MD 210 RUNS IN A NORTH-SOUTH DIRECTION.

EQUIPMENT LISTS

A. EQUIPMENT TO BE FURNISHED BY THE SHA

ITEM NO.	QUANTITY	DESCRIPTION
	1 EACH	EIGHT PHASE FULLY ACTUATED CONTROLLER HOUSED IN A SIZE "6" BASE MOUNTED CABINET W/ FOUR (4) FOUR CHANNEL LOOP DETECTOR AMPLIFIER
	340 S.F.	
	1 EACH	ASSOCIATED SHIELD ASSEMBLY SIGN, "EAST, MARYLAND 227, (RIGHT ARROW)", 30" x 51", POLE MOUNTED HARDWARE
	1 EACH	ASSOCIATED SHIELD ASSEMBLY SIGN, "WEST, MARYLAND 227, (LEFT ARROW)", 48" x 75", POLE MOUNTED HARDWARE
	1 EACH	ASSOCIATED SHIELD ASSEMBLY SIGN, "WEST, MARYLAND 227, (RIGHT ARROW)", 30" x 51", POLE MOUNTED HARDWARE
	1 EACH	ASSOCIATED SHIELD ASSEMBLY SIGN, "EAST, MARYLAND 227, (LEFT ARROW)", 48" x 75", POLE MOUNTED HARDWARE
	1 EACH	ASSOCIATED SHIELD ASSEMBLY SIGN, "NORTH, MARYLAND 210, (RIGHT ARROW)", 30" x 51", POLE MOUNTED HARDWARE
	1 EACH	ASSOCIATED SHIELD ASSEMBLY SIGN, "SOUTH, MARYLAND 210, (LEFT ARROW)", 48" x 75", POLE MOUNTED HARDWARE
	1 EACH	ASSOCIATED SHIELD ASSEMBLY SIGN, "SOUTH, MARYLAND 210, (RIGHT ARROW)", 30" x 51", POLE MOUNTED HARDWARE
	1 EACH	ASSOCIATED SHIELD ASSEMBLY SIGN, "NORTH, MARYLAND 210, (LEFT ARROW)", 48" x 75", POLE MOUNTED HARDWARE
	2 EACH	R10-12 SIGN, 36" x 42", MAST ARM MOUNTED HARDWARE
	2 EACH	R3-5(L) SIGN, 36" x 42", MAST ARM MOUNTED HARDWARE
	2 EACH	R3-7(L) SIGN, 30" x 30", POLE MOUNTED HARDWARE
	1 EACH	R3-5(R) SIGN, 36" x 42", MAST ARM MOUNTED HARDWARE
	2 EACH	R3-7(R) SIGN, 30" x 30", POLE MOUNTED HARDWARE
	3 EACH	GM-1 SIGN, "LEFT 2 LANES MUST TURN LEFT", 48" x 60", POLE MOUNTED HARDWARE
	2 EACH	PUSHBUTTON W/ R10-4(1) SIGN, "PUSH BUTTON TO CROSS INDIAN HEAD ROAD", 9" x 12", POLE MOUNTED HARDWARE
	2 EACH	W11A-2 SIGN, 30" x 30", M6-2(L) SIGN, 21" x 15", POLE MOUNTED HARWARE
	2 EACH	W11A-2 SIGN, 30" x 30", M6-2(R) SIGN, 21" x 15", POLE MOUNTED HARDWARE
	2 EACH	R3-7(1)(L) SIGN, "LEFT LANE MUST TURN LEFT AT MD 227", 30" x 42", POLE MOUNTED HARDWARE
	1 EACH	R4-7 SIGN, 24" x 30", POLE MOUNTED HARDWARE

