PROJECT DESCRIPTION

I. GENERAL

This portion of the project involves the reconstruction of the existing traffic control signal at the intersection of MD 140 and Sudbrook Lane in Baltimore County, Maryland. MD 140 is considered to run in a north/south direction.

II. INTERSECTION OPERATION

The intersection is to continue to operate in a NEMA five (5) phase, full-traffic-actuated mode. There is an exclusive/permissive left turn phase for the southbound movement of MD 140. The MD 140 through movements operate concurrently with concurrent pedestrian phases across both the east and west legs of the intersection. The Sudbrook Lane through movements operate concurrently with actuated pedestrian phases across both the north and south legs of the intersection.

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

EQUIPMENT LIST

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

Category Code No.	Quantity	Units	Description
900000	1	EA	Standard S.H.A. traffic base mounted cabinet, and three 4-channel rack mounted loop detector amplifiers
900000	65	SF	Sheet aluminum sign with mast arm mounting hardware: [1 each 36 in. x 42 in. R 10-12] [2 each 16 in. x Var. D-3(1) (Dual Faced)] [2 each 30 in. x 36 in. R 3-5(L)] [1 each 30 in. x 36 in. R 3-5(R)].
900000	3.0	SF	Sheet aluminum sign with pole mounting hardware: [4 each 9 in. x 12 in. R 10-4(I)].
900000	4	EA	Pedestrian pushbutton assembly.

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	6	CY	Test pit excavation.
500000	625	LF	12 in. wide HAPPTPM - white for crosswalk.
500000	150	LF	24 in. wide HAPPTPM - white for stop line.
800000	1	EA	23 ft. steel twin mast arm pole with 60 ft, and 50 ft. mast arms [Note: four 2 in. x 90 in. anchor bolts].
818021	1	EA	21 ft. steel twin mast arm pole with 50 ft. mast arms [Note: four 1-3/4 in. x 90 in. anchor bolts].
868003	3	EA	10 ft. steel pedestal pole with break away transformer base [Note: four 1 in. x 40 in. anchor bolts].
800000	3	EA	8 in. black faced traffic signal head section with mast arm mounting hardware.
800000	28	EA	12 in. black faced traffic signal head section with mast arm mounting hardware.
800000	4	EA	12 in. pedestrian signal head section with pole mounting hardware.
800000	12	EA	12 in. pedestrian signal head section with post top mounting hardware.
871202	1	EA	Install base mounted cabinet/controller.
800000	4	EA	Install pedestrian pushbutton assembly.
800000	75.76	EA	Install sign - mast arm mounted.
800000	3.0	EA	Install sign - pole mounted.
811001	9	EA	Handhole.
862102	845	LF	Sawcut for signal loop detector.
862101	3000	LF	Loop detector wire (No. 14 A.W.G.) encased in flexible tubing.
861104	1410	LF	2-conductor (aluminum shielded) electrical cable (No. 14 A.W.G.).
861105	520	LF	2-conductor electrical cable (No. 14 A.W.G.).
861107	650	LF	5-conductor electrical cable (No. 14 A.W.G.).
861108	1025	LF	7-conductor electrical cable (No. 14 A.W.G.).
861117	5	LF	3-wire (No. 4 A.W.G.) electrical cable.
802501	315	LF	Bare copper stranded ground wire (No. 6 A.W.G.).
805160	60	LF	1 in. liquid tight flexible non-metalic conduit for loop detector sleeve.
800000	30	LF	2 in. polyvinyl chloride [Schedule 80] electrical conduit - trenched.
805145	45	LF	2 in. polyvinyl chloride [Schedule 80] electrical conduit - slotted in roadway.
800000	85	LF	3 in. polyvinyl chloride [Schedule 80] electrical conduit - trenched.
805115	20	LF	3 in. polyvinyl chloride [Schedule 80] electrical conduit - bored.
805150	565	LF	3 in. polyvinyl chloride [Schedule 80] electrical conduit - slotted in roadway.
800000	75	LF	4 in. polyvinyl chloride [Schedule 80] electrical conduit - trenched.
805118	20	LF	4 in. polyvinyl chloride [Schedule 80] electrical conduit - bored.
805155	160	LF	4 in. polyvinyl chloride [Schedule 80] electrical conduit - slotted in roadway.
801004	10.65	CY	Concrete foundation for traffic signal equipment.
837001	7	EA	Ground rod -5/8in. diameter x 10 ft. length.
838003	1	EA	Control and distribution equipment (120/240 V, one phase, three wire system) for a type B-5 underground electrical service.
800000	4	EA	Microloop probe (set of three) with 500 ft. lead-in cable.
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, and pedestal poles National Park Service (NPS) Brown.

