PROJECT DESCRIPTION

GENERAL

THIS PORTION OF THE PROJECT INVOLVES THE RECONSTRUCTION OR MODIFICATION OF THE FOLLOWING EXISTING TRAFFIC CONTROL SIGNALS IN BALTIMORE COUNTY:

A. RECONSTRUCTION

1. MD 542 (LOCH RAVEN BLVD) AND TAYLOR AVE
2. MD 542 (LOCH RAVEN BLVD) AND GLEN KEITH BLVD
3. MD 542 (LOCH RAVEN BLVD) AND PUTTY HILL AVE
4. MD 542 (LOCH RAVEN BLVD) AND JOAN AVE/MUSSULA RD
5. MD 542 (LOCH RAVEN BLVD) AND JOPPA RD

B. MODIFICATION

1. MD 542 (LOCH RAVEN BLVD) AND HILLENDALE/LOCH RAVEN PLAZA SHOPPING CENTER

MD 542 (LOCH RAVEN BLVD) IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

INTERSECTION OPERATION

1. MD 542 (LOCH RAVEN BLVD) AND TAYLOR AVE.

   THE INTERSECTION WILL OPERATE IN A NEMA EIGHT-PHASE,FULL-TRAFFIC ACTUATED MODE WITH THE MD 542 (LOCH RAVEN BLVD) APPROACHES OPERATING CONCURRENTLY AND THE TAYLOR AVE APPROACHES OPERATING CONCURRENTLY. EXCLUSIVE/PERMISSIVE LEFT-TURN PHASES ARE PROVIDED FOR ALL APPROACHES. ALTERNATE PEDESTRIAN PHASES ARE PROVIDED ACROSS BOTH LEGS OF MD 542 (LOCH RAVEN BLVD). PEDESTRIAN INDICATIONS ARE PROVIDED ACROSS TAYLOR AVE LEGS.

2. MD 542 (LOCH RAVEN BLVD) AND GLEN KEITH BLVD

   THE INTERSECTION WILL OPERATE IN A NEMA FOUR-PHASE,FULL-TRAFFIC ACTUATED MODE WITH THE MD 542 (LOCH RAVEN BLVD) APPROACHES OPERATING CONCURRENTLY AND THE GLEN KEITH BLVD APPROACHES OPERATING CONCURRENTLY. ALTERNATE PEDESTRIAN PHASES ARE PROVIDED ACROSS BOTH LEGS OF MD 542 (LOCH RAVEN BLVD).

3. MD 542 (LOCH RAVEN BLVD) AND PUTTY HILL AVE

   THE INTERSECTION WILL OPERATE IN A NEMA SIX-PHASE,FULL-TRAFFIC ACTUATED MODE WITH THE MD 542 (LOCH RAVEN BLVD) APPROACHES OPERATING CONCURRENTLY AND THE PUTTY HILL AVE APPROACHES OPERATING CONCURRENTLY. EXCLUSIVE/PERMISSIVE LEFT-TURN PHASES ARE PROVIDED FOR THE MD 542 (LOCH RAVEN BLVD) APPROACHES. LEADING PEDESTRIAN PHASES ARE PROVIDED ACROSS BOTH LEGS OF MD 542 (LOCH RAVEN BLVD). PEDESTRIAN INDICATIONS ARE PROVIDED ACROSS PUTTY HILL AVE LEGS.

4. MD 542 (LOCH RAVEN BLVD) AND JOAN AVE/MUSSULA ROAD

   THE INTERSECTION WILL OPERATE IN A NEMA SIX-PHASE,FULL-TRAFFIC ACTUATED MODE WITH THE MD 542 (LOCH RAVEN BLVD) APPROACHES OPERATING CONCURRENTLY AND THE JOAN AVE/MUSSULA ROAD APPROACHES OPERATING SPLIT. EXCLUSIVE/PERMISSIVE LEFT-TURN PHASES ARE PROVIDED FOR THE MD 542 (LOCH RAVEN BLVD) APPROACHES. ALTERNATE PEDESTRIAN PHASES ARE PROVIDED ACROSS BOTH LEGS OF MD 542 (LOCH RAVEN BLVD). PEDESTRIAN INDICATIONS ARE PROVIDED ACROSS JOAN AVE./MUSSULA RD. LEGS.

