## PROJECT DESCRIPTION

GENERAL

This project involves the installation of an Uninteruptable Power Supply System to the intersection of MD 2 (Governor Ritchie Highway) at Arnold Road in Anne Arundel County, Maryland. MD 2 is assumed to run in a North - South direction.

INTERSECTION OPERATIONS

The intersection operates in a fully actuated mode using 6 NEMA phases. The northbound and southbound left- turn movements operate with an exclusive left- turn phase.

SPECIAL NOTES

1. All underground utilities shown on these plans are schematic only and may not be complete. The Contractor shall be responsible for notifying "Miss Utility" prior to construction so that all utilities may be located in the field. If the Contractor perceives that a conflict between the utilities and the traffic signal will occur, the Contractor shall notify the Project Engineer immediately so that the conflict may be resolved.
2. The Contractor shall be responsible for terminating all signal cable to the appropriate terminals and properly label each cable so that SHA Forces can make the final connections. Contact the Traffic Signal Operations Supervisor, at least 72 hours prior to installation.

PROJECT CONTACTS:

District #5: Mr. Lee Starkloff
District Engineer
Phone: (410) 841-1001

Ms. Kimberly Tran
Assistant District Engineer - Traffic
Phone: (410) 841-1019

Mr. John Mays
Assistant District Engineer - Maintenance
Phone: (410) 841-1013

Mr. Mike Huber
Utility Engineer
Phone: (410) 841-1039

OOTS: Mr. Ed Rodenhizer
Traffic Signal Operations Manager
Phone: (410) 787-7650

## EQUIPMENT LIST

A. EQUIPMENT TO BE SUPPLIED BY THE SHA

| ITEM NO. | DESCRIPTION | QUANTITY | UNIT |
|---|---|---|---|
| 9000 | NEMA SIZE "S" CABINET WITH 4-4 CHANNEL LOOP DETECTOR AMPLIFIERS, AND SPECIAL RELAY PACKAGE | 1 | EA |
| 9000 | ASCIII CONTROLLER | 1 | EA |
| 9000 | UNINTERUPTABLE POWER SUPPLY SYSTEM | 1 | EA |

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR

| ITEM NO. | DESCRIPTION | QUANTITY | UNIT |
|---|---|---|---|
| 1001 | MAINTENANCE OF TRAFFIC | 1 | EA |
| 8016 | F&I 16" COUNTDOWN PEDESTRIAN SIGNAL HEAD | 2 | EA |
| 8024 | REMOVE AND DISPOSE OF EQUIPMENT | 1 | EA |
| 8033 | DISCONNECT-PULLBACK AND REROUTE CABLES | 1 | EA |
| 8063 | INSTALL CONTROLL AND CABINET - BASE MOUNT | 1 | EA |

