BORDER REV DATE: June 1, 2004

DRILL HOLES

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BY: waeschel

I. GENERAL

PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE RECONSTRUCTION OF THE EXISTING TRAFFIC CONTROL SIGNAL AT THE INTERSECTION OF MD 355 (FREDERICK RD) AND LAKEFOREST BLVD AND PERRY PKWY IN MONTGOMERY COUNTY. THE RECONSTRUCTION WILL INCLUDE UPGRADING THE EXISTING PEDESTRIAN SIGNALS TO ACCESSIBLE AND COUNTDOWN PEDESTRIAN SIGNALS (APS/CPS) ON THE SOUTH, EAST, AND WEST LEGS OF THE INTERSECTION. MD 355 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

II. INTERSECTION OPERATION

1. THE INTERSECTION OPERATES IN A NEMA SIX (6) PHASE, FULLY-ACTUATED MODE. NORTHBOUND AND SOUTHBOUND MD 355 OPERATE CONCURRENTLY WITH EXCLUSIVE LEFT TURN PHASES.EASTBOUND AND WESTBOUND LAKE FOREST/PERRY PARKWAY OPERATE SPLIT PHASE WITH AN ALTERNATE PEDESTRIAN PHASE ACROSS THE SOUTH LEG.

2. AN PROPOSED NEMA FULL-TRAFFIC-ACTUATED, EIGHT (8) PHASE CONTROLLER WITH BATTERY BACKUP IN A NEMA SIZE "S" BASE MOUNTED CABINET SHALL BE INSTALLED AT THIS LOCATION. ALL CABLES TO BE INSTALLED BY MONTGOMERY COUNTY.

III. SPECIAL NOTES

APS WILL FUNCTION AS FOLLOWS:

TO CROSS MD 355 (FREDERICK RD) SW CORNER
1. WHEN A PEDESTRIAN LOCATES AND PRESSES THE PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL ANNOUNCE THE FOLLOWING MESSAGE: "WAIT TO CROSS FREDERICK AT PERRY, WAIT."
2. WHEN THE WALK PHASE BEGINS, THE PUSHBUTTON UNIT WILL PROVIDE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

TO CROSS MD 355 (FREDERICK RD) SE CORNER
1. WHEN A PEDESTRIAN LOCATES AND PRESSES THE PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL ANNOUNCE THE FOLLOWING MESSAGE: "WAIT TO CROSS FREDERICK AT LAKEFOREST, WAIT."
2. WHEN THE WALK PHASE BEGINS, THE PUSHBUTTON UNIT WILL PROVIDE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

TO CROSS LAKEFOREST BLVD
1. WHEN A PEDESTRIAN LOCATES AND PRESSES THE PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL ANNOUNCE THE FOLLOWING MESSAGE: "WAIT TO CROSS LAKEFOREST AT FREDERICK, WAIT."
2. WHEN THE WALK PHASE BEGINS, THE PUSHBUTTON UNIT WILL PROVIDE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

TO CROSS PERRY PKWY

1. WHEN A PEDESTRIAN LOCATES AND PRESSES THE PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL ANNOUNCE THE FOLLOWING MESSAGE: "WAIT TO CROSS PERRY AT FREDERICK, WAIT."
2. WHEN THE WALK PHASE BEGINS, THE PUSHBUTTON UNIT WILL PROVIDE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

