

PROJECT DESCRIPTION

EQUIPMENT LIST (cont.)

I. GENERAL

This project involves the reconstruction of an existing Traffic Control Signal with interconnect, street lighting and a traffic surveillance camera at the intersection of MD 320 (Piney Branch Rd) and MD 787 (Flower Ave) in Montgomery County. A new mast arm traffic signal with interconnect, street lighting, traffic surveillance camera and Countdown pedestrian signals with audible pushbuttons shall be installed at this location. MD 320 (Piney Branch Rd) is assumed to run in an east-west direction.

II. INTERSECTION OPERATION

- The intersection shall continue to operate in a NEMA six-phase, semi-actuated mode, with the MD 320 (Piney Branch Rd) approaches running concurrently. The Exclusive/Permissive left turn phases for both approaches of MD 320 (Piney Branch Rd) shall remain in operation. The pedestrian phases across MD 320 (Piney Branch Rd) shall now be Countdown pedestrian phases with audible pushbutton actuation. The pedestrian phases across MD 787 (Flower Ave) shall now be Countdown pedestrian phases with audible pushbuttons on recall. The MD 787 (Flower Ave) approaches shall also continue to run concurrently.
- A full-traffic-actuated, eight-phase controller with video interface and all necessary equipment housed in a NEMA size "6" base-mounted cabinet shall be installed at this intersection.
- Montgomery County signal shop shall install APS control unit into controller cabinet. The Contractor shall deliver the Control Unit and audible pushbuttons to Mr. Keith Lord of the Montgomery County Signal Shop for testing and programming.

III. SPECIAL NOTES

- The Contractor shall be responsible for terminating all signal cables, excluding interconnect, to the appropriate terminals and shall properly label each cable.
- Disconnecting and splicing of interconnect cable shall be performed by Montgomery County Forces. 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.
- Contact Mr. Mike Kinney at (240) 777-8760 seventy-two hours in advance of intended work for wiring/relocating of traffic surveillance camera equipment including pole mount camera cabinet.
- APS will function as follows:
TO CROSS PINEY BRANCH ROAD
a. When pedestrian locates and presses the pushbutton for an extended time, the pushbutton unit will announce the following message "Wait to cross Piney Branch at Flower, crosswalk angles left."
b. When the WALK phase begins, the pushbutton unit will provide a rapid tick which will last for the duration of the WALK phase.
TO CROSS FLOWER AVENUE
a. When pedestrian locates and presses the pushbutton for an extended time, the pushbutton unit will announce the following message "Wait to cross Flower at Piney Branch."
b. When the WALK phase begins, the pushbutton unit will provide a rapid tick which will last for the duration of the WALK phase.

The contacts for Montgomery County and SHA are as follows:

Mr. Jeff Wentz Assistant District Engineer - Traffic Phone: (301) 513-7318	Mr. Richard L. Daff, Sr. Chief, Traffic Operations Division Phone: (410) 787-7630	Mr. Mike Kinney Mont. County Traffic 240-777-8760
Mr. Vernon Stinnett Assistant District Engineer - Maintenance Phone: (301) 513-7304	Mr. Bob Ricketts Signal Shop (Mont Co.) 240-876-3681	Mr. Kamal Hamud Mont. County TMC Center 240-777-8761
Mr. Augie Rebish District Engineer - Utility Phone: (301) 513-7350	Mr. Sonny Bailey Manager, Sign Shop Operations 410-787-7670	

