

I. GENERAL PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE RECONSTRUCTION OF AN EXISTING TRAFFIC SIGNAL AT THE INTERSECTION OF MD 547 (KNOWLES AVENUE) AND SUMMIT AVENUE IN MONTGOMERY COUNTY. AUDIBLE PEDESTRIAN PUSHBUTTON STATIONS, AND COUNTDOWN PEDESTRIAN SIGNAL HEADS SHALL BE INSTALLED FOR ALL FOUR LEGS OF THE INTERSECTION. NEW ADA RAMPS SHALL BE INSTALLED FOR ALL CROSSINGS OF THE INTERSECTION. A NEW NEMA SIZE SIX BASE MOUNTED CABINET AND CONTROLLER SHALL BE INSTALLED WITH VIDEO INTERFACE EQUIPMENT INSIDE THE CABINET. 12 PAIR COMMUNICATION CABLE SHALL BE INSTALLED TO CONNECT THE PROPOSED CONTROLLER TO THE EXISTING INTERCONNECT SYSTEM ALONG MD 547. INTERSECTION LIGHTING SHALL BE INSTALLED IN THE NORTHWEST AND SOUTHEAST CORNERS OF THE INTERSECTION. THE PROPOSED MAST ARM POLES WILL BE INSTALLED IN THE NORTHWEST, NORTHEAST AND SOUTHEAST CORNERS OF THE INTERSECTION. MD 547 IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

II. INTERSECTION OPERATION
 A SYSTEM CONTROLLER HOUSED IN A BASE MOUNTED CABINET SHALL BE INSTALLED AT THIS LOCATION. THE INTERSECTION OPERATES IN A SEMI-ACTUATED MODE USING 5 NEMA PHASES. THE SIDE STREETS FOR THIS LOCATION OPERATE UTILIZING A CONCURRENT PHASE SEQUENCE FOR NORTHBOUND AND SOUTHBOUND APPROACHES OF SUMMIT AVENUE. THERE IS A RIGHT TURN OVERLAP PHASE SEQUENCE FOR NORTHBOUND SUMMIT AVENUE. THE MAIN LINE OPERATES UTILIZING A CONCURRENT PHASE FOR EASTBOUND MD 547 AND A EXCLUSIVE/PERMISSIVE LEFT TURN PHASE FOR WESTBOUND MD 547.

NOTES

- All pavement markings shall be installed in accordance with MDSA standards.
- The contractor shall be responsible for terminating all signal cable to the appropriate terminals and properly label 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 Plates. 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.
- APS will function as follows:
 To cross Knowles Avenue at Summit Ave.
 A. When Pedestrian locates and presses pushbutton for an extended time. The message will announce "Wait to cross Knowles at Summit Wait"
 B. When Walk phase begins, The message will be a rapid tick which will last for the duration of the walk phase.
 To cross south Summit Avenue at Knowles Ave.
 A. When Pedestrian locates and presses pushbutton for an extended time. The message will announce "Wait to cross Summit at Knowles Wait"
 B. When Walk phase begins, The message will be a rapid tick which will last for the duration of the walk phase.
- The Contractor shall deliver Audible/Tactile Pedestrian Pushbutton Station and base unit to Mr. Robert Ricketts at Montgomery County Signal Shop three weeks prior to installation for programming. Montgomery County forces shall install Audible/Tactile Pedestrian Pushbutton Base Unit in the controller cabinet. The Contractor shall contact Mr. Kamal Hamud for location of existing signal equipment 72 hours in advance of any construction in Montgomery County.

III. MAINTENANCE OF TRAFFIC
 MAINTENANCE OF TRAFFIC WILL BE HANDLED BY THE CONTRACTOR UTILIZING MSHA STANDARD PLATES FOR TRAFFIC CONTROL.

CONTACTS

- COUNTY**
 MR. KAMAL HAMUD
 CHIEF OF TRAFFIC DIVISION MCDPW&T
 240-777-8761
- DISTRICT**
 MR. CEDRIC WARD
 ASSISTANT DISTRICT ENGINEER - TRAFFIC
 301-513-7404
- MR. VICTOR GRAFTON**
 ASSISTANT DISTRICT ENGINEER - UTILITIES
 301-513-7350
- MR. KEVIN NOWAK & MR. DUANE BERNARD**
 ASSISTANT DISTRICT ENGINEER - CONSTRUCTION
 301-513-7385
- MR. VERNON STINNETT**
 ASSISTANT DISTRICT ENGINEER - MAINTENANCE
 301-513-7304
- CONTACTS**
- OFFICE OF TRAFFIC AND SAFETY**
 MR. RICHARD DAFF SR.
 CHIEF, TRAFFIC OPERATIONS
 410-787-7630
- MR. ED RODENHIZER**
 CHIEF SIGNAL OPERATIONS
 410-787-7650
- MR. EUGENE BAILEY**
 CHIEF SIGN OPERATIONS
 410-787-7670
- MS. DARLENE EIDE**
 CHIEF SUPPLY OFFICER IV (SIGNAL SHOP WAREHOUSE)
 410-787-7668

