

GENERAL ELECTRIC

GENERAL ELECTRIC COMPANY, P.O. BOX 460, PLEASANTON, CALIFORNIA 94566

NUCLEAR ENERGY
ENGINEERING
DIVISION

July 25, 1980

THIS DOCUMENT CONTAINS
POOR QUALITY PAGES

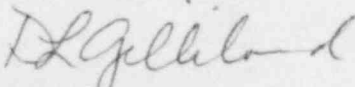
Mr. Darrell G. Eisenhut, Director
Division of Operating Reactors
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

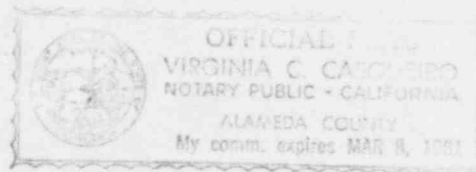
SUBJECT: Slope Monitoring Program - License TR-1 - Docket 50-70

Dear Mr. Eisenhut:

Enclosed is a memorandum describing the slope monitoring program that was initiated in April, 1980, at the GETR site. The monitoring system established at GETR is designed to detect ground movements of several inches or more which might accompany reactivation of the landslide complex, particularly as a result of seismic loadings from strong earthquakes in the site vicinity. The monitoring program was not designed nor is it planned to be used as a part of the slope stability analyses which are currently in progress, but is intended to provide a long-term means of checking the results of the stability analyses in the event of future seismic activity in the site vicinity.

Very truly yours,


D. L. Gilliland
Manager
Reactor Irradiations



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enclosure

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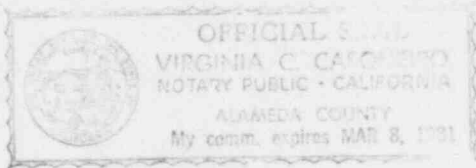
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AFFIRMATION

The General Electric Company hereby submits the attached letter dated July 25, 1980, and memorandum dated July 14, 1980, describing the GETR Slope Monitoring Program.

To the best of my knowledge and belief, the information contained therein is accurate.



D. L. Gilliland

D. L. Gilliland
Manager
Reactor Irradiations

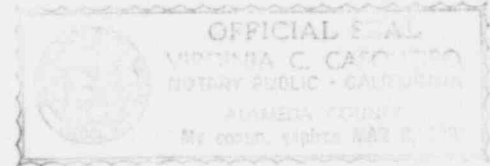
Submitted and sworn before me this 25th day of July, 1980.

Virginia C. Caspary, Notary Public in and for the
County of Alameda, State of California.

July 14, 1980
1886

MEMORANDUM

TO: D. L. Gilliland, VNC
FROM: R. C. Harding, ESA
RE: GETR Landslide Monitoring System



A slope monitoring program was initiated at the GETR site in April, 1980 pursuant to a suggestion by, and after preliminary discussion with, the NRC staff. The program is responsive to the NRC request in the May, 1980 SER to monitor possible future movement of the landslide complex. The monitoring system established at GETR is designed to detect ground movements of several inches or more which might accompany reactivation of the landslide complex, particularly as a result of seismic loadings from strong earthquakes in the site vicinity. The monitoring program was not designed as a part of the slope stability analyses which are currently in progress, but is intended to provide a long term means of checking the results of the stability analyses in the event of future seismic activity in the site vicinity.

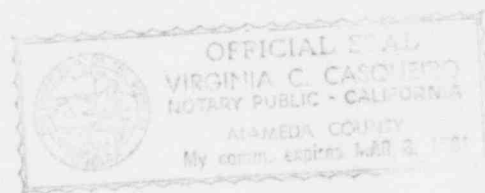
The system consists of two separate components. The first of these, referred to as the survey grid, consists of a network of five monuments distributed as shown on Figure 1. Monuments Nos. 2 and 3, which are positioned well outside the area of the landslide complex, serve as control or reference points. Monuments Nos. 4 and 5 are located within the portion of the slide complex above the B-1/B-3 shear, while monument No. 1 lies between the B-1/B-3 and B-2 shears. The base line data for the survey grid are shown in Figure 2.