C. EQUIPMENT TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR

## PHASE CHART

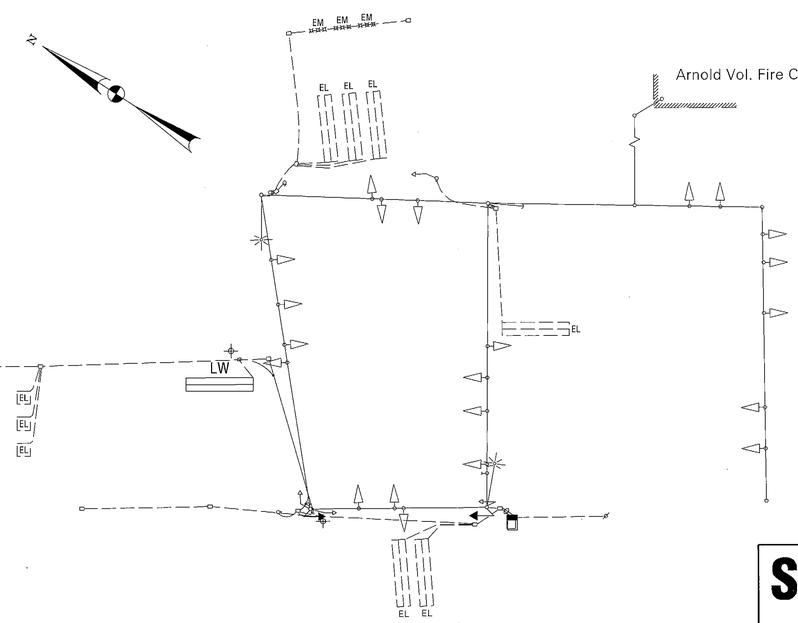
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15,16 | 17,18 | 19,20 | 21 | 22 | 23 | 24 | 25 | 26 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phase Ø1 + Ø5 | ←G– | ←G– | R | R | ←G– | ←G– | R | R | R | R | R | R | R | R | 8" FL/Y | 8" FL/Y | FL/R | DW | DW | DW | DW | DW | DW |
| Phase Ø1 + Ø5 Change | Note: Phase Ø1 + Ø5 can change to Phase Ø1 + Ø6, Phase Ø2 + Ø5 or Phase Ø2 + Ø6. | | | | | | | | | | | | | | | | | | | | | | |
| Phase Ø1 + Ø6 | ←G– | ←G– | G | G | ←R– | ←R– | R | R | R | R | R | R | R | R | 8" FL/Y | 8" FL/Y | FL/R | DW | DW | DW | DW | DW | DW |
| Phase Ø1 + Ø6 Change | ←Y– | ←Y– | G | G | ←R– | ←R– | R | R | R | R | R | R | R | R | 8" FL/Y | 8" FL/Y | FL/R | DW | DW | DW | DW | DW | DW |
| Phase Ø2 + Ø5 | ←R– | ←R– | R | R | ←G– | ←G– | G | G | R | R | R | R | R | R | 8" FL/Y | 8" FL/Y | FL/R | DW | DW | DW | DW | DW | DW |
| Phase Ø2 + Ø5 Change | ←R– | ←R– | R | R | ←Y– | ←Y– | G | G | R | R | R | R | R | R | 8" FL/Y | 8" FL/Y | FL/R | DW | DW | DW | DW | DW | DW |
| Phase Ø2 + Ø6 | ←R– | ←R– | G | G | ←R– | ←R– | G | G | R | R | R | R | R | R | 8" FL/Y | 8" FL/Y | FL/R | W | W | W | W | DW | DW |
| Phase Ø2 + Ø6 Ped Clear | ←R– | ←R– | G | G | ←R– | ←R– | G | G | R | R | R | R | R | R | 8" FL/Y | 8" FL/Y | FL/R | FLDW | FLDW | FLDW | FLDW | DW | DW |
| Phase Ø2 + Ø6 Change | ←R– | ←R– | Y | Y | ←R– | ←R– | Y | Y | R | R | R | R | R | R | 8" FL/Y | 8" FL/Y | FL/R | DW | DW | DW | DW | DW | DW |
| Phase Ø3 | ←R– | ←R– | R | R | ←R– | ←R– | R | R | G/←G– | G/←G– | G | R | R | R | 8" FL/Y | 8" FL/Y | FL/R | DW | DW | DW | DW | DW | DW |
| Phase Ø3 Change | ←R– | ←R– | R | R | ←R– | ←R– | R | R | Y | Y | Y | R | R | R | 8" FL/Y | 8" FL/Y | FL/R | DW | DW | DW | DW | DW | DW |
| Phase Ø4 | ←R– | ←R– | R | R | ←R– | ←R– | R | R | R | R | R | G/←G– | G/←G– | G | 8" FL/Y | 8" FL/Y | FL/R | DW | DW | DW | DW | DW | DW |
| Phase Ø4 Change | ←R– | ←R– | R | R | ←R– | ←R– | R | R | R | R | R | Y | Y | Y | 8" FL/Y | 8" FL/Y | FL/R | DW | DW | DW | DW | DW | DW |
| Phase Ø4 Alt | ←R– | ←R– | R | R | ←R– | ←R– | R | R | R | R | R | G/←G– | G/←G– | G | 8" FL/Y | 8" FL/Y | FL/R | DW | DW | DW | DW | W | W |
| Phase Ø4 Alt Ped Clear | ←R– | ←R– | R | R | ←R– | ←R– | R | R | R | R | R | G/←G– | G/←G– | G | 8" FL/Y | 8" FL/Y | FL/R | DW | DW | DW | DW | FLDW | FLDW |
| Phase Ø4 Alt Change | ←R– | ←R– | R | R | ←R– | ←R– | R | R | R | R | R | Y | Y | Y | 8" FL/Y | 8" FL/Y | FL/R | DW | DW | DW | DW | DW | DW |
| Flashing Operation | 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 | FL/Y | FL/Y | FL/R | DARK | DARK | DARK | DARK | DARK | DARK |

Firehouse Pre-Emption Phase Chart

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| First Change Interval | ←R– | ←R– | G | G | ←R– | ←R– | Y | Y | R | R | R | R | R | R | 8" FL/Y | 8" FL/Y | FL/R | DW | DW | DW | DW | DW | DW |
| Second Change Interval | ←R– | ←R– | G | G | ←R– | ←R– | R | R | R | R | R | R | R | R | Y | Y | R | DW | DW | DW | DW | DW | DW |
| Pre-Emption Phase | ←G– | ←G– | G | G | ←R– | ←R– | R | R | R | R | R | R | R | R | R | R | 8" FL/Y | DW | DW | DW | DW | DW | DW |
| Pre-Emption Phase Change | ←Y– | ←Y– | G | G | ←R– | ←R– | R | R | R | R | R | R | R | R | 8" FL/Y | 8" FL/Y | FL/R | DW | DW | DW | DW | DW | DW |

MD2 Firehouse

## WIRING DIAGRAM




## WIRING DIAGRAM LEGEND

USE ALL EXISTING CABLES

## MESSAGES FOR ACCESSIBLE PEDESTRIAN SIGNALS

| | WAIT MESSAGE | WALK MESSAGE |
|---|---|---|
| LEG | When the pedestrian locates and presses the push button for an extended time, the push button unit will announce the following message: | When the WALK phase begins, the push button unit will provide either (1) a rapid tick which will last for the duration of the WALK phase or (2) the following message: |
| NORTH | "WAIT to cross RITCHIE at ARNOLD." | Rapid Tick |

SHA

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

MD 2 (Governor Ritchie Highway) at Arnold Road

Arnold, Maryland

General Information Sheet

SCALE N/A DATE 11/20/2011 CONTRACT NO.

DESIGNED BY FJA
DRAWN BY FJA
CHECKED BY
F.A.P. NO.

COUNTY Anne Arundel
LOGMILE 0200225.15
T.I.M.S. NO. K961
TOD NO.

DRAWING NO. TS-324-J

SHEET NO. 2 OF 2

PLOTTED:
FILE: L:\Projects\4001 - 4500\4410 - MD 2 & Arnold Road\Design\MD 2 & Arnold GI.dgn

BY: WELLS+ASSOCIATES, INC.