

**PROJECT DESCRIPTION**

**GENERAL**

THIS PROJECT INVOLVES UPGRADING THE EXISTING INTERSECTION CONTROL BEACON TO A FULLY-ACTUATED TRAFFIC SIGNAL AT THE INTERSECTION OF MD 3C (BENFIELD BLVD.) AND I-97 SOUTHBOUND ON RAMP IN ANNE ARUNDEL COUNTY, MARYLAND. MD 3C (BENFIELD BLVD.) IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

**INTERSECTION OPERATION**

THE INTERSECTION WILL OPERATE IN A NEMA TWO-PHASE, FULL-TRAFFIC-ACTUATED MODE WITH THE WESTBOUND MD 3C (BENFIELD BLVD.) LEFT-TURNS OPERATING ALONE AND THE EASTBOUND MD 3C (BENFIELD BLVD.) APPROACH OPERATING ALONE.

**CONTROLLER REQUIREMENTS**

USE EXISTING BASE MOUNTED CABINET AND CONTROLLER AND RETROFIT DETECTOR RACK AND INSTALL (ONE) 1-FOUR CHANNEL, TIME-DELAY OUTPUT LOOP DETECTOR AMPLIFIER.

**MAINTENANCE OF TRAFFIC**

THE FOLLOWING TRAFFIC CONTROL STANDARDS SHALL BE REFERENCED FOR THE PROJECT.

- STANDARD NO. MD-104.04-01 (SHOULDER WORK)
- STANDARD NO. MD-104.04-03 (LEFT LANE CLOSURE)
- STANDARD NO. MD-104.04-05 (RIGHT LANE CLOSURE)
- STANDARD NO. MD-104.04-07 (CENTER LANE CLOSURE)
- STANDARD NO. MD-104.04-13 (LEFT TURN BAY CLOSURE)
- STANDARD NO. MD-104.04-15 (INTERSECTION LEFT LANE, TURN BAY)

**PROJECT CONTACTS**

THE CONTACT PERSONS FOR SHA ARE AS FOLLOWS:

MS. KIMBERLY TRAN  
ASSISTANT DISTRICT ENGINEER - TRAFFIC  
PHONE: (410) 841-1019

MR. JOHN S. MAYS  
DISTRICT UTILITY ENGINEER  
PHONE: (410) 841-1039

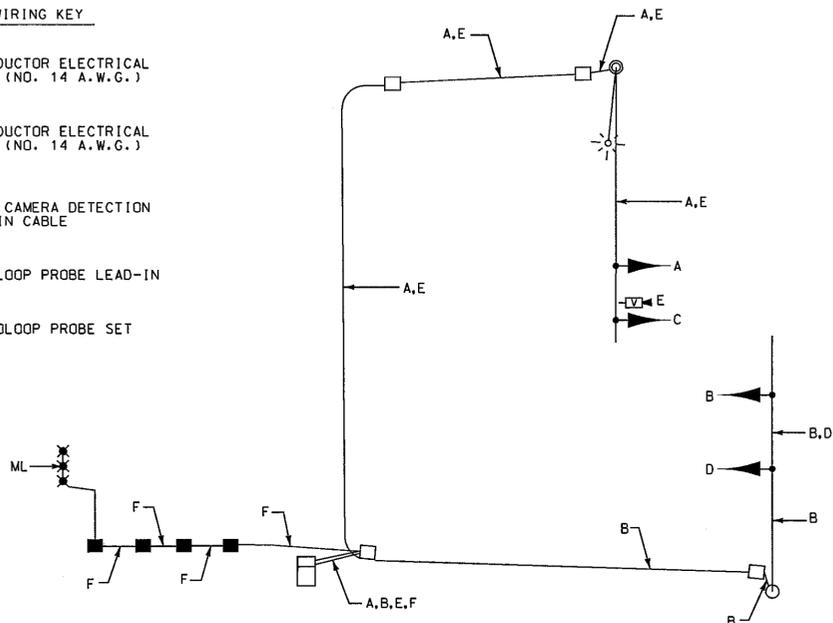
MR. CHUCK E. GEORGE  
ASSISTANT DISTRICT ENGINEER - MAINTENANCE  
PHONE: (410) 841-1013

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

**WIRING DIAGRAM**

**WIRING KEY**

- A } 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- B } 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- C } VIDEO CAMERA DETECTION LEAD-IN CABLE
- D } MICROLOOP PROBE LEAD-IN
- ML - MICROLOOP PROBE SET



