BORDER REV. DATE: June 1, 2004

DRILL HOLES

DRILL HOLES

DRILL HOLES

PROJECT DESCRIPTION

I. GENERAL
THIS PROJECT INVOLVES THE RECONSTRUCTION OF AN EXISTING TRAFFIC CONTROL SIGNAL AT THE INTERSECTION OF MD 355 (HUNGERFORD DRIVE) AND NORTH WASHINGTON STREET/GIANT FOODS DRIVEWAY IN MONTGOMERY COUNTY, MD. THE EXISTING INTERCONNECT CONNECTIONS WITH ALL ADJACENT INTERSECTIONS SHALL BE MAINTAINED (NORTH TO FREDERICK ST. SOUTH TO THE HUNGERFORD PLAZA ENTRANCE, AND WEST TO MARTINS LN) BY PULLING BACK AND REROUTING TO A PROPOSED INTERCONNECT SPLICE CABINET, AND SPLICING THE EXISTING INTERCONNECT CABLES TO NEW 12-PAIR COMMUNICATION CABLES. MD 355 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

II. INTERSECTION OPERATION
1. THE INTERSECTION SHALL CONTINUE TO OPERATE IN A SIX-PHASE, FULL-ACTUATED MODE, WITH THE MD 355 APPROACHES RUNNING CONCURRENTLY. EXCLUSIVE/ PERMISSIVE LEFT TURN MOVEMENTS SHALL CONTINUE TO BE PROVIDED IN BOTH DIRECTIONS OF MD 355. THE NORTH WASHINGTON ST. AND THE GIANT ENT. SHALL OPERATE IN A SPLIT-PHASE. AN ACTUATED PEDESTRIAN PHASE ACROSS THE SOUTH LEG OF MD 355 SHALL REMAIN IN OPERATION. THE EXISTING PEDESTRIAN PHASES ACROSS EAST AND WEST LEGS OF THE INTERSECTION SHALL REMAIN ON RECALL.
2. A NEW FULL-TRAFFIC-ACTUATED, EIGHT-PHASE CONTROLLER WITH L.A.U. AND L.A.U. PANEL, VIDEO DETECTION INTERFACE, 2 WIRE CENTRAL CONTROL UNTI, AND ALL NECESSARY EQUIPMENT HOUSED IN A NEMA SIZE 'S' BASE-MOUNTED CABINET SHALL BE INSTALLED AT THIS INTERSECTION.

III. SPECIAL NOTES

1. APS WILL FUNCTION AS FOLLOWS:
FOR HUNGERFORD DRIVE
A. WHEN THE PEDESTRIAN LOCATES AND PRESSES THE PUSHBUTTON FOR AN EXTENDED TIME, THE APS MESSAGE WILL BE "WAIT TO CROSS HUNGERFORD AT NORTH WASHINGTON, WAIT".
B. WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.
FOR NORTH WASHINGTON STREET
A. WHEN THE PEDESTRIAN LOCATES AND PRESSES THE PUSHBUTTON FOR AN EXTENDED TIME, THE APS MESSAGE WILL BE "WAIT TO CROSS NORTH WASHINGTON AT HUNGERFORD, WAIT".
B. WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.
FOR DRIVEWAY
A. WHEN THE PEDESTRIAN LOCATES AND PRESSES THE PUSHBUTTON FOR AN EXTENDED TIME, THE APS MESSAGE WILL BE "WAIT TO CROSS DRIVEWAY AT HUNGERFORD, WAIT".
B. WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DELIVERING THE SIGNAL CABINET VIDEO INTERFACE EQUIPMENT TO THE MONTGOMERY COUNTY SIGNAL SHOP. THE CONTRACTOR SHALL DELIVER APS PUSHBUTTONS AND CENTRAL CONTROL UNIT TO MR. ROBERT RICKETTS AT MONTGOMERY COUNTY TECHNICAL CENTER AT 1283 SEVEN LOCKS ROAD, ROCKVILLE, MD 20854 AT LEAST 3 WEEKS PRIOR TO BEGINNING WORK. THE CONTRACTOR SHALL HAVE THE APS MESSAGES PROGRAMMED FROM THE FACTORY AND DELIVER THE APS WAVE FILES TO MR. ROBERT RICKETTS.

