PROJECT DESCRIPTION

I. GENERAL

This project involves the reconstruction of an existing Traffic Control Signal with interconnect at the intersection of MD 97 (Georgia Ave) and Seminary Rd / Columbia Blvd in Montgomery County. MD 97 (Georgia Ave) is assumed to run on north-south direction.

This project involves the removal of the existing span wire mounted traffic signal and the installation of a mast arm traffic signal. Video detection cameras shall be installed for all directions at this intersection.

II. INTERSECTION OPERATION

1. The intersection is to operate in a NEMA six-phase, semi-actuated mode, with the MD 97 (Georgia Ave) approaches running concurrently. Exclusive/Permissive left turn phases shall be remain in operation for both approaches of (Georgia Ave). Pedestrian phase with pushbutton actuation shall be provided across both legs of (Georgia Ave). The pedestrian phases across Sminary Road / Columbia Blvd shall remain on recall. The Seminary Road and Columbia Blvd approaches shall remain in a split phase mode

2. A full-traffic-actuated, eight-phase controller with L.A.U. and L.A.U. Panel with associated harnesses housed in a NEMA size "6" base-mounted cabinet shall be installed at this intersection.

III. SPECIAL NOTES

1. The Contractor shall be responsible for terminating all signal cables, excluding interconnect, to the appropriate terminals and shall properly label each cable.

2. Disconnecting and splicing of interconnect cable shall be performed by Montgomery County Forces. The contractor shall run the interconnect cable into the base of each cabinet and properly tag the cable. Contact Mr. Bob Gonzales at (240) 777-8761 seventy-two hours in advance of intended work.

3. The contractor is to supply Mr. Keith Lord at (301) 279-1291, of the Montgomery County Tech Center, the video interface equipment at least four weeks prior to the pickup date

4. 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.

5. The Contractor must contact Montgomery County Transportation Management Center (240) 777-2100 72 hours prior for the purpose of marking the existing signal equipment.

EQUIPMENT LIST

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

ITEM NO.	DESCRIPTION	QUANTITY
9076	Cabinet "G" type - pole mount	1 EA
9084	Eight-phase, full-traffic actuated, solid state digital controller, L.A.U., L.A.U. Panel housed in NEMA size "6" base-mounted cabinet.	1 EA
9089	Sheet aluminum signs to consist of:	76.5 SF
	R3-5R "RIGHT TURN ONLY" sign, (30" x 36") mast arm mounted.	1 EA
	R3-5L "LEFT TURN ONLY" sign, (30" x 36") mast arm mounted.	2 EA
	R3-2(2) "NO LEFT TURN 6:30-9:30 AM 4:00-7:00 PM MONDAY-FRIDAY" sign. (24"x36") mast arm mounted.	4 EA
	M95-1 "(arrow) SOUTH/MD 97/ NORTH (arrow)" sign. (24"x78") ground mounted.	1 EA
	M95-1 "(arrow) NORTH/MD 97/ SOUTH (arrow)" sign. (24"x78") ground mounted.	1 EA
9090	Sheet aluminum signs to consist of: (Green)	40 SF
	D3-2 "Georgia AVE < 9400 " sign. (variable x 16") / Georgia AVE 9400 > " sign. (variable x 16") mast arm mounted. (dual faced)	2 EA
	D3-2 "Seminary RD 1900> (arrow)" sign. (variable x 16") / "(arrow) Seminary RD < 1900" sign. (variable x 16") mast arm mounted. (dual faced)	1 EA
	D3-2 "(arrow) Columbia BLVD <9500 sign. (variable x 16") "Columbia BLVD 9500> (arrow) sign. (variable x 16") mast arm mounted. (dual faced)	1 EA
9096	Pedestrian education sign (No road name)	1 EA

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

ITEM NO.	DESCRIPTION	QUANTITY
1001	Maintenance of traffic per assignment.	3 EA
2001	Class 2 Excavation.	16 C.Y.
2002	Test Pit Excavation	8 C.Y.

EQUIPMENT LIST (CONT.)

