PROJECT DESCRIPTION

GENERAL

THIS PROJECT INVOLVES THE RECONSTRUCTION OF THE EXISTING TRAFFIC CONTROL SIGNAL AND STREET LIGHTING AT THE INTERSECTION OF MD 24 (VIETNAM VETERANS MEMORIAL HIGHWAY) AND BEL AIR SOUTH PARKWAY IN HARFORD COUNTY, MARYLAND. MD 24 (VIETNAM VETERANS MEMORIAL HIGHWAY) IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

INTERSECTION OPERATION

THE INTERSECTION OPERATION WILL REMAIN THE SAME.

TYPICAL MESSAGES FOR ACCESSIBLE PED SIGNALS

MD 24 (VIETNAM VETERANS MEMORIAL HIGHWAY) AND BEL AIR SOUTH PARKWAY - SOUTH LEG

STREETS AT 90 DEGREES

WAIT: "WAIT TO CROSS VIETNAM VETERANS MEMORIAL AT BEL AIR SOUTH, WAIT." *

WALK: RAPID TICK

* MESSAGE USED IF DISTANCE FROM NEAREST PUSHBUTTON FOR PERPENDICULAR CROSSING IS < 10'
** MESSAGE USED IF CROSSWALK DIVERGES FROM OR CONVERGES WITH PARALLEL TRAFFIC

NOTE: MESSAGES FOR INTERSECTION CONFIGURATIONS, VARYING FROM THE ABOVE ARE TO BE APPROVED BY THE DIRECTOR, OFFICE OF TRAFFIC AND SAFETY.

CONTROLLER REQUIREMENTS

INSTALL A FULL-TRAFFIC-ACTUATED, EIGHT-PHASE CONTROLLER WITH ONE (1) FOUR-CHANNEL, TIME-DELAY-OUTPUT LOOP DETECTOR AMPLIFIERS, VIDEO INTERFACE EQUIPMENT (5-8 CAMERAS), SYSTEM PACKAGE AND ASSOCIATED HARNESSES HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET.

PROJECT CONTACTS

THE CONTACT PERSONS FOR SHA ARE AS FOLLOWS:

MS. ERIN KUHN
ASSISTANT DISTRICT ENGINEER - TRAFFIC
PHONE: (410) 229-2381

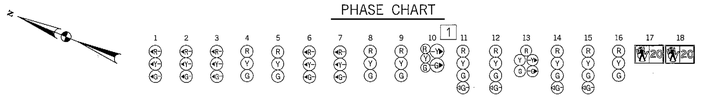
MR. ANDRE FUTRELL
ASSISTANT DISTRICT ENGINEER - MAINTENANCE
PHONE: (410) 229-2361

MR. MIKE PASQUARIELLO
DISTRICT UTILITY ENGINEER
PHONE: (410) 321-2841

MR. ROBERT SYNDER
ASSISTANT CHIEF, TRAFFIC OPERATIONS DIVISION
PHONE: (410) 787-7631

MR. RICHARD L. DAFF, SR.
CHIEF, TRAFFIC OPERATIONS DIVISION
PHONE: (410) 787-7630

PHASE CHART



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	WALK / PED CLEARANCE	WALK / PED CLEARANCE	WALK / PED CLEARANCE	R / Y / G	R / Y / G	WALK / PED CLEARANCE	WALK / PED CLEARANCE	R / Y / G	R / Y / G	R / Y / G (1)	R / Y / G	R / Y / G	R / Y / G (5)	R / Y / G	R / Y / G	R / Y / G	WALK / PED CLEARANCE	WALK / PED CLEARANCE

