## PROJECT DESCRIPTION

GENERAL

THIS PORTION OF THE PROJECT INVOLVES THE INSTALLATION OF PRESENCE VIDEO DETECTION FOR ALL APPROACHES AND VIDEO SAMPLING ALONG MD 175 AT THE INTERSECTION OF MD 175 (PATUXENT PARKWAY) AND DOBBIN ROAD IN HOWARD COUNTY, DUE TO THE RESURFACING AND SAFETY IMPROVEMENTS TO MD 175. APS WILL BE INSTALLED TO CROSS THE EAST LEG OF THE INTERSECTION AND 16 INCH LED COUNTDOWN PEDESTRIAN SIGNAL HEADS WILL REPLACE THE EXISTING PEDESTRIAN SIGNAL HEADS. ALL EXISTING VEHICULAR TRAFFIC SIGNAL HEADS WILL REMAIN. MD 175 IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

INTERSECTION OPERATION

THE INTERSECTION WILL CONTINUE TO OPERATE IN A NEMA SIX-PHASE, FULL-TRAFFIC-ACTUATED MODE WITH EMERGENCY VEHICLE PRE-EMPTION IN THE EASTBOUND DIRECTION AND EXCLUSIVE LEFT TURN PHASES FOR THE EAST AND WESTBOUND APPROACHES. THE SIDE STREET SPLIT PHASE AND THE ALTERNATE SIDE STREET PEDESTRIAN PHASE WILL REMAIN.

APS WILL FUNCTION AS FOLLOWS:

FOR PATUXENT PARKWAY

A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON WILL BE 'WAIT TO CROSS PATUXENT PARKWAY.'

B. WHEN 'WALK' PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK, WHICH WILL LAST FOR THE DURATION OF THE 'WALK' PHASE.

CONTROLLER REQUIREMENTS

THE EXISTING BASE MOUNTED CONTROLLER SHALL REMAIN. THE SHA SIGNAL SHOP WILL INSTALL THE VIDEO DETECTION INTERFACE EQUIPMENT AND A 2-WIRE CENTRAL CONTROL UNIT WITHIN THE CABINET.

THE CONTACT PERSONS FOR DISTRICT #7 ARE AS FOLLOWS:

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

Ms. Andrea Abend
Assistant District Engineer - Utility
Phone: 301-624-8115

Mr. Ray Johnson
Assistant District Engineer - Maintenance
Phone: 301-624-8108

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

Mr. Edward Rodenhizer
Chief, SHA Traffic Signal Shop
Phone: 410-787-7650

The Power Company Representative is:
Baltimore Gas & Electric Company
7317 Parkway Drive South
Hanover, MD 21076
Phone: 410-859-9062

## EQUIPMENT LIST 'A'

EQUIPMENT TO BE FURNISHED BY THE SHA.

