FHWA REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	MD	SEE TITLE SHEET	360	465

PROJECT DESCRIPTION

GENERAL

THIS PORTION OF THE PROJECT INVOLVES THE INSTALLATION OF A NEW TRAFFIC CONTROL SIGNAL AND THE REMOVAL OF THE EXISTING TEMPORARY TRAFFIC CONTROL SIGNAL AT THE NEW MD 450 (ANNAPOLIS ROAD) AND MD 704 (MARTIN LUTHER KING JR. HWY) INTERSECTION IN PRINCE GEORGES COUNTY. MD 450 IS ASSUMED TO RUN IN A EAST-WEST DIRECTION.

INTERSECTION OPERATION

THIS INTERSECTION IS TO OPERATE INITIALLY IN A NEMA FOUR PHASE, FULLY-TRAFFIC-ACTUATED MODE. THE EASTBOUND MD 450 MOVEMENT WILL OPERATE ALONE. THERE WILL BE AN EXCLUSIVE/PERMISSIVE LEFT TURN FOR THE EASTBOUND MD 704 MOVEMENT. THE EASTBOUND MD 704 AND WESTBOUND MD 450 THROUGH MOVEMENTS WILL OPERATE CONCURRENTLY.

CONTROLLER REQUIREMENTS

INSTALL AN EIGHT PHASE FULL-TRAFFIC-ACTUATED, SOLID STATE DIGITAL CONTROLLER WITH TEN, TWO-CHANNEL TIME DELAY OUTPUT LOOP DETECTOR AMPLIFIERS, INTERSECTION MONITOR, WITH BATTERY BACK-UP FOR PHONE DROP, TELEMETRY MODULE, ISOLATION BOARD AND SPECIAL RELAY TO BE HOUSED IN A NEMA SIZE '6' BASE MOUNTED CABINET.