PHASE 1 + 5	G	G	G	R	R	G	G	R	R	R/G	R	R	R/G	R	R	R	DW	DW
1 + 5 CHANGE	PHASE 1 + 5 MAY CHANGE TO PHASE 1 + 6, PHASE 2 + 5 OR PHASE 2 + 6																	
PHASE 1 + 6	G	G	G	G	G	R	R	R	R	R/G	R	R	R/G	R	R	R	DW	DW
1 + 6 CHANGE	Y	Y	Y	G	G	R	R	R	R	R/Y	R	R	R/Y	R	R	R	DW	DW
PHASE 2 + 5	R	R	R	R	R	G	G	G	G	R	R	R	R	R	R	R	DW	DW
2 + 5 CHANGE	R	R	R	R	R	Y	Y	G	G	R	R	R	R	R	R	R	DW	DW
PHASE 2 + 6	R	R	R	G	G	R	R	G	G	R	R	R	R	R	R	R	DW	DW
2 + 6 CHANGE	R	R	R	Y	Y	R	R	Y	Y	R	R	R	R	R	R	R	DW	DW
PHASE 3	R	R	R	R	R	R	R	R	R	G/G	G/G	G/G	G/G	R	R	R	DW	DW
3 CHANGE	R	R	R	R	R	R	R	R	R	Y/Y	Y	Y	Y/Y	R	R	R	DW	DW
PHASE 4	R	R	R	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	R	R	R	Y	Y	Y	DW	DW
PHASE 4 ALT.	R	R	R	R	R	R	R	R	R	R	R	R	G/G	G/G	G	WK	WK
PED CLEARANCE	R	R	R	R	R	R	R	R	R	R	R	R	G/G	G/G	G	FL/DW	FL/DW
4 ALT. CHANGE	R	R	R	R	R	R	R	R	R	R	R	R	Y	Y	Y	DW	DW
FLASHING OPERATION	FL/R	FL/R	FL/R	FL/Y	FL/Y	FL/R	FL/R	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	DARK	DARK

EQUIPMENT LIST "A"

A. EQUIPMENT TO BE SUPPLIED BY THE SHA

ITEM NO.	QUANTITY	DESCRIPTION
9016	1 EACH	FOUR-CHANNEL, TIME-DELAY-OUTPUT, LOOP DETECTOR AMPLIFIER
9044	1 EACH	EIGHT-PHASE, FULL-TRAFFIC-ACTUATED CONTROLLER WITH SYSTEM PACKAGE HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET
9086	1 EACH	VIDEO INTERFACE EQUIPMENT: 1-8 CAMERAS
9571	[1] ~~194~~ ~~238~~ S.F.	SHEET ALUMINUM SIGNS TO CONSIST OF :
	[2] 202	
	[1] - 2 ~~4~~ EACH	D-3(1) SIGN (96 IN. x 32 IN.) - MAST ARM MOUNT
	- 2 EACH	D-3(1) SIGN (96 IN. x 16 IN.) - MAST ARM MOUNT
	- 4 EACH	R3-5(L) (30 IN. x 36 IN.) - MAST ARM MOUNT
	- 2 EACH	R3-5(R) (30 IN. x 36 IN.) - MAST ARM MOUNT
	[2] - 2 ~~4~~ EACH	R3-6(L) (30 IN. x 36 IN.) - MAST ARM MOUNT
	- 2 EACH	R4-7 (36 IN. x 48 IN.) - GROUND MOUNT
	- 2 EACH	R10-3(1) SIGN (9 IN. x 15 IN.) TO READ "PUSHBUTTON TO CROSS VETERANS MEM. HWY" - POLE MOUNT
	- 1 EACH	ASSOCIATED SHIELD ASSEMBLY M1-5(6) "SOUTH, MD 24, RIGHT ARROW" (24 IN. x 48 IN.) - POLE MOUNT
	- 1 EACH	ASSOCIATED SHIELD ASSEMBLY M1-5(6) "NORTH, MD 24, LEFT ARROW" (36 IN. x 72 IN.) - POLE MOUNT
	- 1 EACH	ASSOCIATED SHIELD ASSEMBLY M1-5(6) "NORTH, MD 24, RIGHT ARROW" (24 IN. x 48 IN.) - POLE MOUNT
	- 1 EACH	ASSOCIATED SHIELD ASSEMBLY M1-5(6) "SOUTH, MD 24, LEFT ARROW" (36 IN. x 72 IN.) - POLE MOUNT

EQUIPMENT LIST "C"

