

PROJECT DESCRIPTION

EQUIPMENT LIST (CONT.)

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F.H.W.A. REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	MD	SEE TITLE SHEET	422	529

I. General
This portion of the project involves the installation of the ultimate traffic control signal at the intersection of MD 108 and MD 104. MD 108 is assumed to run in a east-west direction.

II. Intersection Operation
This intersection is proposed to operate in a fully actuated mode with westbound left turn lane operating in an exclusive/permissive phase.

III. Special Notes

- The following contact persons for District #7 are as follows:
 Mr. Robert Fisher, District Engineer (301)694-2145
 Mr. John Conannon, Asst. District Engineer - Traffic (301)694-2592
 Mr. Jim Brown, Utility Engineer (301)694-2025
 Mr. Richard Daff, Chief, Traffic Operations Division (410)787-7630
 Mr. Leon King, Asst. District Engineer - Maintenance (301) 694-1966
- Maintenance of traffic will be handled by the contractor utilizing the following standard plates for traffic control: 105.00, 105.01, 105.02, 105.03, 105.03, 105.101, 105.103, 105.105, 105.107, 105.109

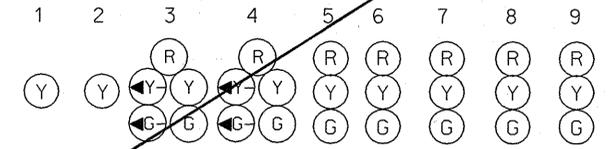
B. Equipment to be furnished and/or installed by the Contractor.

Item No.	Quantity	Units	Specification Section	Description
	3	EA	804	Furnish and install ground rod - 3/4 in. diameter x 10 ft.
	40	LF	805	Furnish and install 4 in. schedule 40 rigid PVC conduit - Trenched.
	40	LF	805	Furnish and install 4 in. schedule 80 rigid PVC conduit - bored.
	120	LF	805	Furnish and install 3 in. schedule 80 rigid PVC conduit - bored.
	160	LF	805	Furnish and install 2 in. schedule 40 rigid PVC conduit - Trenched.
	30	LF	805	Furnish and install 1 in. liquid tight flexible non-metallic conduit for detector wire sleeve.
	20	LF	805	Furnish and install 1 in. galvanized electrical conduit for detector wire sleeve.
	2	EA	806	Furnish and install 250 Watt high pressure sodium lamp and luminaires with photo cell
	1	EA	807	Furnish and install control and distribution equipment.
	310	LF	810	Furnish and install No. 6 AWG standard bare copper ground wire.
	160	LF	810	Furnish and install electrical cable 1-conductor No. 14 AWG - THHN/THWN
	220	LF	810	Furnish and install electrical cable - 2 conductor (Aluminum shielded).
	80	LF	810	Furnish and install electrical cable - 5 conductor (No. 14 AWG).
	620	LF	810	Furnish and install electrical cable - 7 conductor (No. 14 AWG).
	1310	LF	810	Furnish and install loop wire encased in flexible tubing (No. 14 AWG).
	400	LF	810	Furnish and install electrical cable 2-conductor (No. 12 AWG) copper type T/C.
	5	EA	811	Furnish and install electrical handhole.
	46	SF	813	Install overhead sign for signals.
	58	SF	813	Install ground mount sign.
	6	EA	814	Install signal head - any type
	510	LF	815	Furnish and install saw cut for signal (loop detector).
	1	EA	816	Install eight phase (fully actuated) controller and cabinet - base mount.
	1	EA	829	Furnish and install a 27 ft. steel pole with a 38 ft. mast arm (Note: Four - 1 1/2 in. x 90 in. anchor bolts).

