| F.H.W.A. REGION NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 3 | MD | | | |

## PROJECT DESCRIPTION

GENERAL

THIS PROJECT INVOLVES THE INSTALLATION OF A NEW TRAFFIC CONTROL SIGNAL AT THE INTERSECTION OF MD 414 (ST. BARNABAS ROAD) AND LEISURE DRIVE IN PRINCE GEORGES COUNTY. MD 414 IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

INTERSECTION OPERATION

THE INTERSECTION WILL OPERATE IN A NEMA FOUR-PHASE, FULL-TRAFFIC-ACTUATED MODE WITH THE MD 414 APPROACHES OPERATING CONCURRENTLY AND THE LEISURE DRIVE AND CHECKERS RESTAURANT APPROACHES OPERATING CONCURRENTLY.

AN ALTERNATE PEDESTRIAN PHASE WILL BE PROVIDED ACROSS THE EAST LEG OF MD 414.

CONTROLLER REQUIREMENTS

INSTALL A FULL-TRAFFIC-ACTUATED, EIGHT-PHASE CONTROLLER WITH TWO (2), FOUR-CHANNEL, TIME-DELAY-OUTPUT LOOP DETECTOR AMPLIFIERS WITH SYSTEM PACKAGE HOUSED IN A NEMA SIZE "5" POLE MOUNTED CABINET.

## MAINTENANCE OF TRAFFIC

THE CONTACT PERSONS FOR SHA ARE AS FOLLOWS:

MR. CHARLES WATKINS
DISTRICT ENGINEER
PHONE: (301) 513-7311

MR. MAJIB SHAKIB
ASSISTANT DISTRICT ENGINEER - TRAFFIC
PHONE: (301) 513-7358

MR. RANDY BROWN
ASSISTANT DISTRICT ENGINEER - MAINTENANCE
PHONE: (301) 513-7304

MR. AUGIE REBISH
DISTRICT UTILITIES ENGINEER
PHONE: (301) 513-7350

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

## PROJECT CONTACTS

THE FOLLOWING TRAFFIC CONTROL STANDARDS SHALL BE REFERENCED FOR THE PROJECT.

STANDARD NO. MD-104.00 - 104.00-12
STANDARD NO. MD-104.31-01 (FLAGGING OPERATION)
STANDARD NO. MD-104.49-01 (SHOULDER WORK)
STANDARD NO. MD-104.44-01 (LEFT-LANE CLOSURE)
STANDARD NO. MD-104.45-01 (RIGHT-LANE CLOSURE)
STANDARD NO. MD-104.46-01 (CENTER LANE CLOSURE)
STANDARD NO. MD-104.35-01 (LANE SHIFT)
STANDARD NO. MD-104.33-02 (SHOULDER WORK)
STANDARD NO. MD-104.32-02 (INTERSECTION FLAGGING OPERATION)

## EQUIPMENT LIST "A"

A. EQUIPMENT TO BE SUPPLIED BY SHA

| ITEM NO. | QUANTITY | DESCRIPTION |
|---|---|---|
| 9002 | 2 EACH | FOUR-CHANNEL, LOOP DETECTOR AMPLIFIER (DELAY OUTPUT). |
| 9014 | 8 EACH | 12 IN., ONE-WAY, THREE-SECTION (R,Y,G) TRAFFIC SIGNAL HEAD - MAST ARM MOUNT. |
| 9027 | 1 EACH | 12 IN., ONE-WAY, TWO-SECTION PEDESTRIAN SIGNAL HEAD - PEDESTAL MOUNT. |
| 9035 | 1 EACH | 12 IN., ONE-WAY, TWO-SECTION PEDESTRIAN SIGNAL HEAD - POLE MOUNT. |
| 9081 | 1 EACH | EIGHT-PHASE, FULL-TRAFFIC-ACTUATED CONTROLLER WITH SYSTEM PACKAGE HOUSED IN A NEMA SIZE "5" POLE MOUNTED CABINET. |
| 9089 | 77 S.F. | SHEET ALUMINUM SIGNS TO CONSIST OF : |
| | - 2 EACH | D-3(1) SIGN "LEISURE DR." (VARIABLE X 16 IN.) DUAL FACED - MAST ARM MOUNT. |
| | - 2 EACH | W3-3 SIGN (36 IN. X 36 IN.) WITH "NEW" PANEL (30 IN. X 30 IN.) AND FLAGS - GROUND MOUNT |
| | - 2 EACH | D-3(1) SIGN "ST. BARNABAS RD" (VARIABLE X 16 IN.) DUAL FACED - MAST ARM MOUNT. |
| 9096 | 2 EACH | PEDESTRIAN PUSHBUTTON AND R10-4 SIGN (NOTE: SIGN TO READ "PUSHBUTTON TO CROSS ST. BARNABAS RD") |

