

**PROJECT DESCRIPTION**

THIS PROJECT INVOLVES THE REPLACEMENT OF EXISTING VEHICULAR SIGNAL HEADS WITH LED SIGNAL HEADS, INSTALLATION OF AN LED SIGNAL HEAD FOR THE ADDITIONAL NORTHBOUND LEFT TURN LANE ON MD 118, INSTALLATION OF AN LED COUNTDOWN PEDESTRIAN SIGNAL HEAD, APS PUSHBUTTONS, AND SIGNS AT THE INTERSECTION OF MD 118 (GERMANTOWN ROAD) AND MIDDLEBROOK ROAD IN MONTGOMERY COUNTY. MD 118 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

**INTERSECTION OPERATION**

THIS INTERSECTION CURRENTLY OPERATES IN A NEMA EIGHT-PHASE FULL-TRAFFIC-ACTUATED MODE WITH AN ALTERNATE PEDESTRIAN PHASE FOR THE NORTH AND SOUTH LEG OF THE INTERSECTION. EXCLUSIVE LEFT TURNS ARE PROVIDED FOR ALL LEGS OF THE INTERSECTION.

**CONTROLLER REQUIREMENTS**

THE EXISTING FULL-TRAFFIC-ACTUATED EIGHT PHASE TRAFFIC SIGNAL CONTROLLER HOUSED IN A BASE MOUNTED CABINET WILL BE USED. THE EXISTING VIDEO DETECTION INTERFACE EQUIPMENT AND APS 2-WIRE CENTRAL CONTROL UNIT WILL BE USED.

**SPECIAL NOTE**

APS WILL FUNCTION AS FOLLOWS:

TO CROSS GERMANTOWN ROAD:

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

TO CROSS MIDDLEBROOK ROAD:

- A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT MESSAGE WILL BE "WAIT TO CROSS MIDDLEBROOK AT GERMANTOWN."
- 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 #3 (MONTGOMERY COUNTY) ARE AS FOLLOWS:

MS. ANYESHA MOOKHERJEE  
ASSISTANT DISTRICT ENGINEER-TRAFFIC  
PHONE: (301)513-7318

MR. VERNON STINNETT  
ASSISTANT DISTRICT ENGINEER-MAINTENANCE  
PHONE: (301)513-7304

MR. VICTOR GRAFTON  
UTILITY ENGINEER  
PHONE: (301)513-7350

MR. KAMAL HAMUD  
MONTGOMERY COUNTY TMC  
PHONE: (240)777-8761

MR. KEITH LORD  
MONTGOMERY COUNTY SIGNAL SHOP  
PHONE: (301)674-8965

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  
(410)787-7630

MR. ED RODENHEIZER  
CHIEF, SIGNAL OPERATIONS  
(410)787-7650

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

**EQUIPMENT LIST "A"**

A. EQUIPMENT TO BE SUPPLIED BY THE SHA.

CATEGORY CODE	DESCRIPTION	UNIT	QUANTITY
900000	SHEET ALUMINUM SIGNS - MAST ARM/POLE MOUNT 2 - M1-5(6) (30"x48")	SF	20
900000	SHEET ALUMINUM SIGNS - SPAN MOUNT 2 - D-3(1) (92"x20") DUAL FACED 8 - R3-5 (30"x36")	SF	86

**WIRING KEY**

A,B,D,E, H,J,L,M	2-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)	Z	STRANDED BARE COPPER GROUND WIRE (NO. 6 AWG)
C,G,I,N,D, P,Q,S,T,U	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)	PS	POWER SOURCE
F,K,R	7-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)	EX5	EXISTING 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
✱	PROPOSED GROUND ROD	EX7	EXISTING 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
V	DISCONNECT, PULL BACK AND REROUTE FIBER OPTIC CABLE (4 RUNS)		

