

PROJECT DESCRIPTION

I. GENERAL

THIS PROJECT INVOLVES THE MODIFICATION OF THE EXISTING TRAFFIC CONTROL SIGNAL WITH STREET LIGHTING AT THE INTERSECTION OF US 301 (CRAIN HIGHWAY) AND MD 381 (BRANDYWINE RD) IN PRINCE GEORGE'S COUNTY. THE MODIFICATION WILL ADD VIDEO DETECTION EQUIPMENT, UPGRADE SIGNAL HEADS TO LED AND RECONSTRUCT THE EXISTING HAZARD IDENTIFICATION BEACON (HIB) SOUTH OF THE INTERSECTION. US 301 IS ASSUMED TO RUN IN AN NORTH-SOUTH DIRECTION.

II. INTERSECTION OPERATION

- THE INTERSECTION OPERATES IN A NEMA 8 PHASE, FULLY-ACTUATED MODE WITH PROTECTED LEFT TURN PHASING ON THE NORTHBOUND AND SOUTHBOUND US 301 APPROACHES AND EXCLUSIVE PERMISSIVE PHASING ALONG MD 381. BOTH US 301 NORTHBOUND AND SOUTHBOUND APPROACHES OPERATE CONCURRENTLY AND MD 381 EB AND WB OPERATE CONCURRENTLY. A VIDEO DETECTION INTERFACE EQUIPMENT SHALL BE INSTALLED INTO THE CABINET BY SHA FORCES.
- AN EXISTING NEMA FULL-TRAFFIC-ACTUATED, EIGHT (8) PHASE CONTROLLER IN A NEMA SIZE "6" BASE MOUNTED CABINET SHALL BE UTILIZED AT THIS LOCATION. VIDEO DETECTION INTERFACE SHALL BE INSTALLED INTO THE CABINET BY SHA FORCES.

CONTACTS

DISTRICT (DISTRICT 3 - PRINCE GEORGE'S)

OFFICE OF TRAFFIC AND SAFETY

OFFICE OF MAINTENANCE-COMMUNICATIONS DIVISION, RADIO SHOP

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SUPPLY OFFICER IV (SIGNAL SHOP WAREHOUSE)
410-787-7696

EQUIPMENT LIST

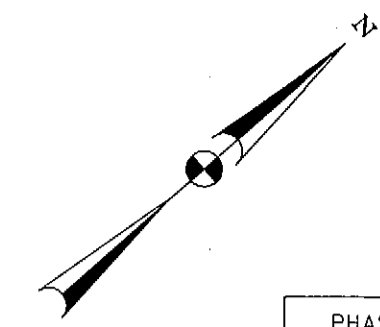
A. EQUIPMENT TO BE FURNISHED BY STATE HIGHWAY ADMINISTRATION

| ITEM NO. | QUANTITY | DESCRIPTION |
|----------|----------|--|
| 900000 | 1 EA | [UPDATED] VIDEO DETECTION INTERFACE EQUIPMENT: 1-8 CAMERAS |
| 900000 | 1 EA | CONTROLLER CABINET, SIZE 5 |
| 900000 | 1 EA | 2 CIRCUIT FLASHER |
| 900000 | 9 SF | [UPDATED] SHEET ALUMINUM MAST ARM / POLE MOUNTED SIGN |
| 900000 | 1 EA | W3-3 'SIGNAL AHEAD' (36"x36") |

