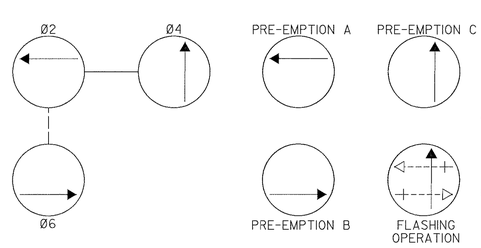
FHWA REGION NO	STATE	FED. AID PROJ. NO	SHEET NO.	TOTAL SHEETS
3	MD.	STPG-218-1(7)E	47	66

PHASING DIAGRAM

	1	2	3	4	5	6
	(R)(Y)(G)	(R)(Y)(G)	(R)(Y)(G)	(R)(Y)(G)	(R)(Y)(G)	(R)(Y)(G)
PHASE 2+6	G	G	G	G	R	R
2+6 CHANGE	Y	Y	Y	Y	R	R
PHASE 4	R	R	R	R	G	G
4 CHANGE	R	R	R	R	Y	Y
PRE-EMPTION A	R	R	G	G	R	R
A CHANGE	R	R	Y	Y	R	R
PRE-EMPTION B	G	G	R	R	R	R
B CHANGE	Y	Y	R	R	R	R
PRE-EMPTION C	R	R	R	R	G	G
C CHANGE	R	R	R	R	Y	Y
FLASHING OPERATION	FL R	FL R	FL R	FL R	FL Y	FL Y

BROADWAY 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

1,2,3,4 (R)(Y)(G) 8"

5,6 (R)(Y)(G) 12"