EQUIPMENT LIST

A. EQUIPMENT TO BE FURNISHED BY STATE HIGHWAY ADIMISTRATION

ITEM NO.	QUANTITY	DESCRIPTION
900000	19 SF	SHEET ALUMINUM GROUND MOUNTED SIGN
		2 EA R4-7 - (24"X30")
		4 EA OM 1-3 (18"X18")
900000	138 SF	SHEET ALUMINUM MAST ARM/POLE MOUNTED SIGN
		2 EA R10-3(1) - 'PUSH BUTTON TO CROSS LAKEFOREST BLVD <-' - (9"X15")
		2 EA R10-3(1) - 'PUSH BUTTON TO CROSS PERRY PKWY ->' = (9"X15")
		1 EA R10-3(1) - 'PUSH BUTTON TO CROSS FREDERICK RD <-' - (9"X15")
		1 EA R10-3(1) - 'PUSH BUTTON TO CROSS FREDERICK RD ->' - (9"X15")
		1 EA D-3(1) - '<- PERRY PKWY / LAKEFOREST BLVD ->' - (VAR. X 32")
		1 EA D-3(1) - '<- LAKEFOREST BLVD / PERRY PKWY ->' - (VAR. X 32")
		2 EA D-3(1) - 'FREDERICK RD' - (VAR. X 16")
		1 EA M1-5(6) - SHIELD ASSEMBLY - NORTH MD 355 - (48"X72")
		1 EA M1-5(6) - SHIELD ASSEMBLY - SOUTH MD 355 - (48"X72")
		1 EA R3-5L - (30"X36")
		2 EA R3-6 - (30"X36")
900000	1 EA	CONTROLLER CABINET, SIZE "S" W/CTRL, VIDEO INT. 1-8 CAM
900000	1 EA	UPS EQUIPMENT FOR 'S' CABINET

A-1. EQUIPMENT TO BE INSTALLED BY MONTGOMERY COUNTY

ITEM NO.	QUANTITY	DESCRIPTION
900000	1 EA	RELOCATE MONTGOMERY COUNTY CCTV CAMERA, CONTROLLER & POLE MOUNTED CABINET

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

ITEM NO.	QUANTITY	DESCRIPTION
100000	1 EA	MAINTENANCE OF TRAFFIC (PER INTERSECTION)
203030	9 CY	TEST PIT EXCAVATION
504150	4 TON	HOT MIX ASPHALT SUPERPAVE 9.5MM FOR SURFACE, PG76-22, LEVEL-3
520109	35 SY	3 INCH GRADED AGGREGATE BASE COURSE
585617	145 LF	5 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES
585621	825 LF	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES
585625	225 LF	24 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES
585700	810 LF	REMOVAL OF EXISTING PAVEMENT MARKING LINES. ANY WIDTH
600000	620 LF	TYPE A COMBINATION CURB AND GUTTER ANY HEIGHT OR DEPTH
600000	225 LF	TYPE A CURB ANY HEIGHT OR DEPTH
655105	3275 SF	5 INCH CONCRETE SIDEWALK
655120	235 SF	DETECTABLE WARNING SURFACE FOR CURB RAMPS
800000	1 EA	2-WIRE APS CENTRAL CONTROL UNIT
800000	6 EA	AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION AND SIGNS
800000	6 EA	16 INCH LED COUNTDOWN PEDESTRIAN SIGNAL HEAD
800000	4 EA	IP-BASED VIDEO DETECTION CAMERA & ANY LENGTH LEAD-IN CABLE
800000	4 EA	5 FOOT OR 10 FOOT PEDESTAL POLE WITH BREAKAWAY COUPLINGS, FOUNDATION & GROUND ROD
800000	2 EA	MAST ARM POLE & 38' MAST ARM ANY 'T' DIMENSION, FOUNDATION & GROUND ROD
800000	2 EA	MAST ARM POLE & 70' MAST ARM ANY 'T' DIMENSION, FOUNDATION & GROUND ROD
800000	1 EA	100 AMP EMBEDDED METERED SERVICE PEDESTAL, CONCRETE COLLAR & GROUND RODS
800000	1 EA	REMOVE & DISPOSE OF EXISTING SIGNAL EQUIPMENT (PER SIGNALIZED INTERSECTION LOCATION)
800000	1 EA	INSTALL CONTROLLER AND CABINET BASE MOUNT (ANY SIZE) INCLUDING F&I FOUNDATION & GROUND ROD
800000	85 LF	1 - CONDUCTOR ELECTRICAL CABLE, NO. 2/0 AWG, TYPE THHN
800000	135 LF	12-PAIR COMMUNICATION CABLE (SELF- SUPPORTING OR JELLY-FILLED/UNDERGROUND)
800000	365 LF	UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT - BORED OR SLOTTED
800000	430 LF	UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED
800000	70 LF	WOOD SIGN SUPPORTS UP TO 4 INCH X 6 INCH
800000	197 SF	INSTALL OVERHEAD OR GROUND MOUNTED SIGN (INCLUDING ALL HARDWARE)
800000	1 EA	THIRD PARTY CONCRETE TESTING (PER INTERSECTION)
802501	775 LF	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
811001	8 EA	FURNISH AND INSTALL ELECTRICAL HANDHOLE
860284	52 EA	12 INCH LED VEHICULAR TRAFFIC SIGNAL HEAD SECTION
861105	1440 LF	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)
861107	1700 LF	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)
861108	2515 LF	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)

