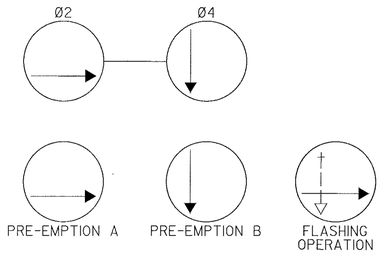
FHWA REGION NO	STATE	FED. AID PROJ. NO	SHEET NO.	TOTAL SHEETS
3	MD.	STPG-218-1(7)E	29	66

S. 40 WEST (WEST WASHINGTON STREET) IS SSUMED TO RUN IN AN EAST-WEST DIRECTION.

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

SIGNALS

1,2,3,4

12"

→ – OPTICAL PRE-EMPTION DETECTOR EYE

SIGNS

5 — R6-1(R) 36" x 12"

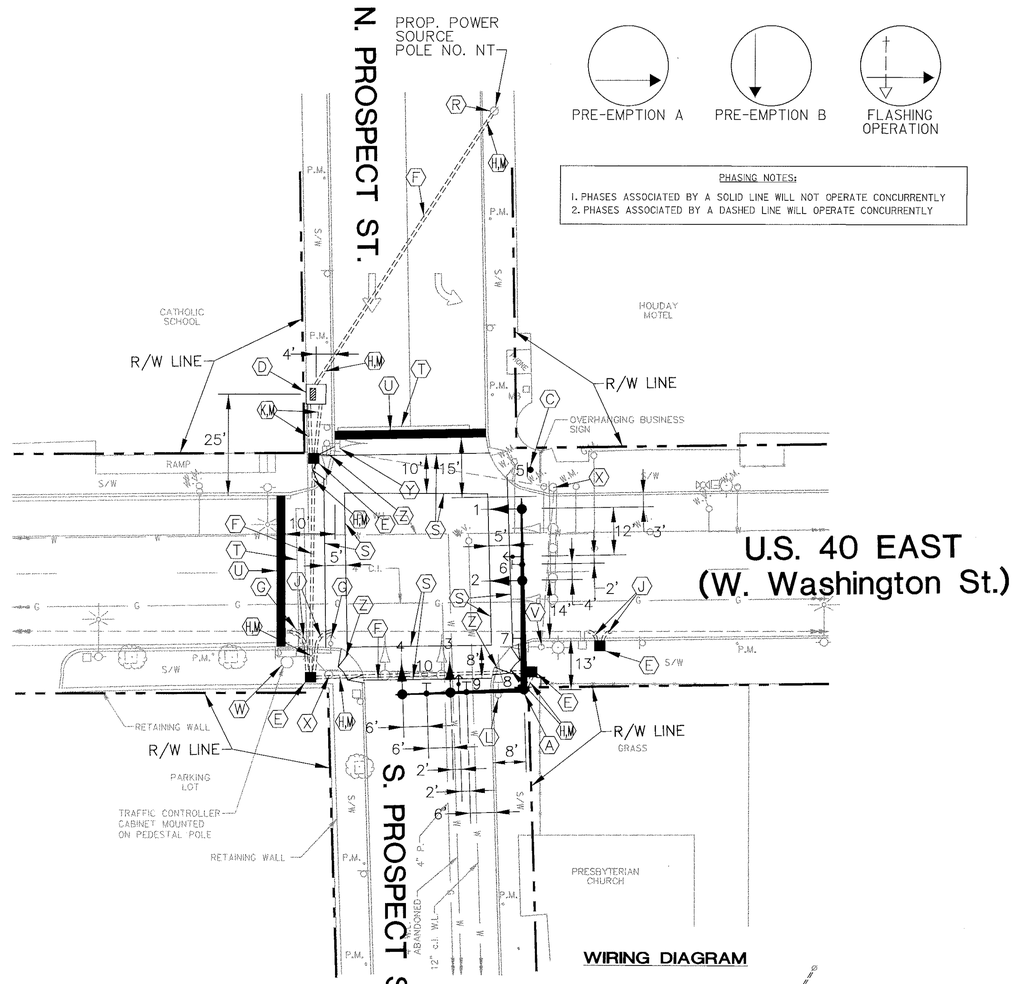
6 — R10-11b 24" x 24"

