PROJECT DESCRIPTION

GENERAL

THIS PROJECT INVOLVES THE INSTALLATION OF TWO NEW TRAFFIC CONTROL SIGNALS AND STREET LIGHTING AT THE INTERSECTIONS OF MD 32 WITH I-70 EASTBOUND AND I-70 WESTBOUND RAMPS IN HOWARD COUNTY. MD 32 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

A HARDWIRE INTERCONNECT ALONG MD 32 WILL BE PROVIDED FROM MD 144 TO MD 99.

INTERSECTION OPERATION

1. I-70 WESTBOUND RAMPS

   THE INTERSECTION WILL OPERATE IN NEMA FOUR-PHASE, FULL-TRAFFIC-ACTUATED MODE WITH THE MD 32 APPROACHES OPERATING CONCURRENTLY AND THE I-70 WESTBOUND OFF-RAMP APPROACH OPERATING ALONE.

   EXCLUSIVE/PERMISSIVE LEFT-TURN PHASING WILL BE PROVIDED ON THE NORTHBOUND MD 32 APPROACH.

   THE INTERSECTION WILL OPERATE AS STATED ABOVE UNLESS THE DELAY OUTPUT QUEUE DETECTOR IN THE NORTHBOUND MD 32 LEFT-TURN LANE IS ACTUATED. A PRE-EMPTION CALL WILL FORCE A CHANGE TO THE NORTHBOUND MD 32 SIGNAL PHASES (PHASE 1 AND 6).

2. I-70 EASTBOUND RAMPS

   THE INTERSECTION WILL OPERATE IN A NEMA FOUR-PHASE, FULL-TRAFFIC-ACTUATED MODE WITH THE MD 32 APPROACHES OPERATING CONCURRENTLY AND THE I-70 EASTBOUND OFF-RAMP APPROACH OPERATING ALONE.

   EXCLUSIVE/PERMISSIVE LEFT-TURN PHASING WILL BE PROVIDED ON THE SOUTHBOUND MD 32 APPROACH.

   THE INTERSECTION WILL OPERATE AS STATED ABOVE UNLESS THE DELAY OUTPUT QUEUE DETECTOR IN THE SOUTHBOUND MD 32 LEFT-TURN LANE IS ACTUATED. A PRE-EMPTION CALL WILL FORCE A CHANGE TO THE SOUTHBOUND MD 32 SIGNAL PHASES (PHASE 2 AND 5).

CONTROLLER REQUIREMENTS

1. I-70 WESTBOUND RAMPS

   INSTALL A FULL-TRAFFIC-ACTUATED, EIGHT-PHASE CONTROLLER WITH SYSTEM PACKAGE AND THREE (3), FOUR-CHANNEL, TIME-DELAY-OUTPUT LOOP DETECTOR AMPLIFIERS HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET.

2. I-70 EASTBOUND RAMPS

   INSTALL A FULL-TRAFFIC-ACTUATED, EIGHT-PHASE CONTROLLER WITH SYSTEM PACKAGE AND THREE (3), FOUR-CHANNEL, TIME-DELAY-OUTPUT LOOP DETECTOR AMPLIFIERS HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET.

SPECIAL NOTE

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 WITH THE NEAREST STREET ADDRESS, ZIP CODE AND PHONE NUMBER FOR A PHONE DROP AT THE MD 99 INTERSECTION.

MAINTENANCE OF TRAFFIC

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

STANDARD NO. MD-104.00 - 104.00-12
STANDARD NO. MD-104.31-01 (FLAGGING OPERATION)
STANDARD NO. MD-104.44-01 (LEFT-LANE CLOSURE)
STANDARD NO. MD-104.49-01 (SHOULDER WORK)
STANDARD NO. MD-104.45-01 (RIGHT-LANE CLOSURE)
STANDARD NO. MD-104.35-01 (LANE SHIFT)
STANDARD NO. MD-104.33-02 (SHOULDER WORK)
STANDARD NO. MD-104.32-02 (INTERSECTION FLAGGING OPERATION)

PROJECT CONTACTS

THE CONTACT PERSONS FOR SHA ARE AS FOLLOWS:

