

FHWA REGION NO	STATE	FED. AID PROJ. NO	SHEET NO.	TOTAL SHEETS
3	MD.	STPG-218-1(7)E	5	66

EQUIPMENT LISTS

A. EQUIPMENT TO BE SUPPLIED BY THE SHA.

QUANTITY	UNIT	SPECIFICATION SECTION	DESCRIPTION
1	EA	SP	BASE MOUNTED LOCAL CABINET (SIZE 5) LESS DETECTION EQUIPMENT WITH 8 PHASE ASC II CONTROLLER WITH TELEMETRY AND OPTICOM PRE-EMPTION MODULE
44	SF	813	FLAT SHEET ALUMINUM SIGNS CONSISTING OF: - 1 EACH R2-(25) (18" X 24")-GROUND MOUNT - 1 EACH R6-1L (36" X 12")-POLE MOUNT - 1 EACH R6-1R (36" X 12")-POLE MOUNT - 1 EACH R8-1R (36" X 12")-GROUND MOUNT - 1 EACH R10-11b (24" X 24")-MAST ARM MOUNT - 1 EACH M1-4a(40) (24" X 24")-POLE MOUNT - 1 EACH M3-4 (24" X 12")-POLE MOUNT - 1 EACH D3-2 (E. Franklin St) (VAR." X 16")-MAST ARM MOUNT - 1 EACH D3-2 (N. Mulberry St) (VAR." X 16")-MAST ARM MOUNT

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

QUANTITY	UNIT	SPECIFICATION SECTION	DESCRIPTION
5	CY	205	TEST PIT EXCAVATION
7	CY	206	REMOVAL OF EXISTING SIDEWALK
70	LF	SP 555	24 INCH WHITE PERMANENT PREFORMED PAVEMENT MARKING TAPE
70	LF	SP	REMOVE EXISTING PAVEMENT MARKINGS-ANY WIDTH
550	SF	610	4 INCH CONCRETE SIDEWALK
1	EA	816	INSTALL CONTROLLER AND CABINET-BASE MOUNT
38	SF	813	INSTALL OVERHEAD SIGN
6	SF	813	INSTALL GROUND MOUNTED SIGN
40	LF	812	FURNISH AND INSTALL WOOD SIGN SUPPORTS 4 INCH X 4 INCH
4	EA	SP	FURNISH AND INSTALL 12 INCH 1 WAY 3 SECTION (R, Y, G) SIGNAL HEAD HAVING PROPER ADJUSTABLE MAST ARM BRACKET, AND TUNNEL VISORS-PAINTED BLACK
2	EA	SP	FURNISH AND INSTALL OPTICOM DETECTOR EYE-MODEL 521
5	EA	811	FURNISH AND INSTALL ELECTRICAL HANDHOLE
7	CY	801	FURNISH AND INSTALL CONCRETE FOR SIGNAL FOUNDATION
80	LF	805	FURNISH AND INSTALL 2" SCHEDULE 40 RIGID PVC CONDUIT-TRENCHED
35	LF	805	FURNISH AND INSTALL 4" SCHEDULE 40 RIGID PVC CONDUIT-TRENCHED
450	LF	805	FURNISH AND INSTALL 2" SCHEDULE 80 RIGID PVC CONDUIT-SLOTTED
1	EA	807	FURNISH AND INSTALL CONTROL AND DISTRIBUTION EQUIPMENT
1	EA	SP	FURNISH AND INSTALL 21-FOOT STEEL POLE WITH A SINGLE 38-FOOT MAST ARM-PAINTED GREEN
1	EA	SP	FURNISH AND INSTALL 21-FOOT STEEL POLE WITH A SINGLE 50-FOOT MAST ARM-PAINTED GREEN
2	EA	SP	CUT, CLEAN AND CAP TRAFFIC SIGNAL STRUCTURE
1	EA	SP	AS-BUILT FOR TRAFFIC SIGNAL
3	EA	804	FURNISH AND INSTALL GROUND ROD-3/4 INCH DIAMETER X 10-FOOT LENGTH
125	LF	810	FURNISH AND INSTALL NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
300	LF	810	FURNISH AND INSTALL ELECTRICAL CABLE-1 CONDUCTOR (NO. 4 AWG - THHN/THWN)
300	LF	810	FURNISH AND INSTALL ELECTRICAL CABLE-5 CONDUCTOR (NO 14 AWG)
250	LF	810	FURNISH AND INSTALL OPTICOM M-138 DETECTOR CABLE
2	EA	SP	REMOVE AND DISPOSE OF EXISTING FOUNDATION 12" BELOW GRADE
1	LS	SP	DELIVERY OF SALVAGED EQUIPMENT
1	LS	SP	REMOVE AND DISPOSE OF EXISTING EQUIPMENT
1	LS	SP	REMOVAL OF EXISTING SIGNAL EQUIPMENT TO BE SALVAGED
1	EA	SP	CONTROLLER AND CABINET
2	EA	SP	OPTICOM DETECTOR EYE

