F H W A REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	MD			

PROJECT DESCRIPTION

I. GENERAL

This project involves the modification of an existing Traffic Control Signal with street lighting and interconnect at the intersection of MD 97 and Spartan Rd/Morningwood Dr in Montgomery County. The modification will consist of the splitting of the side streets and cutting back the median on the south leg of MD 97. MD 97 is assumed to run in a north-south direction.

II. INTERSECTION OPERATION

1. The intersection is to operate in a NEMA 6-phase, semi-actuated mode, with the MD 97 approaches running concurrently. The Exclusive/Permissive left turn phases shall remain on both approaches of MD 97. The pedestrian phases with pushbutton actuation shall remain across both legs of MD 97. The pedestrian phases across both Spartan Road and Morningwood Drive shall remain on recall. The Spartan Road/Morningwood Drive approaches shall operate as a split phase.

2. The existing full-traffic-actuated, eight-phase controller with five (5) two-channel, loop detector amplifiers, A.C.I. Panel and L.A.U. Panel, any associated harnesses housed in a NEMA size "6" base-mounted cabinet shall remain at this intersection.

III. SPECIAL NOTES

1. All field wiring to the exisiting controller cabinet shall be terminated to the appropriate controller cabinet connectors by the Contractor and labelled. All other controller cabinet wiring will be performed by the S.H.A. Signal Shop. Contact Mr. Ed Rodenhizer at (410) 787-7650 seventy-two hours in advance of intended work.

2. Disconnecting and splicing of interconnect cable shall be performed by Montgomery County Forces. Contact Mr. Emil Wolanin at (301) 217-2208 seventy-two hours in advance of intended work.

IV. CONSTRUCTION SEQUENCE

The Contractor shall remove approximately 26' of the south median, a new handhole shall be installed onto the existing conduit as shown on the plan. A new piece of 3" conduit shall be installed from the proposed handhole to the handhole to be removed and from the proposed handhole across the northbound lanes of MD 97 to the southeast quadrant of the intersection. At the direction of Montgomery County D.P.W. &T. the existing interconnect cables will be pulled back from the cabinet across the east span through the conduits to the south median. The cable going north to MD 108 shall be pulled back to the handhole in the north median and the cable going south to King William Drive shall be pulled back to the handhole 140' south of the south median nose.

The existing conduit in the south median shall be cut in the proposed handhole cleaned and an end bell attached. The proposed 3" schedule 80 conduit in the south median shall be attached to the existing 3" galvanized conduit between the medians.

The interconnect cable shall then be rerouted back to the cabinet and labeled.

EQUIPMENT LISTS

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

QUANTITY	SPEC. SECTION	DESCRIPTION
4 Each	814	12", one-way, four-section (R,Y,G,GA) traffic signal head having proper span wire hangers, balance adjusters and tunnel visors.
8 S.F.	813	Sheet aluminum signs to consist of: 1 EA R3-6 (MOD)"LEFT TURN, THRU AND RIGHT" sign, (30" X 36") span wire mounted.

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

QUANTITY	SPEC. SECTION	DESCRIPTION
LS	104	Mobilization
LS	104	Maintenance of traffic.
150 SF	104	Temporary traffic sign.
5 UD	104	Flashing arrow panels.
40 LF	SP-555	Furnish and install preformed pavement marking tape, white (24"width for stoplines).
50 SF	610	Furnish and install 4" concrete sidewalk, mix No. 2.
50 SF	805	Remove sidewalk.
10 LF	609	Furnish and install monolithic concrete median, 4' wide, type A-1.
26 LF	215	Remove median
LS	504	Patch roadway with asphalt as required (in area where median was removed).
4 Each	814	Install 12", one-way, four-section traffic signal head, span wire mount.
100 LF	819	Furnish and install ¼" steel tether wire.
180 LF	815	Furnish and install sawcut.
10 LF	805	Furnish and install 1" liquid tight flexible non-metallic electrical conduit (detector wire sleeve).
40 LF	805	Furnish and install 3" polyvinyl chloride electrical conduit (Schedule 80) (bored).

