

**PROJECT DESCRIPTION**

**GENERAL**

THIS PROJECT INVOLVES THE INSTALLATION OF A NEW TRAFFIC CONTROL SIGNAL AND STREET LIGHTING AT THE INTERSECTION OF U.S. 1 (WASHINGTON BLVD) AND LOUDON AVENUE IN HOWARD COUNTY, MARYLAND. U.S. 1 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 U.S. 1 APPROACHES OPERATING CONCURRENTLY AND THE LOUDON AVENUE/MOBILE HOME PARK ENTRANCE APPROACHES OPERATING CONCURRENTLY.

EXCLUSIVE/PERMISSIVE LEFT-TURN PHASING IS PROVIDED FOR NORTHBOUND AND SOUTHBOUND U.S. 1 APPROACHES.

AN ALTERNATE PEDESTRIAN PHASE IS PROVIDED ACROSS THE NORTH LEG OF U.S. 1.

**CONTROLLER REQUIREMENTS**

INSTALL A FULL-TRAFFIC-ACTUATED, EIGHT-PHASE CONTROLLER WITH ONE (1) FOUR-CHANNEL, TIME-DELAY-OUTPUT LOOP DETECTOR AMPLIFIERS, 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.

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)

STANDARD NO. MD-104.44-01 (LEFT LANE CLOSURE)

**PROJECT CONTACTS**

THE CONTACT PERSONS FOR SHA ARE AS FOLLOWS:

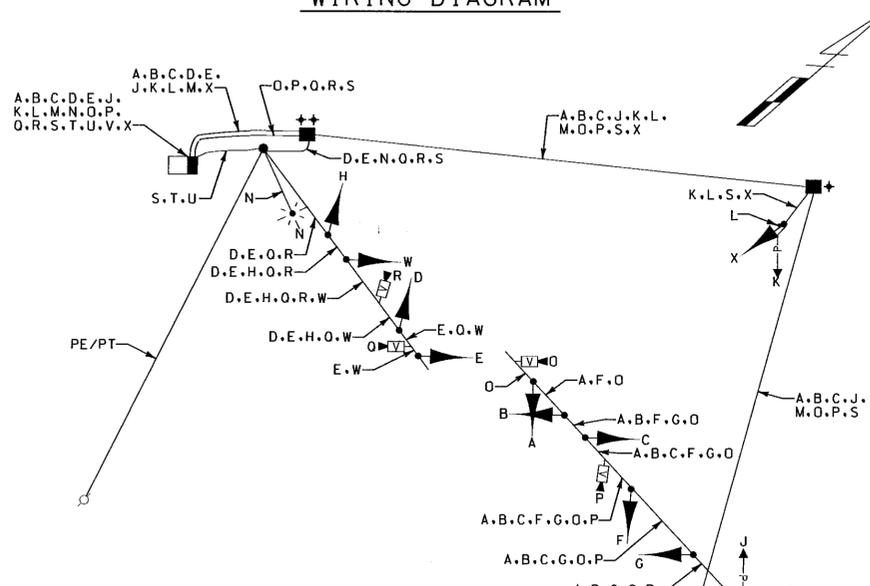
MR. JOHN CONCANNON  
ASSISTANT DISTRICT ENGINEER - TRAFFIC  
PHONE: (301) 624-8140/8141

