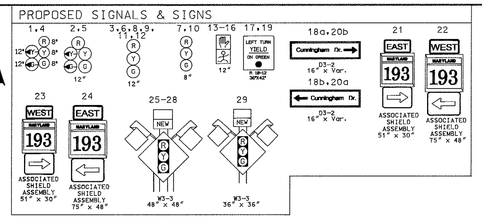
F.J.W.A. REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	MD.		1	1

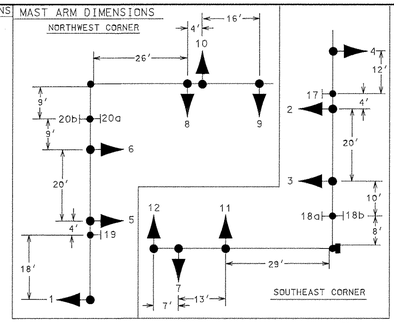
PROPOSED SIGNALS & SIGNS



PROJECT DESCRIPTION

EXISTING SIGNS

MAST ARM DIMENSIONS



I. GENERAL

THIS PROJECT INVOVLES THE INSTALLATION OF A NEW TRAFFIC SIGNAL AT THE INTERSECTION OF MD 193 AND CUNNINGHAM DRIVE/ BELTWAY PLAZA ENTRANCE. MD 193 RUNS IN EAST-WEST DIRECTION.

II. INTERSECTION OPERATION

THIS INTERSECTION WILL BE EQUIPPED WITH AN EIGHT PHASE FULLY ACTUATED CONTROLLER HOUSED IN A POLE MOUNTED CABINET WITH THREE (3) 4 CHANNEL LOOP DETECTOR AMPLIFIERS. THE CONTROLLER WILL ONLY USE SIX PHASES OUT OF EIGHT WITH AN EXCLUSIVE/ PERMISSIVE LEFT TURN PHASE FOR EASTBOUND, AND WESTBOUND MD 193. THERE WILL ALSO BE A PEDESTRIAN MOVEMENT ALONG THE WESTERN PORTION OF MD 193, AND ALONG THE SOUTHERN PORTION OF CUNNINGHAM DRIVE.

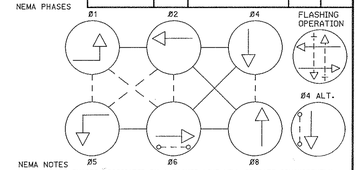
CONSTRUCTION DETAILS

1. INSTALL 27' STEEL POLE WITH TWIN MAST ARMS (60' & 50' RESPECTIVELY), CONTROLLER W/ CABINET, SIX (6) SIGNALS, R10-12 SIGN, TWO (2) D3-2 SIGNS, TWO (2) 3" PVC SCHEDULE 40 BENDS, 2" SCHEDULE 80 BEND, FOUNDATION, GROUT, RISER, PEDESTRIAN SIGNAL, METER SOCKET, DISCONNECT SWITCH, AND TWO (2) ASSOCIATED SHIELD ASSEMBLY SIGNS.
2. INSTALL 27' STEEL POLE WITH TWIN MAST ARMS (60' & 50' RESPECTIVELY), SIX (6) SIGNALS, R10-12 SIGN, TWO (2) D3-2 SIGNS, FOUNDATION, GROUT, 2" PVC SCHEDULE 40 BEND, PEDESTRIAN SIGNAL, PUSHBUTTON, PEDESTRIAN SIGN, AND TWO (2) ASSOCIATED SHIELD ASSEMBLY SIGNS.
3. INSTALL 14' STEEL POLE W/ STAND, TWO (2) PEDESTRIAN SIGNALS, PUSHBUTTON, SIGN, AND FOUNDATION.
4. INSTALL HANDHOLE.
5. REMOVE EXISTING SIDEWALK. INSTALL 2" PVC SCHEDULE 40 TRENCHED. REINSTALL SIDEWALK.
6. INSTALL 6' x 30' LOOP DETECTOR (3-6-3 TURNS).
7. INSTALL 1" NON-METALLIC CONDUIT SLEEVE.
8. INSTALL 3" PVC SCHEDULE 80 CONDUIT - SLOTTED.
9. REMOVE EXISITNG SIDEWALK AND INSTALL 3" PVC SCHEDULE 40 CONDUIT - TRENCHED. REINSTALL SIDEWALK.
10. USE EXISTING HANDHOLE.
11. USE EXISTING CONDUIT.
12. INSTALL MICROLOOP TRIPLE PROBE SET.
13. INSTALL 24" STOPLINE.
14. INSTALL PEDESTRIAN CROSSWALK.
15. REMOVE EXISTING MEDIAN FOR PEDESTRIAN CROSSWALK. DEPRESS MEDIAN.
16. PROPOSED OVERHEAD SERVICE FEED BY PEPCO.
17. PULL BACK THE EXISTING 12 PAIR COMMUNICATION CABLE TO THE EXISTING HANDHOLE FROM MD 193 & CHERRYWOOD LANE/ 60TH AVE., AND RUN THIS CABLE TO THE PROPOSED CONTROLLER CABINET.
18. INSTALL W3-3 GROUND MOUNTED SIGN.
19. REMOVE EXISTING STOP SIGN.
20. INSTALL HANDICAPP RAMP.
21. INSTALL CONCRETE SIDEWALK FROM CROSSWALK TO CROSSWALK.