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

Item No.	Quantity	Units	Specification Section	Description
		EA	829	Furnish and install 27 ft. steel pole with twin 50ft./60 ft. mast arms (Note: Four - 2 in. x 90 in. anchor bolts).
	100	LF	555	24 in. white preformed pavement marking tape.
	1	EA	822	As-built for traffic signal - use existing disk.
	2	EA	818	Furnish and install 20 ft. lighting arm on signal structure
	1	LS	SP	Removal and disposal of existing traffic signal equipment.
	5	EA	xxx	Install micro loop probe set
	1	LS	SP	Remove and salvage existing existing traffic signal equipment.
	1	LS	SP	Delivery of existing material to be salvaged consisting of:
	1	EA		Eight phase (fully actuated) controller and cabinet - pole mount.

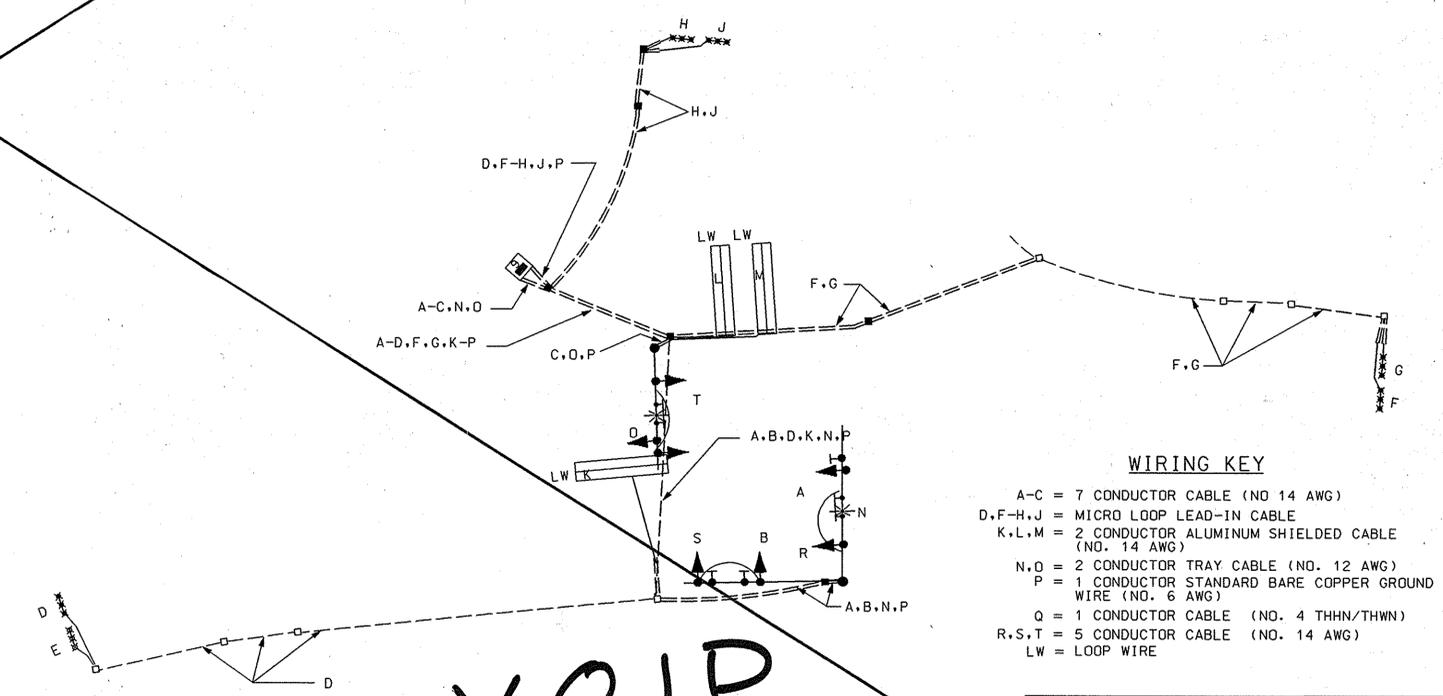
PHASING SEQUENCE CHART



PHASE	FL/Y									
PHASE 1 & 6	FL/Y	FL/Y	G/G	G/G	G	R	R	R	R	
PHASE 1 & 6 CLEAR	FL/Y	FL/Y	Y/G	Y/G	G	R	R	R	R	↔
PHASE 2 & 6	FL/Y	FL/Y	G	G	G	G	G	R	R	↔
PHASE 2 & 6 CLEAR	FL/Y	FL/Y	Y	Y	Y	Y	Y	R	R	↔
PHASE 4	FL/Y	FL/Y	R	R	R	R	R	G	G	↕
PHASE 4 CLEAR	FL/Y	FL/Y	R	R	R	R	R	Y	Y	↕
FLASHING OPERATION	FL/Y	FL/R	FL/R	↔						