MR. JAMES BUCKALEW  
DISTRICT UTILITY ENGINEER  
PHONE: (301) 624-8115/8116

MR. DAVE COYNE  
ASSISTANT DISTRICT ENGINEER - MAINTENANCE  
PHONE: (301) 624-8105/8106

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

**WIRING DIAGRAM**



**WIRING KEY**

- A B C D E X } 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- F G H W } 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- J K } 3-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- L M } 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- N } 2-CONDUCTOR ELECTRICAL CABLE (NO. 12 A.W.G.)
- O P Q R } VIDEO CAMERA DETECTION LEAD-IN CABLE
- S } STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
- T U V } 1-CONDUCTOR ELECTRICAL CABLE (NO. 4 A.W.G.)
- PT - PROPOSED OVERHEAD/UNDERGROUND TELEPHONE SERVICE
- PE - 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
9016	1 EACH	FOUR-CHANNEL, TIME-DELAY-OUTPUT, LOOP-DETECTOR AMPLIFIER (RACK MOUNT)
9044	1 EACH	EIGHT-PHASE, FULL-TRAFFIC-ACTUATED CONTROLLER WITH INTERSECTION MONITOR HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET
9086	1 EACH	VIDEO INTERFACE EQUIPMENT: 1-4 CAMERAS
9571	155 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 - 3 EACH D-3(2) SIGN (72 IN. x 12 IN.) - GROUND MOUNT - 1 EACH D-3(3) SIGN (72 IN. x 24 IN.) - GROUND MOUNT - 1 EACH W2-2(L) SIGN (36 IN. x 36 IN.) - GROUND MOUNT - 1 EACH W3-3 SIGN (36 IN. x 36 IN.) WITH "NEW" PANEL (30 IN. X 30 IN.) AND FLAG - GROUND MOUNT - 1 EACH ASSOCIATED SHIELD ASSEMBLY "NORTH, U.S. 1, RIGHT ARROW" (24 IN. x 51 IN.) - POLE MOUNT - 1 EACH ASSOCIATED SHIELD ASSEMBLY "NORTH, U.S. 1, LEFT ARROW" (36 IN. x 75 IN.) - POLE MOUNT - 1 EACH ASSOCIATED SHIELD ASSEMBLY "SOUTH, U.S. 1, RIGHT ARROW" (24 IN. x 51 IN.) - POLE MOUNT - 1 EACH ASSOCIATED SHIELD ASSEMBLY "SOUTH, U.S. 1, LEFT ARROW" (36 IN. x 75 IN.) - POLE MOUNT

**EQUIPMENT LIST "B"**

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

ITEM NO.	QUANTITY	DESCRIPTION
8080	1425 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 A.W.G)
8081	100 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 A.W.G) TYPE TC
8083	1590 L.F.	FURNISH AND INSTALL SAW CUT FOR SIGNAL (LOOP DETECTOR)
8084	2 EACH	FURNISH AND INSTALL PUSHBUTTON AND SIGN
8085	1 EACH	FURNISH AND INSTALL 15 FOOT LIGHTING BRACKET ARM FOR TRAFFIC SIGNAL STRUCTURE
8090	1 EACH	INSTALL CONTROLLER AND CABINET - BASE MOUNT
NEG.	2 EACH	STEEL BOLLARDS

**EQUIPMENT LIST "C"**

NO EQUIPMENT TO BE REMOVED AND RETURNED TO SHA

**PHASE CHART**

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
PHASE 1 + 5	R	R	R	R	R	R	R	R	R	R	DW	DW
1 + 5 CHANGE	PHASE 1 + 5 MAY CHANGE TO PHASE 1 + 6, PHASE 2 + 5 OR PHASE 2 + 6											
PHASE 1 + 6	R	R	R	R	R	R	R	R	R	R	DW	DW
1 + 6 CHANGE	R	R	R	R	R	R	R	R	R	R	DW	DW
PHASE 2 + 5	R	R	R	R	R	R	R	R	R	R	DW	DW
2 + 5 CHANGE	R	R	R	R	R	R	R	R	R	R	DW	DW
PHASE 2 + 6	R	R	R	R	R	R	R	R	R	R	DW	DW
2 + 6 CHANGE	R	R	R	R	R	R	R	R	R	R	DW	DW
PHASE 4 + 8	R	R	R	R	R	R	R	R	R	R	DW	DW
4 + 8 CHANGE	R	R	R	R	R	R	R	R	R	R	DW	DW
PHASE 4 + 8 ALT	R	R	R	R	R	R	R	R	R	R	FL/DW	FL/DW
PED CLEARANCE	R	R	R	R	R	R	R	R	R	R	FL/DW	FL/DW
4 + 8 ALT CHANGE	R	R	R	R	R	R	R	R	R	R	DW	DW
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	DARK	DARK

