PROJECT DESCRIPTION

GENERAL

THIS PORTION OF THE PROJECT INVOLVES THE CONSTRUCTION OF THE ULTIMATE TRAFFIC SIGNAL AT MD 355 AND MD 85 RELOCATED AND INSTALLATION OF A NEW TRAFFIC SIGNAL AT MD 85 RELOCATED AND ACCESS ROAD IN FREDERICK COUNTY.

INTERSECTION OPERATION

1. MD 355 AND MD 85 RELOCATED

   THE INTERSECTION WILL OPERATE IN A NEMA EIGHT-PHASE, FULL-TRAFFIC-ACTUATED MODE WITH THE MD 355 APPROACHES OPERATING CONCURRENTLY AND THE MD 85 RELOCATED APPROACHES OPERATING CONCURRENTLY.

   EXCLUSIVE/PERMISSIVE LEFT-TURN PHASES WILL BE PROVIDED ON THE NORTH AND SOUTH MD 355 APPROACHES AND EXCLUSIVE LEFT-TURN PHASES WILL BE PROVIDED ON MD 85 RELOCATED APPROACHES.

   ALTERNATE PEDESTRIAN PHASES WILL BE PROVIDED ACROSS BOTH LEGS OF MD 355 AND PEDESTRIAN INDICATIONS WILL BE PROVIDED ACROSS BOTH LEGS OF MD 85 RELOCATED.

2. MD 85 RELOCATED AND ACCESS ROAD

   THE INTERSECTION WILL OPERATE IN A NEMA FOUR-PHASE, FULL-TRAFFIC-ACTUATED MODE WITH THE MD 85 RELOCATED APPROACHES OPERATING CONCURRENTLY AND THE ACCESS ROAD APPROACH OPERATING ALONE.

   EXCLUSIVE/PERMISSIVE LEFT-TURN PHASES WILL BE PROVIDED ON THE NORTHBOUND MD 85 RELOCATED APPROACH.

3. MD 85 AND WALMART ENTRANCE

   THE EXISTING BASE MOUNTED CABINET AND CONTROLLER WILL BE USED.

CONTROLLER REQUIREMENTS

1. MD 355 AND MD 85 RELOCATED

   THE EXISTING BASE MOUNTED CABINET AND CONTROLLER WILL BE USED.

2. MD 85 RELOCATED AND ACCESS ROAD

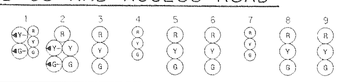
   INSTALL A FULL-TRAFFIC-ACTUATED, EIGHT-PHASE CONTROLLER, WITH SYSTEM PACKAGE AND THREE (3) FOUR-CHANNEL, TIME-DELAY-OUTPUT LOOP DETECTOR AMPLIFIERS HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET.

3. MD 85 AND WALMART ENTRANCE

   INTERSECTION OPERATION WILL REMAIN THE SAME.

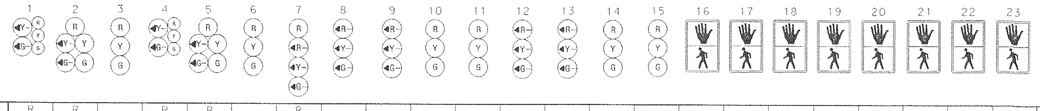
PHASE CHARTS

MD 85 AND ACCESS ROAD



	1	2	3	4	5	6	7	8	9
PHASE 1 + 6	G ← G	G ← G	G	R	R	R	R	R	R
1 + 6 CHANGE	G ← Y	G ← Y	G	R	R	R	R	R	R
PHASE 2 + 6	G	G	G	G	G	G	R	R	R
2 + 6 CHANGE	Y	Y	Y	Y	Y	Y	R	R	R
PHASE 4	R	R	R	R	R	R	G	G	G
4 CHANGE	R	R	R	R	R	R	Y	Y	Y
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R

