PROJECT DESCRIPTION

I. GENERAL

THIS PROJECT INVOLVES THE MODIFICATION OF AN EXISTING TRAFFIC CONTROL SIGNAL AT THE INTERSECTION OF MD 235 AND TOWN CREEK DRIVE. MD 235 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION

II. INTERSECTION OPERATION

THE INTERSECTION WILL OPERATE IN A NEMA FIVE (5) PHASE, FULL-TRAFFIC ACTUATED MODE. EXCLUSIVE LEFT TURN PHASES WILL BE PROVIDED FOR NORTHBOUND AND SOUTHBOUND MD 235. THE MD 235 THROUGH MOVEMENTS WILL OPERATE CONCURRENTLY. THE WESTBOUND TOWN CREEK DRIVE APPROACH WILL OPERATE SEPARATELY.

A PEDESTRIAN PHASE WILL OPERATE ON THE EAST LEG CONCURRENTLY WITH THE MD 235 THROUGH MOVEMENTS. AN ALTERNATE PEDESTRIAN PHASE IS PROVIDED ON THE NORTH LEG OF MD 235.

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

III. CONTROLLER REQUIREMENTS

A FULL-ACTUATED EIGHT-PHASE CONTROLLER WITH THREE (3) FOUR CHANNEL TIME DELAY OUTPUT LOOP DETECTOR AMPLIFIERS, TELEMETRY UNIT AND ASSOCIATED HARNESSES HOUSED IN A NEMA SIZE '6' BASE-MOUNTED CABINET WILL BE INSTALLED AT THIS LOCATION.

IV. INTERCONNECT

EXISTING 12 PAIR VOICE GRADE COMMUNICATION CABLE SHALL BE REROUTED BETWEEN WALMART ENTRANCE AND TOWN CREEK DRIVE 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. RICHARD L. DAFF, SR.
CHIEF, TRAFFIC OPERATIONS DIVISION
PHONE: 410-787-7630

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

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

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

DISTRICT MANAGER
SMECO
P.O. BOX 12B PHONE: 301-475-5631
LEONARDTOWN, MARYLAND 20650

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	971817
3	EA	SP	FOUR-CHANNEL, TIME DELAY OUTPUT, LOOP DETECTOR AMPLIFIER	963007
5	EA	814	12 INCH 1 WAY 3 SECTION (R, Y, G) SIGNAL HEAD - MAST ARM MOUNT	960022
2	EA	814	12 INCH 1 WAY 4 SECTION (R, Y, G, GA) SIGNAL HEAD - MAST ARM MOUNT	960027
4	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
1	EA	814	12 INCH 2 WAY 2 SECTION PEDESTRIAN SIGNAL HEAD-SIDE POLE MOUNT	960069
2	EA	817	PEDESTRIAN PUSHBUTTON AND SIGN	965001
187	SF	813	FLAT SHEET ALUMINUM SIGNS CONSISTING OF:	973023
			- 3 EACH R3-5LI (30" X 36")-MAST ARM MOUNT	
			- 3 EACH R3-5R (30" X 36")-MAST ARM MOUNT	
			- 1 EACH R3-6 (30" X 36")-MAST ARM MOUNT	
			- 4 EACH D3-2 (TOWN CREEK DRIVE,) (VAR.' X 16")-MAST ARM MOUNT	
			- 1 EACH SHEILD ASSEMBLY (48"X75") - SIDE POLE MOUNT	
			-1 EACH M3-1 (24"X12") - GROUND MOUNT	
			-1 EACH M1-5(4) (30"X24") - GROUND MOUNT	
			-1 EACH M6-1 (21"X15") - GROUND MOUNT	