The second component of the monitoring system, referred to as the picket line, consists of a line of six close-spaced survey monuments arrayed transversely across the surface projection of the B-1/B-3 shear just north of the GETR (see Figure 1). Baseline horizontal distances between the picket line monuments and their relative elevation are shown in Figure 2.

The precision of the horizontal distance measurements is estimated as about ± 0.02 feet for the survey grid lines and about ± 0.01 feet for the picket line. The precision of angle measurements is somewhat greater than for the distance measurements, with very good closures obtained in the baseline surveys (personal communication with Gilbert Barbee, California Licensed Surveyor, No. 3592, July 1980).

All of the survey monument installations were designed to minimize the possibility of movement due to soil expansion or near-surface weathered bedrock creep. As shown on Figure 3, the monuments consist of 3-inch structural steel pipe anchored in concrete at the bottom of an auger hole penetrating surficial soils. The upper portions of the auger borings were backfilled with a bentonite slurry. In spite of these precautions, there is a possibility that some movement of the monuments will occur as a result of downslope creep of near surface soil. However, it is expected that these movements will be relatively small and will exhibit a distinctive seasonal pattern. Repeated surveys should establish a baseline of these minor movements from which significant movements resulting from seismic loading can be distinguished.

A baseline survey was completed on May 3, 1980 with the results shown on Figure 2. Current plans call for re-surveying both the survey grid and the picket line approximately twice each year for a few years and following any significant seismic events in the vicinity of the site. This monitoring schedule will be evaluated and modified as appropriate based on measurement results.



