PROJECT DESCRIPTION

I. GENERAL

This project involves the reconstruction of an existing traffic control signal with street lighting at the intersection of US 1 (Belair Road) and MD 152 (Mountain Road) in Harford County. US 1 (Belair Road) runs in a north-south direction.

II. INTERSECTION OPERATION

1. The intersection is to continue operating in a NEMA eight-phase, fully-actuated mode, with the US 1 (Belair Road) approaches running concurrently. Exclusive left turn phases shall be provided for both northbound and southbound approaches of US 1 (Belair Road) . An Exclusive / Permissive left turn phase shall be provided for both the eastbound and westbound approaches of MD 152 (Mountain Road). The MD 152 approaches shall also run concurrently.

2. A full-traffic-actuated, eight-phase controller with four (4) 4-channel rack mount loop detector amplifiers housed in a NEMA size "6" base-mounted cabinet shall be installed at this intersection.

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 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 percieves 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.

EQUIPMENT LIST

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

ITEM NO.	DESCRIPTION	QUANTITY
9000	Eight-phase, full-traffic actuated, solid state digital controller with (four) 4-channel, rack mount loop detector amplifiers, housed in a NEMA size "6 " - base mounted cabinet.	1 EA
9001	Furnish 27' mast arm pole and 50' mast arm.	4 EA
9089	Sheet aluminum signs to consist of:	146.75 SF
	R10-12 "LEFT TURN YIELD ON GREEN (BALL)" sign. (36" x 42") mast arm mounted.	2 EA
	GUIDE SHIELD ASSEMBLY (48"x75") pole mounted. M3-4 "WEST"(30"X15") M1-6 "MD 152"(48"X36") M6-1 "left arrow "(30"X24")	1 EA
	GUIDE SHIELD ASSEMBLY (48"x75") pole mounted. M3-2 "EAST"(30"X15") M1-6 "MD 152"(48"X36") M6-1 "left arrow "(30"X24")	1 EA
	GUIDE SHIELD ASSEMBLY (36"x75") pole mounted. M3-3 "SOUTH"(30"X15") M1-4 "US 1"(36"X36") M6-1 "left arrow "(30"X24")	1 EA
	GUIDE SHIELD ASSEMBLY (36"x75") pole mounted. M3-1 "NORTH"(30"X15") M1-4 "US 1"(36"X36") M6-1 "left arrow "(30"X24")	1 EA
	GUIDE SHIELD ASSEMBLY (30"x51") pole mounted. M3-2 "EAST"(24"X12") M1-6 "MD 152"(30"X24") M6-1 "right arrow" (21"X15")	1 EA
	GUIDE SHIELD ASSEMBLY (30"x51") pole mounted. M3-4 "WEST"(24"X12") M1-6 "MD 152"(30"X24") M6-1 "right arrow" (21"X15")	1 EA
	GUIDE SHIELD ASSEMBLY (24"x51") pole mounted. M3-3 "SOUTH"(24"X12") M1-4 "US 1"(24"X24") M6-1 "right arrow" (21"X15")	1 EA
	GUIDE SHIELD ASSEMBLY (24"x51") pole mounted. M3-1 "NORTH"(24"X12") M1-4 "US 1"(24"X24") M6-1 "right arrow" (21"X15")	1 EA
9090	Sheet aluminum signs to consist of: (Blue or Green)	40 SF
	D3-2 "Belair Rd " dual faced sign (variable x 16") mast arm mounted.	2 EA
	D3-2 "Mountain Rd " dual faced sign (variable x 16") mast arm mounted.	2 EA

EQUIPMENT LIST (CONT.)

