PROJECT DESCRIPTION

I. General

This project involves the installation of a new traffic control signal and street lighting at the intersection of Maryland Route 97 (Georgia Avenue) and Urbana Drive / Metro Entrance in Montgomery County. Maryland Route 97 (Georgia Avenue) is assumed to run in a north - south direction.

Where new equipment is located in exisiting sidewalk the contractor will remove sidewalk, install equipment and replace sidewalk to match existing.

II. Intersection Operation

An eight (8) phase, full-traffic-actuated, solid state digital controller with (3) four-channel loop detector amplifiers and LAU housed in a base mounted cabinet are to be installed at this location.

The intersection will operate in a NEMA, four (4) phase, semi-traffic-actuated mode. An exclusive permissive left turn will be provided for southbound MD 97. The MD 97 movements are to operate concurrently and the Metro Entrance will operate alone.

III. Special Notes

The Contractor shall be responsible for terminating all signal cables, excluding interconnect, to the appropriate terminals and shall properly label each cable.

For Interconnect

The contractor will install new interconnect cable from the proposed controller at the MD 97 / Metro Ent. and Urbana Drive intersection north to a splice box located on PEPCO pole # 784447-4776 south of the MD 97 / Glenallan Avenue intersection. The new interconnect shall be laid in place and routed as shown on the wiring diagram and interconnect plan.

Existing interconnect cable will be pulled back from the splice box on PEPCO pole # 784447-8041 to PEPCO pole # 785447-0320 and routed to the proposed controller at the MD 97 / Metro Ent. and Urbana Drive intersection. This operation will be done with MCDPW&T supervision.

Disconnecting and splicing of interconnect cable shall be performed by Montgomery County forces. The contractor shall be responsible for routing or relocating of interconnect cable into the cabinet(s) as shown on the plans and shall properly label each cable. Contact Emil Wolanin of MCDPW&T at (301) 217-2190 seventy two hours in advance of any intended interconnect work to coordinate with the County.

For Direct Transfers of Existing Interconnect & Fiber

Prior the transfer of any attachment which includes fiber optic cable overlashed to interconnect cable, the Contractor shall arrange a field meeting with MCDPW&T. contact Bruce Mangum of MCDPW&T at (301) 217-2197.

For New Interconnect & Relocated Fiber

The Contractor shall be responsible for routing the new interconnect as shown on the plans. Once the interconnect is in place, the contractor shall contact Bruce Mangum of MCDPW&T (301) 217-2197 so that the County can transfer the existing fiber optic cable.

EQUIPMENT LIST 'A'

EQUIPMENT SUPPLIED BY ADMINISTRATION

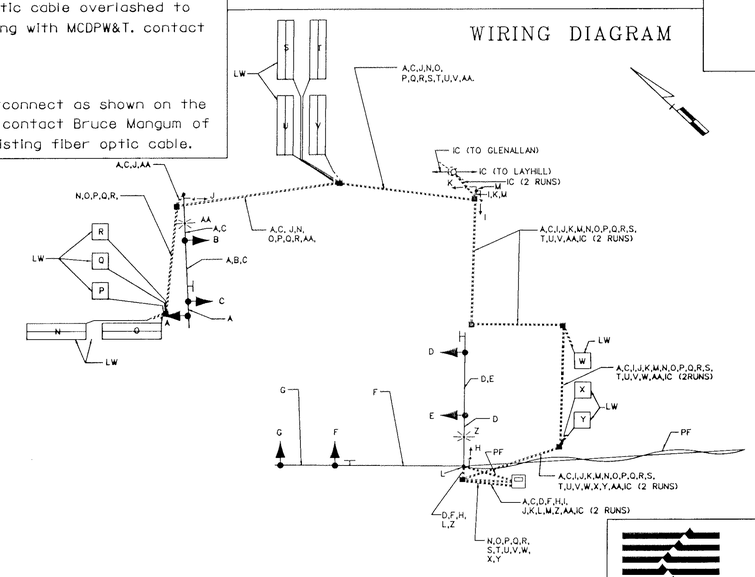
960022	12 INCH ONE WAY 3 SECTION (R,Y,G) SIGNAL HEAD (MAST ARM MOUNTED)	5 EACH
960028	12 INCH ONE WAY 5 SECTION (RY,YA,G,GA) SIGNAL HEAD (MAST ARM MOUNTED)	2 EACH
960048	12 INCH ONE WAY 2 SECTION PEDESTRIAN SIGNAL HEAD (PEDESTAL MOUNTED)	2 EACH
960068	12 INCH ONE WAY 2 SECTION PEDESTRIAN SIGNAL HEAD (POLE MOUNTED)	2 EACH
963007	FOUR CHANNEL LOOP DETECTOR AMPLIFIER (DELAY OUTPUT)	3 EACH
965001	PED. PUSH BUTTON AND SIGN R10-3c SIGNS SHALL READ: "PUSH BUTTON TO CROSS GEORGIA AVE"	2 EA.
971017	EIGHT PHASE (FULLY ACTUATED) LAU CONTROLLER AND CABINET - BASE MOUNT- SYSTEM READY	1 EACH
973023	SHEET ALUMINUM SIGNS	23 S.F.
	1 EACH R3-2 (24"x24") "NO LEFT TURN"	
	1 EACH R10-12 (30"x36") "LEFT TURN YIELD ON GREEN"	
	1 EACH D3-2 (96"x16") "GEORGIA AVE"	