EQUIPMENT LIST

A. EQUIPMENT TO BE SUPPLIED BY SHA

ITEM CODE	QTY	UNITS	DESCRIPTION	
9104	1	EA	CONTROLLER CABINET, SIZE "S" W/CTRL, VIDEO INT. 1-8 CAM	
9110	1	EA	UPS EQUIPMENT FOR "S" CABINET	
9127	1	EA	LAU PANEL (MONTGOMERY COUNTY ONLY)	
9570	53	SF	SHEET ALUMINUM GROUND MOUNTED SIGN	
			4 EA R4-7(1)	(18"X30")
			2 EA M1-5	(24"X30")
			2 EA M3-3	(12"X24")
			2 EA M6-1R	(15"X21")
			4 EA OMI-3	(18"X18")
			2 EA W11-2	(30"X30")
			1 EA W16-7pL	(24"X12")
			1 EA W16-7pR	(24"X12")
9571	140	SF	SHEET ALUMINUM MAST ARM / POLE MOUNTED SIGN	
			2 EA D3-(2) DUAL FACED	(120"X16")
			2 EA D3-(2) DUAL FACED	(72"X16")
			1 EA M1-5(3)	(108"X24")
			1 EA M1-5(6)	(48"X75")
			6 EA R10-3(1)	(9"X15")
			2 EA R10-11b	(36"X36")
			2 EA R3-5(L)	(30"X36")
			1 EA R3-5(R)	(30"X36")
			1 EA R3-5(1)	(30"X36")
			1 EA R3-6(1)	(30"X30")

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

ITEM CODE	QTY	UNITS	DESCRIPTION
1001	1	EA	MAINTENANCE OF TRAFFIC (PER ASSIGNMENT)
2001	1	CY	CLASS 2 EXCAVATION
2002	8	CY	TEST PIT EXCAVATION
5003	1040	LF	REMOVAL OF EXISTING PERMANENT PAVEMENT LINE MARKINGS
5004	555	LF	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES
5005	200	LF	24 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES
6001	265	LF	STANDARD TYPE A COMBINATION CURB AND GUTTER - 12 INCH GUTTER PAN 8 INCH DEPTH
6002	1150	SF	5 INCH CONCRETE SIDEWALK
6003	105	SF	DETECTABLE WARNING SURFACE FOR CURB RAMPS
8001	48	EA	12 INCH LED SIGNAL HEAD SECTION
8005	2	EA	ADJUST HANDHOLE TO GRADE INCLUDING NEW FRAME AND COLLAR
8008	6	EA	AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION AND SIGNS
8009	6	EA	BREAKAWAY PEDESTAL POLE (ANY SIZE)
8012	1	EA	EMBEDDED METERED SERVICE PEDESTAL
8016	6	EA	LED 16 INCH COUNTDOWN PEDESTRIAN SIGNAL HEAD
8019	2	EA	MAST ARM POLE & 50' MAST ARM ANY 'T' DIMENSION
8024	1	EA	REMOVE AND DISPOSE OF EQUIPMENT (PER ASSIGNMENT)
8025	1	EA	TWIN MAST ARM POLE & 50'/50' MAST ARMS ANY "T" DIMENSION
8028	4	EA	VIDEO DETECTION CAMERA AND CABLE ANY LENGTH
8030	250	LF	1-CONDUCTOR ELECTRICAL CABLE, NO. 2 AWG/THHN
8031	220	LF	12-PAIR COMMUNICATION CABLE, SELF-SUPPORTING, JELLY-FILLED/UNDERGROUND
8033	500	LF	DISCONNECT, PULL-BACK & REROUTE CABLES
8037	610	LF	UP TO 4" SCHEDULE 80 RIGID PVC CONDUIT- SLOTTED
8038	330	LF	UP TO 4" SCHEDULE 80 RIGID PVC CONDUIT- TRENCHED
8039	150	LF	WOOD SIGN SUPPORTS UP TO 4' X 6'
8040	219	SF	INSTALL OVERHEAD OR GROUND MOUNTED SIGN (INCLUDING ALL HARDWARE)
8041	235	SF	REMOVE AND RESET DECORATIVE BRICK SIDEWALK
8042	505	LF	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
8045	40	LF	ELECTRICAL CABLE 1-CONDUCTOR NO. 8 AWG-THHN/THWN
8046	6	EA	FURNISH AND INSTALL ELECTRICAL HANDHOLE
8050	30	LF	3 INCH DIAMETER POLYVINYL CHLORIDE CONDUIT, SCHEDULE 80, RISER
8051	1	EA	CLEAN, CUT, GALVANIZE, AND CAP TRAFFIC SIGNAL STRUCTURE
8053	1445	LF	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)
8055	1590	LF	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)
8056	3330	LF	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)
8062	1	EA	INSTALL CONTROLLER AND CABINET - POLE MOUNT
8063	1	EA	INSTALL CONTROLLER AND CABINET - BASE MOUNT (ANY SIZE)
8075	1	EA	FURNISH & INSTALL ANY SIZE LIGHTING ARM WITH LED COBRA HEAD
8076	90	LF	FURNISH & INSTALL ELECTRICAL CABLE - 3 CONDUCTOR (NO. 12 AWG) TC