## PHASE CHART

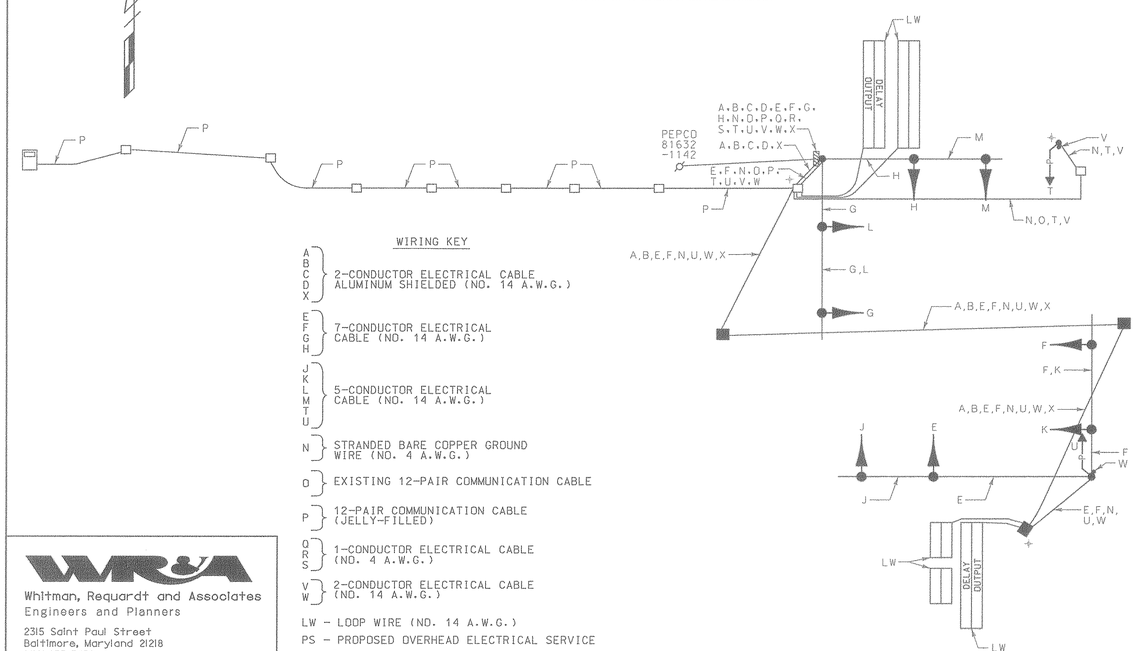
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| PHASE 2 + 6 | G | G | G | G | R | R | R | R | DW | DW |
| 2 + 6 CHANGE | Y | Y | Y | Y | R | R | R | R | DW | DW |
| PHASE 4 + 8 | R | R | R | R | G | G | G | G | DW | DW |
| 4 + 8 CHANGE | R | R | R | R | Y | Y | Y | Y | DW | DW |
| PHASE 4 + 8 ALT. | R | R | R | R | G | G | G | G | WK | WK |
| PED CLEAR. | R | R | R | R | G | G | G | G | FL/DW | FL/DW |
| 4 + 8 ALT. CHANGE | R | R | R | R | Y | Y | Y | Y | DW | DW |
| FLASHING OPERATION | FL/Y | FL/Y | FL/Y | FL/Y | FL/R | FL/R | FL/R | FL/R | DARK | DARK |

