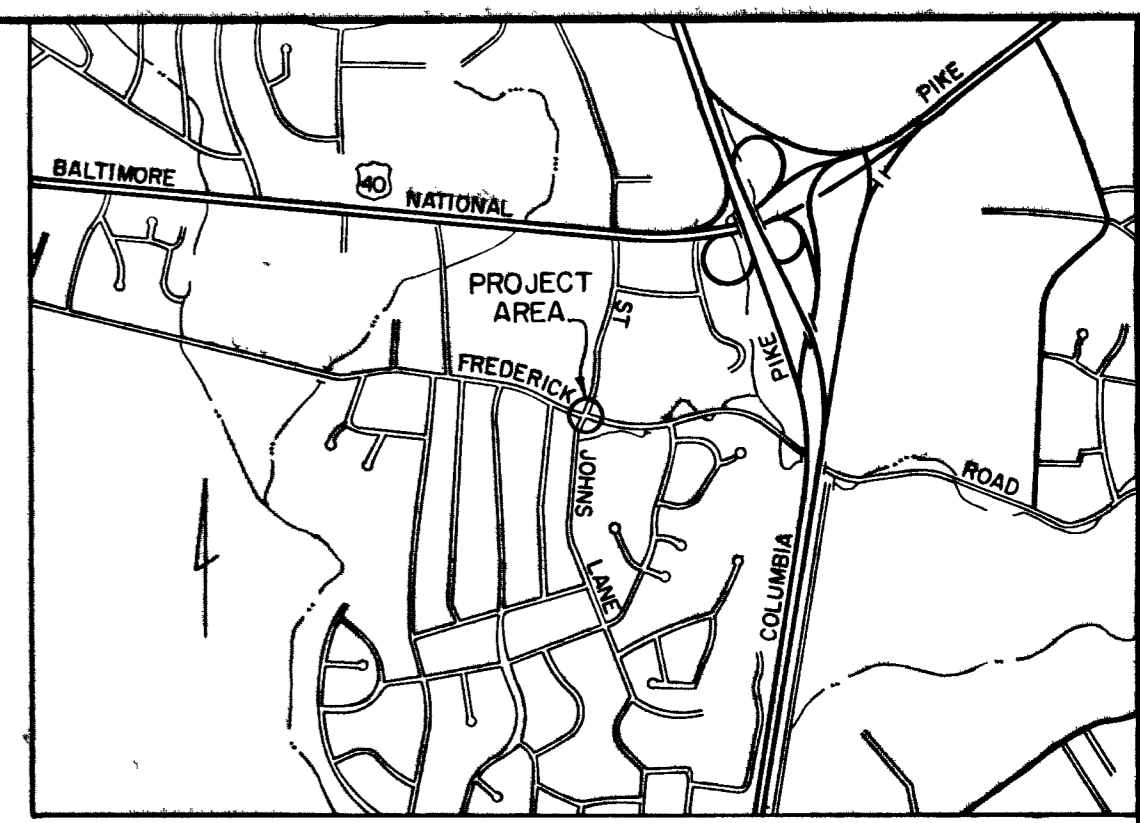


PHASE AND SEQUENCE DIAGRAMS	TRAFFIC SIGNAL HEADS	
	1-6	7-12
	G	R
PHASE A CLEARANCE	A	R
PHASE B	R	G
PHASE B CLEARANCE	R	A
FREE MOVEMENT YIELD PRIOR TO MOVEMENT	FLASH (F/ )	F/A F/R

**EQUIPMENT LIST**

- A. CONTROLLER AND ACCESSORIES**
- TWO PHASE SEMI-ACTUATED MODULAR PROGRAMMABLE CONTROLLER WITH SOLID STATE CIRCUITRY AND DIGITAL TIMING EQUIVALENT TO THE ECONOLITE EHC OR RHC SERIES, MANUFACTURED BY EAGLE SIGNAL CORPORATION, CRUISE HTMS, 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 OVERTIDE.
  - PHASE 'B' 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  
SEE DETAILS FOR LAYOUT
- 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.
- 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.