C. MONTGOMERY COUNTY FORCES SHALL REMOVE CONTROLLER AND AUXILLARY EQUIPTMENT FROM THE EXISTING CABINET. ALL OTHER MATERIALS TO BE REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

D. EQUIPMENT TO BE SUPPLIED BY MONTGOMERY COUNTY.

ITEM CODE	QTY	UNITS	DESCRIPTION
8000	1	EA	POLE MOUNTED SPLICE CABINET

THE CONTACT PERSONS FOR DISTRICT #3 (MONTGOMERY COUNTY) ARE AS FOLLOWS:

DISTRICT (DISTRICT 3 - MONTGOMERY)

MR. BRIAN YOUNG
DISTRICT ENGINEER
301-513-7311

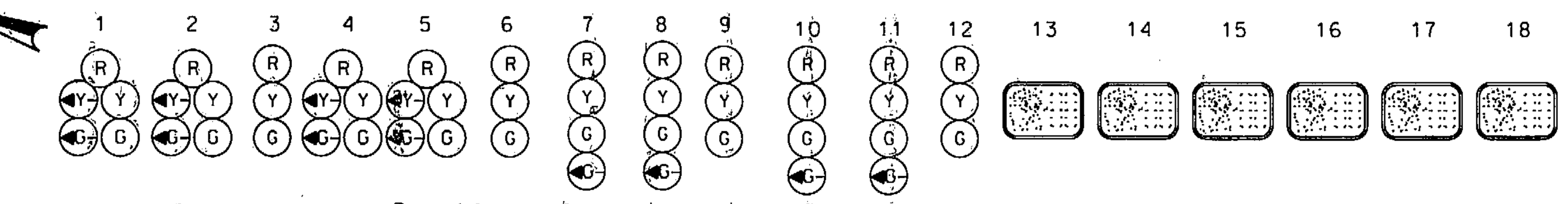
MS. ANYESHA MOOKHERJEE
ASSISTANT DISTRICT ENGINEER - TRAFFIC
301-513-7498

