PROJECT DESCRIPTION

GENERAL

THIS PORTION OF THE PROJECT INVOLVES RECONSTRUCTING THE TRAFFIC CONTROL SIGNAL AT MD 45 AND PADONIA ROAD IN BALTIMORE COUNTY. THE EAST SIDE OF MD 45 WILL BE WIDENED TO PROVIDE A NORTHBOUND DOUBLE LEFT-TURN LANE. STREET LIGHTS ARE PROPOSED ON THE NORTHEAST AND SOUTHEAST QUADRANTS OF THE INTERSECTION. MD 45 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION. THE INTERCONNECT TO THE NORTH AND EAST WILL BE RE-ROUTED. NEW INTERCONNECT WILL REPLACE THE EXISTING RUN TO THE WEST. **COUNTDOWN** ~~AUDIBLE~~ PEDESTRIAN SIGNAL INDICATIONS AND **ACCESSIBLE** PUSH BUTTONS WILL ALSO BE INSTALLED.

INTERSECTION OPERATION

THE INTERSECTION WILL OPERATE IN A NEMA SIX-PHASE, FULL-TRAFFIC-ACTUATED MODE WITH EXCLUSIVE LEFT-TURN PHASING FOR NORTHBOUND TRAFFIC AND EXCLUSIVE/PERMISSIVE PHASING FOR SOUTHBOUND TRAFFIC. SIDE STREET SPLIT PHASING WILL BE PROVIDED. ALTERNATIVE PEDESTRIAN PHASES ARE PROVIDED ACROSS BOTH LEGS OF MD 45 AND BOTH LEGS OF PADONIA ROAD.

CONTROLLER REQUIREMENTS

INSTALL A NEW EIGHT-PHASE FULLY ACTUATED MASTER TRAFFIC SIGNAL CONTROLLER, LOOP DETECTOR AMPLIFIER, PHONE DROP, AND ASSOCIATED HARNESSES IN A NEMA SIZE '6' BASE MOUNTED CABINET. VIDEO DETECTION IS PROPOSED FOR PRESENCE DETECTION ON ALL APPROACHES. MICROLOOP PROBES ARE PROPOSED FOR SETBACK DETECTION ALONG MD 45. THE SHA SIGNAL SHOP WILL INSTALL THE FOUR CHANNEL LOOP DETECTOR AMPLIFIER.

GENERAL

PRIOR TO REMOVING THE EXISTING TRAFFIC SIGNAL, 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 PROVIDE MR. SNYDER WITH THE NEAREST STREET ADDRESS, ZIP CODE AND PHONE NUMBER.

THE CONTACT PERSONS FOR DISTRICT #4 ARE AS FOLLOWS:

