

**PROJECT DESCRIPTION**

THIS PROJECT INVOLVES THE CONSTRUCTION OF ADA COMPLIANT RAMPS, INSTALLATION OF COUNTDOWN PEDESTRIAN SIGNAL HEADS, APS PUSHBUTTONS AND SIGNS AT THE INTERSECTION OF US 40 (PULASKI HIGHWAY) AT MD 222. US 40 IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

**INTERSECTION OPERATION**

THIS INTERSECTION WILL OPERATE IN A NEMA SIX-PHASE FULL TRAFFIC-ACTUATED MODE WITH ALTERNATE PEDESTRIAN PHASES FOR THE EAST AND WEST LEGS OF THE INTERSECTION. LEAD EXCLUSIVE LEFT-TURN PHASE IS PROVIDED FOR THE EASTBOUND APPROACH AND A LAG EXCLUSIVE LEFT TURN PHASE IS PROVIDED FOR THE WESTBOUND APPROACH. THE MD 222 NORTHBOUND AND SOUTHBOUND APPROACHES OPERATE IN SPLIT PHASING. CONCURRENT PEDESTRIAN PHASE ARE PROVIDED FOR THE NORTH AND SOUTH LEGS OF THE INTERSECTION.

**CONTROLLER REQUIREMENTS**

THE EXISTING FULL-TRAFFIC-ACTUATED EIGHT PHASE TRAFFIC SIGNAL CONTROLLER WITH TELEMETRY CABLE HOUSED IN A BASE MOUNTED CABINET SHALL REMAIN. TWO 2-WIRE APS CENTRAL CONTROL UNITS SHALL BE FURNISHED BY THE CONTRACTOR AND INSTALLED BY SHA.

**SPECIAL NOTES**

APS WILL FUNCTION AS FOLLOWS:

- TO CROSS MD 222 (PERRYVILLE ROAD):
  - A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT MESSAGE WILL BE "WAIT TO CROSS PERRYVILLE AT PULASKI. 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 MD 222 (AIKEN AVENUE):
  - A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT MESSAGE WILL BE "WAIT TO CROSS AIKEN AT PULASKI. 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 US 40 (PULASKI HIGHWAY):
  - A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT MESSAGE WILL BE "WAIT TO CROSS PULASKI AT PERRYVILLE AND AIKEN. WAIT."
  - B. WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

**CONTACT PERSONS FOR DISTRICT #2 ARE AS FOLLOWS:**

MR. JEFFERY WENTZ  
ASSISTANT DISTRICT ENGINEER-TRAFFIC  
PHONE: (410) 810-3240

MR. HENRY TEETS  
ASSISTANT DISTRICT ENGINEER - MAINTENANCE  
PHONE: (410) 810-3250

MR. WM NORRIS EMBERT  
ASSISTANT DISTRICT ENGINEER - CONSTRUCTION  
PHONE: (410) 810-3270

**CONTACT PERSONS FOR DOT ARE AS FOLLOWS:**

MS. CORREN JOHNSON  
DIVISION CHIEF,  
TRAFFIC OPERATIONS  
(410)787-7630

MR. ROBERT SNYDER  
ASSISTANT DIVISION CHIEF,  
TRAFFIC OPERATIONS  
(410)787-7631

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

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

**WIRING KEY**

- A,D,G,J, K,N,P,S 5-CONDUCTOR ELECTRICAL CABLE (NO.14 AWG)
- B,C,E,F,H,I, L,M,O,Q,R 2-CONDUCTOR ELECTRICAL CABLE (NO.14 AWG)
- Z STRANDED BARE COPPER GROUND WIRE (NO.6 AWG)
- LW LOOP WIRE (NO.14 AWG)
- PF EXISTING POWER FEED
- ⊕ EXISTING GROUND ROD

**EQUIPMENT LIST "A, B & C"**

A. EQUIPMENT TO BE SUPPLIED BY THE SHA

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
9570	SHEET ALUMINUM GROUND MOUNTED SIGN	SF	150
	6 - W11-2 FY 36"X36" 1 - M3-1 24"X12"		
	6 - M6-2(1) FY 30"X24" 1 - M1-5 30"X24"		
	1 - M4-5 24"X12" 2 - M6-2 21"X15"		
	1 - M1-1 24"X24" 1 - R7-4(2) 24"X30"		
	2 - R1-2 36"X36"X36" 2 - R5-1 36"X36"		
	3 - OM1-3 FY 18"X18"		
9571	SHEET ALUMINUM MAST ARM/POLE MOUNTED SIGN	SF	11
	11 - R10-3(1) 9"X15"		

