PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE RECONSTRUCTION OF THE EXISTING FULL-COLOR TRAFFIC SIGNAL AT THE INTERSECTION OF MD 41 (PERRING PARKWAY) AT TAYLOR AVENUE. THE INSTALLATION INCLUDES LED SIGNAL HEADS, IP-BASED VIDEO DETECTION CAMERAS, APS PUSHBUTTONS AND SIGNS. MD 41 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

INTERSECTION OPERATION

THE INTERSECTION WILL OPERATE IN A NEMA EIGHT-PHASE FULL-TRAFFIC-ACTUATED MODE WITH ALTERNATE PEDESTRIAN PHASES FOR THE NORTH AND SOUTH LEGS AND A CONCURRENT PEDESTRIAN PHASE FOR THE EAST LEG OF THE INTERSECTION. THE MD 41 NORTHBOUND AND SOUTHBOUND LEFT TURNS OPERATE IN EXCLUSIVE PHASING. THE TAYLOR AVENUE EASTBOUND AND WESTBOUND LEFT TURNS OPERATE IN EXCLUSIVE-PERMISSIVE 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. A 2-WIRE APS CENTRAL CONTROL UNIT SHALL BE FURNISHED THE CONTRACTOR AND INSTALLED BY SHA. IP-BASED VIDEO DETECTION INTERFACE EQUIPMENT SHALL BE FURNISHED AND INSTALLED BY SHA.

SPECIAL NOTES

APS WILL FUNCTION AS FOLLOWS:

TO CROSS MD 41 (PERRING PARKWAY):

A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT MESSAGE WILL BE "WAIT TO CROSS PERRING AT TAYLOR. WAIT."

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

TO CROSS TAYLOR AVENUE:

A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT MESSAGE WILL BE "WAIT TO CROSS TAYLOR AT PERRING. WAIT."

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

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. 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.
5. 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.
6. ALL PEDESTAL FOUNDATION TOPS SHALL BE INSTALLED FLUSH WITH SIDEWALK GRADE.
7. LOCATION OF ACCESSIBLE PEDESTRIAN SIGNAL PUSHBUTTONS MUST MEET LOCATION REQUIREMENTS OF MUTCD SECTION 4E.10, MUTCD 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.
8. 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%.
9. 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.
10. PUSHBUTTON ARROWS AND SIGNS ARE TO BE ORIENTED PARALLEL TO THE CROSSING FOR WHICH THEY ARE INTENDED.
11. PROPOSED LUMINAIRES SHALL BE SUPPLIED WITH A PHOTOCELL.
12. VIDEO DETECTION CAMERA ALIGNMENT SHALL BE COORDINATED WITH THE ENGINEER.
13. DURING CONSTRUCTION, PROPOSED SIGNAL EQUIPMENT SHALL NOT BLOCK EXISTING SIGNAL EQUIPMENT.
14. THE CONTRACTOR SHALL CAP AND ABANDON CONDUITS FEEDING EXISTING SIGNAL EQUIPMENT THAT IS REMOVED.

CONTACT PERSONS FOR DISTRICT #4 ARE AS FOLLOWS:

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CONTACT PERSONS FOR OOTS ARE AS FOLLOWS:

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MR. EUGENE BAILEY
CHIEF, SIGN OPERATIONS
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EQUIPMENT LIST "A, B & C"

A. EQUIPMENT TO BE SUPPLIED BY SHA.

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
900000	SHEET ALUMINUM GROUND MOUNTED SIGN 1 - R1-2 36"X36"X36" 2 - R4-7 24"X30" 8 - W11-2 FY 36"X36" 8 - M6-2 FY 30"X24"	SF	131
900000	SHEET ALUMINUM MAST ARM / POLE MOUNTED SIGN 4 - D-3(1) (DUAL FACE) 60"X16" 2 - M1-5(6) 24"X51" 4 - D-3(1) (DUAL FACE) 66"X16" 2 - M1-5(6) 36"X72" 6 - R10-13(1) 9"X15"	SF	115
900000	CONTROLLER CABINET, SIZE "S" W/CTRL, VIDEO INT. 1-8 CAM	EA	1
900000	4 CHANNEL DETECTOR AMPLIFIER	EA	1

