MD 193 RUNS IN A EAST-WEST DIRECTION.

EXISTING SIGNALS & SIGNS

1.3.5.6.8.9.11.12 | 2 | 10 | 13.14 | 15 | 16a | 16b | 20

R Y G 12" | R Y G 12" | 12" | LEFT TURN YIELD ON GREEN R10-12 36" x 42" | Dennis R/L ≤20 Dennis R/L <20 R3-2 48" x 18" BACK TO BACK | ONLY R3-5(L) 36" x 42"

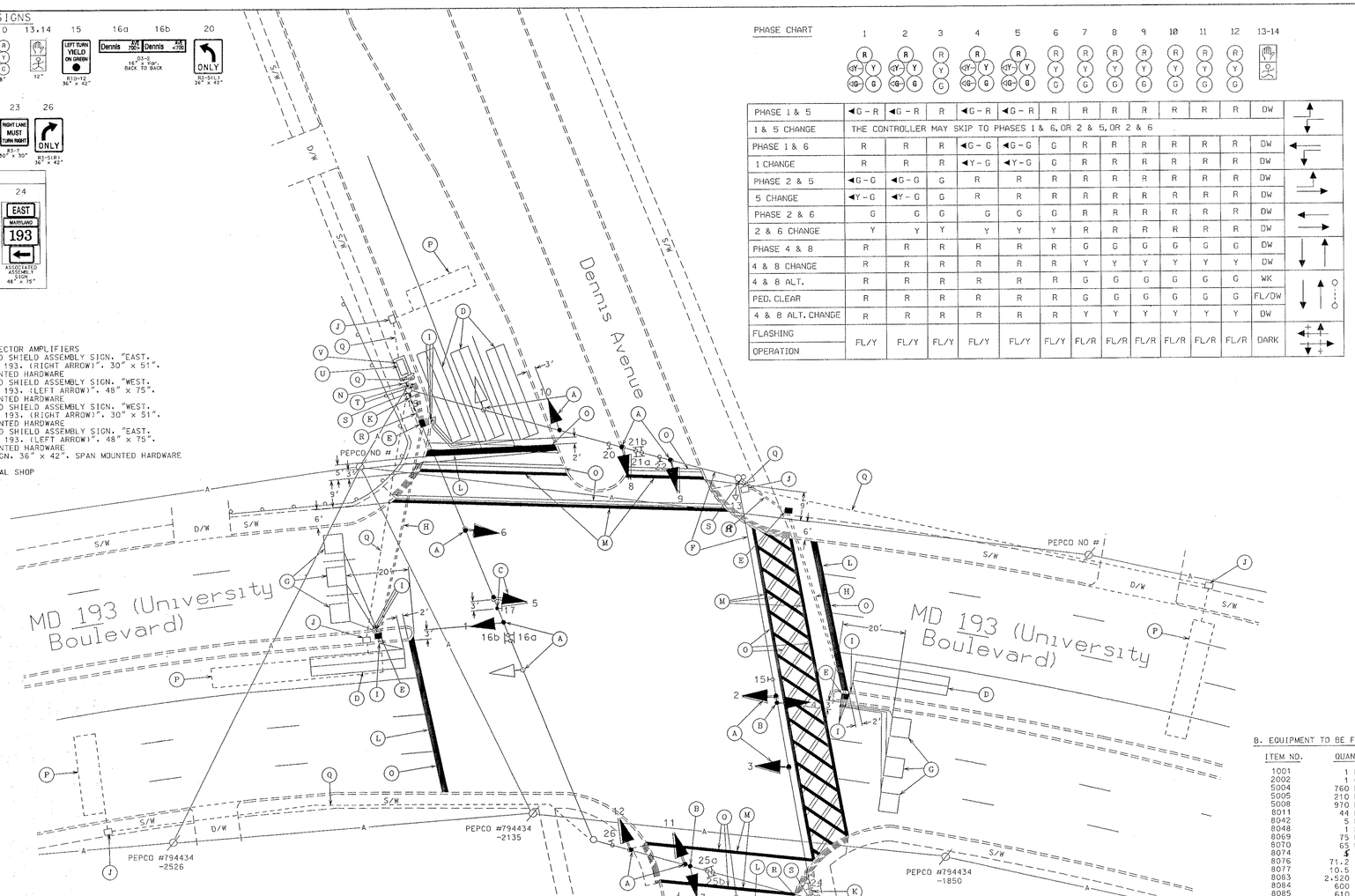
21a.25b 21b.25a | 22 | 23 | 26

University R/L ≥500 University R/L <500 R3-2 18" x 18" BACK TO BACK | NO TURN ON RED R10-11b 30" x 30" | RIGHT LANE MUST TURN RIGHT R3-7 30" x 30" | ONLY R3-5(R) 36" x 42"

