PROJECT DESCRIPTION

GENERAL

THIS PORTION OF THE PROJECT INVOLVES THE RECONSTRUCTION OF THE EXISTING TRAFFIC CONTROL SIGNAL AT THE INTERSECTION OF U.S. 40 (DUAL HIGHWAY) AND EDGEWOOD DRIVE IN WASHINGTON COUNTY, MARYLAND. U.S. 40 IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

INTERSECTION OPERATION

THE INTERSECTION WILL OPERATE IN A NEMA SIX-PHASE, FULL-TRAFFIC-ACTUATED MODE WITH THE U.S. 40 APPROACHES OPERATING CONCURRENTLY AND THE EDGEWOOD DRIVE APPROACHES OPERATING SPLIT.

EXCLUSIVE LEFT-TURN PHASING IS PROVIDED FOR EASTBOUND AND WESTBOUND U.S. 40 APPROACHES AND BOTH EDGEWOOD DRIVE APPROACHES.

AN ALTERNATE PEDESTRIAN PHASE IS PROVIDED ACROSS BOTH LEGS OF U.S. 40 AND EDGEWOOD DRIVE.

AN EMERGENCY PRE-EMPTION PHASE IS PROVIDED FOR BOTH APPOACHES OF U.S. 40 AND EDGEWOOD DRIVE.

CONTROLLER REQUIREMENTS

INSTALL A FULL-TRAFFIC-ACTUATED, EIGHT-PHASE CONTROLLER WITH TWO (2) FOUR-CHANNEL, TIME-DELAY-OUTPUT LOOP DETECTOR AMPLIFIERS WITH VIDEO INTERFACE EQUIPMENT (4-8 CAMERAS) AND SYSTEM PACKAGE AND ASSOCIATED HARNESSES HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET.

PHONE DROP

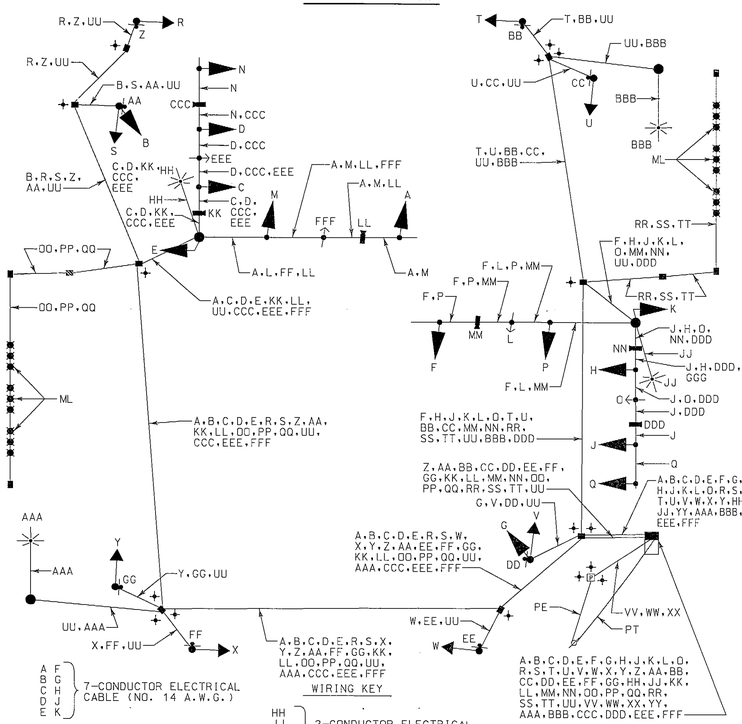
UPON COMPLETION OF THIS PROJECT, THE CONTRACTOR SHALL NOTIFY MR. ROBERT SNYDER OF SHA AT (410) 787-7635 TO ARRANGE FOR THE PHONE LINE INSTALLATION. THE CONTRACTOR IS TO PROVIDE MR. SNYDER THE NEAREST STREET ADDRESS, ZIP CODE, AND PHONE NUMBER.

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 F, B G, C H, D J, E K	7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
M T, N U, P V, Q W, R X, S Y	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
L, O, EEE, FFF	4-CONDUCTOR OPTICOM DETECTOR CABLE (NO. 14 A.W.G.)
Z DD, AA EE, BB FF, CC GG	2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
HH, JJ, AAA, BBB	2-CONDUCTOR ELECTRICAL CABLE (NO. 12 A.W.G.)
KK, LL, MM, NN, CCC, DDD	VIDEO CAMERA DETECTION LEAD-IN CABLE
OO, PP, QQ, RR, SS, TT	MICROLOOP PROBE LEAD-IN
UU	STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
VV, WW, XX	1-CONDUCTOR ELECTRICAL CABLE (NO. 4 A.W.G.)
ML	MICROLOOP PROBE SET
PT	PROPOSED UNDERGROUND TELEPHONE SERVICE
PE	PROPOSED UNDERGROUND ELECTRICAL SERVICE
+	3/4 IN. X 10 FT. GROUND ROD

EQUIPMENT LIST "A"

