# PROJECT DESCRIPTION

## I. GENERAL

THIS PROJECT INVOLVES THE INSTALLATION OF A TRAFFIC CONTROL SIGNAL AT THE INTERSECTION OF MD 235 AND AN ENTRANCE TO WALMART. MD 235 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

## II. INTERSECTION OPERATION

THIS INTERSECTION WILL OPERATE IN A NEMA FOUR (4) PHASE, FULL-TRAFFIC ACTUATED MODE. THE NORTHBOUND MD 235 LEFT TURN MOVEMENT WILL BE CONTROLLED WITH A FLASHING RED ARROW UNTIL QUEUED VEHICLES ACTUATE A STEADY GREEN LEFT TURN INDICATION AND SOUTHBOUND MD 235 THROUGH TRAFFIC IS STOPPED. THE MD 235 THROUGH MOVEMENTS WILL OPERATE CONCURRENTLY. THE WAL MART ENTRANCE MOVEMENT WILL OPERATE SEPARATELY

A PEDESTRIAN PHASE WILL OPERATE ON THE WEST LEG CONCURRENTLY WITH THE MD 235 THROUGH MOVEMENTS.

PRE-EMPTION ON NORTHBOUND MD 235 WILL CALL PRE-EMPT 1.

## III. CONTROLLER REQUIREMENTS

A FULL-TRAFFIC-ACTUATED EIGHT-PHASE CONTROLLER WITH THREE (3) FOUR-CHANNEL TIME DELAY OUTPUT LOOP DETECTOR AMPLIFIERS, PRE-EMPTION, TELEMETRY UNIT AND ASSOCIATED HARNESSES HOUSED IN A NEMA SIZE 6 BASE MOUNTED CABINET.

## IV. INTERCONNECT

EXISTING 12 PAIR VOICE GRADE COMMUNICATION CABLE CABLE SHALL BE ROUTED BETWEEN OLD ROLLING ROAD AND WALMART ENTRANCE AS SHOWN ON INTERCONNECT PLANS AND WIRING DIAGRAM.

## V. PROJECT CONTACTS

THE PROJECT CONTACTS FOR DISTRICT #5 ARE AS FOLLOWS:

MR. PAUL ARMSTRONG
DISTRICT ENGINEER
PHONE: 410-841-5450

MR. LAWRENCE E. ELLIOT
ASSISTANT DISTRICT ENGINEER-TRAFFIC
PHONE: 410-841-5450

MR. RAYMOND HUTZLER
ASSISTANT DISTRICT ENGINEER-MAINTENANCE
PHONE: 410-841-5461

MR. JOHN MAYS
DISTRICT UTILITY ENGINEER
PHONE: 410-841-5450

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

THE PROJECT CONTACT FOR THE SOUTHERN MARYLAND ELECTRIC COOPERATIVE, INC. (SMECO) IS AS FOLLOWS:

DISTRICT MANAGER
SMECO
P.O. BOX 128
LEONARDTOWN, MARYLAND 20650
PHONE: 301-475-5631

# EQUIPMENT LIST 'A'

EQUIPMENT TO BE SUPPLIED BY THE ADMINISTRATION

| QUANTITY | UNIT | SPECIFICATION SECTION | DESCRIPTION | CATEGORY CODE NO. |
|---|---|---|---|---|
| 1 | EA | 816 | EIGHT-PHASE, FULL-TRAFFIC-ACTUATED, SOLID STATE DIGITAL CONTROLLER HOUSED IN A NEMA SIZE '6' BASE MOUNTED CABINET | 971017 |
| 3 | EA | SP | FOUR-CHANNEL, TIME DELAY OUTPUT, LOOP DETECTOR AMPLIFIER | 963007 |
| 4 | EA | 814 | 12 INCH 1 WAY 3 SECTION (R, Y, G) SIGNAL HEAD - MAST ARM MOUNT | 960022 |
| 5 | EA | 814 | 12 INCH 1 WAY 3 SECTION (RA, YA, GA) SIGNAL HEAD - MAST ARM MOUNT | 960023 |
| 2 | EA | 814 | 12 INCH 1 WAY 2 SECTION PEDESTRIAN SIGNAL HEAD-SIDE POLE MOUNT | 960068 |
| 103 | SF | 813 | FLAT SHEET ALUMINUM SIGNS CONSISTING OF: | 973023 |

- 1 EACH R10-6(L) (60" X 36")-MAST ARM MOUNT
- 2 EACH R3-5L (30" X 36")-MAST ARM MOUNT
- 1 EACH ASSOCIATE SHIELD ASSEMBLY (48"X75") - SIDE POLE MOUNT
- 1 EACH ASSOCIATE SHIELD ASSEMBLY (30"X51") - SIDE POLE MOUNT
- 2 EACH D95-2 (24"X12") - GROUND MOUNT
- 2 EACH W3-3 (48"X48") - GROUND MOUNT