C. EQUIPMENT TO BE REMOVED AND RETURNED TO SHA

1 - CONTROLLER AND MALFUNCTIONING MONITOR UNIT

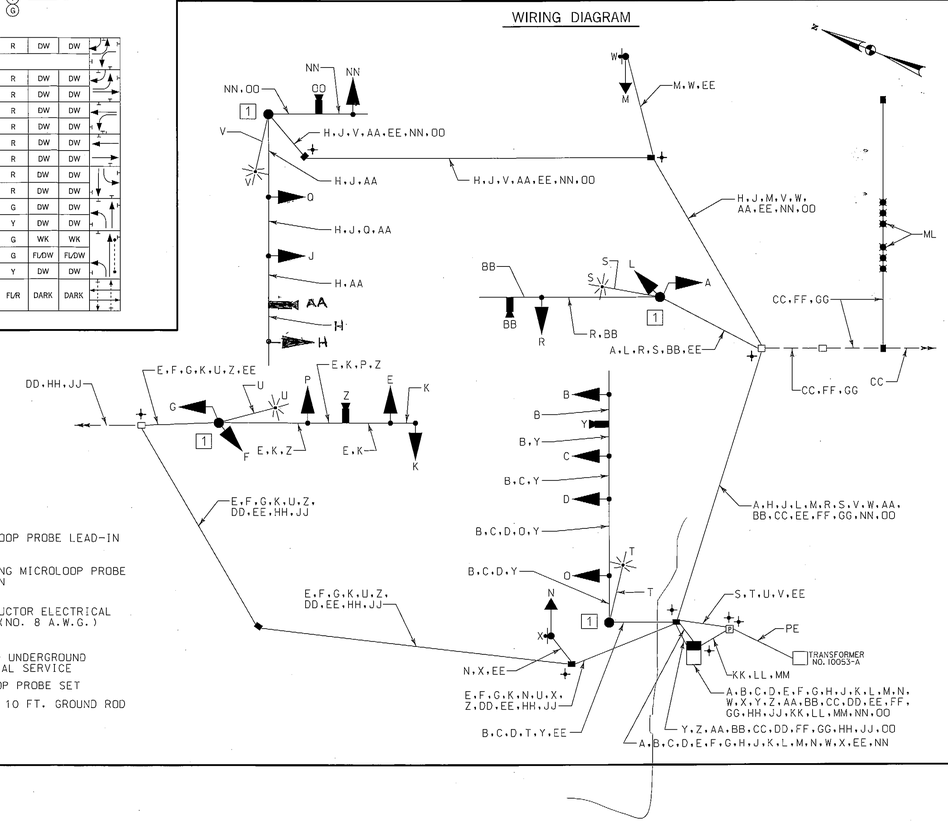
ALL OTHER REMOVED SIGNAL MATERIALS SHALL BECOME PROPERTY OF THE CONTRACTOR

MAINTENANCE OF TRAFFIC

THE FOLLOWING TRAFFIC CONTROL STANDARDS SHALL BE REFERENCED FOR THE PROJECT. ADDITIONAL TRAFFIC CONTROL STANDARDS MAY BE USED AS DIRECTED BY THE ENGINEER.

STANDARD NO. MD-104.04-01 (SHOULDER WORK)
STANDARD NO. MD-104.04-03 (LEFT LANE CLOSURE)
STANDARD NO. MD-104.04-05 (RIGHT LANE CLOSURE)
STANDARD NO. MD-104.04-13 (LEFT TURN BAY CLOSURE)
STANDARD NO. MD-104.04-15 (INTERSECTION LEFT LANE, TURN BAY)

WIRING DIAGRAM



WIRING KEY

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

M, N, O, P, Q, ~~R~~ } 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)

S, T, U, V } 2-CONDUCTOR ELECTRICAL CABLE (NO. 12 A.W.G.) TRAY CABLE

W, X } 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.) -

Y, Z, AA, BB, CC, ~~DD~~ } VIDEO CAMERA DETECTION LEAD-IN CABLE

CC, DD } EXISTING 12-PAIR COMMUNICATION CABLE (JELLY-FILLED)

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

FF, GG } MICROLOOP PROBE LEAD-IN

HH, JJ } EXISTING MICROLOOP PROBE LEAD-IN

KK, LL, MM } 1-CONDUCTOR ELECTRICAL CABLE (NO. 8 A.W.G.)

PE - PROPOSED UNDERGROUND ELECTRICAL SERVICE

ML - MICROLOOP PROBE SET

⏚ - 3/4 IN. X 10 FT. GROUND ROD

EQUIPMENT LIST "B"

