PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE INSTALLATION OF LED COUNTDOWN PEDESTRIAN SIGNAL HEADS, APS PUSHBUTTONS, AND SIGNS AT THE INTERSECTION OF MD 108 AND MELLENBROOK ROAD/BENDIX ROAD IN HOWARD COUNTY. MD 108 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

INTERSECTION OPERATION

THIS INTERSECTION CURRENTLY OPERATES IN A NEMA SIX-PHASE FULL-TRAFFIC-ACTUATED MODE WITH PROTECTED-PERMITTED LEFT TURNS ON NORTHBOUND AND SOUTHBOUND MD 108 AND AN ALTERNATE PEDESTRIAN PHASE FOR THE SOUTH LEG OF THE INTERSECTION. A CONCURRENT PEDESTRIAN PHASE WILL BE ADDED FOR THE WEST LEG OF THE INTERSECTION.

CONTROLLER REQUIREMENTS

THE EXISTING FULL-TRAFFIC-ACTUATED EIGHT PHASE TRAFFIC SIGNAL CONTROLLER HOUSED IN A BASE MOUNTED CABINET WILL BE USED. AN APS CENTRAL CONTROL UNIT WILL BE FURNISHED BY THE CONTRACTOR AND INSTALLED BY THE SHA.

CONTACT PERSONS FOR DISTRICT #7 ARE AS FOLLOWS:

MR. JOHN CONCANNON
ASSISTANT DISTRICT ENGINEER-TRAFFIC
PHONE: (301)624-8140

MS. ANDREA ABEND
UTILITY ENGINEER
PHONE: (301)624-8115

MR. RAYMOND JOHNSON
ASSISTANT DISTRICT ENGINEER-MAINTENANCE
PHONE: (301)624-8105

CONTACT PERSONS FOR OOTS ARE AS FOLLOWS:

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

MR. ROBERT SNYDER
ASSISTANT DIVISION CHIEF
TRAFFIC OPERATIONS
(410)787-7630

MR. ED RODENHIZER
CHIEF, SIGNAL OPERATIONS
(410)787-7650

MR. EUGENE BAILEY
CHIEF, SIGN OPERATIONS
(410)787-7676

SPECIAL NOTE

APS WILL FUNCTION AS FOLLOWS:

FOR OLD ANNAPOLIS ROAD:

A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT MESSAGE WILL BE " WAIT TO CROSS OLD ANNAPOLIS ROAD AT MELLENBROOK AND BENDIX ROADS."

B. WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

FOR MELLENBROOK ROAD:

A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT MESSAGE WILL BE "WAIT TO CROSS MELLENBROOK ROAD AT OLD ANNAPOLIS ROAD."

B. WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

EQUIPMENT LIST "A"

A. EQUIPMENT TO BE SUPPLIED BY THE SHA.

NONE

EQUIPMENT LIST "B"

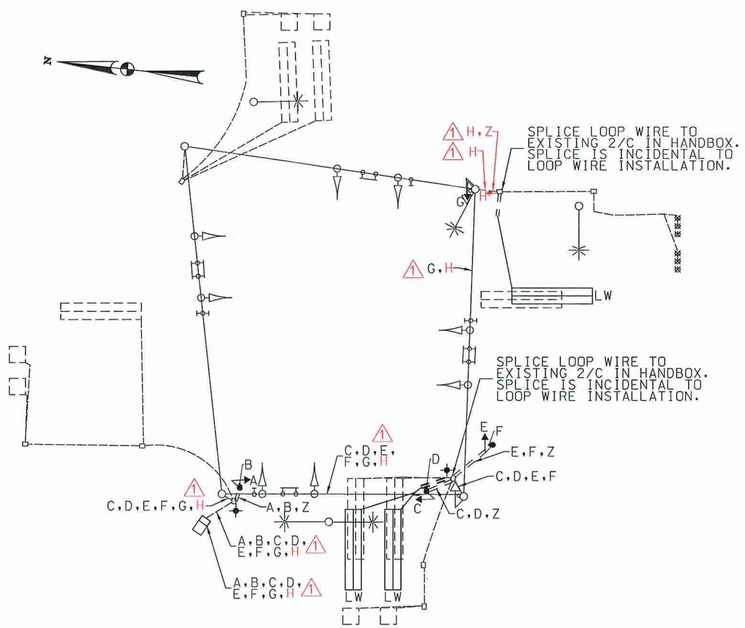
B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR.

