## PROJECT DESCRIPTION

I. GENERAL

This project involves the installation of a new traffic control signal at the intersection of MD 2/4 and Old Field Lane in Calvert County, Maryland. MD 2/4 is considered to run in a north/south direction.

II. INTERSECTION OPERATION

The intersection is to operate in NEMA three (3) phase, full-traffic-actuated mode. The MD 2/4 through movements will operate concurrently. The Old Field Lane movements 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.

## CONTACT LIST

The contact persons for District #5 are as follows:

Mr. Paul D. Armstrong
District Engineer
410-841-5450

Mr. Larry Elliott
Assistant District Engineer - Traffic
410-841-5450

Mr. John Mays
Assistant District Engineer - Utility
410-841-5450

Mr. Charles George
Assistant District Engineer - Maintenance
410-841-5450

Mr. Richard L. Daff
Chief, Traffic Operations Division
410-787-7630

The Power Company Representative is:
SMECO
Mr. Robert Trout (Supervisor of Engineering)
P.O. Box 37
Prince Frederick, Maryland 20678-9501
1-410-535-4400

## EQUIPMENT LIST

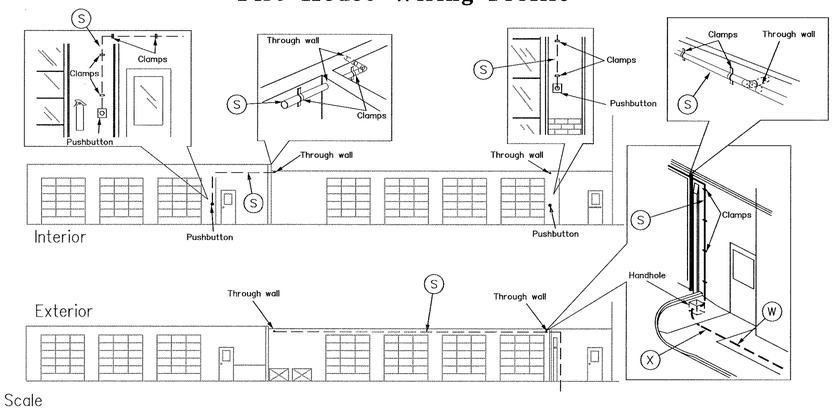
A. Equipment to be supplied by the SHA and installed by the Contractor.

| Item No. | Quantity | Units | Description |
|---|---|---|---|
| 9014 | 6 | EA | (Mast arm mt) 12 in., 1-way, 3 section signal [aluminum]. |
| 9081 | 1 | EA | Cabinet intersection monitor, size 6. |
| 9087 | 1 | EA | Controller ASC II with telemetry. |
| 9089 | 141.5 | SF | Flat sheet aluminum sign - yellow, orange, or silver. |
| 9090 | 21.3 | SF | Flat sheet aluminum sign - blue or green. |
| 9096 | 2 | EA | Pushbutton and sign. |
| 9098 | 4 | EA | Sign hardware - 30 in. form tube. |
| 9104 | 2 | EA | Sign hardware - under mast arm astro bracket with 84 in. cable. |

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

| Item No. | Quantity | Units | Description |
|---|---|---|---|
| 1001 | 1 | EA | Maintenance of traffic per assignment. |
| 2001 | 3 | CY | Test pit excavation. |
| 2004 | 7 | CY | Class 2 excavation. |
| 5001 | 1100 | LF | 5 in. wide HAPPTPM pavement marking - yellow. |
| 5002 | 100 | LF | 5 in. wide HAPPTPM pavement marking - white. |
| 5004 | 120 | LF | 24 in. wide HAPPTPM - white for stop line. |
| 6002 | 15 | LF | Standard Type-A curb and gutter pan. |
| 6003 | 150 | LF | Traffic barrier W-beam. |
| 6004 | 2 | EA | Traffic barrier W-beam trail end anchorage. |
| 6006 | 28 | EA | Traffic barrier W-beam post noraml 6 ft. length. |
| 6009 | 65 | LF | Concrete monolithic median <- 4 ft. Type A-1. |
| 8001 | 6.55 | CY | Concrete foundation for traffic signal equipment. |
| 8011 | 6 | EA | Install signal head. |
| 8018 | 2 | EA | Install pushbutton with sign. |
| 8020 | 1 | EA | Install controller and cabinet - base mount. |
| 8021 | 450 | LF | Sawcut for signal loop detector. |
| 8023 | 40 | LF | 1 in. liquid tight flexible non-metalic conduit for loop detector sleeve. |
| 8024 | 775 | LF | 2 in. polyvinyl chloride [Schedule 80] electrical conduit - trenched. |
| 8026 | 65 | LF | 2 in. polyvinyl chloride [Schedule 80] electrical conduit - bored. |
| 8027 | 10 | LF | 3 in. polyvinyl chloride [Schedule 80] electrical conduit - trenched. |
| 8028 | 200 | LF | 3 in. polyvinyl chloride [Schedule 80] electrical conduit - slotted in roadway. |
| 8030 | 20 | LF | 4 in. polyvinyl chloride [Schedule 80] electrical conduit - trenched. |
| 8033 | 10 | EA | Handhole. |
| 8034 | 4 | EA | Ground rod - 3/4 in. diameter x 10 ft. length. |
| 8040 | 1580 | LF | Loop detector wire (No. 14 A.W.G.) encased in flexible tubing. |
| 8041 | 2325 | LF | 2-conductor (aluminum shielded) electrical cable (No. 14 A.W.G.). |
| 8042 | 400 | LF | 2-conductor electrical cable (No, 14 A.W.G.). |
| 8044 | 90 | LF | 5-conductor electrical cable (No. 14 A.W.G.). |
| 8045 | 630 | LF | 7-conductor electrical cable (No. 14 A.W.G.). |
| 8046 | 350 | LF | 2-conductor electrical tray cable (No. 12 A.W.G.). |
| 8048 | 30 | LF | 1 conductor (No. 8 A.W.G.) electrical cable THHN/THWN. |
| 8049 | 250 | LF | Bare copper stranded ground wire (No. 6 A.W.G.). |
| 8050 | 30 | LF | 1 conductor (No. 4 A.W.G.) electrical cable THHN/THWN. |
| 8051 | 60 | LF | 4 in. x 4 in. wood sign support. |
| 8052 | 164 | LF | 4 in. x 6 in. wood sign support. |
| 8053 | 114 | SF | Install ground mounted sign. |
| 8054 | 48.8 | SF | Install overhead sign. |
| 8056 | 2 | EA | 250 W HPS luminaire with photocell. |
| 8057 | 2 | EA | 15 ft. lighting bracket arm for traffic signal structure. |
| 8061 | 1 | EA | Remove/dispose of existing material/equipment per assignment. |
| 8070 | 1 | EA | Control and distribution equipment (120/240 V, one phase, three wire system) for a MD-SHA type B-13 underground electrical service. |
| 8083 | 1 | EA | Mast arm pole and 60 ft. mast arm. |
| 8086 | 1 | EA | Mast arms pole and twin (50 ft./70 ft.) mast arms. |
| Neg. | 80 | LF | Removal of existing curb and gutter combination. |
| Neg. | 50 | LF | Removal of existing concrete monolithic median. |
| Neg. | .5 | TON | 3 in. bituminous concrete (asphalt). |
| Neg. | 1 | CY | 8 in. crusher run aggregate. |
| Neg. | 960 | LF | Reboundable Delinneator (Qwick Kurb, Inc.). |
| Neg. | 200 | LF | 3/4 in. galvanized steel electrical conduit. |
| Neg. | 40 | EA | 3/4 in. galvanized steel conduit clamps. |

