sample of this soil was tested for its plasticity index and was found to have a P.I. of 18, which classifies the soil as a CL.

Below the surficial soil horizon (colluvium), the borings encountered stiff to hard, sandy, gravelly CLAY/clayey GRAVEL to the limits of our borings at 20 feet. These soils possess adequate strength to support the planned construction on this site.

A trace of free water was observed at a depth of 16 feet in boring 1. After about 1.5 hours, water had entered the hole and had risen to about 6 feet from the surface. Boring 2 encountered water at a depth of 9 feet and the water rose to about 4 feet from the surface (the stabilized water level). We believe that this water is a perched water system that may, or may not be, seasonal. The true ground water level is probably at a depth of several hundred feet below the site.

The logs of the borings are appended to this report. Laboratory test results are shown on the boring logs and on other sheets.

Seismic Conditions

The site lies within the seismically active San Francisco Bay Area, but is not within any of the "Earthquake Fault Zones" as established by the Alquist-Priolo Earthquake Fault Zoning Act of 1972. Figures 3, 4 & 5 show the locations of faults with respect to the site.

The following zoned faults are close to the site:

San Andreas Fault	5.8 km to the southwest
Hayward Fault	20.5 km to the northeast
Calaveras Fault	24.4 km to the northeast
Monte Vista – Shannon (nearest trace)	800 feet to the south
Berrocal Fault	2.3 km to the south

The site lies within a zone of lineaments produced alongside the Monte Vista-Shannon Fault, according to the William Lettis & Associates, Inc. report entitled "Faults and Folds Mapped During Previous Investigations and Zones of Lineaments Between Los Altos Hills and Los Gatos, California", Plate 1. These lineaments are not necessarily fault-traces, nor are they necessarily fault-related. We are of the opinion that the site is not subject to ground rupture due to faulting on nearby traces of the Monte Vista-Shannon Fault. No faults are known, or suspected to pass through the site. The excavation and logging of a fault investigation trench was not a part of our scope of work.

Considering the seismic history of the Bay Area, we feel it is likely that the site will be shaken by several earthquakes of Richter Magnitude 6.5, or greater during the next 30 years, and by at least one earthquake of Richter Magnitude 7.5, or greater. The severity of the ground shaking at the site will be determined by the size of the earthquake and the distance from the site.

impose pressure on foundation soils up to 1500 pounds per square foot from dead plus normal live load.

A zone of drainage material at least 18 inches wide should be placed on the backfill side of walls designed for drained condition. This zone should extend up the back of the wall to about 18 inches down from the proposed ground surface above. The upper 18 inches or so of material above the drainage material should consist of native, clayey soil.

The drainage material and the clayey soil cap should be placed in layers about 6 inches thick and moderately compacted by hand-operated equipment to eliminate voids and to minimize post-construction settlement. Heavy compaction should not be applied; otherwise, the design pressure on the wall may be exceeded.

The drainage material should consist of either Class 2 Permeable Material complying with Section 68 of the CALTRANS Standard Specifications, latest edition, or 3/4 to 1½ inch clean, durable coarse aggregate. If the coarse aggregate is chosen as the drainage material, it should be separated from all adjacent soil by Mirafi 700X or a similar filter fabric approved by the project Soil Engineer.

Any water that may accumulate in the drainage material should be collected and discharged by a 4-inch-diameter, perforated pipe placed "holes down" near the bottom of the drainage material. The perforated pipe should have holes no larger that 1/4-inch diameter.

For this site, the wall drains and under slab drain will have to be discharged by a sump pump.

Hydrostatic Uplift Pressure

To minimize the potential flotation of the basement resulting from a rise in ground water table above the bottom of the basement, we recommend that the basement be designed to support an upward hydrostatic pressure of 500 pounds per square foot. This hydrostatic uplift pressure may be resisted either by using a total weight (very thick, heavily reinforced floor slab), tension piers or mechanical anchors. The allowable tension capacity of each tension pier may be calculated assuming a "skin friction" of 250 pounds per square foot between the shaft of the pier and the adjacent soil.