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
2003	TEST PIT EXCAVATION	CY	10
5001	REMOVAL OF EXISTING PERMANENT PAVEMENT MARKINGS	LF	680
5006	12 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS	LF	320
5007	24 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF	70
8001	CONCRETE FOR SIGNAL STRUCTURE	CY	2.3 △1
8002	AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON	EA	4
8003	BREAKAWAY PEDESTRIAN POLE - ANY SIZE	EA	4 △1
8004	LED 16 INCH COUNTDOWN PEDESTRIAN SIGNAL HEAD	EA	4
8005	REMOVE AND DISPOSE PER ASSIGNMENT	EA	1
8006	PEDESTRIAN EDUCATION SIGN -R10-3(1) MOD (9"X15")	SF	3.75
8007	NO. 6 STRANDED BARE COPPER GROUND WIRE	LF	70 △1
8008	3 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED	LF	50
8011	GROUND ROD - 3/4 INCH DIAMETER X 10 FOOT LENGTH	EA	2
△1 8012	CUT, CLEAN, GALVANIZE AND CAP TRAFFIC SIGNAL STRUCTURE	EA	1 △1
8013	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)	LF	840
8014	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)	LF	830
8016	APS CENTRAL CONTROL UNIT	EA	1
8017	LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO. 14 AWG)	LF	1400
8018	SAW CUT FOR SIGNAL (LOOP DETECTOR)	LF	370
8019	1 INCH DIAMETER RIGID STEEL CONDUIT, SCHEDULE 40	LF	30
8021	ADJUST EXISTING HANDHOLE	EA	1

EQUIPMENT LIST "C"

C. EQUIPMENT TO BE REMOVED BY THE CONTRACTOR AND RETURNED TO SHA.

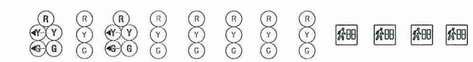
ALL MATERIALS AND EQUIPMENT REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE CONTRACTOR.



WIRING KEY

A,C,E,G	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)	Z	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
B,D,F,H	2-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)	EX	EXISTING 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
LW	LOOP WIRE (NO. 14 AWG)	✦	GROUND ROD

PHASING CHART



PHASE 1 & 5	R ◄G–	R	R ◄G–	R	R	R	R	R	DW	DW	DW	DW	
1 & 5 CHANGE	R ◄Y–	R	R ◄Y–	R	R	R	R	R	DW	DW	DW	DW	
PHASE 1 & 6	R	R	G ◄G–	G	R	R	R	R	DW	DW	WK	WK	
PED CLEARANCE/ COUNTDOWN	R	R	G ◄G–	G	R	R	R	R	DW	DW	FL/DW	FL/DW	
1 & 6 CHANGE	R	R	Y ◄Y–	Y	R	R	R	R	DW	DW	DW	DW	
PHASE 2 & 5	G ◄G–	G	R	R	R	R	R	R	DW	DW	DW	DW	
2 & 5 CHANGE	Y ◄Y–	Y	R	R	R	R	R	R	DW	DW	DW	DW	
PHASE 2 & 6	G	G	G	G	R	R	R	R	DW	DW	WK	WK	
PED CLEARANCE/ COUNTDOWN	G	G	G	G	R	R	R	R	DW	DW	FL/DW	FL/DW	
2 & 6 CHANGE	Y	Y	Y	Y	R	R	R	R	DW	DW	DW	DW	
PHASE 4 & 8	R	R	R	R	G	G	G	G	DW	DW	DW	DW	
4 & 8 CHANGE	R	R	R	R	Y	Y	Y	Y	DW	DW	DW	DW	
PHASE 4 & 8 ALT	R	R	R	R	G	G	G	G	WK	WK	DW	DW	
PED CLEARANCE/ COUNTDOWN	R	R	R	R	G	G	G	G	FL/DW	FL/DW	DW	DW	
4 & 8 ALT CHANGE	R	R	R	R	Y	Y	Y	Y	DW	DW	DW	DW	
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	DARK	DARK	DARK	DARK	

