F.H.W.A. REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	MD		43	55

PROJECT DESCRIPTION

I. GENERAL

THIS PORTION OF THE PROJECT IS LOCATED AT THE INTERSECTION OF US 1 AND FORGE ROAD IN BALTIMORE COUNTY MARYLAND AND INVOLVES GEOMETRIC IMPROVEMENTS AND THE RECONSTRUCTION OF A SIGNAL. US 1 IS ASSUMED TO RUN IN A NORTH SOUTH DIRECTION.

II. INTERSECTION OPERATION

THE PROPOSED TRAFFIC SIGNAL WILL OPERATE IN A NEMA SIX (6) PHASE, FULLY TRAFFIC ACTUATED MODE. A PEDESTRIAN PHASE HAS BEEN ADDED TO CROSS US 1. THE US 1 APPROACHES WILL OPERATE CONCURRENTLY WITH THE LEFT TURNS OPERATING IN AN EXCLUSIVE/ PERMISSIVE PHASE. THE FORGE ROAD APPROACHES WILL OPERATE CONCURRENTLY

A NEW EIGHT PHASE FULLY TRAFFIC ACTUATED CONTROLLER WILL BE INSTALLED WITH TWO (2) FOUR CHANNEL RACK MOUNTED LOOP DETECTOR AMPLIFIERS, TELEMETRY MODULE, INTERSECTION MONITOR WITH BATTERY BACK UP AND TWO CIRCUIT FLASHER UNIT WITH RELAY PACKAGE HOUSED IN A NEMA SIZE SIX (6) BASE MOUNTED CABINET.

III. SPECIAL NOTES

1. IT IS THE RESPONSIBLITY OF THE CONTRACTOR TO CONFIRM GEOMETRICS PRIOR TO PLACING SIGNAL EQUIPMENT.
2. THE SIGNAL SHOP WILL BE NOTIFIED TO PERFORM INTERNAL WIRING OF THE CABINET AT US 1 @ FORGE ROAD. ALL CABLE SHALL BE IDENTIFIED AND BROUGHT INTO THE CONTROLLER BY THE CONTRACTOR. THE CONTRACTOR SHALL NOTIFY MR. EDWARD RODENHIZER, SHA SIGNAL SHOP AT (410) 787-7650 SEVENTY-TWO (72) HOURS IN ADVANCE OF THIS WORK.
3. MOT PLATES FOR THIS PROJECT WILL BE AS FOLLOWS: 104.00 TO 104.00-12, 104.02-01, 104.03-01

CONSTRUCTION DETAILS

(A) INSTALL NEMA "6" BASE MOUNTED CABINET AND CONTROLLER WITH ALL NECESSARY EQUIPMENT (NOTE: 1 - TWO INCH SCHEDULE 80, 2 - FOUR INCH SCHEDULE 80 PVC CONDUIT BEND, 1 - TWO INCH SCHEDULE 80 PVC CONDUIT BEND FOR PHONE DROP).

(B) INSTALL 27' STEEL POLE (CUT AND CAP TO 21') WITH SINGLE MAST ARM 50 FOOT, SIGNAL HEADS, (NOTE: ONE TWO INCH 90 DEGREE PVC SCHEDULE 80 BEND.)

(C) INSTALL 27' STEEL POLE WITH SINGLE 38 FOOT MAST ARM, SIGNAL HEADS, PEDESTRIAN SIGNAL HEAD, PUSH BUTTON, 20 FOOT LIGHTING ARM, LUMINAIRE, PHOTO CELL (NOTE: TWO TWO INCH 90 DEGREE PVC SCHEDULE 80 BEND.)

