

PROJECT DESCRIPTION

GENERAL

THIS PORTION OF THE PROJECT INVOLVES THE INSTALLATION OF A NEW TRAFFIC CONTROL SIGNAL AND STREET LIGHTING AT MD 228 AND BENNSVILLE ROAD IN CHARLES COUNTY. MD 228 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 MD 228 THROUGH MOVEMENTS OPERATING CONCURRENTLY AND THE BENNSVILLE ROAD APPROACH OPERATING ALONE. AN EXCLUSIVE-PERMISSIVE LEFT TURN PHASE WILL BE PROVIDED FOR THE WESTBOUND MD 228 MOVEMENT. OPTICOM LOW PRIORITY BUS PRE-EMPTION WILL BE PROVIDED TO EXTEND PHASE 2 AND 6 GREEN WHEN ACTUATED.

HARDWARE INTERCONNECT WILL BE PROVIDED BETWEEN THIS INTERSECTION AND THE MD 228 AND BEALLE HILL ROAD INTERSECTION.

CONTROLLED REQUIREMENTS

INSTALL A FULL-TRAFFIC-ACTUATED, EIGHT-PHASE CONTROLLER WITH SIX (6) TWO-CHANNEL, TIME-DELAY-OUTPUT LOOP DETECTOR AMPLIFIERS, INTERSECTION MONITOR WITH BATTERY BACK-UP FOR PHONE DROP, TELEMETRY MODULE, ISOLATION BOARD, SPECIAL RELAY, OPTICOM CARD RACK (NO. 560), OPTICOM DISCRIMINATOR MODULE (NO. 562), AND "D" PANEL AND HARNESS TO BE HOUSED IN A NEMA SIZE "6" BASE-MOUNTED CABINET. A TRAFFIC-RESPONSIVE MASTER CONTROLLER TO BE HOUSED IN A NEMA SIZE "6" BASE-MOUNTED CABINET WILL ALSO BE INSTALLED AT THIS INTERSECTION.

