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

GENERAL

This project involves the reconstruction of the existing traffic signals at MD 193 and Williamsburg Drive during the US Route 29 (Colesville Road) Reconstruction Project (widening) from I-495 (Capital Beltway) to North of Timberwood Avenue. MD 193 is assumed to run in an East-West direction.

Existing traffic signal and interconnect shall be maintained during construction of the proposed signal equipment.

INTERSECTION OPERATION

The intersection of MD 193 at Williamsburg Drive will operate in a NEMA seven-phase semi-traffic-actuated mode with a Fire Station pre-emption. Eastbound and westbound MD 193 will operate concurrently, with the Fire Station entrance operating separatly and Williamsburg Drive operating with the School entrance phase with an alternate pedestrian phase.

CONSTRUCTION DETAILS

A. Install 27' steel pole with twin 48' and 56' mast arms, 20' lighting arm and luminaire, traffic signal heads and signs as shown (NOTE: 2-3" PVC 90 degree angle conduit bends).

B. Install 10' breakaway pedestal pole with pedestrian signal heads, push button and sign as shown (NOTE: 1-2" PVC 90 degree angle conduit bend).

C. Install 21' steel pole with single 46' mast arm, traffic signal heads, pedestrian signal heads, push button, and signs as shown (NOTE: 2-3" PVC 90 degree angle conduit bends).

D. Install 21' steel pole with single 56' mast arm, traffic signal heads, pedestrian signal heads and push button sign as shown (NOTE: 2-3" PVC 90 degree angle conduit bends).

E. Install 10' breakaway pedestal pole with traffic signal head and pedestrian signal head as shown (NOTE: 1-2" PVC 90 degree angle conduit bend).

F. Install traffic signal system ready, Montgomery County standard controller with control and distribution equipment (see drawing B-16) in base-mounted cabinet. (NOTE: 2-2" PVC 90 degree angle (schedule 80) conduit bends and 2-4" PVC 90 degree angle conduit bends).

G. Install handhole.

H. Install 1" electrical conduit detector wire sleeve.

I. Install 2" schedule 40 electrical conduit-trenched/buried.

J. Install 3" schedule 40 electrical conduit-trenched/buried.

K. Install 4" schedule 40 electrical conduit-trenched/buried.

L. Install 4" schedule 80 electrical conduit-slotted with 1" flexible PVC corrugated inner conduit (color-orange) with an inner pull string.

M. Install 6'x 30' loop detector, quadrupole type (2-4-2 turns).

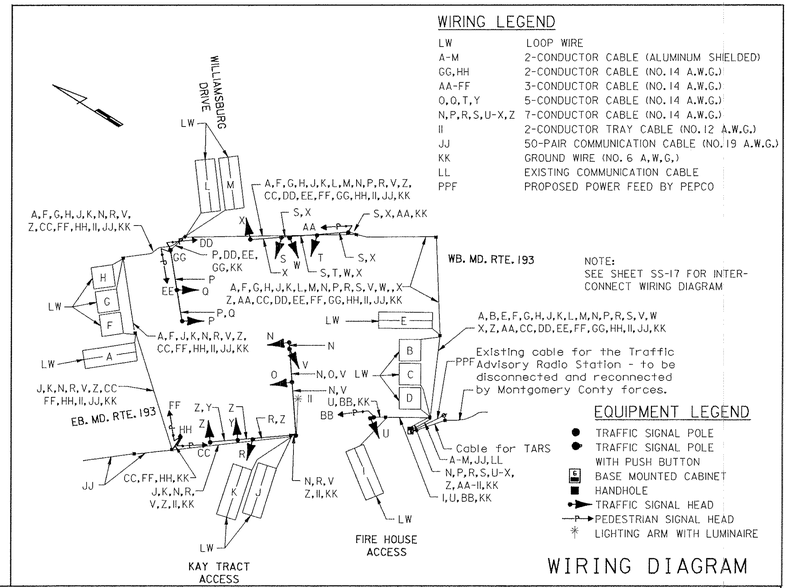
N. Install 6'x 6' loop detector (3 turns) (sampling station).

O. Install 4" schedule 40 electrical conduit-trenched with 1" flexible pvc corrugated inner conduit (color-orange) with an inner pull string.

P. Cap and abandon existing traffic signal conduit and/or remove existing handhole, pole, controller and any other equipment (see list C for equipment to be salvaged).

