EBA WASTECHNOLOGIES
Engineers & Environmental Consultants

00 OCT 16 AM 10:27
ENVIRONMENTAL PROTECTION

October 13, 2000

Mr. Lewis Winchell
Sacramento Stucco
P.O. Box 1166
Sacramento, CA 95691

RE: WORK PLAN – ADDITIONAL GROUNDWATER INVESTIGATION
FORMER WESTERN STUCCO PRODUCTS
5115 EAST EIGHTH STREET,OAKLAND, CALIFORNIA
EBA PROJECT No. 94-484

Dear Mr. Winchell:

EBA Wastechnologies (EBA) is pleased to submit this Work Plan for Subsurface Investigation for the above referenced site. This Work Plan describes proposed investigative work to further evaluate the extent of petroleum hydrocarbon impact from the former underground storage tanks (USTs) that were removed from the site. In a September 13, 2000 letter, Mr. Barney Chan of Alameda County Environmental Health Services requested a work plan to perform additional site characterization at the subject site. A copy of this Work Plan is being submitted on your behalf to the Alameda County Health Care Services (ACHCS) and the San Francisco Bay Regional Water Quality Control Board (SFB-RWQCB) for their review and approval. Upon your approval, along with ACHCS and SFB-RWQCB approval, we will proceed with implementation of this Work Plan.

Sincerely,
EBA WASTECHNOLOGIES

Eriksen Phenix
Environmental Technician

EP/mc

cc: Mr. Barney Chan, ACHCS
SFB-RWQCB

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825 Sonoma Avenue, Suite C Santa Rosa, California 95404 (707) 544-0784 FAX (707) 544-0866
www.ebawaste.com e-mail: info@ebawaste.com Also in Southern California

Prepared for

Mr. Lewis Winchell
Sacramento Stucco Company, Inc.
P.O. Box 1166
Sacramento, CA 95691

ADDITIONAL GROUNDWATER INVESTIGATION WORKPLAN

FORMER WESTERN STUCCO PRODUCTS

5115 EAST EIGHTH STREET

OAKLAND, CALIFORNIA

October 13, 2000

EBA Project No. 94-484

Prepared by

Eriksen Phenix
Environmental Technician

Reviewed by

Damon F. Brown, C.E.G., C.HG.
Vice President & Chief Geologist

Reviewed by

Christine Scheib, R.E.A. #06901
Senior Environmental Specialist

REGISTERED GEOLOGIST DAMON F. BROWN No. 1723 CERTIFIED ENGINEERING GEOLOGIST STATE OF CALIFORNIA

EBA WASTECHNOLOGIES

825 Sonoma Avenue, Suite C Santa Rosa, CA 95404 (707) 544-0784 FAX (707) 544-0866
225 West Hospitality Lane, Suite 200 San Bernardino, CA 92408 (909) 890-0432 FAX (909) 890-0422

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1.0 INTRODUCTION

It is EBA's understanding that two 8,000-gallon underground storage tanks (USTs) were removed from the subject property in March 1991. Analytical results of soil and groundwater samples collected from the two UST excavations indicated petroleum hydrocarbons as gasoline and diesel were present. The Alameda County Health Care Services (ACHCS) is requiring that further site characterization be conducted at the subject site. It is this request by the ACHCS that has prompted the preparation of this Work Plan. It is EBA's understanding that for this site to be considered for closure as a low risk site additional groundwater characterization is required.

1.1 Statement of Scope of Work

EBA proposes additional site investigation consisting of the drilling of three additional soil borings for the purpose of collecting soil samples. All three of the soil borings will be converted into 2-inch monitoring wells to assist in the delineation of the contamination plume. If, based on field screening, the soil borings indicate petroleum hydrocarbon contamination, an additional boring or borings will be initiated approximately fifteen to twenty feet away from the impacted boring(s). Soil and groundwater samples will be submitted to a State-certified analytical laboratory for analysis of gasoline (TPH-g), diesel (TPH-d), benzene, toluene, ethyl benzene, xylenes (BTEX) and methyl tert butyl ether (MtBE). Monitoring wells will be installed with a rotary auger drill rig utilizing 8-inch hollow stem augers.

1.2 Site Location

The project site is located in the City of Oakland,between East Eighth Street to the east and the Southern Pacific Railroad tracks to the west, in Alameda County in California; please refer to Vicinity Map, Figure 1. The site is at an approximate elevation of 10 feet above mean sea level (MSL). San Leandro Bay is located approximately 2,400 feet southwest of the subject site. Land use in this area is predominantly industrial and commercial.

