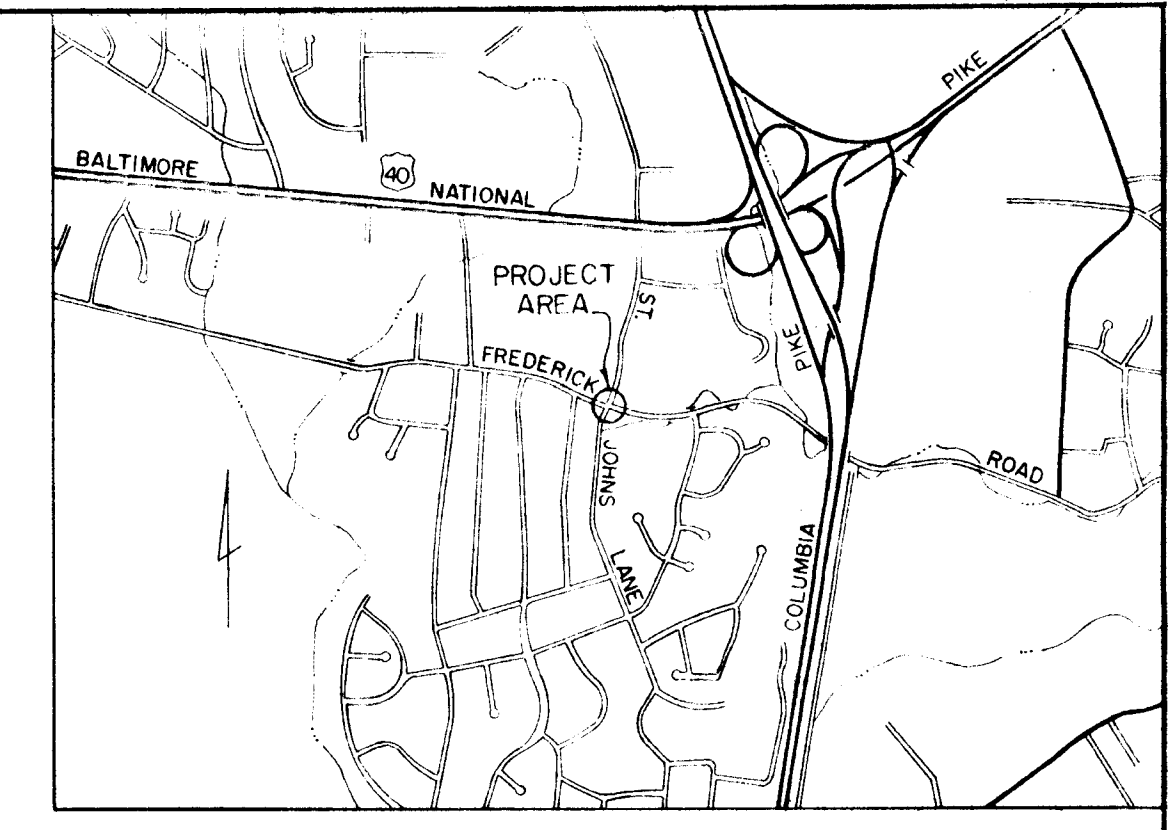


PHASE AND SEQUENCE DIAGRAMS		TRAFFIC SIGNAL HEADS	
		1-6	7-12
	PHASE A	G	R
	PHASE A CLEARANCE	A	R
	PHASE B	R	G
	PHASE B CLEARANCE	R	A
	FLASH (F/A)	F/A	F/R

