F H WA REGION NO.	STATE	FED. AID PROJ. NO	SHEET NO.	TOTAL SHEETS
3	MD.			

PROJECT DESCRIPTION

I. GENERAL
THIS PROJECT INVOLVES THE INSTALLATION OF A LEFT TURN SIGNAL AT THE INTERSECTION OF MD 190 AND I-495 RAMP "C". MD 190 RUNS IN AN EAST-WEST DIRECTION.

II. INTERSECTION OPERATION
THE SIGNAL SHALL OPERATE AS A PARTIAL SIGNAL WITH FLASHING RED ARROWS FOR THE LEFT TURN MOVEMENT TO RAMP "C" AND GREEN INDICATIONS FOR WESTBOUND THROUGH MOVEMENTS.
THE EXCLUSIVE LEFT TURN MOVEMENT WILL BE DISPLAYED DURING AM AND PM PEAK PERIODS.

III. Special Notes

1. The contractor shall confirm the location of all utilities prior to construction.

2. Maintenance of traffic will be handled by the contractor utilizing the following standard plates for traffic control: 105.00, 105.01, 105.02, 105.309, 105.311

3. The following contact persons for District 3 are as follows:

Mr. Charles Watkins — District Engineer — Phone # (301) 513-7311
Mr. Majib Shakib — Asst. District Engineer - Traffic — Phone # (301) 513-7358

Mr. Randy Brown — Asst. District Engineer — Phone # (301) 513-7304
Mr. Augie Rebish — Asst. District Engineer - Utilities — Phone # (301) 513-7350

Mr. Richard L. Daff Sr.
Chief, Traffic Operations Division
Phone # (410) 787-7630

PEPCO
(301) 931-2876

EQUIPMENT LIST

A. Equipment to be supplied by the Administration.

ITEM NO.	QUANTITY	UNIT	SPECIFICATION SECTION	DESCRIPTION
9014	2	EA	806	12" 1-Way 3-Section Signal(Polycarbonate) - R.Y.G.
9017	2	EA	806	3M 12" 1-Way 3-Section Signal(ALUMINUM) - RA.YA.GA.
9084	1	EA	816	Cabinet Size 6 with LAU, Montgomery County - base mount
9089	78	SF	813	Sheet aluminum signs consisting of:
	2	EA	---	R 10-6(1) (36" x 60") - pole mounts
	3	EA	---	W 3-3(48" x 48") - ground mounts

EQUIPMENT LIST

B. Equipment to be supplied and/or installed by the Contractor.

ITEM NO.	QUANTITY	UNIT	SPECIFICATION SECTION	DESCRIPTION
1001	1	EA	104	Maintenance of Traffic
2001	2	CY	205	Test Pit
5004	40	LF	xxx	24 Inch White Permanent Preformed Pavement Marking Tape
8001	6.00	CY	801	Concrete for Signal Foundation
8003	1	EA		14' PEDESTAL POLE
8011	4	EA	814	Install signal head
8020	1	EA	816	Install controller and cabinet - Base mount
8021	800	LF	815	Sawcut
8027	650	LF	804	3" Schedule 80 Rigid PVC Conduit - Trenched
8030	30	LF	804	4" Schedule 80 Rigid PVC Conduit - Trenched
8031	170	LF	804	4" Schedule 80 Rigid PVC Conduit - Slotted
8033	6	EA	804	Handhole
8034	3	EA	804	Ground rod - 3/4in. x 10 ft.
8038	1800	LF	810	12 Pair Communication Cable, Self Supporting(Overhead)
8044	900	LF	810	Electrical cable - 5 conductor No. 14 AWG
8049	300	LF	810	Electrical cable - No. 6 stranded bare copper ground wire
8050	30	LF	810	Electrical cable - 1 conductor No. 4 AWG - THHN/THWN
8052	96	LF	812	4" x 6" Wood Sign Supports
8053	48	SF	813	Install ground mounted sign
8054	30	SF	813	Install Overhead mounted sign
8061	1	EA		Remove & Dispose of Existing Equipment
8070	1	EA	807	Control & Distribution Equipment
8082	1	EA		27' Mast Arm Pole And 50' Mast Arm

SIGNS

5,6 — PROCEED ON FLASHING RED AFTER STOP — R 10-6(1) 36" X 60"

7,8 — W 3-3 48" X 48"

SIGNALS

1,2 — 12"

