DRILL HOLES

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BORDER REV: DATE: June 1, 2004

PROJECT DESCRIPTION

GENERAL

THIS PROJECT INVOLVED ADDING EXCLUSIVE LEFT-TURN PHASING ALONG SOUTHBOUND US 301 AT SOUTH OSBORNE ROAD AND ALONG NORTH- AND SOUTHBOUND US 301 AT MD 382. THE EXISTING MAST ARM STRUCTURE IN THE SOUTHWEST QUADRANT OF US 301 AND SOUTH OSBORNE ROAD AND IN THE SOUTHWEST AND NORTHEAST QUADRANTS OF US 301 AND MD 382 WILL BE REPLACED. VIDEO DETECTION WILL BE INSTALLED FOR PRESENCE DETECTION ON US 301 AND MD 382. VIDEO DETECTION WILL ALSO BE USED AS SETBACK DETECTION ON MD 382. MICROLOOP PROBES WILL BE USED AS SETBACK DETECTION ALONG SOUTHBOUND US 301 AND MD 382. THE SAMPLING LOOPS AT US 301 AND MD 382 WILL ALSO BE REPLACED. US 301 IS ASSUMED TO RUN IN A NORTH - SOUTH DIRECTION.

INTERSECTION OPERATION

THE INTERSECTION WILL OPERATE IN A NEMA EIGHT-PHASE, FULL-TRAFFIC-ACTUATED MODE WITH EXCLUSIVE LEFT-TURN PHASING FOR NORTHBOUND AND SOUTHBOUND LEFT TURN MOVEMENTS AT SOUTH OSBORNE ROAD AND AT MD 382. THE EXISTING FIRE HOUSE PRE-EMPTIONS AT S. OSBORNE ROAD AND CROOM ROAD WILL REMAIN.

THE CABINET AT THE INTERSECTION OF US 301 AND MD 382 OPERATES AS A MASTER/LOCAL CONTROLLER FOR THE INTERCONNECT SYSTEM AND OPERATES US 301/SOUTH OSBORNE ROAD AND US 301/MD 382 AS ONE INTERSECTION.

THE CABINET AT THE INTERSECTION OF US 301 AND SOUTH OSBORNE ROAD OPERATES AS A TERMINAL CABINET TO HOUSE THE DETECTOR AMPLIFIERS, WIRING TERMINALS, AND SPECIAL RELAY PACKAGE.

CONTROLLER REQUIREMENTS

INSTALL A NEW EIGHT-PHASE FULLY ACTUATED TRAFFIC SIGNAL CONTROLLER AND ASSOCIATED HARNESSES IN A SIZE 6 BASE MOUNTED CABINET AT CROOM STATION ROAD.

THE CONTACT PERSONS FOR DISTRICT #3 ARE AS FOLLOWS:

Mr. Majid Shakib
Assistant District Engineer - Traffic
Phone: 301-513-7358

Mr. Augie Rebish
District Utility Engineer - Utility
Phone: 301-513-7350

Mr. Wayne Mowdy
Assistant District Engineer - Maintenance
Phone: 301-513-7304

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

Mr. Edward Rodenhizer
Chief, SHA Traffic Signal Shop
Phone: 410-787-7650

Potomac Electric Power Company
8300 Old Marlboro Pike
Upper Marlboro, Maryland 20772
Phone: 301-961-5325

EQUIPMENT LIST 'A'

EQUIPMENT TO BE FURNISHED BY THE SHA.

ITEM NO.	QUANTITY	DESCRIPTION
9000	1 EA	[UPDATED] (CONT/CAB/ADD) RELAY (110/120 VOLT) 11 PIN
9000	3 EA	[UPDATED] 4 CHANNEL DETECTOR AMPLIFER
1 ~~9000~~	~~1 EA~~	~~[UPDATED] 50/70 MAST ARM TWIN X 23' 0" POLE~~
1 ~~9000~~	~~1 EA~~	~~[UPDATED] 60' MAST ARM SINGLE X 21' 0" POLE~~
1 ~~9000~~	~~1 EA~~	~~[UPDATED] 70' MAST ARM SINGLE X 21' 0" POLE~~
9000	1 EA	[UPDATED] CABINET "G" TYPE POLE MOUNT
9000	1 EA	[UPDATED] CONTROLLER ASC II WITH TELEMETRY
9000	1 EA	[UPDATED] VIDEO INTERFACE EQUIPMENT: 5-8 CAMERAS
9000	77 SF	[UPDATED] SHEET ALUMINUM MAST ARM/POLE MOUNTED SIGN:
		1 EACH - R3-5L SIGN (36 IN. X 42 IN.) MAST ARM MOUNT
		1 EACH - R3-6R SIGN (36 IN. X 42 IN.) MAST ARM MOUNT
		1 EACH - D-3(2) SIGN (60 IN. X 16 IN.) MAST ARM MOUNT
		1 EACH - D-3(2) SIGN (48 IN. X 16 IN.) MAST ARM MOUNT
		1 EACH - M95-1 SIGN (78 IN. X 24 IN.) MAST ARM MOUNT
		1 EACH - SHIELD ASSEMBLY (24 IN X 51 IN.) POLE MOUNT
		3 EACH - R10-10L SIGN (30 IN. X 36 IN.) MAST ARM MOUNT

