PROJECT DESCRIPTION

GENERAL

THIS PROJECT INVOLVES THE INSTALLATION OF A NEW FULL-TRAFFIC-ACTUATED CONTROL SIGNAL, AND HAZARD IDENTIFICATION BEACON AT THE INTERSECTION OF MD 103 AND ILCHESTER ROAD/ RISING SUN LANE IN HOWARD COUNTY. MD 103 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 103 APPROACHES OPERATING CONCURRENTLY AND THE ILCHESTER ROAD/RISING SUN ROAD APPROACHES OPERATING CONCURRENTLY.

EXCLUSIVE/PERMISSIVE LEFT-TURN PHASING IS PROVIDED FOR EASTBOUND AND WESTBOUND MD 103 APPROACHES.

CONTROLLER REQUIREMENTS

INSTALL A FULL-TRAFFIC-ACTUATED, EIGHT-PHASE CONTROLLER WITH THREE (3) FOUR-CHANNEL, TIME-DELAY-OUTPUT LOOP DETECTOR AMPLIFIERS, INTERSECTION MONITOR WITH BATTERY BACK-UP 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 OF 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 - 104.00-12

STANDARD NO. MD-104.31-01 (FLAGGING OPERATION)

STANDARD NO. MD-104.33-01 (SHOULDER WORK)

STANDARD NO. MD-104.35-01 (LANE SHIFT)

STANDARD NO. MD-104.32-02 (INTERSECTION FLAGGING OPERATION)

PROJECT CONTACTS

THE CONTACT PERSONS FOR SHA ARE AS FOLLOWS:

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

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

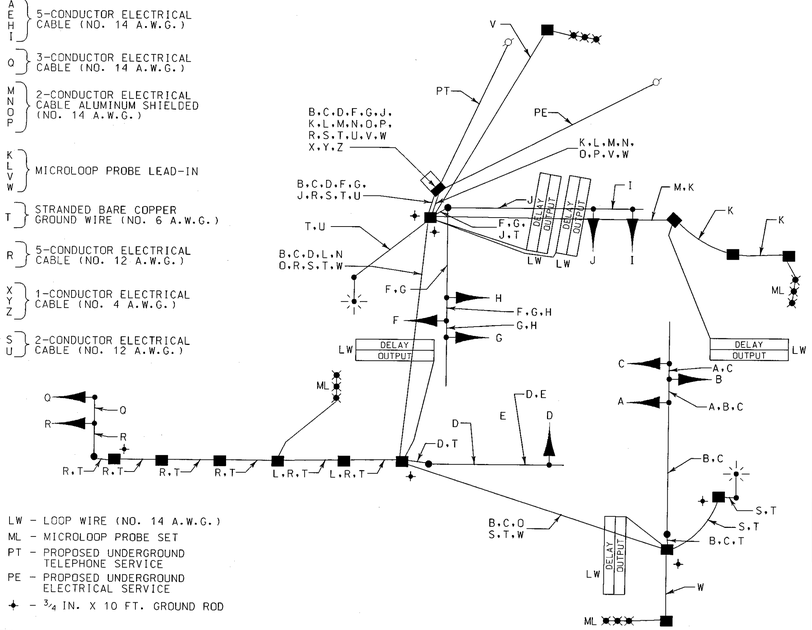
MR. JIM BUCKALEW
DISTRICT UTILITIES ENGINEER
PHONE: (301) 624-8115

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

WIRING DIAGRAM

WIRING KEY

- B C D F G J — 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- A E H I — 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- O — 3-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- M N O P — 2-CONDUCTOR ELECTRICAL CABLE ALUMINUM SHIELDED (NO. 14 A.W.G.)
- K L V W — MICROLOOP PROBE LEAD-IN
- T — STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
- R — 5-CONDUCTOR ELECTRICAL CABLE (NO. 12 A.W.G.)
- X Y Z — 1-CONDUCTOR ELECTRICAL CABLE (NO. 4 A.W.G.)
- S U — 2-CONDUCTOR ELECTRICAL CABLE (NO. 12 A.W.G.)



