

**PROJECT DESCRIPTION**

**I. GENERAL**

This project involves the installation of radar dilemma zone detection for passage detection along east and westbound US 40 along with dilemma zone detection to extend the all red for US 40 E/B.

**II. INTERSECTION OPERATION**

- The intersection is to operate in NEMA (4) four phase, full-traffic actuated mode. US 40 approaches shall run concurrently and Red Toad Rd. approaches shall also run concurrently.
- The existing NEMA size '5' pole mounted cabinet and service shall be used. A full-traffic-actuated, eight-phase controller and two (2) four-channel, rack mounted amplifiers with power supply pack shall be installed.
- The programming of the dilemma zone detection for the extended red is to be coordinated with Dr. Chang of the University of Maryland using the study data.

**NOTES:**

- The contractor shall be responsible for terminating all signal cable to the appropriate terminals and properly label each cable.
- All traffic signal foundations shall be installed at the final sidewalk or curb grade for closed sections, highest roadway profile grade for open sections, to meet clearances as specified in the appropriate 800 series Standard Plates. The contractor shall verify ultimate grades prior to the installation of all signal equipment.
- All underground and overhead utilities shown on these plans are schematic only and may not be complete. The Contractor shall be responsible for notifying Miss Utility 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 will occur, the Contractor shall notify the Project Engineer immediately so that the conflict may be resolved.
- The contractor shall maintain the continuous operation of all interconnect, vehicular, pedestrian detectors, and lighting devices. If any device is damaged by the contractor, it shall be repaired within 72 hours by the contractor at no cost to the Administration after notification by the Engineer.

**CONTACTS**

**DISTRICT**

**OFFICE OF TRAFFIC AND SAFETY**

Mr. Richard Lindsay  
District Engineer  
410-810-3210

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

Mr. Jeff Wentz  
Assistant District Engineer - Traffic  
410-810-3240

MR. ROBERT SNYDER  
ASSISTANT DIVISION CHIEF, TRAFFIC OPERATIONS  
410-787-7630

Mr. Barry Clothier  
Assistant District Engineer - Utility  
410-810-3275

MR. ED RODENHIZER  
TEAM LEADER SIGNAL OPERATIONS  
410-787-7650

Mr. Terry Wright  
Assistant District Engineer - Maintenance  
410-810-3250

MR. EUGENE BAILEY  
TEAM LEADER SIGN OPERATIONS  
410-787-7670

MS. DARLENE EIDE  
SUPPLY OFFICER IV (SIGNAL SHOP WAREHOUSE)  
410-787-7668

**EQUIPMENT LIST**

**A. EQUIPMENT TO BE FURNISHED BY UNIVERSITY OF MARYLAND**

ITEM NO.	QUANTITY	DESCRIPTION
8000	3 EA	WAVETRONICS SMARTSENSOR
8000	3 EA	2 CHANNEL OUTPUT DETECTOR CARD FOR SENSOR
8000	2 EA	TERMINAL CABINET WITH SUPPRESSION
8000	900 LF	HOME RUN CABLE FOR SMARTSENSOR
8000	90 LF	SENSOR TO POLE BOX CABLE

