## PROJECT DESCRIPTION

GENERAL

THIS PROJECT INVOLVES MODIFICATION OF A TRAFFIC SIGNAL AT THE INTERSECTION OF MD 26 (LIBERTY ROAD) AT MONOCACY BOULEVARD IN CONJUNCTION WITH PROPOSED AND SOUTH GEOMETRIC IMPROVEMENTS. ACCESSIBLE PEDESTRIAN SIGNAL EQUIPMENT WILL BE INSTALLED TO SERVE THE EAST LEG CROSSINGS . THE PROJECT IS LOCATED IN FREDERICK COUNTY, MARYLAND. MD 26 (LIBERTY ROAD) IS ASSUMED TO RUN IN AN EAST - WEST DIRECTION.

INTERSECTION OPERATION

THE INTERSECTION OPERATES IN A NEMA SIX-PHASE, FULLY ACTUATED MODE. THE MD 26 (LIBERTY ROAD) APPROACHES WOULD CONTINUE TO RUN CONCURRENTLY WITH EXCLUSIVE LEFT TURN PHASES MODIFIED TO ALLOW CONCURRENT OPERATION - REMOVING THE CURRENT LEAD-LAG PHASING REQUIRED DUE TO GEOMETRICS. THE PEDESTRIAN PHASE ACROSS THE EAST LEG OF MD 26 SHALL REMAIN IN OPERATION. A PEDESTRIAN PHASE WILL BE INSTALLED ACROSS THE SOUTH LEG OF MONOCACY BOULEVARD. THE NORTH AND SOUTHBOUND APPROACHES OF MONOCACY BOULEVARD WILL CONTINUE TO OPERATE SPLIT PHASE.

CONTROLLER REQUIREMENTS:

USE EXISTING BASE MOUNTED CONTROLLER ASSEMBLY.

SPECIAL NOTES

1. ALL UNDERGROUND UTILITIES SHOWN ON THESE PLANS ARE SCHEMATIC 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 ENGINEER IN THE FIELD 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. ALL UNUSED SIGNAL CABLES SHALL BE REMOVED AND DISPOSED. CONTACT THE TRAFFIC SIGNAL OPERATIONS SUPERVISOR AT LEAST 72 HOURS PRIOR TO INSTALLATION.
3. THE FOLLOWING CONTACT PERSONS FOR THIS PROJECT IN DISTRICT #7 ARE AS FOLLOWS:

MR. JOHN CONCANNON
ASSISTANT DISTRICT ENGINEER - TRAFFIC
PHONE: (301) 624-8141

MS. ANDREA ABEND
DISTRICT UTILITY ENGINEER
PHONE: (301) 624-8115

MS. SUSAN PALMER
ASSISTANT DISTRICT ENGINEER - MAINTENANCE
PHONE: (301) 624-8106

MR. JOHN HUCHROWSKI
ASSISTANT DISTRICT ENGINEER - CONSTRUCTION
PHONE: (301) 624-8201

OFFICE OF TRAFFIC & SAFETY

MR. RICHARD L. DAFF, SR.
CHIEF TRAFFIC OPERATIONS DIVISION
PHONE: (410) 787-7630

MR. ROBERT SNYDER
ASSISTANT DIVISION CHIEF, TRAFFIC OPERATIONS
PHONE: (410) 787-7630

MR. EDWARD RODENHIZER
MANAGER SIGNAL SHOP
PHONE: (410) 787-7650

MR. EUGENE BAILEY
MANAGER SIGN SHOP
PHONE: (410) 787-7670

THE POWER COMPANY REPRESENTATIVES IS:
ALLEGHANY POWER
800 CABIN HILL DRIVE
GREENSBURG, PA 15601
PHONE: (800) 255-3443

MESSAGES FOR ACCESSIBLE PEDESTRIAN SIGNAL

| | WAIT MESSAGE<br>WHEN PEDESTRIAN LOCATES AND PRESSES THE PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL ANNOUNCE THE FOLLOWING MESSAGE: | WALK MESSAGE<br>WHEN THE WALK PHASE BEGINS, THE PUSHBUTTON UNIT WILL PROVIDE EITHER (1) A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE OR (2) THE FOLLOWING MESSAGE: |
|---|---|---|
| LEG | | |
| EAST | "WAIT TO CROSS LIBERTY AT MONOCACY WAIT" | RAPID TICK |
| SOUTH | "WAIT TO CROSS MONOCACY AT LIBERTY WAIT" | RAPID TICK |

