PRELIMINARY SITE ASSESSMENT
WORKPLAN

for

Thompson and Thompson Fence Company
2584 Grant Avenue
San Lorenzo, California

Prepared by

Leyton & Associates

Argy Leyton
Senior Project Manager

Roger Greensfelder
Registered Geologist #003011

REGISTERED GEOLOGIST
R. W. GREENSFELDER
No. 003011
STATE OF CALIFORNIA

February 16, 1995

Leyton & Associates
Environmental Consulting
316 Cashew Lane, Oakley, CA 94561
(510) 625-6909

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INTRODUCTION

Leyton & Associates (L&A) is pleased to present this workplan for the drilling and installation of three on-site temporary groundwater monitoring wells at the above-referenced location (Figure 1). The temporary groundwater monitoring wells will be installed to assess the absence or presence of dissolved hydrocarbons in groundwater beneath the site.

SITE HISTORY

On November 6, 1992, one 1,000-gallon leaded gasoline underground storage tank (UST) was removed from the site. Tank removal activities were performed by Paradiso Construction of San Leandro, California. Soil samples were collected by Kaprealian Engineering of Concord, California. Soil samples were collected from both ends of the former UST at approximately 8.5 feet below ground surface (bgs). Soil samples collected and analyzed during tank removal activities contained total petroleum hydrocarbons as gasoline [TPH(G)] at concentrations of 960 and 2,000 parts per million (ppm). Benzene was detected in the soil samples at concentrations of 13 and 38 ppm. Analytic results for total lead indicated that concentrations of 7.4 and 11 ppm were present. Groundwater was not encountered during tank removal activities.

PROPOSED WORK

L&A proposes to install three on-site temporary groundwater monitoring wells by performing the following tasks:

1. Prepare a site-specific health and safety plan for the proposed work.

2. Drill three on-site soil borings to a depth of approximately 20 feet bgs. At a minimum, one soil sample for chemical analysis will be collected from above the capillary fringe. Selected soil sample(s) will be analyzed for TPH(G), and benzene, toluene, ethylbenzene, and xylenes (BTEX) with methyl-tert-butyl-ether (MTBE).

3. Install one 2-inch diameter temporary monitoring well in each of the borings.

4. Develop and sample the newly installed wells. Analyze the groundwater samples from the wells for TPH(G), BTEX with MTBE and total dissolved solids (TDS).

5. Convert or properly abandon the temporary monitoring wells after receipt of the laboratory analytical results and with the approval of Alameda County Environmental Health Services (ACEHS).

6. Arrange for disposal of the drill cuttings from the borings, the steam-cleaning rinseate and the monitoring well purge water.

7. Report the results and make recommendations for future work.

Each of these tasks is described below.

Task 1 - Site Safety Plan

Using available site history information, L&A has prepared a site-specific health and safety plan. The safety plan identifies potential site hazards and specifies procedures to protect site workers and the surrounding community. The safety plan will be on-site during field operations. The safety plan is presented in the appendix.

Tasks 2 and 3 - Drilling and Monitoring Well Installation

Three on-site soil borings (MW-1, MW-2, MW-3) will be drilled at the locations shown on Figure 2. A monitoring well will be installed in each of the soil borings.

The wells will be drilled by Bay Area Exploration, Inc. of Cordelia, California, C57 license #522125. Prior to drilling, Underground Service Alert (USA) will be notified and non-USA member utilities will be located by the client.

All drilling equipment will be steam-cleaned prior to use and all sampling equipment will be washed between sample collection using an EPA-approved detergent such as Alconox or Liquinox and triple rinsed with potable water.

Soil samples will be collected at a minimum of five foot intervals, or at changes in soil type, or if hydrocarbon staining is present. Soil samples will be collected in clean or new stainless steel or brass sleeves. A soil sample will be collected from the capillary fringe in each boring.

The soil samples will be screened in the field with an organic vapor meter (OVM). If volatile organic compounds are detected with the OVM or product odor is noted by the field geologist in the soil sample from the bottom of the proposed well/borings, field personnel will attempt to collect sufficient samples to define the vertical extent of hydrocarbons in the boring.