GENERAL NOTES

1. THE CONTRACTOR SHALL VERIFY ALL PROPOSED POLE LOCATIONS PRIOR TO INSTALLATION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TERMINATING ALL SIGNAL CABLE TO THE APPROPRIATE TERMINALS AND PROPERLY LABELING EACH CABLE.
3. ALL UNUSED CABLE SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.
4. UNDERGROUND 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.
5. 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.
6. ACCESSIBLE PEDESTRIAN CONTROL EQUIPMENT SHALL BE DELIVERED TO THE SHA SIGNAL SHOP FOR TESTING AND PROGRAMMING PRIOR TO INSTALLATION. CONTACT MR. EDWARD RODENHIZER AT 410-787-7652 TO COORDINATE.
7. LOCATION OF ACCESSIBLE PEDESTRIAN PUSHBUTTONS MUST MEET THE LOCATION REQUIREMENTS OF THE MUTCD, SECTION 4E-09 AND FIGURE 4E-2 AND THE NCHRP PUBLICATION, "ACCESSIBLE PEDESTRIAN SIGNAL: GUIDE TO BEST PRACTICE." IF NOT MET, THE CONTRACTOR IS TO STOP WORK ON PUSHBUTTON LOCATIONS UNTIL THE CONFLICT HAS BEEN RESOLVED. IF NEEDED, A DESIGN WAIVER SHALL BE OBTAINED, APPROVED BY THE DIRECTOR, OFFICE OF TRAFFIC AND SAFETY.
8. PUSHBUTTONS ARE TO BE LOCATED SO THAT THEY CAN BE ACTIVATED BY A PERSON IN A WHEELCHAIR FROM 60"X60" LEVEL LANDING AREA. A LEVEL LANDING AREA IS AN AREA WITH A CROSS SLOPE OF LESS THAN 2%.
9. PUSHBUTTON IS TO BE LOCATED SO THAT A PEDESTRIAN IN A WHEELCHAIR LOCATED ON THE LEVEL LANDING AREA, DOES NOT HAVE TO REACH MORE THAN 18"
10. THE 10' SEPARATION BETWEEN PUSHBUTTONS IS TO BE MEASURED FROM FACE OF PUSHBUTTON, NOT CENTER TO CENTER OF POLE.

APPROVAL: 3/18/08
TEAM LEADER

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

MD 108 @ MELLENBROOK ROAD/BENDIX ROAD

COLUMBIA, MARYLAND

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BALTIMORE, MARYLAND 21217
TELE:(410)728-2900 FAX:(410)383-3270

REVISIONS
△1 REDLINE NO. 1 3/18/2008

GENERAL INFORMATION SHEET

SCALE NONE DATE 10/5/2007 CONTRACT NO. AX3755133

DESIGNED BY BJG COUNTY HOWARD
DRAWN BY BJG LOGMILE 13010810.71
CHECKED BY DAE TIMS NO. 1888
FAP NO. TOD NO.

TS NO. 1794B-GI | DRAWING SG - 2 OF 2 | SHEET NO. 19 OF 19

PLOTTED: Tuesday, March 18, 2008 AT 09:44 AM
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BY: BJG