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

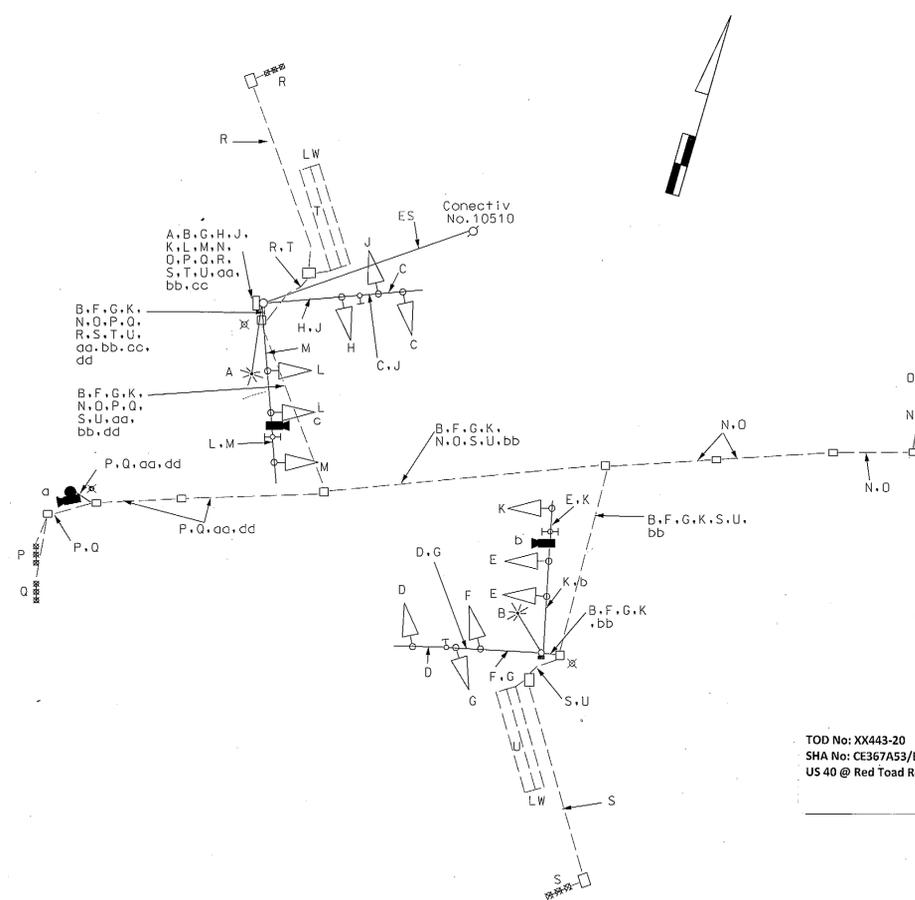
ITEM NO.	QUANTITY	DESCRIPTION
1003	1 EA	MAINTENANCE OF TRAFFIC
8000	3 EA	INSTALL WAVETRONICS SMARTSENSOR (SMART SENSOR AND MOUNTING HARDWARE SUPPLIED BY OTHERS)
8000	3 EA	INSTALL POLEMOUNTED TERMINAL CABINET
8000	990 LF	INSTALL CONTROL CABLE FOR SMARTSENSOR
8008	1 EA	BREAKAWAY PEDESTAL POLE-ANY SIZE
8034	100 LF	SCHEDULE 80 RIGID PVC CONDUIT UP TO 4 INCHES - TRENCHED
8038	650 LF	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE

C. IF THE CABINET IS TO BE REMOVED SHA FORCES SHALL REMOVE THE CONTROLLER AND ALL AUXILIARY EQUIPMENT FROM THE CONTROLLER CABINET. THE CABINET AND ALL OTHER MATERIALS TO BE REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

**PHASE CHART**

	1	2	3	4	5	6	7	8	9	10	11	12
PHASE 2 & 6	G	G	G	G	G	G	R	R	R	R	R	R
2 & 6 CHANGE	Y	Y	Y	Y	Y	Y	R	R	R	R	R	R
PHASE 4 & 8	R	R	R	R	R	R	G	G	G	G	G	G
4 & 8 CHANGE	R	R	R	R	R	R	Y	Y	Y	Y	Y	Y
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

**WIRING DIAGRAM**



**WIRING KEY**

a	Smart sensor to pole	L	Existing 5 Conductor Electrical Cable (No. 14 A.W.G.)
b	box cable	M	Existing 7 Conductor Electrical Cable (No. 14 A.W.G.)
c		N	
aa	Smart sensor home run cable	O	Existing Mircoloop probe set of three with 1000' lead-in.
bb		P	
dd	#6 AWG Stranded Bare Copper Ground Wire	Q	Existing Mircoloop probe set of three with 500' lead-in.
		R	Existing 2-conductor Tray Cable (No. 12 A.W.G.)
		S	Existing 5-Conductor Electrical Cable (No. 14 A.W.G.)
		T	Existing 2-conductor (No. 14 A.W.G.) Aluminum Shielded
		U	Existing Loop detector Wire
		ES	Existing Overhead Electrical Service
		X	Grounding Rod

TOD No: XX443-20  
SHA No: CE367A53/B53  
US 40 @ Red Toad Road

**SHA** STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
OFFICE OF TRAFFIC & SAFETY  
TRAFFIC ENGINEERING, DESIGN DIVISION  
US 40 @ RED TOAD ROAD

SCALE N/A ADVERTISED DATE \_\_\_\_\_ CONTRACT NO. XX4435185

DESIGNED BY J. HENKEL COUNTY CECIL

DRAWN BY J. HENKEL LOGMILE 07004007.35

CHECKED BY JAH 1/7/10 TMS NO. J366

F.A.P. NO. \_\_\_\_\_ TOD NO. \_\_\_\_\_

TS NO. 3920C DRAWING 03 OF 03 SHEET NO. 03 OF 03

BY: Jhenkel-