PROJECT DESCRIPTION

GENERAL

THIS PROJECT INVOLVES THE RECONSTRUCTION OF THE TRAFFIC CONTROL SIGNAL AT US 301 AND MD 6 IN CHARLES COUNTY. CURB RADII IN THE SOUTHEAST AND SOUTHWEST QUADRANTS WILL BE ADJUSTED TO ALLOW CONSTRUCTION OF TWO NEW CHANNELIZATION ISLANDS. THE EXISTING ISLANDS WILL ALSO BE RECONSTRUCTED ALONG WITH ADJUSTMENTS TO THE MEDIAN. THE WESTBOUND LANE USE WILL BE REVISED TO INCLUDE A LEFT-TURN, A THROUGH, AND A RIGHT-TURN LANE. US 301 IS ASSUMED TO RUN IN A NORTH - SOUTH DIRECTION.

INTERSECTION OPERATION

THE INTERSECTION WILL OPERATE IN A NEMA SIX-PHASE, FULL-TRAFFIC-ACTUATED MODE WITH EXCLUSIVE LEFT-TURN PHASING FOR NORTH- AND SOUTHBOUND TRAFFIC. THE SIDE STREET IS SPLIT PHASED. PEDESTRIAN SIGNAL CONTROL IS PROPOSED FOR THE EAST, WEST, AND SOUTH LEGS. PUSH BUTTONS ARE PROPOSED FOR THE PEDESTRIAN CROSSING ON THE SOUTH LEG. PEDESTRIAN LIGHTING IS PROPOSED ON ALL FOUR QUADRANTS.

CONTROLLER REQUIREMENTS

THE EXISTING CONTROLLER, LOOP DETECTOR AMPLIFIERS, AND ASSOCIATED HARNESSES WILL BE REMOVED UPON COMPLETION OF THE NEW SIGNAL. A NEW EIGHT PHASE FULLY ACTUATED TRAFFIC SIGNAL CONTROLLER IS PROPOSED. VIDEO DETECTION WILL BE RELOCATED AND USED FOR PRESENCE DETECTION ON EACH APPROACH. NON-INVASIVE PROBES WILL BE USED FOR ADVANCE DETECTION ON US 301. MICROLOOP PROBES WILL BE USED FOR ADVANCE DETECTION ON MD 6. THE SHA SIGNAL SHOP WILL REMOVE THE EXISTING VIDEO INTERFACE EQUIPMENT FROM THE EXISTING CABINET AND RE-INSTALL IN NEW CABINET.

THE CONTACT PERSONS FOR DISTRICT #5 ARE AS FOLLOWS:

