PROJECT DESCRIPTION

I. GENERAL

This portion of the project involves the reconstruction of the existing traffic control signal at the intersection of MD 45 and Bosley Avenue in Baltimore County, Maryland. MD 45 is considered to run in a north/south direction.

II. INTERSECTION OPERATION

The intersection is to be modified to operate in a NEMA five (5) phase, full-traffic-actuated mode. The MD 45 through movements will operate concurrently with a concurrent pedestrian phase across the east leg of the intersection. An actuated pedestrian phase across the west leg of the intersection will be provided. The Bosley Avenue movements will operate as a side street split phase with an actuated pedestrian phase across the south leg of the intersection. There will be a Pre-Emption phase for the Firehouse utilizing the eastbound Bosley Avenue movements. A right turn overlap phase for the southbound MD 45 to westbound Bosley Ave. movement will be provided. The southbound MD 45 right turn is to be prohibited during the walk phase of the west leg pedestrian movement.

The existing controller shall be utilized. Four 4-channel rack mounted time delay output loop detector amplifiers housed in a base mounted cabinet are to be installed at this location.

All mast arm poles, mast arms, luminaire, luminaire arm, and pedestal poles are to be painted National Park Service (NPS) Brown.

EQUIPMENT LIST

A. Equipment to be furnished by MD-SHA and installed by Contractor.

Category Code No.	Quantity	Units	Description
900000	1	EA	Standard S.H.A. traffic signal base mounted cabinet, with four 4-channel rack mounted loop detector amplifiers.
900000	112.75	SF	Sheet aluminum sign with mast arm mounting hardware: [1 each 30 in. x 36 in. R 3-5(L)]. [1 each 30 in. x 36 in. R 3-5(R)]. [2 each 30 in. x 36 in. R 3-6(L)] [1 each 30 in. x 36 in. R 3-6(R)] [1 each 16 in. x Var. D-3(1) (Dual Faced)]. [3 each 16 in. x Var. D-3(1)] [1 each 30 in. x 30 in. R 3-2]. [2 each 24 in. x 72 in. M 95-1] [1 each 24 in. x 30 in. R 10-10(R)].
900000	28	SF	Sheet aluminum sign with pole mounting hardware: [4 each 9 in. x 12 in. R 10-4(1)] (2 signs to read: Pushbutton To Cross York Rd.). (2 signs to read: Pushbutton To Cross Bosley Ave.). [1 each 74 in. x 24 in. Route Marker Assembly].
900000	4	EA	Pushbutton assembly.
900000 (NEW)	1	EA	Video interface equipment.
900000 (NEW)	1	EA	Relocate Controller.

CONTACT LIST

The contact persons for District #4 are as follows:

Mr. Randall Scott
Assistant District Engineer - Traffic
410-321-2800

Mr. Joseph McMahon
Assistant District Engineer - Utility
410-321-2800

Mr. Dave Ramsey
Assistant District Engineer - Maintenance
410-321-2800

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

The Power Company Representative is:
Baltimore Gas and Electric Company
Mr. Bernie Thuman
7317 Parkway Drive South
Hanover, Maryland 21067
410-859-9030

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.