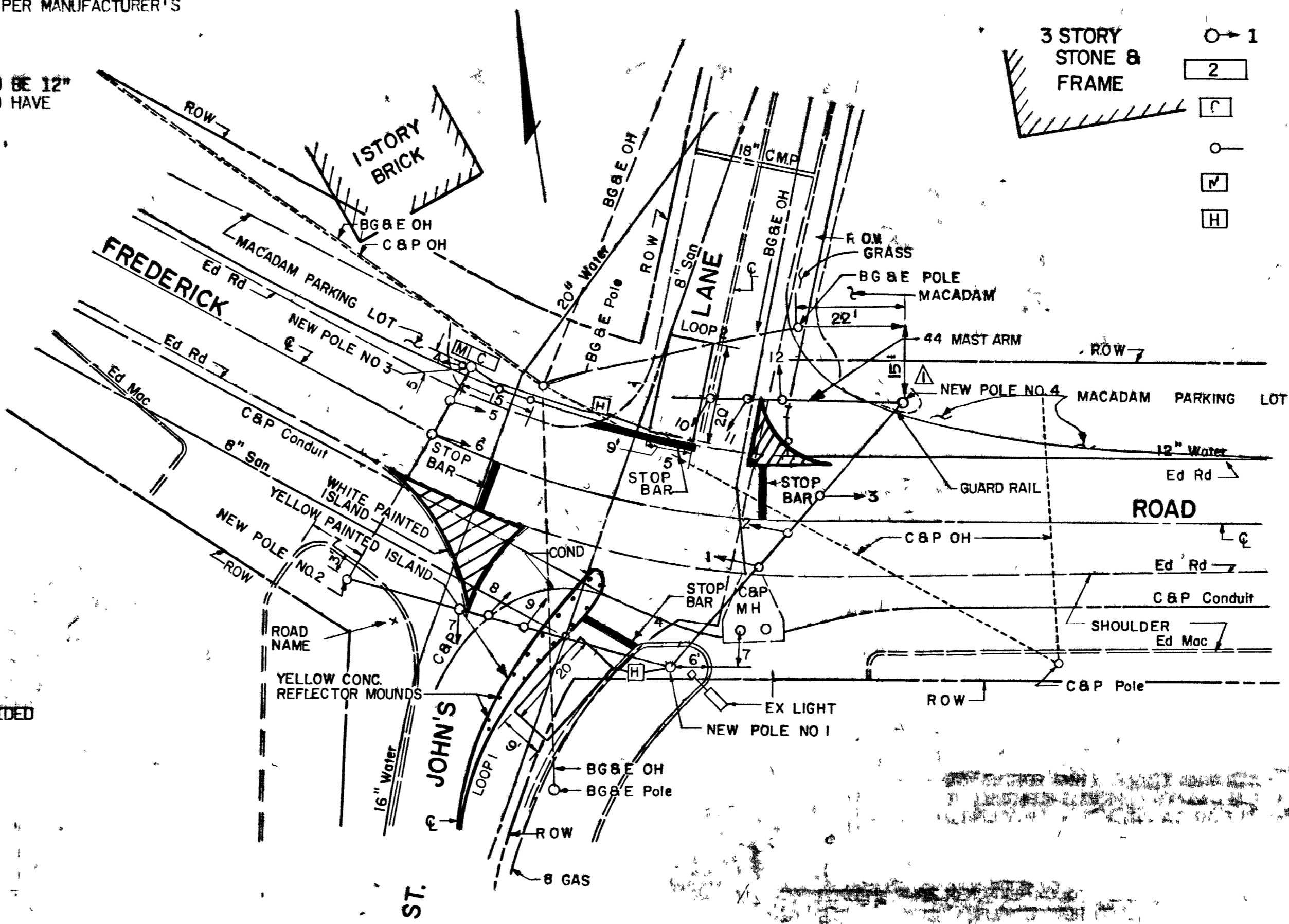
VICINITY MAP  
SCALE 1=2000

**SYMBOLS**

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

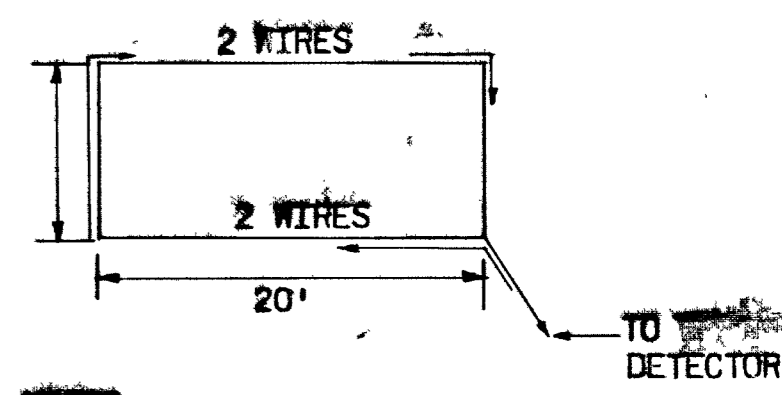
**GENERAL NOTES**

- 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.
  - d. 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 APPURTENANCES.
  - c. CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
    - MISS UTILITY (COLLECT) 1-559-0100
    - BALTIMORE GAS & ELECTRIC COMPANY - UNDERGROUND ELECTRIC DISTRIBUTION ENGINEERING "DAMAGE CONTROL" 234-5691
    - BALTIMORE GAS & ELECTRIC COMPANY - UNDERGROUND GAS DISTRIBUTION ENGINEERING "DAMAGE CONTROL" 234-5533
    - CHESAPEAKE AND POTOMAC TELEPHONE CO 725-9976
- TIMING OF THE SIGNAL SYSTEM SHALL BE FURNISHED BY THE TRAFFIC ENGINEER (REF 4 03K OF THE GENERAL SPECIFICATIONS)
- ALL MATERIALS AND WORKMANSHIP EMPLOYED 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 18 1976
- CLEAR ALL UNDERGROUND UTILITIES BY 6" MINIMUM, AND OVERHEAD UTILITIES ACCORDING TO THE MD. HIGH VOLTAGE ACT