Ms. Kim Tran
Assistant District Engineer - Traffic
Phone: 410-841-1003

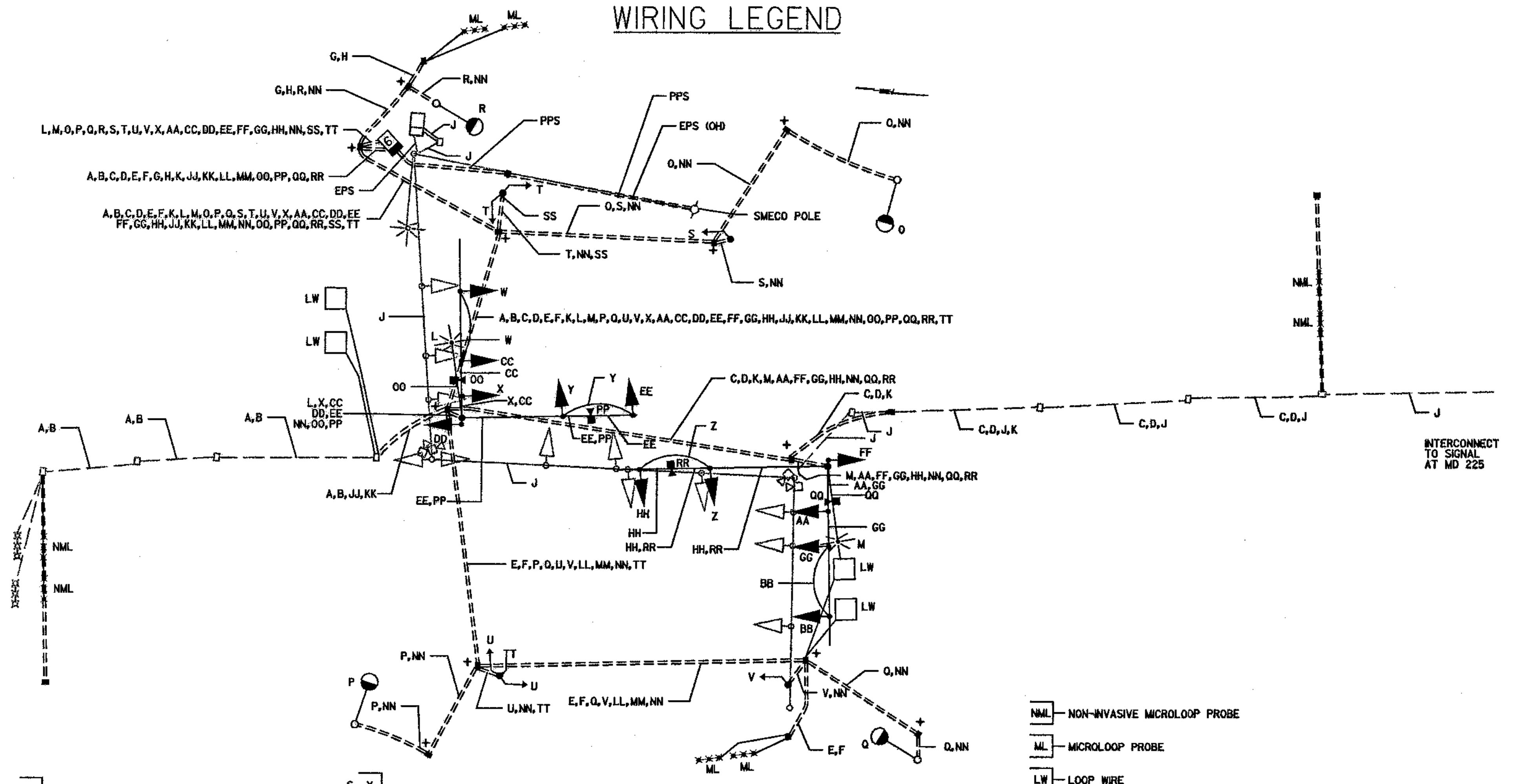
Mr. John Mays
District Utility Engineer
Phone: 410-841-1005

Mr. Charles George
Assistant District Engineer - Maintenance
Phone: 410-841-1002

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

The Power Company Representative is:
Southern Maryland Electrical Cooperative
Mr. Chuck Stone
4415 Crain Highway
P.O. Box 248
White Plains, MD 20695-0248
Phone: 301-645-3636 (ext. 8686)

WIRING LEGEND



- A B C D / E F G H — MICROLOOP PROBE LEAD-IN
- J — 12-PAIR INTERCONNECT CABLE JELLY-FILLED (NO. 19 A.W.G.) EXISTING RUN
- K — 12-PAIR INTERCONNECT CABLE JELLY-FILLED (NO. 19 A.W.G.) PROPOSED RE-ROUTING
- L M O / P Q R — 2-CONDUCTOR ELECTRICAL CABLE (NO. 12 A.W.G.)
- S T U V W / X Y Z AA BB — 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- CC DD EE FF GG HH — 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- JJ KK LL MM — 2-CONDUCTOR ALUMINUM SHIELDED ELECTRICAL CABLE (NO. 14 A.W.G.)
- NN — BARE COPPER STRANDED GROUND WIRE (NO. 6 A.W.G.)
- OO PP QQ RR — VIDEO DETECTOR CABLE
- SS TT — 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- NML — NON-INVASIVE MICROLOOP PROBE
- ML — MICROLOOP PROBE
- LW — LOOP WIRE
- + — ¾ IN x 10 FT. GROUND ROD
- EPS — EXISTING OVERHEAD POWER SERVICE
- PPS — PROPOSED UNDERGROUND POWER SERVICE TO BE INSTALLED BY SOUTHERN MARYLAND ELECTRIC COOPERATIVE
- EXISTING VIDEO DETECTOR CAMERA
- RELOCATED VIDEO DETECTOR CAMERA
- 30 FT. LIGHTING STRUCTURE