CONTACT LIST

The contact persons for District #4 are as follows:

Mr. Dave Malkowski
District Engineer
410-321-2800

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

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

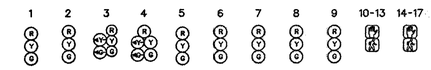
Mr. Dave Ramsey
Assistant District Engineer - Maintenance
410-321-2800

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

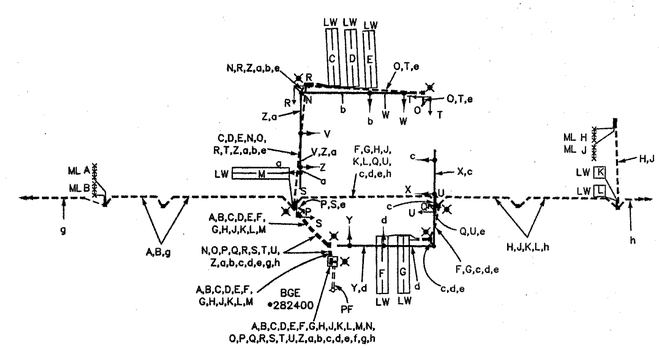
All mast arm poles, mast arms, and pedestal poles are to be painted National Park Service (NPS) Brown.

Phase Chart



	1	2	3	4	5	6	7	8	9	10-13	14-17
Phase 2 & 5	R	R	G	G	G	R	R	R	R	DW	DW
5 Change	R	R	G	G	G	R	R	R	R	DW	DW
Phase 2 & 6	G	G	G	G	G	R	R	R	R	WK	DW
Ped Clearance	G	G	G	G	G	R	R	R	R	FL/DW	DW
2 & 6 Change	Y	Y	Y	Y	Y	R	R	R	R	DW	DW
Phase 4 & 8	R	R	R	R	R	G	G	G	G	DW	DW
4 & 8 Change	R	R	R	R	R	Y	Y	Y	Y	DW	DW
Phase Alt 4 & Alt 8	R	R	R	R	R	G	G	G	G	DW	WK
Ped Clearance	R	R	R	R	R	G	G	G	G	DW	FL/DW
Alt 4 & Alt 8 Change	R	R	R	R	R	Y	Y	Y	Y	DW	DW
Flashing Operation	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	DARK	DARK

Wiring Diagram



A B H J } Microloop Probe Lead-in Cable

C D E F G K L M } 2-Conductor Cable (Aluminum Shielded)

N O P Q } 2-Conductor Electrical Cable (No. 14 A.W.G.)

R S T U V W X Y } 5-Conductor Electrical Cable (No. 14 A.W.G.)

Z a b c d } 7-Conductor Electrical Cable (No. 14 A.W.G.)

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

f — 3-Wire (No. 4 A.W.G.) for Traffic Signal Electrical Service

g — 12-Pair Voice Grade Telemetry Interconnect Cable (No. 19 A.W.G.) (Church La. - Sudbrook La. Run)

h — 12-Pair Voice Grade Telemetry Interconnect Cable (No. 19 A.W.G.) (Sudbrook La. - Sherwood Ave. Run)

ML — Microloop Probe

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

PF — Proposed Underground Electrical Service By BGE

X — Proposed Grounding Rod

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SIG5.DGN

MDOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION
(General Information)

MD 140 at Sudbrook Lane

DATE: December 2, 1999 — LOG MILE * 03014000.88

DRAWN BY: FJH/JES	F.A.P. NO. SEE TITLE SHEET	PLAN SHEET NO.: 3021A-GI	SHEET NO. 39 of 81
CHK. BY:	S.H.A. NO. BA3035183		
SCALE: N/A	COUNTY: Baltimore		

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