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

PROJECT DESCRIPTION

I. GENERAL

THIS PROJECT IS LOCATED IN PRINCE GEORGE'S COUNTY, MARYLAND AND INVOLVES ROADWAY IMPROVEMENTS, THE RECONSTRUCTION OF AN EXISTING SIGNAL THAT IS AFFECTED BY THESE IMPROVEMENTS. MD 4 IS ASSUMED TO RUN IN A NORTH/SOUTH DIRECTION, MD 458 IS ASSUMED TO RUN-IN AN EAST/WEST DIRECTION.

II. INTERSECTION OPERATION

THE PROPOSED TRAFFIC SIGNAL WILL OPERATE IN A NEMA EIGHT (8) PHASE, FULLY TRAFFIC ACTUATED MODE. THE MD 4 APPROACHES WILL OPERATE CONCURRENTLY. WITH EXCLUSIVE LEFT TURN PHASES. THE MD 458 APPROACHED WILL OPERATE CONCURENTLY WITH EXCLUSIVE LEFT TURNING PHASES.

AN EXISTING EIGHT PHASE FULLY TRAFFIC ACTUATED CONTROLLER WILL REMAIN AND A NEW EIGHT PHASE FULLY ACTUATED TRAFFIC CONTROLLER SHALL BE INSTALLED WITH TWO (2) FOUR CHANNEL RACK MOUNTED LOOP DETECTOR AMPLIFIERS, TELEMETRY MODULE, AND INTERSECTION MONITOR WITH BATTERY BACK UP HOUSED IN A NEMA SIZE SIX (6) BASE MOUNTED CABINET.

III. SPECIAL NOTES

1. THE SIGNAL SHOP WILL BE NOTIFIED TO PERFORM INTERNAL WIRING OF THE CABINET AT MD 4 AND MD 458. ALL CABLE SHALL BE IDENTIFIED AND BROUGHT INTO THE CONTROLLER BY THE CONTRACTOR. THE CONTRACTOR SHALL NOTIFY MR. EDWARD RODENHIZER, SHA SIGNAL SHOP AT (410) 787-7650 SEVENTY-TWO (72) HOURS IN ADVANCE OF THIS WORK.

2. MOT PLATES FOR THIS PROJECT WILL BE AS FOLLOWS: 104.00 TO 104.00-12, 104.02-01, 104.03-01

CONSTRUCTION DETAILS

- (A) EXISTING CONTROLLER TO REMAIN
- (B) INSTALL NEW BASE MOUNTED CONTROLLER
- (C) REMOVE EXISTING STEEL STRAIN POLE INCLUDING PEDESTRIAN SIGNAL HEADS
- (D) INSTALL 14 INCH X 32 FOOT STEEL STRAIN POLE AND SHIELD ASSEMBLY WITH ONE-WAY PEDESTRIAN SIGNAL HEADS 20 FT LIGHTING ARM (NOTE: 1 - 4 INCH SCHEDULE 80, 90 DEGREE PVC CONDUIT BEND, 4-2¼" x 96" ANCHOR BOLTS IN BASE)
- (E) INSTALL 14 INCH X 32 FOOT STEEL STRAIN POLE AND SHIELD ASSEMBLY WITH TWO-WAY PEDESTRIAN SIGNAL HEADS, 20 FT. LIGHTING ARM (NOTE: 1-4 INCH SCHEDULE 80, 90 DEGREE PVC CONDUIT BEND, 4-2¼" x 96" ANCHOR BOLTS IN BASE)
- (F) EXISTING PEDESTAL POLE TO BE REMOVED
- (G) INSTALL 12 INCH X 14 FOOT PEDESTAL POLE WITH ONE WAY PEDESTRIAN SIGNAL HEADS
- (H) REMOVE EXISTING HAND HOLE
- (I) EXISTING HAND HOLE TO REMAIN
- (J) INSTALL HANDHOLE
- (K) EXISTING CONDUIT TO REMAIN
- (L) INSTALL 2 INCH SCHEDULE 80 RIGID POLYVINYL CHLORIDE CONDUIT - TRENCHED
- (M) INSTALL 2 INCH SCHEDULE 80 RIGID POLYVINYL CHLORIDE CONDUIT - BORED
- (N) REMOVE EXISTING SPAN WIRE, SIGNAL HEADS AND SIGN
- (O) INSTALL ⅜ INCH SPAN WIRE
- (P) ABANDON EXISTING LOOP DETECTOR
- (Q) INSTALL 6 FT. X 30 FT. LOOP DETECTOR IN 1¼ INCH FLEXIBLE TUBING (3-6-3 TURNS)
- (R) REMOVE EXISTING PROBES
- (S) INSTALL MICROLOOP PROBE SET
- (T) INSTALL 4 INCH SCHEDULE 80 RIGID POLYVINAL CHLORIDE CONDUIT TRENCHED
- (U) INSTALL 12 IN. WHITE PERMANENT PERFORMED PAVEMENT MARKING (CROSSWALK)
- (V) INSTALL 24 IN. WHITE PERMANENT PREFORMED PAVEMENT MARKING (STOP BAR)
- (W) INSTALL 1 IN. GALVANIZED CONDUIT FOR DETECTOR SLEEVE
- (X) INSTALL 1 IN. LIQUID TIGHT FLEXABLE NON-METALLIC CONDUIT FOR DETECTOR SLEEVE
- (Y) INSTALL 14 INCH X 32 FOOT STEEL STRAIN POLE (NOTE 1-4 INCH SCHEDULE 80, 90 DEGREE PVC CONDUIT BEND, 4-2¼" x 96" ANCHOR BOLTS IN BASE)
- (Z) INSTALL GROUND MOUNT SIGN
- (AA) REMOVE EXISTING CONTROLLER
- (BB) ABANDON EXISTING CONDUIT
- (CC) INSTALL 4 INCH SCHEDULE 80 RIGID POLYVINAL CHLORIDE CONDUIT - TRENCHED
- ⟨1⟩ (DD) **INSTALL OPTICOM DETECTOR**