B. EQUIPMENT TO BE FURNISHED AND/ OR INSTALLED BY THE CONTRACTOR OR BY DISTRICT 5 PERSONNEL

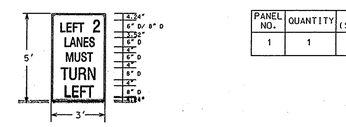
ITEM NO.	QUANTITY	DESCRIPTION
1001	1 EACH	MAINTENANCE OF TRAFFIC
2001	1 C.Y.	TEST PIT EXCAVATION
2004	7.9 C.Y.	CLASS II EXCAVATION
5001	900 L.F.	F & I 5" YELLOW HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
5002	1,330 L.F.	F & I 5" WHITE HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
5003	850 L.F.	F & I 12" WHITE HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
5004	225 L.F.	F & I 24" WHITE HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
5005	16 EACH	F & I HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING LETTER
5006	11 EACH	F & I HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING ARROW
5007	3,000 L.F.	REMOVE EXISTING PAVEMENT MARKINGS - ANY WIDTH
6001	136 S.F.	F & I 4" CONCRETE SIDEWALK
6002	200 L.F.	F & I TYPE A CURB AND GUTTER - 12" x 8"
6008	30 L.F.	F & I MONOLITHIC CONCRETE MEDIAN 4' TYPE A-1
6009	200 L.F.	F & I DEPRESSED CURB AND GUTTER
8001	22 C.Y.	F & I CONCRETE FOR SIGNAL FOUNDATION
8003	1 EACH	F & I 10' BREAKAWAY PEDESTAL POLE AND BASE
8003	2 EACH	F & I 14' BREAKAWAY PEDESTAL POLE AND BASE
8016	4 EACH	F & I MICROLOOP TRIPLE PROBE SET W/ 500' LEAD-IN
8018	2 EACH	INSTALL PUSHBUTTON AND SIGN
8020	1 EACH	INSTALL CONTROLLER AND CABINET - BASE MOUNT
8021	1,400 L.F.	F & I SAWCUT FOR SIGNAL (LOOP DETECTOR)
8022	50 L.F.	F & I 1" ELECTRICAL CONDUIT - GALVANIZED SLEEVE
8023	100 L.F.	F & I 1" LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR SLEEVE
8024	85 L.F.	F & I 2" SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8027	310 L.F.	F & I 3" SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8029	95 L.F.	F & I 3" SCHEDULE 80 RIGID PVC CONDUIT - BORED
8030	465 L.F.	F & I 4" SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8032	680 L.F.	F & I 4" SCHEDULE 80 RIGID PVC CONDUIT - BORED
8033	1 EACH	F & I ELECTRICAL HANDHOLE
8034	8 EACH	F & I GROUND ROD - ¾" DIA. x 10'
8040	4,450 L.F.	F & I LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO. 14 AWG)
8041	4,700 L.F.	F & I ELECTRICAL CABLE - 2-CONDUCTOR (ALUMINUM SHIELDED)
8042	490 L.F.	F & I ELECTRICAL CABLE - 2-CONDUCTOR (NO. 14 AWG)
8043	780 L.F.	F & I ELECTRICAL CABLE - 3-CONDUCTOR (NO. 14 AWG)
8044	685 L.F.	F & I ELECTRICAL CABLE - 5-CONDUCTOR (NO. 14 AWG)
8045	3,760 L.F.	F & I ELECTRICAL CABLE - 7-CONDUCTOR (NO. 14 AWG)
8046	550 L.F.	F & I ELECTRICAL CABLE - 2-CONDUCTOR (NO. 12 AWG) TYPE IN. TC IN.
8048	810 L.F.	F & I NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
8049	180 L.F.	F & I ELECTRICAL CABLE 1-CONDUCTOR NO. 4 AWG - THHN/THWN
8051	220 L.F.	F & I WOOD SIGN SUPPORTS - 4" x 6"
8052	287.5 S.F.	INSTALL GROUND MOUNTED SIGN
8053	52.5 S.F.	INSTALL OVERHEAD SIGN
8055	2 EACH	F & I 250 WATT HPS LUMINAIRE WITH PHOTOCELL
8056	2 EACH	F & I 15' LIGHTING BRACKET ARM FOR TRAFFIC SIGNAL STRUCTURE
8057	6 EACH	REMOVE AND DISPOSE OF EXISTING FOUNDATION 12" BELOW GRADE
8058	1 EACH	REMOVAL OF EXISTING CONTROLLER, CABINET, AND GALVANIZED SIGNAL STRUCTURE
8059	1 EACH	DELIVERY OF REMOVED CONTROLLER, CABINET, AND GALVANIZED SIGNAL STRUCTURE
8060	1 EACH	REMOVE AND DISPOSE OF EXISTING MATERIAL AND EQUIPMENT PER ASSIGNMENT
8066	1 EACH	F & I CONTROL AND DISTRIBUTION EQUIPMENT (120/ 240 V, 1 PHASE 3 WIRE SYST)
8079	2 EACH	F & I 27' MAST ARM POLE AND 70' MAST ARM WITH FOUR (4) 2" ANCHOR BOLTS
8084	58 EACH	F & I 12" VECHICULAR BLACK FACED TRAFFIC SIGNAL HEAD SECTION
8087	12 EACH	F & I 12" PEDESTRIAN SIGNAL HEAD SECTION
NEG.	5 EACH	F & I THE SPLICE KIT FOR INSTALLING THE EXISTING LOOP WIRE TO THE PROPOSED 2-CONDUCTOR (ALUMINUM SHIELDED) CABLE