Category CodeNo.	Quantity	Units	Description
203030	5	CY	Test pit excavation.
500000	530	LF	12 in. wide HAPPTPM - white for croswalk.
500000	160	LF	24 in. wide HAPPTPM - white for stop line
818036	1	EA	27 ft. steel mast arm pole with a 50 ft. mast arm (Note: four 1-3/4 in. x 90 in. anchor bolts).
818036	2	EA	21 ft. steel mast arm pole with a 50 ft. mast arm [Note: four 1-3/4 in. x 90 in. anchor bolts].
818041	1	EA	21 ft. steel mast arm pole with 60 ft. mast arm [Note: four 2 in. x 90 in. anchor bolts].
800000	32	EA	12 in. black faced traffic signal head section with mast arm mounting hardware.
800000	12	EA	8 in. black faced traffic signal head section with mast arm mounting hardware.
800002	12	EA	12 in. pedestrian signal head section with pole mounting hardware.
871202	1	EA	Install base mounted cabinet/controller.
800000	4	EA	Install pedestrian pushbutton assembly.
800000	112.75	SF	Install sign - mast arm mounted.
800000	28	SF	Install sign - pole mounted.
811001	11 ~~14~~	EA	Handhole.
800000	7	EA	Micoloop probe (set of three) with 500 ft. lead-in cable.
862102	630 ~~825~~	LF	Sawcut for signal loop detector.
~~862101~~	~~2620~~	~~LF~~	~~Loop detector wire (No. 14 A.W.G.) encased in flexible tubing.~~
~~861104~~	~~700~~	~~LF~~	~~2-conductor (aluminum shielded) electrical cable (No. 14 A.W.G.).~~
800000	305	LF	2-conductor tray cable (No. 12 A.W.G.).
861105	475	LF	2-conductor electrical cable (No. 14 A.W.G.).
861106	440	LF	3-conductor electrical cable (No. 14 A.W.G.).
861107	380	LF	5-conductor electrical cable (No. 14 A.W.G.).
861108	1925	LF	7-conductor electrical cable (No. 14 A.W.G.).
861117	5	LF	3-wire (No. 4 A.W.G.) electrical cable.
861102	5	LF	3-wire (No. 8 A.W.G.) electrical cable.
802501	420	LF	Bare copper stranded ground wire (No. 6 A.W.G.).
805160	70	LF	1 in. liquid tight flexible non-metalic conduit for loop detector sleeve.
800000	20	LF	2 in. polyvinyl chloride [Schedule 80] electrical conduit - trenched.
~~805145~~	~~90~~	~~LF~~	~~2 in. polyvinyl chloride [Schedule 80] electrical conduit - slotted in roadway.~~
805000	400 ~~60~~	LF	3 in. polyvinyl chloride [Schedule 80] electrical conduit - trenched.
~~805150~~	~~590~~	~~LF~~	~~3 in. polyvinyl chloride [Schedule 80] electrical conduit - slotted in roadway.~~
800000	90 ~~15~~	LF	4 in polyvinyl chloride [Schedule 80] electrical conduit - trenched.
~~805155~~	~~425~~	~~LF~~	~~4 in. polyvinyl chloride [Schedule 80] electrical conduit - slotted in roadway.~~
801004	13.85	CY	Concrete foundation for traffic signal equipment.
837001	6	EA	Ground rod -3/4 in. diameter x 10 ft. length.
838003	1	EA	Control and distribution equipment (120/240 V, one phase, three wire system) for a MD-SHA (Type B-6) underground electrical service.
861103	1	EA	15 ft. luminaire arm.
831010	1	EA	250 W HPS luminaire.
800000	1	EA	Relocate existing sign.
~~800000~~	~~3~~	~~EA~~	~~Concrete filled bollard.~~
800000	2	EA	Cut, clean, and cap mast arm.
800000	Lump Sum	LS	Remove and disposal of existing traffic signal equipment.
800000	Lump Sum	LS	Paint all mast arm poles, mast arms, luminaire arms, and pedestal poles National Park Service (NPS) Brown.
800000 (NEW)	100	LF	Pull-back and re-feed existing electrical cable.
816001 (NEW)	2	EA	Furnish and install video detection cable.
816005 (NEW)	2	EA	Furnish and install 250 ft. video detection cable.
805115 (NEW)	160	LF	3 in. polyvinyl chloride [Schedule 80] electrical conduit - bored.
805118 (NEW)	350	LF	4 in. polyvinyl chloride [Schedule 80] electrical conduit - bored.
805105 (NEW)	90	LF	2 in. polyvinyl chloride [Schedule 80] electrical conduit - bored.

