PROJECT DESCRIPTION

I. General

This project involves a traffic signal modification in conjunction with geometric improvements at the intersection of MD 117(Clopper Road) at MD 119 (Great Seneca Hwy.) in Montgomery County, Maryland. MD 117 is assumed to run in a East-West direction.

II. Intersection Operation

An exclusive/permissive left turn phase will be added on eastbound Clopper Road.

III. Special Notes

1. Maintenance of traffic will be handled by the Contractor utilizing the following standard plates for traffic control: 104.00-13, 104.00-19, 104.00-21-104.00-24, 104.17-01, 104.17-02, 104.39-02, 104.41-02, 104.48-01, 104.48-02, 104.49-01, 104.49-02, 104.81-01, 104.81-02.

2. The following contact persons for District #3 are as follows:

Mr. Charles Watkins
District Engineer Asst.
Phone #(301) 513-7311

Mr. Majib Shakib
District Engineer-Traffic
Phone #(301) 513-7358

Mr. Randy Brown
Asst. District Engineer-Maintenance
Phone #(301) 513-7304

Mr. Joe Geckel
Asst. District Engineer-Utility
Phone #(301) 513-7350

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

3. The Contractor shall be responsible for terminating all signal cables to the appropriate terminals and shall properly label each cable. Contact Mr. Bobby Gonzales at (240)777-8761 seventy two hours in advance of intended work.

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 percieves 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. Disconnecting and splicing of interconnect cable and Fiber Optic cable shall be performed by Montgomery County Forces. The Contractor shall be responsible for routing or relocating of interconect cable into the cabinet(s) as shown on the plans and shall properly label each cable. Contact Mr. Bobby Gonzales and Mr. Bruce Mangum of MCDPW&T at (240)777-8761 seventy two (72) hours in advance of any intended interconnect work to coordinate with the County.

6. Existing I/C cable to remain operational until the new I/C cable has been placed into operation, after which the existing I/C cable shall be removed completely.

7. Cabinet and Controller to be delivered to SHA Signal Shop 21 days prior to installation for wiring and testing.

EQUIPMENT LIST "B"

B. EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR

QUANTITY	UNITS	SPECIFICATION SECTION	DESRCRIPTION
LS	LS	104	Maintenance of Traffic.
LS	LS	814	Mobilization.
4	EA	814	Furnish and install 12 in. 1 way 3 section (R,Y,G) polycarbonate signal head-span mount.
2	EA	814	Furnish and install 12 in. 1 way 3 section (RA,YA,GA) polycarbonate signal head-span mount.
1	EA	814	Furnish and install 12 in. 1 way 5 section (R,Y,YA,G,GA) polycarbonate signal head-span mount.
1	EA	814	Furnish and install 12 in./8 in. 1 way 5 section (R,Y,YA,G,GA) polycarbonate signal head-span mount.
3	EA	817	Install pedestrian push button and R10-4(I) sign.
67	SF	814	Furnish sheet aluminum signs consisting of: 2 ea R10-4(I) (9in. X 12 in.) (Clopper Rd.) 1 ea R10-4(I) (9in. X 12in.) (Great Seneca Hwy) 2 ea D3-2 (var. X 18in.) (Great Seneca Hwy) (Dual-faced) 2 ea D3-2 (var. X 18in.) (Clopper Rd.) (Dual-faced) 1 ea R10-12 (36in. X 42in.) 1 ea R3-5R (30in. X 36in.)
1	CY	205	Test pit excavation.
6	CY	801	Furnish and install concrete for signal foundation.
1000	LF	555	Remove existing pavement marking any width.
100	LF	555	Furnish and install 24 in. white (heat applied) thermoplastic pavement marking tape.
50	LF	555	Furnish and install 5 in. white (heat applied) thermoplastic pavement marking tape.
475	LF	555	Furnish and install 12 in. white (heat applied) thermoplastic pavement marking tape.
2	EA	555	Furnish and install permanent preformed pavement marking arrow.
3	EA	814	Furnish and install 12 in., one way, 2 section (symbolic WALK/DON'T WALK) aluminum signal head, pole mount

