

PROJECT DESCRIPTION

THIS PROJECT INVOLVES RECONSTRUCTION OF THE FULL-COLOR TRAFFIC SIGNAL AT THE INTERSECTION OF MD 140 (REISTERSTOWN RD) AT WOODHOLME CENTER CIRCLE. THE INSTALLATION INCLUDES LED SIGNAL HEADS, LED COUNTDOWN PEDESTRIAN SIGNAL HEADS, APS PUSHBUTTONS AND SIGNS, AND IP-BASED VIDEO DETECTION CAMERAS. MD 140 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

INTERSECTION OPERATION

THE INTERSECTION WILL OPERATE IN A NEMA SIX-PHASE FULL-TRAFFIC-ACTUATED MODE WITH AN ALTERNATE PEDESTRIAN PHASE FOR THE SOUTH LEG OF THE INTERSECTION. THE MD 140 NORTHBOUND AND SOUTHBOUND LEFT TURNS OPERATE IN EXCLUSIVE/PERMISSIVE PHASING. THE EASTBOUND AND WESTBOUND APPROACHES OPERATE IN SPLIT PHASING.

CONTROLLER REQUIREMENTS

THE EXISTING BASE MOUNTED CABINET SHALL BE REMOVED. A NEW FULL-TRAFFIC-ACTUATED EIGHT-PHASE TRAFFIC SIGNAL CONTROLLER HOUSED IN A BASE MOUNTED CABINET SHALL BE FURNISHED BY SHA AND INSTALLED BY THE CONTRACTOR. 2-WIRE APS CENTRAL CONTROL UNIT AND 4-CHANNEL LOOP DETECTOR AMPLIFIER SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. IP-BASED VIDEO DETECTION INTERFACE EQUIPMENT AND UPS BATTERY BACKUP SHALL BE FURNISHED AND INSTALLED BY SHA.

SPECIAL NOTES

APS WILL FUNCTION AS FOLLOWS:

TO CROSS MD 140 (REISTERSTOWN ROAD):

- A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT MESSAGE WILL BE "WAIT TO CROSS REISTERSTOWN AT WOODHOLME CENTER. WAIT."
- B. WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

WIRING KEY

A,B,C,D,E, F,G,H,FF	7-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
I,J,K, L,M,N	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
O,P	2-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
R,S,T,U	IP-BASED VIDEO DETECTION CAMERA CABLE
V,W	3-CONDUCTOR ELECTRICAL CABLE (NO. 12 AWG), TYPE TC
Y,AA	NON-INVASIVE MICROPROBE SET WITH 1000 FT. LEAD-IN CABLE
BB,CC	NON-INVASIVE MICROPROBE SET WITH 500 FT. LEAD-IN CABLE
Z	STRANDED BARE COPPER GROUND WIRE (NO. 6 AWG)
DD	DISCONNECT, PULLBACK AND REROUTE EXISTING INTERCONNECT CABLE
EE	12-PAIR COMMUNICATION CABLE, JELLYFILLED (SEE INTERCONNECT PLANS)
Q	1-CONDUCTOR ELECTRICAL CABLE (NO. 8 AWG - THHN/THWN), 3 RUNS
PF	EXISTING OVERHEAD POWER FEED
⊕	EXISTING GROUND ROD
⚡	PROPOSED GROUND ROD

EQUIPMENT LIST "A, B & C"

A. EQUIPMENT TO BE SUPPLIED BY SHA.

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
900000	SHEET ALUMINUM GROUND MOUNTED SIGN 2 - R4-7 24"x30" 2 - W11-2 FY 36"x36" 1 - M1-5(6) 30"x51" 1 - M1-5(6) 30"x48"	SF	90
900000	SHEET ALUMINUM MAST ARM / POLE MOUNTED SIGN 2 - D-3(1) (DUAL FACE) 90"x16" 2 - R3-5R 30"x36" 2 - R3-6L 30"x36" 2 - D-3(1) 90"x16" 2 - R10-3(1) 90"x15"	SF	158
900000	CONTROLLER CABINET, SIZE "S" W/CTRL, VIDEO INT. 1-8 CAM	EA	1
900000	UPS EQUIPMENT FOR "S" CABINET	EA	1
900000	4 CHANNEL DETECTOR AMPLIFIER	EA	1

