PROJECT DESCRIPTION

I. GENERAL

This project involves the installation of a new traffic control signal at the intersection of US 40 Alt. and Hollow Road in Frederick County, Maryland.
US 40 Alt. is considered to run in an east/west direction.

II. INTERSECTION OPERATION

The intersection is to operate in a NEMA six (6) phase, full-traffic-actuated mode. There will be an exclusive/permissive left turn phase for the both east and westbound movements of US 40 Alt. The US 40 Alt. through movements will operate concurrently. The Hollow Road movements will operate concurrently.

An eight phase, full-traffic-actuated, solid state digital controller with intersection monitor and harness, battery back-up, and two 4-channel rack mounted time delay output loop detector amplifiers housed in a base mounted cabinet are to be installed at this location.

Two AutoScope detectors are to utilized for side street detection. The MD-SHA Signal Shop will perform all internal cabinet wiring for the AutoScope equipment.

EQUIPMENT LIST

A. S.H.A. furnished equipment to be installed by the Contractor.

Item No.	Quantity	Units	Description
9086	1	EA	Cabinet with telemetry (system cab.), size 6.
9087	1	EA	Controller ASC II with telemetry.
9089	49.0	SF	Flat sheet aluminum sign - mast arm mount. [2 ea - 30 in. x 42 in. R10-12] [1 ea - 30 in. x 36 in. R3-5(L)] [2 ea - 24 in. x 72 in. M95-1]
9089	57.5	SF	Flat sheet aluminum sign - ground mount. [2 ea - 48 in. x 48 in. W3-3 "NEW"] [1 ea - 36 in. x 36 in. W3-3 "NEW"]
9090	16.0	SF	Flat sheet aluminum sign - under mast arm mount. [1 ea - 16 in. x Var. D-3(2) Dual Faced]
9092	1	EA	Intersection monitor II with battery backup.
9097	4	EA	Sign hardware - 24 in. form tube.
9098	3	EA	Sign hardware - 30 in. form tube.
9104	1	EA	Sign hardware - under mast arm bracket.
---	1	EA	AutoScope Detector System (To include cabinet equipment, and two cameras).

B. Equipment to be furnished and/or installed by the Contractor.

Item No.	Quantity	Units	Description
1001	3	EA	Maintenance of traffic per assignment.
1005	5	UD	Portable Variable Message Sign (VMS).
2001	3	CY	Test pit excavation.
5001	100	LF	5 in. yellow HAPPTPM.
5002	230	LF	5 in. white HAPPTPM.
5004	75	LF	24 in. white HAPPTPM.
5006	2	EA	HAPPTPM arrow.
5007	325	LF	Remove existing pavement markings - any width.
5008	2	EA	Remove existing pavement marking letter or arrow.
8001	12	CY	Concrete for signal foundation.
8006	2	EA	Cut, clean galvanize, and cap traffic signal mast arm.
8016	2	EA	Microloop probe set with 500 ft. lead-in.
8020	1	EA	Install controller and cabinet - base mount.
8021	1090	LF	Sawcut for signal loop detector.
8023	20	LF	1 in. liquid tight flexible non-metalic conduit - sleeve.
8027	20	LF	3 in. (Schedule 80) PVC electrical conduit- trenched.
8030	65	LF	4 in. (Schedule 80) PVC electrical conduit- trenched.
8031	180	LF	4 in. (Schedule 80) PVC electrical conduit- slotted in roadway.
8033	3	EA	Electrical handhole.
8034	3	EA	Ground rod (3/4 in. x 10 ft. length).
8040	915	LF	Loop detector wire encased in flexible tubing (No. 14 AWG) .
8041	165	LF	Electrical cable - 2-conductor (aluminum shielded).
8044	120	7LF	Electrical cable - 5-conductor (No. 14 AWG).
8045	1450	LF	Electrical cable - 7-conductor (No. 14 AWG).
8046	340	LF	Electrical cable - 2-conductor (No. 12 AWG) Type in TC.
8048	250	LF	Stranded bare copper ground wire (No. 6 AWG).
8049	15	LF	Electrical cable - 1-conductor (No. 4 AWG) - THHN/THWN.
8051	90	LF	Wood sign supports 4 in. x 6 in.
8052	63.5	SF	Install ground mounted sign.
8053	65	SF	Install overhead sign.
8055	2	EA	250 watt HPS luminaire with photcell.
8056	2	EA	15 ft. lighting bracket arm for traffic signal structure.
8060	1	EA	Remove/dispose of existing material/equipment per assignment.
8066	1	EA	Control and distribution equipment (120/240 V, one phase, three wire system) for a type B-13 underground electrical service.
8081	1	EA	Mast arm pole with twin mast arms (50 ft./60 ft.)
8082	1	EA	Mast arm pole with twin mast arms (50 ft./70 ft.)
8084	32	EA	12 in. vehicular traffic signal head section.
8085	9	EA	8 in. vehicular traffic signal head section.
Neg.	450	LF	Electrical cable - 7-conductor (No. 18 AWG) & AutoScope Cable.
Neg.	2	EA	Install AutoScope detectors.

