

PROJECT DESCRIPTION

- I. GENERAL
- This project involves the reconstruction of the existing traffic control signal at the intersection of MD 108 and Queen Elizabeth Drive in Montgomery County. Audible pedestrian pushbutton stations and countdown pedestrian signal heads shall be installed for all crossings of the intersection. Mast arms and associated new signal equipment will be installed. MD 108 is assumed to run in an east/west direction.
- II. INTERSECTION OPERATION
- The intersection will operate in a semi-actuated mode using six phases. Both MD 108 approaches will operate with exclusive - permissive left turn phasing. The minor approaches will operate with permissive phasing.
 - A new NEMA full-traffic-actuated, eight (8) phase controller housed in a Type S base mounted cabinet shall be installed at this intersection under this project.

NOTES

- All pavement markings shall be installed in accordance with Administration standards.
- The contractor shall be responsible for terminating all signal cable to the appropriate terminals and properly labeling each cable.
- All traffic signal foundations shall be installed at the final sidewalk or curb grade for closed sections, highest roadway profile grade for open sections, to meet clearances as specified in the appropriate 800 series Standard Plans. The contractor shall verify ultimate grades prior to the installation of all signal equipment.
- All underground and overhead 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 Project Engineer immediately so that the conflict may be resolved.
- The contractor shall maintain the continuous operation of all interconnect, vehicular, pedestrian detectors, and lighting devices. If any device is damaged by the contractor, it shall be repaired within 72 hours by the contractor at no cost to the Administration after notification by the Engineer.
- The Contractor shall verify cabinet location prior to installation.
- Video camera location and aligning shall be coordinated with the Montgomery County engineer.
- All proposed luminaires shall be provided with a photocell.
- Upon completion of this project, the Contractor shall notify Mr. Robert Snyder to arrange for the phone line installation. The contractor shall provide Mr. Snyder with the nearest street address, zip code, and phone number.
- The contractor shall deliver APS pushbuttons and central control unit to Mr. Kamal Hamud at Montgomery County Technical Center at 1283 Seven Locks Road, Rockville, MD 20854 at least 3 weeks prior to beginning work. The Contractor shall have the APS messages programmed from the factory and deliver the APS wave files to Mr. Kamal Hamud.
- The contractor shall notify Mr. Kamal Hamud 72 hours prior to beginning work.
- APS will function as follows:
 - To cross Olney Laytonsville Road.
 - When Pedestrian locates and presses pushbutton for an extended time, the message will announce "WAIT to cross Olney Laytonsville at Queen Elizabeth. WAIT."
 - When Walk phase begins, the message will be a rapid tick which will last for the duration of the walk phase.
 - To cross Queen Elizabeth Drive.
 - When Pedestrian locates and presses pushbutton for an extended time, the message will announce "WAIT to cross Queen Elizabeth at Olney Laytonsville. WAIT."
 - When Walk phase begins, the message will be a rapid tick which will last for the duration of the walk phase.
- 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 are to be parallel to the crossing for which they are intended.
- Location of accessible pedestrian signal pushbuttons must follow requirements of MD MUTCD Secs. 4E.08 and 4E.10 and Figs. 4E-3 and 4E-4 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 & Safety.

CONTACTS

MONTGOMERY COUNTY MR. KAMAL HAMUD CHIEF OF TRAFFIC DIVISION MCDPW&T 240-777-8761	OFFICE OF TRAFFIC AND SAFETY MS. CORREN JOHNSON CHIEF, TRAFFIC OPERATIONS 410-787-7630
DISTRICT MR. BRIAN YOUNG DISTRICT ENGINEER 301-513-7311	VACANT ASSISTANT DIVISION CHIEF, TRAFFIC OPERATIONS 410-787-7630
MR. ANYESHA MOOKHERJEE ASSISTANT DISTRICT ENGINEER - TRAFFIC 301-513-7404	MR. ED RODENHIZER TEAM LEADER SIGNAL OPERATIONS 410-787-7650
MR. VICTOR GRAFTON UTILITY ENGINEER 301-513-7350	MR. EUGENE BAILEY TEAM LEADER SIGN OPERATIONS 410-787-7670
MR. KEVIN NOWAK & MR. DUANE BERNARD ASSISTANT DISTRICT ENGINEERS - CONSTRUCTION 301-513-7385	MR. MIKE STOCKER SUPPLY OFFICER IV (SIGNAL SHOP WAREHOUSE) 410-787-7668
MR. TOM FOUNTAIN ASSISTANT DISTRICT ENGINEER - MAINTENANCE 301-513-7304	