EQUIPMENT LIST

A. EQUIPMENT TO BE SUPPLIED BY SHA AND INSTALLED BY THE CONTRACTOR

ITEM NO.	QUANTITY	DESCRIPTION
900001	12 EA	12" 1-WAY, 3-SECTION (R,Y,G) TRAFFIC SIGNAL HEAD - SPAN MOUNT
900001	11 EA	12" 1-WAY, 3-SECTION (RA,YA,GA) TRAFFIC SIGNAL HEAD - SPAN MOUNT
900001	2 EA	12" 1-WAY, 2-SECTION (DON'T WALK, WALK) PEDESTRIAN SIGNAL HEAD - POLE MOUNT
900001	2 EA	12" 2-WAY, 2-SECTION (DON'T WALK, WALK) PEDESTRIAN SIGNAL HEAD POLE MOUNT
900001	4 EA	PEDESTRIAN PUSH BUTTON AND SIGN
9090	275 SF	SHEET ALUMINUM SIGNS

- 8 EA. R3-5L SIGN (30 IN. X 36 IN.) 'LEFT TURN ONLY'
- 1 EA. SHIELD ASSEMBLY 'EAST, MD 458, LEFT ARROW' (48 IN. X 75 IN.) - POLE MOUNT
- 1 EA. SHIELD ASSEMBLY 'EAST, MD 458, RIGHT ARROW' (30 IN. X 51 IN.) - POLE MOUNT
- 1 EA. SHIELD ASSEMBLY 'WEST, MD 458, LEFT ARROW' (48 IN. X 75 IN.) - POLE MOUNT
- 1 EA. SHIELD ASSEMBLY 'WEST, MD 458, RIGHT ARROW' (30 IN. X 51 IN.) - POLE MOUNT
- 1 EA. SHIELD ASSEMBLY 'NORTH, MD 4, RIGHT ARROW' (30 IN. X 51 IN.) - POLE MOUNT
- 1 EA. SHIELD ASSEMBLY 'NORTH, MD 4, LEFT ARROW' (48 IN. X 75 IN.) - POLE MOUNT
- 1 EA. SHIELD ASSEMBLY 'SOUTH, MD 4, RIGHT ARROW' (30 IN. X 51 IN.) - POLE MOUNT
- 1 EA. SHIELD ASSEMBLY 'SOUTH, MD 4, LEFT ARROW' (48 IN. X 75 IN.) - POLE MOUNT
- 4 EA. W11-2 SIGN (30 IN. X 30 IN.) 'PED XING'
- 4 EA. W3-4 SIGN (24 IN X 36 IN.) 'ON RAMP'
- 2 EA. D2-1 SIGN (18 IN X 72 IN) 'SILVER HILL RD)