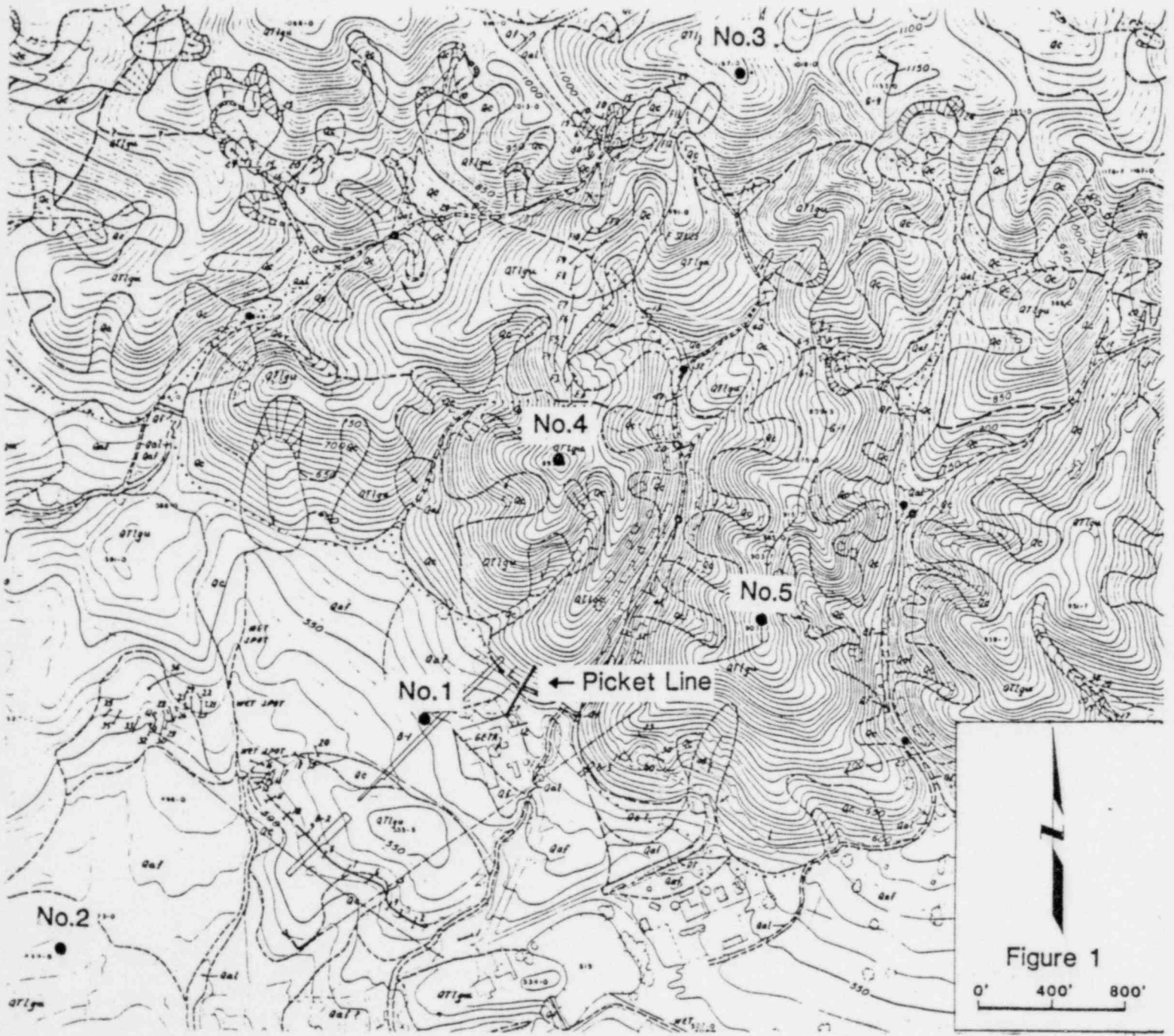

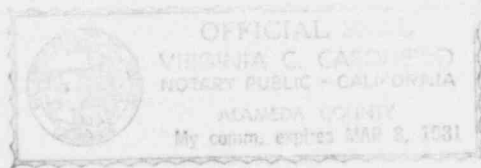


Figure 1

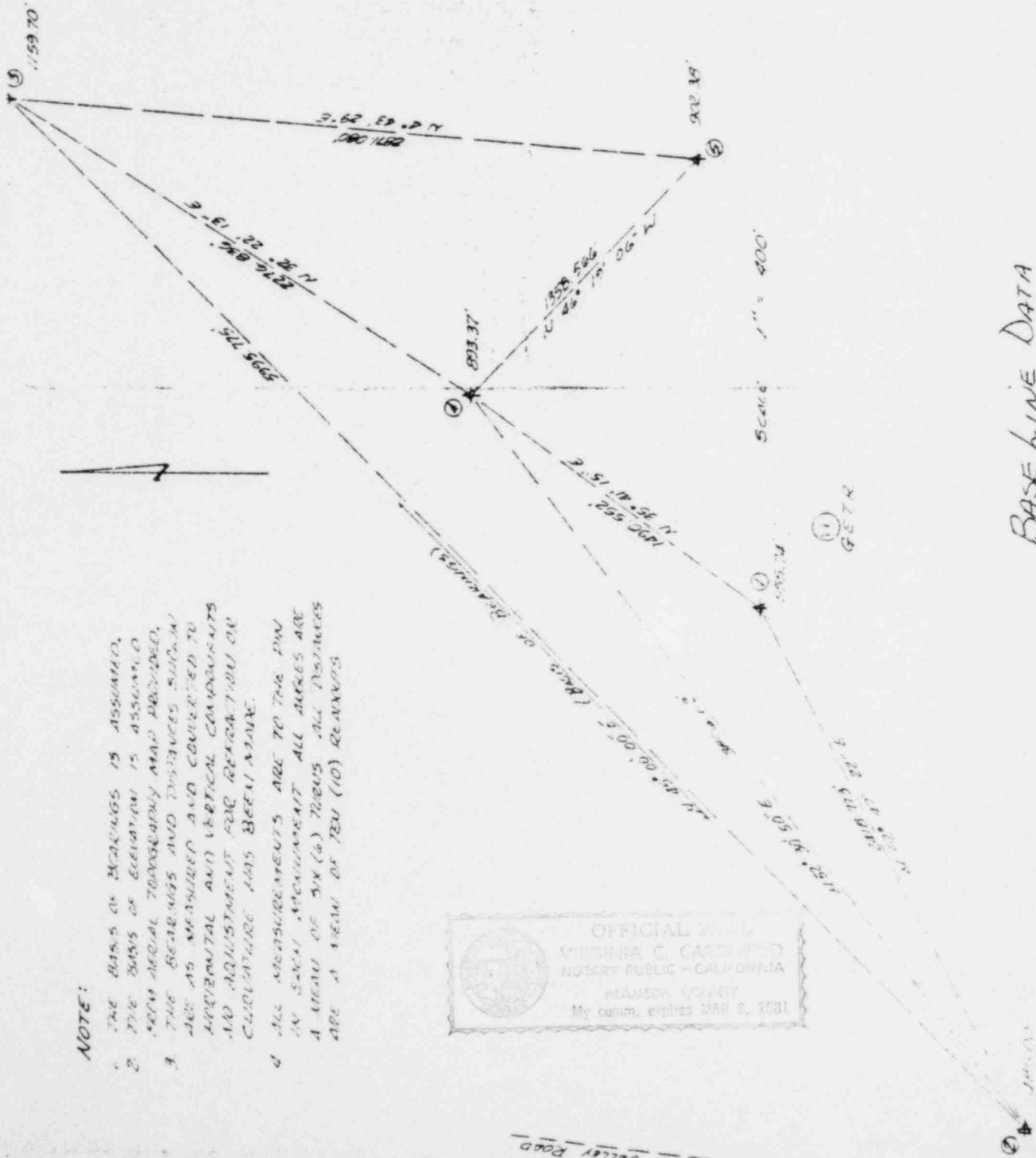

 OFFICIAL SEAL
 VIRGINIA C. CASO 1990
 NOTARY PUBLIC - CALIFORNIA
 ALAMEDA COUNTY
 My comm. expires MAR 8, 1991

NOTE:

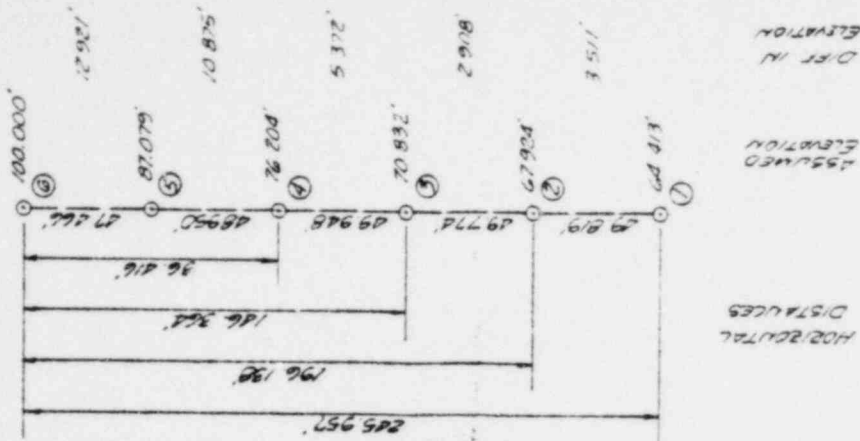
1. THE BASIS OF MEASUREMENTS IS ASSUMED.
2. THE BASIS OF ELEVATION IS ASSUMED.
3. THE BASIS OF TOPOGRAPHY MAP PROVIDED.
4. THE BEARINGS AND DISTANCES SUCH AS ARE AS MEASURED AND CONVERTED TO HORIZONTAL AND VERTICAL COMPONENTS AND ADJUSTMENT FOR REFRACTION OR CURVATURE HAS BEEN MADE.
5. ALL MEASUREMENTS ARE TO THE PIN IN EACH MONUMENT ALL ANGLES ARE A MEAN OF SIX (6) THEUS ALL DISTANCES ARE A MEAN OF TEN (10) READINGS