EQUIPMENT LIST

CAT CODE	DESCRIPTION	UNITS	QUANTITY
900000	CONTROLLER CABINET, SIZE "S" W/CTRL, VIDED INT. 1-8 CAM	EA	1
900000	SHEET ALUMINUM GROUND MOUNTED SIGNS CONSISTING OF:	SF	47
	R4-7 (24" x 30")	EA	2
	D11-1 (24" x 18")	EA	2
	M3-2 (24" x 12")	EA	1
	M1-5 (30" x 24")	EA	1
	M6-1 (21" x 15")	EA	1
	DM1-3 (18" x 18")	EA	2
	W11-15 (30" x 30")	EA	2
	W16-7pL (24" x 12")	EA	2
900000	SHEET ALUMINUM MAST ARM / POLE MOUNTED SIGNS CONSISTING OF:	SF	151
	D-3(1) (VAR, x 16")	EA	8
	M1-5(16) (48" x 72")	EA	2
	M1-5(16) (30" x 48")	EA	1
	R10-3(1) (9" x 15")	EA	8

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

CAT CODE	DESCRIPTION	UNITS	QUANTITY
100000	MAINTENANCE OF TRAFFIC (PER INTERSECTION)	EA	1
201032	CLASS 2 EXCAVATION	CY	5
203030	TEST PIT EXCAVATION	CY	7
585621	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF	675
585625	24 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF	175
585700	REMOVAL OF EXISTING PAVEMENT MARKING LINES, ANY WIDTH	LF	1450
600000	TYPE A COMBINATION CURB AND GUTTER ANY HEIGHT OR DEPTH	LF	300
600000	TYPE A CURB ANY HEIGHT OR DEPTH	LF	180
655105	5 INCH CONCRETE SIDEWALK	SF	2600
655120	DETECTABLE WARNING SURFACE FOR CURB RAMPS	SF	250
704345	PLACING FURNISHED TOPSOIL 4 INCH DEPTH	SY	20
705500	TURFGRASS ESTABLISHMENT	SY	20
800000	2-WIRE APS CENTRAL CONTROL UNIT	EA	1
800000	ANY SIZE LIGHTING ARM ON SIGNAL POLE WITH LED ROADWAY LUMINAIRE	EA	1
800000	AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION AND SIGNS	EA	8
800000	IP-BASED VIDED DETECTION CAMERA & ANY LENGTH LEAD-IN CABLE	EA	4
800000	5 FOOT OR 10 FOOT PEDESTAL POLE WITH BREAKAWAY COUPLINGS, FOUNDATION & GROUND ROD	EA	7
800000	MAST ARM POLE & 38' MAST ARM ANY 'T' DIMENSION, FOUNDATION & GROUND ROD	EA	1
800000	MAST ARM POLE & 60' MAST ARM ANY 'T' DIMENSION, FOUNDATION & GROUND ROD	EA	1
800000	TWIN MAST ARM POLE & 50'/70' MAST ARMS ANY 'T' DIMENSION, FOUNDATION & GROUND ROD	EA	1
800000	100 AMP EMBEDDED METERED SERVICE PEDESTAL, CONCRETE COLLAR & GROUND RODS	EA	1
800000	REMOVE & DISPOSE OF EXISTING SIGNAL EQUIPMENT (PER SIGNALIZED INTERSECTION LOCATION)	EA	1
800000	INSTALL CONTROLLER AND CABINET BASE MOUNT (ANY SIZE) INCLUDING F&T FOUNDATION & GROUND ROD	EA	1

EQUIPMENT LIST (CONT.)

