

PROJECT DESCRIPTION
 THIS PROJECT INVOLVES RECONSTRUCTION OF THE TRAFFIC SIGNAL AT THE INTERSECTION OF MD 528 & 136TH STREET INCLUDING APS PUSHBUTTONS, LED COUNTDOWN PEDESTRAIN SIGNAL HEADS, LED TRAFFIC SIGNAL HEADS AND VIDEO DETECTION. MD 528 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

INTERSECTION OPERATION

THIS INTERSECTION WILL OPERATE IN A NEMA SIX-PHASE FULL-TRAFFIC-ACTUATED MODE WITH ALTERNATE PEDESTRIAN PHASES FOR THE NORTH AND SOUTH LEGS OF THE INTERSECTION. THE MD 528 LEFT TURNS OPERATE IN EXCLUSIVE-PERMISSIVE PHASING.

CONTROLLER REQUIREMENTS

A FULL-TRAFFIC-ACTUATED EIGHT PHASE TRAFFIC SIGNAL CONTROLLER WITH TELEMETRY CABLE HOUSED IN A BASE MOUNTED CABINET SHALL BE FURNISHED BY SHA AND INSTALLED BY THE CONTRACTOR. VIDEO DETECTION INTERFACE EQUIPMENT SHALL BE FURNISHED BY SHA. AN APS CENTRAL CONTROL UNIT SHALL BE FURNISHED BY THE CONTRACTOR AND INSTALLED BY SHA.

SPECIAL NOTES

APS WILL FUNCTION AS FOLLOWS:

TO CROSS COASTAL HIGHWAY (SOUTH LEG):

A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT MESSAGE WILL BE "WAIT TO CROSS COASTAL AT 136TH. WAIT."

B. WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

TO CROSS COASTAL HIGHWAY (NORTH LEG):

A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT MESSAGE WILL BE "WAIT TO CROSS COASTAL AT 136TH. WAIT. CROSSWALK ANGLES RIGHT."

B. WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

CONTACT PERSONS FOR DISTRICT #1 ARE AS FOLLOWS:

MR. KENNETH CIMINO
 ASSISTANT DISTRICT ENGINEER-TRAFFIC
 PHONE: (410) 677-4040

MR. GREG HOLSEY
 ASSISTANT DISTRICT ENGINEER - CONST.
 PHONE: (410) 677-4020

MR. BRUCE POOLE
 DISTRICT UTILITY ENGINEER
 PHONE: (410) 677-4082

MR. JAMES WRIGHT
 ASSISTANT DISTRICT ENGINEER - MAINT.
 PHONE: (410) 677-4010

MR. TERRY MCGEAN
 TOWN OF OCEAN CITY - CITY ENGINEER
 PHONE: (410) 289-8845

CONTACT PERSONS FOR OOTS ARE AS FOLLOWS:

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

MR. ROBERT SNYDER
 ASSISTANT DIVISION CHIEF
 TRAFFIC OPERATIONS
 PHONE: (410)787-7630

MR. JOHN GOVER
 OFFICE OF HIGHWAY DESIGN
 PHONE: (410) 545-8766

MR. ED RODENHIZER
 CHIEF, SIGNAL OPERATIONS
 PHONE: (410)787-7650

MR. EUGENE BAILEY
 CHIEF, SIGN OPERATIONS
 PHONE: (410)787-7676

EQUIPMENT LIST "A"

A. EQUIPMENT TO BE SUPPLIED BY THE SHA.

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
9043	CONTROLLER CABINET, SIZE 5	EA	1
9044	CONTROLLER CABINET, SIZE 6 WITH VIDEO DETECTION INTERFACE EQUIPMENT: 1-4 CAMERAS	EA	1
9571	SHEET ALUMINUM MAST ARM / POLE MOUNTED SIGN 4 - D-3(1) (72"X16") 4 - R10-3(1) (9"X15")	SF	36

WIRING KEY

Q,R,S,T	2-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)	Y,AA	EXISTING 12-PAIR COMMUNICATION CABLE (NO. 19 AWG) SELF-SUPPORTING OVERHEAD TO BE DISCONNECTED, PULLED BACK & REROUTED
C,F,I,L,M,N,O,P	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)	PF	RELOCATED OVERHEAD POWER SERVICE BY DELMARVA
A,B,D,E,G,H,J,K	7-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)	Z	STRANDED BARE COPPER GROUND WIRE (NO. 6 AWG)
BB	1-CONDUCTOR ELECTRICAL CABLE (NO. 4 AWG) 3 RUNS	+	PROPOSED GROUND ROD
U,V,W,X	VIDEO DETECTION CAMERA CABLE (3-CONDUCTOR, NO. 18 AWG)		

