PROJECT DESCRIPTION

GENERAL

THIS PORTION OF THE PROJECT INVOLVES THE MODIFICATION OF THE TRAFFIC SIGNAL AT US 1 (BELAIR ROAD) AND JOPPA ROAD / INDIA AVENUE IN BALTIMORE COUNTY DUE TO THE GEOMETRIC CHANGES ALONG US 1. THE EXISTING VEHICULAR TRAFFIC SIGNAL HEADS WILL BE REPLACED WITH NEW BLACK FACED LED TRAFFIC SIGNAL HEADS. THE EXISTING PEDESTRIAN PUSHBUTTONS AND SIGNAL HEADS WILL BE REPLACED WITH AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATIONS AND SIGNS AND COUNTDOWN PEDESTRIAN SIGNAL HEADS. VIDEO DETECTION CAMERAS WILL BE INSTALLED FOR PRESENCE DETECTION ON ALL APPROACHES, SET BACK DETECTION ON JOPPA ROAD AND SAMPLING DETECTION ON US 1. US 1 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

INTERSECTION OPERATION

THE INTERSECTION WILL OPERATE IN A NEMA SIX-PHASE, FULL-TRAFFIC-ACTUATED MODE. THE EXISTING MAINLINE AND SIDE STREET ALTERNATE PEDESTRIAN PHASES SHALL REMAIN AND A NORTHBOUND RIGHT TURN OVERLAP IS PROPOSED. AN ADDITIONAL ALTERNATE PEDESTRIAN PHASE IS PROPOSED TO CROSS THE NORTH LEG.

CONTROLLER REQUIREMENTS

THE EXISTING BASE MOUNTED CABINET, CONTROLLER, EQUIPMENT AND ASSOCIATED HARNESSES SHALL REMAIN. THE SHA SIGNAL SHOP SHALL INSTALL ONE (1) 2-WIRE CENTRAL CONTROL UNIT AND ONE (1) VIDEO DETECTION INTERFACE WITHIN THE CABINET.

APS WILL FUNCTION AS FOLLOWS:

NORTH LEG

A. WHEN THE PEDESTRIAN LOCATES AND PRESSES THE PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL ANNOUNCE THE FOLLOWING MESSAGE: "WAIT TO CROSS BELAIR ROAD AT JOPPA/INDIA"
B. WHEN THE WALK PHASE BEGINS, THE PUSHBUTTON UNIT WILL PROVIDE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

SOUTH LEG

A. WHEN THE PEDESTRIAN LOCATES AND PRESSES THE PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL ANNOUNCE THE FOLLOWING MESSAGE: "WAIT TO CROSS BELAIR ROAD AT JOPPA/INDIA"
B. WHEN THE WALK PHASE BEGINS, THE PUSHBUTTON UNIT WILL PROVIDE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

EAST LEG

A. WHEN THE PEDESTRIAN LOCATES AND PRESSES THE PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL ANNOUNCE THE FOLLOWING MESSAGE: "WAIT TO CROSS JOPPA AT BELAIR ROAD."
B. WHEN THE WALK PHASE BEGINS, THE PUSHBUTTON UNIT WILL PROVIDE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

WEST LEG

A. WHEN THE PEDESTRIAN LOCATES AND PRESSES THE PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL ANNOUNCE THE FOLLOWING MESSAGE: "WAIT TO CROSS INDIA AT BELAIR ROAD."
B. WHEN THE WALK PHASE BEGINS, THE PUSHBUTTON UNIT WILL PROVIDE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

PHONE DROP

THE CONTRACTOR SHALL NOTIFY MR. ROBERT SNYDER OF SHA AT (410) 787-7635 TO ARRANGE FOR THE PHONE DROP LINE INSTALLATION. THE CONTRACTOR IS TO NOTIFY MR. SNYDER WITH THE NEAREST STREET ADDRESS, ZIP CODE AND PHONE NUMBER.

THE CONTACT PERSONS FOR DISTRICT #4 ARE AS FOLLOWS:

Ms. Erin Kuhn
Assistant District Engineer - Traffic
Phone: 410-321-2781

Mr. Michael Pasquariello
District Utility Engineer
Phone: 410-321-2841

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. Edward Rodenhizer
Chief, SHA Traffic Signal Shop
Phone: 410-787-7650

The Power Company Representative is:
Baltimore Gas & Electric Company
7317 Parkway Drive South
Hanover, MD 21076
Phone: 410-859-9062

EQUIPMENT LIST 'A'

EQUIPMENT TO BE FURNISHED BY THE SHA.