- CABLE FEED TO DETECTION LOOPS SHALL MAKE USE OF SPAN WIRE ACCOMMODATIONS WHEREVER POSSIBLE. THE LAYOUT SHALL BE PROVIDED AS NOTED IN SECTION J PARAGRAPH THREE OF "INFORMATION FOR BIDDERS" OF THE SPECIFICATIONS
- REMOVAL OR REVISION OF EXISTING SIGNING AND MARKING TO BE DONE BY HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
- ALL DISTURBED AREAS SHALL BE PROPERLY RESTORED IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS



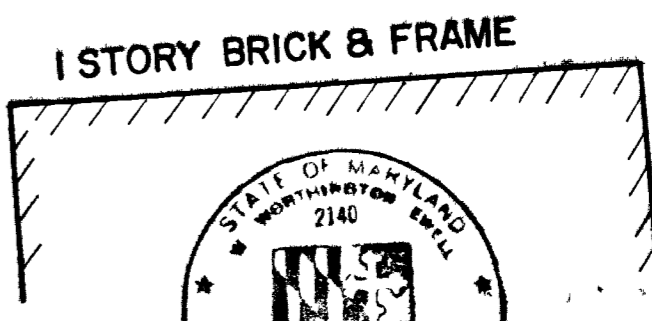
PLAN  
1"=20'

**LOOP DETAIL**  
1"=10'



**NOTES**

- WIRES ARE TO BE LAID IN THIS CONFIGURATION TWICE 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.



W. Ewell  
7/14/80

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

Director: *John F. Newman* 3/24/81  
Chief Bureau of Engineering: *Robert J. Ray* 3/24/81  
Chief Roads, Bridges & Storm Drainage Division: *Elizabeth Anderson* 3/24/81  
Chief Division of Traffic Engineering: *James E. Kinchen* 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	9/25/81	POLE CHANGE	EB & A

DRAWING NO 1 OF 1  
SCALE 1"=20"  
SWP DESIGNED BY  
GMN DRAFTED BY  
CSB CHECKED BY

# 746

FRED STJO