PROJECT DESCRIPTION

GENERAL

THIS PORTION OF THE PROJECT INVOLVES RECONSTRUCTION OF THE EXISTING TRAFFIC CONTROL SIGNAL FOR STAGE II OF THE MAINTENANCE OF TRAFFIC PLANS AT THE INTERSECTION OF MD 212 (POWDER MILL ROAD) AND CHERRY HILL ROAD IN PRINCE GEORGE'S COUNTY. MD 212 IS ASSUMED TO RUN IN AN EAST/WEST DIRECTION.

INTERSECTION OPERATION

DURING STAGE II, THE INTERSECTION WILL OPERATE IN A NEMA SIX-PHASE, PRE-TIMED MODE WITH THE MD 212 APPROACHES OPERATING CONCURRENTLY AND THE CHERRY HILL ROAD APPROACHES OPERATING WITH SPLIT PHASES.

EXCLUSIVE/PERMISSIVE LEFT-TURN PHASES WILL BE PROVIDED ON THE EASTBOUND AND WESTBOUND MD 212 APPROACHES.

AN ALTERNATE PEDESTRIAN PHASE WILL BE PROVIDED ACROSS THE EAST LEG OF MD 212. PEDESTRIAN INDICATIONS ARE PROVIDED TO CROSS THE NORTH LEG OF CHERRY HILL ROAD.

CONTROLLER REQUIREMENTS

INSTALL A FULL-TRAFFIC-ACTUATED CONTROLLER WITH SYSTEM PACKAGE AND FOUR (4), FOUR-CHANNEL, TIME-DELAY-OUTPUT LOOP DETECTOR AMPLIFIERS AND ASSOCIATED HARNESSES HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET.

MAINTENANCE OF TRAFFIC

THE FOLLOWING TRAFFIC CONTROL STANDARDS SHALL BE REFERENCED FOR THE PROJECT.

STANDARD NO. MD-104.00 - 104.00-30

STANDARD NO. MD-104.31-01 (FLAGGING OPERATION)

STANDARD NO. MD-104.43-01 (SHOULDER WORK)

STANDARD NO. MD-104.37-01 (LEFT-LANE CLOSURE)

STANDARD NO. MD-104.38-01 (RIGHT-LANE CLOSURE)

STANDARD NO. MD-104.34-01 (LANE SHIFT)

STANDARD NO. MD-104.32-02 (INTERSECTION FLAGGING OPERATION)

PROJECT CONTACTS

THE CONTACT PERSONS FOR SHA ARE AS FOLLOWS:

MR. CHARLES WATKINS
DISTRICT ENGINEER
PHONE: (301) 513-7311

MR. MAJIB SHAKIB
ASSISTANT DISTRICT ENGINEER - TRAFFIC
PHONE: (301) 513-7358

MR. RANDY BROWN
ASSISTANT DISTRICT ENGINEER - MAINTENANCE
PHONE: (301) 513-7304

MR. JOE GECKLE
DISTRICT UTILITIES ENGINEER
PHONE: (301) 513-7350

MR. RICHARD L. DAFF, SR.
CHIEF, TRAFFIC OPERATIONS DIVISION
PHONE: (410) 787-7630

EQUIPMENT LIST "A"

A. EQUIPMENT TO BE SUPPLIED BY THE SHA

CATEGORY CODE NO.	QUANTITY	DESCRIPTION
900000	6 EACH	FOUR-CHANNEL, TIME DELAY OUTPUT, LOOP DETECTOR AMPLIFIER.
900000	2 EACH	8 IN./12 IN., ONE-WAY, FIVE-SECTION (R,Y,YA,G,GA) TRAFFIC SIGNAL HEAD - SPAN MOUNT
900000	2 EACH	8 IN./12 IN., ONE-WAY, FOUR-SECTION (R,Y,G,GA) TRAFFIC SIGNAL HEAD - SPAN MOUNT.
960002	4 EACH	12 IN., ONE-WAY, THREE-SECTION (R,Y,G) TRAFFIC SIGNAL HEAD - SPAN MOUNT.
960007	2 EACH	12 IN., ONE-WAY, FOUR-SECTION (R,Y,G,GA) TRAFFIC SIGNAL HEAD - SPAN MOUNT.
960008	2 EACH	12 IN., ONE-WAY, FIVE-SECTION (R,Y,YA,G,GA) TRAFFIC SIGNAL HEAD - SPAN MOUNT
960048	1 EACH	12 IN., ONE-WAY, TWO-SECTION PEDESTRIAN SIGNAL HEAD - PEDESTAL MOUNT.
960068	1 EACH	12 IN., ONE-WAY, TWO-SECTION PEDESTRIAN SIGNAL HEAD - POLE MOUNT.
960069	1 EACH	12 IN., TWO-WAY, TWO-SECTION PEDESTRIAN SIGNAL HEAD - POLE MOUNT.
965001	2 EACH	PEDESTRIAN PUSHBUTTON AND R10-4(1) SIGN. (NOTE: SIGN TO READ "PUSHBUTTON TO CROSS POWDER MILL ROAD".
971017	1 EACH	EIGHT-PHASE, FULL-TRAFFIC-ACTUATED CONTROLLER WITH SYSTEM, AND ASSOCIATED HARNESSES, HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET.
973023	110 S.F.	SHEET ALUMINUM SIGNS TO CONSIST OF :

