DRILL HOLES

BORDER REV: DATE: June 1, 2004

PROJECT DESCRIPTION

I. GENERAL

This project involves the reconstruction of an existing wood pole Traffic Control Signal with opticom detection at the intersection of MD 64 (Jefferson Blvd) and Pangborn Blvd in Washington County. A new mast arm design shall be installed with ~~side street~~ video detection **for all approaches.** 1 Countdown pedestrian signals, audible pushbuttons and opticom eyes. MD 64 (Jefferson Blvd) is assumed to run an east-west direction.

II. INTERSECTION OPERATION

1. The intersection shall continue to operate in a NEMA four-phase, fully-actuated mode, with the MD 64 (Jefferson Blvd) approaches running concurrently. Opticom detection shall remain in operation for the eastbound approach of MD 64 (Jefferson Blvd) and the northbound approach of Pangborn Blvd. The Pangborn Blvd approaches shall also continue to run concurrently.

2. A full-traffic-actuated, eight-phase controller with video interface, discriminator module and all necessary equipment housed in a NEMA size "6" base-mounted cabinet shall be installed at this intersection.

3. SHA signal shop shall install APS control unit into controller cabinet. The Contractor shall deliver the Control Unit and audible pushbuttons to the SHA Signal Shop for testing and programming.

III. SPECIAL NOTES

1. The Contractor shall be responsible for terminating all signal cables, to the appropriate terminals and shall properly label each cable.

2. All controller cabinet wiring will be performed by the S.H.A. Signal Shop Contact Mr. Ed Rodenhizer at (410) 787-7652 seventy-two hours in advance of intended work.

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.

4. APS will function as follows:

TO CROSS MD 64 (JEFFERSON BLVD)

a When pedestrian locates and presses the pushbutton for an extended time, the pushbutton unit will announce the following message " Wait to cross Jefferson at Pangborn ."

b. When the WALK phase begins, the pushbutton unit will provide a rapid tick which will last for the duration of the WALK phase.

The contact persons for District #6 are as follows:

Mr. George Small
Assistant District Engineer - Traffic
Phone: (301) 729-8444

Mr. Tony Crawford
Assistant District Engineer - Maintenance
Phone: (301) 729-8457

Mr. Dave Felker
Assistant District Engineer - Utility
Phone: (301) 729-8439

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

Mr. Ed Rodenhizer
Signal Shop
410-787-7652

Mr. Sonny Bailey
Sign Shop
410-787-7676

The power company representative is:

Mr. Jeff Thompson
Allegheny Power
421 East Patrick Street
P.O. Box 488
Frederick, MD 21705
301-694-4485

EQUIPMENT LIST

A. EQUIPMENT TO BE SUPPLIED BY S.H.A..

ITEM NO.	DESCRIPTION	QUANTITY
9042	Controller ASC II with telemetry	1 EA
9044	Controller cabinet, size "6"	1 EA
9086	Video detection interface equipment: 1-4 cameras (To be installed by signal shop).	1 EA
9570	Sheet aluminum signs to consist of: (ground mount)	24 SF
	Pedestrian education R10-3(1) mod sign. (Note: Sign to read "PUSHBUTTON TO CROSS CROSS JEFFERSON BLVD".)	2 EA
	S1-1 "SCHOOL" sign. (36" x 36") ground mounted.	2 EA
	W16-7p(L) "arrow (symbolic)" diagonal sign. (12" x 24")	1 EA
	W16-7p(R) "arrow (symbolic)" diagonal sign. (12" x 24")	1 EA
9571	Sheet aluminum signs to consist of: (mast arm or pole mount)	47 SF
	D3-2 "Pangborn Blvd" sign. (variable X 16") (dual faced) mast arm.	1 EA
	D3-2 "Jefferson Blvd" sign. (variable x 16") (dual faced) mast arm.	1 EA
	M95-2 " WEST / (left arrow) / MD 64 / EAST / (right arrow)" (78"x24")	1 EA
	M95-2 " EAST / (left arrow) / MD 64 / WEST / (right arrow)" (78"x24")	1 EA

EQUIPMENT LIST (CONT.)

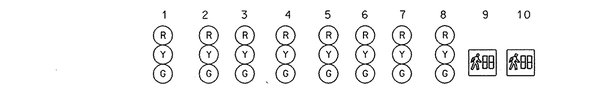
B. EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR

ITEM NO.	DESCRIPTION	QUANTITY
1001	Maintenance of traffic per assignment.	2 EA
2001	Class 2 Excavation.	4 C.Y.
2002	Test Pit Excavation	4 C.Y.
5002	Removal of existing permanent pavement line markings	180 L.F.
5004	12" white heat applied permanent preformed thermoplastic pavement marking.	240 L.F.
5005	24" white heat applied permanent preformed thermoplastic pavement marking.	45 L.F.
6002	Standard type A combination curb and gutter 12" gutter pan 8" depth.	115 L.F.
6003	4" concrete sidewalk.	200 S.F.
6004	Detectable warning surfaces for curb ramps.	11 S.F.
8001	12" LED signal head section.	24 EA
8002	2 wire Central Control unit	1 EA
8008	Audible/tactile pedestrian pushbutton station & signs.	2 EA
8009	Breakaway Pedestal pole (10').	2 EA
8014	LED 16" countdown pedestrian signal head.	2 EA
8018	Mast arm pole and 70' mast arm any "I" dimension	1 EA
1 ~~8021~~	~~Non-invasive detector (any length) lead-in cable up to 1000'.~~	~~2 EA~~
8022	Remove and dispose of existing material and equipment per assignment.	1 EA
1 8027	Video detection camera & cable up to 500'	4 ~~2~~ EA
8035	Schedule 80 rigid PVC conduit up tp 4" - slotted.	180 L.F.
1 8036	Schedule 80 rigid PVC conduit up to 4" - trenched.	210 ~~835~~ L.F.
1 ~~8037~~	~~Schedule 80 rigid PVC conduit up to 4" - bored.~~	~~225 L.F.~~
8038	Wood sign supports up to 4"x6".	304 L.F.
8040	Install overhead or ground mounted sign (including hardware).	71 S.F.
8042	No. 6 AWG stranded bare copper ground wire.	245 L.F.
8044	Metered service pedestal embedded.	1 EA
8046	Electrical cable 1-conductor No. 4 AWG THHN/THWN.	55 L.F.
1 8048	Furnish and install electrical handhole.	3 ~~9~~ EA
8049	Discriminator module, 4 channel #764. (opticom)	1 EA
8051	Opticom #721 detector eye.	2 EA
8052	Furnish and install 4-conductor opticom cable.	350 L.F.
8055	Electrical cable - 2 conductor (No. 14 AWG).	115 L.F.
8057	Electrical cable - 5 conductor (No. 14 AWG).	265 L.F.
8058	Electrical cable - 7 conductor (No. 14 AWG).	730 L.F.
8065	Install controller and cabinet base mount.	1 EA

C. EQUIPMENT TO BE REMOVED

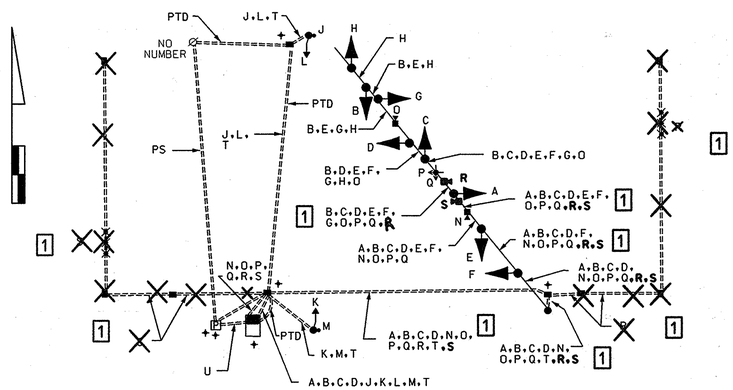
SHA Forces shall remove the controller and all auxilliary equipment from the controller cabinet. The cabinet and all other removed signal materials are to become property of the contractor.

PHASE CHART



	1	2	3	4	5	6	7	8	9	10
PHASE 2 & 6	G	G	G	G	R	R	R	R	DW	DW
2 & 6 CHANGE	Y	Y	Y	Y	R	R	R	R	DW	DW
PHASE 4 & 8	R	R	R	R	G	G	G	G	DW	DW
4 & 8 CHANGE	R	R	R	R	Y	Y	Y	Y	DW	DW
PHASE 4 & 8 ALT	R	R	R	R	G	G	G	G	WK	WK
PED CLEAR / COUNTDOWN	R	R	R	R	G	G	G	G	FL/DW	FL/DW
4 & 8 ALT CHANGE	R	R	R	R	Y	Y	Y	Y	DW	DW
PRE EMPT 1	G	G	R	R	R	R	R	R	DW	DW
PRE EMPT 1 CHANGE	Y	Y	R	R	R	R	R	R	DW	DW
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	DARK	DARK

WIRING DIAGRAM



WIRING KEY

A B C D } 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)

E F G H J K } 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)

L M } 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)

1 N O R S } CONTROL CABLE (CAMERA TO CONTROLLER) UP TO 500'

P Q } 4-CONDUCTOR OPTICOM CABLE

~~R S } NON-INVASIVE MICROLOOP LEAD-IN CABLE~~ 1

T - STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)

U - 3-1 CONDUCTOR ELECTRICAL CABLE (NO. 4 A.W.G.)

PS - PROPOSED OVERHEAD SERVICE TO BE INSTALLED BY ALLEGHENY POWER

PTD - PROPOSED TELEPHONE DROP

+ - GROUND ROD

1 REDLINE REVISION 6/18/08
TEDD APPROVAL 6-19-08

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MD 64 AND PANGBORN BLVD

HAGERSTOWN, MARYLAND

GENERAL INFORMATION SHEET

SCALE NONE DATE 5/12/08 CONTRACT NO. AX1425185

DESIGNED BY J.W.A. COUNTY WASHINGTON
DRAWN BY R.C. LOGMILE 21006400.90
CHECKED BY TIMS NO. 1957
F.A.P. NO. TOD NO.

TS NO. | DRAWING NO. 2 OF 2 | SHEET NO. OF

STREET TRAFFIC STUDIES, LTD.
400 Crain Hwy. NW
Glen Burnie, MD 21061
Ph (410) 590-5500
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PLOTTED: $DATETIME$
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