2/93

WORKPLAN FOR SUBSURFACE INVESTIGATIONS

LOCATION ADJACENT TO THE EXCHANGE CENTER

U.S. COAST GUARD
GOVERNMENT ISLAND
ALAMEDA, CALIFORNIA

PROJECT NO. 582-34006

FEBRUARY 1993

WORKPLAN FOR SUBSURFACE INVESTIGATIONS

LOCATION ADJACENT TO THE EXCHANGE CENTER UNITED STATES COAST GUARD GOVERNMENT ISLAND ALAMEDA, CALIFORNIA

Conducted for

The United States Coast Guard
Civil Engineering Unit, Oakland
2000 Embarcadero - Suite 200
Oakland, California 94606-5000

Project Number 582-34006

February 1993

Conducted by: Mark Casterson
Professional Service Industries, Inc.
3730 Mount Diablo Boulevard, Suite 345
Lafayette, California 94549
(510) 284-3070

MAILING ADDRESS:

U.S. Department of Transportation
United States Coast Guard

Commanding Officer
U.S. Coast Guard
Civil Engineering
Unit Oakland

2000 Embarcadero
Suite 200
Oakland, CA 94606-5337
Staff Symbol: ped
(510) 535-7267

16478
10 February 1993

Juliet Shin
Alameda County, Department of Environmental Health
Division of Clean Water Programs
80 Swan Way, Room 200
Oakland, CA 94621

Dear Ms. Shin:

In response to your letter dated 13 November 1992 enclosed are the workplans for preliminary site assessments at our Support Center Alameda, on Coast Guard Island. One workplan is for the area concerning the retail gas station and the other is for the location of two 2000 gallon UST's which were removed in 1988.

Any questions can be directed to our office with the possibility of a conference call to Professional Service Industries, Inc. Our project manager for this investigation remains LTJG Chris Lutton at (510)535-7267.

Sincerely,

ALBERT V. CRUZ
Chief Planning and Environmental Division
U.S. Coast Guard
By direction of the Commanding Officer

Encl: Workplans for site investigations at Support Center Alameda, Professional Service Industries, Inc., February 1993

Copy: SUPRTCEN Alameda, FED
MLCPAC (s)

CONTENTS

Introduction

The U.S. Coast Guard Support Center is located on Government Island, Alameda, California (See Figure 1, Vicinity Map, and Figure 2, Site Plan).

This workplan for subsurface investigation includes the following:

1) Completion of a Site Safety Plan 2) Completion of eight soil borings to an approximate depth of 25 feet 3) Four of the eight proposed soil borings will be reamed and developed into groundwater monitoring wells 4) Purging and sampling of the four monitoring wells 5) Collection of soil samples 6) Preparation/issue of report summarizing field activities, procedures, findings and recommendations 7) Quarterly monitoring (four only) of the monitoring wells and 8) Preparation/issue of quarterly monitoring reports.

A report summarizing our field activities, procedures, and recommendations, will be prepared under the direct supervision of a qualified professional registered in the State of California and submitted for your review upon completion of the subsurface investigation.

All work will be completed in accordance with the Regional Water Quality Control Board (RWQCB) and "Tri-Regional Board Staff Recommendations for Initial Evaluation of Underground Tanks", revised 18 May, 1989. All work will be under the direction of a California registered engineer or geologist.

Analytical testing will be performed by a laboratory certified by the California Department of Health Services under the Environmental Accreditation Program.

Site History

In September of 1990, two 8,000 gallon unleaded gasoline underground storage tanks (UST's) were removed from in front of the Exchange Center at the U.S. Coast Guard Support Center, Alameda, California. These two UST's had been installed in 1977 and when removed, were noted as being in good condition with no visible holes found in either of the two tanks.

Upon removal, a very strong hydrocarbon smell was observed. Soil and water samples were taken of the spoils pile and in the excavation pit. As a result of the laboratory test, the spoils pile were disposed of as hazardous waste. The water samples show above action gasoline contamination levels requiring a site assessment.

? Replaced w/ new ones.

Figure 3, Location of Existing 8,000 Gallon Unleaded Storage Tanks (UST's), shows the location of the two new UST's with respect to the front of the Exchange Center. The volume of gasoline pumped at this station for each of the two 8,000 gallon tanks removed was approximately 32,000 gallons per month.

According to the U.S. Coast Guard, no nearby wells are located on the island base, hence a survey of nearby wells was not available for submittal.

The following is a list of other sources of information checked in the preparation of this report.

1) Alameda County Health Agency, Division of Hazardous Materials on-site report by Ms. Cynthia Chapman, Hazardous Materials Specialist, on the removal of the two 8,000 gallon unleaded gasoline leaking underground storage tanks (LUST).

2) Tri-Regional Board Staff (RWQCB) Recommendations for Preliminary Investigation and Evaluation of Underground Tank Sites, 1990.

3) TRI-Regional Board Staff (RWQCB) Recommendations Internal Evaluation of Underground Tanks, Revised 18 May 1989

4) Appendix A-Reports. Tri-Regional Board Staff (RWQCB) Recommendations for Preliminary Investigation and Evaluation of Underground Tank Sites.

5) Alameda County Health Care Services Agency, Juliet Shin, Hazardous Materials Specialist.

6) LTJG Christopher Lutton, U.S.C.G, Project Manager for this scope of services.

Proposed Drilling and Soil Sampling Program

Subsurface conditions will be explored by completing eight soil borings through backfilled soils in the front of the Exchange Center on the U.S. Coast Guard Base, located on the Alameda Island, California (See Figure 4, Proposed Monitoring Well and Borehole Location Map). These borings are to be drilled to an approximate depth of 25 feet. Soil samples will be collected on a continuous basis from 5 to 25 feet in each of the borings. Soils encountered during drilling and sampling will be described using the Unified Soil Classification System under the direction of a qualified professional geologist registered in the State of California.