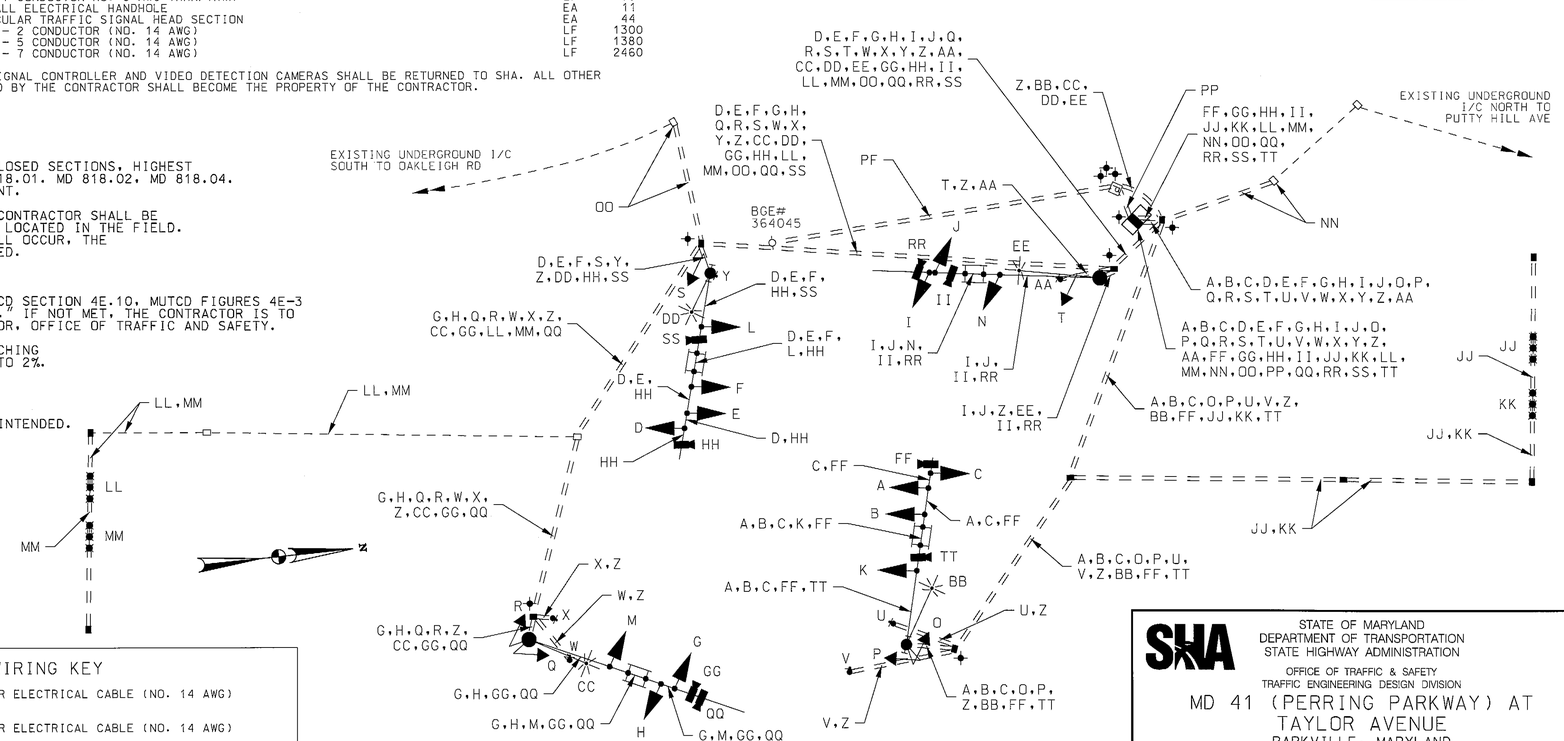
B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR.

