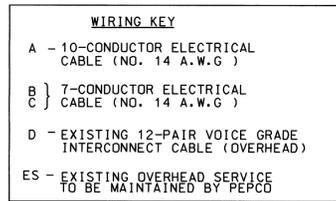


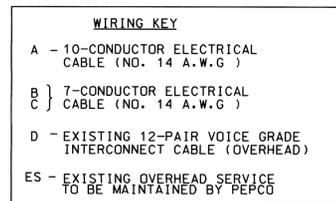
STATION #8 WIRING DIAGRAM



FIBER-OPTIC SIGNAL DISPLAY CHART

	1	2	3	4	5	6
OFF PEAK 7:00 PM TO 6:30 AM	(GREEN)	(FLASH YELLOW)	(RED)	(GREEN)	(FLASH YELLOW)	(RED)
A.M. OFF PEAK CHANGE	(GREEN)	(FLASH YELLOW)	(RED)	(GREEN)	(YELLOW)	(RED)
AM PEAK 6:30 AM TO 9:00 AM	(GREEN)	(GREEN)	(RED)	(GREEN)	(RED)	(RED)
AM CHANGE	(GREEN)	(YELLOW)	(RED)	(GREEN)	(RED)	(RED)
OFF PEAK 9:00 AM TO 3:30 PM	(GREEN)	(FLASH YELLOW)	(RED)	(GREEN)	(FLASH YELLOW)	(RED)
P.M. OFF PEAK CHANGE	(GREEN)	(YELLOW)	(RED)	(GREEN)	(FLASH YELLOW)	(RED)
PM PEAK 3:30 PM TO 7:00 PM	(GREEN)	(RED)	(RED)	(GREEN)	(GREEN)	(RED)
PM CHANGE	(GREEN)	(RED)	(RED)	(GREEN)	(YELLOW)	(RED)

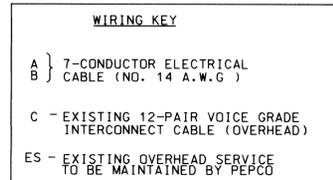
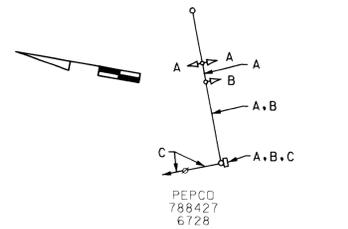
STATION #5 WIRING DIAGRAM



FIBER-OPTIC SIGNAL DISPLAY CHART

	1	2	3	4	5	6
OFF PEAK 7:00 PM TO 6:30 AM	(GREEN)	(FLASH YELLOW)	(RED)	(GREEN)	(FLASH YELLOW)	(RED)
A.M. OFF PEAK CHANGE	(GREEN)	(FLASH YELLOW)	(RED)	(GREEN)	(YELLOW)	(RED)
AM PEAK 6:30 AM TO 9:00 AM	(GREEN)	(GREEN)	(RED)	(GREEN)	(RED)	(RED)
AM CHANGE	(GREEN)	(YELLOW)	(RED)	(GREEN)	(RED)	(RED)
OFF PEAK 9:00 AM TO 3:30 PM	(GREEN)	(FLASH YELLOW)	(RED)	(GREEN)	(FLASH YELLOW)	(RED)
P.M. OFF PEAK CHANGE	(GREEN)	(YELLOW)	(RED)	(GREEN)	(FLASH YELLOW)	(RED)
PM PEAK 3:30 PM TO 7:00 PM	(GREEN)	(RED)	(RED)	(GREEN)	(GREEN)	(RED)
PM CHANGE	(GREEN)	(RED)	(RED)	(GREEN)	(YELLOW)	(RED)