CONTACTS

DISTRICT (DISTRICT 3 - MONTGOMERY)

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DISTRICT ENGINEER
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MONTGOMERY COUNTY DOT

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410-787-7630

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ASSISTANT DIVISION CHIEF, TRAFFIC OPERATIONS
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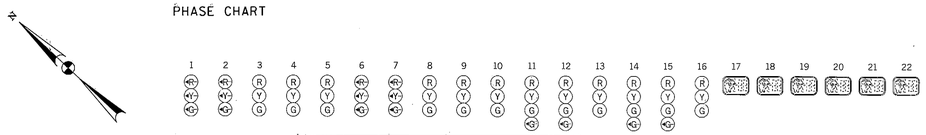
CHIEF, SIGNAL OPERATIONS SECTION
410-787-7650

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

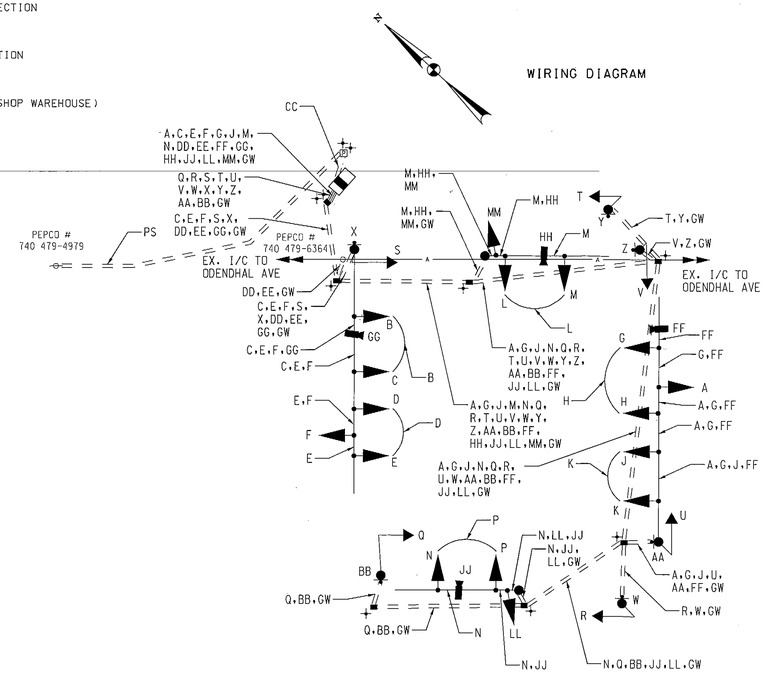
MR. MICHAEL STOCKER
SUPPLY OFFICER IV (SIGNAL SHOP WAREHOUSE)
410-787-7696