## 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PHASE 1 + 5 | G | G | G | R | R | G | G | G | R | R | R | R | R | R/G→ | R | R | R | DW | DW | DW | DW | DW | DW |
| PHASE 1 + 5 CHANGE | NOTE: PHASE 1 + 5 CAN CHANGE TO PHASE 2 + 5, OR PHASE 2 + 6. | | | | | | | | | | | | | | | | | | | | | | |
| PHASE 1 + 6 | G | G | G | G | G | G | G | G | R | R | R | R | R | R | R | R | R | WK | WK | DW | DW | DW | DW |
| PHASE 1 CHANGE | Y | Y | Y | G | G | G | G | G | R | R | R | R | R | R | R | R | R | WK | WK | DW | DW | DW | DW |
| PHASE 2 + 5 | G | G | G | R | R | G | G | G | G | G | R | R | R | R/G→ | R | R | R | DW | DW | DW | DW | DW | DW |
| PHASE 5 CHANGE | G | G | G | R | R | Y | Y | Y | G | G | R | R | R | R/Y→ | R | R | R | DW | DW | DW | DW | DW | DW |
| PHASE 2 + 6 | G | G | G | G | G | G | G | G | G | G | R | R | R | R | R | R | R | WK | WK | DW | DW | DW | DW |
| PHASE 2 + 6 PED CLEAR | G | G | G | G | G | G | G | G | G | G | R | R | R | R | R | R | R | FL/DW | FL/DW | DW | DW | DW | DW |
| PHASE 2 + 6 CHANGE | G | G | G | Y | Y | G | G | G | Y | Y | R | R | R | R | R | R | R | DW | DW | DW | DW | DW | DW |
| PHASE 3 | G | G | G | R | R | G | G | G | R | R | ←G | ←G | G | G | R | R | R | DW | DW | DW | DW | DW | DW |
| PHASE 3 CHANGE | G | G | G | R | R | G | G | G | R | R | Y | Y | Y | Y | R | R | R | DW | DW | DW | DW | DW | DW |
| ALT PHASE 3 | G | G | G | R | R | G | G | G | R | R | ←G | ←G | G | G | R | R | R | DW | DW | WK | WK | WK | WK |
| ALT PHASE 3 PED CLEAR | G | G | G | R | R | G | G | G | R | R | ←G | ←G | G | G | R | R | R | DW | DW | FL/DW | FL/DW | FL/DW | FL/DW |
| ALT PHASE 3 CHANGE | G | G | G | R | R | G | G | G | R | R | Y | Y | Y | Y | R | R | R | DW | DW | DW | DW | DW | DW |
| PHASE 4 | G | G | G | R | R | G | G | G | R | R | R | R | R | R | ←G | ←G | G | DW | DW | DW | DW | DW | DW |
| PHASE 4 CHANGE | G | G | G | R | R | G | G | G | R | R | R | R | R | R | Y | Y | Y | DW | DW | DW | DW | DW | DW |
| FLASHING OPERATION | FL/G | FL/G | FL/G | FL/Y | FL/Y | FL/G | FL/G | FL/G | FL/Y | FL/Y | FL/R | FL/R | FL/R | FL/R | FL/R | FL/R | FL/R | DARK | DARK | DARK | DARK | DARK | DARK |

