

**PROJECT DESCRIPTION**

**I. GENERAL**

THIS PROJECT INVOLVES THE MODIFICATION OF THE EXISTING TRAFFIC CONTROL SIGNAL AT THE INTERSECTION OF MD 28 (NORBECK ROAD) AND BALTIMORE ROAD IN MONTGOMERY COUNTY. EXISTING LOOP DETECTORS ON THE MAIN LINE AND SIDE STREETS ARE TO BE REPLACED WITH VIDEO DETECTION EQUIPMENT AND RELATED ZONES. ANY EXISTING INCANDESCENT SIGNAL AND/OR PEDESTRIAN SIGNAL HEADS WILL BE UPGRADED TO LED SIGNAL HEADS. THE EXISTING SIGNAL HEADS WILL BE DISCONNECTED AND THE PROPOSED SIGNALS WILL BE CONNECTED USING THE EXISTING SIGNAL HEAD WIRING. EXISTING PEDESTRIAN EQUIPMENT WILL BE REPLACED WITH AN ACCESSIBLE PEDESTRIAN PUSHBUTTON SYSTEM (APS) AND ANY ADDITIONAL PEDESTRIAN SIGNAGE. MD 28 IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

**II. INTERSECTION OPERATION**

THE INTERSECTION CURRENTLY OPERATES IN A SIX PHASE SEMI-ACTUATED MODE WITH EXCLUSIVE/PERMISSIVE LEFT TURN PHASES FOR THE EASTBOUND AND WESTBOUND APPROACHES OF MD 28. AN ALTERNATE PEDESTRIAN PHASE EXISTS ACROSS ALL APPROACHES.

**III. SPECIAL NOTES:**

**1. APS WILL FUNCTION AS FOLLOWS:**

- TO CROSS BALTIMORE ROAD
    - A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL ANNOUNCE THE FOLLOWING MESSAGE: "WAIT TO CROSS BALTIMORE AT NORBECK WAIT."
    - B. WHEN WALK PHASE BEGINS, THE UNIT WILL ANNOUNCE THE FOLLOWING MESSAGE: "CROSS BALTIMORE ROAD" WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.
  - TO CROSS NORBECK ROAD
    - A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL ANNOUNCE THE FOLLOWING MESSAGE: "WAIT TO CROSS NORBECK AT BALTIMORE WAIT."
    - B. WHEN WALK PHASE BEGINS, THE UNIT WILL ANNOUNCE THE FOLLOWING MESSAGE: "CROSS NORBECK ROAD" WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.
2. THE CONTRACTOR SHALL PURCHASE AND DELIVER THE 2-WIRE CENTRAL CONTROL UNIT FOR THE CONTROLLER TO SHA SIGNAL SHOP, AT 7491 CONNELLY ROAD, HANOVER, MD 21076. MR. EDWARD RODENHIZER AT 410-787-7652 SHALL BE CONTACTED AT LEAST 3 DAYS PRIOR TO THE DELIVERY.

**PROJECT CONTACTS**

**CONTACT PERSONS FOR SHA DISTRICT 3:**

MS. ANYESHA MOOKHERJEE  
ASSISTANT DISTRICT ENGINEER-TRAFFIC  
PHONE: 301-513-7498

MR. TOM FOUNTAIN  
ASSISTANT DISTRICT ENGINEER-MAINTENANCE  
PHONE: 301-513-7304

MR. VICTOR GRAFTON  
UTILITY ENGINEER  
PHONE: 301-513-7350

**CONTACT PERSONS FOR SHA OFFICE OF TRAFFIC AND SAFETY:**

MR. AVIJIT MAJI  
CHIEF, TRAFFIC OPERATIONS  
410-787-7630

MR. ED RODENHIZER  
CHIEF, SIGNAL OPERATIONS  
410-787-7650

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

**EQUIPMENT LIST**

**A. EQUIPMENT TO BE SUPPLIED BY THE SHA.**

CATEGORY CODE	QTY	UNITS	DESCRIPTION
816015	1	EA	VIDEO DETECTION INTERFACE EQUIPMENT: 1-8 CAMERAS
973023	52	SF	SHEET ALUMINUM SIGNS
			4 EA W11-1(3) (36"X36")
			2 EA W16-7p(R) (24"X12")
			2 EA W16-7p(L) (24"X12")
			8 EA R10-3(1) (9"X15")