EQUIPMENT LIST 'B'

EQUIPMENT FURNISHED AND/OR INSTALLED BY THE CONTRACTOR

120500	MAINTENANCE OF TRAFFIC	LUMP SUM
120610	ARROW PANEL	5 U.D.
130850	MOBILIZATION	LUMP SUM
203030	TEST PIT EXCAVATION	4 C.Y.
585414	12" WHITE REFLECTIVE THERMO. PAVEMENT MARKINGS	790 LF.
801004	FURNISH AND INSTALL CONCRETE FOR SIGNAL FOUNDATION	9 C.Y.
802501	FURNISH AND INSTALL NO. 6 A.W.G. STRANDED BARE COPPER GROUND WIRE	100 L.F.
805026	FURNISH AND INSTALL 3" ELECTRICAL CONDUIT PCV RISER	20 L.F.
805125	FURNISH AND INSTALL 2 INCH SCHEDULE 40 RIGID PVC CONDUIT - TRENCHED	10 L.F.
805135	FURNISH AND INSTALL 3 INCH SCHEDULE 40 RIGID PVC CONDUIT - TRENCHED	75 L.F.
805140	FURNISH AND INSTALL 4 INCH SCHEDULE 40 RIGID PVC CONDUIT - TRENCHED	125 L.F.
805150	FURNISH AND INSTALL 3 INCH SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED	150 L.F.
805155	FURNISH AND INSTALL 4 INCH SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED	100 L.F.
805160	FURNISH AND INSTALL 1 INCH LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR SLEEVE	30 L.F.
807205	FURNISH AND INSTALL CONTROL AND DISTRIBUTION EQUIPMENT (B-15)	1 EACH
811001	FURNISH AND INSTALL ELECTRICAL HANDHOLE	8 EACH
813015	INSTALL OVERHEAD SIGN	40 S.F.
822003	FURNISH AND INSTALL 50-PAIR COMMUNICATION SELF-SUPPORTING (OH)	500 L.F.
822500	USE EXISTING PLAN ON DISK AND AS-BUILT FOR TRAFFIC SIGNAL	1 EACH
831010	FURNISH AND INSTALL 250 WATT HIGH PRESSURE SODIUM LAMP AND LUMINAIRE	2 EACH
837001	FURNISH AND INSTALL GROUND ROD - 3/4 INCH DIA. X 10 FEET LENGTH	5 EACH
860022	INSTALL 12 INCH ONE WAY 3 SECTION (R,Y,G) SIGNAL HEAD (MAST ARM MOUNTED)	5 EACH
860028	INSTALL 12 INCH ONE WAY 3 SECTION (R,Y,YA,G,GA) SIGNAL HEAD (MAST ARM MOUNTED)	2 EACH
860048	INSTALL 12 INCH ONE WAY 2 SECTION PEDESTRIAN SIGNAL HEAD (PEDESTAL MOUNTED)	2 EACH
860068	INSTALL 12 INCH ONE WAY 2 SECTION PEDESTRIAN SIGNAL HEAD (POLE MOUNTED)	2 EACH
861104	FURNISH AND INSTALL ELECTRICAL CABLE 2-CONDUCTOR (ALUM. SHIELDED)	2800 L.F.
861105	FURNISH AND INSTALL ELECTRICAL CABLE 2 CONDUCTOR (NO. 14)	500 L.F.
861106	FURNISH AND INSTALL ELECTRICAL CABLE 3 CONDUCTOR (NO. 14 A.W.G.)	1000 L.F.
861107	FURNISH AND INSTALL ELECTRICAL CABLE 5-CONDUCTOR (NO. 14 A.W.G.)	600 L.F.
861108	FURNISH AND INSTALL ELECTRICAL CABLE 7-CONDUCTOR (NO. 14 A.W.G.)	1000 L.F.
861116	FURNISH AND INSTALL ELECTRICAL CABLE 2-CONDUCTOR (NO. 12 A.W.G.)	400 L.F.
861117	FURNISH AND INSTALL ELECTRICAL CABLE 3-WIRE (NO. 4 A.W.G.)	200 L.F.
862101	FURNISH AND INSTALL LOOP WIRE ENCASED IN FLEX. TUBING (NO. 14 A.W.G.)	3750 L.F.
862102	FURNISH AND INSTALL SAWCUT FOR SIGNAL (LOOP DETECTOR)	1000 L.F.
865201	INSTALL PEDESTRIAN PUSH-BUTTON AND SIGN	2 EACH
866103	FURNISH AND INSTALL 15 FOOT LIGHTING ARM ON SIGNAL STRUCTURE	2 EACH
871202	INSTALL CONTROLLER AND CABINET - BASE MOUNT	1 EACH
800000	FURNISH AND INSTALL 27' STEEL POLE WITH 50' MAST ARM	1 EACH
800000	FURNISH AND INSTALL 27' STEEL POLE WITH 50' x 70' TWIN MAST ARM	1 EACH
800000	FURNISH AND INSTALL 10' BREAKAWAY PEDESTAL POLE	1 EACH
800000	TRANSFER EXISTING COMMUNICATION CABLE - RELOCATION	LUMP SUM
800000	TRANSFER EXISTING COMMUNICATION CABLE - REMOVAL	500 L.F.
800000	FURNISH AND INSTALL 2 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED	30 L.F.