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	←G	←G	R	R	R	R	R	R	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	←R	←R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	
PHASE 1 + 6 CHANGE	←Y	←Y	G	G	←R	←R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	
PHASE 2 + 5	←R	←R	R	R	←G	←G	G	G	R	R	R	R	DW	DW	DW	DW	DW	DW	
PHASE 2 + 5 CHANGE	←R	←R	R	R	←Y	←Y	G	G	R	R	R	R	DW	DW	DW	DW	DW	DW	
PHASE 2 + 6	←R	←R	G	G	←R	←R	G	G	R	R	R	R	W	W	DW	DW	W	W	
PED CLEARANCE	←R	←R	G	G	←R	←R	G	G	R	R	R	R	FDW	FDW	DW	DW	FDW	FDW	
PHASE 2 + 6 CHANGE	←R	←R	Y	Y	←R	←R	Y	Y	R	R	R	R	DW	DW	DW	DW	DW	DW	
PHASE 3	←R	←R	R	R	←R	←R	R	R	G/←G	G	R	R	DW	DW	DW	DW	DW	DW	
PHASE 3 CHANGE	←R	←R	R	R	←R	←R	R	R	Y	Y	R	R	DW	DW	DW	DW	DW	DW	
PHASE 3 ALT	←R	←R	R	R	←R	←R	R	R	G/←G	G	R	R	DW	DW	W	W	DW	DW	
PED CLEARANCE	←R	←R	R	R	←R	←R	R	R	G/←G	G	R	R	DW	DW	FDW	FDW	DW	DW	
PHASE 3 ALT CHANGE	←R	←R	R	R	←R	←R	R	R	Y	Y	R	R	DW	DW	DW	DW	DW	DW	
PHASE 4	←R	←R	R	R	←R	←R	R	R	R	R	G/←G	G	DW	DW	DW	DW	DW	DW	
PHASE 4 CHANGE	←R	←R	R	R	←R	←R	R	R	R	R	Y	Y	DW	DW	DW	DW	DW	DW	
FLASHING OPERATION	FL/RA	FL/RA	FL/Y	FL/Y	FL/RA	FL/RA	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	DARK	DARK	DARK	DARK	DARK	DARK	

EQUIPMENT LIST 'A'

EQUIPMENT TO BE FURNISHED BY THE SHA.

CAT CODE	QUANTITY	DESCRIPTION
900000	1 EA	EIGHT-PHASE, FULL TRAFFIC ACTUATED, AND SOLID STATE DIGITAL CONTROLLER WITH SYSTEM PACKAGE IN A NEMA SIZE '6' BASE MOUNTED CABINET
973023	194 SF	SHEET ALUMINUM SIGNS
		2 EACH - D3-2 SIGN (72 IN. X 16 IN.) MAST ARM MOUNT
		2 EACH - D3-2 SIGN (66 IN. X 16 IN.) MAST ARM MOUNT
		2 EACH - D3-2 SIGN (48 IN. X 16 IN.) MAST ARM MOUNT
		1 EACH - R3-6L SIGN (30 IN. X 36 IN.) MAST ARM MOUNT
		2 EACH - R3-5L SIGN (30 IN. X 36 IN.) MAST ARM MOUNT
		2 EACH - M95-1 SIGN (78 IN. X 24 IN.) MAST ARM MOUNT
		1 EACH - ASSOCIATED SHIELD ASSEMBLY 'WEST, MD 6, LEFT ARROW' 48 IN. X 75 IN. POLE MOUNT
		1 EACH - ASSOCIATED SHIELD ASSEMBLY 'WEST, MD 6, RIGHT ARROW' 48 IN. X 75 IN. POLE MOUNT
		1 EACH - ASSOCIATED SHIELD ASSEMBLY 'EAST, MD 6, LEFT ARROW' 48 IN. X 75 IN. POLE MOUNT
		1 EACH - ASSOCIATED SHIELD ASSEMBLY 'EAST, MD 6, RIGHT ARROW' 48 IN. X 75 IN. POLE MOUNT

EQUIPMENT LIST 'B'