PROPOSED SIGNALS & SIGNS

1.2.4.5 | 3.6-12 | 17 | 18 | 19 | 23 | 24

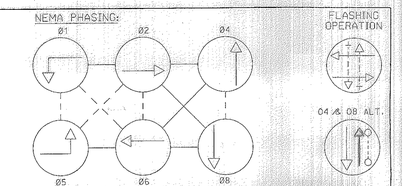
R Y G 12" | R Y G 12" | LEFT TURN YIELD ON GREEN R10-12 36" x 42" | EAST MARYLAND 193 ASSOCIATED ASSEMBLY SIGN. 30" x 51" | WEST MARYLAND 193 ASSOCIATED ASSEMBLY SIGN. 48" x 75" | WEST MARYLAND 193 ASSOCIATED ASSEMBLY SIGN. 30" x 51" | EAST MARYLAND 193 ASSOCIATED ASSEMBLY SIGN. 48" x 75"



PHASE CHART

	1	2	3	4	5	6	7	8	9	10	11	12	13-14	
PHASE 1 & 5	◄G - R	◄G - R	R	◄G - R	◄G - R	R	R	R	R	R	R	R	DW	
1 & 5 CHANGE	THE CONTROLLER MAY SKIP TO PHASES 1 & 6, OR 2 & 5, OR 2 & 6													
PHASE 1 & 6	R	R	R	◄G - G	◄G - G	G	R	R	R	R	R	R	DW	
1 CHANGE	R	R	R	◄Y - G	◄Y - G	G	R	R	R	R	R	R	DW	
PHASE 2 & 5	◄G - G	◄G - G	G	R	R	R	R	R	R	R	R	R	DW	
5 CHANGE	◄Y - G	◄Y - G	G	R	R	R	R	R	R	R	R	R	DW	
PHASE 2 & 6	G	G	G	G	G	G	R	R	R	R	R	R	DW	
2 & 6 CHANGE	Y	Y	Y	Y	Y	Y	R	R	R	R	R	R	DW	
PHASE 4 & 8	R	R	R	R	R	R	G	G	G	G	G	G	DW	
4 & 8 CHANGE	R	R	R	R	R	R	Y	Y	Y	Y	Y	Y	DW	
4 & 8 ALT.	R	R	R	R	R	R	G	G	G	G	G	G	WK	
PED. CLEAR	R	R	R	R	R	R	G	G	G	G	G	G	FL/DW	
4 & 8 ALT. CHANGE	R	R	R	R	R	R	Y	Y	Y	Y	Y	Y	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	DARK	

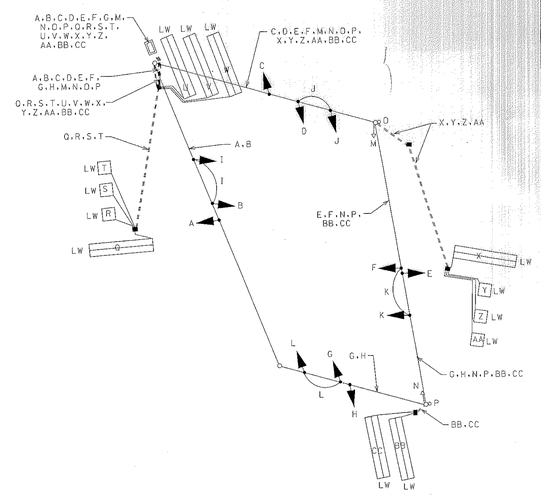
NEMA PHASING:



NEMA NOTES:
1. PHASES ASSOCIATED BY A DASHED LINE WILL OPERATE CONCURRENTLY.
2. PHASES ASSOCIATED BY A SOLID LINE WILL NOT OPERATE CONCURRENTLY.

WIRING DIAGRAM

A-H = 7-CONDUCTOR CABLE (NO. 14 AWG)
I-L = USE THE EXISTING CABLE (NO. 14 AWG)
M-N = 3-CONDUCTOR CABLE (NO. 14 AWG)
O-P = 2-CONDCUTOR CABLE (NO. 14 AWG)
Q-CC = 2-CONDUCTOR (ALUMINUM SHIELDED) CABLE
LW = LOOP WIRE



