DRILL HOLES

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PROJECT DESCRIPTION

I. GENERAL

This project involves the modification of the existing traffic control signal at the intersection of MD 2 (Governor Ritchie Highway) and Arnold Road in Anne Arundel County, Maryland. MD 2 is considered to run in a north/south direction.

[II. INTERSECTION OPERATION

The intersection is to remain a NEMA six (6) phase, full-traffic-actuated mode. There is an exclusive left turn phase for both the north and southbound movements of MD 2. The MD 2 through movements operate concurrently with a actuated APS pedestrian movement across the east leg of the intersection, and an existing concurrent pedestrian movement across the west leg of the intersection. The Arnold Road through movements operate in a side street split phase mode with an actuated pedestrian movement across the north leg of the intersection.

The existing cabinet/controller will be utilized at this intersection. Audible pedestrian controller unit will be installed.

CONTACT LIST

The contact persons for District •5 are as follows:

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Mr. John Mays
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Mr. Andre Futrell
District Engineer - Maintenance
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Mr. Richard L. Daff
Chief, Traffic Operations Division
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Mr. Edward Rodenhizer:
Supervisor, Signal Operations
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EQUIPMENT LIST

Approved S.H.A. equipment to be purchased by the Developer and installed by the Contractor. All equipment in this list shall have catalog cuts submitted for approval prior to installation.

Quantity	Units	Specification Section	Description
1	EA	818	12 in. x 32 in. 2 ply steel strain pole.
1	EA	818	5 ft steel pedestal pole with break away transformer base.
2	EA	818	10 ft. steel pedestal pole with break away transformer base
1	EA	---	Audible pedestrian pushbutton central controller unit.
4	EA	814	12 in., one-way, three section (RA,YA,GA) (L.E.D.)adjustable black faced traffic signal head with span wire mounting hardware and tunnel visors.
6	EA	814	12 in., one-way, three section (R,Y,G) (L.E.D.) adjustable black faced traffic signal head with span wire mounting hardware and tunnel visors.
4	EA	814	12 in., one-way, four section (R,Y,G,GA) (L.E.D>) adjustable black faced traffic signal head with span wire mounting hardware and tunnel visors.
2	EA	814	16 in., one-way, one section LED (countdown indications) adjustable pedestrian signal head with pole mounting hardware and cut-away visors.
2	EA	814	16 in., one-way one section LED (countdown indications) adjustable pedestrian signal head with post top mounting hardware and cut-away visors.
3	EA	813	30 in. x 36 in. R3-5(L) sign with span wire mounting hardware.
2	EA	813	30 in. x 36 in. R3 -6(R) sign with span wire mounting hardware.
2	EA	817	Pedestrian pushbutton pushbutton sign (R 10-3(1)..
2	EA	817	Audible pedestrian pushbutton assembly with sign.
3	EA	---	Non-Invasive Micro -loop probe (set of 3) with 1000 ft. lead-in cable.
1	EA	806	20 ft. luminaire arm.
1	EA	806	250 W H.P.S. lamp and luminarie.

Quantity	Units	Specification Section	Description
Lump Sum	LS	108	Mobilization.
Lump Sum	LS	104	Maintenance of traffic.
3	CY	205	Test pit excavation.
4	EA	811	Handhole.
410	LF	815	Sawcut for signal loop detector.
1425	LF	810	Loop detector wire (No. 14 A.W.G.) encased in flexible tubing.
890	LF	810	2-conductor (aluminum shielded) electrical cable (No. 14 A.W.G.).
305	LF	810	2-conductor electrical tray cable (No. 12 A.W.G.).
1275	LF	810	2-conductor electrical cable (NO. 14 A.W.G.)
1410	LF	810	5-conductor electrical cable (No. 14 A.W.G.).
1130	LF	810	7-conductor electrical cable (No. 14 A.W.G.).
45	LF	804	Bare copper stranded ground wire (No. 6 A.W.G.).
400	LF	819	3/8 in. steel span wire.
175	LF	819	1/4 in teather wire.
30	LF	805	1 in. liquid tight flexible non-metallic conduit for loop detector sleeve.
60	LF	805	2 in. polyvinyl chloride [Schedule 80] electrical conduit - trenched.
40	LF	805	2 in. polyvinyl chloride [Schedule 80] electrical conduit - bored under sidewalk.
110	LF	805	3 in. polyvinyl chloride [Schedule 80] electrical conduit - trenched.
40	LF	805	3 in. polyvinyl chloride [Schedule 80] electrical conduit - bored.
90	LF	805	4 in. polyvinyl chloride [Schedule 80] electrical conduit - bored.
8.0	CY	801	Concrete foundation for traffic signal equipment.
1	EA	804	Ground rod -3/4 in. diameter x 10 ft. length.
225	EA	549	12 in. wide HAPPTPM - white for crosswalk.
40	LF	549	24 in. wide HAPPTPM - white for stop line.
40	LF	549	5 in. wide white pavement marking.
1	EA	---	Remove and dispose of existing concrete foundation 12 inches below grade.
260	LF	---	Remove existing pavement markings by grinding.
8.75	SF	---	Remove/ replace existing of concrete sidewalk.
2	EA	---	Relocate existing sign.
Lump Sum	LS	---	Removal and dispose of existing signal equipment.

