PROJECT DESCRIPTION

I. GENERAL

THIS PROJECT INVOLVES THE INSTALLATION OF APS/CPS EQUIPMENT AT MD 28 (MONTGOMERY AVENUE/ KEY WEST AVENUE) AND SHADY GROVE ROAD.
MD 28 IS ASSUMED TO RUN IN AN EAST/WEST DIRECTION.

II. INTERSECTION OPERATION

THE INTERSECTION OPERATES IN A NEMA EIGHT-PHASE, SEMI-TRAFFIC-ACTUATED MODE. THERE IS AN EXCLUSIVE LEFT TURN PHASE FOR BOTH THE EAST AND WEST BOUND MOVEMENTS OF MD 28. THE MD 28 THROUGH MOVEMENTS OPERATE CONCURRENTLY WITH THE PEDESTRIAN MOVEMENTS ACROSS THE NORTH AND SOUTH LEGS OF THE INTERSECTION. THERE IS AN EXCLUSIVE LEFT TURN MOVEMENT FOR BOTH THE NORTH AND SOUTHBOUND MOVEMENTS OF SHADY GROVE ROAD. THE SHADY GROVE MOVEMENT OPERATES CONCURRENTLY WITH AN ACTUATED PEDESTRIAN MOVEMENT ACROSS BOTH THE EAST AND WEST LEGS OF THE INTERSECTION.

III. PEDESTRIAN OPERATION

NAVIGATOR AUDIBLE PEDESTRIAN PUSHBUTTONS TO CROSS THE NORTH, SOUTH, EAST AND WEST LEGS OF THE INTERSECTION ARE TO BE PROVIDED. WHEN THE PEDESTRIAN LOCATES AND PRESSES THE PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL ANNOUNCE THE FOLLOWING MESSAGE:

NORTH: "WAIT TO CROSS SHADY GROVE AT KEY WEST/MONTGOMERY, WAIT."
SOUTH: "WAIT TO CROSS SHADY GROVE AT KEY WEST/MONTGOMERY, WAIT."
EAST: "WAIT TO CROSS MONTGOMERY AT SHADY GROVE, WAIT"
WEST: "WAIT TO CROSS KEY WEST AT SHADY GROVE, WAIT"