EQUIPMENT LIST

A. EQUIPMENT TO BE SUPPLIED BY S.H.A.A.

ITEM NO.	DESCRIPTION	QUANTITY
9042	Controller ASC II with telemetry	1 EA
9044	Controller cabinet, size "6"	1 EA
9086	Video detection interface equipment: 1-4 cameras (To be installed by signal shop).	1 EA
9571	Sheet aluminum signs to consist of: (mast arm or pole mount)	63 SF
	D-3(1) "Piney Branch RD 8500" / Piney Branch RD 8500" sign, (variable x 16"), dual faced mast arm mounted	2 EA
	D-3(1) "Flower AVE 8700" / Flower AVE 8700" sign, (variable x 16") dual faced, mast arm mounted	2 EA
	R3-5L "LEFT TURN ONLY" sign, (30" x 36") mast arm mounted	1 EA
	R10-11b "NO TURN ON RED" sign, (24"x24"), mast arm mounted	3 EA
	Pedestrian education R10-3(1) sign (9"x15"). (Note: Sign to read "PUSHBUTTON TO CROSS FLOWER AVENUE".) pole mounted.	4 EA
	Pedestrian education R10-3(1) sign (9"x15"). (Note: Sign to read "PUSHBUTTON TO CROSS PINEY BRANCH RD".) pole mounted.	4 EA
9032	27' steel Mast arm pole (cut to 23') with 70' mast arm.	1 EA

B. EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR

ITEM NO.	DESCRIPTION	QUANTITY
1003	Maintenance of traffic per assignment.	3 EA
2002	Test Pit Excavation	11 C.Y.
5004	12" white heat applied permanent preformed thermoplastic pavement marking.	540 L.F.
5005	24" white heat applied permanent preformed thermoplastic pavement marking.	125 L.F.
5007	Removal of existing permanent pavement line markings	280 L.F.
6001	Standard type A combination curb and gutter 12" gutter pan 8" depth.	300 L.F.
6002	5" concrete sidewalk.	1525 S.F.
6003	Detectable warning surface for curb ramps	140 S.F.
8001	2 wire Central Control unit	1 EA
8005	Adjust and re-rig existing span wire (each span).	1 EA
8006	Any size lighting arm on signal pole with 250 watt HPS lamp & luminaire.	2 EA
8007	Audible/facile pedestrian pushbutton station & signs.	8 EA
8008	Breakaway Pedestal pole (Any size)	6 EA
8012	Install steel strain or mast arm pole with single or twin.	1 EA
8013	LED 16" countdown pedestrian signal head.	8 EA
8018	Mast arm pole and 50' mast arm any "T" dimension	1 EA
8021	Remove and dispose of material & equipment per assignment.	1 EA
8024	Twin mast arm pole & 50' (cut to 38') / 70' mast arms any "T" dimension.	1 EA
8025	Video detection camera & cable up to 500'	4 EA
8027	12-pair communication cable self supporting or jelly-filled.	750 L.F.
8029	Cable - 1 conductor, No. 250 KCMIL, Cu. Use	720 L.F.
8030	Disconnect, pull back and reroute cable.	140 L.F.
8033	Schedule 80 rigid PVC conduit up to 4" - slotted.	210 L.F.
8034	Schedule 80 rigid PVC conduit up to 4" - trenched.	230 L.F.
8036	Install overhead or ground mounted sign (including hardware).	63 S.F.
8038	No. 6 AWG stranded bare copper ground wire.	670 L.F.
8040	Weatherhead, 3 inch.	3 EA
8041	Metered service pedestal embedded.	1 EA
8043	Electrical cable 1-conductor No. 4 AWG THHN/THWN.	45 L.F.
8045	Furnish and install electrical handhole.	3 EA
8049	3 inch diameter PVC conduit schedule 80, riser	30 L.F.
8050	12" LED signal head section.	44 EA
8052	Cut, clean, galvanize and cap traffic signal structure.	2 EA
8054	Electrical cable - 2 conductor (No. 14 AWG).	1165 L.F.
8056	Electrical cable - 5 conductor (No. 14 AWG).	1330 L.F.
8057	Electrical cable - 7 conductor (No. 14 AWG).	1650 L.F.
8058	Electrical cable - 2 conductor (No. 12 AWG) TC.	100 L.F.
8064	Install controller and cabinet pole mount.	1 EA
8065	Install controller and cabinet base mount.	1 EA

C. EQUIPMENT TO BE REMOVED

Montgomery County Forces shall remove the controller and all auxiliary equipment from the controller cabinet. The cabinet and all other removed signal materials are to become property of the contractor.