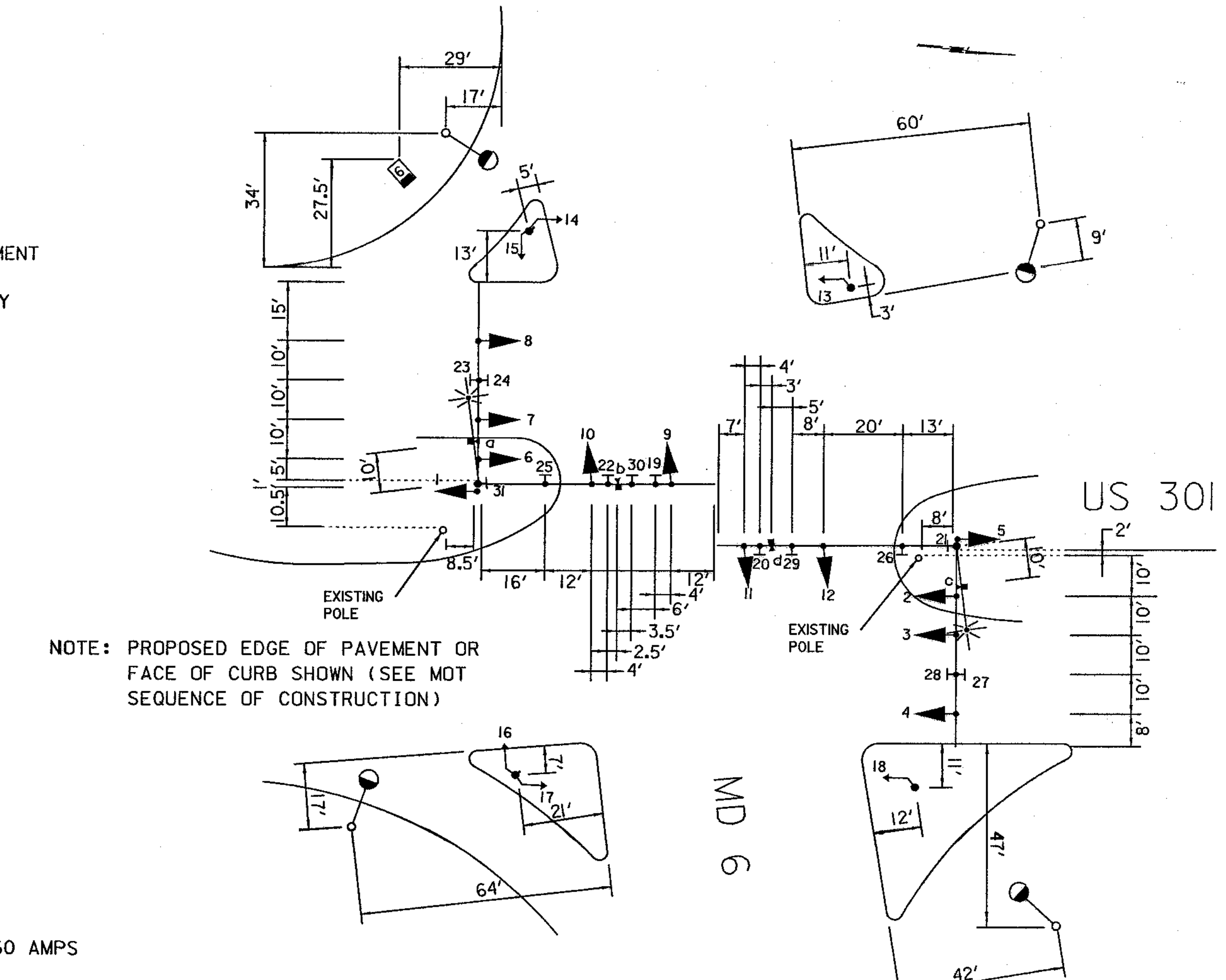
EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR.