PHASE CHART



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
PHASE 1 AND 5	◄G-	◄G-	R	R	R	◄G-	◄G-	R	R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW
PHASE 1 AND 5 CHANGE TO 1 AND 6, 2 AND 5, OR 2 AND 6																						
PHASE 1 AND 6	◄G-	◄G-	G	G	G	◄R-	◄R-	R	R	R	R	R	R	R	R	R	WK	WK	DW	DW	DW	DW
PED CLEARANCE PHASE	◄G-	◄G-	G	G	G	◄R-	◄R-	R	R	R	R	R	R	R	R	R	FL/DW	FL/DW	DW	DW	DW	DW
PHASE 1 AND 6 CHANGE	◄Y-	◄Y-	Y	Y	Y	◄R-	◄R-	R	R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW
PHASE 2 AND 5	◄R-	◄R-	R	R	R	◄G-	◄G-	G	G	G	R	R	R	R	R	R	DW	DW	WK	WK	DW	DW
PED CLEARANCE PHASE	◄R-	◄R-	R	R	R	◄G-	◄G-	G	G	G	R	R	R	R	R	R	DW	DW	FL/DW	FL/DW	DW	DW
PHASE 2 AND 5 CHANGE	◄R-	◄R-	R	R	R	◄Y-	◄Y-	Y	Y	Y	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW
PHASE 2 AND 6	◄R-	◄R-	G	G	G	◄R-	◄R-	G	G	G	R	R	R	R	R	R	WK	WK	WK	WK	DW	DW
PED CLEARNACE PHASE	◄R-	◄R-	G	G	G	◄R-	◄R-	G	G	G	R	R	R	R	R	R	FL/DW	FL/DW	FL/DW	FL/DW	DW	DW
PHASE 2 AND 6 CHANGE	◄R-	◄R-	Y	Y	Y	◄R-	◄R-	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	R	R	R	R	G/◄G-	G	G	DW	DW	DW	DW	DW	DW
PHASE 3 CHANGE	◄R-	◄R-	R	R	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-	◄R-	R	R	R	G/◄G-	G	G	R	R	R	DW	DW	DW	DW	WK	WK
PHASE 4 CHANGE	◄R-	◄R-	R	R	R	◄R-	◄R-	R	R	R	G/◄G-	G	G	R	R	R	DW	DW	DW	DW	DW	DW
PHASE 4 ALT	◄R-	◄R-	R	R	R	◄R-	◄R-	R	R	R	G/◄G-	G	G	R	R	R	DW	DW	DW	DW	WK	WK
PED CLEARANCE PHASE	◄R-	◄R-	R	R	R	◄R-	◄R-	R	R	R	G/◄G-	G	G	R	R	R	DW	DW	DW	DW	FL/DW	FL/DW
PHASE 4 ALT CHANGE	◄R-	◄R-	R	R	R	◄R-	◄R-	R	R	R	Y	Y	Y	R	R	R	DW	DW	DW	DW	DW	DW
FLASHING OPERATION	◄FL/R-	◄FL/R-	FL/Y	FL/Y	FL/Y	◄FL/R-	◄FL/R-	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



WIRING KEY:

A,C,E,F, G,J,M,N, LL,MM - 7 CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)

B,D,H,K, L,P,Q,R, S,T,U,V - 5 CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)

W,X,Y,Z, AA,BB - 2 CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)

+ - PROPOSED GROUND ROD

GW - 1 CONDUCTOR (NO. 6 A.W.G.) STRANDED BARE COPPER GROUND WIRE

CC - 3-1-CONDUCTOR ELECTRICAL CABLE NO. 2/0 AWG/THHN

DD,EE - 12-PAIR COMMUNICATION CABLE, SELF-SUPPORTING, JELLY-FILLED/UNDERGROUND

FF,GG, HH,JJ - VIDEO DETECTION LEAD-IN CABLE

PS - PROPOSED POWER SERVICE

C. IF THE CABINET IS TO BE REMOVED 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 SIGNAL CONTRACTOR UPON COMPLETION OF THE SIGNAL MODIFICATIONS.

PARSONS BRINCKERHOFF
100 S. Charles Street
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Baltimore, MD 21201
(Ph) 410-787-5050
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PLOTTED: Monday, April 29, 2013 AT 11:02 AM
FILE: T:\173124A-TrafficDesignServices\TRF\112\Plans\pSG_N001-L713_LakeForest.dgn

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

MD 355 AT LAKEFOREST BLVD/PERRY PKWY
SIGNAL RECONSTRUCTION
GAITHERSBURG, MD

GENERAL INFORMATION SHEET

SCALE N.T.S. DATE APRIL, 2013 CONTRACT NO. XY1515185

DESIGNED BY ESA
DRAWN BY ESA
CHECKED BY LW
F.A.P. NO. SEE TITLE SHEET
COUNTY MONTGOMERY
LOGMILE 15035515.19
TIMS NO. L803
TOD NO.

TS NO.3099B-GI | DRAWING SG - 03 OF 03 | SHEET NO. 03 OF 03