

PROJECT DESCRIPTION

I. GENERAL

THIS PROJECT INVOLVES THE MODIFICATION OF THE EXISTING TRAFFIC CONTROL SIGNALS AT THE INTERSECTION OF MD 700 (MARTIN BLVD) AT KELSO DRIVE / CEDAR DRIVE IN BALTIMORE COUNTY. MD 700 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

THIS PROJECT INVOLVES REPLACING THE EXISTING POLE-MOUNTED CABINET AND ELECTRICAL DISTRIBUTION EQUIPMENT WITH A GROUND MOUNTED CABINET AND METERED SERVICE PEDESTAL. VIDEO DETECTION CAMERAS FOR EACH APPROACH, NON-INVASIVE MICROLOOP PROBES, LED SIGNAL HEAD MODULES, COUNTDOWN PEDESTRIAN SIGNALS AND AUDIBLE PEDESTRIAN SIGNAL STATIONS WILL BE INSTALLED.

II. INTERSECTION OPERATION

- THE INTERSECTIONS OPERATE IN A NEMA SIX-PHASE, FULL-TRAFFIC-ACTUATED MODE, WITH MD 700 APPROACHES RUNNING CONCURRENTLY. EXCLUSIVE LEFT TURN PHASES SHALL BE PROVIDED FOR BOTH APPROACHES OF MD 700. THE KELSO DRIVE / CEDAR DRIVE APPROACHES SHALL RUN CONCURRENTLY. AN ALTERNATE PEDESTRIAN PHASE WITH COUNTDOWN PEDESTRIAN SIGNALS AND AUDIBLE PUSHBUTTONS SHALL BE INSTALLED FOR THE NORTH LEG OF MD700.
- A FULL-TRAFFIC-ACTUATED, EIGHT-PHASE CONTROLLER WITH VIDEO DETECTION INTERFACE EQUIPMENT, TELEMETRY CABLE AND ALL NECESSARY EQUIPMENT HOUSED IN A NEMA SIZE "6" BASE-MOUNTED CABINET SHALL BE INSTALLED AT THIS INTERSECTION.

III. INTERCONNECT NOTES

SEE SHEET SP-31 OF 39 FOR INTERCONNECT DETAILS AND QUANTITIES.

IV. APS NOTES

- WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON WILL ANNOUNCE "WAIT TO CROSS MARTIN AT CEDAR AND KELSO."
- WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK, WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

IV. APS NOTES CONTINUED

- WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON WILL ANNOUNCE "WAIT TO CROSS MARTIN AT CEDAR AND KELSO. SECOND PUSHBUTTON IN MEDIAN"
- WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK, WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

EQUIPMENT LIST

A. EQUIPMENT TO BE FURNISHED BY STATE HIGHWAY ADMINISTRATION

CAT CODE	QUANTITY	DESCRIPTION
900000	1 EA	[UPDATED] 4 CHANNEL DETECTOR AMPLIFIER
900000	1 EA	[UPDATED] CONTROLLER CABINET, SIZE 6
900000	1 EA	[UPDATED] CONTROLLER ASC II WITH TELEMETRY
900000	1 EA	[UPDATED] VIDEO DETECTION INTERFACE EQUIPMENT: 1-4 CAMERAS
900000	70 SF	[UPDATED] SHEET ALUMINUM GROUND MOUNTED SIGN
		1 EA R4-7(1) "KEEP RIGHT" SIGN (24"x30") GROUND MOUNTED
		3 EA W11(A)-2 "CROSSING" SIGN (30"x30"); W16-7p "DIAGONAL LEFT" SIGN (24"x12")
		1 EA M3-3 "NORTH" (24"x12"); M1-5 "MD700" (30"x24"); M6-2 "DIAGONAL RIGHT" (21"x15")
		1 EA D3-2(1) "KELSO DR/CEDAR DR NEXT SIGNAL" SIGN (VARx36")
		1 EA D3-2(1) "CEDAR DR/KELSO DR NEXT SIGNAL" SIGN (VARx36")
900000	125 SF	[UPDATED] SHEET ALUMINUM MAST ARM / POLE MOUNTED SIGN
		2 EA D-3(1) "MARTIN BLVD" STREET SIGN - DUAL FACED (VARx16") MAST ARM MOUNTED
		1 EA W3-3a(1) -FY "SIGNAL AHEAD" SIGN (120"x48") MAST ARM MOUNTED
		3 EA R10-3(1) "MARTIN BLVD CROSSWALK" SIGN (9"x15") POLE MOUNTED
		1 EA SHIELD ASSEMBLY SIGN (48"x75") POLE MOUNTED
		M3-1 "NORTH" (30"x15"); M1-5 "MD700" (48"x36"); M6-1 "LEFT ARROW" (30"x24")
		1 EA SHIELD ASSEMBLY SIGN (48"x75") POLE MOUNTED
		M3-3 "SOUTH" (30"x15"); M1-5 "MD700" (48"x36"); M6-1 "LEFT ARROW" (30"x24")
		1 EA SHIELD ASSEMBLY SIGN (30"x51") POLE MOUNTED
		M3-3 "SOUTH" (24"x12"); M1-5 "MD700" (30"x24"); M6-2 "DIAGONAL ARROW" (21"x15")