**EQUIPMENT LIST "B"**

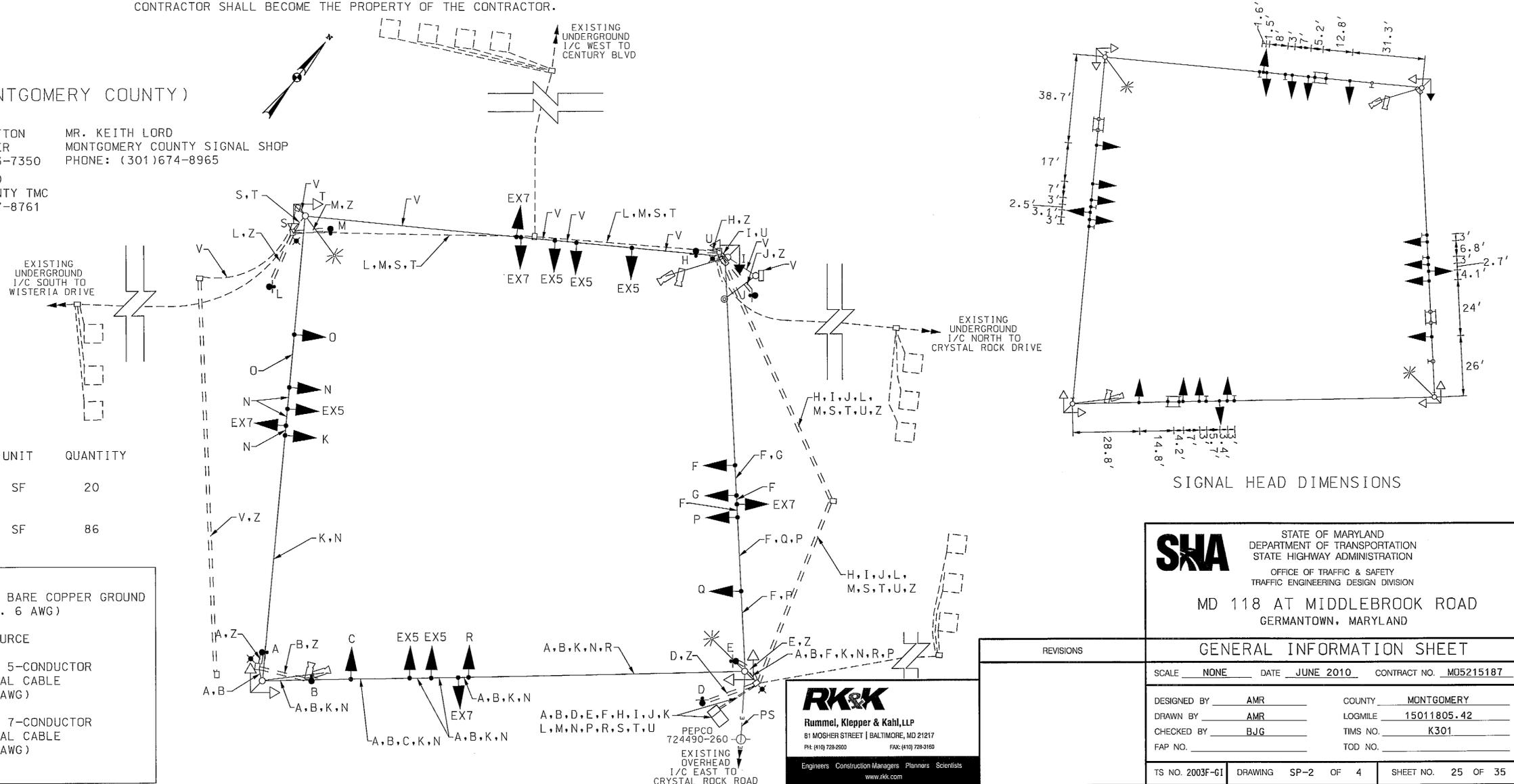
B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR.

CATEGORY CODE	DESCRIPTION	UNIT	QUANTITY
203030	TEST PIT EXCAVATION	CY	2
585621	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF	1840
585625	24 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF	180
585700	REMOVAL OF EXISTING PAVEMENT MARKING LINES, ANY WIDTH	LF	2010
800000	AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION AND SIGNS	EA	8
800000	REMOVE AND DISPOSE OF EXISTING TRAFFIC SIGNAL EQUIPMENT	LS	1
800000	16 INCH LED COUNTDOWN PEDESTRIAN SIGNAL HEAD SECTION	EA	1
800000	REAIM EXISTING VIDEO DETECTION CAMERA	EA	3
800000	DISCONNECT, PULL BACK AND REROUTE EXISTING CABLE	LF	1600
801004	CONCRETE FOR SIGNAL FOUNDATION	CY	6
802145	ADJUST EXISTING HANDHOLE	EA	2
802501	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE	LF	430
805118	4 INCH SCHEDULE 80 RIGID PVC CONDUIT-BORED	LF	300
805135	3 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED	LF	130
811002	REMOVE ELECTRICAL HANDHOLE	EA	2
813015	INSTALL OVERHEAD SIGN	SF	106
818004	10 FOOT BREAKAWAY PEDESTAL POLE	EA	8
837001	FURNISH AND INSTALL GROUND ROD 3/4 IN. DIAMETER X FT. LENGTH	EA	4
860284	12 INCH LED VEHICULAR TRAFFIC SIGNAL HEAD SECTION	EA	60
860292	CUT,CLEAN,GALVANIZE AND CAP TRAFFIC SIGNAL STRUCTURE	EA	8
861105	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)	LF	1890
861107	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)	LF	1750
861108	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)	LF	650

