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

PROJECT DESCRIPTION

GENERAL

THIS PROJECT INVOLVES THE INSTALLATION OF A NEW TRAFFIC CONTROL SIGNAL AND STREET LIGHTING AT THE INTERSECTION OF MD 543 AND BRASS MILL ROAD/CHURCH CREEK ROAD IN HARFORD COUNTY. MD 543 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

INTERSECTION OPERATION

THE INTERSECTION WILL OPERATE IN A NEMA SIX-PHASE, FULL-TRAFFIC-ACTUATED MODE WITH THE MD 543 APPROACHES OPERATING CONCURRENTLY AND THE BRASS MILL ROAD/CHURCH CREEK ROAD APPROACHES OPERATING CONCURRENTLY.

EXCLUSIVE/PERMISSIVE LEFT-TURN PHASES WILL BE PROVIDED ON THE NORTHBOUND AND SOUTHBOUND MD 543 APPROACHES.

AN ALTERNATE PEDESTRIAN PHASE WILL BE PROVIDED ACROSS THE SOUTH LEG OF MD 543.

CONTROLLER REQUIREMENTS

INSTALL A FULL-TRAFFIC-ACTUATED, EIGHT-PHASE CONTROLLER WITH THREE (3), FOUR-CHANNEL, TIME-DELAY-OUTPUT LOOP DETECTOR AMPLIFIERS, INTERSECTION MONITOR WITH BATTERY BACK-UP FOR PHONE DROP AND ASSOCIATED HARNESSES HOUSED IN A NEMA SIZE "5" POLE MOUNTED CABINET.

SPECIAL NOTE

UPON COMPLETION OF THIS PROJECT, THE CONTRACTOR SHALL NOTIFY MR. ROBERT SNYDER OF SHA AT (410) 787-7635 TO ARRANGE FOR THE PHONE LINE INSTALLATION. THE CONTRACTOR IS TO PROVIDE MR. SNYDER WITH THE NEAREST STREET ADDRESS, ZIPCODE AND PHONE NUMBER.

MAINTENANCE OF TRAFFIC

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

STANDARD NO. MD-104.00 - 104.00-12
STANDARD NO. MD-104.31-01 (FLAGGING OPERATION)
STANDARD NO. MD-104.49-01 (SHOULDER WORK)
STANDARD NO. MD-104.44-01 (LEFT-LANE CLOSURE)
STANDARD NO. MD-104.45-01 (RIGHT-LANE CLOSURE)
STANDARD NO. MD-104.46-01 (CENTER LANE CLOSURE)
STANDARD NO. MD-104.35-01 (LANE SHIFT)
STANDARD NO. MD-104.33-02 (SHOULDER WORK)
STANDARD NO. MD-104.32-02 (INTERSECTION FLAGGING OPERATION)

PROJECT CONTACTS

THE CONTACT PERSONS FOR SHA ARE AS FOLLOWS:

MR. DAVE MALKOWSKI
DISTRICT ENGINEER
PHONE: (410) 321-3461

MR. RANDALL SCOTT
ASSISTANT DISTRICT ENGINEER - TRAFFIC
PHONE: (410) 321-3514

MR. RUSS YUREK
ASSISTANT DISTRICT ENGINEER - MAINTENANCE
PHONE: (410) 321-3468

MR. JOSEPH MCMAHON
DISTRICT UTILITIES ENGINEER
PHONE: (410) 321-3456

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

EQUIPMENT LIST "A"

