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

PROJECT DESCRIPTION

GENERAL

THIS PROJECT INVOLVES CONVERTING THE EXISTING INTERSECTION CONTROL BEACONS TO FULL TRAFFIC CONTROL SIGNALS AT THE INTERSECTIONS OF MD 32 WITH EAST LINDEN CHURCH ROAD AND WEST LINDEN CHURCH ROAD IN HOWARD COUNTY. MD 32 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

A HARDWIRE INTERCONNECT WILL BE PROVIDED BETWEEN THE TWO INTERSECTIONS.

INTERSECTION OPERATION

1. EAST LINDEN CHURCH ROAD

   THE INTERSECTION WILL OPERATE IN A NEMA FOUR-PHASE, FULL-TRAFFIC-ACTUATED MODE WITH THE MD 32 APPROACHES OPERATING CONCURRENTLY AND THE EAST LINDEN CHURCH ROAD APPROACH OPERATING ALONE.

   EXCLUSIVE/PERMISSIVE LEFT-TURN PHASE WILL BE PROVIDED ON THE SOUTHBOUND MD 32 APPROACH.

   THE INTERSECTION WILL OPERATE IN A FLASHING MODE DURING NON-PEAK HOURS AS DIRECTED BY DISTRICT 7.

2. WEST LINDEN CHURCH ROAD

   THE INTERSECTION WILL OPERATE IN A NEMA FOUR-PHASE, FULL-TRAFFIC-ACTUATED MODE WITH THE MD 32 APPROACHES OPERATING CONCURRENTLY AND THE WEST LINDEN CHURCH ROAD APPROACH OPERATING ALONE.

   EXCLUSIVE/PERMISSIVE LEFT-TURN PHASE WILL BE PROVIDED ON THE NORTHBOUND MD 32 APPROACH.

   THE INTERSECTION WILL OPERATE IN A FLASHING MODE DURING NON-PEAK HOURS AS DIRECTED BY DISTRICT 7.

CONTROLLER REQUIREMENTS

1. EAST LINDEN CHURCH ROAD

   INSTALL A FULL-TRAFFIC-ACTUATED CONTROLLER AND TWO (2), FOUR-CHANNEL, TIME-DELAY-OUTPUT LOOP DETECTOR AMPLIFIERS IN THE EXISTING POLE MOUNTED CABINET.

2. WEST LINDEN CHURCH ROAD

   INSTALL A FULL-TRAFFIC-ACTUATED CONTROLLER AND TWO (2), FOUR-CHANNEL, TIME-DELAY-OUTPUT LOOP DETECTOR AMPLIFIERS IN THE EXISTING POLE MOUNTED CABINET.

EQUIPMENT LIST "A"

A. EQUIPMENT TO BE SUPPLIED BY SHA

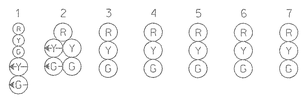
ITEM NO.	QUANTITY	DESCRIPTION
9002	4 EACH	FOUR-CHANNEL, TIME DELAY OUTPUT, LOOP DETECTOR AMPLIFIER.
9014	11 EACH	12 IN., ONE-WAY, THREE-SECTION (R,Y,G) TRAFFIC SIGNAL HEAD - MAST ARM MOUNT.
9016	2 EACH	12 IN., ONE-WAY, FIVE-SECTION (R,Y,YA,G,GA) TRAFFIC SIGNAL HEAD - MAST ARM MOUNT.
9000	2 EACH	8 IN./12 IN., ONE-WAY, FIVE-SECTION (R,Y,G,YA,GA) VERTICAL TRAFFIC SIGNAL HEAD - PEDESTAL MOUNT.
9087	2 EACH	EIGHT-PHASE, FULL-TRAFFIC-ACTUATED CONTROLLER.
9089	168 S.F.	SHEET ALUMINUM SIGNS TO CONSIST OF : - 2 EACH R10-12 SIGN (36 IN. X 42 IN.) - MAST ARM MOUNT. - 4 EACH W3-3 SIGN (60 IN. X 60 IN.) WITH "NEW" PANEL (30 IN. X 30 IN.) - GROUND MOUNT - 2 EACH W3-3 SIGN (36 IN. X 36 IN.) - GROUND MOUNT.