→ – OPTICAL PRE-EMPTION DETECTOR EYE

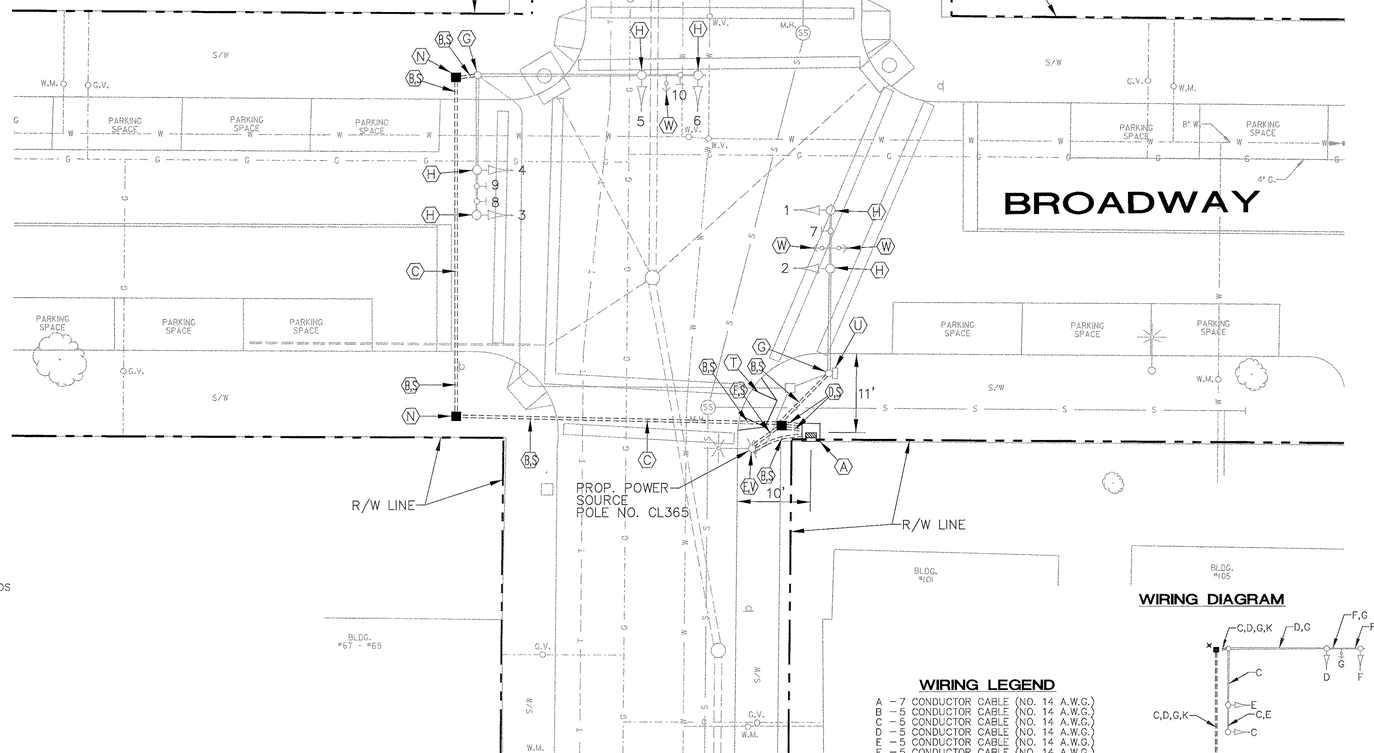
SIGNS

7,8 N LOCUST ST D3-2

9 NO TURN ON RED R10-11b

10 BROADWAY D3-2

NOTE: ALL SIGNALS AND SIGNS ARE EXISTING.



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

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

QUANTITY	UNIT	SPECIFICATION SECTION	DESCRIPTION
2	CY	205	TEST PIT EXCAVATION
7	CY	206	REMOVAL OF EXISTING SIDEWALK
500	SF	610	4 INCH CONCRETE SIDEWALK
1	EA	816	INSTALL CONTROLLER AND CABINET-BASE MOUNT
1	EA	811	FURNISH AND INSTALL ELECTRICAL HANDHOLE
2	EA	SP	FURNISH AND INSTALL ELECTRICAL HANDHOLE (CITY STANDARD)
1	CY	801	FURNISH AND INSTALL CONCRETE FOR SIGNAL FOUNDATION
2	EA	SP	FURNISH AND INSTALL CONDUIT BEND IN EXISTING BASE
10	LF	805	FURNISH AND INSTALL 2" SCHEDULE 80 RIGID PVC CONDUIT-RISER
30	LF	805	FURNISH AND INSTALL 3" SCHEDULE 80 RIGID PVC CONDUIT-RISER
75	LF	805	FURNISH AND INSTALL 2" SCHEDULE 40 RIGID PVC CONDUIT-TRENCHED
10	LF	805	FURNISH AND INSTALL 3" SCHEDULE 40 RIGID PVC CONDUIT-TRENCHED
10	LF	805	FURNISH AND INSTALL 4" SCHEDULE 40 RIGID PVC CONDUIT-TRENCHED
75	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	AS-BUILT FOR TRAFFIC SIGNAL
3	EA	804	FURNISH AND INSTALL GROUND ROD-3/4 INCH DIAMETER X 10-FOOT LENGTH
150	LF	810	FURNISH AND INSTALL NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
175	LF	810	FURNISH AND INSTALL ELECTRICAL CABLE-1 CONDUCTOR (NO. 4 AWG - THIN/THWN)
375	LF	810	FURNISH AND INSTALL ELECTRICAL CABLE-5 CONDUCTOR (NO 14 AWG)
75	LF	810	FURNISH AND INSTALL ELECTRICAL CABLE-7 CONDUCTOR (NO 14 AWG)
325	LF	810	FURNISH AND INSTALL OPTICOM M-138 DETECTOR CABLE
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

CONSTRUCTION DETAILS

(A) 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).

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

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

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

(E) INSTALL 3" P.V.C. (SCHEDULE 80) ELECTRICAL CONDUIT – RISER AND 3" WEATHERHEAD.