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
100000	MAINTENANCE OF TRAFFIC (PER INTERSECTION)	EA	1
201032	CLASS 2 EXCAVATION	CY	1
504150	HOT MIX ASPHALT SUPERPAVE 9.5MM FOR SURFACE, PG76-22, LEVEL-3	TON	2
520109	3 INCH GRADED AGGREGATE BASE COURSE	SY	4
585621	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF	190
585625	24 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF	75
585700	REMOVAL OF EXISTING PAVEMENT MARKING LINES, ANY WIDTH	LF	800
600000	TYPE A COMBINATION CURB AND GUTTER ANY HEIGHT OR DEPTH	LF	210
600000	TYPE A CURB ANY HEIGHT OR DEPTH	LF	83
600000	DETECTABLE WARNING SURFACE FOR CURB RAMPS (TYPE 3 BRICK PAVERS)	SF	141
655105	5 INCH CONCRETE SIDEWALK	SF	1283
704345	PLACING FURNISHED TOPSOIL 4 INCH DEPTH	SY	3.5
708220	TURFGRASS SOD ESTABLISHMENT	SY	3.5
800000	8 INCH LED VEHICULAR TRAFFIC SIGNAL HEAD SECTION	EA	6
800000	2-WIRE APS CENTRAL CONTROL UNIT	EA	1
800000	ANY SIZE LIGHTING ARM ON SIGNAL POLE WITH LED ROADWAY LUMINAIRE	EA	4
800000	AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION AND SIGNS	EA	6
800000	16 INCH LED COUNTDOWN PEDESTRIAN SIGNAL HEAD	EA	6
800000	IP-BASED VIDEO DETECTION CAMERA & ANY LENGTH LEAD-IN CABLE	EA	8
800000	5 FOOT OR 10 FOOT PEDESTAL POLE WITH BREAKAWAY COUPLINGS, FOUNDATION & GROUND ROD	EA	5
800000	MAST ARM POLE & 50' MAST ARM ANY 'T' DIMENSION, FOUNDATION & GROUND ROD	EA	2
800000	MAST ARM POLE & 60' MAST ARM ANY 'T' DIMENSION, FOUNDATION & GROUND ROD	EA	2
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	860
800000	DISCONNECT, PULL-BACK & REROUTE CABLES	LF	315
800000	UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT - BORED OR SLOTTED	LF	635
800000	UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED	LF	605
800000	WOOD SIGN SUPPORTS UP TO 4 INCH X 6 INCH	LF	192
800000	INSTALL OVERHEAD OR GROUND MOUNTED SIGN (INCLUDING ALL HARDWARE)	SF	246
802501	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE	LF	630
810022	ELECTRICAL CABLE 1-CONDUCTOR NO. 8 AWG-THHN/THWN	LF	60
811001	FURNISH AND INSTALL ELECTRICAL HANDHOLE	EA	11
860284	12 INCH LED VEHICULAR TRAFFIC SIGNAL HEAD SECTION	EA	44
861105	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)	LF	1300
861107	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)	LF	1380
861108	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)	LF	2460

C. THE EXISTING TRAFFIC SIGNAL CONTROLLER AND VIDEO DETECTION CAMERAS SHALL BE RETURNED TO SHA. ALL OTHER MATERIALS TO BE REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