EQUIPMENT LIST "B"

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

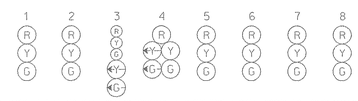
ITEM NO.	QUANTITY	DESCRIPTION
1001	1 EACH	MAINTENANCE OF TRAFFIC PER ASSIGNMENT
1003	1 EACH	MOBILIZATION FOR ASSIGNMENTS OUTSIDE OF CONTRACT AREA
2001	2 C.Y.	TEST PIT EXCAVATION
2004	4 C.Y.	CLASS 2 EXCAVATION
5007	20 L.F.	6 IN. YELLOW THERMOPLASTIC PAVEMENT MARKING TAPE
5010	100 L.F.	24 IN. WHITE THERMOPLASTIC PAVEMENT MARKING TAPE
5012	2 EACH	THERMOPLASTIC PAVEMENT MARKING ARROW
5013	110 L.F.	REMOVE EXISTING PAVEMENT MARKINGS - ANY WIDTH
5014	2 EACH	REMOVE EXISTING PAVEMENT MARKING LETTER OR ARROW
6001	100 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	15 EACH	INSTALL SIGNAL HEAD (ANY TYPE)
8017	4 EACH	FURNISH AND INSTALL MICROLOOP PROBE SET WITH 1000 FT. LEAD-IN
8021	800 L.F.	SAW CUT FOR SIGNAL LOOP DETECTOR
8022	65 L.F.	FURNISH AND INSTALL 1 IN. ELECTRICAL CONDUIT - GALVANIZED SLEEVE
8023	50 L.F.	FURNISH AND INSTALL 1 IN. LIQUID-TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR SLEEVE
8024	1020 L.F.	FURNISH AND INSTALL 2 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8027	1005 L.F.	FURNISH AND INSTALL 3 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8031	105 L.F.	FURNISH AND INSTALL 4 IN. SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED
8032	130 L.F.	FURNISH AND INSTALL 4 IN. SCHEDULE 80 RIGID PVC CONDUIT - BORED
8033	16 EACH	FURNISH AND INSTALL HANDHOLE
8034	2 EACH	FURNISH AND INSTALL GROUND ROD - 3/4 IN. DIAMETER X 10 FT. LENGTH
8039	1260 L.F.	FURNISH AND INSTALL 12-PAIR COMMUNICATION CABLE, JELLY FILLED (UNDERGROUND)
8040	3050 L.F.	FURNISH AND INSTALL LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO 14. A.W.G.)
8041	900 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 A.W.G.) ALUMINUM SHIELDED
8045	205 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 A.W.G.)
8049	200 L.F.	FURNISH AND INSTALL NO. 6 A.W.G. STRANDED BARE COPPER GROUND WIRE
8052	218 L.F.	FURNISH AND INSTALL 4 IN. X 6 IN. WOOD SIGN SUPPORT
8053	146 S.F.	INSTALL GROUND MOUNTED SIGN
8054	22 S.F.	INSTALL OVERHEAD SIGN
8061	1 EACH	REMOVE AND DISPOSE OF EXISTING MATERIAL AND EQUIPMENT PER ASSIGNMENT
NEG.	3 EACH	RELOCATE EXISTING SIGN