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

ITEM NO.	QUANTITY	DESCRIPTION
1003	2 EACH	MAINTENANCE OF TRAFFIC
2001	[1] 5 ~~4~~ C.Y.	CLASS 2 EXCAVATION
2002	8 C.Y.	TEST PIT EXCAVATION
5002	[1] 170 ~~198~~ L.F.	5 INCH HEAT APPLIED WHITE OR YELLOW PERMANENT PAVEMENT MARKINGS
5003	[1] 870 ~~185~~ L.F.	REMOVAL OF EXISTING PERMANENT PAVEMENT LINE MARKINGS
5004	[1] 625 ~~340~~ L.F.	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES
5005	[1] 150 ~~80~~ L.F.	24 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES
5006	[2] 93 ~~67~~ S.F.	WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LEGENDS AND SYMBOLS
[1] 6001	215 L.F.	STANDARD TYPE A COMBINATION CURB AND GUTTER 12 INCH GUTTER PAN 8 INCH DEPTH
[1] 6002	625 S.F.	5 INCH CONCRETE SIDEWALK
[1] 6003	66 S.F.	DETECTABLE WARNING SURFACE FOR CURB RAMPS
8001	[1] 53 ~~56~~ EACH	12 INCH LED SIGNAL HEAD SECTION
8002	1 EACH	2-WIRE CENTRAL CONTROL UNIT
[1] 8004	3 EACH	8 INCH LED SIGNAL HEAD SECTION
8007	4 EACH	ANY SIZE LIGHTING ARM ON SIGNAL POLE WITH 250 WATT HPS LAMP & LUMINAIRE
8008	2 EACH	AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION AND SIGNS
8009	2 EACH	BREAKAWAY PEDESTAL POLE (ANY SIZE)
8012	1 EACH	EMBEDDED METERED SERVICE PEDESTAL
8016	2 EACH	LED 16 INCH COUNTDOWN PEDESTRIAN SIGNAL HEAD
8020	1 EACH	MAST ARM POLE & 60 FOOT MAST ARM ANY 'T'
8021	2 EACH	MAST ARM POLE & 70 FOOT MAST ARM ANY 'T'
8023	2 EACH	NONINVASIVE DETECTOR (ANY LENGTH) LEAD IN CABLE UP TO 1000'
8024	1 EACH	REMOVE & DISPOSE MAT & EQUIP PER ASSIGN
8026	1 EACH	TWIN MAST ARM POLE & 50'/60' MAST ARMS ANY 'T' DIMENSION
8028	[1] 5 ~~6~~ EACH	VIDEO DETECTION CAMERA AND CABLE ANY LENGTH
8032	1100 L.F.	DISCONNECT, PULL-BACK & REROUTE CABLE
8034	500 L.F.	SCHEDULE 80 RIGID PVC CONDUIT UP TO 4 INCHES - BORED
8036	155 L.F.	SCHEDULE 80 RIGID PVC CONDUIT UP TO 4 INCHES - TRENCHED
8037	34 L.F.	WOOD SIGN SUPPORTS UP TO 4" X 6"
8038	[1] ~~198~~ ~~238~~ S.F.	INSTALL OVERHEAD OR GROUND MOUNTED SIGN (INCLUDING ALL HARDWARE)
	[2] 228	
8040	[1] 700 ~~561~~ L.F.	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
8043	60 L.F.	ELECTRICAL CABLE 1-CONDUCTOR NO. 8 AWG - THHN/THWN
8044	7 EACH	FURNISH AND INSTALL ELECTRICAL HANDHOLE
8049	3 EACH	CUT, CLEAN, GALVANIZE AND CAP TRAFFIC SIGNAL STRUCTURE
8051	[1] 250 ~~260~~ L.F.	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)
8053	[1] 345 ~~380~~ L.F.	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)
8054	[1] 3500 ~~2975~~ L.F.	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)
8055	[1] 1000 ~~826~~ L.F.	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 AWG) TC
8061	1 EACH	INSTALL CONTROLLER AND CABINET - BASE MOUNT

[2] REDLINE REVISION NO. 2
REVISED QUANTITIES
12/12/2011

[1] REDLINE REVISION NO. 1
REVISED WIRING DIAGRAM & QUANTITIES 7/13/2011

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

MD 24 AT BEL AIR SOUTH PARKWAY

BELAIR, MD

GENERAL INFORMATION SHEET

SCALE NONE DATE APRIL 5, 2011 CONTRACT NO. XX3535168

DESIGNED BY J. RASMUSSEN
DRAWN BY J. RASMUSSEN
CHECKED BY N. LEARY
F.A.P. NO.

COUNTY HARFORD
LOGMILE 12002406.56
TIMS NO. K888
TOD NO.

TS NO. 2571D | DRAWING TSP-3 OF 3 | SHEET NO. 3 OF 3

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231

PLOTTED: December 13, 2011
FILE: N:\31669-130\CADD\Redlines2\gSG-N003_MD24_RL1.dgn

BY: sbloss