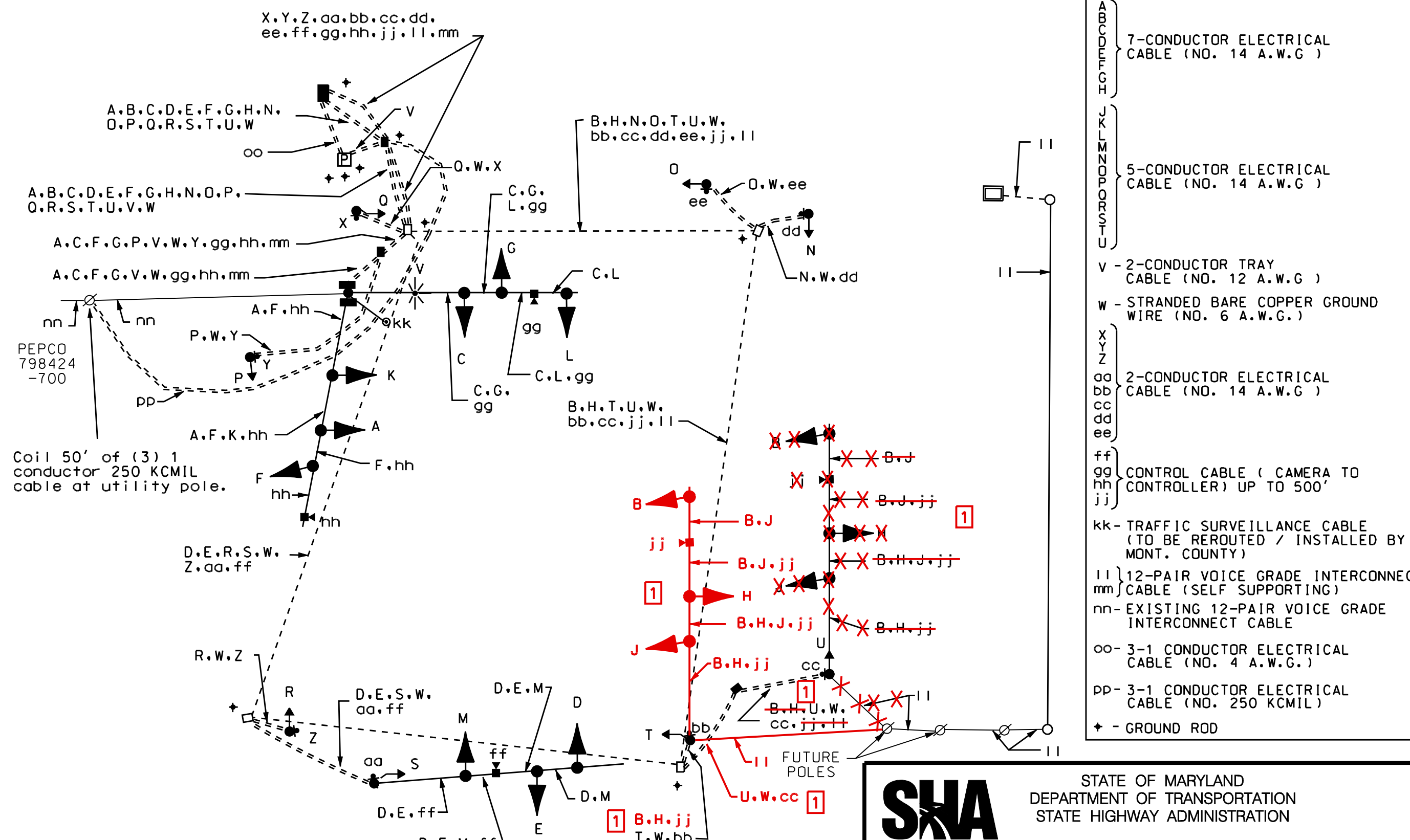
D. EQUIPMENT TO BE SUPPLIED BY MONTGOMERY CABINET

