DRILL HOLES

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BORDER REV DATE: June 1, 2004

PROJECT DESCRIPTION

I. GENERAL

This project involves the reconstruction of an existing Traffic Control Signal with overhead interconnect at the intersection of US 13 (BUS.) (Fruitland Blvd) and Main Street in Wicomico County. The existing strain pole Traffic Signal shall be replaced with a new mast arm Traffic Signal Poles with a relocated ped phase on the north leg. Video detection along with countdown pedestrian signals shall be installed at this intersection. US 13 (BUS.) (Fruitland Blvd) is assumed to run a north-south direction.

II. INTERSECTION OPERATION

1. The intersection shall continue to operate in a NEMA six-phase, fully-actuated mode, with the US 13 (BUS.) (Fruitland Blvd) approaches running concurrently. The Exclusive/Permissive left turn phases for northbound and southbound shall remain in operation. The proposed pedestrian phase across the north leg shall have countdown pedestrian signal heads with audible pushbuttons. The Main Street approaches shall continue to operate a side street split phase. A pre emption phase for both directions of US 13 shall be provided. A pre emption phase for the westbound approach of Main Street shall be provided.

1 **A new pre emption phase for the eastbound approach of Main Street shall now operate when activated via opticom detection.**

2. A full-traffic-actuated, proposed eight-phase controller with video interface, APS Central Control Unit and all necessary equipment housed in a NEMA size "6" base-mounted cabinet shall be installed at this intersection.

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

III. SPECIAL NOTES

1. The Contractor shall be responsible for terminating all signal cables, including 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. Upon completion of this project, the Contractor shall notify Mr. Robert Snyder at (410) 787-7631 to arrange for the phone line installation. The Contractor is to provide Mr. Robert Snyder with the nearest street address, zip code and phone number.

4. APS will function as follows:

FOR US 13 (BU) (FRUITLAND BLVD)

a When pedestrian locates and presses pushbutton for an extended time, the pushbutton unit will be " Wait to cross Fruitland at Main."

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 #1 are as follows:

Mr. Gene Cofiell
Assistant District Engineer - Traffic
Phone: (410) 677-4040

Mr. Wayne Weichmann
Assistant District Engineer - Maintenance
Phone: (410) 677-4010

Mr. Bruce Poole
Assistant District Engineer - Utility
Phone: (410) 677-4082

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

Mr. Ed Rodenhizer
Chief, Traffic Signal Operations
410-787-7652

Mr. Sonny Bailey
Chief Sign Shop
410-787-7670

The power company representative is:

Rodney Bain
Delmarva
2530 N. Salisbury Blvd
Salisbury, MD 21802
Phone: 410 860-6242

EQUIPMENT LIST

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

ITEM NO.	DESCRIPTION	QUANTITY
9042	Controller ASC II with telemetry	1 EA
9044	Controller cabinet, size "6"	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)	135 SF
	W16-7P(L) "arrow (symbolic)" diagonal sign, (24" x 12") pole mounted.	6 EA
	S1-1 "SCHOOL" sign, (36" x 36") ground mounted.	6 EA
	R2-1 "YIELD" sign, (36" x 36" x 36") ground mounted.	2 EA
	R5-2 (mod) "No Truck (SYMBOL)/NO TRUCKS OVER TWO AXLES" (36" x 36") ground mounted.	2 EA
	Sheet aluminum signs to consist of: (mast arm or pole mount)	44 SF
9571	D-3(1) "Main St." sign (variable x 16") dual faced mast arm.	2 EA
	D-3(1) "Fruitland Blvd." sign (variable x 16") dual faced mast arm.	1 EA
	Pedestrian education R10-3(1) (Note: Sign to read "PUSHBUTTON TO CROSS FRUITLAND BOULEVARD")	2 EA
	GUIDE SHIELD ASSEMBLY (36"X75") pole mounted. M3-1 "NORTH"(24"X12") M1-4 "US 13"(36"X36") M6-1 "dog leg left arrow "(30"X24")	1 EA

EQUIPMENT LIST (Con't)

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

ITEM NO.	DESCRIPTION	QUANTITY
	GUIDE SHIELD ASSEMBLY (24"x51") pole mounted. M3-3 "SOUTH"(24"X12") M1-4 "US 13"(24"X24") M6-1 "right arrow "(21"X15")	1 EA
	GUIDE SHIELD ASSEMBLY (36"x75") pole mounted. M3-3 "SOUTH"(24"X12") M1-4 "US 13"(36"X36") M6-1 "dog leg left arrow "(30"X24")	1 EA
	GUIDE SHIELD ASSEMBLY (24"x51") pole mounted. M3-3 "SOUTH"(24"X12") M1-4 "US 13"(24"X24") M6-1 "right arrow "(21"X15")	1 EA

