PROJECT DESCRIPTION

GENERAL

THIS PROJECT INVOLVES UPGRADING THE EXISTING TRAFFIC SIGNAL AT MD 173 AND BAR HARBOR ROAD TO APS/CPS AND HANDICAP RAMPS. ALL TRAFFIC SIGNAL HEADS WILL BE UPGRADED TO L.E.D.'S. ALSO, THE TRAFFIC SIGNAL HEADS FOR THE EMERGENCY VEHICLE SIGNAL AT RIVERIA BEACH VFD WILL BE UPGRADEDTO L.E.D.'S. MD 173 (FT. SMALLWOOD RD.) IS CONSIDERED TO RUN IN A NORTH-SOUTH DIRECTION.

INTERSECTION OPERATION

AN EIGHT PHASE FULL-TRAFFIC -ACTUATED CONTROLLER HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET IS TO BE INSTALLED AT THIS LOCATION. THE EXISTING CABINET & CONTROLLER AT THE VFD WILL BE UTILIZED. THE INTERSECTION WILL OPERATE IN A NEMA SIX PHASE MODE. THE NORTHBOUND MD 173 LEFT TURN WILL OPERATE AS AN EXCLUSIVE LEFT TURN PHASE WITH THE MD 173 AND RIVIERA DRIVE APPROACHES OPERATING CONCURRENTLY.THE BAR HARBOR ROAD LEFT TURN WILL OPERATE AS EXCLUSIVE/PERMISSIVE PHASE WITH THE MD 173 AND BAR HARBOR ROAD APPROACHES OPERATING CONCURRENTLY. THE SOUTHBOUND MD 173 RIGHT TURN WILL OPERATE AS A CONCURRENT MOVEMENT TO THE NORTHBOUND MD 173 LEFT TURN PHASE. THE EAST LEG OF THE INTERSECTION WILL HAVE A CURRENT PEDESTRIAN PHASE AND THE NORTH LEG OF THE INTERSECTION WILL HAVE AN ALTERNATE PEDESTRIAN PHASE. THIS INTERSECTION WILL BE COORDINATED WITH THE EXISTING FIREHOUSE SIGNAL FOR THE RIVERA BEACH VFD. UPON ACTUATION BY THE FIREHOUSE THE NORTH AND SOUTH MD 173 APPROACHES IN FRONT OF THE VFD WILL BE STOPPED. THE SIDEROAD APPROACH OF RUGBY ROAD WILL GO FROM FLASHING RED TO SOLID RED INDICATIONS AND THE NORTHBOUND MD 173 APPROACH AT THE INTERSECTION WILL BE CALLED WITHOUT OVERLAP "A".

EQUIPMENT LIST FOR AREA WIDE CONTRACT # XX4485185

A. EQUIPMENT TO BE SUPPLIED BY THE ADMINISTRATION.

ITEM	QUANTITY	UNIT	DESCRIPTION
9042	1	EA	[UPDATED] CONTROLLER ASC II WITH TELEMETRY
9044	1	EA	[UPDATED] CONTROLLER CABINET, SIZE 6
9086	1	EA	[UPDATED] VIDEO DETECTION INTERFACE EQUIPMENT: 1-4 CAMERAS
9571	12	SF	[UPDATED] SHEET ALUMINUM MAST ARM/POLE MOUNT
	4	EA	R10 - 3 (1) 9" x 15" - "PUSHBUTTON TO CROSS" SIGN
	8	EA	M95-1 (MOD) 24" x 50" - MAST ARM MOUNT