CONTACT LIST

The contact persons for District #7 are as follows:

Mr. Robert Fisher
District Engineer
301-624-8101

Mr. John Concannon
Assistant District Engineer - Traffic
301-624-8140

Mr. Jim Buckalew
Assistant District Engineer - Utility
301-624-8115

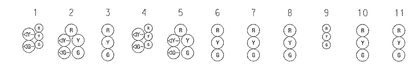
Mr. Dave Coyne
Assistant District Engineer - Maintenance
301-624-8105

Mr. Richard L. Daff
Chief, Traffic Operations Division
410-787-7630

The Power Company Representative is:
Allegheny Power Company
421 E. Patrick Street
Frederick, Maryland 21701

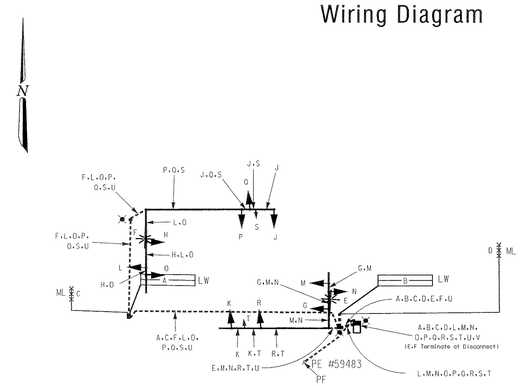
1-800-255-3443

Phase Chart



Phase 1 & 5	R ◄G—	R ◄G—	R	R ◄G—	R ◄G—	R	R	R	R	R	R	
1 & 5 Change to Phase 1 & 6 or Phase 2 & 5 or Phase 2 & 6												
Phase 1 & 6	G ◄G—	G ◄G—	G	R	R	R	R	R	R	R	R	
1 Change	G ◄Y—	G ◄Y—	G	R	R	R	R	R	R	R	R	
Phase 2 & 5	R	R	R	G ◄G—	G ◄G—	G	R	R	R	R	R	
5 Change	R	R	R	G ◄Y—	G ◄Y—	G	R	R	R	R	R	
Phase 2 & 6	G	G	G	G	G	G	R	R	R	R	R	
2 & 6 Change	Y	Y	Y	Y	Y	Y	R	R	R	R	R	
Phase 4 & 8	R	R	R	R	R	R	G	G	G	G	G	
4 & 8 Change	R	R	R	R	R	R	Y	Y	Y	Y	Y	
Flashing Operation	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	

Wiring Diagram



A, B — 2-Conductor Cable (Aluminum Shielded)

C, D — Micro-loop Detector Lead-in Cable

E, F — 2-Conductor Tray Cable (No. 12 A.W.G.)

G, H, J, K — 5-Conductor Electrical Cable (No. 14 A.W.G.)

L, M, N, O, P, Q, R — 7-Conductor Electrical Cable (No. 14 A.W.G.)

S, T — 7-Conductor Electrical Cable (No. 18 A.W.G.) and AutoScope Coax Cable

U — Bare Copper Ground Wire (No. 6 A.W.G.)

V — 3 pcs. - 1-conductor (No. 4 AWG) for Traffic Signal Electrical Service

LW — Loop Detector Wire (No. 14 A.W.G.) in Flexible Tubing

ML — Micro-loop Detector

PF — Proposed Underground Electrical Service By Allegheney Power Co.

✱ — Proposed Grounding Rod

The Traffic Group
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APPROVALS

TEAM LEADER, TRAFFIC ENGINEERING DESIGN DIVISION

ASST. CHIEF TRAFFIC ENGINEERING DESIGN DIVISION

CHIEF, TRAFFIC ENGINEERING DESIGN DIVISION

DIRECTOR, TRAFFIC & SAFETY

MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION
(General Information Plan)
US 40 Alt. at Hollow Road

DRAWN BY: J. Dirndorfer	F.A.P. NO. N/A	TS NO. 4018	SHEET NO.
CHECKED BY:	S.H.A. NO. FR360A5E/D5E		
SCALE: N/A	COUNTY: Frederick	T.I.M.S. NO. E-036	2 OF 2
DATE: August 4, 2000	LOG MILE: 10040A06.68		

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