Drill cuttings will be stored on-site on visqueen sheeting and covered with visqueen pending analytical results for disposal at an appropriate landfill.

Selected soil samples from the borings will be analyzed for TPH(G) and BTEX with MTBE by EPA Methods 5030/8015 and 8020, respectively. All quality assurance/quality control (QA/QC) data from the laboratory will be included in the final report.

The wells will be constructed with 0.010- or 0.020-inch machine slotted well screen for the monitoring wells and #2/12 or #3 sand for gravel pack throughout the well screen. The well screen interval will extend approximately five feet above the static water level to approximatelt ten feet below static water level. The final well construction details will be made in the field after subsurface conditions are assessed.

Task 4 - Well Development, Groundwater Sampling and Analysis

The temporary monitoring wells will be developed no sooner than 72 hours after drilling with a vented surge block and bailing. Groundwater will be removed using steam-cleaned polyvinyl chloride (PVC) bailers. Groundwater removed from the wells will be stored in 55-gallon DOT-approved drums, labeled appropriately and remain on-site pending disposal.

Groundwater samples will be collected from the newly installed wells no sooner than 24 hours after well development. Prior to sampling, the monitoring wells will be purged a minimum of three well volumes, or until groundwater parameters (temperature, pH, conductivity) have stabilized. The evacuated water will be stored in 55-gallon DOT-approved drums, labeled appropriately and remain on-site pending disposal.

The groundwater samples will be collected using Teflon or new disposable bailers. Sample containers will be provided by the analytical laboratory prior to sampling. After water samples are collected, they will be labeled and maintained at 4°C prior to and during transport to the laboratory. Proper chain-of-custody protocol will be maintained for the samples. A trip and bailer blank will accompany the samples to the laboratory.

Groundwater samples from the wells will be analyzed for TPH(G) and BTEX with MTBE and TDS by EPA Methods 5030/8015, 8020 and 160.1, respectively. The trip and bailer blank will be analyzed for TPH(G) and BTEX by EPA Methods 5030/8015 and 8020, respectively. All QA/QC data from the laboratory will be included in the final report.

Task 5 - Well Conversion/Abandonment

Groundwater analytical results from the initial sampling will determine whether the wells be converted into permanent groundwater monitoring wells to continue to assess groundwater quality beneath the site. Permanent monitoring well conversion will be performed with the approval of AECHS. If low- or non-detectable concentrations of the analytes are detected by the analytical laboratory, L&A will request permission from AECHS to abandon the temporary wells.

Task 6 - Drill Cuttings, Steam-cleaning Rinseate and Monitoring Well Purge Water Disposal

The soil cuttings will be stored on-site on visqueen sheeting and covered with visqueen pending analytical results for disposal at an appropriate landfill.

The steam-cleaning rinseate, well development and purge water will be stored in 55-gallon DOT-approved drums, and labeled appropriately pending appropriate disposal.

Task 7 - Report

The report will be prepared and the field work conducted under the supervision of Roger Greensfelder, a California Registered Geologist (R.G. #003011).

A final report presenting the results of the site investigation will be prepared. The report will include:

TEXT:

- Exective Summary
- Site Background and History
- Geologic Setting
- Description of Soil Sampling and Subsurface Sediments
- Monitoring Well Installation Details
- Depth to Groundwater
- Soil and Groundwater Analytical Data
- Recommendations

TABLES:

- Tabulated Soil and Groundwater Analytic Results
- Depth to Groundwater and Well Construction Data

FIGURES:

- Site Vicinity Map
- Monitoring Well Location Map

APPENDIX:

- Boring Logs and Well Construction Details
- Chain-of-Custody Documents and Laboratory Analytic Results
- Field Methods and Procedures
- Field Data Sheets