**EQUIPMENT LIST**

- A. CONTROLLER AND ACCESSORIES**
- TWO PHASE SEMI-ACTUATED MODULAR PROGRAMMABLE CONTROLLER WITH SPILL STATE MEMORY AND DIGITAL TYPING, EQUIPMENT TO THE COMPLETE END OF P40 SERIES, MANUFACTURED BY EAGLE SIGNAL CORPORATION, SERVICE HEADS, OR APPROVED EQUAL.
  - EQUIPPED WITH ONE (1) VEHICLE ACTUATED PHASE MODULE.
  - CONTROLLER SHALL BE CAPABLE OF THE FOLLOWING FUNCTIONS: RECALL, RED CLEARANCE, DUAL MAXIMUM MEMORY, AND MANUAL OVERRIDE.
  - PHASE 101 TO BE TRAFFIC ACTUATED.
  - CABINET WITH STANDARD POLICE PANEL TO BE PAINTED BRONZE AND MOUNTED ON STEEL STRAIN POLE.
- B. STEEL STRAIN POLE**
- UNION METAL MANUFACTURING CO. DESIGN 50054, BRONZE FINISH, OR EQUIVALENT. ANCHOR BOLTS AND FOUNDATION TO BE AS PER MANUFACTURER'S RECOMMENDATIONS.
- C. SIGNAL HEADS**
- ALL SIGNAL INDICATORS TO BE 12" DIAMETER. ALL SIGNALS TO HAVE VISOR CAPS.
- D. LOOPS AND DETECTORS**
- LOOPS - DIMENSIONS PHASE NOS. 1 & 2 9' x 20' B
- 2 DELAYED TIMER DETECTOR TO ACCOMMODATE RIGHT TURN ON RED.
- E. UNDERGROUND WIRING**
- UNDERGROUND WIRING SHALL BE PLACED IN NEW PVC CONDUITS UNDER THE ROAD SURFACE AND IN GRASS AREAS, AS SHOWN ON THE CONTRACT DRAWINGS.
  - THE CONDUIT SHALL BE SIZED TO ACCOMMODATE FUTURE WIRING FOR LEFT TURN DETECTORS.
  - THE CONTRACTOR SHALL FURNISH AN "AS-BUILT" DRAWING AS PER "GENERAL SPECIFICATIONS"-4.02b.
- F. NEW POLE NO. 4 TO BE UNION METAL MANUFACTURING CO. DESIGN TO ACCOMMODATE ONE 44" MAST ARM AND SPAN WIRE TO NEW POLE NO. 1.**



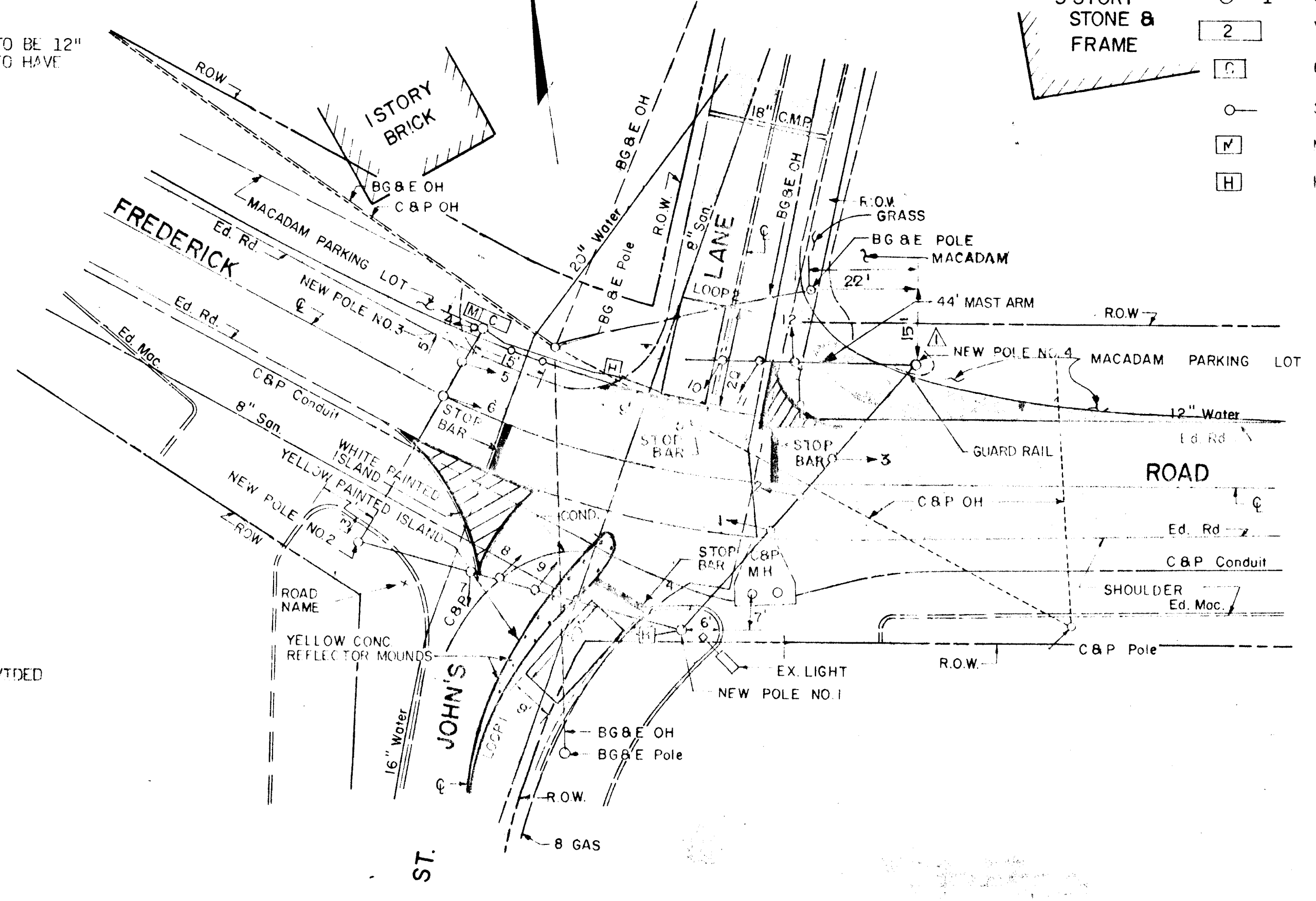
VICINITY MAP  
SCALE: 1"=2000'