LW - LOOP WIRE (NO. 14 A.W.G.)
ML - MICROLOOP PROBE SET
PT - PROPOSED UNDERGROUND TELEPHONE SERVICE
PE - PROPOSED UNDERGROUND ELECTRICAL SERVICE
⏚ - 3/4 IN. X 10 FT. GROUND ROD

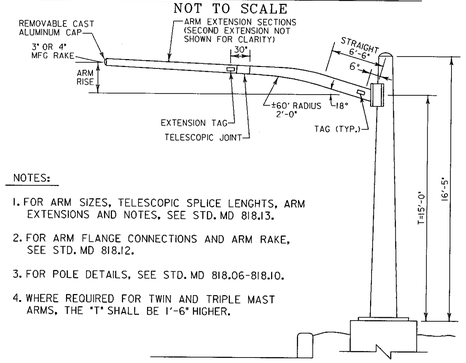
EQUIPMENT LIST "A"

A. EQUIPMENT TO BE SUPPLIED BY SHA

ITEM NO.	QUANTITY	DESCRIPTION
9002	3 EACH	FOUR-CHANNEL, TIME-DELAY-OUTPUT, LOOP DETECTOR AMPLIFIER
9025	1 EACH	(UPDATED) 50/60 MAT ARM TWIN X X 23' STEEL POLE (NO ANCHOR BOLTS
9030	2 EACH	(UPDATED) 60' MAST ARM SINGLE X 27' STEEL POLE
9087	1 EACH	EIGHT-PHASE, FULL TRAFFIC ACTUATED CONTROLLER WITH INTERSECTION MONITOR WITH BATTERY BACK-UP FOR PHONE DROP AND ASSOCIATED HARNESSES HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET
9089	213 S.F.	SHEET ALUMINUM SIGNS CONSISTING OF:
	- 2 EACH	R10-12 SIGN (36 IN. X 42 IN.) - MAST ARM MOUNT
	- 2 EACH	W3-3 SIGN (36 IN. X 36 IN.) WITH "NEW" PANEL (30 IN. X 30 IN.) AND FLAG - GROUND MOUNT
	- 1 EACH	W3-3 SIGN (36 IN. X 36 IN.) WITH "NEW" PANEL (30 IN. X 30 IN.) AND FLAG - POLE MOUNT
	- 2 EACH	M95-1 (78 IN. X 40 IN.) - MAST ARM MOUNT
	- 1 EACH	D-3(1) SIGN "ILCHESTER RD" (VARIABLE X 16 IN.) DUAL FACED - MAST ARM MOUNT
	- 1 EACH	D-3(1) SIGN "RISING SUN LN" (VARIABLE X 16 IN.) DUAL FACED - MAST ARM MOUNT
	- 1 EACH	W3-3(2) SIGN (120 IN. X 60 IN.) - MAST ARM MOUNT
	- 1 EACH	W2-2 SIGN (30 IN. X 30 IN.) WITH D-3(2) SIGN (72 IN. X 12 IN.) GROUND MOUNT
	- 2 EACH	D-3(3) SIGN (72 IN. X 12IN.) - GROUND MOUNT
	- 1 EACH	R3-5R SIGN (30 IN. X 36 IN.) - MAST ARM MOUNT

15'-0" "T" STEEL POLE DETAIL

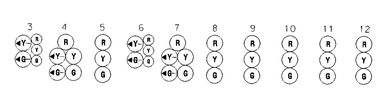
NOT TO SCALE



NOTES:

1. FOR ARM SIZES, TELESCOPIC SPLICE LENGHTS, ARM EXTENSIONS AND NOTES, SEE STD. MD 818.13.
2. FOR ARM FLANGE CONNECTIONS AND ARM RAKE, SEE STD. MD 818.12.
3. FOR POLE DETAILS, SEE STD. MD 818.06-818.10.
4. WHERE REQUIRED FOR TWIN AND TRIPLE MAST ARMS, THE "T" SHALL BE 1'-6" HIGHER.

PHASE CHART



PHASE 1 + 5	R G	R G	R	R G	R G	R	R	R	R	R	
1 + 5 CHANGE	PHASE 1 + 5 MAY CHANGE TO PHASE 1 + 6, PHASE 2 + 5 OR PHASE 2 + 6										
PHASE 1 + 6	G G	G G	G	R	R	R	R	R	R	R	
1 + 6 CHANGE	G Y	G Y	G	R	R	R	R	R	R	R	
PHASE 2 + 5	R	R	R	G G	G G	G	R	R	R	R	
2 + 5 CHANGE	R	R	R	G Y	G Y	G	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	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	

EQUIPMENT LIST "B"