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

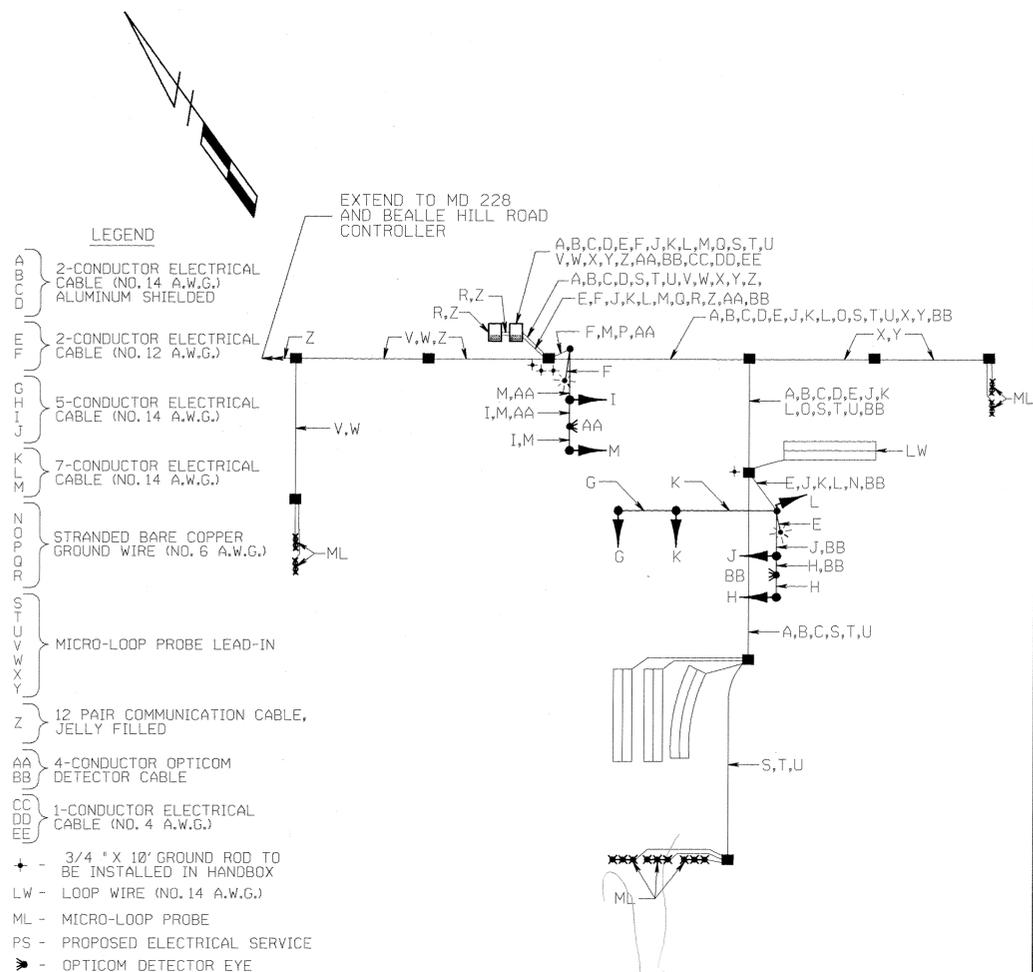
CATEGORY CODE NO.	QUANTITY	DESCRIPTION
960022	5 EACH	12 IN., ONE WAY, THREE-SECTION (R,Y,G) SIGNAL HEAD-MAST ARM MOUNT
960028	1 EACH	12 IN., ONE-WAY, FIVE-SECTION (R,Y,YA,G,GA) SIGNAL HEAD-MAST ARM MOUNT
963007	6 EACH	TWO CHANNEL LOOP DETECTOR AMPLIFIER (DELAY OUTPUT)
971017	1 EACH	EIGHT PHASE, FULL-TRAFFIC-ACTUATED, SOLID STATE DIGITAL CONTROLLER WITH INTERSECTION MONITOR AND BATTERY BACK-UP FOR PHONE DROP, TELEMETRY MODULE, ISOLATION BOARD, SPECIAL RELAY, OPTICOM CARD RACK (NO. 560), OPTICOM DISCRIMINATOR MODULE (NO. 562), AND "D" PANEL AND HARNESS HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET
973023	111 S.F.	SHEET ALUMINUM SIGNS - 1 EACH D3-2 SIGN (VARIABLE X 16 IN.) DUAL FACED MAST ARM MOUNT - 2 EACH R3-5L SIGN (30 IN. X 36 IN.) MAST ARM MOUNT - 1 EACH R10-12 SIGN (36 IN. X 42 IN.) MAST ARM MOUNT - 1 EACH "MD 228, EAST-WEST" SIGN (72 IN. X 24 IN.) MAST ARM MOUNT - 3 EACH W3-3 SIGN (48 IN. X 48 IN.) WITH "NEW" PANEL (30 IN. X 30 IN.) AND FLAGS
971020	1 EACH	TRAFFIC RESPONSIVE MASTER CONTROLLER AND CABINET-BASE MOUNT (NEMA SIZE 5)
900000	7 EACH	MICROLOOP PROBE SET WITH 1000 FT. LEAD-IN
900000	1 EACH	8 IN./12 IN., ONE-WAY, FIVE SECTION (R,Y,YA,G,GA) SIGNAL HEAD-POLE MOUNT
900000	2 EACH	OPTICOM DETECTOR EYE (NO. 511)

EQUIPMENT LIST "B"