NOTE TO CONTRACTOR

1. CONTRACTOR SHALL CONTACT MR. BOB DeBLASE (410-787-7656) FROM THE SHA SIGNAL SHOP BEFORE PULLING THE EXISTING 12 PAIR COMMUNICATION CABLE FROM MD 193 AND CHERRYWOOD LANE/ 60TH AVE TO THE PROPOSED CONTROLLER, AND THEN INSTALLING THE PROPOSED 12 PAIR COMMUNICATION CABLE FROM THE PROPOSED CONTROLLER CABINET TO THE EXISTING CONTROLLER CABINET AT MD 193 AND CHERRYWOOD LANE/ 60TH AVE.
2. THE CONTRACTOR SHALL MAKE SURE THAT NO HANDHOLES ARE OVERLAID WITH CONCRETE.

NEMA PHASES

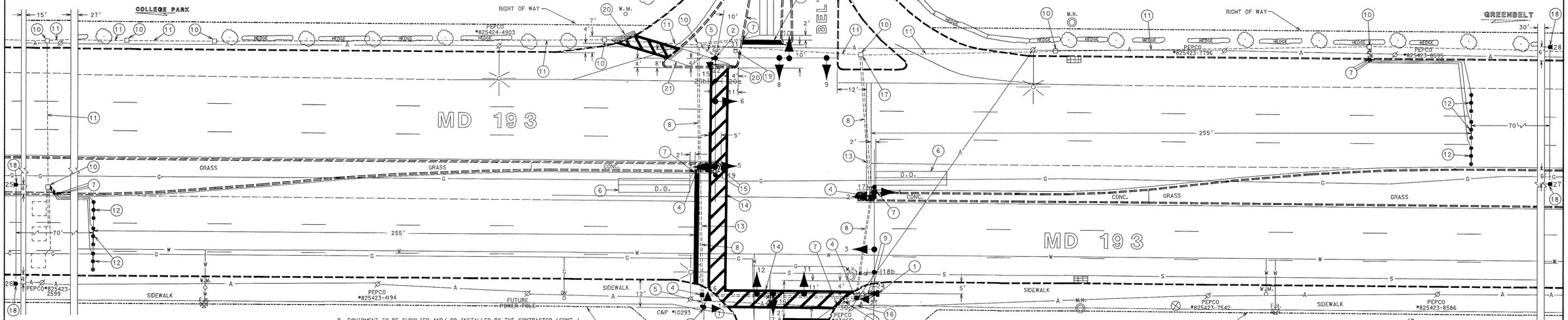


NEMA NOTES

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

GENERAL NOTES

1. "D.O." DENOTES A DELAY-OUTPUT LOOP DETECTOR.
2. PAVEMENT MARKINGS ARE NOT TO BE INSTALLED UNTIL LOOP DETECTORS, AND CONDUIT INSTALLATIONS ARE COMPLETED.



