

PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE INSTALLATION OF LED COUNTDOWN PEDESTRIAN SIGNAL HEADS, APS PUSHBUTTON AND SIGNS, IP-BASED VIDEO DETECTION CAMERAS AND SIGNS AT THE INTERSECTION OF MD 140 (REISTERSTOWN RD) AT CRADOCK LN AND MCDONOGH RD. MD 140 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

INTERSECTION OPERATION

THE INTERSECTION WILL CONTINUE TO OPERATE IN A NEMA EIGHT-PHASE FULL-TRAFFIC-ACTUATED MODE WITH AN ALTERNATE PEDESTRIAN PHASE FOR THE NORTH LEG AND CONCURRENT PEDESTRIAN PHASES FOR THE EAST AND WEST LEGS OF THE INTERSECTION. THE NORTHBOUND AND SOUTHBOUND MD 140 LEFT TURNS, EASTBOUND MCDONOGH RD AND WESTBOUND CRADOCK LN LEFT TURNS OPERATE IN EXCLUSIVE-PERMISSIVE PHASING, WITH A RIGHT TURN OVERLAP FOR THE EASTBOUND MCDONOGH RD APPROACH.

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. IP-BASED VIDEO DETECTION INTERFACE EQUIPMENT 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 CRADOCK AND MCDONOGH. 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 MCDONOGH ROAD:

A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT MESSAGE WILL BE "WAIT TO CROSS MCDONOGH AT REISTERSTOWN. 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 CRADOCK LANE:

A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT MESSAGE WILL BE "WAIT TO CROSS CRADOCK AT REISTERSTOWN. 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 SIGN	SF	46
900000	6 - R10-3(1) 9"X15" 4 - D-3(1) (DUAL FACE) 90"X16" 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
201032	CLASS 2 EXCAVATION	CY	1.5
203030	TEST PIT EXCAVATION	CY	1
585621	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF	400
585625	24 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF	110
585700	REMOVAL OF EXISTING PAVEMENT MARKING LINES, ANY WIDTH	LF	830
600000	TYPE A COMBINATION CURB AND GUTTER ANY HEIGHT OR DEPTH	LF	115
600000	TYPE A CURB ANY HEIGHT OR DEPTH	LF	108
600000	DETECTABLE WARNING SURFACE FOR CURB RAMPS (TYPE 3 BRICK PAVERS)	SF	82
655105	5 INCH CONCRETE SIDEWALK	SF	1118
704345	PLACING FURNISHED TOPSOIL 4 INCH DEPTH	SY	7
708220	TURFGRASS SOD ESTABLISHMENT	EA	7
800000	2-WIRE APS CENTRAL CONTROL UNIT	EA	4
800000	ADJUST HANDHOLE TO GRADE AND REPLACE FRAME AND COVER	EA	6
800000	AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION AND SIGNS	EA	2
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	6
800000	CONDUIT BEND IN EXISTING FOUNDATION BASE (ANY SIZE)	EA	1
800000	REMOVE & DISPOSE OF EXISTING SIGNAL EQUIPMENT (PER SIGNALIZED INTERSECTION LOCATION)	EA	1
800000	UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT - BORED OR SLOTTED	LF	105
800000	UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED	LF	85
800000	INSTALL OVERHEAD OR GROUND MOUNTED SIGN (INCLUDING ALL HARDWARE)	SF	46
800000	THIRD PARTY CONCRETE TESTING (PER INTERSECTION)	EA	1
802501	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE	LF	200
811001	FURNISH AND INSTALL ELECTRICAL HANDHOLE	EA	1
861105	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)	LF	720
861107	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)	LF	325

