PROJECT DESCRIPTION

GENERAL

THIS PROJECT INVOLVES THE MODIFICATION OF AN EXISTING TRAFFIC CONTROL SIGNAL AT THE INTERSECTION OF MD 216 AND ALL SAINTS ROAD IN HOWARD COUNTY. MD 216 IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

INTERSECTION OPERATION

THE INTERSECTION WILL OPERATE IN A NEMA SIX-PHASE, FULL-TRAFFIC-ACTUATED MODE WITH THE MD 216 APPROACHES OPERATING CONCURRENTLY AND THE ALL SAINTS ROAD APPROACHES OPERATING SPLIT.

THE EXCLUSIVE/PERMISSIVE LEFT-TURN PHASE FOR WESTBOUND MD 216 WILL BE MODIFIED TO OPERATE EXCLUSIVE DURING EVENING-PEAK PERIOD (3:00 PM - 7:00 PM) MONDAY THRU FRIDAY AND EXCLUSIVE/PERMISSIVE DURING ALL OTHER HOURS. THE EXISTING EASTBOUND EXCLUSIVE/PERMISSIVE LEFT-TURN PHASE WILL REMAIN AND BE SERVICED TWICE EVERY CYCLE (PRIOR TO AND AND AFTER PHASE 2) DURING THE EVENING PEAK PERIOD (3:00 PM - 7:00 PM) MONDAY THRU FRIDAY.

CONTROLLER REQUIREMENTS

THE EXISTING BASE MOUNTED CABINET AND EIGHT-PHASE CONTROLLER WILL BE USED.

SPECIAL REQUIREMENTS

ALL WORK TO THE CONTROLLER WILL BE COMPLETED BY SHA FORCES.

SPECIAL NOTE

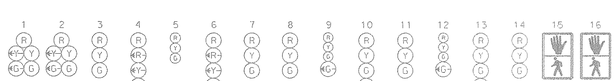
UPON COMPLETION OF THIS PROJECT, THE CONTRACTOR SHALL NOTIFY MR. ROBERT SNYDER OF SHA AT (410) 787-7635 TO ARRANGE FOR THE PHONE LINE INSTALLATION. THE CONTRACTOR IS TO PROVIDE MR. SNYDER WITH THE NEAREST STREET ADDRESS, ZIP CODE AND PHONE NUMBER.

PHASE CHART

NORMAL OPERATION

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

SPECIAL OPERATION (3:00 PM - 7:00 PM) MONDAY - FRIDAY



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

EQUIPMENT LIST "A"

A. EQUIPMENT TO BE SUPPLIED BY SHA

ITEM NO.	QUANTITY	DESCRIPTION
9000	1 EACH	12 IN., ONE-WAY, FIVE-SECTION (R,Y,G,YA,GA) TRAFFIC SIGNAL HEAD - SIDE OF POLE MOUNT.
9027	2 EACH	12 IN., ONE-WAY, TWO-SECTION PEDESTRIAN SIGNAL HEAD - PEDESTAL MOUNT.
9046	1 EACH	12 IN., ONE-WAY, THREE-SECTION (R,Y,G) POLYCARBONATE TRAFFIC SIGNAL HEAD WITH TETHER CLAMP - SPAN MOUNT.
9048	2 EACH	12 IN., ONE-WAY, FOUR-SECTION (R,Y,G,GA) POLYCARBONATE TRAFFIC SIGNAL HEAD WITH TETHER CLAMP - SPAN MOUNT.
9048	2 EACH	12 IN., ONE-WAY, FOUR-SECTION (R,RA,YA,GA) POLYCARBONATE TRAFFIC SIGNAL HEAD WITH TETHER CLAMP - SPAN MOUNT.
9058	1 EACH	8 IN., ONE-WAY, THREE-SECTION (R,Y,G) POLYCARBONATE TRAFFIC SIGNAL HEAD WITH TETHER CLAMP - SPAN MOUNT.
9060	2 EACH	8 IN./12 IN., ONE-WAY, FOUR-SECTION (R,Y,G,GA) POLYCARBONATE TRAFFIC SIGNAL HEAD WITH TETHER CLAMP - SPAN MOUNT.
9089	105 S.F.	SHEET ALUMINUM SIGNS TO CONSIST OF :
		- 1 EACH D-3(1) SIGN "ALL SAINTS ROAD" (VARIABLE X 16 IN.) - SPAN MOUNT.
		- 1 EACH R3-5L SIGN (30 IN. X 36 IN.) - SPAN MOUNT.
		- 1 EACH R3-6(R) SIGN (30 IN. X 36 IN.) - SPAN MOUNT.
		- 1 EACH R10-6(1) SIGN (60 IN. X 36 IN.) - SPAN MOUNT.
		- 1 EACH "ALL SAINTS ROAD, 1300 FT" SIGN (84 IN. X 108 IN.) - GROUND MOUNT.
9096	2 EACH	PEDESTRIAN PUSHBUTTON AND R10-4(1) SIGN (NOTE: SIGN TO READ "PUSH BUTTON TO CROSS MD 216).