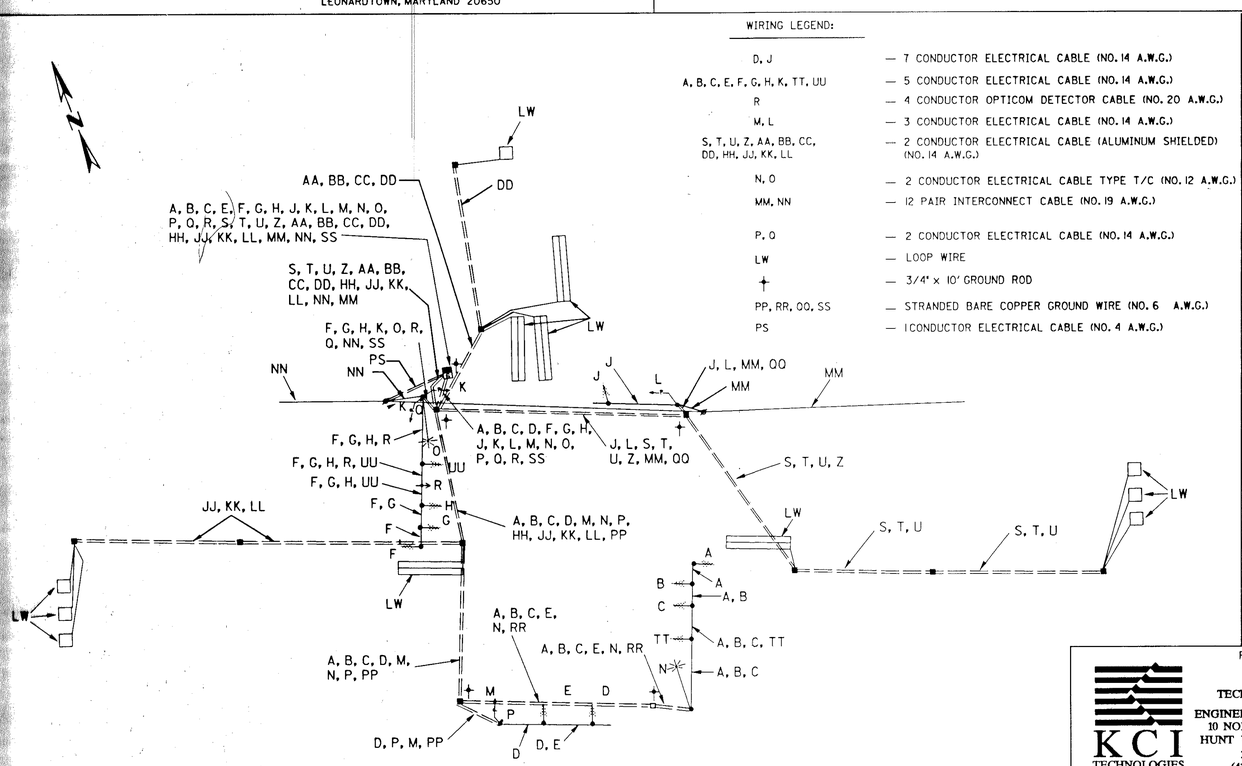
EQUIPMENT LIST 'B'