Will all soil samples be analyzed?

The primary purpose of completing the boring and sampling program is to define the lateral and vertical extent, as well as concentrations, of contamination that exist within the area of contamination.

Borings will be advanced utilizing a truck-mounted drill rig equipped with 8-inch outside diameter (O.D.) hollow stem augers. Soil samples will be collected using a modified California splitspoon sampler with brass sleeve inserts. Samples retrieved in this manner remain relatively undisturbed, thus retaining the geologic profile of the sample zone.

To prevent cross-contamination of samples, all sampling instruments will be decontaminated prior to, and between, sampling using a solution of non-phosphate soap and tap water, triple-rinsed in tap water, followed by a final rinse with distilled water. Auger flights will be decontaminated prior to commencement of drilling activities, and between each boring, using a high pressure steam cleaner. All decontamination rinsate will be stored in Department of Transportation (DOT) approved 55 gallon drums in a secured area on-site.

Soil will be collected and stored in brass sleeves. The ends of the brass sleeves will be covered with Teflon tape and plastic caps. The samples will then be labeled by identifying the boring number and depth from which the sample was collected. Samples will be placed in a cooled ice chest for storage until delivery to a California State certified laboratory for analysis. Proper chain-of-custody documentation will be maintained on all samples in accordance with Alameda County, Health Care Services Agency, Hazardous Materials Division (ACHCSA-HMD) guidelines.

Four of the soil borings will be completed as groundwater monitoring wills as described in the following section. The remaining borings will be backfilled using a neat cement of bentonite slurry. Soil cuttings from all borings will be placed in DOT approved 55 gallon drums and stored in a fenced secure area on-site.

Materials stored on-site (i.e., drill cuttings, decontamination rinsate, and well development and purge water) will be sampled and analyzed for the suspect contaminants. A determination on their disposition will be made after the laboratory results have been received.

The wells will be constructed with a 2-inch O.D. blank and slotted PVC pipe, with slot widths of 0.020 inches. A slotted casing will be placed in the well to extend approximately 10 feet below and 5 feet above the groundwater surface to account for expected tidal level fluctuations. A non-slotted casing will be installed between the ground surface and the top of the slotted casing. All lengths of casing will be steam cleaned to remove any existing contaminants. The joints between the lengths of casing will be threaded , and PVC cement will not be used in the well construction process. A clean slip-on PVC cap will be placed on the bottom of the casing. A water-tight locking cap will be installed on the top of the well, and a water-tight Christy box will be constructed flush with the existing ground surface.

The gravel pack placed in the annular space between the well casing and the boring wall will consist of clean No. 3 Monterey silica (or its equivalent) sand. The gravel pack will extend up from the bottom of the boring to approximately two feet above the top of the slotted casing. An approximately three to five foot thick layer of bentonite will be placed immediately above the gravel pack. The annular space above the bentonite will be filled with grout. A five foot cement surface seal will be constructed (See Figure 5, Typical Monitoring Well Construction Design).

The proposed well will be developed after installation until the water is clay or silt free. The development will establish groundwater flow through the gravel pack and into the well. The development well water will be stored in DOT-approved 55 gallon drums in a fenced secure area on-site.

After the monitoring wells have been developed and recharged for at least 48 hours, groundwater depth measurements will be taken from all four monitoring wells. The water levels will be determined by lowering an electronic probe into the well. When the probe comes in contact with the waters surface, an indicator light is lit. The depth to groundwater is then recorded from the probes cord.

Using groundwater depths and surveyed well locations, the direction of groundwater flow will be calculated using a three point problem. The hydraulic gradient will also be calculated in determining the horizontal and vertical limits of groundwater contamination.

Proposed Groundwater Sampling

Prior to purging the wells for collection of groundwater samples, the groundwater will be checked for free product using a clear Teflon bailer. The well will then be purged until the groundwater temperature, conductivity, and pH are stabilized. We anticipate the removal of five to seven well volumes, per well, of groundwater using a stainless steel bailer. Once the well water has stabilized and the water level recharges to at least 80 percent of its initial level, a sample will be collected and a final water level measurement will be recorded.

Samples will be collected using a stainless steel bailing device to reduce the possibility of the loss of volatile constituents from the sample. The bailer will be decontaminated prior to, and between,sampling using a solution of non-phosphate soap and tap water.

Proposed Laboratory Analysis

Soil and groundwater samples will be submitted for analysis to Sequoia Analytical, of Concord, California, a State of California Department of Health Services certified laboratory. Each soil sample will be analyzed for Total Petroleum Hydrocarbons for gasoline (TPHG) using EPA Method 8015 modified for gasoline. The sample yielding the highest TPHG concentration will be additionally analyzed for benzene, toluene, xylene, and ethyl benzene (BTXE) using EPA Method 8020. The method detection limits for TPHG and BTXE for soil analysis are 1.0 mg/kg and 0.05 mg/kg, respectively.

Groundwater samples will be analyzed for TPHG and BTXE using the above EPA test methods. The method detection limit for TPHG for water analysis is 50 mg/kg. The method detection limit for BTXE for water analysis is 0.3 mg/kg for benzene and toluene, and 0.5 mg/kg for xylene and ethyl benzene.

Sample remains will be disposed of by Sequoia Analytical.

Results of the laboratory testing, quality assurance/quality control (QA/QC) program, and chain-of-custody documentation will be provided in the final report.

Proposed Quality Assurance/Quality Control

This project will be staffed with personnel trained in hazardous waste operations and familiar with the history of the site. Drilling will be performed by a State of California licensed drilling company. All work will be performed under the direct supervision of a professional engineer or geologist registered in the State of California.

All sampling equipment (i.e., California splitspoon, bailer) will be properly decontaminated prior to, and between, sample collection using a solution of tap water and non-phosphate soap, triple-rinsed in tap water, and followed by a final rinse with distilled water. Auger flights will be decontaminated prior to, and between, borings using a high pressure steam cleaner.