## EQUIPMENT LIST

A. EQUIPMENT TO BE SUPPLIED BY STATE HIGHWAY ADMINISTRATION
NONE

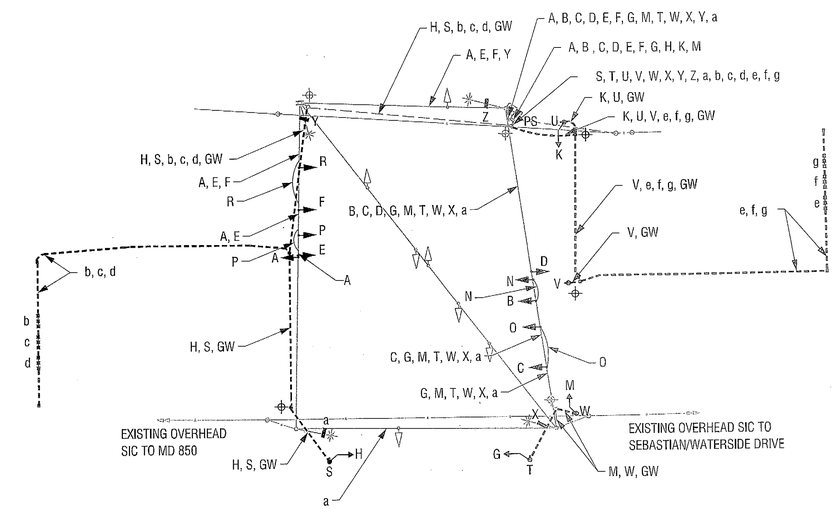
B. EQUIPMENT TO BE FURNISHED AND /OR INSTALLED BY THE CONTRACTOR

| CATEGORY CODE NO. | DESCRIPTION | UNITS | QUANTITY |
|---|---|---|---|
| 120500 | MAINTENANCE OF TRAFFIC | LS | 1 |
| 130850 | MOBILIZATION | LS | 1 |
| 203030 | TEST PIT EXCAVATION | CY | 6 |
| 585621 | 12" WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES | LF | 500 |
| 585625 | 24" WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES | LF | 240 |
| 634310 | STANDARD TYPE A COMBINATION CURB AND GUTTER 12 " GUTTER PAN 10" DEPTH | LF | 125 |
| 655105 | 5" CONCRETE SIDEWALK | SF | 200 |
| 655120 | DETECTABLE WARNING SURFACE FOR CURB RAMPS | SF | 16 |
| 800000 | 2 WIRE CENTRAL CONTROL UNIT (APS) | EA | 1 |
| 800000 | 16" LED COUNTDOWN PEDESTRIAN SIGNAL HEAD | EA | 4 |
| 800000 | AUDIBLE / TACTILE PEDESTRIAN PUSHBUTTON AND SIGN | EA | 5 |
| 800000 | RELOCATE SIGNS FROM EXISTING SPANWIRE | SF | 15 |
| 801004 | CONCRETE FOR SIGNAL FOUNDATION | CY | 5 |
| 801605 | SHEET ALUMINUM SIGNS | SF | 52 |
| | 1 EA M1-5(6).2WL MARYLAND WEST 26/LEFT ARROW (48" x 75") POLE MOUNTED | | |
| | 1 EA M1-5(6).2WR MARYLAND WEST 26/RIGHT ARROW (30" x 51") POLE MOUNTED | | |
| | 1 EA R6-1(L) ONE WAY (36" x 12") POLE MOUNTED | | |
| | 1 EA R6-1(R) ONE WAY (36" x 12") POLE MOUNTED | | |
| 802501 | STRANDED BARE COPPER GROUND WIRE (No. 6 AWG) | LF | 175 |
| 805115 | 3" SCHEDULE 80 RIGID PVC CONDUIT - BORED | LF | 275 |
| 805118 | 4" SCHEDULE 80 RIGID PVC CONDUIT - BORED | LF | 360 |
| 805135 | 3" SCHEDULE 80 PVC RIGID CONDUIT - TRENCHED | LF | 900 |
| 810550 | MICROLOOP PROBE, 500 FOOT LEAD IN CABLE | EA | 6 |
| 811001 | FURNISH AND INSTALL ELECTRICAL HANDHOLE | EA | 10 |
| 811002 | REMOVE ELECTRICAL HANDHOLE | EA | 8 |
| 816001 | VIDEO DETECTION CAMERA WITH ARM AND CLAMP | EA | 4 |
| 816005 | CONTROL CABLE, 250', VIDEO DETECTION CAMERA TO CONTROLLER | EA | 2 |
| 816010 | CONTROL CABLE, 500', VIDEO DETECTION CAMERA TO CONTROLLER | EA | 2 |
| 816015 | VIDEO INTERFACE EQUIPMENT | EA | 1 |
| 818000 | 5' BREAKAWAY PEDESTAL POLE | EA | 1 |
| 818004 | 10' BREAKAWAY PEDESTAL POLE | EA | 4 |
| 837001 | GROUND ROD - 3/4 " DIAMETER x 10' LENGTH | EA | 3 |
| 860284 | 12" VEHICULAR SIGNAL HEAD SECTION | EA | 30 |
| 861105 | ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG) | LF | 550 |
| 861107 | ELECTRICAL CABLE - 5 CONDUCTOR (No. 14 AWG) | LF | 125 |
| 861108 | ELECTRICAL CABLE - 7 CONDUCTOR (No. 14 AWG) | LF | 1500 |
| 873001 | REMOVE EXISTING SIGNAL EQUIPMENT | LS | 1 |

