

PROJECT DESCRIPTION

GENERAL
 THIS PROJECT INVOLVES THE CONSTRUCTION OF A MAST ARM TRAFFIC SIGNAL AT THE INTERSECTION OF US 29 (COLUMBIA PIKE) AT FAIRLAND RD IN MONTGOMERY COUNTY. VIDEO PRESENCE DETECTION IS TO BE USED ON THE NORTHBOUND, EASTBOUND AND WESTBOUND APPROACHES.

US 29 (COLUMBIA PIKE) IS CONSIDERED TO RUN IN A NORTH-SOUTH DIRECTION.

INTERSECTION OPERATION

A SYSTEM CONTROLLER HOUSED IN A BASE MOUNTED CABINET SHALL BE INSTALLED AT THIS LOCATION. THE INTERSECTION WILL OPERATE IN A SEMI-ACTUATED MODE USING 5 NEMA PHASES. NEW CURB AND GUTTER SHALL BE INSTALLED IN THE NORTHEAST, SOUTHEAST, SOUTHWEST AND NORTHWEST QUADRANTS OF THE INTERSECTION.

SPECIAL NOTES

- ALL UNDERGROUND AND OVERHEAD UTILITIES SHOWN ON THESE PLANS ARE SCHEMATIC ONLY AND MAY NOT BE COMPLETE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING MISS UTILITY PRIOR TO CONSTRUCTION SO THAT ALL UTILITIES MAY BE LOCATED IN THE FIELD. IF THE CONTRACTOR PERCEIVES THAT A CONFLICT BETWEEN THE UTILITIES AND THE TRAFFIC SIGNAL WILL OCCUR, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IMMEDIATELY SO THAT THE CONFLICT MAY BE RESOLVED.
- CONTRACTOR SHALL USE CAUTION WHEN INSTALLING SIGNAL EQUIPMENT TO AVOID DISTURBANCE OF EXISTING UNDERGROUND UTILITIES. CONTRACTOR SHALL TEST PIT TO DETERMINE EXACT LOCATION AND DEPTH OF UNDERGROUND UTILITIES PRIOR TO INSTALLING SIGNAL EQUIPMENT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR TERMINATING ALL SIGNAL CABLES, EXCLUDING INTERCONNECT, TO THE APPROPRIATE TERMINALS AND SHALL PROPERLY LABEL EACH CABLE.
- SPLICING OF INTERCONNECT CABLE SHALL BE PERFORMED BY MONTGOMERY COUNTY FORCES. THE CONTRACTOR SHALL RUN THE INTERCONNECT CABLE INTO THE BASE OF EACH CABINET AND PROPERLY TAG THE CABLE. ALL CONTROLLER CABINET WIRING WILL BE PERFORMED BY MONTGOMERY COUNTY FORCES. ALSO, ALL ACCESSIBLE PEDESTRIAN CONTROL EQUIPMENT SHALL BE DELIVERED TO THE MONTGOMERY COUNTY SIGNAL SHOP FOR TESTING AND PROGRAMMING PRIOR TO INSTALLATION. CONTACT KAMAL HAMUD AT (240) 777-8761 SEVENTY-TWO HOURS IN ADVANCE OF INTENDED WORK.
- MAINTENANCE OF TRAFFIC WILL BE HANDLED BY THE CONTRACTOR UTILIZING THE FOLLOWING STANDARD PLATES FOR TRAFFIC CONTROL: 104.00 - 12, 104.04 - 01, 104.04 - 13 AND 104.04 - 15.
- THE CONTACT PERSONS FOR THIS PROJECT ARE AS FOLLOWS:

MS. ANYESHA MOOKHERJEE, ASSISTANT DISTRICT ENGINEER - TRAFFIC
 PHONE: (301) 513-7498

MR. VICTOR GRAFTON, ASSISTANT DISTRICT ENGINEER - UTILITY
 PHONE: (301) 513-7315

MR. VERNON STINNETT, ASSISTANT DISTRICT ENGINEER - MAINTENANCE
 PHONE: (301) 513-7304

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

THE POWER COMPANY REPRESENTATIVE IS:

MR. STEVE CUSTER
 POTOMAC ELECTRIC POWER COMPANY
 8300 OLD MARLBORO PIKE
 UPPER MARLBORO, MARYLAND 20772
 PHONE: (301) 548-4333

