

**PROJECT DESCRIPTION**

**GENERAL**  
 THIS PROJECT INVOLVES THE INSTALLATION OF A NEW TRAFFIC CONTROL SIGNAL AT THE INTERSECTION OF MD 30 (HANOVER PIKE) AND MD 496 (BACHMANS VALLEY RD/WENTZ ROAD) IN CARROLL COUNTY, MARYLAND. MD 30 (HANOVER PIKE) IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

**INTERSECTION OPERATION**  
 THE INTERSECTION WILL OPERATE IN A NEMA FOUR-PHASE, FULL-TRAFFIC-ACTUATED MODE WITH THE MD 30 (HANOVER PIKE) APPROACHES OPERATING CONCURRENTLY AND THE MD 496 (BACHMANS VALLEY RD/WENTZ ROAD) APPROACHES OPERATING CONCURRENTLY.

**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 MINIMUM TRAFFIC CONTROL STANDARDS SHALL BE REFERENCED FOR THE PROJECT.

STANDARD NO. MD-104.02-01 (SHOULDER WORK)  
 STANDARD NO. MD-104.02-03 (LANE SHIFT RIGHT OR LEFT SIDE)  
 STANDARD NO. MD-104.02-09 (FLAGGING OPERATION)  
 STANDARD NO. MD-104.02-13 (INTERSECTION FLAGGING OPERATION)  
 NOTE: LANE CLOSURES TO OCCUR (9AM-3 PM) - MONDAY THRU FRIDAY

**PROJECT CONTACTS**

THE CONTACT PERSONS FOR SHA ARE AS FOLLOWS:

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

MR. ANDREA ABEND  
 DISTRICT UTILITY ENGINEER  
 PHONE: (301) 624-8115/8116

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

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
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
9086	1 EACH	VIDEO INTERFACE EQUIPMENT: 1-4 CAMERAS
9570	52 S.F.	SHEET ALUMINUM SIGNS TO CONSIST OF : - 4 EACH W3-3 SIGN (36 IN. x 36 IN.) WITH "NEW" PANEL (24 IN. x 24 IN.) AND FLAG - GROUND MOUNT
9571	100 S.F.	SHEET ALUMINUM SIGNS TO CONSIST OF : - 4 EACH D-3(1) SIGN (VARIABLE x 16 IN.) DUAL FACED - MAST ARM MOUNT - 1 EACH ASSOCIATED SHIELD ASSEMBLY "NORTH, MD, RIGHT ARROW" (24 IN. x 51 IN.) - POLE MOUNT - 1 EACH ASSOCIATED SHIELD ASSEMBLY "NORTH, MD, LEFT ARROW" (36 IN. x 75 IN.) - POLE MOUNT - 1 EACH ASSOCIATED SHIELD ASSEMBLY "SOUTH, MD, RIGHT ARROW" (24 IN. x 51 IN.) - POLE MOUNT - 1 EACH ASSOCIATED SHIELD ASSEMBLY "SOUTH, MD, LEFT ARROW" (36 IN. x 75 IN.) - POLE MOUNT

**EQUIPMENT LIST "C"**

NO EQUIPMENT TO BE REMOVED AND RETURNED TO SHA

**EQUIPMENT LIST "B"**

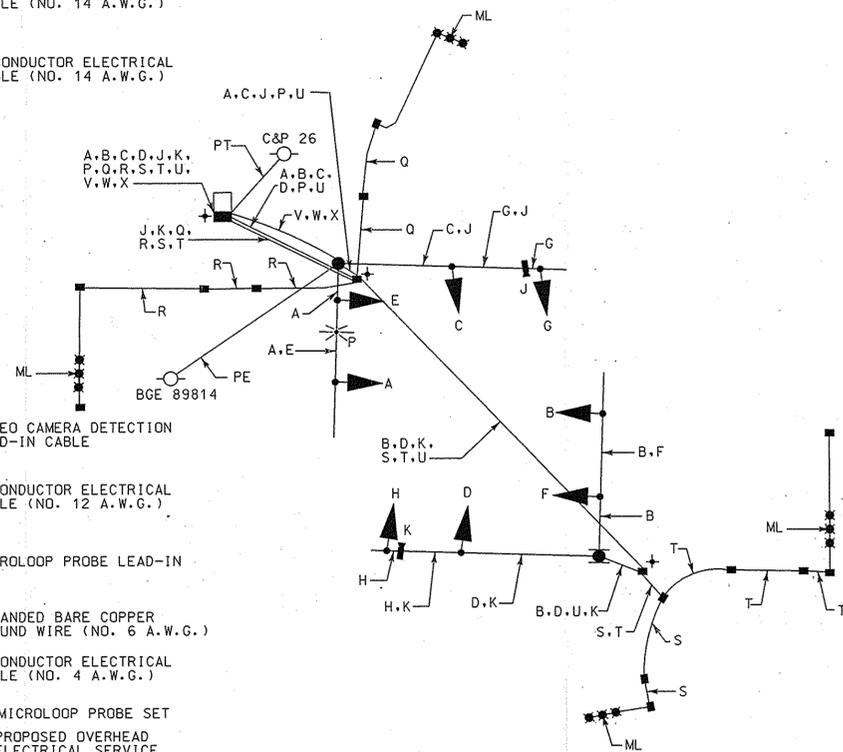
B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR