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

| ITEM NO. | QUANTITY | DESCRIPTION |
|----------|----------|--|
| 203030 | 1 CY | TEST PIT EXCAVATION |
| 800000 | 4 EA | IP-BASED VIDEO DETECTION CAMERA AND CABLE |
| 800000 | 6 EA | 8 INCH LED VEHICULAR TRAFFIC SIGNAL HEAD MODULE |
| 800000 | 52 EA | 12 INCH LED VEHICULAR TRAFFIC SIGNAL HEAD MODULE |
| 800000 | 1 LS | REMOVAL AND DISPOSAL OF EXISTING SIGNAL MATERIAL AND EQUIPMENT |
| 801004 | 4.1 CY | CONCRETE FOR SIGNAL FOUNDATION |
| 802501 | 30 LF | NO. 6 AWG STRANDED BARE COPPER GROUND WIRE |
| 805115 | 125 LF | 3 INCH SCHEDULE 80 RIGID PVC CONDUIT-BORED |
| 805125 | 55 LF | 2 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED |
| 805135 | 30 LF | 3 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED |
| 807500 | 1 EA | EMBEDDED METERED SERVICE PEDESTAL |
| 810022 | 110 LF | ELECTRICAL CABLE 1-CONDUCTOR NO. 8 AWG-THHN/THWN |
| 810605 | 4 EA | NONINVASIVE DETECTOR, 1000 FOOT LEAD IN CABLE |
| 811001 | 5 EA | FURNISH AND INSTALL ELECTRICAL HANDHOLE |
| 813015 | 9 SF | INSTALL OVERHEAD SIGN |
| 818030 | 1 EA | STEEL POLE WITH A SINGLE 38 FOOT MAST ARM |
| 837001 | 3 EA | GROUND ROD - 3/4 INCH DIAMETER X 10 FOOT LENGTH |
| 860284 | 2 EA | 12 INCH LED VEHICULAR TRAFFIC SIGNAL HEAD SECTION |
| 861107 | 20 LF | ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG) |
| 861108 | 70 LF | ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG) |
| 862102 | 40 LF | SAW CUT FOR SIGNAL (LOOP DETECTOR) |
| 871201 | 1 EA | INSTALL CONTROLLER AND CABINET - POLE MOUNT |

C. ALL MATERIALS TO BE REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE SIGNAL CONTRACTOR UPON COMPLETION OF THE SIGNAL MODIFICATIONS.

