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

PROJECT DESCRIPTION

GENERAL

THIS PORTION OF THE PROJECT INVOLVES THE INSTALLATION OF A NEW TRAFFIC CONTROL SIGNAL WITH INTERCONNECT AT THE I-97 RAMP CONNECTION AND ACCESS ROAD IN ANNE ARUNDEL COUNTY. I-97 RAMP CONNECTION IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

INTERSECTION OPERATION

THE INTERSECTION WILL OPERATE IN A NEMA FOUR PHASE, FULL-TRAFFIC-ACTUATED MODE, WITH I-97 RAMP CONNECTION THROUGH MOVEMENTS OPERATING CONCURRENTLY AND THE ACCESS ROAD APPROACH OPERATING ALONE. AN EXCLUSIVE LEFT-TURN PHASE WILL BE PROVIDED FOR THE EASTBOUND I-97 RAMP CONNECTION MOVEMENT AND A RIGHT-TURN OVERLAP WILL BE PROVIDED FOR THE SOUTHBOUND ACCESS ROAD.

THIS INTERSECTION WILL BE INTERCONNECTED TO THE INTERSECTION OF MD 162 AND I-97 RAMP CONNECTION.

CONTROLLER REQUIREMENTS

INSTALL A FULL-TRAFFIC-ACTUATED, EIGHT-PHASE CONTROLLER WITH SEVEN (7) TWO-CHANNEL, TIME DELAY OUTPUT LOOP DETECTOR AMPLIFIERS. INTERSECTION MONITOR WITH BATTERY BACK-UP FOR PHONE DROP, TELEMETRY MODULE, ISOLATION BOARD AND SPECIAL RELAY TO BE 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)787-7631 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

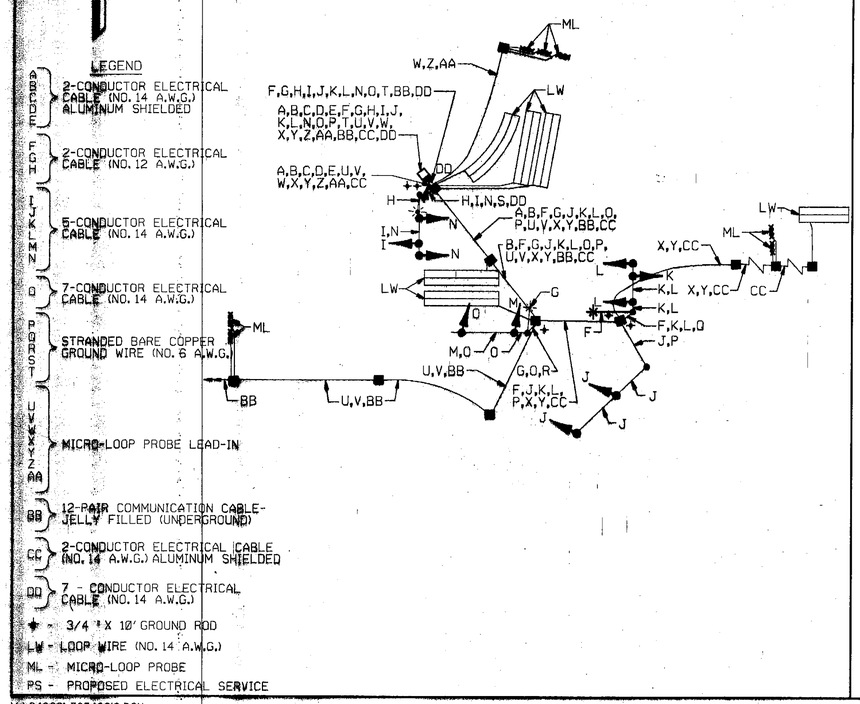