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

ITEM	QUANTITY	UNIT	DESCRIPTION
1001	2	EA	MAINTENANCE OF TRAFFIC PER ASSIGNMENT
1003	1100	LF	REMOVAL OF EXISTING PAVEMENT LINE MARKINGS, ANY WIDTH
2001	1	CY	CLASS 2 EXCAVATION
2002	1	CY	TEST PIT EXCAVATION
5001	190	LF	5 INCH LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS - ANY COLOR
5002	240	LF	12 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
6001	150	LF	STANDARD TYPE A COMBINATION CURB AND GUTTER 12 INCH GUTTER PAN 8 INCH DEPTH
6002	710	SF	5 INCH CONCRETE SIDEWALK
8001	62	EA	12 INCH (R, Y, G) LED SIGNAL HEAD SECTION
8003	1	EA	2 WIRE CENTRAL CONTROL UNIT
8007	16	EA	8 INCH LED SIGNAL (R,Y,G) HEAD SECTION
8010	4	EA	AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION AND SIGNS
8011	4	EA	BREAKAWAY PEDESTAL POLE (ANY SIZE)
8012	2	EA	CONDUIT BEND IN EXISTING BASE
8013	1	EA	EMBEDDED METERED SERVICE PEDESTAL
8014	4	EA	LED 16 INCH COUNTDOWN PEDESTRIAN SIGNAL HEAD
8017	1	EA	REMOVE AND DISPOSE OF EQUIPMENT (PER ASSIGNMENT)
8024	370	LF	DISCONNECT, PULL-BACK AND REROUTE CABLES
8026	510	LF	UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT-BORED
8027	280	LF	UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT-SLOTTED
8028	270	LF	UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED
8029	70	SF	DETECTABLE WARNING SURFACES
8034	380	LF	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
8039	60	LF	ELECTRICAL CABLE 1-CONDUCTOR NO. 4 AWG-THHN/THWN
8047	12	SF	INSTALL OVERHEAD SIGN
8048	4	EA	VIDEO DETECTION CAMERA AND CABLE UP TO 500 FT.
8051	600	LF	12-PAIR COMMUNICATION CABLE, JELLYFILLED (UNDERGROUND)
8056	750	LF	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)
8058	850	LF	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)
8059	2370	LF	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)

PROJECT CONTACTS

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Mr. John S. Mays
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Phone: (410) 841 - 1005

Mr. Richard L. Daff, Sr.
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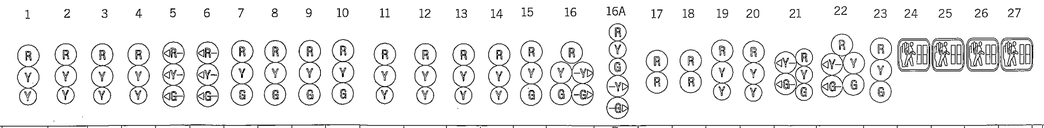
Mr. Ed Rodenhizer
Supervisor, Signal Operations
Phone: (410)-787-7652