EQUIPMENT LISTS

A. EQUIPMENT TO BE FURNISHED BY THE SHA

ITEM NO.	QUANTITY	DESCRIPTION
*	4 EACH	4-CHANNEL LOOP DETECTOR AMPLIFIERS
	81.7 S.F.	
	1 EACH	ASSOCIATED SHIELD ASSEMBLY SIGN. "EAST. MARYLAND 193. (RIGHT ARROW)". 30" x 51". POLE MOUNTED HARDWARE
	1 EACH	ASSOCIATED SHIELD ASSEMBLY SIGN. "WEST. MARYLAND 193. (LEFT ARROW)". 48" x 75". POLE MOUNTED HARDWARE
	1 EACH	ASSOCIATED SHIELD ASSEMBLY SIGN. "WEST. MARYLAND 193. (RIGHT ARROW)". 30" x 51". POLE MOUNTED HARDWARE
	1 EACH	ASSOCIATED SHIELD ASSEMBLY SIGN. "EAST. MARYLAND 193. (LEFT ARROW)". 48" x 75". POLE MOUNTED HARDWARE
	1 EACH	R10-12 SIGN. 36" x 42". SPAN MOUNTED HARDWARE

* - TO BE INSTALLED BY THE SHA SIGNAL SHOP

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

ITEM NO.	QUANTITY	DESCRIPTION
1001	1 EACH	MAINTENANCE OF TRAFFIC
2002	1 C.Y.	TEST PIT EXCAVATION
5004	760 L.F.	F & I 12" WHITE HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
5005	210 L.F.	F & I 24" WHITE HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
5008	970 L.F.	REMOVE THE EXISTING PAVEMENT MARKINGS - ANY WIDTH
8011	44 EACH	F & I 12" BLACK FACED VECHICULAR TRAFFIC SIGNAL HEAD SECTION
8042	5 EACH	INSTALL CONDUIT IN THE EXISTING FOUNDATION
8048	1 EACH	REMOVE AND DISPOSE OF EXISTING MATERIAL & EQUIPMENT PER ASSIGNMENT
8069	75 L.F.	F & I 4" SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED
8070	65 L.F.	F & I 1" LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR SLEEVE
8074	5 EACH	F & I ELECTRICAL HANDHOLE
8076	71.2 S.F.	INSTALL GROUND MOUNTED SIGN
8077	10.5 S.F.	INSTALL OVERHEAD SIGN
8083	2,520 L.F.	F & I ELECTRICAL CABLE - 2-CONDUCTOR (ALUMINUM SHIELDED)
8084	600 L.F.	F & I ELECTRICAL CABLE - 2-CONDUCTOR (NO. 14 AWG)
8085	610 L.F.	F & I ELECTRICAL CABLE - 3-CONDUCTOR (NO. 14 AWG)
8087	1,830 L.F.	F & I ELECTRICAL CABLE - 7-CONDUCTOR (NO. 14 AWG)
8089	4,030 L.F.	F & I LOOP WIRE ENCASED IN FLEXIBLE TUBING
8090	1,145 L.F.	F & I SAWCUT FOR SIGNAL (LOOP DETECTOR)
8051	30 L.F.	F & I 4" SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8053	50 L.F.	F & I 4" SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8068	1,150 L.F.	F & I 4" SCHEDULE 80 RIGID PVC CONDUIT - BORED

C. EQUIPMENT TO BE REMOVED AND RETURNED TO THE SHA

ITEM NO.	QUANTITY	DESCRIPTION
		ALL REMOVED SIGNAL MATERIALS ARE TO BECOME THE PROPERTY OF THE CONTRACTOR

PROJECT DESCRIPTION

I. GENERAL

THIS PROJECT INVOLVES PROVIDING AN EXCLUSIVE/ PERMISSIVE LEFT TURN FOR EASTBOUND MD 193 AT THE INTERSECTION OF MD 193 AND DENNIS AVENUE IN PRINCE GEORGE'S COUNTY.
MD 193 RUNS IN A EAST-WEST DIRECTION.

II. INTERSECTION OPERATION

THIS INTERSECTION IS EQUIPPED WITH A EIGHT PHASE FULLY ACTUATED CONTROLLER HOUSED IN A BASE MOUNTED CABINET. THE CONTROLLER WILL USE SIX PHASES OUT OF EIGHT WITH EXCLUSIVE/ PERMISSIVE LEFT TURN PHASES FOR EASTBOUND AND WESTBOUND MD 193.