7 — D3-2 Var. x 16"

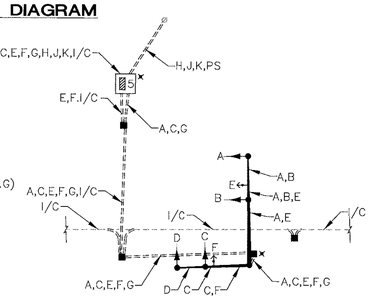
8 — R6-1(L) 36" x 12"; M3-2 24" x 12"; M1-4a 24" x 24"; M6-1 21" x 15"

9 — R3-5(L) 30" x 36"

10 — D3-2 Var. x 16"



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 – 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.)
× – 3/4"x10' GROUND ROD
PS – PROPOSED ELECTRICAL SERVICE
I/C – INTERCONNECT CABLE

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
48	SF	813	FLAT SHEET ALUMINUM SIGNS CONSISTING OF: – 1 EACH R3-5L (30" X 36")–MAST ARM MOUNT – 1 EACH R6-1L (36" X 12")–POLE MOUNT – 1 EACH R6-1R (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 M3-2 (24" X 12")–POLE MOUNT – 1 EACH M6-1 (21" X 15")–POLE MOUNT – 1 EACH D3-2 (W. Washington St) (VAR." X 16")–MAST ARM MOUNT – 1 EACH D3-2 (S. Prospect 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
10	CY	206	REMOVAL OF EXISTING SIDEWALK
325	LF	SP 555	12 INCH WHITE PERMANENT PREFORMED PAVEMENT MARKING TAPE
80	LF	SP 555	24 INCH WHITE PERMANENT PREFORMED PAVEMENT MARKING TAPE
400	LF	SP	REMOVE EXISTING PAVEMENT MARKINGS–ANY WIDTH
775	SF	610	4 INCH CONCRETE SIDEWALK
1	EA	816	INSTALL CONTROLLER AND CABINET–BASE MOUNT
45	SF	813	INSTALL OVERHEAD SIGN
3	SF	813	INSTALL GROUND MOUNTED SIGN
20	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
4	EA	811	FURNISH AND INSTALL ELECTRICAL HANDHOLE
6	CY	801	FURNISH AND INSTALL CONCRETE FOR SIGNAL FOUNDATION
10	LF	805	FURNISH AND INSTALL 2" SCHEDULE 80 RIGID PVC CONDUIT–RISER
75	LF	805	FURNISH AND INSTALL 2" SCHEDULE 40 RIGID PVC CONDUIT–TRENCHED
40	LF	805	FURNISH AND INSTALL 4" SCHEDULE 40 RIGID PVC CONDUIT–TRENCHED
80	LF	805	FURNISH AND INSTALL 2" SCHEDULE 80 RIGID PVC CONDUIT–SLOTTED
40	LF	805	FURNISH AND INSTALL 3" 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 TWIN 50–FOOT AND 50–FOOT MAST ARMS–PAINTED GREEN
2	EA	SP	CUT, CLEAN AND CAP TRAFFIC SIGNAL STRUCTURE
1	EA	SP	AS–BUILT FOR TRAFFIC SIGNAL
2	EA	804	FURNISH AND INSTALL GROUND ROD–3/4 INCH DIAMETER X 10–FOOT LENGTH
175	LF	810	FURNISH AND INSTALL NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
475	LF	810	FURNISH AND INSTALL ELECTRICAL CABLE–1 CONDUCTOR.(NO. 4 AWG – THHN/THWN)
475	LF	810	FURNISH AND INSTALL ELECTRICAL CABLE–5 CONDUCTOR (NO 14 AWG)
425	LF	810	FURNISH AND INSTALL OPTICOM M–138 DETECTOR CABLE
5	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

