# PROJECT DESCRIPTION

I. GENERAL

This portion of the project involves the reconstruction of the existing traffic control signal at the intersection of MD 85 (Buckeystown Pike) and Crestwood Blvd./Shockley Drive in Frederick County, Maryland. MD 85 is considered to run in a north/south direction.

II. INTERSECTION OPERATION

The intersection is to operate in a NEMA six (6) phase, full-traffic-actuated mode. There will be an exclusive left turn phase for the both the north and southbound movements of MD 85. The MD 85 through movements will operate concurrently with a concurrent pedestrian movement across the east leg of the intersection. The Crestwood Blvd./Shockley Drive through movements will operate in a side street split phase mode with an actuated pedestrian movement across the south leg of the intersection.

Interconnect cable from MD 85 @ MD-SHA Entrance/ Westview Entertainment Entrance to MD 85 @ Crestwood Blvd./Shockley Drive.

The existing controller to be relocated.

An intersection monitor and harness, battery back-up, (2) four-channel rack mounted time delay output loop detector amplifiers, and video detection equipment, and the existing controller are to be housed in a new base mounted cabinet 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 |
|---|---|---|---|
| 3 | EA | 818 | 27 ft. steel mast arm pole with a 60 ft. mast arm |
| 1 | EA | 818 | 27 ft. steel mast arm pole with a 70 ft. mast arm |
| 1 | EA | 816 | Standard S.H.A. traffic signal base mounted cabinet, two (2) four-channel loop detector amplifiers, and video detection equipment [Note: Cabinet shall be purchased from Econolite and delivered to the S.H.A. signal shop for wiring and testing. Contact Mr. Ed Rodenhizer (410) 787-7650]. The existing controller is to be utilized. |
| 4 | EA | --- | Video detection camera with lighting arm mounting hardware. |
| 5 | EA | 814 | 12 in., one-way, three section (RA,YA,GA) adjustable black faced traffic signal head with mast arm mounting hardware and tunnel visors. |
| 6 | EA | 814 | 12 in., one-way, three section (R,Y,G) adjustable black faced traffic signal head with mast arm mounting hardware and tunnel visors. |
| 2 | EA | 814 | 12 in., one-way, four section (R,Y,G,GA) adjustable black faced traffic signal head with mast arm mounting hardware and tunnel visors. |
| 2 | EA | 814 | 12 in./8 in., one-way, four section (12 in. GA/ 8 in. R,Y,G) adjustable black faced traffic signal head with mast arm mounting hardware and tunnel visors. |
| 2 | EA | 814 | 12 in., one-way, two section (symbolic DW, WK) adjustable pedestrian signal head with pole mounting hardware and cut-away visors. |
| 1 | EA | 814 | 12 in., two-way, two section (symbolic DW,WK) adjustable pedestrian signal head with pole mounting hardware and cut-away visors. |
| 6 | EA | 813 | 30 in. x 36 in. R 3-5(L) sign with mast arm mounting hardware. |
| 1 | EA | 813 | 30 in. x 36 in. R 3-6(L) sign with mast arm mounting hardware. |
| 1 | EA | 813 | 30 in. x 36 in. R 3-6(R) sign with mast arm mounting hardware. |
| 2 | EA | 817 | 9 in. x 12 in. R 10-4(1) pedestrian pushbutton sign with pole mounting hardware. |
| 2 | EA | 817 | Pedestrian pushbutton assembly |
| 2 | EA | --- | Micro-loop probe (set of 3) with 500 ft. lead-in cable. |
| 3 | EA | --- | Micro-loop probe (set of 3) with 1000 ft. lead-in cable. |
| 4 | EA | 806 | 15 ft. luminaire arm. |
| 2 | EA | 806 | 250 W H.P.S. lamp and luminaire. |