Power By BGE
Pending

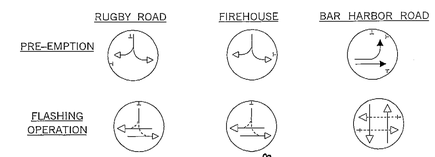
PHASE CHART



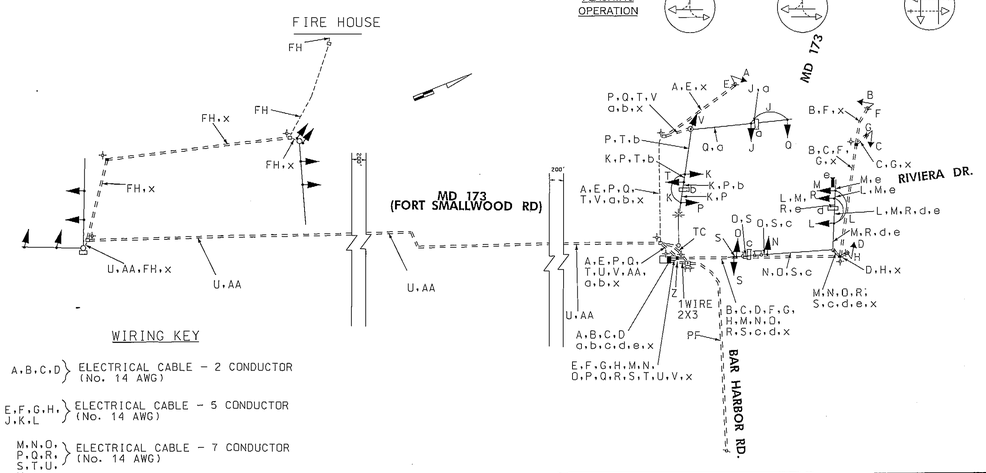
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	16A	17	18	19	20	21	22	23	24	25	26	27	
PHASE 1 & 6	8" FL/Y	8" FL/Y	8" FL/Y	8" FL/Y	←G—	←G—	G	G	R	R	8" FL/Y	8" FL/Y	8" FL/Y	8" FL/Y	R	R/←G→	R/←G→	FL /R	FL /R	FL /R	FL /R	R	R	R	DW	DW	WK	WK	
1 & 6 CHANGE	8" FL/Y	8" FL/Y	8" FL/Y	8" FL/Y	←Y—	←Y—	G	G	R	R	8" FL/Y	8" FL/Y	8" FL/Y	8" FL/Y	R	R/←Y→	R/←Y→	FL /R	FL /R	FL /R	FL /R	R	R	R	DW	DW	WK	WK	
PHASE 2 & 6	8" FL/Y	8" FL/Y	8" FL/Y	8" FL/Y	←R—	←R—	G	G	G	G	8" FL/Y	8" FL/Y	8" FL/Y	8" FL/Y	R	R	R	FL /R	FL /R	FL /R	FL /R	R	R	R	WK	WK	DW	DW	
PED CLEARANCE	8" FL/Y	8" FL/Y	8" FL/Y	8" FL/Y	←R—	←R—	G	G	G	G	8" FL/Y	8" FL/Y	8" FL/Y	8" FL/Y	R	R	R	FL /R	FL /R	FL /R	FL /R	R	R	R	FL/DW	FL/DW	DW	DW	
2 & 6 CHANGE	8" FL/Y	8" FL/Y	8" FL/Y	8" FL/Y	←R—	←R—	Y	Y	Y	Y	8" FL/Y	8" FL/Y	8" FL/Y	8" FL/Y	R	R	R	FL /R	FL /R	FL /R	FL /R	R	R	R	DW	DW	DW	DW	
PHASE 3 & 8	8" FL/Y	8" FL/Y	8" FL/Y	8" FL/Y	←R—	←R—	R	R	R	R	8" FL/Y	8" FL/Y	8" FL/Y	8" FL/Y	R	R	R	FL /R	FL /R	FL /R	FL /R	←G→/G	←G→/G	G	DW	DW	DW	DW	
3 & 8 CHANGE	8" FL/Y	8" FL/Y	8" FL/Y	8" FL/Y	←R—	←R—	R	R	R	R	8" FL/Y	8" FL/Y	8" FL/Y	8" FL/Y	R	R	R	FL /R	FL /R	FL /R	FL /R	←Y→/G	←Y→/G	G	DW	DW	DW	DW	
PHASE 4	8" FL/Y	8" FL/Y	8" FL/Y	8" FL/Y	←R—	←R—	R	R	R	R	8" FL/Y	8" FL/Y	8" FL/Y	8" FL/Y	G	G	G	FL/R	FL /R	FL /R	FL /R	G	G	G	DW	DW	DW	DW	
4 & 8 CHANGE	8" FL/Y	8" FL/Y	8" FL/Y	8" FL/Y	←R—	←R—	R	R	R	R	8" FL/Y	8" FL/Y	8" FL/Y	8" FL/Y	Y	Y	Y	FL /R	FL /R	FL /R	FL /R	Y	Y	Y	DW	DW	DW	DW	
PHASE 8 ALT	8" FL/Y	8" FL/Y	8" FL/Y	8" FL/Y	←R—	←R—	R	R	R	R	8" FL/Y	8" FL/Y	8" FL/Y	8" FL/Y	G	G	G	FL /R	FL /R	FL /R	FL /R	G	G	G	DW	DW	WK	WK	
PED CLEARANCE	8" FL/Y	8" FL/Y	8" FL/Y	8" FL/Y	←R—	←R—	R	R	R	R	8" FL/Y	8" FL/Y	8" FL/Y	8" FL/Y	G	G	G	FL /R	FL /R	FL /R	FL /R	G	G	G	DW	DW	FL/DW	FL/DW	
PHASE 8 ALT CHANGE	8" FL/Y	8" FL/Y	8" FL/Y	8" FL/Y	←R—	←R—	R	R	R	R	8" FL/Y	8" FL/Y	8" FL/Y	8" FL/Y	Y	Y	Y	FL /R	FL /R	FL /R	FL /R	Y	Y	Y	DW	DW	DW	DW	
PRE-EMPTION WARNING	8" QUICK FL/Y	8" QUICK FL/Y	8" QUICK FL/Y	8" QUICK FL/Y	1	1	1	1	1	1	8" QUICK FL/Y	8" QUICK FL/Y	8" QUICK FL/Y	8" QUICK FL/Y	1	1	1	R R	R R	FL /R	FL /R	1	1	1	DW	DW	DW	DW	SEE BELOW
PRE-EMPTION WARNING CHANGE	12" Y	12" Y	12" Y	12" Y	1	1	1	1	1	1	12" Y	12" Y	12" Y	12" Y	1	1	1	R R	R R	FL /R	FL /R	1	1	1	DW	DW	DW	DW	
PRE-EMPTION	12" R	12" R	12" R	12" R	←G—	←G—	G	R	R	R	12" R	12" R	12" R	12" R	R	R	R	R R	R R	12" FL/Y	12" FL/Y	R	R	R	DW	DW	DW	DW	
FLASHING OPERATION	8" FL/Y	8" FL/Y	8" FL/Y	8" FL/Y	FL/←R	FL/←R	FL /R	FL /R	FL /R	FL /R	8" FL/Y	8" FL/Y	8" FL/Y	8" FL/Y	FL /Y	FL /Y	FL /Y	FL /R	FL /R	FL /R	FL /R	FL /Y	FL /Y	FL /Y	DARK	DARK	DARK	DARK	SEE BELOW