EQUIPMENT LISTS (CON'T.)

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

QUANTITY	SPEC. SECTION	DESCRIPTION
20 LF	805	Furnish and install 3" polyvinyl chloride electrical conduit (Schedule 80) (trenched).
1 EA	811	Furnish and install handhole (frame and cover).
700 LF	810	Furnish and install loop wire (No. 14 A.W.G.) encased in ¼" flexible tubing.
580 LF	810	Furnish and install 2-conductor electrical cable (No. 14 A.W.G.) (aluminum shielded).
380 LF	810	Furnish and install 7-conductor electrical cable (No. 14 A.W.G.).
2 EA	822	Remove signal head.
2 EA	822	Remove existing sign (span mounted).
1 EA	822	Relocate existing sign (ground mounted).
1 EA	822	Remove existing handhole.
680 LF		Pullback and reroute existing interconnect cable.
1 EA		Use existing plan on disk and as-built traffic control device.

CATEGORY 800

UTILITIES

SECTION 875-UTILITIES

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

Mr. Cres Mills
District Engineer
Phone: (410) 513-7311

Mr. Majid Shakib
Assistant District Engineer - Traffic
Phone: (410) 513-7359

Mr. Carter Wilson
Assistant District Engineer - Maintenance
Phone: (410) 513-7304

Mr. Sonny Lauer
Assistant District Engineer - Utility
Phone: (410) 513-7350

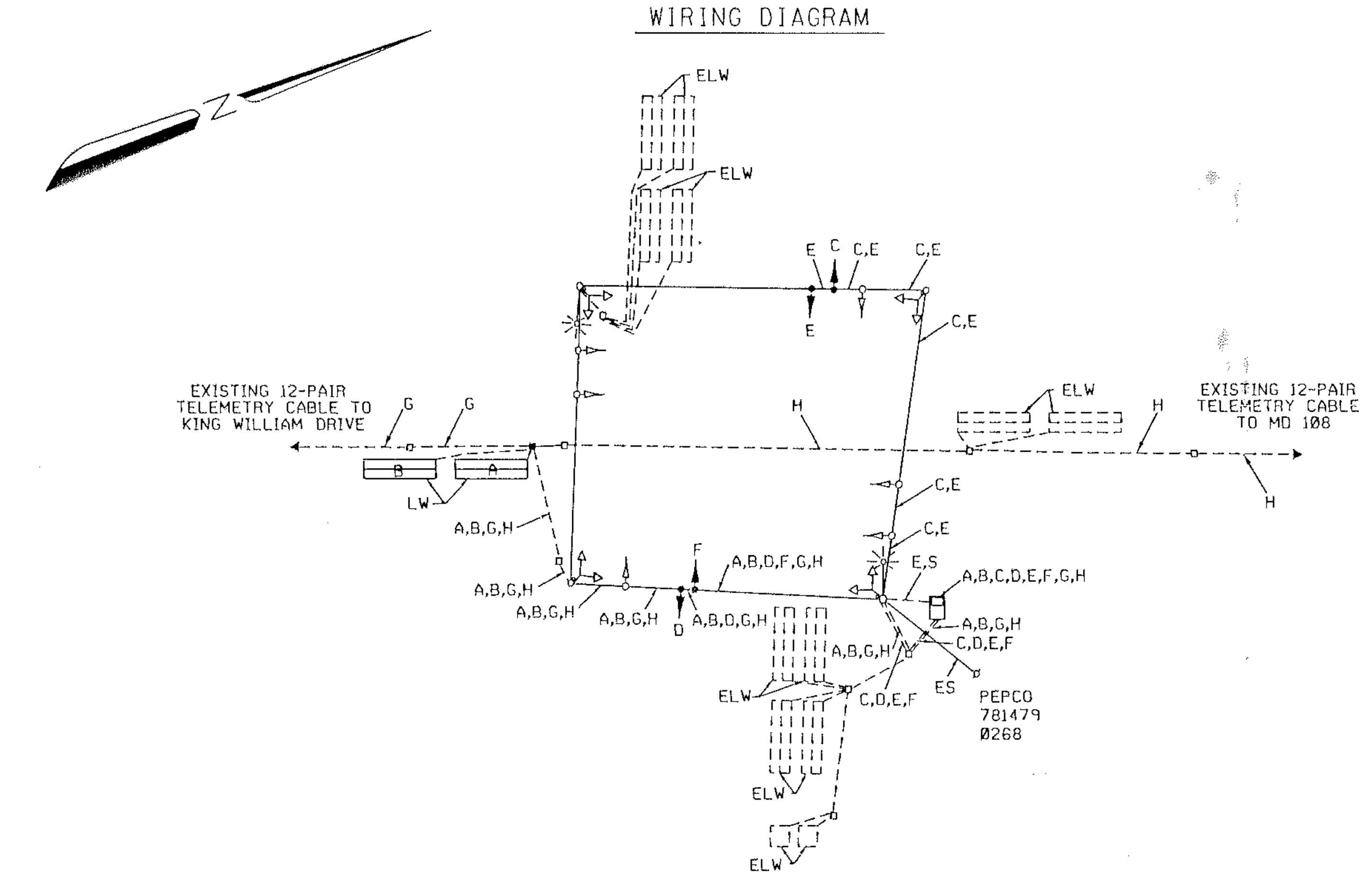
Mr. Richard L. Doff, Sr.
Chief, Traffic Operations Division
Phone: (410) 787-7630