(D) INSTALL 27' STEEL POLE WITH TWIN 50 FOOT MAST ARM BY 60 FOOT MAST ARM, SIGNAL HEADS, PEDESTRIAN SIGNAL HEAD, 20 FOOT LIGHTING ARM, LUMINAIRE, PHOTO CELL (NOTE: TWO TWO INCH 90 DEGREE PVC SCHEDULE 80 BENDS.) POWER SUPPLY FOR LUMINAIRE TO BE SEPARATE FROM POWER SUPPLY FOR TRAFFIC SIGNAL; RUN CONDUCTOR INTO "PERRY HALL PROFESSIONAL" BUILDING FOLLOWING SAME ROUTE AS CONDUCTORS FOR EXISTING LUMINAIRES AT LOCATIONS (X). CONNECT TO EXISTING POWER DISTRIBUTION PANEL IN BUILDING. USE GROUT TO WATERPROOF CONDUCTOR ENTRY INTO BUILDING. ⚠1

(E) INSTALL HANDHOLE.

(F) INSTALL 6' X 30' LOOP DETECTOR IN 1/4 INCH FLEXIBLE TUBING (3-6-3 TURNS).

(G) INSTALL MICROLOOP PROBE SET 500 FOOT LEAD-IN.

(H) INSTALL MICROLOOP PROBE SET 1000 FOOT LEAD-IN.

(I) INSTALL 2" SCHEDULE 80 PVC CONDUIT-TRENCHED.

(J) INSTALL 2" SCHEDULE 80 PVC CONDUIT - BORED.

(K) INSTALL 3" SCHEDULE 80 PVC CONDUIT-TRENCHED.

(L) INSTALL 3" SCHEDULE 80 PVC CONDUIT - BORED.

(M) INSTALL 4" SCHEDULE 80 PVC CONDUIT - TRENCHED.

(N) INSTALL 1" LIQUID TIGHT FLEXIBLE NON-METALIC CONDUIT AND FITTING (DETECTOR WIRE SLEEVE).

(O) INSTALL 1" GALVANIZED CONDUIT SLEEVE.

(P) INSTALL 24" REFLECTIVE THERMOPLASTIC PVT MARKING TAPE FOR STOP LINE.

(Q) REMOVE HANDHOLE AND ABANDON CONDUIT.

(R) EXISTING SIGNAL POLE TO BE REMOVED, INCLUDING SIGNAL HEADS, SPAN WIRE AND SIGNS.

(S) EXISTING POLE MOUNTED CONTROLLER TO BE REMOVED.

(T) EXISTING LOOP DETECTOR TO BE ABANDONED.

(U) EXISTING STOP BAR TO BE REMOVED.

(V) EXISTING CONDUIT TO BE ABANDONED.

(W) INSTALL 6' X 20' LOOP DETECTOR IN 1/4 INCH FLEXIBLE TUBING (3-6-3 TURNS).

(X) EXISTING STRAIN POLE AND SIGNAL/LIGHTING EQUIPMENT TO BE REMOVED. REMOVE POLE FOUNDATIONS TO 1' BELOW GRADE. REUSE EXISTING CONDUIT FOR LUMINAIRES TO RUN CONDUCTOR FOR NEW LUMINAIRE AT LOCATION (D) INTO "PERRY HALL PROFESSIONAL" BUILDING. IF EXISTING CONDUIT CAN NOT BE REUSED, BORE UNDER EXISTING DRIVEWAY TO GET CONDUCTOR TO BUILDING. ⚠1

(Y) INSTALL 12" REFLECTIVE THERMOPLASTIC PVT MARKING TAPE FOR CROSS WALK

(Z) INSTALL 10' PUSH BUTTON PEDESTAL POLE (CUT AND CAP TO 3'), PUSH BUTTON AND SIGN (NOTE: ONE TWO INCH 90 DEGREE PVC SCHEDULE 80 BEND.)

