PROJECT DESCRIPTION

GENERAL

THIS PROJECT INVOLVES THE INSTALLATION OF A NEW TRAFFIC CONTROL SIGNAL WITH FIREHOUSE PRE-EMPTION AT THE INTERSECTION OF MD 80 (FINGERBOARD ROAD) AND MD 75 (GREEN VALLEY ROAD) IN FREDERICK COUNTY. MD 80 IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

INTERSECTION OPERATION

THE INTERSECTION WILL OPERATE IN A NEMA FOUR-PHASE, FULL-TRAFFIC-ACTUATED MODE WITH THE MD 80 APPROACHES OPERATING CONCURRENTLY AND THE MD 75 APPROACH OPERATING ALONE.

EXCLUSIVE/PERMISSIVE LEFT-TURN PHASING IS PROVIDED FOR WESTBOUND MD 80.

WHEN A PUSHBUTTON IS ACTIVATED WITHIN THE FIREHOUSE, THE MD 80 APPROACHES ARE STOPPED AND THE MD 75 APPROACH OPERATES ALONE.

CONTROLLER REQUIREMENTS

INSTALL A FULL-TRAFFIC-ACTUATED, EIGHT-PHASE CONTROLLER WITH TWO (2), 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 "6" BASE 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, ZIP CODE AND PHONE NUMBER.

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-104.33-01 (SHOULDER WORK)

STANDARD NO. MD-104.35-01 (LANE SHIFT)

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
ASSISTANT DISTRICT ENGINEER - TRAFFIC
PHONE: (301) 624-8141

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

MR. JOHN WRIGHT
DISTRICT UTILITIES ENGINEER
PHONE: (301) 624-8140

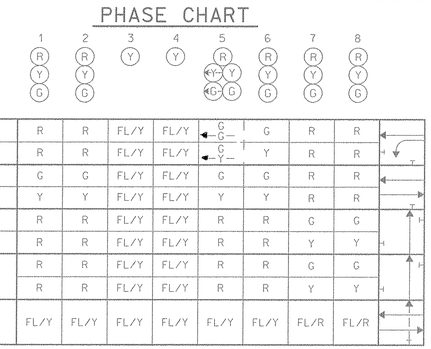
MR. RICHARD L. DAFF, SR.
CHIEF, TRAFFIC OPERATIONS DIVISION
PHONE: (410) 787-7630

EQUIPMENT LIST "A"

A. EQUIPMENT TO BE SUPPLIED BY THE SHA

ITEM NO.	QUANTITY	DESCRIPTION
9000	2 EACH	FIREHOUSE PUSHBUTTON
9002	2 EACH	FOUR-CHANNEL, TIME-DELAY-OUTPUT, LOOP DETECTOR AMPLIFIER
9081	1 EACH	EIGHT-PHASE, FULL-TRAFFIC-ACTUATED CONTROLLER WITH INTERSECTION MONITOR AND ASSOCIATED HARNESSES HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET.
9089	104 S.F.	SHEET ALUMINUM SIGNS TO CONSIST OF :
	- 1 EACH	R3-5L SIGN (30 IN. X 36 IN.) - MAST ARM MOUNT.
	- 1 EACH	R3-5R SIGN (30 IN. X 36 IN.) - MAST ARM MOUNT.
	- 1 EACH	R3-2 SIGN (30 IN. X 30 IN.) - GROUND MOUNT.
	- 1 EACH	R10-12 SIGN (36 IN. X 42 IN.) - MAST ARM MOUNT.
	- 1 EACH	D-3(1) SIGN (VARIABLE X 16 IN.) DUAL FACED - MAST ARM MOUNT.
	- 1 EACH	D-3(1) SIGN (VARIABLE X 16 IN.) - MAST ARM MOUNT.
	- 1 EACH	W3-3 SIGN (48 IN. X 48 IN.) - PEDESTAL MOUNT.
	- 1 EACH	W3-3 SIGN (36 IN. X 36 IN.) WITH "NEW" PANEL (30 IN. X30 IN.) AND FLAGS - GROUND MOUNT.
	- 1 EACH	W3-3 SIGN (48 IN. X 48 IN.) WITH "NEW" PANEL (30 IN. X30 IN.) AND FLAGS - GROUND MOUNT.
	1 EACH	R1-2 SIGN (36 IN. X 36 IN. X 36 IN.) - GROUND MOUNT.

