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 Old Court Road 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 eight (8) phase, full-traffic-actuated mode. There is an exclusive/permissive left turn phase for both the north and southbound movements of MD 140. The MD 140 through movements operate concurrently with concurrent pedestrian phases across the east and west legs of the intersection. There is an exclusive/permissive left turn phase for both the east and westbound movements of Old Court Road. The Old Court Road through movements operate concurrently with an actuated pedestrian phase across the south leg of the intersection.

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

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

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 six 4-channel rack mounted loop detector amplifiers.
900000	74	SF	Sheet aluminum sign with mast arm mounting hardware: [4 each 36 in. x 42 in. R 10-12] [4 each 16 in. x Var. D-3(1) (Dual Faced)].
900000	1.5	SF	Sheet aluminum sign with pole mounting hardware: [4 each 9 in. x 12 in. R 10-4(1)] .
900000	13	SF	Sheet aluminum sign for ground mounting: [2 each 24 in. x 30 in. I95-3(mod)] [2 each 36 in. x 36 in. R 1-2] .
900000	2	EA	Pedestrian pushbutton assembly.

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

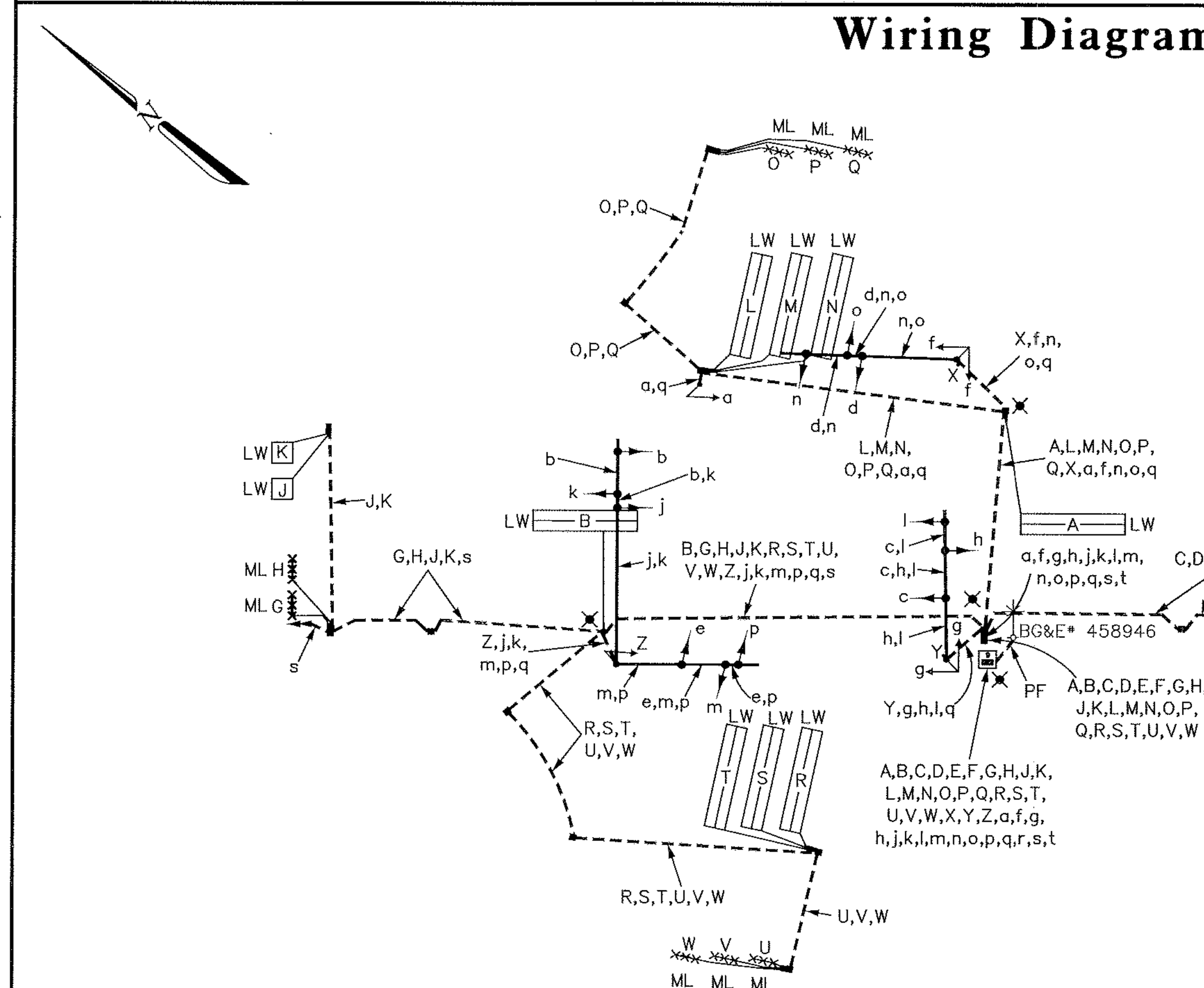
B. Equipment to be furnished and/or installed by the Contractor.
All equipment in this list shall have catalog cuts submitted for approval prior to installation.

