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

PROJECT DESCRIPTION

GENERAL

THIS PROJECT INVOLVES THE INSTALLATION OF A NEW TRAFFIC CONTROL SIGNAL AND STREET LIGHTING AT THE INTERSECTION OF U.S. 40 AND JOPPA ROAD IN HARFORD COUNTY. U.S. 40 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 U.S. 40 APPROACHES RUNNING CONCURRENTLY AND THE JOPPA ROAD APPROACHES RUNNING CONCURRENTLY.

EXCLUSIVE/PERMISSIVE LEFT-TURN PHASES WILL BE PROVIDED FOR EASTBOUND AND WESTBOUND U.S. 40 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.

CONTROLLER REQUIREMENTS

UPON COMPLETION OF THE 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 WITH THE NEAREST STREET ADDRESS, ZIPCODE AND PHONE NUMBER.

MAINTENANCE OF TRAFFIC

THE FOLLOWING WORK ZONE TRAFFIC CONTROL STANDARDS SHALL BE USED FOR THE PROJECT.

STANDARD NO. MD-104.00-104.00-12
STANDARD NO. MD-104.31-01 (FLAGGING OPERATION)
STANDARD NO. MD-104.49-01 (SHOULDER WORK)
STANDARD NO. MD-104.44-01 (LEFT LANE CLOSURE)
STANDARD NO. MD-104.45-01 (RIGHT LANE CLOSURE)
STANDARD NO. MD-104.46-01 (CENTER LANE CLOSURE)

PROJECT CONTACTS

THE CONTACT PERSONS FOR DISTRICT #4 ARE AS FOLLOWS:

MR. DAVE MALKOWSKI
DISTRICT ENGINEER
PHONE: (410) 321-3461

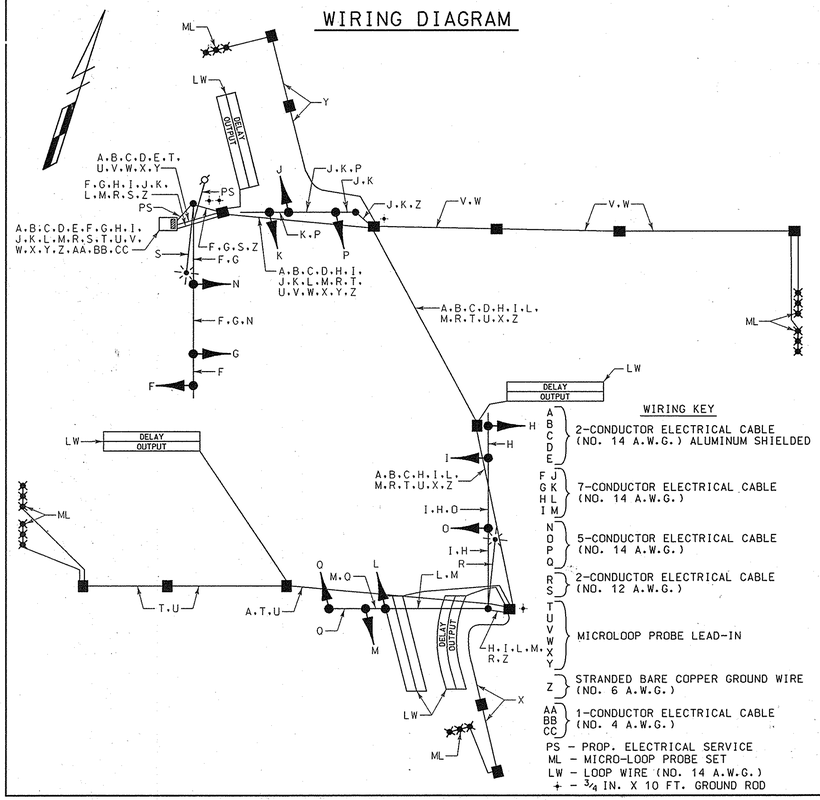
MR. RANDALL SCOTT
ASSISTANT DISTRICT ENGINEER - TRAFFIC
PHONE: (410) 321-3314

MR. RUSS YUREK
ASSISTANT DISTRICT ENGINEER - MAINTENANCE
PHONE: (410) 321-3468

MR. JOSEPH MCMAHON
DISTRICT UTILITIES ENGINEER
PHONE: (410) 321-3456

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

WIRING DIAGRAM

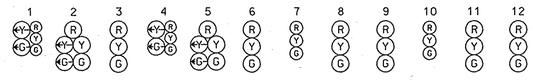


EQUIPMENT LIST "A"