PHASE CHART



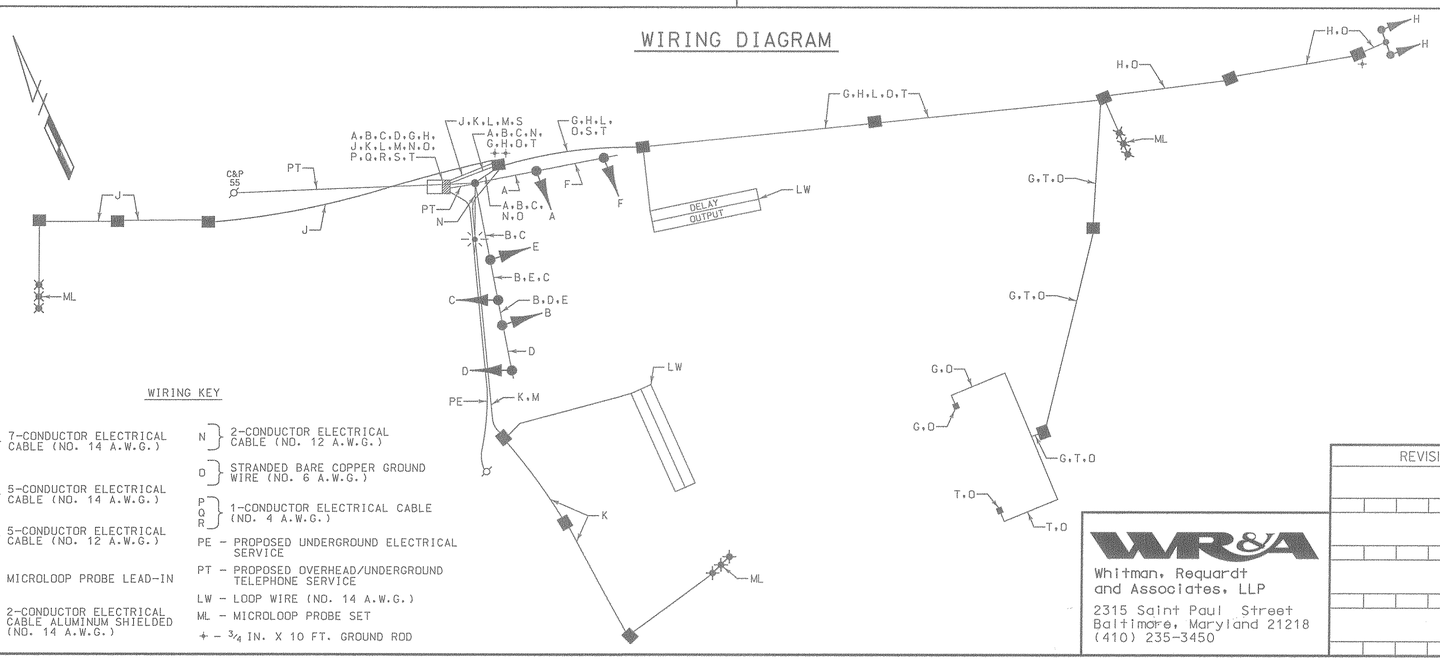
	1	2	3	4	5	6	7	8
PHASE 2 + 5	R	R	FL/Y	FL/Y	G	G	R	R
2 + 5 CHANGE	R	R	FL/Y	FL/Y	Y	Y	R	R
PHASE 2 + 6	G	G	FL/Y	FL/Y	G	G	R	R
2 + 6 CHANGE	Y	Y	FL/Y	FL/Y	Y	Y	R	R
PHASE 4	R	R	FL/Y	FL/Y	R	R	G	G
4 CHANGE	R	R	FL/Y	FL/Y	R	R	Y	Y
FIREHOUSE	R	R	FL/Y	FL/Y	R	R	G	G
PRE-EMPTION	R	R	FL/Y	FL/Y	R	R	Y	Y
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R