MR. VICTOR GRAFTON
DISTRICT UTILITY ENGINEER
301-513-7350

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

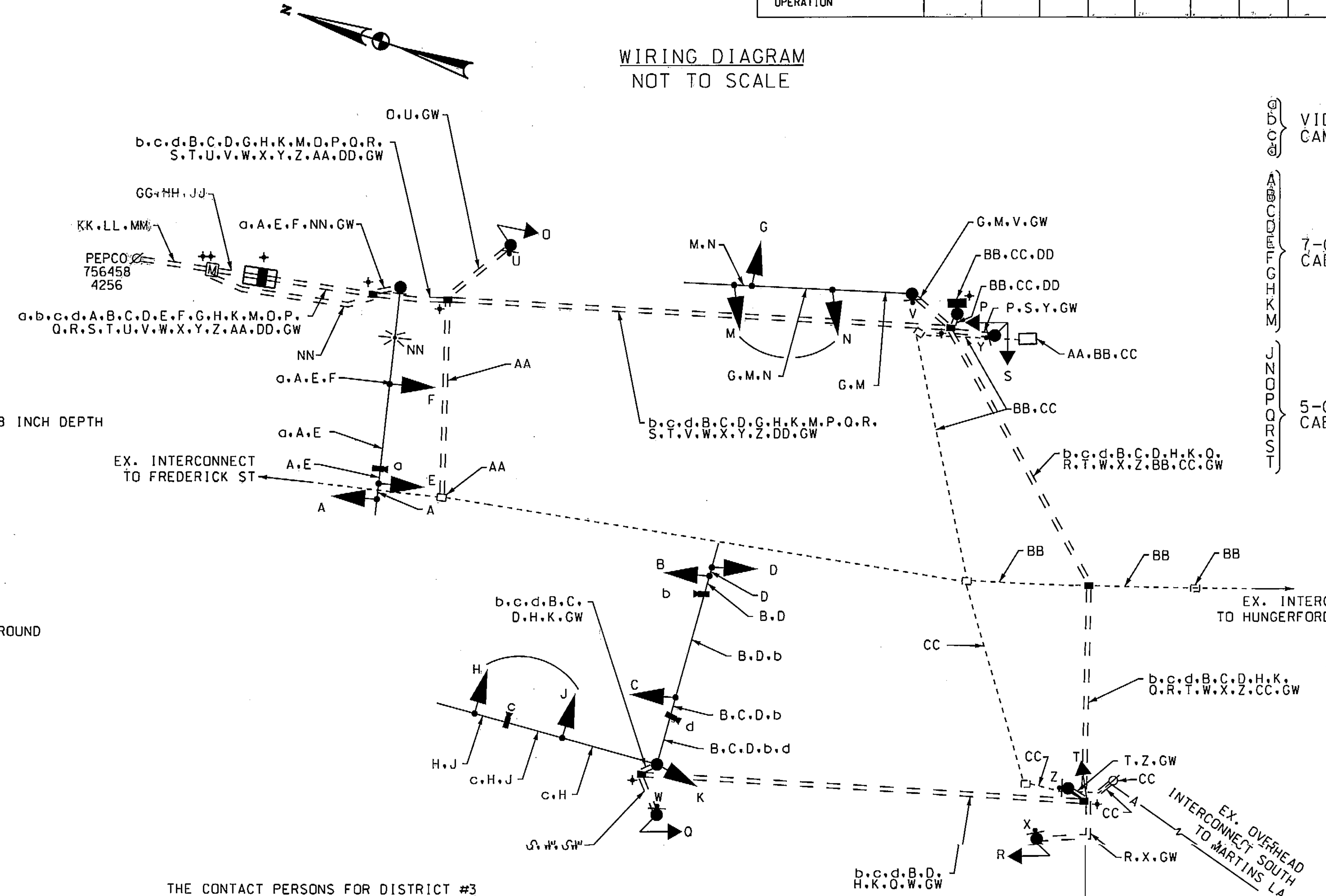
MR. TOM FOUNTAIN
ASSISTANT DISTRICT ENGINEER - MAINTENANCE
301-513-7304

PHASE CHART



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
PHASE 1 & 5	◄G-/R	◄G-/R	R	◄G-/R	◄G-/R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW
CHANGES TO PHASES 1 & 6, 2 & 5 OR 2 & 6																		
PHASE 1 & 6	R	R	R	◄G-/G	◄G-/G	G	R	R	R	R	R	R	WK	WK	DW	DW	DW	DW
1 & 6 CHANGE	R	R	R	◄Y-/G	◄Y-/G	G	R	R	R	R	R	R	WK	WK	DW	DW	DW	DW
PHASE 2 & 5	◄G-/G	◄G-/G	G	R	R	R	R	R	R	R	R	R	DW	DW	WK	WK	DW	DW
2 & 5 CHANGE	◄Y-/G	◄Y-/G	G	R	R	R	R	R	R	R	R	R	DW	DW	WK	WK	DW	DW
PHASE 2 & 6	G	G	G	G	G	G	R	R	R	R	R	R	WK	WK	WK	WK	DW	DW
PED CLEAR	G	G	G	G	G	G	R	R	R	R	R	R	FL/DW	FL/DW	FL/DW	FL/DW	DW	DW
2 & 6 CHANGE	Y	Y	Y	Y	Y	Y	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW
PHASE 3	R	R	R	R	R	R	R	R	R	G / ◄G-	G / ◄G-	G	DW	DW	DW	DW	DW	DW
3 CHANGE	R	R	R	R	R	R	R	R	R	Y	Y	Y	DW	DW	DW	DW	DW	DW
PHASE 3 ALT	R	R	R	R	R	R	R	R	R	G / ◄G-	G / ◄G-	G	DW	DW	DW	DW	WK	WK
PED CLEAR	R	R	R	R	R	R	R	R	R	G / ◄G-	G / ◄G-	G	DW	DW	DW	DW	FL/DW	FL/DW
3 CHANGE ALT	R	R	R	R	R	R	R	R	R	Y	Y	Y	DW	DW	DW	DW	DW	DW
PHASE 4	R	R	R	R	R	R	G / ◄G-	G / ◄G-	G	R	R	R	DW	DW	DW	DW	DW	DW
4 CHANGE	R	R	R	R	R	R	Y	Y	Y	R	R	R	DW	DW	DW	DW	DW	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	DARK	DARK	DARK	DARK	DARK