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR

ITEM NO.	DESCRIPTION	QUANTITY
1001	Maintenance of traffic per assignment.	3 EA
2001	Test pit excavation.	5 C.Y.
5001	5" yellow heat applied permanent preformed thermoplastic pavement marking.	200 L.F.
5002	5" white heat applied permanent preformed thermoplastic pavement marking.	40 L.F.
5004	24" white heat applied permanent preformed thermoplastic pavement marking.	100 L.F.
8001	Furnish and install concrete for signal foundation.	14 C.Y.
8006	Cut, clean, galvanize and cap traffic signal structure.	4 Each
8017	Furnish and install microloop probe set with 1000' lead-in	6 EA
8020	Install controller and cabinet base mount.	1 EA
8021	Furnish and install saw cut for signal (loop detector).	1200 L.F.
8022	Furnish and install 1" electrical conduit galvanized sleeve.	20 L.F.
8023	Furnish and install 1" liquid tight flexible non-metallic conduit for detector sleeve.	70 L.F.
8024	Furnish and install 2" schedule 80 rigid polyvinyl chloride - trenched	770 L.F.
8027	Furnish and install 3" schedule 80 rigid polyvinyl chloride conduit - trenched	610 L.F.
8029	Furnish and install 3" schedule 80 rigid polyvinyl chloride conduit - bored.	240 L.F.
8030	Furnish and install 4" schedule 80 rigid polyvinyl chloride conduit - trenched.	65 L.F.
8032	Furnish and install 4" schedule 80 rigid polyvinyl chloride conduit - bored.	380 L.F.
8033	Furnish and install electrical handhole.	15 EA
8034	Furnish and install ground rod -3/4" x 10'.	5 EA
8040	Furnish and install loop wire encased in flexible tubing (No. 14 AWG).	3900 L.F.
8041	Furnish and install electrical cable - 2 conductor (aluminum shielded).	1220 L.F.
8044	Furnish and install electrical cable - 5 conductor (No. 14 AWG).	1365 L.F.
8045	Furnish and install electrical cable - 7 conductor (No. 14 AWG).	905 L.F.
8046	Furnish and install tray cable - 2 conductor (No. 12 AWG).	795 L.F.
8048	Furnish and install No. 6 AWG stranded bare copper ground wire.	635 L.F.
8053	Install overhead sign.	186.75 S.F.
8055	Furnish and install 250 watt HPS Luminaire with photocell.	4 EA
8056	Furnish and install 15' lighting bracket arm for traffic signal structure.	4 EA
8057	Remove and dispose of existing foundation 12" below grade.	5 EA
8058	Removal of existing controller, cabinet and galvanized signal structure.	1 EA

EQUIPMENT LIST (CONT.)

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR

ITEM NO.	DESCRIPTION	QUANTITY
8060	Remove and dispose of existing material and equipment per assignment.	1 EA
8066	Furnish and install control and distribution equipment (120/240 V, 1 phase 3 wire system).	1 EA
8074	Install steel pole and single 50' mast arm .	4 EA
8084	Furnish and install 12" vehicular traffic signal head section	44 EA
8085	Furnish and install 8" vehicular traffic signal head section.	6 EA
Neg.	Furnish and install concrete collar and lid.	7 EA
Neg.	Remove ground mounted sign.	4 EA
Neg.	Furnish and install non-invasive probe set with 1000' lead-in cable.	2 EA

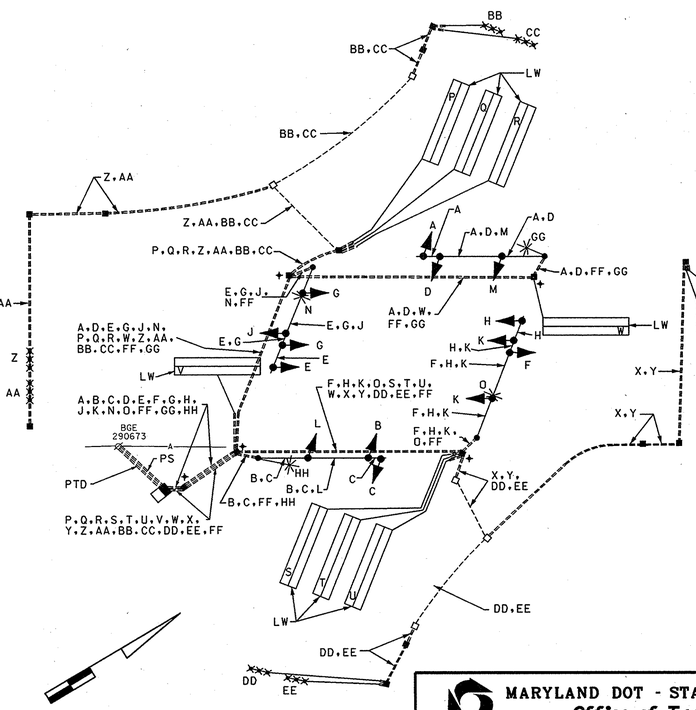
C. EQUIPMENT TO BE REMOVED AND RETURNED TO THE STATE HIGHWAY ADMINISTRATION

ITEM NO.	DESCRIPTION	QUANTITY
8059	Delivery of removed controller, cabinet and galvanized signal structure (per intersection).	1 EA