Category CodeNo.	Quantity	Units	Description
203030	5	CY	Test pit excavation.
500000	450	LF	12 in. wide HAPPTPM - white for crosswalk.
500000	140	LF	24 in. wide HAPPTPM - white for stop line.
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].
800000	1	EA	23 ft. steel twin mast arm pole with 50 ft. and 70 ft. mast arms [Note: four 2 in. x 90 in. anchor bolts].
868003	1	EA	10 ft. steel pedestal pole with break away transformer base [Note: four 1 in. x 40 in. anchor bolts].
800000	12	EA	8 in. black faced traffic signal head section with mast arm mounting hardware.
800000	40	EA	12 in. black faced traffic signal head section with mast arm mounting hardware.
800000	10	EA	12 in. pedestrian signal head section with pole mounting hardware.
800000	2	EA	12 in. pedestrian signal head section with post top mounting hardware.
800000	2	EA	Install pedestrian pushbutton assembly.
800000	74	SF	Install sign - mast arm mount.
800000	1.5	SF	Install sign - pole mount.
800000	13	SF	Install sign - ground mount.
871202	1	EA	Install base mounted cabinet/controller.
811001	16	EA	Handhole.
862102	1430	LF	Sawcut for signal loop detector.
862101	4235	LF	Loop detector wire (No. 14 A.W.G.) encased in flexible tubing.
861104	2975	LF	2-conductor (aluminum shielded) electrical cable (No. 14 A.W.G.).
861105	140	LF	2-conductor electrical cable (No. 14 A.W.G.).
861106	350	LF	3-conductor electrical cable (No. 14 A.W.G.).
861107	285	LF	5-conductor electrical cable (No. 14 A.W.G.).
861108	1360	LF	7-conductor electrical cable (No. 14 A.W.G.).
861117	5	LF	3-wire (No. 4 A.W.G.) electrical cable.
802501	325	LF	Bare copper stranded ground wire (No. 6 A.W.G.).
805160	80	LF	1 in. liquid tight flexible non-metalic conduit for loop detector sleeve.
800000	200	LF	2 in. polyvinyl chloride [Schedule 80] electrical conduit - trenched.
805105	20	LF	2 in. polyvinyl chloride [Schedule 80] electrical conduit - bored.
805145	240	LF	2 in. polyvinyl chloride [Schedule 80] electrical conduit - slotted in roadway.
800000	65	LF	3 in. polyvinyl chloride [Schedule 80] electrical conduit - trenched
805115	45	LF	3 in. polyvinyl chloride [Schedule 80] electrical conduit - bored.
805150	420	LF	3 in. polyvinyl chloride [Schedule 80] electrical conduit - slotted in roadway.
800000	10	LF	4 in. polyvinyl chloride [Schedule 80] electrical conduit - trenched.
805118	265	LF	4 in. polyvinyl chloride [Schedule 80] electrical conduit - bored.
805155	20	LF	4 in. polyvinyl chloride [Schedule 80] electrical conduit - slotted in roadway.
801004	11.9	CY	Concrete foundation for traffic signal equipment.
837001	5	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-5) underground electrical service.
800000	3	EA	Cut, clean, and cap mast arm.
800000	36	LF	Steel square tublar sign post.
800000	10	EA	Microloop probe (set of three) with 500 ft. lead-in cable.
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.

