

PROJECT DESCRIPTION

GENERAL

THIS PORTION OF THE PROJECT INVOLVES THE INSTALLATION OF A NEW TRAFFIC SIGNAL AT THE RECONSTRUCTED INTERSECTION OF MD 355 (URBANA PIKE) AND MD 80 (FINGERBOARD ROAD) IN FREDERICK COUNTY. MD 355 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

INTERSECTION OPERATION

THIS INTERSECTION IS TO OPERATE IN A NEMA EIGHT PHASE FULLY-TRAFFIC-ACTUATED MODE. THERE WILL BE AN EXCLUSIVE/PERMISSIVE LEFT TURN FOR BOTH MOVEMENTS ON MD 355. THE THROUGH MOVEMENTS ON MD 355 WILL OPERATE CONCURRENTLY. THERE WILL BE AN EXCLUSIVE/PERMISSIVE LEFT TURN FOR BOTH MOVEMENTS ON MD 80. THE THROUGH MOVEMENTS ON MD 80 WILL OPERATE CONCURRENTLY.

CONTROLLER REQUIREMENTS

INSTALL AN EIGHT PHASE, FULLY-TRAFFIC-ACTUATED, SOLID STATE DIGITAL CONTROLLER WITH THREE FOUR-CHANNEL RACK MOUNTED LOOP DETECTOR AMPLIFIERS, INTERSECTION MONITOR (WITH BATTERY BACK-UP FOR PHONE DROP) AND TELEMETRY MODULE WITH ALL THE NECESSARY HARNESSSES, TO BE HOUSED IN A NEMA SIZE 6 BASE-MOUNTED CABINET.

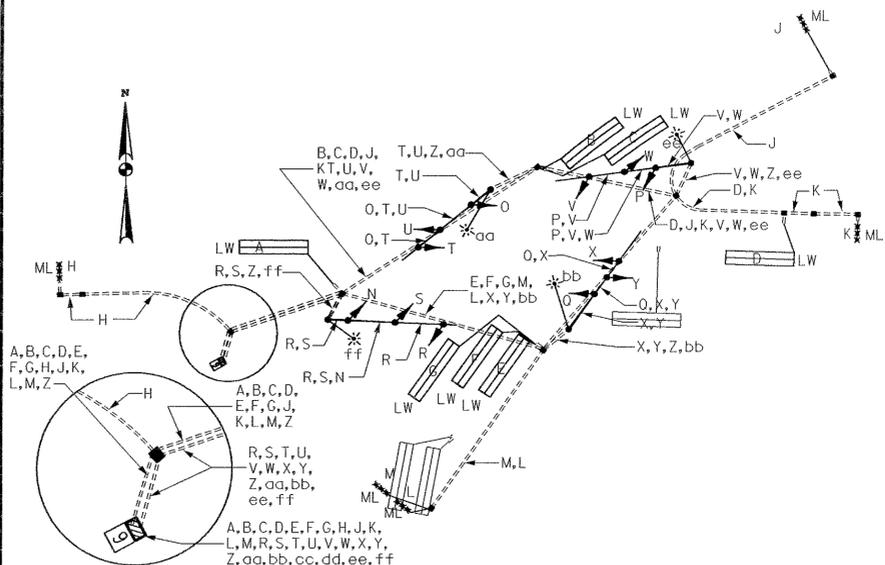
SPECIAL NOTE

UPON COMPLETION OF THIS PROJECT THE CONTRACTOR SHALL NOTIFY MR. ROBERT SNYDER OF SHA, AT 410-787-7631, TO ARRANGE FOR THE PHONE LINE INSTALLATION. THE CONTRACTOR IS TO PROVIDE MR. SNYDER WITH THE NEAREST STREET ADDRESS, ZIP CODE AND TELEPHONE NUMBER.

ALL UTILITIES SHOWN ON THESE PLANS ARE SCHEMATIC AND ARE NOT TO BE CONSIDERED COMPLETE BECAUSE THESE UTILITIES MAY BE MODIFIED PRIOR TO AND DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL UTILITY COMPANIES PRIOR TO CONSTRUCTION SO THAT ALL UTILITIES MAY BE LOCATED IN THE FIELD. IF THE CONTRACTOR PERCEIVES THAT A CONFLICT BETWEEN THE UTILITIES AND THE TRAFFIC SIGNAL EQUIPMENT WILL OCCUR, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IMMEDIATELY.

THE CONTROLLER AND CABINET MUST BE DELIVERED TO THE SHA SIGNAL SHOP 14 DAYS PRIOR TO INSTALLATION FOR WIRING AND TESTING. NOTIFY MR. ED RODENHIZER, AT 410-787-7650, 72 HRS IN ADVANCE OF INTENDED DELIVERY. CATALOG CUTS FOR ALL MATERIALS MUST BE SUBMITTED AND APPROVED BY THE ADMINISTRATION PRIOR TO INSTALLATION.

