PROJECT DESCRIPTION

GENERAL

THIS PROJECT INVOLVES THE RECONSTRUCTION OF THE EXISTING TRAFFIC CONTROL SIGNAL AT THE INTERSECTION OF MD 190 (RIVER ROAD) AND MD 614 (GOLDSBORO ROAD) IN MONTGOMERY COUNTY, MARYLAND. APS (ACCESSIBLE PEDESTRIAN SIGNALS/CPS (COUNTDOWN PEDESTRIAN SIGNALS AND THE SIDEWALK RAMPS ALONG THE WEST LEG TO BE INSTALLED. MD 190 (RIVER ROAD) IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

INTERSECTION OPERATION

THE INTERSECTION OPERATES IN A NEMA SIX-PHASE, FULL-TRAFFIC-ACTUATED MODE WITH THE MD 190 (RIVER ROAD) APPROACHES OPERATING CONCURRENTLY AND THE MD 614 (GOLDSBORO ROAD) APPROACHES OPERATING SPLIT PHASE.

THE EXCLUSIVE/PERMISSIVE LEFT-TURN PHASING ON THE EASTBOUND AND WESTBOUND MD 190 (RIVER ROAD) APPROACH IS BEING CHANGED TO FLASHING RED ARROW OPERATION.

THE SPLIT PHASE OPERATIONS ON THE NORTHBOUND AND SOUTHBOUND MD 614 (GOLDSBORO ROAD) APPROACHES WILL REMAIN UNCHANGED.

THE PEDESTRIAN PHASE ACROSS THE WEST LEG WILL BE ADDED AS PART OF THIS PROJECT.

TYPICAL MESSAGES FOR ACCESSIBLE PED SIGNALS

MD 190 (RIVER ROAD) AND MD 614 (GOLDSBORO ROAD) - WEST LEG

STREETS AT 90 DEGREES

WAIT: "WAIT TO CROSS RIVER AT GOLDSBORO, WAIT."

WALK: RAPID TICK

NOTE: MESSAGES FOR INTERSECTION CONFIGURATIONS, VARYING FROM THE ABOVE ARE TO BE APPROVED BY THE DIRECTOR, OFFICE OF TRAFFIC AND SAFETY.

CONTROLLER REQUIREMENTS

INSTALL A FULL-TRAFFIC-ACTUATED, EIGHT-PHASE CONTROLLER WITH ONE (1) FOUR-CHANNEL, TIME-DELAY-OUTPUT LOOP DETECTOR AMPLIFIERS, VIDEO INTERFACE EQUIPMENT (1-8 CAMERAS), INTERSECTION MONITOR WITH BATTERY BACKUP FOR PHONE DROP AND ASSOCIATED HARNESSES HOUSED IN A NEMA SIZE "S" BASE MOUNTED CABINET.

PROJECT CONTACTS

THE CONTACT PERSONS FOR SHA ARE AS FOLLOWS:

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ASSISTANT DISTRICT ENGINEER - MAINTENANCE
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MR. VICTOR GRAFTON
ASSISTANT UTILITY ENGINEER
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TEAM LEADER, TRAFFIC SIGNALS
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MR. AVIJIT MAJII
CHIEF, TRAFFIC OPERATIONS DIVISION
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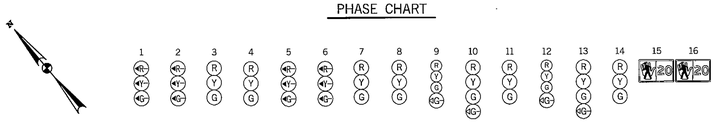
MR. BOB RICKETTS
MONTGOMERY COUNTY TECHNICAL CENTER SUPERVISOR
PHONE: (240) 876-3681