A. EQUIPMENT TO BE SUPPLIED BY THE ADMINISTRATION

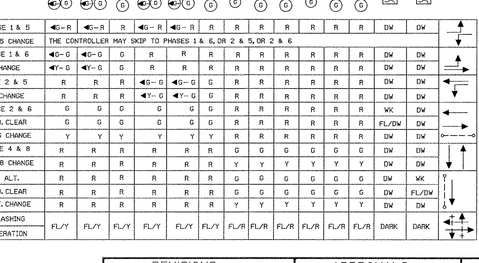
ITEM NO.	QUANTITY	DESCRIPTION
	2 EACH	COMBINATON 8" / 12" ONE WAY, FIVE SECTION (12" YA.GA.8" R.Y.G) SIGNAL HEAD, MAST ARM MOUNTED HARDWARE
	2 EACH	12" ONE WAY, FIVE SECTION (YA.RA.R.Y.G) SIGNAL HEAD, MAST ARM MOUNTED HARDWARE
	6 EACH	12" ONE WAY, THREE SECTION (R.Y.G) SIGNAL HEAD, MAST ARM MOUNTED HARDWARE
	2 EACH	8" ONE WAY, THREE SECTION (R.Y.G) SIGNAL HEAD, MAST ARM MOUNTED HARDWARE
	2 EACH	12" ONE WAY, TWO SECTION PEDESTRIAN SIGNAL HEAD, POLE MOUNTED HARDWARE
	1 EACH	12" TWO WAY, TWO SECTION PEDESTRIAN SIGNAL HEAD, PEDESTAL POLE MOUNTED HARDWARE
209.3 S.F.	2 EACH	R10-12 SIGN, "LEFT TURN YIELD ON GREEN (BALL)" (BALL)", 36" x 42", MAST ARM MOUNTED HARDWARE
	2 EACH	D3-2 SIGN, "(LEFT ARROW) Cunningham Dr.", 16" x Var., MAST ARM MOUNTED HARDWARE
	2 EACH	D3-2 SIGN, "Cunningham Dr. (RIGHT ARROW)", 16" x Var., MAST ARM MOUNTED HARDWARE
	1 EACH	ASSOCIATED SHIELD ASSEMBLY SIGN, "EAST, MARYLAND 193, (RIGHT ARROW)", 51" x 30", POLE MOUNTED HARDWARE
	1 EACH	ASSOCIATED SHIELD ASSEMBLY SIGN, "WEST, MARYLAND 193, (LEFT ARROW)", 75" x 48", POLE MOUNTED HARDWARE
	1 EACH	ASSOCIATED SHIELD ASSEMBLY SIGN, "WEST, MARYLAND 193, (RIGHT ARROW)", 51" x 30", POLE MOUNTED HARDWARE
	1 EACH	ASSOCIATED SHIELD ASSEMBLY SIGN, "EAST, MARYLAND 193, (LEFT ARROW)", 75" x 48", POLE MOUNTED HARDWARE
	2 EACH	PUSHBUTTON & R10-3C SIGN, "PUSH BUTTON TO CROSS GREENBELT RD.", 12" x 9", POLE MOUNTED HARDWARE
	1 EACH	W3-3 SIGN, "NEW SIGNAL AHEAD" W/ FLAGS, 36" x 36", WOOD POLE MOUNTED HARDWARE
	4 EACH	W3-3 SIGN, "NEW SIGNAL AHEAD" W/ FLAGS, 48" x 48", WOOD POLE MOUNTED HARDWARE
	1 EACH	EIGHT PHASE FULLY ACTUATED CONTROLLER WITH TELEMETRY MONITOR, IN A POLE MOUNTED SYSTEM CABINET
	6 EACH	MICROLOOP TRIPLE PROBE SET (500 FT.)
*	3 EACH	4 CHANNEL LOOP DETECTOR AMPLIFIERS

* TO BE INSTALLED BY THE SHA SIGNAL SHOP

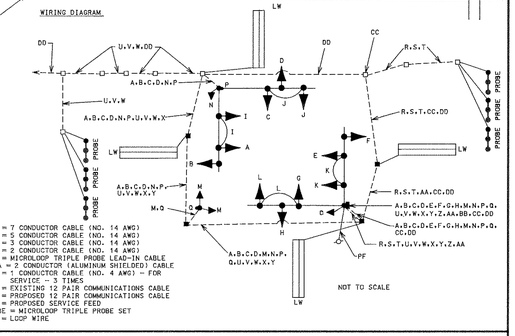
B. EQUIPMENT TO BE SUPPLIED AND/ OR INSTALLED BY THE CONTRACTOR (CONT.)

