DRILL HOLES

BORDER REV: DATE: June 1, 2004

PROJECT DESCRIPTION

I. GENERAL

This project involves the reconstruction of an existing Traffic Control Signal with street lighting and interconnect at the intersection of MD 31 (New Windsor Rd) and Main Street / WMC Drive in Carroll County. The existing strainpole signal shall be replaced with a new mast arm pole signal. Video detection shall be used in all directions. MD 31 (New Windsor Rd) is assumed to run a north-south direction.

II. INTERSECTION OPERATION

1. The intersection is to operate in a NEMA six-phase, fully-actuated mode, with the MD 31 (New Windsor Rd) approaches running concurrently. Exclusive/Permissive left turn phases shall be provided for both approaches of MD 31 (New Windsor Rd). A pedestrian phase with pushbutton actuation shall be provided across the north leg of MD 31 (New Windsor Rd). The pedestrian phase across WMC Drive shall be on recall. A farside sampling station shall be provided on the south leg of MD 31 (New Windsor Rd) at this intersection. The Main Street / WMC Drive approaches shall also run concurrently.
2. A full-traffic-actuated, eight-phase controller with two (2) four channel, rack mount loop detector amplifier, video interface and all necessary equipment housed in a NEMA size "6" base-mounted cabinet shall be installed 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) 787-7650 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 #7 are as follows:

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

Mr. Dave Coyne
Assistant District Engineer - Maintenance
Phone: (310) 624-8106

Ms. Andrea Abend
District Engineer - Utility
Phone: (301) 624-8110

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
410-787-7670

Mr. George Miller
Traffic Engineer
301-624-8144

The power company representative is:

Mr. Mark Lentz
Baltimore Gas and Electric
7317 Parkway Drive South
Hanover, MD 21076
410-859-9310

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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
9571	Sheet aluminum signs to consist of: (mast arm or pole mount)	91 SF
	D3-2 "WMC Dr (arrow)/ (arrow) WMC Dr" sign. (variable x 16") dual faced. mast arm mnt.	1 EA
	D3-2 "W Main St (arrow)/ (arrow) W Main St" sign. (variable x 16") dual faced mast arm mnt.	1 EA
	R10-12 "LEFT TURN YIELD ON GREEN (BALL)" sign. (36" x 42") mast arm mnt.	2 EA
	GUIDE SHIELD ASSEMBLY (36"x75") pole mounted. M 3-3 "SOUTH"(30"X15") M1-5 "MD 31"(36"X36") M6-1 "left arrow "(30"X24")	1 EA
	GUIDE SHIELD ASSEMBLY (36"x75") pole mounted. M 3-1 "NORTH"(30"X15") M1-5 "MD 31"(36"X36") M6-1 "left arrow "(30"X24")	1 EA
	GUIDE SHIELD ASSEMBLY (24"x51") pole mounted. M3-3 "SOUTH"(24"X12") M1-5 "MD 31"(24"X24") M6-1 "right arrow "(21"X15")	1 EA
	GUIDE SHIELD ASSEMBLY (24"x51") pole mounted. M3-1 "NORTH"(24"X12") M1-5 "MD 31"(24"X24") M6-1 "right arrow "(21"X15")	1 EA

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

ITEM NO.	DESCRIPTION	QUANTITY
1001	Maintenance of traffic per assignment.	3 EA
2001	Class 2 Excavation.	14 C.Y.
2002	Test Pit Excavation	8 C.Y.

EQUIPMENT LIST (cont)