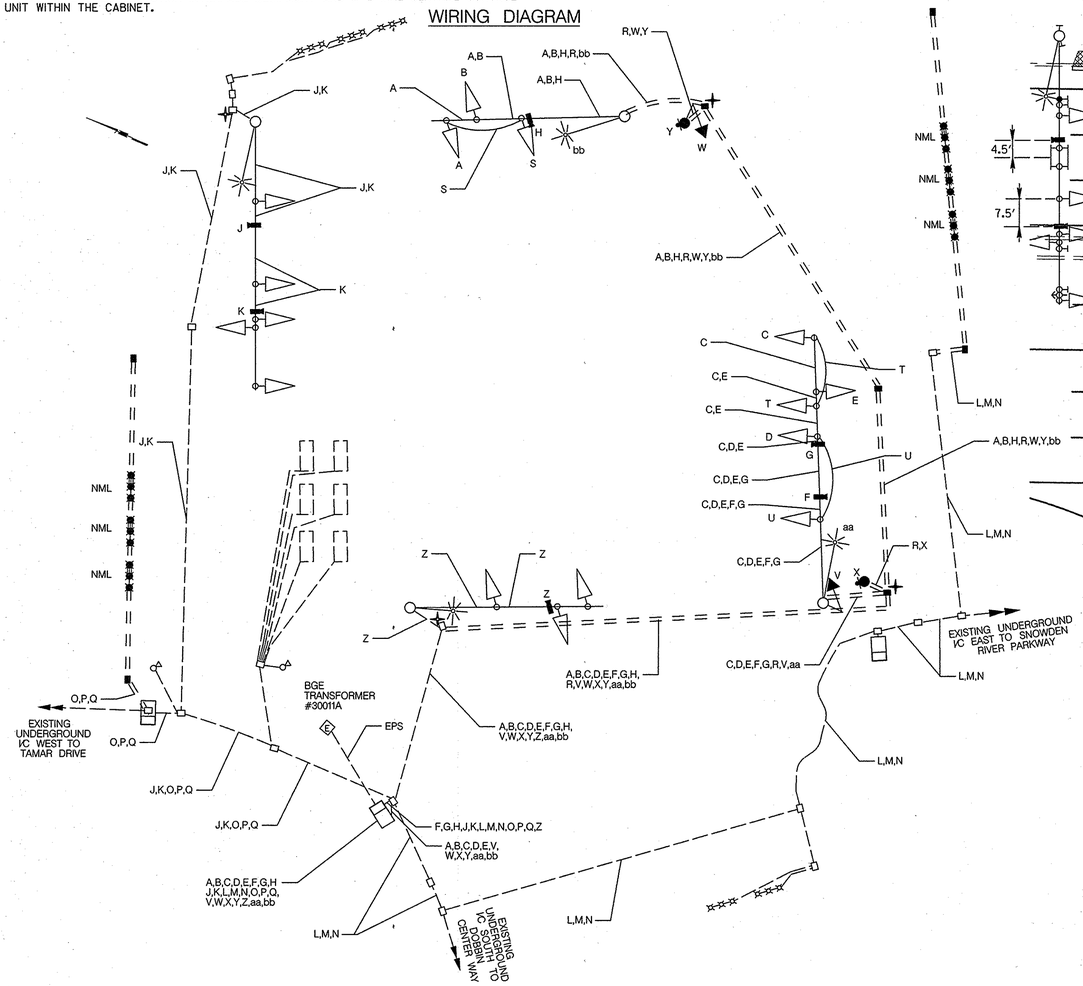
| CATEGORY CODE | QUANTITY | DESCRIPTION |
|---|---|---|
| 900000 | 1 EA | 4 CHANNEL DETECTOR AMPLIFIER |
| 900000 | 2 EA | VIDEO DETECTION INTERFACE EQUIPMENT: 5-8 CAMERAS |
| 973023 | 50 SF | SHEET ALUMINUM SIGNS: |
| | | 2 EA - R10-3(I), (9 IN. X 15 IN.) POLE MOUNT, 'PUSH BUTTON TO CROSS PATUXENT ROAD' |
| | | 1 EA - W9-2(4), FY (30 IN. x 42 IN.) 'LANE ENDS, MERGE LEFT' MAST ARM MOUNT |
| | | 1 EA - R4-7 (24 IN. x 30 IN.) |
| | | 4 EA - W11-2 (30 IN. x 30 IN.) |
| | | 4 EA - M6-2 (MOD), FY (21 IN. x 15 IN.) |

## EQUIPMENT LIST 'B'

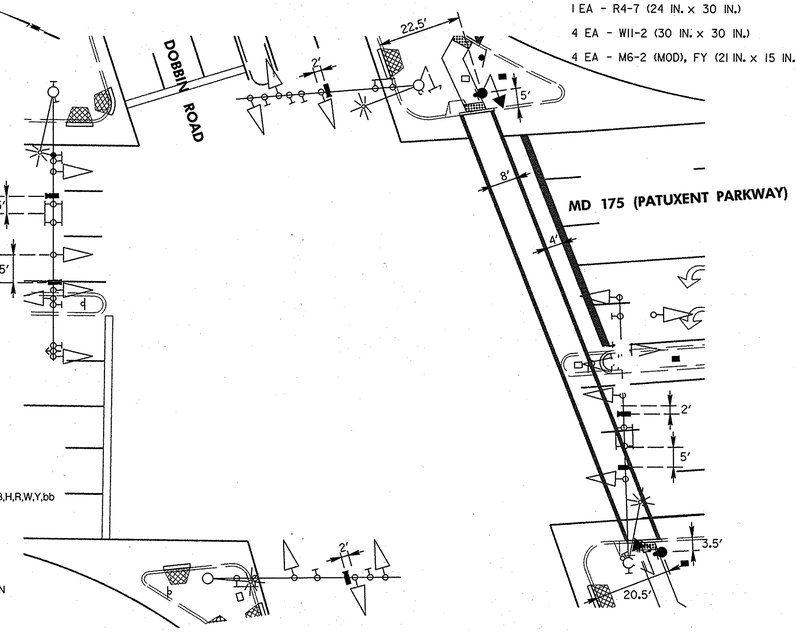
EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR.