WIRING DIAGRAM



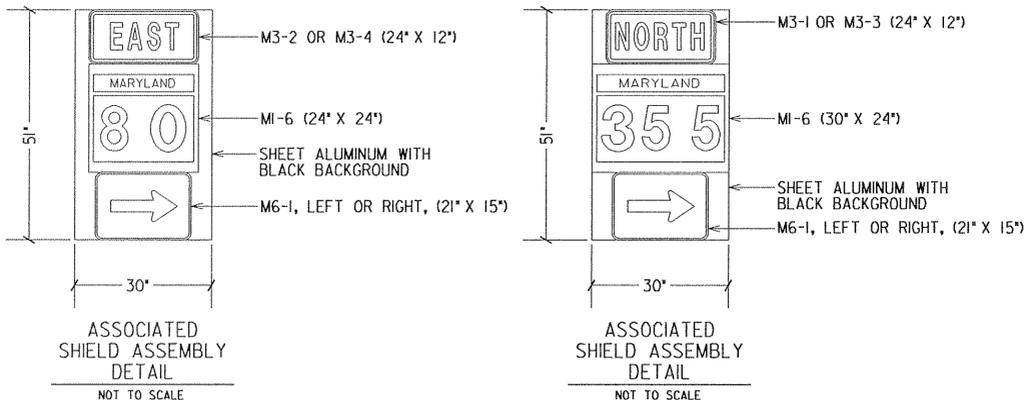
- A, B, C, D, E, F, G } 2-CONDUCTOR CABLE (ALUMINUM SHIELDED)
- H, J, K, L, M } MICRO LOOP PROBE LEAD-IN
- N, O, P, Q } 5-CONDUCTOR CABLE (NO. 14 A.W.G.)
- R, S, T, U, V, W, X, Y } 7-CONDUCTOR CABLE (NO. 14 A.W.G.)
- aa, bb, ee, ff } 2-CONDUCTOR TRAY CABLE (NO. 12 A.W.G.)
- Z } BARE COPPER STRANDED GROUND WIRE (NO. 6 A.W.G.)

- cc — 1-CONDUCTOR CABLE (NO. 4 A.W.G.) FOR INTERSECTION LIGHTING ELECTRICAL SERVICE
- dd — 1-CONDUCTOR CABLE (NO. 4 A.W.G.) FOR TRAFFIC SIGNAL ELECTRICAL SERVICE
- PF — PROPOSED ELECTRICAL SERVICE BY ALLEGHENY POWER
- LW — LOOP WIRE (NO. 14 A.W.G.) IN FLEXIBLE TUBING
- ML — MICRO LOOP PROBE

EQUIPMENT LIST "B"

B. EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR

SPEC. SECTION	QUANTITY	DESCRIPTION
818	1 EA.	FURNISH AND INSTALL 27 FT. STEEL MAST ARM POLE WITH A SINGLE 50 FT. MAST ARM
818	1 EA.	FURNISH AND INSTALL 27 FT. STEEL MAST ARM POLE WITH A SINGLE 54 FT. MAST ARM
818	1 EA.	FURNISH AND INSTALL 27 FT. STEEL MAST ARM POLE WITH A SINGLE 56 FT. MAST ARM
818	1 EA.	FURNISH AND INSTALL 27 FT. STEEL MAST ARM POLE WITH A SINGLE 60 FT. MAST ARM



PHASE DIAGRAM

	1	2	3	4	5	6	7	8	9	10	11	12	
PHASE 1 + 5	R	R	R	R	R	R	R	R	R	R	R	R	↑
1 + 5 CHANGE TO PHASE 1 + 6, PHASE 2 + 5 OR PHASE 2 + 6	G	G	G	G	G	G	G	G	G	G	G	G	↑
PHASE 1 + 6	G	G	G	G	G	G	G	G	G	G	G	G	↑
1 CHANGE	G	G	G	G	G	G	G	G	G	G	G	G	↑
PHASE 2 + 5	R	R	R	R	R	R	R	R	R	R	R	R	↑
5 CHANGE	R	R	R	R	R	R	R	R	R	R	R	R	↑
PHASE 2 + 6	G	G	G	G	G	G	G	G	G	G	G	G	↑
2 + 6 CHANGE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	↑
PHASE 3 + 7	R	R	R	R	R	R	R	R	R	R	R	R	↑
3 + 7 CHANGE TO 3 + 8, PHASE 4 + 7 OR PHASE 4 + 8	G	G	G	G	G	G	G	G	G	G	G	G	↑
PHASE 3 + 8	R	R	R	R	R	R	R	R	R	R	R	R	↑
3 CHANGE	R	R	R	R	R	R	R	R	R	R	R	R	↑
PHASE 4 + 7	R	R	R	R	R	R	R	R	R	R	R	R	↑
7 CHANGE	R	R	R	R	R	R	R	R	R	R	R	R	↑
PHASE 4 + 8	R	R	R	R	R	R	R	R	R	R	R	R	↑
4 + 8 CHANGE	R	R	R	R	R	R	R	R	R	R	R	R	↑
FLASHING OPERATION	F	F	F	F	F	F	F	F	F	F	F	F	↑