B. EQUIPMENT TO BE SUPPLIED AND INSTALLED BY THE CONTRACTOR

ITEM NO.	QUANTITY	DESCRIPTION
585443	1750 LF	FURNISH AND INSTALL 12" WHITE PERMANENT PREFORMED PAVEMENT MARKING TAPE (CROSSWALK)
585445	250 LF	FURINSH AND INSTALL 24 " WHITE PERMANENT PREFORMED PAVEMENT MARKING TAPE (STOP BAR)
801004	21.3 CY	FURNISH AND INSTALL CONCRETE SIGNAL FOUNDATION
805011	130 LF	FURNISH AND INSTALL 1 IN. ELECTRICAL CONDUIT - GALVANIZED SLEEVE
805105	160 LF	FURNISH AND INSTALL 2 IN. SCHEDULE 80 PVC CONDUIT - BORED
805125	50 LF	FURNISH AND INSTALL 2 IN. SCHEDULE 80 PVC CONDUIT - TRENCHED
805160	30 LF	FURNISH AND INSTALL 1 IN. LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT SLEEVE
811001	7 EA	FURNISH AND INSTALL HANDHOLE
813010	8 EA	BAND SIGN TO SIGN SUPPORT
818005	4 EA	REMOVE AND SALVAGE STRAIN POLE
818007	2 EA	REMOVE AND SALVAGE PEDESTAL POLE
819001	310 LF	REMOVE SPAN WIRE AND ASSOCIATED WIRING
860002	12 EA	INSTALL 12 IN. 1-WAY 3-SECTION (R,Y,G) SIGNAL HEAD - SPAN MOUNT
860003	8 EA	INSTALL 12 IN. 1-WAY 3-SECTION (RA,YA,GA) SIGNAL HEAD - SPAN MOUNT
860068	2 EA	INSTALL 12 IN. 1-WAY 2-SECTION PEDESTRIAN SIGNAL HEAD - POLE MOUNT
861104	2400 LF	FURNISH AND INSTALL ELECTRICAL CABLE 2-CONDUCTOR ALUMINUM SHIELDED
861105	1650 LF	FURNISH AND INSTALL ELECTRICAL CABLE 2-CONDUCTOR NO 14 AWG
861106	1650 LF	FURNISH AND INSTALL ELECTRICAL CABLE 3-CONDUCTOR NO 14 AWG
861107	3800 LF	FURNISH AND INSTALL ELECTRICAL CABLE 5-CONDUCTOR NO 14 AWG
822002	800 LF	FURNISH AND INSTALL ELECTRICAL CABLE 12 PAIR COMMUNICATION CABLE, JELLYFILLED
862101	5300 LF	FURNISH AND INSTALL LOOP WIRE IN FLEXIBLE TUBING
862102	1428 LF	FURNISH AND INSTALL SAW CUT FOR SIGNAL (LOOP DETECTOR)
865201	4 EA	INSTALL PUSHBUTTON AND SIGN
869102	625 LF	FURNISH AND INSTALL STEEL SPAN WIRE -⅜IN. DIAMETER
800000	4 EA	FURNISH AND INSTALL STRAIN POLE 14 IN. X 32 FT.
800000	8 EA	FURNISH AND INSTALL MICROLOOP PROBE SET 500 FT. LEAD IN
814004	17 EA	REMOVE AND SALVAGE EXISTING SIGNAL HEAD
813015	84 SF	INSTALL OVERHEAD SIGN
818010	1 EA	FURNISH AND INSTALL 14 FT. BREAKAWAY PEDESTAL POLE
813014	84 SF	INSTALL GROUND MOUNT SIGN
801104	90 LF	FURNISH AND INSTALL WOOD SUPPORT 4"X4"
871202	1 EA	INSTALL BASE MOUNTED CABINET AND CONTROLLER
822001	250 LF	FURNISH AND INSTALL 12-PAIR COMMUNICATION CABLE, UNDERGROUND
866104	2 EA	FURNISH AND INSTALL 20 FT LIGHTING ARM ON SIGNAL STRUCTURE
831010	2 EA	FURNISH AND INSTALL 250 WATT HIGH PRESSURE SODIUM LAMP AND LUMNAIRE
838003	1 EA	FURNISH AND INSTALL CONTROL AND DISTRIBUTION EQUIPMENT (120/240V, 1 PH 3 W)
800000	100 LF	FURNISH AND INSTALL 4 IN. SCHEDULE 80 PVC CONDUIT - TRENCHED
860069	2 EA	INSTALL 12" 2-WAY 2 SECTION PEDESTRAIN SIGNAL HEAD - POLE MOUNT
861116	575 LF	FURNISH AND INSTALL ELECTRICAL CABLE 2 CONDUCTOR NO. 12 AWG
⟨1⟩ 800000	1 EA	**FURNISH AND INSTALL OPTICOM DETECTOR**
⟨1⟩ 800000	300 LF	**FURNISH AND INSTALL 4 CONDUCTOR OPTICOM DETECTOR CABLE**