Soil and groundwater samples will be collected in a manner which minimizes the possibility of the loss of volatile constituents. Once collected, samples will be placed in cold storage until delivery to a laboratory certified by the California Department of Health Services. Proper chain-of-custody documentation, which includes the name of the sampler, the site location, the sample collection, will be maintained on all samples.

Proposed Site Safety

All persons working on this investigation will be required to have completed an approved OSHA 40-hour hazardous waste operations course while maintaining current 8-hour refresher course status, as required.

Based on previous site investigations, it is anticipated that Level D protection will be required. Persons handling suspected gasoline contaminated soils will be further required to nitrile gloves.

The complete Site Safety and Health Plan is appended.

Should the scope of this workplan meet with your approval, please contact the undersigned immediately in order to expedite this project. The opportunity to present this workplan is appreciated and we look forward with working with you on this project.

Sincerely
PROFESSIONAL SERVICE INDUSTRIES, INC.

Mark Casterson
Professional Senior

Kevin B. Oliver
Project Manager

FIGURES

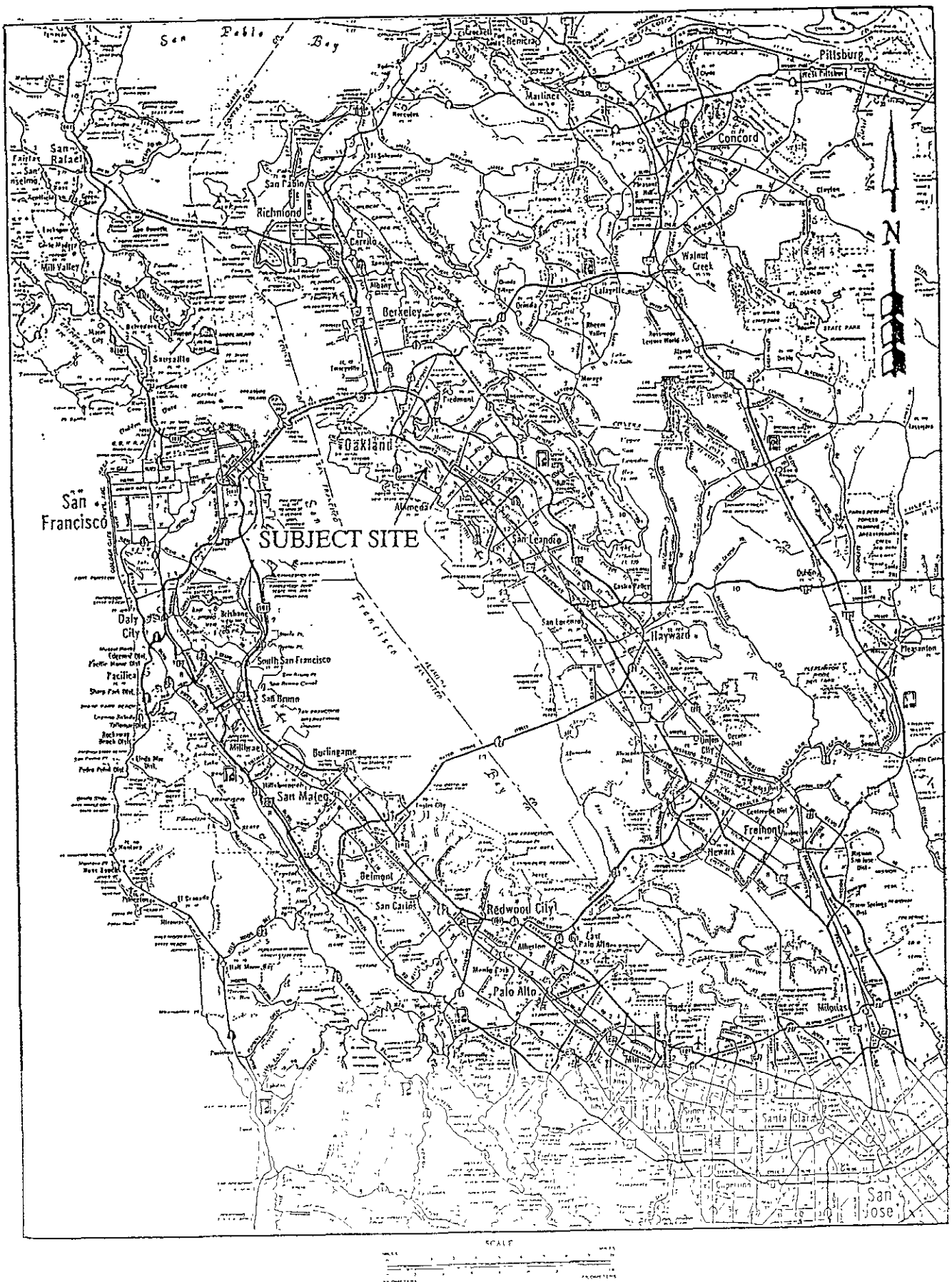


Figure 1, Vicinity Map

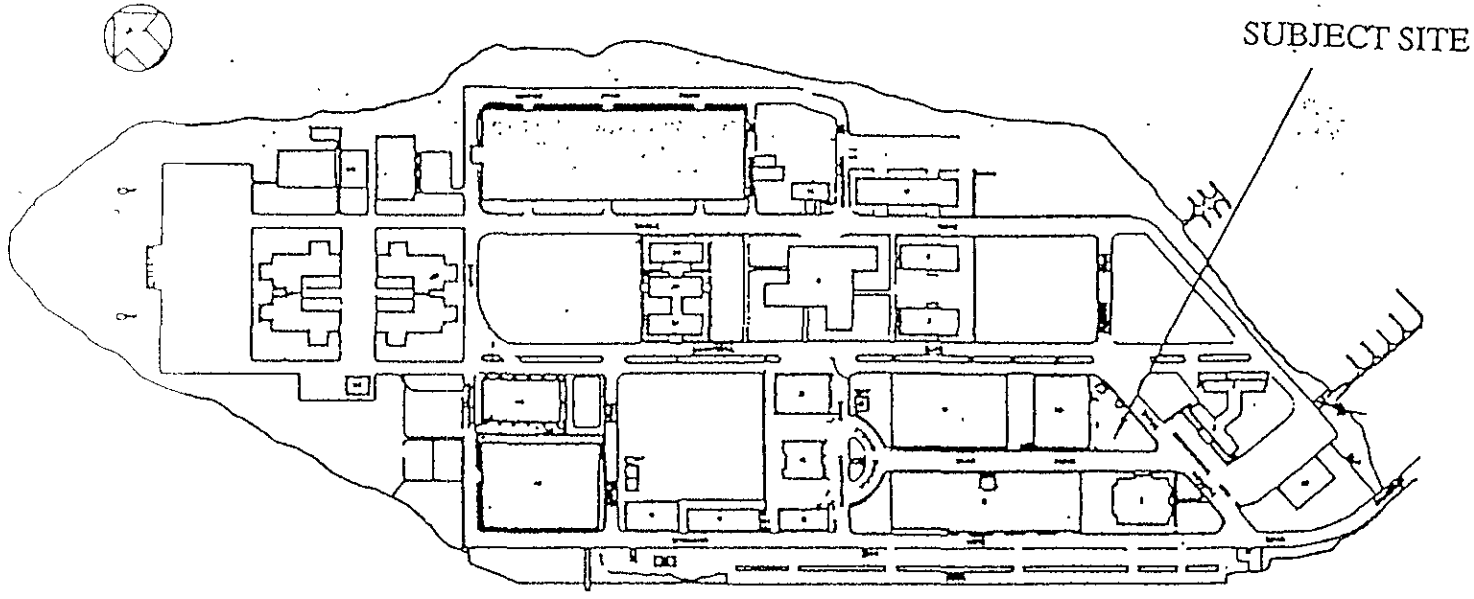
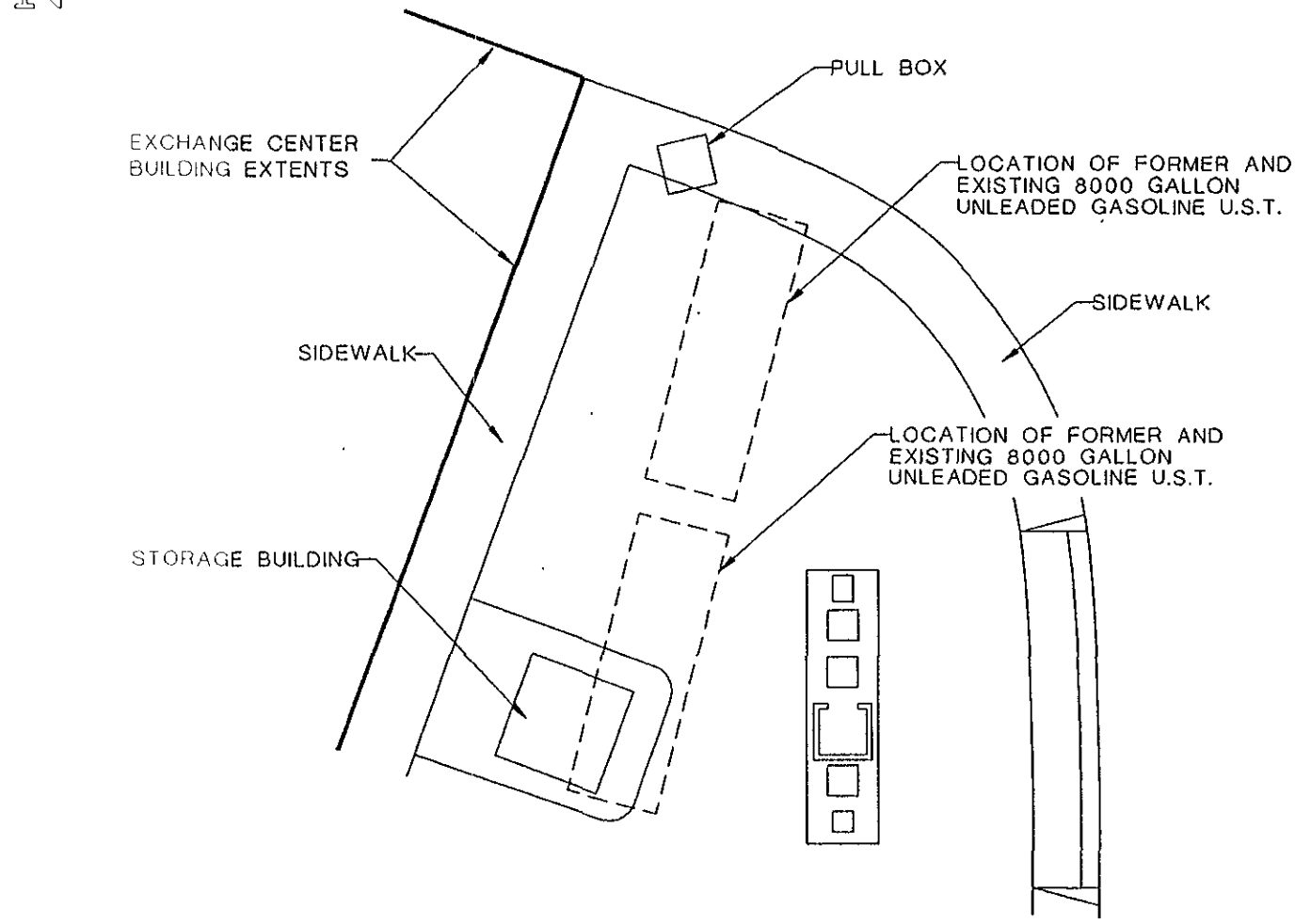
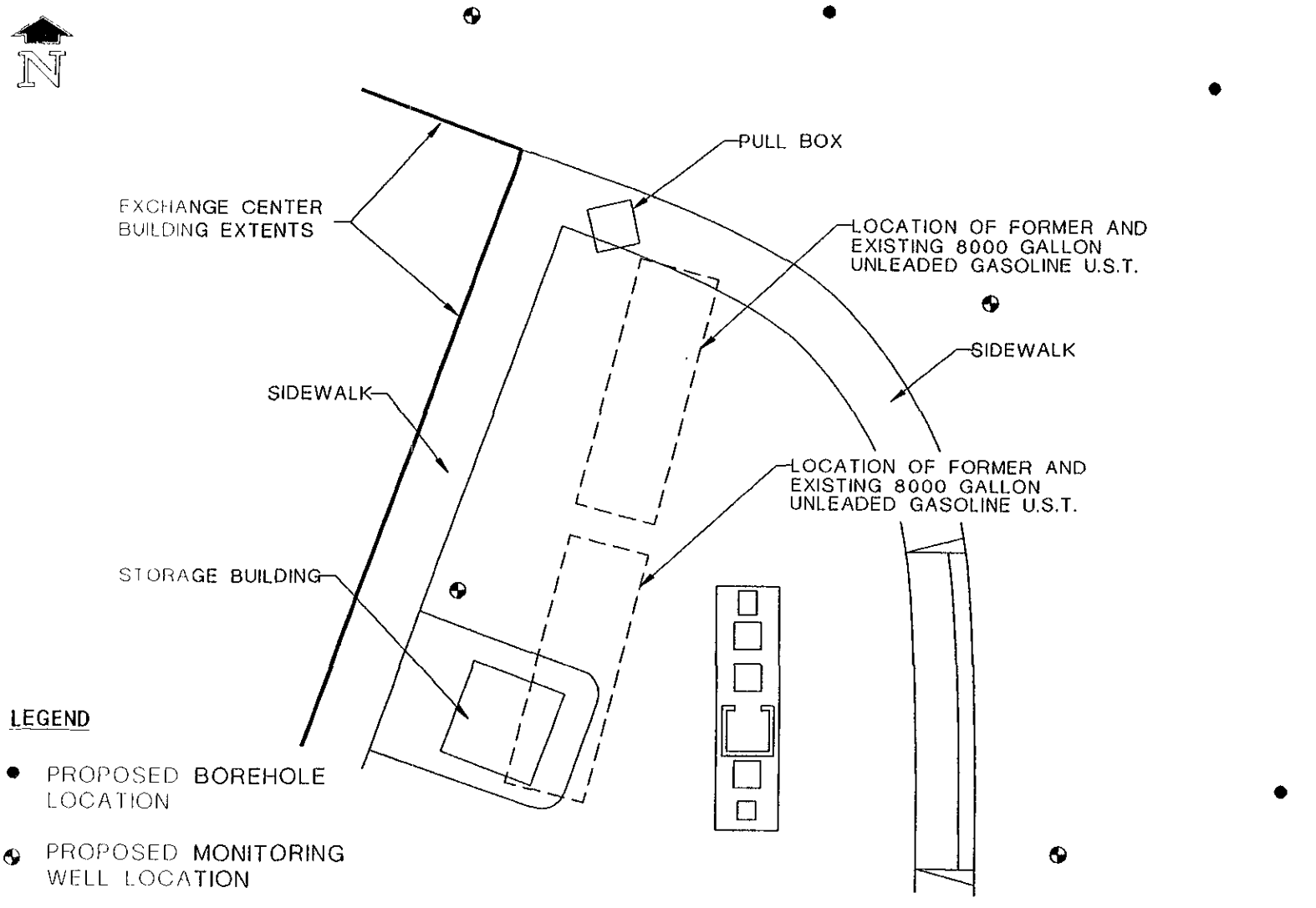


