

PROJECT DESCRIPTION

I. GENERAL

This project involves the reconstruction of an existing Traffic Control Signal with interconnect at the intersection of East Diamond Avenue and Summit Avenue in Montgomery County. East Diamond Avenue is assumed to run an east-west direction.

II. INTERSECTION OPERATION

- The intersection is to operate in a NEMA seven-phase, semi-actuated mode, with the East Diamond Avenue approaches running concurrently. An Exclusive/Permissive left turn phase shall continue to be provided for the westbound approach of East Diamond Avenue. The pedestrian phases with pushbutton actuation across both legs of East Diamond Avenue shall remain in operation. The pedestrian phases across Summit Avenue shall remain on recall. All pedestrian crossings shall have countdown displays. An Exclusive left turn phase shall now be provided for the southbound approach of Summit Avenue. A rail track clearance phase shall now be provided for the northbound approach of Summit Avenue. Additionally, a rail pre-emption phase shall be provided for the northbound approach of Summit Avenue. The Summit Avenue approaches shall also continue to run concurrently.
- A full-traffic-actuated, eight-phase controller with video interface, L.A.U., L.A.U. Panel and all necessary equipment housed in a NEMA size "6" base-mounted cabinet shall be installed at this intersection.

III. SPECIAL NOTES

- The Contractor shall be responsible for terminating all signal cables, excluding interconnect, to the appropriate terminals and shall properly label each cable.
- Disconnecting and splicing of interconnect cable shall be performed by Montgomery County Forces. The contractor shall run the interconnect cable into the base of each cabinet and properly tag the cable. Contact Mr. Bob Gonzales at (240) 777-8761 seventy-two hours in advance of intended work.
- 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.

EQUIPMENT LIST

A. EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR

ITEM NO.	DESCRIPTION	QUANTITY
2002	Test pit excavation.	7 C.Y.
5016	4" concrete sidewalk, mix No. 2.	180 S.F.
5018	Remove and restore ornamental brick sidewalk.	345 S.F.
5022	Remove sidewalk.	165 S.F.
8001	Concrete foundation.	18 C.Y.
8019	2" polyvinyl chloride electrical conduit (Schedule 80) (trenched).	20 L.F.
8023	3" polyvinyl chloride electrical conduit (Schedule 80) (trenched).	135 L.F.
8027	4" polyvinyl chloride electrical conduit (Schedule 80) (trenched).	125 L.F.
8029	4" polyvinyl chloride electrical conduit (Schedule 80) (slotted).	365 L.F.
8030	4" polyvinyl chloride electrical conduit (Schedule 80) (2nd conduit within one slot or trench).	410 L.F.
8041	Control and distribution equipment.	1 Each
8043	Ground rod, 3/4" diameter x 10' length with clamp.	7 Each
8052	12-pair telemetry cable - jelly-filled (underground).	485 L.F.
8063	Canoga 4-conductor electrical cable (No. 14 A.W.G.) (shielded).	740 L.F.
8064	2-conductor electrical cable (No. 14 A.W.G.).	1265 L.F.
8066	5-conductor electrical cable (No. 14 A.W.G.).	3075 L.F.
8067	7-conductor electrical cable (No. 14 A.W.G.).	1425 L.F.
8075	1-conductor electrical cable (No. 6 A.W.G.) stranded bare copper ground wire.	1535 L.F.
8131	Traffic signal handbox (pullbox).	6 Each
8143	Relocate sign.	3 Each
8148	Removal and salvage of signs less than 50 S.F.	7 Each
8152	Removal of electrical service.	1 Each
8157	Removal and salvage of steel pole with mast arm including foundation.	1 Each

EQUIPMENT LIST (CONT.)

A. EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR

ITEM NO.	DESCRIPTION	QUANTITY
8159	Removal and salvage of cabinet, base-mounted.	1 Each
8161	Removal of handbox.	3 Each
8162	Removal and salvage of traffic signal head.	11 Each
8162	Removal and salvage of pedestrian signal	8 Each
Neg.	Removal and salvage of steel pole including foundation.	2 Each
Neg.	Removal and salvage of steel pole.	1 Each
Neg.	3" polyvinyl chloride electrical conduit (Schedule 80) (riser).	15 L.F.
Neg.	16.5' steel pole with a 26' mast arm (black) and 15' "T" dimension. (Note: Anchor bolts will be 1 1/2" x 60").	1 Each
Neg.	18.5' steel pole with a 26' mast arm (black) and 17' "T" dimension. (Note: Anchor bolts will be 1 1/2" x 60").	1 Each
Neg.	16.5' steel pole with a 30' mast arm (black) and 15' "T" dimension. (Note: Anchor bolts will be 1 1/2" x 60").	1 Each
Neg.	16.5' steel pole with a 50' mast arm (black) and 15' "T" dimension. (Note: Anchor bolts will be 1 3/4" x 90").	1 Each
Neg.	12", one-way, two-section (DW,W) symbolic pedestrian signal head with adjustable bracket for pole mounting and cutaway visors. (Black Faced) (Countdown display)	4 Each
Neg.	12", one-way, two-section (DW,W) symbolic pedestrian signal head having proper post top adapter for pedestal mounting and cutaway visors. (Black Faced) (Countdown display)	4 Each
Neg.	D3-2 "(arrow) N Summit AVE <00" / N Summit AVE 00> (arrow)" (variable x 18") (dual faced) mast arm mounted.	1 Each
Neg.	D3-2 "(arrow) S Summit AVE <00" / S Summit AVE 00> (arrow)" (variable x 18") (dual faced) mast arm mounted.	1 Each
Neg.	D3-2 "E Diamond AVE <300" / E Diamond AVE 300> (arrow)" (variable x 18") (dual faced) mast arm mounted.	2 Each
Neg.	R3-5L "LEFT TURN ONLY" sign, (30" x 36") mast arm mounted.	1 Each
Neg.	R3-6(R) "RIGHT TURN AND THRU" sign, (30"x36") mast arm mounted.	1 Each
Neg.	R10-12 "LEFT TURN YIELD ON GREEN BALL" sign, (36"x42") span wire mounted.	1 Each
Neg.	R10-11b "NO TURN ON RED" (24"x24") sign, mast arm mounted.	4 Each
Neg.	14' breakaway pedestal pole (black) with transformer base.	2 Each
Neg.	12", one-way, three-section (R,Y,G) traffic signal head with adjustable bracket for mast arm mounting and tunnel visors. (Black Faced)	9 Each
Neg.	12", one-way, three-section (RA,YA,GA) traffic signal head with adjustable bracket for mast arm mounting and tunnel visors.	2 Each
Neg.	12", one-way, five-section (R,YA,YGA,G) traffic signal head with adjustable bracket for mast arm mounting and tunnel visors. (Black Faced)	2 Each
Neg.	Pedestrian pushbutton and pedestrian education R10-4(1) sign. (Note: Sign to read "PUSH BUTTON TO CROSS E DIAMOND AVE.")	4 Each
Neg.	Eight-phase, full-traffic-actuated, solid state digital controller with L.A.U., L.A.U. Panel and video interface housed in a NEMA size "6" base-mounted cabinet.	1 Each
Neg.	Video detector camera w/ coaxial cable	4 Each

SEQUENCE OF OPERATION SHEET

E DIAMOND AVE RUNS IN AN EAST-WEST DIRECTION

TRAFFIC OPERATIONS SECTION  
DIVISION OF TRAFFIC ENGINEERING  
MONTGOMERY COUNTY, MARYLAND

ULTIMATE SIGNAL

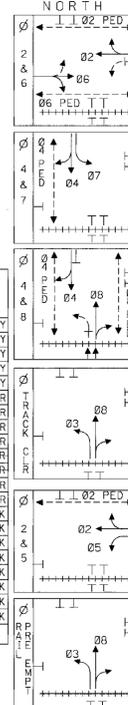
INTERSECTION: S EAST DIAMOND AVENUE AND N SUMMIT AVENUE / N SUMMIT AVENUE

SIGNAL NO.	SIGNAL HEAD INDICATIONS			
	1,2,5,6,7,8,9,12,13	10,11	3,4	14-21
TOTAL:	9	2	2	8

LEGEND	(R)	(←R)	(R)	(Y)	(H)
OPTICALLY LIMITED	(Y)	(←Y)	(Y)	(Y)	(H)
R RED	(G)	(←G)	(G)	(G)	(H)
Y YELLOW	(G)	(←G)	(G)	(G)	(H)
G GREEN	(G)	(←G)	(G)	(G)	(H)
← ARROW	(G)	(←G)	(G)	(G)	(H)
F FLASHING	(G)	(←G)	(G)	(G)	(H)