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

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
100000	MAINTENANCE OF TRAFFIC (PER INTERSECTION)	EA	1
504150	HOT MIX ASPHALT SUPERPAVE 9.5MM FOR SURFACE, PG76-22, LEVEL-3	TON	1.5
520109	3 INCH GRADED AGGREGATE BASE COURSE	SY	3
585617	5 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF	85
585621	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF	385
585625	24 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF	30
585700	REMOVAL OF EXISTING PAVEMENT MARKING LINES, ANY WIDTH	LF	175
600000	TYPE A COMBINATION CURB AND GUTTER ANY HEIGHT OR DEPTH	LF	267
600000	TYPE A CURB ANY HEIGHT OR DEPTH	LF	42
600000	DETECTABLE WARNING SURFACE FOR CURB RAMPS (TYPE 3 BRICK PAVERS)	SF	90
655105	5 INCH CONCRETE SIDEWALK	SF	87.1
800000	8 INCH LED VEHICULAR TRAFFIC SIGNAL HEAD SECTION	EA	15
800000	2-WIRE APS CENTRAL CONTROL UNIT	EA	1
800000	ADJUST HANDHOLE TO GRADE AND REPLACE FRAME AND COVER	EA	2
800000	ANY SIZE LIGHTING ARM ON SIGNAL POLE WITH LED ROADWAY LUMINAIRE	EA	2
800000	AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION AND SIGNS	EA	2
800000	16 INCH LED COUNTDOWN PEDESTRIAN SIGNAL HEAD	EA	2
800000	IP-BASED VIDEO DETECTION CAMERA & ANY LENGTH LEAD-IN CABLE	EA	4
800000	5 FOOT OR 10 FOOT PEDESTAL POLE WITH BREAKAWAY COUPLINGS, FOUNDATION & GROUND ROD	EA	1
800000	PEDESTAL POLE (ANY SIZE LARGER THAN 10 FOOT) WITH BREAKAWAY TRANSFORMER BASE, FOUNDATION & GROUND ROD	EA	1
800000	MAST ARM POLE & 38' MAST ARM ANY 'I' DIMENSION, FOUNDATION & GROUND ROD	EA	2
800000	MAST ARM POLE & 50' MAST ARM ANY 'I' DIMENSION, FOUNDATION & GROUND ROD	EA	1
800000	100 AMP EMBEDDED METERED SERVICE PEDESTAL, CONCRETE COLLAR & GROUND RODS	EA	1
800000	NONINVASIVE DETECTOR WITH ANY LENGTH LEAD-IN CABLE UP TO 1000'	EA	4
800000	REMOVE & DISPOSE OF EXISTING SIGNAL EQUIPMENT (PER SIGNALIZED INTERSECTION LOCATION)	EA	1
800000	INSTALL CONTROLLER AND CABINET BASE MOUNT (ANY SIZE) INCLUDING F&I FOUNDATION & GROUND ROD	EA	1
800000	ELECTRICAL CABLE - 3 CONDUCTOR (NO. 12 AWG) (B.W.G) TYPE TC	LF	750
800000	DISCONNECT, PULL-BACK & REROUTE CABLES	LF	220
800000	UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT - BORED OR SLOTTED	LF	470
800000	UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED	LF	445
800000	WOOD SIGN SUPPORTS UP TO 4 INCH X 6 INCH	LF	169
800000	INSTALL OVERHEAD OR GROUND MOUNTED SIGN (INCLUDING ALL HARDWARE)	SF	248
800000	THIRD PARTY CONCRETE TESTING (PER INTERSECTION)	EA	1
802501	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE	LF	380
810022	ELECTRICAL CABLE 1-CONDUCTOR NO. 8 AWG-THHN/THWN	LF	50
811001	FURNISH AND INSTALL ELECTRICAL HANDHOLE	EA	11
860284	12 INCH LED VEHICULAR TRAFFIC SIGNAL HEAD SECTION	EA	38
861105	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)	LF	375
861107	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)	LF	485
861108	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)	LF	2040

C. THE CONTRACTOR SHALL RETURN THE EXISTING CONTROLLER AND VIDEO DETECTION CAMERA TO SHA. ALL MATERIALS TO BE REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