Phase Chart

	1	2	3	4	5	6	7	8	9	10	11	12	13-16	17-18
Phase 1 & 5	R ←G	R ←G	R	R ←G	R ←G	R	R	R	R	R	R	R	DW	DW
1 & 5 Change to Phase 1 & 6 or Phase 2 & 5 or Phase 2 & 6														
Phase 1 & 6	G ←G	G ←G	G	R	R	R	R	R	R	R	R	R	DW	DW
1 Change	G ←Y	G ←Y	G	R	R	R	R	R	R	R	R	R	DW	DW
Phase 2 & 5	R	R	R	G ←G	G ←G	G	R	R	R	R	R	R	DW	DW
5 Change	R	R	R	G ←Y	G ←Y	G	R	R	R	R	R	R	DW	DW
Phase 2 & 6	G	G	G	G	G	G	R	R	R	R	R	R	WK	DW
Ped Clearance	G	G	G	G	G	G	R	R	R	R	R	R	FL/DW	DW
2 & 6 Change	Y	Y	Y	Y	Y	Y	R	R	R	R	R	R	DW	DW
Phase 3 & 7	R	R	R	R	R	R	R ←G	R ←G	R	R ←G	R ←G	R	DW	DW
3 & 7 Change to Phase 3 & 8 or Phase 4 & 7 or Phase 4 & 8														
Phase 3 & 8	R	R	R	R	R	R	R	R	R	G ←G	G ←G	G	DW	DW
3 Change	R	R	R	R	R	R	R	R	R	G ←Y	G ←Y	G	DW	DW
Phase 4 & 7	R	R	R	R	R	R	G ←G	G ←G	G	R	R	R	DW	DW
7 Change	R	R	R	R	R	R	G ←Y	G ←Y	G	R	R	R	DW	DW
Phase 4 & 8	R	R	R	R	R	R	G	G	G	G	G	G	DW	DW
4 & 8 Change	R	R	R	R	R	R	Y	Y	Y	Y	Y	Y	DW	DW
Phase Alt 4 & 8	R	R	R	R	R	R	G	G	G	G	G	G	DW	WK
Ped Clearance	R	R	R	R	R	R	G	G	G	G	G	G	DW	FL/DW
Alt 4 & 8 Change	R	R	R	R	R	R	Y	Y	Y	Y	Y	Y	DW	DW
Flashing Operation	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	DARK	DARK

Wiring Diagram



A J N / B K R / E L S / F M T — 2-Conductor Cable (Aluminum Shielded)

C P / D Q / G U / H V / O W — Microloop Probe Lead-in Cable

X / Y — 2-Conductor Electrical Cable (No. 14 A.W.G.)

Z / a — 3-Conductor Electrical Cable (No. 14 A.W.G.)

b / c / d / e / f / g — 5-Conductor Electrical Cable (No. 14 A.W.G.)

h m / j n / k o / l p — 7-Conductor Electrical Cable (No. 14 A.W.G.)

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

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

s — 12-Pair Voice Grade Telemetry Interconnect Cable (No. 19 A.W.G.) (Naylors La. - Old Court Rd. Run)

t — 12-Pair Voice Grade Telemetry Interconnect Cable (No. 19 A.W.G.) (Old Court Rd. - McHenry Ave./Walker Ave. Run)

ML — Microloop Probe

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

PF — Proposed Underground Electrical Service By BGE

— Proposed Grounding Rod

The Traffic Group

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SIG2.DGN

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

MD 140 at Old Court Road

DATE: December 2, 1999 LOG MILE * 03014001.25

DRAWN BY: FJH/JES	F.A.P. NO. SEE TITLE SHEET	PLAN SHEET NO.:	SHEET NO.
CHK. BY:	S.H.A. NO. BA3035183	3265G-GI	4 of 21
SCALE: N/A	COUNTY: Baltimore		

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