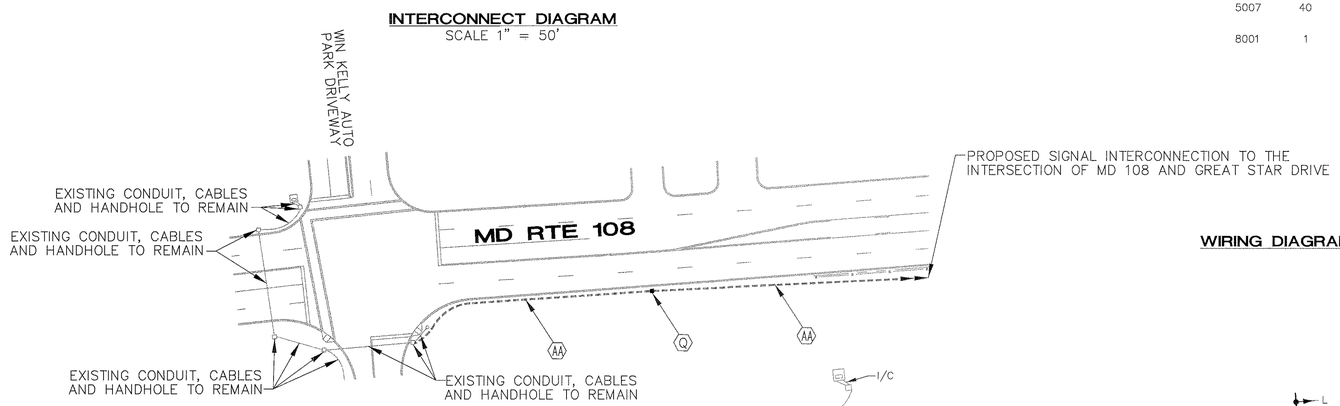
PHASING DIAGRAM

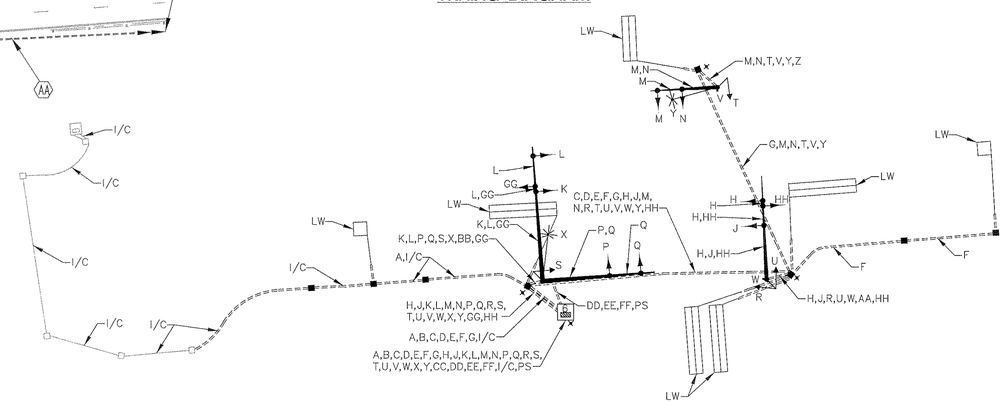
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
PHASE 1+6	G ◄G—	G ◄G—	G	R	R	R	R	R	R	R	DW	DW	DW	DW
1+6 CHANGE	Y ◄Y—	Y ◄Y—	Y	R	R	R	R	R	R	R	DW	DW	DW	DW
PHASE 2+5	R	R	R	G ◄G—	G ◄G—	G	R	R	R	R	DW	DW	DW	DW
2+5 CHANGE	R	R	R	Y ◄Y—	Y ◄Y—	Y	R	R	R	R	DW	DW	DW	DW
PHASE 2+6	G	G	G	G	G	G	R	R	R	R	W	W	DW	DW
2+6 PED CLEAR	G	G	G	G	G	G	R	R	R	R	FL/DW	FL/DW	DW	DW
2+6 CHANGE	Y	Y	Y	Y	Y	Y	R	R	R	R	DW	DW	DW	DW
PHASE 4+8	R	R	R	R	R	R	G	G	G	G	DW	DW	DW	DW
4+8 CHANGE	R	R	R	R	R	R	Y	Y	Y	Y	DW	DW	DW	DW
ALT PHASE 4+8	R	R	R	R	R	R	G	G	G	G	DW	DW	W	W
4+8 PED CLEAR	R	R	R	R	R	R	G	G	G	G	DW	DW	FL/DW	FL/DW
4+8 CHANGE	R	R	R	R	R	R	Y	Y	Y	Y	DW	DW	DW	DW
FLASHING OPERATION	FL Y	FL Y	FL Y	FL Y	FL Y	FL Y	FL R	FL R	FL R	FL R	DARK	DARK	DARK	DARK