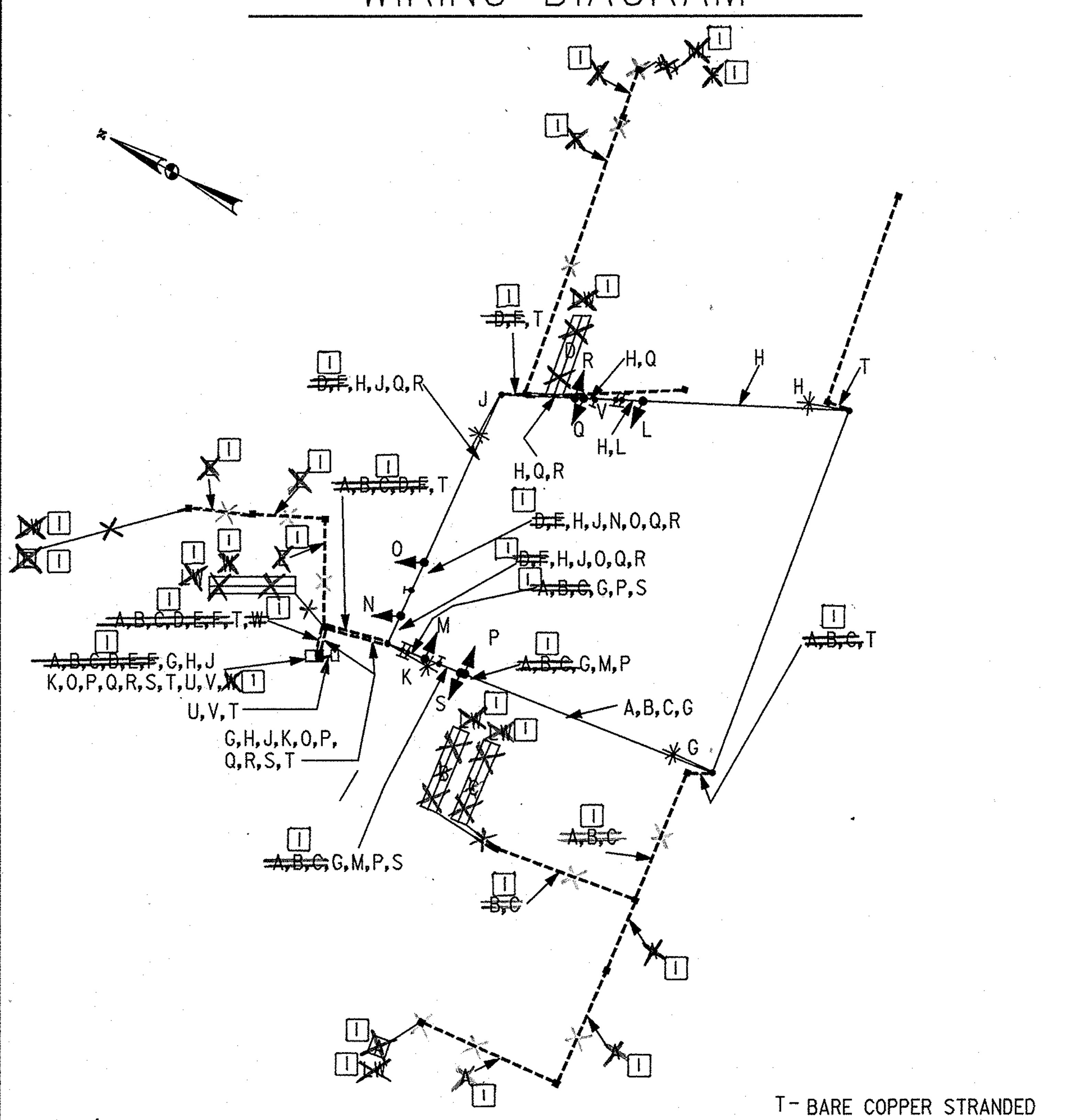
SPECIAL NOTE

THIS NEW INTERSECTION IS APPROXIMATELY 1100 FT. EAST OF THE EXISTING INTERSECTION OF MD 450 AT MD 704.

ALL UNDERGROUND AND OVERHEAD UTILITIES SHOWN ON THESE PLANS ARE SCHEMATIC AND ARE NOT TO BE CONSIDERED COMPLETE BECAUSE THESE UNDERGROUND AND OVERHEAD UTILITIES MAY BE MODIFIED PRIOR TO AND DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL UTILITY COMPANIES 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 EQUIPMENT WILL OCCUR, THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE PROJECT ENGINEER IMMEDIATELY.

72 HOURS PRIOR TO ANY WORK ON THE TRAFFIC SIGNALS, THE CONTRACTOR SHALL NOTIFY THE DISTRICT 3 TRAFFIC SECTION REPRESENTATIVE, MR. RICHARD BUETTNER (301-513-7316) AND THE SIGNAL OPERATIONS SUPERVISOR, MR. EDWARD RODENHIZER (410-787-7652).

WIRING DIAGRAM



A, B, C, D, E, W – ~~2-CONDUCTOR CABLE (ALUMINUM SHIELDED)~~

~~F – MICRO PROBE LEAD IN~~

G, H, J, K – 2-CONDUCTOR TRAY CABLE (NO. 12 A.W.G.)

L, M, N – 5-CONDUCTOR CABLE (NO. 14 A.W.G.)

O, P, Q, R, S – 7-CONDUCTOR CABLE (NO. 14 A.W.G.)

T – BARE COPPER STRANDED GROUND WIRE (NO. 6 A.W.G.)

U – 3-WIRE #4 FOR TRAFFIC SIGNAL ELECTRICAL SERVICE

V – 3-WIRE #4 FOR INTERSECTION LIGHTING ELECTRICAL SERVICE

PF – PROPOSED OVERHEAD ELECTRICAL SERVICE BY BGE

~~ML – MICRO LOOP PROBE~~

~~LW – LOOP WIRE (NO. 14 A.W.G.) IN FLEXIBLE TUBING~~

FILE NO. SS33S450.DGN
09-26-96 IJS/TES/FDB

EQUIPMENT LIST "A"