EQUIPMENT LIST 'B'

EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR.

ITEM NO.	QUANTITY	DESCRIPTION
1001	3 EA	MAINTENANCE OF TRAFFIC
2002	2 CY	TEST PIT EXCAVATION
5006	150 LF	24 INCH HEAT APPLIED WHITE PERMANENT PREFORMED THERMOSPLASTIC PAVEMENT MARKINGS
8001	15 CY	CONCRETE FOUNDATION
8015	5 EA	CONTROL CABLE, 300 FOOT, VIDEO DETECTION CABLE
8017	1 EA	CONTROL CABLE, 500 FOOT, VIDEO DETECTION CABLE
1 ~~8020~~	~~3 EA~~	~~INSTALL STEEL POLE AND SINGLE OR TWIN MAST ARM, ANY SIZE~~
8029	1 EA	REMOVE AND DISPOSE OF EQUIPMENT PER ASSIGNMENT
8030	3 EA	REMOVE CONCRETE FOUNDATION 12 INCHES
8038	550 LF	DISCONNECT, PULL-BACK AND REROUTE CABLE
8044	215 LF	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
8045	40 LF	1 INCH ELECTRICAL CONDUIT - GALVANIZED SLEEVE OR RISER
8050	160 LF	4 INCH SCHEDULE 80 RIGID PVC CONDUIT - BORED
8052	40 LF	3 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8053	20 LF	4 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8057	40 LF	1 INCH LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR SLEEVE
8064	2 EA	MICROLOOP PROBE, 1000 FOOT LEAD-IN
8067	3 EA	FURNISH AND INSTALL ELECTRICAL HANDHOLE
8070	77 SF	INSTALL OVERHEAD SIGN
8071	5 EA	VIDEO DETECTION CAMERA
8074	1 EA	OPTICOM NO. 721 DETECTOR EYE
1 **8078**	**1 EA**	**STEEL POLE WITH A SINGLE 60 FOOT MAST ARM**
1 **8080**	**1 EA**	**STEEL POLE WITH TWIN 50 FOOT AND 70 FOOT MAST ARMS**
1 **8081**	**1 EA**	**STEEL POLE WITH A SINGLE 70 FOOT MAST ARM**
8091	3 EA	GROUND ROD - ¾ INCH DIAMETER X 10 FOOT LENGTH
8093	64 EA	12 INCH VEHICULAR TRAFFIC SIGNAL HEAD SECTION
8095	150 LF	FURNISH AND INSTALL 4 CONDUCTOR OPTICOM DETECTOR CABLE
1 **8096**	**3 EA**	**CUT, CLEAN, GALVANIZE AND CAP TRAFFIC SIGNAL STRUCTURE**
8098	510 LF	ELECTRICAL CABLE - 2 CONDUCTOR (ALUMINUM SHIELDED)
8101	625 LF	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)
8102	1,450 LF	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)
8104	750 LF	LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO. 14 AWG)
8105	150 LF	SAW CUT FOR SIGNAL (LOOP DETECTOR)
8111	1 EA	INSTALL CONTROLLER AND CABINET - POLE MOUNT
NEGOT	1 EA	RELOCATE VIDEO DETECTOR CAMERA FROM EXISTING POLE TO PROPOSED POLE

WIRING DIAGRAM

NOTE 1:
PULL AND RE-ROUTE ALL EXISTING ELECTRICAL CABLES FROM SIGNAL HARDWARE THAT ARE TO REMAIN FROM THE EXISTING POLE-MOUNTED CABINET TO THE PROPOSED POLE MOUNTED CABINET.

NOTE 2:
PULL AND RE-ROUTE ALL EXISTING ELECTRICAL CABLES FROM SIGNAL HARDWARE THAT ARE TO REMAIN FROM THE EXISTING HANDHOLE OUTSIDE THE CABINET TO THE PROPOSED HANDHOLE OUTSIDE THE CABINET.