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

ITEM NO.	DESCRIPTION	QUANTITY
5005	12" white heat applied permanent preformed thermoplastic pavement marking.	400 L.F.
5006	24" white heat applied permanent preformed thermoplastic pavement marking.	95 L.F.
6003	Standard type A combination curb and gutter 12" gutter pan 8" depth.	85 L.F.
6005	4" concrete sidewalk.	450 S.F.
8001	Concrete foundation.	18 C.Y.
8002	12" pedestrian signal head section	8 EA
8014	Control cable, 200', video detection camera to controller	1 EA
8015	Control cable, 300', video detection camera to controller	2 EA
8016	Control cable, 400', video detection camera to controller	1 EA
8027	Pedestal pole (10').	2 EA
8029	Remove and dispose of existing material and equipment per assignment.	1 EA
8037	Cable - 1 conductor (No. 250 KCMIL), Cu, USE	275 L.F.
~~8038~~	~~Disconnect, pull back and reroute cable.~~	~~525 L.F.~~
8040	Detectable warning surfaces.	24 S.F.
8044	No. 6 AWG stranded bare copper ground wire.	630 L.F.
8049	3" schedule 80 rigid polyvinyl chloride - bored.	245 L.F.
8050	4" schedule 80 rigid polyvinyl chloride - bored.	365 L.F.
8051	2" schedule 80 rigid polyvinyl chloride - trenched.	35 L.F.
8052	3" schedule 80 rigid polyvinyl chloride - trenched.	85 L.F.
8053	4" schedule 80 rigid polyvinyl chloride - trenched.	50 L.F.
8058	Metered service pedestal.	1 EA
8061	Electrical cable 1-conductor No. 4 AWG THHN/THWN.	15 L.F.
8065	Non-invasive detector with 500' lead-in cable.	4 EA
8066	Non-invasive detector with 1000' lead-in cable.	1 EA
8067	Furnish and install electrical handhole.	5 EA
8070	Install overhead sign.	91 SF
8071	Video detector camera.	4 EA
8076	Steel pole with a single 38' mast arm.	1 EA
8077	Steel pole with a single 50' mast arm.	2 EA
8081	Steel pole with a single 70' mast arm.	1 EA
8083	12-pair communication cable jelly-filled, (underground).	2700 LF
8084	250 watt HPS lamp and luminare.	2 EA
8091	Ground rod 3/4" dia. x 10' length.	8 EA
8092	8" vehicular traffic signal head section.	6 EA
8093	12" vehicular traffic signal head section.	32 EA
8099	Electrical cable - 2 conductor (No. 14 AWG).	450 L.F.
8101	Electrical cable - 5 conductor (No. 14 AWG).	1040 L.F.
8102	Electrical cable - 7 conductor (No. 14 AWG).	1550 L.F.
8103	Electrical cable - 2 conductor (No. 12 AWG) tray cable.	420 L.F.
8106	Pedestrian pushbutton and R10-4(1) sign. (Note: Sign to read "PUSH BUTTON TO CROSS NEW WINDSOR RD".)	2 EA
8107	15' lighting arm on signal structure.	2 EA
8112	Install controller and cabinet base mount.	1 EA