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

CAT CODE	QUANTITY	DESCRIPTION
201032	1.5	CY CLASS 2 EXCAVATION
203030	1 2X	CY TEST PIT EXCAVATION
585407	70	LF 5 INCH YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
585462	75	LF REMOVAL OF EXISTING PERMANENT PAVEMENT LINE MARKINGS-ANY WIDTH
585620	450	LF 12 INCH HEAT APPLIED WHITE PERM.-PREF. THERMOPLASTIC PAVEMENT MARKINGS
585624	75	LF 24 INCH HEAT APPLIED WHITE PERM.-PREF. THERMOPLASTIC PAVEMENT MARKINGS
600000	18	SF DETECTABLE WARNING SURFACES FOR CURB RAMPS
634300	13	LF STANDARD TYPE A COMBINATION CURB AND GUTTER, 12 INCH GUTTER 8 INCH DEPTH
655105	80	SF 5 INCH CONCRETE SIDEWALK
800000	38	EA 12 INCH LED VEHICULAR TRAFFIC SIGNAL MODULE
800000	2	EA 16 INCH LED COUNTDOWN PEDESTRIAN SIGNAL HEAD SECTION
800000	230	LF DISCONNECT, PULL BACK & REROUTE CABLE
800000	1 4X	EA AUDIBLE/TACTILE PEDESTRIAN PUSH BUTTON AND SIGN
800000	1	EA FURNISH & DELIVER 2 WIRE CENTRAL CONTROL UNIT
800000	1 260X	LF SCHEDULE 80 RIGID PVC CONDUIT UP TO 4 INCH - TRENCHED
800000	4	EA NONINVASIVE DETECTOR (ANY LENGTH) LEAD IN CABLE UP TO 1000 FT
800000	195	SF INSTALL OVERHEAD OR GROUND MOUNTED SIGN
800000	1 3X	EA BREAKAWAY PEDESTAL POLE (ANY SIZE)
800000	4	EA VIDEO DETECTION CAMERA & CABLE UP TO 500 FT
801104	14.5	LF WOOD SIGN SUPPORTS 4 INCH x 4 INCH
801106	127	LF WOOD SIGN SUPPORTS 4 INCH x 6 INCH
802501	1 35X	LF NO.6 AWG STRANDED BARE COPPER GROUND WIRE
807202	1	EA METERED SERVICE PEDESTAL EMBEDDED
810010	70	LF ELECTRICAL CABLE 1-CONDUCTOR NO. 4 AWG-THHN/THWN
811001	4	EA FURNISH AND INSTALL ELECTRICAL HANDHOLES
860284	6	EA 12 INCH LED VEHICULAR TRAFFIC SIGNAL HEAD SECTION
861105	1 425X	LF ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)
861107	230	LF ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)
861108	200	LF ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)
871202	1	EA INSTALL CONTROLLER AND CABINET - BASE MOUNT
1 800000	60	LF SCHEDULE 80 RIGID PVC CONDUIT UP TO 4 INCH - BORED

C. IF THE CABINET IS TO BE REMOVED SHA FORCES SHALL REMOVE THE CONTROLLER AND ALL AUXILIARY EQUIPMENT FROM THE CONTROLLER CABINET. THE CABINET AND ALL OTHER MATERIALS TO BE REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