Mr. Randall Scott
Assistant District Engineer - Traffic
Phone: 410-321-2781

Ms. Suenette Pope
District Utility Engineer
Phone: 410-321-2841

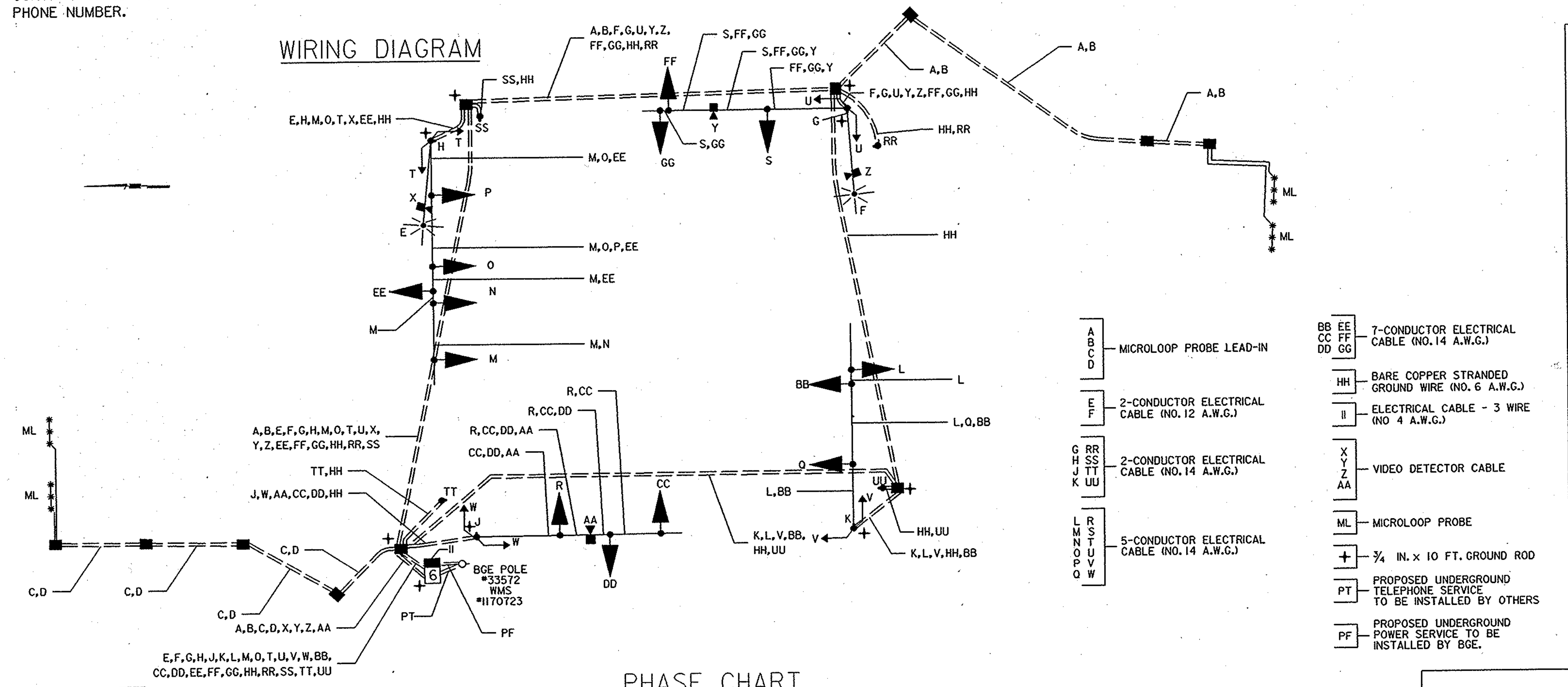
Mr. Steve Marciszewski
Assistant District Engineer - Maintenance
Phone: 410-321-2761

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

Mr. Richard L. Daff Sr.
Chief, Traffic Operations Division
Phone: 410-787-7630

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

WIRING DIAGRAM



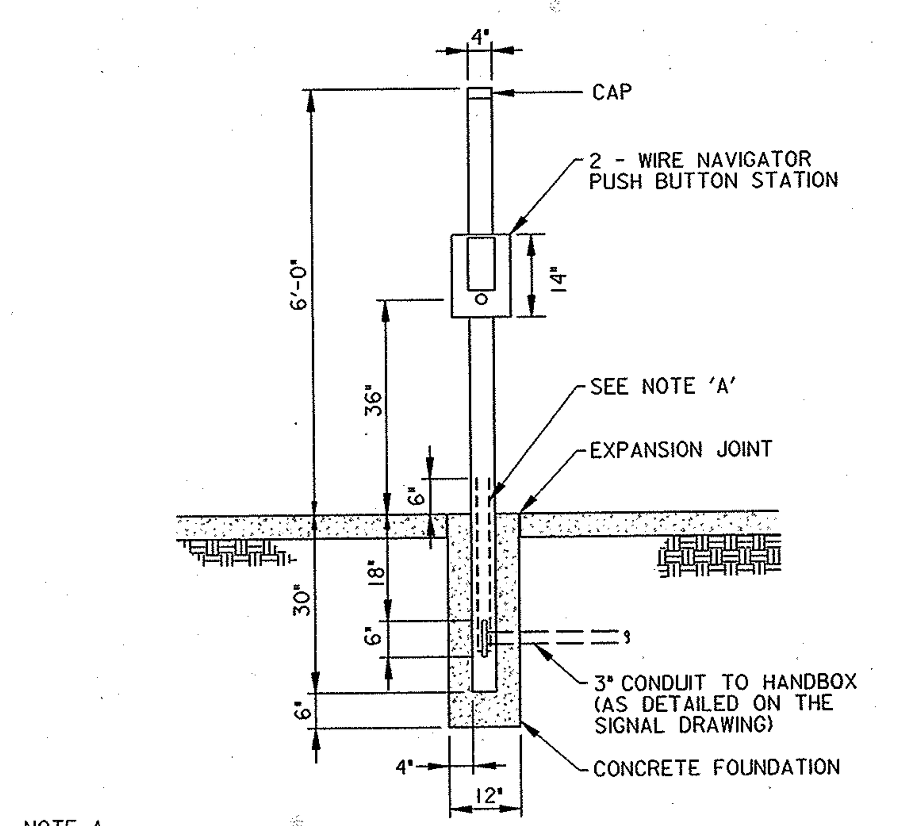
EQUIPMENT LIST 'A'

EQUIPMENT TO BE FURNISHED BY THE SHA.