A B C D E F G H J K L M — 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)

N O P Q R S T U V — 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)

W — CONTROL CABLE, 300 FOOT, VIDEO DETECTION CABLE

X Y Z AA BB — CONTROL CABLE, 500 FOOT, VIDEO DETECTION CABLE

CC — 4-CONDUCTOR OPTICOM DETECTOR CABLE (NO. 20 A.W.G.)

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

FF GG HH JJ — 2-CONDUCTOR ELECTRICAL CABLE (ALUMINUM SHIELDED NO. 14 A.W.G.)

KK LL — MICROLOOP PROBE LEAD-IN

EML — EXISTING MICROLOOP PROBE

ML — MICROLOOP PROBE

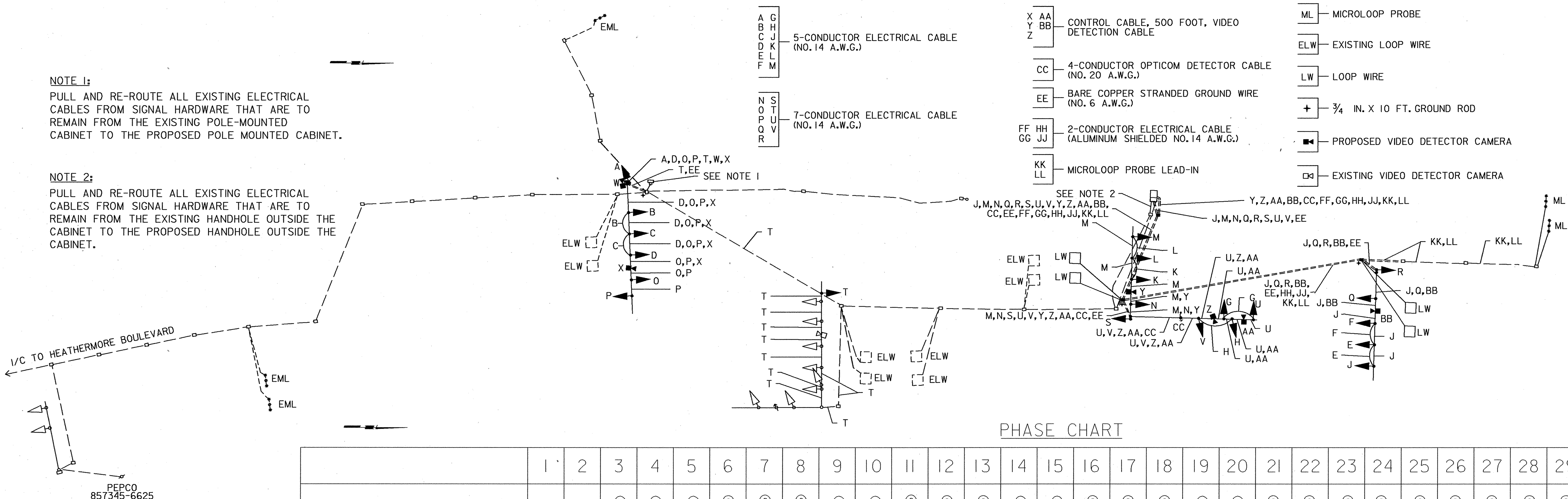
ELW — EXISTING LOOP WIRE

LW — LOOP WIRE

+ — ¾ IN. X 10 FT. GROUND ROD

PROPOSED VIDEO DETECTOR CAMERA

EXISTING VIDEO DETECTOR CAMERA



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	27	28	29	30	31	US 301 AT SOUTH OSBORNE ROAD	US 301 AT CROOM ROAD
	Y	Y	←R ←Y ←G	←R ←Y ←G	←R ←Y ←G	R Y G	R Y G	R Y G	←R ←Y ←G	←R ←Y ←G	R Y G	R Y G	R Y G	←R ←Y ←G	←R ←Y ←G	R Y G	R Y G	R Y G	←R ←Y ←G	←R ←Y ←G	R Y G	R Y G	R Y G	R Y G	R Y G	R Y G	R Y G	R Y G	R Y G	R Y G ←G	R Y G		
PHASE 1 + 5	FL/Y	FL/Y	←G	←G	←G	R	R	R	←G	←G	R	R	R	←G	←G	R	R	R	←G	←G	R	R	R	R	R	R	R	R	R	R	R		
PHASE 1 + 5 CHANGE	THE CONTROLLER MAY SKIP TO PHASE 1 + 6, 2 + 5 OR 2 + 6																																
PHASE 1 + 6	DARK	DARK	←G	←G	←G	G	G	G	←G	←G	G	G	G	←R	←R	R	R	R	←R	←R	R	R	R	R	R	R	R	R	R	R	R		
PHASE 1 + 6 CHANGE	DARK	DARK	←Y	←Y	←Y	G	G	G	←Y	←Y	G	G	G	←R	←R	R	R	R	←R	←R	R	R	R	R	R	R	R	R	R	R	R		
PHASE 2 + 5	FL/Y	FL/Y	←R	←R	←R	R	R	R	←R	←R	R	R	R	←G	←G	G	G	G	←G	←G	G	G	G	R	R	R	R	R	R	R	R		
PHASE 2 + 5 CHANGE	FL/Y	FL/Y	←R	←R	←R	R	R	R	←R	←R	R	R	R	←Y	←Y	G	G	G	←Y	←Y	G	G	G	R	R	R	R	R	R	R	R		
PHASE 2 + 6	DARK	DARK	←R	←R	←R	G	G	G	←R	←R	G	G	G	←R	←R	G	G	G	←R	←R	G	G	G	R	R	R	R	R	R	R	R		