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

ITEM NO.	QUANTITY	DESCRIPTION
1001	1 EACH	MAINTENANCE OF TRAFFIC PER ASSIGNMENT
2001	10 C.Y.	CLASS 2 EXCAVATION
2002	5 C.Y.	TEST PIT EXCAVATION
5004	150 L.F.	12 IN. WHITE HEAT APPLIED THERMOPLASTIC PAVEMENT MARKING
5005	100 L.F.	24 IN WHITE HEAT APPLIED THERMOPLASTIC PAVENMENT MARKING
5006	420 L.F.	5 IN WHITE HEAT APPLIED THERMOPLASTIC PAVENMENT MARKING
5007	320 L.F.	5 IN YELLOW HEAT APPLIED THERMOPLASTIC PAVENMENT MARKING
5008	420 L.F.	REMOVAL OF EXISTING PAVEMENT LINE MARKINGS - ANY WIDTH
6004	240 S.F.	4 IN. CONCRETE SIDEWALK
6005	150 L.F.	TRAFFIC BARRIER W BEAM
6007	1 EA.	SPECIAL TRAFFIC BARRIER W BEAM END TREATMENT
6008	1 EA.	TRAFFIC BARRIER W BEAM TRAIL END ANCHORAGE
8006	3 EA.	CUT, CLEAN AND CAP TRAFFIC SIGNAL STRUCTURE
8011	34 EA.	FURNISH & INSTALL 12 IN. VEHICLE SIGNAL HEAD SECTION
8019	6 EA.	FURNISH & INSTALL 8 IN. VEHICLE SIGNAL HEAD SECTION
8020	1 EA.	FURNISH & INSTALL CONTROL AND DISTRIBUTION EQUIPMENT FOR SIGNAL
8026	1 EA	FURNISH AND INSTALL MAST ARM POLE (15' T) AND 60' MAST ARM
8028	1 EA.	FURNISH & INSTALL MICRO PROBE SET 1000 FT LEAD-IN
8029	3 EA.	FURNISH & INSTALL MICRO PROBE SET 500 FT LEAD-IN
8039	2 EA	INSTALL STEEL POLE AND SINGLE MAST ARM
8040	1 EA	INSTALL STEEL POLE AND TWIN MAST ARMS
8048	1 EA.	REMOVE & DISPOSE MATERIAL & EQUIPMENT PER ASSIGN
8051	1090 L.F.	FURNISH & INSTALL 3 IN. PVC SCHEDULE 80 CONDUIT- TRENCHED
8052	230 L.F.	FURNISH & INSTALL 4 IN. PVC SCHEDULE 80 CONDUIT- BORED
8053	30 L.F.	FURNISH & INSTALL 4 IN. PVC SCHEDULE 80 CONDUIT- TRENCHED
8057	19 C.Y.	FURNISH & INSTALL CONCRETE FOR SIGNAL FOUNDATION
8059	100 L.F.	FURNISH & INSTALL WOOD SIGN SUPPORTS 4 IN. x 6 IN.
8060	1330 L.F.	FURNISH & INSTALL NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
8063	20 L.F.	FURNISH & INSTALL 2 IN. PVC SCHEDULE 80 CONDUIT- BORED
8064	85 L.F.	FURNISH & INSTALL 3 IN. PVC SCHEDULE 80 CONDUIT- BORED
8068	45 L.F.	FURNISH & INSTALL 1 INCH LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR SLEEVE
8070	45 L.F.	FURNISH & INSTALL ELECTRICAL CABLE - 1 CONDUCTOR (NO. 4 AWG)
8072	14 EA.	FURNISH & INSTALLL ELECTRICAL HANDHOLE
8074	51 S.F.	INSTALL GROUND MOUNTED SIGN
8075	162 S.F.	INSTALL OVERHEAD SIGN
8080	6 EA.	FURNISH & INSTALL GROUND ROD - 3/4 INCH DIAMETER x 10 FOOT LENGTH
8081	350 L.F.	FURNISH & INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (ALUMINUM SHIELDED)
8083	25 L.F.	FURNISH & INSTALL ELECTRICAL CABLE - 3 CONDUCTOR (NO. 14 AWG)
8084	100 L.F.	FURNISH & INSTALL ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)
8085	605 L.F.	FURNISH & INSTALL ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)
8086	380 L.F.	FURNISH & INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 AWG)
8087	2400 L.F.	FURNISH & INSTALL LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO. 14 AWG)
8088	630 L.F.	FURNISH & INSTALL SAW CUT FOR SIGNAL (LOOP DETECTOR)
8091	600 L.F.	FURNISH & INSTALL 2 IN. PVC SCHEDULE 80 CONDUIT- TRENCHED
8093	1 EA.	INSTALL CONTROLLER & CABINET - BASE MOUNT
NEG.	1170 L.F.	FURNISH & INSTALL ELECTRICAL CABLE - 5 CONDUCTOR (NO. 12 AWG)
NEG.	2 EA	FURNISH AND INSTALL 30' LIGHT POLE WITH 10' BRAKCET ARM
NEG.	1 LS	MOBILIZATION

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

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

GENERAL INFORMATION SHEET
MD 103 and Ilchester Road

DRAWN BY: B. MARTINE	F.A.P. NO.		TS NO. 4155	SHEET NO.
CHECKED BY: N. LEARY	S.H.A. NO.	HS 802A51		
SCALE: NONE	COUNTY:	Howard	T.I.M.S. NO. E840	2 OF 2
DATE: 1/8/02	LOG MILE:	[redacted]		

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