EQUIPMENT LIST

ITEM NO.	DESCRIPTION	UNITS	QUANTITY
9042	CONTROLLER ASC 3 WITH TELEMETRY	EA	1
9044	CONTROLLER CABINET, SIZE 6	EA	1
9086	VIDEO DETECTION INTERFACE EQUIPMENT: 1-4 CAMERAS	EA	1
9570	SHEET ALUMINUM GROUND MOUNTED SIGN CONSISTING OF: R3-7R (30" x 30")	SF	7
9571	SHEET ALUMINUM POLE MOUNTED SIGN CONSISTING OF: M1-5(3) (78" x 24") D3-1(1) (VAR. X 16") DUAL FACE R3-5(L) (30" x 36") R3-5(R) (30" x 36") R10-11B (24" x 24")	EA	75
		EA	2
		EA	3
		EA	1
		EA	1
		EA	1

ITEM NO.	DESCRIPTION	UNITS	QUANTITY
A1.	EQUIPMENT TO BE SUPPLIED BY MONTGOMERY COUNTY MCDPW&T.		
	POLE MOUNTED SPLICE CABINET	EA	1

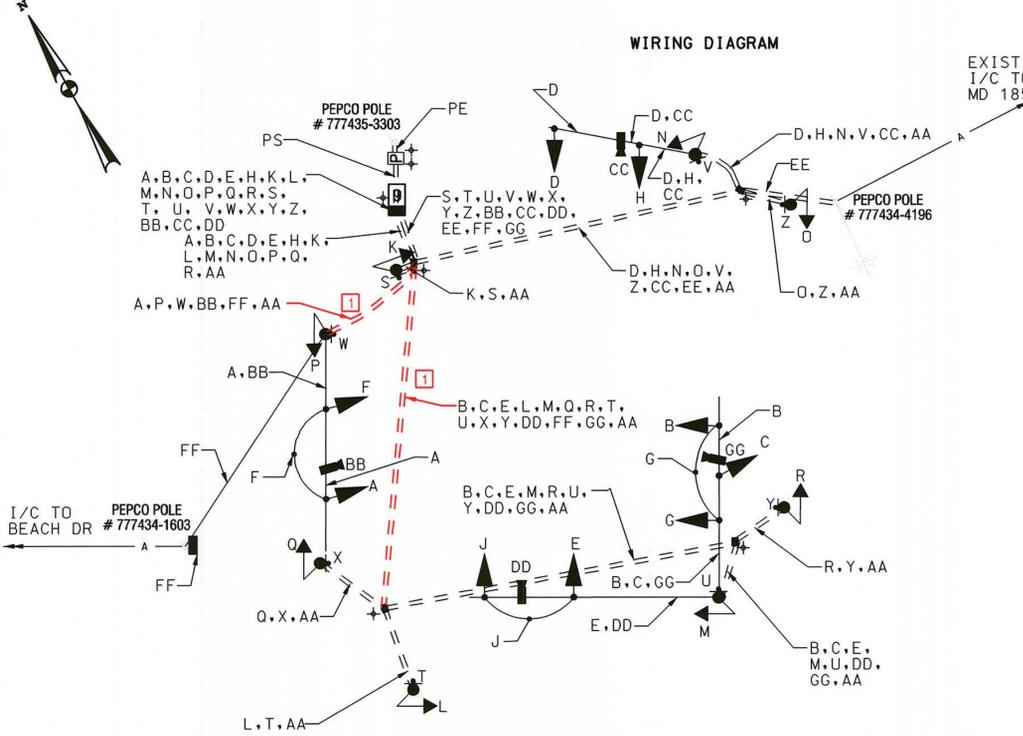
B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR.

