I. GENERAL

This project involves the installation of a temporary traffic signal for Stage 3 MOT at the intersection of MD 144 (Frederick Road) and I-695 SB Ramps in Baltimore county. The temporary traffic shall utilize span wire attached to temporary wood poles.

II. INTERSECTION OPERATION

1. The existing base mounted controller cabinet will be utilized at this location. This intersection will continue to operate in a fully actuated mode using 5 NEMA phases. Eastbound and Westbound MD 144 (Frederick Road) operates concurrently, while the side street movement operates in a seperate phase.

NOTES

1. For final pavement markings, refer to MOT and /or pavement marking plans, as applicable; other than those detailed on the plan. All pavement markings shall be installed in accordance with Administartion standards.

2. The contractor shall be responsible for terminating all signal cable to the appropriate terminals and properly labeling each cable.

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.

5. The contractor shall maintain the continuous operation of all vehicular 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.

6. The contractor shall contact the SHA Signal Shop at (410)-787-7650 at least 72 hours prior to starting construction for this phase.

APS NOTES

1. The APS Push Buttons shall be delivered to SHA Signal Shop at least two (2) weeks prior to beginning work, so that the programming may be checked.

2. APS will function as follows:
To cross Frederick Road
a. When pedestrian locates and presses pushbutton for an extended time, the message will be "Wait to cross Frederick Road at Ramps, Wait." at first.
b. When WALK phase begins, the message will be a rapid tick which will last for the duration of the WALK phase.

3. 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 two percent (2%).

4. The 10' seperation between pushbuttons is to be measured from face of pushbutton to face of pushbutton, not from center of pole to center of pole.

5. Pushbutton arrows are to be parallel to the crossing for which they are intended.

6. Location of accessible pedestrian signal pushbuttons must meet location requirements of 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 and approved by the Director, Office of Traffic and Safety.

EQUIPMENT LIST

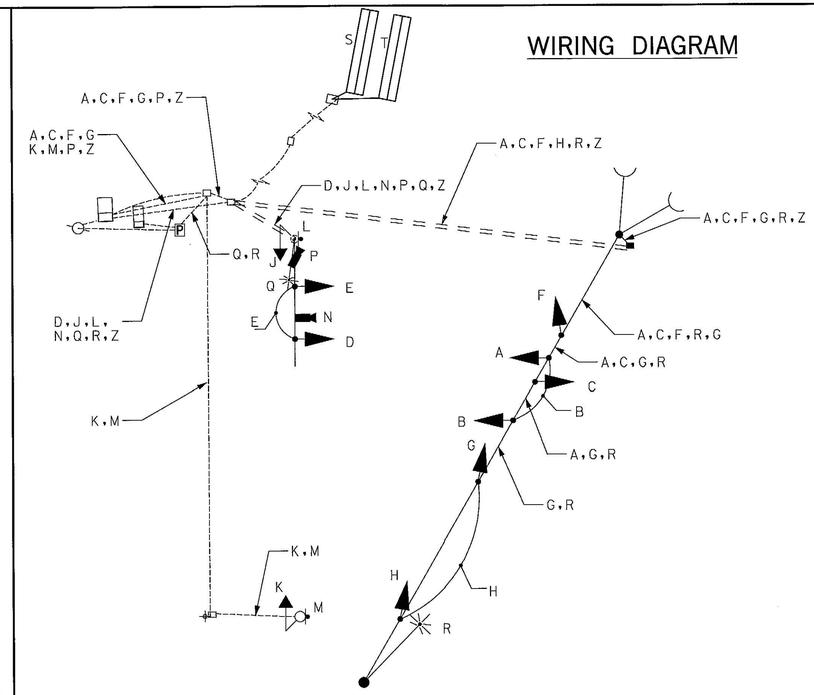
A. EQUIPMENT TO BE FURNISHED BY STATE HIGHWAY ADIMISTRATION

ITEM NO./ CAT CODE	QUANTITY	UNIT	DESCRIPTION
973023	22	SF	SHEET ALUMINUM SIGNS CONSISTING OF:
	1	EA	R3-1 (30"X30") SPAN WIRE MOUNT
	1	EA	R3-2 (30"X30") SPAN WIRE MOUNT
	1	EA	R3-5(R) (30"X36") SPAN WIRE MOUNT
	2	EA	R10-3(1) (9"X15") POLE MOUNT SIGN TO READ "PUSH BUTTON TO CROSS FREDERICK"