Figure 2, Site Plan



PROFESSIONAL SERVICE INDUSTRIES, INC.
3730 MT. DIABLO BLVD., SUITE 345 LAFAYETTE, CA 94549
(510) 284-3070

PROJECT NAME: U.S. COAST GUARD ALAMEDA, CALIFORINA	DRAWN BY: B BRITTON	DATE: 01/29/93	APPROVED BY: K OLIVER
TITLE: FIGURE 3 LOCATIONS OF EXISTING 8000 GALLON U.S.T.'S MAP	SCALE: NONE	PROJECT NO.: 582-34006	
		DRAWING NO.: E:\CG\CG-2	



PROFESSIONAL SERVICE INDUSTRIES, INC.
3730 MT. DIABLO BLVD., SUITE 345 LAFAYETTE, CA 94549
(510) 284-3070

PROJECT NAME: U.S. COAST GUARD ALAMEDA, CALIFORINA		DRAWN BY: B BRITTON	DATE: 01/29/93	APPROVED BY: K OLIVER
TITLE: FIGURE 4 LOCATIONS OF EXISTING 8000 GALLON U.S.T.'S MAP		SCALE: NONE	PROJECT NO.:582-34006	
			DRAWING NO.: E:\CG\CG-2	

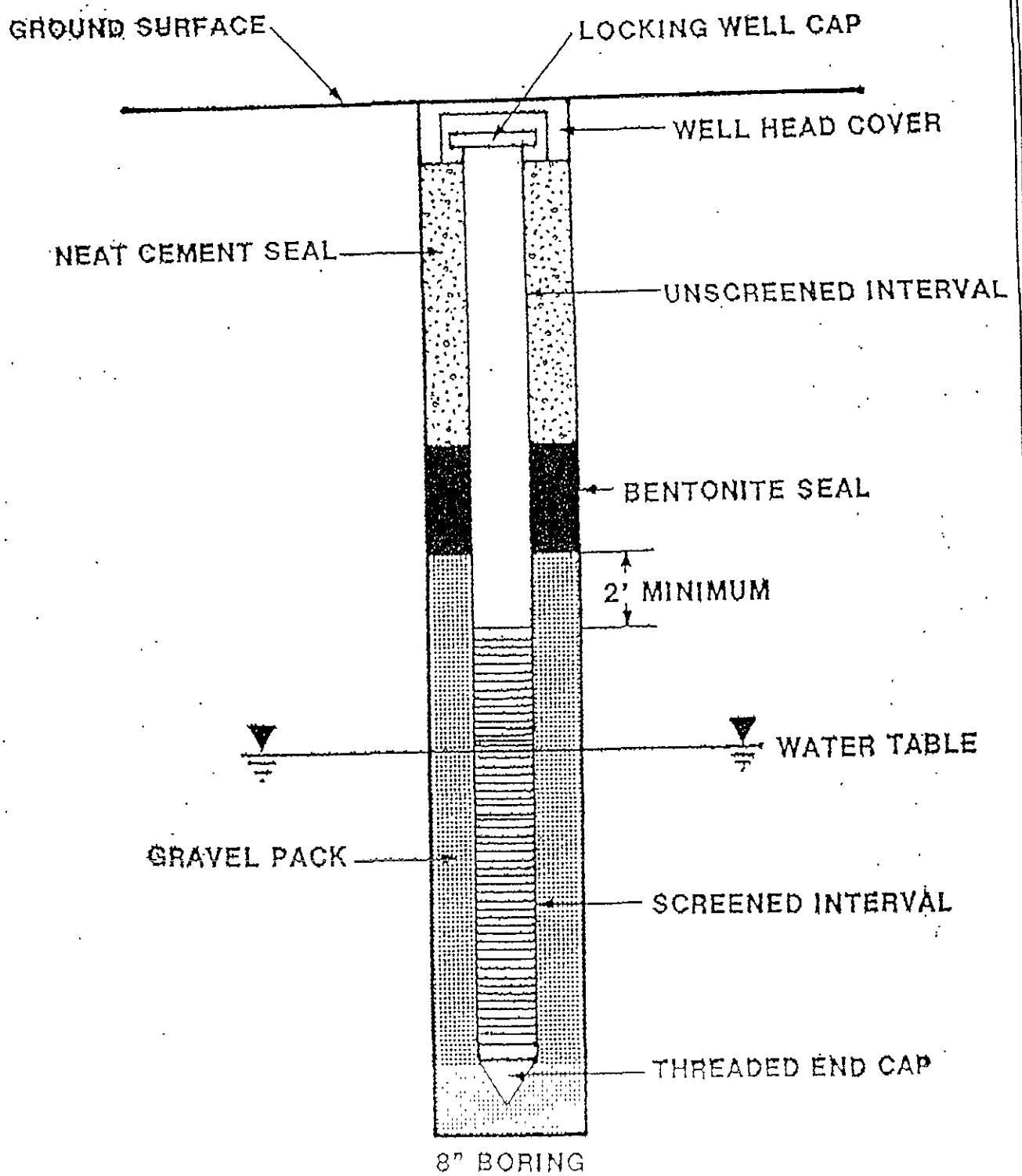


Figure 5, Typical Monitoring Well Construction Design

APPENDIX

SITE SAFETY AND HEALTH PLAN

PROFESSIONAL SERVICE INDUSTRIES, INC.
SITE SAFETY AND HEALTH PLAN

1.0 Introduction- This Safety and Health Plan (SHP) is prepared to provide information for worker safety and emergency procedures on the specific site named and described below. The SHP as prepared is not intended as a stand-alone document, but will augment the Professional Service Industries Employer's Safety and Health Plan (ESHP), and serve as Appendix D of that document. A copy of the ESHP and prepared SHP must be made available to all personnel working under the conditions of the SHP, and must be reviewed with all personnel. Following review, all personnel will sign the acknowledgement page indicating that they have read and understand therequirements of the SHP.

2.0 ORGANIZATION:

SHP Prepared By: MARK CASTERSON Date: 1/29/93

Approved By: KEVIN OLIVER Date: 1/29/93

Site Safety and Health Supervisor: MARK CASTERSON

Address 3730 MT. DIABLO BLVD.,STE.345,LAFAYETTE,CA 94549 Tel: (510)284-3070

PSI Site Supervisor: _____ Tel: _____

3.0 SITE DESCRIPTION:

Site Name: U.S. COAST GUARD EXCHANGE CENTER

Location: GOVERNMENT ISLAND, CALIFORNIA

Site Contact: LTJG CHRISTOPHER LUTTON Tel (510)535-7267

Address: U.S. COAST GUARD,2000 EMBARCADERO,STE.200,OAKLAND, CA

Site Characteristics (Use, terrain, buildings, etc.) SITE LOCATED AT THE U.S. COAST GUARD (USCG) EXCHANGE CENTER, GOVERNMENT ISLAND SUPPORT CENTER, ALAMEDA, CALIFORNIA. FLAT TERRAIN WITH A GAS STATION ADJACENT TO THE NEARBY EXCHANGE CENTER.

4.0 TASK ANALYSIS:

Proposed Date(s) of PSI Work: FEBRUARY 15, 1993

General Description of Work to be Accomplished: 1) COMPLETION OF 8 SOIL BORINGS TO AN APPROXIMATE DEPTH OF 25 FEET. 2) REAM 7 OF THE 8 SOIL BORINGS INTO MONITORING WELLS. 3) PURGE 4 SAMPLES OF ALL 4 MONITORING WELLS.

Task to Be Performed: DRILLING OF 8 SOIL BORINGS AND 4 MONITORING WELLS.