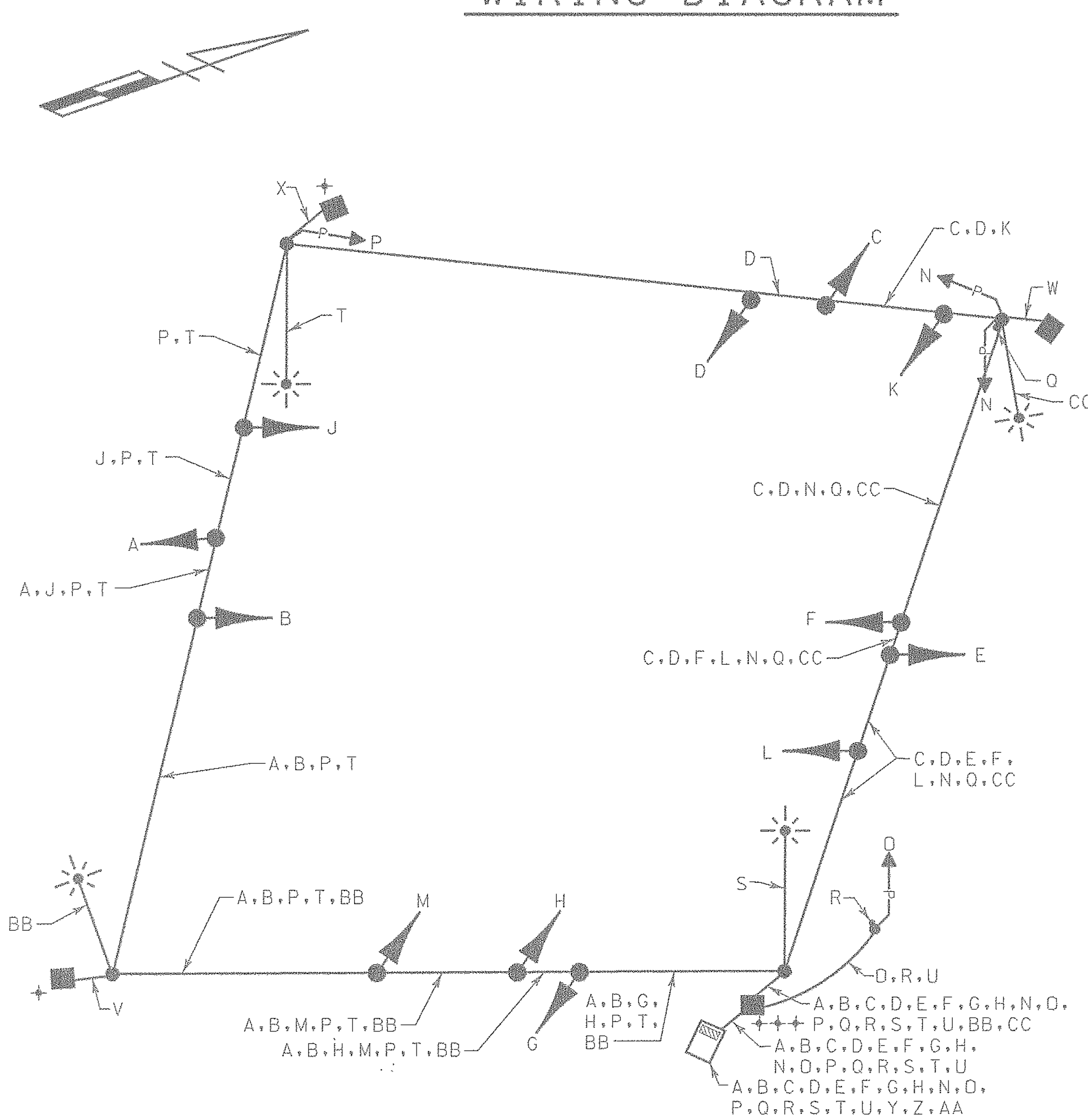
- 2 EACH D-3(1) SIGN (VARIABLE X 16 IN.) DUAL FACED - SPAN MOUNT
- 1 EACH ASSOCIATED SHIELD ASSEMBLY, "WEST, MD 212, RIGHT ARROW" (30 IN. X 51 IN.) - POLE MOUNT
- 1 EACH ASSOCIATED SHIELD ASSEMBLY, "WEST, MD 212, LEFT ARROW" (48 IN. X 75 IN.) - POLE MOUNT
- 1 EACH ASSOCIATED SHIELD ASSEMBLY, "EAST, MD 212, RIGHT ARROW" (30 IN. X 51 IN.) - POLE MOUNT
- 1 EACH ASSOCIATED SHIELD ASSEMBLY, "EAST, MD 212, LEFT ARROW" (48 IN. X 75 IN.) - POLE MOUNT
- 2 EACH R10-12 SIGN (36 IN. X 42 IN.) - SPAN MOUNT