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

ITEM NO./ CAT CODE	QUANTITY	UNITS	DESCRIPTION
114235	125	LF	12 IN WHITE REMOVABLE PAVEMENT LINE MARKINGS
114245	75	LF	24 IN WHITE REMOVABLE PAVEMENT LINE MARKINGS
203030	2	CY	TEST PIT EXCAVATION
800000	1	LS	REMOVE AND DISPOSE EXISTING SIGNAL EQUIPMENT
800000	2	EA	16 INCH LED COUNTDOWN PEDESTRIAN SIGNAL HEAD SECTION
800000	1	EA	2-WIRE CENTRAL CONTROL UNIT
800000	2	EA	AUDIBLE TACTILE PEDESTRIAN PUSH BUTTON STATION
800000	1	EA	40 FT CLASS II WOOD POLE
800000	2	EA	BACK GUY ANCHOR ASSEMBLY
801004	7	CY	CONCRETE FOR SIGNAL FOUNDATION
805050	1	EA	3 IN WEATHER HEAD
805135	10	LF	3 IN PVC SCHEDULE 80 ELECTRICAL CONDUIT - TRENCHED
805140	70	LF	4 IN PVC SCHEDULE 80 ELECTRICAL CONDUIT - TRENCHED
805155	100	LF	4 INCH SCHEDULE 80 RIGID PVC CONDUIT- SLOTTED
811001	2	EA	FURNISH AND INSTALL ELECTRICAL HANDHOLE
813015	22	SF	INSTALL OVERHEAD SIGN
816001	2	EA	IP-BASED VIDEO DETECTION CAMERA AND CABLES
818004	1	EA	10 FOOT BREAKAWAY PEDESTAL POLE
818036	1	EA	STEEL POLE WITH SINGLE 50 FOOT MAST ARM
831010	1	EA	250 WATT HPS LAMP AND LUMINAIRE
802501	275	LF	NO. 6 AWG. BASE STRANDED COPPER GROUND WIRE
833060	40	LF	3 IN PVC SCHEDULE 80 RISERS
837001	1	EA	GROUND ROD - 3/4 INCH DIAMETER X 10 FT. LENGTH
860284	28	EA	12 IN. LED SIGNAL HEAD SECTION.
861105	220	LF	ELECTRICAL CABLE - 2 CONDUCTOR NO. 14 AWG.
861107	500	LF	ELECTRICAL CABLE - 5 CONDUCTOR NO. 14 AWG.
861108	700	LF	ELECTRICAL CABLE - 7 CONDUCTOR NO. 14 AWG.
861116	100	LF	ELECTRICAL CABLE - 2 CONDUCTOR NO. 12 AWG.
862101	450	LF	LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO. 14 AWG)
862102	200	LF	SAW CUT FOR SIGNAL (LOOP DETECTOR)
866104	1	EA	20 FOOT LIGHTING ARM ON SIGNAL STRUCTURE
867103	1	EA	30 FT. STRAIN POLE
869101	160	LF	1/4 IN TETHER WIRE
869102	160	LF	3/8 IN SPAN WIRE

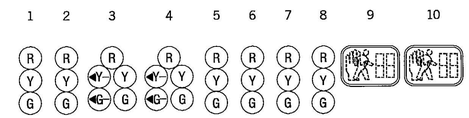
WIRING DIAGRAM



KEY

A, C, D, G	7 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
B, E, F, H, J, K	5 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
L, M	2 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
N, P	3 CONDUCTOR CABLE FOR VIDEO DETECTION
Q, R	2 CONDUCTOR ELECTRICAL CABLE (NO. 12 AWG) TRAY CABLE
S, T	LOOP WIRE ENCASED IN FLEXIBLE TUBING
Z	1 CONDUCTOR (NO. 6 AWG) STRANDED COPPER GROUND WIRE
⏚	GROUND ROD

PHASE CHART



PHASE 2 AND 5	R	R	◄G/G	◄G/G	G	R	R	R	DW	DW
5 CHANGE	R	R	◄Y/G	◄Y/G	G	R	R	R	DW	DW
PHASE 2 AND 6	G	G	G	G	G	R	R	R	DW	DW
2 AND 6 CHANGE	Y	Y	Y	Y	Y	R	R	R	DW	DW
PHASE 4	R	R	R	R	R	G	G	G	DW	DW
4 CHANGE	R	R	R	R	R	Y	Y	Y	DW	DW
PHASE 4 ALT	R	R	R	R	R	G	G	G	WK	WK
PED CLEARANCE	R	R	R	R	R	G	G	G	FL/DW	FL/DW
4 ALT CHANGE	R	R	R	R	R	Y	Y	Y	DW	DW
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	DARK	DARK

CONTACTS

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MOT STAGE 3

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

MD 144 (FREDERICK ROAD) AT I-695 SB RAMPS
INTERCHANGE RECONSTRUCTION

GENERAL INFORMATION SHEET

SCALE NTS DATE SEPTEMBER 2010 CONTRACT NO. BA7275380

DESIGNED BY J. PALADUGU
DRAWN BY J. PALADUGU
CHECKED BY K. RINIKER CJW
F.A.P. NO. SEE TITLE SHEET
COUNTY BALTIMORE
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T.I.M.S. NO.
TOD NO.

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TS NO. 4381A DRAWING NO. pSG OF N003 SHEET NO. 189 OF 235

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BY: jpaladugu