EQUIPMENT LIST "B"

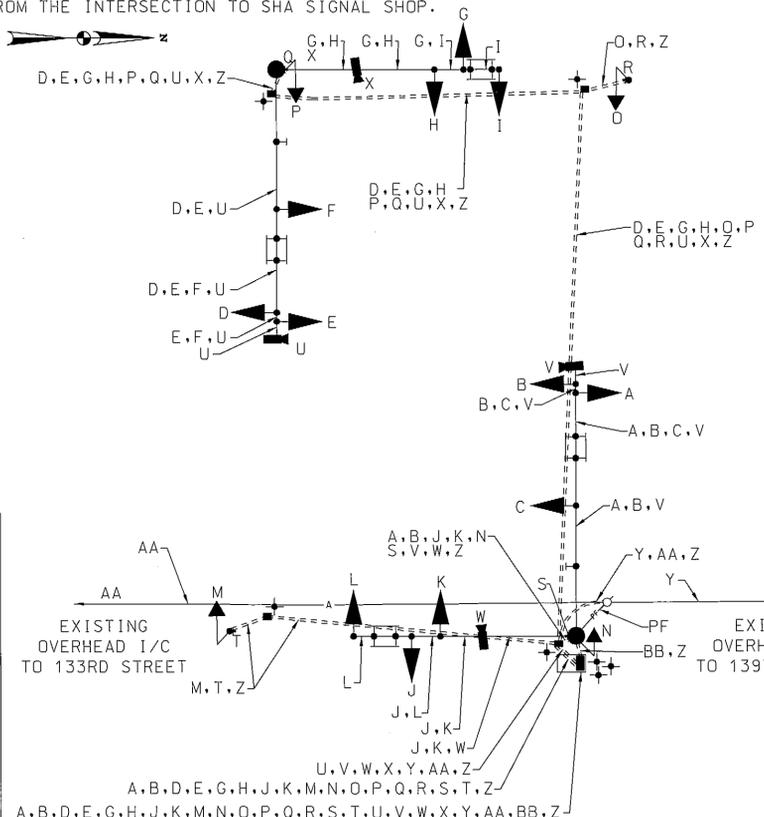
B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR.

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
1003	MAINTENANCE OF TRAFFIC (PAID UNDER MD 528 @ 85TH ST)	EA	0
2002	TEST PIT EXCAVATION	CY	5
5005	REMOVAL OF EXISTING PERMANENT PAVEMENT LINE MARKINGS ANY WIDTH	LF	1180
5006	F & I 12" WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF	1020
5007	F & I 24" WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF	160
6001	F & I STANDARD TYPE A COMBINATION CURB AND GUTTER 12" GUTTER PAN 8" DEPTH	LF	319
6002	F & I 5" CONCRETE SIDEWALK	SF	1079
6003	F & I DETECTABLE WARNING SURFACE FOR CURB RAMPS	SF	90
8001	F & I 2 WIRE CENTRAL CONTROL UNIT	EA	1
8003	F & I 8" LED SIGNAL HEAD SECTION	EA	6
8007	F & I AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION & SIGNS	EA	4
8008	F & I BREAKAWAY PEDESTAL POLE (ANY SIZE)	EA	2
8021	REMOVE & DISPOSE MATERIAL AND EQUIPMENT PER ASSIGNMENT	EA	1
8022	F & I TWIN MAST ARM POLE & 50'/60' MAST ARMS ANY 'T' DIMENSION	EA	2
8025	F & I VIDEO DETECTION CAMERA AND CABLE UP TO 500'	EA	4
8027	DISCONNECT, PULL-BACK & REROUTE CABLES	LF	130
8030	12-PAIR COMMUNICATION CABLE, SELF-SUPPORTING (OVERHEAD)	LF	2900*
8032	F & I SCHEDULE 80 RIGID PVC CONDUIT UP TO 4" - BORED	LF	300
8034	F & I SCHEDULE 80 RIGID PVC CONDUIT UP TO 4" - TRENCHED	LF	165
8036	INSTALL OVERHEAD OR GROUND MOUNTED SIGN (INCLUDING ALL HARDWARE)	SF	36
8038	F & I NO. 6 AWG STRANDED BARE COPPER GROUND WIRE	LF	400
8040	F & I WEATHER HEAD, 3"	EA	2
8042	F & I ELECTRICAL UTILITY SERVICE EQUIPMENT 120/240 VOLTS 60 AMPS	EA	1
8043	F & I ELECTRICAL CABLE - 1 CONDUCTOR NO. 4 AWG - THHN/THWN	LF	100
8045	F & I ELECTRICAL HANDHOLE	EA	4
8049	F & I 3" DIAMETER POLYVINYL CHLORIDE CONDUIT, SCHEDULE 80, RISER	LF	30
8050	F & I 12" LED VEHICULAR TRAFFIC SIGNAL HEAD SECTION	EA	10
8054	F & I ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)	LF	520
8056	F & I ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)	LF	620
8057	F & I ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)	LF	1620
8065	INSTALL CONTROLLER AND CABINET - BASE MOUNT	EA	2
8067-A	RELOCATE EXISTING TRAFFIC SIGNAL (ENTIRE CLUSTER)	EA	8
8068-A	RELOCATE EXISTING PED SIGNAL	EA	4
8071-A	RELOCATE EXISTING SIGNS	EA	2
8074-A	F & I 6" X 6" LANDSCAPE TIMBERS	LF	53
NEG	MONOLITHIC CONCRETE MEDIAN 4 FEET 0 INCH WIDE TYPE A-1	LF	6

