PROJECT DESCRIPTION

I. GENERAL
This project involves the installation of a new traffic control signal at the intersection of MD 27 at Bennett Cerf Dr./MD 852 in Carroll County, Maryland. MD 27 is considered to run in a north/south direction.

II. INTERSECTION OPERATION
The intersection is to operate in NEMA six (6) phase, full-traffic-actuated mode. There will be an exclusive/permissive left turn phase for both the north and southbound movements of MD 27. The MD 27 through movements will operate concurrently. The Bennett Cerf Dr./ MD 852 movements will operate concurrently.

An eight phase, full-traffic-actuated, solid state digital controller with intersection monitor and harness, battery back-up, and three (3) four-channel rack mounted time delay output loop detector amplifiers housed in a NEMA 6 mounted cabinet are to be installed at this location.

EQUIPMENT LIST

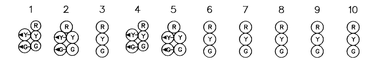
A. Equipment to be furnished by S.H.A.

Item No.	Quantity	Units	Description
9014	6	EA	(Mast arm mt.) 12 in, one-way, three section signal [aluminum].
9016	2	EA	(Mast arm mt.) 12 in, one-way, five section signal [aluminum].
9019	2	EA	(Mast arm mt.) 8 in./12 in., combo signal [aluminum].
9081	1	EA	Cabinet intersection monitor, size 6.
9087	1	EA	Controller ASC II with telemetry.
9089	21	SF	36 in. x 42 in. aluminun sign - R 10-12.
9089	15	SF	30 in. x 36 in. aluminum sign - R 3-5(L).
9089	18	SF	36 in. x 36 in. aluminum sign - W 3-3.
9089	32	SF	48 in. x 48 in. aluminum sign - W 3-3.
9089	17	SF	24 in. x 51 in. aluminum sign - M 3-3/M 1-5/M6-1.
9089	37.5	SF	36 in. x 75 in. aluminum sign - M 3-3/M 1-5/M 6-1.
9090	32	SF	16 in. x 72 in. aluminum sign - D 3-(1).
9090	85.33	SF	32 in. x 96 in. aluminum sign - D 3-(1).
9090	64	SF	48 in. x 96 in. aluminum sign - D 3-(3).
9098	12	EA	Sign hardware - 30 in. form tube.
9104	2	EA	Sign hardware - under mast arm astro bracket 84 in. cable.

B. Equipment to be furnished and/or installed by the Contractor.

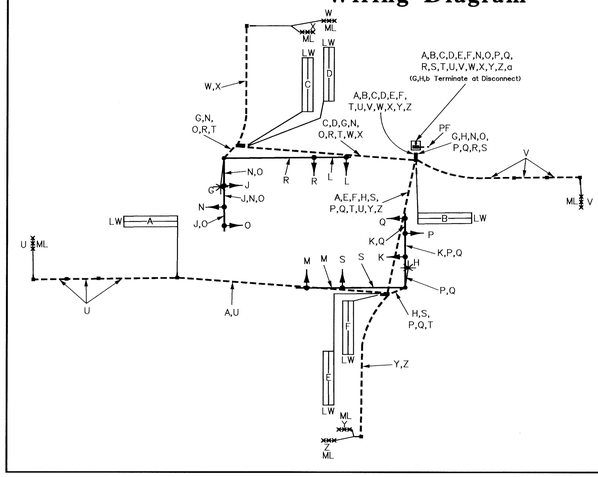
Item No.	Quantity	Units	Description
1001	1	EA	Maintenance of traffic per assignment.
2001	3	CY	Test pit excavation.
8006	1	EA	Cut, clean, galvanize, and cap traffic signal structure.
8011	10	EA	Install signal head (any type).
8016	4	EA	Microloop probe set with 500 ft. lead-in.
8017	2	EA	Microloop probe set with 1000 ft. lead-in.
8020	1	EA	Install controller and cabinet - base mount.
8021	924	LF	Sawcut for signal loop detector.
8022	15	LF	1 in. electrical conduit - galvanized steel sleeve.
8023	55	LF	1 in. liquid tight flexible non-metallic conduit - sleeve.
8024	1020	LF	2 in. electrical conduit - PVC [Schedule 80] - trenched.
8025	85	LF	2 in. electrical conduit - PVC [Schedule 80] - slotted in roadway.
8028	180	LF	3 in. electrical conduit - PVC [Schedule 80] - slotted in roadway.
8030	350	LF	4 in. electrical conduit - PVC [Schedule 80] - trenched.
8031	130	LF	4 in. eldctrical conduit - PVC [Schedule 80] - slotted in roadway.
8033	12	LF	Electrical handhole.
8034	4	EA	Ground rod (3/4 in. diameter x 10 ft. length).
8040	3040	LF	Loop detector wire encased in flexible tubing (No. 14 A.W.G.).
8041	665	LF	Electrical cable - 2-conductor (aluminum shielded).
8044	120	LF	Electrical cable - 5-conductor (No. 14 A.W.G.).
8045	1225	LF	Electrical cable - 7-conductor (No. 14 A.W.G.).
8046	350	LF	Electrical cable - 2-conductor (No. 12 A.W.G).
8048	15	LF	Electrical cable - 1-conductor (No. 8 A.W.G.) THHN/THWN.
8049	250	LF	Stranded bare copper ground wire (No. 6 A.W.G.).
8050	15	LF	Electrical cable - 1-conductor (No. 4 A.W.G.) THHN/THWN.
8052	182	LF	Wood sign supports - 4 in. x 6 in.
8053	114	SF	Install ground mounted sign.
8054	137.33	SF	Install overhead sign.
8056	2	EA	250 watt HPS luminaire with photocell.
8057	2	EA	Lighting bracket arm for traffic signal structure.
8070	1	EA	Control and distribution equipment (120/240, 1 phase, 3 wire).
8085	1	EA	Mast arm pole and twin (50 ft./60 ft.) mast arms.
8086	1	EA	Mast arm pole and twin (50 ft./ 70ft.) mast arms.
Neg.	1	EA	Electrical manhole.
Neg.	54.5	SF	Install pole mounted sign.