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

CATEGORY CODE NO.	QUANTITY	DESCRIPTION
230030	4 C.Y.	TEST PIT EXCAVATION
585445	150 L.F.	24 IN. WHITE PERMANENT PREFORMED PAVEMENT MARKING TAPE
801004	12 C.Y.	FURNISH AND INSTALL CONCRETE FOR SIGNAL FOUNDATION
801104	108 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
805105	140 L.F.	FURNISH AND INSTALL 2 IN. SCHEDULE 80 RIGID PVC CONDUIT-BORED
805118	75 L.F.	FURNISH AND INSTALL 4 IN. SCHEDULE 80 RIGID PVC CONDUIT-BORED
805125	500 L.F.	FURNISH AND INSTALL 2 IN. SCHEDULE 40 RIGID PVC CONDUIT-TRENCHED
805140	725 L.F.	FURNISH AND INSTALL 4 IN. SCHEDULE 40 RIGID PVC CONDUIT-TRENCHED
805160	100 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	10 EACH	FURNISH AND INSTALL ELECTRICAL HANDHOLE
813014	69 S.F.	INSTALL GROUND MOUNTED SIGN
813015	42 S.F.	INSTALL OVERHEAD SIGN
822002	670 L.F.	FURNISH AND INSTALL 12-PAIR COMMUNICATION CABLE, JELLY FILLED (UNDERGROUND)
822500	1 EACH	AS-BUILT FOR TRAFFIC SIGNAL
837001	4 EACH	FURNISH AND INSTALL GROUND ROD- 3/4 IN. DIAMETER X 10 FT. LENGTH
860022	5 EACH	INSTALL 12 IN., ONE-WAY, THREE-SECTION (R,Y,G) 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	1000 L.F.	FURNISH AND INSTALL ELECTRICAL-CABLE - 2 CONDUCTOR (ALUMINUM SHIELDED)
861107	320 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE-5 CONDUCTOR (NO. 14 A.W.G.)
861108	550 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE-7 CONDUCTOR (NO. 14 A.W.G.)
861116	320 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE-2 CONDUCTOR (NO. 12 A.W.G.)
862101	1300 L.F.	FURNISH AND INSTALL LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO. 14 A.W.G.)
862102	640 L.F.	FURNISH AND INSTALL SAWCUT FOR SIGNAL (LOOP DETECTOR)
866103	2 EACH	FURNISH AND INSTALL 15 FT. LIGHTING ARM ON SIGNAL STRUCTURE
871020	1 EACH	INSTALL TRAFFIC RESPONSIVE MASTER CONTROLLER AND CABINET-BASE MOUNT
871117	1 EACH	INSTALL EIGHT PHASE (FULLY ACTUATED) CONTROLLER AND CABINET-BASE MOUNT
800000	2 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 50 FT. MAST ARM
800000	1 EACH	FURNISH AND INSTALL 27 FT. STEEL POLE WITH TWIN 64 FT./50 FT. MAST ARMS
800000	330 L.F.	FURNISH AND INSTALL 4-CONDUCTOR OPTICOM DETECTOR CABLE (NO. 138)
800000	2 EACH	INSTALL OPTICOM DETECTOR EYE
800000	1 EACH	INSTALL 8 IN./12 IN., ONE-WAY, FIVE SECTION (R,Y,YA,G,GA) SIGNAL HEAD-POLE MOUNT

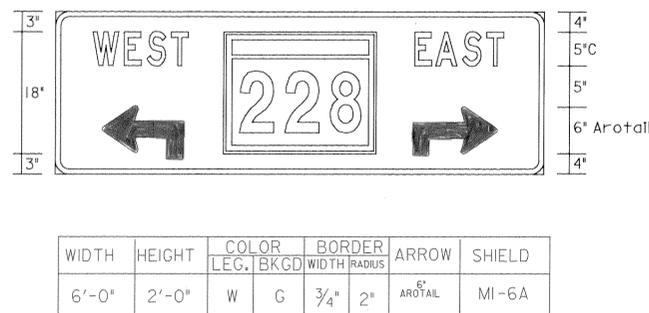
WIRING DIAGRAM



PHASE CHART

	1	2	3	4	5	6	7
	(R) (Y) (G)						
PHASE 2 + 5	R	R	G	G	G	R	R
2 + 5 CHANGE	R	R	G	G	G	R	R
PHASE 2 + 6	G	G	G	G	G	R	R
2 + 6 CHANGE	Y	Y	Y	Y	Y	R	R
PHASE 4	R	R	R	R	R	G	G
4 CHANGE	R	R	R	R	R	Y	Y
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R

SIGN LAYOUT



WR&A
Whitman, Reardon and Associates
ENGINEERS AND PLANNERS
2315 Saint Paul Street
Baltimore, Maryland 21218
(410) 235-3450

REVISIONS	APPROVALS	REVISIONS
	CHEF, SIGNAL DESIGN SECTION	
	ASST. DISTRICT ENGINEER, TRAFFIC	
	CHEF, 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 228 AND BENNSVILLE ROAD

DATE: 10-5-95	DRAWN BY: S. BLOSS	F.A.P. NO.	PLAN SHEET NO.:	SHEET NO.
SCALE: NONE	DESIGNED BY: T. ZAYDEL	S.H.A. NO.		
APPROVED BY:	CHECKED BY: T. HANNAN	COUNTY: CHARLES	TS-35536I	OF