MR. KAMAL HAMUD
 MONTGOMERY COUNTY DPWT
 PHONE: (240) 777-8761

MR. KEITH LORD
 MONTGOMERY COUNTY
 PHONE: (301) 279-1291

MR. EUGENE BAILEY
 SIGN SHOP
 PHONE: (410) 787-7676

EQUIPMENT LIST

A. EQUIPMENT TO BE SUPPLIED BY MONTGOMERY COUNTY.

CATEGORY CODE NO.	DESCRIPTION	UNITS	QUANTITY
900000	CCTV CAMERA WITH DOME ASSEMBLY AND CAMERA CABINET	EA	1

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

CATEGORY CODE NO.	DESCRIPTION	UNITS	QUANTITY
203030	TEST PIT EXCAVATION	CY	4
800000	3-WIRE, 1 CONDUCTOR 250 KCML ELECTRICAL CABLE	LF	185
800000	10 FOOT LIGHTING ARM ON SIGNAL STRUCTURE WITH WELDED NIPPLE	EA	1
800000	ELECTRICAL CABLE - 1 CONDUCTOR (NO. 4 AWG THHN/THWN)	LF	160
800000	REMOVE AND DISPOSE OF EXISTING EQUIPMENT	LS	1
800000	GALVANIZED BASE FOR POLE RISER (PER REQUEST OF PEPCO)	EA	1
801004	CONCRETE FOR SIGNAL FOUNDATIONS	CY	23
801104	WOOD SIGN SUPPORTS 4 INCH X 4 INCH	LF	60
801106	WOOD SIGN SUPPORTS 4 INCH X 6 INCH	LF	35
801605	SHEET ALUMINUM SIGN	SF	108
802501	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE	LF	530
805018	3 INCH ELECTRICAL CONDUIT-GALVANIZED RISER	LF	10
805115	3 INCH SCHED. 80 PVC CONDUIT-BORED	LF	150
805118	4 INCH SCHED. 80 PVC CONDUIT-BORED	LF	525
805125	2 INCH SCHED. 80 PVC CONDUIT-TRENCHED	LF	50
805135	3 INCH SCHED. 80 PVC CONDUIT-TRENCHED	LF	270
805140	4 INCH SCHED. 80 PVC CONDUIT-TRENCHED	LF	300
807202	METERED SERVICE PEDESTAL	EA	1
811001	FURNISH AND INSTALL ELECTRICAL HANDHOLE	EA	6
813014	INSTALL GROUND MOUNTED SIGN	SF	49
816001	VIDEO DETECTION CAMERA	EA	5
816010	CONTROL CABLE, 500 FOOT VIDEO DETECTION CAMERA TO CONTROLLER	EA	5
818052	STEEL POLE WITH A SINGLE 70 FOOT MAST ARM	EA	4
831010	250 W HIGH PRESSURE SODIUM LAMP AND LUMINAIRE	EA	1
837001	GROUND ROD - 3/4 INCH DIA. X 10 FOOT LENGTH	EA	7
860284	12 INCH LED VEHICULAR TRAFFIC SIGNAL HEAD SECTION	EA	42
860292	CUT, CLEAN, GALVANIZE AND CAP TRAFFIC SIGNAL STRUCTURE	EA	1
861106	ELECTRICAL CABLE - 3 CONDUCTOR (NO. 14 AWG)	LF	200
861107	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)	LF	1700
861108	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)	LF	3000
861116	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 AWG)	LF	470
866104	20 FOOT LIGHTING ARM ON SIGNAL STRUCTURE	EA	1
818030	STEEL POLE WITH A SINGLE 38 FOOT MAST ARM	EA	1
811202	INSTALL CONTROLLER AND CABINET - BASE MOUNT	EA	1
800000	SYSTEM LOCAL CONTROLLER AND CABINET SIZE 6 W/ VIDEO DETECTION INTERFACE EQUIP.	EA	1

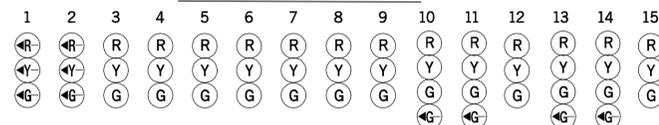
C. MONTGOMERY COUNTY FORCES SHALL REMOVE THE CONTROLLER AND ALL AUXILLIARY EQUIPMENT FROM THE CONTROLLER CABINET. THE CABINET AND ALL OTHER MATERIALS TO BE REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