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. |
| 5 | CY | 205 | Test pit excavation. |
| 12 | EA | 811 | Handhole. |
| 180 | LF | 815 | Sawcut for signal loop detector. |
| 375 | LF | 810 | 2-conductor electrical tray cable (No. 12 A.W.G.). |
| 425 | LF | 810 | 2-conductor electrical cable (No. 14 A.W.G.). |
| 325 | LF | 810 | 3-conductor electrical cable (No. 14 A.W.G.). |
| 1700 | LF | 810 | 5-conductor electrical cable (No. 14 A.W.G.). |
| 875 | LF | 810 | 7-conductor electrical cable (No. 14 A.W.G.). |
| 800 | LF | 810 | 6-pair [Essex GOPIC-FSF] Shielded Cable (No. 19 AWG) |
| 25 | LF | 810 | 3-wire (No. 4 A.W.G.) electrical cable. |
| 400 | LF | 804 | Bare copper stranded ground wire (No. 6 A.W.G.). |
| 15 | LF | 805 | 1 in. liquid tight flexible non-metallic conduit for loop detector sleeve. |
| 120 | LF | 805 | 3 in. polyvinyl chloride [Schedule 80] electrical conduit - slotted in roadway. |
| 825 | LF | 805 | 3 in. polyvinyl chloride [Schedule 80] electrical conduit - trenched. |
| 350 | LF | 805 | 4 in. polyvinyl chloride [Schedule 80] electrical conduit - slotted in roadway. |
| 30 | LF | 805 | 4 in. polyvinyl chloride [Schedule 80] electrical conduit - trenched. |
| 19.85 | CY | 801 | Concrete foundation for traffic signal equipment. |
| 5 | 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-13 underground electrical service. |
| 350 | LF | 556 | 12 in. wide HAPPTPM - white for crosswalk. |
| 200 | LF | 556 | 24 in. wide HAPPTPM - white for stop line. |
| Lump Sum | LS | --- | Remove existing traffic signal equipment. |
| Lump Sum | LS | --- | Relocate existing traffic signal equipment. |
| Lump Sum | LS | --- | Relocate existing I/C cable (approx. 600 LF). |
| Lump Sum | LS | --- | As-built for S.H.A. [on CADD]. |

C. Material to be removed and returned to the MD-SHA

| Quantity | Units | Description |
|---|---|---|
| 1 | EA | Cabinet |

All other removed materials are to be come property of the Contractor.

# CONTACT LIST

The contact persons for District •7 are as follows:

Mr. Robert Fisher
District Engineer
301-624-8101

Mr. John Concannon
Assistant District Engineer - Traffic
301-624-8140

Mr. Jim Buckalew
Assistant District Engineer - Utility
301-624-8115

Mr. Dave Coyne
Assistant District Engineer - Maintenance
301-624-8105

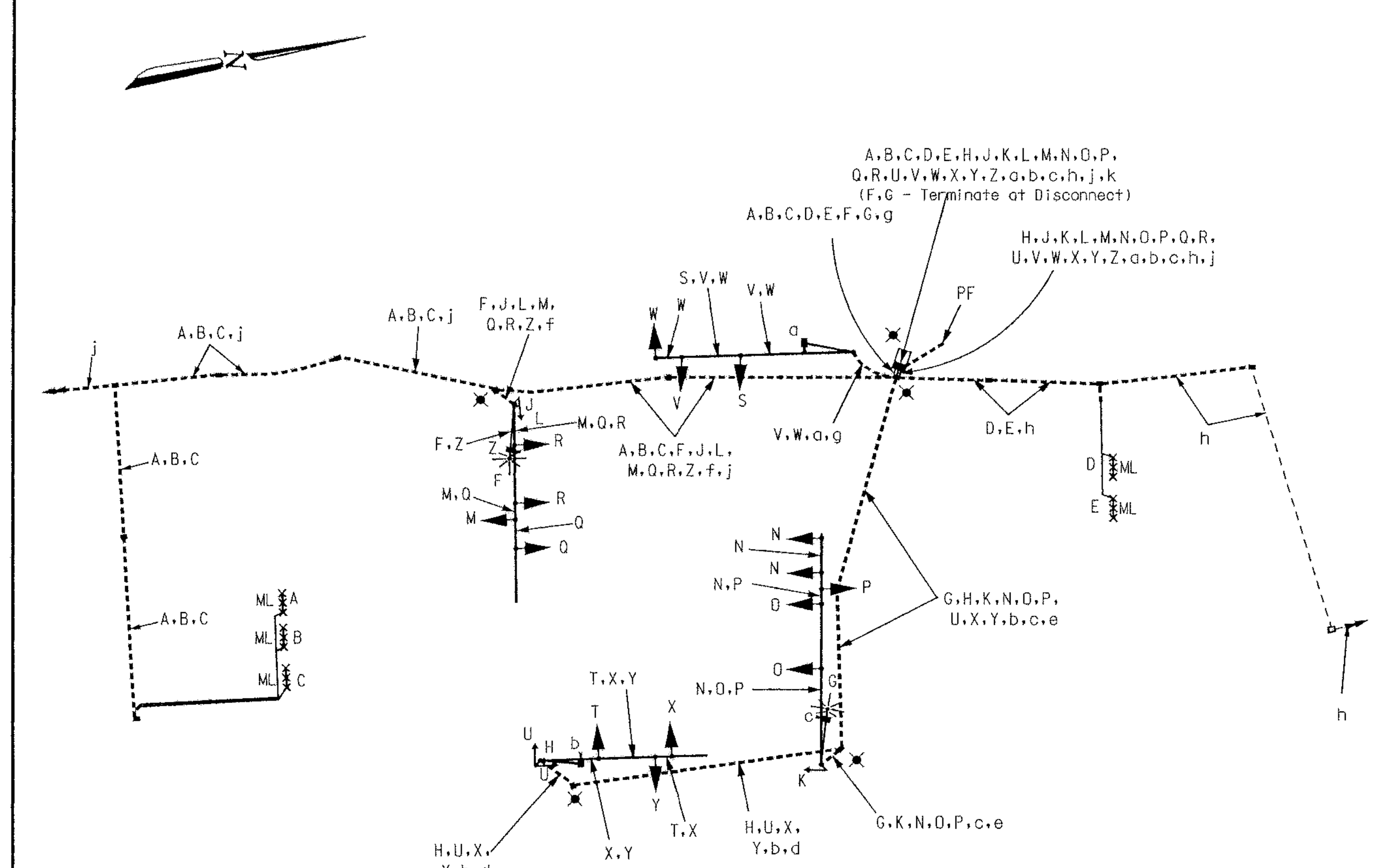
Mr. Richard L. Daff
Chief, Traffic Operations Division
410-787-7630

The Power Company Representative is:
Allegheny Power Company
421 E. Patrick Street
Frederick, Maryland 21701
1-800-255-3443