## EQUIPMENT LIST "B"

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

| ITEM NO. | QUANTITY | DESCRIPTION |
|---|---|---|
| 1001 | 1 EACH | MAINTENANCE OF TRAFFIC PER ASSIGNMENT |
| 1003 | 1 EACH | MOBILIZATION FOR ASSIGNMENTS OUT OF CONTRACT AREA |
| 2001 | 3 C.Y. | TEST PIT EXCAVATION |
| 2004 | 17 C.Y. | CLASS 2 EXCAVATION |
| 5007 | 60 L.F. | 6 IN. YELLOW THERMOPLASTIC PAVEMENT MARKING TAPE |
| 5008 | 80 L.F. | 6 IN. WHITE THERMOPLASTIC PAVEMENT MARKING TAPE |
| 5009 | 420 L.F. | 12 IN. WHITE THERMOPLASTIC PAVEMENT MARKING TAPE (CROSSWALK) |
| 5010 | 110 L.F. | 24 IN. WHITE THERMOPLASTIC PAVEMENT MARKING TAPE |
| 5013 | 50 L.F. | REMOVE EXISTING PAVEMENT MARKINGS - ANY WIDTH |
| 6001 | 250 S.F. | 4 IN. CONCRETE SIDEWALK |
| 6009 | 24 L.F. | MONOLITHIC CONCRETE MEDIAN 4 FT. WIDE TYPE A |
| 6010 | 40 L.F. | FURNISH AND INSTALL DEPRESSED CURB AND GUTTER |
| 8001 | 9 C.Y. | FURNISH AND INSTALL CONCRETE FOR SIGNAL FOUNDATION |
| 8003 | 1 EACH | FURNISH AND INSTALL 10 FT. BREAKAWAY PEDESTAL POLE |
| 8006 | 2 EACH | CUT, CLEAN, GALVANIZE AND CAP TRAFFIC SIGNAL STRUCTURE |
| 8011 | 10 EACH | INSTALL SIGNAL HEAD (ANY TYPE) |
| 8018 | 2 EACH | INSTALL PUSHBUTTON AND SIGN |
| 8019 | 1 EACH | INSTALL CONTROLLER AND CABINET - POLE MOUNT |
| 8021 | 500 L.F. | SAW CUT FOR SIGNAL (LOOP DETECTOR) |
| 8023 | 20 L.F. | FURNISH AND INSTALL 2 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED |
| 8024 | 35 L.F. | FURNISH AND INSTALL 1 IN. LIQUID-TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR SLEEVE |
| 8027 | 30 L.F. | FURNISH AND INSTALL 3 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED |
| 8030 | 40 L.F. | FURNISH AND INSTALL 4 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED |
| 8031 | 255 L.F. | FURNISH AND INSTALL 4 IN. SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED |
| 8033 | 3 EACH | FURNISH AND INSTALL ELECTRICAL HANDHOLE |
| 8034 | 3 EACH | FURNISH AND INSTALL GROUND ROD - 3/4 IN. DIAMETER X 10 FT. LENGTH |
| 8039 | 700 L.F. | FURNISH AND INSTALL 12 PAIR COMMUNICATION CABLE, JELLY FILLED (UNDERGROUND) |
| 8040 | 1900 L.F. | FURNISH AND INSTALL LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO 14. A.W.G.) |
| 8041 | 1000 L.F. | FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 A.W.G.) ALUMINUM SHIELDED |
| 8042 | 460 L.F. | FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 A.W.G.) |
| 8044 | 560 L.F. | FURNISH AND INSTALL ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 A.W.G.) |
| 8045 | 1000 L.F. | FURNISH AND INSTALL ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 A.W.G.) |
| 8047 | 1 EACH | FURNISH AND INSTALL MAST ARM POLE AND TWIN 50 FT/50 FT. MAST ARMS |
| 8049 | 500 L.F. | FURNISH AND INSTALL NO. 6 A.W.G. STRANDED BARE COPPER GROUND WIRE |
| 8050 | 45 L.F. | FURNISH AND INSTALL ELECTRICAL CABLE 1-CONDUCTOR NO. 4 A.W.G. - THHN/THWN |
| 8051 | 36 L.F. | FURNISH AND INSTALL WOOD SIGN SUPPORTS 4 IN. X 4 IN. |
| 8053 | 32 S.F. | INSTALL GROUND MOUNTED SIGN |
| 8054 | 45 S.F. | INSTALL OVERHEAD SIGN |
| 8061 | 1 EACH | REMOVE AND DISPOSE OF EXISTING MATERIAL AND EQUIPMENT PER ASSIGNMENT |
| 8070 | 1 EACH | FURNISH AND INSTALL CONTROL AND DISTRIBUTION EQUIPMENT (120/240V, 1 PHASE 3 WIRE SYST) |
| 8086 | 1 EACH | FURNISH AND INSTALL MAST ARM POLE AND TWIN (50 FT./70 FT.) OR (70 FT./50 FT.) MAST ARMS |
| NEG. | 160 L.F. | PULL BACK AND RE-FEED EXISTING INTERCONNECT CABLE |
| NEG. | 2 EACH | RELOCATE EXISTING SIGN AND SUPPORT |