ITEM NO.	QUANTITY	DESCRIPTION
1001	1 EACH	MAINTENANCE OF TRAFFIC
2001	1 C.Y.	TEST PIT EXCAVATION
2005	3.4 C.Y.	REMOVAL OF EXISTING SIDEWALK
2006	17 L.F.	REMOVAL OF EXISTING CURB AND GUTTER
2007	.2 C.Y.	REMOVAL OF CONCRETE MONOLITHIC MEDIAN
5003	750 L.F.	F & I 12" WHITE PAVEMENT MARKING TAPE
5005	165 L.F.	F & I 24" WHITE PAVEMENT MARKING TAPE
6001	323 S.F.	F & I 4" CONCRETE SIDEWALK
6009	24 L.F.	F & I MONOLITHIC CONCRETE MEDIAN 4' WIDE TYPE A-1
6010	17 S.F.	F & I DEPRESSED CURB AND GUTTER
8001	9 C.Y.	F & I CONCRETE FOUNDATION
8003	1 EACH	F & I 10' BREAKAWAY PEDESTAL POLE & BASE (NOTE: 1" x 40" ANCHOR BOLTS)
8011	16 EACH	INSTALL SIGNAL HEADS (ANY TYPE)
8015	6 EACH	INSTALL MICROLOOP PROBE SET
8016	2 EACH	INSTALL PUSHBUTTON AND SIGN
8018	1 EACH	INSTALL CONTROLLER AND CABINET - POLE MOUNT
8022	1,000 L.F.	F & I SAWCUT
8023	130 L.F.	F & I 1" ELECTRICAL CONDUIT - GALVANIZED SLEEVE
8025	25 L.F.	F & I 2" SCHEDULE 40 PVC CONDUIT - TRENCHED
8028	30 L.F.	F & I 3" SCHEDULE 40 PVC CONDUIT - TRENCHED
8029	255 L.F.	F & I 3" SCHEDULE 80 PVC CONDUIT - SLOTTED
8035	4 EACH	F & I HANDHOLE
8037	3 EACH	F & I GROUND ROD
8042	1,200 L.F.	F & I 12 PAIR COMMUNICATIONS CABLE - (JELLY FILLED) UNDERGROUND
8043	1,800 L.F.	F & I LOOP WIRE ENCASED IN FLEXIBLE TUBING
8044	500 L.F.	F & I 2-CONDUCTOR (ALUMINUM SHIELDED) CABLE
8045	270 L.F.	F & I 2-CONDUCTOR CABLE (NO. 14 AWG)
8046	270 L.F.	F & I 3-CONDUCTOR CABLE (NO. 14 AWG)
8047	260 L.F.	F & I 5-CONDUCTOR CABLE (NO. 14 AWG)
8048	1,535 L.F.	F & I 7-CONDUCTOR CABLE (NO. 14 AWG)
8052	20 L.F.	F & I 1-CONDUCTOR CABLE (NO. 6 AWG) - GROUND
8053	90 L.F.	F & I 1-CONDUCTOR CABLE (NO. 4 AWG)
8055	80 L.F.	F & I WOOD SIGN SUPPORTS 4" x 6"
8056	144.2 S.F.	INSTALL GROUND MOUNTED SIGN
8057	63.6 S.F.	INSTALL OVERHEAD MOUNTED SIGN
8076	1 EACH	F & I CONTROL & DISTRIBUTION OF EQUIPMENT
8101	2 EACH	F & I MAST ARM POLE & TWIN (60 FT./ 50FT.) MAST ARMS (NOTE: 2" x 80" ANCHOR BOLTS)
NEG.	LUMP SUM	PULL BACK THE EXISTING 12 PAIR COMMUNICATON CABLE TO THE EXISTING HANDHOLE FROM MD 193 & CHERRYWOOD LANE/ 60TH AVE., AND INSTALL THIS CABLE TO THE PROPOSED CONTROLLER CABINET FROM THE EXISTING HANDHOLE. CONTACT BOB DeBLASE (410-787-7656) FROM THE SHA SIGNAL SHOP BEFORE BEGINNING THIS TASK.

PHASE CHART



WIRING DIAGRAM



A-H = 7 CONDUCTOR CABLE (NO. 14 AWG)
I-M = 5 CONDUCTOR CABLE (NO. 14 AWG)
N-O = 3 CONDUCTOR CABLE (NO. 14 AWG)
P-Q = 2 CONDUCTOR CABLE (NO. 14 AWG)
R-W = MICROLOOP TRIPLE PROBE LEAD-IN CABLE
X-AA = 2 CONDUCTOR (ALUMINUM SHIELDED) CABLE
BB = 1 CONDUCTOR CABLE (NO. 4 AWG) - FOR SERVICE - 3 TIMES
CC = EXISTING 12 PAIR COMMUNICATIONS CABLE
DD = PROPOSED 12 PAIR COMMUNICATIONS CABLE
PF = PROPOSED SERVICE FEED
PROBE = MICROLOOP TRIPLE PROBE SET
LW = LOOP WIRE

UTILITY LEGEND

G — G	GAS MAIN
W — W	WATER MAIN
S — S	SEWER MAIN
E — E	ELECTRIC CABLES
A — A	AERIAL CABLES
T — T	TELEPHONE CABLES

REVISIONS	APPROVALS
	ASSISTANT DIVISION CHIEF, TEDD
	ASSISTANT DISTRICT ENGINEER OF TRAFFIC
	8/12/96 CHIEF, TRAFFIC ENGINEERING DESIGN DIVISION
	8/21/96 DIRECTOR, OFFICE OF TRAFFIC & SAFETY

MARYLAND DOT - STATE HIGHWAY ADMINISTRATION

Office of Traffic & Safety

TRAFFIC ENGINEERING DESIGN DIVISION

MD. 193 and CUNNINGHAM DR./ BELTWAY PLAZA ENT.

SIGNAL NO. 160193005.31 — DATE 08/96

DRAWN BY:	F.A.P. NO. STPG-0005 (492)E	PLAN SHEET NO.	SHEET NO.
DES. BY:	S.H.A. NO. AW-102-501-385	TS-3613	1 OF 1
CHECK BY: 8/7/96	COUNTY PRINCE GEORGE'S		
SCALE: 1" = 20'			