PROJECT DESCRIPTION

I. GENERAL

This project involves the modification of the existing traffic signal at the intersection of MD 97 (Georgia Avenue) with MD 28 (Norbeck Road) in Montgomery County. New APS pedestrian traffic signals will be installed at this location and existing lane configurations and signal phasing will be modified.

II. INTERSECTION OPERATION

1. The existing base mounted cabinet will be utilized at this location. The intesection will operate in a NEMA 8-phase, semi-actuated mode. Existing video detection zones will be adjusted. The left turn phases for all four approaches to the intersection shall operate with exclusive, lead-lag, left turn phasing.

NOTES

1. For final pavement markings, refer to the pavement marking plans, as applicable; other than those detailed on the plan. All pavement markings shall be installed in accordance with Administration standards.
2. The contractor shall be responsible for terminating all signal cable to the appropriate terminals and properly labeling each cable.
3. All traffic signal foundations shall be installed at the final sidewalk or curb grade for closed sections.
4. The contractor shall be responsible for delivering the video interface equipment to the Montgomery County Signal Shop. County forces will complete the retrofit of all signal equipment.
5. 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.
6. The contractor shall maintain the continuous operation of all interconnect, vehicular, pedestrian detectors, and lighting devices. If any device is damaged by the contractor, it shall be repaired within 72 hours by the contractor at no cost to the Administration after notification by the Engineer.
7. The contractor shall contact Mr. Michael Kinney, Montgomery County DPW&T, at 240-777-8760 at least two weeks prior to the necessary removal of the existing red light camera and laser detector. The contractor shall be responsible for removing the camera pole base and any impacted conduit or handholes related to the red light camera.
8. APS will function as follows:
   TO CROSS GEORGIA AVENUE:
   a. When pedestrian locates and presses pushbutton for extended time, the audible message will be "Wait to cross Georgia Avenue at Norbeck Road."
   b. When Walk phase begins, the message will be a rapid tick which will last for the duration of the Walk phase.
   TO CROSS NORBECK ROAD:
   a. When pedestrian locates and presses pushbutton for extended time, the audible message will be "Wait to cross Norbeck Road at Georgia Avenue."
   b. When Walk phase begins, the message will be a rapid tick which will last for the duration of the Walk phase.
9. Pushbuttons are to be located so that they can be activated by a person in a wheelchair reaching less than 18" from a 60" X 60" level landing area with a cross slope of less than or equal to 2%.
10. The 10' separation between pushbuttons is to be measured from face of pushbutton to face of pushbutton, not center of pole to center of pole.
11. Pushbutton arrows are to be parallel to the crossing for which they are intended.
12. Location of accessible pedestrian signal pushbuttons must meet location requirements of MD MUTCD Sec. 4E.09 and Fig. 4E.2 and the NCHRP publication "Accessible pedestrian signals: Guide to best practice." If not met, the contractor is to stop work on pushbutton locations until a design waiver is obtained, approved by the Director, Office of Traffic & Safety.

CONTACTS

DISTRICT (THREE)