MAINTENANCE OF TRAFFIC SPECIAL PROVISIONS

The following Traffic Control Standard Numbers shall be referenced for the project.

Standard 105.00	Standard 105.01
Standard 105.02	Standard 105.03
₵40	₵40
Standard 105.101	Standard 105.102
Standard 105.103	Standard 105.104
Standard 105.105	Standard 105.106
Standard 105.107	Standard 105.108
Standard 105.109	Standard 105.110
₵40	₵40
Standard 105.201	Standard 105.202
Standard 105.203	Standard 105.204
Standard 105.205	Standard 105.206
Standard 105.207	Standard 105.208
Standard 105.209	Standard 105.210
Standard 105.211	Standard 105.212
Standard 105.213	Standard 105.214
₵40	₵40
Standard 105.301	Standard 105.302
Standard 105.303	Standard 105.304
Standard 105.305	Standard 105.306
Standard 105.307	Standard 105.308
Standard 105.309	Standard 105.310
Standard 105.311	Standard 105.312

WIRING DIAGRAM



WIRING KEY

A } B } 2-conductor electrical cable (No. 14 A.W.G.) (aluminum shielded)

C } D } 7-conductor electrical cable (No. 14 A.W.G.)

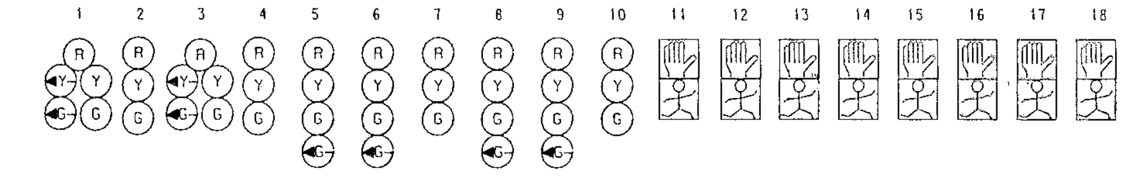
E } F } Existing 7-conductor electrical cable (No. 14 A.W.G.) (to be reused)

G } H } Existing 12-pair voice grade telemetry cable (No. 19 A.W.G.) jelly-filled. (To be pulled back and rerouted, see Construction Sequence in Project Description

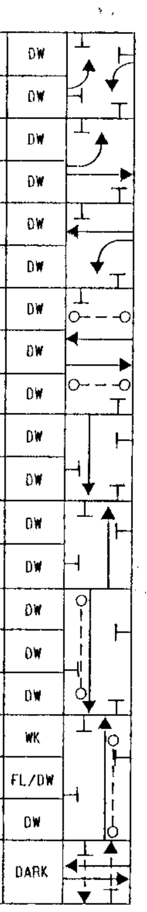
ELW — Existing Loopwire (No. 14 A.W.G.) encased in ¼" flexible tubing

ES — Existing overhead electrical service by PEPCO.

