## PROJECT DESCRIPTION
### GENERAL

THIS PROJECT INVOLVES THE RECONSTRUCTION OF A TRAFFIC SIGNAL AT THE INTERSECTION OF MD 212 (RIGGS ROAD) AT 410 (EAST-WEST HIGHWAY) IN PRINCE GEORGES COUNTY.

### INTERSECTION OPERATION

A SYSTEM CONTROLLER HOUSED IN A BASE MOUNTED CABINET SHALL BE INSTALLED AT THIS LOCATION. THE INTERSECTION WILL OPERATE IN A FULLY ACTUATED MODE USING 8 NEMA PHASES. THE LEFT TURN PHASES ALONG MD 212 WILL BE REVISED TO OPERATE WITH EXCLUSIVE LEFT TURN PHASING.

### SPECIAL NOTES

1. THE FOLLOWING CONTACT PERSONS FOR DISTRICT #3 ARE AS FOLLOWS:

**PROJECT CONTACTS:**

MR. MAJIB SHAKIB, ASSISTANT DISTRICT ENGINEER - TRAFFIC
PHONE: (301) 513-7359
MR. DENNIS MCMAHAN, ASSISTANT DISTRICT ENGINEER- MAINTENANCE
PHONE: (301) 513-7300
MR. AUGI REBISH, ASSISTANT DISTRICT ENGINEER - UTILITY
PHONE: (301) 513-7300
MR. RICHARD L. DAFF, SR. CHIEF TRAFFIC OPERATIONS DIVISION
PHONE: (410) 787-7630

### EQUIPMENT LIST

A. EQUIPMENT TO BE SUPPLIED BY THE ADMINISTRATOR.

| CATEGORY CODE NO. | DESCRIPTION | UNITS | QUANTITY |
|---|---|---|---|
| 900000 | MASTER LOCAL CONTROLLER AND CABINET SIZE 6 W/ VIDEO DETECTION INTERFACE EQUIP. | EA | 1 |
| 900000 | FLAT SHEET ALUMINUM SIGNS CONSISTING OF: | SF | 244 |
| | R10-12 (36"X42") MAST ARM MOUNT | EA | 2 |
| | R3-5 (30"x36") MAST ARM MOUNT | EA | 3 |
| | D3-2 (16" X VAR.) MAST ARM MOUNT | EA | 4 |
| | GUIDE SHIELD ASSEMBLY (30"X51") | EA | 4 |
| | GUIDE SHIELD ASSEMBLY (48"X75") | EA | 4 |
| 963010 | FOUR CHANNEL LOOP DETECTOR AMPLIFIER, RACK MOUNT | EA | 3 |

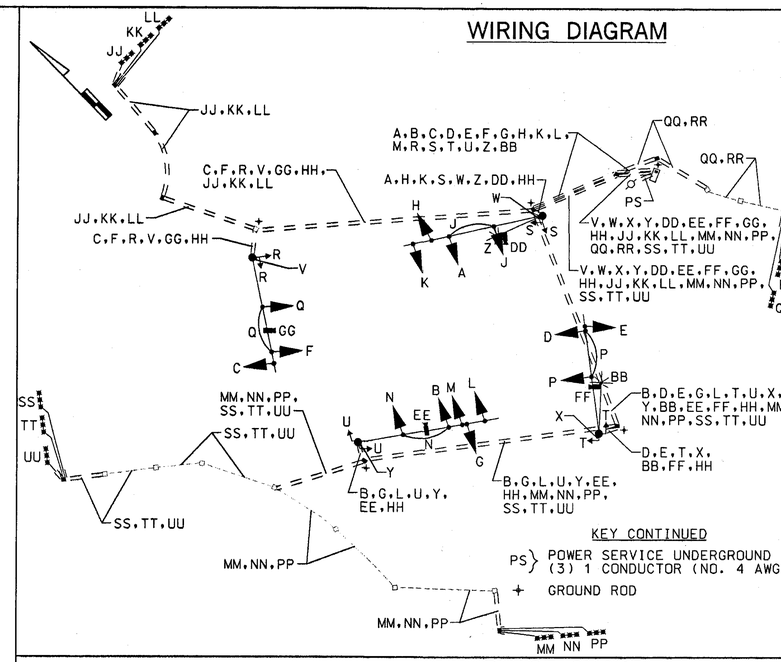
B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR.