MR. JEFFREY WENTZ
ASSISTANT DISTRICT ENGINEER - TRAFFIC
301-513-7318

MR. KEVIN NOWAK
ASSISTANT DISTRICT ENGINEER - CONSTRUCTION
301-513-7336

MR. WAYNE MOWDY
ASSISTANT DISTRICT ENGINEER - MAINTENANCE
301-513-7304

MR. AUGIE REBISH
UTILITY ENGINEER
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MONTGOMERY COUNTY

MR. KEITH LORD
301-279-1971

MR. KAMAL HAMUD
TRAFFIC ENGINEER - MCTMC
240-777-8761

OFFICE OF TRAFFIC AND SAFETY

MR. RICHARD DAFF SR.
CHIEF, TRAFFIC OPERATIONS
410-787-7630

MR. ROBERT SNYDER
ASSISTANT DIVISION CHIEF, TRAFFIC OPERATIONS
410-787-7630

MR. ED RODENHIZER
TEAM LEADER SIGNAL OPERATIONS
410-787-7650

MR. EUGENE BAILEY
TEAM LEADER SIGN OPERATIONS
410-787-7670

MS. DARLENE EIDE
SUPPLY OFFICER IV (SIGNAL SHOP WAREHOUSE)
410-787-7668

EQUIPMENT LIST

A. EQUIPMENT TO BE FURNISHED BY STATE HIGHWAY ADMINISTRATION

CAT CODE	UNITS	QUANTITY	DESCRIPTION
			NONE

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

CAT CODE	UNITS	QUANTITY	DESCRIPTION
203030	CY	2	TEST PIT EXCAVATION
500000	LF	575	12 INCH WHITE PERMANENT PREFORMED THERMO. PAVEMENT MARKING
500000	LF	100	24 INCH WHITE PERMANENT PREFORMED THERMO. PAVEMENT MARKING
800000	EA	4	16 INCH LED COUNTDOWN PEDESTRIAN SIGNAL HEAD SECTION PEDESTAL POLE MOUNT
800000	EA	1	AUDIBLE TACTILE PEDESTRIAN PUSH BUTTON BASE UNIT
800000	EA	4	AUDIBLE TACTILE PEDESTRIAN PUSH BUTTON STATION
800000	EA	1	INSTALL CONDUIT BEND IN EXISTING FOUNDATION
801004	CY	3	CONCRETE FOR SIGNAL FOUNDATIONS
801605	SF	27	SHEET ALUMINUM SIGNS
802501	LF	130	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
805135	LF	50	3 INCH SCHEDULE 80 PVC CONDUIT - TRENCHED
805140	LF	50	4 INCH SCHEDULE 80 PVC CONDUIT - TRENCHED
811001	EA	1	FURNISH AND INSTALL ELECTRICAL HANDHOLE
818004	EA	3	10 FOOT BREAKAWAY PEDESTAL POLE
837001	EA	1	GROUND ROD - 3/4 INCH DIA. X 10 FOOT LENGTH
860284	EA	57	12 INCH LED VEHICULAR TRAFFIC SIGNAL HEAD SECTION
861105	LF	1240	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)
861107	LF	2525	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)
861108	LF	2075	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)

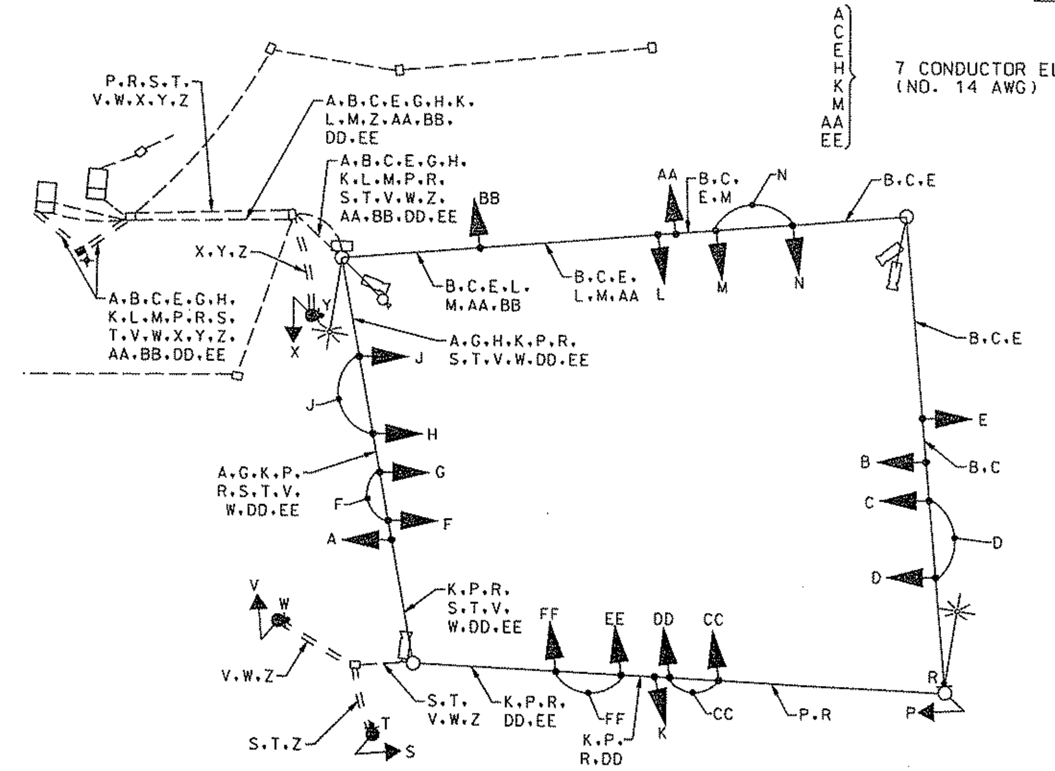
NOTE: THE CONTRACTOR SHALL DELIVER AUDIBLE TACTILE PEDESTRIAN PUSH BUTTON STATION AND BASE UNIT TO THE MONTGOMERY COUNTY SIGNAL SHOP FOR PROGRAMMING PRIOR TO THE INSTALLATION.

