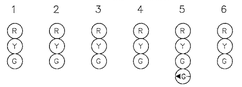
FHWA REGION NO	STATE	FED. AID PROJ. NO	SHEET NO.	TOTAL SHEETS
3	MD.	STPG-218-I(7)E	28	66

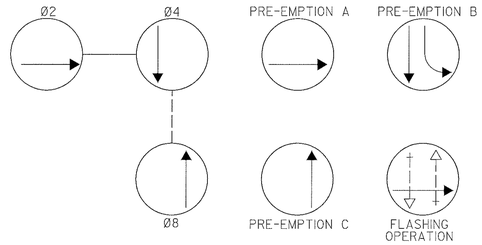
PHASING DIAGRAM



PHASE 2	G	G	R	R	R	R	
2 CHANGE	Y	Y	R	R	R	R	
PHASE 4 & 8	R	R	G	G	G	G	
4 & 8 CHANGE	R	R	Y	Y	Y	Y	
PRE-EMPTION A	G	G	R	R	R	R	
A CHANGE	Y	Y	R	R	R	R	
PRE-EMPTION B	R	R	R	R	G C	G	
B CHANGE	R	R	R	R	Y	Y	
PRE-EMPTION C	R	R	G	G	R	R	
C CHANGE	R	R	Y	Y	R	R	
FLASHING OPERATION	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	

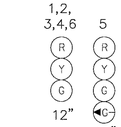
U.S. 40 EAST (WEST WASHINGTON STREET) IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

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



→ – OPTICAL PRE-EMPTION DETECTOR EYE

SIGNS

7


R3-5(L)
30" x 36"

8

D3-2
Var. x 32"

9,13


R10-11b
24" x 24"

10


R6-1(R)
36" x 12"

11

R3-2
24" x 24"

12,14

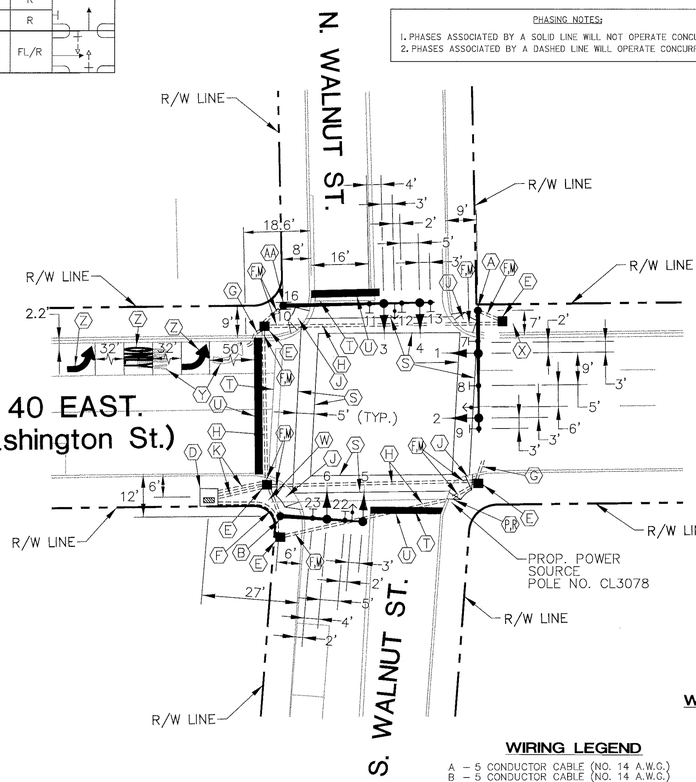

D3-2
Var. x 16"

15

R3-1
24" x 24"

16


R6-1(L)
36" x 12"



U.S. 40 EAST. (W. Washington St.)

EQUIPMENT LISTS

A. EQUIPMENT TO BE SUPPLIED BY THE SHA.

ITEM NO.	QUANTITY	UNIT	SPECIFICATION SECTION	DESCRIPTION
9003	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
9006/9007	73	SF	813	FLAT SHEET ALUMINUM SIGNS CONSISTING OF: – 1 EACH R3-1 (24" X 24")–POLE MOUNT – 1 EACH R3-2 (24" X 24")–POLE MOUNT – 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")–POLE MOUNT – 2 EACH R10-11b (24" X 24")–MAST ARM MOUNT – 2 EACH D3-2 (W. Washington St) (VAR." X 16")–MAST ARM MOUNT – 1 EACH D3-2 (ARROW–N. Walnut St/ S. Walnut St–ARROW)(VAR." X 32")–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
11	CY	206	REMOVAL OF EXISTING SIDEWALK
350	LF	SP 555	12 INCH WHITE PERMANENT PREFORMED PAVEMENT MARKING TAPE
80	LF	SP 555	24 INCH WHITE PERMANENT PREFORMED PAVEMENT MARKING TAPE
4	EA	SP 555	PERMANENT PREFORMED PAVEMENT MARKING LETTER
2	EA	SP 555	PERMANENT PREFORMED PAVEMENT MARKING ARROW
450	LF	SP	REMOVE EXISTING PAVEMENT MARKINGS–ANY WIDTH
850	SF	610	4 INCH CONCRETE SIDEWALK
1	EA	816	INSTALL CONTROLLER AND CABINET–BASE MOUNT
73	SF	813	INSTALL OVERHEAD SIGN
5	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
1	EA	SP	FURNISH AND INSTALL 12 INCH 1 WAY 4 SECTION (R, Y, G, GA) SIGNAL HEAD HAVING PROPER ADJUSTABLE MAST ARM BRACKET, AND TUNNEL VISORS–PAINTED BLACK
3	EA	SP	FURNISH AND INSTALL OPTICOM DETECTOR EYE–MODEL 521
5	EA	811	FURNISH AND INSTALL ELECTRICAL HANDHOLE
11	CY	801	FURNISH AND INSTALL CONCRETE FOR SIGNAL FOUNDATION
40	LF	805	FURNISH AND INSTALL 2" SCHEDULE 80 RIGID PVC CONDUIT–RISER
100	LF	805	FURNISH AND INSTALL 2" SCHEDULE 40 RIGID PVC CONDUIT–TRENCHED
30	LF	805	FURNISH AND INSTALL 4" SCHEDULE 40 RIGID PVC CONDUIT–TRENCHED
175	LF	805	FURNISH AND INSTALL 2" SCHEDULE 80 RIGID PVC CONDUIT–SLOTTED
15	LF	805	FURNISH AND INSTALL 3" SCHEDULE 80 RIGID PVC CONDUIT–SLOTTED
1	EA	807	FURNISH AND INSTALL CONTROL AND DISTRIBUTION EQUIPMENT
2	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
3	EA	SP	CUT, CLEAN AND CAP TRAFFIC SIGNAL STRUCTURE
1	EA	SP	AS–BUILT FOR TRAFFIC SIGNAL
4	EA	804	FURNISH AND INSTALL GROUND ROD–3/4 INCH DIAMETER X 10–FOOT LENGTH
200	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)
375	LF	810	FURNISH AND INSTALL ELECTRICAL CABLE–5 CONDUCTOR (NO 14 AWG)
100	LF	810	FURNISH AND INSTALL ELECTRICAL CABLE–7 CONDUCTOR (NO 14 AWG)
400	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

