

**PROJECT DESCRIPTION**

**GENERAL**

THIS PROJECT INVOLVES THE MODIFICATION OF THE EXISTING INTERSECTION CONTROL BEACON TO A FULL TRAFFIC CONTROL SIGNAL AT THE INTERSECTION OF MD 155 (LEVEL ROAD) AND MD 462 (PARADISE ROAD) IN HARFORD COUNTY, MARYLAND. MD 155 IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

**INTERSECTION OPERATION**

NORMAL OPERATION: HOURS OF 5 AM TO 10 PM

THE INTERSECTION WILL OPERATE IN A NEMA FOUR-PHASE, FULL-TRAFFIC-ACTUATED MODE WITH THE MD 155 APPROACHES OPERATING CONCURRENTLY AND THE MD 462 APPROACHES OPERATING CONCURRENTLY.

SPECIAL OPERATION: HOURS OF 10 PM AND 5 AM

THE INTERSECTION WILL OPERATE WITH THE MD 155 APPROACHES FLASHING YELLOW AND THE MD 462 APPROACHES FLASHING RED.

**CONTROLLER REQUIREMENTS**

INSTALL A FULL-TRAFFIC-ACTUATED, EIGHT-PHASE CONTROLLER WITH ONE (1) FOUR-CHANNEL, TIME-DELAY-OUTPUT LOOP DETECTOR AMPLIFIERS, INTERSECTION MONITOR WITH BATTERY BACKUP FOR PHONE DROP AND ASSOCIATED HARNESSES HOUSED IN A NEMA SIZE "5" POLE MOUNTED CABINET.

**PHONE DROP**

UPON COMPLETION OF THIS PROJECT, THE CONTRACTOR SHALL NOTIFY MR. ROBERT SNYDER OF SHA AT (410) 787-7635 TO ARRANGE FOR THE PHONE LINE INSTALLATION. THE CONTRACTOR IS TO PROVIDE MR. SNYDER THE NEAREST STREET ADDRESS, ZIP CODE, AND PHONE NUMBER.

**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-104.02-01 (SHOULDER WORK)

STANDARD NO. MD-104.02-13 (FLAGGING OPERATION)

**PROJECT CONTACTS**

THE CONTACT PERSONS FOR SHA ARE AS FOLLOWS:

MS. ERIN KUHN  
ASSISTANT DISTRICT ENGINEER - TRAFFIC  
PHONE: (410) 229-2381

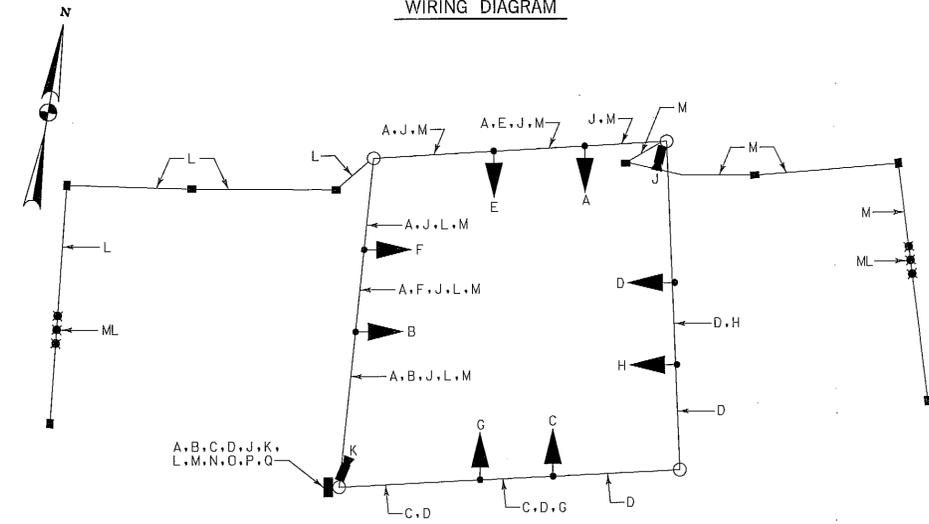
MR. ROBERT SYNDER  
ASSISTANT CHIEF, TRAFFIC OPERATIONS DIVISION  
PHONE: (410) 787-7631

MR. ANDRE FUTRELL  
ASSISTANT DISTRICT ENGINEER - MAINTENANCE  
PHONE: (410) 229-2361

MR. RICHARD L. DAFF, SR.  
CHIEF, TRAFFIC OPERATIONS DIVISION  
PHONE: (410) 787-7630

MR. MIKE PASQUARIELLO  
DISTRICT UTILITY ENGINEER  
PHONE: (410) 229-2341

**WIRING DIAGRAM**



**WIRING KEY**

- A, B, C, D } 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- E, F, G, H } 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- J, K } VIDEO CAMERA DETECTION LEAD-IN CABLE
- L } MICROLOOP PROBE LEAD-IN
- M } MICROLOOP PROBE SET
- N } STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
- O, P, Q } 1-CONDUCTOR ELECTRICAL CABLE (NO. 4 A.W.G.)