CONTACTS

DISTRICT

- MR. ERIN KUHN
ASSISTANT DISTRICT ENGINEER - TRAFFIC
410-321-2781
- MR. DONALD SCHAEFER
ASSISTANT DISTRICT ENGINEER - CONSTRUCTION
410-321-2821
- MR. ANDRE FUTRELL
ASSISTANT DISTRICT ENGINEER - MAINTENANCE
410-321-2761
- MR. MICHAEL PASQUARIELLO
ASSISTANT DISTRICT ENGINEER - UTILITIES
410-321-2841
- MR. DAVID CASTLE
BALTIMORE GAS & ELECTRIC - ELECTRICAL SERVICE
1-800-233-1854

OFFICE OF TRAFFIC AND SAFETY

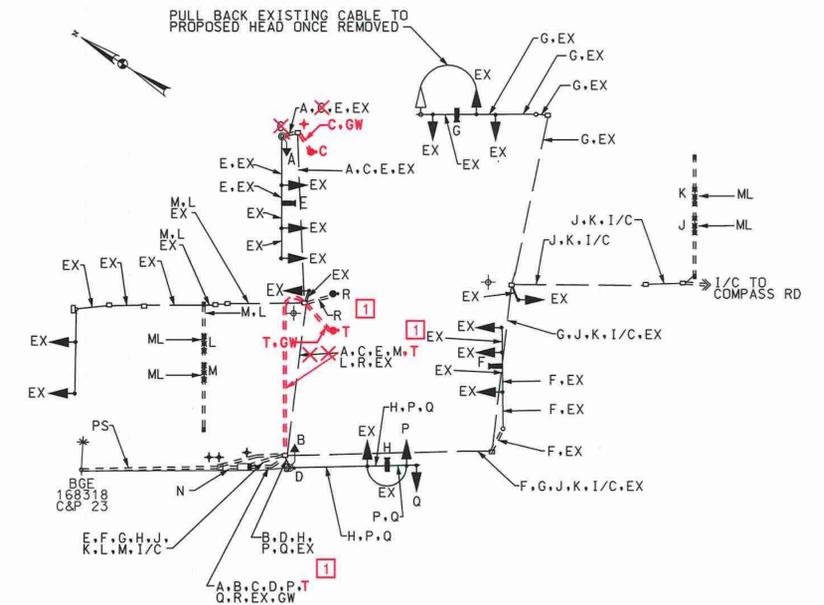
- MR. RICHARD DAFF SR.
CHIEF, TRAFFIC OPERATIONS
410-787-7630
- MR. ROBERT SNYDER
ASSISTANT DIVISION CHIEF, TRAFFIC OPERATIONS
410-787-7630
- MR. ED RODENHIZER
TEAM LEADER SIGNAL OPERATIONS
410-787-7650
- MR. EUGENE BAILEY
TEAM LEADER SIGN OPERATIONS
410-787-7670
- MS. DARLENE EIDE
SUPPLY OFFICER IV (SIGNAL SHOP WAREHOUSE)
410-787-7668

PHASE CHART



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

WIRING DIAGRAM



WIRING KEY

- P, Q - 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- A, B - 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- 1 C, D, R, T - 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- E, F, G, H - VIDEO DETECTION LEAD-IN CABLE
- J, K, L, M - NON-INVASIVE DETECTOR LEAD-IN CABLE
- N - 3-1 CONDUCTOR NO. 4 AWG THHN/THWN
- GS - STRANDED BARE COPPER GROUND WIRE (NO. 6 AWG)
- PW - PROPOSED SERVICE (UNDERGROUND)
- EX - EXISTING CABLE
- I/C - 12 PAIR INTERCONNECT TO COMPASS RD
- + - PROPOSED GROUND ROD
- GW - NO. 6 GROUND WIRE

1 RED LINE # 9 - FEB 23, 2010

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

MD 700 AT KELSO DRIVE/CEDAR DRIVE
MIDDLE RIVER, MARYLAND

GENERAL INFORMATION PLAN

SCALE 1"=20' DATE 6/1/09 CONTRACT NO. BA1195168

DESIGNED BY K. PERMISHIN COUNTY BALTIMORE
DRAWN BY R. ROBERTSON LOGMILE 03070001.75
CHECKED BY D. MACLEAN TMS NO. J639
FAP NO. N/A TOD NO.

TS NO. 2088C GI DRAWING SP-22 OF 37 SHEET NO. 2 OF 2

PB
100 YEARS

PARSONS BRINCKERHOFF
100 South Charles Street
Tower 1, 10th Floor
Baltimore, MD 21201-2727
Phone: 410-727-5050
Fax: 410-727-4668