DRILL HOLES

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BORDER REV: DATE: June 1, 2004

PROJECT DESCRIPTION

I. GENERAL

This project involves the modification of an existing mast arm Traffic Control Signal with street lighting and interconnect at the intersection of MD 355 (Urbana Pike) and Lowe's Lane in Frederick County. The Monocacy Plaza entrance is beingconstructed opposite of Lowe's Lane in conjunction with MD 355 widening at this location.This will result in the need for the installation of new mast arm poles at this intersection. Additionally, Countdown pedestrian signal heads with audible pushbutton shall be installed across the east, north and west legs of the intersection. MD 355 (Urbana Pike) is assumed to run a north-south direction.

II. INTERSECTION OPERATION

1. The intersection is to operate in a NEMA eight-phase, fully-actuated mode, with the MD 355 (Urbana Pike) approaches running concurrently. An Exclusive/Permissive left turn phase shall be provided for the southbound approaches of MD 355 (Urbana Pike). The Exclusive/Permissive left turn phase for the northbound approach shall remain in operation. A Countdown pedestrain phase with audible pushbutton actuation across the north leg of MD 355 (Urbana Pike) shall now be provided. New Countdown pedestrain phases with audible pushbuttons on recall shall be provided across the new driveway and Lowe's Lane. Exclusive/Permissive left turn phases shall be provided for the Lowe's Lane / Driveway approaches. The Lowe's Lane / Driveway approaches shall also run concurrently.

2. The existing full-traffic-actuated, eight-phase controller with all necessary equipment housed in a NEMA size "6" base-mounted cabinet shall be utilized at this intersection. Video interface shall be installed into the cabinet.

3. SHA signal shop shall install APS control unit into controller cabinet. The Contractor shall deliver the Control Unit and audible pushbuttons to the SHA Signal Shop for testing and programming.

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 controller cabinet wiring will be performed by the S.H.A. Signal Shop Contact Mr. Ed Rodenhizer at (410) 787-7652 seventy-two hours in advance of intended work.

3. 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 perceives 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.

4. APS will function as follows:

FOR MD 355 (URBANA PIKE)

a When pedestrian locates and presses pushbutton for an extended time, the pushbutton unit will be " Wait to cross Urbana Pike at Lowe's Lane and Monocacy Plaza."

b. When WALK phase begins, the message will be a rapid tick which will last for the duration of the WALK phase.

FOR MONOCACY PLAZA ENT

a When pedestrian locates and presses pushbutton for an extended time, the pushbutton unit will be " Wait to cross Monocacy Plaza Entrance at Urbana Pike"

b. When WALK phase begins, the message will be a rapid tick which will last for the duration of the WALK phase.

FOR LOWE'S LANE

a When pedestrian locates and presses pushbutton for an extended time, the pushbutton unit will be " Wait to cross Lowe's Lane at Urbana Pike"

b. When WALK phase begins, the message will be a rapid tick which will last for the duration of the WALK phase.

The contact persons for District #7 are as follows:

Mr. John Concannon
Assistant District Engineer - Traffic
Phone: (310) 624-8141

Mr. Ray Johnson
Assistant District Engineer - Maintenance
Phone: (310) 624-8105

Ms Andrea Abend
District Engineer - Utility
Phone: (301) 624-8116

Mr. Richard L. Daff, Sr.
Chief, Traffic Operations Division
Phone: (410) 787-7630

Mr. Ed Rodenhizer
Signal Shop
410-787-7652

Mr. Sonny Bailey
Sign Shop
410-787-7676

EQUIPMENT LIST

A. EQUIPMENT TO BE FURNISHED BY THE SHA

THERE IS NO EQUIPMENT TO BE SUPPLIED BY THE SHA

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

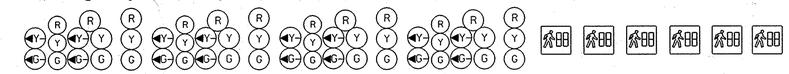
SPEC. NUMBER	DESCRIPTION	QUANTITY
814	12", one-way, three-section (R,Y,G) LED traffic signal head with adjustable bracket for mast arm mounting and tunnel visors.	4 EA
814	12", one-way, five-section (R,YA,Y,GA,G) (left arrows) LED traffic signal head having proper span wire hangers, balance adjusters and tunnel visors.	4 EA
814	8'/12", one-way, five-section 8"(R,Y,G) 12'(YA,GA) (left arrows) LED traffic signal head having proper span wire hangers, balance adjusters and tunnel visors.	4 EA

EQUIPMENT LIST (CONT.)