PHASING NORTH

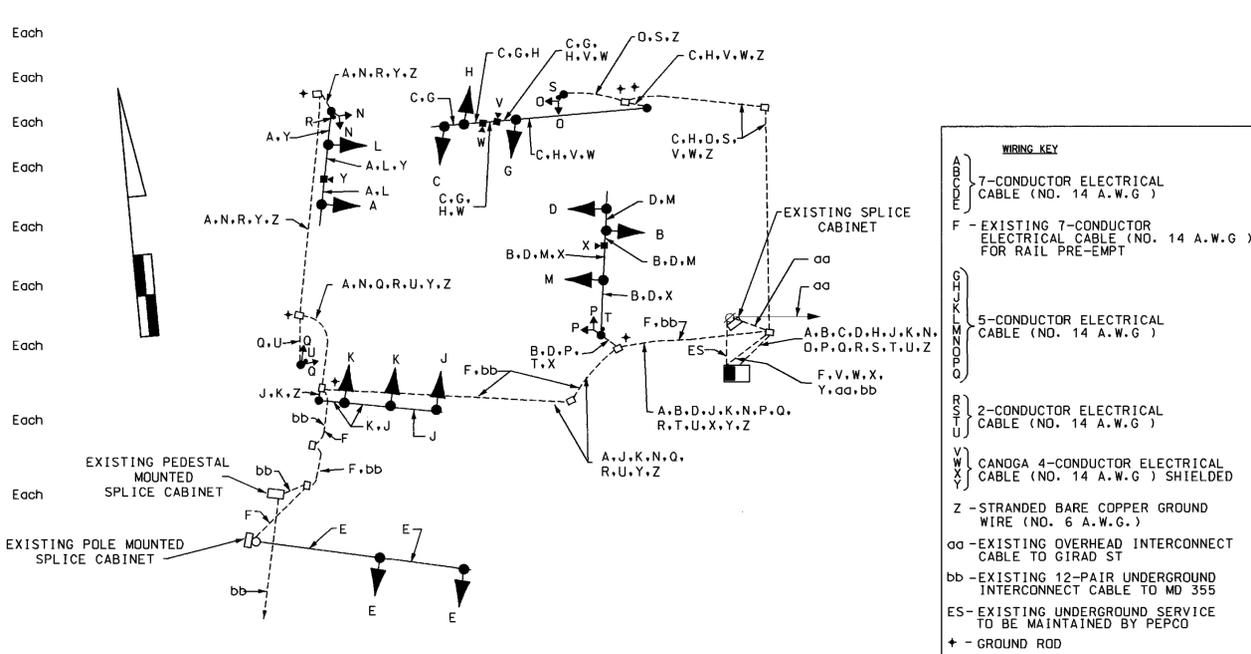


SIGNAL NO.	INTERVAL																					F L S H
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
1	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FLY
2	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FLY
3	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FLY
4	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FLY
5	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FLY
6	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FLY
7	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FLY
8	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FLY
9	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FLY
10	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FLY
11	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FLY
12	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FLY
13	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FLY
14	WK	FL	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DARK
15	WK	FL	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DARK
16	WK	FL	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DARK
17	WK	FL	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DARK
18	DW	DW	DW	DW	WK	WK	WK	WK	WK	WK	WK	WK	WK	WK	WK	WK	WK	WK	WK	WK	WK	DARK
19	DW	DW	DW	DW	WK	WK	WK	WK	WK	WK	WK	WK	WK	WK	WK	WK	WK	WK	WK	WK	WK	DARK
20	DW	DW	DW	DW	WK	WK	WK	WK	WK	WK	WK	WK	WK	WK	WK	WK	WK	WK	WK	WK	WK	DARK
21	DW	DW	DW	DW	WK	WK	WK	WK	WK	WK	WK	WK	WK	WK	WK	WK	WK	WK	WK	WK	WK	DARK
PHASE	2 & 6	ALL RED	4 & 7	ALL RED	4 & 8	ALL RED	ALL TRUCK	ALL RED	2 & 5	ALL RED	RAIL	PRE-EMPT										

NOTES:

SUBMITTED: \_\_\_\_\_ CHECKED: \_\_\_\_\_ APPROVED: \_\_\_\_\_  
IN SERVICE BY: \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_

WIRING DIAGRAM



PREPARED FOR:  
CITY OF GAITHERSBURG  
DEPARTMENT OF PUBLIC WORKS  
800 RABBIT ROAD  
GAITHERSBURG, MARYLAND 20878  
PHONE #: (301) 258-6370

No.	REVISION	DATE	BY

STREET TRAFFIC STUDIES, LTD.  
400 Crain Hwy. NW  
Glen Burnie, MD 21061  
Ph (410) 590-5500  
Fax (410) 590-6637  
438961.DGN

EAST DIAMOND AVE AND SUMMIT AVE

TRAFFIC SIGNAL RECONSTRUCTION  
CITY OF GAITHERSBURG  
MONTGOMERY COUNTY, MARYLAND

RRZ DESIGN	SCALE	none
RC DRAWN		4 OF 4
CHECKED	SHEET	
DATE	PROJ No.	FILE No.