EQUIPMENT LIST "B"

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

CATEGORY CODE NO.	QUANTITY	DESCRIPTION
120500	LUMP SUM	MAINTENANCE OF TRAFFIC
120610	5 U.D.	ARROW PANEL
120620	300 S.F.	TEMPORARY TRAFFIC SIGNS
130850	LUMP SUM	MOBILIZATION
203030	6 C.Y.	TEST PIT EXCAVATION
801004	23 C.Y.	FURNISH AND INSTALL CONCRETE FOR SIGNAL FOUNDATION
802501	160 L.F.	FURNISH AND INSTALL STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
805011	30 L.F.	FURNISH AND INSTALL 1 IN. ELECTRICAL CONDUIT - GALVANIZED SLEEVE
805105	20 L.F.	FURNISH AND INSTALL 2 IN. SCHEDULE 80 RIGID PVC CONDUIT - BORED
805160	40 L.F.	FURNISH AND INSTALL 1 IN. LIQUID-TIGHT FLEXIBLE NON-METALLIC CONDUIT DETECTOR SLEEVE
810010	45 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 1-CONDUCTOR (NO. 4 A.W.G. - THHN/THWN)
811001	10 EACH	FURNISH AND INSTALL ELECTRICAL HANDHOLE
813015	110 S.F.	INSTALL OVERHEAD SIGN
831010	4 EACH	FURNISH AND INSTALL 250 WATT HPS LUMINAIRE WITH PHOTOCELL
837001	6 EACH	FURNISH AND INSTALL GROUND ROD - 3/4 IN. DIAMETER X 10 FT. LENGTH
838003	1 EACH	FURNISH AND INSTALL CONTROL AND DISTRIBUTION EQUIPMENT
861105	280 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 A.W.G.)
861106	540 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 3 CONDUCTOR (NO. 14 A.W.G.)
861107	325 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 A.W.G.)
861108	1600 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 A.W.G.)
861116	880 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 A.W.G.)
865201	2 EACH	INSTALL PUSHBUTTON AND SIGN
866104	4 EACH	FURNISH AND INSTALL 20 FT. LIGHTING BRACKET FOR TRAFFIC SIGNAL STRUCTURE
869101	510 L.F.	FURNISH AND INSTALL STEEL SPAN WIRE - 1/4 IN. DIAMETER
869102	510 L.F.	FURNISH AND INSTALL STEEL SPAN WIRE - 3/8 IN. DIAMETER
871117	1 EACH	INSTALL CONTROLLER AND CABINET - BASE MOUNT
800000	675 L.F.	FURNISH AND INSTALL 2 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
800000	80 L.F.	FURNISH AND INSTALL 3 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
800000	120 L.F.	FURNISH AND INSTALL 4 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
800000	15 EACH	INSTALL SIGNAL HEAD - ANY TYPE
800000	4 EACH	FURNISH AND INSTALL 14 IN. X 32 FT. STEEL STRAIN POLE
800000	1 EACH	FURNISH AND INSTALL BREAKAWAY PEDESTAL POLE
800000	4 EACH	FURNISH AND INSTALL 3 IN. WEATHERHEAD
800000	700 L.F.	PULL BACK INTERCONNECT CABLE
800000	LUMP SUM	REMOVAL AND DISPOSAL OF EXISTING MATERIAL AND EQUIPMENT
800000	LUMP SUM	REMOVAL OF EXISTING SIGNAL EQUIPMENT TO BE SALVAGED
800000	LUMP SUM	DELIVERY OF SALVAGED SIGNAL EQUIPMENT AND MATERIAL

WIRING DIAGRAM



WIRING KEY

A, B, C, D, E, F, G, H — 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)