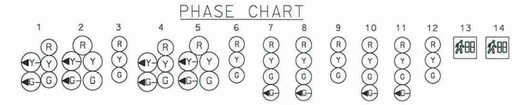
B. EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR

ITEM NO.	DESCRIPTION	QUANTITY
1003	Maintenance of traffic per assignment.	3 EA
2002	Test Pit Excavation	9 C.Y.
5005	Removal of existing permanent pavement line markings	350 L.F.
5006	12" white heat applied permanent preformed thermoplastic pavement marking.	500 L.F.
5007	24" white heat applied permanent preformed thermoplastic pavement marking.	120 L.F.
6001	Standard type A combination curb and gutter 12" gutter pan 8" depth.	501 L.F.
6002	5" concrete sidewalk.	930 S.F.
6003	Detectable warning surface for curb ramps	100 S.F.
8001	2 wire Central Control unit	1 EA
8003	8" LED signal head section.	12 EA
8007	Audible/tactile pedestrian pushbutton station & signs.	2 EA
8008	Breakaway Pedestal pole (Any size)	2 EA
8013	LED 16" countdown pedestrian signal head.	2 EA
8020	Non-invasive detector (any length) lead-in cable up to 1000'.	4 EA
8021	Remove and dispose of material & equipment per assignment.	1 EA
8023	Twin mast arm pole & 50'/50' mast arms any "T" dimension.	2 EA
8025	Video detection camera & cable up to 500'	4 EA
8030	Disconnect, pull back and reroute cable.	235 L.F.
1 8032	Schedule 80 rigid PVC conduit up to 4" - bored.	810 ~~750~~ L.F.
8034	Schedule 80 rigid PVC conduit up to 4" - trenched.	1200 L.F.
8035	Wood sign supports up to 4"x6".	225 L.F.
8036	Install overhead or ground mounted sign (including hardware).	179 S.F.
8038	No. 6 AWG stranded bare copper ground wire.	550 L.F.
8041	Metered service pedestal embedded.	1 EA
8043	Electrical cable 1-conductor No. 4 AWG THHN/THWN.	60 L.F.
1 8045	Furnish and install electrical handhole.	13 ~~11~~ EA
8046	Discriminator module, 4 channel No. 764	1 EA
1 8048	Opticom #721 detector eye.	4 ~~2~~ EA
8049	3 inch diameter PVC conduit schedule 80, riser	200 L.F.
8050	12" LED signal head section.	36 EA
1 8051	Furnish and install 4 conductor opticom cable.	1040 ~~550~~ L.F.
8054	Electrical cable - 2 conductor (No. 14 AWG).	300 L.F.
8056	Electrical cable - 5 conductor (No. 14 AWG).	375 L.F.
8057	Electrical cable - 7 conductor (No. 14 AWG).	1800 L.F.
8065	Install controller and cabinet base mount.	1 EA

C. EQUIPMENT TO BE REMOVED

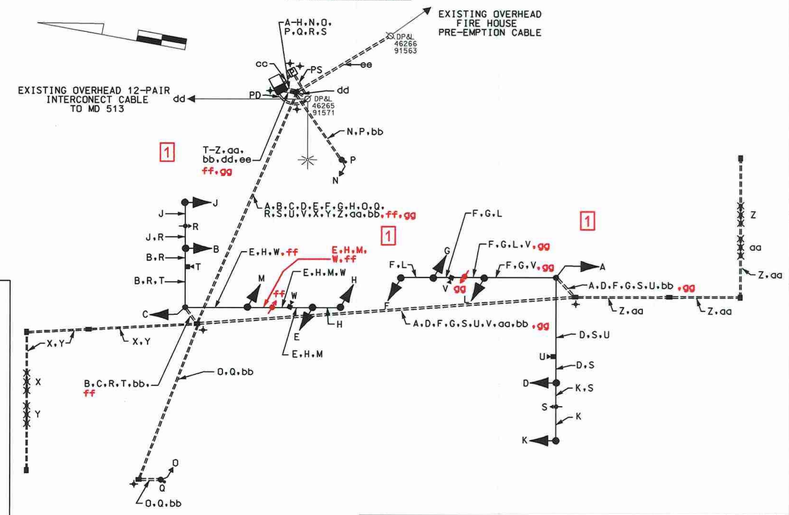
SHA Forces shall remove the controller and all auxilliary equipment from the controller cabinet. The cabinet and all other removed signal materials are to become the property of the contractor.

