PROJECT DESCRIPTION

This project involves the installation of a new traffic control signal at the intersection of MD 4 and Town Center Blvd./ Dunkirk District Park in Calvert county, Maryland. MD 4 is assumed to run in a north/south direction.

INTERSECTION OPERATION

The intersection is to operate in a NEMA (6) phase, full-traffic-actuated mode. The MD 4 north and south through movements will operate concurrently with exclusive left turn phases for north and south MD 4; the Dunkirk District Park approach and the Town Center Blvd. approache will operate concurrently.

An eight phase, full-traffic-actuated, solid state digital controller with telemetry module, two 4-channel rack mounted amplifiers and a master controller housed in a size 6 base mounted master local cabinet is to be installed at this location.

PROJECT CONTACTS DISTRICT 5

MR. LARRY ELLIOTT
ASST. DIST. ENGR. TRAFFIC
410-841-1003

MR. CHARLES GEORGE
ASST. DIST. ENGR. MAINTENANCE
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MR. JOHN MAYS
UTILITIES ENGR.
410-841-1005

MR. ERNIE HODSHON
ASST. DIST. ENGR. CONSTRUCTION
410-841-1004

CONTACTS FOR THE OFFICE OF TRAFFIC

MR. RICHARD DAFF
CHIEF TRAFFIC OPERATIONS
410-787-7630

MR. ED RODENHIZER
TEAMLEADER SIGNAL OPERATION
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MR. EUGENE BAILEY
TEAMLEADER SIGN OPERATIONS
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MR. DAVE SCHWARTZ
SUPPLY OFFICER SIGNAL WAREHOUSE
410-787-7666

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

0000	500 PA	UTILITY UNIT
1001	2 EA	MAINTENANCE OF TRAFFIC
1005	10 UD	PORTABLE VARIABLE MESSAGE SIGN
5004	110 LF	24 INCH WHITE HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
5007	40 LF	REMOVE EXISTING PAVEMENT MARKINGS - ANY WIDTH
6003	175 LF	TRAFFIC BARRIER W BEAM
6004	1 EA	TRAFFIC BARRIER W BEAM TRAIL END ANCHORAGE
6005	1 EA	SPECIAL TRAFFIC BARRIER W BEAM END TREATMENT
8001	21 CY	FURNISH AND INSTALL CONCRETE FOR SIGNAL FOUNDATION
8016	2 EA	FURNISH AND INSTALL MICROLOP PROBE SET WITH 500 FOOT LEAD-IN
8017	2 EA	FURNISH AND INSTALL MICROLOP PROBE SET WITH 1000 FOOT LEAD-IN
8021	450 LF	FURNISH AND INSTALL SAW CUT FOR SIGNAL (LOOP DETECTOR)
8023	30 LF	FURNISH AND INSTALL 1 INCH LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR SLEEVE
8027	1150 LF	FURNISH AND INSTALL 3 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8029	50 LF	FURNISH AND INSTALL 3 INCH SCHEDULE 80 RIGID PVC CONDUIT - BORED
8030	60 LF	FURNISH AND INSTALL 4 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8032	410 LF	FURNISH AND INSTALL 4 INCH SCHEDULE 80 RIGID PVC CONDUIT - BORED
8033	12 EA	FURNISH AND INSTALL ELECTRICAL HANDHOLE
8034	5 EA	FURNISH AND INSTALL GROUND ROD - 3/4 INCH DIAMETER X 10 FOOT LENGTH
8040	1584 LF	FURNISH AND INSTALL LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO. 14 AWG)
8041	600 LF	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (ALUMINUM SHIELDED)
8044	640 LF	FURNISH AND INSTALL ELECTRICAL CABLE - 5 CONDUCTOR (NO 14 AWG)
8045	3120 LF	FURNISH AND INSTALL ELECTRICAL CABLE - 7 CONDUCTOR (NO 14 AWG)
8046	450 LF	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (NO 12 AWG) TYPE IN. TC IN.
8048	1830 LF	FURNISH AND INSTALL NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
8049	210 LF	FURNISH AND INSTALL ELECTRICAL CABLE 1-CONDUCTOR NO. 4 AWG- THHN/THWN
8050	52 LF	FURNISH AND INSTALL WOOD SIGN SUPPORTS 4 INCH X 4 INCH
8052	50 SF	INSTALL GROUND MOUNTED SIGN
8053	58 SF	INSTALL OVERHEAD SIGN
8055	2 EA	FURNISH AND INSTALL 250 WATT HPS LUMINAIRE WITH PHOTOCELL
8056	2 EA	FURNISH AND INSTALL 15 FOOT LIGHTING BRACKET ARM FOR TRAFFIC SIGNAL STRUCTURE
8060	1 EA	REMOVE AND DISPOSE OF EXISTING MATERIAL AND EQUIPMENT PER ASSIGNMENT
8066	1 EA	FURNISH AND INSTALL CONTROL AND DISTRIBUTION EQUIPMENT (120/240 V, 1 PHASE 3 WIRE SYSTEM)
8076	1 EA	FURNISH AND INSTALL MAST ARM POLE AND 38 FOOT MAST ARM
8078	1 EA	FURNISH AND INSTALL MAST ARM POLE AND 60 FOOT MAST ARM
8079	3 EA	FURNISH AND INSTALL MAST ARM POLE AND 70 FOOT MAST ARM
8084	47 EA	FURNISH AND INSTALL 12 INCH VEHICULAR TRAFFIC SIGNAL HEAD SECTION