C. EQUIPMENT TO BE REMOVED AND RETURNED TO THE SHA

ITEM NO.	QUANTITY	DESCRIPTION
	1 EACH	EIGHT PHASE FULLY ACTUATED CONTROLLER HOUSED IN A BASE MOUNTED CABINET

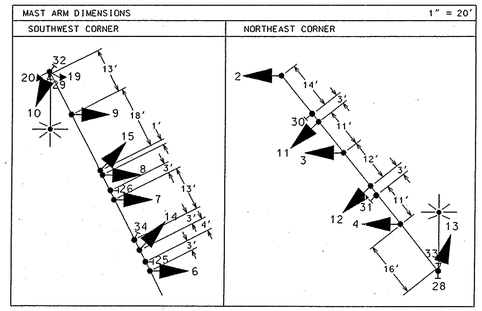
ALL OTHER REMOVED SIGNAL MATERIALS ARE TO BECOME THE PROPERTY OF THE CONTRACTOR

MEASUREMENTS FOR GM-1 SIGN



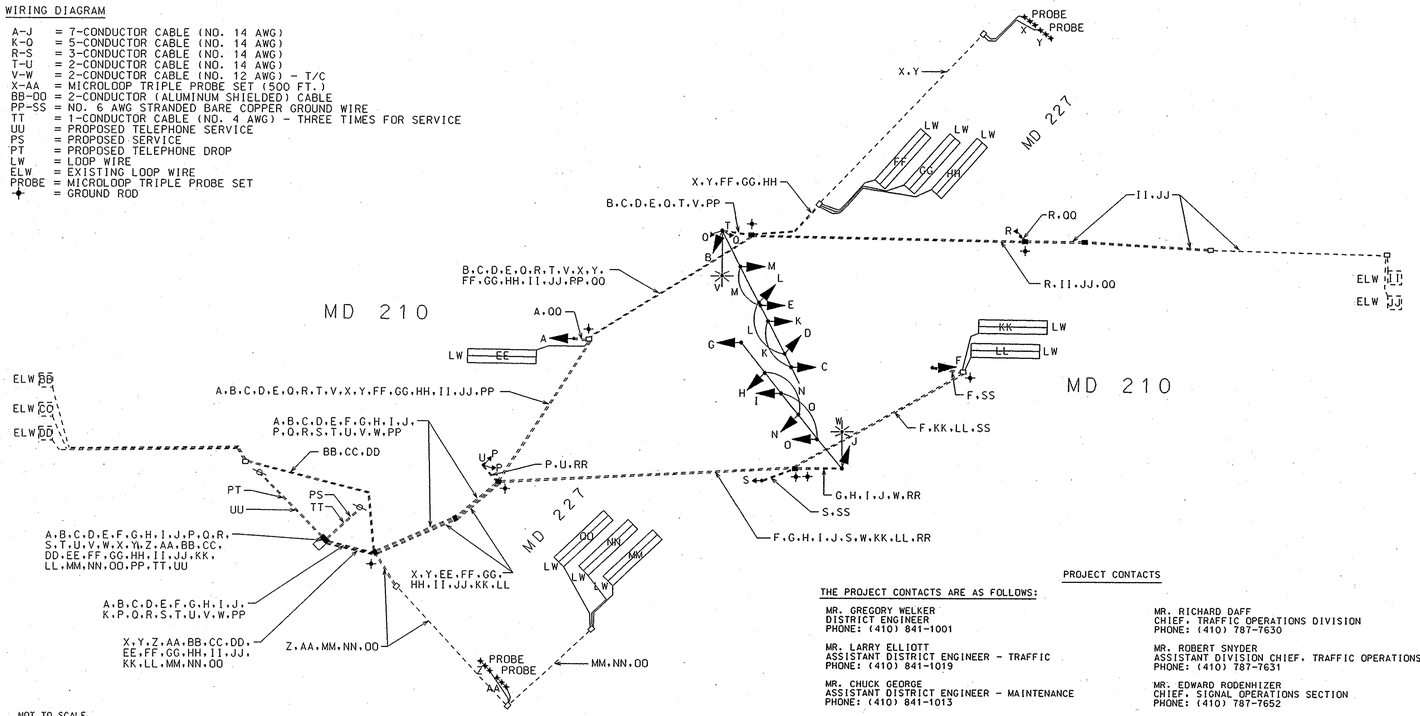
MEASUREMENTS FOR GM-1 SIGN

PANEL NO.	QUANTITY	AREA (SQ. FT.)	WIDTH	HEIGHT	COLOR LEG.	COLOR BKGD.	BORDER WIDTH	BORDER RADIUS	ARROW	SHIELD	REMARKS
1	1	15	3'	5'	B	W	1 1/4"	3"	N/A	N/A	SHEET ALUMINUM