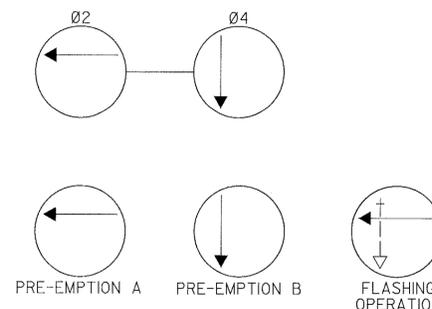
NOTE: ALL EQUIPMENT AND/OR MATERIALS TO BE REMOVED BY THE CONTRACTOR, BUT NOT LISTED BELOW, SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

NOTE: EXISTING RIGHT-OF-WAY BASED ON INFORMATION PROVIDED BY THE CITY OF HAGERSTOWN.

PHASING DIAGRAM

	1	2	3	4
PHASE 2	G	G	R	R
2 CHANGE	Y	Y	R	R
PHASE 4	R	R	G	G
4 CHANGE	R	R	Y	Y
PRE-EMPTION A	G	G	R	R
A CHANGE	Y	Y	R	R
PRE-EMPTION B	R	R	G	G
B CHANGE	R	R	Y	Y
FLASHING OPERATION	FL/Y	FL/Y	FL/R	FL/R

NEMA PHASING

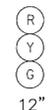


PHASING NOTES:
 1. PHASES ASSOCIATED BY A SOLID LINE WILL NOT OPERATE CONCURRENTLY
 2. PHASES ASSOCIATED BY A DASHED LINE WILL OPERATE CONCURRENTLY

U.S. 40 WEST (EAST FRANKLIN STREET) IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