5. MD 542 (LOCH RAVEN BLVD) AND JOPPA ROAD

   THE INTERSECTION WILL OPERATE IN A NEMA EIGHT-PHASE,FULL-TRAFFIC ACTUATED MODE WITH THE MD 542 (LOCH RAVEN BLVD) APPROACHES OPERATING CONCURRENTLY AND THE JOPPA ROAD APPROACHES OPERATING CONCURRENTLY. EXCLUSIVE LEFT-TURN PHASES ARE PROVIDED FOR ALL APPROACHES. ALTERNATE PEDESTRIAN PHASES ARE PROVIDED ACROSS BOTH LEGS OF MD 542 (LOCH RAVEN BLVD). PEDESTRIAN INDICATIONS ARE PROVIDED ACROSS JOPPA ROAD LEGS.

6. MD 542 (LOCH RAVEN BLVD) AND HILLENDALE/LOCH RAVEN PLAZA SHOPPING CENTER

   THE INTERSECTION WILL OPERATE IN A NEMA FOUR-PHASE,FULL-TRAFFIC ACTUATED MODE WITH THE MD 542 (LOCH RAVEN BLVD) APPROACHES OPERATING CONCURRENTLY AND THE HILLENDALE/LOCH RAVEN PLAZA SHOPPING CENTER APPROACHES OPERATING CONCURRENTLY. ALTERNATE PEDESTRIAN PHASE EXIST ACROSS THE NORTH LEG OF MD 542 (LOCH RAVEN BLVD).

CONTROLLER REQUIREMENTS

1. MD 542 (LOCH RAVEN BLVD) AND TAYLOR AVE.

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

2. MD 542 (LOCH RAVEN BLVD) AND GLEN KEITH BLVD

   INSTALL A FULL TRAFFIC-ACTUATED, EIGHT-PHASE CONTROLLER WITH SYSTEM PACKAGE AND TWO (2) FOUR-CHANNEL,TIME-DELAY-OUTPUT LOOP DETECTOR AMPLIFIERS HOUSED IN A NEMA SIZE "6" BASE MOUNT CABINET.

3. MD 542 (LOCH RAVEN BLVD) AND PUTTY HILL AVENUE

   INSTALL A FULL TRAFFIC-ACTUATED, EIGHT-PHASE CONTROLLER WITH SYSTEM PACKAGE AND FIVE (5) FOUR-CHANNEL,TIME-DELAY-OUTPUT LOOP DETECTOR AMPLIFIERS HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET.

4. MD 542 (LOCH RAVEN BLVD) AND JOAN AVE./MUSSULA ROAD

   INSTALL A FULL-TRAFFIC-ACTUATED, EIGHT-PHASE CONTROLLER WITH SYSTEM PACKAGE AND TWO (2) FOUR-CHANNEL TIME-DELAY-OUTPUT LOOP DETECTOR AMPLIFIERS HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET.

5. MD 542 (LOCH RAVEN BLVD) AND JOPPA ROAD

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

6. MD 542 (LOCH RAVEN BLVD) AND HILLENDALE/LOCH RAVEN PLAZA SHOPPING CENTER

   SHA SIGNAL SHOP SHALL BE RESPONSIBLE FOR RETRO-FITTING DETECTOR RACK WITH THREE (3), FOUR-CHANNEL, TIME-DELAY-OUTPUT LOOP DETECTOR AMPLIFIERS IN THE EXISTING POLE MOUNTED CABINET AND INSTALLING QUICK CONNECTOR KIT AND TELEMETRY PANEL.