# Phase Chart

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16-19 | 20,21 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phase 1 & 5 | ←G | ←G | ←G | R | R | ←G | ←G | R | R | R | R | R | R | R | R | DW | DW |
| 1 & 5 Change to Phase 1 & 6 or Phase 2 & 5 or Phase 2 & 6 | | | | | | | | | | | | | | | | | |
| Phase 1 & 6 | ←G | ←G | ←G | G | G | ←R | ←R | R | R | R | R | R | R | R | R | DW | DW |
| 1 Change | ←Y | ←Y | ←Y | G | G | ←R | ←R | R | R | R | R | R | R | R | R | DW | DW |
| Phase 2 & 5 | ←R | ←R | ←R | R | R | ←G | ←G | G | G | R | R | R | R | R | R | DW | DW |
| 5 Change | ←R | ←R | ←R | R | R | ←Y | ←Y | G | G | R | R | R | R | R | R | DW | DW |
| Phase 2 & 6 | ←R | ←R | ←R | G | G | ←R | ←R | G | G | R | R | R | R | R | R | WK | DW |
| Ped Clearance | ←R | ←R | ←R | G | G | ←R | ←R | G | G | R | R | R | R | R | R | FL/DW | DW |
| 2 & 6 Change | ←R | ←R | ←Y | Y | Y | ←R | ←Y | Y | Y | R | R | R | R | R | R | DW | DW |
| Phase 3 | ←R | ←R | ←R | R | R | ←R | ←R | R | R | G ←G | G ←G | G ←G | R | R | R | DW | DW |
| 3 Change | ←R | ←R | ←R | R | R | ←R | ←R | R | R | Y | Y | Y | R | R | R | DW | DW |
| Phase Alt 3 | ←R | ←R | ←R | R | R | ←R | ←R | R | R | G ←G | G ←G | G ←G | R | R | R | DW | WK |
| Ped Clearance | ←R | ←R | ←R | R | R | ←R | ←R | R | R | G ←G | G ←G | G ←G | R | R | R | DW | FL/DW |
| Alt 3 Change | ←R | ←R | ←R | R | R | ←R | ←R | R | R | Y | Y | Y | R | R | R | DW | DW |
| Phase 4 | ←R | ←R | ←R | R | R | ←R | ←R | R | R | R | R | R | G ←G | G ←G | G ←G | DW | DW |
| 4 Change | ←R | ←R | ←R | R | R | ←R | ←R | R | R | R | R | R | Y | Y | Y | DW | DW |
| Flashing Operation | ←FL/R | ←FL/R | ←FL/R | FL/Y | FL/Y | ←FL/R | ←FL/R | FL/Y | FL/Y | FL/R | FL/R | FL/R | FL/R | FL/R | FL/R | DARK | DARK |

# Wiring Diagram




A, B, C, D, E — Micro-loop Detector Lead-in Cable

F, G — 2-Conductor Tray Cable (No. 12 A.W.G.)

H, J — 2-Conductor electrical Cable (No. 14 A.W.G.)

K, L — 3-Conductor Electrical Cable (No. 14 A.W.G.)

M, N, O, P, Q, R, S, T, U — 5-Conductor Electrical Cable (No. 14 A.W.G.)

V, W, X, Y — 7-Conductor Electrical Cable (No. 14 A.W.G.)

Z, a, b, c — 6-pair [Essex GOPIC-FSF] Shielded Cable (No. 19 AWG)

d, e, f, g — Bare Copper Ground Wire (No. 6 A.W.G.)

h — Existing Interconnect Cable (Crestwood Blvd./Shockley Dr.- I-270 @ SB on Ramp Run)

j — 12-Pair Voice Grade Telemetry Interconnect Cable (No. 19 A.W.G.) (Crestwood Blvd./Shockley Dr.- MD-SHA Entr./Westview Entertainment Center Entr. Run)

k — 3-Wire (No. 4 A.W.G.) for Traffic Signal Electrical Service

ML — Micro-loop Detector

PF — Proposed Underground Electrical Service By Alleghney Power Company

✱ — Proposed Grounding Rod

Revision " D"

The Traffic Group
*The Traffic Group, Inc.*
*410-931-6600*
*Fax 410-931-6601*

APPROVALS

TEAM LEADER, TRAFFIC ENGINEERING DESIGN DIVISION

ASST. CHIEF TRAFFIC ENGINEERING DESIGN DIVISION

CHIEF, TRAFFIC ENGINEERING DESIGN DIVISION

DIRECTOR, TRAFFIC & SAFETY

**MARYLAND DOT - STATE HIGHWAY ADMINISTRATION**
*Office of Traffic & Safety*
TRAFFIC ENGINEERING DESIGN DIVISION
(General Information Plan)
*MD 85 at Crestwood Blvd./Shockley Drive*

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|---|---|---|---|---|---|
| DRAWN BY: | Frank Hoeckel | F.A.P. NO. | N/A | TS NO. 2619D | SHEET NO. |
| CHECKED BY: | | S.H.A. NO. | BW996M82 | | |
| SCALE: | N/A | COUNTY: | Frederick | T.I.M.S. NO. | |
| DATE: | June 27, 2001 | LOG MILE: | 10008508.62 | E570 | 4 OF 7 |

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