**SYMBOLS**

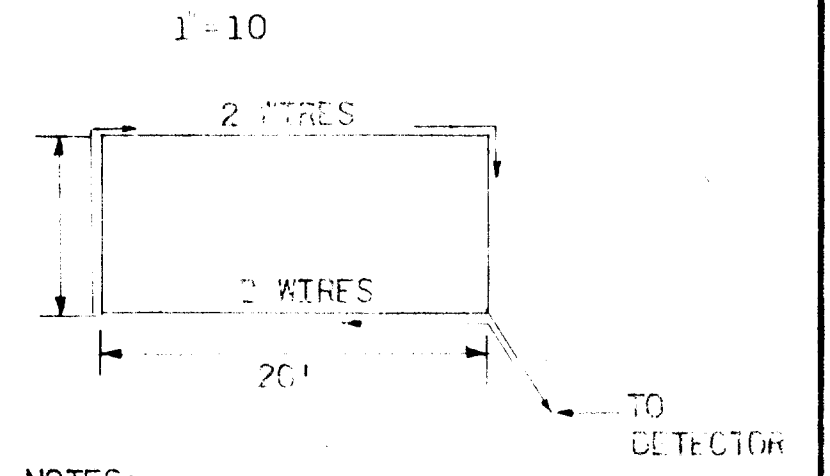
- 1 SIGNAL HEAD WITH IDENTIFICATION
- 2 VEHICLE DETECTOR LOOP
- 3 CONTROL CABINET
- 4 STEEL STRAIN POLE WITH SPAN WIRE
- 5 METER BOX
- 6 HAND BOX