J, K, L, M, N — 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)

O, P — 3-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)

Q, R — 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)

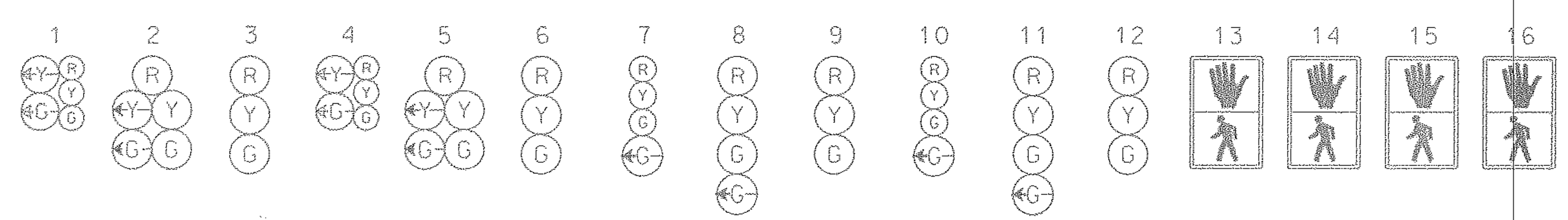
S, T, BB, CC — 2-CONDUCTOR ELECTRICAL CABLE (NO. 12 A.W.G.)

U, V, W, X — STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)

Y, Z, AA — 1-CONDUCTOR ELECTRICAL CABLE (NO. 4 A.W.G.)

+ 3/4 IN. X 10 FT. GROUND ROD

PHASE CHART



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASE 1 + 5	R ←G	R ←G	R	R ←G	R ←G	R	R	R	R	R	R	R	DW	DW	DW	DW
1 + 5 CHANGE	1 + 5 MAY CHANGE TO PHASE 1 + 6, PHASE 2 + 5 OR PHASE 2 + 6															
PHASE 1 + 6	G ←G	G ←G	G	R	R	R	R	R	R	R	R	R	DW	DW	DW	DW
1 + 6 CHANGE	G ←Y	G ←Y	G	R	R	R	R	R	R	R	R	R	DW	DW	DW	DW
PHASE 2 + 5	R	R	R	G ←G	G ←G	G	R	R	R	R	R	R	WK	WK	DW	DW
2 + 5 CHANGE	R	R	R	G ←Y	G ←Y	G	R	R	R	R	R	R	WK	WK	DW	DW
PHASE 2 + 6	G	G	G	G	G	G	R	R	R	R	R	R	WK	WK	DW	DW
PED. CLEARANCE	Y	Y	Y	Y	Y	Y	R	R	R	R	R	R	FL/DW	FL/DW	DW	DW
2 + 6 CHANGE	Y	Y	Y	Y	Y	Y	R	R	R	R	R	R	DW	DW	DW	DW
PHASE 3	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	Y	Y	Y	DW	DW	DW	DW
PHASE 4	R	R	R	R	R	R	G ←G	G ←G	G	R	R	R	DW	DW	DW	DW
4 CHANGE	R	R	R	R	R	R	Y	Y	Y	R	R	R	DW	DW	DW	DW
PHASE 4 ALT.	R	R	R	R	R	R	G ←G	G ←G	G	R	R	R	DW	DW	WK	WK
PED. CLEARANCE	R	R	R	R	R	R	G ←G	G ←G	G	R	R	R	DW	DW	FL/DW	FL/DW
4 ALT. CHANGE	R	R	R	R	R	R	Y	Y	Y	R	R	R	DW	DW	DW	DW
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	DARK	DARK	DARK	DARK

WR&A
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REVISIONS

APPROVALS

ASST. TRAFFIC ENGINEERING DESIGN DIVISION

ASST. DISTRICT ENGINEER, TRAFFIC

CHIEF, TRAFFIC ENGINEERING DESIGN DIVISION

DIRECTOR, TRAFFIC & SAFETY

STAGE II (TSP-2)

MARYLAND DOT - STATE HIGHWAY ADMINISTRATION

Office of Traffic & Safety

TRAFFIC ENGINEERING DESIGN DIVISION

GENERAL INFORMATION SHEET

MD 212 (POWDER MILL ROAD) AT CHERRY HILL ROAD

DRAWN BY: K.LITZ	F.A.P. NO.	TS NO. TS-1923D	SHEET NO.
CHECKED BY: N.LEARY	S.H.A. NO. PG 244 5171		
SCALE:	COUNTY: PRINCE GEORGES	T.I.M.S. NO.	
DATE: 7-1-99	LOG MILE:		58 OF