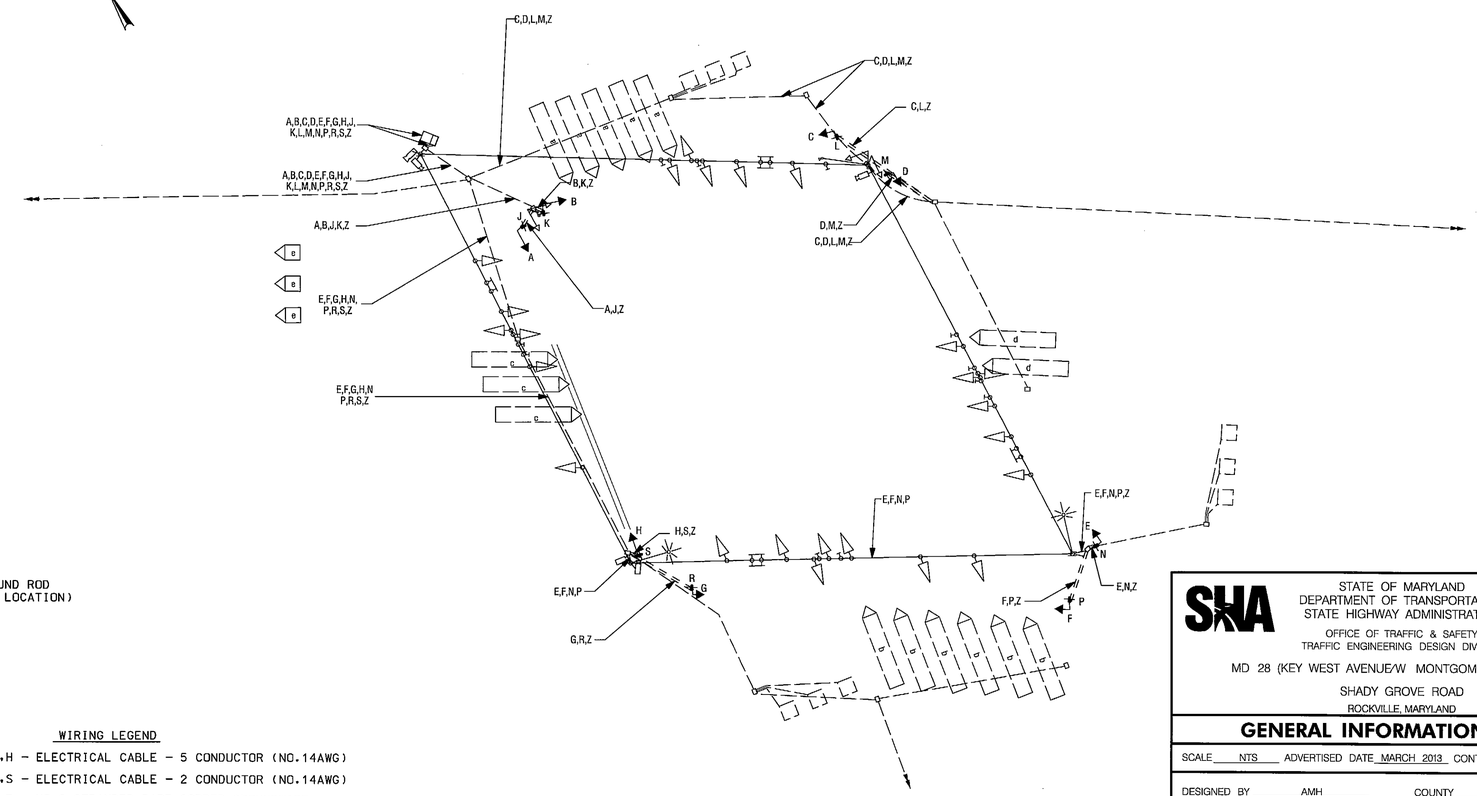
WHEN THE WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