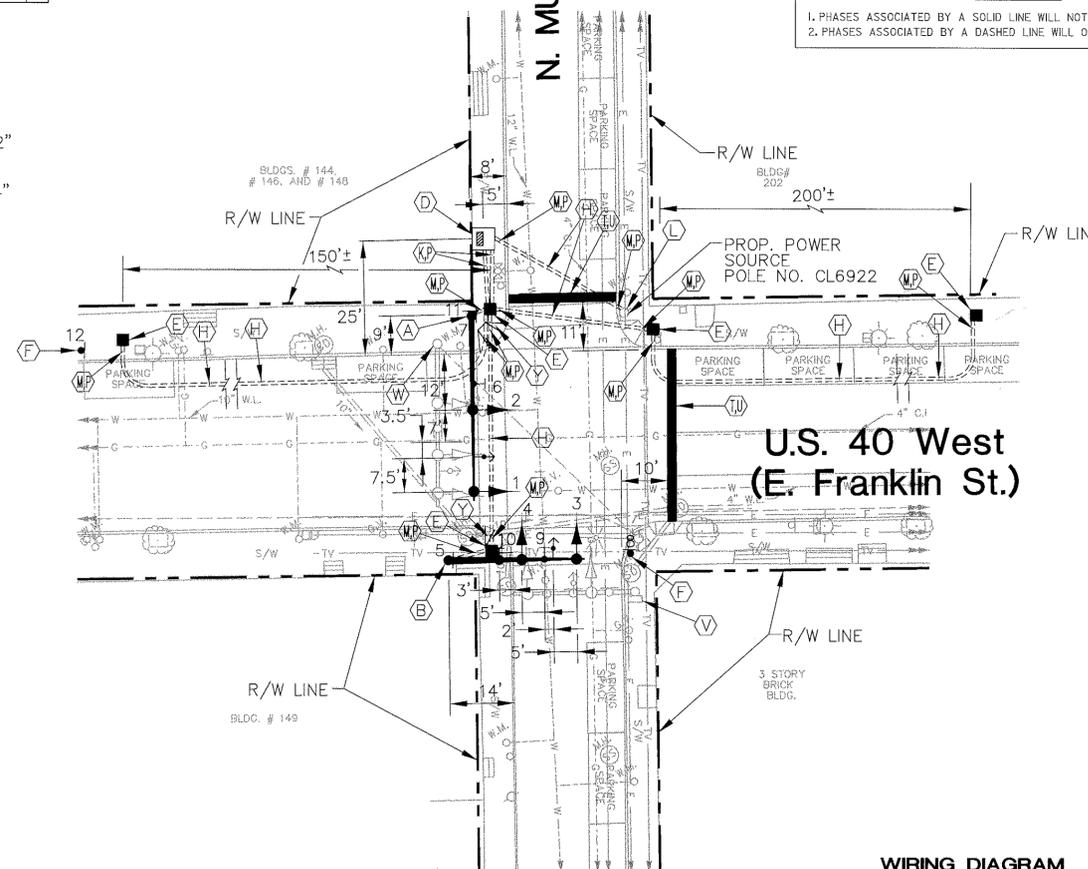
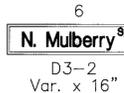
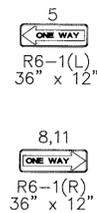
SIGNALS

1,2,3,4



→ - OPTICAL PRE-EMPTION DETECTOR EYE

SIGNS



CONSTRUCTION DETAILS

- (A) INSTALL 21' STEEL POLE, 42' MAST ARM, SIGNAL HEADS AND SIGNS. (NOTE: 1-2", 90-DEGREE P.V.C. BEND).
- (B) INSTALL 21' STEEL POLE, 32' MAST ARM, SIGNAL HEADS AND SIGNS. (NOTE: 1-2", 90-DEGREE P.V.C. BEND).
- (D) INSTALL BASE-MOUNTED CABINET, SIZE #5, AND CONTROLLER WITH ALL NECESSARY EQUIPMENT AS SHOWN (NOTE: 2-4", 90-DEGREE P.V.C. BENDS; AND, 2-2", 90-DEGREE P.V.C. BENDS.)
- (E) INSTALL HANDHOLE.
- (F) INSTALL GROUND MOUNTED SIGNS.
- (H) INSTALL 2" P.V.C. (SCHEDULE 80) ELECTRICAL CONDUIT (SLOTTED).
- (K) INSTALL 4" P.V.C. (SCHEDULE 40) ELECTRICAL CONDUIT (TRENCHED).
- (L) INSTALL 10' OF 2" P.V.C. (SCHEDULE 80) ELECTRICAL CONDUIT - RISER AND COIL 25' OF ADDITIONAL CABLE.
- (M) INSTALL 2" P.V.C. (SCHEDULE 40) ELECTRICAL CONDUIT (TRENCHED).
- (P) REMOVE AND REPLACE EXISTING SIDEWALK.
- (T) REMOVE EXISTING STOP BAR.
- (U) INSTALL 24" SOLID WHITE LINE.
- (V) REMOVE EXISTING STEEL POLE, MAST ARM, SIGNALS, SIGNS, CABINET, CONTROLLER, AND FOUNDATION.
- (W) REMOVE EXISTING STEEL POLE, MAST ARM, SIGNALS, SIGNS, AND FOUNDATION.
- (Y) CONSTRUCT SIDEWALK RAMP.