PHASE CHART



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASE 1 + 5	←G—	←G—	R	R	←G—	←G—	R	R	R	R	R	R	R	R	DW	DW
1 + 5 CHANGE	PHASE 1 + 5 MAY CHANGE TO PHASE 1 + 6, PHASE 2 + 5 OR PHASE 2 + 6															
PHASE 1 + 6	←G—	←G—	G	G	←R—	←R—	R	R	R	R	R	R	R	R	DW	DW
1 + 6 CHANGE	←Y—	←Y—	G	G	←R—	←R—	R	R	R	R	R	R	R	R	DW	DW
PHASE 2 + 5	←R—	←R—	R	R	←G—	←G—	G	G	R	R	R	R	R	R	DW	DW
2 + 5 CHANGE	←R—	←R—	R	R	←Y—	←Y—	G	G	R	R	R	R	R	R	DW	DW
PHASE 2 + 6	← FL/R —	← FL/R —	G	G	← FL/R —	← FL/R —	G	G	R	R	R	R	R	R	DW	DW
2 + 6 CHANGE	← FL/R —	← FL/R —	Y	Y	← FL/R —	← FL/R —	Y	Y	R	R	R	R	R	R	DW	DW
PHASE 3	←R—	←R—	R	R	←R—	←R—	R	R	G/G	G/G	G	R	R	R	DW	DW
3 CHANGE	←R—	←R—	R	R	←R—	←R—	R	R	Y	Y	Y	R	R	R	DW	DW
PHASE 4	←R—	←R—	R	R	←R—	←R—	R	R	R	R	R	G/G	G/G	G	DW	DW
4 CHANGE	←R—	←R—	R	R	←R—	←R—	R	R	R	R	R	Y	Y	Y	DW	DW
PHASE 4 ALT	←R—	←R—	R	R	←R—	←R—	R	R	R	R	R	G/G	G/G	G	WK	WK
PED CLEARANCE	←R—	←R—	R	R	←R—	←R—	R	R	R	R	R	G/G	G/G	G	FL/DW	FL/DW
4 ALT CHANGE	←R—	←R—	R	R	←R—	←R—	R	R	R	R	R	Y	Y	Y	DW	DW
FLASHING OPERATION	← FL/R —	← FL/R —	FL/Y	FL/Y	← FL/R —	← FL/R —	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	DARK	DARK

EQUIPMENT LIST "A"

A. EQUIPMENT TO BE SUPPLIED BY THE SHA

ITEM NO.	QUANTITY	DESCRIPTION
9104	1 EACH	EIGHT-PHASE, FULL-TRAFFIC-ACTUATED CONTROLLER WITH INTERSECTION MONITOR, TELEMETRY VIDEO INTERFACE EQUIPMENT 1-8 CAMERAS AND HOUSED IN A NEMA SIZE "S" BASE MOUNTED CABINET
9571	402 S.F.	SHEET ALUMINUM SIGNS TO CONSIST OF :
	- 4 EACH	D-3(1) SIGN (VARIABLE x 16 IN.) - MAST ARM MOUNT
	- 4 EACH	D-3(1) SIGN (VARIABLE x 16 IN.) DUAL FACED - MAST ARM MOUNT
	- 2 EACH	D3-2(4) SIGN (96 IN. x 48 IN.)
	- 2 EACH	R3-5(L) (30 IN. x 36 IN.) - MAST ARM MOUNT
	- 2 EACH	R3-6(L) (30 IN. x 36 IN.) - MAST ARM MOUNT
	- 2 EACH	R10-12(2) SIGN (48 IN. x 36 IN.) - MAST ARM MOUNT
	- 2 EACH	R10-3(1) SIGN (9 IN. x 15 IN.) TO READ "PUSHBUTTON TO CROSS RIVER ROAD"
	- 2 EACH	W9-2(4)(L) (30 IN. x 42 IN.) - MAST ARM MOUNT
	- 4 EACH	W11-2 (36 IN. x 36 IN.)
	- 2 EACH	W16-7pL (24 IN. x 12 IN.)
	- 2 EACH	W16-7pR (24 IN. x 12 IN.)
	- 1 EACH	M1-5(6) "EAST, MD 190, 45° RIGHT ARROW" (30 IN. x 48 IN.)
	- 1 EACH	M1-5(6) "WEST, MD 190, LEFT ARROW" (48 IN. x 72 IN.)
	- 1 EACH	M1-5(6) "WEST, MD 190, RIGHT ARROW" (30 IN. x 48 IN.)
	- 1 EACH	M1-5(6) "EAST, MD 190, LEFT ARROW" (48 IN. x 72 IN.)
	- 1 EACH	M1-5(6) "NORTH, MD 614, 45° RIGHT ARROW" (30 IN. x 48 IN.)
	- 1 EACH	M1-5(6) "SOUTH, MD 614, LEFT ARROW" (48 IN. x 72 IN.)
	- 1 EACH	M1-5(6) "SOUTH, MD 614, RIGHT ARROW" (30 IN. x 48 IN.)
	- 1 EACH	M1-5(6) "NORTH, MD 614, LEFT ARROW" (48 IN. x 72 IN.)