Phase Chart

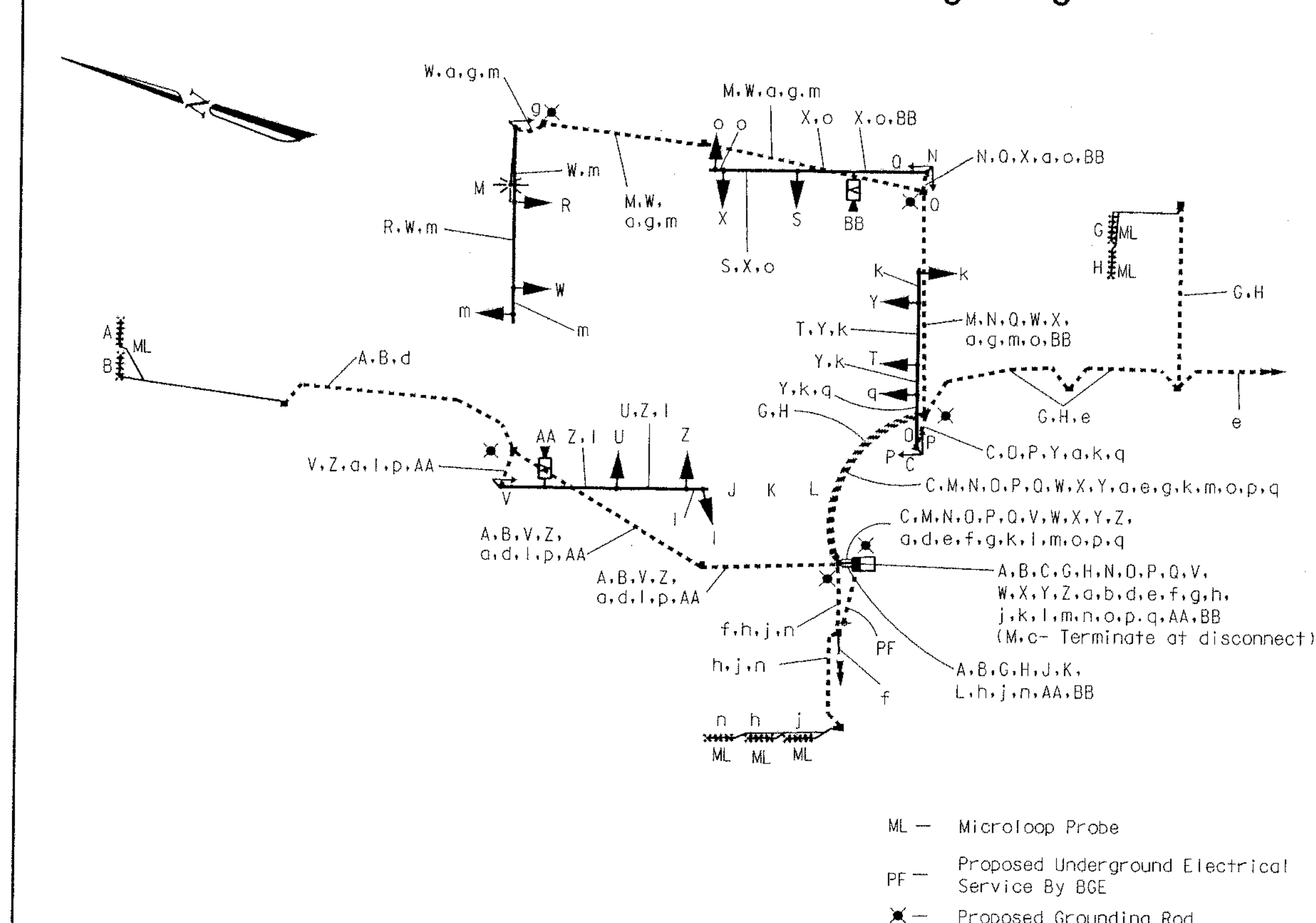
	1	2	3	4	5	6	33	7	8	9	10	11	12	13.14	15.16	31.32	
Phase 1 & 6	G	G	G	G	G	G	—R→ —R→	R	R	R	R	R	R	WK	DW	WK	
Ped Clearance	G	G	G	G	G	G	—R→ —R→	R	R	R	R	R	R	WK	DW	FL/DW	OVL A
1 Change	G	G	G	G	G	G	—R→ —R→	R	R	R	R	R	R	WK	DW	DW	
Phase 2 & 6	G	G	G	G	G	G	—G→	R	R	R	R	R	R	WK	DW	DW	
Ped Clearance	G	G	G	G	G	G	—G→	R	R	R	R	R	R	FL/DW	DW	DW	
2 & 6 Change	Y	Y	Y	Y	Y	Y	—G→	R	R	R	R	R	R	DW	DW	DW	
Phase 3	R	R	R	R	R	R	—G→	R	R	R	G ←G—	G ←G—	G	DW	DW	DW	OVL B
3 Change	R	R	R	R	R	R	—Y→	R	R	R	Y	Y	Y	DW	DW	DW	
Phase Alt 3	R	R	R	R	R	R	—G→	R	R	R	G ←G—	G ←G—	G	DW	WK	DW	
Ped Clearance	R	R	R	R	R	R	—G→	R	R	R	G ←G—	G ←G—	G	DW	FL/DW	DW	OVL B
Alt 3 Change	R	R	R	R	R	R	—Y→	R	R	R	Y	Y	Y	DW	DW	DW	
Phase 4	R	R	R	R	R	R	—R→ —R→	G ←G—	G ←G—	G	R	R	R	DW	DW	DW	
4 Change	R	R	R	R	R	R	—R→ —R→	Y	Y	Y	R	R	R	DW	DW	DW	
Flashing Operation	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	DARK	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	DARK	DARK	DARK	

