

FHWA REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	MD			

I. GENERAL PROJECT DESCRIPTION

This project involves the installation of a new traffic control signal at the intersection of MD 22 and Middleton Road in Harford County, Maryland. MD 22 is considered to run in an east/west direction.

II. INTERSECTION OPERATION

The intersection is to operate in NEMA four (4) phase, full-traffic-actuated mode. There will be an exclusive/permissive left turn phase for the westbound movement of MD 22. The MD 22 through movements will operate concurrently. The Middleton Road movements will operate alone.

An eight phase, full-traffic-actuated, solid state digital controller with intersection monitor and harness, battery back-up, and five two-channel time delay output loop detector amplifiers housed in a base mounted cabinet are to be installed at this location.

EQUIPMENT LIST

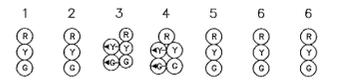
A. Approved S.H.A. equipment to be purchased by the Developer and installed by the Contractor. All equipment in this list shall have catalog cuts submitted for approval prior to installation.

Quantity	Units	Specification Section	Description
1	EA	818	27 ft. steel mast arm pole with 50 ft. mast arm [Note: four 1-3/4 in. anchor bolts].
1	EA	818	27 ft. steel twin mast arm pole with a 50 ft. and a 60 ft. mast arm [Note: four 2 in. anchor bolts].
1	EA	816	Standard S.H.A. traffic signal controller, base mounted cabinet, and five 2-channel loop detector amplifiers [Note: Controller and cabinet shall be supplied by Econolite and delivered to the S.H.A. signal shop for wiring and testing. Contact Mr. Ed Rodenhizer (410) 787-7650].
5	EA	814	12 in., one-way, three section (R,Y,G) adjustable traffic signal head with mast arm mounting hardware and tunnel visors.
1	EA	814	12 in., one-way, five section (R,Y,YA,G,G) adjustable traffic signal head with mast arm mounting hardware and tunnel visors.
1	EA	814	12 in./8 in., one-way, five section (12 in. YA, GA/ 8 in. R,Y,G) adjustable traffic signal head with mast arm mounting hardware and tunnel visors.
10.5	SF	813	36 in. x 42 in. R 10-12 sign with mast arm mounting hardware.
15	SF	813	30 in. x 36 in. R 3-5(L) sign with mast arm mounting hardware.
7.5	SF	813	30 in. x 36 in. R 3-5(R) sign with mast arm mounting hardware.
21.5	SF	813	16 in. x Var. D 3-2 sign with mast arm mounting hardware.
64	SF	813	48 in. x 48 in. W 3-3 "NEW" sign for ground mounting.
36	SF	813	72 in. x 36 in. R 3-5(mod) sign for ground mounting.
1	EA	806	15 ft. luminaire arm.
1	EA	806	250 W H.P.S. lamp and luminaire.

B. Equipment to be furnished and installed by the Contractor. All equipment in this list shall have catalog cuts submitted for approval prior to installation.