| CATEGORY CODE NO. | DESCRIPTION | UNITS | QUANTITY |
|---|---|---|---|
| 203030 | TEST PIT EXCAVATION | CY | 3 |
| 585462 | REMOVAL OF EXISTING PERMANENT PAVEMENT LINE MARKINGS - ANY WIDTH | LF | 1000 |
| 585620 | 12 INCH HEAT APPL. WHITE PERMANENT PREFORMED THERMO. PAVEMENT MARKING | LF | 1350 |
| 585624 | 24 INCH HEAT APPL. WHITE PERMANENT PREFORMED THERMO. PAVEMENT MARKING | LF | 250 |
| 800000 | REMOVE AND DISPOSE OF EXISTING EQUIPMENT | LS | 1 |
| 800000 | 2 INCH SCHED. 80 PVC CONDUIT-TRENCHED | LF | 15 |
| 801004 | CONCRETE FOR SIGNAL FOUNDATIONS | CY | 21 |
| 801607 | INSTALL SHEET ALUMINUM SIGN | SF | 244 |
| 802501 | NO. 6 AWG STRANDED BARE COPPER GROUND WIRE | LF | 530 |
| 805135 | 3 INCH SCHED. 80 PVC CONDUIT-TRENCHED | LF | 400 |
| 805140 | 4 INCH SCHED. 80 PVC CONDUIT-TRENCHED | LF | 40 |
| 805155 | 4 INCH SCHED. 80 PVC CONDUIT-SLOTTED | LF | 800 |
| 805160 | 1 INCH LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT | LF | 33 |
| 807400 | ELECTRICAL UTILITY SERVICE EQUIPMENT 120/240 VOLTS, 60 AMPS | EA | 1 |
| 810550 | MICROLOOP PROBE, 500 FOOT LEAD IN CABLE | EA | 8 |
| 810555 | MICROLOOP PROBE, 1000 FOOT LEAD IN CABLE | EA | 2 |
| 811001 | F&I ELECTRICAL HANDHOLE | EA | 10 |
| 816001 | VIDEO DETECTOR CAMERA | EA | 4 |
| 816005 | CONTROL CABLE, 250 FOOT VIDEO DETECTION CAMERA TO CONTROLLER | EA | 2 |
| 816010 | CONTROL CABLE, 500 FOOT VIDEO DETECTION CAMERA TO CONTROLLER | EA | 2 |
| 818036 | STEEL POLE WITH A SINGLE 50 FOOT MAST ARM | EA | 1 |
| 818041 | STEEL POLE WITH A SINGLE 60 FOOT MAST ARM | EA | 3 |
| 831010 | 250 WATT HPS LAMP AND LUMINAIRE | EA | 2 |
| 832017 | CABLE 1-CONDUCTOR, NO. 4 AWG, TYPE USE, 600V | LF | 60 |
| 837001 | GROUND ROD - 3/4 INCH DIA. X 10 FOOT LENGTH | EA | 5 |
| 860270 | 8 INCH VEHICULAR TRAFFIC SIGNAL HEAD SECTION | EA | 6 |
| 860272 | 12 INCH VEHICULAR TRAFFIC SIGNAL HEAD SECTION | EA | 47 |
| 860278 | 12 INCH PEDESTRIAN SIGNAL HEAD SECTION - POLE MOUNT | EA | 16 |
| 860292 | CUT, CLEAN, GALVANIZE AND CAP TRAFFIC SIGNAL STRUCTURE | EA | 2 |
| 861105 | ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG) | LF | 920 |
| 861107 | ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG) | LF | 2300 |
| 861108 | ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG) | LF | 1900 |
| 861116 | ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 AWG) | LF | 500 |
| 862102 | SAW CUT FOR SIGNAL (LOOP DETECTOR) | LF | 330 |
| 865001 | PUSHBUTTON AND SIGN | EA | 4 |
| 866104 | 20 FOOT LIGHTING ARM ON SIGNAL STRUCTURE | EA | 2 |
| 871202 | INSTALL CONTROLLER AND CABINET - BASE MOUNT | EA | 1 |

C. SHA FORCES SHALL REMOVE THE CONTROLLER AND ALL AUXILLIARY EQUIPMENT FROM THE CONTROLLER CABINET. THE CABINET AND ALL OTHER MATERIALS TO BE REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

| CATEGORY CODE NO. | DESCRIPTION | UNITS | QUANTITY |
|---|---|---|---|

## WIRING DIAGRAM




KEY

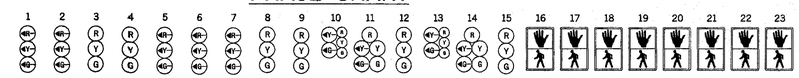
| | |
|---|---|
| A B C D E F G H | 7 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG) |
| J K L M N P Q R S T U | 5 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG) |
| V W X Y | 2 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG) |
| Z BB | 2 CONDUCTOR ELECTRICAL CABLE (NO. 12 AWG) TRAY CABLE |
| DD EE FF GG | VIDEO DETECTION CABLE |
| HH | 1 CONDUCTOR (NO. 6 AWG) STRANDED COPPER GROUND WIRE |
| JJ KK LL MM NN PP QQ RR SS TT UU | MICRO LOOP DETECTOR CABLE LEAD-IN |

KEY CONTINUED

PS } POWER SERVICE UNDERGROUND (3) 1 CONDUCTOR (NO. 4 AWG)