PROJECT CONTACTS

THE CONTACT PERSONS FOR SHA ARE AS FOLLOWS:

MR. ROBERT FISHER
DISTRICT ENGINEER
PHONE: (301) 624-8140

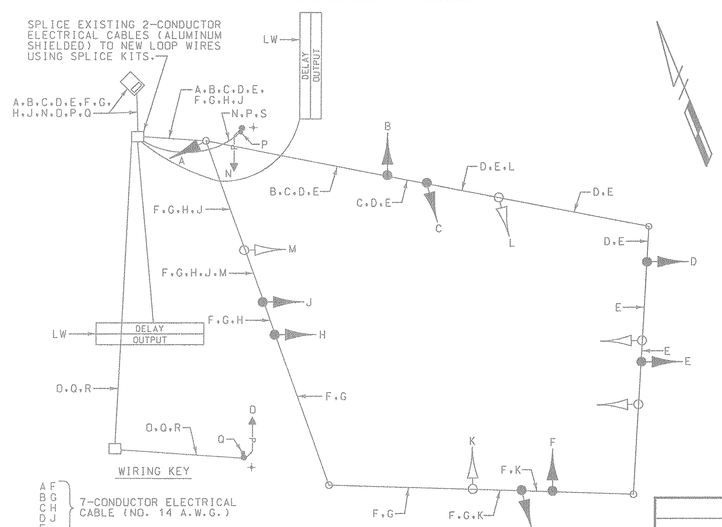
MR. JOHN CONCANNON
ASSISTANT DISTRICT ENGINEER - TRAFFIC
PHONE: (301) 624-8141

MR. LEON KERNS
ASSISTANT DISTRICT ENGINEER - MAINTENANCE
PHONE: (301) 624-8140

MR. JIM BUCKALOO
ACTING DISTRICT UTILITIES ENGINEER
PHONE: (301) 624-8140

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

WIRING DIAGRAM



WIRING KEY

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

K L M } 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)

N O } 3-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)

P Q } 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)

R S } STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)

LW - LOOP WIRE (NO. 14 A.W.G.)

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

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	2 EACH	TEST PIT EXCAVATION
5008	40 L.F.	6 IN. WHITE THERMOPLASTIC PAVEMENT MARKING TAPE
5009	410 L.F.	12 IN. WHITE THERMOPLASTIC PAVEMENT MARKING TAPE
5010	200 L.F.	24 IN. WHITE THERMOPLASTIC PAVEMENT MARKING TAPE
5011	4 EACH	THERMOPLASTIC PAVEMENT MARKING LETTER
5012	3 EACH	THERMOPLASTIC PAVEMENT MARKING ARROW
5013	350 L.F.	REMOVE EXISTING PAVEMENT MARKINGS - ANY WIDTH
5014	19 EACH	REMOVE EXISTING PAVEMENT MARKING LETTER OR ARROW
6001	16 S.F.	4 IN. CONCRETE SIDEWALK
8001	2 C.Y.	FURNISH AND INSTALL CONCRETE FOR SIGNAL FOUNDATION
8003	2 EACH	FURNISH AND INSTALL BREAKAWAY PEDESTAL POLE (ANY SIZE)
8011	11 EACH	INSTALL SIGNAL HEAD (ANY TYPE)
8018	2 EACH	INSTALL PUSHBUTTON AND SIGN
8021	300 L.F.	SAW CUT FOR SIGNAL LOOP DETECTOR
8022	50 L.F.	FURNISH AND INSTALL 1 IN. ELECTRICAL CONDUIT - GALVANIZED SLEEVE
8024	120 L.F.	FURNISH AND INSTALL 2 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8034	2 EACH	FURNISH AND INSTALL GROUND ROD - 3/4 IN. DIAMETER X 10 FT. LENGTH
8040	1050 L.F.	FURNISH AND INSTALL LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO 14. A.W.G.)
8042	280 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 A.W.G.)
8043	280 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 3 CONDUCTOR (NO. 14 A.W.G.)
8044	120 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 A.W.G.)
8045	1950 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 A.W.G.)
8049	220 L.F.	FURNISH AND INSTALL NO. 6 A.W.G. STRANDED BARE COPPER GROUND WIRE
8053	63 S.F.	INSTALL GROUND MOUNTED SIGN
8054	42 S.F.	INSTALL OVERHEAD SIGN
8061	1 EACH	REMOVE AND DISPOSE OF EXISTING MATERIAL AND EQUIPMENT PER ASSIGNMENT
8000	38 L.F.	GALVANIZED STEEL BEAMS (W6X12)
8000	2 EACH	BREAKAWAY BASE SUPPORT SYSTEM FOR STEEL BEAMS
8000	3 C.Y.	CONCRETE FOR SIGN FOUNDATION
8000	4 EACH	RELOCATE EXISTING SIGN
8000	2 EACH	FURNISH AND INSTALL SPLICE KIT
8000	1 EACH	RELOCATE EXISTING SIGNAL HEAD

SIGN DETAIL

WR&A
Whitman, Requardt and Associates
Engineers and Planners
2315 Saint Paul Street
Baltimore, Maryland 21218
(410) 235-3450

REVISIONS	APPROVALS
	ASST. TRAFFIC ENGINEERING DESIGN DIVISION
	ASST. DISTRICT ENGINEER, TRAFFIC
	CHIEF, TRAFFIC ENGINEERING DESIGN DIVISION
	DIRECTOR, TRAFFIC & SAFETY

MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION
GENERAL INFORMATION SHEET
MD 216 AND ALL SAINTS ROAD

DRAWN BY: S.BLOSS	F.A.P. NO.		TS NO. TS-1004C	SHEET NO.
CHECKED BY: N.LEARY	S.H.A. NO. AW077A6U BSU MSU			
SCALE: 1"= 20'	COUNTY: HOWARD		T.I.M.S. NO. D023	2 OF 2
DATE: 9-17-98	LOG MILE: 130021600.64			