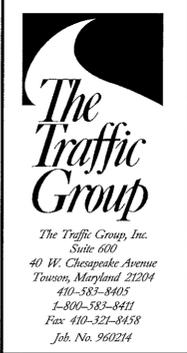
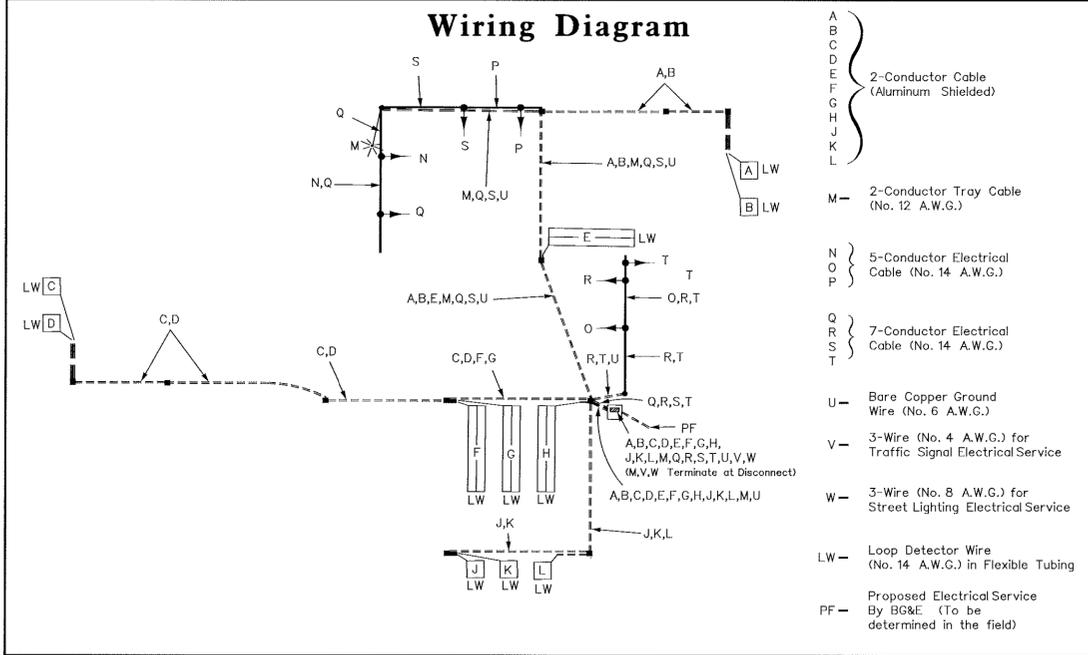
Quantity	Units	Specification Section	Description	Quantity	Units	Specification Section	Description
Lump Sum	LS	108	Mobilization.	110	LF	553	24 in. wide pre-formed permanent pavement marking - white for stop line
Lump Sum	LS	104	Maintenance of traffic.	216	LF	812	4 in. x 4 in. wood sign support.
3	CY	205	Test pit excavation.	Lump Sum	LS	---	Remove existing ground mounted sign.
11	EA	811	Handhole.	3	EA	553	Pre-formed permanent pavement marking symbol - "ONLY".
730	LF	815	Sawcut for signal loop detector.	1	EA	553	Pre-formed permanent pavement marking symbol - "RIGHT ARROW".
2300	LF	810	Loop detector wire (No. 14 A.W.G.) encased in flexible tubing.	2	EA	553	Pre-formed permanent pavement marking symbol - "LEFT ARROW".
2540	LF	810	2-conductor (aluminum shielded) electrical cable (No. 14 A.W.G.).	200	LF	553	5 in. wide pre-formed permanent pavement marking - white for lane line.
230	LF	810	2-conductor electrical tray cable (No. 12 A.W.G.).				
75	LF	810	5-conductor electrical cable (No. 14 A.W.G.).				
735	LF	810	7-conductor electrical cable (No. 14 A.W.G.).				
10	LF	810	3-wire (No. 4 A.W.G.) electrical cable.				
10	LF	810	3-wire (No. 8 A.W.G.) electrical cable.				
200	LF	804	Bare copper stranded ground wire (No. 6 A.W.G.).				
45	LF	805	1 in. liquid tight flexible non-metallic conduit for loop detector sleeve.				
75	LF	805	1 in. galvanized steel electrical conduit for loop detector sleeve.				
875	LF	805	2 in. polyvinyl chloride [Schedule 40] electrical conduit - trenched.				
50	LF	805	2 in. polyvinyl chloride [Schedule 80] electrical conduit - slotted in roadway.				
200	LF	805	3 in. polyvinyl chloride [Schedule 80] electrical conduit - slotted in roadway.				
30	LF	805	4 in. polyvinyl chloride [Schedule 40] electrical conduit - trenched.				
9.4	CY	801	Concrete foundation for traffic signal equipment.				
3	EA	804	Ground rod - 3/4 in. diameter x 10 ft. length.				
1	EA	807	Control and distribution equipment (120/240 V, one phase, three wire system) for a type B-6 underground electrical service.				

Phase Chart



Phase 2 & 5	R	R	G	G	G	R	R	←
5 Change	R	R	←Y	←Y	G	R	R	↶
Phase 2 & 6	G	G	G	G	G	R	R	←
2 & 6 Change	Y	Y	Y	Y	Y	R	R	→
Phase 4	R	R	R	R	R	G	G	↑
4 Change	R	R	R	R	R	Y	Y	↑
Flashing Operation	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	↕

Wiring Diagram



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

(General Information)

MD 22 at Middleton Road

COUNTY: HARFORD LOG MILE * 12002210.50

DATE: February 26, 1997	F.A.P. NO. N/A	TS/STD. NO.	SHEET NO.
SCALE: N/A	S.H.A. NO. BW984M82	3608-GI	2 of 2