**EQUIPMENT LIST "B"**

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

ITEM NO.	QUANTITY	DESCRIPTION
1001	1 EACH	MAINTENANCE OF TRAFFIC
2002	4 C.Y.	TEST PIT EXCAVATION
5001	250 L.F.	REMOVAL OF EXISTING PAVEMENT LINE MARKINGS - ANY WIDTH
5002	1 EACH	REMOVAL OF EXISTING PAVEMENT MARKING LETTERS, SYMBOLS, ARROWS AND NUMBERS
5003	50 L.F.	5 INCH HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
5004	100 L.F.	5 INCH HEAT APPLIED YELLOW PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING
5006	135 L.F.	24 INCH HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING
8001	11 C.Y.	FURNISH AND INSTALL CONCRETE FOR SIGNAL FOUNDATION
8002	4 EACH	FURNISH AND INSTALL 12 IN. PED. SIGNAL HEAD
8010	1 EACH	FURNISH AND INSTALL MAST ARM POLE (15 FT. T) AND 60 FT. MAST ARM
8013	1 EACH	FURNISH AND INSTALL PED POLE (ANY SIZE)
8014	1 EACH	REMOVE AND DISPOSE OF EXISTING MATERIAL AND EQUIPMENT
8021	144 L.F.	FURNISH AND INSTALL WOOD SIGN SUPPORTS 4 IN. X 6 IN.
8022	295 L.F.	FURNISH AND INSTALL NO. 6 A.W.G. STRANDED BARE COPPER GROUND WIRE
8023	30 L.F.	FURNISH AND INSTALL 1 IN. ELECTRICAL CONDUIT-GALVANIZED RISER
8024	80 L.F.	FURNISH AND INSTALL 1 IN. ELECTRICAL CONDUIT-GALVANIZED SLEEVE
8029	90 L.F.	FURNISH AND INSTALL 4 IN. SCHEDULE 80 RIGID PVC CONDUIT - BORED
8030	40 L.F.	FURNISH AND INSTALL 2 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8032	100 L.F.	FURNISH AND INSTALL 4 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8035	100 L.F.	FURNISH AND INSTALL 4 IN. SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED
8038	1 EACH	ELECTRICAL UTILITY SERVICE EQUIPMENT 120/240 VOLTS 60 AMP
8039	100 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 1 CONDUCTOR NO. 4 A.W.G - THN/THWN
8041	2 EACH	FURNISH AND INSTALL MICROLOOP PROBE SET WITH 500 FOOT LEAD-IN CABLE
8042	2 EACH	FURNISH AND INSTALL MICROLOOP PROBE SET WITH 1000 FOOT LEAD-IN CABLE
8045	3 EACH	FURNISH AND INSTALL ELECTRICAL HANDHOLE
8047	55 S.F.	INSTALL GROUND MOUNTED SIGN
8048	100 S.F.	INSTALL OVERHEAD SIGN
8049	4 EACH	VIDEO DETECTION CAMERA
8050	2 EACH	CONTROL CABLE, 250 FT. VIDEO DETECTION CAMERA TO CONTROLLER
8051	2 EACH	CONTROL CABLE, 500 FT. VIDEO DETECTION CAMERA TO CONTROLLER
8057	1 EACH	INSTALL STEEL POLE WITH A SINGLE 50 FT. MAST ARM
8064	1 EACH	FURNISH AND INSTALL 250 WATT HPS LUMINAIRE WITH PHOTOCELL
8069	4 EACH	FURNISH AND INSTALL GROUND ROD - 3/4 INCH DIAMETER x 10 FOOT LENGTH
8070	6 EACH	FURNISH AND INSTALL 8 IN. VEHICULAR TRAFFIC SIGNAL HEAD SECTION
8071	32 EACH	FURNISH AND INSTALL 12 IN. VEHICULAR TRAFFIC SIGNAL HEAD SECTION
8074	1 EACH	CUT, CLEAN, GALVANIZE AND CAP TRAFFIC SIGNAL STRUCTURE
8077	450 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 A.W.G)
8078	450 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 3 CONDUCTOR (NO. 14 A.W.G)
8079	100 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 A.W.G)

**MARYLAND DOT - STATE HIGHWAY ADMINISTRATION**  
Office of Traffic & Safety  
TRAFFIC ENGINEERING DESIGN DIVISION

GENERAL INFORMATION SHEET  
U.S. 1 (WASHINGTON BLVD) AND LOUDON AVENUE

**WR&A**  
Whitman, Reardon  
and Associates, LLP  
801 South Caroline Street  
Baltimore, Maryland 21231  
(410) 235-3450

DRAWN BY: S. BLOSS	F.A.P. NO.	TS NO.	
CHECKED BY: N. LEARY	S.H.A. NO.	4289	SHEET NO.
SCALE: NONE	COUNTY: HOWARD	T.I.M.S. NO.	
DATE: 5/18/2004	LOG MILE: 13000108.69	F602	3 OF 3