EQUIPMENT LIST

A. EQUIPMENT TO BE SUPPLIED BY SHA AND INSTALLED BY THE CONTRACTOR

ITEM NO.	QUANTITY	DESCRIPTION
900000	1 EA	FURNISH NEMA 6 BASE MOUNTED CABINET & CONTROLLER
900000	6 EA	12" 1-WAY 3 SECTION SIGNAL HEAD (R, Y, G) - MAST ARM MOUNT
900000	2 EA	12" 1-WAY 5 SECTION SIGNAL HEAD (R, Y, YA, G, GA) - MAST ARM MOUNT
900000	2 EA	8"/12" 1-WAY 5 SECTION SIGNAL HEAD (R, Y, YA, G, GA) - MAST ARM MOUNT
900000	2 EA	12" ONE-WAY, TWO SECTION (DON'T WALK, WALK) PEDESTRIAN SIGNAL HEAD WITH ADJUSTABLE BRACKET FOR PEDESTAL POST TOP MOUNTING AND CUT AWAY VISORS
900000	2 EA	DETECTOR AMPLIFIER 4 CHANNEL RACK MOUNTED
900000	90.20 S.F.	SHEET ALUMINUM SIGN TWO (2) R10-12, (36"x42") "LEFT TURN YIELD ON GREEN"; FOUR (4) D3-2, 16"x96" "FORGE RD."; TWO (2) R10-3C (9"x12") "PUSH BUTTON TO CROSS BELAIR ROAD"; ONE (1) R3-5 (30"x36") "LEFT TURN ONLY"; D3-2 MOD ONE (1) (60"x42") "US 1 NORTH SOUTH"
900000	2 EA	FURNISH PEDESTRIAN PUSH BUTTON AND SIGN

B. EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR:

ITEM NO.	QUANTITY	DESCRIPTION
120500	LS	MAINTENANCE OF TRAFFIC
203030	3 CY	TEST PIT EXCAVATION
585445	100 LF	24" WHITE PERMANENT PREFORM PAVEMENT MARKING TAPE
585443	575 LF	12" WHITE PERMANENT PREFORM PAVEMENT MARKING TAPE
800000	2 EA	FURNISH AND INSTALL MICROLOOP PROBE SET 500 FT. LEAD IN
800000	4 EA	FURNISH AND INSTALL MICROLOOP PROBE SET 1000 FT LEAD IN
801004	14 CY	FURNISH AND INSTALL CONCRETE FOUNDATION
805105	50 LF	FURNISH AND INSTALL 2" SCHEDULE 80 PVC CONDUIT BORED
805115	170 LF	FURNISH AND INSTALL 3" SCHEDULE 80 PVC CONDUIT BORED
800000	975 LF	FURNISH AND INSTALL 2" SCHEDULE 80 PVC CONDUIT TRENCHED
800000	50 LF	FURNISH AND INSTALL 3" SCHEDULE 80 PVC CONDUIT TRENCHED
800000	30 LF	FURNISH AND INSTALL 4" SCHEDULE 80 PVC CONDUIT TRENCHED
805160	40 LF	FURNISH AND INSTALL 1" NON-METALLIC SLEEVE
805010	40 LF	FURNISH AND INSTALL 1" GALVANIZED ELECTRICAL CONDUIT RISER
811001	10 EA	FURNISH AND INSTALL HANDHOLE
832020	100 LF	FURNISH AND INSTALL BARE COPPER GROUND WIRE - NO. 6 AWG
837001	4 EA	FURNISH AND INSTALL GROUND ROD
860220	12 EA	INSTALL SIGNAL HEAD (ANY TYPE)
861105	135 LF	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR NO. 14 AWG
861106	145 LF	FURNISH AND INSTALL ELECTRICAL CABLE - 3 CONDUCTOR NO. 14 AWG
861104	425 LF	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR ALUMINUM SHIELDED
861107	80 LF	FURNISH AND INSTALL ELECTRICAL CABLE - 5 CONDUCTOR NO. 14 AWG
861108	900 LF	FURNISH AND INSTALL ELECTRICAL CABLE - 7 CONDUCTOR NO. 14 AWG
861116	175 LF	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR NO. 12 AWG
862101	2000 LF	FURNISH AND INSTALL LOOP WIRE
862102	625 LF	FURNISH AND INSTALL SAW CUT
861117	300 LF	FURNISH AND INSTALL ELECTRICAL CABLE - 1 CONDUCTOR NO. 4 AWG
838003	1 EA	FURNISH AND INSTALL CTR DIST EQPT (120.240V, 1PH, 3W)
822500	1 EA	AS BUILT FOR TRAFFIC SIGNAL
813015	83.50 SF	INSTALL OVERHEAD SIGN
866104	2 EA	FURNISH AND INSTALL 20' LIGHTING ARM ON SIGNAL STRUCTURE
831010	2 EA	FURNISH AND INSTALL 250 WATT LUMINAIRE WITH PHOTOCELL
805011	25 LF	FURNISH AND INSTALL 1 INCH GALVANIZED CONDUIT SLEEVE
800000	LS	REMOVE AND DISPOSE OF EXISTING MATERIAL AND EQUIPMENT
818036	1 EA	FURNISH AND INSTALL STEEL POLE WITH 50' MAST ARM
800000	1 EA	FURNISH AND INSTALL STEEL POLE WITH TWIN 50'-60' MAST ARMS
818030	1 EA	FURNISH AND INSTALL STEEL POLE WITH 38' MAST ARM.
871202	1 EA	INSTALL NEMA 6 BASE MOUNTED CABINET.

B. EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR (CONTINUED):

ITEM NO.	QUANTITY	DESCRIPTION
865201	2 EA	INSTALL PEDESTRIAN PUSH BUTTON AND SIGN
860265	6 EA	RELOCATE EXISTING SIGNAL HEAD FOR MAINTANENCE OF TRAFFIC
868003	1 EA	FURNISH AND INSTALL PUSH BUTTON PEDESTAL POLE
800000	2 EA	CUT AND CAP SIGNAL POLE

C. EQUIPMENT TO BE REMOVED BY THE CONTRACTOR AND DELIVERED TO THE MARYLAND STATE HIGHWAY ADMINISTRATION TRAFFIC SIGNAL SHOP -7491 CONNELLEY DRIVE, HANOVER, MARYLAND 21076. CONTACT MR. EDWARD RODENHIZER (301) 787-7650 72 HOURS IN ADVANCE PRIOR TO DELIVERY.

QUANTITY	DESCRIPTION
1 EA	POLE MOUNTED CONTROLLER

NOTE:
ALL EQUIPMENT AND MATERIAL NOT LISTED ABOVE WILL BECOME THE PROPERTY OF THE CONTRACTOR

THE FOLLOWING CONTACT PERSONS FOR DISTRICT # 4 ARE AS FOLLOWS:

Mr. David Malkowski
District Engineer
Phone: (410) 321-2810

Mr. Randall Scott
Assistant District Engineer-Traffic
Phone: (410) 321-2781

Mr. David Ramsey
Assistant District Engineer-Maintenance
Phone: (410) 363-2761

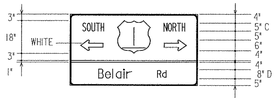
Mr. Joe McMahon
Assistant District Engineer-Utility
Phone: (410) 321-2841

Mr. Richard Daff
Chief Traffic Operations Division
Phone: (410) 787-7630

The Utility Company Representative is:

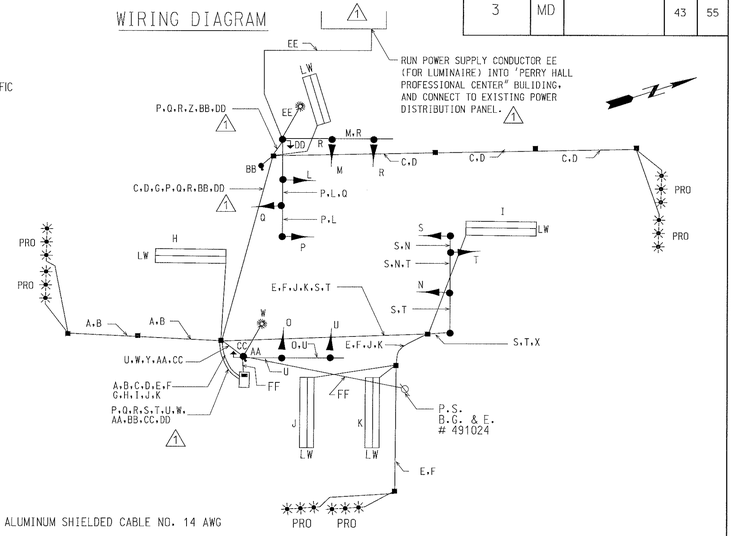
BALTIMORE GAS AND ELECTRIC
MR. Joe Weber
7317 PARKWAY DRIVE
HANOVER MARYLAND 21076
(410) 859-9026