CAT CODE	QUANTITY	DESCRIPTION
963010	1 EA	FOUR CHANNEL LOOP DETECTOR AMPLIFIER, RACK MOUNT
971020	1 EA	TRAFFIC RESPONSIVE MASTER CONTROLLER AND CABINET-BASE MOUNT
973023	124 SF ~~94 SF~~	SHEET ALUMINUM SIGNS:
		4 EACH - D3-2 SIGN (48 IN. X 16 IN.) MAST ARM MOUNT
		1 EACH - R10-12 (36 IN. X 42 IN.) MAST ARM MOUNT
		5 EACH - R3-5L (30 IN. X 36 IN.) MAST ARM MOUNT
		~~2 EACH - M95-1(MOD) (72 IN. X 24 IN.) MAST ARM MOUNT~~
		2 EACH - SHIELD ASSEMBLY (24"X51") POLE MOUNT
		2 EACH - SHIELD ASSEMBLY (36"X75") POLE MOUNT

STUB POLE DETAIL

(REFER TO IFB FOR SPECIFICATION)



NOTE A

GROUNDING LUG APPLICABLE TO DIRECT BURIAL WITH ONE HEX HEAD STAINLESS STEEL BOLT (1/4" - 20 UNC) AND NUT DRILLED BELOW GRADE WITH BINDING BUSHING FOR #6 BARE COPPER GROUND WIRE TO GROUND ROD IN HANDBOX

EQUIPMENT LIST 'B'

EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR.