NOTE: Phase 1 is pedestrian actuated. A call to Phase 1 shall also place a call to Phase 4 min. green.

Fire House Pre-Emption

First Change Interval	Y	Y	Y	Y	Y	Y	—G→	R	R	R	R	R	R	DW	DW	DW	
Pre-emption Phase	R	R	R	R	R	R	—G→	R	R	R	G ←G—	G ←G	G	DW	DW	DW	

Wiring Diagram



A B G H h j n — Microloop Probe Lead-in Cable
M — 2-Conductor Tray Cable (No. 12 A.W.G.)
C N O V — 2-Conductor Electrical Cable (No. 14 A.W.G.)
g p — 3-Conductor Electrical Cable (No. 14 A.W.G.)
P Q R S T U — 5-Conductor Electrical Cable (No. 14 A.W.G.)
W X Y Z k l m o q — 7-Conductor Electrical Cable (No. 14 A.W.G.)
a — Bare Copper Ground Wire (No. 6 A.W.G.)
b — 3-Wire (No. 4 A.W.G.) for Traffic Signal Electrical Service
c — 3-Wire (No. 8 A.W.G.) for Street Lighting Electrical Service
d — 12-Pair Voice Grade Telemetry Interconnect Cable (No. 19 A.W.G.) (Fairmount Ave - Bosley Ave Run)
e — 12-Pair Voice Grade Telemetry Interconnect Cable (No. 19 A.W.G.) (Bosley Ave - Washington Ave Run)
f — Existing Interconnect Cable (MD 45 - Kenilworth Dr. Run)
AA BB — Video detection lead-in cable

NEW SHEET
[Z] REDLINE REVISION #2

REVISIONS
(A) REDLINE REVISION No.2 CONTRACT NO. BA3305183 3/2002

MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION
(General Information Plan)
MD 45 (York Road) at Bosley Road

DRAWN BY:	Frank Hoeckel	F.A.P. NO.	N/A	TS NO. 3982-GI	SHEET NO.
CHECKED BY:		S.H.A. NO.	BA 3305183		
SCALE:	N/A	COUNTY:	Baltimore	T.I.M.S. NO.	
DATE:	January 7, 2000	LOG MILE:	0345002.55		22 OF 44

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