+ GROUND ROD

## 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 AND 5 | ←G- | ←G- | R | R | ←G- | ←G- | ←G- | R | R | R | R | R | R | R | R | DW | DW | DW | DW | DW | DW | DW | DW |
| 1 AND 5 CHANGE TO 1 AND 6, 2 AND 5, OR 2 AND 6 | | | | | | | | | | | | | | | | | | | | | | | |
| PHASE 1 AND 6 | ←G- | ←G- | G | G | ←R- | ←R- | ←R- | R | R | R | R | R | R | R | R | DW | DW | DW | DW | DW | DW | DW | DW |
| 1 AND 6 CHANGE | ←Y- | ←Y- | Y | Y | ←R- | ←R- | ←R- | R | R | R | R | R | R | R | R | DW | DW | DW | DW | DW | DW | DW | DW |
| PHASE 2 AND 5 | ←R- | ←R- | R | R | ←G- | ←G- | ←G- | G | G | R | R | R | R | R | R | DW | DW | DW | DW | DW | DW | DW | DW |
| 2 AND 5 CHANGE | ←R- | ←R- | R | R | ←Y- | ←Y- | ←Y- | Y | Y | R | R | R | R | R | R | DW | DW | DW | DW | DW | DW | DW | DW |
| PHASE 2 AND 6 | ←R- | ←R- | G | G | ←R- | ←R- | ←R- | G | G | R | R | R | R | R | R | WK | WK | WK | WK | DW | DW | DW | DW |
| 2 AND 6 CHANGE | ←R- | ←R- | Y | Y | ←R- | ←R- | ←R- | Y | Y | R | R | R | R | R | R | FL/DW | FL/DW | FL/DW | FL/DW | DW | DW | DW | DW |
| PHASE 3 AND 7 | ←R- | ←R- | R | R | ←R- | ←R- | ←R- | R | R | ←G/R | ←G/R | R | ←G/R | ←G/R | R | DW | DW | DW | DW | DW | DW | DW | DW |
| 3 AND 7 CHANGE TO 3 AND 8, 4 AND 7, OR 4 AND 8 | | | | | | | | | | | | | | | | | | | | | | | |
| PHASE 3 AND 8 | ←R- | ←R- | R | R | ←R- | ←R- | ←R- | R | R | R | R | R | ←G/G | ←G/G | G | DW | DW | DW | DW | DW | DW | DW | DW |
| 3 AND 8 CHANGE | ←R- | ←R- | R | R | ←R- | ←R- | ←R- | R | R | R | R | R | ←Y/G | ←Y/G | G | DW | DW | DW | DW | DW | DW | DW | DW |
| PHASE 4 AND 7 | ←R- | ←R- | R | R | ←R- | ←R- | ←R- | R | R | ←G/G | ←G/G | G | R | R | R | DW | DW | DW | DW | DW | DW | DW | DW |
| 4 AND 7 CHANGE | ←R- | ←R- | R | R | ←R- | ←R- | ←R- | R | R | ←Y/G | ←Y/G | G | R | R | R | DW | DW | DW | DW | DW | DW | DW | DW |
| PHASE 4 AND 8 | ←R- | ←R- | R | R | ←R- | ←R- | ←R- | R | R | G | G | G | G | G | G | DW | DW | DW | DW | DW | DW | DW | DW |
| 4 AND 8 CHANGE | ←R- | ←R- | R | R | ←R- | ←R- | ←R- | R | R | Y | Y | Y | Y | Y | Y | DW | DW | DW | DW | DW | DW | DW | DW |
| PHASE 4 AND 8 ALT | ←R- | ←R- | R | R | ←R- | ←R- | ←R- | R | R | G | G | G | G | G | G | DW | DW | DW | DW | WK | WK | WK | WK |
| PED CLEARANCE | ←R- | ←R- | R | R | ←R- | ←R- | ←R- | R | R | G | G | G | G | G | G | DW | DW | DW | DW | FL/DW | FL/DW | FL/DW | FL/DW |
| 4 AND 8 ALT CHANGE | ←R- | ←R- | R | R | ←R- | ←R- | ←R- | R | R | Y | Y | Y | Y | Y | Y | DW | DW | DW | DW | DW | DW | DW | DW |
| FLASHING OPERATION | FL/R | FL/R | 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 | DARK | DARK | DARK | DARK | DARK | DARK | DARK |

2 REDLINE REVISION NO.2
NEW SHEET 02/ /03


SABRA, WANG & ASSOCIATES, INC.
1506 30th AVENUE
SUITE 100
BALTIMORE, MD 21227
(410) 737-6564
WWW.SABRA-WANG.COM


MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
*Office of Traffic & Safety*
TRAFFIC ENGINEERING DESIGN DIVISION
GENERAL INFORMATION PLAN

# MD 212 (RIGGS ROAD) AT MD 410 (EAST-WEST HIGHWAY)

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: J. WEAVER | F.A.P. NO. | | TS NO. 1778 C | SHEET NO. |
| CHECKED BY: S. RENZI | S.H.A. NO. | PG3735176 | | |
| SCALE: 1" = 20' | COUNTY: | PRINCE GEORGES | T.I.M.S. NO. D 486 | OF |
| DATE: 04/18/02 | LOG MILE: | 16021201.26 | | |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