ITEM NO.	QUANTITY	DESCRIPTION
1001	3 EACH	MAINTENANCE OF TRAFFIC
2002	2 C.Y.	TEST PIT EXCAVATION
5003	200 L.F.	REMOVAL OF EXISTING PERMANENT PAVEMENT LINE MARKINGS - ANY WIDTH
5006	75 L.F.	24 INCH HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
8001	8 C.Y.	CONCRETE FOR SIGNAL FOUNDATION
8003	16 EACH	12 INCH RED OR GREEN LED SIGNAL HEAD SECTION
8004	8 EACH	12 INCH YELLOW LED SIGNAL HEAD SECTION
8014	1 EACH	CONTROL CABLE, 200 FOOT, VIDEO DETECTION CABLE
8015	1 EACH	CONTROL CABLE, 300 FOOT, VIDEO DETECTION CABLE
8043	76 L.F.	WOOD SIGN SUPPORTS 4 INCH x 6 INCH
8044	180 L.F.	NO. 6 A.W.G. STRANDED BARE COPPER GROUND WIRE
8049	550 L.F.	3 INCH SCHEDULE 80 RIGID PVC CONDUIT - BORED
8051	1000 L.F.	2 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8053	60 L.F.	4 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8050	95 L.F.	4 INCH SCHEDULE 80 RIGID PVC CONDUIT - BORED
8057	40 L.F.	1 INCH LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR WIRE SLEEVE
8059	1 EACH	ELECTRICAL UTILITY SERVICE EQUIPMENT 120/240 VOLTS 60 AMPS
8066	1 EACH	NONINVASIVE DETECTOR, 1000 FOOT LEAD-IN CABLE
8061	100 L.F.	ELECTRICAL CABLE - 1 CONDUCTOR (NO. 4 A.W.G.)
8063	1 EACH	MICROLOOP PROBE SET WITH 500 FOOT LEAD-IN CABLE
8064	1 EACH	MICROLOOP PROBE SET WITH 1000 FOOT LEAD-IN CABLE
8065	1 EACH	NONINVASIVE DETECTOR, 500 FOOT LEAD-IN CABLE
8067	15 EACH	FURNISH AND INSTALL ELECTRICAL HANDHOLE
8069	52 S.F.	INSTALL GROUND MOUNTED SIGN
8070	100 S.F.	INSTALL OVERHEAD SIGN
8071	2 EACH	VIDEO DETECTION CAMERA
8075	2 EACH	STEEL POLE WITH TWIN 50 FT. MAST ARMS
8084	1 EACH	250 WATT HIGH PRESSURE SODIUM LAMP AND LUMINAIRE
8091	3 EACH	GROUND ROD - 3/4 INCH DIAMETER x 10 FOOT LENGTH
8096	3 EACH	CUT, CLEAN, GALVANIZE AND CAP TRAFFIC SIGNAL STRUCTURE
8101	100 L.F.	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 A.W.G.)
8102	635 L.F.	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 A.W.G.)
8103	100 L.F.	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 A.W.G.) TC
8105	150 L.F.	SAW CUT FOR SIGNAL (LOOP DETECTOR)
8107	1 EACH	15 FOOT LIGHTING ARM ON SIGNAL STRUCTURE
8112	1 EACH	INSTALL CONTROLLER AND CABINET - BASE MOUNT

**WIRING KEY**

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

**WIRING DIAGRAM**



**PHASE CHART**

	1	2	3	4	5	6	7	8
(R)	R	R	R	R	R	R	R	R
(Y)	Y	Y	Y	Y	Y	Y	Y	Y
(G)	G	G	G	G	G	G	G	G
PHASE 2 AND 6	G	G	G	G	R	R	R	R
2 AND 6 CHANGE	Y	Y	Y	Y	R	R	R	R
PHASE 4 AND 8	R	R	R	R	G	G	G	G
4 AND 8 CHANGE	R	R	R	R	Y	Y	Y	Y
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R

TOD No: AT717-20M  
 SHA No: CL329A55/B55/M55  
 Carroll County

**SHA** STATE OF MARYLAND  
 DEPARTMENT OF TRANSPORTATION  
 STATE HIGHWAY ADMINISTRATION  
 OFFICE OF TRAFFIC & SAFETY  
 TRAFFIC ENGINEERING DESIGN DIVISION  
 MD 30 (Hanover Pike) and  
 MD 496 (Bachmans Valley Road/Wentz Road)

**GENERAL INFORMATION SHEET**

SCALE	NONE	DATE	12/22/05	CONTRACT NO.	AT7175185
DESIGNED BY	B. DONOWAY	COUNTY	CARROLL		
DRAWN BY	B. DONOWAY	LOGMILE	05003009.69		
CHECKED BY	N. LEARY	T.I.M.S. NO.	H156		
F.A.P. NO.		TOD NO.			
T.S. NO. 4460 -		OF		SHEET NO. 3 OF 3	



Whitman, Reardon  
 and Associates, LLP  
 801 South Caroline Street  
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 (410) 235-3450

BY: DONOWAY