PHASE CHART - WEST LINDEN CHURCH ROAD



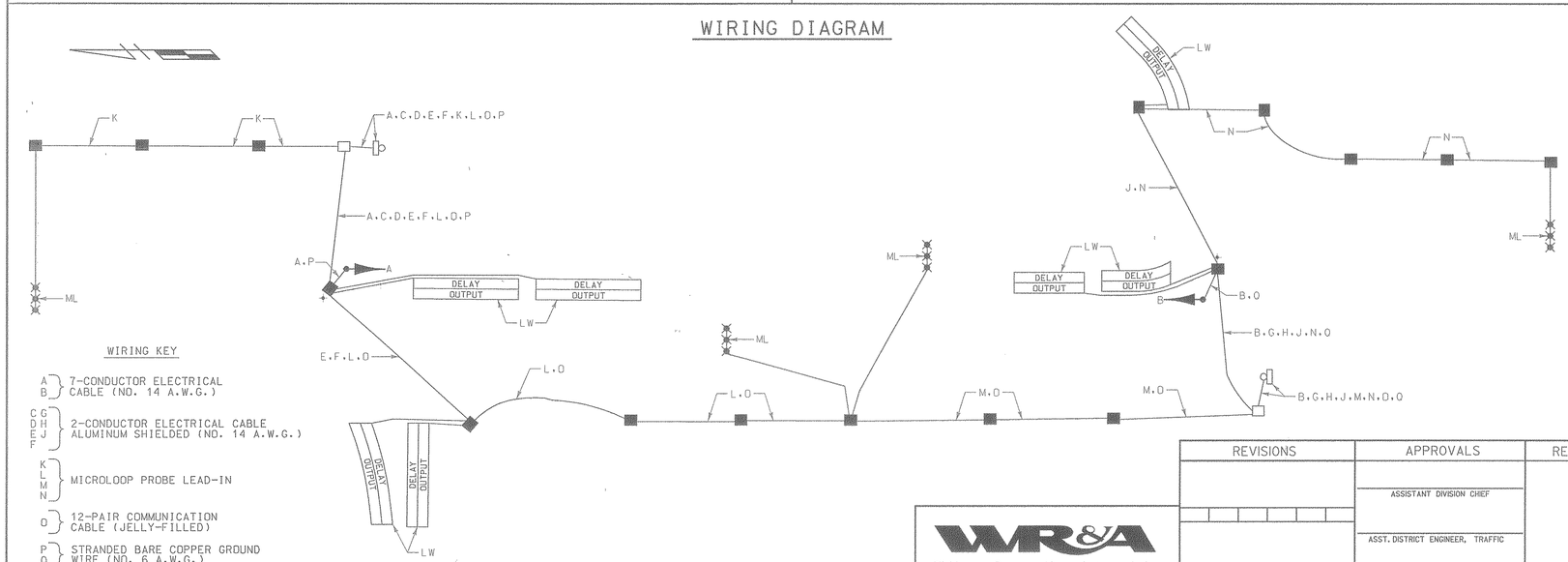
PHASE 1 + 6	G ← G	G ← G	G	R	R	R	R
1 + 6 CHANGE	G ← Y	G ← Y	G	R	R	R	R
PHASE 2 + 6	G	G	G	G	G	R	R
2 + 6 CHANGE	Y	Y	Y	Y	Y	R	R
PHASE 4	R	R	R	R	R	G	G
4 CHANGE	R	R	R	R	R	Y	Y
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R

PHASE CHART - EAST LINDEN CHURCH ROAD



PHASE 2 + 5	R	R	G ← G	G ← G	G	R	R	R	
2 + 5 CHANGE	R	R	G ← Y	G ← Y	G	R	R	R	
PHASE 2 + 6	G	G	G	G	G	R	R	R	
2 + 6 CHANGE	Y	Y	Y	Y	Y	R	R	R	
PHASE 4	R	R	R	R	R	G	G	G	
4 CHANGE	R	R	R	R	R	Y	Y	Y	
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	

WIRING DIAGRAM



WIRING KEY

- A, B — 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- C, D, E, F, G, H, J — 2-CONDUCTOR ELECTRICAL CABLE ALUMINUM SHIELDED (NO. 14 A.W.G.)
- K, L, M, N — MICROLOOP PROBE LEAD-IN
- O — 12-PAIR COMMUNICATION CABLE (JELLY-FILLED)
- P, Q — STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
- LW - LOOP WIRE (NO. 14 A.W.G.)
- ML - MICROLOOP PROBE SET
- ⏚ - 3/4 IN. X 10 FT. GROUND ROD

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-104.45-01 (RIGHT-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. ROBERT FISHER
DISTRICT ENGINEER
PHONE: (301) 624-8140

MR. JOHN CONCANNON
ACTING 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

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

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

MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION
GENERAL INFORMATION SHEET
MD 32 INTERSECTIONS

DATE: 7-13-98	DRAWN BY: S.BLOSS	F.A.P. NO.		PLAN SHEET NO.:	SHEET NO.
SCALE: NONE	DESIGNED BY: N.LEARY	S.H.A. NO.	AW8379A5F/B5F/H5F		3 OF 3
APPROVED BY:	CHECKED BY: T.HANNAN	COUNTY	HOWARD		