EQUIPMENT LIST "C"

C. EQUIPMENT TO BE REMOVED AND RETURNED TO SHA

EXISTING CONTROLLER AND AUXILARY EQUIPMENT FROM THE CABINET WILL BE REMOVED AND BECOME PROPERTY OF SHA. ANY ADDITIONAL SIGNAL MATERIALS REMOVED SHALL BECOME PROPERTY OF THE CONTRACTOR

MAINTENANCE OF TRAFFIC

THE FOLLOWING TRAFFIC CONTROL STANDARDS SHALL BE REFERENCED FOR THE PROJECT. ADDITIONAL TRAFFIC CONTROL STANDARDS MAY BE USED AS DIRECTED BY THE ENGINEER.

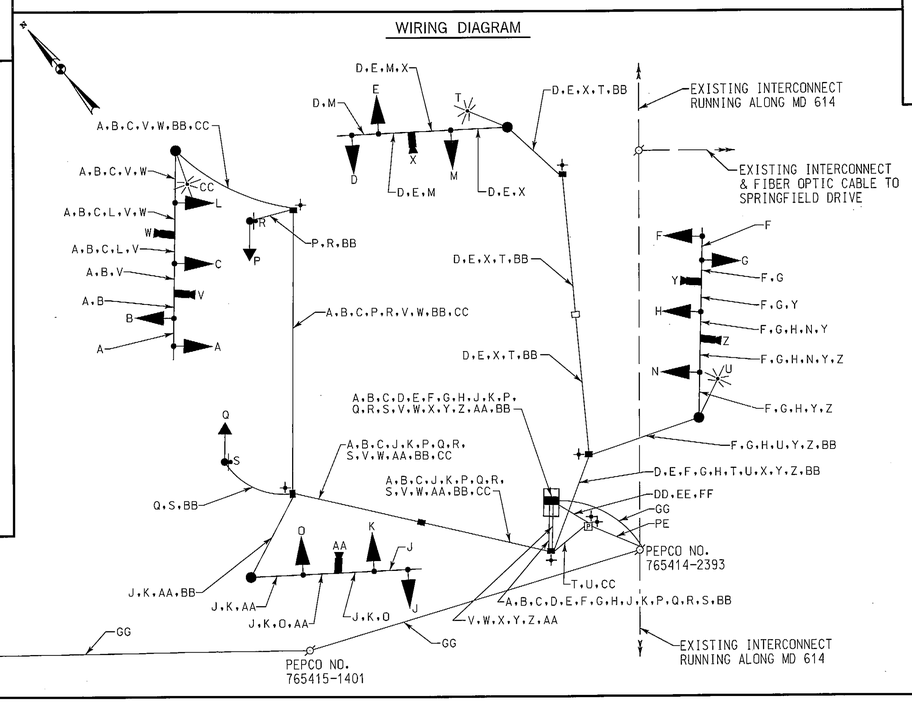
STANDARD NO. MD-104.04-03 (LEFT LANE CLOSURE)
STANDARD NO. MD-104.04-05 (RIGHT LANE CLOSURE)
STANDARD NO. MD-104.04-13 (LEFT TURN BAY CLOSURE)
STANDARD NO. MD-104.02-13 (INTERSECTION FLAGGING OPERATION)

EQUIPMENT LIST "B"

