## PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE INSTALLATION OF A NEW TRAFFIC SIGNAL AT MD 216 AND LEISHEAR ROAD IN HOWARD COUNTY. MD 216 IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION. INTERSECTION LIGHTING AND INTERCONNECT SHALL BE PROVIDED.

INTERSECTION OPERATION

1. NORMAL OPERATION

THE INTERSECTION WILL OPERATE IN A SIX PHASE FULL TRAFFIC-ACTUATED MODE WITH THE MD 216 APPROACHES RUNNING CONCURRENTLY AND LEISHEAR ROAD APPROACHES OPERATING AS A SPLIT PHASE. EXCLUSIVE LEFT TURN PHASING WILL BE PROVIDED FOR THE MD 216 APPROACHES.

## CONTROLLER REQUIREMENTS

A FULLY-TRAFFIC-ACTUATED EIGHT PHASE TRAFFIC SIGNAL CONTROLLER IN A BASE-MOUNTED SYSTEM READY CABINET HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET.

## PROJECT CONTACTS

CONTACTS FOR DISTRICT 7:

MR. JOHN CONCANNON
ASSISTANT DISTRICT ENGINEER - TRAFFIC
PHONE: (301) 624-8140

MR. JAMES BUCKALEW
DISTRICT UTILITIES ENGINEER
PHONE: (301) 624-8115

MR. DAVE COYNE
ASSISTANT DISTRICT ENGINEER - MAINTENANCE
PHONE: (301) 624-8105

THE POWER COMPANY REPRESENTATIVE:
MR. BILL HARTMAN
BG&E POWER COMPANY
PHONE: (410) 291-3570

CONTACTS FOR OFFICE OF TRAFFIC AND SAFETY:

MR. RICHARD DAFF SR.
CHIEF,-TRAFFIC OPERATIONS
410-787-7630

MR. ROBERT SNYDER
ASSISTANT DIVISION CHIEF, TRAFFIC OPERATIONS
410-787-7630

MR. ED RODENHIZER
TEAM LEADER SIGNAL OPERATIONS
410-787-7650

MR. EUGENE BAILEY
TEAM LEADER SIGN OPERATIONS
410-787-7676

MS. DARLENE EIDE
SIGNAL SHOP WAREHOUSE
410-787-7668

## EQUIPMENT LIST "A"

A. EQUIPMENT TO BE SUPPLIED BY THE SHA.

| CATEGORY CODE NO. | QUANTITY | DESCRIPTION |
|---|---|---|
| 973023 | 1 L.S. | SHEET ALUMINUM SIGNS TO CONSIST OF: |
| | | - 2 EACH D-3(1) (VARIABLEx16") MAST ARM MOUNT |
| | | - 7 EACH R3-5(L) (30"x36") MAST ARM MOUNT |
| | | - 1 EACH R3-5(R) (30"x36") MAST ARM MOUNT |
| | | - 1 EACH ONE PIECE SHIELD ASSEMBLY ON A BLACK BACKGROUND (48"x75") POLE MOUNT: M3-4 (30"x15") M1-5 (48"x36") M6-1 (30"x24") |
| | | - 1 EACH ONE PIECE SHIELD ASSEMBLY ON A BLACK BACKGROUND (48"x75") POLE MOUNT: M3-2 (30"x15") M1-5 (48"x36") M6-1 (30"x24") |
| | | - 1 EACH ONE PIECE SHIELD ASSEMBLY ON A BLACK BACKGROUND (30"x51") POLE MOUNT: M3-4 (24"x12") M1-5 (30"x24") M6-1 (21"x15") |
| | | - 1 EACH ONE PIECE SHIELD ASSEMBLY ON A BLACK BACKGROUND (30"x51") POLE MOUNT: M3-2 (24"x12") M1-5 (30"x24") M6-1 (21"x15") |