Phase Chart



Phase 1 & 5	R ◄G—	R ◄G—	R	R ◄G—	R ◄G—	R	R	R	R	R	
1 & 5 Change to Phase 1 & 6 or Phase 2 & 5 or Phase 2 & 6											
Phase 1 & 6	G ◄G—	G ◄G—	G	R	R	R	R	R	R	R	
1 Change	G ◄Y—	G ◄Y—	G	R	R	R	R	R	R	R	
Phase 2 & 5	R	R	R	G ◄G—	G ◄G—	G	R	R	R	R	
5 Change	R	R	R	G ◄Y—	G ◄Y—	G	R	R	R	R	
Phase 2 & 6	G	G	G	G	G	G	R	R	R	R	
2 & 6 Change	Y	Y	Y	Y	Y	Y	R	R	R	R	
Phase 4 & 8	R	R	R	R	R	R	G	G	G	G	
4 & 8 Change	R	R	R	R	R	R	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	

Wiring Diagram



A, B, C, D, E, F — 2-Conductor Cable (Aluminum Shielded)

G, H — 2-Conductor Tray Cable (No. 12 A.W.G.)

J, K, L, M — 5-Conductor Electrical Cable (No. 14 A.W.G.)

N, O, P, Q, R, S — 7-Conductor Electrical Cable (No. 14 A.W.G.)

T — Bare Copper Ground Wire (No. 6 A.W.G.)

U, V, W, X, Y, Z — Microloop Probe Lead-in

a — 3-Wire (No. 4 A.W.G.) for Traffic Signal Electrical Service

b — 3-Wire (No. 8 A.W.G.) for Street Lighting Electrical Service

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

ML — MicroLoop Probe

PF — Proposed Underground Electrical Service By BG&E

The Traffic Group

The Traffic Group, Inc.
Suite 600
40 W. Chesapeake Avenue
Towson, Maryland 21204
410-583-8405
1-800-583-8411
Fax 410-321-8438
Job. No. 971004
SIGPLAN.DGN

MDOT – STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION
(General Information)

MD 27 at Bennett Cerf Dr. / MD 852

DATE: September 2, 1998 — LOG MILE • 06027019.84

DRAWN BY: J.E.S.	F.A.P. NO. N/A	PLAN SHEET NO.: 3815-GI	SHEET NO. 2 of 3
CHK. BY:	S.H.A. NO. AW280A5A/B5A		
SCALE: N/A	COUNTY: CARROLL		

F:\971004\dgn\sigplan.dgn 02 SEP 98