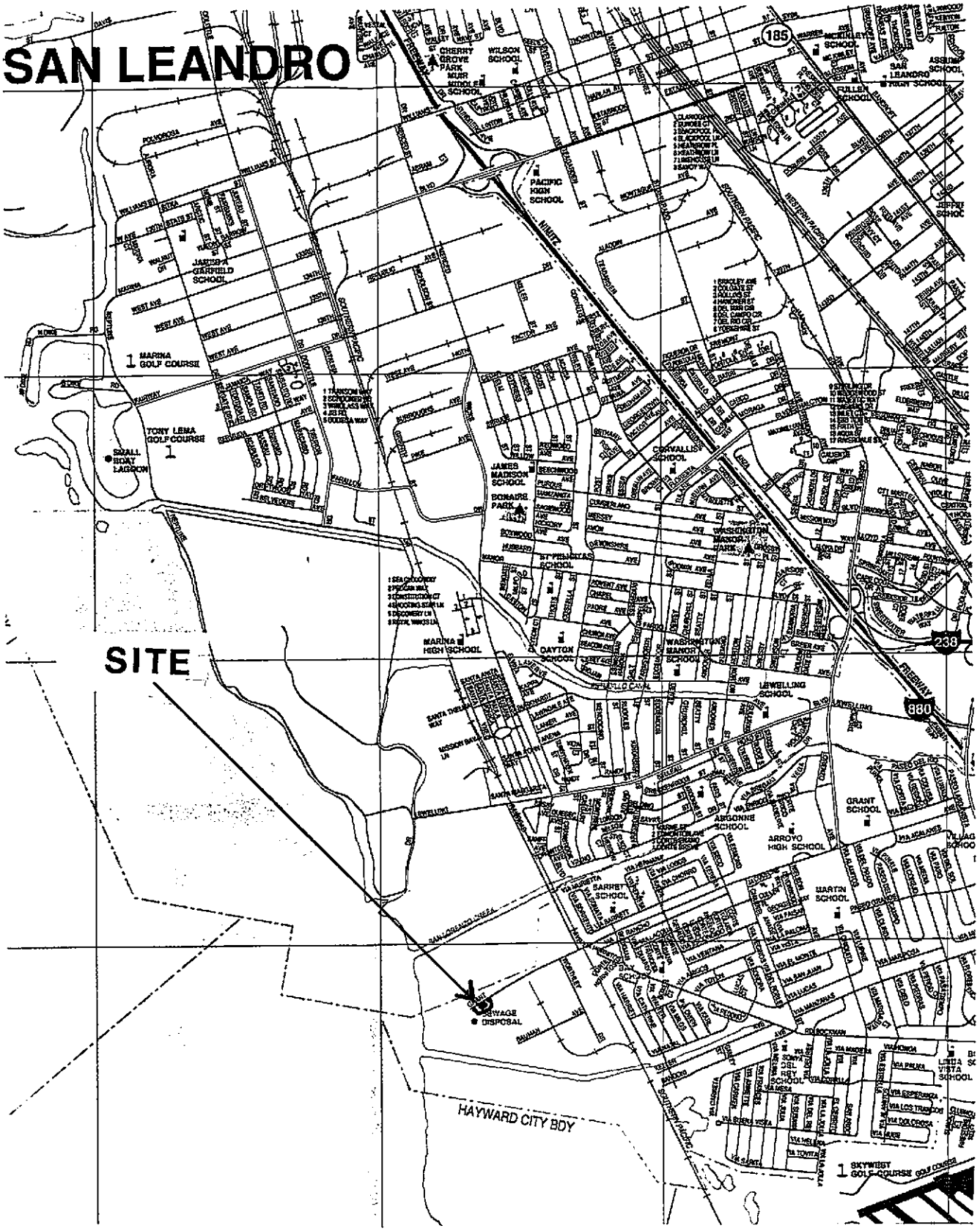

FIGURE 1. SITE LOCATION MAP – 2584 GRANT AVENUE, SAN LORENZO, CALIFORNIA

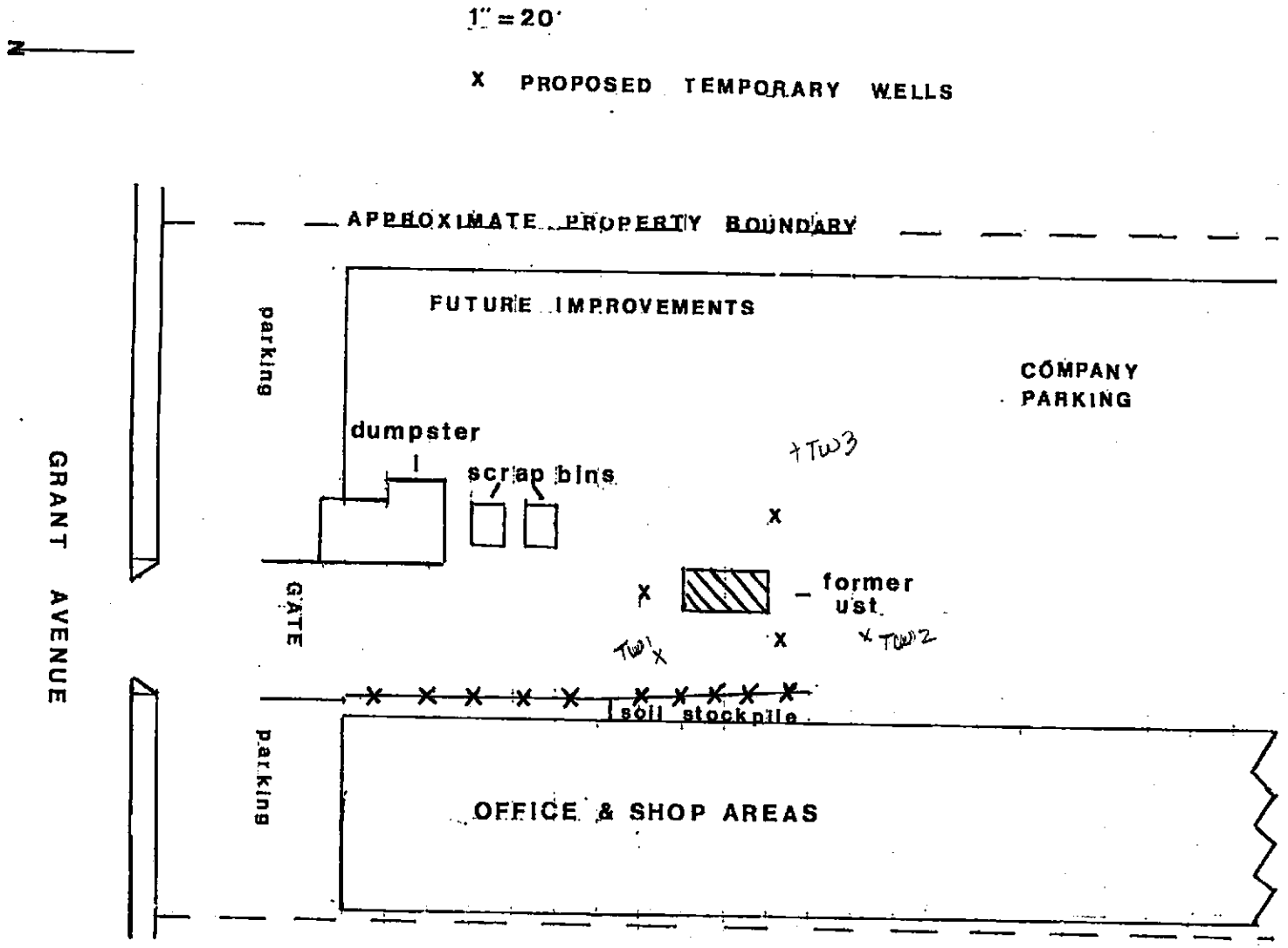

FIGURE 2. PROPOSED TEMPORARY WELL LOCATION MAP – FEBRUARY 1996 – 2584 GRANT AVENUE, SAN LORENZO, CALIFORNIA

Site Safety Plan

1.0 GENERAL INFORMATION

Company: Thompson & Thompson Fence Company
Location: 2584 Grant Ave., San Lorenzo, CA

Client Contact: Gary Thompson 510-276-8350
Project Manager: Argy Leyton 510-625-6909

Date Prepared: February 8, 1996

Proposed Work Date(s): February/March 1996

Work Objective: Soil/groundwater Investigation

Site History: One 1,000-gallon leaded gasoline UST was removed November 1992.