| CATEGORY CODE | QUANTITY | DESCRIPTION |
|---|---|---|
| 120500 | 1 EA | MAINTENANCE OF TRAFFIC |
| 120662 | 360 LF | REMOVAL OF EXISTING PAVEMENT LINE MARKINGS - ANY WIDTH |
| 203030 | 1 CY | TEST PIT EXCAVATION |
| 585617 | 50 LF | 5 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES |
| 585621 | 460 LF | 12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES |
| 585625 | 75 LF | 24 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES |
| 655105 | 10 SF | 5 INCH CONCRETE SIDEWALK |
| 800000 | 1 EA | 2-WIRE CENTRAL CONTROL UNIT |
| 800000 | 2 EA | 16 INCH LED COUNTDOWN PEDESTRIAN SIGNAL HEAD |
| 800000 | 2 EA | ACCESSIBLE PEDESTRIAN PUSHBUTTON |
| 800000 | 1 LS | REMOVE AND DISPOSE OF TRAFFIC SIGNAL EQUIPMENT |
| 800000 | 2 EA | CONDUIT BEND IN EXISTING FOUNDATION - ANY SIZE |
| 801004 | 2 CY | CONCRETE FOR SIGNAL FOUNDATION |
| 801106 | 77 LF | WOOD SIGN SUPPORTS - 4 IN. x 6 IN. |
| 802501 | 340 LF | NO. 6 AWG STRANDED BARE COPPER GROUND WIRE |
| 805115 | 200 LF | 3 INCH SCHEDULE 80 RIGID PVC ELECTRICAL CONDUIT - BORED |
| 805118 | 300 LF | 4 INCH SCHEDULE 80 RIGID PVC ELECTRICAL CONDUIT - BORED |
| 805135 | 40 LF | 3 INCH SCHEDULE 80 RIGID PVC ELECTRICAL CONDUIT - TRENCHED |
| 810605 | 6 EA | NON-INVASIVE DETECTOR, 1000 FOOT LEAD IN CABLE |
| 811001 | 7 EA | ELECTRICAL HANDHOLE |
| 813014 | 39 SF | INSTALL GROUND MOUNTED SIGN |
| 813015 | 11 SF | INSTALL OVERHEAD SIGN |
| 816001 | 6 EA | VIDEO DETECTION CAMERA |
| 816005 | 1 EA | CONTROL CABLE, 250 FOOT, VIDEO DETECTION CAMERA TO CONTROLLER |
| 816010 | 5 EA | CONTROL CABLE, 500 FOOT, VIDEO DETECTION CAMERA TO CONTROLLER |
| 818004 | 2 EA | 10 FOOT BREAKAWAY PEDESTAL POLE |
| 837001 | 2 EA | GROUND ROD - 3/4 IN. DIAMETER x 10 FT. LENGTH |
| 860292 | 1 EA | CUT, CLEAN, GALVANIZE AND CAP TRAFFIC SIGNAL STRUCTURE |
| 861105 | 530 LF | ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG) |
| 861107 | 540 LF | ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG) |
| 861108 | 1910 LF | ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG) |
| 861116 | 680 LF | ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 AWG), TC |