## Fire House Wiring Profile




Not To Scale

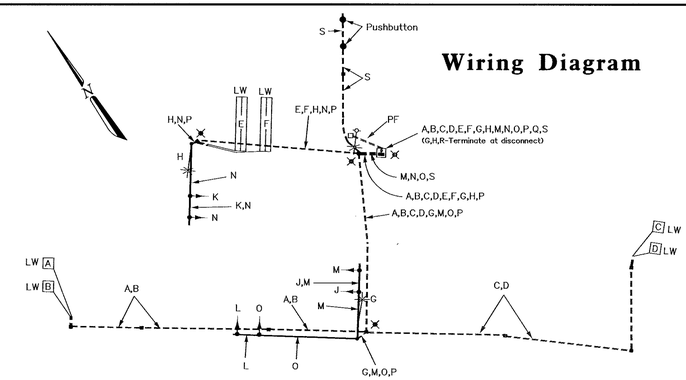
## Phase Chart

| | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| | R Y G | R Y G | R Y G | R Y G | R Y G | R Y G |
| Phase 2 & 6 | G | G | G | G | R | R |
| 2 & 6 Change | Y | Y | Y | Y | R | R |
| Phase 4 | R | R | R | R | G | G |
| 4 Change | R | R | R | R | Y | Y |
| Flashing Operation | FL/Y | FL/Y | FL/Y | FL/Y | FL/R | FL/R |

Fire House Pre-Emption

| | | | | | | |
|---|---|---|---|---|---|---|
| First Change Interval | Y | Y | Y | Y | R | R |
| Pre-Emption Phase | R | R | R | R | G | G |

## Wiring Diagram




A, B, C, D, E, F — 2-Conductor Cable (Aluminum Shielded)
G, H — 2-Conductor Tray Cable (No. 12 A.W.G.)
J, K, L — 5-Conductor Electrical Cable (No. 14 A.W.G.)
M, N, O — 7-Conductor Electrical Cable (No. 14 A.W.G.)
P — Bare Copper Ground Wire (No. 6 A.W.G.)
Q — 3 pcs. 1-Wire (No. 4 A.W.G.) for Traffic Signal Electrical Service
R — 3 pcs. 1-Wire (No. 8 A.W.G.) for Street Lighting Electrical Service
S — 2-Conductor Electrical Cable (No. 14 A.W.G.)
LW — Loop Detector Wire (No. 14 A.W.G.) in Flexible Tubing
PF — Proposed Underground Electrical Service By SMECO
Proposed Grounding Rod


The Traffic Group

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SIGPLAN.DGN


MDOT – STATE HIGHWAY ADMINISTRATION
*Office of Traffic & Safety*
TRAFFIC ENGINEERING DESIGN DIVISION
(General Information)

# MD 2/4 at Old Field Lane

DATE: August 12, 1999 — LOG MILE • 04002019.56

| | | | |
|---|---|---|---|
| DRAWN BY: Cody Pryseski | F.A.P. NO. N/A | PLAN SHEET NO.: 3921 GI | SHEET NO. 2 of 2 |
| CHK. BY: | S.H.A. NO. | | |
| SCALE: N/A | COUNTY: | | |

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