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- W } 2-CONDUCTOR ELECTRICAL CABLE (NO. 12 A.W.G.)

**WIRING KEY**

- X Y Z AA } VIDEO DETECTION LEAD-IN CABLE
- CC DD EE FF } MICROLOOP PROBE LEAD-IN
- GG } STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
- HH JJ KK } 1-CONDUCTOR ELECTRICAL CABLE (NO. 4 A.W.G.)
- ML - MICROLOOP PROBE SET
- PS - PROPOSED OVERHEAD ELECTRICAL SERVICE
- + - 3/4 IN. X 10 FT. GROUND ROD



**EQUIPMENT LIST "A"**

A. EQUIPMENT TO BE SUPPLIED BY THE SHA

ITEM NO.	QUANTITY	DESCRIPTION
9000	1 EACH	27 FT. STEEL POLE WITH A 34 FT. MAST ARM WITH ANCHOR BOLTS
9016	3 EACH	FOUR-CHANNEL, TIME-DELAY-OUTPUT, LOOP DETECTOR AMPLIFIER
9026	1 EACH	27 FT. STEEL POLE WITH 50 FT./60 FT. MAST ARMS
9030	1 EACH	27 FT. STEEL POLE WITH A 60 FT. MAST ARM
9044	1 EACH	EIGHT-PHASE, FULL-TRAFFIC-ACTUATED CONTROLLER WITH SYSTEM PACKAGE HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET
9086	1 EACH	VIDEO DETECTION EQUIPMENT: 1-4 CAMERAS
9571	72 S.F.	SHEET ALUMINUM SIGNS TO CONSIST OF : - 2 EACH R10-12 SIGN (36 IN. x 42 IN.) - MAST ARM MOUNT - 2 EACH D-3(1) SIGN (VARIABLE x 16 IN.) DUAL FACED - MAST ARM MOUNT - 2 EACH M95-1 (72 IN. x 36 IN.) - MAST ARM MOUNT - 1 EACH R2-1 SIGN (24 IN. x 30 IN.) - GROUND 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.

**EQUIPMENT LIST "B" CONT.**

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

ITEM NO.	QUANTITY	DESCRIPTION
8082	575 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 3 CONDUCTOR (NO. 14 A.W.G.)
8083	160 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 A.W.G.)
8084	1500 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 A.W.G.)
8085	250 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 A.W.G.) TYPE TC
8087	135 L.F.	FURNISH AND INSTALL SAW CUT FOR SIGNAL (LOOP DETECTOR)
8037	30 L.F.	FURNISH AND INSTALL 2 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8094	1 EACH	INSTALL CONTROLLER AND CABINET - BASE MOUNT
NEG.	8 EACH	2 IN. DIAMETER x 72 IN. ANCHOR BOLTS

**PHASE CHART**

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
PHASE 1 + 5	R	R	R	R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW
1 + 5 CHANGE	G	G	G	G	G	G	G	G	G	G	G	DW	DW	DW	DW	DW	DW
PHASE 1 + 6	G	G	G	R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW
1 + 6 CHANGE	R	R	R	G	G	G	G	G	G	G	G	DW	DW	DW	DW	DW	DW
PHASE 2 + 5	R	R	R	R	R	R	R	R	R	R	R	WK	WK	DW	DW	DW	DW
2 + 5 CHANGE	R	R	R	G	G	G	G	G	G	G	G	WK	WK	DW	DW	DW	DW
PHASE 2 + 6	G	G	G	G	G	G	G	R	R	R	R	WK	WK	DW	DW	DW	DW
2 + 6 CHANGE	Y	Y	Y	Y	Y	Y	Y	R	R	R	R	DW	DW	DW	DW	DW	DW
PHASE 4 + 8	R	R	R	R	R	R	R	G	G	G	G	DW	DW	DW	DW	DW	DW
4 + 8 CHANGE	R	R	R	R	R	R	R	Y	Y	Y	Y	DW	DW	DW	DW	DW	DW
PHASE 4 + 8 ALT	R	R	R	R	R	R	R	G	G	G	G	DW	DW	WK	WK	WK	WK
4 + 8 ALT CHANGE	R	R	R	R	R	R	R	G	G	G	G	DW	DW	FL/DW	FL/DW	FL/DW	FL/DW
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	DARK	DARK	DARK	DARK	DARK	DARK