PHASE CHART



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
PHASE 1 & 5	← G/R	R	← G/R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
1 CHANGE	CHANGE TO PHASE 1 & 6 OR PHASE 2 & 5										DW	DW	DW	DW	DW	DW	DW	DW
PHASE 1 & 6	← G/G	G	R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
1 CHANGE	← Y/G	G	R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 2 & 5	R	R	← G/G	G	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
5 CHANGE	R	R	← Y/G	G	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 2 & 6	G	G	G	G	R	R	R	R	R	R	WK	WK	WK	WK	DW	DW	DW	DW
PED CLEARANCE	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	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 3	R	R	R	R	← G/G	← G/G	G	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
3 CHANGE	R	R	R	R	Y	Y	Y	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 4	R	R	R	R	R	R	R	← G/G	← G/G	G	DW	DW	DW	DW	DW	DW	DW	DW
4 CHANGE	R	R	R	R	R	R	R	Y	Y	Y	DW	DW	DW	DW	DW	DW	DW	DW
ALT PHASE 3	R	R	R	R	← G/G	← G/G	G	R	R	R	DW	DW	DW	DW	DW	WK	WK	DW
PED CLEARANCE	R	R	R	R	← G/G	← G/G	G	R	R	R	DW	DW	DW	DW	DW	FL/DW	FL/DW	DW
ALT 3 CHANGE	R	R	R	R	Y	Y	Y	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
ALT PHASE 4	R	R	R	R	R	R	R	← G/G	← G/G	G	DW	DW	DW	DW	WK	DW	DW	WK
PED CLEARANCE	R	R	R	R	R	R	R	← G/G	← G/G	G	DW	DW	DW	DW	FL/DW	DW	DW	FL/DW
ALT 4 CHANGE	R	R	R	R	R	R	R	Y	Y	Y	DW	DW	DW	DW	DW	DW	DW	DW
FLASHING OPERATION	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



REVISION "C" ASBUILT

STREET TRAFFIC STUDIES, LTD.

Gateway International
1302 Concourse Drive, Suite 104
Linthicum, Maryland 21090
Ph (410) 859-3553
Fax (410) 859-3579

3234SPC.DGN

REVISIONS

Ⓒ 6-27-97
SPLIT SIDE STREETS, ADD DUAL WB LT
SHA NO. BW 111M83
RRZ

Ⓑ 3-9-94
INSTALL N.B. E/P LEFT TURN PHASING
DJD

Ⓐ 5-31-89
INSTALL S.B. E/P LEFT TURN PHASING
RFL

APPROVALS

ASST. CHIEF TEDD SECTION
ASST. DISTRICT ENGINEER, TRAFFIC
CHIEF, TRAFFIC ENGINEERING DESIGN DIVISION
DIRECTOR, TRAFFIC & SAFETY
ORIGINAL ON FILE

MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION
GENERAL INFORMATION
MD 97 AND SPARTAN RD/MORNINGWOOD DR

DRAWN BY: S. R. BARANOWSKI	COUNTY: MONTGOMERY	TS NO. 2452C	SHEET NO.
CHECK BY: R.R. ZACHERL	LOG MILE: 15009711.70		2 OF 2
DATE: 4-12-88	F.A.P. NO.	T.I.M.S. NO.	
SCALE: NONE	S.H.A. NO. M-613-459-385		

JUN 3 0 1997