PHASE CHART

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
PHASE 1 & 5	◄G-	◄G-	R	R	◄G-	◄G-	R	R	R	R	R	R	R	R
CHANGES TO PHASES 1 & 6, 2 & 5 OR 2 & 6														
PHASE 1 & 6	◄G-	◄G-	G	G	◄R-	◄R-	R	R	R	R	R	R	R	R
1 & 6 CHANGE	◄Y-	◄Y-	G	G	◄R-	◄R-	R	R	R	R	R	R	R	R
PHASE 2 & 5	◄R-	◄R-	R	R	◄G-	◄G-	G	G	R	R	R	R	R	R
2 & 5 CHANGE	◄R-	◄R-	R	R	◄Y-	◄Y-	G	G	R	R	R	R	R	R
PHASE 2 & 6	◄R-	◄R-	G	G	◄R-	◄R-	G	G	R	R	R	R	R	R
2 & 6 CHANGE	◄R-	◄R-	Y	Y	◄R-	◄R-	Y	Y	R	R	R	R	R	R
PHASE 3 & 7	◄R-	◄R-	R	R	◄R-	◄R-	R	R	◄G-/R	◄G-/R	R	◄G-/R	◄G-/R	R
CHANGES TO PHASES 3 & 8, 4 & 7 OR 4 & 8														
PHASE 3 & 8	◄R-	◄R-	R	R	◄R-	◄R-	R	R	R	R	R	◄G-/G	◄G-/G	G
3 & 8 CHANGE	◄R-	◄R-	R	R	◄R-	◄R-	R	R	R	R	R	◄Y-/G	◄Y-/G	G
PHASE 4 & 7	◄R-	◄R-	R	R	◄R-	◄R-	R	R	◄G-/G	◄G-/G	G	R	R	R
4 & 7 CHANGE	◄R-	◄R-	R	R	◄R-	◄R-	R	R	◄Y-/G	◄Y-/G	G	R	R	R
PHASE 4 & 8	◄R-	◄R-	R	R	◄R-	◄R-	R	R	G	G	G	G	G	G
4 & 8 CHANGE	◄R-	◄R-	R	R	◄R-	◄R-	R	R	Y	Y	Y	Y	Y	Y
FLASHING OPERATION	FL/◄R-	FL/◄R-	FL/Y	FL/Y	FL/◄R-	FL/◄R-	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R

WIRING DIAGRAM



WIRING KEY

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

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

N O GG HH — 2-CONDUCTOR TRAY CABLE (NO. 12 A.W.G)

P Q R S T U V W — 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G) ALUMINUM SHIELDED

X Y BB CC DD EE — MICROLOOP LEAD-IN CABLE

Z AA — NON INVASIVE PROBE LEAD-IN CABLE

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

LW - LOOP WIRE (NO. 14 A.W.G.)

PTD - PROPOSED TELEPHONE DROP

PS - PROPOSED UNDERGROUND SERVICE TO BE INSTALLED BY BGE

+ - GROUND ROD

REVISION 'F'

STREET TRAFFIC STUDIES, LTD.
400 Crain Hwy.NW.
Glen Burnie,MD 21061
Ph (410) 590-5500
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3962GI.DGN TASK 8

MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION

US 1 (BELAIR RD.) AND MD 152 (MOUNTAIN RD.)

DRAWN BY: EMM	F.A.P. NO. —		TS NO. 681F GI	SHEET NO.
CHECKED BY: RRZ	S.H.A. NO. XX10DS485			
SCALE: NONE	COUNTY: HARFORD		T.I.M.S. NO. E 616	2 OF 2
DATE: 4/25/01	LOG MILE: 12000101.35			