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

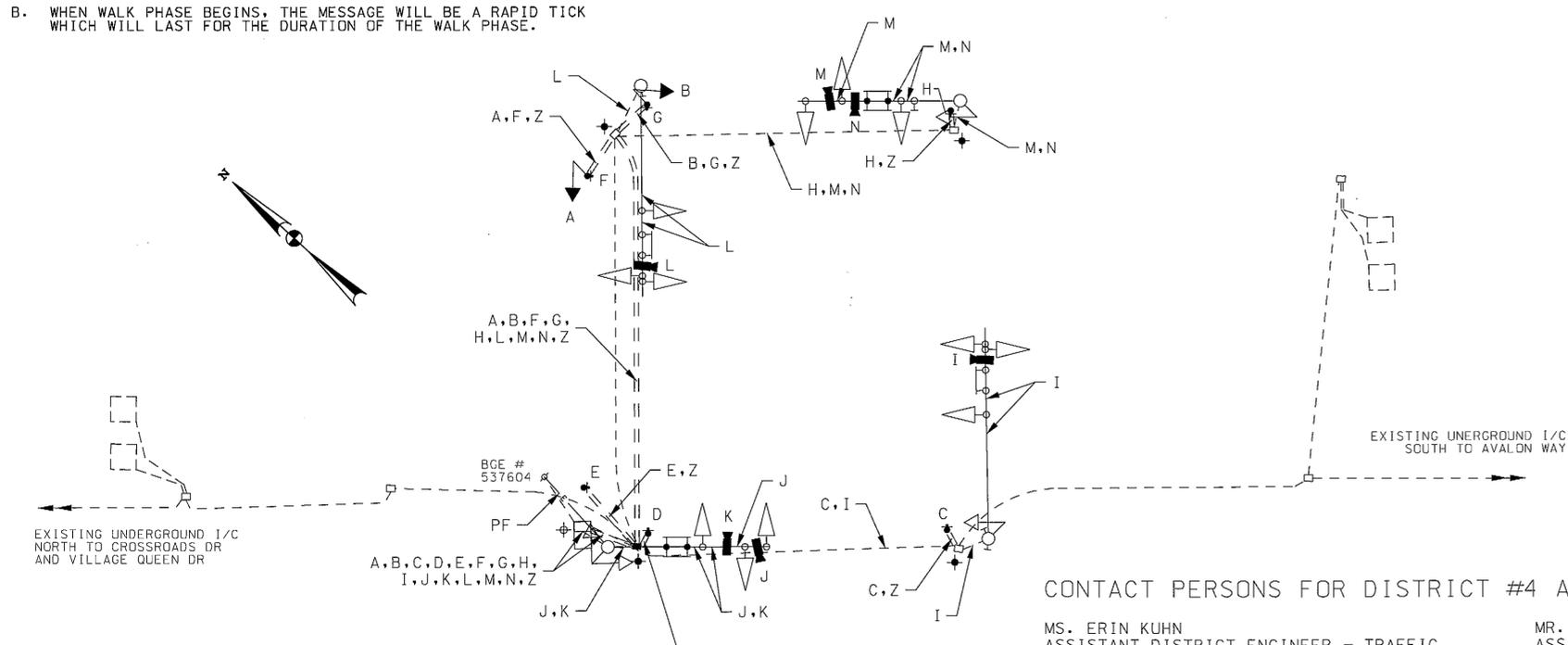
GENERAL NOTES

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

PHASING CHART



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



WIRING KEY

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

CONTACT PERSONS FOR DISTRICT #4 ARE AS FOLLOWS:

MS. ERIN KUHN
ASSISTANT DISTRICT ENGINEER - TRAFFIC
PHONE: 410-229-2381

MR. JESSE FREE
ASSISTANT DISTRICT ENGINEER - CONSTRUCTION
410-229-2421

MR. ANDRE FUTRELL
ASSISTANT DISTRICT ENGINEER - MAINTENANCE
410-229-2361

CONTACT PERSONS FOR OOTS ARE AS FOLLOWS:

MS. CORREN JOHNSON
ASSISTANT DIVISION CHIEF,
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TRAFFIC OPERATIONS
410-787-7631

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

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

REVISIONS	GENERAL INFORMATION SHEET		
	SCALE	DATE	CONTRACT NO.
	NONE	MARCH 2013	XY1515185
	DESIGNED BY	WFW	COUNTY
	DRAWN BY	WFW	BALTIMORE
	CHECKED BY	BJG	LOGMILE
	FAP NO.		03014003.15
			TIMS NO.
			TOD NO.
TS NO. 2101C-G1	DRAWING	SP-4	OF 4
			SHEET NO. 2 OF 3

BY: WFW