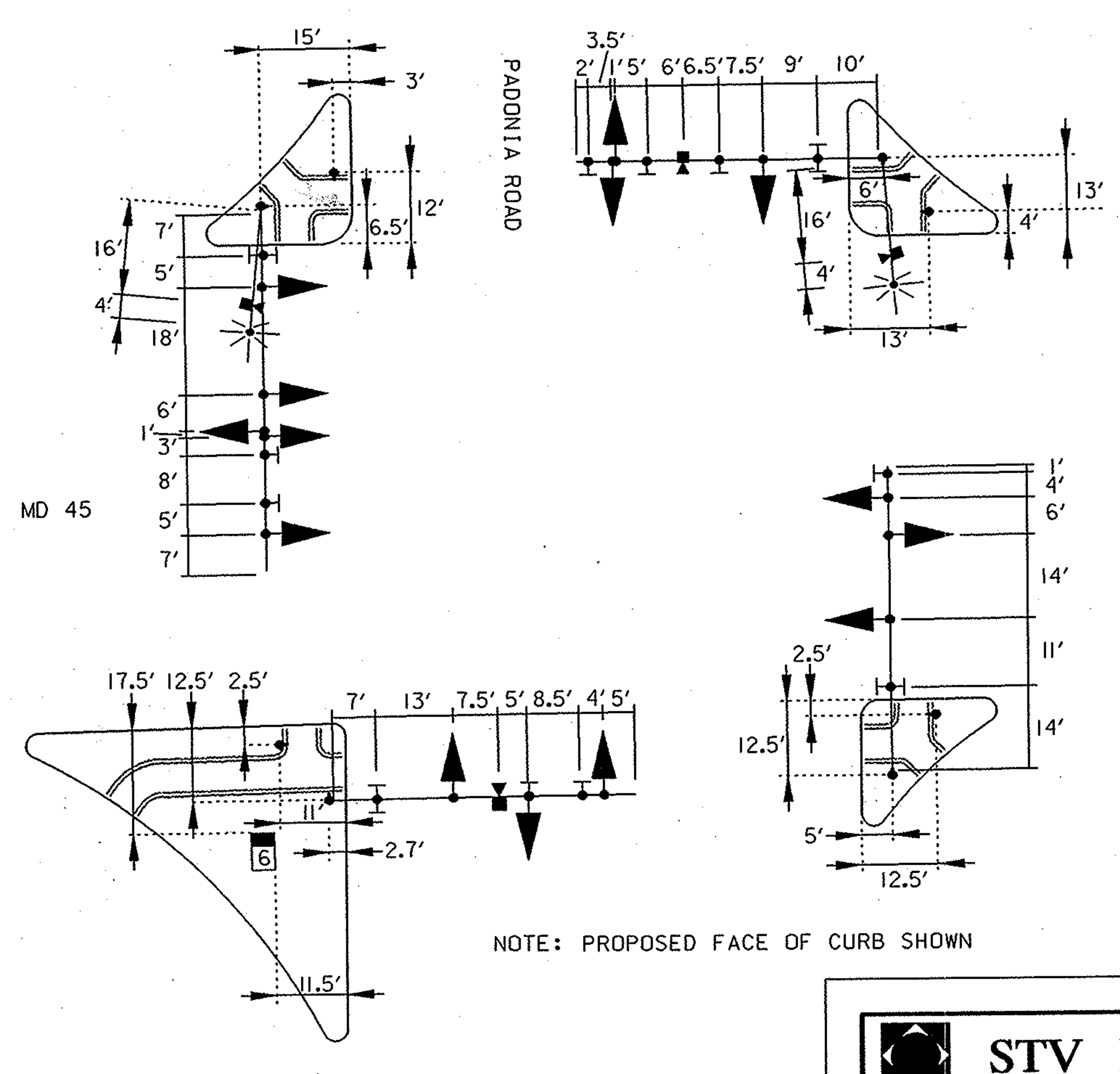
CAT CODE	QUANTITY	DESCRIPTION
120500	1 LS	MAINTENANCE OF TRAFFIC
203030	9 CY	TEST PIT EXCAVATION
585620	**960 LF** ~~800 LF~~	12 INCH HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
585624	165 LF	24 INCH HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
800000	1 LS	REMOVE AND DISPOSE OF EXISTING TRAFFIC SIGNAL EQUIPMENT
800000	110 LF	PULL AND RE-ROUTE 12-PAIR COMMUNICATION CABLE, JELLY FILLED (NO. 19 AWG)
800000	2 EA	RELOCATE VIDEO DETECTOR CAMERA FROM EXISTING POLE TO PROPOSED MAST ARM
800000	**8 EA**	**16 INCH L.E.D. PEDESTRIAN COUNTDOWN SIGNAL HEAD SECTION - POLE MOUNT**
800000	4 EA	FURNISH AND INSTALL 6 FOOT STUB POLE
800000	8 EA	FURNISH AND INSTALL 2 WIRE NAVIGATOR PUSH BUTTON STATION
800000	1 EA	FURNISH AND INSTALL 2 WIRE NAVIGATOR CENTRAL CONTROL UNIT
801004	15 CY	CONCRETE FOR SIGNAL FOUNDATION
802501	600 LF	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
805050	1 EA	WEATHER HEAD, 3 INCH
805115	280 LF	3 INCH SCHEDULE 80 RIGID PVC CONDUIT - BORED
805125	15 LF	2 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
805135	600 LF	3 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
805140	35 LF	4 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
805150	180 LF	3 INCH SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED
805155	420 LF	4 INCH SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED
805160	10 LF	1 INCH LIQUID-TIGHT NON-METALLIC CONDUIT FOR DETECTOR SLEEVE
807400	1 EA	ELECTRICAL UTILITY SERVICE EQUIPMENT 120/240 VOLTS 60 AMPS
810550	2 EA	MICROLOOP PROBE, 500 FOOT LEAD-IN CABLE
810555	2 EA	MICROLOOP PROBE, 1000 FOOT LEAD IN CABLE
811001	13 EA	ELECTRICAL HANDHOLE
813015	**124 SF** ~~94 SF~~	INSTALL OVERHEAD SIGN
816001	2 EA	VIDEO DETECTION CAMERA
816005	2 EA	CONTROL CABLE, 250 FOOT, VIDEO DETECTION CAMERA TO CONTROLLER
816010	2 EA	CONTROL CABLE, 500 FOOT, VIDEO DETECTION CAMERA TO CONTROLLER
818036	3 EA	STEEL POLE WITH 50 FOOT MAST ARM
818041	1 EA	STEEL POLE WITH 60 FOOT MAST ARM
822002	725 LF	12-PAIR COMMUNICATION CABLE, JELLYFILLED (UNDERGROUND)
831010	2 EA	250 WATT HIGH PRESSURE SODIUM LAMP AND LUMINAIRE
837001	9 EA	GROUND ROD - 3/4 INCH DIAMETER X 10 FOOT LENGTH
860270	9 EA	8 INCH VEHICULAR TRAFFIC SIGNAL HEAD SECTION
860272	41 EA	12 INCH VEHICULAR TRAFFIC SIGNAL HEAD SECTION
~~860278~~	~~16 EA~~	~~12 INCH PEDESTRIAN SIGNAL HEAD SECTION POLE MOUNT~~
860292	2 EA	CUT, CLEAN, GALVANIZE AND CAP TRAFFIC SIGNAL STRUCTURE
861105	2,000 LF	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)
861107	1,400 LF	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)
861108	1,100 LF	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)
861116	500 LF	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 AWG)
861117	10 LF	ELECTRICAL CABLE - 3 WIRE (NO. 4 AWG)
862102	200 LF	SAW CUT FOR SIGNAL (LOOP DETECTOR)
866104	2 EA	20 FOOT LIGHTING ARM ON SIGNAL STRUCTURE
871117	1 EA	INSTALL EIGHT PHASE (FULLY ACTUATED) CONTROLLER AND CABINET - BASE MOUNT