EQUIPMENT LIST "B"

B. EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR

SPEC. SECTION	QUANTITY	DESCRIPTION
205	5 C.Y.	TEST PIT EXCAVATION
XXX	120 L.F.	24 IN. WHITE THERMOPLASTIC PREFORMED PAVEMENT MARKING
801	18 C.Y.	FURNISH AND INSTALL CONCRETE FOR SIGNAL FOUNDATION
812	170 L.F.	FURNISH AND INSTALL WOOD SIGN SUPPORTS 4 IN. X 6 IN.
810	150 L.F.	FURNISH AND INSTALL NO. 6 A.W.G. STRANDED BARE COPPER GROUND WIRE
805	70 L.F.	FURNISH AND INSTALL 1 IN. LIQUID-TIGHT NON-METALLIC CONDUIT FOR DETECTOR SLEEVE
810	120 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 1 CONDUCTOR (NO. 4 A.W.G. THHN/THWN)
811	12 EA.	FURNISH AND INSTALL ELECTRICAL HANDHOLE
813	7 EA.	BAND SIGN TO SIGN SUPPORT
813	100 S.F.	INSTALL GROUND MOUNTED SIGN
813	93 S.F.	INSTALL OVERHEAD SIGN
804	5 EA.	FURNISH AND INSTALL GROUND ROD - 3/4 IN. DIAMETER X 10 FT. LENGTH
807	1 EA.	FURNISH AND INSTALL CONTROL AND DISTRIBUTION EQUIPMENT (120/240V, 1 PHASE, 3 WIRE SYSTEM)
814	4 EA.	FURNISH AND INSTALL 12 IN. 1 WAY 3 SECTION (R,Y,G) POLYCARBONATE SIGNAL HEAD - MAST ARM MOUNT
814	4 EA.	FURNISH AND INSTALL 12 IN. 1 WAY 5 SECTION (R,Y,G,YA,GA) POLYCARBONATE SIGNAL HEAD - MAST ARM MOUNT
810	1400 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (ALUMINUM SHIELDED)
810	150 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 A.W.G.)
810	2300 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 A.W.G.)
810	1200 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 A.W.G.)
A 810	3500 3400 L.F.	FURNISH AND INSTALL LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO. 14 A.W.G.)
A 815	1090 1050 L.F.	FURNISH AND INSTALL SAWCUT FOR SIGNAL (LOOP DETECTOR)
815	1 L.F.	FURNISH AND INSTALL 10 FT. FOR SIGNAL (LOOP DETECTOR)
815	1 L.F.	FURNISH AND INSTALL 15 FT. FOR SIGNAL (LOOP DETECTOR)
818	2 EA.	FURNISH AND INSTALL 20 FT. LIGHTING ARM ON SIGNAL STRUCTURE
A 805	940 900 L.F.	FURNISH AND INSTALL 2 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
A 805	600 580 L.F.	FURNISH AND INSTALL 3 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
805	30 L.F.	FURNISH AND INSTALL 4 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
806	2 EA.	FURNISH AND INSTALL 250 WATT HPS VAPOR LUMINAIRE WITH PHOTO-CELL
810	4 EA.	FURNISH AND INSTALL MICRO LOOP PROBE SET WITH 500 FT. LEAD-IN
810	1 EA.	FURNISH AND INSTALL MICRO LOOP PROBE SET WITH 1000 FT. LEAD-IN
813	180 S.F.	FURNISH SHEET ALUMINUM SIGNS
814	4 EA.	FURNISH AND INSTALL 8IN./12 IN. 1 WAY 5 SECTION (8" R,Y,G - 12" YA,GA) POLYCARBONATE SIGNAL HEAD - SPAN MOUNT
816	1 EA.	FURNISH AND INSTALL EIGHT PHASE (FULLY ACTUATED) CONTROLLER AND CABINET - BASE MOUNT
817	3 EA.	FURNISH AND INSTALL FOUR-CHANNEL LOOP DETECTOR AMPLIFIER (DELAY OUTPUT)

THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND

REVISIONS	APPROVALS	MARYLAND DOT - STATE HIGHWAY ADMINISTRATION Office of Traffic & Safety	
A JUNE, 1999 ELIMINATED STAGGERED STOP LINE	ASST. DIVISION CHIEF, TEDD	TRAFFIC ENGINEERING DESIGN DIVISION	
	ASST. DISTRICT ENGINEER, TRAFFIC	MD 355 (URBANA PIKE) AT MD 80 (FINGERBOARD ROAD)	
	CHEF, TRAFFIC ENGINEERING DESIGN DIVISION	LOG MILE NO. 100080005.51	DATE 03/27/98
	DIRECTOR, OFFICE OF TRAFFIC & SAFETY	DRAWN BY: JDM	F.A.P. NO.
		CHECK BY: JDM	S.H.A. NO.
		SCALE: NONE	COUNTY: FREDERICK
			PLAN SHEET NO.: TS-3780-GI
			SHEET NO. 75 OF 95