## WIRING DIAGRAM



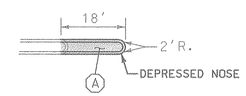

WIRING KEY

- A, B, C, D, X — 2-CONDUCTOR ELECTRICAL CABLE ALUMINUM SHIELDED (NO. 14 A.W.G.)
- E, F, G, H — 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- J, K, L, M, T, U — 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- N — STRANDED BARE COPPER GROUND WIRE (NO. 4 A.W.G.)
- O — EXISTING 12-PAIR COMMUNICATION CABLE
- P — 12-PAIR COMMUNICATION CABLE (JELLY-FILLED)
- Q, R, S — 1-CONDUCTOR ELECTRICAL CABLE (NO. 4 A.W.G.)
- V, W — 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)

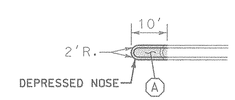
LW - LOOP WIRE (NO. 14 A.W.G.)
PS - PROPOSED OVERHEAD ELECTRICAL SERVICE
⏚ - 3/4 IN. X 10 FT. GROUND ROD

## MEDIAN DETAIL

MEDIAN DETAIL A




MEDIAN DETAIL B




A. 4 FT. MONOLITHIC CONCRETE MEDIAN, TYPE A

SCALE: 1"=20'


WR&A
Whitman, Requardt and Associates
Engineers and Planners
2315 Saint Paul Street
Baltimore, Maryland 21218
(410) 235-3450


| REVISIONS | APPROVALS | REVISIONS |
|---|---|---|
| | ASSISTANT DIVISION CHIEF | |
| | ASST. DISTRICT ENGINEER, TRAFFIC | |
| | CHIEF, TRAFFIC ENGINEERING DESIGN DIVISION | |
| | DIRECTOR, OFFICE OF TRAFFIC & SAFETY | |

MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION
GENERAL INFORMATION SHEET
MD 414 (ST. BARNABAS RD) AND LEISURE DRIVE

| | | | | | |
|---|---|---|---|---|---|
| DATE: 4-15-98 | DRAWN BY: S.BLOSS | F.A.P. NO. | | PLAN SHEET NO.: | SHEET NO. |
| SCALE: NONE | DESIGNED BY: N.LEARY | S.H.A. NO. | AW278 A55/B55/M55 | | 2 OF 2 |
| APPROVED BY: | CHECKED BY: T.HANNAN | COUNTY | PRINCE GEORGES | | |

M:\96011\31034GIS.DGN