

PROJECT DESCRIPTION

GENERAL

THIS PROJECT INVOLVES THE MODIFICATION OF AN EXISTING SIGNAL WITH STREET LIGHTING AND INTERCONNECT AT THE INTERSECTION OF MD 124 (QUINCE ORCHARD ROAD) AND I-270 SOUTH RAMP IN MONTGOMERY COUNTY. INSTALLATION OF ACCESSIBLE PEDESTRIAN SIGNALS AND COUNTDOWN PEDESTRIAN SIGNAL HEADS IS PROPOSED ALONG THE SOUTH AND WEST LEGS OF THE INTERSECTION. MODIFICATION OF THE EXISTING PEDESTRIAN RAMPS IS PROPOSED TO MEET CURRENT ADA REQUIREMENTS.

MD 124 IS ASSUMED TO RUN IN AN NORTH/SOUTH DIRECTION.

INTERSECTION OPERATION

THE INTERSECTION WILL CONTINUE TO OPERATE IN A NEMA FIVE (5) PHASE, SEMI-TRAFFIC-ACTUATED MODE. THERE WILL BE NO CHANGE TO THE INTERSECTION OPERATION. THE MD 124 THROUGH MOVEMENTS OPERATE CONCURRENTLY. SIDE STREET MOVEMENTS ARE SPLIT PHASED. THE PEDESTRIAN PHASE MOVEMENTS FOR THE SOUTH AND WEST LEGS WILL BE UPGRADED TO AUDIBLE PEDESTRIAN PUSHBUTTONS AND COUNTDOWN PEDESTRIAN SIGNAL HEADS.

APS OPERATION

FOR MD 124 (QUINCE ORCHARD ROAD)

- A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL BE "WAIT TO CROSS QUINCE ORCHARD AT I-270 RAMP, WAIT"
- B. WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

FOR I-270 RAMP (SOUTH)

- A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL BE "WAIT TO CROSS I-270 RAMP AT QUINCE ORCHARD, WAIT"
- B. WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

THE CONTACT PERSONS FOR DISTRICT #3 ARE AS FOLLOWS:

Ms. Anyesha Mookherjee
Assistant District Engineer - Traffic (Montgomery County)
Phone: 301-513-7498

Mr. Victor Grafton
District Utility Engineer
Phone: 301-513-7350

Mr. Tom Fountain
Assistant District Engineer - Maintenance
Phone: 301-513-7304

Mr. Duane Bernard
Assistant District Engineer - Construction
Phone: 301-513-7385

THE CONTACT PERSONS FOR MONTGOMERY COUNTY ARE AS FOLLOWS:

Mr. Robert Ricketts
Montgomery County Signal Operations Manager
Phone: 301-279-1291

Mr. Kamal Hamud
Montgomery County TMC Center
Phone: 240-777-8761

The Power Company Representative is:
Potomac Electric Power Company
Mr. Paul Wilson
201 West Gude Drive
Rockville, Maryland 20850
Phone: 301-548-4332

EQUIPMENT LIST 'A'

EQUIPMENT TO BE FURNISHED BY STATE HIGHWAY ADMINISTRATION		
CATEGORY NO	QUANTITY	DESCRIPTION
900000	1 EA	CONTROLLER CABINET, SIZE "S" W/CTRL. VIDEO INT. 1-8 CAM
900000	1 EA	CABINET EXTENSION BASE, SIZE "S"
900000	1 EA	UPS EQUIPMENT FOR "S" CABINET
900000	3 EA	4 CHANNEL DETECTOR AMPLIFIER
900000	19 SF	SHEET ALUMINUM GROUND MOUNTED SIGN
		2 EA W11-2 (30"x30")
		1 EA W16-7p (L) (24"x12")
		1 EA W16-7p (R) (24"x12")
		1 EA OM-1(3) (18"x18")
900000	4 SF	SHEET ALUMINUM MAST ARM/POLE MOUNTED SIGN
		4 EA R10-3(1) (9"x15")

EQUIPMENT LIST 'B'

EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR		
CATEGORY NO	QUANTITY	DESCRIPTION
100000	1 EA	MAINTENANCE OF TRAFFIC (PER INTERSECTION)
201032	2 CY	CLASS 2 EXCAVATION
203030	2 CY	TEST PIT EXCAVATION
585617	180 LF	5 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES
585619	180 LF	5 INCH YELLOW PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES
585621	260 LF	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES
585625	160 LF	24 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES
585627	31 SF	WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LEGENDS AND SYMBOLS
585700	350 LF	REMOVAL OF EXISTING PAVEMENT MARKING LINES, ANY WIDTH
585705	31 SF	REMOVAL OF EXISTING PAVEMENT MARKING LEGENDS AND SYMBOLS
600000	125 LF	TYPE A COMBINATION CURB AND GUTTER ANY HEIGHT OR DEPTH
600000	130 LF	TYPE A CURB ANY HEIGHT OR DEPTH
600000	40 SF	REMOVE & RESET DECORATIVE BRICK SIDEWALK
655105	440 SF	5 INCH CONCRETE SIDEWALK
655120	64 SF	DETECTABLE WARNING SURFACE FOR CURB RAMPS
704345	12 SY	PLACING FURNISHED TOPSOIL 4 INCH DEPTH
708220	12 SY	TURFGRASS SOD ESTABLISHMENT
800000	1 EA	2-WIRE APS CENTRAL CONTROL UNIT
800000	1 EA	ANY SIZE LIGHTING ARM ON SIGNAL POLE WITH LED ROADWAY LUMINAIRE
800000	4 EA	AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION AND SIGNS
800000	4 EA	16 INCH LED COUNTDOWN PEDESTRIAN SIGNAL HEAD
800000	4 EA	5 FOOT OR 10 FOOT PEDESTAL POLE WITH BREAKAWAY COUPLINGS, FOUNDATION & GROUND ROD
800000	1 EA	100 AMP EMBEDDED METERED SERVICE PEDESTAL, CONCRETE COLLAR & GROUND RODS
800000	1 EA	REMOVE & DISPOSE OF EXISTING SIGNAL EQUIPMENT (PER SIGNALIZED INTERSECTION LOCATION)
800000	1 EA	INSTALL CONTROLLER AND CABINET BASE MOUNT (ANY SIZE) INCLUDING F&I FOUNDATION & GROUND ROD
800000	150 LF	1 - CONDUCTOR ELECTRICAL CABLE, NO. 2/0 AWG, TYPE THHN
800000	540 LF	ELECTRICAL CABLE - 3 CONDUCTOR (NO. 12 AWG) (B.W.G) TYPE TC
800000	100 LF	UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED
800000	50 LF	WOOD SIGN SUPPORTS UP TO 4 INCH X 6 INCH
800000	23 SF	INSTALL OVERHEAD OR GROUND MOUNTED SIGN (INCLUDING ALL HARDWARE)
800000	1 EA	THIRD PARTY CONCRETE TESTING (PER INTERSECTION)
800000	24 SF	RELOCATE EXISTING OVERHEAD SIGN INCLUDING NEW MOUNTING HARDWARE
802501	120 LF	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
810022	30 LF	ELECTRICAL CABLE 1-CONDUCTOR NO. 8 AWG-THHN/THWN
861105	810 LF	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)
861107	850 LF	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)

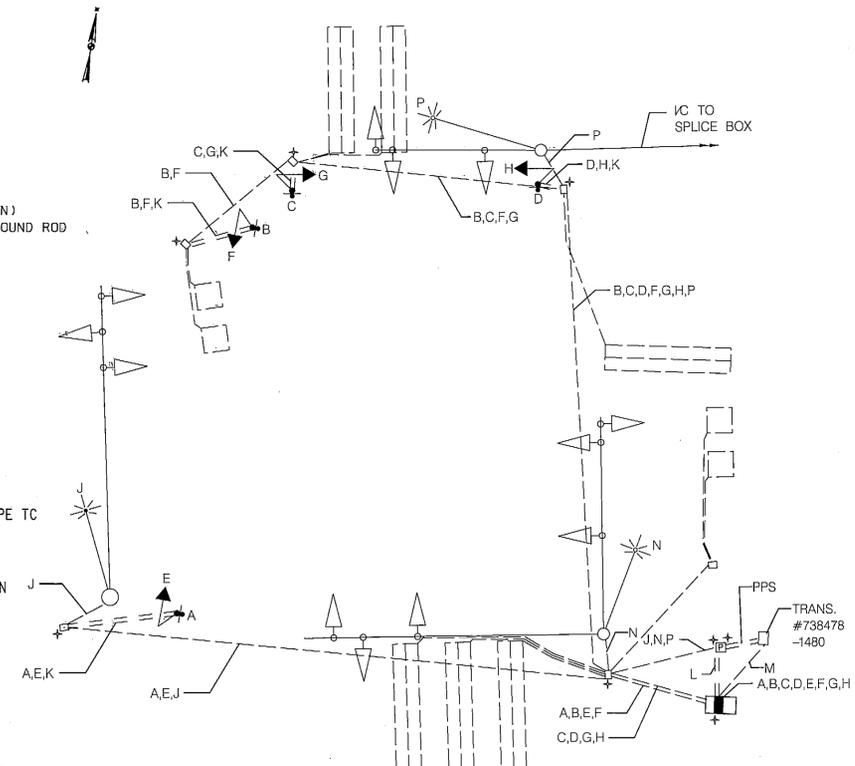
EQUIPMENT LIST 'C'

MONTGOMERY 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 THE PROPERTY OF THE CONTRACTOR.

