PROJECT DESCRIPTION

I. GENERAL

This project involves the reconstruction of the existing traffic control signal at the intersection of MD 450 and Jennifer Road/US 50 Ramps in Anne Arundel County, Maryland. MD 450 is considered to run in an east/west direction.

The east and west legs are being modified for double left turns.

II. INTERSECTION OPERATION

The intersection currently operates in a NEMA six (6) phase, full-traffic-actuated mode. There are exclusive left turn phases for both the east and westbound movements of MD 450. The MD 450 through movements operate concurrently. The Jennifer Road/US 50 Ramp movements operate in a side street split phase mode.

An eight phase, full-traffic-actuated, solid state digital controller with intersection monitor and harness, battery back-up, video detection equipment, and (1) four-channel rack mounted time delay output loop detector amplifier housed in a base mounted cabinet are to be installed at this location.

CONTACT LIST

The contact persons for District #5 are as follows:

Ms. Kim Tran
Assistant District Engineer - Traffic
410-841-1019

Mr. John Mays
Assistant District Engineer - Utility
410-841-1039

Mr. Chuck E. George
Assistant District Engineer - Maintenance
410-841-1013

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

The Power Company Representative is:
Baltimore Gas & Electric Company
7317 Parkway Drive South
Hanover, Maryland 21076
410-859-9070

EQUIPMENT LIST

A. S.H.A. furnished equipment material.

Cabinet equipment in cabinet.

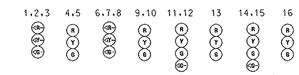
B. Equipment to be furnished and/or installed by the Contractor.
All equipment in this list shall have catalog cuts submitted for approval prior to installation.

Quantity	Units	Specification Section	Description
1	EA	818	27 ft. steel mast arm pole with a 60 ft. mast arm.
3	EA	818	27 ft. steel mast arm pole with a 70 ft. mast arm.
1	EA	816	Standard S.H.A. traffic signal controller, base mounted cabinet, and six (1) four-channel loop detector amplifiers (Note: Controller and cabinet shall be purchased from Econolite and delivered to the S.H.A. signal shop for wiring and testing. Contact Mr. Ed Rodenhizer (410) 787-7650).
6	EA	---	Video camera detection with specification cable. (1)- 150 ft., (1)-175 ft., (1)- 250 ft., (1)-275 ft., (2)-400 ft. Camera Detection in cabinet.
6	EA	814	12 in., one-way, three section LED (RA,YA,GA) adjustable black faced traffic signal head with mast arm mounting hardware and tunnel visors.
6	EA	814	12 in., one-way, three section LED (R,Y,G) adjustable black faced traffic signal head with mast arm mounting hardware and tunnel visors.
4	EA	814	12 in., one-way, four section LED (R,Y,G,GA) adjustable black faced traffic signal head with mast arm mounting hardware and tunnel visors.
7	EA	813	30 in. x 36 in. R 3-5(L) sign with mast arm mounting hardware.
1	EA	813	30 in. x 36 in. R 3-6(L) sign with mast arm mounting hardware.
4	EA	813	16 in. x Var. D 3(1) (Dual Faced) sign with mast arm mounting hardware.
4	EA	---	Non-Invasive micro-loop probe (set of 3) with 750 ft. lead-in cable.
2	EA	806	20 ft. luminaire arm.
2	EA	806	250 W H.P.S. lamp and luminarie.

B. (Cont.) Equipment to be furnished and/or installed by the Contractor.
All equipment in this list shall have catalog cuts submitted for approval prior to installation.