C. EQUIPMENT TO BE REMOVED AND RETURNED TO STATE HIGHWAY ADMINISTRATION

NONE

## WIRING DIAGRAM




## WIRING DIAGRAM LEGEND

| | |
|---|---|
| A, B, C, D, E, F, G, H, K, M | 7 CONDUCTOR ELECTRICAL CABLE (No. 14 AWG) |
| N, O, P, R | 5 CONDUCTOR ELECTRICAL CABLE (No. 14 AWG) (JUMPER) |
| S, T, U, V, W | 2 CONDUCTOR ELECTRICAL CABLE (No. 14 AWG) (PUSH BUTTON) |
| X, Y, Z, a | VIDEO DETECTION CAMERA CONTROL CABLE |
| b, c, d, e, f, g | MICROLOOP PROBE, 500 FOOT LEAD-IN CABLE |
| GW | STRANDED BARE COPPER GROUND WIRE (No. 6 AWG) |
| PS | POWER SOURCE |
| ⌖ | GROUND ROD |
| J, L | NOT USED |

WELLS + ASSOCIATES, INC
TRANSPORTATION, TRAFFIC AND PARKING CONSULTANTS
210 Witt Street SW, Suite 201, Leesburg, Virginia 20175
Phone: 703/ 443-1442 Facsimile: 703/ 443-1225
1420 Spring Hill Road, Suite 600, McLean, Virginia 22102
Phone: 703/ 917-6620 Facsimile: 703/ 917-0739

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

**MD 26 (LIBERTY ROAD) AT MONOCACY ROAD**
FREDERICK, MARYLAND

APPROVALS
TEAM LEADER
ASST. DIV. CHIEF
DIVISION CHIEF
OFFICE DIRECTOR

**GENERAL INFORMATION SHEET**

SCALE 1" = 40' DATE 12 JUNE 2012 CONTRACT NO. BW996M82

DESIGNED BY N. GEORGE COUNTY FREDERICK
DRAWN BY J. SEE LOGMILE 10002601.06
CHECKED BY C. TURNBULL T.I.M.S. NO. L067
F.A.P. NO. N/A TOD NO. -

DRAWING NO. TS-3367-E SHEET NO. 2 OF 2

PLOTTED: –
FILE: L:\Projects\5001-5500\5094 - MD 26 - Signals\Design\Traffic Signal Plans\MD 26 at Monocacy Blvd G1.dgn

WELLS + ASSOCIATES, INC.