R = RED
 Y = YELLOW
 G = GREEN
 YA = YELLOW ARROW
 GA = GREEN ARROW
 FL = FLASHING

WIRING DIAGRAM



WIRING KEY

- A-C = 7 CONDUCTOR CABLE (NO 14 AWG)
- D, F-H, J = MICRO LOOP LEAD-IN CABLE
- K, L, M = 2 CONDUCTOR ALUMINUM SHIELDED CABLE (NO. 14 AWG)
- N, O = 2 CONDUCTOR TRAY CABLE (NO. 12 AWG)
- P = 1 CONDUCTOR STANDARD BARE COPPER GROUND WIRE (NO. 6 AWG)
- Q = 1 CONDUCTOR CABLE (NO. 4 THHN/THWN)
- R, S, T = 5 CONDUCTOR CABLE (NO. 14 AWG)
- LW = LOOP WIRE

EQUIPMENT LIST

A. Equipment to be supplied by the Administration

Item No.	Quantity	Units	Specification Section	Description
5	EA	814	12 in. 1 way 3 section (R,Y,G) signal head - mast arm mount.	
1	EA	814	Combination 1-way, 5 sec. 12" YA, GA/8" R,Y,G) signal head mast arm mount	
1	EA	814	12 in. 1 way 5 section (R,Y,G,YA,GA) signal head - mast arm mount.	
1	EA	816	Eight-phase (fully actuated controller and cabinet) - base mount.	
2	EA	817	Four channel loop detector amplifier (delayed output).	
2	EA	XXX	Microloop probe set with 500 ft. lead in cables	
3	EA	XXX	Microloop probe set with 1000 ft. lead-in cable	
104	SF	813	Sheet aluminum signs consisting of:	
1	EA	-	R10-12. (36 in. x 42 in.) "Left Turn Yield on Green" - mast arm mount.	
2	EA	-	D3-2 (var x 16 in.) mast arm mount.	
1	EA	-	Guide shield assembly (48 in. x 75 in.) pole mount.	
3	EA	-	Guide shield assembly (30 in. x 51 in.) pole mount.	
2	EA	-	R3-5 (L) (30" x 36") mast arm mount	

EQUIPMENT LIST

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

Item No.	Quantity	Units	Specification Section	Description
3	CY	206		Test pit excavation
7	CY	801		Furnish and install concrete for signal foundation.

VOID

SIG-11 SIGNAL #5 ULTIMATE

REVISIONS	APPROVALS
	ASST. DIV. CHIEF, SIGNAL DESIGN SECTION
	ASST. DISTRICT ENGINEER, TRAFFIC
	CHIEF, TRAFFIC ENGINEERING DESIGN DIVISION

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

ORIGINAL DRAWN BY: ROB CICCHINI
 DES. BY: SCOTT CHERNACK
 CHK. BY: Bruce Thompson 11-7-96

DATE: 8/96 F.A.P. NO. SEE TITLE SHEET
 SCALE: S.H.A. NO. HO-661-502-770

MD 108 AT MD 104
 GENERAL INFORMATION SHEET
 LOG MILE: COUNTY: HOWARD

TS/FILE NO. 1589-GI
 SHEET NO. 422 OF 529

JDCE CONSULTING ENGINEERS COLUMBIA, MARYLAND

REDLINE NO. 9, 4/29/98 DELETE SHEET
 DEPUTY CHIEF ENGINEER, OFFICE OF TRAFFIC