MAINTENANCE OF TRAFFIC

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

STANDARD NO. MD-104.00 - 104.00-30
STANDARD NO. MD-104.31-01 (FLAGGING OPERATION)
STANDARD NO. MD-104.32-01 (INTERSECTION FLAGGING OPERATION)
STANDARD NO. MD-104.33-01 (SHOULDER WORK)
STANDARD NO. MD-104.34 (LANE SHIFT)
STANDARD NO. MD-104.44-01 (LEFT LANE CLOSURE)
STANDARD NO. MD-104.45-01 (RIGHT LANE CLOSURE)
STANDARD NO. MD-104.46-01 (CENTER LANE CLOSURE)
STANDARD NO. MD-104.48-01 (INTERSECTION TURN-BAY CLOSURE)
STANDARD NO. MD-104.49-01 (SHOULDER WORK)

EQUIPMENT LIST "A"

A. EQUIPMENT TO BE SUPPLIED BY THE SHA

CATAGORY CODE NO.	QUANTITY	DESCRIPTION
900000	1 EACH	DETECTOR RACK RETRO-FIT
900000	24 EACH	FOUR CHANNEL, TIME-DELAY-OUTPUT LOOP DETECTOR AMPLIFIER
900000	1 EACH	TRAFFIC RESPONSIVE MASTER CONTROLLER
900000	1 EACH	QUICK CONNECTOR KIT AND TELEMETRY PANEL
971017	5 EACH	EIGHT PHASE, FULL TRAFFIC-ACTUATED CONTROLLER WITH SYSTEM PACKAGE HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET
973023	774 S.F.	SHEET ALUMINUM SIGNS TO CONSIST OF :
		- 8 EACH R10-12 SIGN (36 IN. X 42 IN.) - MAST ARM MOUNT
		- 17 EACH D-3(1) SIGN (DUAL FACE) (VARIABLE x 16") - MAST ARM MOUNT
		- 6 EACH R3-5(L) SIGN (30 IN. X 36 IN.) - MAST ARM MOUNT
		- 5 EACH R10-11B (24 IN. x 24 IN.) - MAST ARM MOUNT
		- 1 EACH R3-5R (30 IN. x 30 IN.) - MAST ARM MOUNT
		- 5 EACH ASSOCIATED SHIELD ASSEMBLY "SOUTH, MD 542, RIGHT ARROW (30 IN. X 51 IN.) - POLE MOUNT
		- 4 EACH ASSOCIATED SHIELD ASSEMBLY "SOUTH, MD 542, LEFT ARROW" (48 IN. X 75 IN.) - POLE MOUNT
		- 5 EACH ASSOCIATED SHIELD ASSEMBLY "NORTH, MD 542 RIGHT ARROW (30 IN. x 51 IN.) - POLE MOUNT
		- 4 EACH ASSOCIATED SHIELD ASSEMBLY "NORTH, MD 542 LEFT ARROW (48 IN. x 75 IN.) - POLE MOUNT
		- 1 EACH ASSOCIATED SHIELD ASSEMBLY "SOUTH, MD 542 LEFT ARROW (30 IN. x 51 IN.) - POLE MOUNT
		- 1 EACH ASSOCIATED SHIELD ASSEMBLY "NORTH, MD 542 LEFT ARROW (30 IN. x 51 IN.) - POLE ,MOUNT
		- 4 EACH D-3(1) SIGN (VARIABLE x 32 IN.) - MAST ARM MOUNT

EQUIPMENT LIST "B"

