DRILL HOLES

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BORDER REV: DATE: June 1, 2004

PROJECT DESCRIPTION

I. GENERAL

This project involves the reconstruction of an existing strain pole Traffic Control Signal with street lighting and interconnect at the intersection of MD 450 (Annapolis Rd) and Cooper Lane in Prince George's County. A new mast arm Traffic Control Signal with video detection, street lighting and interconnect shall be installed at this location. MD 450 (Annapolis Rd) is assumed to run an east-west direction.

II. INTERSECTION OPERATION

1. The intersection shall continue to operate in a NEMA six-phase, fully-actuated mode, with the MD 450 (Annapolis Rd) approaches running concurrrently. Exclusive/Permissive left turn phases shall remain in operation for both approaches of MD 450 (Annapolis Rd). The pedestrian phases on both legs of MD 450 (Annapolis Rd) shall now be Countdown pedestrian phases with audible pushbutton actuation. The pedestrian phases across both legs of Coopers Lane shall now be Countdown pedestrian phases with audible pushbuttons on recall. Cooper Lane shall continue to operate as a side street split phase.

2. A full-traffic-actuated, eight-phase controller with video interface, U.P.S. battery backup system and all necessary equipment housed in a Type "S" base-mounted cabinet shall be utilized at this intersection.

III. SPECIAL NOTES

1. The Contractor shall be responsible for terminating all signal cables, excluding interconnect, 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.

The contact persons for District #3 (Prince George's County) and SHA are as follows:

Ms. Felecia Murphy
Assistant District Engineer - Traffic
Phone: (301) 513-7424

Mr. Vernon Stinnett
District Engineer - Maintenance
Phone: (301) 513-7304

Mr. Victor Grafton
Assistant District Engineer - Utility
Phone: (301) 513-7350

Chief, Traffic Operations Division
Phone: (410) 787-7630

Mr. Ed Rodenhizer
Manager, Signal Operations Section
410-787-7652

Mr. Sonny Bailey
Manager, Sign Shop Operations
410-787-7676

The power company representative is:

Mr Richard Chilcoat
PEPCO
8300 Old Marlboro Pike
Upper Marlboro, MD 20772
Phone: 301-967-5805

EQUIPMENT LIST

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

ITEM NO.	DESCRIPTION	QUANTITY
9000	Cabinet "S" Type with ASC III controller with UPS, UPS batteries and bypass switch	1 EA
9086	Video detection interface equipment: 1-4 cameras (To be installed by signal shop).	1 EA
9570	Sheet aluminum signs to consist of: (ground mount)	34 SF
	W16-7P(L) "arrow (symbolic)" diagonal sign, (12" x 24") pole mounted.	2 EA
	S1-1 "SCHOOL" sign, (30" x 30") ground mounted.	1 EA
	M1-5(6) GUIDE SHIELD ASSEMBLY (48"x72") WEST / MD 450 / LEFT / ARROW	1 EA
9571	Sheet aluminum signs to consist of: (mast arm or pole mount)	99 SF
	D-3(1) "Annapolis RD" sign, (variable x 16") dual faced mast arm mounted.	2 EA
	D-3(1) "Cooper LN" sign, (variable x 16") dual faced mast arm mounted.	2 EA
	R3-5L "LEFT TURN ONLY" sign, (30" x 36") mast arm mounted.	2 EA
	M1-5(6) GUIDE SHIELD ASSEMBLY (48"x72") pole mounted. EAST / MD450 / RIGHT ARROW	1 EA
	M1-5(6) GUIDE SHIELD ASSEMBLY (48"x72") pole mounted. EAST / MD 450 / LEFT ARROW	1 EA
	M1-5(6) GUIDE SHIELD ASSEMBLY (30"x48") pole mounted. WEST / MD450 / RIGHT ARROW	1 EA
	Pedestrian education R10-3(1) sign (9"x15"). (Note: Sign to read "PUSHBUTTON TO CROSS COOPER LANE".)	4 EA
	Pedestrian education R10-3(1) sign (9"x15"). (Note: Sign to read "PUSHBUTTON TO CROSS ANNAPOLIS RD".)	4 EA

EQUIPMENT LIST (cont.)

