

FHWA REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TO SHEET
3	MD.	SEE TITLE SHEET		

**Intersection Operation**

This intersection is to operate initially in a NEMA five phase, semi-traffic-actuated mode. There will be an exclusive/permissive left turn for the northbound movement of MD 355. The through movements for MD 355 will operate concurrently. The Professional Drive movements will operate as a side street split.

An eight phase, full-traffic-actuated, solid state digital controller with seven two-channel time delay output loop detector amplifiers housed in a base mounted cabinet are to be installed at this location.

**Construction Details**

- A. Install base mounted cabinet/controller with all necessary equipment (Note: two 4 in., 90-degree (Schedule 40) PVC bends, one 3 in., 90-degree (Schedule 40) PVC bend, and one 2 in., 90-degree (Schedule 80) PVC bend).
- B. Install 12 in. x 30 ft. steel strain pole with 20 ft. luminaire arm, 250 watt HPS luminaire, and all necessary equipment for an overhead type B-14 electrical service (Note: two 3 in., 90-degree (Schedule 40) PVC bends, and one 2 in., 90-degree (Schedule 80) PVC bend). [Use four 1-3/4 in. x 90 in. anchor bolts.]
- C. Install 12 in. x 30 ft. steel strain pole with 20 ft. luminaire arm, and 250 watt HPS luminaire (Note: one 2 in., 90-degree (Schedule 40) PVC bend). [Use four 1-3/4 in. x 90 in. anchor bolts.]
- D. Install handhole.
- E. Install 1 in. liquid tight, non-metallic conduit for loop detector sleeve.
- F. Install 2 in. polyvinyl chloride (Schedule 40) electrical conduit - trenched.
- G. Install 2 in. polyvinyl chloride (Schedule 80) electrical conduit - trenched.
- H. Install 3 in. polyvinyl chloride (Schedule 40) electrical conduit - trenched.
- J. Install 4 in. polyvinyl chloride (Schedule 40) electrical conduit - trenched.
- K. Install 6 ft. x 30 ft. quadrupole type vehicle loop detector (2-4-2 turns).
- L. Install 3/8 in. steel span wire, 1/4 in. tether wire, vehicle signal heads, and sign as shown (Note: Provide approximately 50 ft. of additional electrical cable for each signal head for use during roadway construction phasing).
- M. Install 3/8 in. steel span wire, 1/4 in. tether wire, vehicle signal heads, and signs as shown (Note: Provide approximately 50 ft. of additional electrical cable for each signal head for use during roadway construction phasing).
- N. Install 3/8 in. steel span wire, and vehicle signal heads as shown.
- O. Install 6 ft. x 22 ft. quadrupole type vehicle loop detector (2-4-2 turns).
- P. Remove existing handhole.
- Q. Cap and abandon existing conduit.
- R. Remove existing steel pole and all attached equipment.
- S. Remove existing span wire and all attached equipment.
- T. Remove existing electrical service.
- U. Remove existing cabinet/controller and all attached equipment.
- V. Install 12 in. x 30 ft. steel strain pole with 12 ft. luminaire arm, and 250 watt HPS luminaire (Note: one 2 in., 90-degree Schedule 40) PVC bend). [Use four 1-3/4 in. x 90 in. anchor bolts.]
- W. Install 12 in. x 30 ft. steel strain pole with 12 ft. luminaire arm, and 250 watt HPS luminaire (Note: one 2 in., 90-degree Schedule 40) PVC bend). [Use four 1-3/4 in. x 90 in. anchor bolts.]
- X. Use existing handhole.
- Y. Install 1 in. galvanized steel conduit for loop detector sleeve.
- Z. Install 3/8 in. steel span wire, 1/4 in. tether wire, and polycarbonate vehicle signal head.

**Equipment List "B"**

Equipment to be furnished and/or installed by the Contractor.

Quantity	Unit	Description
4	CY	Test pit excavation.
115	LF	24 in. preformed white pavement marking for stop line.
4	EA	30 ft. steel strain pole.
3	EA	Handhole.
900	LF	Sawcut for signal loop detector.
2500	LF	Loop detector wire (No. 14 A.W.G.) enclosed in flexible tubing.
800	LF	2-conductor (aluminum shielded) electrical cable (No. 14 A.W.G.).
675	LF	2-conductor electrical tray cable (No. 12 A.W.G.).
275	LF	5-conductor electrical cable (No. 14 A.W.G.).
1400	LF	7-conductor electrical cable (No. 14 A.W.G.).
60	LF	Bare copper ground wire (No. 6 A.W.G.).
90	LF	3-wire electrical cable (No. 4 A.W.G.) for electrical services.
375	LF	1/4 in. tether wire.
500	LF	3/8 in. steel span wire.
125	LF	1 in. galvanized steel conduit for loop detector sleeve.
10	LF	1 in. liquid tight, flexible, non-metallic conduit for loop detector sleeve.
30	LF	2 in. polyvinyl chloride (Schedule 40) electrical conduit - trenched.
15	LF	2 in. polyvinyl chloride (Schedule 80) electrical conduit - trenched.
20	LF	3 in. polyvinyl chloride (Schedule 40) electrical conduit - trenched.
20	LF	4 in. polyvinyl chloride (Schedule 40) electrical conduit - trenched.
14	CY	Concrete foundation for signal equipment.
4	EA	Ground rod - 3/4 in. diameter x 10 ft. length.
1	EA	Control and distribution equipment (120/240V, one phase, three wire system).
2	EA	12 ft. Luminaire arm with 250 watt HPS luminaire.
2	EA	20 ft. Luminaire arm with 250 watt HPS luminaire.
11	EA	Install traffic signal head - span wire mount.
33	SF	Install sheet aluminum signing - overhead mount.
1	EA	Install base mounted cabinet.
LS	LS	Removal of existing traffic signal equipment.