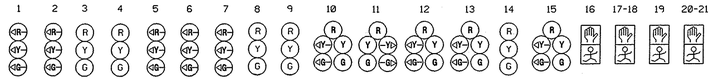
WIRING DIAGRAM

A-J = 7-CONDUCTOR CABLE (NO. 14 AWG)
K-Q = 5-CONDUCTOR CABLE (NO. 14 AWG)
R-S = 3-CONDUCTOR CABLE (NO. 14 AWG)
T-U = 2-CONDUCTOR CABLE (NO. 14 AWG)
V-W = 2-CONDUCTOR CABLE (NO. 12 AWG) - T/C
X-AA = MICROLOOP TRIPLE PROBE SET (500 FT.)
BB-DD = 2-CONDUCTOR (ALUMINUM SHIELDED) CABLE
PP-SS = NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
TT = 1-CONDUCTOR CABLE (NO. 4 AWG) - THREE TIMES FOR SERVICE
UU = PROPOSED TELEPHONE SERVICE
PS = PROPOSED SERVICE
PT = PROPOSED TELEPHONE DROP
LW = LOOP WIRE
ELW = EXISTING LOOP WIRE
PROBE = MICROLOOP TRIPLE PROBE SET
⏚ = GROUND ROD



NOT TO SCALE

PHASE CHART



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17-18	19	20-21
PHASE 1 & 5	◄G-	◄G-	R	R	◄G-	◄G-	◄G-	R	R	R	R -G►	R	R	R	R	DW	DW	DW	DW
1 & 5 CHANGE	THE CONTROLLER MAY SKIP TO PHASES 1 & 6 OR 2 & 5 OR 2 & 6															DW	DW	DW	DW
PHASE 1 & 6	◄R	R	R	R	◄G-	◄G-	◄G-	G	G	R	R -G►	R	R	R	R	WK	DW	WK	DW
1 CHANGE	◄R	R	R	R	◄Y-	◄Y-	◄Y-	G	G	R	R -Y►	R	R	R	R	WK	DW	WK	DW
PHASE 2 & 5	◄G-	◄G-	G	G	◄R-	◄R-	◄R-	R	R	R	R	R	R	R	R	DW	WK	DW	DW
5 CHANGE	◄Y-	◄Y-	G	G	◄R-	◄R-	◄R-	R	R	R	R	R	R	R	R	DW	WK	DW	DW
PHASE 2 & 6	◄R-	◄R-	G	G	◄R-	◄R-	◄R-	G	G	R	R	R	R	R	R	WK	WK	WK	DW
PED. CLEAR	◄R-	◄R-	G	G	◄R-	◄R-	◄R-	G	G	R	R	R	R	R	R	FL/DW	FL/DW	FL/DW	DW
2 & 6 CHANGE	◄R-	◄R-	Y	Y	◄R-	◄R-	◄R-	Y	Y	R	R	R	R	R	R	DW	DW	DW	DW
PHASE 3 & 7	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	◄G-R	R	◄G- R	◄G- R	R	◄G- R	DW	DW	DW	DW
3 & 7 CHANGE	THE CONTROLLER MAY SKIP TO PHASES 3 & 8 OR 4 & 7 OR 4 & 8															DW	DW	DW	DW
PHASE 3 & 8	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	R	R	R	◄G- G	G	◄G- G	DW	DW	DW	DW
3 CHANGE	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	R	R	R	◄Y- G	G	◄Y- G	DW	DW	DW	DW
PHASE 4 & 7	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	◄G- G	G	◄G- G	R	R	R	DW	DW	DW	DW
7 CHANGE	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	◄Y- G	G	◄Y- G	R	R	R	DW	DW	DW	DW
PHASE 4 & 8	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	G	G	G	G	G	G	DW	DW	DW	DW
4 & 8 CHANGE	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	Y	Y	Y	Y	Y	Y	DW	DW	DW	DW
8 ALT.	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	G	G	G	G	G	G	DW	DW	DW	WK
PED. CLEAR	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	G	G	G	G	G	G	DW	DW	DW	FL/DW
8 ALT. CHANGE	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	Y	Y	Y	Y	Y	Y	DW	DW	DW	DW
FLASHING OPERATION	FL/RA	FL/RA	FL/Y	FL/Y	FL/RA	FL/RA	FL/RA	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	DARK	DARK	DARK	DARK

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	DIRECTOR, OFFICE OF TRAFFIC & SAFETY

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

MD 210 and MD 227
BRYANS ROAD, MARYLAND

DRAWN BY: William Malcolm	F.A.P. NO.	T.S. NO. TS-1 F	SHEET NO.
CHECKED BY:	S.H.A. NO. XX1005585		
SCALE: AS NOTED	COUNTY CHARLES	T.I.M.S. NO.	
DATE: 05/ 2001	LOG MILE 08021005.77	E126	3 OF 3