CATEGORY CODE NO.	DESCRIPTION	UNITS	QUANTITY
	CONTROLLER	EA	1
	CCTV CAMERA, CONTROLLER AND CABINET	EA	1

GENERAL NOTES

- VIDEO CAMERA LOCATION/ALIGNING SHALL BE COORDINATED WITH THE SHA ENGINEER.
- THE CONTRACTOR SHALL VERIFY ALL PROPOSED POLE AND CABINET LOCATIONS PRIOR TO INSTALLATION.
- FOR FINAL PAVEMENT MARKINGS AND GROUND-MOUNTED SIGNS, REFER TO THE SIGNING AND PAVEMENT MARKING PLANS. MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH MSHA STANDARDS.
- THE CONTRACTOR SHALL ASSEMBLE AND DELIVER THE SIGNAL CABINET AND CONTROLLER TO THE MONTGOMERY COUNTY TRAFFIC SIGNAL SHOP FOR TESTING AND VERIFICATION. ONCE VERIFICATION AND TESTING HAS BEEN PERFORMED, THE CONTRACTOR SHALL DELIVER AND INSTALL THE CABINET AND CONTROLLER AT THE PROJECT SITE. MONTGOMERY COUNTY WILL PROVIDE THE FINAL CONNECTIONS OF CABLES WITHIN THE CABINET.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR TERMINATING ALL DETECTOR PROBE LEAD-IN CABLES AND VIDEO DETECTION CAMERA CABLES TO THE APPROPRIATE TERMINALS AND PROPERLY LABEL EACH CABLE SO THAT MONTGOMERY COUNTY FORCES CAN MAKE THE FINAL CONNECTIONS.
- THE CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITIES PRIOR TO INSTALLING PROPOSED SIGNAL EQUIPMENT. IF ANY UTILITY CONFLICTS SHOULD ARISE, THE CONTRACTOR SHALL CONTACT THE PROJECT ENGINEER.
- ALL TRAFFIC SIGNAL FOUNDATIONS SHALL BE INSTALLED AT THE FINAL SIDEWALK OR CURB GRADE FOR CLOSED SECTIONS, HIGHEST ROADWAY PROFILE GRADE FOR OPEN SECTIONS, TO MEET CLEARANCES AS SPECIFIED IN MD 816.03, MD 818.01, MD 818.02, MD 818.04. THE CONTRACTOR SHALL VERIFY ULTIMATE GRADES PRIOR TO THE INSTALLATION OF ALL SIGNAL EQUIPMENT.
- REFER TO ROADWAY PLANS FOR INSTALLATION OF ALL ADA RAMPS.
- TRENCH CONDUIT PRIOR TO RAMP AND SIDEWALK INSTALLATION.
- CONTACT MIKE KINNEY AT MONTGOMERY COUNTY (240-777-8760) 2 WEEKS PRIOR TO REQUIRED REMOVAL TO ARRANGE FOR REMOVAL OF COUNTY INSTALLED CCTV CAMERA AND EQUIPMENT AND RED LIGHT CAMERA AND EQUIPMENT.

PHASE CHART



PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
PHASE 1 AND 6	←G	←G	G	G	G	R	R	R	R	R	R	R	R	R	R
PHASE 1 AND 6 CHANGE	←Y	←Y	G	G	G	R	R	R	R	R	R	R	R	R	R
PHASE 2 AND 6	←R	←R	G	G	G	G	G	G	G	R	R	R	R	R	R
HIB CHANGE*	←R	←R	G	G	G	G	G	G	G	R	R	R	R	R	R
PHASE 2 AND 6 CHANGE	←R	←R	Y	Y	Y	Y	Y	Y	Y	R	R	R	R	R	R
PHASE 3	←R	←R	R	R	R	R	R	R	R	←G	←G	G	R	R	R
PHASE 3 CHANGE	←R	←R	R	R	R	R	R	R	R	Y	Y	Y	R	R	R
PHASE 4	←R	←R	R	R	R	R	R	R	R	R	R	R	←G	←G	G
PHASE 4 CHANGE	←R	←R	R	R	R	R	R	R	R	R	R	R	Y	Y	Y
FLASHING OPERATION	FL/R	FL/R	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R						

