

PROJECT DESCRIPTION

I. GENERAL:

THIS PROJECT INVOLVES RECONSTRUCTION OF THE EXISTING TRAFFIC SIGNAL TO MAST ARM STRUCTURES AT THE INTERSECTION OF MD 450 (ANNAPOLIS ROAD) AND 68TH AVENUE IN PRINCE GEORGE'S COUNTY.

MD 450 IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

II. INTERSECTION OPERATION:

A SYSTEM READY BASE-MOUNTED CABINET AND CONTROLLER WITH ALL THE NECESSARY EQUIPMENT WILL BE INSTALLED AT THE INTERSECTION. THE INTERSECTION WILL CONTINUE TO OPERATE IN A NEMA FIVE-PHASE, FULLY-ACTUATED MODE. MD 450 THROUGH-MOVEMENTS OPERATE CONCURRENTLY; THERE IS AN EXCLUSIVE/PERMISSIVE EASTBOUND LEFT-TURN. 68TH AVENUE THROUGH-MOVEMENTS WILL OPERATE CONCURRENTLY WITH THE LEARNING CENTER ENTRANCE. AUDIBLE PUSHBUTTONS WILL ACTUATE THE PEDESTRIAN MOVEMENTS TO CROSS THE WEST AND NORTH LEGS OF THE INTERSECTION.

VIDEO CAMERAS SHALL ACTUATE PRESENCE DETECTION AND NON-INVASIVE DETECTORS SHALL PROVIDE ADVANCE PASSAGE DETECTION ON MD 450.

STREET LIGHTING AND STREET NAME SIGNS SHALL BE UPDATED TO CURRENT MSHA STANDARDS. THE INTERSECTION SHALL BE ADJUSTED TO BE ADA COMPLIANT.

AUDIBLE PUSHBUTTON MESSAGE FUNCTIONS AS FOLLOWS:

WHEN A PEDESTRIAN LOCATES AND PRESSES THE PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL ANNOUNCE THE FOLLOWING MESSAGE:

NORTH LEG: "Wait to cross 68th Avenue at Annapolis. Wait"

WEST LEG: "Wait to cross Annapolis at 68th Avenue. Wait"

WHEN THE "WALK" PHASE BEGINS FOR EITHER CROSSING:

The message will be a rapid tick, which will last for the duration of the "WALK" phase.

III. SPECIAL NOTES:

THE CONTRACTOR SHALL PURCHASE AND DELIVER THE NAVIGATOR CENTRAL CONTROL UNIT FOR THE CONTROLLER TO THE SHA SIGNAL SHOP AT 7491 CONNELLEY ROAD, HANOVER, MD, 21207. MR. EDWARD RODENHIZER SHALL BE CONTACTED AT 410-787-7652 AT LEAST 3 DAYS PRIOR TO THE DELIVERY.

IV. PROJECT CONTACTS:

1. THE CONTACT PERSONNEL FOR THIS PROJECT ARE AS FOLLOWS:

MR. CEDRIC WARD, ASSISTANT DISTRICT ENGINEER - TRAFFIC
PHONE: (301) 513-7409

MR. DUANE BERNARD, ASSISTANT DISTRICT ENGINEER - CONSTRUCTION
PHONE: (301) 513-7385

MR. VERNON STINNETT, ASSISTANT DISTRICT ENGINEER - MAINTENANCE
PHONE: (310) 513-7304

MR. VICTOR GRAFTON, UTILITY ENGINEER
PHONE: (310) 513-7350

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

MR. EDWARD RODENHIZER, CHIEF - SIGNAL SHOP
PHONE: (410) 787-7652

MR. SONNY BAILEY, CHIEF - SIGN SHOP
PHONE: (410) 787-7676

THE POWER COMPANY REPRESENTATIVE:
PEPCO

2. MAINTENANCE OF TRAFFIC WILL BE HANDLED BY THE CONTRACTOR UTILIZING THE STANDARD PLATES FOR TRAFFIC CONTROL FROM SECTION MD 104.00 OF THE SHA BOOK OF STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES.