INTERCONNECT DIAGRAM

SCALE 1" = 50'



WIRING DIAGRAM



WIRING LEGEND

A – 2 CONDUCTOR CABLE (ALUMINUM SHIELDED)
B – 2 CONDUCTOR CABLE (ALUMINUM SHIELDED)
C – 2 CONDUCTOR CABLE (ALUMINUM SHIELDED)
D – 2 CONDUCTOR CABLE (ALUMINUM SHIELDED)
E – 2 CONDUCTOR CABLE (ALUMINUM SHIELDED)
F – 2 CONDUCTOR CABLE (ALUMINUM SHIELDED)
G – 2 CONDUCTOR CABLE (ALUMINUM SHIELDED)
H – 7 CONDUCTOR CABLE (NO. 14 A.W.G.)
J – 5 CONDUCTOR CABLE (NO. 14 A.W.G.)
K – 7 CONDUCTOR CABLE (NO. 14 A.W.G.)
L – 5 CONDUCTOR CABLE (NO. 14 A.W.G.)
M – 7 CONDUCTOR CABLE (NO. 14 A.W.G.)
N – 5 CONDUCTOR CABLE (NO. 14 A.W.G.)
P – 5 CONDUCTOR CABLE (NO. 14 A.W.G.)
Q – 7 CONDUCTOR CABLE (NO. 14 A.W.G.)
R – 3 CONDUCTOR CABLE (NO. 14 A.W.G.)
S – 3 CONDUCTOR CABLE (NO. 14 A.W.G.)
T – 3 CONDUCTOR CABLE (NO. 14 A.W.G.)
U – 3 CONDUCTOR CABLE (NO. 14 A.W.G.)
V – 2 CONDUCTOR CABLE (NO. 14 A.W.G.)
W – 2 CONDUCTOR CABLE (NO. 14 A.W.G.)
X – 2 CONDUCTOR TRAY CABLE (NO. 12 A.W.G.)
Y – 2 CONDUCTOR TRAY CABLE (NO. 12 A.W.G.)
Z – STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
AA – STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
BB – STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
CC – STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
DD – 1 CONDUCTOR CABLE (NO. 4 A.W.G.)
EE – 1 CONDUCTOR CABLE (NO. 4 A.W.G.)
FF – 1 CONDUCTOR CABLE (NO. 4 A.W.G.)
GG – 7 CONDUCTOR CABLE (NO. 14 A.W.G.)
HH – 7 CONDUCTOR CABLE (NO. 14 A.W.G.)
X – 3/4"x10' GROUND ROD
PS – PROPOSED ELECTRICAL SERVICE
I/C – 12 PAIR VOICE GRADE COMMUNICATION (NO. 19 A.W.G.)
LW – LOOP WIRE

EQUIPMENT LIST

A. EQUIPMENT TO BE PURCHASED THROUGH THE SHA.

ITEM NO.	QUANTITY	UNIT	SPECIFICATION SECTION	DESCRIPTION
9001	1	EA	SP	BASE MOUNTED LOCAL CABINET (SIZE 6) WITH DETECTION EQUIPMENT WITH 8 PHASE ASC II CONTROLLER WITH TELEMETRY
9002	227	SF	SP	FLAT SHEET ALUMINUM SIGN–BLUE OR GREEN