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

CATAGORY CODE NO.	QUANTITY	DESCRIPTION
120500	LUMP SUM	MAINTENANCE OF TRAFFIC
120610	30 U.D.	ARROW PANEL
120620	300 S.F.	TEMPORARY TRAFFIC SIGNS
120662	660 L.F.	REMOVAL OF EXISTING PAVEMENT MARKINGS - ANY WIDTH
130850	LUMP SUM	MOBILIZATION
203030	30 C.Y.	TEST PIT EXCAVATION
500000	765 L.F.	24 INCH WHITE HEAT APPLIED PERMANENT PREFORMED PAVEMENT MARKINGS
585620	7000 L.F.	12 INCH WHITE HEAT APPLIED PERMANENT PREFORMED PAVEMENT MARKINGS
801004	81 C.Y.	FURNISH AND INSTALL CONCRETE FOR SIGNAL FOUNDATION
802501	2300 L.F.	FURNISH AND INSTALL STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
805150	300 L.F.	FURNISH AND INSTALL 3 INCH SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED
805155	1800 L.F.	FURNISH AND INSTALL 4 INCH SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED
805160	500 L.F.	FURNISH AND INSTALL 1 INCH, LIQUID-TIGHT, FLEXIBLE NON-METALLIC CONDUIT DETECTOR SLEEVE
810010	225 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE 1-CONDUCTOR NO. 4 A.W.G - THHN/THWN
811001	73 EACH	FURNISH AND INSTALL ELECTRICAL HANDHOLE
813015	774 S.F.	INSTALL OVERHEAD SIGN
822002	10230 L.F.	FURNISH AND INSTALL 12-PAIR COMMUNICATION CABLE JELLY-FILLED (UNDERGROUND)
831010	8 EACH	FURNISH AND INSTALL 250 WATT HPS LUMINAIRE WITH PHOTOCELL
837001	29 EACH	FURNISH AND INSTALL GROUND ROD - 3/4 IN. DIAMETER X 10 FT. LENGTH
838003	5 EACH	FURNISH AND INSTALL CONTROL AND DISTRIBUTION EQUIPMENT
861103	7500 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR ALUMINUM SHIELDED (NO. 14 A.W.G.)
861105	2755 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 A.W.G.)

PROJECT CONTACTS

THE CONTACT PERSONS FOR SHA ARE AS FOLLOWS:

MR. DAVE MALKOWSKI
DISTRICT ENGINEER
PHONE: (410) 321-2810

MR. RANDALL SCOTT
ASSISTANT DISTRICT ENGINEER - TRAFFIC
PHONE: (410) 321-2781

MR. DAVE RAMSEY
ASSISTANT DISTRICT ENGINEER - MAINTENANCE
PHONE: (410) 321-2761

MR. JOSEPH MCMAHON
DISTRICT UTILITIES ENGINEER
PHONE: (410) 321-2841

MR. RICHARD L. DAFF, SR.
CHIEF, TRAFFIC OPERATIONS DIVISION
PHONE: (410) 787-2810

EQUIPMENT LIST "B" (CONT.)