MR. ROBERT FISHER
DISTRICT ENGINEER
PHONE: (301) 624-8140

MR. JOHN CONCANNON
ACTING ASSISTANT DISTRICT ENGINEER - TRAFFIC
PHONE: (301) 624-8141

MR. LEON KERNS
ASSISTANT DISTRICT ENGINEER - MAINTENANCE
PHONE: (301) 624-8140

MR. JIM BUCKALOO
ACTING DISTRICT UTILITIES ENGINEER
PHONE: (301) 624-8140

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

EQUIPMENT LIST "A"

A. EQUIPMENT TO BE SUPPLIED BY SHA

ITEM NO.	QUANTITY	DESCRIPTION
9000	2 EACH	QUICK CONNECTOR KIT AND TELEMETRY PANEL
9002	6 EACH	FOUR-CHANNEL, LOOP DETECTOR AMPLIFIER (DELAY OUTPUT).
9014	12 EACH	12 IN., ONE-WAY, THREE-SECTION (R,Y,G) TRAFFIC SIGNAL HEAD - MAST ARM MOUNT.
9014	2 EACH	12 IN., ONE-WAY, THREE-SECTION (RA,YA,GA) TRAFFIC SIGNAL HEAD - MAST ARM MOUNT.
9022	1 EACH	8 IN., ONE-WAY, THREE-SECTION (R,Y,G) TRAFFIC SIGNAL HEAD - MAST ARM MOUNT.
9028	1 EACH	12 IN., ONE-WAY, THREE-SECTION (RA,YA,GA) TRAFFIC SIGNAL HEAD - PEDESTAL MOUNT.
9036	1 EACH	12 IN., ONE-WAY, THREE-SECTION (RA,YA,GA) TRAFFIC SIGNAL HEAD - SIDE OF POLE MOUNT.
9041	1 EACH	8 IN., ONE-WAY, THREE-SECTION (R,Y,G) TRAFFIC SIGNAL HEAD - SIDE OF POLE MOUNT.
9081	2 EACH	EIGHT-PHASE, FULL-TRAFFIC-ACTUATED CONTROLLER WITH SYSTEM PACKAGE HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET.
9088	1 EACH	MASTER CONTROLLER (ASC 10,000 WITH TELEMETRY)
9089	242 S.F.	SHEET ALUMINUM SIGNS TO CONSIST OF :
	- 6 EACH	W3-3 SIGN (48 IN. X 48 IN.) WITH "NEW" PANEL (30 IN. X 30 IN.) - GROUND MOUNT.
	- 2 EACH	R10-6(1) SIGN (60 IN. X 36 IN.) - MAST ARM MOUNT.
	- 2 EACH	R3-1 SIGN (36 IN. X 36 IN.) - MAST ARM MOUNT.
	- 2 EACH	R3-3(2) SIGN (36 IN. X 36 IN.) - MAST ARM MOUNT.
	- 1 EACH	ASSOCIATED SHIELD ASSEMBLY "SOUTH, MD 32, LEFT ARROW" (36 IN. x 75 IN.)
	- 1 EACH	ASSOCIATED SHIELD ASSEMBLY "NORTH, MD 32, LEFT ARROW" (36 IN. x 75 IN.)

EQUIPMENT LIST "B"