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

ITEM NO.	QUANTITY	UNIT	SPECIFICATION SECTION	DESCRIPTION
2001	1	CY	205	TEST PIT EXCAVATION
5001	455	LF	SP 555	12 INCH WHITE REFLECTIVE HEAT APPLIED THERMO PAVEMENT MARKING TAPE
5002	125	LF	SP 555	24 INCH WHITE REFLECTIVE HEAT APPLIED THERMO PAVEMENT MARKING TAPE
5003	2	EA	SP 555	PERMANENT PREFORMED HEAT APPLIED THERMO PAVEMENT MARKING ARROW
5004	320	LF	SP	REMOVE EXISTING PAVEMENT MARKINGS–ANY WIDTH
5005	110	LF	SP	5 INCH SOLID WHITE REFLECTIVE HEAT APPLIED THERMO PAVEMENT MARKING TAPE
5006	110	LF	SP	5 INCH (10' DASH/30' GAP) WHITE REFLECTIVE HEAT APPLIED THERMO PAVEMENT MARKING TAPE
5007	40	LF	SP	5 INCH DOUBLE SOLID YELLOW REFLECTIVE HEAT APPLIED THERMO PAVEMENT MARKING TAPE
8001	1	EA	816	INSTALL CONTROLLER AND CABINET–BASE MOUNT
8002	108	SF	813	INSTALL OVERHEAD SIGN
8003	6	EA	814	FURNISH AND INSTALL 12 INCH 1 WAY 3 SECTION (R, Y, G) SIGNAL HEAD HAVING PROPER AND TUNNEL VISORS–PAINTED BLACK
8004	2	EA	814	FURNISH AND INSTALL 12 INCH 1 WAY 5 SECTION (R, Y, YA, G, GA) SIGNAL HEAD HAVING PROPER ADJUSTABLE MAST ARM BRACKET, AND TUNNEL VISORS–PAINTED BLACK
8005	2	EA	814	FURNISH AND INSTALL 12/8 INCH 1 WAY 5 SECTION (R, Y, YA, G, GA) SIGNAL HEAD HAVING PROPER ADJUSTABLE MAST ARM BRACKET, AND TUNNEL VISORS–PAINTED BLACK
8006	1	EA	814	FURNISH AND INSTALL 12 INCH 2 WAY 2 SECTION PEDESTRIAN SIGNAL HEAD–SIDE POLE MOUNT–PAINTED BLACK
8007	8	EA	811	FURNISH AND INSTALL ELECTRICAL HANDHOLE
8008	9	CY	801	FURNISH AND INSTALL CONCRETE FOR SIGNAL FOUNDATION
8009	105	LF	805	FURNISH AND INSTALL 1" LIQUID TIGHT FLEXIBLE NON–METALLIC CONDUIT FOR DETECTOR SLEEVE
8010	1035	LF	805	FURNISH AND INSTALL 2" SCHEDULE 80 RIGID PVC CONDUIT–TRENCHED
8011	90	LF	805	FURNISH AND INSTALL 3" SCHEDULE 80 RIGID PVC CONDUIT–TRENCHED
8012	20	LF	805	FURNISH AND INSTALL 4" SCHEDULE 80 RIGID PVC CONDUIT–TRENCHED
8013	1	EA	807	FURNISH AND INSTALL CONTROL AND DISTRIBUTION EQUIPMENT
8014	1	EA	818	FURNISH AND INSTALL 21–FOOT STEEL POLE WITH A SINGLE 46–FOOT MAST ARM–PAINTED GREEN
8015	4	EA	SP	CUT, CLEAN AND CAP TRAFFIC SIGNAL STRUCTURE
8016	1	EA	SP	AS–BUILT FOR TRAFFIC SIGNAL
8017	4	EA	804	FURNISH AND INSTALL GROUND ROD–3/4 INCH DIAMETER X 10–FOOT LENGTH
8018	60	LF	810	FURNISH AND INSTALL NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
8019	360	LF	810	FURNISH AND INSTALL ELECTRICAL CABLE–1 CONDUCTOR (NO. 4 AWG – THHN/THWN)
8020	1640	LF	810	FURNISH AND INSTALL ELECTRICAL CABLE–2 CONDUCTOR (ALUMINUM SHIELDED)
8021	755	LF	810	FURNISH AND INSTALL ELECTRICAL CABLE–5 CONDUCTOR (NO 14 AWG)
8022	1100	LF	810	FURNISH AND INSTALL ELECTRICAL CABLE–7 CONDUCTOR (NO 14 AWG)
8023	2550	LF	810	FURNISH AND INSTALL LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO 14 AWG)
8024	725	LF	815	FURNISH AND INSTALL SAWCUT FOR SIGNAL (LOOP DETECTOR)
8025	175	LF	805	FURNISH AND INSTALL 3" SCHEDULE 80 RIGID PVC CONDUIT – SLOTTED
8026	90	SF	813	INSTALL GROUND MOUNTED SIGN
8027	30	SF	813	INSTALL POLE MOUNTED SIGN
8028	955	LF	810	FURNISH AND INSTALL 12–PAIR COMMUNICATION CABLE ,JELLYFILLED (UNDERGROUND)
8029	2	EA	806	FURNISH AND INSTALL 250 WATT HIGH PRESSURE SODIUM LAMP AND LUMINAIRE WITH PHOTOCELL
8030	2	EA	814	FURNISH AND INSTALL 12 INCH 1 WAY 2 SECTION PEDESTRIAN SIGNAL HEAD SIDE POLE MOUNT–PAINTED BLACK
8031	455	LF	810	FURNISH AND INSTALL 2 CONDUCTOR CABLE (NO. 14 A.W.G.)
8032	685	LF	810	FURNISH AND INSTALL 3 CONDUCTOR CABLE (NO. 14 A.W.G.)
8033	2	EA	817	FURNISH AND INSTALL PUSHBUTTON AND SIGN
8034	2	EA	808	FURNISH AND INSTALL 20–FOOT LIGHTING ARM ON SIGNAL–PAINTED GREEN
8035	1	EA	818	FURNISH AND INSTALL 27–FOOT STEEL POLE WITH TWIN 50–FOOT AND 60–FOOT MAST ARMS–PAINTED GREEN
8036	1	EA	818	FURNISH AND INSTALL 27–FOOT STEEL POLE WITH A SINGLE 40–FOOT MAST ARM–PAINTED GREEN
8037	20	LF		REMOVE EXISTING COMBINATION CURB & GUTTER
8038	105	SF		4 INCH CONCRETE SIDEWALK