Phase Chart

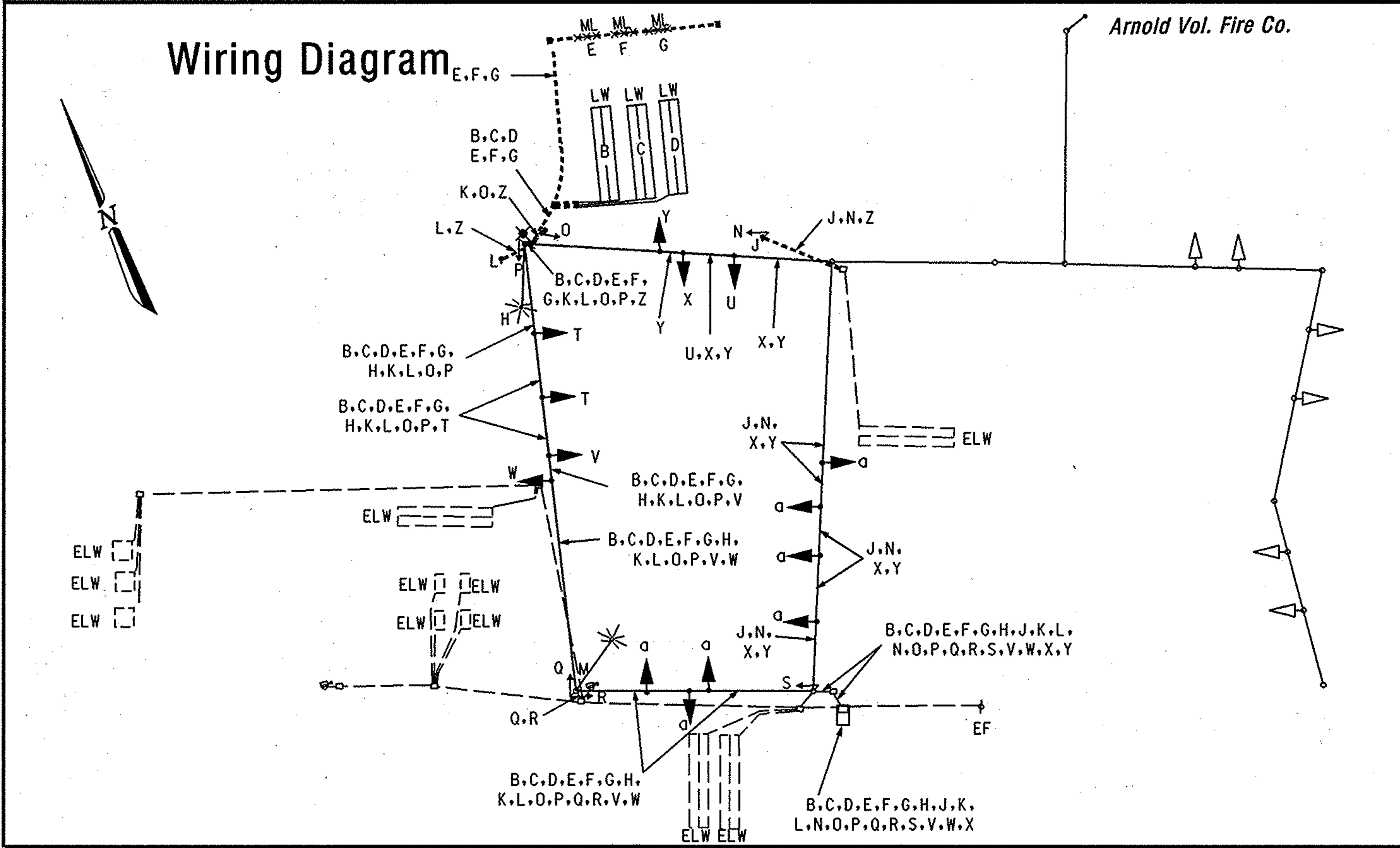
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15,16	17,18	19,20	21,22	23,24	25,26
Phase 1 & 5	←G	←G	R	R	←G	←G	R	R	R	R	R	R	R	R	8" FL/Y	8" FL/Y	FL/R	DW	DW	DW
1 & 5 Change to Phase 1 & 6 or Phase 2 & 5 or Phase 2 & 6																				
Phase 1 & 6	←G	←G	G	G	←R	←R	R	R	R	R	R	R	R	R	8" FL/Y	8" FL/Y	FL/R	DW	DW	DW
1 Change	←Y	←Y	G	G	←R	←R	R	R	R	R	R	R	R	R	8" FL/Y	8" FL/Y	FL/R	DW	DW	DW
Phase 2 & 5	←R	←R	R	R	←G	←G	G	G	R	R	R	R	R	R	8" FL/Y	8" FL/Y	FL/R	DW	DW	DW
5 Change	←R	←R	R	R	←Y	←Y	G	G	R	R	R	R	R	R	8" FL/Y	8" FL/Y	FL/R	DW	DW	DW
Phase 2 & 6	←R	←R	G	G	←R	←R	G	G	R	R	R	R	R	R	8" FL/Y	8" FL/Y	FL/R	WK	WK	DW
Ped Clearance	←R	←R	G	G	←R	←R	G	G	R	R	R	R	R	R	8" FL/Y	8" FL/Y	FL/R	FL/DW	FL/DW	DW
2 & 6 Change	←R	←R	Y	Y	←R	←R	Y	Y	R	R	R	R	R	R	8" FL/Y	8" FL/Y	FL/R	DW	DW	DW
Phase 3	←R	←R	R	R	←R	←R	R	R	G ←G	G ←G	G	R	R	R	8" FL/Y	8" FL/Y	FL/R	DW	DW	DW
Phase Alt 3	←R	←R	R	R	←R	←R	R	R	Y	Y	Y	R	R	R	8" FL/Y	8" FL/Y	FL/R	DW	DW	DW
Phase 4	←R	←R	R	R	←R	←R	R	R	R	R	R	G ←G	G ←G	G	8" FL/Y	8" FL/Y	FL/R	DW	DW	DW
4 Change	←R	←R	R	R	←R	←R	R	R	R	R	R	Y	Y	Y	8" FL/Y	8" FL/Y	FL/R	DW	DW	DW
Phase Alt 4	←R	←R	R	R	←R	←R	R	R	R	R	R	G ←G	G ←G	G	8" FL/Y	8" FL/Y	FL/R	DW	DW	WK
Ped Clearance	←R	←R	R	R	←R	←R	R	R	R	R	R	G ←G	G ←G	G	8" FL/Y	8" FL/Y	FL/R	DW	DW	FL/DW
Alt 4 Change	←R	←R	R	R	←R	←R	R	R	R	R	R	Y	Y	Y	8" FL/Y	8" FL/Y	FL/R	DW	DW	DW
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	FL/Y	FL/Y	FL/R	DARK	DARK	DARK