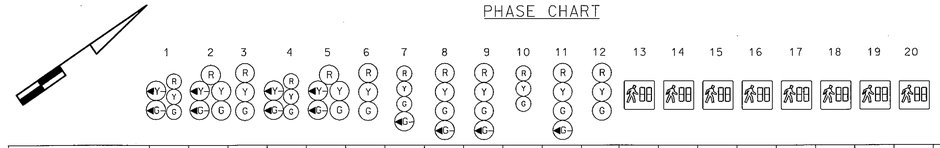
B. EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR

ITEM NO.	DESCRIPTION	QUANTITY
1001	Maintenance of traffic per assignment.	3 EA
2001	Class 2 Excavation.	1 C.Y.
2002	Test Pit Excavation	11 C.Y.
5002	5" heat applied white or yellow permanent pavement markings.	30 L.F.
5003	Removal of existing permanent pavement line markings.	700 L.F.
5004	12" white preformed thermoplastic pavement marking lines.	1275 L.F.
5005	24" white preformed thermoplastic pavement marking lines.	145 L.F.
6001	Standard type A combination curb and gutter 12" gutter pan 8" depth.	360 L.F.
6002	5" concrete sidewalk.	1355 S.F.
6003	Detectable warning surface for curb ramps	102 S.F.
8001	12" LED signal head section.	36 EA
8002	2 wire Central Control unit	1 EA
8004	8" LED signal head section.	12 EA
8005	Adjust existing handhole to grade with new frame and cover.	1 EA
8007	Any size lighting arm on signal pole with 250 Watt HPS lamp and luminaire.	2 EA
8008	Audible/tactile pedestrian pushbutton station & signs.	8 EA
8009	Breakaway Pedestal pole (10')	6 EA
8012	Embedded Metered service pedestal.	1 EA
8014	Install controller and cabinet, base mount any size.	1 EA
8016	LED 16" countdown pedestrian signal head.	8 EA
8018	Mast arm pole and 38' mast arm any "T" dimension	2 EA
8020	Mast arm pole and 60' mast arm any "T" dimension	1 EA
8021	Mast arm pole and 70' mast arm any "T" dimension	1 EA
8023	Non-invasive detector (any length) lead-in cable up to 1000'.	6 EA
8024	Remove and dispose of equipment per assignment.	1 EA
8029	Video detection camera & cable any length.	4 EA
8031	1 conductor electrical cable, No. 2 AWG/THHN	145 L.F.
8034	Disconnect, pull back and reroute cable.	320 L.F.
8035	Electrical cable - 2 conductor (No. 12 AWG) Type TC.	385 L.F.
8038	Schedule 80 rigid PVC conduit up to 4" - bored.	385 L.F.
8040	Schedule 80 rigid PVC conduit up to 4" - trenched.	475 L.F.
8041	Wood sign supports up to 4"x6".	48 L.F.
8042	Install overhead or ground mounted sign (including all hardware).	156.5 S.F.
8044	No. 6 AWG stranded bare copper ground wire.	650 L.F.
8047	1 conductor electrical cable, No. 8 AWG THHN/THWN	55 L.F.
8048	Furnish and install electrical handhole.	12 EA
8053	Cut, clean, galvanize and cap traffic signal structure.	3 EA
8055	Electrical cable - 2 conductor (No. 14 AWG).	1300 L.F.
8057	Electrical cable - 5 conductor (No. 14 AWG).	1450 L.F.
8058	Electrical cable - 7 conductor (No. 14 AWG).	1880 L.F.