(F) INSTALL 3" P.V.C. (SCHEDULE 40) ELECTRICAL CONDUIT (TRENCHED).

(G) INSTALL 2" P.V.C. BEND IN EXISTING BASE.

(H) USE EXISTING SIGNAL HEAD.

(M) INSTALL HANDHOLE.

(N) INSTALL HANDHOLE (CITY STANDARD).

(S) REMOVE AND REPLACE EXISTING SIDEWALK.

(T) REMOVE AND REPLACE EXISTING SIDEWALK RAMP.

(U) REMOVE EXISTING CONTROLLER AND CABINET FROM TRAFFIC SIGNAL POLE AND INSTALL RUBBER PLUG.

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

(W) USE EXISTING OPTICOM DETECTOR.

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 NORTH LOCUST STREET AND BROADWAY CONSTRUCTION AT THIS INTERSECTION INVOLVES THE REPLACEMENT OF THE EXISTING TRAFFIC SIGNAL CONTROLLER AND INTERCONNECTION WITH THE OTHER SIGNALIZED INTERSECTIONS IN THE NEW CITY-WIDE SYSTEM. IT IS ASSUMED THAT BROADWAY RUNS IN AN EAST-WEST DIRECTION.

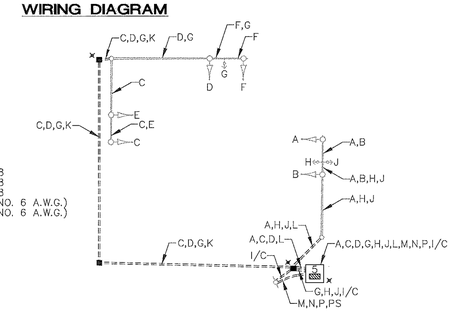
II. INTERSECTION DESCRIPTION

THE INTERSECTION WILL OPERATE IN A NEMA THREE (3) PHASE PRE-TIMED MODE. EASTBOUND AND WESTBOUND BROADWAY WILL OPERATE CONCURRENTLY NORTHBOUND NORTH LOCUST STREET WILL OPERATE SEPERATELY.

PRE-EMPTION ON WESTBOUND BROADWAY WILL CALL PRE-EMPTION A. PRE-EMPTION ON EASTBOUND BROADWAY WILL CALL PRE-EMPTION B. PRE-EMPTION ON NORTHBOUND NORTH LOCUST 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.

WIRING DIAGRAM



WIRING LEGEND

A – 7 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 – 5 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 – 1 CONDUCTOR CABLE (NO. 4 A.W.G.)
N – 1 CONDUCTOR CABLE (NO. 4 A.W.G.)
P – 1 CONDUCTOR CABLE (NO. 4 A.W.G.)
× – 3/4"x10' GROUND ROD
PS – PROPOSED ELECTRICAL SERVICE
I/C – INTERCONNECT CABLE

CITY OF HAGERSTOWN, MARYLAND
ENGINEERING DEPARTMENT

LOCATION: North Locust Street at Broadway

TITLE: TRAFFIC SIGNAL UPGRADE

DRAWN BY	A.W. (BASE PLAN)	DATE	8-96
SURVEY BY	A.J.B.	DATE	7-96
SCALES	HORIZONTAL: 1" = 10'	VERTICAL: –	

APPROVED	FILE NUMBER
DATE _____ BY _____ CITY ENGINEER	67-054-12

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

A/E GROUP, INC.
ENGINEERS • PLANNERS
181 E. Main Street
Westminster, Maryland 21158
A/E Job No. 96-317

MDOT – STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION LOG MI. 21MLOC01.03

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

North Locust St. at Broadway

COUNTY: WASHINGTON

DATE: 05/30/97
SCALE: 1" = 10'

F.A.P. NO. STPG-218-1(7)E
S.H.A. NO. WA9535185
CITY NO. 97-243-332

TS NO. 3712

SHEET NO. 47 OF 66