CATEGORY CODE NO.	QUANTITY	DESCRIPTION
960022	4 EACH	12 IN., ONE WAY, THREE SECTION (R,Y,G) SIGNAL HEAD-MAST ARM MOUNT
960023	3 EACH	12 IN., ONE-WAY, THREE SECTION (RA,YA,GA) SIGNAL HEAD-MAST ARM MOUNT
960025	2 EACH	12 IN., ONE-WAY, THREE-SECTION (R,Y,G) OPTICALLY PROGRAMMED SIGNAL HEAD-MAST ARM MOUNT
960028	1 EACH	12 IN., ONE-WAY, FIVE-SECTION (R,Y,YA,G,GA) SIGNAL HEAD-MAST ARM MOUNT
963007	7 EACH	TWO CHANNEL LOOP DETECTOR AMPLIFIER (DELAY OUTPUT)
971017	1 EACH	EIGHT PHASE, FULL-TRAFFIC-ACTUATED, SOLID STATE DIGITAL CONTROLLER WITH INTERSECTION MONITOR AND BATTERY BACK-UP FOR PHONE DROP, TELEMETRY MODULE, ISOLATION BOARD AND SPECIAL RELAY HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET
973023	185 S.F.	SHEET ALUMINUM SIGNS - 2 EACH R3-5L SIGN (30 IN. X 36 IN.) MAST ARM MOUNT - 1 EACH R3-5R SIGN (30 IN. X 36 IN.) MAST ARM MOUNT - 2 EACH R3-5A (MOD.) SIGN (30 IN. X 36 IN.) MAST ARM MOUNT - 6 EACH W3-3 SIGN (48 IN. X 48 IN.) WITH "NEW" PANEL (30 IN. X 30 IN.) AND FLAGS - GROUND MOUNT - 1 EACH R10-11B SIGN (30 IN. X 30 IN.) MAST ARM MOUNT
900000	4 EACH	MICROLOOP PROBE SET WITH 1000 FT. LEAD-IN
900000	1 EACH	12 IN., ONE-WAY, 5-SECTION (R,Y,YA,G,GA) VERTICAL SIGNAL HEAD - POLE MOUNT
900000	3 EACH	MICROLOOP PROBE SET WITH 500 FT. LEAD-IN