1.3 Site History

The subject site was formerly a stucco products facility where the ingredients for stucco were stored and mixed. On March 26, 1991 two 8,000-gallon steel USTs were removed from the site under the supervision of Kaprealian Engineering, Inc. (KEI), of Benicia, California. One UST stored diesel fuel and the other UST stored unleaded gasoline. Each UST was removed from a separate excavation. Four holes with a maximum diameter of ½ inch were observed in the gasoline UST. Ms. Cynthia Chapman of the ACHCS was present during the USTs removal and subsequent soil sampling.

Groundwater was encountered in the UST excavations at the time of removal at an approximate depth of nine feet below ground surface (bgs). Due to the groundwater in the UST excavations, samples from beneath the former USTs could not be collected. Four sidewall soil samples were collected from the UST excavations at approximately 6 inches above the groundwater level by KEI.

Approximately 4,000 gallons of groundwater was pumped from the UST excavations after the soil sampling was completed. On March 28, 1991 KEI collected a groundwater sample from the gasoline UST excavation. KEI returned to the site on March 29, 1991 and collected a groundwater sample from the diesel UST excavation. Ms. Cynthia Chapman with the ACHCS was present during the groundwater sampling.

The samples were analyzed by Sequoia Analytical Laboratory in Concord, California, for total petroleum hydrocarbons as gasoline (TPH-g), total petroleum hydrocarbons as diesel (TPH-d), benzene, toluene, ethyl benzene and xylenes (BTEX).

Analytical results of the two soil samples collected from the diesel UST excavation detected TPH-g at 120 parts per million (ppm) in each and TPH-d at 100 and 21 ppm. The analytical results of the groundwater sample collected from the diesel UST excavation indicated TPH-g at 1,500 parts per billion (ppb), TPH-d at 34,000 ppb and benzene at 240 ppb. Analytical results of the two soil samples collected from the gasoline UST excavation were below laboratory detectable limits for all analytes except xylenes. The analytical results of the groundwater sample collected from the gasoline UST excavation indicated TPH-g at 800 parts per billion (ppb), TPH-d at 13,000 ppb and benzene at 1.8 ppb.

On April 4, 1997, EBA Wastechnologies (EBA) personnel visited the subject site and collected samples from the three on-site soil stockpiles. The samples were analyzed by Legend Analytical Services of Santa Rosa, California, for TPH-g, TPH-d and BTEX. The soil stockpile samples were below detectable levels for TPH-g and BTEX. TPH-d was detected in the soil stockpile samples at concentrations of 290 ppm, 92 ppm and 78 ppm. On May 19, 1997 Conti Material Services, Inc., of Stockton, California, disposed of approximately 130 cubic yards of stockpiled soil at Forward Inc. Landfill in Stockton, California.

In a June 16, 1997 letter Mr. Barney Chan of Alameda County Environmental Health Services requested a work plan to perform additional site characterization at the subject site. In response to this request EBA prepared a groundwater investigation work plan, dated July 24, 1997. The Work Plan was accepted in a letter dated August 4, 1997, by Mr. Barney Chan.

On September 26, 1997, EBA supervised the drilling of seven soil borings (EBA-1 thru EBA-7, Figure 2, Appendix A) at the project site. All soil borings were advanced to a total depth of 16 feet bgs with the exception of boring EBA-2 which was advanced to a total depth of 20 feet bgs. Soil borings were installed using a truck-mounted hydraulic percussion rig provided by Gregg Drilling & Testing of Martinez, California. Soil borings were continuously sampled and soil samples were collected in 4 feet long clear acetate tubes, 1.75 inches in diameter. Soil samples were submitted for all soil borings with the exception of EBA-3. After all soil borings had remained open for a period of two to four hours, groundwater was encountered in soil borings EBA-1, EBA-3, and EBA-6 only. All other soil borings, including the 20 foot EBA-2, were found to be dry. Grab groundwater samples were collected and submitted for soil borings EBA-1, EBA-3, and EBA-6.

Analytical results from the soil samples indicated contamination from TPH-g in borings EBA-4, EBA-5, EBA-6, and EBA-7 at concentrations up to 2300 mg/Kg. BTEX constituents were found in soil samples from borings EBA-4, EBA-6, and EBA-7. No TPH-d constituents were found in any of the soil samples analyzed.

Analytical results from the groundwater samples collected during the September 26, 1997 drilling activities indicated petroleum hydrocarbon contamination as TPH-g and TPH-d at concentrations up to 590,000 µg/L and 250 mg/L respectively. BTEX constituents were detected in the groundwater samples from borings EBA-1 and EBA-3, with Benzene concentrations up to 560 µg/L. The fuel oxygenate MtBE was not found in any of the soil or groundwater samples collected during the September 1997 subsurface investigation.