STATION #1 WIRING DIAGRAM



FIBER-OPTIC SIGNAL DISPLAY CHART

	1	2	3
OFF PEAK 7:00 PM TO 6:30 AM	(GREEN)	(RED)	(RED)
A.M. OFF PEAK CHANGE	(GREEN)	(RED)	(RED)
AM PEAK 6:30 AM TO 9:00 AM	(GREEN)	(RED)	(RED)
AM CHANGE	(GREEN)	(RED)	(RED)
OFF PEAK 9:00 AM TO 3:30 PM	(GREEN)	(RED)	(RED)
P.M. OFF PEAK CHANGE	(GREEN)	(RED)	(RED)
PM PEAK 3:30 PM TO 7:00 PM	(GREEN)	(RED)	(RED)
PM CHANGE	(GREEN)	(RED)	(RED)

PROJECT DESCRIPTION

This project involves the maintenance of a Reversible Lane System on MD 97 from I-495 south approximately 2300' to Luzerne Avenue in Montgomery County. It includes the replacement of wiring, span wire and signal mounting brackets at 5 span wire sites along MD 97.

SYSTEM OPERATION

The system is in operation Monday thru Friday providing 4-lanes of thru traffic for southbound MD 97 in the AM Peak from 6:30 AM to 9:00 AM. At 9:00 AM, the off-peak operation shall begin consisting of 3 thru lanes in each direction and a two-way left turn lane. At 3:30 PM, the PM Peak begins providing 4-lanes of traffic for northbound MD 97 until 7:00 PM at which time the off-peak operation will again commence.

SPECIAL NOTE

All field wiring to the existing controller cabinet shall be terminated to the appropriate controller cabinet connectors by the Contractor and labeled. All other controller cabinet wiring will be performed by the MCDOT Forces. Contact Mr. Keith Lord (MCDPWT) at (301) 279-1292 seventy-two hours in advance of intended work.

EQUIPMENT LIST

ITEM NO.	DESCRIPTION	QUANTITY
A. EQUIPMENT TO BE SUPPLIED BY S.H.A..		
9000	Retrofitted Lane Control Signal	1 EA
B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR		
1001	Maintenance of traffic per assignment.	2 EA
8019	Remove and dispose of existing material and equipment per assignment.	1 EA
8084	Furnish and install electrical cable - 7 conductor (No. 14 AWG).	1200 L.F.
Neg.	Furnish and install 2-Way Lane Control Signal Head (with standard mounting bracket arm and standard span wire mounting bracket)	2 EA
Neg.	Furnish and install electrical cable - 10 conductor (No. 14 AWG).	2200 L.F.
Neg.	Furnish and install steel span wire, 1/2" diameter.	1400 L.F.
Neg.	Remove, Retrofit & Reinstall Lane Control Signal (with standard mounting bracket arm and standard span wire mounting bracket)	14 EA
Neg.	Install Signal Head (any type)	1 EA

MD 97 (GEORGIA AVE) LANE CONTROL SIGNALS

There are 5 Stations. 4 Stations have three heads each and the South most Station consists of only two heads.

The 4 Stations with reversible lane control heads should be wired with 10 conductor IMSA Spec. 19-1, Number 14 AWG wire.

REVERSIBLE LANE CONTROL HEADS

Conductor	Color	Termination
1	Black	Chassis Ground
2	White	AC Neutral
3	Red	Red (X)
4	Green	Green (Arrow)
5	Orange	Flashing (Yellow X)
6	Blue	Chassis Ground
7	White/Black	AC Neutral
8	Red/Black	Red (X)
9	Green/Black	Green (Arrow)
10	Orange/Black	Flashing (Yellow X)

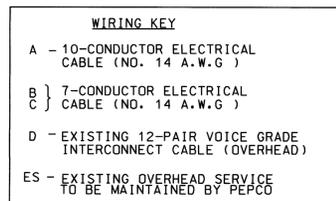
Note: Conductors 1 through 5 are to be wired to the "North facing indication" while conductors 6 through 10 will be wired to the South facing indication.

NON-CHANGING LANE CONTROL HEADS

The 5 Stations with Non-changing lane indications are to be wired with 7 conductor IMSA Spec 19-1, Number 14 AWG wire. There is a total of 10 lane control heads with non-changing indications.