PHASE CHART



	1	2	3	4	5	6	7	8	9	10	11	12	13	14
PHASE 1 & 5	◄G-/R	◄G-/R	R	◄G-/R	◄G-/R	R	R	R	R	R	R	R	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	DW
1 & 6 CHANGE	◄Y-/G	◄Y-/G	Y	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
2 & 5 CHANGE	R	R	R	◄Y-/G	◄Y-/G	Y	R	R	R	R	R	R	DW	DW
PHASE 2 & 6	G	G	G	G	G	G	R	R	R	R	R	R	DW	DW
2 & 6 CHANGE	Y	Y	Y	Y	Y	Y	R	R	R	R	R	R	DW	DW
PHASE 3	R	R	R	R	R	R	G ◄G-	◄G- G	G	R	R	R	DW	DW
3 CHANGE	R	R	R	R	R	R	Y	Y	Y	R	R	R	DW	DW
PHASE 4	R	R	R	R	R	R	R	R	R	G ◄G-	◄G- G	G	DW	DW
4 CHANGE	R	R	R	R	R	R	R	R	R	Y	Y	Y	DW	DW
PHASE 4 ALT	R	R	R	R	R	R	R	R	R	G ◄G-	◄G- G	G	WK	WK
PED CLEAR / COUNTDOWN	R	R	R	R	R	R	R	R	R	G ◄G-	◄G- G	G	FL/DW	FL/DW
PHASE 4 ALT CHANGE	R	R	R	R	R	R	R	R	R	Y	Y	Y	DW	DW
PRE-EMPT 1	G	G	G	G	G	G	R	R	R	R	R	R	DW	DW
PRE-EMPT 1 CHANGE	Y	Y	Y	Y	Y	Y	R	R	R	R	R	R	DW	DW
PRE-EMPT 2	R	R	R	R	R	R	R	R	R	G	G	G	DW	DW
PRE-EMPT 2 CHANGE	R	R	R	R	R	R	R	R	R	Y	Y	Y	DW	DW
1 PRE-EMPT 3	R	R	R	R	R	R	G	G	G	R	R	R	DW	DW
1 PRE-EMPT 3 CHANGE	R	R	R	R	R	R	Y	Y	Y	R	R	R	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



WIRING KEY

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

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

P Q } 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)

R S ~~ff~~ ~~gg~~ } 4-CONDUCTOR OPTICOM CABLE

T U V W } CONTROL CABLE (CAMERA TO CONTROLLER) UP TO 500'

X Y Z aa } NON-INVASIVE DETECTOR PROBE SET LEAD-IN (1000')

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

cc- 3-1 CONDUCTOR ELECTRICAL CABLE (NO. 4 A.W.G.)

dd- RELOCATED EXISTING OVERHEAD 12-PAIR INTERCONNECT CABLE

ee- RELOCATED EXISTING OVERHEAD FIRE HOUSE PRE-EMPTION CABLE

PD- PROPOSED PHONE DROP

PS- PROPOSED UNDERGROUND SERVICE TO BE INSTALLED BY DELMARVA

+ - GROUND ROD

1 GREENLINE REVISION 8/18/10

TEDD APPROVAL 9/14/2010

1 REDLINE REVISION 9/7/10

TEDD APPROVAL 9/14/2010

REVISION "C"

STREET TRAFFIC STUDIES, LTD.
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Glen Burnie,MD 21061
Ph (410) 590-5500
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5602BGI.DGN T-190

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

U.S 13 (BUS.) (FRUITLAND BLVD) AND EAST MAIN STREET.

FRUITLAND, MARYLAND

GENERAL INFORMATION SHEET

SCALE NONE DATE 2/3/09 CONTRACT NO. XX4435185

DESIGNED BY James Allen Jr. COUNTY WICOMICO
DRAWN BY James Allen Jr. LOGMILE 22B01302.08
CHECKED BY TIMS NO. J120
F.A.P. NO. TOD NO.

TS NO. 1831C | DRAWING NO. 2 OF 2 | SHEET NO. OF

PLOTTED: $DATETIME$
FILE: $FILE$

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