DRILL HOLES

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$USERNAME$

PROJECT DESCRIPTION

I. GENERAL

This project involves the installation of a southbound left turn lane from MD 124 (Quince Orchard Road) onto Twin Lakes Drive.

II. INTERSECTION OPERATION

The intersection will operate in a NEMA five-phase, full traffic actuated mode. The southbound left turn lane from MD 124 will operate exclusive/permissive. Twin Lakes Drive will operate concurrently.

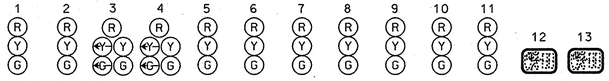
III. CONTROLLER REQUIREMENTS

The controller assembly will be an eight phase fully actuated NEMA controller complete with system package and miscellaneous auxiliary equipment as required. A NEMA "6" base mounted cabinet is to be used.

IV. SPECIAL NOTES

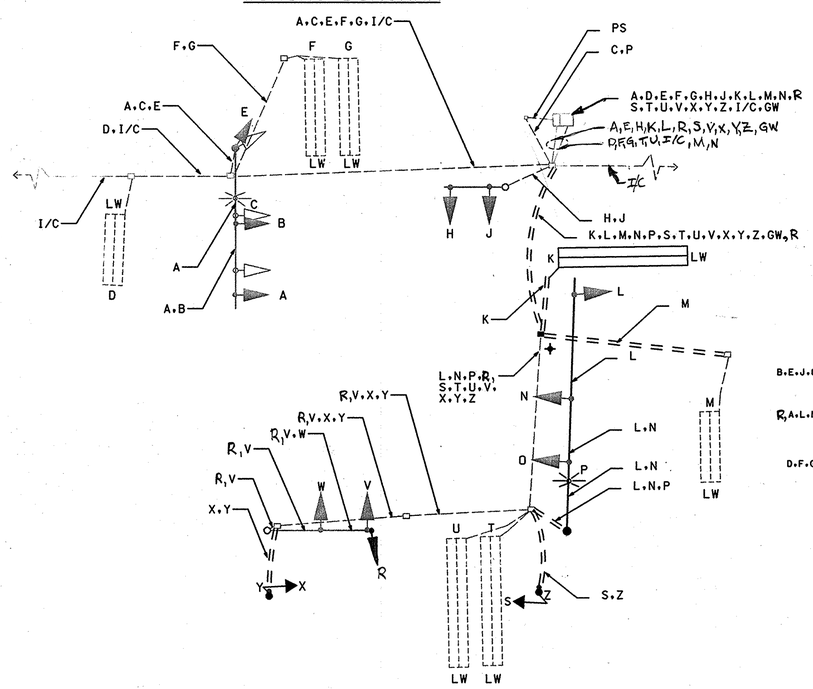
1. MAINTENANCE OF TRAFFIC WILL BE HANDLED BY THE CONTRACTOR UTILIZING THE FOLLOWING STANDARD PLATES FOR TRAFFIC CONTROL: 104.00 - 104.00-30, 103.31-01 (FLAGGING OPERATION), 104.33-01 (SHOULDER WORK), 104.35 (LANE SHIFT), 104.32-01 (INTERSECTION FLAGGING OPERATION).
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PULLING ALL CABLE TO THE CABINET AND SHALL PROPERLY LABEL EACH CABLE.
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.

PHASE CHART AND PHASING DIAGRAM



	1	2	3	4	5	6	7	8	9	10	11	12	13
PHASE 2 + 5	R	R	←G/G	←G/G	G	R	R	R	R	R	R	DW	DW
2 + 5 CHANGE	R	R	←Y/G	←Y/G	G	R	R	R	R	R	R	DW	DW
PHASE 2 + 6	G	G	G	G	G	R	R	R	R	R	R	W	W
2 + 6 PED CLEAR	G	G	G	G	G	R	R	R	R	R	R	FL/DW	FL/DW
2 + 6 CHANGE	Y	Y	Y	Y	Y	R	R	R	R	R	R	DW	DW
PHASE 4 + 8	R	R	R	R	R	G	G	G	G	G	G	DW	DW
4 + 8 CHANGE	R	R	R	R	R	Y	Y	Y	Y	Y	Y	DW	DW
FLASH	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



WIRING LEGEND

Y,Z	2-COND. ELECTRICAL CABLE (#14 AWG) (PROPOSED PUSHBUTTONS)
C,P	2-COND. ELECTRICAL CABLE (#12 AWG) (PROPOSED LUMINAIRES) TYPE T/C
B,E,J,O,R,W	5-COND. ELECTRICAL CABLE (#14 AWG) (PROPOSED SIGNAL HEADS)
S,X	5-COND. ELECTRICAL CABLE (#14 AWG) (PROPOSED PED HEADS)
R,A,L,N,V,H	7-COND. ELECTRICAL CABLE (#14 AWG) (PROPOSED SIGNAL HEADS)
LW	LOOP WIRE INCASED IN FLEXIBLE TUBING
D,F,G,T,U	LOOP DETECTOR LEAD IN (EXISTING)
K,M	LOOP DETECTOR LEAD IN (PROPOSED)
GW	GROUND WIRE
PS	POWER SOURCE (TBD)
I/C	INTERCONNECT
⊕	GROUND ROD