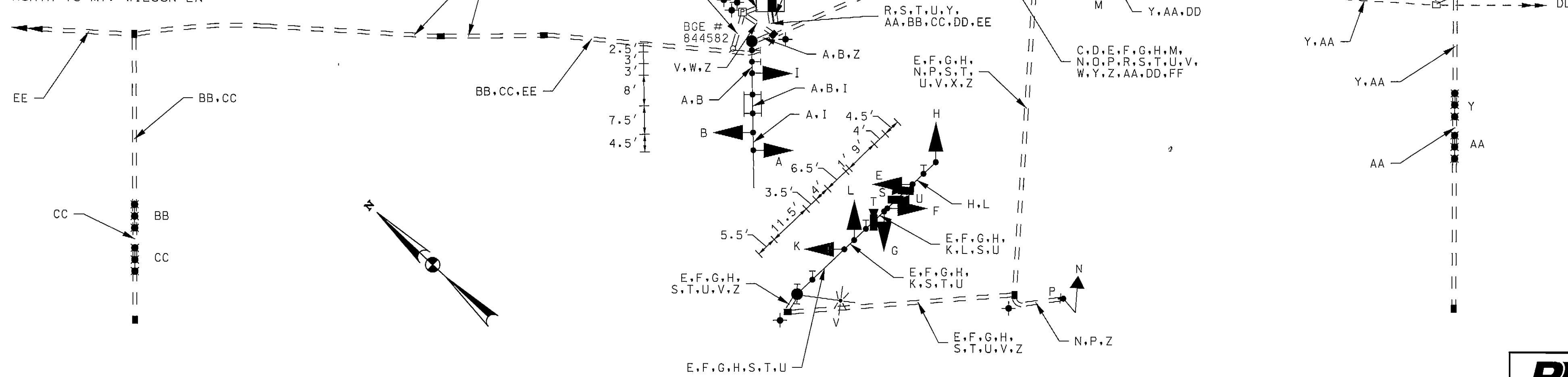
GENERAL NOTES

- THE CONTRACTOR SHALL VERIFY ALL PROPOSED POLE LOCATIONS PRIOR TO INSTALLATION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR TERMINATING ALL SIGNAL CABLE TO THE APPROPRIATE TERMINALS AND PROPERLY LABELING EACH CABLE.
- ALL UNUSED CABLE SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.
- 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 AND MD 818.04, THE CONTRACTOR SHALL VERIFY ULTIMATE GRADES PRIOR TO THE INSTALLATION OF ALL SIGNAL EQUIPMENT.
- 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.
- ALL PEDESTAL FOUNDATION TOPS SHALL BE INSTALLED FLUSH WITH SIDEWALK GRADE.
- LOCATION OF ACCESSIBLE PEDESTRIAN SIGNAL PUSHBUTTONS MUST MEET LOCATION REQUIREMENTS OF MUTCD SECTION 4E.10, FIGURES 4E-3 AND 4E-4 AND THE NCHRP PUBLICATION, "ACCESSIBLE PEDESTRIAN SIGNALS: GUIDE TO BEST PRACTICE." IF NOT MET, THE CONTRACTOR IS TO STOP WORK ON PUSHBUTTON LOCATIONS UNTIL A DESIGN WAIVER IS OBTAINED, APPROVED BY THE DIRECTOR, OFFICE OF TRAFFIC AND SAFETY.
- PUSHBUTTONS ARE TO BE LOCATED SO THAT THEY CAN BE ACTIVATED BY A PERSON IN A WHEELCHAIR REACHING LESS THAN 18" FROM A 60" X 60" LEVEL LANDING AREA WITH A CROSS SLOPE OF LESS THAN OR EQUAL TO 2%.
- THE 10' SEPARATION BETWEEN PUSHBUTTONS IS TO BE MEASURED FROM FACE OF PUSHBUTTON TO FACE OF PUSHBUTTON, NOT CENTER OF POLE TO CENTER OF POLE.
- PUSHBUTTON ARROWS AND SIGNS ARE TO BE ORIENTED PARALLEL TO THE CROSSING FOR WHICH THEY ARE INTENDED.
- PROPOSED LUMINAIRES SHALL BE SUPPLIED WITH A PHOTOCCELL.
- VIDEO DETECTION CAMERA ALIGNMENT SHALL BE COORDINATED WITH THE ENGINEER.
- DURING CONSTRUCTION, PROPOSED SIGNAL EQUIPMENT SHALL NOT BLOCK EXISTING SIGNAL EQUIPMENT.
- THE CONTRACTOR SHALL CAP AND ABANDON CONDUITS FEEDING EXISTING SIGNAL EQUIPMENT THAT IS REMOVED.
- THE CONTRACTOR SHALL CONTACT MR. ED RODENHIZER AT THE SIGNAL SHOP (410-787-7650) TO DELIVER APS EQUIPMENT FOR TESTING.

PHASING CHART

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
PHASE 1 AND 5	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
1 AND 5 CHANGE TO 1 AND 6, 2 AND 5, OR 2 AND 6	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
PHASE 1 AND 6	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
1 AND 6 CHANGE	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
PHASE 2 AND 5	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
2 AND 5 CHANGE	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
PHASE 2 AND 6	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
2 AND 6 CHANGE	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
PHASE 3	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
3 CHANGE	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
PHASE 4	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
4 CHANGE	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
PHASE 4 ALT	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
PED CLEARANCE	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
4 ALT CHANGE	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
FLASHING OPERATION	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL

PROPOSED UNDERGROUND I/C NORTH TO MT. WILSON LN



STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
OFFICE OF TRAFFIC & SAFETY  
TRAFFIC ENGINEERING DESIGN DIVISION  
MD 140 (REISTERSTOWN ROAD)  
AT WOODHOLME CENTER CIRCLE  
PIKESVILLE, MARYLAND

GENERAL INFORMATION SHEET

SCALE	NONE	DATE	JANUARY 2013	CONTRACT NO.	XY1515185
DESIGNED BY	WFW	COUNTY	BALTIMORE		
DRAWN BY	WFW	LOGMILE	03014002.36		
CHECKED BY	BJG	TIMS NO.	L825		
FAP NO.		TOD NO.			

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