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

CATEGORY CODE	QTY	UNITS	DESCRIPTION
120500	1	EA	MAINTENANCE OF TRAFFIC PER ASSIGNMENT
585621	1210	LF	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES
585625	110	LF	24 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES
800000	13	EA	LED SIGNAL HEAD MODULES (ANY SIZE)
800000	1	EA	2 WIRE CENTRAL CONTROL UNIT
800000	8	EA	AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON AND SIGNS
800000	6	EA	VIDEO DETECTION CAMERA AND CABLE
800000	1	EA	REMOVE AND DISPOSE OF EQUIPMENT (PER ASSIGNMENT)
801004	10	CY	CONCRETE FOR SIGNAL FOUNDATION
801106	28	LF	WOOD SIGN SUPPORTS UP TO 4" X 6"
801607	52	SF	INSTALL SHEET ALUMINUM SIGN
801706	32	SF	REMOVE SIGNS FROM EXISTING OVERHEAD STRUCTURE
802501	165	LF	NO. 6 AWG GROUNDWIRE
805125	90	LF	2" SCHEDULE 80 RIGID PVC CONDUIT- TRENCHED
805135	75	LF	3" SCHEDULE 80 RIGID PVC CONDUIT- TRENCHED
811001	2	EA	FURNISH AND INSTALL ELECTRICAL HANDHOLE
818004	5	EA	10 FOOT BREAKAWAY PEDESTAL POLE
818010	1	EA	14 FOOT BREAKAWAY PEDESTAL POLE
837001	2	EA	GROUND ROD - 3/4" DIAMETER X 10' LENGTH
860264	8	EA	LED 16" COUNTDOWN PEDESTRIAN SIGNAL HEAD
860284	35	EA	12 INCH LED SIGNAL HEAD SECTION
860292	1	EA	CUT, CLEAN, GALVANIZE AND CAP TRAFFIC SIGNAL STRUCTURE
861105	2,220	LF	ELECTRICAL CABLE -2 CONDUCTOR (NO. 14 AWG )
861107	2,270	LF	ELECTRICAL CABLE -5 CONDUCTOR (NO. 14 AWG )

**C. ALL OTHER MATERIALS TO BE REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE CONTRACTOR.**

**T3 design**  
T3 DESIGN CORP.  
3827 OLD LEE HWY  
SUITE 101-C  
FAIRFAX, VA 22030  
PHONE: 703-359-5861  
www.t3design.us

**SPECIAL NOTES:**

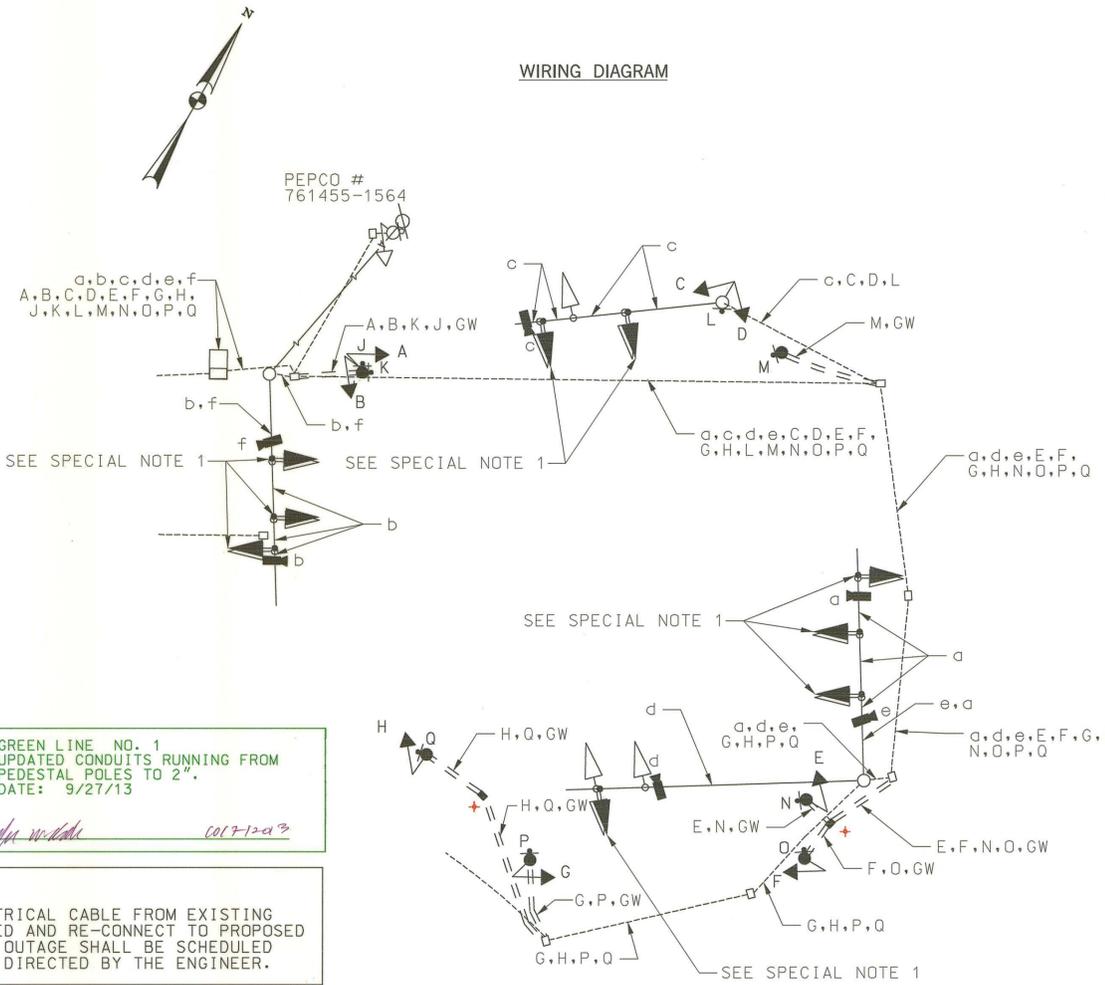
1. DISCONNECT EXISTING ELECTRICAL CABLE FROM EXISTING SIGNAL HEADS TO BE REMOVED AND RE-CONNECT TO PROPOSED SIGNAL HEADS. ANY SIGNAL OUTAGE SHALL BE SCHEDULED DURING NON-PEAK HOURS AS DIRECTED BY THE ENGINEER.