EQUIPMENT LIST "C"

C. EQUIPMENT TO BE REMOVED BY THE CONTRACTOR AND DELIVERED TO THE STATE HIGHWAY ADMINISTRATION, 7491 CONNELLEY DRIVE, HANOVER, MARYLAND 21076.

SHA FORCES SHALL REMOVE THE CONTROLLER AND ALL AUXILIARY EQUIPMENT FROM THE CONTROLLER CABINET. THE CABINET AND ALL OTHER MATERIALS TO BE REMOVED BY THE CONTRACTOR SHALL BECOME PROPERTY OF THE CONTRACTOR. CONTRACTOR SHALL RETURN ALL VIDEO DETECTION CAMERAS REMOVED FROM THE INTERSECTION TO SHA SIGNAL SHOP.



TOD No: XX443-22
 SHA No: WO409AS1jCSb
 MD 85th St., MD 528 @ 136th St.

RK&K
 Rummel, Klepper & Kahl, LLP
 81 MOSHER STREET | BALTIMORE, MD 21217
 PR: (410) 728-2922 FAX: (410) 728-3160
 Engineers Construction Managers Planners Scientists
 www.rkk.com

PHASING CHART

NO PHASE CHANGE

GENERAL NOTES

- ALL EXISTING FOUNDATION TOPS WITHIN EXISTING SIDEWALK SHALL BE REMOVED 2" BELOW SIDEWALK GRADE AND NEW SIDEWALK SHALL BE INSTALLED TO BE FLUSH WITH FINAL GRADE.
- ALL PROPOSED FOUNDATION TOPS SHALL BE INSTALLED FLUSH WITH SIDEWALK GRADE.
- ACCESSIBLE PEDESTRIAN CONTROL EQUIPMENT SHALL BE DELIVERED TO THE SHA SIGNAL SHOP FOR TESTING AND PROGRAMMING PRIOR TO INSTALLATION. CONTACT MR. EDWARD RODENHIZER AT 410-787-7652 TO COORDINATE.
- LOCATION OF ACCESSIBLE PEDESTRIAN SIGNAL PUSHBUTTONS MUST MEET LOCATION REQUIREMENTS OF MUTCD SECTION 4E.09 AND FIGURE 4E.2 AND THE NCHRP PUBLICATION, "ACCESSIBLE PEDESTRIAN SIGNALS: GUIDE TO BEST PRACTICE." IF NOT MET, THE CONTRACTOR IS TO STOP WORK ON PUSHBUTTON LOCATIONS UNTIL A DESIGN WAIVER IS OBTAINED, APPROVED BY THE DIRECTOR, OFFICE OF TRAFFIC AND SAFETY.
- PUSHBUTTONS ARE TO BE LOCATED SO THAT THEY CAN BE ACTIVATED BY A PERSON IN A WHEELCHAIR REACHING LESS THAN 18" FROM A 60" X 60" LEVEL LANDING AREA WITH A CROSS SLOPE OF LESS THAN OR EQUAL TO 2%.
- THE 10' SEPARATION BETWEEN PUSHBUTTONS IS TO BE MEASURED FROM FACE OF PUSHBUTTON TO FACE OF PUSHBUTTON, NOT CENTER TO CENTER OF POLE.
- PUSHBUTTON ARROWS AND SIGNS ARE TO BE ORIENTED PARALLEL TO THE CROSSING FOR WHICH THEY ARE INTENDED.
- ANY HARDWARE NECESSARY FOR THE INSTALLATION OF RELOCATED TRAFFIC SIGNAL EQUIPMENT SHALL BE INCIDENTAL TO THE PERTINANT RELOCATE PAY ITEM.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR TERMINATING ALL SIGNAL CABLE TO THE APPROPRIATE TERMINALS AND PROPERLY LABEL EACH CABLE.
