

**PROJECT DESCRIPTION**

THIS PROJECT INVOLVES THE INSTALLATION OF COUNTDOWN PEDESTRIAN SIGNAL HEADS, APS PUSHBUTTONS AND SIGNS AT THE INTERSECTION OF MD 26 (LIBERTY ROAD) AT ROLLING ROAD. MD 26 IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

**INTERSECTION OPERATION**

THE INTERSECTION WILL OPERATE IN A NEMA SIX-PHASE FULL-TRAFFIC-ACTUATED MODE WITH AN ALTERNATE PEDESTRIAN PHASES FOR THE EAST AND WEST LEGS AND CONCURRENT PEDESTRIAN PHASES FOR THE NORTH AND SOUTH LEGS OF THE INTERSECTION. THE MD 26 EASTBOUND AND WESTBOUND LEFT TURNS OPERATE IN EXCLUSIVE-PERMISSIVE PHASING. THE MILFORD MILL ROAD APPROACHES OPERATE IN SPLIT PHASING.

**CONTROLLER REQUIREMENTS**

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

**SPECIAL NOTES**

APS WILL FUNCTION AS FOLLOWS:

TO CROSS MD 26 (LIBERTY ROAD):

- A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT MESSAGE WILL BE "WAIT TO CROSS LIBERTY AT ROLLING. 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 ROLLING ROAD:

- A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT MESSAGE WILL BE "WAIT TO CROSS ROLLING AT LIBERTY. WAIT."
- 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, B & C"**

A. EQUIPMENT TO BE SUPPLIED BY SHA.

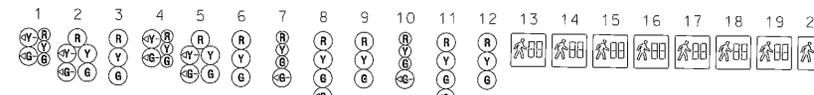
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
900000	SHEET ALUMINUM MAST ARM/POLE MOUNTED SIGNS 2 - S1-1 FYG 36"x36" 2 - M6-2(1) FYG 30"x24" 8 - R10-3(1) 9"x15"	SF	36
900000	VIDEO DETECTION INTERFACE EQUIPMENT: 1-8 CAMERAS	EA	1

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

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
100000	MAINTENANCE OF TRAFFIC (PER INTERSECTION)	EA	1
585621	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF	950
585625	24 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF	55
585700	REMOVAL OF EXISTING PAVEMENT MARKING LINES, ANY WIDTH	LF	990
600000	TYPE A COMBINATION CURB AND GUTTER ANY HEIGHT OR DEPTH	LF	224
600000	TYPE A CURB ANY HEIGHT OR DEPTH	LF	121
600000	DETECTABLE WARNING SURFACE FOR CURB RAMPS (TYPE 3 BRICK PAVERS)	SF	84
655105	5 INCH CONCRETE SIDEWALK	SF	1423
800000	2-WIRE APS CENTRAL CONTROL UNIT	EA	1
800000	ADJUST HANDHOLE TO GRADE AND REPLACE FRAME AND COVER	EA	2
800000	AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION AND SIGNS	EA	8
800000	16 INCH LED COUNTDOWN PEDESTRIAN SIGNAL HEAD	EA	6
800000	IP-BASED VIDEO DETECTION CAMERA & ANY LENGTH LEAD-IN CABLE	EA	6
800000	5 FOOT OR 10 FOOT PEDESTAL POLE WITH BREAKAWAY COUPLINGS, FOUNDATION & GROUND ROD	EA	8
800000	REMOVE & DISPOSE OF EXISTING SIGNAL EQUIPMENT (PER SIGNALIZED INTERSECTION LOCATION)	EA	1
800000	UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED	LF	105
800000	INSTALL OVERHEAD OR GROUND MOUNTED SIGN (INCLUDING ALL HARDWARE)	SF	36
802501	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE	LF	105
861105	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)	LF	1020
861107	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)	LF	755

C. THE EXISTING VIDEO DETECTION CAMERA SHALL BE RETURNED TO SHA. ALL OTHER MATERIALS TO BE REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