A. EQUIPMENT TO BE SUPPLIED BY THE SHA

ITEM NO.	QUANTITY	DESCRIPTION
9002	3 EACH	FOUR-CHANNEL, TIME-DELAY-OUTPUT, LOOP DETECTOR AMPLIFIER
9014	6 EACH	12 IN., ONE-WAY, THREE-SECTION (R,Y,G) TRAFFIC SIGNAL HEAD WITH ADJUSTABLE HANGER FOR MAST ARM MOUNTING AND TUNNEL VISORS.
9016	2 EACH	12 IN., ONE-WAY, FIVE-SECTION (R,Y,YA,G,GA) TRAFFIC SIGNAL HEAD WITH ADJUSTABLE HANGER FOR MAST ARM MOUNTING AND TUNNEL VISORS.
9019	2 EACH	8 IN./12 IN., ONE-WAY, FIVE-SECTION (R,Y,YA,G,GA) TRAFFIC SIGNAL HEAD WITH ADJUSTABLE BRACKET FOR MAST ARM MOUNTING AND TUNNEL VISORS.
9022	2 EACH	8 IN., ONE-WAY, THREE-SECTION (R,Y,G) TRAFFIC SIGNAL HEAD WITH ADJUSTABLE HANGER FOR MAST ARM MOUNTING AND TUNNEL VISORS.
9081	1 EACH	EIGHT-PHASE, FULL-TRAFFIC-ACTUATED CONTROLLER AND INTERSECTION MONITOR II WITH BATTERY BACK-UP FOR PHONE DROP HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET.
9089	158 S.F.	SHEET ALUMINUM SIGNS TO CONSIST OF :
		- 2 EACH D3-2 SIGN "JOPPA RD" (VARIABLE X 16 IN.) DUAL FACED - MAST ARM MOUNT.
		- 1 EACH ASSOCIATED SHIELD ASSEMBLY "WEST, U.S. 40, LEFT ARROW" (36 IN. X 75 IN.) - POLE MOUNT
		- 1 EACH ASSOCIATED SHIELD ASSEMBLY "EAST, U.S. 40, LEFT ARROW" (36 IN. X 75 IN.) - POLE MOUNT
		- 1 EACH ASSOCIATED SHIELD ASSEMBLY "EAST, U.S. 40, RIGHT ARROW" (24 IN. X 51 IN.) - POLE MOUNT
		- 1 EACH ASSOCIATED SHIELD ASSEMBLY "WEST, U.S. 40, RIGHT ARROW" (24 IN. X 51 IN.) - POLE MOUNT
		- 2 EACH R10-12 SIGN (36 IN. X 42 IN.) - MAST ARM MOUNT.
		- 2 EACH W3-3 SIGN (48 IN. X 48 IN.) WITH "NEW" PANEL (30 IN. X 30 IN.) AND FLAGS WITH D3-2 SIGN "JOPPA RD." (BLACK ON YELLOW) (VARIABLE X 16 IN.) - GROUND MOUNT.
		- 2 EACH W3-3 SIGN (36 IN. X 36 IN.) WITH "NEW" PANEL (30 IN. X 30 IN.) AND FLAGS - GROUND MOUNT.
		- 1 EACH R3-5R (30 IN. X 36 IN.) - MAST ARM MOUNT

PHASE CHART

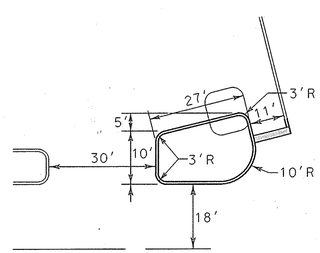


PHASE 1 + 5	R ← G	R ← G	R	R ← G	R ← G	R	R	R	R	R	R	R	
1 + 5 CHANGE	1 + 5 MAY CHANGE TO PHASE 1 + 6, PHASE 2 + 5 OR PHASE 2 + 6												
PHASE 1 + 6	G ← G	G ← G	G	R	R	R	R	R	R	R	R	R	
1 + 6 CHANGE	G ← Y	G ← Y	G	R	R	R	R	R	R	R	R	R	
PHASE 2 + 5	R	R	R	G ← G	G ← G	G	R	R	R	R	R	R	
2 + 5 CHANGE	R	R	R	G ← Y	G ← Y	G	R	R	R	R	R	R	
PHASE 2 + 6	G	G	G	G	G	G	R	R	R	R	R	R	
2 + 6 CHANGE	Y	Y	Y	Y	Y	Y	R	R	R	R	R	R	
PHASE 4 + 8	R	R	R	R	R	R	G	G	G	G	G	G	
4 + 8 CHANGE	R	R	R	R	R	R	Y	Y	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	FL/R	FL/R	

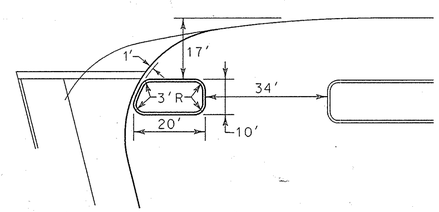
MEDIAN DETAIL

SCALE 1" = 20'