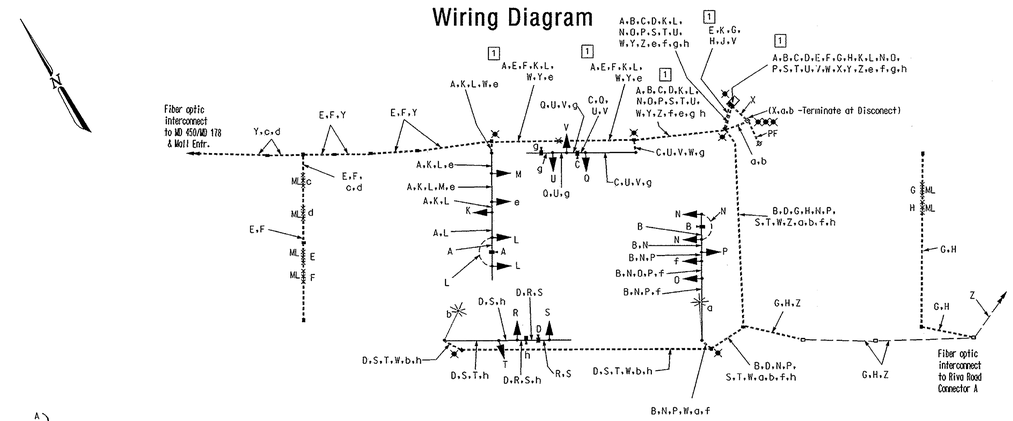
Quantity	Units	Specification Section	Description
Lump Sum	LS	108	Mobilization.
Lump Sum	LS	104	Maintenance of traffic.
5	CY	205	Test pit excavation.
11	EA	811	Handhole.
25	LF	810	1-conductor electrical cable (No. 4 A.W.G.) (3 pieces).
600	LF	810	2-conductor electrical tray cable (No. 12 A.W.G.).
1150	LF	810	5-conductor electrical cable (No. 14 A.W.G.).
1600	LF	810	7-conductor electrical cable (No. 14 A.W.G.).
515	LF	804	Bare copper stranded ground wire (No. 6 A.W.G.).
15	LF	805	2 in. polyvinyl chloride [Schedule 80] electrical conduit - trenched.
535	LF	805	3 in. polyvinyl chloride [Schedule 80] electrical conduit - trenched.
90	LF	805	3 in. polyvinyl chloride [Schedule 80] electrical conduit - Slotted in roadway.
50	LF	805	4 in. polyvinyl chloride [Schedule 80] electrical conduit - trenched.
430	LF	805	4 in. polyvinyl chloride [Schedule 80] electrical conduit - slotted in roadway.
22.0	CY	801	Concrete foundation for traffic signal equipment.
9	EA	804	Ground rod -3/4in. diameter x 10 ft. length.
1	EA	807	Electrical utility service equipment (120/240 V, one phase, three wire system) for a type 807.05-1 underground electrical service. 200 Amp meter service.
2	EA	---	Cut, clean, and cap mast arm pole.
1	EA	---	Remove existing shrub.
5	EA	---	Remove and dispose of existing concrete foundation 12 inches below grade.
2	EA	---	Relocate existing pole mounted signs.
Lump Sum	LS	---	Remove existing traffic signal equipment.
Lump Sum	LS	---	Relocate existing fiber-optic interconnect cable (Approx. 200 LF).
Lump Sum	LS	---	As-built for S.H.A. [on CADD].
[1] 5	FT	---	4 in. polyvinyl chloride [Schedule 80] electrical conduit sleeve- trenched.

Phase Chart



	1,2,3	4,5	6,7,8	9,10	11,12	13	14,15	16
Phase 1 & 5	G	R	G	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	R	R	R	R	R	R
1 Change	Y	G	R	R	R	R	R	R
Phase 2 & 5	R	R	G	G	R	R	R	R
5 Change	R	R	Y	G	R	R	R	R
Phase 2 & 6	R	G	R	G	R	R	R	R
2 & 6 Change	R	Y	R	Y	R	R	R	R
Phase 3	R	R	R	R	R	R	G G	G
3 Change	R	R	R	R	R	R	Y	Y
Phase 4	R	R	R	R	G G	G	R	R
4 Change	R	R	R	R	Y	Y	R	R
Flashing Operation	FL/ R	FL/Y	FL/ R	FL/Y	FL/R	FL/R	FL/R	FL/R

Wiring Diagram



A, B, C, D, g, h } Video Detector Cable

E, F, G, H } Non-Invasive Micro-loop Detector Lead-in Cable

a, b } 2-Conductor Tray Cable (No. 12 A.W.G.)

K, L, M, N, O, P, Q, R } 5-Conductor Electrical Cable (No. 14 A.W.G.)

S, T, U, V, e, f } 7-Conductor Electrical Cable (No. 14 A.W.G.)

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

X — 1-conductor (2-pieces) (No. 4 A.W.G.) for electrical service from cabinet to meter pole

Y — Existing Fiber Optic Interconnect Cable (Jennifer Road - MD 178/Annapolis Mall Entr. Run)

Z — Existing Fiber Optic Interconnect Cable (Jennifer Rd. - Riva Rd. Conector A Run)

c, d } Non-Invasive Micro-loop for Traffic Signal MD 450/MD 178 Mall Entrance

✱ — Proposed Grounding Rod

ML — Micro-loop Detector (Non-Invasive)

PF — Proposed Underground Electrical Service By BGE

[1] Redline Revision
Dated February 7, 2008

SHA MDOT - SHA O.O.T.S.

S.H.A. Approval — Date 7/13/08

Revision " K"

The Traffic Group
The Traffic Group, Inc.
410-931-6600
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MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION
(General Information Plan)

MD 450/ and Jennifer Road/US 50 Ramps

DRAWN BY:	Frank Hoeckel	F.A.P. NO.	N/A	TS NO. GI-1050-K	SHEET NO.
CHECKED BY:		S.H.A. NO.	BW996M82		
SCALE:	N/A	COUNTY:	Anne Arundel County	T.I.M.S. NO. H-575	17 OF 19
DATE:	May 23, 2006	LOG MILE:	02045009.45		

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