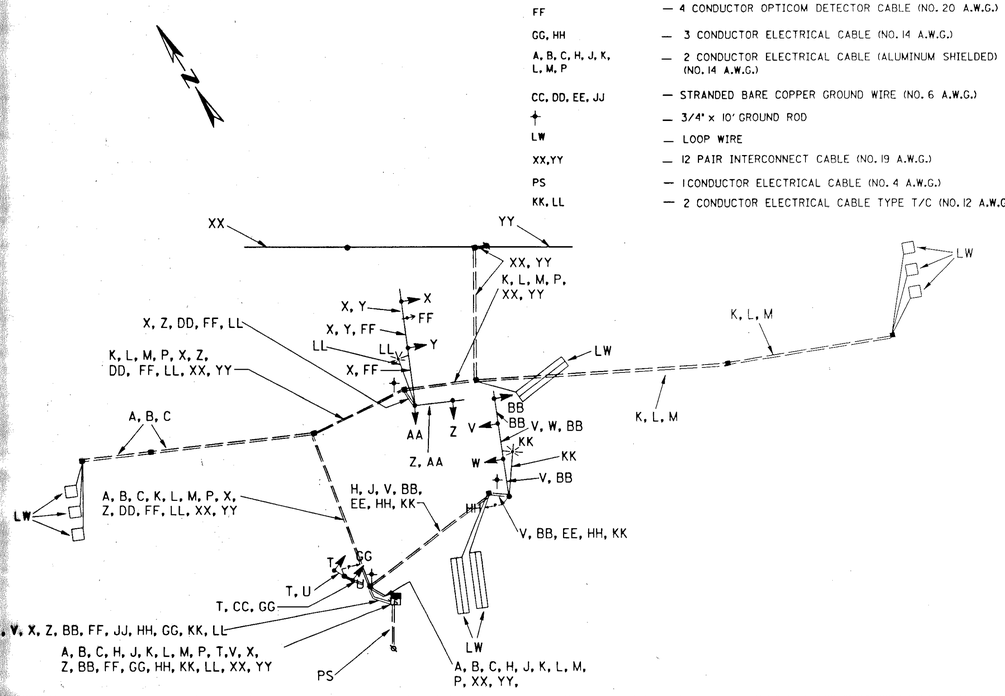
# EQUIPMENT LIST 'B'

EQUIPMENT FURNISHED AND/OR INSTALLED BY THE CONTRACTOR

| QUANTITY | UNIT | SPECIFICATION SECTION | DESCRIPTION | CATEGORY CODE NO. |
|---|---|---|---|---|
| 3 | CY | 205 | TEST PIT EXCAVATION | 203030 |
| 200 | LF | SP | 12 INCH WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING TAPE | 585443 |
| 145 | LF | SP | 24 INCH WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING TAPE | 585445 |
| 1 | EA | 816 | INSTALL CONTROLLER AND CABINET-BASE MOUNT | 871202 |
| 67 | SF | 813 | INSTALL OVERHEAD SIGN | 813015 |
| 11 | EA | 814 | INSTALL SIGNAL HEAD (ANY TYPE) | 800000 |
| 2 | EA | SP | FURNISH AND INSTALL 20' LIGHTING ARM | 866104 |
| 10 | EA | 811 | FURNISH AND INSTALL ELECTRICAL HANDHOLE | 811001 |
| 10 | CY | 801 | FURNISH AND INSTALL CONCRETE FOR SIGNAL FOUNDATION | 801204 |
| 75 | LF | 805 | FURNISH AND INSTALL 1" LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR SLEEVE | 805160 |
| 725 | LF | 805 | FURNISH AND INSTALL 2" SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED | 800000 |
| 225 | LF | 805 | FURNISH AND INSTALL 2" SCHEDULE 80 RIGID PVC CONDUIT-SLOTTED | 805145 |
| 145 | LF | 805 | FURNISH AND INSTALL 3" SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED | 800000 |
| 25 | LF | 805 | FURNISH AND INSTALL 4" SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED | 800000 |
| 1 | EA | 807 | FURNISH AND INSTALL CONTROL AND DISTRIBUTION EQUIPMENT | 807205 |