DESCRIPTION	QUANTITY
Splice cabinet.	1 EA

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 & 5	←G-/R	←G-/R	R	←G-/R	←G-/R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
CHANGES TO PHASES 1 & 6, 2 & 5 OR 2 & 6																				
PHASE 1 & 6	←G-/G	←G-/G	G	R	R	R	R	R	R	R	R	R	DW	WK	WK	DW	DW	DW	DW	DW
1 & 6 CHANGE	←Y-/G	←Y-/G	G	R	R	R	R	R	R	R	R	R	DW	WK	WK	DW	DW	DW	DW	DW
PHASE 2 & 5	R	R	R	←G-/G	←G-/G	G	R	R	R	R	R	R	WK	DW	DW	WK	DW	DW	DW	DW
2 & 5 CHANGE	R	R	R	←Y-/G	←Y-/G	G	R	R	R	R	R	R	WK	DW	DW	WK	DW	DW	DW	DW
PHASE 2 & 6	G	G	G	G	G	G	R	R	R	R	R	R	WK	WK	WK	WK	DW	DW	DW	DW
PED CLEAR	G	G	G	G	G	G	R	R	R	R	R	R	FL/DW	FL/DW	FL/DW	FL/DW	DW	DW	DW	DW
2 & 6 CHANGE	Y	Y	Y	Y	Y	Y	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 4 & 8	R	R	R	R	R	R	G	G	G	G	G	G	DW	DW	DW	DW	DW	DW	DW	DW
4 & 8 CHANGE	R	R	R	R	R	R	Y	Y	Y	Y	Y	Y	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 4 & 8 ALT	R	R	R	R	R	R	G	G	G	G	G	G	DW	DW	DW	DW	WK	WK	WK	WK
PED CLEARANCE	R	R	R	R	R	R	G	G	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	R	Y	Y	Y	Y	Y	Y	DW	DW	DW	DW	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	DARK	DARK	DARK	DARK

WIRING DIAGRAM



WIRING KEY

- A - 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- B - 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- V - 2-CONDUCTOR TRAY CABLE (NO. 12 A.W.G.)
- W - STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
- X, Y, Z - 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- aa, bb, cc, dd, ee, ff - CONTROL CABLE (CAMERA TO CONTROLLER) UP TO 500'
- kk - TRAFFIC SURVEILLANCE CABLE (TO BE REROUTED / INSTALLED BY MONT. COUNTY)
- ll, mm - 12-PAIR VOICE GRADE INTERCONNECT CABLE (SELF SUPPORTING)
- nn - EXISTING 12-PAIR VOICE GRADE INTERCONNECT CABLE
- oo - 3-1 CONDUCTOR ELECTRICAL CABLE (NO. 4 A.W.G.)
- pp - 3-1 CONDUCTOR ELECTRICAL CABLE (NO. 250 KCMIL)
- + - GROUND ROD

SHA STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MD 320 (PINEY BRANCH RD.)
AND MD 787 (FLOWER AVE.)

TAKOMA PARK, MARYLAND

GENERAL INFORMATION SHEET

SCALE NONE DATE 1/4/2010 CONTRACT NO. XX4455185

DESIGNED BY R.R.Z. COUNTY MONTGOMERY
DRAWN BY R.C. LOGMILE 15032001.63
CHECKED BY TIMS NO. J436
F.A.P. NO. TOD NO.

TS NO. 2684A DRAWING NO. 2 OF 2 SHEET NO. OF

sts STREET TRAFFIC STUDIES, LTD.
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Creston, MD 20625
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FILE: 8/3/10

1 REDLINE REVISION 8/3/10
TEDD APPROVAL

DRILL HOLES

DRILL HOLES

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BORDER REV. DATE: June 1, 2004