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	MAST ARM POLE (SOUTHWEST CORNER)
1	EA	MAST ARM (SOUTHWEST CORNER)
1	EA	CONTROLLER AND CABINET
3	EA	OPTICOM DETECTOR EYE

CONSTRUCTION DETAILS

(AA) INSTALL 21' STEEL POLE, 42' MAST ARM, SIGNAL HEADS, SIGNS AND OPTICOM DETECTOR(NOTE 1–2", 90–DEGREE P.V.C. BEND).

(A) INSTALL 21' STEEL POLE, 34' MAST ARM, SIGNAL HEADS, SIGNS AND OPTICOM DETECTOR (NOTE: 1–2", 90–DEGREE P.V.C. BEND).

(B) INSTALL 21' STEEL POLE, 24' MAST ARM, SIGNAL HEADS, SIGNS AND OPTICOM DETECTOR (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 2" P.V.C. (SCHEDULE 40) ELECTRICAL CONDUIT (TRENCHED).

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

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

(J) CONSTRUCT SIDEWALK RAMP.

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

(M) REMOVE AND REPLACE EXISTING SIDEWALK.

(P) INSTALL 2" P.V.C. (SCHEDULE 80) ELECTRICAL CONDUIT – RISER AND 2" WEATHERHEAD

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

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

(T) REMOVE EXISTING STOP BAR.

(U) INSTALL 24" SOLID WHITE LINE.

(W) REMOVE EXISTING CONTROLLER, CABINET, STEEL POLE, MAST ARM, SIGNALS, SIGNS, OPTICOM DETECTOR AND FOUNDATION.

(X) REMOVE EXISTING STEEL POLE, MAST ARM, SIGNALS, SIGNS, OPTICOM DETECTOR AND FOUNDATION.

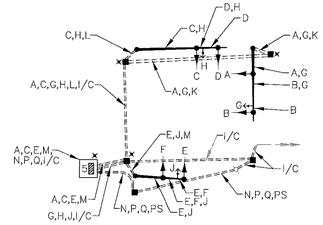
(Y) REMOVE EXISTING PAVEMENT MARKINGS.

(Z) INSTALL PAVEMENT MARKINGS.

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 – 7 CONDUCTOR CABLE (NO. 14 A.W.G.)
F – 5 CONDUCTOR CABLE (NO. 14 A.W.G.)
G – 3M OPTICOM DETECTOR CABLE, MODEL 138
H – 3M OPTICOM DETECTOR CABLE, MODEL 138
J – 3M OPTICOM DETECTOR CABLE, MODEL 138
K – STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
L – STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
M – STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
N – 1 CONDUCTOR CABLE (NO. 4 A.W.G.)
P – 1 CONDUCTOR CABLE (NO. 4 A.W.G.)
Q – 1 CONDUCTOR CABLE (NO. 4 A.W.G.)
× – 3/4"x10' GROUND ROD
PS – PROPOSED ELECTRICAL SERVICE
I/C – INTERCONNECT CABLE

WIRING DIAGRAM



INTERSECTION DESCRIPTION

I. GENERAL

THIS INTERSECTION IS U.S. 40 EAST (WEST WASHINGTON STREET) AND NORTH/SOUTH WALNUT 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 THREE (3) PHASE PRE–TIMED MODE. EASTBOUND U.S. 40 EAST (WEST WASHINGTON STREET) AND NORTHBOUND AND SOUTHBOUND NORTH/SOUTH WALNUT 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 WALNUT STREET WILL CALL PRE–EMPTION B. PRE–EMPTION ON NORTHBOUND SOUTH WALNUT STREET WILL CALL PRE–EMPTION C.

A NEW EIGHT PHASE FULLY ACTUATED CONTROLLER WITH TELEMETRY MODULE AND PRE–EMPTION HOUSED IN A GROUND MOUNTED CABINET WILL BE INSTALLED.

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

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

NOTE: EXISTING RIGHT–OF–WAY BASED MDSHA PLAT NO. 17431 AND INFORMATION PROVIDED BY THE CITY OF HAGERSTOWN.

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. 21E04035.76

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

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

COUNTY: WASHINGTON

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

TS NO. 3688

SHEET NO. 28 OF 66