EQUIPMENT LIST "B"

B. EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR

QUANTITY	UNITS	SPECIFICATION SECTION	DESRCRIPTION
4000	LF	810	Furnish and install 2 conductor electrical cable (No. 14 AWG) aluminum shielded.
1450	LF	810	Furnish and install 2 conductor electrical cable (No. 14 AWG)
675	LF	810	Furnish and install 5 conductor electrical cable (No. 14 AWG).
1000	LF	810	Furnish and install 7 conductor electrical cable (No. 14 AWG).
5	EA	813	Relocate overhead sign - for signals.
1	EA	813	Relocate ground - mounted signs.
1	EA	SP/818	Furnish and install a 12 in. X 32 ft. steel pole (Note: four - 2-1/4 in. X 96 in. anchor bolts).
10	LF	805	Furnish and install liquid tight flexible non metalic conduit for detector wire sleeve.
150	LF	815	Furnish and install saw cut for signal loop detector.
600	LF	810	Furnish and install loop wire encased in a 1/4 in. flexible tubing.
1	EA	818	Furnish and install 20 ft lighting arm on signal pole (for video camera system).
2	EA	XXX	Re-ring existing span wire.
3	EA	811	Furnish and install electrical handhole.
60	LF	805	Furnish and install 4 in. schedule 80 rigid PVC conduit (trenched).
35	LF	805	Furnish and install 3 in. schedule 80 rigid PVC conduit (trenched).
80	LF	805	Furnish and install 3 in. schedule 80 rigid PVC conduit (bored).
15	LF	805	Furnish and install 2 in. schedule 80 rigid PVC conduit (trenched) (electrical service).
15	LF	805	Furnish and install 2 in. schedule 80 rigid PVC conduit (trenched).
LS	LS	SP	Remove and dispose of existing signal equipment.
LS	LS	SP	Remove and salvage existing equipment.
LS	LS	SP	Delivery of salvaged equipment.
300	LF	819	Furnish and install 3/8 in. steel span wire.
300	LF	819	Furnish and install 1/4 in. tether wire.
20	LF	810	Furnish and install No. 6 AWG standard bare copper ground wire.
2	EA	804	Furnish and install ground rod - 3/4 in. diameter X 10 ft.
800	LF	810	Furnish and install 50 pair communications cable (NO. 19 AWG). (Self Supporting)
4000	LF	810	Furnish and install 50 pair communications cable (NO. 19 AWG) (Jelly Filled).
1	EA	SP	Furnish (Montgomery County Approved) video detection unit.
1	EA	816	Furnish and install EconoLite ACS II eight phase (fully actuated controller and cabinet with system package - base mount).

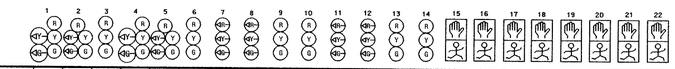
EQUIPMENT LIST "C"

C. EXISTING EQUIPMENT TO BE REMOVED BY THE CONTRACTOR AND DELIVERED TO THE STATE HIGHWAY ADMINISTRATION. 7491 CONNELLEY DRIVE, HANOVER, MARYLAND 21076.