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

QUANTITY	UNIT	DESCRIPTION
1	EA	CONTROLLER AND CABINET
4	EA	PEDESTAL POLE AND BASE

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

CONSTRUCTION DETAILS

INSTALL 21' STEEL POLE, 32' AND 48' MAST ARMS, SIGNAL HEADS, SIGNS AND OPTICOM DETECTOR (NOTE: 1–2", 90–DEGREE P.V.C. BEND).

INSTALL GROUND MOUNTED SIGN AND POST.

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.)

INSTALL HANDHOLE.

INSTALL 2" P.V.C. (SCHEDULE 80) ELECTRICAL CONDUIT (SLOTTED).

REMOVE EXISTING OPTICOM DETECTOR.

INSTALL 2" P.V.C. (SCHEDULE 40) ELECTRICAL CONDUIT (TRENCHED).

TEST PIT. INSTALL 3" P.V.C. (SCHEDULE 80) ELECTRICAL CONDUIT (SLOTTED) AND CONNECT TO EXISTING CONDUIT.

INSTALL 4" P.V.C. (SCHEDULE 40) ELECTRICAL CONDUIT (TRENCHED).

REMOVE EXISTING PEDESTAL POLE, MAST ARM, SIGNALS, SIGNS AND FOUNDATION.

REMOVE AND REPLACE EXISTING SIDEWALK.

INSTALL 10' OF 2" P.V.C. (SCHEDULE 80) ELECTRICAL CONDUIT – RISER AND COIL 25' OF ADDITIONAL CABLE.

REMOVE EXISTING CROSSWALK LINES AND INSTALL 12" SOLID WHITE LINE FOR CROSSWALKS.

REMOVE EXISTING STOP BAR.

INSTALL 24" SOLID WHITE LINE.

REMOVE EXISTING PEDESTAL POLE, SIGNAL AND FOUNDATION.

REMOVE EXISTING CONTROLLER, CABINET, PEDESTAL POLE AND FOUNDATION.

REMOVE EXISTING STEEL POLE, MAST ARM, SIGNALS, SIGNS AND FOUNDATION.

REMOVE EXISTING CONTROLLER, CABINET, PEDESTAL POLE, SIGNALS AND FOUNDATION.

CONSTRUCT SIDEWALK RAMP.

UTILITY LEGEND

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

INTERSECTION DESCRIPTION

I. GENERAL

THIS INTERSECTION IS U.S. 40 EAST (WEST WASHINGTON STREET) AND NORTH/SOUTH PROSPECT 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 EAST (WEST WASHINGTON STREET) RUNS IN AN EAST–WEST DIRECTION.

II. INTERSECTION OPERATION

THE INTERSECTION WILL OPERATE IN A NEMA TWO (2) PHASE PRE–TIMED MODE. EASTBOUND U.S. 40 EAST (WEST WASHINGTON STREET) AND SOUTHBOUND NORTH PROSPECT STREET WILL OPERATE IN SEPARATE PHASES.

PRE–EMPTION ON EASTBOUND U.S. 40 EAST (WEST WASHINGTON STREET) WILL CALL PRE–EMPTION A. PRE–EMPTION ON SOUTHBOUND NORTH PROSPECT 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

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 MI. 21E04035.83

DRAWN BY: T. COURVILLE
DES. BY: J. LAWRENCE
CHK. BY:

US 40 East (West Washington St.) at North/South Prospect St.

COUNTY: WASHINGTON

DATE: 05/30/97 F.A.P. NO. STPG–218–1(7)E
SCALE: 1" = 20' S.H.A. NO. WA9535185

TS NO. 3689

SHEET NO. 29 OF 66