CAT CODE	QUANTITY	DESCRIPTION
120500	1 LS	MAINTENANCE OF TRAFFIC
203030	6 CY	TEST PIT EXCAVATION
585620	530 LF	12 INCH HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
585624	130 LF	24 INCH HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
800000	1 LS	REMOVE AND DISPOSE OF EXISTING TRAFFIC SIGNAL EQUIPMENT
800000	430 LF	PULL AND RE-ROUTE 12-PAIR COMMUNICATION CABLE, JELLY FILLED (NO. 19 AWG)
800000	4 EA	RELOCATE VIDEO DETECTOR CAMERA FROM EXISTING POLE TO PROPOSED MAST ARM
801003	4 CY	CONCRETE FOR LIGHT FOUNDATION
801004	14 CY	CONCRETE FOR SIGNAL FOUNDATION
802501	820 LF	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
805011	50 LF	1 INCH ELECTRICAL CONDUIT - GALVANIZED SLEEVE
805115	60 LF	3 INCH SCHEDULE 80 RIGID PVC CONDUIT - BORED
805135	325 LF	3 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
805140	20 LF	4 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
805150	300 LF	3 INCH SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED
805155	450 LF	4 INCH SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED
805160	50 LF	1 INCH LIQUID-TIGHT NON-METALLIC CONDUIT FOR DETECTOR SLEEVE
807400	1 EA	ELECTRICAL UTILITY SERVICE EQUIPMENT 120/240 VOLTS 60 AMPS
808037	4 EA	30 FOOT LIGHT STRUCTURE - 10 FOOT BRACKET ARM
810550	2 EA	MICROLOOP PROBE, 500 FOOT LEAD IN CABLE
810555	2 EA	MICROLOOP PROBE, 1000 FOOT LEAD IN CABLE
810605	4 EA	NONINVASIVE PROBE, 1000 FOOT LEAD-IN
811001	16 EA	ELECTRICAL HANDHOLE
813015	194 SF	INSTALL OVERHEAD SIGN

EQUIPMENT LIST 'B' (CONTINUED)

EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR.

CAT CODE	QUANTITY	DESCRIPTION
816005	2 EA	CONTROL CABLE, 250 FOOT, VIDEO DETECTION CAMERA TO CONTROLLER
816010	2 EA	CONTROL CABLE, 500 FOOT, VIDEO DETECTION CAMERA TO CONTROLLER
818010	4 EA	14 FOOT BREAKAWAY PEDESTAL POLE
818050	2 EA	STEEL POLE WITH TWIN 50 FOOT AND 60 FOOT MAST ARMS
821002	4 EA	BREAKAWAY BASE SUPPORT SYSTEM FOR LIGHTING STRUCTURE
831010	6 EA	250 WATT HIGH PRESSURE SODIUM LAMP AND LUMINAIRE (WITH PHOTOCELL)
837001	11 EA	GROUND ROD -¾ INCH DIAMETER X 10 FOOT LENGTH
860272	38 EA	12 INCH VEHICULAR TRAFFIC SIGNAL HEAD SECTION
860278	12 EA	12 INCH PEDESTRIAN SIGNAL HEAD SECTION POLE MOUNT
861104	950 LF	ELECTRICAL CABLE - 2 CONDUCTOR (ALUMINUM SHIELDED)
861105	340 LF	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)
861107	1,500 LF	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)
861108	1,500 LF	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)
861116	1,625 LF	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 AWG)
862101	540 LF	LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO. 14 AWG)
862102	410 LF	SAW CUT FOR SIGNAL (LOOP DETECTOR)
865001	2 EA	PUSH BUTTON AND SIGN
866104	2 EA	20 FOOT LIGHTING ARM ON SIGNAL STRUCTURE
871117	1 EA	INSTALL EIGHT PHASE (FULLY ACTUATED) CONTROLLER AND CABINET - BASE MOUNT



NOTE: PROPOSED EDGE OF PAVEMENT OR FACE OF CURB SHOWN (SEE MOT SEQUENCE OF CONSTRUCTION)

SIGNAL POLE/LIGHT POLE/SIGNAL HEAD/CAMERA/SIGN LAYOUT

NOT TO SCALE

SS-2

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

US 301 (CRAIN HIGHWAY) AND
MD 6 (PORT TOBACCO RD/CHARLES ST)
GENERAL INFORMATION

DRAWN BY:	M. THOMPSON	F.A.P. NO.	SEE TITLE SHEET	TS NO. 82-K	SHEET NO.
CHECKED BY:	B. BIDDLE	S.H.A. NO.	CH6645170		
SCALE:	NONE	COUNTY:	CHARLES	T.I.M.S. NO. F-362	
DATE:	MARCH 2003	LOG MILE:	08030144.99		11 OF 14

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