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

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
1002	REMOVAL OF EXISTING PAVEMENT LINE MARKINGS, ANY WIDTH	LF	1670
5008	12 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS	LF	1390
8001	FURNISH AND INSTALL AUDIBLE / TACTILE PEDESTRIAN PUSHBUTTON STATION AND SIGNS	EA	11
8002	FURNISH AND INSTALL BREAKWAY PEDESTAL POLE - ANY SIZE	EA	8
8003	FURNISH AND INSTALL LED 16 INCH COUNTDOWN PEDESTRIAN SIGNAL HEADS	EA	1
8004	REMOVE AND DISPOSE EXISTING MATERIAL PER ASSIGNMENT	EA	80
8006	FURNISH & INSTALL UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED OR BORED	LF	90
8007	WOOD SIGN SUPPORTS 4 INCH X 4 INCH	EA	3
8008	ADJUST EXISTING HANDHOLE	LF	345
8009	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE	LF	245
8010	3 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED	SF	161
8012	INSTALL GROUND MOUNTED SIGN	SF	12
8013	RELOCATE EXISTING GROUND MOUNTED SIGNS	LF	30
8014	1 INCH DIAMETER RIGID STEEL CONDUIT, SCHEDULE 40	EA	3
8016	CUT, CLEAN, GALVANIZE AND CAP TRAFFIC SIGNAL STRUCTURE	LF	2505
8017	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)	LF	1915
8018	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)	LF	470
8019	LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO. 14 AWG)	LF	110
8020	SAW CUT FOR SIGNAL (LOOP DETECTOR)	LF	190
	WOOD SIGN SUPPORTS 4 INCH X 6 INCH	CY	1
	TEST PIT EXCAVATION		

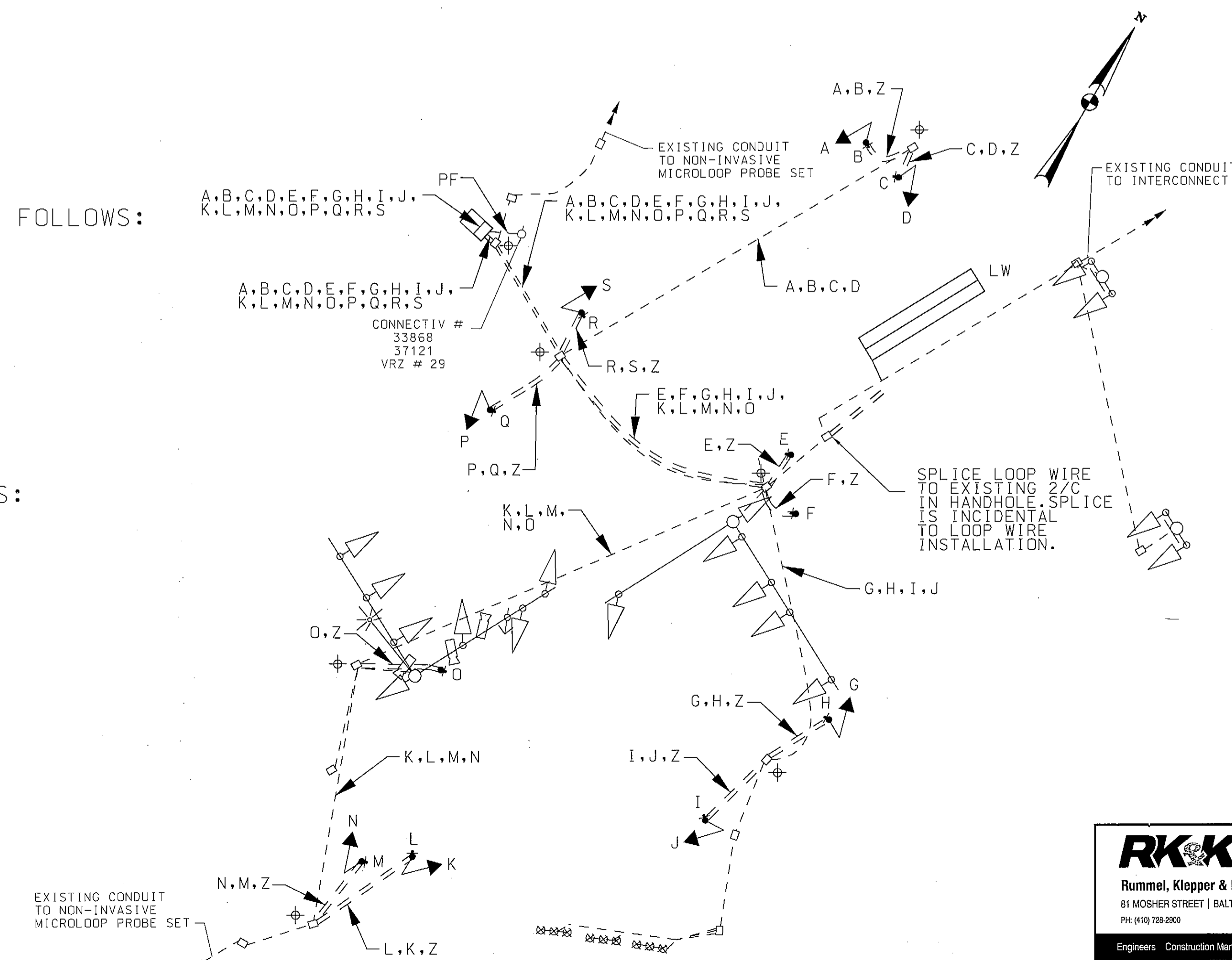
C. ALL MATERIALS TO BE REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