After reviewing the results of the September 1997 investigation, Mr. Barney Chan of the ACHCS issued a letter requesting an additional groundwater investigation at the project site.

2.0 GROUNDWATER INVESTIGATION

2.1 Regional Hydrogeologic Setting

The subject site is mapped as being underlain by Holocene alluvium (U.S. Geologic Survey Professional Paper 943 "Flatland Deposits of the San Francisco Bay Region," California, 1979). The subject site is mapped as being situated at the approximate geologic contact of bay mud and fine grained alluvium. The fine-grained alluvium is defined as typically consisting of unconsolidated, moderately to poorly sorted silt and clay rich in organic material. These materials are assumed to overlie older alluvial fan and stream terrace deposits on the bay margin. The Bay Mud is described as typically consisting of unconsolidated, water-saturated plastic clay and silty clay rich in organic material, which locally contains lenses of well-sorted silt, sand and beds of peat.

Soils at the subject site encountered during UST removal activities appeared to consist primarily of silty clay to the excavated depth of nine feet bgs. Soils encountered during previous soil boring activities generally consisted of silt with varying amounts of sand and occasional clayey gravel interbeds.

Based on local topography, groundwater is believed to flow in a southwesterly direction from the Oakland hills to the San Leandro Bay.

2.2 Boring Locations

The proposed boring locations are shown on Figure 3, Appendix A. The boring locations are based on analytical results of soil and groundwater sampling conducted during the September 1997 Soil and Groundwater investigation, and the recommendations presented in EBA's December 1997 Subsurface Investigation report. The current investigation is proposing to install an additional three soil borings, all of which will be converted into monitoring wells. If, based on field screening, the initial borings indicate petroleum hydrocarbon contamination, additional borings will be initiated approximately fifteen to twenty feet further away from the former USTs and these borings will be converted to monitoring wells.

2.3 Monitoring Well Construction

The proposed depth of the monitoring well borings are 35 feet bgs. A screened interval from 5 to 35 feet is anticipated. However, the screened interval will ultimately depend on field conditions and will be installed to account for shallow groundwater fluctuations.

The wells will be constructed of 2-inch diameter, Schedule 40 blank and slotted (screen), flush-threaded polyvinyl chloride (PVC) pipe; no glues nor solvent will be used. The well screen slot size will be 0.010 inches. When the desired boring depth is attained, the PVC casing will be installed through the hollow-stem of the auger. The sand pack of number 12/20 sand will be slowly poured around the screen to approximately 1 foot above the slotted interval. A 2-foot thick bentonite seal will be placed above the sand pack. The remaining portion of the annular space will be filled with a cement slurry. The top of the well will be set in a water tight traffic-rated box at one-inch above grade level with an internal steel casing and locking cover to provide security. Typical well construction details are presented in Figure 4, Appendix A.

2.4 Monitoring Well Development

The wells will be developed following a minimum period of 48 hours after construction. The wells will be developed with a surge block to remove residual silts and clays left from the drilling and to improve the hydraulic conductivity between the well and the natural formation. Development water will be removed by hand bailing with disposable polyethylene bailers. All water collected during well development will be placed in properly labeled DOT 17H 55-gallon drums and left on-site pending laboratory results.

The top of casing elevations of the monitoring wells will be surveyed in reference to mean sea level under the supervision of a licensed surveyor. The surveyed elevations will be used for the measurement and calculation of groundwater flow direction and gradient.

2.5 Equipment Decontamination

The rotary augers and other tools will be steam cleaned before drilling each boring to minimize the possibility of cross-contamination. The sampling equipment will be cleaned prior to collecting each soil sample with a trisodium phosphate solution, a potable water rinse, and deionized water rinse. Equipment and tools will be steam cleaned on-site in a plastic lined containment area. Decontamination water from equipment clean-up will be stored on-site in properly labeled DOT 17H 55-gallon drums.

3.0 SAMPLING PROCEDURES

3.1 Soil Sampling

The borings will be advanced with a truck-mounted hollow stem rotary auger. Relatively undisturbed soil samples will be collected with a modified California split tube sampler with internal 1.5-inch diameter by 6-inch-long brass liners. Soil samples will be collected at approximately 5-foot depth intervals, at lithologic changes, at obviously contaminated layers, and at the approximate groundwater interface.

EBA personnel will monitor the drilling process with a PID meter for volatile hydrocarbons. All soil samples from each interval will be screened with the PID meter and one soil sample from each interval will be collected for laboratory analysis, capped, labeled, logged on a chain-of-custody form, and placed in an ice chest for transport to a State-certified laboratory. A log of the subsurface conditions encountered during drilling and classifying the soil using the Unified Soil Classification System will be prepared for each boring.

