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ALCO
HAZMAT

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February 1, 1994
SCI 891.001

STD 4540

Mrs. Marianne Robison
Ladies Home Society
c/o Buttner Properties
600 West Grand Avenue
Oakland, California 94612

Work Plan
Groundwater Investigation
Park Day School
368 42nd Street
Oakland, California

Dear Mrs. Robison:

Presented herein is a Work Plan developed by Subsurface Consultants, Inc. (SCI) to perform a groundwater investigation at the subject site. We understand a 1500-gallon underground fuel oil tank was removed June 11, 1993 by SEMCO. At the time of removal two nickel-sized holes were noted, one at each end of the tank. Soil samples taken below the tank contained concentrations of TPH-D as high as 5600 mg/kg. A grab groundwater sample obtained from a test boring contained 160 ug/l of TPH-D. The former tank location is shown on the Site Plan, Plate 1.

The ACHCSA has requested that one monitoring well be installed within 10 feet of the downgradient side of the previous tank to evaluate impacts to groundwater. The groundwater gradient at the site has not been established. However, information does exist regarding the depth to groundwater. A test boring/hydropunch drilled near the tank pit following tank removal encountered water at a depth of about 25.5 feet. Water is situated at a depth of about 16 feet in a brick-lined cistern approximately 250 feet east of the tank area. Mr. Gordon Laverty, of Laverty Consultants, was retained by the Ladies Home Society to evaluate groundwater conditions at the cistern. Based on discussions with Mr. Laverty, it appears that the cistern is about 45 feet deep and was constructed in an old drainage swale which intercepts subsurface water.

■ Subsurface Consultants, Inc.

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Based on regional studies in the bay area, groundwater is known to flow from the hills and upland areas, to the San Francisco Bay. Water recharges into groundwater through creeks, swales and lakes and surface infiltration. Given the location of the site and the shallow depth at which water has been found, it appears that groundwater flow at the site follows the topographic downgradient direction and the alignment of the topographic swale through the area.

Proposed Scope of Services

Well Installation

We propose to install one (1) monitoring well within 10 feet of the topographic downgradient side of the former tank. The proposed well location is shown on the attached site plan. The well will be installed in a test boring drilled using 8-inch-diameter hollow-stem augers. Drilling and sampling equipment will be steam cleaned prior to each use. Soil cuttings and steam cleaning water generated during drilling will be stored in sealed drums and left on-site for later disposal by others.

The test boring will be extended about 10 feet below groundwater. Based on data generated at the site, it appears that groundwater will be encountered between 15 to 25 feet below the ground surface. As such the boring will be on the order of 25 to 35 feet deep.

Our field engineer will observe drilling operations and prepare a detailed log of the soils encountered. Soil samples will be obtained at 3-to 5-foot intervals and screened in the field using an organic vapor meter. The samples will be retained in 2-inch-diameter brass liners. Sample liner ends will be covered with Teflon sheeting and plastic caps, prior to sealing them with duct tape. The samples will be refrigerated until transmitted to the analytical laboratory. The samples will be accompanied by Chain-of-Custody records.

A permit to install the well in the boring will be obtained from the Alameda Flood Control and Water Conservation District (Zone 7). The well will be constructed in accordance with Regional Water Quality Control Board (RWQCB) guidelines. The well will consist of 2-inch-diameter, PVC casing and machine-slotted screen. The screened section will be positioned to intercept the static groundwater level. The wellhead will be secured with a locking cap and finished below grade in a traffic rated utility box.

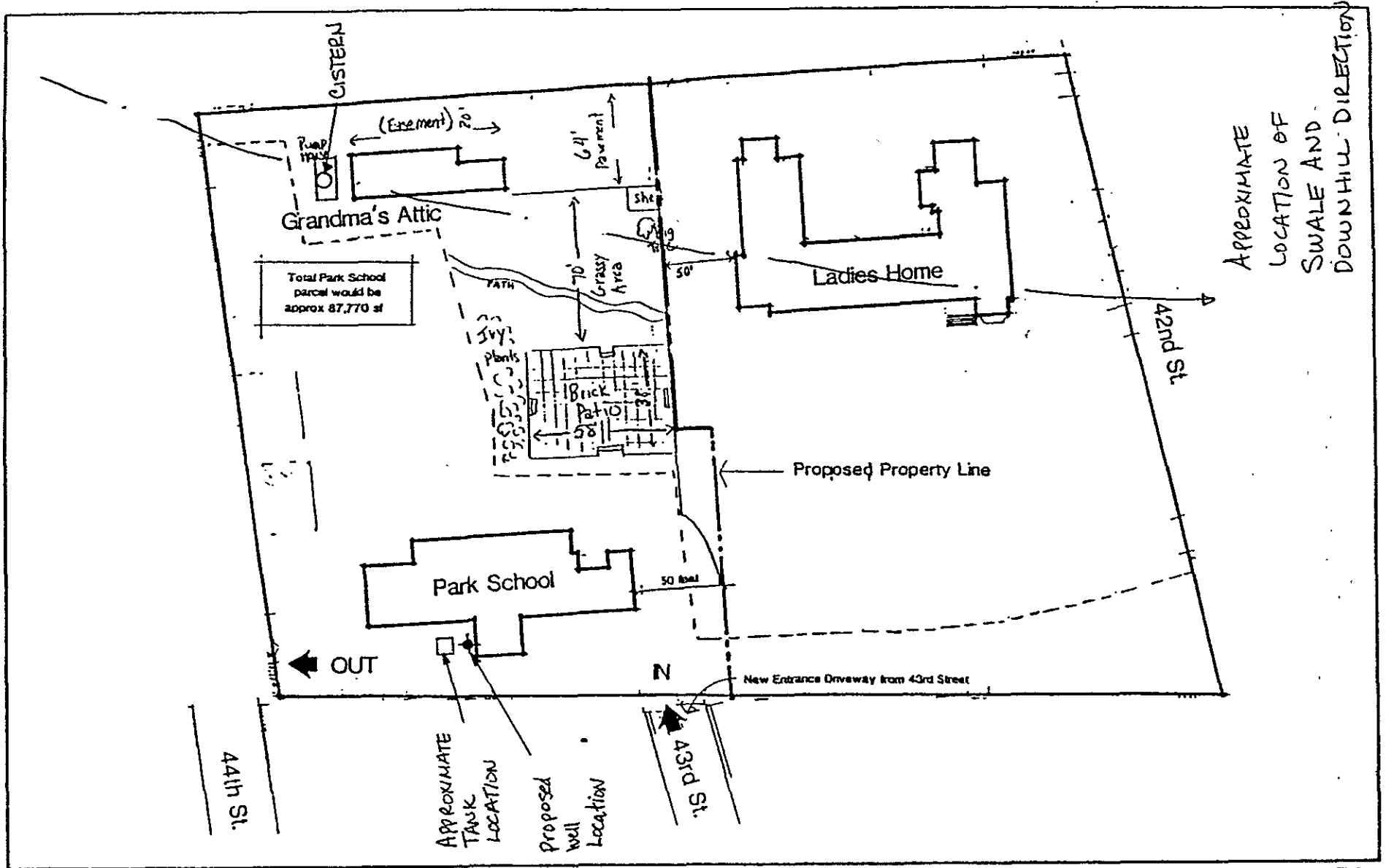


FIGURE 4. PROPOSED PROPERTY LINE ADJUSTMENT