CATEGORY CODE	QUANTITY	DESCRIPTION
900000	1 EA	VIDEO DETECTION INTERFACE EQUIPMENT: 1-4 CAMERAS
973023	103 SF	SHEET ALUMINUM SIGNS:
		1 EA - D-3(1) "BELAIR RD" (96 IN. x 16 IN.) DUAL FACED
		1 EA - R3-6MOD (30 IN. x 36 IN.) LANE USE CONTROL - SHARED LEFT/THRU/RIGHT
		1 EA - SHIELD ASSEMBLY (24 IN. x 51 IN.) "SOUTH, US 1, RIGHT ARROW"
		1 EA - SHIELD ASSEMBLY (24 IN. x 51 IN.) "NORTH, US 1, RIGHT ARROW"
		1 EA - SHIELD ASSEMBLY (36 IN. x 75 IN.) "SOUTH, US 1, LEFT ARROW"
		1 EA - SHIELD ASSEMBLY (36 IN. x 75 IN.) "SOUTH, US 1, LEFT ARROW"
		4 EA - R10-3(1) (9 IN. x 15 IN.) "PUSH BUTTON TO CROSS BELAIR ROAD"
		2 EA - R10-3(1) (9 IN. x 15 IN.) "PUSH BUTTON TO CROSS JOPPA ROAD"
		2 EA - R10-3(1) (9 IN. x 15 IN.) "PUSH BUTTON TO CROSS INDIA AVENUE"
		2 EA - S1-1 (36 IN. x 36 IN.)
		2 EA - M6-2(MOD) (21 IN. x 15 IN.) FYG

EQUIPMENT LIST 'B'

EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR.

CATEGORY CODE	QUANTITY	DESCRIPTION
203030	6 CY	TEST PIT EXCAVATION
800000	1 EA	4 INCH CONDUIT BEND IN BASE MOUNTED CABINET
800000	1 EA	2-WIRE CENTRAL CONTROL UNIT
800000	6 EA	8 INCH LED VEHICULAR TRAFFIC SIGNAL HEAD SECTION
800000	8 EA	AUDIBLE/TACTILE PUSHBUTTON STATION AND SIGN
800000	8 EA	LED 16 INCH COUNTDOWN PEDESTRIAN SIGNAL HEAD SECTION - POLE MOUNTED
801004	3 CY	CONCRETE FOR SIGNAL FOUNDATION
802501	500 LF	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
805125	130 LF	2 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
805135	420 LF	3 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
805140	155 LF	4 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
805145	50 LF	2 INCH SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED
805150	150 LF	3 INCH SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED
805155	265 LF	4 INCH SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED
807202	1 EA	METERED SERVICE PEDESTAL
810010	20 LF	ELECTRICAL CABLE 1-CONDUCTOR NO.4 AWG - THHN/THWN
810601	4 EA	NONINVASIVE DETECTOR, 500 FOOT LEAD IN CABLE
811001	6 EA	FURNISH AND INSTALL ELECTRICAL HANDHOLE
811002	2 EA	REMOVE EXISTING HANDHOLE
813015	103 SF	INSTALL OVERHEAD SIGN
816001	4 EA	VIDEO DETECTION CAMERA
816005	1 EA	CONTROL CABLE, 250 FOOT, VIDEO DETECTION CAMERA TO CONTROLLER
816010	3 EA	CONTROL CABLE, 500 FOOT, VIDEO DETECTION CAMERA TO CONTROLLER
818004	5 EA	10 FOOT BREAKAWAY PEDESTAL POLE
818010	1 EA	14 FOOT BREAKAWAY PEDESTAL POLE
837001	3 EA	GROUND ROD - 3/4 INCH DIAMETER X 10 FOOT LENGTH
860284	40 EA	12 INCH LED VEHICULAR TRAFFIC SIGNAL HEAD SECTION
860292	2 EA	CUT, CLEAN, GALVANIZE AND CAP TRAFFIC SIGNAL STRUCTURE
861105	1,200 LF	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)
861107	2,200 LF	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)
861108	1,650 LF	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)