WIRING DIAGRAM
NOT TO SCALE



WIRING KEY

a, b, c, d	VIDEO DETECTION CAMERA LEAD-IN CABLE	U, V, W, X, Y, Z	2-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
A, B, C, D, E, F, G, H, K, M	7-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)	AA	DISCONNECT, PULL BACK, AND RE-ROUTE EXISTING INTERCONNECT CABLE FROM FREDERICK ST
		BB	DISCONNECT, PULL BACK, AND RE-ROUTE EXISTING INTERCONNECT CABLE FROM HUNGERFORD PLAZA
J, N, O, P, Q, R, S, T	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)	CC	DISCONNECT, PULL BACK, AND RE-ROUTE EXISTING INTERCONNECT CABLE FROM MARTINS LA
		DD	12-PAIR COMMUNICATION CABLE, JELLYFILLED/UNDERGROUND
		GG, HH, JJ	ELECTRICAL CABLE 1-CONDUCTOR NO. 8 AWG-THHN/THWN
		KK, LL, MM	POWER SOURCE 1-CONDUCTOR ELECTRICAL CABLE, NO. 2 AWG/THHN
		NN	ELECTRICAL CABLE - 3-CONDUCTOR (NO. 12 AWG) TYPE T/C
		GW	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
		+	PROPOSED GROUND ROD

TOD NO: XY224-30
SHA NO: MO145B5D
MD 355 @ N. Washington Street

THE CONTACT PERSONS FOR DISTRICT #3 (MONTGOMERY COUNTY) ARE AS FOLLOWS: (cont.)

OFFICE OF TRAFFIC AND SAFETY

MS. CORREN JOHNSON
CHIEF, TRAFFIC OPERATIONS
410-787-7630

VACANT
ASSISTANT DIVISION CHIEF, TRAFFIC OPERATIONS
410-787-7630

MR. EDWARD RODENHIZER
CHIEF, SIGNAL OPERATIONS SECTION
410-787-7650

MR. EUGENE BAILEY
CHIEF, SIGN OPERATIONS SECTION
410-787-7670

MR. MICHAEL STOCKER
SUPPLY OFFICER IV (SIGNAL SHOP WAREHOUSE)
410-787-7696

MONTGOMERY COUNTY DOT

MR. KAMAL HAMUD
TRAFFIC ENGINEER
240-777-8761

MR. ROBERT RICKETTS
SIGNAL SHOP
301-279-1291

UTILITY CONTACT

PEPCO
PAUL WILSON
(301)548-4332
201 W GUDE DRIVE
ROCKVILLE, MD 20850-0850

T3 DESIGN, P.C.
3927 OLD LEE HWY
SUITE 101-C
FAIRFAX, VA 22030
PHONE: 703-359-5861
www.t3design.us

BY: $USERNAME$

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

HUNGERFORD DRIVE (MD 355) AND N. WASHINGTON STREET/GIANT FOODS DR
ROCKVILLE, MD

GENERAL INFORMATION SHEET

SCALE NONE	DATE 06/12/2013	CONTRACT NO. XY2245185	
DESIGNED BY J. SMITH		COUNTY MONTGOMERY	
DRAWN BY J. SMITH		LOGMILE 15035510.00	
CHECKED BY A. MORRIS		TIMS NO. J380	
F.A.P. NO.		TOD NO.	
TS NO. 376 G	DRAWING SG-03 OF 03	SHEET NO. 3 OF 3	

PLOTTED: $DATETIME$
FILE: $FILE$