EQUIPMENT LIST "C"

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

EQUIPMENT LIST "A"

A. EQUIPMENT TO BE SUPPLIED BY SHA AND INSTALLED BY THE CONTRACTOR.

CAT CODE	QUANTITY	DESCRIPTION
900000	1 EA	LOCAL CONTROLLER, VIDEO INTERFACE UNIT W/ ALL NECESSARY EQUIPMENT HOUSED IN A NEMA SIZE '6' BASE-MOUNTED CABINET.
900000	110 SF	FLAT SHEET ALUMINUM SIGNS CONSISTING OF:
	2 EA	D-3(1) (VAR"x 16") MAST ARM-MOUNTED "Annapolis RD"
	1 EA	D-3(1) (VAR"x 16") MAST ARM-MOUNTED "LEFT ARROW, 68th AVE"
	1 EA	D-3(1) (VAR x 16") MAST ARM-MOUNTED (DUAL-FACED) "LEFT ARROW, 68th AVE/ 68th AVE, RIGHT ARROW"
	1 EA	W11-8 "FIREHOUSE SYMBOL" (36"x 36") GROUND-MOUNTED SHIELD ASSEMBLY PANEL
	1 EA	(30"x 51") POLE-MOUNTED "WEST, MD 450, RIGHT ARROW"
	1 EA	(30"x 51") POLE-MOUNTED "EAST, MD 450, RIGHT ARROW"
	1 EA	(48"x 75") POLE-MOUNTED "WEST, MD 450, LEFT ARROW"
	1 EA	(48"x 15") POLE-MOUNTED "EAST, MD 450, LEFT ARROW"
	2 EA	R10-3(1) (9"x 15") POLE-MOUNTED PEDESTRIAN SIGNS "PUSH BUTTON TO CROSS 68th Avenue"
	2 EA	R10-3(1) (9"x 15") POLE-MOUNTED PEDESTRIAN SIGNS "PUSH BUTTON TO CROSS Annapolis Rd."

EQUIPMENT LIST "B"

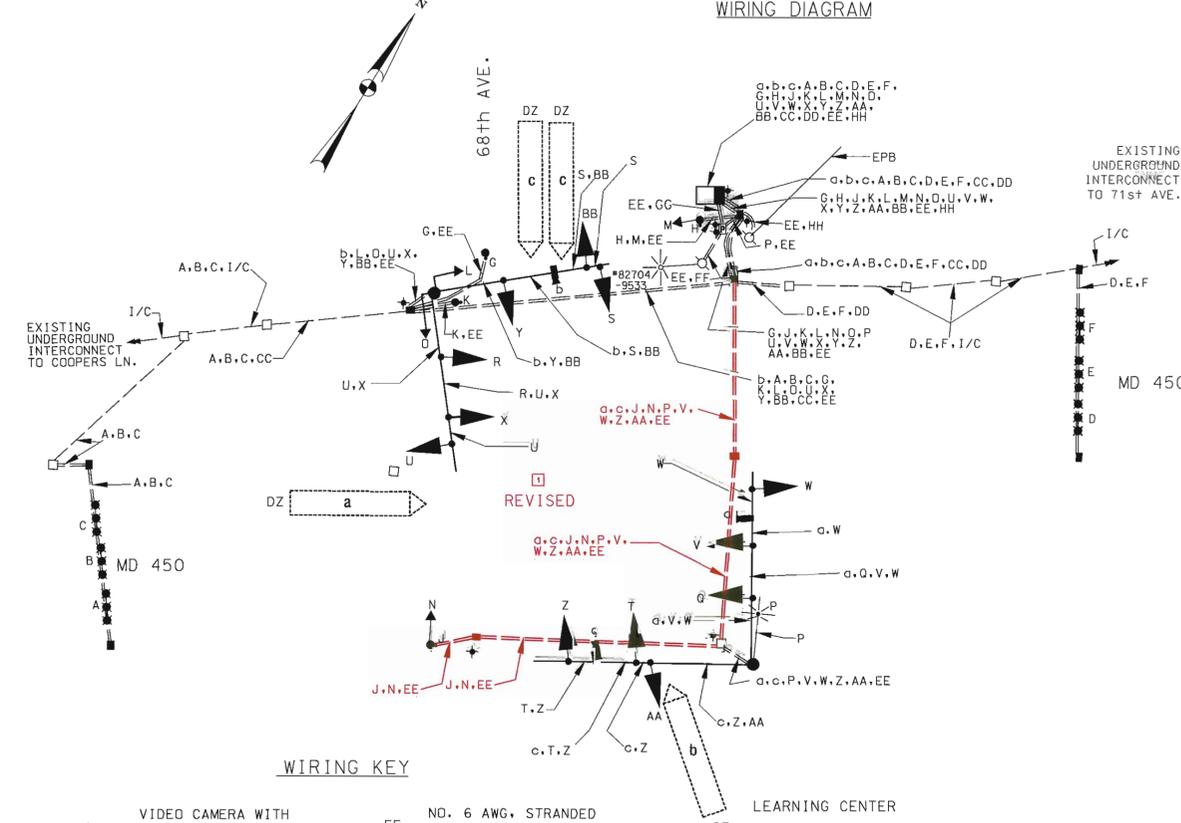
B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR

ITEM NO.	QUANTITY	DESCRIPTION
1003	2 EA	MAINTENANCE OF TRAFFIC
2002	5 CY	TEST PIT EXCAVATION
5004	300 LF	12" HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
5005	150 LF	24" HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
5007	420 LF	REMOVE EXISTING PERMANENT PAVEMENT LINE MARKINGS ANY WIDTH
6001	475 LF	STANDARD TYPE 'A' COMBINATION CURB AND GUTTER 12" GUTTER PAN AND 8" DEPTH
6002	1750 SF	5 INCH CONCRETE SIDEWALK
8001	1 EA	2 WIRE CENTRAL CONTROL UNIT
8003	9 EA	8" LED VEHICULAR TRAFFIC SIGNAL HEAD SECTION
8004	3 EA	ADJUST EXISTING HANDHOLE TO GRADE INCLUDING COLLAR
8006	1 EA	ANY SIZE LIGHTING ARM ON SIGNAL STRUCTURE WITH 250 WATT HPS LAMP AND LUMINAIRE
8007	4 EA	AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION & SIGNS
8008	4 EA	BREAKAWAY PEDESTAL POLE (ANY SIZE)
8009	1 EA	CLASS II WOOD POLE WITH 2 DOWN GUYS AND ANCHORS
8013	4 EA	LED 16" COUNTDOWN PEDESTRIAN SIGNAL HEADS
8020	6 EA	NON-INVASIVE DETECTOR (ANY LENGTH) LEAD-IN CABLE UP TO 1000'
8021	1 EA	REMOVE & DISPOSE MATERIAL AND EQUIPMENT PER ASSIGNMENT
8023	1 EA	TWIN MAST ARM POLE & 50'/50' MAST ARMS ANY 'T' DIMENSION
8024	1 EA	TWIN MAST ARM POLE & 50'/70' MAST ARMS ANY 'T' DIMENSION
8025	3 EA	VIDEO DETECTION CAMERA AND CABLE UP TO 500'
8029	35 LF	3 INCH ELECTRICAL CONDUIT-PVC RISER
8030	180 LF	ELECTRICAL CABLE - 1 CONDUCTOR #2/0 AWG (3 WIRES)
8031	880 LF	DISCONNECT, PULL BACK AND RE-ROUTE EXISTING CABLES
8033	110 LF	SCHEDULE 80 PVC CONDUIT UP TO 4 - BORED
8034	230 LF	SCHEDULE 80 PVC CONDUIT UP TO 4 - SLOTTED
8035	360 LF	SCHEDULE 80 PVC CONDUIT UP TO 4 - TRENCHED
8036	30 LF	WOOD SIGN SUPPORTS UP TO 4 x 6
8037	50 SF	DETECTABLE WARNING SURFACES
8038	110 SF	INSTALL OVERHEAD OR GROUND-MOUNTED SIGNS (INCLUDING ALL HARDWARE)
8040	420 LF	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
8041	1 EA	WEATHER HEAD, 3 INCH
8042	1 EA	METERED SERVICE PEDESTAL EMBEDDED (100 OR 200 AMP)
8044	24 LF	ELECTRICAL CABLE - 1 CONDUCTOR, NO. 4 AWG-THHN/THWN (3 WIRES)
8046	8 EA	FURNISH AND INSTALL ELECTRICAL HANDHOLE
8050	36 EA	12" LED VEHICULAR TRAFFIC SIGNAL HEAD SECTION
8052	3 EA	CUT, CLEAN, GALVANIZE & CAP TRAFFIC SIGNAL STRUCTURE
8054	610 LF	ELECTRICAL CABLE - 2 CONDUCTOR (NO.14 AWG)
8056	740 LF	ELECTRICAL CABLE - 5 CONDUCTOR (NO.14 AWG)
8057	2070 LF	ELECTRICAL CABLE - 7 CONDUCTOR (NO.14 AWG)
8058	255 LF	ELECTRICAL CABLE - 2 CONDUCTOR (NO.12 AWG) TC
8065	1 EA	INSTALL CONTROLLER AND CABINET - BASE MOUNT
8066	1 EA	CONCRETE TESTING BY A CERTIFIED THIRD PARTY