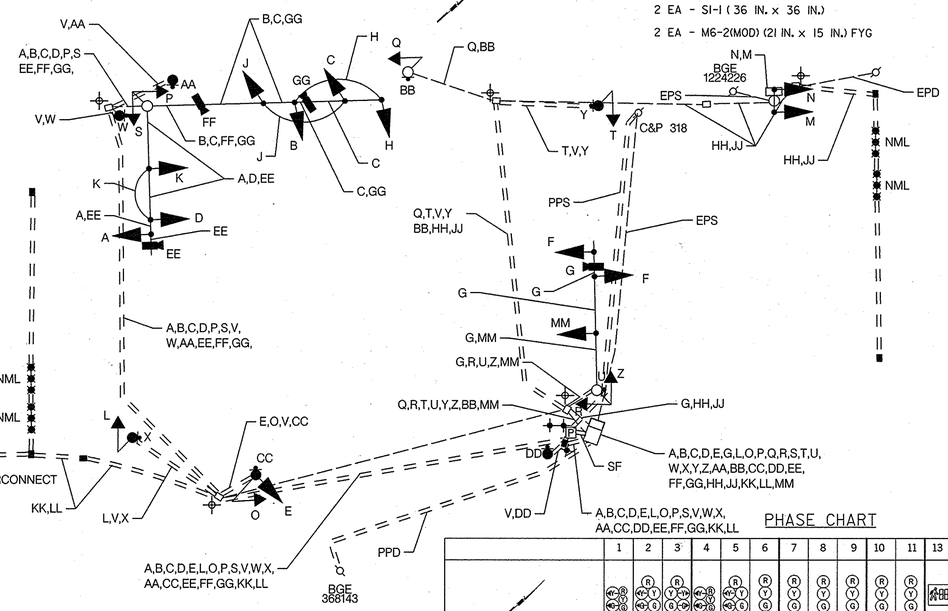
EQUIPMENT LIST 'C'

EQUIPMENT TO BE REMOVED AND RETURNED TO SHA.

CATEGORY CODE	QUANTITY	DESCRIPTION

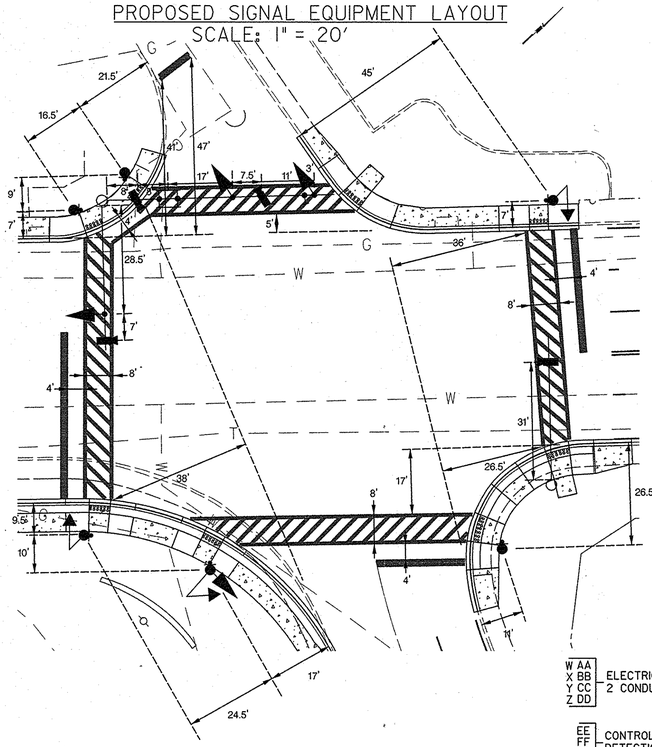
NONE - ALL REMOVED EQUIPMENT SHALL BECOME THE PROPERTY OF THE CONTRACTOR

WIRING DIAGRAM



PROPOSED SIGNAL EQUIPMENT LAYOUT

SCALE: 1" = 20'



A B C D E M — ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)

