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

PROJECT DESCRIPTION

I. GENERAL

This project involves the installation of a new traffic control signal at the intersection of MD 45 (York Rd.) and the entrance to Lan Lea Property/Lutherville Elementary school in Baltimore County, Maryland. MD 45 is considered to run in a north/south direction.

II. INTERSECTION OPERATION

The intersection is to operate in NEMA five (5) phase, full-traffic-actuated mode. There will be an exclusive/permissive left turn phase for both the north and southbound movements of MD 45. The MD 45 through movements will operate concurrently. The Lan Lea Property entrance movement will operate alone.

An eight phase, full-traffic-actuated, solid state digital controller with intersection monitor and harness, battery back-up, and two 4-channel rack mounted time delay output loop detector amplifiers housed in a base mounted cabinet are to be installed at this location.

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.

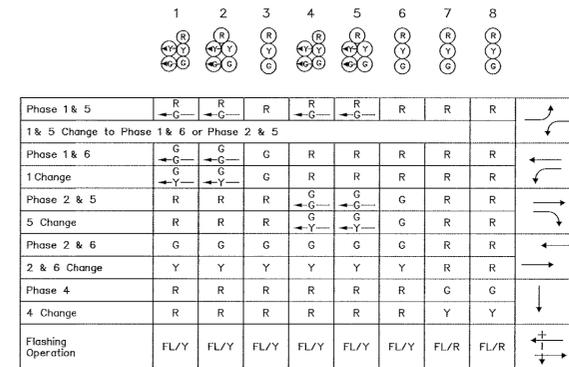
| Quantity | Units | Specification Section | Description |
|----------|-------|-----------------------|--|
| Lump Sum | LS | 108 | Mobilization. |
| Lump Sum | LS | 104 | Maintenance of traffic. |
| 3 | CY | 205 | Test pit excavation. |
| 8 | EA | 811 | Handhole. |
| 580 | LF | 815 | Sawcut for signal loop detector. |
| 1840 | LF | 810 | Loop detector wire (No. 14 A.W.G.) encased in flexible tubing. |
| 345 | LF | 810 | 2-conductor (aluminum shielded) electrical cable (No. 14 A.W.G.). |
| 35 | LF | 810 | 2-conductor electrical tray cable (No. 12 A.W.G.). |
| 75 | LF | 810 | 5-conductor electrical cable (No. 14 A.W.G.). |
| 1030 | LF | 810 | 7-conductor electrical cable (No. 14 A.W.G.). |
| 45 | LF | 810 | 3-wire (No. 4 A.W.G.) electrical cable. |
| 25 | LF | 810 | 3-wire (No. 8 A.W.G.) electrical cable. |
| 245 | LF | 804 | Bare copper stranded ground wire (No. 6 A.W.G.). |
| 35 | LF | 805 | 1 in. liquid tight flexible non-metallic conduit for loop detector sleeve. |
| 580 | LF | 805 | 2 in. polyvinyl chloride [Schedule 80] electrical conduit - trenched. |
| 85 | LF | 805 | 2 in. polyvinyl chloride [Schedule 80] electrical conduit - pushed. |
| 130 | LF | 805 | 3 in. polyvinyl chloride [Schedule 80] electrical conduit - trenched. |
| 65 | LF | 805 | 3 in. polyvinyl chloride [Schedule 80] electrical conduit - slotted in roadway. |
| 20 | LF | 805 | 4 in. polyvinyl chloride [Schedule 80] electrical conduit - trenched. |
| 1 | EA | 805 | 3 in. weatherhead. |
| 8.55 | 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-B overhead electrical service. |
| 100 | LF | 556 | 24 in. wide HAPPTPM - white for stop line. |
| 870 | LF | 810 | 12-pair (self supporting) voice grade telemetry interconnect cable (No. 19 A.W.G.). |
| 36 | LF | 812 | 4 in. x 6 in. wood sign support. |
| .4 | CY | 610 | Removal of concrete sidewalk. |
| 32 | SF | 610 | Replacement of 4 in. concrete sidewalk. |
| 1 | EA | --- | Cut, clean, and cap mast arm. |
| 1 | EA | --- | Cut, clean, and cap mast arm pole. |
| Lump Sum | LS | 810 | Relocate existing interconnect cable. |
| Lump Sum | LS | --- | As-built for S.H.A. [on CADD]. |

