

**PROJECT DESCRIPTION**

**GENERAL**

THIS PROJECT INVOLVES THE MODIFICATION OF THE EXISTING TRAFFIC CONTROL SIGNAL AT THE INTERSECTION OF MD 139 (CHARLES STREET) AND MD 134 (BELLONA AVENUE) IN BALTIMORE COUNTY, MARYLAND. MD 139 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

**INTERSECTION OPERATION**

THE INTERSECTION IS OPERATING IN A NEMA SIX-PHASE, FULL-TRAFFIC-ACTUATED MODE WITH THE MD 139 APPROACHES OPERATING CONCURRENTLY AND THE MD 134 APPROACHES OPERATING CONCURRENTLY.

EXCLUSIVE LEFT-TURN PHASING IS PROVIDED ON MD 139.

AN ALTERNATE PEDESTRIAN PHASE WILL PROVIDED ACROSS THE NORTH LEG OF MD 139.

**TYPICAL MESSAGES FOR ACCESSIBLE PED SIGNALS**

**NORTH LEG - MD 139 (CHARLES STREET) AND BELLONA AVENUE**

WAIT: "WAIT TO CROSS CHARLES AT BELLONA. CROSSWALK ANGLES LEFT"\*

WALK: RAPID TICK

\* MESSAGE USED IF DISTANCE FROM NEAREST PUSHBUTTON FOR PERPDIUCULAR CROSSING IS < 10'  
 \*\* MESSAGE USED IF CROSSWALK DIVERGES FROM OR CONVERGES WITH PARALLEL TRAFFIC

NOTE: MESSAGES FOR INTERSECTION CONFIGURATIONS, VARYING FROM THE ABOVE ARE TO BE APPROVED BY THE DIRECTOR, OFFICE OF TRAFFIC AND SAFETY.

**CONTROLLER REQUIREMENTS**

THE EXISTING BASE MOUNTED CABINET AND CONTROLLER WILL BE USED. THE CONTROLLER SHALL BE RETROFITTED TO OPERATE VIDEO DETECTION EQUIPMENT.

**MAINTENANCE OF TRAFFIC**

THE FOLLOWING TRAFFIC CONTROL STANDARDS SHALL BE REFERENCED FOR THE PROJECT. ADDITIONAL TRAFFIC CONTROL STANDARDS MAY BE USED AS DIRECTED BY THE ENGINEER.

- STANDARD NO. MD-104.03-01 (SHOULDER WORK)
- STANDARD NO. MD-104.03-03 (LEFT LANE CLOSURE)
- STANDARD NO. MD-104.03-05 (RIGHT LANE CLOSURE)

**PROJECT CONTACTS**

THE CONTACT PERSONS FOR SHA ARE AS FOLLOWS:

MS. ERIN KUHN  
 ASSISTANT DISTRICT ENGINEER - TRAFFIC  
 PHONE: (410) 321-2781/2785

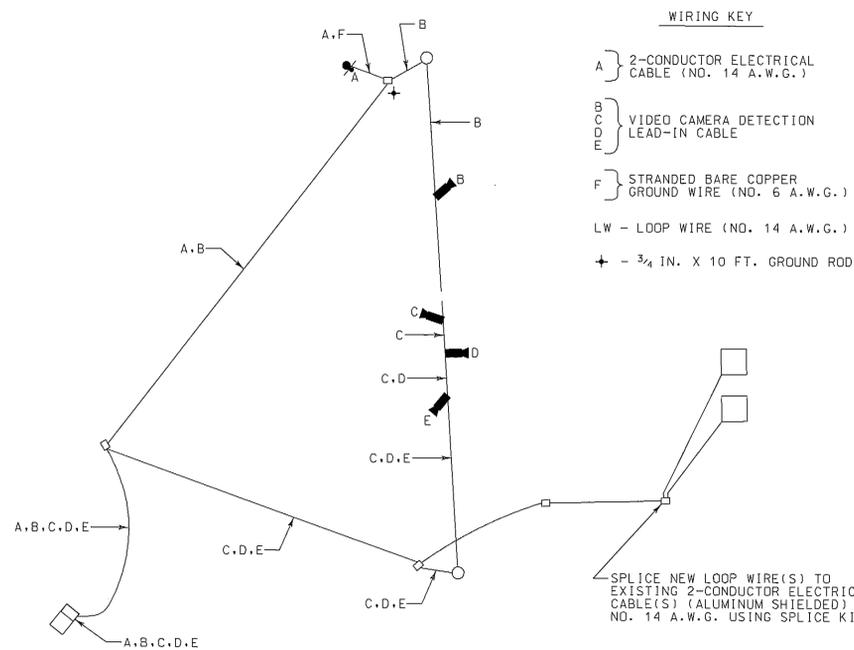
MR. ROBERT SYNDER  
 ASSISTANT CHIEF, TRAFFIC OPERATIONS DIVISION  
 PHONE: (410) 787-7631

MR. ANDRE FUTRELL  
 ASSISTANT DISTRICT ENGINEER - MAINTENANCE  
 PHONE: (410) 321-2761

MR. RICHARD L. DAFF, SR.  
 CHIEF, TRAFFIC OPERATIONS DIVISION  
 PHONE: (410) 787-7630

MR. MIKE PASQUARIELLO  
 DISTRICT UTILITY ENGINEER  
 PHONE: (410) 321-2841

**WIRING DIAGRAM**



**EQUIPMENT LIST "A"**

A. EQUIPMENT TO BE SUPPLIED BY THE SHA

ITEM NO.	QUANTITY	DESCRIPTION
9086	1 EACH	VIDEO INTERFACE EQUIPMENT: 1-8 CAMERAS
9571	16 S.F.	SHEET ALUMINUM SIGNS TO CONSIST OF : - 3 EACH R7-1(1) (12 IN. x 18 IN.) - GROUND MOUNT - 1 EACH W6-1 (48 IN. x 24 IN.) - GROUND MOUNT - 2 EACH R10-3(1) SIGN (9 IN. x 15 IN.) TO READ "PUSHBUTTON TO CROSS CHARLES STREET"