MD 355 AND MD 85 RELOCATED



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
PHASE 1 + 5	R ← G	R ← G	R	R ← G	R ← G	R	R ← R	← R	← R	R	R	← R	← R	R	R	DW	DW	DW	DW	DW	DW	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	G	R	R	G	R ← R	← R	← R	R	R	← R	← R	R	R	DW	WK	WK	DW	DW	DW	DW	DW
1 + 6 CHANGE	G ← Y	G ← Y	G	R	R	G	R ← R	← R	← R	R	R	← R	← R	R	R	DW	WK	WK	DW	DW	DW	DW	DW
PHASE 2 + 5	R	R	R	G ← G	G ← G	G	R ← R	← R	← R	R	R	← R	← R	R	R	WK	DW	DW	WK	DW	DW	DW	DW
2 + 5 CHANGE	R	R	R	G ← Y	G ← Y	G	R ← R	← R	← R	R	R	← R	← R	R	R	WK	DW	DW	WK	DW	DW	DW	DW
PHASE 2 + 6	G	G	G	G	G	G	R ← R	← R	← R	R	R	← R	← R	R	R	WK	WK	WK	WK	DW	DW	DW	DW
PED CLEARANCE	G	G	G	G	G	G	R ← R	← R	← R	R	R	← R	← R	R	R	FL/DW	FL/DW	FL/DW	FL/DW	DW	DW	DW	DW
2 + 6 CHANGE	G	G	Y	Y	Y	Y	R ← R	← R	← R	R	R	← R	← R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 3 + 7	R	R	R	R	R	R	← G	← G	← G	R	R	← G	← G	R	R	DW	DW	DW	DW	DW	DW	DW	DW
3 + 7 CHANGE	PHASE 3 + 7 MAY CHANGE TO PHASE 3 + 8, PHASE 4 + 7 OR PHASE 4 + 8																						
PHASE 3 + 8	R	R	R	R	R	R	R ← R	← R	← R	R	R	← G	← G	G	G	DW	DW	DW	DW	DW	DW	DW	DW
3 + 8 CHANGE	R	R	R	R	R	R	R ← R	← R	← R	R	R	← Y	← Y	G	G	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 4 + 7	R	R	R	R	R	R	← G	← G	← G	G	G	← R	← R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
4 + 7 CHANGE	R	R	R	R	R	R	← Y	← Y	← Y	G	G	← R	← R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 4 + 8	R	R	R	R	R	R	← R	← R	← R	G	G	← R	← R	G	G	DW	DW	DW	DW	DW	DW	DW	DW
4 + 8 CHANGE	R	R	R	R	R	R	← R	← R	← R	Y	Y	← R	← R	Y	Y	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 4 + 8 ALT	R	R	R	R	R	R	← R	← R	← R	G	G	← R	← R	G	G	DW	DW	DW	DW	WK	WK	WK	WK
PED CLEARANCE	R	R	R	R	R	R	← R	← R	← R	G	G	← R	← R	G	G	DW	DW	DW	DW	FL/DW	FL/DW	FL/DW	FL/DW
4 + 8 ALT CHANGE	R	R	R	R	R	R	← R	← R	← R	Y	Y	← R	← R	Y	Y	DW	DW	DW	DW	DW	DW	DW	DW
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	← FL/R	← FL/R	FL/R	FL/R	← FL/R	← FL/R	FL/R	FL/R	DARK	DARK	DARK	DARK	DARK	DARK	DARK	DARK

EQUIPMENT LIST "A"

A. EQUIPMENT TO BE SUPPLIED BY THE SHA

CATAGORY CODE NO.	QUANTITY	DESCRIPTION
900000	3 EACH	FOUR CHANNEL, TIME-DELAY-OUTPUT LOOP DETECTOR AMPLIFIER
971017	1 EACH	EIGHT-PHASE, FULL-TRAFFIC-ACTUATED CONTROLLER WITH SYSTEM PACKAGE HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET
973023	127 S.F.	SHEET ALUMINUM SIGNS TO CONSIST OF :
		- 4 EACH R3-5(L) SIGN (30 IN. X 36 IN.) - MAST ARM MOUNT
		- 3 EACH R10-12 SIGN (36 IN. X 42 IN.) - MAST ARM MOUNT
		- 3 EACH M95-1 (72 IN. x 24 IN.) - MAST ARM MOUNT
		- 2 EACH M95-1 (78 IN. x 24 IN.) - MAST ARM MOUNT

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-104.37-01 (LEFT LANE CLOSURE)
STANDARD NO. MD-104.38-01 (RIGHT LANE CLOSURE)
STANDARD NO. MD-104.39-01 (INTERSECTION FAR-SIDE CLOSURE)
STANDARD NO. MD-104.40-01 (INTERSECTION FAR-LEFT LANE CLOSURE)
STANDARD NO. MD-104.40-01 (INTERSECTION FAR-LEFT LANE CLOSURE)
STANDARD NO. MD-104.43-01 (SHOULDER WORK)
STANDARD NO. MD-104.32-01 (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
ASSISTANT DISTRICT ENGINEER - TRAFFIC
PHONE: (301) 624-8141

MR. LEON KERNS
ACTING ASSISTANT DISTRICT ENGINEER - MAINTENANCE
PHONE: (410) 624-8140

MR. JOHN NESBIT
DISTRICT UTILITIES ENGINEER
PHONE: (310) 729-8436

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

EQUIPMENT LIST "B"