A. EQUIPMENT TO BE SUPPLIED BY THE ADMINISTRATION

CATEGORY CODE NO.	SPEC. SECTION	QUANTITY		DESCRIPTION
960015	814	4	EA.	12 IN. 1 WAY 3 SECTION (R,Y,G) ADJUSTABLE POLYCARBONATE VEHICLE SIGNAL HEAD WITH SPAN MOUNTING HARDWARE AND TUNNEL VISORS
960017	814	2	EA.	12 IN. 1 WAY 3 SECTION (RA,YA,GA) ADJUSTABLE POLYCARBONATE VEHICLE SIGNAL HEAD WITH SPAN MOUNTING HARDWARE AND TUNNEL VISORS
960020	814	1	EA.	12 IN. 1 WAY 5 SECTION (R,Y,G,YA,GA) ADJUSTABLE POLYCARBONATE VEHICLE SIGNAL HEAD WITH SPAN MOUNTING HARDWARE AND TUNNEL VISORS
963007	817	11	EA.	TWO-CHANNEL LOOP DETECTOR AMPLIFIERS (DELAY OUTPUT)
971017	816	1	EA.	EIGHT PHASE, FULL-TRAFFIC-ACTUATED, SOLID STATE DIGITAL CONTROLLER WITH INTERSECTION MONITOR AND BATTERY BACK-UP FOR PHONE DROP, TELEMETRY MODULE, ISOLATION BOARD AND SPECIAL RELAY HOUSED IN A NEMA SIZE '6' BASE-MOUNTED CABINET
973023	813	45.58	S.F.	SHEET ALUMINUM SIGNS - 1 EACH R3-5 (30" X 36") - 1 EACH R10-12 (36" X 42") - 1 EACH R3-1 (30" X 30") - 2 EACH D3-2-DUAL FACED (VAR. X 16")
900000	814	1	EA.	8 IN./12 IN. 1 WAY 5 SECTION (8" R,Y,G - 12" YA,GA) ADJUSTABLE POLYCARBONATE VEHICLE SIGNAL HEAD WITH SPAN MOUNTING HARDWARE AND TUNNEL VISORS
900000	810	1	EA.	MICRO-LOOP PROBE SET WITH 1000 FT. LEAD-IN

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.

QUANTITY	DESCRIPTION
1 EA.	POLE MOUNTED CABINET/CONTROLLER

PHASE DIAGRAM

	1	2	3	4	5	6	7	8	
PHASE 2	◄G–	◄G–	R	R	R	R	R	R	→
2 CHANGE	◄Y–	◄Y–	R	R	R	R	R	R	
PHASE 3+8	◄R–	◄R–	G / ◄G–	G / ◄G–	G	R	R	R	↰ ↑
3 CHANGE	◄R–	◄R–	G / ◄Y–	G / ◄Y–	G	R	R	R	
PHASE 4 + 8	◄R–	◄R–	G	G	G	G	G	G	↓ ↑
4 + 8 CHANGE	◄R–	◄R–	Y	Y	Y	Y	Y	Y	
FLASHING OPERATION	FL / ◄Y–	FL / ◄Y–	FL / R	FL / R	FL / R	FL / R	FL / R	FL / R	

EQUIPMENT LIST "B"