Firehouse Pre-Emption

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15,16	17,18	19,20	21,22	23,24	25,26
First Change Interval	←R	←R	G	G	←R	←R	Y	Y	R	R	R	R	R	R	8" FL/Y	8" FL/Y	FL/R	DW	DW	DW
Second Change Interval	←R	←Y	Y	G	←R	←R	R	R	R	R	R	R	R	R	Y	Y	R	DW	DW	DW
Pre-Emption Phase	←G	←G	G	G	←R	←R	R	R	R	R	R	R	R	R	R	R	8" FL/Y	DW	DW	DW
Change	←Y	←Y	G	G	←R	←R	R	R	R	R	R	R	R	R	8" FL/Y	8" FL/Y	FL/R	DW	DW	DW

MD2 Firehouse

Wiring Diagram



B, C, D — 2-Conductor Cable (Aluminum Shielded)

E, F, G — Non-Invasive Micro-loop Detector Lead-in Cable

H — 2-Conductor Tray Cable (No. 12 A.W.G.)

J, K, L, M — 2-Conductor Electrical Cable (No. 14 A.W.G.)

N, O, P, Q, R, S, T, U — 5-Conductor Electrical Cable (No. 14 A.W.G.)

V, W, X, Y — 7-Conductor Electrical Cable (No. 14 A.W.G.)

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

a — Existing Cable

ELW — Existing Loop Detector Wire

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

EF — Existing underground Underground Electrical Service By BGE

✱ — Proposed Grounding Rod

ML — Micro-loop Detector (Non-Invasive)

NOTE

These plans are approved for construction for a period of one (1) year from the date of approval. Should construction not begin within this time frame these plans shall be null and void without a re-review from the Traffic Engineering design Division.

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STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

MD 2 at Arnold Road

GENERAL INFORMATION SHEET

SCALE N/A DATE 7/12/2007 CONTRACT NO. BW996M82

DESIGNED BY	Frank Hoeckel	COUNTY	Anne Arundel
DRAWN BY	Frank Hoeckel	LOGMILE	0200225.15
CHECKED BY		T.I.M.S. NO.	I-446
F.A.P. NO.	N/A	TOD NO.	

DRAWING NO. TS - 324G- GI SHEET NO. 2 OF 2

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