PHASING CHART

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PHASE 1 AND 5	←G-	←G-	R	R	←G-	←G-	R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW
1 AND 5 CHANGE TO 1 AND 6, 2 AND 5, OR 2 AND 6																				
PHASE 1 AND 6	←G-	←G-	G	G	←R-	←R-	R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW
1 AND 6 CHANGE	←Y-	←Y-	G	G	←R-	←R-	R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW
PHASE 2 AND 5	←R-	←R-	R	R	←G-	←G-	G	G	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW
2 AND 5 CHANGE	←R-	←R-	R	R	←Y-	←Y-	G	G	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW
PHASE 2 AND 6	←R-	←R-	G	G	←R-	←R-	G	G	R	R	R	R	R	R	DW	DW	WK	WK	DW	DW
PED CLEARANCE	←R-	←R-	G	G	←R-	←R-	G	G	R	R	R	R	R	R	DW	DW	FL/DW	FL/DW	DW	DW
2 AND 6 CHANGE	←R-	←R-	Y	Y	←R-	←R-	Y	Y	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW
PHASE 3 AND 7	←R-	←R-	R	R	←R-	←R-	R	R	R ←G-	←G-	R	R ←G-	R ←G-	R	DW	DW	DW	DW	DW	DW
3 AND 7 CHANGE TO 3 AND 8, 4 AND 7, OR 4 AND 8																				
PHASE 3 AND 8	←R-	←R-	R	R	←R-	←R-	R	R	R	R	R	G ←G-	G ←G-	G	DW	DW	DW	DW	DW	DW
3 AND 8 CHANGE	←R-	←R-	R	R	←R-	←R-	R	R	R	R	R	G ←Y-	G ←Y-	G	DW	DW	DW	DW	DW	DW
PHASE 4 AND 7	←R-	←R-	R	R	←R-	←R-	R	R	G ←G-	←G-	G	R	R	R	DW	DW	DW	DW	DW	DW
4 AND 7 CHANGE	←R-	←R-	R	R	←R-	←R-	R	R	G ←Y-	G ←Y-	G	R	R	R	DW	DW	DW	DW	DW	DW
PHASE 4 AND 8	←R-	←R-	R	R	←R-	←R-	R	R	G	G	G	G	G	G	DW	DW	DW	DW	DW	DW
4 AND 8 CHANGE	←R-	←R-	R	R	←R-	←R-	R	R	Y	Y	Y	Y	Y	Y	DW	DW	DW	DW	DW	DW
PHASE 4 AND 8 ALT	←R-	←R-	R	R	←R-	←R-	R	R	G	G	G	G	G	G	WK	WK	DW	DW	WK	WK
PED CLEARANCE	←R-	←R-	R	R	←R-	←R-	R	R	G	G	G	G	G	G	FL/DW	FL/DW	DW	DW	FL/DW	FL/DW
4 AND 8 ALT CHANGE	←R-	←R-	R	R	←R-	←R-	R	R	Y	Y	Y	Y	Y	Y	DW	DW	DW	DW	DW	DW
FLASHING OPERATION	FL/ ←R-	FL/ ←R-	FL/Y	FL/Y	FL/ ←R-	FL/ ←R-	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	DARK	DARK	DARK	DARK	DARK	DARK



WIRING KEY

A,B,C,D,E,F,G,H,I,J	7-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
K,L,M,N,O,P,Q,R,S,T	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
U,V,W,X,Y,AA	2-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
BB,CC,DD,EE	3-CONDUCTOR ELECTRICAL CABLE (NO. 12 AWG, TYPE T/C)
FF,GG,HH,II,QQ,RR,SS,TT	IP-BASED VIDEO DETECTION CAMERA CABLE
JJ,KK,LL,MM	NON-INVASIVE MICROPROBE SET WITH 1000 FT. LEAD-IN CABLE
NN,OO	DISCONNECT, PULLBACK AND REROUTE EXISTING COMMUNICATION CABLE FOR INTERCONNECT
PP	1-CONDUCTOR ELECTRICAL CABLE (NO. 8 AWG, TYPE THHN/THWN), 3 RUNS
Z	STRANDED BARE COPPER GROUND WIRE (NO. 6 AWG)
PF	PROPOSED UNDERGROUND POWER FEED
✦	PROPOSED GROUND ROD

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

MD 41 (PERRING PARKWAY) AT TAYLOR AVENUE
PARKVILLE, MARYLAND

REVISIONS

GENERAL INFORMATION SHEET

SCALE NONE DATE JANUARY 2013 CONTRACT NO.

DESIGNED BY WFW COUNTY BALTIMORE
DRAWN BY WFW LOGMILE 03004101.04
CHECKED BY BJG TIMS NO. L825
FAP NO. TOD NO.

TS NO. 851D-GI DRAWING SP-2 OF 4 SHEET NO. 2 OF 6

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BY: WFW