**PHASING CHART**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14-17	18	19	20	21	22	23	24	25	54	56
PHASE 1 AND 6	←G	←G	←G	G	G	←R	←R	R	R	R	R	R	R	FL/Y	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
1 AND 6 CHANGE	←Y	←Y	←Y	G	G	←R	←R	R	R	R	R	R	R	FL/Y	WK	WK	DW	DW	WK	WK	DW	DW	DW	DW
PHASE 2 AND 6	←R	←R	←R	G	G	←R	←R	G	G	R	R	R	R	FL/Y	FL/DW	FL/DW	DW	DW	FL/DW	FL/DW	DW	DW	DW	DW
2 AND 6 CHANGE	←R	←R	←R	Y	Y	←R	←R	G	G	R	R	R	R	FL/Y	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 2 AND 5	←R	←R	←R	R	R	←G	←G	G	G	R	R	R	R	FL/Y	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
2 AND 5 CHANGE	←R	←R	←R	R	R	←Y	←Y	Y	Y	R	R	R	R	FL/Y	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 3	←R	←R	←R	R	R	←R	←R	R	R	←G	←G	R	R	FL/Y	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
3 CHANGE	←R	←R	←R	R	R	←R	←R	R	R	←Y	←Y	R	R	FL/Y	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 3 ALT	←R	←R	←R	R	R	←R	←R	R	R	←G	←G	R	R	FL/Y	DW	DW	DW	DW	DW	DW	WK	WK		
PED CLEARANCE	←R	←R	←R	R	R	←R	←R	R	R	←G	←G	R	R	FL/Y	DW	DW	DW	DW	DW	DW	FL/DW	FL/DW		
3 ALT CHANGE	←R	←R	←R	R	R	←R	←R	R	R	←Y	←Y	R	R	FL/Y	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 4	←R	←R	←R	R	R	←R	←R	R	R	←G	←G	R	R	FL/Y	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
4 CHANGE	←R	←R	←R	R	R	←R	←R	R	R	←Y	←Y	R	R	FL/Y	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 4 ALT	←R	←R	←R	R	R	←R	←R	R	R	←G	←G	R	R	FL/Y	DW	DW	WK	WK	DW	DW	DW	DW	DW	DW
PED CLEARANCE	←R	←R	←R	R	R	←R	←R	R	R	←G	←G	R	R	FL/Y	DW	DW	FL/DW	FL/DW	DW	DW	DW	DW	DW	DW
4 ALT CHANGE	←R	←R	←R	R	R	←R	←R	R	R	←Y	←Y	R	R	FL/Y	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
PRE-EMPTION CLEARANCE	←R	←R	←R	R	R	←R	←R	R	R	←G	←G	R	R	FL/Y	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
FLASHING OPERATION	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	DARK	DARK	DARK	DARK	DARK	DARK	DARK	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 PEDESTAL FOUNDATION TOPS SHALL BE INSTALLED FLUSH WITH SIDEWALK GRADE.
6. LOCATION OF ACCESSIBLE PEDESTRIAN SIGNAL PUSHBUTTONS MUST MEET LOCATION REQUIREMENTS OF MD MUTCD CHAPTER 4E "PEDESTRIAN CONTROL FEATURES" AND FIGURES 4E-3 AND 4E-4, AND THE LATEST 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.
7. 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%.
8. 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.
9. PUSHBUTTON ARROWS AND SIGNS ARE TO BE ORIENTED PARALLEL TO THE CROSSING FOR WHICH THEY ARE INTENDED.
10. THE CONTRACTOR SHALL CAP AND ABANDON CONDUITS FEEDING EXISTING SIGNAL EQUIPMENT THAT IS REMOVED.
11. VIDEO DETECTION CAMERA ALIGNMENT SHALL BE COORDINATED WITH THE ENGINEER.
12. THE CONTRACTOR SHALL CONTACT ED RODENHIZER AT THE SIGNAL SHOP (410) 787-7652 TO DELIVER APS EQUIPMENT FOR TESTING.



**SHA** STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
OFFICE OF TRAFFIC & SAFETY  
TRAFFIC ENGINEERING DESIGN DIVISION  
US 40 AT MD 222  
PERRYVILLE, MARYLAND

**RKK**  
Rummel, Klepper & Kahl, LLP  
81 MOSHER STREET | BALTIMORE, MD 21217  
PH: (410) 728-2800 FAX: (410) 728-3100  
Engineers Construction Managers Planners Scientists  
www.rkk.com

REVISIONS	GENERAL INFORMATION SHEET		
	SCALE	DATE	CONTRACT NO.
	NONE	FEBRUARY 2013	XY2345I33
	DESIGNED BY	COUNTY	
	GS	CECIL	
	DRAWN BY	LOGMILE	
	GS	07004001.18	
	CHECKED BY	TMS NO.	
	BJG	L858	
	FAP NO.	TOD NO.	
	TS NO. 290K-GI	DRAWING	SHEET NO. OF
		SP-2 OF 2	