PROJECT CONTACTS

THE PROJECT CONTACTS ARE AS FOLLOWS:

MR. LEE STARKLOFF
ASSISTANT DISTRICT ENGINEER - TRAFFIC (MONT. CO.)
PHONE: (301) 513-7318

MR. RALEIGH MEDLEY
ASSISTANT DISTRICT ENGINEER - MAINTENANCE
PHONE: (301) 513-7304

MR. AUGIE REBISH
ASSISTANT DISTRICT ENGINEER - UTILITIES
PHONE: (301) 513-7350

MR. ROBERT GONZALES
MONTGOMERY COUNTY TRAFFIC
PHONE: (240) 777-8761

MR. RICHARD DAFF
CHIEF, TRAFFIC OPERATIONS DIVISION
PHONE: (410) 787-7630

MR. ROBERT SNYDER
ASSISTANT CHIEF, TRAFFIC OPERATIONS DIVISION
PHONE: (410) 787-7631

MR. EDWARD RODENHUIZER
CHIEF, SIGNAL OPERATIONS SECTION
PHONE: (410) 787-7652

CONSTRUCTION DETAILS

A. INSTALL THE PROPOSED SIGNAL HEAD. REMOVE THE EXISTING SIGNAL HEAD.
B. INSTALL THE PROPOSED SIGNAL HEAD.
C. INSTALL THE PROPOSED SIGNAL HEAD AND SIGN. REMOVE THE EXISTING SIGNAL HEAD.
D. INSTALL THE PROPOSED 6' x 30' LOOP DETECTOR (3-6-3 TURNS).
E. INSTALL THE PROPOSED HANDHOLE.
F. USE THE EXISTING SPAN WIRE.
G. INSTALL THE PROPOSED 6" x 6' LOOP DETECTOR (3 TURNS).
H. INSTALL THE PROPOSED 3" PVC SCHEDULE 80 CONDUIT - BORED.
I. INSTALL THE PROPOSED 1" LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR SLEEVE.
J. REMOVE THE EXISTING HANDHOLE.
K. INSTALL THE PROPOSED GROUND MOUNTED SIGN.
L. INSTALL THE PROPOSED 24" WHITE HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING.
M. INSTALL THE PROPOSED 12" WHITE HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING.
N. INSTALL THE PROPOSED SIGN ABOVE THE EXISTING GROUND MOUNTED SIGN.
O. REMOVE THE EXISTING PAVEMENT MARKINGS.
P. DISCONNECT THE EXISTING LOOP DETECTOR.
Q. CAP AND ABANDON THE EXISTING CONDUIT.
R. INSTALL THE PROPOSED 3" PVC SCHEDULE 80 CONDUIT - TRENCHED.
S. INSTALL THE PROPOSED 3" PVC SCHEDULE 80 BEND IN THE EXISTING FOUNDATION.
T. INSTALL THE PROPOSED 4" PVC SCHEDULE 80 CONDUIT - TRENCHED.
U. INSTALL THE PROPOSED 4" PVC SCHEDULE 80 BENDS (2) IN THE EXISTING FOUNDATION.
V. INSTALL THE PROPOSED 4-CHANNEL LOOP DETECTOR AMPLIFIERS IN THE EXISTING CABINET. (TO BE COMPLETED BY THE SHA SIGNAL SHOP.)

UTILITY LEGEND

—G— G —G—	GAS MAIN
—W— W —W—	WATER MAIN
—S— S —S—	SEWER MAIN
—E— E —E—	ELECTRIC CABLES
—A— A —A—	AERIAL CABLES
—T— T —T—	TELEPHONE CABLES
—D— D —D—	STORM DRAIN

REVISIONS
A) 03/2002 - PROVIDE E/P FOR E/B MD 193: REPLACE ALL SIGNALS W/ BLACK FACES: REPLACE ALL LOOP DETECTORS: SHA NO. XX1065285

APPROVALS

NOTE: THIS IS A REVISION TO A MONTGOMERY COUNTY PLAN DATED OCT 16-197 ORIGINAL ON FILE

LOOP DESIGN, TRAFFIC ENGINEERING DESIGN DIVISION
ASSISTANT CHIEF, TRAFFIC ENGINEERING DESIGN DIVISION
CHIEF, TRAFFIC ENGINEERING DESIGN DIVISION
DIRECTOR, OFFICE OF TRAFFIC & SAFETY

MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety

TRAFFIC ENGINEERING DESIGN DIVISION

MD 193 (University Boulevard) and Dennis Avenue
FOUR CORNERS, MARYLAND

DRAWN BY: Rod Cadd OF MONT. CO.	F.A.P. NO.	T.S. NO. TS-4168 A	SHEET NO.
CHECKED BY: R. Grimes OF MONT. CO.	S.H.A. NO. MD 193		
SCALE: 1" = 20'	COUNTY MONTGOMERY	T.I.M.S. NO. E978	1 OF 1
DATE: 05/ 06/ 1971	LOG MILE 15.019 & 03.73		