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

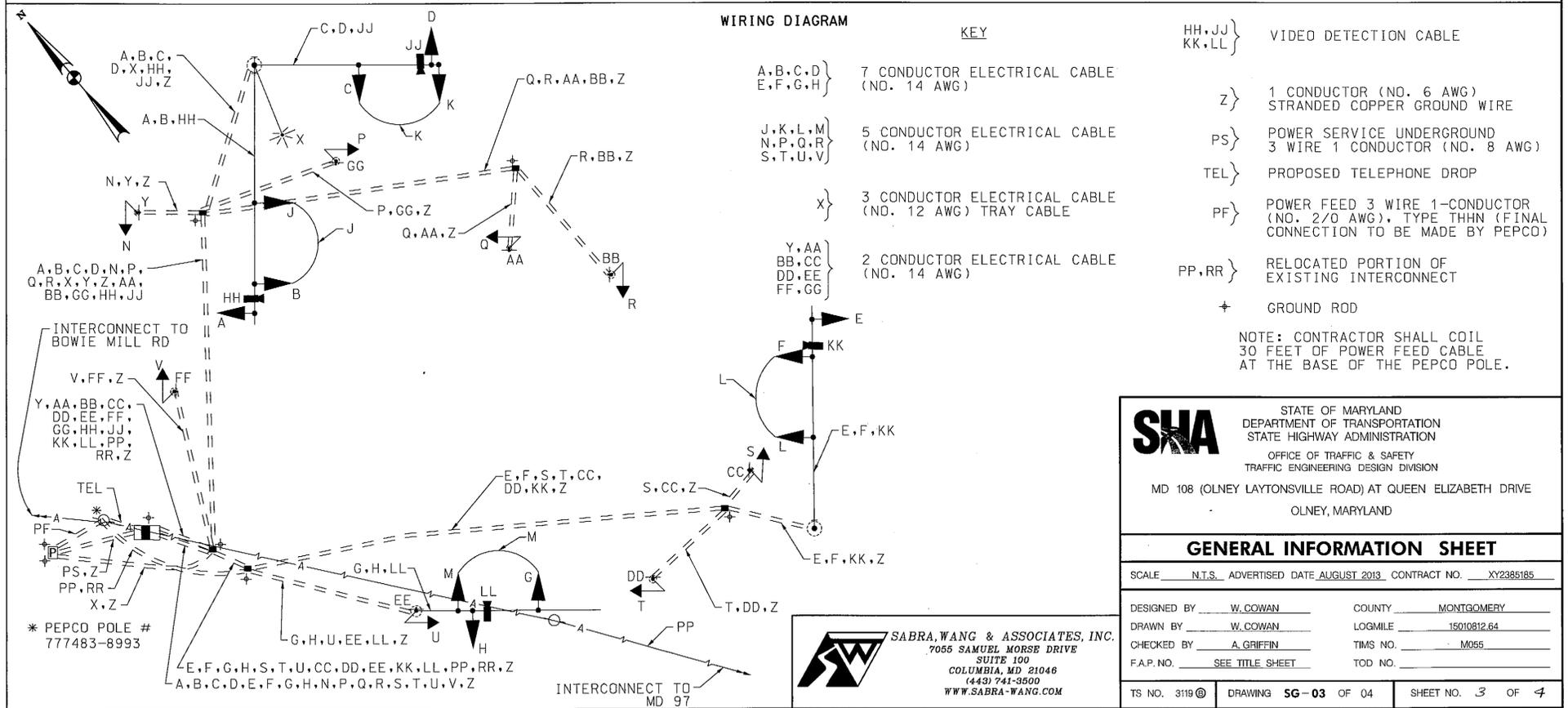
CAT CODE	DESCRIPTION	UNITS	QUANTITY
800000	1 - CONDUCTOR ELECTRICAL CABLE, NO. 2/0 AWG, TYPE THHN	LF	150
800000	ELECTRICAL CABLE - 3 CONDUCTOR (NO. 12 AWG) (B,W,G) TYPE TC	LF	230
800000	DISCONNECT, PULL-BACK & REROUTE CABLES	LF	405
800000	LASHING NEW CABLE TO EXISTING OVERHEAD CABLE	LF	150
800000	UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT - BORED OR SLOTTED	LF	350
800000	UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED	LF	280
800000	WOOD SIGN SUPPORTS UP TO 4 INCH X 6 INCH	LF	130
800000	INSTALL OVERHEAD OR GROUND MOUNTED SIGN (INCLUDING ALL HARDWARE)	SF	210
800000	THIRD PARTY CONCRETE TESTING (PER INTERSECTION)	EA	1
800000	RELOCATE EXISTING SIGNAL HEAD INCLUDING NEW MOUNTING HARDWARE	EA	8
802501	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE	LF	610
810022	ELECTRICAL CABLE 1-CONDUCTOR NO. 8 AWG-THHN/THWN	LF	40
811001	FURNISH AND INSTALL ELECTRICAL HANDHOLE	EA	5
813023	RELOCATE EXISTING GROUND MOUNTED SIGNS	SF	4
833060	3 INCH DIAMETER POLYVINYL CHLORIDE CONDUIT, SCHEDULE 80, RISER	LF	70
860284	12 INCH LED VEHICULAR TRAFFIC SIGNAL HEAD SECTION	EA	44
861105	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)	LF	1260
861107	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)	LF	1425
861108	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)	LF	1650