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

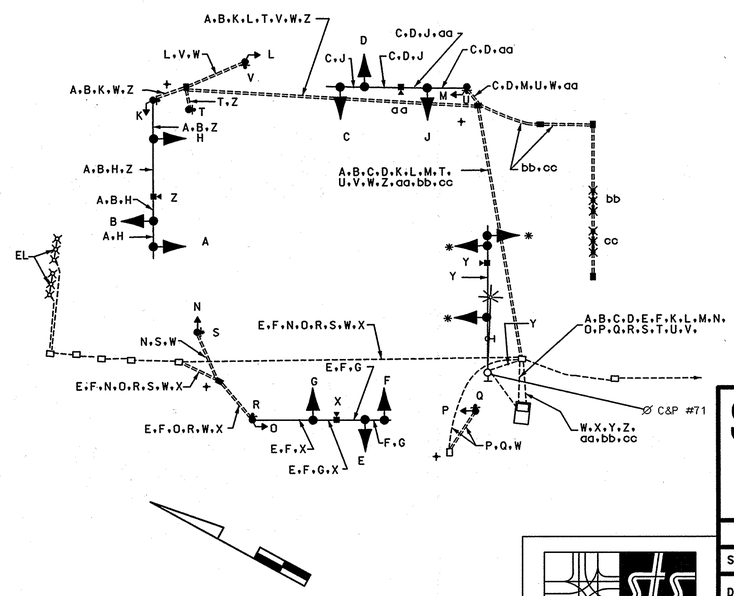
SPEC. NUMBER	DESCRIPTION	QUANTITY
814	16", one-way, LED (DW, W) symbolic pedestrian signal head with adjustable bracket for pole mounting and cutaway visors. (Countdown Display)	8 EA
205	Test pit excavation.	7 C.Y.
206	Remove concrete sidewalk	180 S.F.
610	4" concrete sidewalk.	350 S.F.
801	Furnish and install concrete for signal foundation.	13.2 C.Y.
813	Ground mounted sheet aluminum signs to consist of:	6 S.F.
	Pedestrian education R10-3(1) sign. (Note: Sign to read "PUSHBUTTON TO CROSS CROSS URBANA PIKE".)	2 EA
	Pedestrian education R10-3(1) sign. (Note: Sign to read "PUSHBUTTON TO CROSS CROSS LOWE'S LANE".)	2 EA
	Pedestrian education R10-3(1) sign. (Note: Sign to read "PUSHBUTTON TO CROSS MONOCACY PLAZA ENT".)	2 EA
813	Overhead (mast arm / pole) mounted sheet aluminum sign consisting of:	69 S.F.
	D3-2 "(arrow) Lowe's LN/ Lowe's LN (arrow) sign (variable x 16"). mast arm	1 EA
	R3-5L "LEFT TURN ONLY" sign, (30" x 36"). mast arm	2 EA
	R3-5R "RIGHT TURN ONLY" sign, (30" x 36"). mast arm	1 EA
	GUIDE SHIELD ASSEMBLY (48"X15") pole mounted. M3-3 "SOUTH"(30"X15") M1-5 "MD 198"(48"X36") M6-1 "left arrow "(30"X24")	1 EA
	GUIDE SHIELD ASSEMBLY (30"x51") pole mounted. M3-1 "NORTH"(24"X12") M1-5 "MD 128"(30"X24") M6-1 "right arrow "(21"X15")	1 EA
556	12" white heat applied permanent preformed thermoplastic pavement marking	410 L.F.
556	24" white heat applied permanent preformed thermoplastic pavement marking	125 L.F.
805	Furnish and install 3" schedule 80 rigid polyvinyl chloride conduit - trenched	545 L.F.
805	Furnish and install 3" schedule 80 rigid polyvinyl chloride conduit - bored	45 L.F.
805	Furnish and install 4" schedule 80 rigid polyvinyl chloride conduit - bored.	110 L.F.
811	Furnish and install electrical handhole.	6 EA
810	Furnish and install 2-conductor electrical cable (No. 14 A.W.G.).	1050 L.F.
810	Furnish and install 5-conductor electrical cable (No. 14 A.W.G.).	1125 L.F.
810	Furnish and install 7-conductor electrical cable (No. 14 A.W.G.).	1475 L.F.
810	Furnish and install ground rod -3/4" x 10'.	4 EA
810	Furnish and install No. 6 AWG stranded bare copper ground wire.	600 L.F.
	Furnish and install 27' steel pole pole and 38' mast arm.	2 EA
	Furnish and install 27' steel pole pole and 60' mast arm.	1 EA
	Furnish and install 10' breakaway pedestal pole with transformer base.	3 EA
	Furnish and install 5' breakaway pedestal pole with transformer base.	1 EA
	Furnish and install non-onvasive micro-loop with 1000' lead-in.	2 EA
	Video interface	1 EA
	Video camera detector with control cable (up to 500').	4 EA
	Remove and dispose of existing signal equipment and material (including signal foundation 12" below grade).	LUMP SUM
	2-wire central control unit	1 EA
	Audible/tactile pedestrian pushbutton station & signs.	6 EA
806	Furnish and install 250 watt HPS Luminaire with photocell.	1 EA