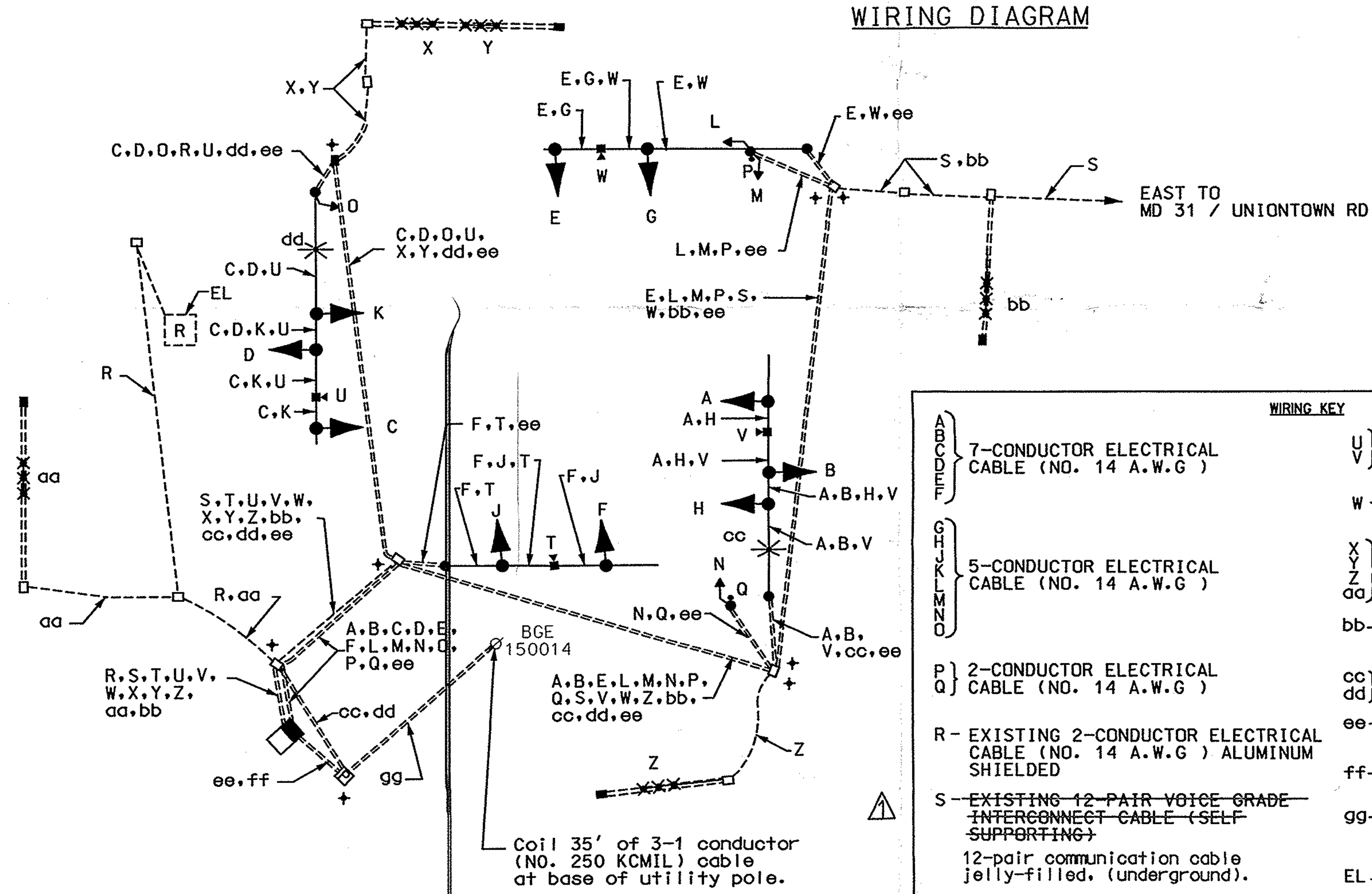
C. EQUIPMENT TO BE REMOVED

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 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	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	DW	DW	DW	DW
1 & 6 CHANGE	◄Y-/G	◄Y-/G	G	R	R	R	R	R	R	R	DW	DW	DW	DW
PHASE 2 & 5	R	R	R	◄G-/G	◄G-/G	G	R	R	R	R	WK	WK	DW	DW
2 & 5 CHANGE	R	R	R	◄Y-/G	◄Y-/G	G	R	R	R	R	WK	WK	DW	DW
PHASE 2 & 6	G	G	G	G	G	G	R	R	R	R	WK	WK	DW	DW
PED CLEAR	G	G	G	G	G	G	R	R	R	R	FL/DW	FL/DW	DW	DW
2 & 6 CHANGE	Y	Y	Y	Y	Y	Y	R	R	R	R	DW	DW	DW	DW
PHASE 4 & 8	R	R	R	R	R	R	G	G	G	G	DW	DW	DW	DW
4 & 8 CHANGE	R	R	R	R	R	R	Y	Y	Y	Y	DW	DW	DW	DW
PHASE 4 & 8 ALT	R	R	R	R	R	R	G	G	G	G	DW	DW	WK	WK
PED CLEAR	R	R	R	R	R	R	G	G	G	G	DW	DW	FL/DW	FL/DW
4 & 8 CHANGE ALT	R	R	R	R	R	R	Y	Y	Y	Y	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	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 – 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)
- P, Q – 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)
- R - EXISTING 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G) ALUMINUM SHIELDED
- S - ~~EXISTING 12-PAIR VOICE GRADE INTERCONNECT CABLE (SELF SUPPORTING)~~ 12-pair communication cable jelly-filled, (underground). ⚠1
- T - PRE MANUFACTURED CAMERA TO CONTROLLER CABLE (200')
- U, V – PRE MANUFACTURED CAMERA TO CONTROLLER CABLE (300')
- W - PRE MANUFACTURED CAMERA TO CONTROLLER CABLE (300')
- X, Y, Z, aa – NON INVASIVEMICROLOOP LEAD-IN CABLE (500')
- bb- NON INVASIVE MICROLOOP LEAD-IN CABLE (1000')
- cc, dd – 2-CONDUCTOR TRAY CABLE (NO. 12 A.W.G)
- ee- STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
- ff- 2-1 CONDUCTOR ELECTRICAL CABLE (NO. 4 A.W.G.)
- gg- 3-1 CONDUCTOR ELECTRICAL CABLE (NO. 250 KCMIL)
- EL - LOOP WIRE (NO. 14 A.W.G.) EXISTING
- + - GROUND ROD

⚠1 GREEN LINE REVISION 2/8/06
APPROVED BY: [signature]

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

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PLOTTED: $DATETIME$
FILE: $FILE$

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MD 31 (NEW WINDSOR DRIVE) AND MAIN STREET / WMC DRIVE

SCALE none DATE 9/1/05 CONTRACT NO. AT7175185

DESIGNED BY JA
DRAWN BY RC
CHECKED BY
F.A.P. NO.

COUNTY CARROLL
LOGMILE 06003109.75
TIMS: G916

DRAWING NO. 171 - OF

SHEET NO. 2 OF 2

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