F.H.W.A. REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	MD			

PROJECT DESCRIPTION

I. GENERAL

THIS PROJECT IS LOCATED AT THE INTERSECTION OF US 1 (HICKORY BYPASS) AND MD 23 IN HARFORD COUNTY, MARYLAND AND INVOLVES ROADWAY CONSTRUCTION AND THE CONSTRUCTION OF A NEW SIGNAL THAT IS EFFECTED BY THIS CONSTRUCTION. US 1 (HICKORY BYPASS) IS ASSUMED TO RUN IN A NORTH/SOUTH DIRECTION.

II. INTERSECTION OPERATION

THE PROPOSED TRAFFIC SIGNAL WILL OPERATE IN A NEMA SIX (6) PHASE, FULLY TRAFFIC ACTUATED MODE. THE US 1 APPROACHES WILL OPERATE CONCURRENTLY, WITH AN EXCLUSIVE/PERMISSIVE LEFT TURN PHASE FOR NORTHBOUND TRAFFIC. THE MD 23 APPROACH WILL OPERATE SEPERATELY.

A NEW EIGHT PHASE FULLY TRAFFIC ACTUATED CONTROLLER WITH TWO (2) FOUR CHANNEL RACK MOUNTED LOOP DETECTOR AMPLIFIERS, TELEMETRY MODULE, AND INTERSECTION MONITOR WITH BATTERY BACK UP HOUSED IN A NEMA SIZE SIX (6) BASE MOUNTED CABINET.

III. SPECIAL NOTES

1. THE SIGNAL SHOP WILL BE NOTIFIED TO PERFORM INTERNAL WIRING OF THE CABINET AT MD 23 AND US 1. ALL CABLE SHALL BE IDENTIFIED AND BROUGHT INTO THE CONTROLLER BY THE CONTRACTOR. THE CONTRACTOR SHALL NOTIFY MR. EDWARD RODENHIZER, SHA SIGNAL SHOP AT (410) 787-7650 SEVENTY-TWO (72) HOURS IN ADVANCE OF THIS WORK.

2. MOT PLATES FOR THIS PROJECT WILL BE AS FOLLOWS: 104.00 TO 104.00-12, 104.02-01, 104.03-01

EQUIPMENT LIST

A. EQUIPMENT TO BE SUPPLIED BY SHA AND INSTALLED BY THE CONTRACTOR

ITEM NO.	CATEGORY CODE NO.	QUANTITY	DESCRIPTION
	900000	1 EA.	FURNISH NEMA SIZE 6 BASE MOUNTED CABINET & CONTROLLER
	900000	4 EA.	12" 1-WAY, 3-SECTION (R,Y,G) TRAFFIC SIGNAL HEAD - MAST ARM MOUNT
	900000	1 EA.	12"/8" 1-WAY, 5-SECTION (R,Y,YA,G,GA) TRAFFIC SIGNAL HEAD - MAST ARM MOUNT
	900000	2 EA.	12" 1-WAY, 5-SECTION (R,Y,YA,G,GA) TRAFFIC SIGNAL HEAD - MAST ARM MOUNT
	900000	144 SF.	SHEET ALUMINUM SIGNS
		- 1 EA.	D3-2 SIGN (16" X 96") NAME TO BE DETERMINED - DUAL FACED
		- 2 EA.	D3-2 SIGN (16" X 96") "East/West Hwy" - DUAL FACED
		- 1 EA.	R10-12 SIGN (30" X 36") "LEFT TURN YIELD ON GREEN"
		- 5 EA.	W3-3 SIGN (48" X 48") WITH "NEW" PANEL (30" X 30") AND FLAGS - GROUND MOUNT
		- 1 EA.	SHIELD ASSEMBLY "SOUTH, US 1, RIGHT ARROW" (24 IN. x 51 IN.) - POLE MOUNT
		- 1 EA.	SHIELD ASSEMBLY "NORTH, US 1, LEFT ARROW" (30 IN. x 75 IN.) - POLE MOUNT

THE FOLLOWING CONTACT PERSONS FOR DISTRICT # 4 ARE AS FOLLOWS:

Mr. Richard L. Daff, Sr.
Chief, Traffic Operations Division
(410) 787-7630

Mr. Randall Scott
Asst. District Engineer - Traffic
(410) 321-2781

Mr. Joseph McMahon
Utility Engineer
(410) 321-2841

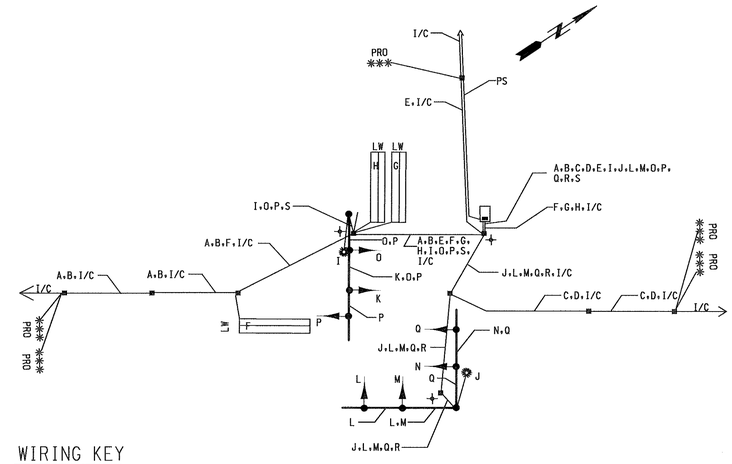
Mr. David Malkowski
District Engineer
(410) 321-2810

Mr. David Ramsey
Asst. District Engineer - Maintenance
(410) 321-2761

The Power Company Representative is:

Mr. Tony Battista
Baltimore Gas and Electric Company
1068 North Front Street
Room 200
Baltimore, Maryland 21202
(410) 291-3118

WIRING DIAGRAM



WIRING KEY

A-E	MICRO PROBE CABLE
F-H	2 CONDUCTOR ELECTRICAL CABLE ALUMINUM SHIELDED
I-J	2 CONDUCTOR ELECTRICAL CABLE (NO. 12 AWG TYPE T.C.)
K-N	5 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
O-Q	7 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
R,S	STRANDED BARE COPPER GROUND WIRE
PRO	MICRO LOOP PROBES
LW	LOOP WIRE
PS	POWER SOURCE
I/C	12 PAIR JELLY FILLED NO. 19 AWG INTERCONNECT WIRING
+	GROUND ROD

CONSTRUCTION DETAILS

(A) INSTALL 12 INCH X 27 FOOT STEEL STRAIN POLE WITH 60 FOOT MAST ARM, SIGNAL HEADS, SIGNS AND 20 FOOT LIGHTING ARM WITH A 250 WATT HIGH PRESSURE SODIUM VAPOR LUMINAIRE. (NOTE: ONE - 3 INCH SCHEDULE 80, 90 DEGREE PVC CONDUIT BEND AND FOUR - 2 INCH x 90 INCH ANCHOR BOLTS)

(B) INSTALL 12 INCH X 27 FOOT STEEL STRAIN POLE AND WITH TWIN 50 FOOT/ 60 FOOT MAST ARMS, TRAFFIC SIGNAL HEADS, SIGNS AND 20 FOOT LIGHTING ARM WITH A 250 WATT HIGH PRESSURE SODIUM VAPOR LUMINAIRE. (NOTE: ONE - 3 INCH SCHEDULE 80, 90 DEGREE PVC CONDUIT BEND AND FOUR - 2 INCH ANCHOR BOLTS)

(C) INSTALL NEMA SIX (6) PHASE BASE MOUNTED CABINET AND CONTROLLER

(D) INSTALL HANDHOLE

(E) INSTALL MICROLOOP PROBES - 1000 FOOT LEAD-IN

(F) INSTALL MICROLOOP PROBES - 500 FOOT LEAD-IN

(G) INSTALL 2" SCHEDULE 80 POLYVINYL CHLORIDE CONDUIT - TRENCHED

(H) INSTALL 3" SCHEDULE 80 POLYVINYL CHLORIDE CONDUIT - TRENCHED

(I) INSTALL 6 FOOT X 30 FOOT LOOP DETECTOR IN 1/4 IN. FLEXIBLE TUBING (3-6-3 TURNS)

(J) INSTALL 1 INCH LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR SLEEVE

(K) INSTALL 24 INCH WHITE PERMANENT PREFORMED PAVEMENT MARKING TAPE (STOP BAR)