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

	CATEGORY CODE NO.	SPEC. SECTION	QUANTITY		DESCRIPTION
	114245	104	61	L.F.	24 IN. WHITE REMOVABLE PREFORMED PAVEMENT MARKING TAPE
	203030	205	5	C.Y.	TEST PIT EXCAVATION
	801004	801	11.68	C.Y.	FURNISH AND INSTALL CONCRETE FOR SIGNAL FOUNDATION
	802501	810	75	L.F.	FURNISH AND INSTALL NO. 6 A.W.G. STRANDED BARE COPPER GROUND WIRE
1	~~805111~~	~~805~~	~~30~~	~~L.F.~~	~~FURNISH AND INSTALL 1 IN. ELECTRICAL CONDUIT - GALVANIZED STEEL~~
	805125	805	1065	L.F.	FURNISH AND INSTALL 2 IN. SCHEDULE 40 RIGID PVC CONDUIT - TRENCHED
	805135	805	43	L.F.	FURNISH AND INSTALL 3 IN. SCHEDULE 40 RIGID PVC CONDUIT - TRENCHED
	805140	805	17	L.F.	FURNISH AND INSTALL 4 IN. SCHEDULE 40 RIGID PVC CONDUIT - TRENCHED
1	~~805160~~	~~805~~	~~25~~	~~L.F.~~	~~FURNISH AND INSTALL 1 IN. LIQUID TIGHT NON-METALLIC CONDUIT FOR DETECTOR SLEEVE~~
	810010	810	135	L.F.	FURNISH AND INSTALL ELECTRICAL CABLE 1 CONDUCTOR (NO. 4 A.W.G. THHN/THWN)
	811001	811	16	EA.	FURNISH AND INSTALL ELECTRICAL HANDHOLE
	813015	813	45.58	S.F.	INSTALL OVERHEAD SIGN
	837001	804	5	EA.	FURNISH AND INSTALL GROUND ROD - 3/4 IN. DIAMETER X 10 FT. LENGTH
	838002	807	1	EA.	FURNISH AND INSTALL CONTROL AND DISTRIBUTION EQUIPMENT (240/480V, 1 PHASE, 3 WIRE SYSTEM)
	860015	814	4	EA.	INSTALL 12 IN. 1 WAY 3 SECTION (R,Y,G) POLYCARBONATE SIGNAL HEAD - SPAN MOUNT
	860017	814	2	EA.	INSTALL 12 IN. 1 WAY 3 SECTION (RA,YA,GA) POLYCARBONATE SIGNAL HEAD - SPAN MOUNT
	860020	814	1	EA.	INSTALL 12 IN. 1 WAY 5 SECTION (R,Y,G,YA,GA) POLYCARBONATE SIGNAL HEAD - SPAN MOUNT
1	~~861104~~	~~810~~	~~2085~~	~~L.F.~~	~~FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (ALUMINUM SHIELDED)~~
	861107	810	38	L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 A.W.G.)
	861108	810	758	L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 A.W.G.)
	861116	810	826	L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 A.W.G.)
1	~~862101~~	~~810~~	~~1925~~	~~L.F.~~	~~FURNISH AND INSTALL LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO. 14 A.W.G.)~~
1	~~862102~~	~~815~~	~~575~~	~~L.F.~~	~~FURNISH AND INSTALL SAWCUT FOR SIGNAL (LOOP DETECTOR)~~
	866103	818	4	EA.	FURNISH AND INSTALL 15 FT. LIGHTING ARM ON SIGNAL STRUCTURE
	867103	818	4	EA.	FURNISH AND INSTALL 12 IN. X 30 FT. STRAIN POLE
	869101	819	350	L.F.	FURNISH AND INSTALL STEEL SPAN WIRE - 1/4 IN. DIAMETER
	869102	819	443	L.F.	FURNISH AND INSTALL STEEL SPAN WIRE - 3/8 IN. DIAMETER
	871117	816	1	EA.	INSTALL EIGHT PHASE (FULLY ACTUATED) CONTROLLER AND CABINET - BASE MOUNT
	800000	805	201	L.F.	FURNISH AND INSTALL 2 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
	800000	805	110	L.F.	FURNISH AND INSTALL 3 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
	800000	814	1	EA.	INSTALL 8 IN./12 IN. 1 WAY, 5 SECTION (8" R,Y,G - 12" YA,GA) POLYCARBONATE SIGNAL HEAD - SPAN MOUNT
	800000	806	4	EA.	FURNISH AND INSTALL 250-WATT HIGH PRESSURE SODIUM VAPOR LUMINAIRE WITH PHOTO-CELL
1	~~800000~~	~~810~~	~~1~~	~~EA.~~	~~INSTALL MICRO LOOP PROBE SET~~
	800000	XXX	LUMP	SUM	REMOVAL OF EXISTING TRAFFIC SIGNAL EQUIPMENT

1 RED LINE REV. NO. 1
7-14-97

TEMPORARY SIGNAL PHASE III STAGE 2+3	DWG. NO. TS-14

THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND

REVISIONS

Ⓐ AUGUST 1996 - WTB
MODIFY EXISTING SIGNAL
SHA NO. PG900517I

JDM

APPROVALS

ASST. DIVISION CHIEF, TEDD

ASST. DISTRICT ENGINEER, TRAFFIC

CHIEF, TRAFFIC ENGINEERING DESIGN DIVISION

DIRECTOR, OFFICE OF TRAFFIC & SAFETY

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

MD 450 (ANNAPOLIS ROAD) AT MD 704 (MARTIN LUTHER KING JR. HWY)

LOG MILE NO. 16045007.35 DATE 2 / 6 / 91

DRAWN BY:	D. A. NIES	F.A.P. NO.	SEE TITLE SHEET	PLAN SHEET NO.:	SHEET NO.
CHECK BY:	D. DODA 7/25/91 E. MILESKY 7/26/91	S.H.A. NO.	P-981-451-385		
SCALE:	NONE	COUNTY	PRINCE GEORGES	TS-3167A-X3-GI	360 OF 465