A. EQUIPMENT TO BE SUPPLIED BY SHA

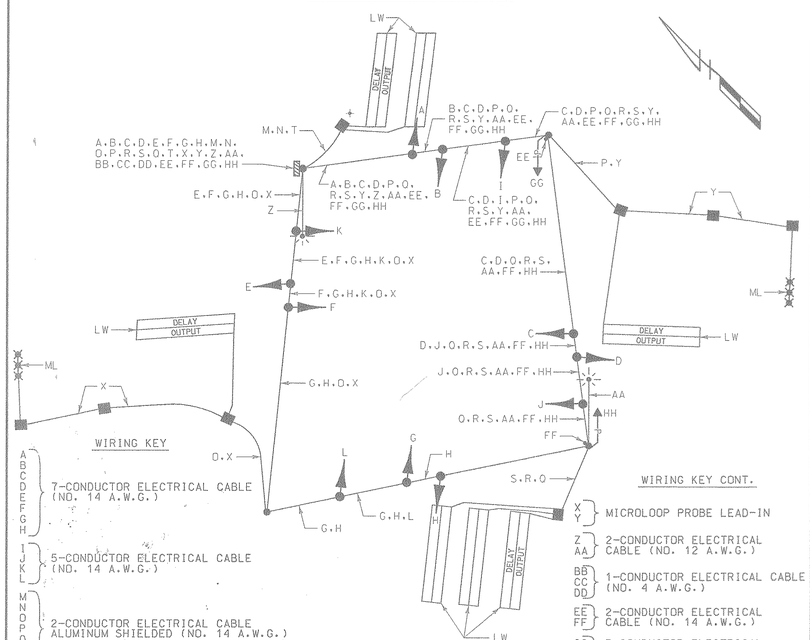
ITEM NO.	QUANTITY	DESCRIPTION
9002	3 EACH	FOUR-CHANNEL, LOOP DETECTOR AMPLIFIER (DELAY OUTPUT).
9035	2 EACH	12 IN., ONE-WAY, TWO-SECTION (R,Y,G) PEDESTRIAN SIGNAL HEAD - SIDE OF POLE MOUNT.
9044	4 EACH	12 IN., ONE-WAY, THREE-SECTION (R,Y,G) TRAFFIC SIGNAL HEAD - SPAN MOUNT.
9046	2 EACH	12 IN., ONE-WAY, THREE-SECTION (R,Y,G) TRAFFIC SIGNAL HEAD WITH TETHER CLAMP - SPAN MOUNT.
9051	2 EACH	12 IN., ONE-WAY, FIVE-SECTION (R,Y,YA,G,GA) TRAFFIC SIGNAL HEAD WITH TETHER CLAMP - SPAN MOUNT.
9054	2 EACH	8 IN./12 IN., ONE-WAY, FIVE-SECTION (R,Y,YA,G,GA) TRAFFIC SIGNAL HEAD WITH TETHER CLAMP - SPAN MOUNT.
8057	2 EACH	8 IN., ONE-WAY, THREE-SECTION (R,Y,G) TRAFFIC SIGNAL HEAD - SPAN MOUNT.
9081	1 EACH	EIGHT-PHASE, FULL-TRAFFIC-ACTUATED CONTROLLER AND INTERSECTION MONITOR II WITH BATTERY BACK-UP FOR PHONE DROP HOUSED IN A NEMA SIZE "5" POLE MOUNTED CABINET.
9089	120 S.F.	SHEET ALUMINUM SIGNS TO CONSIST OF : - 2 EACH R10-12 SIGN (36 IN. X 42 IN.) - SPAN MOUNT. - 1 EACH D3-2 SIGN "CHURCH CREEK RD" (VARIABLE X 16 IN.) DUAL FACED - SPAN MOUNT. - 1 EACH D3-2 SIGN "BRASS MILL RD" (VARIABLE X 16 IN.) DUAL FACED - SPAN MOUNT. - 2 EACH D3-2 SIGN "RIVERSIDE PARKWAY" (VARIABLE X 16 IN.) DUAL FACED - SPAN MOUNT. - 2 EACH W3-3 SIGN (48 IN. X 48 IN.) WITH "NEW" PANEL (30 IN. X 30 IN.) - GROUND MOUNT. - 1 EACH R3-5L (30 IN. X 36 IN.) - SPAN MOUNT.
9096	2 EACH	PEDESTRIAN PUSHBUTTON AND R10-4 SIGN (NOTE: SIGN TO READ "PUSHBUTTON TO CROSS RIVERSIDE PARKWAY").

EQUIPMENT LIST "B"