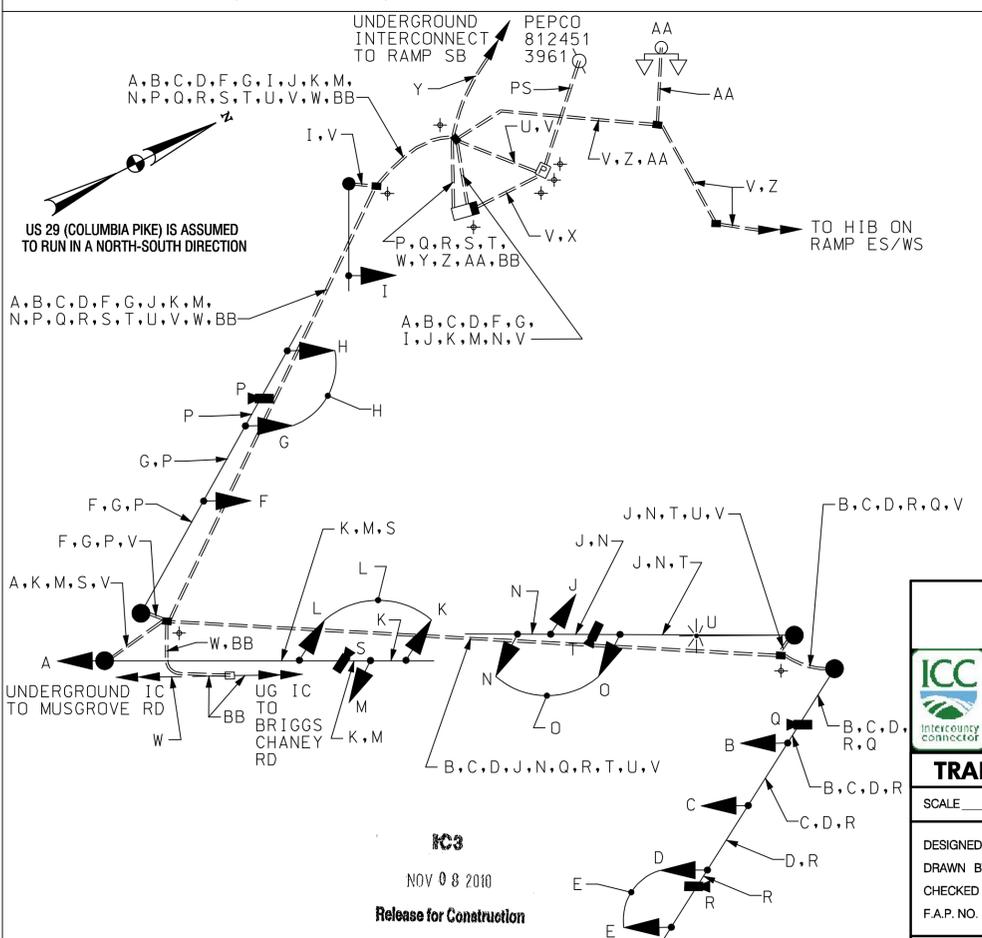
* SEE HIB PHASE CHART (DWG. SG-7.3 OF 03).

WIRING DIAGRAM

KEY

- B, F, J, K, M, N, Z } 7 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
- A, C, D, E, G, H, I, L, O } 5 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
- U } 2 CONDUCTOR ELECTRICAL CABLE (NO. 12 AWG) TRAY CABLE
- P, Q, R, S, T } VIDEO DETECTION CAMERA LEAD-IN CABLE
- V } 1 CONDUCTOR (NO. 6 AWG) STRANDED COPPER GROUND WIRE
- X } POWER SERVICE UNDERGROUND 3 WIRE 1 CONDUCTOR (NO. 4 AWG)
- W, Y } 12-PAIR COMMUNICATION CABLE, JELLY FILLED (UNDERGROUND) (SEE RAMP SB & MUSGROVE ROAD SIGNAL PLANS FOR DETAILS)
- Z } 7 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG) (TO HIB)
- AA } 7 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG) (TO S5-1)
- BB } PROPOSED INTERCONNECT (SEE US 29 INTERCONNECT PLANS FOR DETAILS)
- PS } POWER SERVICE, 1 CONDUCTOR 250 KCML ELECTRICAL CABLE (3 RUNS OF CABLE, 30' COILED SLACK EACH AT UTILITY POLE 10' HIGH)
- + } GROUND ROD

3 61810 - MODIFIED CONTACTS AND EQUIPMENT LIST



STATE OF MARYLAND
 DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION
 OFFICE OF TRAFFIC & SAFETY
 TRAFFIC ENGINEERING DESIGN DIVISION
 US 29 (COLUMBIA PIKE) AND FAIRLAND ROAD
 MD 200 (ICC)-CONTRACT C
 WEST OF US 29 TO EAST OF I-95
 AREA "W"

TRAFFIC SIGNAL-GENERAL INFORMATION

SCALE: NTS ADVERTISED DATE: 09/28/2009 CONTRACT NO.: AT3765C60

DESIGNED BY: JRS COUNTY: MONTGOMERY
 DRAWN BY: JRS LOGMILE: 15002007.68
 CHECKED BY: DSU TMS NO.: J855
 F.A.P. NO.: AC-NH-ICC-1(t)N TOD NO.:

TS NO. 466E DRAWING SG-5.2 OF 02 SHEET NO. 13 OF 31