PROJECT DESCRIPTION

I. GENERAL

THIS INTERSECTION IS MD RTE 108 AND GREAT STAR DRIVE. CONSTRUCTION AT THIS INTERSECTION INVOLVES THE INSTALLATION. OF NEW TRAFFIC SIGNALS. IT IS ASSUMED THAT MD RTE 108 RUNS IN AN EAST–WEST DIRECTION.

THE EXISTING WESTERLY DRIVEWAY OF THE GATEWAY SCHOOL, WHICH IS LOCATED APPROXIMATELY 35 FEET EAST OF THE NORTHERLY LEG OF THIS INTERSECTION, WILL BE CLOSED TO ALL VEHICULAR TRAFFIC. ALL NECESSARY WORK TO EFFECT THE DRIVEWAY CLOSURE WILL BE PAID FOR UNDER A SEPARATE PHASE OF CONSTRUCTION.

II. INTERSECTION OPERATION

THE INTERSECTION WILL OPERATE IN A NEMA SIX (6) PHASE SEMI–TRAFFIC ACUATED MODE. EASTBOUND AND WESTBOUND MD RTE 108 WILL OPERATE CONCURRENTLY AND NORTHBOUND GREAT STAR DRIVE AND SOUTHBOUND DRIVEWAY FROM KENDALL HARDWARE STORE WILL OPERATE CONCURRENTLY.

PEDESTRIAN SIGNALS FOR EAST – WEST CROSSING WILL OPERATE CONCURRENTLY WITH EASTBOUND AND WESTBOUND MD RTE 108 AND PEDESTRIAN SIGNALS FOR NORTH – SOUTH CROSSING WILL OPERATE CONCURRENTLY UPON ACTUATION WITH AN ALTERNATE PHASE (ALT 04/08), WHICH SERVICES NORTHBOUND AND SOUTHBOUND TRAFFIC.

A NEW EIGHT PHASE FULLY ACTUATED CONTROLLER WITH TELEMETRY MODULE HOUSED IN A GROUND MOUNTED CABINET WILL BE INSTALLED.

III. INTERCONNECT DIAGRAM

SEE THIS SHEET FOR INTERSECTION INTERCONNECT DIAGRAM.

BOARD OF PROFESSIONAL ENGINEERS 22678 WILLIAM BEN CHEN STATE OF MARYLAND

06/09/98

A/E GROUP, INC.
ENGINEERS • PLANNERS
181 E. Main Street
Westminster, Maryland 21158
A/E Job No. 97–358–003

REVISIONS	APPROVALS
	CHIEF, SIGNAL DESIGN SECTION
	ASST. DISTRICT ENGINEER, TRAFFIC
	CHIEF, TRAFFIC ENGINEERING DESIGN DIVISION
	DIRECTOR, OFFICE OF TRAFFIC & SAFETY

MDOT – STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION SIGNAL # 3802

DRAWN BY: M. GESELL
DES. BY: A. HAGOS
CHK. BY: C. CHEN

MD 108 at Great Star Drive

GENERAL INFORMATION COUNTY: HOWARD

DATE: 5/98 F.A.P. NO. F.A.P. NO.
SCALE: NONE S.H.A. NO. BW177M83

TS/STD. NO. 3802 GI

SHEET NO. 2 OF 2