C. ALL MATERIALS TO BE REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

PHASE CHART

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25,26	27,28	29-32
PHASE 1+5	◄G-	R	◄G-	◄G-	◄G-	R	R	◄G-	◄G-	◄G-	R	R	◄R-	R	R	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	DW	DW	DW
1+5 CHANGE TO PHASE 1 & 6 OR PHASE 2 & 5 OR PHASE 2 & 6																											
PHASE 1+6	◄G-	G	◄G-	◄G-	◄G-	G	G	◄R-	◄R-	◄R-	R	R	◄R-	R	R	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	DW	WK	DW
1 CHANGE	◄Y-	G	◄Y-	◄Y-	◄Y-	G	G	◄R-	◄R-	◄R-	R	R	◄R-	R	R	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	DW	WK	DW
PHASE 2+5	◄R-	R	◄R-	◄R-	◄R-	R	R	◄G-	◄G-	◄G-	G	G	◄R-	R	R	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	WK	DW	DW
5 CHANGE	◄R-	R	◄R-	◄R-	◄R-	R	R	◄Y-	◄Y-	◄Y-	G	G	◄R-	R	R	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	WK	DW	DW
PHASE 2+6	◄R-	G	◄R-	◄R-	◄R-	G	G	◄R-	◄R-	◄R-	G	G	◄R-	R	R	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	WK	WK	DW
PED CLEAR	◄R-	G	◄R-	◄R-	◄R-	G	G	◄R-	◄R-	◄R-	G	G	◄R-	R	R	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	FL/DW	FL/DW	DW
2+6 CHANGE	◄R-	Y	◄R-	◄R-	◄R-	Y	Y	◄R-	◄R-	◄R-	Y	Y	◄R-	R	R	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	DW	DW	DW
PHASE 3+7	◄R-	R	◄R-	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	◄G-	R	R	◄G-	◄G-	R	R	◄G-	◄G-	◄G-	R	R	DW	DW	DW
3 & 7 CHANGE TO PHASE 3 & 8 OR PHASE 4 & 7 OR PHASE 4 & 8																											
PHASE 3 & 8	◄R-	R	◄R-	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	◄G-	G	G	◄G-	◄G-	G	G	◄R-	◄R-	◄R-	R	R	DW	DW	DW
3 CHANGE	◄R-	R	◄R-	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	◄Y-	G	G	◄Y-	◄Y-	G	G	◄R-	◄R-	◄R-	R	R	DW	DW	DW
PHASE 4 & 7	◄R-	R	◄R-	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	◄R-	R	R	◄R-	◄R-	R	R	◄G-	◄G-	◄G-	G	G	DW	DW	DW
7 CHANGE	◄R-	R	◄R-	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	◄R-	R	R	◄R-	◄R-	R	R	◄Y-	◄Y-	◄Y-	G	G	DW	DW	DW
PHASE 4 & 8	◄R-	R	◄R-	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	◄R-	G	G	◄R-	◄R-	G	G	◄R-	◄R-	◄R-	G	G	DW	DW	DW
4 & 8 CHANGE	◄R-	R	◄R-	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	◄R-	Y	Y	◄R-	◄R-	Y	Y	◄R-	◄R-	◄R-	Y	Y	DW	DW	DW
PHASE ALT 4 & ALT 8	◄R-	R	◄R-	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	◄R-	G	G	◄R-	◄R-	G	G	◄R-	◄R-	◄R-	G	G	DW	DW	WK
PED CLEARANCE	◄R-	R	◄R-	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	◄R-	G	G	◄R-	◄R-	G	G	◄R-	◄R-	◄R-	G	G	DW	DW	FL/DW
ALT 4 & ALT 8 CHANGE	◄R-	R	◄R-	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	◄R-	Y	Y	◄R-	◄R-	Y	Y	◄R-	◄R-	◄R-	Y	Y	DW	DW	DW
FLASHING OPERATION	◄FL / R	FL / Y	◄FL / R	◄FL / R	◄FL / R	FL / Y	FL / Y	◄FL / R	◄FL / R	◄FL / R	FL / Y	FL / Y	◄FL / R	FL / R	FL / R	◄FL / R	◄FL / R	FL / R	FL / R	◄FL / R	◄FL / R	◄FL / R	FL / R	FL / R	DARK	DARK	DARK

WIRING DIAGRAM



SPECIAL NOTES

1. THE CONTACT PERSONS FOR THIS PROJECT ARE AS FOLLOWS:

DISTRICT 3

MS. ANYESHA MOOKHERJEE (MO)
ASSISTANT DISTRICT ENGINEER - TRAFFIC
301-513-7404

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DISTRICT ENGINEER - UTILITIES
301-513-7350

MR. DUANE BERNARD
ASSISTANT DISTRICT ENGINEER - CONSTRUCTION
301-513-7385

MR. THOMAS FOUNTAIN
ASSISTANT DISTRICT ENGINEER - MAINTENANCE
301-513-7304

MONTGOMERY COUNTY

MR. ROBERT RICKETTS
TECHNICAL CENTER SUPERVISOR
PHONE NUMBER 240-876-3681

MR. KAMAL HAMUD
MONTGOMERY COUNTY-TRAFFIC ENGINEERING
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OFFICE OF TRAFFIC AND SAFETY

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CHIEF, TRAFFIC OPERATIONS
410-787-7630