QUANTITY	DESRCRIPTION
	CABINET AND CONTROLLER

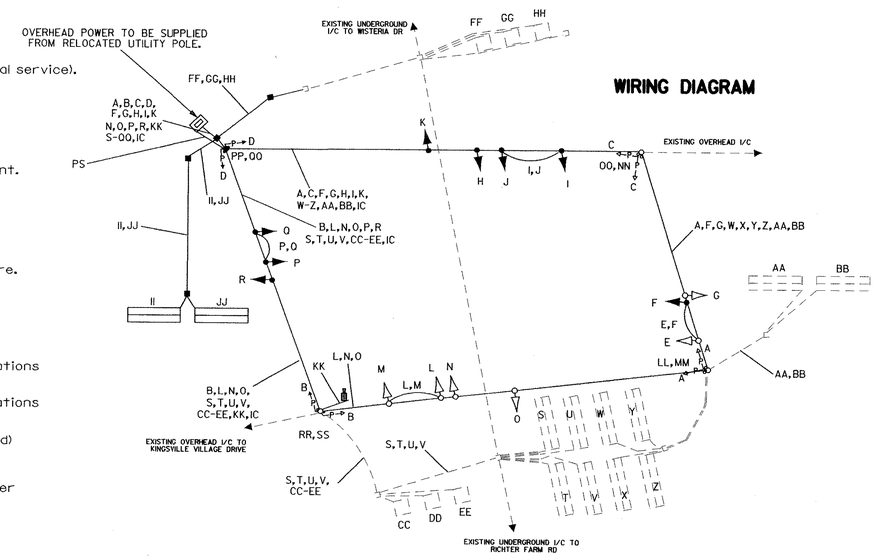
NOTES:
1. ALL MATERIALS TO BE REMOVED AND NOT LISTED ABOVE SHALL BECOME THE PROPERTY OF THE CONTRACTOR.
2. THE CONTRACTOR SHALL NOTIFY THE SHA AT (410) 787-7652 AT LEAST THREE DAYS IN ADVANCE OF DELIVERY.

PHASING SEQUENCE CHART



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
PHASE 1 + 5	←G-	←G-	R	←G-	←G-	R	←R-	←R-	R	R	←R-	←R-	R	R	DW	DW	DW	DW	DW	DW	DW	DW	
1 + 5 CHANGE	←Y-	←Y-	R	←Y-	←Y-	R	←R-	←R-	R	R	←R-	←R-	R	R	DW	DW	DW	DW	DW	DW	DW	DW	
PHASE 1 + 6	←G-	←G-	G	R	R	R	←R-	←R-	R	R	←R-	←R-	R	R	DW	DW	DW	DW	DW	DW	DW	DW	
1 + 6 CHANGE	←Y-	←Y-	Y	R	R	R	←R-	←R-	R	R	←R-	←R-	R	R	DW	DW	DW	DW	DW	DW	DW	DW	
PHASE 2 + 5	R	R	R	←G-	←G-	G	←R-	←R-	R	R	←R-	←R-	R	R	DW	DW	DW	DW	DW	DW	DW	DW	
2 + 5 CHANGE	R	R	R	←Y-	←Y-	Y	←R-	←R-	R	R	←R-	←R-	R	R	DW	DW	DW	DW	DW	DW	DW	DW	
PHASE 2 + 6	G	G	G	G	G	G	←R-	←R-	R	R	←R-	←R-	R	R	W	W	W	W	DW	DW	DW	DW	
PED CLEAR	G	G	G	G	G	G	←R-	←R-	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-	R	R	DW	DW	DW	DW	DW	DW	DW	DW	
PHASE 3 + 7	R	R	R	R	R	R	←G-	←G-	R	R	←G-	←G-	R	R	DW	DW	DW	DW	DW	DW	DW	DW	
3 + 7 CHANGE	R	R	R	R	R	R	←Y-	←Y-	R	R	←Y-	←Y-	R	R	DW	DW	DW	DW	DW	DW	DW	DW	
PHASE 3 + 8	R	R	R	R	R	R	←G-	←G-	G	G	←R-	←R-	R	R	DW	DW	DW	DW	DW	DW	DW	DW	
3 + 8 CHANGE	R	R	R	R	R	R	←Y-	←Y-	Y	Y	←R-	←R-	R	R	DW	DW	DW	DW	DW	DW	DW	DW	
PHASE 4 + 7	R	R	R	R	R	R	←R-	←R-	R	G	←G-	←G-	G	G	DW	DW	DW	DW	DW	DW	DW	DW	
4 + 7 CHANGE	R	R	R	R	R	R	←R-	←R-	G	G	←Y-	←Y-	Y	Y	DW	DW	DW	DW	DW	DW	DW	DW	
PHASE 4 + 8	R	R	R	R	R	R	←R-	←R-	G	G	←R-	←R-	G	G	DW	DW	DW	DW	DW	DW	DW	DW	
4 + 8 CHANGE	R	R	R	R	R	R	←R-	←R-	Y	Y	←R-	←R-	Y	Y	DW	DW	DW	DW	DW	DW	DW	DW	
ALT PHASE 4 + 8	R	R	R	R	R	R	←R-	←R-	R	R	←R-	←R-	G	G	DW	DW	DW	DW	W	DW	DW	W	
PED CLEAR	R	R	R	R	R	R	←R-	←R-	R	R	←R-	←R-	G	G	DW	DW	DW	DW	FL/DW	DW	DW	FL/DW	
ALT 4 + 8 CHANGE	R	R	R	R	R	R	←R-	←R-	R	R	←R-	←R-	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	FL/R	FL/R	DARK	DARK	DARK	DARK	DARK	DARK	DARK	DARK	

