

**PROJECT DESCRIPTION**

**I. GENERAL**

This portion of the project involves the modification of the traffic control signal at the intersection of MD 228 (Berry Road) and Middletown Road/Ironwood Drive in Charles County, Maryland. MD 228 is considered to run in an east/west direction.

**II. INTERSECTION OPERATION**

The intersection operates in a NEMA five (5) phase, full-traffic-actuated mode. There is an exclusive left turn phase for the westbound movement of MD 228. The MD 228 through movements operate concurrently (No left turns are permitted from eastbound MD 228). The Middletown Road/Ironwood Drive through movements operate in a side street split phase mode. An actuated pedestrian movement across the west leg of the intersection is to be added.

The existing cabinet/controller will be utilized.

**EQUIPMENT LIST**

**A. S.H.A. furnished equipment material.**

None.

**B. Equipment to be furnished and/or 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.   |
| 255      | LF    | 810                   | 2-conductor electrical cable (No. 14 A.W.G.).   |
| 255      | LF    | 810                   | 3-conductor electrical cable (No. 14 A.W.G.).   |
| 40       | LF    | 804                   | Bare copper stranded ground wire (No. 6 A.W.G.).  |
| 35       | LF    | 805                   | 2 in. polyvinyl chloride [Schedule 80] electrical conduit - trenched.   |
| 2.0      | CY    | 801                   | Concrete foundation for traffic signal equipment.   |
| 1        | EA    | 804                   | Ground rod - 3/4" diameter x 10 ft. length.   |
| 500      | LF    | 556                   | 12 in. wide HAPPTM - white for crosswalk.   |
| 50       | LF    | 556                   | 24 in. wide HAPPTM - white for stop line.   |
| 1        | EA    | ---                   | Load Switch.  |
| 85       | LF    | ---                   | Remove pavement marking by grinding.  |
| 1        | EA    | ---                   | Adjust frame and cover on handhole.   |
| Lump Sum | LS    | ---                   | As-built for S.H.A. [on CADD].  |
| 2        | EA    | 818                   | 10 ft. steel pedestal pole with break away transformer base   |
| 2        | EA    | 814                   | 12 in., one-way, two section (symbolic DW, WK) adjustable pedestrian signal head with post top mounting hardware and cut-away visors. |
| 2        | EA    | 814                   | Pedestrian pushbutton assembly with pushbutton sign.  |

**CONTACT LIST**

The contact persons for District #5 are as follows:

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District Engineer  
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Mr. Kimberly Tran  
Assistant District Engineer - Traffic  
410-841-1003

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

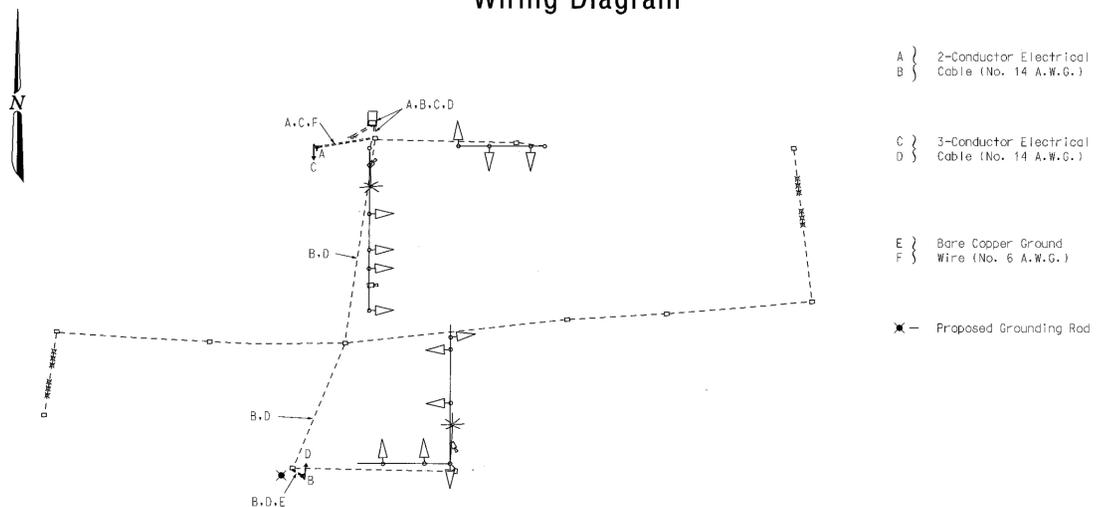
Mr. Chuck George  
Assistant District Engineer - Maintenance  
410-841-5461

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

**Phase Chart**

|                    | 1    | 2    | 3     | 4     | 5     | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 35,36 |
|--------------------|------|------|-------|-------|-------|------|------|------|------|------|------|------|------|-------|
| Phase 2 & 5        | R    | R    | ←G    | ←G    | ←G    | G    | G    | R    | R    | R    | R    | R    | R    | DW    |
| 5 Change           | R    | R    | ←Y    | ←Y    | ←Y    | G    | G    | R    | R    | R    | R    | R    | R    | DW    |
| Phase 2 & 6        | G    | G    | ←R    | ←R    | ←R    | G    | G    | R    | R    | R    | R    | R    | R    | DW    |
| 2 & 6 Change       | Y    | Y    | ←R    | ←R    | ←R    | Y    | Y    | R    | R    | R    | R    | R    | R    | DW    |
| Phase 3            | R    | R    | ←R    | ←R    | ←R    | R    | R    | ←G   | ←G   | G    | R    | R    | R    | DW    |
| 3 Change           | R    | R    | ←R    | ←R    | ←R    | R    | R    | Y    | Y    | Y    | R    | R    | R    | DW    |
| Phase 4            | R    | R    | ←R    | ←R    | ←R    | R    | R    | R    | R    | R    | ←G   | ←G   | G    | DW    |
| 4 Change           | R    | R    | ←R    | ←R    | ←R    | R    | R    | R    | R    | R    | Y    | Y    | Y    | DW    |
| Phase Alt 4        | R    | R    | R     | R     | R     | R    | R    | R    | R    | R    | ←G   | ←G   | G    | WK    |
| Ped Clearance      | R    | R    | R     | R     | R     | R    | R    | R    | R    | R    | ←G   | ←G   | G    | FL/DW |
| Alt 4 Change       | R    | R    | R     | R     | R     | R    | R    | R    | R    | R    | Y    | Y    | Y    | DW    |
| Flashing Operation | FL/Y | FL/Y | ←FL/R | ←FL/R | ←FL/R | FL/Y | FL/Y | FL/R | FL/R | FL/R | FL/R | FL/R | FL/R | DARK  |

**Wiring Diagram**



**MARYLAND DOT - STATE HIGHWAY ADMINISTRATION**  
 Office of Traffic & Safety  
 TRAFFIC ENGINEERING DESIGN DIVISION  
 (General Information Plan)  
**MD 228 at Middletown Rd./Ironwood Dr.**

|                          |                     |                       |           |
|--------------------------|---------------------|-----------------------|-----------|
| DRAWN BY: F. Hoeckel     | F.A.P. NO. N/A      | TS NO. 3786-A         | SHEET NO. |
| CHECKED BY: [Signature]  | S.H.A. NO. BW996M82 | T.I.M.S. NO. F969     | 2 OF 2    |
| SCALE: N/A               | COUNTY: Charles     | LOG MILE: 08228007.57 |           |
| DATE: September 30, 2003 |                     |                       |           |