Current Status: Site is currently a busy fence installation company.

Underground utilities will located by: Private Locator & USA

2.0 WASTE CHARACTERISTICS

Waste Types: Solid, Liquid, Vapor

Waste Characteristics: Volatile, Flammable, Toxic, Carcinogenic

Amount of Waste to be Generated: ~ 2 cy soil,

Waste Containment: Soil will be placed on and covered with visqueen pending disposal.

3.0 HAZARD EVALUATION

Physical:

Trip Fall Splash Below Grade Overhead Traffic Heavy Equipment
Other:

Anticipated Chemicals:

Gasoline, BTEX

Routes of Exposure: Inhalation, Ingestion, Absorption, Injection

Overall Hazard evaluation: Low

Basis for hazard evaluation: Previous Analytic Data

Site conditions

Chemical parameters:

Element	PEL(ppm)	Action Level(ppm)
Gasoline	---	150
Benzene	1	.5
Toluene	100	50
Ethylbenzene	100	50
Xylenes	100	50

Work will be conducted in level D modified conditions (hard hats, red vests and gloves) unless site conditions necessitate upgrading to level C conditions. Level B protection is not considered at this site.

4.0 SITE SAFETY WORKPLAN

Site Perimeter: Work zones will be defined on site and secured. Contamination (hot zones) will be identified and public access will be prohibited.

Personal Protection: Work will be conducted at level D modified conditions. If odor is present, air monitoring will be implemented.

If air monitoring indicates concentration levels at or above the action levels, site personnel will upgrade to level C conditions. Air monitoring will be performed at intervals no greater than once every hour. Air monitoring will be conducted using an organic vapor meter calibrated to 100 ppm isobutyl. If ovm readings exceed 300 ppm, benzene air monitoring will be implemented with draeger tubes. Should off-site air monitoring exceed 300 ovm readings or 0.5 ppm benzene, site work will cease immediately and site personnel will re-assess work conditions.

Decontamination: Personnel
Wash thoroughly with detergent solution and water

Equipment
Steam-clean all drilling and sampling equipment and tools.

Investigation-derived material disposal:

Soil generated during site work will be remain on site pending disposal at an appropriate landfill. Steam-cleaning rinseate will be stored in and appropriately labeled in DOT-approved 55-gallon drums pending appropriate disposal.

Field Personnel:

_____
_____
_____
_____
_____
_____

Work Limitations: To minimize impact to the public, work will be conducted during the hours of 7:30 a.m. to 7:30 p.m.

5.0 EMERGENCY INFORMATION

Client Contact: Gary Thompson, Thompson & Thompson Fence Co.

Phone Number: 510-276-8350

Project Manager: Argy Leyton

Phone Number: 510-625-6909

Hospital: Eden Hospital, (510) 537-1234
20103 Lake Chabot Road
Castro Valley

Ambulance: 911

Police Department: 911

Fire Department: 911

Directions to Hospital:

See Attached Map

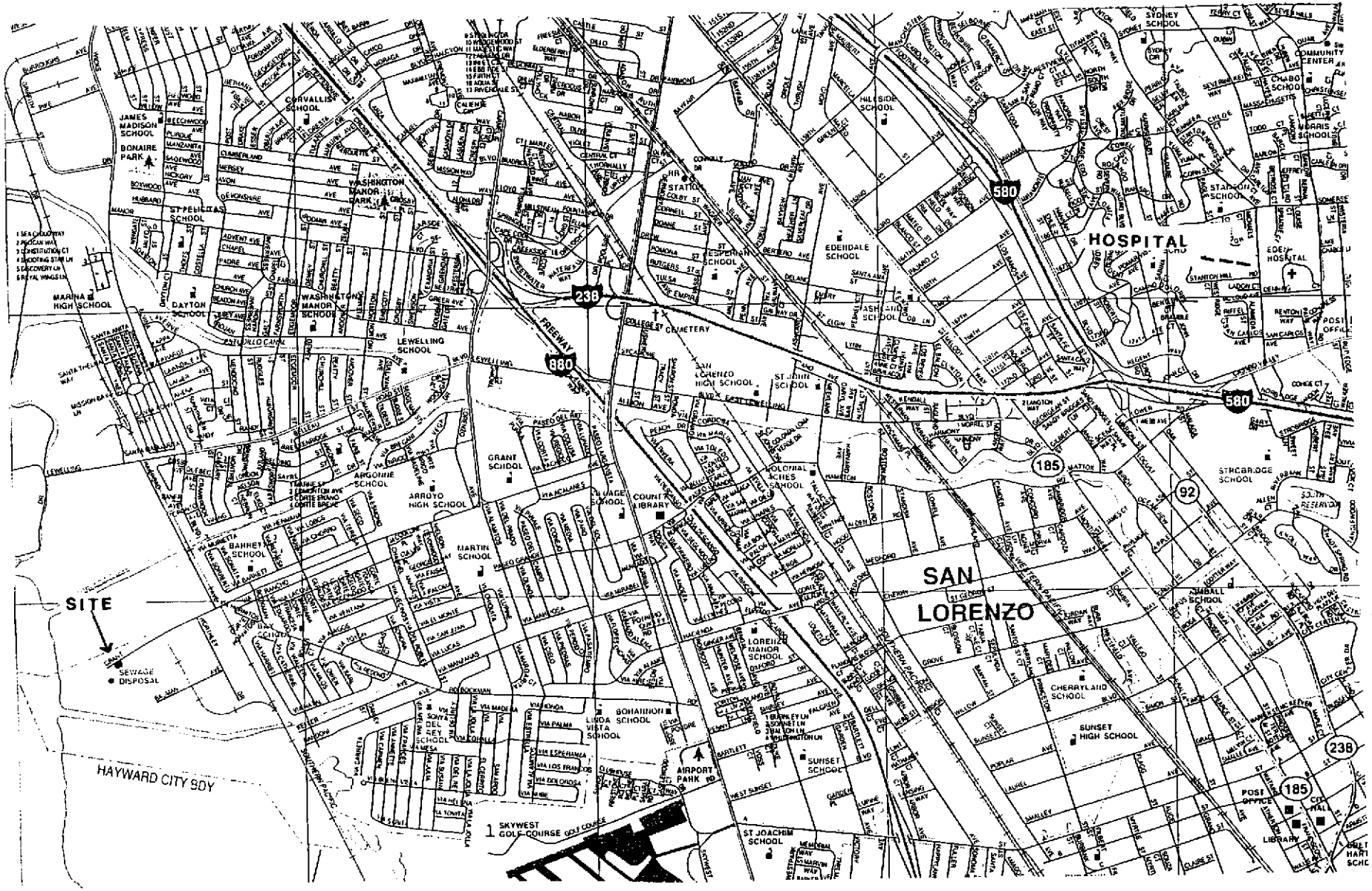

Figure 1. Hospital Route Map

SITE SAFETY MEETING

JOB #:_____ DATE:_____ TIME:_____

SITE LOCATION:_____

WORK DESCRIPTION:_____

PHYSICAL HAZARDS:_____

ANTICIPATED CONTAMINANTS:_____

PERSONAL PROTECTION LEVEL:_____

DECONTAMINATION PROCEDURES:_____

SPECIAL SITE CONDITIONS:_____

EQUIPMENT CALIBRATED THIS DAY_____ MAP POSTED_____
ALL MEMBERS FAMILIAR WITH EMEGENCY PROCEDURES_____
DIRECTIONS TO HOSPITAL_____

PERSONNEL PRESENT AT MEETING:

NAME	SIGNATURE
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
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_____	_____
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_____	_____

SITE SAFETY
OFFICER:_____
MEETING CONDUCTED
BY:_____

AIR MONITORING RECORD

DATE	TIME	AREA	CONTAMINANT/EQUIPMENT	READINGS