

PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE INSTALLATION OF A NEW TRAFFIC SIGNAL AT THE INTERSECTION OF MD 22 AND CAMPUS HILLS SHOPPING CENTER IN HARFORD COUNTY. MD 22 IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

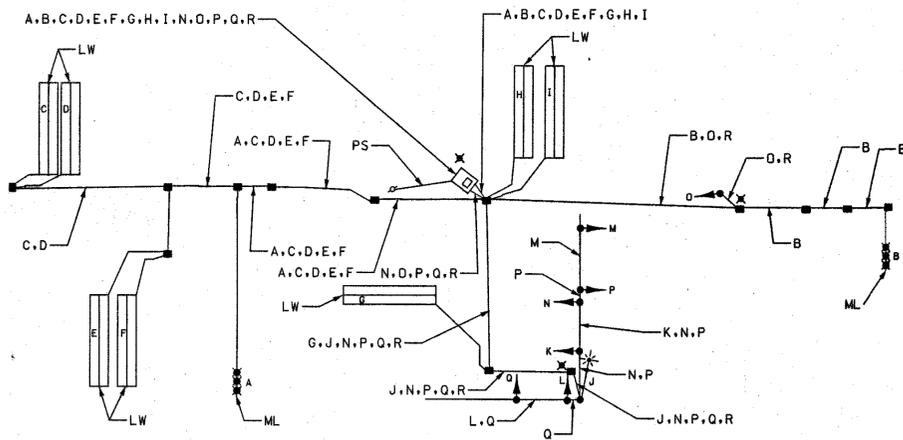
CONTROLLER OPERATION

AN EIGHT-PHASE, FULLY ACTUATED NEMA CONTROLLER WITH INTERSECTION MONITOR AND BATTERY BACKUP AND THREE 4-CHANNEL TIME-DELAY-OUTPUT, LOOP DETECTOR AMPLIFIERS HOUSED IN A BASE MOUNTED CABINET WILL BE INSTALLED AT THE INTERSECTION. THE CONTROLLER WILL OPERATE AS A FOUR PHASE FULL-TRAFFIC-ACTUATED CONTROLLER WITH AN EXCLUSIVE-PERMISSIVE LEFT TURN PHASE FOR EASTBOUND MD 22. A QUEUE DETECTOR WILL BE INSTALLED FOR THE WEST ENTRANCE OF THE SHOPPING CENTER TO CALL PHASE 4.

SPECIAL NOTE

UPON COMPLETION OF THIS PROJECT THE CONTRACTOR SHALL NOTIFY MR. ROBERT SNYDER OF THE SHA AT (410) 787-7635 TO ARRANGE FOR THE PHONE LINE INSTALLATION. THE CONTRACTOR IS TO PROVIDE MR. SNYDER WITH THE NEAREST STREET ADDRESS, ZIP CODE, AND PHONE NUMBER.

WIRING DIAGRAM



WIRING KEY

- A-B MICRO-LOOP PROBE
- C-I 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.) ALUMINUM SHIELDED
- J 2 CONDUCTOR ELECTRICAL CABLE (NO. 12 A.W.G.)
- K-M 5 CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- N-Q 7 CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- R STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
- LW LOOP WIRE (NO. 14 A.W.G.)
- PS PROPOSED ELECTRIC SERVICE AND PHONE DROP.
- ML MICRO-LOOP PROBE SHIELDED
- X GROUND ROD

PHASE CHART

	1	2	3	4	5	6	7
PHASE 1 & 6	G	R	R	R	R	R	R
1 & 6 CHANGE	G	R	R	R	R	R	R
PHASE 2 & 6	G	G	G	G	G	R	R
2 & 6 CHANGE	Y	Y	Y	Y	Y	R	R
PHASE 4	R	R	R	R	R	G	G
4 CHANGE	R	R	R	R	R	G	G
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R

EQUIPMENT LIST "A"

A. APPROVED SHA EQUIPMENT TO BE PURCHASED BY THE DEVELOPER AND INSTALLED BY THE CONTRACTOR. ALL EQUIPMENT IN THIS LIST SHALL HAVE CATALOG CUTS SUBMITTED FOR APPROVAL PRIOR TO INSTALLATION.