EQUIPMENT FURNISHED AND/OR INSTALLED BY THE CONTRACTOR

QUANTITY	UNIT	SPECIFICATION SECTION	DESCRIPTION	CATEGORY CODE NO.
4	CY	205	TEST PIT EXCAVATION	203030
900	LF	SP	12 INCH WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING TAPE	505443
200	LF	817	24 INCH WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING TAPE	505445
1	EA	816	INSTALL CONTROLLER AND CABINET-BASE MOUNT	871202
73	SF	813	INSTALL OVERHEAD SIGN	813015
2	EA	817	INSTALL PUSHBUTTON AND SIGN	865201
14	EA	814	INSTALL SIGNAL HEAD, ANY TYPE	800000
2	EA	SP	FURNISH AND INSTALL 20' LIGHTING ARM	866184
18	EA	811	FURNISH AND INSTALL ELECTRICAL HANDHOLE	811001
19	CY	801	FURNISH AND INSTALL CONCRETE FOR SIGNAL FOUNDATION	801004
230	LF	805	FURNISH AND INSTALL 1' LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR SLEEVE	805160
1825	LF	805	FURNISH AND INSTALL 2" SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED	800000
450	LF	805	FURNISH AND INSTALL 3" SCHEDULE 80 RIGID PVC CONDUIT-SLOTTED	805150
50	LF	805	FURNISH AND INSTALL 4" SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED	800000
1	EA	807	FURNISH AND INSTALL CONTROL AND DISTRIBUTION EQUIPMENT	807205
4	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
4	EA	804	FURNISH AND INSTALL GROUND ROD-3/4 INCH DIAMETER X 10-FOOT LENGTH	837001
500	LF	818	FURNISH AND INSTALL NO. 6 AWG STRANDED BARE COPPER GROUND WIRE	802501
185	LF	818	FURNISH AND INSTALL ELECTRICAL CABLE-4 CONDUCTOR (NO. 20 AWG)	800000
6815	LF	818	FURNISH AND INSTALL ELECTRICAL CABLE-2 CONDUCTOR (ALUMINUM SHIELDED)	861184
275	LF	818	FURNISH AND INSTALL ELECTRICAL CABLE-2 CONDUCTOR (NO 14 AWG)	861185
385	LF	818	FURNISH AND INSTALL ELECTRICAL CABLE-3 CONDUCTOR (NO 14 AWG)	861186
1725	LF	818	FURNISH AND INSTALL ELECTRICAL CABLE-5 CONDUCTOR (NO 14 AWG)	861187
485	LF	818	FURNISH AND INSTALL ELECTRICAL CABLE-7 CONDUCTOR (NO 14 AWG)	861188
9318	LF	818	FURNISH AND INSTALL LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO 14 AWG)	862181
2685	LF	815	FURNISH AND INSTALL SAWCUT FOR SIGNAL (LOOP DETECTOR)	862182
460	LF	818	FURNISH AND INSTALL 2-CONDUCTOR TRAY CABLE (NO 12 AWG)	861116
75	LF	818	FURNISH AND INSTALL ELECTRICAL CABLE 1 CONDUCTOR (NO 4 AWG)	818018
2	EA	SP	FURNISH AND INSTALL 27-FOOT STEEL POLE WITH SINGLE 78-FOOT MAST ARM	800000
1	EA	SP	FURNISH AND INSTALL 21-FOOT STEEL POLE WITH SINGLE 68-FOOT MAST ARM	800000
1	EA	SP	FURNISH AND INSTALL 21-FOOT STEEL POLE WITH SINGLE 38-FOOT MAST ARM	800000
	LS	SP	DELIVERY OF SALVAGED EQUIPMENT	873001
	LS	SP	REMOVE AND DISPOSE OF EXISTING EQUIPMENT	800000
	LS	SP	REMOVAL OF EXISTING SIGNAL EQUIPMENT TO BE SALVAGED	800000
100	LF	805	FURNISH AND INSTALL 2" SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED	805145
10	LF	805	FURNISH AND INSTALL 2" SCHEDULE 80 PVC RISER	805023
16	LF	812	FURNISH AND INSTALL WOOD SIGN SUPPORTS 4"X6	811186

NOTE: ALL EQUIPMENT AND/OR MATERIALS TO BE REMOVED BY THE CONTRACTOR, BUT NOT LISTED BELOW, SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

QUANTITY	UNIT	DESCRIPTION
4	EA	MAST ARM POLE
4	EA	MAST ARM
1	EA	CONTROLLER AND CABINET



WIRING LEGEND:

D, J	— 7 CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
A, B, C, E, F, G, H, K, TT, UU	— 5 CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
R	— 4 CONDUCTOR OPTICOM DETECTOR CABLE (NO. 20 A.W.G.)
M, L	— 3 CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
S, T, U, Z, AA, BB, CC, DD, HH, JJ, KK, LL	— 2 CONDUCTOR ELECTRICAL CABLE (ALUMINUM SHIELDED) (NO. 14 A.W.G.)
N, O	— 2 CONDUCTOR ELECTRICAL CABLE TYPE T/C (NO. 12 A.W.G.)
MM, NN	— 12 PAIR INTERCONNECT CABLE (NO. 19 A.W.G.)
P, Q	— 2 CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
LW	— LOOP WIRE
⏚	— 3/4" x 10' GROUND ROD
PP, RR, QQ, SS	— STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
PS	— 1 CONDUCTOR ELECTRICAL CABLE (NO. 4 A.W.G.)