PHASE CHART

PHASE CHART	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASE 2 + 5	R	R	R	<G-Y/G	<G-Y/G	G	R	R	R	R	R	R	DW	DW	DW	DW
PHASE 5 CHANGE	R	R	R	<Y-G	<Y-G	G	R	R	R	R	R	R	DW	DW	DW	DW
PHASE 2 + 6	G	G	G	G	G	G	R	R	R	R	R	R	WK	WK	DW	DW
PED CLEARANCE	G	G	G	G	G	G	R	R	R	R	R	R	FL/DW	FL/DW	DW	DW
PHASE 2 + 6 CHANGE	Y	Y	Y	Y	Y	Y	R	R	R	R	R	R	DW	DW	DW	DW
PHASE 3	R	R	R	R	R	R	R	R	R	R	R	R	DW	DW	DW	DW
PHASE 3 CHANGE	R	R	R	R	R	R	R	R	R	R	R	R	DW	DW	DW	DW
PHASE 4	R	R	R	R	R	R	R	R	R	R	R	R	DW	DW	DW	DW
PHASE 4 CHANGE	R	R	R	R	R	R	R	R	R	R	R	R	DW	DW	DW	DW
PHASE 3 ALT.	R	R	R	R	R	R	R	R	R	R	R	R	DW	DW	WK	WK
PED CLEARANCE	R	R	R	R	R	R	R	R	R	R	R	R	DW	DW	FL/DW	FL/DW
PHASE 3 ALT. CHANGE	R	R	R	R	R	R	R	R	R	R	R	R	DW	DW	DW	DW
FLASHING OPERATION	FL/Y	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

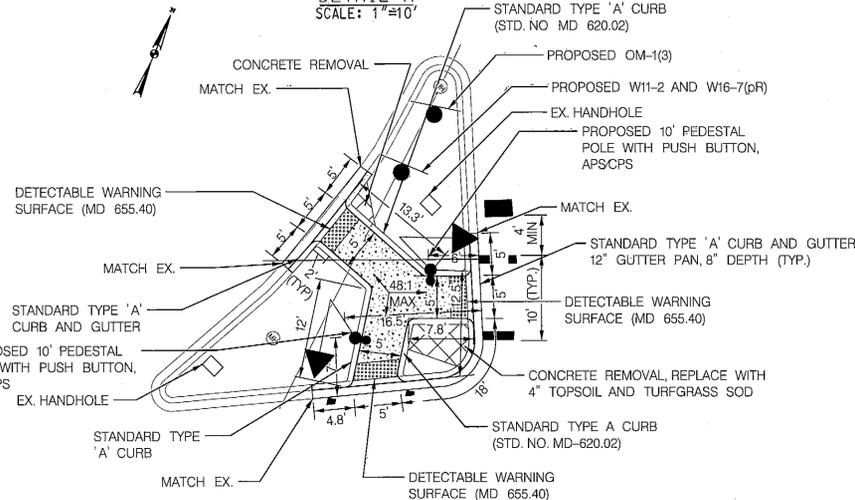
WIRING DIAGRAM



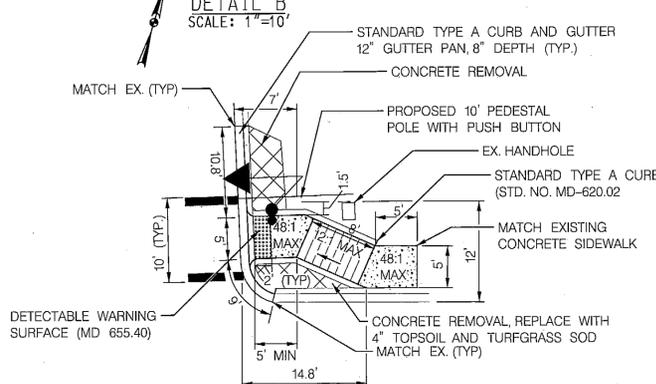
WIRING KEY

- A,B,C,D - ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)
- E,F,G,H - ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)
- J,N,P - ELECTRICAL CABLE - 3 CONDUCTOR (NO. 12 AWG) TYPE TC (TO DISCONNECT SWITCH)
- K - NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
- L - ELECTRICAL CABLE-3-1 CONDUCTOR NO. 8 AWG-THIN/THWN
- M - PEPCO TO CAP AND ABANDON
- PPS - PROPOSED POWER SOURCE (ELECTRICAL CABLE-1 CONDUCTOR, NO. 2/0 AWG, 3 WIRE, 3 RUNS WITH 30 FT COILS SLACK CABLE AT TRANSFORMER, FINAL SERVICE CONNECTIONS TO BE MADE BY PEPCO FORCES.)

DETAIL A



DETAIL B



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

MD 124 (QUINCE ORCHARD RD) AND SOUTHBOUND I-270 RAMP ('E' SPUR)
GAITHERSBURG, MARYLAND

GENERAL INFORMATION SHEET

SCALE: NTS ADVERTISED DATE: AUG 2013 CONTRACT NO. XY2385185

DESIGNED BY: N. Turner COUNTY: MONTGOMERY
DRAWN BY: N. Turner LOGMILE: 15012403.1B
CHECKED BY: P. Westcott TMS NO.: M005
F.A.P. NO.: TOD NO.:

TS NO. 3635A-GI DRAWING SG-02 OF 02 SHEET NO. 2 OF 2

RJM ENGINEERING, INC.
CONSULTING ENGINEERS
ELLICOTT CITY, MARYLAND