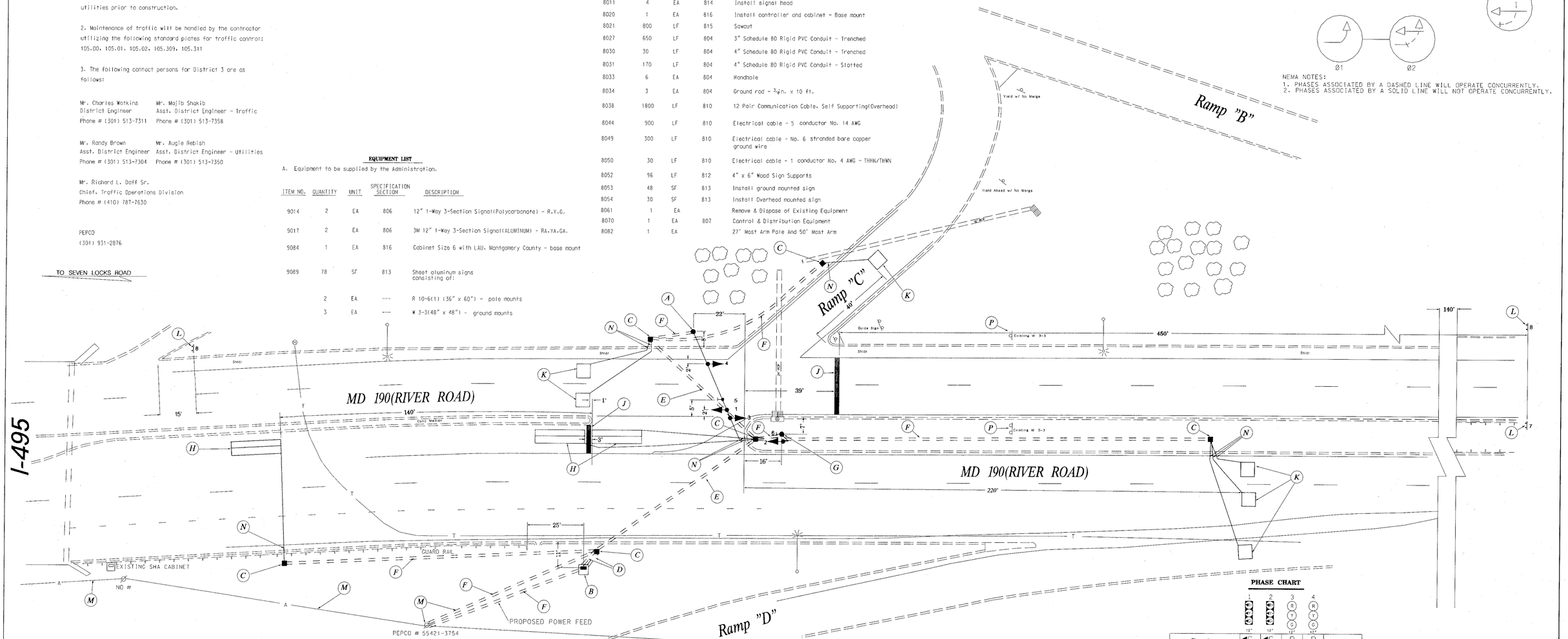
3,4 — R Y G — 12"

NEMA PHASING

Ø1 Ø2

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

FLASHING OPERATION



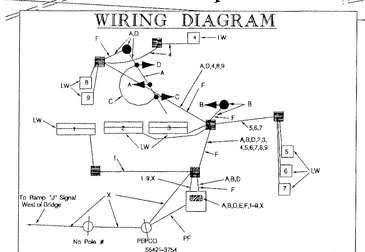
PHASE CHART

	1	2	3	4
Phase 1	G	G	R	R
Phase 1 Change	Y	Y	R	R
Phase 2	FL/R	FL/R	G	G
Phase 2 Change	FL/R	FL/R	Y	Y
Flashing Operation	FL/RA	FL/RA	FL/Y	FL/Y

CONSTRUCTION DETAILS

A. INSTALL 27' STEEL MAST ARM POLE WITH 50' MAST ARM, SIGNALS AND SIGNS AS SHOWN. (NOTE: INCLUDE 1- 3" CONDUIT BEND IN BASE WITH 1 3/4" x 90" ANCHOR BOLTS)
B. INSTALL NEMA SIZE 6 BASE MOUNTED CABINET AND CONTROLLER WITH TELEMETRY.
C. INSTALL HANDHOLE.
D. INSTALL 4" SCHEDULE 80 PVC ELECTRICAL CONDUIT - TRENCHED.
E. INSTALL 4" SCHEDULE 80 PVC ELECTRICAL CONDUIT - SLOTTED.
F. INSTALL 3" SCHEDULE 80 PVC ELECTRICAL CONDUIT - TRENCHED.
G. INSTALL 14' PEDESTAL POLE WITH SIGNAL AND SIGN AS SHOWN (NOTE: 1-3" CONDUIT BEND AND 4- 1"X 40" ANCHOR BOLTS).
H. INSTALL 6' X 22' QUADRUPOLE LOOP DETECTOR(3-6-3 TURNS).
J. INSTALL 24" PERMANENT PREFORMED MARKING TAPE FOR STOP LINE AS SHOWN.
K. INSTALL 6' X 6' LOOP DETECTOR(4 TURNS).
L. INSTALL W3-3 SIGNS AS SHOWN.
M. INSTALL INTERCONNECT CABLE(OVERHEAD) TO SIGNAL AT RAMP ON WEST SIDE OF I-495 BRIDGE.
N. INSTALL 1" LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR SLEEVE.
P. REMOVE AND DISPOSE OS EXISTING W 3-3 SIGN.

WIRING DIAGRAM



A-D = 5 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
E = 1 CONDUCTOR ELECTRICAL WIRE (NO. 4 AWG) - THHN/THWN
F = 1 CONDUCTOR ELECTRICAL WIRE - NO. 6 STRANDED BARE COPPER GROUND WIRE
1-9 = 2 CONDUCTOR ELECTRICAL WIRE - NO. 14 AWG - Aluminum Shielded
X = 12 Pair Communication Cable (No. 19 AWG) - Self Supporting Interconnect
LW = Loop Wire
PF = PROPOSED POWER FEED

UTILITY LEGEND

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

LOG MILE = 150+90+1.58

REVISIONS

APPROVALS
ASST. DIVISION CHIEF, TEOD
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

MD 190 & I-495 Ramp C

DATE: 3-30-99

DRAWN BY: Chris Jedrowski	F.A.P. NO. AC-STPG-0005(588)E	PLAN SHEET NO.	SHEET NO.
DES. BY: Chris Jedrowski	S.H.A. NO. AW517A5V(B51)	3882	1 OF 1
CHK. BY:	COUNTY: MONTGOMERY		
SCALE: 1" = 20'			