Hazard Risk: ____ Unknown ____ High ____ Moderate X Low

Level of Protection: ____ A ____ B ____ C X D

Task to Be Performed: ____

Hazard Risk: ____ Unknown ____ High ____ Moderate ____ Low

Level of Protection: ____ A ____ B ____ C ____ D

Task to Be Performed: ____

Hazard Risk: ____ Unknown ____ High ____ Moderate ____ Low

Level of Protection: ____ A ____ B ____ C ____ D

Task to Be Performed: ____

Hazard Risk: ____ Unknown ____ High ____ Moderate ____ Low

Level of Protection: ____ A ____ B ____ C ____ D

Task to Be Performed: ____

Hazard Risk: ____ Unknown ____ High ____ Moderate ____ Low

Level of Protection: ____ A ____ B ____ C ____ D

5.0 HAZARD ANALYSIS:

Hazards Present:

____ Biological	____ Ionizing Radiation
X Physical Safety	____ Cold/Heat Stress
____ Oxygen Deficiency	____ Electrical
____ Fire/Explosion	____ Chemical

Contaminant Locations

____ Air	X Water	____ Sediment
X Soil	____ Surface	X Underground

____ Other (Specify): _____

Hazard Discussion: THE EVERY DAY HAZARDS ASSOCIATED WITH THE DRILLING OF MONITORING WELLS.

6.0 PERSONAL PROTECTIVE EQUIPMENT:

Level D : Task(s) DRILLING AND SAMPLING OF MONITORING WELLS

X Hard Hat

X Ear Protection

____ Respirator: Half-mask _____ Full-mask _____

Cartridge Type: _____

____ Face Protection: Shield _____ Glasses: _____

____ Inner Gloves: Material _____

X Outer Gloves: Material _____

____ Coveralls: Hooded: Yes _____ No _____

Material: _____

X Steel-Toed Boots: Material _____

____ Disposable Booties: Material _____

____ Other (Specify): _____

Level ___: Task(s): _____

___ Hard Hat

____ Ear Protection

____ Respirator: Half-mask _____ Full-mask _____

Cartridge Type: _____

____ Face Protection: Shield _____ Glasses: _____

____ Inner Gloves: Material _____

____ Outer Gloves: Material _____

____ Coveralls: Hooded: Yes _____ No _____

Material: _____

____ Steel-Toed Boots: Material _____

____ Disposable Booties: Material _____

Other (Specify): _____

7.0 MONITORING INSTRUMENTS:

Equipment Required:

____ Combustible Gas/Oxygen Meter

____ Hydrogen Sulfide Meter

_X_ Photolonization Detector (HNU/TIP)

_X_ Organic Vapor Analyzer

____ Colorimetric Detector Tubes

____ Radiation Survey Meter

____ Dosimeter Badges

____ Other (Specify): _____

Monitoring Frequency and Levels:

Hazard: _____

Frequency:_____ Action Level _____

Response: _____

_____

Hazard: _____

Frequency:_____ Action Level _____

Response: _____

_____

Hazard: _____

Frequency:_____ Action Level _____

Response: _____

_____

Hazard: _____

Frequency:_____ Action Level _____

Response: _____

_____

8.0 DECONTAMINATION:

Level:____ Task(s): N/A

Decontaminating Fluid(s): _____

Station # _____ Procedure: _____

Station # _____ Procedure: _____

Station # _____ Procedure: _____

Station # _____ Procedure: _____

Station # _____ Procedure: _____

Level:____ Task(s): _____

Decontaminating Fluid(s): _____

Station # _____ Procedure: _____

Station # _____ Procedure: _____

Station # _____ Procedure: _____

Station # _____ Procedure: _____

Station # _____ Procedure: _____

Level:____ Task(s): _____

Decontaminating Fluid(s): _____

Station # _____ Procedure: _____

Station # _____ Procedure: _____

Station # _____ Procedure: _____

Station # _____ Procedure: _____

Station # _____ Procedure: _____

Station # _____ Procedure: _____

Station # _____ Procedure: _____

Station # _____ Procedure: _____

9.0 EMERGENCY PROCEDURES

Emergency Signals:

Evacuate Site: U.S. COAST GUARD EXCHANGE CENTER

Leave Area Immediately: Gripping wrists or waist of another worker with both hands.

I Can't Breathe: Hand gripping throat.

Need Assistance: Hands on top of head.

I'm Okay- I Understand: Thumbs up

No- Negative: Thumbs down.

Other: _____

_____

Emergency Telephone Numbers

Local Police Department	(510) 522 - 2423
Local Fire Department	(510) 522 - 2423
Local Rescue Department	(510) 222 - 2423
Primary Hospital Name: ALAMEDA HOSPITAL	
Telephone:	(510) 522 - 3700
Secondary Hospital Name: HIGHLAND HOSPITAL	
Telephone:	(510) 534 - 8055
Environmental Medicine Resources -24 Hour Telephone -Satellite Paging	 (404) 455-0818 (800) 869-2337 ID Ext 6125
National Poison Control Center	(800) 492-2414
Chemical Mfg. Association -Chemical Referral Center	 (800) 262-8200

DIRECTIONS TO EMERGENCY MEDICAL FACILITIES

Primary Hospital: ALAMEDA HOSPITAL

Address: 2070 CLINTON AVENUE, ALAMEDA

Telephone Number: (510) 522-3700

Description of route to Primary Hospital (Show Map on Following Page):

DRIVE FROM GOVERNMENT ISLAND TO EMBARCADERO ROAD. RIGHT ON EMBARCADERO TO KENNEDY STREET. TURN RIGHT ON KENNEDY STREET AND DRIVE TO PARK STREET. TURN RIGHT ON PARK STREET AND DRIVE APPROXIMATELY 3/4 OF A MILE TO CLINTON AVENUE. TURN RIGHT ON CLINTON AVENUE AND DRIVE APPROXIMATELY 1/4 MILE. HOSPITAL WILL BE ON LEFT HAND SIDE.