PHASE CHART

	1	2	3	4	5	6	7	8	9	10	11	12	13-14	15-16
Phase 1 & 6	G	G	G	R	R	R	R	R	R	R	R	R	DW	DW
1 Change	G	G	G	R	R	R	R	R	R	R	R	R	DW	DW
Phase 2 & 6	G	G	G	G	G	G	R	R	R	R	R	R	WK	DW
Countdown Ped Clearance	G	G	G	G	G	G	R	R	R	R	R	R	FL/DW	DW
2 & 6 Change	Y	Y	Y	Y	Y	Y	R	R	R	R	R	R	DW	DW
Phases 4 & 8	R	R	R	R	R	R	G	G	G	G	G	G	DW	DW
4 & 8 Change	R	R	R	R	R	R	Y	Y	Y	Y	Y	Y	DW	DW
Phase 4 Alt.	R	R	R	R	R	R	G	G	G	G	G	G	DW	WK
Countdown Ped Clearance	R	R	R	R	R	R	G	G	G	G	G	G	DW	FL/DW
4 Alt. Change	R	R	R	R	R	R	Y	Y	Y	Y	Y	Y	DW	DW
Flashing Operation	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	DARK	DARK

WIRING DIAGRAM



WIRING KEY

a,b,c	VIDEO CAMERA WITH 3-CONDUCTOR (NO. 18 AWG) LEAD-IN CABLE TO CONTROLLER	EE	NO. 6 AWG, STRANDED BARE COPPER GROUND WIRE
A,B,C	NON-INVASIVE DETECTORS WITH LEAD-IN CABLE TO CONTROLLER	FF	NO. 2/0 AWG, ELECTRICAL SERVICE CABLE (3 WIRES)
D,E,F	NON-INVASIVE DETECTORS WITH LEAD-IN CABLE TO CONTROLLER	GG	NO. 4 AWG, THHN/THWN ELECTRICAL SERVICE CABLE (3 WIRES)
G,H,J,K	2-CONDUCTOR (NO.14 AWG) ELECTRICAL CABLE	HH	RELOCATED EXISTING FIREHOUSE PUSHBUTTON CABLE
L,M,N,D	5-CONDUCTOR (NO.14 AWG) ELECTRICAL CABLE	EPB	EXISTING FIREHOUSE PUSHBUTTON CABLE
P	2-CONDUCTOR (NO.12 AWG) TRAY CABLE	DZ	DETECTION ZONE
Q,R,S,T	5-CONDUCTOR (NO.14 AWG) JUMPER ELEC. CABLE	+	GROUND ROD
U,V,W,X,Y,Z,AA,BB	7-CONDUCTOR (NO.14 AWG) ELECTRICAL CABLE		
CC,DD	EXISTING INTERCONNECT CABLE (TO BE PULLED BACK AND RE-ROUTED)		
I/C	EXISTING INTERCONNECT CABLE (TO REMAIN)		

REDLINE 1 - TEDD APPROVAL 6/18/2011
RELOCATED CONDUIT RUN ACROSS MD 450 FROM WEST LEG TO EAST LEG OF INTERSECTION 6/16/2011

SHA STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION
MD 450 (ANNAPOLIS ROAD)
AT 68TH AVENUE
HYATTSVILLE, MARYLAND

GENERAL INFORMATION SHEET

SCALE	NONE	ADVERTISED DATE	FEB. 2011	CONTRACT NO.	XX3515188
DESIGNED BY	EMM	COUNTY	PRINCE GEORGE'S		
DRAWN BY	EMM	LOGMILE	16045001.91		
CHECKED BY	EMM/MAR	TIMS NO.	K-041		
F.A.P. NO.		TOD NO.			
TS NO.	778B-GI	DRAWING	5G-02	OF 2	SHEET NO. 2 OF 2

THIRTY CENTURY
ENGINEERING
CONSULTING ENGINEERS - PLANNERS
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