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

ITEM NO.	DESCRIPTION	QUANTITY
5004	12" white heat applied permanent preformed thermoplastic pavement marking.	1500 L.F.
5008	Remove existing pavement markings - crosswalk.	1599 L.F.
6004	4" concrete sidewalk.	400 S.F.
8001	Pre-manufactured camera to controller (250' length) cable	2 EA
8003	Pre-manufactured camera to controller (500' length) cable	2 EA
8006	Cut, clean, galvanize and cap traffic signal structure.	3 EA
8010	Furnish and install 12" pedestrian signal head section	16 EA
8011	Furnish and install 12" vehicular traffic signal head section	48 EA
8015	Furnish and install 3" weatherhead.	2 EA
8020	Furnish and install control and distribution equipment (120/240 V, 1 phase 3 wire system).	1 EA
8025	Furnish and install special 18' upright with 15' T dimension with 50' (cut to 45') mast arm.	2 EA
8026	Furnish and install special 18' upright with 15' T dimension with 60' (cut to 56') mast arm.	1 EA
8027	Furnish and install special 18' upright with 15' T dimension with 50' mast arm.	1 EA
8030	Furnish and install 10' breakaway pedestal pole .	2 EA
8032	Pedestrian pushbutton and R10-3C sign. (Note: Sign to read "PUSHBUTTON TO CROSS GEORGIA AVE".)	4 EA
8047	Remove and dispose of existing foundation 12" below grade.	5 EA
8048	Remove and dispose of existing material and equipment per assignment.	1 EA
8049	Furnish and install video detector camera.	4 EA
8050	Furnish and install video detection interface equipment.	1 EA
8051	Furnish and install 3" schedule 80 rigid polyvinyl chloride conduit - trenched	115 L.F.
8052	Furnish and install 4" schedule 80 rigid polyvinyl chloride conduit - bored.	400 L.F.
8053	Furnish and install 4" schedule 80 rigid polyvinyl chloride conduit - trenched.	20 L.F.
8054	Furnish and install 12-pair communication cable, self-supporting (overhead).	200 L.F.
8059	Furnish and install concrete for signal foundation.	17 C.Y.
8062	Furnish and install No. 6 AWG stranded bare copper ground wire.	975 L.F.
8072	Furnish and install electrical cable 1-conductor No. 4 AWG THHN/THWN.	300 L.F.
8074	Furnish and install electrical handhole.	7 EA
8076	Install ground mounted sign.	26 S.F.
8077	Install overhead sign.	90.5 S.F.
8082	Furnish and install ground rod -¾" x 10'.	6 EA
8084	Furnish and install electrical cable - 2 conductor (No. 14 AWG).	720 L.F.
8085	Furnish and install electrical cable - 3 conductor (No. 14 AWG).	560 L.F.
8086	Furnish and install electrical cable - 5 conductor (No. 14 AWG).	510 L.F.
8087	Furnish and install electrical cable - 7 conductor (No. 14 AWG).	1760 L.F.
8091	Furnish and install 2" schedule 80 rigid polyvinyl chloride - trenched	40 L.F.
8094	Install pole mounted cabinet	1 EA
8095	Install controller and cabinet base mount.	1 EA

EQUIPMENT LIST (CONT.)

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

ITEM NO.	DESCRIPTION	QUANTITY
Neg.	Furnish and install 3" electrical conduit - polyvinyl chloride riser.	30 L.F.
Neg.	Pull back and reroute 12-pair interconnect cable	350 L.F.
Neg.	Remove bushes and selective tree trimming	LUMP SUM
Neg.	Install pedestrian education sign.	1 EA

C. EQUIPMENT TO BE REMOVED BY SHA FORCES.

SHA Forces shall remove the controller and all auxilliary equipment from the controller cabinet. The cabinet and all other materials to be removed by the contractor shall become the property of the contractor.

The contact persons for District #3 are as follows:

Mr. Majid Shakib
Assistant District Engineer - Traffic
Phone: (301 513-7358

Mr. Randy Brown
Assistant District Engineer - Maintenance
Phone: (301) 513-7304

Mr. Augie Rebish
Assistant District Engineer - Utility
Phone: (301) 513-7350

Mr. Richard L. Daff, Sr.
Chief, Traffic Operations Division
Phone: (410) 787-7630

The power company representative is:

Eliza Hemingway
PEPCO
4061 Powder Mill Rd
Suite 600, Center Park II
Calverton, MD 20705
Phone: 301-931-2880

SEQUENCE OF OPERATION SHEET

TRAFFIC OPERATIONS SECTION
DIVISION OF TRAFFIC ENGINEERING
MONTGOMERY COUNTY, MARYLAND

MD 97 (GEORGIA AVE) AND SEMINARY RD / COLUMBIA BLVD

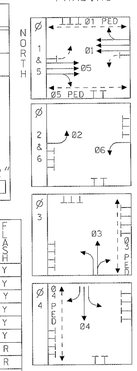
MD 97 RUNS IN AN NORTH-SOUTH DIRECTION

INTERSECTION: _____ NO. ____

SIGNAL NO.	3,6,9,12		1,2,4,5	7,8, 10,11		13-20
	SIGNAL HEAD INDICATIONS					
TOTAL:	4		4	4		8
	R		R	R	R	
	Y	Y	◄Y Y	Y	◄Y Y	
	G		◄G G	G	◄G G	9"or12" X
	12"	12"	12"	12"	12"/8	