GENERAL NOTES

1. Geometrics shall be confirmed prior to the installation of signal equipment.
2. Loop detectors and conduits shall be installed prior to the installation of pavement markings.
3. All utilities are shown in their approximate locations and are not to be considered as complete. The Contractor shall be responsible for contacting Miss Utility to verify the location of all utilities. The Contractor shall contact The Project Engineer prior to construction if there may be potential conflicts.
4. Pavement markings detailed are proposed and are to be installed by the Contractor in accordance with S.H.A. standards. All other pavement markings will be installed as part of the highway contract.
5. All luminaires must be full cut off.
6. "D.O." indicates delay output loop detector.
7. All loops must be installed in the base course paving, after milling is completed.
8. All patching shall be done with type "B" pavement, as per roadway details.



WIRING DIAGRAM

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	R Y G	R Y G	R Y G	R Y G	R Y G	R Y G	R Y G	R Y G	R Y G	R Y G	R Y G	R Y G	R Y G	DW WK	DW WK	DW WK	DW WK	DW WK	DW WK
PHASE 1+5	◄G—	R	◄G—	R	R	R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW
1+5 CHANGE TO 1+6, 2+5 OR 2+6																			
PHASE 1+6	◄G—	G	R	R	R	R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW
1+6 CHANGE	◄Y—	G	R	R	R	R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW
PHASE 2+5	R	R	◄G—	G	R	R	R	R	R	R	R	R	R	WK	WK	WK	WK	DW	DW
1+6 CHANGE	R	R	◄Y—	G	R	R	R	R	R	R	R	R	R	WK	WK	WK	WK	DW	DW
PHASE 2+6	G	G	G	G	R	R	R	R	R	R	R	R	R	WK	WK	WK	WK	DW	DW
PED. CLEAR.	G	G	G	G	R	R	R	R	R	R	R	R	R	FL/DW	FL/DW	FL/DW	FL/DW	DW	DW
2+6 CHANGE	Y	Y	Y	Y	R	R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW
PHASE 3	R	R	R	R	R	R	R	G	G	G	R	R	R	DW	DW	DW	DW	DW	DW
3 CHANGE	R	R	R	R	R	R	R	Y	Y	Y	R	R	R	DW	DW	DW	DW	DW	DW
PHASE 4	R	R	R	R	G	G	G	R	R	R	G	G	G	DW	DW	DW	DW	DW	DW
4 CHANGE	R	R	R	R	Y	Y	Y	R	R	R	Y	Y	Y	DW	DW	DW	DW	DW	DW
ALT. PHASE 4	R	R	R	R	G	G	G	R	R	R	G	G	G	DW	DW	DW	DW	WK	WK
PED. CLEAR.	R	R	R	R	G	G	G	R	R	R	G	G	G	DW	DW	DW	DW	FL/DW	FL/DW
ALT. 4 CHANGE	R	R	R	R	Y	Y	Y	R	R	R	Y	Y	Y	DW	DW	DW	DW	DW	DW
PHASE 7 OL "A" 3+7	R	R	R	R	R	R	R	G	G	G	R	R	R	DW	DW	DW	DW	DW	DW
7 CHANGE	R	R	R	R	R	R	R	Y	Y	Y	R	R	R	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	FL/R	FL/R	FL/R	DARK	DARK	DARK	DARK	DARK	DARK

PHASING CHART

SS-21

RUMMEL, KLEPPER & KAHL
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

REVISIONS:	APPROVALS:
REVISED 10/95 FOR THE US 29 IMPROVEMENTS S.H.A. NO. M 425-502-370	ORIGINAL
	CHIEF SIGNAL DESIGN SECTION
	ON
	ASST. DISTRICT ENGINEER TRAFFIC
	CHIEF TRAFFIC ENGINEERING DESIGN DIVISION
	FILE
	DIRECTOR OFFICE OF TRAFFIC & SAFETY

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

LOG MILE # 15019304.71

DRAWN BY: ZAJ
DES. BY: ZAJ
CHK. BY:

MD 193 @ WILLIAMSBURG DRIVE
GENERAL INFORMATION

COUNTY: MONTGOMERY

DATE: OCTOBER, 1995 F.A.P. NO.
SCALE: None S.H.A. NO. M 425-502-370

TS/STD. NO.: TS-3560-GI-1

SHEET NO. ___ OF ___