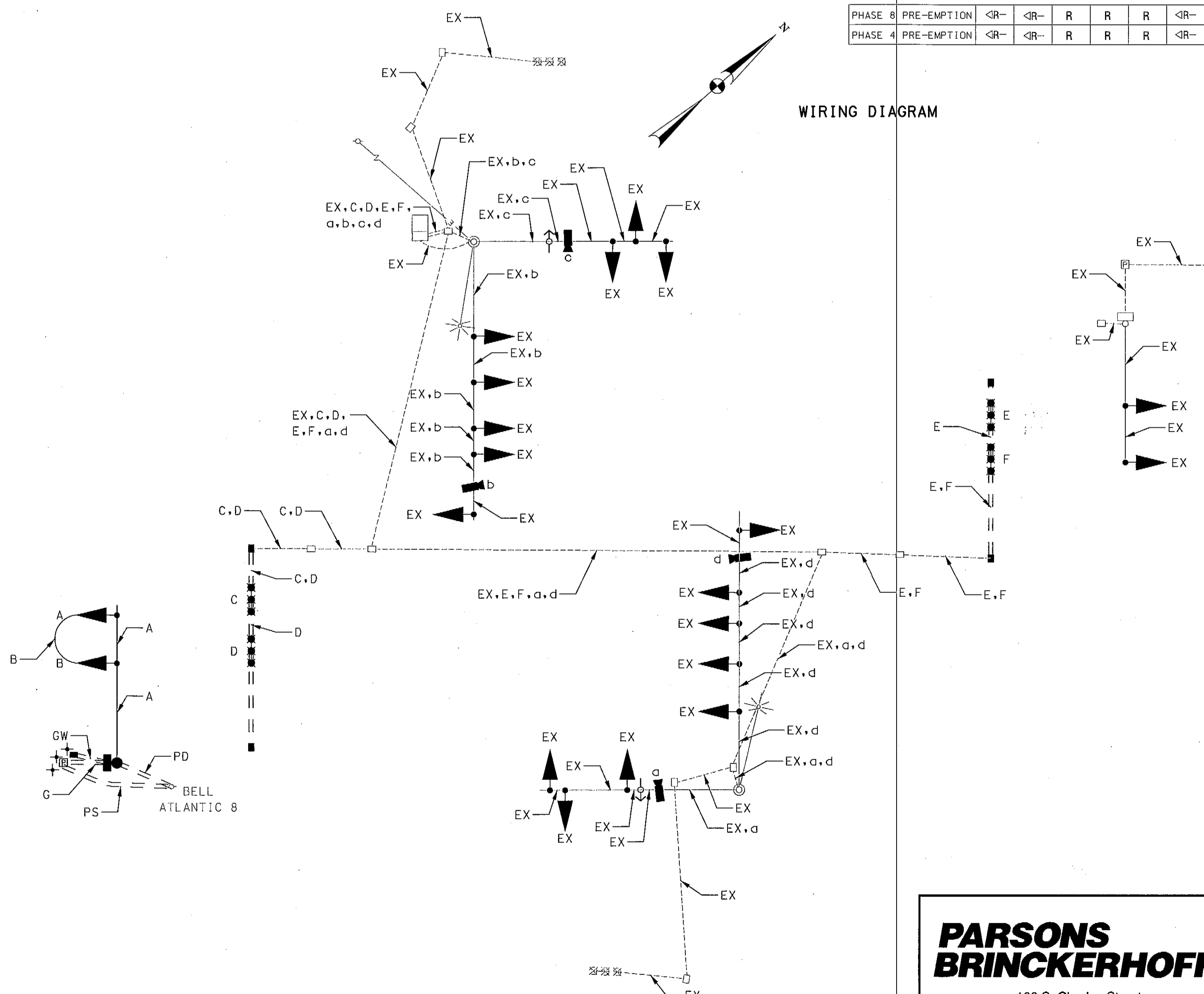


PHASE CHART

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|--------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| PHASE 1 & 5 | <G- | <G- | R | R | R | <G- | <G- | R | R | R | R | R | R | R | R | R |
| PHASE 1 & 6 | <G- | <G- | G | G | G | <R- | <R- | R | R | R | R | R | R | R | R | R |
| PHASE 2 & 5 | <R- | <R- | R | R | R | <G- | <G- | G | G | G | R | R | R | R | R | R |
| PHASE 2 & 6 | <R- | <R- | G | G | G | <R- | <R- | G | G | G | R | R | R | R | R | R |
| PHASE 3 & 7 | <R- | <R- | R | R | R | <R- | <R- | R | R | R | R | R | R | R | R | R |
| PHASE 3 & 8 | <R- | <R- | R | R | R | <R- | <R- | R | R | R | R | R | R | R | R | R |
| PHASE 4 & 7 | <R- | <R- | R | R | R | <R- | <R- | R | R | R | R | R | R | R | R | R |
| PHASE 4 & 8 | <R- | <R- | R | R | R | <R- | <R- | R | R | R | R | R | R | R | R | R |
| FLASHING OPERATION | FL/R | FL/R | FL/Y | FL/Y | FL/Y | FL/R | FL/R | FL/Y | FL/Y | FL/Y | FL/R | FL/R | FL/R | FL/R | FL/R | FL/R |

| | | | | | | | | | | | | | | | | |
|---------------------|-----|-----|---|---|---|-----|-----|---|---|---|---|---|---|---|---|---|
| PHASE 8 PRE-EMPTION | <R- | <R- | R | R | R | <R- | <R- | R | R | R | R | R | R | R | R | R |
| PHASE 4 PRE-EMPTION | <R- | <R- | R | R | R | <R- | <R- | R | R | R | R | R | R | R | R | R |

WIRING DIAGRAM



WIRING KEY

| | |
|---------|---|
| A | - 7 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG) |
| B | - 5 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG) |
| C,D,E,F | - MICROLOOP PROBE LEAD-IN CABLE |
| a,b,c,d | - VIDEO DETECTION LEAD-IN CABLE |
| G | - 2-1 CONDUCTOR ELECTRICAL CABLE (NO. 8 AWG) THHN/ THWN |
| PS | - PROPOSED POWER SERVICE |
| PD | - PROPOSED PHONE DROP |
| GW | - 1 CONDUCTOR (NO. 6 AWG) STRANDED COPPER GROUND WIRE |
| EX | - EXISTING SIGNAL CABLE |
| + | - PROPOSED GROUND ROD |

SHA STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION
US 301 (CRAIN HWY) AT
MD 381 (BRANDYWINE RD)
UPPER MARLBORO, MD

GENERAL INFORMATION SHEET

| | | | | | |
|----------------|---------|----------|-----------------|--------------|-----------|
| SCALE | N.T.S. | DATE | MAY 6, 2013 | CONTRACT NO. | PG7865577 |
| DESIGNED BY | JEK | COUNTY | PRINCE GEORGE'S | | |
| DRAWN BY | JEK | LOGMILE | 16030103.12 | | |
| CHECKED BY | KMP | TIMS NO. | L498 | | |
| F.A.P. NO. | | TOD NO. | | | |
| TS NO. 598K-GI | DRAWING | SG-02 | OF 02 | SHEET NO. | 02 OF 06 |

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