**EQUIPMENT LIST "A"**

A. EQUIPMENT TO BE SUPPLIED BY THE SHA

ITEM NO.	QUANTITY	DESCRIPTION
9016	1 EACH	FOUR-CHANNEL, TIME-DELAY-OUTPUT, LOOP DETECTOR AMPLIFIER
9043	1 EACH	EIGHT-PHASE, FULL-TRAFFIC-ACTUATED CONTROLLER WITH INTERSECTION MONITOR HOUSED IN A NEMA SIZE "5" POLE MOUNTED CABINET
9086	1 EACH	VIDEO INTERFACE EQUIPMENT: 1-8 CAMERAS
9571	141 S.F.	SHEET ALUMINUM SIGNS TO CONSIST OF : - 2 EACH D-3(1) SIGN (VARIABLE x 16 IN.) DUAL FACED - MAST ARM MOUNT - 2 EACH D-3(2) SIGN (VARIABLE x 16 IN.) - GROUND MOUNT - 1 EACH ASSOCIATED SHIELD ASSEMBLY "EAST, MD 155, RIGHT ARROW" (30 IN. x 48 IN.) - POLE MOUNT - 1 EACH ASSOCIATED SHIELD ASSEMBLY "WEST, MD 155, LEFT ARROW" (48 IN. x 72 IN.) - POLE MOUNT - 1 EACH ASSOCIATED SHIELD ASSEMBLY "WEST, MD 155, RIGHT ARROW" (30 IN. x 48 IN.) - POLE MOUNT - 1 EACH W3-3 SIGN (36 IN. x 36 IN.) WITH "NEW" PANEL (24 IN. x 24 IN.) AND FLAG - GROUND MOUNT - 2 EACH W3-3 SIGN (48 IN. x 48 IN.) WITH "NEW" PANEL (24 IN. x 24 IN.) AND FLAG - GROUND MOUNT

**EQUIPMENT LIST "C"**

C. EQUIPMENT TO BE REMOVED AND RETURNED TO SHA

ALL REMOVED SIGNAL MATERIALS SHALL BECOME PROPERTY OF THE CONTRACTOR

**EQUIPMENT LIST "B"**

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

ITEM NO.	QUANTITY	DESCRIPTION
1001	1 EACH	MAINTENANCE OF TRAFFIC
1003	70 L.F.	REMOVAL OF EXISTING PERMANENT PAVEMENT LINE MARKINGS - ANY WIDTH
5001	100 L.F.	5 INCH WHT OR YEL REFLECTIVE THERMOPLASTIC PAVEMENT MARKING
5003	35 L.F.	24 INCH HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
8001	24 EACH	12 INCH LED SIGNAL HEAD SECTION
8017	1 EACH	REM & DISPOSE MAT & EQUIP PER ASSIGN
8026	120 L.F.	SCHEDULE 80 RIGID PVC CONDUIT UP TO 4 INCHES - BORED
8028	800 L.F.	SCHEDULE 80 RIGID PVC CONDUIT UP TO 4 INCHES - TRENCHED
8030	3 S.F.	RELOCATE EXISTING SIGN
8033	61 L.F.	WOOD SIGN SUPPORTS 4 IN. X 6 IN.
8034	15 L.F.	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
8036	3 EACH	WEATHER HEAD, 3 INCH
8039	45 L.F.	ELECTRICAL CABLE 1-CONDUCTOR NO. 4 AWG - THHN/THWN
8044	2 EACH	NONINVASIVE DETECTOR (ANY LENGTH) LEAD IN CABLE UP TO 1000 FT
8045	8 EACH	FURNISH AND INSTALL ELECTRICAL HANDHOLE
8046	75 S.F.	INSTALL GROUND MOUNTED SIGN
8047	66 S.F.	INSTALL OVERHEAD SIGN
8048	2 EACH	VIDEO DETECTION CAMERA & CABLE UP TO 500 FT
8058	90 L.F.	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)
8059	500 L.F.	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)
8066	1 EACH	INSTALL CONTROLLER AND CABINET - POLE MOUNT