**EQUIPMENT LIST "B"**

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

ITEM NO.	QUANTITY	DESCRIPTION
1001	3 EACH	MAINTENANCE OF TRAFFIC
2001	9 C.Y.	CLASS 2 EXCAVATION
2002	6 C.Y.	TEST PIT EXCAVATION
5005	360 L.F.	12 INCH WHITE HEAT-APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING
5006	110 L.F.	24 INCH WHITE HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING
5010	100 L.F.	5 INCH YELLOW HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING
5001	350 L.F.	REMOVAL OF EXISTING PAVEMENT LINE MARKINGS - ANY WIDTH
6001	40 L.F.	FURNISH AND INSTALL DEPRESSED CURB AND GUTTER
6004	320 S.F.	4 INCH CONCRETE SIDEWALK
8009	4 EACH	300 FT. VIDEO CABLE TO CONTROLLER
8078	1 EACH	CUT, CLEAN, GALVANIZE AND CAP TRAFFIC SIGNAL STRUCTURE
8002	12 EACH	FURNISH AND INSTALL 12 IN. PEDESTRIAN SIGNAL HEAD SECTION
8075	32 EACH	FURNISH AND INSTALL 12 IN. VEHICULAR TRAFFIC SIGNAL HEAD SECTION
8089	1 EACH	FURNISH AND INSTALL 15 FOOT LIGHTING BRACKET ARM FOR TRAFFIC SIGNAL STRUCTURE
8069	1 EACH	FURNISH AND INSTALL 250 WATT HPS LUMINAIRE WITH PHOTOCELL
8074	9 EACH	FURNISH AND INSTALL 8 IN. VEHICULAR TRAFFIC SIGNAL HEAD SECTION
8045	1 EACH	ELECTRICAL UTILITY SERVICE EQUIPMENT (120/240 V, 1 PHASE 3 WIRE SYSTEM)
8049	4 EACH	FURNISH AND INSTALL MICROLOOP PROBE SET WITH 1,000 FOOT LEAD-IN CABLE
8018	2 EACH	FURNISH AND INSTALL PEDESTRIAN POLE (ANY SIZE)
8088	4 EACH	FURNISH AND INSTALL PUSHBUTTON AND SIGN
8013	2 EACH	INSTALL STEEL POLE AND SINGLE OR TWIN MAST ARMS
8019	1 EACH	REMOVE AND DISPOSE OF EXISTING MATERIAL AND EQUIPMENT AS PER ASSIGNMENT
8038	590 L.F.	FURNISH AND INSTALL 3 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8039	90 L.F.	FURNISH AND INSTALL 4 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8001	17 C.Y.	FURNISH AND INSTALL CONCRETE FOR SIGNAL FOUNDATION
8027	15 L.F.	FURNISH AND INSTALL WOOD SIGN SUPPORTS 4 IN. x 4 IN.
8029	380 L.F.	FURNISH AND INSTALL NO. 6 A.W.G. STRANDED BARE COPPER GROUND WIRE
8041	190 L.F.	FURNISH AND INSTALL 3 IN. SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED
8042	280 L.F.	FURNISH AND INSTALL 4 IN. SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED
8043	30 L.F.	FURNISH AND INSTALL 1 INCH LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR WIRE SLEEVE
8046	80 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 1 CONDUCTOR NO. 4 A.W.G. - THHN/THWN
8052	10 EACH	FURNISH AND INSTALL ELECTRICAL HANDHOLE
8054	5 S.F.	INSTALL GROUND MOUNTED SIGN
8055	67 S.F.	INSTALL OVERHEAD SIGN
8068	750 L.F.	FURNISH AND INSTALL 12-PAIR COMMUNICATION CABLE, JELLY FILLED (UNDERGROUND)
8073	6 EACH	FURNISH AND INSTALL GROUND ROD - 3/4 INCH DIAMETER x 10 FOOT LENGTH
8081	575 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 A.W.G.)
8056	4 EACH	VIDEO DETECTION CAMERA
8067	4564 L.F.	FURNISH AND INSTALL 12-PAIR COMMUNICATION CABLE, SELF-SUPPORTING (OVERHEAD)
8033	1 EACH	WEATHERHEAD, 3 IN.

**WR&A**  
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and Associates, LLP  
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Baltimore, Maryland 21231  
(410) 235-3450

MD # BA158404/854 TID #: AT307-15

**MARYLAND DOT - STATE HIGHWAY ADMINISTRATION**  
Office of Traffic & Safety  
TRAFFIC ENGINEERING DESIGN DIVISION  
GENERAL INFORMATION SHEET  
MD 26 (LIBERTY RD.) AND PIKESWOOD DR.

DRAWN BY: S.BLOSS	F.A.P. NO. 1858	TS NO. 1858	SHEET NO.
CHECKED BY: N.LEARY	S.H.A. NO. AT3575185	T.I.M.S. NO. F452	6 OF 6
SCALE: NONE	COUNTY: BALTIMORE	LOG MILE:	
DATE: 8/1/2003			