**GENERAL NOTES:**

- ALL HIGHWAY MARKING SHALL BE THE RESPONSIBILITY OF THE DIVISION OF TRAFFIC ENGINEERING OF THE BUREAU OF ENGINEERING, DEPARTMENT OF PUBLIC WORKS OF HOWARD COUNTY, MARYLAND; AND IS NOT TO BE CONSIDERED A PART OF THIS CONTRACT.
- APPROXIMATE LOCATION OF EXISTING UTILITIES IS SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL LOCATE EXISTING UTILITIES A MINIMUM OF TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS IN VICINITY OF UTILITIES. COST SHALL BE INCLUDED IN THE UNIT PRICES BID FOR EXCAVATION AND BACKFILL FOR TRAFFIC SIGNAL APPROPRIANCES.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:  
 MTS UTILITY (COLLECT) 2-569-0100  
 BALTIMORE GAS & ELECTRIC COMPANY - UNDERGROUND ELECTRIC DISTRIBUTION ENGINEERING "DAMAGE CONTROL" 234-5691  
 BALTIMORE ELECTRIC COMPANY - UNDERGROUND GAS DISTRIBUTION ENGINEERING "DAMAGE CONTROL" 234-5533  
 CHESAPEAKE TELEPHONE CO. 725-9977
- TIMING OF THE SIGNAL SYSTEM SHALL BE FURNISHED BY THE TRAFFIC ENGINEER. (REF. 4.03K OF THE GENERAL SPECIFICATIONS).
- ALL MATERIALS AND WORKMANSHIP UNDER THIS CONTRACT SHALL CONFORM WITH THE "GENERAL SPECIFICATIONS FOR INSTALLATION AND EQUIPMENT OF TRAFFIC SIGNALS FOR HOWARD COUNTY DEPT. OF PUBLIC WORKS", DATED OCTOBER 7, 1974; REVISED FEBRUARY 16, 1975.
- CLEAR ALL UNDERGROUND UTILITIES BY 6" MINIMUM, AND OVERHEAD UTILITIES ACCORDING TO THE MD HIGH VOLTAGE ACT
- CABLE FEED TO DETECTOR LOOPS SHALL HAVE USE OF PLYM WIRE ACCORDATIONS WHENEVER POSSIBLE. THE LAYOUT SHALL BE PROVIDED AS NOTED IN SECTION 4.03 PARAGRAPH 3 OF "INFORMATION FOR SUBMITTERS" OF THE SPECIFICATIONS.
- REMOVAL OF REVISIONS, EXISTING SIGNING AND MARKING TO BE DONE BY HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
- ALL DISTURBED AREAS SHALL BE PROMPTLY RESTORED IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS.



**LOOP DETAIL**



**NOTES:**

- WIRES ARE TO BE LAID IN THIS CONFIGURATION TRACE GIVING A TOTAL NUMBER OF WIRES AS SHOWN.
- WIRE TO BE LAID 2" DEEP IN 1/4" WIDE SAWCUT IN THE PAVEMENT. WIRE TO BE HELD IN PLACE IN SAWCUT UNTIL INITIAL SET OF EPOXY TO AVOID MIGRATION TO THE SURFACE.
- WIRE TO LOOP NOS. 1 & 2 SHALL BE SHIELDED AUDIO CABLE.

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 DIRECTOR OF PUBLIC WORKS: *[Signature]* DATE: *3/24/81*  
 CHIEF BUREAU OF ENGINEERING: *[Signature]* DATE: *3/24/81*  
 CHIEF BUREAU OF TRAFFIC ENGINEERING: *[Signature]* DATE: *3/24/81*

PREPARED BY:  
**EWELL, BOMHARDT & ASSOC.**  
 Consulting Engineers  
 BALTIMORE, MARYLAND  
 TELEPHONE 265 8100

SIGNALIZATION OF ST. JOHN'S LANE AND FREDERICK ROAD  
 CAPITAL PROJECT T-9-7008  
 ELECTION DISTRICT NO. 2  
 HOWARD COUNTY, MARYLAND

NO.	DATE	DESCRIPTION & REVISION	SIGNATURE
1		POLE CHANGE	E.B. & A.

DRAWING NO. 1 OF 1  
 SCALE 1"=20'  
 DESIGNED BY: S.W.P.  
 DRAFTED BY: G.M.N.  
 CHECKED BY: C.S.B.

SEE J-4056 SIGNAL INDICATIONS PLAN  
 BY J-CHEUNG 8/19/86

C272201