## EQUIPMENT LIST "B"

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

| CATEGORY CODE NO. | QUANTITY | DESCRIPTION |
|---|---|---|
| 585462 | 1 L.S. | REMOVAL OF EXISTING PERMANENT PAVEMENT LINE MARKINGS - ANY WIDTH |
| 585620 | 1 L.S. | 12 IN. WHITE HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS |
| 585624 | 1 L.S. | 24 IN. WHITE HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS |
| 800000 | 1 L.S. | 70 FT. MAST ARM |
| 801004 | 1 L.S. | CONCRETE FOR SIGNAL FOUNDATION |
| 802501 | 1 L.S. | NO. 6 AWG STRANDED BARE COPPER GROUND WIRE |
| 805011 | 1 L.S. | 1 IN. ELECTRICAL CONDUIT - GALVANIZED SLEEVE |
| 805118 | 1 L.S. | 4" SCHEDULE 80 RIGID PVC CONDUIT - BORED |
| 805135 | 1 L.S. | 3" SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED |
| 805160 | 1 L.S. | 1 INCH LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR SLEEVE |
| 810555 | 1 L.S. | MICROLOOP PROBE SET WITH 1000 FT. LEAD-IN |
| 811001 | 1 L.S. | ELECTRICAL HANDHOLE |
| 816001 | 1 L.S. | VIDEO DETECTION CAMERA |
| 816005 | 1 L.S. | CONTROL CABLE, 250 FOOT, VIDEO DETECTION CAMERA TO CONTROLLER |
| 818052 | 1 L.S. | STEEL POLE WITH A SINGLE 70 FT. MAST ARM |
| 831010 | 1 L.S. | 250 WATT HIGH PRESSURE SODIUM LUMINAIRE WITH PHOTOCELL |
| 837001 | 1 L.S. | GROUND ROD - 3/4 IN. DIAMETER x 10 FT. LENGTH |
| 860220 | 1 L.S. | INSTALL SIGNAL HEADS - MAST ARM MOUNT |
| 860272 | 1 L.S. | 12 IN. TRAFFIC SIGNAL HEAD SECTION |
| 860278 | 1 L.S. | 12 IN. PEDESTRIAN SIGNAL HEAD SECTION POLE MOUNT |
| 861104 | 1 L.S. | ELECTRICAL CABLE - 2 CONDUCTOR (ALUMINUM SHIELDED) |
| 861105 | 1 L.S. | ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG) |
| 861106 | 1 L.S. | ELECTRICAL CABLE - 3 CONDUCTOR (NO. 14 AWG) |
| 861107 | 1 L.S. | ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG) |
| 861108 | 1 L.S. | ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG) |
| 861116 | 1 L.S. | ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 AWG) |
| 865001 | 1 L.S. | PUSHBUTTON AND SIGN |
| 866104 | 1 L.S. | 20 FOOT LIGHTING ARM ON SIGNAL STRUCTURE |

## EQUIPMENT LIST "C"

C. EQUIPMENT TO BE REMOVED BY THE CONTRACTOR AND DELIVERED TO THE STATE HIGHWAY ADMINISTRATION, 7491 CONNELLEY DRIVE, HANOVER, MARYLAND 21076.

| QUANTITY | DESCRIPTION |
|---|---|
| NONE | |

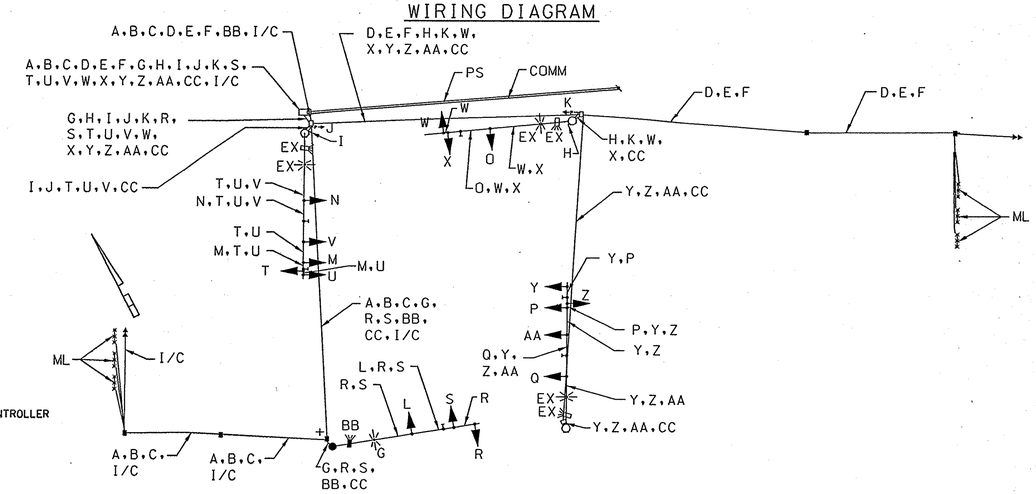
NOTES: 1. THE CONTRACTOR SHALL NOTIFY THE SHA AT 410-787-7652 AT LEAST THREE DAYS IN ADVANCE OF DELIVERY.

2. ALL EQUIPMENT TO BE REMOVED AND NOT LISTED ABOVE SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

## GENERAL NOTES

1. THE CONTRACTOR SHALL VERIFY ALL PROPOSED POLE AND CABINET LOCATIONS PRIOR TO INSTALLATION.
2. THE CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITIES PRIOR TO INSTALLING PROPOSED SIGNAL EQUIPMENT. THE CONTRACTOR SHALL CONTACT THE PROJECT ENGINEER IF ANY UTILITY CONFLICTS SHOULD ARISE.
3. ALL EXISTING TRAFFIC SIGNAL EQUIPMENT REMOVED SHALL BECOME THE PROPERTY OF THE SIGNAL CONTRACTOR UPON COMPLETION OF THE NEW SIGNAL.
4. CONDUITS ARE TO BE INSTALLED PRIOR TO INTSTALLATION OF FINAL PAVEMENT MARKINGS.
5. MICROLOOP PROBES ARE TO BE INSTALLED PRIOR TO INSTALLATION OF FINAL PAVEMENT SURFACE.
6. ALL PROPOSED TRAFFIC SIGNAL EQUIPMENT SHALL BE INSTALLED TO FINAL GRADE.