B. EQUIPMENT TO BE FURNISHED BY SHA

9002	2 EA	(CONT/CAB/ADD) DETECTOR AMPLIFIER 4-CH RACK MT
9086	1 EA	CABINET W/ TELEMETRY (SYSTEM CAB MASTER LOCAL), SIZE 6
9087	1 EA	CONTROLLER ASC II W/ TELEMETRY
9088	1 EA	CONTROLLER, MASTER ASC 10,000 W/ TELEMETRY
9089	65 SF	FLAT SHEET ALUM SIGN-YELLOW, ORANGE, & SILVER (SF) 1 EA M95-1 24"X78" (NORTH UP-LEFT ARROW, MD 4, SOUTH RIGHT ARROW) 1 EA 21"X51" SHIELD ASSEMBLY (NORTH, MD 4, ANGLE RIGHT) 1 EA 36"X75" SHIELD ASSEMBLY (SOUTH, MD 4, LEFT ARROW) 2 EA 24"X30" R4-8 KEEP RIGHT 2 EA 30"X36" R3-7L LEFT ONLY
9090	17.5 SF	FLAT SHEET ALUM. SIGN-BLUE OR GREEN (SF) 1 EA D3-3 24"X72" (TOWN CENTER BLVD., NEXT SIGNAL) 1 EA D3-2 16 X VAR. (TOWN CENTER BLVD, ARROW RIGHT) 1 EA D3-2 16 X VAR. (ARROW LEFT, TOWN CENTER BLVD)
9097	4 EA	SIGN HARDWARE 24 INCH FORM TUBE
9104	2 EA	SIGN HARDWARE UNDER MAST ARM MOUNT ASTRO BRACKET 84 INCH CABLE

C. EQUIPMENT TO BE RETURNED TO SHA

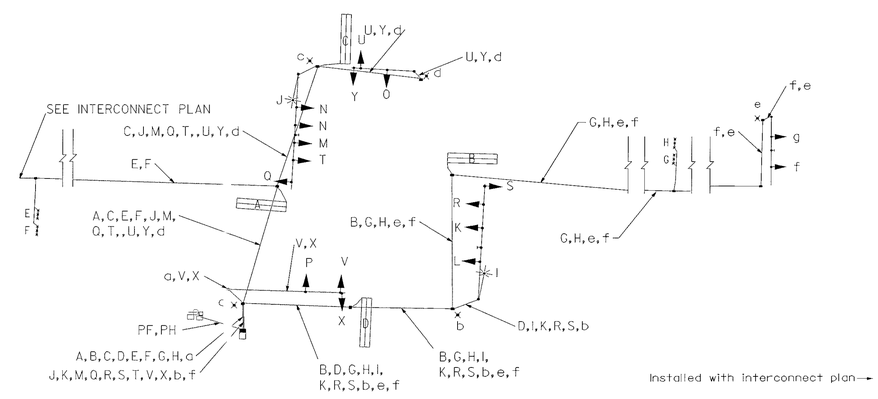
ALL REMOVED EQUIPMENT WILL BECOME THE PROPERTY OF THE CONTRACTOR

Phase Chart

	1,2	3,4	5,6	7,8	9,10,11	12,13,14	15,16,17
	◁R- ◁Y- ◁G-	R Y G	Y	◁R- ◁Y- ◁G-	R Y G	R Y G	R Y G
Phase 1 & 5	◁G-	R	FL/Y	◁G-	R	R	R
1 & 5 Change	THE CONTROLLER MAY SKIP TO PHASES 1 & 6 OR 2 & 5 OR 2 & 6						
Phase 1 & 6	◁G-	G	FL/Y	◁R-	R	R	R
1 Change	◁Y-	G	FL/Y	◁R-	R	R	R
Phase 2 & 5	◁R-	R	FL/Y	◁G-	G	R	R
5 Change	◁R-	R	FL/Y	◁Y-	G	R	R
Phase 2 & 6	◁R-	G	FL/Y	◁R-	G	R	R
2 & 6 Change	◁R-	Y	FL/Y	◁R-	Y	R	R
Phase 4 & 8	◁R-	R	FL/Y	◁R-	R	G	G
4 & 8 Change	◁R-	R	FL/Y	◁R-	R	Y	Y
Flashing Operation	FL/R	FL/R	FL/Y	FL/R	FL/R	FL/R	FL/R

Note: Signal heads 5 and 6 will alternate flashing

Wiring Diagram



A,B 2-Conductor cable
C,D Aluminum Shielded)

E,F Micro loop probe lead in
G,H

I,J 2-Conductor Tray Cable
(No.12 A.W.G.

K,L 5-Conductor Electrical
M,N Cable (No.14 A.W.G.)
O,P
g

Q,R 7-Conductor Electrical
S,T Cable (No.14 A.W.G.)
U,V
X,Y
f

a,b Bare Copper Ground
c,d Wire (No.6 A.W.G)
e

LW Loop Detector Wire
(No.14 A.W.G.) in Flexible Tubing

12 Pair Voice Grade Telemetry
Interconnect Cable (No.19 A.W.G)

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

MD 4 and Town Center Blvd./Dunkirk District Park

DRAWN BY: J. Henkel	F.A.P. NO. AC STPG 0005 (686)E	TS NO. 4074 G1	SHEET NO.
CHECKED BY: MAR	S.H.A. NO. XX1005585		
SCALE: 1" = 20'	COUNTY: Calvert	T.I.M.S. NO. E181	02 OF 02
DATE: 4/01/2001	LOG MILE: 02000433.66		