C. EQUIPMENT TO BE REMOVED

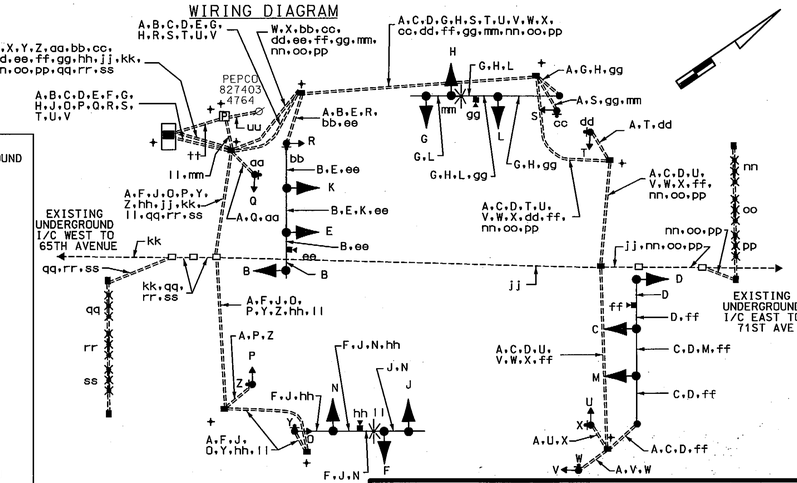
SHA Forces shall remove the controller and all auxilliary equipment from the controller cabinet. The cabinet and all other removed signal materials are to become property of the contractor.

PHASE CHART



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
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	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	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	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	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	DW	DW
PHASE 2 & 6	G	G	G	G	G	G	R	R	R	R	R	R	WK	WK	WK	WK	DW	DW	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	DW	DW
2 & 6 CHANGE	Y	Y	Y	Y	Y	Y	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 3	R	R	R	R	R	R	G ◄G-	G ◄G-	G	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
3 CHANGE	R	R	R	R	R	R	Y	Y	Y	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 4	R	R	R	R	R	R	R	R	R	G ◄G-	G ◄G-	G	DW	DW	DW	DW	DW	DW	DW	DW
4 CHANGE	R	R	R	R	R	R	R	R	R	Y	Y	Y	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 3 ALT	R	R	R	R	R	R	G ◄G-	G ◄G-	G	R	R	R	DW	DW	DW	DW	DW	WK	WK	DW
PED CLEAR / COUNTDOWN	R	R	R	R	R	R	G ◄G-	G ◄G-	G	R	R	R	DW	DW	DW	DW	DW	FL/DW	FL/DW	DW
3 ALT CHANGE	R	R	R	R	R	R	Y	Y	Y	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 4 ALT	R	R	R	R	R	R	R	R	R	G ◄G-	G ◄G-	G	DW	DW	DW	DW	WK	DW	DW	WK
PED CLEAR / COUNTDOWN	R	R	R	R	R	R	R	R	R	G ◄G-	G ◄G-	G	DW	DW	DW	DW	FL/DW	DW	DW	FL/DW
4 ALT CHANGE	R	R	R	R	R	R	R	R	R	Y	Y	Y	DW	DW	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	DARK	DARK

WIRING DIAGRAM



WIRING KEY

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

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

K L M N O P Q R S T U V } 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)

W X Y Z aa bb cc dd } 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)

ee ff gg hh } CONTROL CABLE (CAMERA TO CONTROLLER)

jj } EXISTING INTERCONNECT
kk } CABLE (JELLY FILLED)

ll } 2-CONDUCTOR TRAY
mm } CABLE (NO. 12 A.W.G)

nn oo pp qq rr ss } MICROLOOP LEAD-IN CABLE (UP TO 1000')

tt - 3-1 CONDUCTOR ELECTRICAL CABLE (NO. 8 A.W.G)

uu - 3-1 CONDUCTOR ELECTRICAL CABLE (NO. 2 A.W.G.)

+ - GROUND ROD

NOTE:
COIL 50' OF 3-1 CONDUCTOR ELECTRICAL CABLE (NO. 2 AWG) AT BASE OF PEPCO POLE 827403-4764.

STREET TRAFFIC STUDIES, LTD.
400 Crain Hwy. NW.
Glen Burnie, MD 21061
Ph (410) 590-5500
Fax (410) 590-5637

6059GI.DGN T-143

SHA
STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MD 450 (ANNAPOLIS RD) AND COOPER LANE

LANDOVER, MARYLAND

GENERAL INFORMATION SHEET

SCALE NONE DATE 5/18/12 CONTRACT NO. XX4395185

DESIGNED BY R.R.Z. COUNTY PRINCE GEORGE'S
DRAWN BY R.C. LOGMILE 1604500.20
CHECKED BY TIMS NO. K924
F.A.P. NO. TOD NO.

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