PHASE CHART

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
PHASE 1 + 5	←G	←G	←G	R	R	R / ←G	R / ←G	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 1 + 5 CHANGE		THE CONTROLLER MAY SKIP TO PHASE 1 + 6, 2 + 5 OR 2 + 6																				
PHASE 1 + 6	←G	←G	←G	G	G	R	R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 1 + 6 CHANGE	←Y	←Y	←Y	Y	Y	R	R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 2 + 5	←R	←R	←R	R	R	G / ←G	G / ←G	G	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 2 + 5 CHANGE	←R	←R	←R	R	R	Y / ←Y	Y / ←Y	Y	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 2 + 6	←R	←R	←R	G	G	G	G	G	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 2 + 6 CHANGE	←R	←R	←R	Y	Y	Y	Y	Y	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 2 + 6 ALT	←R	←R	←R	G	G	G	G	G	R	R	R	R	R	R	W	W	W	W	DW	DW	DW	DW
PED CLEARANCE	←R	←R	←R	G	G	G	G	G	R	R	R	R	R	R	FDW	FDW	FDW	FDW	DW	DW	DW	DW
PHASE 2 + 6 ALT CHANGE	←R	←R	←R	Y	Y	Y	Y	Y	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 3	←R	←R	←R	R	R	R	R	R	R	R	R	G / ←G	G / ←G	G	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 3 CHANGE	←R	←R	←R	R	R	R	R	R	R	R	R	Y	Y	Y	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 3 ALT	←R	←R	←R	R	R	R	R	R	R	R	R	G / ←G	G / ←G	G	DW	DW	DW	DW	DW	DW	W	W
PED CLEARANCE	←R	←R	←R	R	R	R	R	R	R	R	R	G / ←G	G / ←G	G	DW	DW	DW	DW	DW	DW	FDW	FDW
PHASE 3 ALT CHANGE	←R	←R	←R	R	R	R	R	R	R	R	R	Y	Y	Y	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 4	←R	←R	←R	R	R	R	R	R	G / ←G	G / ←G	G	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 4 CHANGE	←R	←R	←R	R	R	R	R	R	Y	Y	Y	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 4 ALT	←R	←R	←R	R	R	R	R	R	G / ←G	G / ←G	G	R	R	R	DW	DW	DW	DW	W	W	DW	DW
PED CLEARANCE	←R	←R	←R	R	R	R	R	R	G / ←G	G / ←G	G	R	R	R	DW	DW	DW	DW	FDW	FDW	DW	DW
PHASE 4 ALT CHANGE	←R	←R	←R	R	R	R	R	R	Y	Y	Y	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
FLASHING OPERATION	FL/RA	FL/RA	FL/RA	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	DARK	DARK	DARK	DARK	DARK	DARK	DARK	DARK

SIGNAL POLE/SIGNAL HEAD/CAMERA/SIGN LAYOUT

NOT TO SCALE



NOTE: PROPOSED FACE OF CURB SHOWN

REDLINE REVISION 7-06-2005 7-11-06

SP-2

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

MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION

MD 45 (YORK ROAD) AND PADONIA ROAD
GENERAL INFORMATION

DRAWN BY:	R. KIPP	F.A.P. NO.	SEE TITLE SHEET	TS NO. TS-4310A	SHEET NO.
CHECKED BY:	B. BIDDLE	S.H.A. NO.	BA4035187		
SCALE:	NONE	COUNTY:	BALTIMORE	T.I.M.S. NO. G075	
DATE:	MAY 2004	LOG MILE:	03004506.28		14 OF 19

I:\projects\11103\task07\Signal\redline6_29_05\sp02md45.dgn