THE FOLLOWING CONTACT PERSONS FOR DISTRICT # 3 ARE AS FOLLOWS:

Mr. Richard L. Daff, Sr.
Chief, Traffic Operations Division
(410) 787-7630

Mr. Majib Shakib
Asst. District Engineer - Traffic
(301) 513-7358

Mr. Augustine Rebish
Acting Engineer - Utility
(301) 513-7350

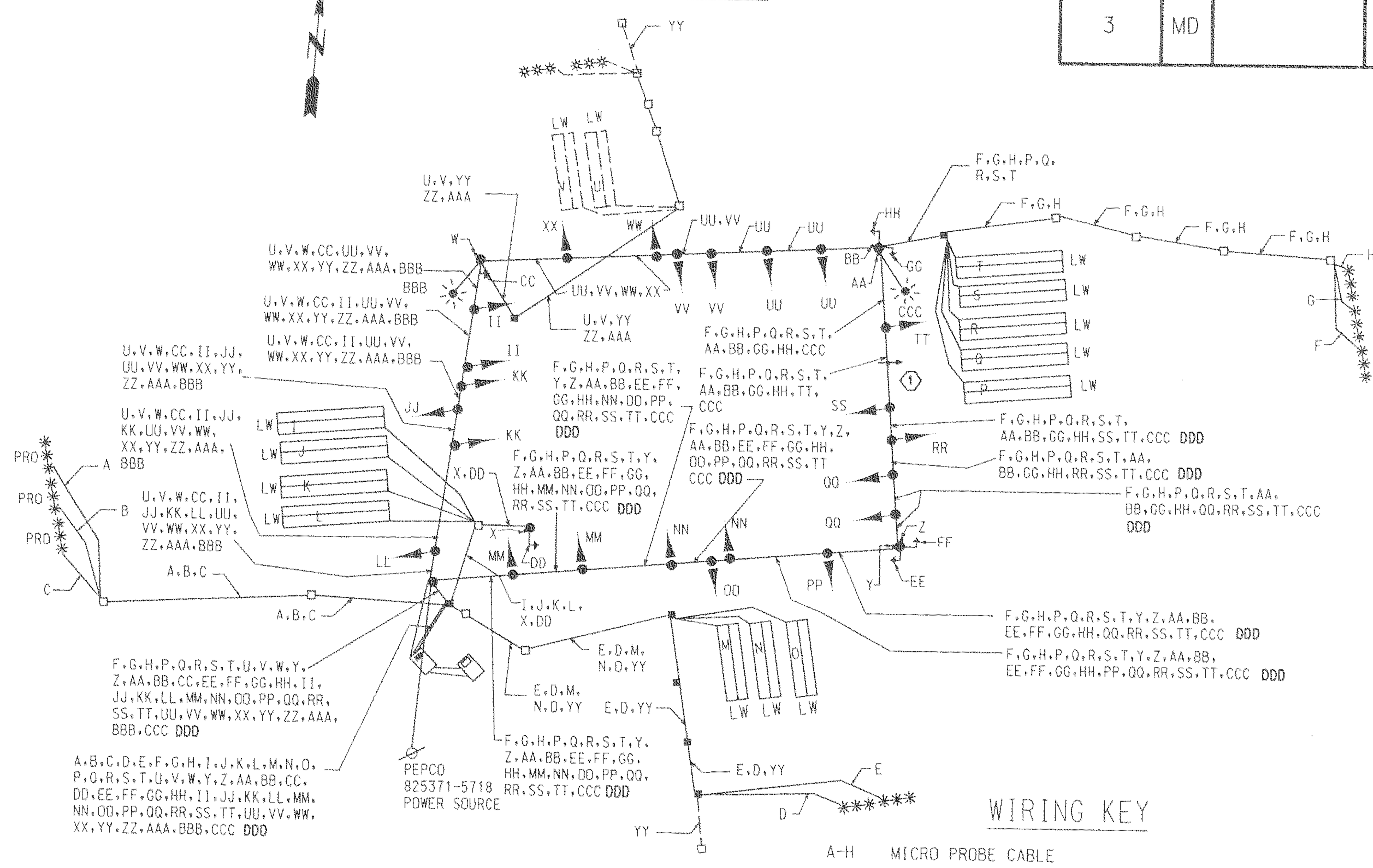
Mr. Charles Watkins
District Engineer
(301) 513-7311