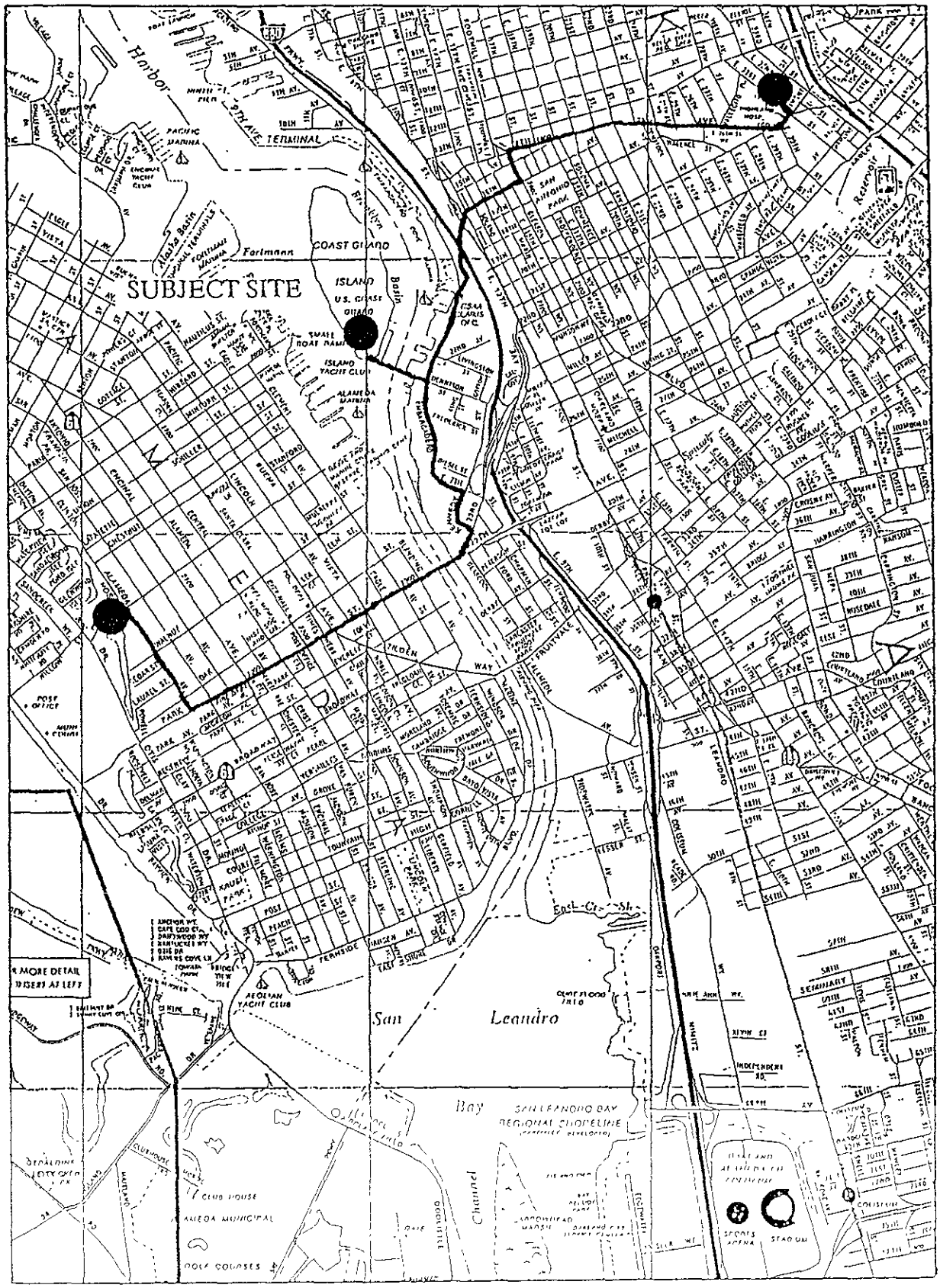
Secondary Hospital: HIGHLAND HOSPITAL

Address: 1411 EAST 31ST STREET

Telephone Number: (510) 534-8055

Description of route to Secondary Hospital (Show Map on Following Page):

DRIVE FROM GOVERNMENT ISLAND TO EMBARCADERO ROAD. TURN LEFT ON EMBARCADERO AND VEAR RIGHT ON 16TH AVENUE. TAKE 16TH AVENUE OVER THE 880 FREEWAY UNTIL FOOTHILL BOULEVARD. TURN LEFT ON FOOTHILL UNTIL 14TH AVENUE. TURN RIGHT ON 14TH AVENUE UNTIL EAST 31ST STREET. TURN LEFT ON EAST 31ST STREET, HOSPITAL IS ON LEFT HAND SIDE.



Route to Primary and Secondary Hospitals

10.0 ACKNOWLEDGEMENT OF TRAINING

This will acknowledge that the information contained in the foregoing Site Safety and Health Plan and the PSI Employer's Safety and Health Plan has been presented and explained to me; and that I understand the information and agree to comply with the requirements and provisions contained in these documents.

Name: _____	Date: _____
Name: _____	Date: _____
Name: _____	Date: _____
Name: _____	Date: _____
Name: _____	Date: _____
Name: _____	Date: _____
Name: _____	Date: _____
Name: _____	Date: _____
Name: _____	Date: _____
Name: _____	Date: _____
Name: _____	Date: _____
Name: _____	Date: _____
Name: _____	Date: _____
Name: _____	Date: _____
Name: _____	Date: _____
Name: _____	Date: _____
Name: _____	Date: _____
Name: _____	Date: _____
Name: _____	Date: _____

Name(s) of Presentor(s):

_____ (NAME)

_____ (SIGNATURE)

_____ (NAME)

_____ (SIGNATURE)