PHASE CHART

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
PHASE 1 & 5	G	G	R	R	G	G	R	R	R	R	R	DW	DW	DW	DW	
1 & 5 CHANGE	TO PHASES 1+6 OR 2+5 OR 2+6															
PHASE 1 & 6	R	R	R	R	G	G	G	G	R	R	R	DW	DW	DW	DW	
1 CHANGE	R	R	R	R	Y	Y	Y	Y	R	R	R	DW	DW	DW	DW	
PHASE 2 & 5	G	G	G	G	R	R	R	R	R	R	R	DW	DW	DW	DW	
5 CHANGE	Y	Y	Y	Y	R	R	R	R	R	R	R	DW	DW	DW	DW	
PHASE 2 & 6	R	R	G	G	R	R	G	G	R	R	R	W	W	DW	DW	
PED CLEAR	R	R	G	G	R	R	G	G	R	R	R	FL/DW	FL/DW	DW	DW	
2 & 6 CHANGE	R	R	Y	Y	R	R	Y	Y	R	R	R	DW	DW	DW	DW	
PHASE 4	R	R	R	R	R	R	R	R	G/G	G/G	G	DW	DW	DW	DW	
4 CHANGE	R	R	R	R	R	R	R	R	Y	Y	Y	DW	DW	DW	DW	
ALT 4	R	R	R	R	R	R	R	R	G/G	G/G	G	DW	DW	W	W	
PED CLEAR	R	R	R	R	R	R	R	R	G/G	G/G	G	DW	DW	FL/DW	FL/DW	
4 CHANGE	R	R	R	R	R	R	R	R	Y	Y	Y	DW	DW	DW	DW	
PRE-EMPT 1	G	G	G	G	R	R	R	R	R	R	R	DW	DW	DW	DW	
PRE-EMPT 1 CHANGE	Y	Y	Y	Y	R	R	R	R	R	R	R	DW	DW	DW	DW	
FLASHING OPERATION	FL/R	FL/R	FL/Y	FL/Y	FL/R	FL/R	FL/Y	FL/Y	FL/R	FL/R	FL/R	DARK	DARK	DARK	DARK	

SD-8 OF SD-8

REVISION 'E'
KCI TECHNOLOGIES INC.
ENGINEERS AND PLANNERS
10 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND
21030-1888
(410) 316-7800

REVISIONS
(C) 8-98 NEW MD 235 GEOMETRICS SHA NOs
P.S.
(D) ADD SIGNAL, SIGNING AND MODIFY PAVEMENT MARKINGS FOR SB TOWN CREEK DRIVE, 12-96
(A) 5-19-95 REVISE MD 235 E/P LTS TO EXCLUSIVE LTS.
R.L.W.
(B) 6-20-92 ADD I/C AND ASBUILT
R.R.Z.

APPROVALS
ORIGINAL ON FILE
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: J. GREEZICK (FOR CENTURY)
DES. BY: R. SAGOS (FOR CENTURY)
CHK. BY:
DATE: 12-20-86
SCALE: NONE

MD ROUTE 235 FROM NORTH OF MD ROUTE 4 TO MD 237
GENERAL INFORMATION SHEET
MD 235 AND TOWN CREEK DRIVE
COUNTY: ST. MARY'S

F.A.P. NO.
S.H.A. NO. SM-753-509-585
TS/STD. NO. 2286E-GI
SHEET NO. 150 OF 213