A. EQUIPMENT TO BE SUPPLIED BY THE SHA

ITEM NO.	QUANTITY	DESCRIPTION
963010	2 EACH	FOUR-CHANNEL, TIME-DELAY-OUTPUT, LOOP DETECTOR AMPLIFIER
917017	1 EACH	EIGHT-PHASE, FULL-TRAFFIC-ACTUATED CONTROLLER WITH INTERSECTION MONITOR HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET
900000	1 EACH	VIDEO INTERFACE EQUIPMENT: 4-8 CAMERAS
973023	194 S.F.	SHEET ALUMINUM SIGNS TO CONSIST OF :
	- 4 EACH	D-3(1) SIGN (VARIABLE x 16 IN.) DUAL FACED - MAST ARM MOUNT
	- 6 EACH	R3-5(L) SIGN (30 IN. x 36 IN.) - MAST ARM MOUNT
	- 1 EACH	ASSOCIATED SHIELD ASSEMBLY "EAST, US 40 , RIGHT ARROW" (36 IN. x 75 IN.) - POLE MOUNT
	- 1 EACH	ASSOCIATED SHIELD ASSEMBLY "EAST, US 40 , LEFT ARROW" (36 IN. x 75 IN.) - POLE MOUNT
	- 1 EACH	ASSOCIATED SHIELD ASSEMBLY "WEST, US 40 , RIGHT ARROW" (36 IN. x 75 IN.) - POLE MOUNT
	- 1 EACH	ASSOCIATED SHIELD ASSEMBLY "WEST, US 40 , LEFT ARROW" (36 IN. x 75 IN.) - POLE MOUNT
	- 4 EACH	R10-3(1) SIGN (9 IN. x 15 IN.) TO READ "PUSHBUTTON TO CROSS U.S. 40"
	- 4 EACH	R10-3(1) SIGN (9 IN. x 15 IN.) TO READ "PUSHBUTTON TO CROSS EDGEWOOD DRIVE"
	- 2 EACH	W9-2(4)(L) BLK/FY SIGN (30 IN. x 42 IN.) - MAST ARM MOUNT

PROJECT CONTACTS

THE CONTACT PERSONS FOR SHA ARE AS FOLLOWS:

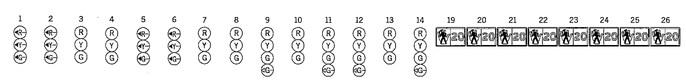
MR. GEORGE H. SMALL
ASSISTANT DISTRICT ENGINEER - TRAFFIC
PHONE: (301) 729-8444

MR. ANTHONY CRAWFORD
ASSISTANT DISTRICT ENGINEER - MAINTENANCE
PHONE: (301) 729-8457

MR. ROBERT ROWAN
DISTRICT UTILITY ENGINEER
PHONE: (301) 729-8420

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

PHASE CHART



PHASE 1 + 5	←G—	←G—	R	R	←G—	←G—	R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	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	←R—	←R—	R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW	
1 + 6 CHANGE	←Y—	←Y—	G	G	←R—	←R—	R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW	
PHASE 2 + 5	←R—	←R—	R	R	←G—	←G—	G	G	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW	
2 + 5 CHANGE	←R—	←R—	R	R	←Y—	←Y—	G	G	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW	
PHASE 2 + 6 ALT	←R—	←R—	G	G	←R—	←R—	G	G	R	R	R	R	R	R	WK	WK	WK	WK	DW	DW	DW	DW	
PED CLEARANCE	←R—	←R—	G	G	←R—	←R—	G	G	R	R	R	R	R	R	FL/DW	FL/DW	FL/DW	FL/DW	DW	DW	DW	DW	
2 + 6 ALT CHANGE	←R—	←R—	Y	Y	←R—	←R—	Y	Y	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW	
PHASE 3	←R—	←R—	R	R	←R—	←R—	R	R	←G—	G	←G—	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW	
3 CHANGE	←R—	←R—	R	R	←R—	←R—	R	R	Y	Y	Y	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW	
PHASE 3 ALT	←R—	←R—	R	R	←R—	←R—	R	R	←G—	G	←G—	R	R	R	DW	DW	DW	DW	WK	WK	DW	DW	
PED CLEARANCE	←R—	←R—	R	R	←R—	←R—	R	R	←G—	G	←G—	R	R	R	DW	DW	DW	DW	FL/DW	FL/DW	DW	DW	
3 ALT CHANGE	←R—	←R—	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	R	R	←G—	G	←G—	DW	DW	DW	DW	DW	DW	DW	DW	
4 CHANGE	←R—	←R—	R	R	←R—	←R—	R	R	R	R	R	Y	Y	Y	DW	DW	DW	DW	DW	DW	DW	DW	
PHASE 4	←R—	←R—	R	R	←R—	←R—	R	R	R	R	R	←G—	G	←G—	DW	DW	DW	DW	DW	DW	WK	WK	
PED CLEARANCE	←R—	←R—	R	R	←R—	←R—	R	R	R	R	R	←G—	G	←G—	DW	DW	DW	DW	DW	FL/DW	FL/DW	FL/DW	
4 ALT CHANGE	←R—	←R—	R	R	←R—	←R—	R	R	R	R	R	←G—	Y	←G—	DW	DW	DW	DW	DW	DW	DW	DW	
FLASHING OPERATION	← 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	DARK	DARK	DARK	DARK	DARK	DARK	