## WIRING DIAGRAM




## WIRING KEY

A,B,C,D,E,F } MICRO-LOOP LEAD-IN

G } 2-CONDUCTOR ELECTRICAL CABLE (NO. 12 A.W.G.)

H,I } 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)

J,K } 3-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)

L,M,N,O,P,Q } 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)

R,S,T,U,V,W,X,Y,Z,AA } 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)

BB } VIDEO DETECTION CAMERA TO CONTROLLER CABLE

CC } STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)

I/C - 12 PAIR JELLY FILLED INTERCONNECT (SEE INTERCONNECT PLAN)

PS - POWER SERVICE UNDERGROUND

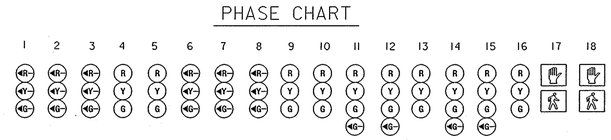
ML - MICRO-LOOP PROBE SET

+ - 3/4 IN. x 10 FT. GROUND ROD

EX - EXISTING CABLE INSTALLED UNDER PREVIOUS PHASE

COMM - PHONE DROP

## PHASE CHART



| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PHASE 1+5 | ◄G- | ◄G- | ◄G- | R | R | ◄G- | ◄G- | ◄G- | R | R | R | R | R | R | R | R | DW | DW |
| 1 AND 5 CHANGE TO 1 AND 6, 2 AND 5, OR 2 AND 6 | | | | | | | | | | | | | | | | | | |
| PHASE 1+6 | ◄G- | ◄G- | ◄G- | G | G | ◄R- | ◄R- | ◄R- | R | R | R | R | R | R | R | R | DW | DW |
| 1+6 CHANGE | ◄Y- | ◄Y- | ◄Y- | Y | Y | ◄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 |
| 2+5 CHANGE | ◄R- | ◄R- | ◄R- | R | R | ◄Y- | ◄Y- | ◄Y- | Y | Y | 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 |
| 2+6 CHANGE | ◄R- | ◄R- | ◄R- | Y | Y | ◄R- | ◄R- | ◄R- | Y | Y | R | R | R | R | R | R | DW | DW |
| PHASE 2 ALT+6 | ◄R- | ◄R- | ◄R- | G | G | ◄R- | ◄R- | ◄R- | G | G | R | R | R | R | R | R | WALK | WALK |
| PED CLEAR | ◄R- | ◄R- | ◄R- | G | G | ◄R- | ◄R- | ◄R- | G | G | R | R | R | R | R | R | FL/DW | FL/DW |
| 2 ALT+6 CLEAR | ◄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 | R | R | R | ◄G-/G | ◄G-/G | G | DW | DW |
| 3 CHANGE | ◄R- | ◄R- | ◄R- | R | R | ◄R- | ◄R- | ◄R- | R | R | R | R | R | Y | Y | Y | DW | DW |
| PHASE 4 | ◄R- | ◄R- | ◄R- | R | R | ◄R- | ◄R- | ◄R- | R | R | ◄G-/G | ◄G-/G | G | R | R | R | DW | DW |
| 4 CHANGE | ◄R- | ◄R- | ◄R- | R | R | ◄R- | ◄R- | ◄R- | R | R | Y | Y | Y | R | R | R | DW | DW |
| FLASHING OPERATION | ◄FL/R- | ◄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 |

SG-12

RUMMEL, KLEPPER & KAHL, LLP
CONSULTING ENGINEERS
81 MOSHER STREET
BALTIMORE, MARYLAND 21217

MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION
MD 216 AND LEISHEAR ROAD
GENERAL INFORMATION PLAN

| | | | | | |
|---|---|---|---|---|---|
| DESIGNED BY: HEH | F.A.P. NO. AC-STP-G-3605(2)N | TS NO. TS-1570D | SHEET NO. |
| CHECKED BY: DAE | S.H.A. NO. H0306517I | | |
| SCALE: 1"=20' | COUNTY: HOWARD | T.I.M.S. NO. F-513 | 13 OF 35 |
| DATE: MAY 21, 2003 | LOG MILE: 13021602.68 | | |

6/16/03 15:08:10
K:\projects\102-129\DGN\Package6\Traffic\sg02e216.dgn (SG02E216.PRP)