EQUIPMENT LIST

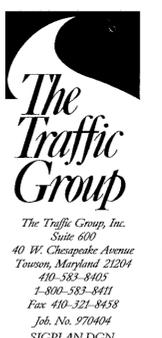
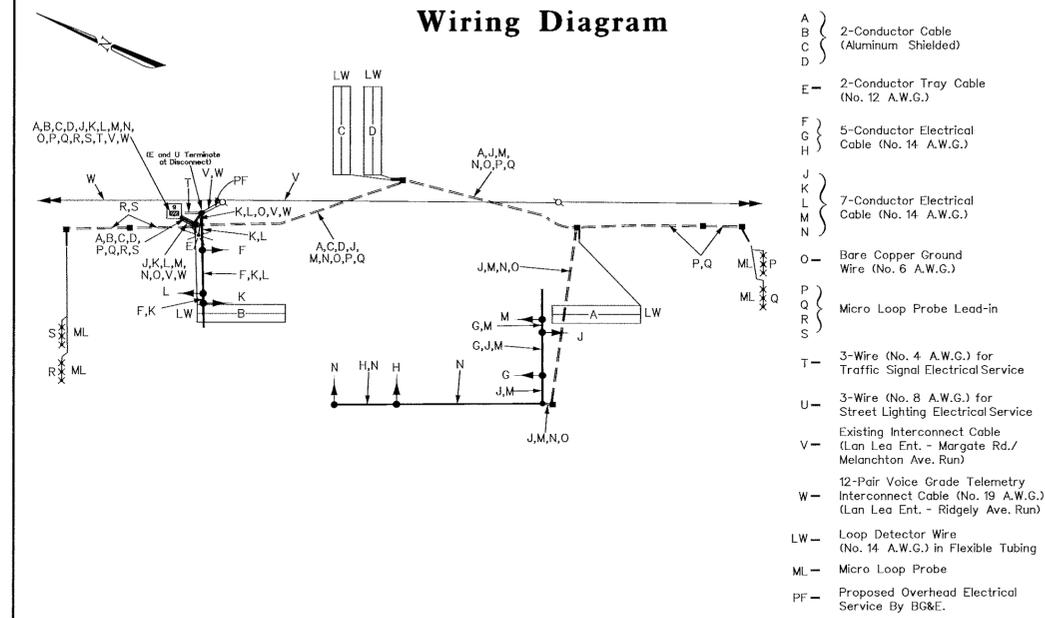
A. Approved S.H.A. equipment to be purchased by the Developer and installed by the Contractor. All equipment in this list shall have catalog cuts submitted for approval prior to installation.

| Quantity | Units | Specification Section | Description |
|----------|-------|-----------------------|--|
| 1 | EA | 818 | 27 ft. steel mast arm pole with a 38 ft. mast arm [Note: four 1-1/2 in. x 60 in. anchor bolts]. |
| 1 | EA | 818 | 27 ft. steel twin mast arm pole with 50 ft. and 70 ft. mast arms [Note: four 2 in. x 90 in. anchor bolts]. |
| 1 | EA | 816 | Standard S.H.A. traffic signal controller, base mounted cabinet, and two 4-channel rack mounted 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) 787-76501. |
| 4 | EA | 814 | 12 in., one-way, three section (R,Y,G) adjustable traffic signal head with mast arm mounting hardware and tunnel visors. |
| 2 | EA | 814 | 12 in., one-way, five section (R,Y,YA,G,GA) adjustable traffic signal head with mast arm mounting hardware and tunnel visors. |
| 2 | 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. |
| 6.67 | SF | 813 | 16 in. x Var. D 3-2 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 | SF | 813 | 36 in. x 42 in. R 10-12 sign with mast arm mounting hardware. |
| 26 | SF | 813 | 36 in. x 36 in. W 3-3 "NEW" sign for ground mounting. |
| 1 | EA | 806 | 10 ft. luminaire arm. |
| 1 | EA | 806 | 250 W H.P.S. lamp and luminaire. |
| 2 | EA | --- | Microloop probes (set of three) with 500 ft. lead-in cable. |
| 2 | EA | --- | Microloop probes (set of three) with 600 ft. lead-in cable. |

Phase Chart



Wiring Diagram



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

DRAWN BY: Jamie Storck
DES. BY: Jamie Storck
CHK. BY: _____

(General Information)
MD 45 (York Rd.) at
Entrance to Lan Lea/Lutherville ES
COUNTY: BALTIMORE LOC MILE: _____

DATE: March 6, 1998 F.A.P. NO. N/A TS/STD. NO. _____ SHEET NO. _____
SCALE: N/A S.H.A. NO. BW996M82 **3778 GI** 2 of 2