ITEM NO.	QUANTITY	DESCRIPTION
NONE		

EQUIPMENT LIST "B"

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY CONTRACTOR ALL EQUIPMENT SHALL HAVE CATALOG CUTS SUBMITTED TO OOTS FOR APPROVAL PRIOR TO INSTALLATION.

ITEM NO.	QUANTITY	DESCRIPTION
1001	1 EA	MAINTENANCE OF TRAFFIC
2001	3 CY	TEST PIT EXCAVATION
5001	1150 LF	FURNISH AND INSTALL 5 IN. YELLOW HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING
5002	300 LF	FURNISH AND INSTALL 5 IN. WHITE HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING
5004	100 LF	FURNISH AND INSTALL 24 IN. HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING
5007	960 LF	REMOVE EXISTING PAVEMENT MARKINGS
5008	2 EA	REMOVE EXISTING PAVEMENT MARKINGS ARROW
8001	8 CY	FURNISH AND INSTALL CONCRETE FOR SIGNAL FOUNDATION
8003	1 EA	FURNISH AND INSTALL BREAKAWAY PEDESTAL POLE
8006	1 EA	CUT, CLEAN, GALVANIZE AND CAP TRAFFIC SIGNAL STRUCTURE
8016	2 EA	FURNISH AND INSTALL NON-EVASIVE MICRO-LOOP PROBE WITH 500 FT. LEAD-IN
8021	925 LF	FURNISH AND INSTALL SAW CUT FOR SIGNAL (LOOP DETECTOR)
8023	70 LF	FURNISH AND INSTALL 1 IN. LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR SLEEVE
8027	720 LF	FURNISH AND INSTALL 3 IN. SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED
8029	300 LF	FURNISH AND INSTALL 3 IN. SCHEDULE 80 RIGID PVC CONDUIT-BORED
8030	25 LF	FURNISH AND INSTALL 4 IN. SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED
8032	180 LF	FURNISH AND INSTALL 4 IN. SCHEDULE 80 RIGID PVC CONDUIT-BORED
8033	13 EA	FURNISH AND INSTALL ELECTRICAL HANDHOLE
8034	3 EA	FURNISH AND INSTALL GROUND ROD - 3/4" X 10'
8040	3100 LF	FURNISH AND INSTALL LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO. 14 A.W.G.)
8041	2700 LF	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (ALUMINUM SHIELDED)
8044	80 LF	FURNISH AND INSTALL ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 A.W.G.)
8045	660 LF	FURNISH AND INSTALL ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 A.W.G.)
8046	175 LF	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 A.W.G.)
8048	250 LF	FURNISH AND INSTALL NO. 6 A.W.G. STRANDED BARE COPPER GROUND WIRE
8049	45 LF	FURNISH AND INSTALL ELECTRICAL CABLE - 1 CONDUCTOR (NO. 4 A.W.G.) THHN/THWN
8051	32 LF	FURNISH AND INSTALL WOOD SIGN SUPPORTS 4 IN. X 6 IN.
8055	1 EA	FURNISH AND INSTALL 250 WATT HPS LUMINAIRE WITH PHOTOCELL
8056	1 EA	FURNISH AND INSTALL 15 FT. LIGHTING BRACKET ARM FOR TRAFFIC SIGNAL STRUCTURE
8066	1 EA	FURNISH AND INSTALL CONTROL AND DISTRIBUTION EQUIPMENT (120/240V, 1 PHASE 3 WIRE SYSTEM)
8080	1 EA	FURNISH AND INSTALL MAST ARM POLE AND TWIN 50 FT./60 FT. MAST ARMS

EQUIPMENT LIST "B" CONTINUED

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY CONTRACTOR ALL EQUIPMENT SHALL HAVE CATALOG CUTS SUBMITTED TO OOTS FOR APPROVAL PRIOR TO INSTALLATION.