WIRING DIAGRAM



WIRING KEY

A-D,F,J,M,O = 5 CONDUCTOR ELECTRICAL CABLE (NO.14 AWG)
E,G,H,I,K, N,O,P,R = 7 CONDUCTOR ELECTRICAL CABLE (NO.14 AWG)
S-JJ = 2 CONDUCTOR ELECTRICAL CABLE (NO.14 AWG) ALUMINUM SHIELDED)
LL-SS = 2 CONDUCTOR ELECTRICAL CABLE (NO.14 AWG) ALUMINUM SHIELDED)
KK = CO-AXLE CABLE (TO BE OBTAINED FROM MONTGOMERY COUNTY) FOR VIDEO DETECTION UNIT.
LW = LOOP WIRE
PS = POWER SOURCE (TO BE DETERMINED)
IC = 50 PAIR INTERCONNECT CABLE

WELLS & ASSOCIATES, LLC
TRANSPORTATION, TRAFFIC, AND PARKING CONSULTANTS
1420 Spring Hill Rd., Suite 600
McLean, VA 22102
Phone: (703) 917-6620 Fax: (703)917-0739

REVISIONS

C 4-5-01 CONTRACT # BW866MB2
RELOCATE POLE & CONTROLLER IN THE NORTHWEST CORNER DUE TO GEOMETRIC IMPROVEMENTS ON GREAT SENECA & MD 117.
C.A.

B 3-3-99
REPLACE LOOPS DUE TO GEO. IMPRVMTS. ON GREAT SENECA AND MD 117
SHA NO.: BW866MB2
R.R.Z.

A 11-96
REDRAWN, REMOVE E/P AND INSTALL EXCLUSIVE LEFT-TURNS ON GREAT SENECA HWY.
SHA NO.: AW-102-501-385
SR/RR

APPROVALS

ORIGINAL ON FILE

TEAM LEADER, TRAFFIC ENGINEERING DESIGN DIVISION
ASST. CHIEF TRAFFIC ENGINEERING DESIGN DIVISION
CHIEF, TRAFFIC ENGINEERING DESIGN DIVISION
DIRECTOR, TRAFFIC & SAFETY

MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION

MD 117 (CLOPPER RD) AND MD 119 (GREAT SENECA HIGHWAY)

DRAWN BY: CA	F.A.P. NO.		TS NO. 3638C	SHEET NO.
CHECKED BY: LES	S.H.A. NO.			
SCALE:	COUNTY:	MONTGOMERY	T.I.M.S. NO. E-002	2 OF 2
DATE: 4-5-01	LOG MILE:	150117.08.06		

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