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 WITH STREET LIGHTING AT MD 450 (ANNAPOLIS ROAD) AND FORBES ROAD IN PRINCE GEORGES COUNTY. MD 450 IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

INTERSECTION OPERATION

THE INTERSECTION WILL OPERATE IN A NEMA SEVEN-PHASE, FULL-TRAFFIC ACTUATED MODE, WITH THE MD 450 APPROACHES RUNNING CONCURRENTLY AND THE FORBES ROAD APPROACHES RUNNING CONCURRENTLY.

EXCLUSIVE/PERMISSIVE LEFT TURN PHASES WILL BE PROVIDED FOR EASTBOUND AND WESTBOUND MD 450 AND NORTHBOUND FORBES ROAD.

CONTROLLER REQUIREMENTS

INSTALL A FULL-TRAFFIC-ACTUATED, EIGHT-PHASE CONTROLLER WITH FOUR (4) TWO-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.

SPECIAL NOTE

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 WITH THE NEAREST STREET ADDRESS, ZIP CODE, AND PHONE NUMBER.

EQUIPMENT LIST "A"

A. EQUIPMENT TO BE SUPPLIED BY THE SHA

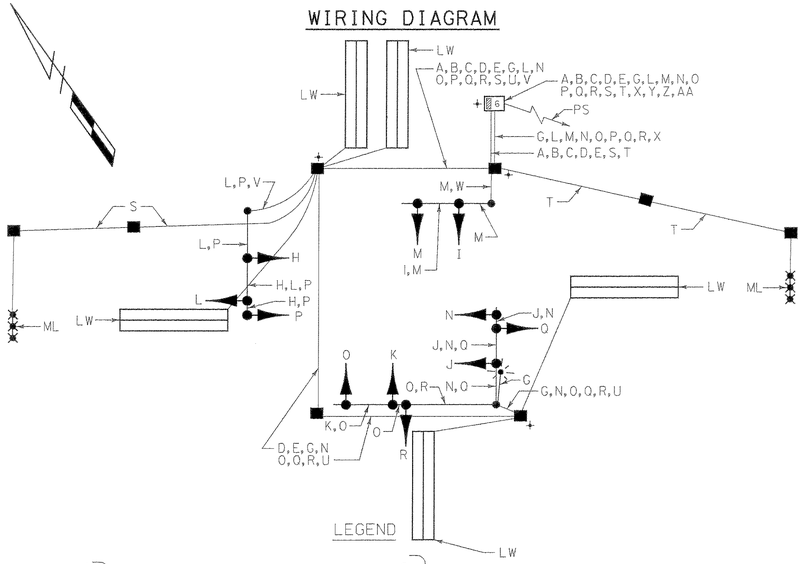
ITEM NO.	QUANTITY	DESCRIPTION
9001	1 EACH	EIGHT-PHASE, FULL-TRAFFIC-ACTUATED, SOLID STATE DIGITAL CONTROLLER WITH FOUR (4) TWO-CHANNEL, TIME-DELAY-OUTPUT LOOP DETECTOR AMPLIFIERS, INTERSECTION MONITOR WITH BATTERY BACK-UP FOR PHONE DROP, HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET.
9002	5 EACH	12 IN., ONE-WAY, THREE-SECTION (R,Y,G) TRAFFIC SIGNAL HEAD WITH ADJUSTABLE BRACKET FOR MAST ARM MOUNTING AND TUNNEL VISORS.
9003	3 EACH	12 IN., ONE-WAY, FIVE-SECTION (R,Y,YA,G,GA) TRAFFIC SIGNAL HEAD WITH ADJUSTABLE BRACKET FOR MAST ARM MOUNTING AND TUNNEL VISORS.
9004	3 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.
9005	163 S.F.	SHEET ALUMINUM SIGNS TO CONSIST OF :
		- 2 EACH W3-3 SIGN (48 IN. X 48 IN.) WITH "NEW" PANEL (30 IN. X 30 IN.) AND FLAGS-GROUND MOUNT.
		- 2 EACH W3-3 SIGN (36 IN. X 36 IN.) WITH "NEW" PANEL (24 IN. X 24 IN.) AND FLAGS - GROUND MOUNT
		- 2 EACH D3-2 DUAL FACED SIGN (VARIABLE X 16 IN.) - MAST ARM MOUNT.
		- 3 EACH R10-12 SIGN (36 IN. X 42 IN.) - MAST ARM MOUNT
		- 1 EACH ASSOCIATED SHIELD ASSEMBLY "EAST, MD 450, RIGHT ARROW" (24 IN. X 51 IN.) - POLE MOUNT.
		- 1 EACH ASSOCIATED SHIELD ASSEMBLY "WEST, MD 450, LEFT ARROW" (24 IN. X 51 IN.) - POLE MOUNT.
		- 1 EACH ASSOCIATED SHIELD ASSEMBLY "WEST, MD 450, RIGHT ARROW" (24 IN. X 51 IN.) - POLE MOUNT.
9006		- 1 EACH ASSOCIATED SHIELD ASSEMBLY "EAST, MD 450, LEFT ARROW" (24 IN. X 51 IN.) - POLE MOUNT.
	2 EACH	MICRO-LOOP PROBE SET WITH 1000 FT. LEAD-IN.