## WIRING DIAGRAM




## PROPOSED PEDESTAL POLE, APS, VIDEO DETECTION, AND PAVEMENT MARKING LAYOUT




## PHASE CHART

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (1)(2) | (3)(4) | (5)(6) | (1) | (2) | (3)(4) | (5)(6) | (7)(8) | (1) | (2) | (3)(4) | (5)(6) | (7) | (8) | (5) | (6) | (1)(2)(3)(4) | (5)(6)(7)(8) |
| PHASE 1 + 5 | ~~G~~ | ~~G~~ | ~~G~~ | R | R | ~~G~~ | ~~G~~ | ~~G~~ | R | R | R | R | R | R | R | R | DW | DW |
| PHASE 1 + 5 CHANGE | THE CONTROLLER MAY SKIP TO PHASE 1 + 6, 2 + 5, OR 2 + 6 | | | | | | | | | | | | | | | | DW | DW |
| PHASE 1 + 6 | ~~G~~ | ~~G~~ | ~~G~~ | G | G | ~~R~~ | ~~R~~ | ~~R~~ | R | R | R | R | R | R | R | R | DW | DW |
| PHASE 1 CHANGE | ~~Y~~ | ~~Y~~ | ~~Y~~ | G | G | ~~R~~ | ~~R~~ | ~~R~~ | R | R | R | R | R | R | R | R | DW | DW |
| PHASE 2 + 5 | ~~R~~ | ~~R~~ | ~~R~~ | R | R | ~~G~~ | ~~G~~ | ~~G~~ | G | G | R | R | R | R | R | R | DW | DW |
| PHASE 5 CHANGE | ~~R~~ | ~~R~~ | ~~R~~ | R | R | ~~Y~~ | ~~Y~~ | ~~Y~~ | G | G | R | R | R | R | R | R | DW | DW |
| PHASE 2 + 6 | ~~R~~ | ~~R~~ | ~~R~~ | G | G | ~~R~~ | ~~R~~ | ~~R~~ | G | G | R | R | R | R | R | R | DW | DW |
| PHASE 2 + 6 CHANGE | ~~R~~ | ~~R~~ | ~~R~~ | Y | Y | ~~R~~ | ~~R~~ | ~~R~~ | Y | Y | R | R | R | R | R | R | DW | DW |
| PHASE 3 | ~~R~~ | ~~R~~ | ~~R~~ | R | R | ~~R~~ | ~~R~~ | ~~R~~ | R | R | G / ~~G~~ | G / ~~G~~ | G | R | R | R | DW | DW |
| PHASE 3 CHANGE | ~~R~~ | ~~R~~ | ~~R~~ | R | R | ~~R~~ | ~~R~~ | ~~R~~ | R | R | Y | Y | Y | R | R | R | DW | DW |
| PHASE 3 ALT. | ~~R~~ | ~~R~~ | ~~R~~ | R | R | ~~R~~ | ~~R~~ | ~~R~~ | R | R | G / ~~G~~ | G / ~~G~~ | G | R | R | R | W | W |
| PHASE 3 ALT. PED CLEARANCE | ~~R~~ | ~~R~~ | ~~R~~ | R | R | ~~R~~ | ~~R~~ | ~~R~~ | R | R | G / ~~G~~ | G / ~~G~~ | G | R | R | R | FL/DW | FL/DW |
| PHASE 3 ALT. CHANGE | ~~R~~ | ~~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 | R | G / ~~G~~ | G / ~~G~~ | G | DW | DW |
| PHASE 4 CHANGE | ~~R~~ | ~~R~~ | ~~R~~ | R | R | ~~R~~ | ~~R~~ | ~~R~~ | R | R | R | R | R | Y | Y | Y | DW | DW |
| PRE-EMPT PHASE 1 + 6 | ~~G~~ | ~~G~~ | ~~G~~ | G | G | ~~R~~ | ~~R~~ | ~~R~~ | R | R | R | R | R | R | R | R | DW | DW |
| PRE-EMPT PHASE 1 + 6 CHANGE | ~~Y~~ | ~~Y~~ | ~~Y~~ | Y | Y | ~~R~~ | ~~R~~ | ~~R~~ | R | R | R | R | R | R | R | R | DW | DW |
| FLASHING OPERATION | FL/RA | FL/RA | FL/RA | FL/Y | FL/Y | FL/RA | FL/RA | FL/RA | FL/Y | FL/Y | FL/R | FL/R | FL/R | FL/R | FL/R | FL/R | DARK | DARK |

## EQUIPMENT LIST 'C'

EQUIPMENT TO BE REMOVED AND RETURNED TO SHA.

| ITEM NO | QUANTITY | DESCRIPTION |
|---|---|---|

ALL REMOVED EQUIPMENT SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

A B C D E — ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)

F G H J K — CONTROL CABLE, 500 FOOT, VIDEO DETECTION CAMERA TO CONTROLLER

L M N O P Q — NON-INVASIVE MICROLOOP PROBE, 1000 FOOT LEAD-IN CABLE

R — NO. 6 AWG STRANDED BARE COPPER GROUND WIRE

S T U V W — ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)

X Y — ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)

Z — CONTROL CABLE, 250 FOOT, VIDEO DETECTION CAMERA TO CONTROLLER

aa bb — ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 AWG)

NML — NON-INVASIVE MICROLOOP PROBE SET

EPS — EXISTING POWER SOURCE

EXISTING GROUND ROD - 3/4 INCH DIAMETER X 10 FOOT LENGTH.

PROPOSED GROUND ROD - 3/4 INCH DIAMETER X 10 FOOT LENGTH.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BY: THOMPSMA

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

MD 175 (PATUXENT PARKWAY) AT DOBBIN ROAD

## GENERAL INFORMATION

SCALE NONE DATE 10/2007 CONTRACT NO. H03715177

DESIGNED BY SBS
DRAWN BY SBS
CHECKED BY BAB CSW
F.A.P. NO.

COUNTY HOWARD
LOGMILE 13017504.18
T.I.M.S. NO. H951
TOD NO.

TS NO. 1396 I-GI | DRAWING SG - 6 OF 6 | SHEET NO. OF

PLOTTED: FRIDAY, OCTOBER 12, 2007 AT 08:56 AM
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