

**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**

- TO CROSS MD700:
- 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.

**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(11) "MARTIN BLVD" STREET SIGN - DUAL FACED (VARX16") MAST ARM MOUNTED
	1 EA	W3-3o(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
	1 EA	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
	1 EA	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
	1 EA	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 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	3 EA	AUDIBLE/TACTILE PEDESTRIAN PUSH BUTTON AND SIGN
800000	1 EA	FURNISH & DELIVER 2 WIRE CENTRAL CONTROL UNIT
800000	255 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 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	20 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	315 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

**DISTRICT**

MS. 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 PASOUARIELLO  
ASSISTANT DISTRICT ENGINEER - UTILITIES  
410-321-2841

MR. DAVID CASTLE  
BALTIMORE GAS & ELECTRIC - ELECTRICAL SERVICE  
1-800-233-1854

**CONTACTS**

**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

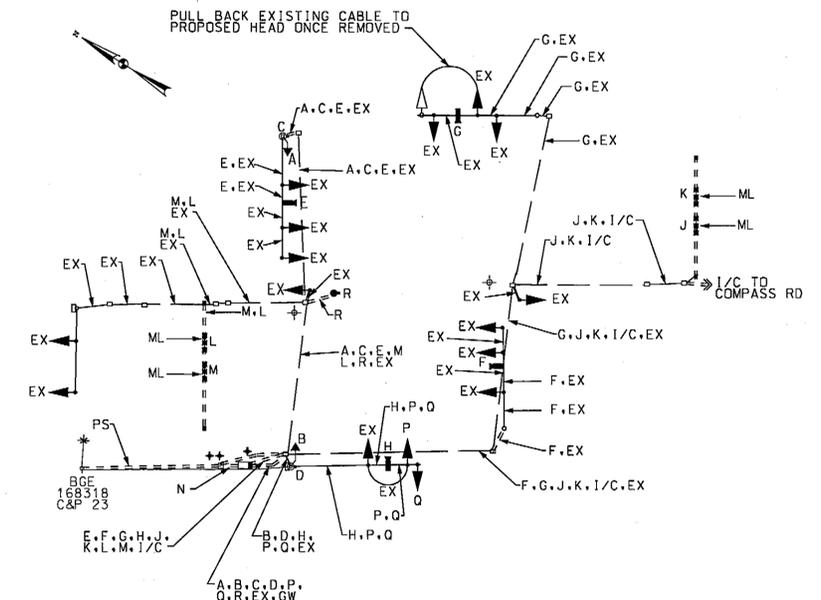
MS. DARLENE EIDE  
SUPPLY OFFICER IV (SIGNAL SHOP WAREHOUSE)  
410-787-7668

**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	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	FL/Y	FL/Y	←R-	←R-	R	R	R	R	R	R	R	R	R	DW	DW
1 + 6 CHANGE	←Y-	←Y-	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	DW	DW
2 + 5 CHANGE	←R-	←R-	R	R	DARK	DARK	←Y-	←Y-	G	G	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	DW	DW
2 + 6 CHANGE	←R-	←R-	Y	Y	FL/Y	FL/Y	←R-	←R-	Y	Y	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	DW	DW
4 + 8 CHANGE	←R-	←R-	R	R	FL/Y	FL/Y	←R-	←R-	R	R	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	WK	WK
PED CLEARANCE	←R-	←R-	R	R	FL/Y	FL/Y	←R-	←R-	R	R	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	DW	DW
FLASHING OPERATION	FL/←R-	FL/←R-	FL/Y	FL/Y	DARK	DARK	FL/←R-	FL/←R-	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	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.)
- C,D,R - 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
- GW - STRANDED BARE COPPER GROUND WIRE (NO. 6 AWG)
- PS - PROPOSED SERVICE (UNDERGROUND)
- EX - EXISTING CABLE
- I/C - 12 PAIR INTERCONNECT TO COMPASS RD
- + - PROPOSED GROUND ROD
- GW - NO. 6 GROUND WIRE

**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. PERMISOHN COUNTY BALTIMORE  
DRAWN BY R. ROBERTSON LOGMILE 03070001.75  
CHECKED BY D. MACLEAN TMS NO. J639  
FAP NO. NA TOD NO.

TS NO. 2088C GI DRAWING SP-22 OF 39 SHEET NO. 2 OF 2