ITEM NO.	QUANTITY	DESCRIPTION
----	5 EA	FURNISH AND INSTALL 12 IN., ONE-WAY, THREE-SECTION (R.Y.G) VEHICLE TRAFFIC SIGNAL HEAD - MAST ARM MOUNT
----	2 EA	FURNISH AND INSTALL W3-3 SIGN (48 IN. X 48 IN.) WITH NEW PANEL-GROUND MOUNT
----	1 EA	FURNISH AND INSTALL 12 IN., ONE-WAY, FIVE-SECTION (R.Y.YA.G.GA) VEHICLE TRAFFIC SIGNAL HEAD - MAST ARM MOUNT
----	1 EA	FURNISH AND INSTALL R10-12 SIGN (36 IN. X 42 IN.) MAST ARM MOUNT
----	1 EA	FURNISH AND INSTALL BASE MOUNTED CABINET AND CONTROLLER
----	3 EA	FURNISH AND INSTALL FOUR CHANNEL TIME-DELAY-OUTPUT LOOP DETECTOR AMPLIFIER
----	1 EA	FURNISH AND INSTALL 12 IN., ONE-WAY, FIVE-SECTION (R.Y.YA.G.GA) VEHICLE TRAFFIC SIGNAL HEAD - PEDESTAL MOUNT
----	1 EA	FURNISH AND INSTALL M95-1 SIGN (72 IN. X 24 IN.) MAST ARM MOUNT

EQUIPMENT LIST "C"

C. EXISTING EQUIPMENT TO BE REMOVED BY THE CONTRACTOR AND DELIVERED TO THE STATE HIGHWAY ADMINISTRATION, 7491 CONNELLEY DRIVE, HANOVER, MARYLAND 21076. THE CONTRACTOR SHALL NOTIFY THE SHA AT (410) 787-7652 AT LEAST THREE DAYS IN ADVANCE OF DELIVERY.

ITEM NO.	QUANTITY	DESCRIPTION
NONE		

CONTACT PERSONS FOR DISTRICT 4 ARE AS FOLLOWS:

- MR. DAVID MALKOWSKI
DISTRICT ENGINEER
(410) 321-2810
- MR. JOSEPH MCMAHON
ASSISTANT DISTRICT ENGINEER - UTILITIES
(410) 321-2841
- MR. RANDALL SCOTT
ASSISTANT DISTRICT ENGINEER - TRAFFIC
(410) 321-2781
- MR. DAVE RAMSEY
ASSISTANT DISTRICT ENGINEER - MAINTENANCE
(410) 321-2761

CONTACTS FOR OFFICE OF TRAFFIC AND SAFETY

- MR. RICHARD DAFF SR.
CHIEF, TRAFFIC OPERATIONS
(410) 787-7630
- MR. EUGENE BAILEY
TEAM LEADER SIGN OPERATIONS
(410) 787-7676
- MR. ROBERT SNYDER
ASSISTANT DIVISION CHIEF,
TRAFFIC OPERATIONS
(410) 787-7631
- MR. DAVID SCHWARTZ
SUPPLY OFFICE IV (SIGNAL SHOP WAREHOUSE)
(410) 787-7668
- MR. ED RODENHIZER
TEAM LEADER SIGNAL OPERATIONS
(410) 787-7652

TRAFFIC CONCEPTS, INC.
325 Gambrills Road
Suite E
Gambrills, MD 21054
(410) 923-7101

MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION
GENERAL INFORMATION SHEET
MD 22 AT CAMPUS HILLS SHOPPING CENTER ENT.

DRAWN BY: T.M.Z	F.A.P. NO. 4071	TS NO. 4071	SHEET NO. 2 OF 3
CHECKED BY: K.W.S. <i>gpc/olubel</i>	S.H.A. NO.	T.I.M.S. NO. E188	
SCALE: NONE	COUNTY: HARFORD	LOG MILE: 12022004.43	
DATE: 2-5-01			