PHASE 2 + 6 CHANGE	FL/Y	FL/Y	←R	←R	←R	Y	Y	Y	←R	←R	Y	Y	Y	←R	←R	Y	Y	Y	←R	←R	Y	Y	Y	R	R	R	R	R	R	R	R		
PHASE 4 / PHASE 4 + 8	FL/Y	FL/Y	←R	←R	←R	R	R	R	←R	←R	R	R	R	←R	←R	R	R	R	←R	←R	R	R	R	G	G	G	G	G	G	G	G		
PHASE 4 CHANGE / PHASE 4 + 8 CHANGE	FL/Y	FL/Y	←R	←R	←R	R	R	R	←R	←R	R	R	R	←R	←R	R	R	R	←R	←R	R	R	R	Y	Y	Y	Y	Y	Y	Y	Y		
PRE-EMPT 1, PHASE 3	FL/Y	FL/Y	←R	←R	←R	R	R	R	←R	←R	R	R	R	←R	←R	R	R	R	←G	←G	G	G	G	R	R	R	R	R	R	G / ←G	G		
PRE-EMPT 1, PHASE 3 CHANGE	FL/Y	FL/Y	←R	←R	←R	R	R	R	←R	←R	R	R	R	←R	←R	R	R	R	←Y	←Y	Y	Y	Y	R	R	R	R	R	R	Y	Y		
PRE-EMPT 2, PHASE 7	FL/Y	FL/Y	←R	←R	←R	R	R	R	←G	←G	G	G	G	←R	←R	R	R	R	←R	←R	R	R	R	G	G	G	G	R	R	R	R		
PRE-EMPT 2, PHASE 7 CHANGE	FL/Y	FL/Y	←R	←R	←R	R	R	R	←Y	←Y	Y	Y	Y	←R	←R	R	R	R	←R	←R	R	R	R	Y	Y	Y	Y	R	R	R	R		
FLASHING OPERATION	DARK	DARK	FL/RA	FL/RA	FL/RA	FL/Y	FL/Y	FL/Y	FL/RA	FL/RA	FL/Y	FL/Y	FL/Y	FL/RA	FL/RA	FL/Y	FL/Y	FL/Y	FL/RA	FL/RA	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R		

EQUIPMENT LIST 'C'

EQUIPMENT TO BE REMOVED AND RETURNED TO SHA.

ITEM NO	QUANTITY	DESCRIPTION
NONE	NONE	NONE

1 **REDLINE REVISION 07-19-2005**

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION
US 301 (CRAIN HIGHWAY) AND
SOUTH OSBORNE ROAD/MD 382 (CROOM ROAD)

GENERAL INFORMATION

SCALE NONE DATE 11/2004 CONTRACT NO. AT7185185

DESIGNED BY MRK — COUNTY PRINCE GEORGE'S
DRAWN BY MRK — LOGMILE 16030110.34
CHECKED BY BAB — T.I.M.S. NO. G531
F.A.P. NO. — TOD NO.

DRAWING NO. **TS-2366-H** — SHEET NO. 2 OF 2

STV Incorporated

engineers / architects / planners / scientists / construction managers
7125 Ambassador Road Baltimore, MD 21244-2722 (410) 944-9112

BY: THOMPSMA

PLOTTED: 07/19/2005 03:52:56 PM
FILE: I:\PROJECTS\11103\47\G531GD02.DGN