F — USE EXISTING WIRE

G — CONTROL CABLE, 250 FT. VIDEO DETECTION CAMERA TO CONTROLLER

H J K L M N O P Q R S T U — ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)

V — NO. 6 STRANDED BARE COPPER WIRE

W AA X BB Y CC Z DD — ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)

EE FF GG — CONTROL CABLE, 500 FT. VIDEO DETECTION CAMERA TO CONTROLLER

HH JJ KK LL — NON-INVASIVE DETECTOR, 500 FOOT LEAD-IN CABLE

EXISTING GROUND ROD

EPS — EXISTING POWER SERVICE

NML — NON-INVASIVE MICROLOOP PROBE SET

PPD — PROPOSED PHONE DROP TO BE INSTALLED BY OTHERS

PPS — PROPOSED UNDERGROUND POWER SERVICE TO BE INSTALLED BY BG&E

SF — SERVICE FEED (ELECTRICAL CABLE 1-CONDUCTOR NO. 4 AWG - THHN/THWN)

P — PROPOSED METERED SERVICE PEDESTAL

PROPOSED GROUND ROD - 3/4 INCH DIAMETER X 10 FOOT LENGTH.

PHASE CHART

	1	2	3	4	5	6	7	8	9	10	11	13	14	15	16	17	18	19	20
PHASE 1 AND 5	G/R	G/R	R	G/R	G/R	R	R	R	R	R	R	DW	DW	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/G	G	R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
1 CHANGE	Y/G	Y/G	G	R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 2 AND 5	R	R	R	G/G	G/G	G	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
5 CHANGE	R	R	R	Y/G	Y/G	G	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 2 AND 6	G	G	G	G	G	G	R	R	R	R	R	W	W	W	W	DW	DW	DW	DW
PED CLEARANCE	G	G	G	G	G	G	R	R	R	R	R	FL/DW	FL/DW	FL/DW	FL/DW	DW	DW	DW	DW
2 AND 6 CHANGE	Y	Y	Y	Y	Y	Y	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 3	R	R	R	R	R	R	G/G	G	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 3 CHANGE	R	R	R	R	R	R	Y	Y	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 3 ALT	R	R	R	R	R	R	G/G	G	R	R	R	DW	DW	DW	DW	DW	W	W	DW
PHASE 3 PED CLEARANCE	R	R	R	R	R	R	G/G	G	R	R	R	DW	DW	DW	DW	DW	FL/DW	FL/DW	DW
PHASE 3 ALT CHANGE	R	R	R	R	R	R	Y	Y	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 4	R	R	R/G	R	R	R	R	R	G/G	G/G	G	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 4 CHANGE	R	R	R/Y	R	R	R	R	R	Y	Y	Y	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 4 ALT	R	R	R/G	R	R	R	R	R	G/G	G/G	G	DW	DW	DW	DW	W	W	W	W
PHASE 4 PED CLEARANCE	R	R	R/G	R	R	R	R	R	G/G	G/G	G	DW	DW	DW	DW	FL/DW	FL/DW	FL/DW	FL/DW
PHASE 4 ALT CHANGE	R	R	R/Y	R	R	R	R	R	Y	Y	Y	DW	DW	DW	DW	DW	DW	DW	DW
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	DARK	DARK	DARK	DARK	DARK	DARK	DARK	DARK

HIB PHASE CHART

	12	12a
	Y	Y
NORMAL OPERATION	DARK	DARK
SPECIAL OPERATION	FL/Y	FL/Y

STV Incorporated
engineers / architects / planners / construction managers
7125 Ambassador Road Baltimore, MD 21244-2722 (410) 944-9112

BY: thompsma

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

US 1 (BELAIR ROAD) AT
INDIA AVENUE / JOPPA ROAD

GENERAL INFORMATION

SCALE 1" = 20' DATE MARCH 2008 CONTRACT NO. BA4855187

DESIGNED BY SBS COUNTY BALTIMORE
DRAWN BY SBS LOGMILE 03000119.59
CHECKED BY BAB TIMS NO. I-425
FAP NO. SEE TITLE SHEET TOD NO.

TS NO. ~~5868~~ 5868 | DRAWING SG - 6 OF 6 | SHEET NO. 27 OF 38

PLOTTED: Tuesday, May 06, 2008 AT 02:01 PM
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