WIRING DIAGRAM



A, C, D, F — 7-CONDUCTOR CABLE (NO. 14 AWG)

B, E, G — 5-CONDUCTOR CABLE (NO. 14 AWG)

H, I, J, K — 3-CONDUCTOR CABLE (NO. 14 AWG)

L, M — 2-CONDUCTOR CABLE (NO. 14 AWG)

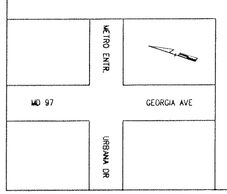
N, O, P, Q, R, S, T, U, V, W, X, Y — 2-CONDUCTOR CABLE ALUMINUM SHIELDED (NO. 14 AWG)

Z, AA — 2-CONDUCTOR TRAY CABLE (NO. 12 AWG)

IC - 50 PAIR INTERCONNECT CABLE

LW - LOOP WIRE

PF - POWER FEED



PHASE CHART

	1	2	3	4	5	6	7	8	9	10	11
PHASE 2 & 5	R	R	←G/G	←G/G	G	R	R	DW	DW	DW	DW
5 CHANGE	R	R	←Y/G	←Y/G	G	R	R	DW	DW	DW	DW
PHASE 2 & 6	G	G	G	G	G	R	R	W	W	DW	DW
PED CLEAR	G	G	G	G	G	R	R	FL/DW	FL/DW	DW	DW
2 & 6 CHANGE	Y	Y	Y	Y	Y	R	R	DW	DW	DW	DW
PHASE 4	R	R	R	R	R	G	G	DW	DW	DW	DW
4 CHANGE	R	R	R	R	R	Y	Y	DW	DW	DW	DW
PHASE 4 ALT.	R	R	R	R	R	G	G	DW	DW	W	W
PED CLEAR	R	R	R	R	R	G	G	DW	DW	FL/DW	FL/DW
4 ALT. CHANGE	R	R	R	R	R	Y	Y	DW	DW	DW	DW
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	DARK	DARK	DARK	DARK

TS-4 OF TS-10

KCI TECHNOLOGIES

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

REVISIONS	APPROVALS
	PROJECT MANAGER, SIGNAL DESIGN SECTION
	ASST. CHIEF, TRAFFIC ENGINEERING DESIGN DIVISION
	CHIEF, TRAFFIC ENGINEERING DESIGN DIVISION
	DIRECTOR, OFFICE OF TRAFFIC & SAFETY

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

LOG MILE: 15009704.91

DRAWN BY: TCC
DES. BY: TCC/GWC
CHK. BY:

MD 97 (GEORGIA AVE.) FROM MASON ST. TO EPPING RD.
GENERAL INFORMATION SIGNAL PLAN FOR
MD 97 @ URBANA DRIVE / METRO ENTRANCE

COUNTY: MONTGOMERY

DATE: MARCH, 1997 F.A.P. NO. SEE TITLE SHEET
SCALE: N.A. S.H.A. NO. M07105176

TS/STD. NO. TS-3651

SHEET NO. 62 OF

M:\0190122.H\SP02METR.DGN