1 GREEN LINE NO. 1 UPDATED CONDUITS RUNNING FROM PEDESTAL POLES TO 2". DATE: 9/27/13

**PHASE CHART**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PHASE 1 AND 5	R	R	R	R	R	R	R	R	R	R	R	R	DW							
1 AND 5 CHANGE TO PHASES 1 AND 6 OR 2 AND 5 OR 2 AND 6																				
PHASE 1 AND 6	G	G	G	R	R	R	R	R	R	R	R	R	DW	DW	WK	WK	DW	DW	DW	DW
1 AND 6 CHANGE	G	G	G	R	R	R	R	R	R	R	R	R	DW	DW	WK	WK	DW	DW	DW	DW
PHASE 2 AND 5	R	R	R	R	R	R	R	R	R	R	R	R	WK	WK	DW	DW	DW	DW	DW	DW
2 AND 5 CHANGE	R	R	R	R	R	R	R	R	R	R	R	R	WK	WK	DW	DW	DW	DW	DW	DW
PHASE 2 AND 6	G	G	G	G	G	R	R	R	R	R	R	R	WK	WK	WK	WK	DW	DW	DW	DW
PED CLEAR / COUNTDOWN	G	G	G	G	G	R	R	R	R	R	R	R	FL/DW	FL/DW	FL/DW	FL/DW	DW	DW	DW	DW
2 AND 6 CHANGE	Y	Y	Y	Y	Y	Y	R	R	R	R	R	R	DW							
PHASE 4 AND 7	R	R	R	R	R	R	R	R	R	R	R	R	DW							
4 & 7 CHANGE	R	R	R	R	R	R	R	R	R	R	R	R	DW							
PHASE 4 AND 8	R	R	R	R	R	R	G	G	G	G	G	G	DW							
4 & 8 CHANGE	R	R	R	R	R	R	Y	Y	Y	Y	Y	Y	DW							
PHASE 4 AND 7 ALT	R	R	R	R	R	R	R	R	R	R	R	R	DW	DW	DW	DW	WK	WK	DW	DW
PHASE 4 AND 7 ALT CHANGE	R	R	R	R	R	R	R	R	R	R	R	R	DW	DW	DW	DW	WK	WK	DW	DW
PHASE 4 AND 8 ALT	R	R	R	R	R	R	G	G	G	G	G	G	DW	DW	DW	DW	WK	WK	WK	WK
PED CLEAR / COUNTDOWN	R	R	R	R	R	R	G	G	G	G	G	G	DW	DW	DW	DW	FL/DW	FL/DW	FL/DW	FL/DW
PHASE 4 AND 8 ALT CHANGE	R	R	R	R	R	R	Y	Y	Y	Y	Y	Y	DW							
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	DARK							

**WIRING DIAGRAM**



**WIRING KEY**

- b, c, f } 250' VIDEO DETECTION CAMERA LEAD-IN CABLE
- d, e } 500' VIDEO DETECTION CAMERA LEAD-IN CABLE
- A, B, C, D, E, F, G, H, J, K, L, M, N, O, P, Q } 5-CONDUCTOR ELECTRICAL CABLE, NO. 14 AWG/THHN
- J, K, L, M, N, O, P, Q } 2-CONDUCTOR ELECTRICAL CABLE, NO. 14 AWG/THHN
- GW } 1 CONDUCTOR (NO. 6 AWG) STRANDED COPPER GROUND WIRE
- + } PROPOSED GROUND ROD

**SHA** STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
OFFICE OF TRAFFIC & SAFETY  
TRAFFIC ENGINEERING DESIGN DIVISION  
MD 28 (NORBECK RD)  
AT BALTIMORE RD  
ROCKVILLE, MARYLAND

**GENERAL INFORMATION SHEET**

SCALE 1"=20' DATE 01-07-12 CONTRACT NO. MD1315277

DESIGNED BY JMS COUNTY MONTGOMERY  
DRAWN BY LEB LOGMILE 150028023.15  
CHECKED BY AJM TMS NO. 1687  
FAP NO. TOD NO.

TS NO. 66G-GI DRAWING SG-04 OF 06 SHEET NO. 4 OF 6