PHASING NOTES:

1. AT THE END OF PRE-EMPTION WARNING, THE CURRENT PHASE BEING SERVICED AT MD 173 AND BAR HARBOR RD. WILL GO TO THAT PHASE CHANGE WITH PRE-EMPTION WARNING CHANGE.



WIRING DIAGRAM



WIRING KEY

A,B,C,D	ELECTRICAL CABLE - 2 CONDUCTOR (No. 14 AWG)
E,F,G,H, J,K,L	ELECTRICAL CABLE - 5 CONDUCTOR (No. 14 AWG)
M,N,O, P,Q,R, S,T,U, V	ELECTRICAL CABLE - 7 CONDUCTOR (No. 14 AWG)
AA	12 PAIR COMMUNICATION CABLE JELLY-FILLED (UNDERGROUND)
Z	ELECTRICAL CABLE - 1 CONDUCTOR No. 4 AWG THHN/THWN
a,b,c, d	VIDEO DETECTION CABLE
x	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
PF	POWER FEED
⏚	GROUND ROD
FH	EXISTING FIREHOUSE CABLE
TC	EXISTING TREY CABLE (PULL BACK AND RE-ROUTED)

TOD NO:XX 448-30
SHA NO:AA267A51/B51
MD 173@ BAR HARBOR RD

BRUDIS & ASSOCIATES, INC.
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STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

MD 173 (FT. SMALLWOOD RD.) AND BAR HARBOR RD. /RIVIERA DRIVE
TRAFFIC SIGNAL MODIFICATION

GENERAL INFORMATION PLAN SHEET

SCALE N/A ADVERTISED DATE ____ CONTRACT NO. XX4485185

DESIGNED BY R. SCOTT
DRAWN BY R. SCOTT
CHECKED BY J. BOLING
F.A.P. NO. ____
COUNTY ANNE ARUNDEL
LOGMILE 02017305.13
TIMS NO. J207
TOD NO. ____

TS NO. 13696/ 3063D | DRAWING - OF | SHEET NO. 4 OF 4

PLOTTED: Thursday, February 12, 2009 AT 12:55 PM
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BY: bdonoway