| QUANTITY | UNIT | SPECIFICATION SECTION | DESCRIPTION | CATEGORY CODE NO. |
|---|---|---|---|---|
| 3 | EA | SP | CUT, CLEAN AND CAP TRAFFIC SIGNAL STRUCTURE | 800000 |
| 1 | EA | SP | FURNISH AND INSTALL OPTICOM DETECTOR EYE MODEL 721 | 800000 |
| 2 | EA | 806 | FURNISH AND INSTALL 250 WATT HIGH PRESSURE SODIUM LAMP AND LUMINAIRE WITH PHOTOCELL | 800000 |
| 3 | EA | 804 | FURNISH AND INSTALL GROUND ROD-3/4 INCH DIAMETER X 10-FOOT LENGTH | 837001 |
| 300 | LF | 810 | FURNISH AND INSTALL NO. 6 AWG STRANDED BARE COPPER GROUND WIRE | 802501 |
| 250 | LF | 810 | FURNISH AND INSTALL OPTICOM CABLE-4 CONDUCTOR (NO. 20 AWG) | 800000 |
| 3550 | LF | 810 | FURNISH AND INSTALL ELECTRICAL CABLE-2 CONDUCTOR (ALUMINUM SHIELDED) | 861104 |
| 175 | LF | 810 | FURNISH AND INSTALL ELECTRICAL CABLE-3 CONDUCTOR (NO 14 AWG) | 861106 |
| 975 | LF | 810 | FURNISH AND INSTALL ELECTRICAL CABLE--5 CONDUCTOR (NO 14 AWG) | 861107 |
| 20 | LF | 805 | FURNISH AND INSTALL 2" SCHEDULE 80 PVC RISER | 805023 |
| 2450 | LF | 810 | FURNISH AND INSTALL LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO 14 AWG) | 862101 |
| 650 | LF | 815 | FURNISH AND INSTALL SAWCUT FOR SIGNAL (LOOP DETECTOR) | 862102 |
| 70 | LF | 810 | FURNISH AND INSTALL ELECTRICAL CABLE 1 CONDUCTOR (NO. 4 AWG) | 810010 |
| 400 | LF | 810 | FURNISH AND INSTALL 2-CONDUCTOR TRAY CABLE (NO 12 AWG) | 861116 |

| QUANTITY | UNIT | SPECIFICATION SECTION | DESCRIPTION | CATEGORY CODE NO. |
|---|---|---|---|---|
| 1 | EA | SP | FURNISH AND INSTALL 27-FOOT STEEL POLE WITH SINGLE 60-FOOT MAST ARM | 800000 |
| 1 | EA | SP | FURNISH AND INSTALL 27-FOOT STEEL POLE WITH TWIN 50-FOOT AND 50-FOOT MAST ARMS | 800000 |
| 1 | EA | SP | FURNISH AND INSTALL 14-FOOT BREAKAWAY PEDESTAL POLE | 800000 |
| 64 | LF | 812 | FURNISH AND INSTALL WOOD SIGN SUPPORTS 4"X4" | 801104 |




## PHASE CHART

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PHASE 2 & 6 | G | G | FL/◄R | FL/◄R | FL/◄R | G | G | ◄R- | ◄R- | W | W | ← |
| PED CLEAR | G | G | FL/◄R | FL/◄R | FL/◄R | G | G | ◄R- | ◄R- | FL/DW | FL/DW | → |
| 2 & 6 CHANGE | Y | Y | FL/◄R | FL/◄R | FL/◄R | Y | Y | ◄R- | ◄R- | DW | DW | ○- - - - ○ |
| PHASE 1 & 6 | R | R | ◄G- | ◄G- | ◄G- | G | G | ◄R- | ◄R- | DW | DW | ← |
| 6 CHANGE | R | R | ◄Y- | ◄Y- | ◄Y- | G | G | ◄R- | ◄R- | DW | DW | ↓ |
| PHASE 4 | R | R | ◄R- | ◄R- | ◄R- | R | R | ◄G- | ◄G- | DW | DW | ↑ |
| 4 CHANGE | R | R | ◄R- | ◄R- | ◄R- | R | R | ◄Y- | ◄Y- | DW | DW | |
| PRE EMPT 1 | R | R | ◄G- | ◄G- | ◄G- | G | G | ◄R- | ◄R- | DW | DW | ← |
| PRE EMPT 1 CHANGE | R | R | ◄Y- | ◄Y- | ◄Y- | Y | Y | ◄R- | ◄R- | DW | DW | ↓ |
| | | | | | | | | | | | | |
| FLASHING OPERATION | FL/Y | FL/Y | FL/◄R | FL/◄R | FL/◄R | FL/Y | FL/Y | FL/◄R | FL/◄R | DARK | DARK | ← ↑ → ↓ |

SD-6 OF SD-8

KCI TECHNOLOGIES

KCI TECHNOLOGIES INC.
ENGINEERS AND PLANNERS
10 NORTH PARK DRIVE
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| REVISIONS | APPROVALS |
|---|---|
| | CHIEF, SIGNAL DESIGN SECTION |
| | ASST. DISTRICT ENGINEER, TRAFFIC |
| | CHIEF, TRAFFIC ENGINEERING DESIGN DIVISION |
| | DIRECTOR, OFFICE OF TRAFFIC & SAFETY |

MDOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION

DRAWN BY: P.S./R.L.B.
DES. BY: P.S./R.L.B.
CHK. BY:

MD. 235 NORTH OF MD ROUTE 4 TO MD 237
GENERAL INFORMATION SHEET
MD 235 AND WALMART ENTRANCE
COUNTY: ST. MARY'S

DATE: AUGUST 1998 F.A.P. NO. SEE TITLE SHEET
SCALE: NONE S.H.A. NO. SEE TITLE SHEET
TS/STD. NO. 3842-GI
SHEET NO. 148 OF 213