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

ITEM NO.	QUANTITY	DESCRIPTION
1001	1 EACH	MAINTENANCE OF TRAFFIC PER ASSIGNMENT
2001	8 C.Y.	TEST PIT EXCAVATION
5010	140 L.F.	24 IN. WHITE THERMOPLASTIC PAVEMENT MARKING TAPE
5013	60 L.F.	REMOVE EXISTING PAVEMENT MARKINGS - ANY WIDTH
8001	21 C.Y.	FURNISH AND INSTALL CONCRETE FOR SIGNAL FOUNDATION
8003	1 EACH	FURNISH AND INSTALL BREAKAWAY PEDESTAL POLE (ANY SIZE)
8011	18 EACH	INSTALL SIGNAL HEAD (ANY TYPE)
8020	2 EACH	INSTALL CONTROLLER AND CABINET - BASE MOUNT
8021	1500 L.F.	SAW CUT FOR SIGNAL LOOP DETECTOR
8023	300 L.F.	FURNISH AND INSTALL 1 IN. LIQUID-TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR SLEEVE
8024	750 L.F.	FURNISH AND INSTALL 2 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8025	50 L.F.	FURNISH AND INSTALL 2 IN. SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED
8027	5700 L.F.	FURNISH AND INSTALL 3 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8029	250 L.F.	FURNISH AND INSTALL 3 IN. SCHEDULE 80 RIGID PVC CONDUIT - BORED
8030	170 L.F.	FURNISH AND INSTALL 4 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8032	330 L.F.	FURNISH AND INSTALL 4 IN. SCHEDULE 80 RIGID PVC CONDUIT - BORED
8033	45 EACH	FURNISH AND INSTALL ELECTRICAL HANDHOLE
8034	7 EACH	FURNISH AND INSTALL GROUND ROD - 3/4 IN. DIAMETER X 10 FT. LENGTH
8039	8400 L.F.	FURNISH AND INSTALL 12-PAIR COMMUNICATION CABLE, JELLY FILLED (UNDERGROUND)
8040	5350 L.F.	FURNISH AND INSTALL LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO 14. A.W.G.)
8041	9300 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 A.W.G.) ALUMINUM SHIELDED
8044	1800 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 A.W.G.)
8045	830 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 A.W.G.)
8046	760 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 A.W.G.)
8047	1 EACH	FURNISH AND INSTALL MAST ARM POLE AND TWIN 50 FT./50 FT. MAST ARMS
8049	550 L.F.	FURNISH AND INSTALL NO. 6 A.W.G. STRANDED BARE COPPER GROUND WIRE
8050	120 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 1 CONDUCTOR NO. 4 A.W.G. - THHN/THWN
8052	140 L.F.	FURNISH AND INSTALL 4 IN. X 6 IN. WOOD SIGN SUPPORT
8053	138 S.F.	INSTALL GROUND MOUNTED SIGN
8054	104 S.F.	INSTALL OVERHEAD SIGN
8056	4 EACH	FURNISH AND INSTALL 250 WATT HPS LUMINAIRE WITH PHOTOCELL
8057	4 EACH	FURNISH AND INSTALL LIGHTING BRACKET ARM FOR TRAFFIC SIGNAL STRUCTURE
8061	1 EACH	REMOVE AND DISPOSE OF EXISTING MATERIAL AND EQUIPMENT PER ASSIGNMENT
8070	2 EACH	FURNISH AND INSTALL CONTROL AND DISTRIBUTION EQUIPMENT (120/240V, 1 PHASE 3 WIRE SYST)
8082	1 EACH	FURNISH AND INSTALL MAST ARM POLE AND 50 FT. MAST ARM
8083	1 EACH	FURNISH AND INSTALL MAST ARM POLE AND 60 FT. MAST ARM
8085	1 EACH	FURNISH AND INSTALL MAST ARM POLE AND TWIN 50 FT./60 FT. MAST ARMS
NEG.	1 EACH	REBUILD EXISTING HANDHOLE
NEG.	LUMP SUM	BACKFILL, SEED AND MULCH AROUND POLE FOUNDATION

WR&A
Whitman, Requardt and Associates
Engineers and Planners
2315 Saint Paul Street
Baltimore, Maryland 21218
(410) 235-3450

REVISIONS

APPROVALS

ASST. TRAFFIC ENGINEERING DESIGN DIVISION

ASST. DISTRICT ENGINEER, TRAFFIC

CHIEF, TRAFFIC ENGINEERING DESIGN DIVISION

DIRECTOR, TRAFFIC & SAFETY

MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION
GENERAL INFORMATION SHEET
MD 32 AND I-70 RAMPS

DRAWN BY: S.BLOSS	F.A.P. NO.	TS NO.	SHEET NO.
CHECKED BY: N.LEARY	S.H.A. NO. AW280A5F/B5F		7 OF 7
SCALE: NONE	COUNTY: HOWARD	T.I.M.S. NO.	
DATE: 1-11-99	LOG MILE:		

M:\960\\310850IS.DGN