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

ITEM NO.	QUANTITY	DESCRIPTION
1001	1 EACH	MAINTENANCE OF TRAFFIC
2001	16 C.Y.	CLASS 2 EXCAVATION
2002	8 C.Y.	TEST PIT EXCAVATION
5003	150 L.F.	REMOVAL OF EXISTING PERMANENT PAVEMENT LINE MARKINGS
5004	370 L.F.	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES
5005	150 L.F.	24 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES
5006	90 S.F.	WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LEGENDS AND SYMBOLS
6001	300 L.F.	STANDARD TYPE A COMBINATION CURB AND GUTTER 12 INCH GUTTER PAN 8 INCH DEPTH
6002	1050 S.F.	5 INCH CONCRETE SIDEWALK
6003	95 S.F.	DETECTABLE WARNING SURFACE FOR CURB RAMPS
8001	46 EACH	12 INCH LED SIGNAL HEAD SECTION
8002	1 EACH	2-WIRE CENTRAL CONTROL UNIT
8008	2 EACH	AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION & SIGNS
8009	2 EACH	BREAKAWAY PEDESTAL POLE (ANY SIZE)
8012	1 EACH	EMBEDDED METERED SERVICE PEDESTAL WITH BYPASS SWITCH
8014	1 EACH	INSTALL CONTROLLER AND CABINET BASE MOUNT (ANY SIZE)
8016	2 EACH	LED 16 INCH COUNTDOWN PEDESTRIAN SIGNAL HEADS
8019	3 EACH	MAST ARM POLE & 50' MAST ARM ANY 'T' DIMENSION
8020	1 EACH	MAST ARM POLE & 60' MAST ARM ANY 'T' DIMENSION
8024	1 EACH	REMOVE & DISPOSE OF EQUIPMENT (PER ASSIGNMENT)
8029	6 EACH	VIDEO DETECTION CAMERA AND CABLE ANY LENGTH
8032	450 L.F.	12-PAIR COMMUNICATION CABLE, SELF-SUPPORTING, JELLY-FILLED/UNDERGROUND
8035	635 L.F.	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 AWG) TYPE T/C
8038	350 L.F.	UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT - BORED
8040	130 L.F.	UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8041	354 L.F.	WOOD SIGN SUPPORTS UP TO 4" X 6"
8042	408 S.F.	INSTALL OVERHEAD OR GROUND MOUNTED SIGN (INCLUDING ALL HARDWARE)
8044	500 L.F.	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
8047	60 L.F.	ELECTRICAL CABLE 1-CONDUCTOR NO. 8 AWG-THHN/THWN
8048	6 EACH	FURNISH AND INSTALL ELECTRICAL HANDHOLE
8053	3 EACH	CUT, CLEAN, GALVANIZE, AND CAP TRAFFIC SIGNAL STRUCTURE
8055	410 L.F.	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)
8057	530 L.F.	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)
8058	2320 L.F.	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)
8063	2 EACH	INSTALL CONTROLLER AND CABINET - POLE MOUNT
8071	3 EACH	FURNISH AND INSTALL ANY SIZE LIGHTING ARM WITH LED COBRA HEAD

WIRING DIAGRAM



WIRING KEY

A F, B G, C H, D J, E K } 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)

L O, M P, N Q } 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)

R S } 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)

T U, CC } 2-CONDUCTOR ELECTRICAL CABLE (NO. 12 A.W.G.) TRAY CABLE

V Y, W Z, X AA } VIDEO CAMERA DETECTION LEAD-IN CABLE

BB } STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)

DD, EE, FF } 1-CONDUCTOR ELECTRICAL CABLE (NO. 8 A.W.G.)

GG } 12-PAIR COMMUNICATION CABLE, JELLY-FILLED

PE - PROPOSED UNDERGROUND ELECTRICAL SERVICE

⏚ - 3/4 IN. X 10 FT. GROUND ROD

TOD NO: XX439-26
SHA NO: MO242B5C
MD 190 @ MD 614

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

MD 190 (RIVER ROAD) AND MD 614 (GOLDSBORO ROAD)

(BETHESDA, MD)

REVISIONS

GENERAL INFORMATION SHEET

SCALE NONE DATE FEBRUARY 2013 CONTRACT NO. XX4395185

DESIGNED BY J. RASMUSSEN COUNTY MONTGOMERY
DRAWN BY J. RASMUSSEN LOGMILE 15019013.83
CHECKED BY N. LEARY TIMS NO. K981
F.A.P. NO. TOD NO.

TS NO. 3179E | DRAWING TSP-3 OF 3 | SHEET NO. 3 OF 3

PLOTTED: February 05, 2013
FILE: N:\31668-175\CADD\pSG-N003_MD190.dgn

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BY: jrasmussen