(L) INSTALL 1 IN. GALVANIZED CONDUIT FOR DETECTOR SLEEVE

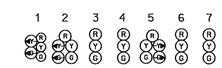
(M) INSTALL 4 IN. SCHEDULE 80 POLYVINAL CHLORIDE CONDUIT-TRENCHED

(N) INSTALL GROUND MOUNT SIGN

B. EQUIPMENT TO BE SUPPLIED AND INSTALLED BY THE CONTRACTOR

ITEM NO.	CATEGORY CODE NO.	QUANTITY	DESCRIPTION
	120500	1 L.S.	MAINTENANCE OF TRAFFIC
	203030	2.0 CY	TEST PIT EXCAVATION
	585445	135 LF	FURNISH AND INSTALL 24" WHITE PERMANENT PREFORMED PAVEMENT MARKING TAPE (STOP LINE)
	801004	10.0 CY	FURNISH AND INSTALL CONCRETE SIGNAL FOUNDATION
	801104	250 LF	FURNISH AND INSTALL WOOD SIGN SUPPORTS (4 IN. X 6 IN.)
	805011	45 LF	FURNISH AND INSTALL 1 IN. ELECTRICAL CONDUIT - GALVANIZED SLEEVE
	805125	1125 LF	FURNISH AND INSTALL 2 IN. SCHEDULE 80 PVC CONDUIT - TRENCHED
	805115	350 LF	FURNISH AND INSTALL 3 IN. SCHEDULE 80 PVC CONDUIT - TRENCHED
	805140	25 LF	FURNISH AND INSTALL 4 IN. SCHEDULE 80 PVC CONDUIT - TRENCHED
	805160	10 LF	FURNISH AND INSTALL 1 IN. LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT SLEEVE
	811001	10 EA	FURNISH AND INSTALL HANDHOLE
	813014	112 SF	INSTALL GROUND MOUNT SIGN
	813015	32 SF	INSTALL OVERHEAD SIGN
	818041	1 EA	FURNISH AND INSTALL 12 IN. X 27 FT. STRAIN POLE WITH SINGLE 60 FT. MAST ARM
	818036	1 EA	FURNISH AND INSTALL 12 IN. X 27 FT. STRAIN POLE WITH TWIN 50 FT./60 FT. MAST ARMS
	831010	2 EA	FURNISH AND INSTALL 250 WATT HIGH PRESSURE SODIUM LAMP AND LUMINAIRE
	802501	280 LF	FURNISH AND INSTALL STRANDED BARE COPPER GROUND WIRE (NO. 6 AWG)
	837001	3 EA	FURNISH AND INSTALL GROUND ROD 3/4 IN. DIAMETER X 10 FT LENGTH
	838003	1 EA	FURNISH AND INSTALL CONTROL AND DISTRIBUTION EQUIPMENT (120/240V, 1 PH, 3 W)
	860220	7 EA	INSTALL SIGNAL HEAD ANY TYPE- MAST ARM MOUNT
	861116	410 LF	FURNISH AND INSTALL ELECTRICAL CABLE 2 CONDUCTOR NO. 12
	861104	440 LF	FURNISH AND INSTALL ELECTRICAL CABLE 2-CONDUCTOR ALUMINUM SHIELDED
	861105	515 LF	FURNISH AND INSTALL ELECTRICAL CABLE 5-CONDUCTOR NO. 14 AWG
	861107	665 LF	FURNISH AND INSTALL ELECTRICAL CABLE 7-CONDUCTOR NO. 14 AWG
	862101	1500 LF	FURNISH AND INSTALL LOOP WIRE IN FLEXIBLE TUBING
	862102	510 LF	FURNISH AND INSTALL SAW CUT FOR SIGNAL (LOOP DETECTOR)
	866104	2 EA	FURNISH AND INSTALL 20 FT. LIGHTING ARM ON SIGNAL STRUCTURE
	800000	1 EA	FURNISH AND INSTALL MICROLOOP PROBE SET 500 FT. LEAD IN.
	800000	4 EA	FURNISH AND INSTALL MICROLOOP PROBE SET 1000 FT. LEAD IN
	871202	1 EA	INSTALL NEMA SIZE 6 BASE MOUNTED CABINET

PHASE CHART



	1	2	3	4	5	6	7	
PHASE 1 & 6	G	G	G	R	R	R	R	
PHASE 1 CHANGE	Y	Y	G	R	R	R	R	
PHASE 2 & 6	G	G	G	G	G	R	R	
PHASE 2 & 6 CHANGE	Y	Y	Y	Y	Y	R	R	
PHASE 4 & _	R	R	R	R	R/G	G	G	
PHASE 4 & _ CHANGE	R	R	R	R	R/Y	Y	Y	
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	

LOG MILE:

REVISIONS	APPROVALS
	DESIGN SECTION
	ASST. DISTRICT ENGINEER, TRAFFIC
	CHIEF, TRAFFIC ENGINEERING DESIGN DIVISION
	DIRECTOR, TRAFFIC & SAFETY

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future

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

US 1 (HICKORY BYPASS) AND
MD 23 (EAST/WEST HWY.)

DRAWN BY: N.E.M.	F.A.P. NO. AC-NH-G-123-1(30)E	TS NO.	SHEET NO.
CHK. BY: M.J.W.	S.H.A. NO. HA8735170	3855-G1	196 OF 259
SCALE: 1" = 20'	COUNTY HARFORD		
DATE: 3/99			