**PHASE CHART**

NORMAL OPERATION: HOURS OF 5 AM TO 10 PM

1	2	3	4	5	6	7	8
R	R	R	R	R	R	R	R
Y	Y	Y	Y	Y	Y	Y	Y
G	G	G	G	G	G	G	G

PHASE 2 + 6	G	G	G	G	R	R	R	R
2 + 6 CHANGE	Y	Y	Y	Y	R	R	R	R
PHASE 4 + 8	R	R	R	R	G	G	G	G
4 + 8 CHANGE	R	R	R	R	Y	Y	Y	Y
FLASHING OPERATION	FLY	FLY	FLY	FLY	FLR	FLR	FLR	FLR

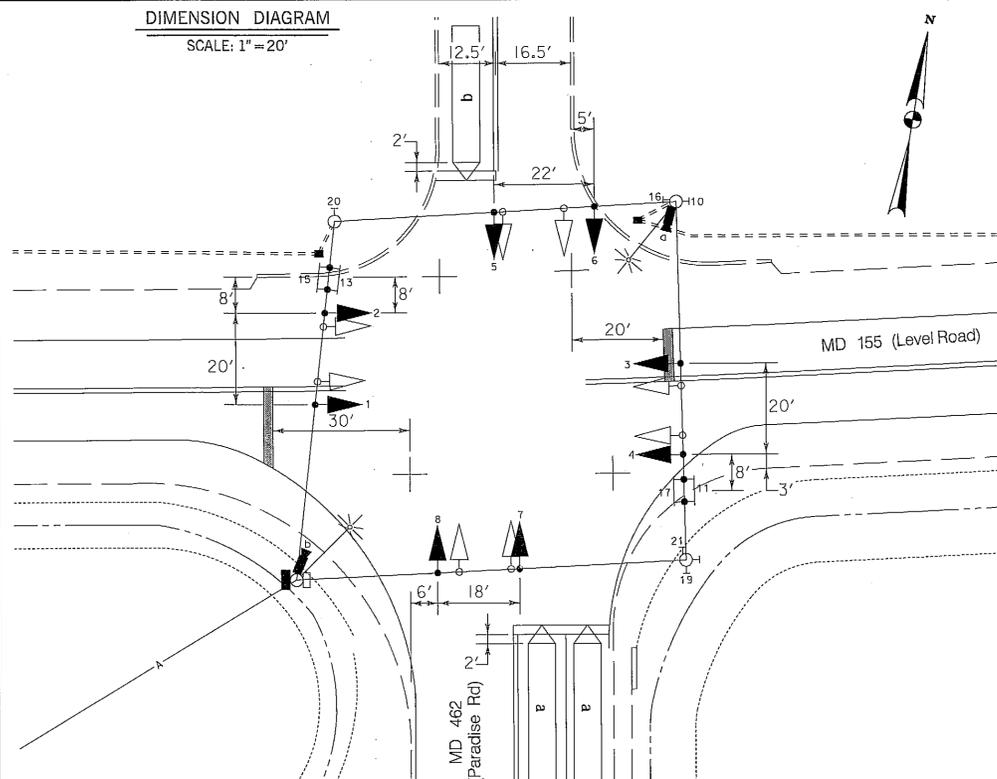
SPECIAL OPERATION: HOURS OF 10 PM TO 5 AM

1	2	3	4	5	6	7	8
R	R	R	R	R	R	R	R
Y	Y	Y	Y	Y	Y	Y	Y
G	G	G	G	G	G	G	G

FLASHING OPERATION	FLY	FLY	FLY	FLY	FLR	FLR	FLR	FLR
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**DIMENSION DIAGRAM**

SCALE: 1" = 20'



TOD No: XX448-50  
SHA No: HA404A53/B53  
MD 155 @ MD 462

**SHA** STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
OFFICE OF TRAFFIC & SAFETY  
TRAFFIC ENGINEERING DESIGN DIVISION  
MD 155 (Level Road) and MD 462 (Paradise Road)  
*Paradise Drive*  
*Level Maryland*

**GENERAL INFORMATION SHEET**

SCALE NONE DATE 04/19/2010 CONTRACT NO. XX4485185

DESIGNED BY S. Bloss COUNTY Harford  
DRAWN BY S. Bloss LOGMILE 12015504.74  
CHECKED BY N. Leary TMS NO. JB42  
F.A.P. NO. TOD NO.

TS NO. 1603B DRAWING TSP-2 OF 2 SHEET NO. 2 OF 2



**WHITMAN, REQUARDT & ASSOCIATES, LLP**  
801 South Caroline Street, Baltimore, Maryland 21231



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