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	3 C.Y.	TEST PIT EXCAVATION
5001	3000 L.F.	5 IN. YELLOW HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
5002	900 L.F.	12 IN. WHITE HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
5003	390 L.F.	5 IN. WHITE HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
5004	60 L.F.	24 IN. WHITE HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
5005	18 EACH	HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING LETTER
5006	8 EACH	HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING ARROW
5007	800 L.F.	REMOVE EXISTING PAVEMENT MARKING - ANY WIDTH
5008	7 EACH	REMOVE EXISTING PAVEMENT MARKING ARROW OR LETTER
8001	8 C.Y.	FURNISH AND INSTALL CONCRETE FOR SIGNAL FOUNDATION
8003	1 EACH	FURNISH AND INSTALL BREAKAWAY PEDESTAL POLE (ANY SIZE)
8006	1 EACH	CUT,CLEAN, GALVZANIZE AND CAP TRAFFIC SIGNAL STRUCTURE
8008	1 EACH	FURNISH AND INSTALL 3 IN. WEATHERHEAD
8016	1 EACH	FURNISH AND INSTALL MICROLOOP PROBE SET WITH 500 FT. LEAD-IN
8017	2 EACH	FURNISH AND INSTALL MICROLOOP PROBE SET WITH 1000 FT. LEAD-IN
8020	1 EACH	INSTALL CONTROLLER AND CABINET - BASE MOUNT
8021	370 L.F.	FURNISH AND INSTALL 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	1130 L.F.	FURNISH AND INSTALL 2 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8026	120 L.F.	FURNISH AND INSTALL 2 IN. SCHEDULE 80 RIGID PVC CONDUIT - BORED
8027	480 L.F.	FURNISH AND INSTALL 3 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8028	80 L.F.	FURNISH AND INSTALL 3 IN. SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED
8029	40 L.F.	FURNISH AND INSTALL 3 IN. SCHEDULE 80 RIGID PVC CONDUIT - BORED
8030	60 L.F.	FURNISH AND INSTALL 4 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8031	80 L.F.	FURNISH AND INSTALL 4 IN. SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED
8033	14 EACH	FURNISH AND INSTALL ELECTRICAL HANDHOLE
8034	3 EACH	FURNISH AND INSTALL GROUND ROD - 3/4 IN. DIAMETER X 10 FT. LENGTH
8040	1000 L.F.	FURNISH AND INSTALL LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO. 14 A.W.G.)
8041	120 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (ALUMINUM SHIELDED)
8044	75 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 A.W.G.)
8045	320 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 A.W.G.)
8046	90 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 A.W.G.)
8048	825 L.F.	FURNISH AND INSTALL NO. 6 A.W.G. STRANDED BARE COPPER GROUND WIRE
8049	45 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE 1-CONDUCTOR NO. 4 A.W.G. - THHN/THWN
8050	30 L.F.	FURNISH AND INSTALL WOOD SIGN SUPPORTS 4 IN. X 4 IN.
8051	40 L.F.	FURNISH AND INSTALL WOOD SIGN SUPPORTS 4 IN. X 6 IN.
8052	46 S.F.	INSTALL GROUND MOUNTED SIGN
8053	58 S.F.	INSTALL OVERHEAD SIGN
8055	1 EACH	FURNISH AND INSTALL 250 WATT HPS LUMINAIRE WITH PHOTOCELL
8056	1 EACH	FURNISH AND INSTALL 15 FT. LIGHTING BRACKET ARM FOR TRAFFIC SIGNAL STRUCTURE
8060	1 EACH	REMOVE AND DISPOSE OF EXISTING MATERIAL AND EQUIPMENT PER ASSIGNMENT
8066	1 EACH	FURNISH AND INSTALL CONTROL AND DISTRIBUTION EQUIPMENT (120/240V, 1 PHASE 3 WIRE SYST)
8069	1 EACH	FURNISH AND INSTALL PHOTOCELL
8081	1 EACH	FURNISH AND INSTALL MAST ARM POLE AND TWIN 50 FT./60 FT. MAST ARMS
8084	22 EACH	FURNISH AND INSTALL 12 IN. VEHICULAR TRAFFIC SIGNAL HEAD SECTION
NEG.	2 EACH	INSTALL FIREHOUSE PUSHBUTTON
NEG.	860 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 5 CONDUCTOR (NO. 12 A.W.G.)
NEG.	5 S.F.	RELOCATE EXISTING GROUND MOUNTED SIGN
NEG.	250 L.F.	12 IN. YELLOW HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS

WIRING DIAGRAM



WIRING KEY

- A, B, C, D — 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- E, F, G, T — 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- H — 5-CONDUCTOR ELECTRICAL CABLE (NO. 12 A.W.G.)
- J, K, L — MICROLOOP PROBE LEAD-IN
- M, S — 2-CONDUCTOR ELECTRICAL CABLE ALUMINUM SHIELDED (NO. 14 A.W.G.)
- N — 2-CONDUCTOR ELECTRICAL CABLE (NO. 12 A.W.G.)
- O — STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
- P, Q, R — 1-CONDUCTOR ELECTRICAL CABLE (NO. 4 A.W.G.)
- PE - PROPOSED UNDERGROUND ELECTRICAL SERVICE
- PT - PROPOSED OVERHEAD/UNDERGROUND TELEPHONE SERVICE
- LW - LOOP WIRE (NO. 14 A.W.G.)
- ML - MICROLOOP PROBE SET
- + - 3/4 IN. X 10 FT. GROUND ROD

WR&A
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(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 80 AND MD 75

DRAWN BY:	S.BLOSS	F.A.P. NO.	FR360A53/B53	TS NO. TS-3938	SHEET NO.
CHECKED BY:	N.LEARY	S.H.A. NO.			
SCALE:	NONE	COUNTY:	FREDERICK	T.I.M.S. NO. D318	4 OF 4
DATE:	8-23-99	LOG MILE:	10080010.28		