ITEM NO.	DESCRIPTION	UNITS	QUANTITY
1003	MAINTENANCE OF TRAFFIC	EA	3
2001	CLASS 2 EXCAVATION	CY	3
2002	TEST PIT EXCAVATION	CY	5
5004	12" HEAT APPL WHITE PERM PREF THERMO PVMT MARKINGS	LF	475
5005	24" HEAT APPLIED WHITE PERM PREF THERMO PVMT MARKINGS	LF	125
5006	5" HEAT APPLIED WHITE OR YELLOW PERM PVMT LINE MARKINGS	LF	30
5007	REM OF EXISTING PERM PVMT LINE MARKINGS ANY WIDTH	LF	675
6001	STANDARD TYPE A COMBINATION CURB AND GUTTER 12 INCH GUTTER PAN 8 INCH DEPTH	LF	1390 350
6002	5 INCH CONCRETE SIDEWALK	SF	1405 1334
6003	DETECTABLE WARNING SURFACE FOR CURB RAMPS	SF	80
8001	2 WIRE CENTRAL CONTROL UNIT	EA	1
8006	ANY SIZE LIGHTING ARM ON SIGNAL POLE WITH 250 WATT HPS LAMP & LUMINAIRE	EA	2
8007	AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION & SIGNS	EA	8
8008	BREAKAWAY PEDESTAL POLE (ANY SIZE)	EA	5
8013	LED 16 INCH COUNTDOWN PEDESTRIAN SIGNAL HEADS	EA	8
8015	MAST ARM POLE & 38 FT MAST ARM ANY 'T' DIMENSION	EA	2
8021	REM & DISPOSE MAT & EQUIP PER ASSIGN	EA	1
8022	TWIN MAST ARM POLE & 50 FT/60 FT MAST ARMS ANY 'T' DIMENSION	EA	1
8025	VIDEO DETECTION CAMERA & CABLE UP TO 500 FT	EA	4
8027	12 - PAIR COMMUNICATION CABLE, SELF SUPPORTING OR JELLY FILLED	LF	500
8029	CABLE - 1 CONDUCTOR, 250 KCML. CU. USE	LF	150
8030	DISCONNECT, PULL-BACK & REROUTE CABLES	LF	160
8033	SCHEDULE 80 RIGID PVC CONDUIT UP TO 4 INCHES - SLOTTED	LF	250
8034	SCHEDULE 80 RIGID PVC CONDUIT UP TO 4 INCHES - TRENCHED	LF	250
8035	WOOD SIGN SUPPORTS UP TO 4 X 6	LF	15
8036	INSTALL OVERHEAD OR GROUND MOUNTED SIGN (INCLUDING ALL HARDWARE)	SF	82
8038	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE	EA	500
8040	WEATHER HEAD, 3 INCH	EA	3
8041	METERED SERVICE PEDESTAL EMBEDDED	EA	1
8044	ELECTRICAL CABLE 1-CONDUCTOR NO. 8 AWG-THHN/THWN	LF	40
8045	FURNISH AND INSTALL ELECTRICAL HANDHOLE	EA	145
8049	3 INCH DIAMETER POLYVINYL CHLORIDE CONDUIT, SCHEDULE 80, RISER	LF	50
8050	12 INCH LED VEHICULAR TRAFFIC SIGNAL HEAD SECTION	EA	33
8054	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)	LF	1150
8056	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)	LF	1350
8057	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)	LF	1450
8064	INSTALL CONTROLLER AND CABINET - POLE MOUNT	EA	1
8065	INSTALL CONTROLLER AND CABINET - BASE MOUNT	EA	1

C. SHA 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

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
PHASE 2 + 5	R	R	G	G	G	R	R	R	R	WK	DW	DW	WK	DW	DW	DW	DW
5 CHANGE	R	R	G	G	G	R	R	R	R	WK	DW	DW	WK	DW	DW	DW	DW
PHASE 2 + 6	G	G	G	G	G	R	R	R	R	WK	WK	WK	WK	DW	DW	DW	DW
PED CLEARANCE	G	G	G	G	G	R	R	R	R	FL/DW	FL/DW	FL/DW	FL/DW	DW	DW	DW	DW
2 + 6 CHANGE	Y	Y	Y	Y	Y	R	R	R	R	DW							
PHASE 4 + 8	R	R	R	R	R	G	G	G	G	DW							
4 + 8 CHANGE	R	R	R	R	R	Y	Y	Y	Y	DW							
PHASE 4 + 8 ALT	R	R	R	R	R	G	G	G	G	DW	DW	DW	DW	WK	WK	WK	WK
PED CLEARANCE	R	R	R	R	R	G	G	G	G	DW	DW	DW	DW	FL/DW	FL/DW	FL/DW	FL/DW
4 + 8 ALT CHANGE	R	R	R	R	R	Y	Y	Y	Y	DW							
	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	DARK							



KEY

- A, B, C, D, E, H } 7 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
- F, G, J, K, L, M, N, O, P, Q, R } 5 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
- S, T, U, V, W, X, Y, Z } 2 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
- AA } 1 CONDUCTOR (NO. 6 AWG) STRANDED BARE COPPER GROUND WIRE
- BB } VIDEO DETECTION
- CC } CAMERA CABLE
- GG } CABLE - 3 WIRES, 1 CONDUCTOR, 250 KCML. CU. USE
- PE } 2 WIRES, 1 CONDUCTOR NO. 8 AWG.
- EE } EXISTING 12-PAIR COMMUNICATION CABLE, SELF SUPPORTING
- FF } 12-PAIR COMMUNICATION CABLE, SELF SUPPORTING
- + } GROUND ROD

REDLINE NO. 1, AUGUST 2011

SHA STATE OF MARYLAND
 DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION
 OFFICE OF TRAFFIC & SAFETY
 TRAFFIC ENGINEERING DESIGN DIVISION
 MD 547 (KNOWLES AVENUE)
 AT SUMMIT AVENUE
 KENSINGTON, MARYLAND

GENERAL INFORMATION SHEET

SCALE	NTS	ADVERTISED DATE	JANUARY 2011	CONTRACT NO.	XX4456185
DESIGNED BY	S. SMITH	COUNTY	MONTGOMERY		
DRAWN BY	J. WOOD	LOGMILE	15045701.63		
CHECKED BY	S. DU	TIMS NO.	1607		
F.A.P. NO.	SEE TITLE SHEET	TOD NO.			
TS NO.	471A	DRAWING	2	OF	4
		SHEET NO.		OF	

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