**Equipment List "C"**

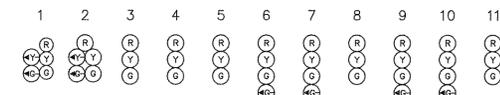
Equipment to be removed by the contractor and delivered to the MCDOT Systems Technical Center, 12B3 Seven Locks Road, Building "C", Rockville MD 20852. A twenty-four (24) hour notice is required prior to delivery. Contact Mr. Emil Wolanin at (301) 217-2208.

Quantity	Unit	Description
4	EA	Steel strain pole.
9	EA	Traffic signal head.
5	EA	Overhead mounted sign.
1	EA	Pole mounted cabinet/controller.

**Equipment List "A"**

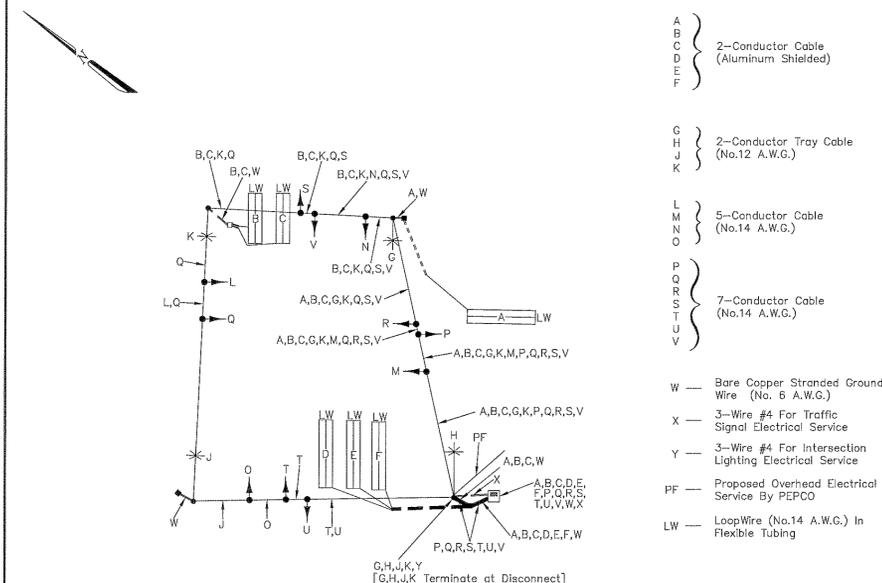
Equipment to be supplied by the SHA.

Quantity	Unit	Description
1	EA	Eight phase, full-traffic-actuated, solid state digital controller with LAU panel (to be used in a NEMA six phase semi-traffic-actuated mode) housed in a base mounted cabinet.
7	EA	Two-channel time delay output vehicle loop detector amplifier and harness.
1	EA	8 in./12 in., one-way, five section (8 in. R,Y,G/12 in. YA,GA) polycarbonate adjustable traffic signal head - span wire mount.
2	EA	12 in., one-way, three section (R,Y,G) polycarbonate adjustable traffic signal head - span wire mount.
3	EA	12 in., one-way, three section (R,Y,G) adjustable traffic signal head - span wire mount.
4	EA	12 in., one-way, four section (R,Y,G,GA) adjustable traffic signal head - span wire mount.
1	EA	12 in., one-way, five section (R,Y,YA,G,GA) adjustable traffic signal head - span wire mount.
33	SF	Sheet aluminum signing. [To consist of one 36 in. x 42 in. R10-12, one 30 in. x 36 in. R3-5(L), one 30 in. x 36 in. R3-5(R), and one 30 in. x 36 in. R3-6(L) signs for span wire mounting.]



Phase	1	2	3	4	5	6	7	8	9	10	11	Direction
Phase 1 & 6	G	G	G	R	R	R	R	R	R	R	R	←
1 Change	G	G	G	R	R	R	R	R	R	R	R	↓
Phase 2 & 6	G	G	G	G	G	R	R	R	R	R	R	→
2 & 6 Change	Y	Y	Y	Y	Y	R	R	R	R	R	R	→
Phase 3	R	R	R	R	R	G	G	G	R	R	R	↓
3 Change	R	R	R	R	R	Y	Y	Y	R	R	R	↓
Phase 4	R	R	R	R	R	R	R	R	G	G	G	↑
4 Change	R	R	R	R	R	R	R	R	Y	Y	Y	↑
Flashing Operation	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	↕

**Phase Chart**



**Wiring Diagram**

Maintenance of Traffic Phase 1, Stage 1

Sheet 13 of 5

MDOT - STATE HIGHWAY ADMINISTRATION  
Office of Traffic & Safety  
TRAFFIC ENGINEERING DESIGN DIVISION

SIGNAL # 15035516.65

DRAWN BY: C. Buitrago  
DES. BY: D. Renshaw  
CHK. BY: D. Doda

**MD 355 at Professional Drive**

COUNTY: MONTGOMERY

DATE: October 13, 1988  
SCALE: N/A

F.A.P. NO. N/A  
S.H.A. NO. BW-357-802-312

TS/STD. NO. 2517A-X1-G1  
SHEET NO. OF

Revision 'A'

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

November 6, 1995  
Rebuild to new geometrics.  
S.H.A. No. M 611-501-371