DRILL HOLES

BORDER REV: DATE: June 1, 2004

PROJECT DESCRIPTION

I. GENERAL

This project involves the installation of a new mast arm Traffic Control Signal with street lighting and interconnect at the intersection of MD 355 (Frederick Rd) and Foreman Blvd / Clarksburg High School Driveway in Montgomery County. MD 355 (Frederick Rd) is assumed to run a north-south direction.

II. INTERSECTION OPERATION

1. The intersection is to operate in a NEMA six-phase, semi-actuated mode, with the MD 355 (Frederick Rd) approaches running concurrently. An Exclusive left turn phase shall be provided for the northbound both approach of MD 355 (Frederick Rd). An Exclusive/Permissive left turn phase shall be provided for the eastbound approach of the Clarksburg High School Driveway. The Foreman Blvd / Clarksburg High School Driveway approaches shall also run concurrently. A Countdown pedestrian phase with audible pushbutton actuation shall be provided across the south leg of MD 355. [1]

2. A full-traffic-actuated, eight-phase controller with video interface, detector rack with power supply, L.A.U. and L.A.U. Panel and all necessary equipment housed in a NEMA size "6" base-mounted cabinet shall be installed at this intersection.

[1] Montgomery County signal shop shall install APS control unit into controller cabinet. The Contractor shall deliver the Control Unit and audible pushbuttons to the Montgomery County Signal Shop for testing and programming. Contact Mr. Keith Lord (301) 675-8965

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. All controller cabinet wiring will be performed by Montgomery County Forces. Contact Kamal Hamud at (240) 777-8761 seventy-two hours in advance of intended work.

3. 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.

4. Contractor shall contact Kamal Hamud at (240) 777-8761 or Bob Thorne at 301 651-6025 at least 72 hours prior to attaching proposed interconnect.

The contact persons for District #3 (Montgomery County) are as follows:

Mr. Jeff Wentz
Assistant District Engineer - Traffic
Phone: (301) 513-7358

Mr. Wayne Mowdy
Assistant District Engineer - Maintenance
Phone: (301) 513-7304

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

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

Mr. Ed Rodenhizer
Signal Shop
410-787-7652

Mr. Sonny Bailey
Sign Shop
410-787-7670

The power company representative is:

Ms. Donna Dolecki
Allegheny Power
Mount Airy Service Center
2901 Back Acre Circle
Mt Airy, MD 21771
301-829-7012

EQUIPMENT LIST

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

	ITEM NO.	DESCRIPTION	QUANTITY
	9000	38' mast arm with 27' pole	3 EA
	9022	50' mast arm with 27' pole	1 EA
	9042	Controller ASC II with telemetry	1 EA
	9044	Controller cabinet, size "6"	1 EA
	9570	Sheet aluminum signs to consist of: (ground mount)	9 SF
		W3-3 NEW "SIGNAL AHEAD" with flags sign. (36" x 36") pole mounted.	1 EA
[1]	9571	Sheet aluminum signs to consist of: (mast arm or pole mount) ~~151.5~~ 153	SF
		W3-3 NEW "SIGNAL AHEAD" sign. (36" x 36") pole mounted.	1 EA
		D3-2 "FREDERICK RD 22500" sign. (variable x 16") mast arm mnt (dual faced).	2 EA
		D3-2 "FOREMAN BLVD (arrow) 12600/ (arrow) FORMAN BLVD 12600" (variable x 32") mast arm mnt (dual faced).	2 EA
		R3-5L "LEFT TURN ONLY" sign. (30" x 36") mast arm mnt.	2 EA
		GUIDE SHIELD ASSEMBLY (48"x75") pole mounted. M3-1 "NORTH"(30"X15") M1-5 "MD 355"(48"X36") M6-1 "left arrow "(30"X24")	1 EA
		GUIDE SHIELD ASSEMBLY (48"x75") pole mounted. M3-3 "SOUTH"(30"X15") M1-5 "MD 355"(48"X36") M6-1 "left arrow "(30"X24")	1 EA
		GUIDE SHIELD ASSEMBLY (30"x51") pole mounted. M3-1 "NORTH"(24"X12") M1-5 "MD 355"(30"X24") M6-1 "right arrow "(21"X15")	1 EA
		GUIDE SHIELD ASSEMBLY (30"x51") pole mounted. M3-1 "SOUTH"(24"X12") M1-5 "MD 355"(30"X24") M6-1 "right arrow "(21"X15")	1 EA
[1]		Pedestrian education R10-4(1) mod sign. (Note: Sign to read "PUSHBUTTON TO CROSS FREDERICK ROAD").	2 EA

EQUIPMENT LIST (cont.)

B. EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR

	ITEM NO.	DESCRIPTION	QUANTITY
	1001	Maintenance of traffic per assignment.	3 EA
[1]	2002	Test Pit Excavation	9 ~~7~~ C.Y.
	5002	5" yellow lead free reflective thermoplastic pavement marking.	100 L.F.
[1]	5003	12" white lead free reflective thermoplastic pavement marking.	380 L.F.
[1]	5004	24" white lead free reflective thermoplastic pavement marking.	115 ~~80~~ L.F.
	5008	Heat applied white permanent preformed thermoplastic pavement marking arrow. (Left)	2 EA
	8002	12" red or green LED signal head section.	28 EA
	8003	12" yellow LED signal head section.	17 EA
	8004	15' lighting arm on existing structure.	2 EA
[1]	8006	2 wire Central Control unit	1 EA
[1]	8014	Audible/tactile pedestrian pushbutton station & signs.	2 EA
	8015	Breakaway pedestal pole (20')	1 EA
[1]	8015	Breakaway pedestal pole (10')	2 EA
	8017	Control cable, 300', video detection camera to controller	1 EA
	8018	Control cable, 100', video detection camera to controller	1 EA
	8019	Control cable, 200', video detection camera to controller	1 EA
	8023	Embedded metered service pedestal.	1 EA
[1]	8024	LED 16" countdown pedestrian signal head.	2 EA
	8031	2" schedule 80 rigid polyvinyl chloride conduit - trenched.	40 L.F.
	8032	3" electrical conduit riser schedule 80 (PVC).	105 LF
[1]	8036	Electrical cable - 2 conductor (No. 12 AWG) tray cable.	340 L.F.
[1]	8040	Concrete for signal foundation.	17 ~~15~~ C.Y.
	8042	Wood sign supports 4"x6".	16 L.F.
[1]	8043	No. 6 AWG stranded bare copper ground wire.	605 ~~500~~ L.F.
	8045	Weatherhead, 3"	3 EA
	8048	4" schedule 80 rigid polyvinyl chloride conduit - bored.	360 L.F.
[1]	8049	3" schedule 80 rigid polyvinyl chloride conduit - trenched.	1185 ~~1160~~ L.F.
	8050	4" schedule 80 rigid polyvinyl chloride conduit - trenched.	25 L.F.
	8056	Electrical cable 1-conductor No. 4 AWG THHN/THWN.	55 L.F.
[1]	8062	Furnish and install electrical handhole.	10 ~~9~~ EA
	8063	Install ground mounted sign.	9 SF
	8064	Install overhead mounted sign.	151.5 SF
	8065	Video detector camera.	3 SF

EQUIPMENT LIST (cont.)

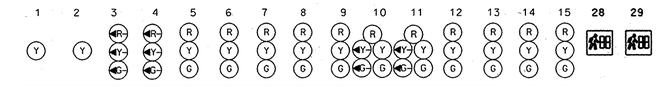
B. EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR

	ITEM NO.	DESCRIPTION	QUANTITY
	8067	12-pair communication cable self-supporting (overhead).	8520 L.F.
	8069	250 watt HPS lamp and luminare.	2 EA
[1]	8070	Ground rod 3/4" dia. x 10' length.	9 ~~8~~ EA
[1]	8076	Electrical cable - 2 conductor (No. 14 AWG).	350 L.F.
[1]	8078	Electrical cable - 5 conductor (No. 14 AWG).	615 ~~255~~ L.F.
	8079	Electrical cable - 7 conductor (No. 14 AWG).	2570 L.F.
	8082	Install steel pole and single mast arm (any size).	4 EA
	8088	Install controller and cabinet base mount.	1 EA
	Neg.	Lash I/C cable to existing County Fiber Optic cable.	8520 L.F.

C. EQUIPMENT TO BE REMOVED

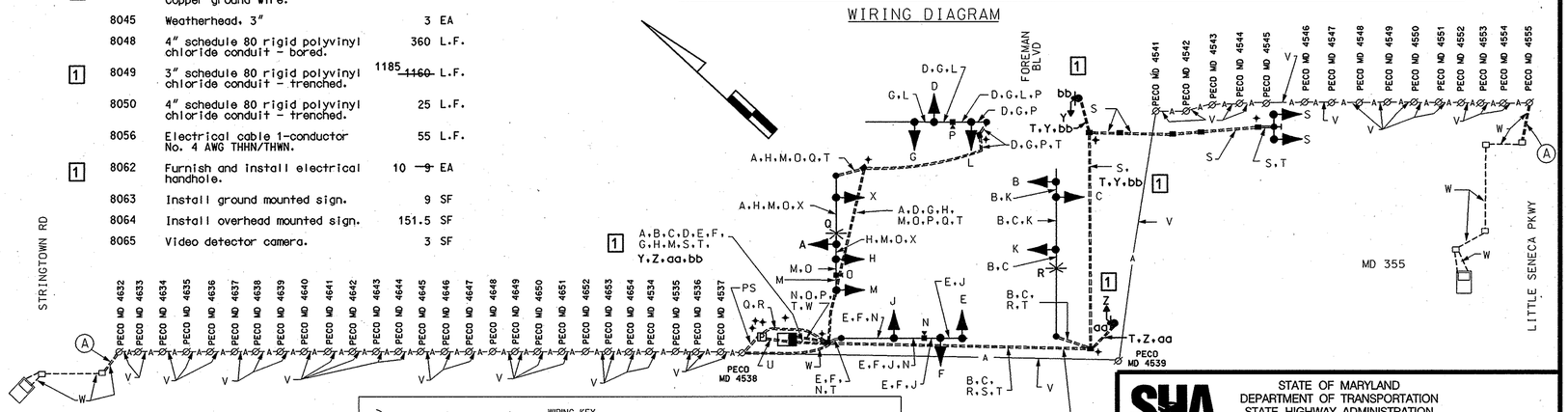
There is no signal equipment to be removed for this project.

