

PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE RECONSTRUCTION OF THE EXISTING FULL-COLOR TRAFFIC SIGNAL AT THE INTERSECTION OF US 40 (W. PATRICK ST) AT WILLOWDALE DR. THE INSTALLATION INCLUDES LED SIGNAL HEADS, LED COUNTDOWN PEDESTRIAN SIGNAL HEADS, APS PUSHBUTTONS AND SIGNS AND IP-BASED VIDEO DETECTION CAMERAS.

INTERSECTION OPERATION

THE INTERSECTION WILL OPERATE IN A NEMA SIX-PHASE FULL-TRAFFIC-ACTUATED MODE WITH AN ALTERNATE PEDESTRIAN PHASE FOR THE WEST LEG AND CONCURRENT PEDESTRIAN PHASES FOR THE NORTH AND SOUTH LEGS OF THE INTERSECTION. THE US 40 EASTBOUND AND WESTBOUND LEFT TURNS OPERATE IN EXCLUSIVE PHASING. THE WILLOWDALE DR AND ENTRANCE APPROACHES OPERATE IN SPLIT PHASING.

CONTROLLER REQUIREMENTS

THE EXISTING BASE MOUNTED CABINET SHALL BE REMOVED. THE EXISTING CONTROLLER SHALL BE RETURNED TO SHA. A NEW FULLY 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 BY THE CONTRACTOR AND INSTALLED BY SHA. IP-BASED VIDEO DETECTION INTERFACE EQUIPMENT, 4-CHANNEL DETECTOR AMPLIFIERS AND UPS BATTERY BACKUP SHALL BE FURNISHED AND INSTALLED BY SHA.

SPECIAL NOTES

APS WILL FUNCTION AS FOLLOWS:

TO CROSS US 40 (W. PATRICK ST):

A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT MESSAGE WILL BE "WAIT TO CROSS WEST PATRICK AT WILLOWDALE. 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 WILLOWDALE DR:

A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT MESSAGE WILL BE "WAIT TO CROSS WILLOWDALE AT WEST PATRICK. 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 ENTRANCE:

A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT MESSAGE WILL BE "WAIT TO CROSS ENTRANCE AT WEST PATRICK. 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 AND 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 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 CONTRACTOR, 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 PHOTOCCELL.
12. VIDEO DETECTION CAMERA ALIGNMENT SHALL BE COORDINATED WITH THE ENGINEER.
13. DURING CONSTRUCTION, PROPOSED SIGNAL EQUIPMENT SHALL NOT BLOCK EXISTING SIGNAL EQUIPMENT.
14. 10 FEET OF SLACK SHALL BE PROVIDED IN EACH HANDHOLE FOR INTERCONNECT CABLE.
15. THE CONTRACTOR SHALL CONTACT ED RODENHIZER AT THE SIGNAL SHOP (410-787-7652) TO DELIVER APS EQUIPMENT FOR TESTING.
16. THE CONTRACTOR SHALL CAP AND ABANDON CONDUITS FEEDING EXISTING SIGNAL EQUIPMENT THAT IS REMOVED.
17. PEDESTRIAN ACCESS SHALL BE MAINTAINED DURING CONSTRUCTION. IF PEDESTRIAN ACCESS CANNOT BE MAINTAINED, A PEDESTRIAN DETOUR SHALL BE PROVIDED BASED ON DISTRICT TRAFFIC APPROVAL.

EQUIPMENT LIST "A, B & C"

Table with columns: ITEM NO., DESCRIPTION, UNIT, QUANTITY. Lists equipment items A, B, and C including detector amplifiers, cabinets, signs, and maintenance items.

CONTACT PERSONS FOR DISTRICT #7 ARE AS FOLLOWS:

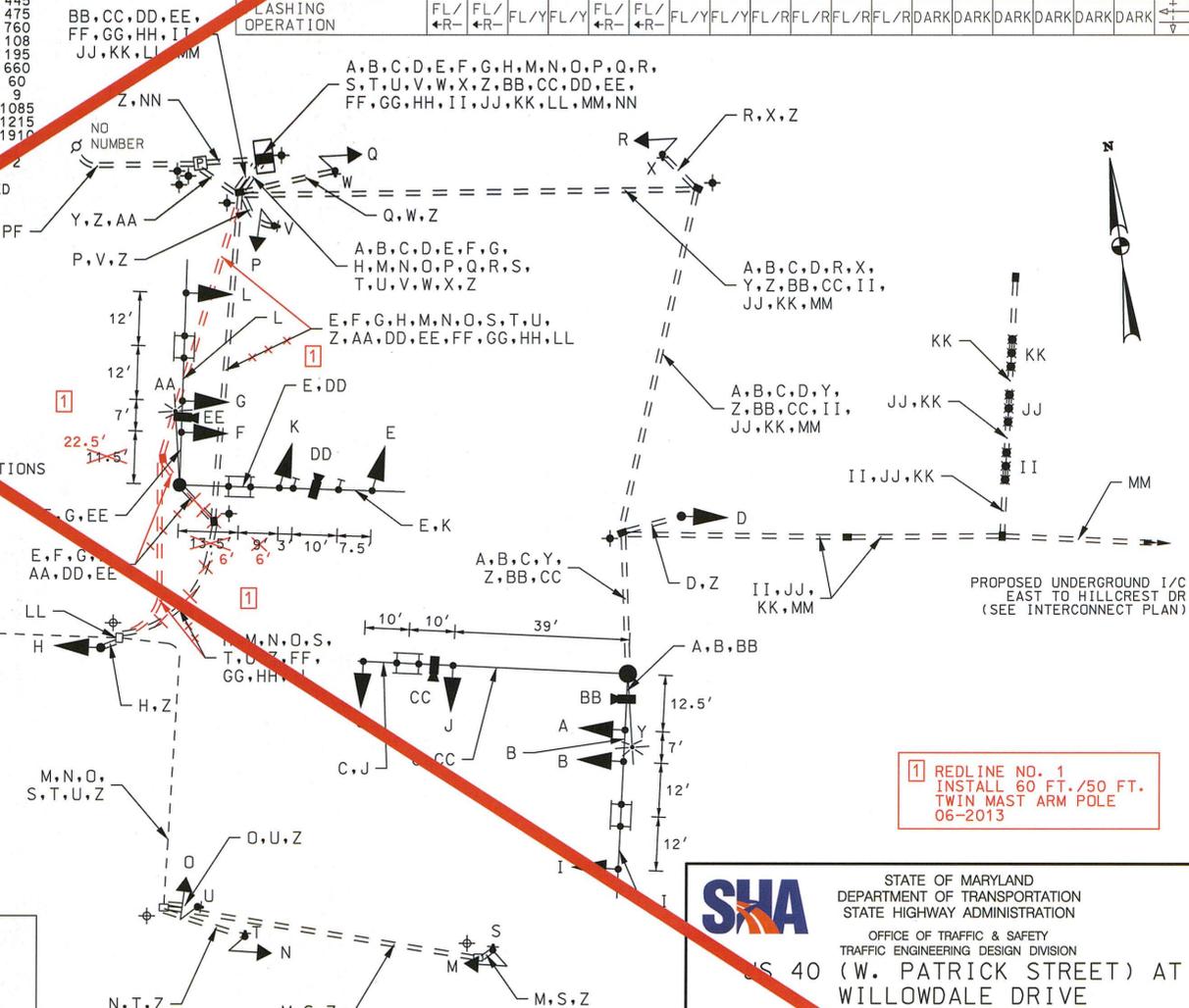
MR. JOHN CONCANNON ASSISTANT DISTRICT ENGINEER - TRAFFIC PHONE: 301-624-8140
MR. JOHN HUCHROWSKI ASSISTANT DISTRICT ENGINEER - CONSTRUCTION 301-624-8200

CONTACT PERSONS FOR OOTS ARE AS FOLLOWS:

MS. CORREN JOHNSON DIVISION CHIEF, TRAFFIC OPERATIONS PHONE: 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 LILLEY CHIEF, SIGN OPERATIONS 410-787-7676

PHASING CHART

Phasing chart table showing signal phases (1-6) and their corresponding movements (G, R, Y, W, DW, WK, FL/DW) across 18 lanes.



WIRING KEY table mapping letter codes (A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z) to specific cable types and equipment.

REDLINE NO. 2 JULY 2013 DELETE SHEET

RK&K logo and contact information for Rummel, Klepper & Kahl, LLP.

SHA logo and project information: STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION, OFFICE OF TRAFFIC & SAFETY, TRAFFIC ENGINEERING DESIGN DIVISION, US 40 (W. PATRICK STREET) AT WILLOWDALE DRIVE, FREDERICK, MARYLAND. GENERAL INFORMATION SHEET.