DETAIL 1



DETAIL 2



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	4 C.Y.	TEST PIT EXCAVATION
2004	25 C.Y.	CLASS 2 EXCAVATION
5004	100 L.F.	24 IN. WHITE PERMANENT PREFORMED PAVEMENT MARKING TAPE
5013	100 L.F.	REMOVE EXISTING PAVEMENT MARKINGS - ANY WIDTH
6001	500 S.F.	4 IN. CONCRETE SIDEWALK
6002	150 L.F.	STANDARD TYPE A COMBINATION CURB AND GUTTER
8001	15 C.Y.	FURNISH AND INSTALL CONCRETE FOR SIGNAL FOUNDATION
8011	12 EACH	INSTALL SIGNAL HEAD
8016	1 EACH	FURNISH AND INSTALL MICROLOOP PROBE SET WITH 500 FT. LEAD-IN
8017	5 EACH	FURNISH AND INSTALL MICROLOOP PROBE SET WITH 1000 FT. LEAD-IN
8020	1 EACH	INSTALL CONTROLLER AND CABINET - BASE MOUNT
8021	860 L.F.	SAW CUT FOR SIGNAL (LOOP DETECTOR)
8023	60 L.F.	FURNISH AND INSTALL 1 IN. LIQUID-TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR SLEEVE
8024	1200 L.F.	FURNISH AND INSTALL 2 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8026	210 L.F.	FURNISH AND INSTALL 2 IN. SCHEDULE 80 RIGID PVC CONDUIT - BORED
8030	60 L.F.	FURNISH AND INSTALL 4 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8031	255 L.F.	FURNISH AND INSTALL 4 IN. SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED
8033	13 EACH	FURNISH AND INSTALL ELECTRICAL HANDHOLE
8034	4 EACH	FURNISH AND INSTALL GROUND ROD - 3/4 IN. DIAMETER X 10 FT. LENGTH
8040	2360 L.F.	FURNISH AND INSTALL LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO. 14 A.W.G.)
8041	880 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR ALUMINUM SHIELDED (NO. 14 A.W.G.)
8044	100 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 A.W.G.)
8045	1650 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 A.W.G.)
8046	360 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 A.W.G.)
8049	260 L.F.	FURNISH AND INSTALL NO. 6 A.W.G. STRANDED BARE COPPER GROUND WIRE
8050	45 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 1 CONDUCTOR NO. 4 A.W.G. - THHN/THWN
8051	148 L.F.	FURNISH AND INSTALL WOOD SIGN SUPPORTS 4 IN. X 4 IN.
8053	106 S.F.	INSTALL GROUND MOUNTED SIGN
8054	52 S.F.	INSTALL OVERHEAD SIGN
8056	2 EACH	FURNISH AND INSTALL 250 WATT HPS LUMINAIRE WITH PHOTO-CELL
8057	2 EACH	FURNISH AND INSTALL 20 FT. LIGHTING BRACKET ARM FOR TRAFFIC SIGNAL STRUCTURE
8061	1 EACH	REMOVE AND DISPOSE OF EXISTING MATERIAL AND EQUIPMENT PER ASSIGNMENT
8064	1 EACH	USE EXISTING PLAN OR DISK AND AS-BUILT TRAFFIC CONTROL DEVICE
8069	30 L.F.	FURNISH AND INSTALL 1 IN. ELECTRICAL CONDUIT - GALVANIZED RISER
8070	1 EACH	CONTROL AND DISTRIBUTION EQUIPMENT
8081	1 EACH	FURNISH AND INSTALL MAST ARM POLE AND 38 FT. MAST ARM
8083	1 EACH	FURNISH AND INSTALL MAST ARM POLE AND 60 FT. MAST ARM
8085	1 EACH	FURNISH AND INSTALL MAST ARM POLE AND TWIN 50 FT./60 FT. MAST ARMS
8000	1 EACH	RELOCATE EXISTING SIGN

Whitman, Requardt and Associates
Engineers and Planners
2315 Saint Paul Street
Baltimore, Maryland 21218
(410) 235-3450

REVISIONS	APPROVALS	REVISIONS
	ASSISTANT DIVISION CHIEF	
	ASST. DISTRICT ENGINEER, TRAFFIC	
	CHIEF, TRAFFIC ENGINEERING DESIGN DIVISION	
	DIRECTOR, OFFICE OF TRAFFIC & SAFETY	

MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION
GENERAL INFORMATION SHEET
U.S. ROUTE 40 AND JOPPA ROAD

DATE: 10-16-97	DRAWN BY: S.BLOSS	F.A.P. NO. AC-STPG-000S(589)E	PLAN SHEET NO.: TS-3727	SHEET NO. 2 OF 2
SCALE: NONE	DESIGNED BY: N.LEARY	S.H.A. NO. AW-278-5185		
APPROVED BY:	CHECKED BY: T.HANNAN	COUNTY HARFORD		

M:\94002\30852GI2.DGN