PHASE CHART



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
PHASE 1 & 5	G/R	G/R	R	G/R	G/R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW
CHANGES TO PHASES 1 & 6, 2 & 5 OR 2 & 6																		
PHASE 1 & 6	G/G	G/G	G	R	R	R	R	R	R	R	R	R	DW	WK	WK	DW	DW	DW
1 & 6 CHANGE	Y/G	Y/G	G	R	R	R	R	R	R	R	R	R	DW	WK	WK	DW	DW	DW
PHASE 2 & 5	R	R	R	G/G	G/G	G	R	R	R	R	R	R	WK	DW	DW	WK	DW	DW
2 & 5 CHANGE	R	R	R	Y/G	Y/G	G	R	R	R	R	R	R	WK	DW	DW	WK	DW	DW
PHASE 2 & 6	G	G	G	G	G	G	R	R	R	R	R	R	WK	WK	WK	WK	DW	DW
PED CLEAR / COUNTDOWN	G	G	G	G	G	G	R	R	R	R	R	R	FL/DW	FL/DW	FL/DW	FL/DW	DW	DW
2 & 6 CHANGE	Y	Y	Y	Y	Y	Y	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW
PHASE 3 & 7	R	R	R	R	R	R	G/R	G/R	R	G/R	G/R	R	DW	DW	DW	DW	DW	DW
CHANGES TO PHASES 3 & 8, 4 & 7 OR 4 & 8																		
PHASE 3 & 8	R	R	R	R	R	R	R	R	R	G/G	G/G	G	DW	DW	DW	DW	DW	DW
3 & 8 CHANGE	R	R	R	R	R	R	R	R	R	Y/G	Y/G	G	DW	DW	DW	DW	DW	DW
PHASE 4 & 7	R	R	R	R	R	R	G/G	G/G	G	R	R	R	DW	DW	DW	DW	DW	DW
4 & 7 CHANGE	R	R	R	R	R	R	Y/G	Y/G	G	R	R	R	DW	DW	DW	DW	DW	DW
PHASE 4 & 8	R	R	R	R	R	R	G	G	G	G	G	G	DW	DW	DW	DW	DW	DW
4 & 8 CHANGE	R	R	R	R	R	R	Y	Y	Y	Y	Y	Y	DW	DW	DW	DW	DW	DW
PHASE 4 & 7 ALT	R	R	R	R	R	R	G/G	G/G	G	R	R	R	DW	DW	DW	DW	DW	WK
4 & 7 ALT CHANGE	R	R	R	R	R	R	Y/G	Y/G	G	R	R	R	DW	DW	DW	DW	DW	WK
PHASE 4 & 8 ALT	R	R	R	R	R	R	G	G	G	G	G	G	DW	DW	DW	DW	WK	WK
PED CLEAR / COUNTDOWN	R	R	R	R	R	R	G	G	G	G	G	G	DW	DW	DW	DW	FL/DW	FL/DW
4 & 8 ALT CHANGE	R	R	R	R	R	R	Y	Y	Y	Y	Y	Y	DW	DW	DW	DW	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	DARK	DARK	DARK	DARK

WIRING DIAGRAM



WIRING KEY

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

G H J K L M N O P } 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)

Q R S T U V } 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)

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

X Y Z aa } CONTROL CABLE (CAMERA TO CONTROLLER) UP TO 500'

bb cc } MICROLOOP LEAD-IN CABLE (1000')

EL - EXISTING MICROLOOP

* - USE EXISTING CABLE

ES - EXISTING OVERHEAD SERVICE TO BE MAINTAINED BY ALLEGHENY POWER

+ - GROUND ROD

STREET TRAFFIC STUDIES, LTD.
400 Crain Hwy.NW.
Glen Burnie,MD 21061
Ph (410) 590-5500
Fax (410) 590-6637

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PLOTTED: @DATETIME@
FILE: @FILE@

SHA
STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MD 355 AND LOWE'S LANE / MONOCACY PLAZA ENT

GENERAL INFORMATION SHEET

SCALE NONE	DATE 2/26/08	CONTRACT NO. BW996M82	
DESIGNED BY RRZ		COUNTY FREDERICK	
DRAWN BY R.C.		LOGMILE 10035508.91	
CHECKED BY CJW		TIMS NO. 1580	
F.A.P. NO. N/A		TOD NO.	
TS NO. 4055 B	DRAWING NO. 2 OF 2	SHEET NO. OF	

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