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

CATAGORY CODE NO.	QUANTITY	DESCRIPTION
861106	4640 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 3 CONDUCTOR (NO. 14 A.W.G.)
861107	900 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 A.W.G.)
861108	8600 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 A.W.G)
861116	1500 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 A.W.G.)
862101	19500 L.F.	FURNISH AND INSTALL LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO. 14 A.W.G.)
862102	6300 L.F.	FURNISH AND INSTALL SAWCUT FOR SIGNAL (LOOP DETECTOR)
866104	8 EACH	FURNISH AND INSTALL 20 FOOT LIGHTING BRACKET FOR TRAFFIC SIGNAL STRUCTURE
871201	5 EACH	INSTALL CONTROLLER AND CABINET - BASE MOUNT
800000	570 L.F.	FURNISH AND INSTALL 2 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
800000	6300 L.F.	FURNISH AND INSTALL 3 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
800000	750 L.F.	FURNISH AND INSTALL 4 IN SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
800000	1 EACH	REMOVAL AND DISPOSAL OF EXISTING MATERIAL AND EQUIPMENT
800000	20 EACH	FURNISH AND INSTALL MICROLOOP PROBE SET WITH 1,000 FOOT LEAD-IN CABLE
800000	14 EACH	FURNISH AND INSTALL MICROLOOP PROBE SET WITH 500 FT. LEAD-IN CABLE
800000	184 EACH	FURNISH AND INSTALL 12 IN. VEHICULAR TRAFFIC SIGNAL HEAD SECTION
	2 EACH	FURNISH AND INSTALL 12 IN., ONE-WAY, FOUR-SECTION (R,Y,G,GA) TRAFFIC SIGNAL HEAD - MAST ARM MOUNT
	30 EACH	FURNISH AND INSTALL 12 IN.,ONE-WAY, THREE SECTION (R,Y,G) TRAFFIC SIGNAL HEAD - MAST ARM MOUNT
	8 EACH	FURNISH AND INSTALL 12 IN., ONE-WAY, FIVE SECTION (RA,YA,GA,Y,G) TRAFFIC SIGNAL HEAD - MAST ARM MOUNT
	10 EACH	FURNISH AND INSTALL 12 IN., ONE-WAY, THREE SECTION (RA,YA,GA) TRAFFIC SIGNAL HEAD - MAST ARM MOUNT
	8 EACH	FURNISH AND INSTALL 12 IN./8 IN.,ONE-WAY, FIVE SECTION (12 IN. YA,GA) TRAFFIC SIGNAL HEAD - MAST ARM MOUNT
800000	36 EACH	FURNISH AND INSTALL 8 IN. VEHICULAR TRAFFIC SIGNAL HEAD SECTION
	4 EACH	FURNISH AND INSTALL 8 IN., ONE-WAY, THREE SECTION (R,Y,G) TRAFFIC SIGNAL HEAD - MAST ARM MOUNT
	8 EACH	FURNISH AND INSTALL 12 IN./8 IN., ONE-WAY, FIVE SECTION (8 IN. R,Y,G) TRAFFIC SIGNAL HEAD - MAST ARM MOUNT
800000	64 EACH	FURNISH AND INSTALL 12 IN. PEDESTRIAN SIGNAL HEAD SECTIONS:
	7 EACH	FURNISH AND INSTALL 12 IN. ONE-WAY PEDESTRIAN SIGNAL HEAD - PEDESTAL MOUNT
	11 EACH	FURNISH AND INSTALL 12 IN. TWO-WAY PEDESTRIAN SIGNAL HEAD - POLE MOUNT
	3 EACH	FURNISH AND INSTALL 12 IN. ONE-WAY PEDESTRIAN SIGNAL HEAD - POLE MOUNT
800000	3 EACH	FURNISH AND INSTALL 27 FT. STEEL POLE WITH A 38 FT. MAST ARM
800000	6 EACH	FURNISH AND INSTALL 27 FT. STEEL POLE WITH A 50 FT. MAST ARM
800000	3 EACH	FURNISH AND INSTALL 27 FT. STEEL POLE WITH A 60 FT. MAST ARM
800000	1 EACH	FURNISH AND INSTALL 27 FT. STEEL POLE WITH A 70 FT. MAST ARM
800000	3 EACH	FURNISH AND INSTALL 27 FT. STEEL POLE WITH TWIN 50 FT/70 FT. MAST ARMS
800000	7 EACH	FURNISH AND INSTALL BREAKAWAY PEDESTAL POLE
800000	1 EACH	FURNISH AND INSTALL CONDUIT BEND IN EXISTING BASE SIGNAL STRUCTURE
800000	13 EACH	CUT,CLEAN, GALVANIZE AND CAP TRAFFIC SIGNAL STRUCTURE
800000	20 EACH	FURNISH AND INSTALL PEDESTRIAN PUSHBUTTON AND R10-4(1) SIGN (NOTE: SIGN TO READ "PUSH BUTTON TO CROSS LOCH RAVEN BLVD)
800000	5 EACH	REMOVAL OF EXISTING SIGNAL EQUIPMENT TO BE SALVAGED
800000	5 EACH	DELIVERY OF SALVAGED SIGNAL EQUIPMENT AND MATERIAL

⚠ REVISE QUANITITIES AND PROJECT DESCRIPTION
ADDENDUM NO.1 MAY 11, 2000

TSP-16

MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION

GENERAL INFORMATION SHEET
MD 542 (LOCH RAVEN BLVD)

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

DRAWN BY: S.BLOSS	F.A.P. NO. SEE TITLE SHEET	TS NO.	SHEET NO.
CHECKED BY: N.LEARY	S.H.A. NO. BA3225183		
SCALE: NONE	COUNTY: BALTIMORE	T.I.M.S. NO. D443	OF
DATE: 5/2/00	LOG MILE:		