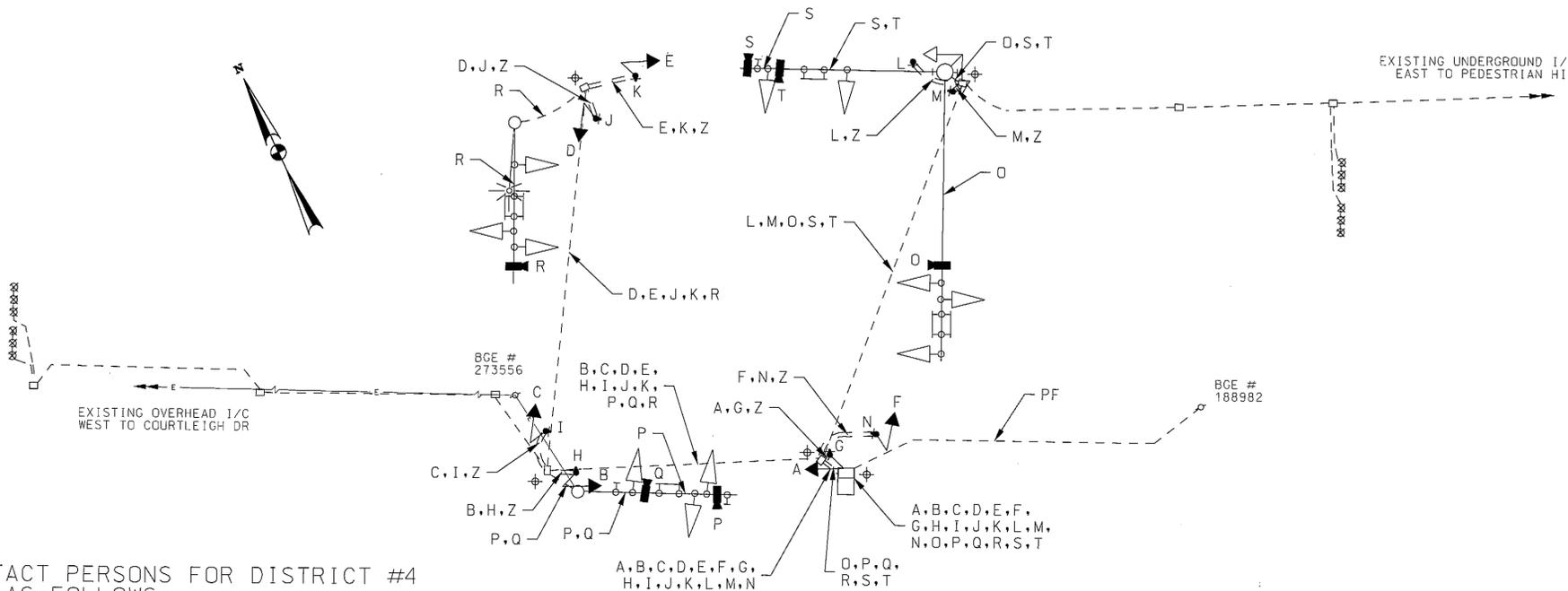
**PHASING CHART**



PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PHASE 1 AND 5	R	R	R	R	R	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	G	G	G	G	G
PHASE 1 AND 6	R	R	R	R	R	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	G	G	G	G	G
PHASE 2 AND 5	R	R	R	R	R	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	G	G	G	G	G
PHASE 2 AND 6	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
PHASE 2 AND 6 CHANGE	G	G	G	G	G	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	R	R	R	R	R
3 CHANGE	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
PHASE 3 ALT	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
PHASE 3 ALT CHANGE	G	G	G	G	G	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	R	R	R	R	R
4 CHANGE	G	G	G	G	G	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	R	R	R	R	R
PHASE 4 ALT CHANGE	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
FLASHING OPERATION	FL																			

**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 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.
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. VIDEO DETECTION CAMERA REALIGNMENT SHALL BE COORDINATED WITH THE ENGINEER.
11. THE CONTRACTOR SHALL CAP AND ABANDON CONDUITS FEEDING EXISTING SIGNAL EQUIPMENT THAT IS REMOVED.
12. THE CONTRACTOR SHALL CONTACT ED RODENHIZER AT THE SIGNAL SHOP (410-787-7652) TO DELIVER APS EQUIPMENT FOR TESTING.



CONTACT PERSONS FOR DISTRICT #4 ARE AS FOLLOWS:

- MS. ERIN KUHN  
ASSISTANT DISTRICT ENGINEER - TRAFFIC  
PHONE: 410-229-2381
- MR. ANDRE FUTRELL  
ASSISTANT DISTRICT ENGINEER - MAINTENANCE  
410-229-2361
- MR. JESSE FREE  
ASSISTANT DISTRICT ENGINEER - CONSTRUCTION  
410-229-2421

CONTACT PERSONS FOR OOTS ARE AS FOLLOWS:

- MR. AVIJIT MAJI  
DIVISION CHIEF,  
TRAFFIC OPERATIONS  
410-787-7630
- MR. ROBERT SNYDER  
ASSISTANT DIVISION CHIEF,  
TRAFFIC OPERATIONS  
410-787-7631
- MR. ED RODENHIZER  
CHIEF, SIGNAL OPERATIONS  
410-787-7650
- MR. EUGENE BAILEY  
CHIEF, SIGN OPERATIONS  
410-787-7676

**WIRING KEY**

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

**RK&K**  
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**SHA** STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
OFFICE OF TRAFFIC & SAFETY  
TRAFFIC ENGINEERING DESIGN DIVISION  
MD 26 (LIBERTY ROAD) AT  
ROLLING ROAD  
MILFORD MILL, MARYLAND

REVISIONS		GENERAL INFORMATION SHEET	
SCALE	NONE	DATE	JANUARY 2013
DESIGNED BY	WFW	COUNTY	BALTIMORE
DRAWN BY	WFW	LOGMILE	03002607.23
CHECKED BY	BJG	TMS NO.	L825
FAP NO.		TOD NO.	
TS NO. 1114.-01	DRAWING	SP-6 OF 10	SHEET NO. 2 OF 4