Mr. Randy Brown
Asst. District Engineer - Maintenance
(301) 513-7304

The Power Company Representative is:

POTOMAC ELECTRIC POWER COMPANY
Mr. Joe Weber
8300 OLD MARLBORO PIKE
UPPER MARLBORO MARYLAND 20772
(301) 961-5325

WIRING DIAGRAM



WIRING KEY

A-H	MICRO PROBE CABLE
I-V,ZZ,AAA	2 CONDUCTOR ELECTRICAL CABLE ALUMINUM SHIELDED
W-BB	2 CONDUCTOR ELECTRICAL CABLE NO. 14 AWG
CC-HH	3 CONDUCTOR ELECTRICAL CABLE NO. 14 AWG
II-XX	5 CONDUCTOR ELECTRICAL CABLE NO. 14 AWG
PRO	MICRO LOOP PROBES
LW	LOOP WIRE
YY	12 PAIR JELLY FILLED NO. 19 AWG INTERCONNECT CABLE
BBB,CCC	2 CONDUCTOR ELECTRICAL CABLE TYPE T/C NO. 12 A.W.G.
⟨1⟩ DDD	**4 CONDUCTOR ELECTRICAL CABLE NO. 20 AWG**

⟨1⟩ PHASE CHART

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	
PHASE 1 & 5	-R-	R	-R-	-R-	R	R	-G-	G	-G-	-G-	G	G	-R-	R	-R-	R	R	-R-	R	-R-	-R-	R	R	DW	DW	DW	DW	DW	DW	
PHASE 1 & 5 CHANGE TO PHASE 2 & 6 OR 2 & 5																														
PHASE 2 & 6	-G-	G	-G-	-G-	G	G	-R-	R	-R-	-R-	R	R	-R-	R	-R-	R	R	-R-	R	-R-	-R-	R	R	DW	DW	DW	DW	DW	DW	
PHASE 2 & 6 CHANGE	-Y-	G	-Y-	-Y-	G	G	-R-	R	-R-	-R-	R	R	-R-	R	-R-	R	R	-R-	R	-R-	-R-	R	R	DW	DW	DW	DW	DW	DW	
PHASE 2 & 5	-R-	G	-R-	-R-	G	G	-R-	G	-R-	-G-	G	G	-R-	R	-R-	R	R	-R-	R	-R-	-R-	R	R	DW	DW	DW	DW	DW	DW	
PHASE 2 & 5 CHANGE	-R-	Y	-R-	-R-	Y	Y	-R-	Y	-R-	-Y-	Y	Y	-R-	R	-R-	R	R	-R-	R	-R-	-R-	R	R	DW	DW	DW	DW	DW	DW	
PHASE 2 & 5	-R-	G	-R-	-R-	G	G	-R-	G	-R-	-R-	G	G	-R-	R	-R-	R	R	-R-	R	-R-	-R-	R	R	DW	DW	DW	DW	DW	DW	
PED CLEAR	-R-	G	-R-	-R-	G	G	-R-	G	-R-	-R-	G	G	-R-	R	-R-	R	R	-R-	R	-R-	-R-	R	R	W	W	DW	DW	DW	DW	
PHASE 2 & 5 CHANGE	-R-	Y	-R-	-R-	Y	Y	-R-	Y	-R-	-R-	Y	Y	-R-	R	-R-	R	R	-R-	R	-R-	-R-	R	R	FL/DW	FL/DW	DW	DW	DW	DW	
PHASE 3 & 7	-R-	R	-R-	-R-	R	R	-R-	R	-R-	-R-	R	R	-G-	R	-G-	R	R	-G-	R	-G-	-G-	R	R	DW	DW	DW	DW	DW	DW	
PHASE 3 & 7 CHANGE TO 3 & 8 OR 4 & 7																														