EQUIPMENT LIST "B"

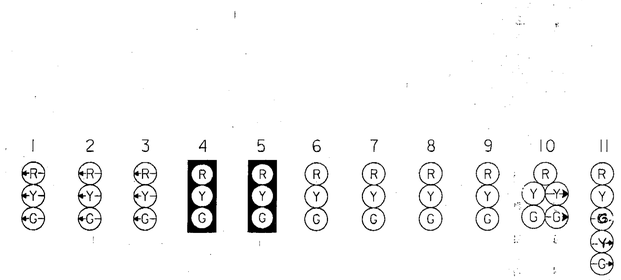
B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR

CATEGORY CODE NO.	QUANTITY	DESCRIPTION
230030	5 C.Y.	TEST PIT EXCAVATION
585445	130 L.F.	24 IN. WHITE PERMANENT PREFORMED PAVEMENT MARKING TAPE
801004	14 C.Y.	FURNISH AND INSTALL CONCRETE FOR SIGNAL FOUNDATION
801104	220 L.F.	FURNISH AND INSTALL WOOD SIGN SUPPORTS - 4 IN. X 4 IN.
802501	230 L.F.	FURNISH AND INSTALL NO. 6 A.W.G. STRANDED BARE COPPER GROUND WIRE
805125	1010 L.F.	FURNISH AND INSTALL 2 IN. SCHEDULE 40 RIGID PVC CONDUIT-TRENCHED
805140	320 L.F.	FURNISH AND INSTALL 4 IN. SCHEDULE 40 RIGID PVC CONDUIT-TRENCHED
805160	110 L.F.	FURNISH AND INSTALL 1 IN. LIQUID-TIGHT NON-METALLIC CONDUIT FOR DETECTOR SLEEVE
807205	1 EACH	FURNISH AND INSTALL CONTROL AND DISTRIBUTION EQUIPMENT
810010	45 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE 1-CONDUCTOR NO. 4 A.W.G. THHN/THWN
811011	13 EACH	FURNISH AND INSTALL ELECTRICAL HANDHOLE
813014	138 S.F.	INSTALL GROUND MOUNTED SIGN
813015	47 S.F.	INSTALL OVERHEAD SIGN
822002	480 L.F.	FURNISH AND INSTALL 12-PAIR COMMUNICATION CABLE, JELLY FILLED (UNDERGROUND)
822500	1 EACH	AS-BUILT FOR TRAFFIC SIGNAL
837001	5 EACH	FURNISH AND INSTALL GROUND ROD- 3/4 IN. DIAMETER X 10 FT. LENGTH
860022	4 EACH	INSTALL 12 IN., ONE-WAY, THREE-SECTION (R,Y,G) SIGNAL HEAD-MAST ARM MOUNT
860023	3 EACH	INSTALL 12 IN., ONE-WAY, THREE-SECTION (RA,YA,GA) SIGNAL HEAD-MAST ARM MOUNT
860025	2 EACH	INSTALL 12 IN., ONE-WAY, THREE SECTION (R,Y,G) OPTICALLY PROGRAMMED SIGNAL HEAD-MAST ARM MOUNT
860028	1 EACH	INSTALL 12 IN., ONE-WAY, FIVE-SECTION (R,Y,YA,G,GA) SIGNAL HEAD-MAST ARM MOUNT
861104	1230 L.F.	FURNISH AND INSTALL ELECTRICAL- CABLE - 2 CONDUCTOR (ALUMINUM SHIELDED)
861107	880 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE-5 CONDUCTOR (NO. 14 A.W.G.)
861108	210 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE-7 CONDUCTOR (NO. 14 A.W.G.)
861116	440 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE-2 CONDUCTOR (NO. 12 A.W.G.)
862101	1820 L.F.	FURNISH AND INSTALL LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO. 14 A.W.G.)
862102	960 L.F.	FURNISH AND INSTALL SAWCUT FOR SIGNAL (LOOP DETECTOR)
866102	2 EACH	FURNISH AND INSTALL 12 FT. LIGHTING ARM ON SIGNAL STRUCTURE
866103	1 EACH	FURNISH AND INSTALL 15 FT. LIGHTING ARM ON SIGNAL STRUCTURE
871117	1 EACH	INSTALL EIGHT PHASE (FULLY ACTUATED) CONTROLLER AND CABINET-BASE MOUNT
800000	3 EACH.	FURNISH AND INSTALL 250 WATT HIGH PRESSURE SODIUM VAPOR LUMINAIRE WITH PHOTO-CELL
800000	7 EACH	INSTALL MICROLOOP PROBE SET
800000	1 EACH	FURNISH AND INSTALL 27 FT. STEEL POLE WITH A 38 FT. MAST ARM
800000	3 EACH	FURNISH AND INSTALL 27 FT. STEEL POLE WITH A 50 FT. MAST ARM
800000	200 L.F.	FURNISH AND INSTALL 4 IN. SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED
800000	3 EACH	CUT, CLEAN, GALVANIZE, AND CAP MAST ARM
800000	1 EACH	INSTALL 12 IN., ONE-WAY, FIVE-SECTION (R,Y,YA,G,GA) SIGNAL HEAD - POLE MOUNT

WIRING DIAGRAM



PHASE CHART



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

SIGNAL NO. 02D0974

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

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

MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION
GENERAL INFORMATION SHEET
I-97 RAMP CONNECTION AND ACCESS ROAD

DATE: 2-8-96	DRAWN BY: S. BLOSS	F.A.P. NO.		PLAN SHEET NO.:	SHEET NO.
SCALE: NONE	DESIGNED BY: T. ZAYDEL	S.H.A. NO.	AW-893-251-572	TS-3583 GI	___ OF ___
APPROVED BY:	CHECKED BY: T. HANNAN	COUNTY	ANNE ARUNDEL		

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