MR. ROBERT SNYDER
ASSISTANT DIVISION CHIEF, TRAFFIC OPERATIONS
410-787-7630

MR. ED RODENHIZER
CHEIF SIGNAL OPERATIONS
410-787-7650

MR. EUGENE BAILEY
CHIEF SIGN OPERATIONS
410-787-7670

MR. MIKE STOCKER
SUPPLY OFFICER IV (SIGNAL SHOP WAREHOUSE)
410-787-7668

EQUIPMENT LIST

A. EQUIPMENT TO BE FURNISHED BY STATE HIGHWAY ADIMISTRATION

ITEM NO./ CAT CODE	QUANTITY	DESCRIPTION
NONE		

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

ITEM NO./ CAT CODE	QUANTITY	DESCRIPTION
100000	1 EA	MAINTENANCE OF TRAFFIC (PER INTERSECTION)
201032	50 CY	CLASS 2 EXCAVATION
203030	4 CY	TEST PIT EXCAVATION
504150	8 TON	HOT MIX ASPHALT SUPERPAVE 9.5MM FOR SURFACE, PG76-22, LEVEL-3
520109	20 SY	3 INCH GRADED AGGREGATE BASE COURSE
585621	940 LF	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES
585625	170 LF	24 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES
585700	940 LF	REMOVAL OF EXISTING PAVEMENT MARKING LINES, ANY WIDTH
600000	274 LF	TYPE A COMBINATION CURB AND GUTTER ANY HEIGHT OR DEPTH
600000	30 LF	TYPE A CURB ANY HEIGHT OR DEPTH
655105	1820 SF	5 INCH CONCRETE SIDEWALK
655120	100 SF	DETECTABLE WARNING SURFACE FOR CURB RAMPS
800000	1 EA	2-WIRE APS CENTRAL CONTROL UNIT
800000	1 EA	ADJUST HANDHOLE TO GRADE AND REPLACE FRAME AND COVER
800000	8 EA	AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION AND SIGNS
800000	8 EA	16 INCH LED COUNTDOWN PEDESTRIAN SIGNAL HEAD
800000	8 EA	5 FOOT OR 10 FOOT PEDESTAL POLE WITH BREAKAWAY COUPLINGS, FOUNDATION & GROUND ROD
800000	1 EA	REMOVE & DISPOSE OF EXISTING SIGNAL EQUIPMENT (PER SIGNALIZED INTERSECTION LOCATION)
800000	140 LF	UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED
800000	17 SF	INSTALL OVERHEAD OR GROUND MOUNTED SIGN (INCLUDING ALL HARDWARE)
800000	1 EA	THIRD PARTY CONCRETE TESTING (PER INTERSECTION)
802501	310 LF	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
861105	2280 LF	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)
861107	2330 LF	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)

WIRING LEGEND

A,B,C,D,E,F,G,H - ELECTRICAL CABLE - 5 CONDUCTOR (NO.14AWG)
J,K,L,M,N,P,R,S - ELECTRICAL CABLE - 2 CONDUCTOR (NO.14AWG)
Z - NO.6 STRANDED BARE COPPER GROUNDWIRE

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

MD 28 (KEY WEST AVENUE/W MONTGOMERY AVENUE) AT
SHADY GROVE ROAD
ROCKVILLE, MARYLAND

GENERAL INFORMATION SHEET

SCALE NTS ADVERTISED DATE MARCH 2013 CONTRACT NO. XY1515185

DESIGNED BY AMH
DRAWN BY AMH
CHECKED BY JFL
F.A.P. NO.
COUNTY MONTGOMERY
LOGMILE 15002819.51
TIMS NO. L735
TOD NO.

TS NO. 1189K-GI | DRAWING SG-3 OF 3 | SHEET NO. 6 OF 24

PLOTTED: "11:19 AM on Thursday, March 28, 2013"
FILE: M:\2009\01090619.87\drawings\pSG-P002_MD28GI.dgn

DRILL HOLES
DRILL HOLES
DRILL HOLES
BORDER REV: DATE: Mmmhh12720807
BY: Jenny Elyard Division: P068 Highway Traff GMA Emp