- THE CONTRACTOR SHALL COORDINATE WITH DISTRICT 1 TRAFFIC TO COORDINATE TRAFFIC SIGNAL TURN OFF AND TEMPORARY STOP CONTROL. CONTRACTOR SHALL VERIFY ANY EVENT OR DATE RESTRICTIONS PRIOR TO TRAFFIC SIGNAL TURN OFF.
- UNDERGROUND UTILITIES SHOWN ON THESE PLANS ARE SCHEMATIC ONLY AND MAY NOT BE COMPLETE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING "MISS UTILITY" PRIOR TO CONSTRUCTION SO THAT ALL UTILITIES MAY BE LOCATED IN THE FIELD. IF THE CONTRACTOR PERCEIVES THAT A CONFLICT BETWEEN THE UTILITIES AND THE TRAFFIC SIGNAL WILL OCCUR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY SO THAT THE CONFLICT MAY BE RESOLVED.
- THE CONTRACTOR SHALL VERIFY ALL POLE LOCATIONS PRIOR TO INSTALLATION.
- VIDEO DETECTION CAMERA LOCATION/ALIGNMENT SHALL BE COORDINATED WITH THE ENGINEER.
- THE CONTRACTOR SHALL CAP AND ABANDON CONDUIT FEEDING SIGNAL EQUIPMENT THAT IS REMOVED.
- ADA REQUIRES THAT ANY ABRUPT CHANGE IN ELEVATION IN SIDEWALK BE LESS THAN 1/4".
- VIDEO DETECTION CAMERAS FOR EAST AND WEST APPROACHES SHALL BE CHECKED IN THE FIELD BY THE ENGINEER PRIOR TO PERMANENT INSTALLATION TO ELIMINATE ANY POSSIBLE TELECOMMUNICATION CABLE CONFLICTS.
- BRUCE POOLE AND OCEAN CITY DPW SHOULD BE CONTACTED A MINIMUM OF TWO WEEKS PRIOR TO STARTING WORK ON THIS INTERSECTION TO COORDINATE FIRE HYDRANT AND IRRIGATION SYSTEM CONTROL RELOCATION. REFER TO SIGNAL PLAN SHEET FOR CONTACT AND PHONE NUMBER.
- THE CONTRACTOR SHALL ENSURE ALL UNDERGROUND UTILITIES ARE MARKED PRIOR TO TRAFFIC SIGNAL STAKEOUT. THE CONTRACTOR SHALL ENSURE ALL UNDERGROUND UTILITIES ARE MARKED AND STAKEOUT HAS OCCURRED PRIOR TO TRAFFIC SIGNAL TURN OFF.

SHA STATE OF MARYLAND
 DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION
 OFFICE OF TRAFFIC & SAFETY
 TRAFFIC ENGINEERING DESIGN DIVISION
 MD 528 (COASTAL HWY.) AT 136TH ST.
 OCEAN CITY, MARYLAND

REVISIONS		GENERAL INFORMATION SHEET	
SCALE	NONE	DATE	SEPTEMBER 2010
CONTRACT NO.	XX4435185	DESIGNED BY	BJG
COUNTY	WORCESTER	DRAWN BY	BJG
LOGMILE	23052800.69	CHECKED BY	BLB
TMS NO.	K548	FAP NO.	
TOD NO.		TS NO. 14348-GI	DRAWING SG-4 OF 4
			SHEET NO. 5 OF 8