EQUIPMENT LIST "A"

A. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY SHA

None

EQUIPMENT LIST "B"

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

QUANTITY	UNITS	SPECIFICATION SECTION	DESCRIPTION
1	LS	104	Maintenance of Traffic.
1	LS	108	Mobilization.
2	CY	205	Test pit excavation.
61	SY	603	Replace sidewalk
7.5	CY	801	Furnish and install concrete for signal foundation.
1	EA	804	Ground rod -3/4 in. diameter X 10 ft.
135	LF	804	Stranded bare copper ground wire (#6 AWG)
100	LF	805	3 in. schedule 80 rigid PVC conduit (trenched).
80	LF	805	4 in. schedule 80 rigid PVC conduit (bored).
128	LF	812	4"x6" wood post
70	LF	810	2 conductor electrical cable (aluminum shelided).
400	LF	810	2 conductor electrical cable Type T/C (No. 12 AWG).
410	LF	810	2 conductor electrical cable (No. 14 AWG).
515	LF	810	5 conductor electrical cable (No. 14 AWG).
1120	LF	810	7 conductor electrical cable (No. 14 AWG).
1	EA	811	Electrical handhole.
83	SF	813	Sheet aluminum signs consisting of: 4 ea. W11-2 30"x30" -(GROUND MOUNT) 4 ea. R6-2 21"x15" -(GROUND MOUNT) 2 ea. R6-1 36"x12" -(GROUND MOUNT) 1 ea. R1-2 36"X36" -(GROUND MOUNT) 1 ea. R3-2 30"X30" -(GROUND MOUNT) 2 ea. R10-3(I) 9"X15" -(POLE MOUNT) 1 ea. R4-7 24"x30" -(GROUND MOUNT) 2 ea. R3-1 24"x24" -(GROUND/MAST ARM MOUNT)
2	EA	814	16" LED pedestrian count down signal head section (pole mount)
37	EA	814	12 in. LED vehicular signal head section
2	EA	817	Pedestrian pushbutton (APS) and R10-3(I) sign.
1	EA	806	250 watt HPS luminare with photocell
1	EA	808	20 ft lighting arm on signal pole
2	EA	818	10' steel pedestal pole w/breakaway T-base
1	EA	818	27' steel pole with 70' mast arm.
20	LF	805	1" electrical conduit - galvanized sleeve.
160	LF	815	Saw cut for loop detector.
360	LF	810	Loop wire incased in plastic tubing.
65	LF	549	Furnish and install 24" white reflective heat applied thermoplastic pavement marking tape.
330	LF	549	Furnish and install 12" white reflective heat applied thermoplastic pavement marking tape.
85	LF	549	Furnish and install 10" white lead free permanent thermoplastic pavement marking

EQUIPMENT LIST "C"

C. EXISTING EQUIPMENT TO BE REMOVED BY THE CONTRACTOR AND DELIVERED TO THE STATE HIGHWAY ADMINISTRATION. 7491 CONNELLEY DRIVE, HANOVER, MARYLAND 21076.

QUANTITY	UNITS	CATEGORY CODE #	DESCRIPTION
None			

PROJECT CONTACTS

THE CONTACT PERSONS FOR SHA ARE AS FOLLOWS:

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

Mr. Wayne Mowdy
Asst. District Engineer - Maintenance
Phone # (301) 513-7304

Mr. Lee Starkloff
Asst. District Engineer - Traffic
Phone # (301) 513-7358

Mr. Wilhelm Derminassian
Engineer III (Montgomery County)
Phone # (240) 777-8795

Mr. Augestine Rebish
Asst. District Engineer - Utility
Phone # (301) 513-7350

Mr. Keith Lord
Signal Shop Supervisor
Phone # (301) 279-1291

APPROVALS	REVISIONS
TEAM LEADER	
ASST. DIV. CHIEF	(B) ADDITION OF WESTBOUND LEFT TURN LANE AND PEDESTRIAN EQUIPMENT. SHA NO. 1/4/07 DPN
DIVISION CHIEF	(A) RELOCATE MAST ARM AND LOOPS SHA NO. 10/19/98 RRZ
OFFICE DIRECTOR	

PLOTTED: $DATETIME$
FILE: $FILE$

SHA
STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION
TRAFFIC SIGNAL MODIFICATION PLAN
MD 124 (QUINCE ORCHARD ROAD)
AND TWIN LAKES DRIVE
GAITHERSBURG, MD

GENERAL INFORMATION

SCALE 1" = 20' DATE 3/29/07 CONTRACT NO. BW996M82

DESIGNED BY DPN (Wells) COUNTY MONTGOMERY
DRAWN BY
CHECKED BY LOGMILE 15012401.56
F.A.P. NO. T.I.M.S. NO. 1119
TOD NO.

DRAWING NO. 1997B SHEET NO. 2 OF 2