Conductor	Color	Termination
1	Black	Chassis Ground
2	White	AC Neutral
3	Red	Red (X)
4	Green	Green (Arrow)
5	Orange	Spare
6	Blue	Spare
7	White/Black	Spare

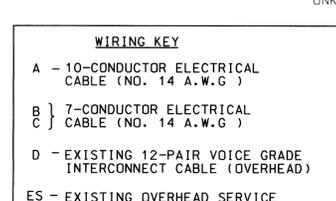
STATION #7 WIRING DIAGRAM



FIBER-OPTIC SIGNAL DISPLAY CHART

	1	2	3	4	5	6
OFF PEAK 7:00 PM TO 6:30 AM	(GREEN)	(FLASH YELLOW)	(RED)	(GREEN)	(FLASH YELLOW)	(RED)
A.M. OFF PEAK CHANGE	(GREEN)	(FLASH YELLOW)	(RED)	(GREEN)	(YELLOW)	(RED)
AM PEAK 6:30 AM TO 9:00 AM	(GREEN)	(GREEN)	(RED)	(GREEN)	(RED)	(RED)
AM CHANGE	(GREEN)	(YELLOW)	(RED)	(GREEN)	(RED)	(RED)
OFF PEAK 9:00 AM TO 3:30 PM	(GREEN)	(FLASH YELLOW)	(RED)	(GREEN)	(FLASH YELLOW)	(RED)
P.M. OFF PEAK CHANGE	(GREEN)	(YELLOW)	(RED)	(GREEN)	(FLASH YELLOW)	(RED)
PM PEAK 3:30 PM TO 7:00 PM	(GREEN)	(RED)	(RED)	(GREEN)	(GREEN)	(RED)
PM CHANGE	(GREEN)	(RED)	(RED)	(GREEN)	(YELLOW)	(RED)

STATION #2 WIRING DIAGRAM



FIBER-OPTIC SIGNAL DISPLAY CHART

	1	2	3	4	5	6
OFF PEAK 7:00 PM TO 6:30 AM	(GREEN)	(FLASH YELLOW)	(RED)	(GREEN)	(FLASH YELLOW)	(RED)
A.M. OFF PEAK CHANGE	(GREEN)	(FLASH YELLOW)	(RED)	(GREEN)	(YELLOW)	(RED)
AM PEAK 6:30 AM TO 9:00 AM	(GREEN)	(GREEN)	(RED)	(GREEN)	(RED)	(RED)
AM CHANGE	(GREEN)	(YELLOW)	(RED)	(GREEN)	(RED)	(RED)
OFF PEAK 9:00 AM TO 3:30 PM	(GREEN)	(FLASH YELLOW)	(RED)	(GREEN)	(FLASH YELLOW)	(RED)
P.M. OFF PEAK CHANGE	(GREEN)	(YELLOW)	(RED)	(GREEN)	(FLASH YELLOW)	(RED)
PM PEAK 3:30 PM TO 7:00 PM	(GREEN)	(RED)	(RED)	(GREEN)	(GREEN)	(RED)
PM CHANGE	(GREEN)	(RED)	(RED)	(GREEN)	(YELLOW)	(RED)

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

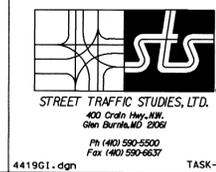
Mr. Lee Starkloff
Assistant District Engineer - Traffic
Phone: (301) 513-7318

Mr. Raleigh Medley
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

Bobby Gonzales
MCDPWT
Advanced Transportation Management Section
Phone: (240) 777-8761



MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION
MD 97 (GEORGIA AVE):
FROM I-495 TO 16th AVE
(REVERSIBLE LANE STATIONS)

DRAWN BY: SR BARANOWSKI	F.A.P. NO.	TS NO.
CHECKED BY:	S.H.A. NO. A3575185	TS 4174-GI
SCALE: none	COUNTY: MONTGOMERY	T.I.M.S. NO.
DATE: 7-15-03	LOG MILE: 15.0097.00.52	F 814

SHEET NO. 2 OF 2