**EQUIPMENT LIST "C"**

C. EQUIPMENT TO BE REMOVED AND RETURNED TO SHA

ALL REMOVED SIGNAL MATERIALS SHALL BECOME PROPERTY OF THE CONTRACTOR

**PHASE CHART**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
PHASE 1 + 5	←G	R	R	R	←G	←G	←G	R	R	R	←G	R	←G	DW	DW
1 + 5 CHANGE	PHASE 1 + 5 MAY CHANGE TO PHASE 1 + 6, PHASE 2 + 5 OR PHASE 2 + 6														
PHASE 1 + 6	←G	G	G	G	←G	←R	←R	R	R	R	←G	R	R	DW	DW
1 + 6 CHANGE	←Y	G	G	G	←Y	←R	←R	R	R	R	R	R	R	DW	DW
PHASE 2 + 5	←R	R	R	R	←R	←G	←G	G	G	R	R	R	←G	DW	DW
2 + 5 CHANGE	←R	R	R	R	←R	←Y	←Y	G	G	R	R	R	R	DW	DW
PHASE 2 + 6	←R	G	G	G	←R	←R	←R	G	G	R	R	R	R	DW	DW
2 + 6 CHANGE	←R	Y	Y	Y	←R	←R	←R	Y	Y	R	R	R	R	DW	DW
PHASE 4 AND 8	←R	R	R	R	←R	←R	←R	R	R	G	G	G	G	DW	DW
4 AND 8 CHANGE	←R	R	R	R	←R	←R	←R	R	R	Y	Y	Y	Y	DW	DW
PHASE 4 AND 8 ALT.	←R	R	R	R	←R	←R	←R	R	R	G	G	G	G	WK	WK
PED CLEARANCE	←R	R	R	R	←R	←R	←R	R	R	G	G	G	G	FLDW	FLDW
4 + 8 ALT. CHANGE	←R	R	R	R	←R	←R	←R	R	R	Y	Y	Y	Y	DW	DW
FLASHING OPERATION	←FLR	FLY	FLY	FLY	←FLR	←FLR	←FLR	FLY	FLY	FLR	FLR	FLR	FLR	DARK	DARK

**EQUIPMENT LIST "B"**

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

CATEGORY CODES	QUANTITY	DESCRIPTION
120500	LUMP SUM	MAINTENANCE OF TRAFFIC
114280	55 L.F.	REMOVAL OF EXISTING PERMANENT PAVEMENT LINE MARKINGS - ANY WIDTH
203030	1 C.Y.	TEST PIT EXCAVATION
585600	1420 L.F.	5 INCH WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS
585604	1510 L.F.	5 INCH YELLOW PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS
585621	375 L.F.	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES
585625	125 L.F.	24 INCH HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
801004	1 C.Y.	CONCRETE FOR SIGNAL FOUNDATION
801106	15 L.F.	WOOD SIGN SUPPORTS 4"x6"
801130	4 EACH	SQUARE PERFORATED TUBULAR STEEL SIGN POSTS
801135	4 EACH	SQUARE PERFORATED STEEL ANCHOR BASES
802145	1 EACH	ADJUST EXISTING HANDHOLE
802501	15 L.F.	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
805135	10 L.F.	3 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED
805160	10 L.F.	1 INCH LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR SLEEVE
813014	16 S.F.	INSTALL GROUND MOUNTED SIGN
813023	9 S.F.	RELOCATE EXISTING GROUND MOUNTED SIGNS
816001	4 EACH	VIDEO DETECTION CAMERA
816010	4 EACH	CONTROL CABLE, 500 FOOT, VIDEO DETECTION CAMERA TO CONTROLLER
818004	1 EACH	10 FOOT BREAKAWAY PEDESTAL POLE
837001	1 EACH	GROUND ROD - 3/4 INCH DIAMETER X 10 FOOT LENGTH
860292	1 EACH	CUT, CLEAN, GALVANIZE AND CAP TRAFFIC SIGNAL STRUCTURE
861105	215 L.F.	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 A.W.G.)
862101	430 L.F.	LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO. 14 AWG)
862102	150 L.F.	SAW CUT FOR SIGNAL (LOOP DETECTOR)
800000	1 EACH	REMOVE AND DISPOSE OF EXISTING MATERIAL AND EQUIPMENT
800000	2 EACH	16 INCH COUNTDOWN PEDESTRIAN SIGNAL HEAD
800000	2 EACH	AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION
800000	1 EACH	2-WIRE CENTRAL CONTROL UNIT

**SHA** STATE OF MARYLAND  
 DEPARTMENT OF TRANSPORTATION  
 STATE HIGHWAY ADMINISTRATION  
 OFFICE OF TRAFFIC & SAFETY  
 TRAFFIC ENGINEERING DESIGN DIVISION  
 MD 139 (N. Charles Street) and  
 MD 134 (Bellona Avenue)

**GENERAL INFORMATION SHEET**

SCALE NONE ADVERTISED DATE 11/17/2009 CONTRACT NO. BA355A21

DESIGNED BY S. Bloss COUNTY Baltimore  
 DRAWN BY S. Bloss LOGMILE  
 CHECKED BY N. Leary TMS NO. G426  
 F.A.P. NO. SEE TITLE SHEET TOD NO.

TS NO. 1824 D DRAWING TSP-3 OF 3 SHEET NO. OF