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

ITEM NO.	QUANTITY	DESCRIPTION
1001	1 EACH	MAINTENANCE OF TRAFFIC PER ASSIGNMENT
2001	5 C.Y.	TEST PIT EXCAVATION
5011	4 EACH	THERMOPLASTIC PAVEMENT MARKING LETTER
5012	2 EACH	THERMOPLASTIC PAVEMENT MARKING ARROW
5014	3 EACH	REMOVE EXISTING PAVEMENT MARKING LETTER OR ARROW
6001	50 S.F.	FURNISH AND INSTALL 4 IN. CONCRETE SIDEWALK
8009	480 L.F.	FURNISH AND INSTALL STEEL SPAN WIRE - 3/8 IN. DIAMETER
8010	210 L.F.	FURNISH AND INSTALL STEEL SPAN WIRE - 1/4 IN. DIAMETER
8011	14 EACH	INSTALL SIGNAL HEAD (ANY TYPE)
8017	2 EACH	FURNISH AND INSTALL MICROLOOP PROBE SET WITH 1000 FT. LEAD-IN
8018	2 EACH	INSTALL PUSHBUTTON AND SIGN
8019	1 EACH	INSTALL CONTROLLER AND CABINET - POLE MOUNT
8021	930 L.F.	SAW CUT FOR SIGNAL LOOP DETECTOR
8023	50 L.F.	FURNISH AND INSTALL 1 IN. LIQUID-TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR SLEEVE
8024	820 L.F.	FURNISH AND INSTALL 2 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8033	9 EACH	FURNISH AND INSTALL HANDHOLE
8034	1 EACH	FURNISH AND INSTALL GROUND ROD - 3/4 IN. DIAMETER X 10 FT. LENGTH
8040	3310 L.F.	FURNISH AND INSTALL LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO 14. A.W.G.)
8041	1600 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 A.W.G.) ALUMINUM SHIELDED
8042	510 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 A.W.G.)
8043	570 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 3 CONDUCTOR (NO. 14 A.W.G.)
8044	110 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 A.W.G.)
8045	1590 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 A.W.G.)
8046	390 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 A.W.G.)
8049	50 L.F.	FURNISH AND INSTALL NO. 6 A.W.G. STRANDED BARE COPPER GROUND WIRE
8050	45 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE 1-CONDUCTOR NO. 4 A.W.G. - THHN/THWN
8052	76 L.F.	FURNISH AND INSTALL WOOD SIGN SUPPORTS 4 IN. X 6 IN.
8053	46 S.F.	INSTALL GROUND MOUNTED SIGN
8054	74 S.F.	INSTALL OVERHEAD SIGN
8056	2 EACH	FURNISH AND INSTALL 250 WATT HPS LUMINAIRE WITH PHOTOCELL
8057	2 EACH	FURNISH AND INSTALL 20 FT. LIGHTING BRACKET ARM FOR TRAFFIC SIGNAL STRUCTURE
8058	1 EACH	REMOVE AND DISPOSE OF EXISTING FOUNDATION 12 IN. BELOW GRADE
8061	1 EACH	REMOVE AND DISPOSE OF EXISTING MATERIAL AND EQUIPMENT PER ASSIGNMENT
8067	20 L.F.	FURNISH AND INSTALL 3 IN. ELECTRICAL CONDUIT PVC RISER
8068	100 L.F.	FURNISH AND INSTALL 2 IN. ELECTRICAL CONDUIT PVC RISER
8070	1 EACH	FURNISH AND INSTALL CONTROL AND DISTRIBUTION EQUIPMENT (120/240V, 1 PHASE 3 WIRE SYST)
NEG.	2 EACH	RELOCATE EXISTING SIGNS
NEG.	4 EACH	FURNISH AND INSTALL 40 FT. CLASS II WOOD POLE
NEG.	8 EACH	FURNISH AND INSTALL BACK GUY

WIRING DIAGRAM



PHASE CHART

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
PHASE 1 + 5	R G	R G	R	R G	R G	R	R	R	R	R	R	R	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
1 + 6 CHANGE	G Y	G Y	G	R	R	R	R	R	R	R	R	R	DW	DW
PHASE 2 + 5	R	R	R	G G	G G	G	R	R	R	R	R	R	DW	DW
2 + 5 CHANGE	R	R	R	G Y	G Y	G	R	R	R	R	R	R	DW	DW
PHASE 2 + 6	G	G	G	G	G	G	R	R	R	R	R	R	DW	DW
2 + 6 CHANGE	Y	Y	Y	Y	Y	Y	R	R	R	R	R	R	DW	DW
PHASE 4 + 8	R	R	R	R	R	R	G	G	G	G	G	G	DW	DW
4 + 8 CHANGE	R	R	R	R	R	R	Y	Y	Y	Y	Y	Y	DW	DW
PHASE 4 ALT.	R	R	R	R	R	R	G	G	G	G	G	G	WK	WK
PED. CLEARANCE	R	R	R	R	R	R	G	G	G	G	G	G	FL/DW	FL/DW
4 ALT. CHANGE	R	R	R	R	R	R	Y	Y	Y	Y	Y	Y	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

REVISIONS	APPROVALS	REVISIONS
	ASSISTANT DIVISION CHIEF	
	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
MD 543 AND BRASS MILL RD./CHURCH CREEK RD.

DATE: 4-30-98	DRAWN BY: S.BLOSS	F.A.P. NO.		PLAN SHEET NO.:	SHEET NO.
SCALE: 1"= 20'	DESIGNED BY: N.LEARY	S.H.A. NO.	AW278A5K/B5K		2 OF 2
APPROVED BY:	CHECKED BY: T.HANNAN	COUNTY	HARFORD		