PHASE CHART



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	28	29
PHASE 1 & 6	FL/Y	FL/Y	◄G-	◄G-	G	G	R	R	R	R	R	R	R	R	R	DW	DW
1 & 6 CHANGE	FL/Y	FL/Y	◄Y-	◄Y-	G	G	R	R	R	R	R	R	R	R	R	DW	DW
PHASE 2 & 6	FL/Y	FL/Y	◄R-	◄R-	G	G	G	G	G	R	R	R	R	R	R	DW	DW
2 & 6 CHANGE	FL/Y	FL/Y	◄R-	◄R-	Y	Y	Y	Y	Y	R	R	R	R	R	R	DW	DW
PHASE 4 & 7	FL/Y	FL/Y	◄R-	◄R-	R	R	R	R	R	◄G-/G	◄G-/G	G	R	R	R	DW	DW
4 & 7 CHANGE	FL/Y	FL/Y	◄R-	◄R-	R	R	R	R	R	◄Y-/G	◄Y-/G	G	R	R	R	DW	DW
PHASE 4 & 8	FL/Y	FL/Y	◄R-	◄R-	R	R	R	R	R	G	G	G	G	G	G	DW	DW
4 & 8 CHANGE	FL/Y	FL/Y	◄R-	◄R-	R	R	R	R	R	Y	Y	Y	Y	Y	Y	DW	DW
PHASE 4 & 7 ALT	FL/Y	FL/Y	◄R-	◄R-	R	R	R	R	R	◄G-/G	◄G-/G	G	R	R	R	WK	WK
4 & 7 ALT CHANGE	FL/Y	FL/Y	◄R-	◄R-	R	R	R	R	R	◄Y-/G	◄Y-/G	G	R	R	R	WK	WK
PHASE 4 & 8 ALT	FL/Y	FL/Y	◄R-	◄R-	R	R	R	R	R	G	G	G	G	G	G	WK	WK
PED CLEAR / COUNTDOWN	FL/Y	FL/Y	◄R-	◄R-	R	R	R	R	R	G	G	G	G	G	G	FL/DW	FL/DW
4 & 8 ALT CHANGE	FL/Y	FL/Y	◄R-	◄R-	R	R	R	R	R	◄Y-/G	◄Y-/G	G	R	R	R	DW	DW
FLASHING OPERATION	FL/Y	FL/Y	FL/◄R-	FL/◄R-	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	DARK	DARK

WIRING DIAGRAM



Interconnect Construction Detail

A. Install 3" polyvinyl chloride electrical conduit (Schedule 80) (trenched) for interconnect cable.

WIRING KEY

A B C D E F G H — 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)

J K L M X Y Z — 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)

N - CONTROL CABLE 100'

O - CONTROL CABLE 200'

P - CONTROL CABLE 300'

Q R — 2-CONDUCTOR TRAY CABLE (NO. 12 A.W.G)

S - 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G) for HIB

T - STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)

U - 3-1 CONDUCTOR ELECTRICAL CABLE (NO. 4 A.W.G.)

V - LASH 12-PAIR VOICE GRADE INTERCONNECT CABLE (SELF SUPPORTING) TO EXISTING COUNTY FIBER OPTIC CABLE

W - 12-PAIR VOICE GRADE INTERCONNECT CABLE (SELF SUPPORTING)

aa, bb — 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)

PS - PROPOSED UNDERGROUND SERVICE TO BE INSTALLED BY ALLEGHENY POWER

✦ - GROUND ROD

[1] REDLINE REVISION 8/22/06
TEDD APPROVAL 8/29/06

STREET TRAFFIC STUDIES, LTD.
400 Crain Hwy.NW.
Glen Burnie,MD 21061
Ph (410) 590-5500
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4982GI.dgn D6-64

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MD 355 AND FOREMAN BLVD

CLARKSBURG, MD.

GENERAL INFORMATION SHEET

SCALE NONE DATE 6/6/06 CONTRACT NO. AT7825185

DESIGNED BY JAMES ALLEN Jr. COUNTY MONTGOMERY
DRAWN BY R.C. LOGMILE 15035521.74
CHECKED BY TIMS NO. H062
F.A.P. NO. TOD NO.

TS NO. 4486 | DRAWING NO. 2 OF 2 | SHEET NO. OF

PLOTTED: @DATETIME@
FILE: @FILE@