C. MONTGOMERY COUNTY 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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PHASE 1 AND 5	+G/R	+G/R	R	+G/R	+G/R	R	R	R	R	R	R	R	R	DW						
1 AND 5 MAY CHANGE TO 1 AND 6, 2 AND 5, OR 2 AND 6																				
PHASE 1 AND 6	+G/G	+G/G	G	R	R	R	R	R	R	R	R	R	R	DW	WK	WK	DW	DW	DW	DW
1 CHANGE	+Y/G	+Y/G	G	R	R	R	R	R	R	R	R	R	R	DW	WK	WK	DW	DW	DW	DW
PHASE 2 AND 5	R	R	R	+G/G	+G/G	G	R	R	R	R	R	R	R	WK	DW	DW	WK	DW	DW	DW
5 CHANGE	R	R	R	+Y/G	+Y/G	G	R	R	R	R	R	R	R	WK	DW	DW	WK	DW	DW	DW
PHASE 2 AND 6	G	G	G	G	G	G	R	R	R	R	R	R	R	WK	WK	WK	WK	DW	DW	DW
PED CLEARANCE	G	G	G	G	G	G	R	R	R	R	R	R	R	FLOW	FLOW	FLOW	FLOW	DW	DW	DW
2 AND 6 CHANGE	Y	Y	Y	Y	Y	Y	R	R	R	R	R	R	R	DW						
PHASE 4 AND 8	R	R	R	R	R	R	G	G	G	G	G	G	G	DW						
4 AND 8 CHANGE	R	R	R	R	R	R	Y	Y	Y	Y	Y	Y	Y	DW						
PHASE 4 AND 8 ALT	R	R	R	R	R	R	G	G	G	G	G	G	G	DW	DW	DW	WK	WK	WK	WK
PED CLEARANCE	R	R	R	R	R	R	G	G	G	G	G	G	G	DW	DW	DW	FLDW	FLDW	FLDW	FLDW
4 AND 8 ALT CHANGE	R	R	R	R	R	R	Y	Y	Y	Y	Y	Y	Y	DW						
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	DARK												

WIRING DIAGRAM



SHA STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION
MD 108 (OLNEY LAYTONSVILLE ROAD) AT QUEEN ELIZABETH DRIVE
OLNEY, MARYLAND

GENERAL INFORMATION SHEET

SCALE: N.T.S. ADVERTISED DATE: AUGUST 2013 CONTRACT NO. XY2385185

DESIGNED BY: W. COWAN COUNTY: MONTGOMERY
DRAWN BY: W. COWAN LOGMILE: 15010812.64
CHECKED BY: A. GRIFFIN TMS NO.: M055
F.A.P. NO.: SEE TITLE SHEET TOD NO.:

TS NO. 3119 @ DRAWING SG-03 OF 04 SHEET NO. 3 OF 4

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