PHASE 4 & 7	-R-	-R-	R	R	-R-	-R-	-R-	R	-R-	-R-	R	R	-R-	R	-R-	R	R	-G-	G	-G-	-G-	G	G	DW	DW	DW	DW	DW	DW	
PHASE 4 & 7 CHANGE	-R-	-R-	R	R	-R-	-R-	-R-	R	-R-	-R-	R	R	-R-	R	-R-	R	R	-Y-	G	-Y-	-Y-	G	G	DW	DW	DW	DW	DW	DW	
PHASE 3 & 8	-R-	-R-	R	R	-R-	-R-	-R-	R	-R-	-R-	R	R	-G-	G	-G-	G	G	-R-	R	-R-	-R-	R	R	DW	DW	DW	DW	DW	DW	
PHASE 3 & 8 CHANGE	-R-	-R-	R	R	-R-	-R-	-R-	R	-R-	-R-	R	R	-Y-	G	-Y-	G	G	-R-	R	-R-	-R-	R	R	DW	DW	DW	DW	DW	DW	
PHASE 4 & 8	-R-	-R-	R	R	-R-	-R-	-R-	R	-R-	-R-	R	R	-R-	G	-R-	G	G	-R-	G	-R-	-R-	G	G	DW	DW	DW	DW	DW	DW	
PHASE 4 & 8 CHANGE	-R-	-R-	R	R	-R-	-R-	-R-	R	-R-	-R-	R	R	-R-	Y	-R-	Y	Y	-R-	Y	-R-	-R-	Y	Y	DW	DW	DW	DW	DW	DW	
PHASE 4 & 8 ALT	-R-	-R-	R	R	-R-	-R-	-R-	R	-R-	-R-	R	R	-R-	G	-G-	R	G	-R-	G	-G-	-R-	G	G	DW	DW	W	W	W	W	
PED CLEAR	-R-	-R-	R	R	-R-	-R-	-R-	R	-R-	-R-	R	R	-R-	G	-G-	R	G	-R-	G	-G-	-R-	G	G	DW	DW	FL/DW	FL/DW	FL/DW	FL/DW	
PHASE 4 & 8 ALT. CHANGE	-R-	-R-	R	R	-R-	-R-	-R-	R	-R-	-R-	R	R	-R-	Y	-R-	R	Y	-R-	Y	-R-	-R-	Y	Y	DW	DW	DW	DW	DW	DW	
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	DARK	DARK	DARK	DARK	DARK	DARK	FLASHING OPERATION

⟨1⟩ 7/28/1999

REVISIONS		
(D) 9-98 PG2175170		MODIFY FOR NEW GEOMETRICS ON MD 4 TRIBLE LEFT
(C) 11-88 BW-190-801-312		MODIFY FOR NEW GEOMETRICS
(B) 10-31-86 SHA NO. P-896-501-385		MODIFY FOR DOUBLE LEFT TURNS
(A) 10-83 AW-680-501-085		RECUT LOOPS

APPROVALS

DESIGN SECTION

ASST. DISTRICT ENGINEER, TRAFFIC

CHIEF, TRAFFIC ENGINEERING DESIGN DIVISION

DIRECTOR, TRAFFIC & SAFETY

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future

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

MD 4 @
MD 458 (SILVER HILL ROAD)

LOG MILE: 16000411.88

DRAWN BY:		F.A.P. NO.	T-8006 (25)	GI NO.
CHK. BY:		S.H.A. NO.	P-333-1-386	837-D
SCALE:	1" = 20'			SHEET NO.
DATE:	1-15-73	COUNTY	PRINCE GEORGE'S	77 OF 125

FILE: m:\metro_hw\md4_gen.dgn
DATE: 28-Jul-99 17:40