LEGEND
□ OPTICALLY LIMITED
R RED
Y YELLOW
G GREEN
◄ ARROW
F FLASHING

PHASING



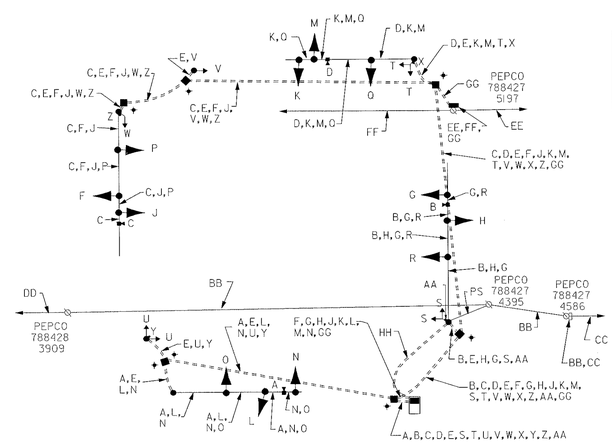
SEQUENCE OF OPERATION

SIGNAL NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	FLASH
	INTERVAL																	
1	G	G	Y	R	◄G/R	◄Y/R	R	R	R	R	R	R	R	R	R	R	R	Y
2	G	G	Y	R	◄G/R	◄Y/R	R	R	R	R	R	R	R	R	R	R	R	Y
3	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Y
4	G	G	Y	R	◄G/R	◄Y/R	R	R	R	R	R	R	R	R	R	R	R	Y
5	G	G	Y	R	◄G/R	◄Y/R	R	R	R	R	R	R	R	R	R	R	R	Y
6	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Y
7	R	R	R	R	R	R	◄G	◄G	◄G	Y	R	R	R	R	R	R	R	R
8	R	R	R	R	R	R	◄G	◄G	◄G	Y	R	R	R	R	R	R	R	R
9	R	R	R	R	R	R	G	G	G	Y	R	R	R	R	R	R	R	R
10	R	R	R	R	R	R	R	R	R	R	R	◄G	◄G	◄G	Y	R	R	R
11	R	R	R	R	R	R	R	R	R	R	R	◄G	◄G	◄G	Y	R	R	R
12	R	R	R	R	R	R	R	R	R	R	R	R	G	G	G	Y	R	R
13	WK	F/DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DARK
14	WK	F/DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DARK
15	WK	F/DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DARK
16	WK	F/DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DARK
17	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	WK	F/DW	DW	DW	DW	DARK
18	DW	DW	DW	DW	DW	DW	DW	WK	F/DW	DW	DW	DW	DW	DW	DW	DW	DW	DARK
19	DW	DW	DW	DW	DW	DW	DW	WK	F/DW	DW	DW	DW	DW	DW	DW	DW	DW	DARK
20	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	WK	F/DW	DW	DW	DW	DARK
PHASE	1 & 5			ALL RED	2 & 6	ALL RED	3					ALL RED	4				ALL RED	

NOTES:

SUBMITTED: _____ CHECKED: _____ APPROVED: _____
IN SERVICE BY: _____ DATE: _____ TIME: _____

WIRING DIAGRAM



WIRING KEY

- A, B — 250' PRE-MANUFACTURED CAMERA TO CONTROLLER CABLE
- C, D — 500' PRE-MANUFACTURED CAMERA TO CONTROLLER CABLE
- E — STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
- F, K, H, T, X, M, N — 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)
- G, Q, R, S, U — 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)
- V, W — 3-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)
- X, Y, Z, AA — 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)
- BB - REROUTED REVERSIBLE LANE INTERCONNECT CABLE (OVERHEAD)
- CC - EXISTING REVERSIBLE LANE INTERCONNECT CABLE (OVERHEAD) TO 16TH STREET
- DD - EXISTING REVERSIBLE LANE INTERCONNECT CABLE (OVERHEAD) TO SEMINARY PLACE
- EE, FF — EXISTING 12-PAIR VOICE GRADE INTERCONNECT CABLE (OVERHEAD)
- GG - 12-PAIR VOICE GRADE INTERCONNECT CABLE (OVERHEAD)
- HH - 3-1 CONDUCTOR ELECTRICAL CABLE (NO. 4 A.W.G.)
- PS - PROPOSED OVERHEAD SERVICE TO BE INSTALLED BY PEPCO
- ✦ - GROUND ROD

STREET TRAFFIC STUDIES, LTD.
400 Crain Hwy. NW.
Glen Burnie, MD 21061
Ph (410) 590-5500
Fax (410) 590-6637
3948G1.dgn

MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION
MD 97 (GEORGIA AVE) AND SEMINARY RD / COLUMBIA BLVD

DRAWN BY:		F.A.P. NO.		TS NO.	SHEET NO.
CHECKED BY:		S.H.A. NO.	MD 019A02/053		
SCALE:	NONE	COUNTY:	MONTGOMERY	T.I.M.S. NO.	2 OF 2
DATE:	10/15/01	LOG MILE:	15009700.18		