**EQUIPMENT LIST "C"**

C. EQUIPMENT TO BE REMOVED BY THE CONTRACTOR AND RETURNED TO SHA.

ALL MATERIALS AND EQUIPMENT REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE CONTRACTOR.



**PHASING CHART  
NO PHASE CHANGE  
GENERAL NOTES**

1. THE CONTRACTOR SHALL VERIFY ALL PROPOSED POLE LOCATIONS PRIOR TO INSTALLATION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TERMINATING ALL SIGNAL CABLE TO THE APPROPRIATE TERMINALS AND PROPERLY LABELING EACH CABLE.
3. ALL UNUSED CABLE SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.
4. 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 PROJECT ENGINEER IMMEDIATELY SO THAT THE CONFLICT MAY BE RESOLVED.
5. ALL TRAFFIC SIGNAL FOUNDATIONS SHALL BE INSTALLED AT THE FINAL SIDEWALK GRADE.
6. ACCESSIBLE PEDESTRIAN CONTROL EQUIPMENT SHALL BE DELIVERED TO THE MONTGOMERY COUNTY SIGNAL SHOP FOR TESTING AND PROGRAMMING PRIOR TO INSTALLATION. CONTACT MR. KEITH LORD AT 301-674-8965 TO COORDINATE.
7. LOCATION OF ACCESSIBLE PEDESTRIAN PUSHBUTTONS MUST MEET THE LOCATION REQUIREMENTS OF THE MUTCD, SECTION 4E-09 AND FIGURE 4E-2 AND THE NCHRP PUBLICATION, "ACCESSIBLE PEDESTRIAN SIGNAL: GUIDE TO BEST PRACTICE." IF NOT MET, THE CONTRACTOR IS TO STOP WORK ON PUSHBUTTON LOCATIONS UNTIL THE CONFLICT HAS BEEN RESOLVED. IF NEEDED, A DESIGN WAIVER SHALL BE OBTAINED, APPROVED BY THE DIRECTOR, OFFICE OF TRAFFIC AND SAFETY.
8. PUSHBUTTONS ARE TO BE LOCATED SO THAT THEY CAN BE ACTIVATED BY A PERSON IN A WHEELCHAIR FROM 60"x60" LEVEL LANDING AREA. A LEVEL LANDING AREA IS AN AREA WITH A CROSS SLOPE OF LESS THAN OR EQUAL TO 2%.
9. PUSHBUTTON IS TO BE LOCATED SO THAT A PEDESTRIAN IN A WHEELCHAIR LOCATED ON THE LEVEL LANDING AREA, DOES NOT HAVE TO REACH MORE THAN 18".
10. THE 10' SEPARATION BETWEEN PUSHBUTTONS IS TO BE MEASURED FROM FACE OF PUSHBUTTON, NOT CENTER TO CENTER OF POLE.
11. VIDEO DETECTION CAMERA LOCATION / ALIGNMENT SHALL BE COORDINATED WITH THE SHA ENGINEER.

SIGNAL HEAD DIMENSIONS

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

**MD 118 AT MIDDLEBROOK ROAD  
GERMANTOWN, MARYLAND**

REVISIONS		GENERAL INFORMATION SHEET	
SCALE	NONE	DATE	JUNE 2010
CONTRACT NO.	MD5215187	COUNTY	MONTGOMERY
DESIGNED BY	AMR	LOGMILE	15011805.42
DRAWN BY	AMR	TMS NO.	K301
CHECKED BY	BJG	TOD NO.	
FAP NO.			
TS NO. 2003F-G1	DRAWING	SP-2	OF 4
			SHEET NO. 25 OF 35

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