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

CATEGORY CODE NO.	QUANTITY	DESCRIPTION
120500	LUMP SUM	MAINTENANCE OF TRAFFIC
120610	3 U.D.	ARROW PANEL
203030	9 C.Y.	TEST PIT EXCAVATION
585620	1200 L.F.	12 IN. WHITE HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
585624	340 L.F.	24 IN. WHITE HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
585630	3 EACH	HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING ARROW
585634	3 EACH	REMOVAL OF EXISTING PAVEMENT MARKING ARROW
801004	36 C.Y.	FURNISH AND INSTALL CONCRETE FOR SIGNAL FOUNDATION
802501	1200 L.F.	FURNISH AND INSTALL NO. 6 A.W.G. STRANDED BARE COPPER GROUND WIRE
805160	75 L.F.	FURNISH AND INSTALL 1 IN. LIQUID-TIGHT FLEXIBLE NON-METALLIC CONDUIT DETECTOR SLEEVE
810010	45 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE 1-CONDUCTOR NO. 4 A.W.G. - THHN/THWN
811001	23 EACH	FURNISH AND INSTALL ELECTRICAL HANDHOLE
813015	127 S.F.	INSTALL OVERHEAD SIGN
818052	2 EACH	FURNISH AND INSTALL 27 FT. STEEL POLE WITH A 70 FT. MAST ARM
831010	6 EACH	FURNISH AND INSTALL 250 WATT HPS LUMINAIRE WITH PHOTOCELL
837001	11 EACH	FURNISH AND INSTALL GROUND ROD- 3/4 IN. DIAMETER X 10 FT. LENGTH
807205	1 EACH	FURNISH AND INSTALL CONTROL AND DISTRIBUTION EQUIPMENT
860270	15 EACH	FURNISH AND INSTALL 8 IN. VEHICULAR TRAFFIC SIGNAL HEAD SECTION
860272	70 EACH	FURNISH AND INSTALL 12 IN. VEHICULAR TRAFFIC SIGNAL HEAD SECTION
860278	16 EACH	FURNISH AND INSTALL 12 IN. PEDESTRIAN SIGNAL HEAD SECTION - POLE MOUNT
861104	5500 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE- 2 CONDUCTOR ALUMINUM SHIELDED (NO. 14 A.W.G.)
861105	1000 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE- 2 CONDUCTOR (NO. 14 A.W.G.)
861106	2000 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE- 3 CONDUCTOR (NO. 14 A.W.G.)
861107	500 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE- 5 CONDUCTOR (NO. 14 A.W.G.)
861108	4000 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE- 7 CONDUCTOR (NO. 14 A.W.G.)
861116	1600 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE- 2 CONDUCTOR (NO. 12 A.W.G.)
862101	5500 L.F.	FURNISH AND INSTALL LOOP WIRE ENCASED IN 1/4 IN. FLEXIBLE TUBING (NO. 14 A.W.G.)
862102	1800 L.F.	FURNISH AND INSTALL SAWCUT FOR SIGNAL
866104	6 EACH	FURNISH AND INSTALL 20 FT. STREET LIGHT ARM
870160	750 L.F.	FURNISH AND INSTALL 2 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
870161	100 L.F.	FURNISH AND INSTALL 2 IN. SCHEDULE 80 RIGID PVC CONDUIT - BORED
870164	140 L.F.	FURNISH AND INSTALL 3 IN. SCHEDULE 80 RIGID PVC CONDUIT - BORED
870163	2350 L.F.	FURNISH AND INSTALL 3 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
870166	500 L.F.	FURNISH AND INSTALL 4 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
870167	820 L.F.	FURNISH AND INSTALL 4 IN. SCHEDULE 80 RIGID PVC CONDUIT - BORED
871202	1 EACH	INSTALL CONTROLLER AND CABINET - BASE MOUNT
800000	1 EACH	REMOVAL AND DISPOSAL OF EXISTING MATERIAL AND EQUIPMENT
800000	3 EACH	FURNISH AND INSTALL 27 FT. STEEL POLE WITH A 60 FT. MAST ARM
800000	3 EACH	FURNISH AND INSTALL 500 FT. VIDEO TRAFFIC DETECTION CABLE
800000	3 EACH	FURNISH AND INSTALL 27 FT. STEEL POLE WITH A 50 FT. MAST ARM
800000	1 EACH.	FURNISH AND INSTALL 250 FT. VIDEO TRAFFIC DETECTION CABLE
800000	4 EACH	RELOCATE VIDEO TRAFFIC DETECTION CAMERA
800000	4 EACH	FURNISH AND INSTALL PEDESTRIAN PUSHBUTTON AND R10-4(1) SIGN (NOTE: SIGN TO READ "PUSH BUTTON TO CROSS MD 355")
800000	6 EACH	FURNISH AND INSTALL MICROLOOP PROBE SET WITH 1000 FT. LEAD-IN

TSP-11

WR&A
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Baltimore, Maryland 21218
(410) 235-3450

MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION
GENERAL INFORMATION SHEET - ULTIMATE SIGNALS
MD 85 RELOCATED

DRAWN BY: S.BLOSS	F.A.P. NO. SEE TITLE SHEET	TS NO.	SHEET NO.
CHECKED BY: N.LEARY	S.H.A. NO. FR8668823-B24		
SCALE: NONE	COUNTY: FREDERICK	T.I.M.S. NO. E089	152 OF 189
DATE: 11/16/01	LOG MILE:		

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