PHASE CHART

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	33	34	35	36
PHASE 1 AND 6	←G–	←G–	G	G	←R–	←R–	←R–	R	R	←R–	R	←R–	←R–	R	R	←R–	←R–	R	R	WK	WK	DW	DW
1 AND 6 CHANGE TO 2 AND 6, OR 2 AND 5																							
PHASE 2 AND 6	←R–	←R–	G	G	←R–	←R–	←R–	G	G	←R–	R	←R–	←R–	R	R	←R–	←R–	R	R	WK	WK	DW	DW
PED CLEARANCE	←R–	←R–	G	G	←R–	←R–	←R–	G	G	←R–	R	←R–	←R–	R	R	←R–	←R–	R	R	FL/DW	FL/DW	DW	DW
2 AND 6 CHANGE	←R–	←R–	Y	Y	←R–	←R–	←R–	G	G	←R–	R	←R–	←R–	R	R	←R–	←R–	R	R	DW	DW	DW	DW
PHASE 2 AND 5	←R–	←R–	R	R	←G–	←G–	←G–	G	G	←R–	R	←R–	←R–	R	R	←R–	←R–	R	R	DW	DW	DW	DW
2 AND 5 CHANGE	←R–	←R–	R	R	←Y–	←Y–	←Y–	Y	Y	←R–	R	←R–	←R–	R	R	←R–	←R–	R	R	DW	DW	DW	DW
PHASE 3 AND 8	←R–	←R–	R	R	←R–	←R–	←R–	R	R	←R–	R	←R–	←R–	R	R	←G–	←G–	G	G	DW	DW	DW	DW
3 AND 8 CHANGE TO 4 AND 8, 4 AND 7, 4 ALT AND 8, OR 4 ALT AND 7																							
PHASE 4 AND 8	←R–	←R–	R	R	←R–	←R–	←R–	R	R	←R–	G	←R–	←R–	G	G	←R–	←R–	G	G	DW	DW	DW	DW
4 AND 8 CHANGE	←R–	←R–	R	R	←R–	←R–	←R–	R	R	←R–	G	←R–	←R–	G	G	←R–	←R–	Y	Y	DW	DW	DW	DW
PHASE 4 AND 7	←R–	←R–	R	R	←R–	←R–	←R–	R	R	←G–	G	←G–	←G–	G	G	←R–	←R–	R	R	DW	DW	DW	DW
4 AND 7 CHANGE	←R–	←R–	R	R	←R–	←R–	←R–	R	R	←Y–	Y	←Y–	←Y–	Y	Y	←R–	←R–	R	R	DW	DW	DW	DW
PHASE 4 ALT AND 8	←R–	←R–	R	R	←R–	←R–	←R–	R	R	←R–	G	←R–	←R–	G	G	←R–	←R–	G	G	DW	DW	WK	WK
4 ALT AND 8 CHANGE	←R–	←R–	R	R	←R–	←R–	←R–	R	R	←R–	G	←R–	←R–	G	G	←R–	←R–	Y	Y	DW	DW	WK	WK
PHASE 4 ALT AND 7	←R–	←R–	R	R	←R–	←R–	←R–	R	R	←G–	G	←G–	←G–	G	G	←R–	←R–	R	R	DW	DW	WK	WK
PED CLEARANCE	←R–	←R–	R	R	←R–	←R–	←R–	R	R	←G–	G	←G–	←G–	G	G	←R–	←R–	R	R	DW	DW	FL/DW	FL/DW
4 ALT AND 7 CHANGE	←R–	←R–	R	R	←R–	←R–	←R–	R	R	←Y–	Y	←Y–	←Y–	Y	Y	←R–	←R–	R	R	DW	DW	DW	DW
FLASHING OPERATION	FL/R	FL/R	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	DARK	DARK	DARK	DARK

WIRING DIAGRAM

FOR DETAILS ON INTERCONNECT, REFER TO INTERCONNECT PLANS (pSG OF C009 THRU C013).



KEY

A, C, E, H, K, M, AA, EE — 7 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)

B, D, F, G, J, L, N, P, S, V, X, BB, CC, DD, FF — 5 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)

R, T, W, Y — 2 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)

Z — 1 CONDUCTOR (NO. 6 AWG) STRANDED COPPER GROUND WIRE

✦ GROUND ROD

SEGMENT D
APPROVED FOR
CONSTRUCTION

INTERCOUNTY CONSTRUCTORS
TWO TAFT COURT * ROCKVILLE, MARYLAND 20850 * 301-354-8600

SHA
STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION
MD 97 (GEORGIA AVENUE) AT
MD 28 (NORBECK ROAD)
NORBECK, MARYLAND

Released For Construction
APR 17 2009
Intercounty Constructors
MD ICC Contract "A"

REVISIONS

D SDSRW-FFD0-40F

GENERAL INFORMATION SHEET

SCALE NOT TO SCALE DATE OCT. 2007 CONTRACT NO. AT3765960

DESIGNED BY A. GRIFFIN COUNTY MONTGOMERY
DRAWN BY A. GRIFFIN LOGMILE 15009708.82
CHECKED BY K. BINIKER T.I.M.S. NO. J367X
F.A.P. NO. AC-NH-ICC-1(1)N TOD NO.

TS NO. 190E DRAWING pSG OF N005 SHEET NO. OF

PLOTTED: WEDNESDAY, NOVEMBER 19, 2008 AT 06:06 PM
FILE: C:\DOCUMENTS AND SETTINGS\C0038660\DESKTOP\SIGNALS\PSG-N005 ICC-A.DGN

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