EQUIPMENT LIST "B"

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

ITEM NO.	QUANTITY	DESCRIPTION
1001	1 EACH	MAINTENANCE OF TRAFFIC
2001	4 C.Y.	TEST PIT EXCAVATION
5005	260 L.F.	4 IN. YELLOW PERMANENT PREFORMED PAVEMENT MARKING TAPE
5006	130 L.F.	4 IN. WHITE PERMANENT PREFORMED PAVEMENT MARKING TAPE
5009	120 L.F.	24 IN. WHITE PERMANENT PREFORMED PAVEMENT MARKING TAPE
8001	13 C.Y.	FURNISH AND INSTALL CONCRETE FOR SIGNAL FOUNDATION
8005	7005 LBS	FURNISH AND INSTALL MAST ARM POLE AND ARM - 27 FT. POLE WITH TWIN 60/40 FT. ARMS - 21 FT. POLE WITH 38 FT. ARM - 21 FT. POLE WITH 48 FT. ARM
8011	11 EACH	INSTALL SIGNAL HEAD
8015	2 EACH	INSTALL MICRO-LOOP PROBE SET
8019	1 EACH	INSTALL CONTROLLER AND CABINET-BASE MOUNT
8022	725 L.F.	FURNISH AND INSTALL SAW CUT FOR SIGNAL (LOOP DETECTOR)
8024	70 L.F.	FURNISH AND INSTALL 1 IN. LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR SLEEVE
8025	600 L.F.	FURNISH AND INSTALL 2 IN. SCHEDULE 40 RIGID PVC CONDUIT - TRENCHED
8026	100 L.F.	FURNISH AND INSTALL 2 IN. SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED
8027	50 L.F.	FURNISH AND INSTALL 2 IN. SCHEDULE 80 RIGID PVC CONDUIT - BORED
8031	50 L.F.	FURNISH AND INSTALL 4 IN. SCHEDULE 40 RIGID PVC CONDUIT - TRENCHED
8032	90 L.F.	FURNISH AND INSTALL 4 IN. SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED
8033	90 L.F.	FURNISH AND INSTALL 4 IN. SCHEDULE 80 RIGID PVC CONDUIT - BORED
8035	8 EACH	FURNISH AND INSTALL ELECTRICAL HANDHOLE
8036	1 EACH	FURNISH AND INSTALL CONTROL AND DISTRIBUTION EQUIPMENT
8037	4 EACH	FURNISH AND INSTALL GROUND ROD - 3/4 IN. DIAMETER X 10 FT. LENGTH
8043	1750 L.F.	FURNISH AND INSTALL LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO. 14 A.W.G.)
8044	1000 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE-2 CONDUCTOR ALUMINUM SHIELDED (NO. 14 A.W.G.)
8047	100 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE-5 CONDUCTOR (NO. 14 A.W.G.)
8048	2000 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE-7 CONDUCTOR (NO. 14 A.W.G.)
8049	360 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE-2 CONDUCTOR (NO. 12 A.W.G.)
8052	380 L.F.	FURNISH AND INSTALL STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
8053	45 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE-1 CONDUCTOR (NO. 4 A.W.G. - THHN/THWN)
8054	72 L.F.	FURNISH AND INSTALL WOOD SIGN SUPPORTS (4 IN. X 4 IN.)
8055	34 L.F.	FURNISH AND INSTALL WOOD SIGN SUPPORTS (4 IN. X 6 IN.)
8056	108 S.F.	INSTALL GROUND MOUNTED SIGN
8057	55 S.F.	INSTALL OVERHEAD SIGN
8059	1 EACH	FURNISH AND INSTALL 250 WATT HPS LUMINAIRE WITH PHOTOCELL
8060	1 EACH	FURNISH AND INSTALL 15 FT. LIGHTING BRACKET FOR TRAFFIC SIGNAL STRUCTURE
8062	1 EACH	REMOVAL OF EXISTING EQUIPMENT
8067	1 EACH	USE EXISTING DISK AND AS-BUILT TRAFFIC CONTROL DEVICES
NEG.	90 L.F.	FURNISH AND INSTALL 3 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED

WIRING DIAGRAM



LEGEND

A B C D E — 2-CONDUCTOR ELECTRICAL CABLE ALUMINUM SHIELDED	S T — MICRO-LOOP PROBE LEAD-IN
F - NOT USED	U V W X — STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
G — 2-CONDUCTOR ELECTRICAL CABLE (NO. 12 A.W.G.)	Y Z AA — 1 CONDUCTOR ELECTRICAL CABLE (NO. 4 A.W.G.)
H I J K — 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)	ML - MICRO-LOOP PROBE
L M N O P Q R — 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)	LW - LOOP WIRE (NO. 14 A.W.G.)
	PS - PROPOSED ELECTRICAL SERVICE
	+ - 3/4" X 10' GROUND ROD

PHASE CHART

	1	2	3	4	5	6	7	8	9	10	11
PHASE 1 + 5	R G	R G	R	R G	R G	R	R	R	R	R	R
1 + 5 CHANGE	R Y	R Y	R	R Y	R Y	R	R	R	R	R	R
PHASE 1 + 6	G G	G G	G	R	R	R	R	R	R	R	R
1 + 6 CHANGE	G Y	G Y	G	R	R	R	R	R	R	R	R
PHASE 2 + 5	R	R	R	G G	G G	G	R	R	R	R	R
2 + 5 CHANGE	R	R	R	G Y	G Y	G	R	R	R	R	R
PHASE 2 + 6	G	G	G	G	G	G	R	R	R	R	R
2 + 6 CHANGE	Y	Y	Y	Y	Y	Y	R	R	R	R	R
PHASE 3 + 8	R	R	R	R	R	R	G G	G G	G	R	R
3 + 8 CHANGE	R	R	R	R	R	R	G Y	G Y	G	R	R
PHASE 4 + 8	R	R	R	R	R	R	G	G	G	G	G
4 + 8 CHANGE	R	R	R	R	R	R	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

NOTE: PHASE 1 + 5 MAY CHANGE TO PHASE 1 + 6 OR PHASE 2 + 5 OR 2 + 6

WR&A
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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
MD 450 (ANNAPOLIS ROAD) AND FORBES BLVD.

DATE: 5-20-96	DRAWN BY: S. BLOSS	F.A.P. NO.		PLAN SHEET NO.:	SHEET NO.
SCALE: NONE	DESIGNED BY: T. ZAYDEL	S.H.A. NO.	AW102A55 AW102N81		
APPROVED BY:	CHECKED BY: T. HANNAN	COUNTY	PRINCE GEORGE'S	TS 3600-GI	OF