LITTLE VALLEY ROAD



PICKET LINE
400 TO SCALE



BASE LINE DATA
FIGURE 2

Robert Barber
L.S. 10-92

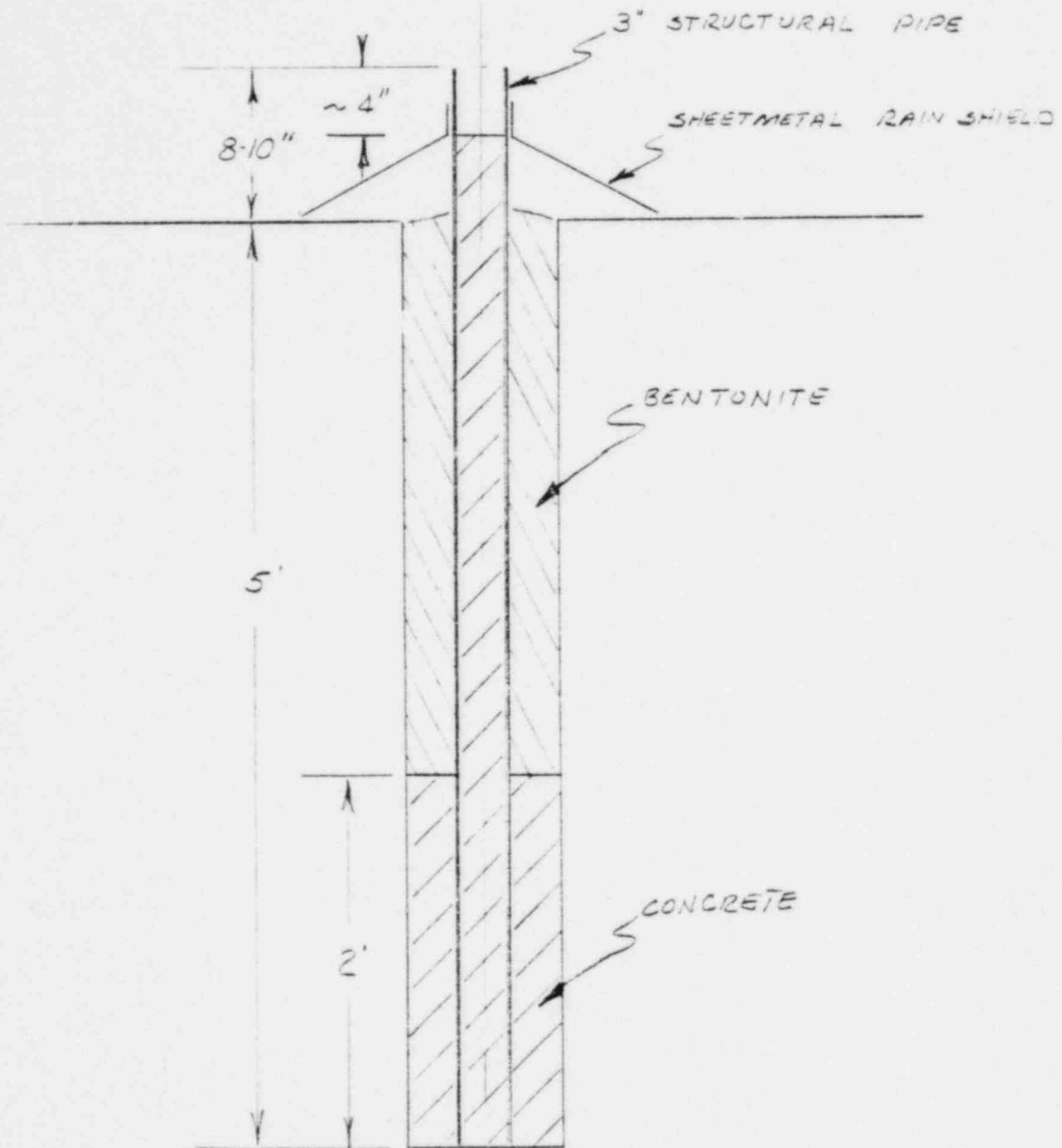


FIGURE 3 - GEOLOGIC MONUMENTS