SIGN NO. 18



WIDTH	HEIGHT	COLOR		BORDER		ARROW	SHIELD
		LEG.	BKGD	WIDTH	RADIUS		
6'-0"	3'-6"	W	G	3/4"	2"	6" AROTAIL	MI-2

WIRING DIAGRAM



WIRING KEY

A-F	PROBE CABLE
G-K	2 CONDUCTOR ALUMINUM SHIELDED CABLE NO. 14 AWG
L-O	5 CONDUCTOR ELECTRICAL CABLE NO. 14 AWG
P-U	7 CONDUCTOR ELECTRICAL CABLE NO. 14 AWG
W.EE	2 CONDUCTOR ELECTRICAL CABLE TYPE T/C NO. 12 AWG
X-Z	STRANDED BARE COPPER GROUND WIRE NO. 6 AWG
AA-BB	2 CONDUCTOR ELECTRICAL CABLE NO. 14 AWG
CC-DD	3 CONDUCTOR ELECTRICAL CABLE NO. 14 AWG
PRO	PROBES
L W	LOOP WIRE
FF	1 CONDUCTOR ELECTRICAL CABLE NO. 4 AWG
P.S.	POWER SOURCE

PHASE CHART

	1	2	3	4	5	6	7	8	9	10	11	12	
	R Y G	R Y G	R Y G	R Y G	R Y G	R Y G	R Y G	R Y G	R Y G	R Y G	⚠1	⚠1	
PHASE 1 & 5	R	R	R	R	R	R	R	R	R	R	DW	DW	
PHASE 1 & 5 CHANGE TO PHASE 1 & 6 OR TO 2 & 5 OR TO 2 & 6													
PHASE 1 & 6	G	G	G	R	R	R	R	R	R	R	DW	DW	
PHASE 1 & 6 CHANGE	Y	Y	G	R	R	R	R	R	R	R	DW	DW	
PHASE 2 & 5	R	R	R	G	G	G	R	R	R	R	DW	DW	
PHASE 2 & 5 CHANGE	R	R	R	Y	Y	G	R	R	R	R	DW	DW	
PHASE 2 & 6	G	G	G	G	G	G	R	R	R	R	DW	DW	
PHASE 2 & 6 CHANGE	Y	Y	Y	Y	Y	Y	R	R	R	R	DW	DW	
PHASE 4 & 8	R	R	R	R	R	R	G	G	G	G	DW	DW	
PHASE 4 & 8 CHANGE	R	R	R	R	R	R	Y	Y	Y	Y	DW	DW	
PHASE 4 & 8 ALT.	R	R	R	R	R	R	G	G	G	G	W	W	
PED CLEAR	R	R	R	R	R	R	G	G	G	G	FL/DW	FL/DW	
PHASE 4 & 8 ALT CHANGE	R	R	R	R	R	R	Y	Y	Y	Y	DW	DW	
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/DW	FL/DW	

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future

REVISIONS
Ⓐ 1/98 REDESIGN SIGNAL DUE TO GEOMETRIC IMPROVEMENTS BA#2527(1)
C. G. M.

APPROVALS
ORIGINAL IN FILE
DESIGN SECTION
ASST. DISTRICT ENGINEER, TRAFFIC
CHIEF, TRAFFIC ENGINEERING DESIGN DIVISION
DIRECTOR, TRAFFIC & SAFETY

REVISIONS
⚠1 ADDENDUM NO. 1 4/13/98

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

US1 (BELAIR ROAD) & FORGE ROAD
GENERAL INFORMATION
LOG MILE: 03000109.45

DRAWN BY:	H. KILIAN	F.A.P. NO.	SEE TITLE SHEET	TS NO.	SHEET NO.
CHK. BY:	H. KILIAN	S.H.A. NO.	BII5501476	1514 A	43 OF 55
SCALE:	1" = 20'	COUNTY	BALTIMORE		
DATE:	5/18/77				

FILE: m:\belair_2\forg_gen.dgn
DATE: 9-Apr-98 19:51