UTILITY LEGEND

- G - GAS MAIN
- W - WATER MAIN
- S - SEWER MAIN
- : STORM DRAIN
- TV - CABLE TELEVISION
- E - ELECTRIC CABLES
- T - TELEPHONE CABLES
- A - AERIAL CABLES

INTERSECTION DESCRIPTION

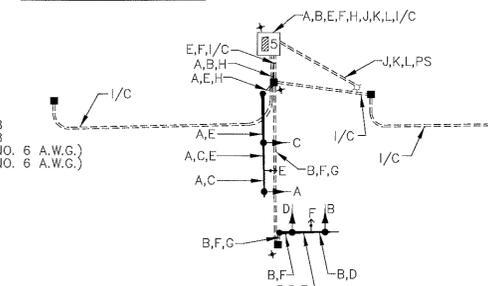
I. GENERAL
 THIS INTERSECTION IS U.S. 40 WEST (EAST FRANKLIN STREET) AND NORTH MULBERRY STREET. CONSTRUCTION AT THIS INTERSECTION INVOLVES THE RECONSTRUCTION OF THE EXISTING TRAFFIC SIGNAL AND INTERCONNECTION WITH THE OTHER SIGNALIZED INTERSECTIONS IN THE NEW CITY-WIDE SYSTEM. IT IS ASSUMED THAT U.S. 40 WEST (EAST FRANKLIN STREET) RUNS IN AN EAST-WEST DIRECTION.

II. INTERSECTION OPERATION
 THE INTERSECTION WILL OPERATE IN A NEMA TWO (2) PHASE PRE-TIMED MODE. WESTBOUND U.S. 40 WEST (EAST FRANKLIN STREET) AND SOUTHBOUND NORTH MULBERRY STREET WILL OPERATE IN SEPARATE PHASES.

PRE-EMPTION ON WESTBOUND U.S. 40 WEST (EAST FRANKLIN STREET.) WILL CALL PRE-EMPTION A. PRE-EMPTION ON SOUTHBOUND NORTH MULBERRY STREET WILL CALL PRE-EMPTION B.
 A NEW EIGHT PHASE FULLY ACTUATED CONTROLLER WITH TELEMETRY MODULE AND PRE-EMPTION HOUSED IN A GROUND MOUNTED CABINET WILL BE INSTALLED.

A/E GROUP, INC.
 ENGINEERS • PLANNERS
 181 E. Main Street
 Westminster, Maryland 21158
 A/E Job No. 95-289

WIRING DIAGRAM



WIRING LEGEND

- A - 5 CONDUCTOR CABLE (NO. 14 A.W.G.)
- B - 5 CONDUCTOR CABLE (NO. 14 A.W.G.)
- C - 5 CONDUCTOR CABLE (NO. 14 A.W.G.)
- D - 5 CONDUCTOR CABLE (NO. 14 A.W.G.)
- E - 3M OPTICOM DETECTOR CABLE, MODEL 138
- F - 3M OPTICOM DETECTOR CABLE, MODEL 138
- G - STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
- H - STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
- I - 1 CONDUCTOR CABLE (NO. 4 A.W.G.)
- J - 1 CONDUCTOR CABLE (NO. 4 A.W.G.)
- K - 1 CONDUCTOR CABLE (NO. 4 A.W.G.)
- L - 1 CONDUCTOR CABLE (NO. 4 A.W.G.)
- PS - 3/4" X 10' GROUND ROD
- I/C - INTERCONNECT CABLE

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

MDOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION LOG. NO. 21W04036.33

DRAWN BY: M. GESELL
 DES. BY: J. LAWRENCE
 CHK. BY: _____

DATE: 05/30/97 F.A.P. NO. STPG-218-1(7)E TS/ NO. 3681 SHEET NO. 5 OF 66
 SCALE: 1" = 20' S.H.A. NO. WA9535185

**US 40 West (East Franklin St.)
 at North Mulberry St.**

COUNTY: WASHINGTON