EQUIPMENT LIST "B"

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

CATEGORY CODE	QUANTITY	DESCRIPTION
203030	11 C.Y.	TEST PIT EXCAVATION
585621	1065 L.F.	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES
585625	250 L.F.	24 INCH HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
655104	18 S.F.	4 INCH CONCRETE SIDEWALK
801003	5 C.Y.	CONCRETE FOR LIGHT FOUNDATION
801004	20 C.Y.	CONCRETE FOR SIGNAL FOUNDATION
802501	865 L.F.	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
805125	50 L.F.	2 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED
805135	1355 L.F.	3 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED
805140	250 L.F.	4 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED
805150	140 L.F.	3 INCH SCHEDULE 80 RIGID PVC CONDUIT-SLOTTED
805155	280 L.F.	4 INCH SCHEDULE 80 RIGID PVC CONDUIT-SLOTTED
807202	1 EACH	METERED SERVICE PEDESTAL
808031	2 EACH	40 FOOT LIGHT STRUCTURE - 15 FOOT BRACKET ARM
810010	65 L.F.	ELECTRICAL CABLE 1-CONDUCTOR NO. 4 AWG-THHN/THWN
810605	6 EACH	NONINVASIVE DETECTOR, 1000 FOOT LEAD IN CABLE
811001	15 EACH	FURNISH AND INSTALL ELECTRICAL HANDHOLE
813015	194 S.F.	INSTALL OVERHEAD SIGN
816001	6 EACH	VIDEO DETECTION CAMERA
816005	3 EACH	CONTROL CABLE, 250 FOOT, VIDEO DETECTION CAMERA TO CONTROLLER
816010	3 EACH	CONTROL CABLE, 500 FOOT, VIDEO DETECTION CAMERA TO CONTROLLER
816201	1 EACH	DISCRIMINATOR MODULE, 4 CHANNEL, NO. 764
816215	4 EACH	OPTICOM NO. 721 DETECTOR EYE
818004	6 EACH	10 FOOT BREAKAWAY PEDESTAL POLE
818010	2 EACH	14 FOOT BREAKAWAY PEDESTAL POLE
818051	2 EACH	STEEL POLE WITH TWIN 50 FOOT AND 70 FOOT MAST ARMS
822002	4100 L.F.	12-PAIR COMMUNICATION CABLE, JELLYFILLED (UNDERGROUND)
831010	4 EACH	250 WATT HIGH PRESSURE SODIUM LAMP AND LUMINAIRE
837001	16 EACH	GROUND ROD - 3/4 INCH DIAMETER X 10 FOOT LENGTH
860284	46 EACH	12 INCH VEHICULAR TRAFFIC SIGNAL HEAD SECTION
860288	1125 L.F.	FURNISH AND INSTALL 4 CONDUCTOR OPTICOM CABLE
861105	1905 L.F.	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)
861107	2055 L.F.	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)
861108	2625 L.F.	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)
861116	1125 L.F.	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 AWG)
866103	2 EACH	15 FOOT LIGHTING ARM ON SIGNAL STRUCTURE
871202	1 EACH	INSTALL CONTROLLER AND CABINET - BASE MOUNT
800000	LUMP SUM	REMOVE AND DISPOSE OF EXISTING MATERIAL AND EQUIPMENT
800000	725 L.F.	DISCONNECT AND PULL BACK EXISTING ELECTRICAL CABLE
800000	8 EACH	16" LED COUNTDOWN PEDESTRIAN SIGNAL HEAD
800000	8 EACH	AUDIBLE/ TACTILE PEDESTRIAN PUSHBUTTON STATION
800000	1 EACH	AUDIBLE/ TACTILE PEDESTRIAN PUSHBUTTON BASE UNIT

EQUIPMENT LIST "C"

C. EQUIPMENT TO BE REMOVED AND RETURNED TO SHA

SHA FORCES SHALL REMOVE THE CONTROLLER AND ALL AUXILIARY EQUIPMENT FROM THE CONTROLLER CABINET. THE CABINET AND ALL OTHER MATERIALS TO BE REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

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

U.S. 40 (Dual Highway) and
Edgewood Drive

GENERAL INFORMATION SHEET

Whitman, Requardt and Associates, LLP
Engineers, Architects and Planners
801 South Caroline Street
Baltimore, Maryland 21231
410-235-3450

SCALE NONE DATE 10/15/2007 CONTRACT NO.

DESIGNED BY S. BLOSS
DRAWN BY S. BLOSS
CHECKED BY N. LEARY
FAP NO.
COUNTY
LOGMILE 21004021.63
TIMS NO. H603
TOD NO.

TS NO. 157 F | DRAWING TSP-5 - 5 OF 5 | SHEET NO. 90 OF 123

PLOTTED: 10-09-2007
FILE: n:\3\410-11\CADD\gSG-N005_US40.dgn

BY: jrasmussen