**EQUIPMENT LIST "A"**

A. EQUIPMENT TO BE SUPPLIED BY THE SHA

ITEM NO.	QUANTITY	DESCRIPTION
9046	1 EACH	DETECTOR RACK RETROFIT
9086	1 EACH	VIDEO INTERFACE EQUIPMENT: 1-4 CAMERAS
9016	1 EACH	FOUR-CHANNEL, TIME-DELAY OUTPUT LOOP DETECTOR AMPLIFIER
9571	30 S.F.	SHEET ALUMINUM SIGNS TO CONSIST OF : - 1 EACH R3-5L SIGN (30 IN. x 36 IN.) - MAST ARM MOUNT - 1 EACH R3-5R SIGN (30 IN. x 36 IN.) - MAST ARM MOUNT - 2 EACH R3-7L ( 30 IN. x 36 IN.) - GROUND MOUNT

**EQUIPMENT LIST "B"**

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

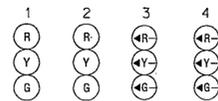
ITEM NO.	QUANTITY	DESCRIPTION
1001	2 EACH	MAINTENANCE OF TRAFFIC
5001	650 L.F.	5 INCH HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
5003	360 L.F.	REMOVAL OF EXISTING PERMANENT PAVEMENT LINE MARKINGS - ANY WIDTH
5004	12 EACH	REMOVAL OF EXISTING PAVEMENT MARKING LETTERS, SYMBOLS, ARROWS AND NUMBERS
5006	30 L.F.	24 INCH HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
5007	12 EACH	HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING LETTERS
5008	6 EACH	HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING ARROWS
8009	1 EACH	CONTROL CABLE, 300 FT. VIDEO DETECTION CAMERA TO CONTROLLER
8019	1 EACH	REMOVE AND DISPOSE OF EXISTING MATERIAL AND EQUIPMENT AS PER ASSIGNMENT
8029	15 L.F.	WOOD SIGN SUPPORTS 4 INCH x 4 INCH
8037	100 L.F.	3 INCH SCHEDULE 80 RIGID PVC CONDUIT - BORED
8040	210 L.F.	3 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8045	10 L.F.	1 INCH LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR WIRE SLEEVE
8050	1 EACH	MICROLOOP PROBE SET WITH 500 FOOT LEAD-IN CABLE
8054	4 EACH	FURNISH AND INSTALL ELECTRICAL HANDHOLE
8056	14 S.F.	INSTALL GROUND MOUNTED SIGN
8057	16 S.F.	INSTALL OVERHEAD SIGN
8058	1 EACH	VIDEO DETECTION CAMERA
8077	12 EACH	12 INCH VEHICULAR TRAFFIC SIGNAL HEAD SECTION
8085	50 L.F.	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 A.W.G.)
8086	480 L.F.	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 A.W.G.)
8089	20 L.F.	SAW CUT FOR SIGNAL (LOOP DETECTOR)

**EQUIPMENT LIST "C"**

C. EQUIPMENT TO BE REMOVED AND RETURNED TO SHA

ALL REMOVED SIGNAL MATERIALS SHALL BECOME PROPERTY OF THE CONTRACTOR

**PHASE CHART**



PHASE	1	2	3	4
PHASE 5	R	R	←G	←G
5 CHANGE	R	R	←Y	←Y
PHASE 6	G	G	←R	←R
6 CHANGE	Y	Y	←R	←R
FLASHING OPERATION	FL/Y	FL/Y	←FL/R	←FL/R

TSP-3

**WR&A**  
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and Associates, LLP  
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Baltimore, Maryland 21231  
(410) 235-3450

**MARYLAND DOT - STATE HIGHWAY ADMINISTRATION**  
Office of Traffic & Safety  
TRAFFIC ENGINEERING DESIGN DIVISION  
GENERAL INFORMATION SHEET  
MD 3C (BENFIELD BLVD. EXT.) @ I-97 (SB) ON RAMP  
SHA #: AA382A52/B52  
TOD #: AT04-18

DRAWN BY: B. DONOWAY	F.A.P. NO.	TS NO.
CHECKED BY: N. LEARY	S.H.A. NO. AT6045185	3442-A
SCALE: 1"=20'	COUNTY: ANNE ARUNDEL	T.I.M.S. NO.
DATE: 11/30/2004	LOG MILE: 0200970921	6512

SHEET NO. 3 OF 3