3.2 Groundwater Sampling

The monitoring wells will be allowed to recharge for a minimum of 24 hours following well development before groundwater samples are collected. Each well will be purged of a minimum of three well volumes (until temperature, pH and EC have stabilized) with a disposable bailer or electric purge pump prior to sampling. A water level measurement will be made after purging and before sampling to the nearest 0.01 feet. The sample will be collected with a disposable, bottom-valve, plastic bailer. The sample will be transferred directly into 40 ml glass vials and one liter amber bottles, placed in plastic bags, and put on ice for transport to the analytical laboratory under chain-of-custody procedures.

A California State-certified laboratory will analyze both the groundwater sample and soil samples using methods approved by the California Regional Water Quality Control Board (CRWQCB) and the Environmental Protection Agency (EPA). The laboratory will analyze both the groundwater samples and soil samples for TPH-g, TPH-d, BETX and MtBE. EBA anticipates using Alpha Analytical Laboratories of Ukiah, California as our analytical laboratory. Confirm 2ug MTBE

4.0 REPORT OF FINDINGS

The information collected, analytical results, and EBA's conclusions and recommendations will be summarized in a report to the ACHCS and SFB-RWQCB. The report will include a site map showing features relevant to the investigation, a description of the work performed and graphical boring logs. Summary tables of analytical results will be presented and complete laboratory analytical data will be appended to the report. Report conclusions will address the vertical and lateral extent of contamination.

5.0 SCHEDULE

Permits will be obtained prior to the initiation of work at the site. Also, the site will be marked for Underground Services Alert (USA) prior to commencement of work. Drilling will be scheduled at the direction of the client and upon ACHCS approval of this work plan.

6.0 SITE HEALTH AND SAFETY PLAN

Project No.: EB94-484 **Field Activities Date:** November-December 2000

Client: Sacramento Stucco **Address:** P.O. Box 1166
West Sacramento, CA 95691

Contact Person: Mr. Lewis Winchell **Telephone No.:** (916) 372-7442

Job Location: 5115 East Eighth Street, Oakland, California

Project Description:

- Provide technical assistance for a Subsurface Investigation of former gasoline and diesel underground storage tanks.
- Installation of up to 6 soil borings and 3 monitoring wells.
- Collection of groundwater samples.

Project Manager: Christine Scheib **Site Health & Safety Manager:** Erik Phenix

Chemical Hazards:

CHEMICAL NAME	DESCRIPTION	HEALTH & SAFETY AND POTENTIAL STANDARDS	PERSONS EXPOSED* ROUTES OF EXPOSURE	SYMPTOMS OF ACUTE EXPOSURE
Benzene	Carcinogen, aromatic HC	8-hr. TLV=10 ppm PEL=1 ppm	Inhalation, dermal	Headache, dizziness
Toluene	Aromatic HC	8-hr. TLV=100 ppm	Inhalation, dermal	Headache, dizziness
Xylenes	Aromatic HC	8-hr. TLV=100 ppm	Inhalation, dermal	Headache, dizziness
Ethylbenzene	Aromatic HC	8-hr. TLV=100 ppm	Inhalation, dermal	Headache, dizziness
Gasoline	Flammable liquid	8-hr. TLV=300 ppm Flashpt.=-50° F LEL=1.4%, UEL=7.6%	Inhalation, dermal	Headache, dizziness, eye/skin irritation
Diesel	Combustible liquid		Inhalation, dermal	Headache, dizziness, eye/skin irritation

Note: Health and safety standards refer to airborne concentrations to which nearly all workers may be repeatedly exposed daily without harmful effects. The concentrations are time-weighed averages for a normal 8-hour work period.

Physical Hazards: Fire and explosion (primarily gasoline), heavy equipment, noise, overhead and underground utilities.

Personal Protective Equipment Required: First aid kit, hard hat, eye protection, noise protection, chemical-protective gloves, steel-toed rubber boots, respirator with organic vapor cartridge.

6.0 SITE SAFETY PLAN (Continued)

Air Monitoring Strategy (including action levels): Monitor breathing zone with PID meter (ppm scale). If greater than 5 ppm in breathing zone for five minutes or greater than 30 ppm instantaneous, don respirator and/or go upwind of boring. Measure breathing zone concentration of benzene during excavation using detector tube. Don respirator if fuel odor persists or if benzene concentration is detectable in breathing zone. If benzene concentration in breathing zone exceeds 10 ppm, go to area where not detectable (respirator will not offer adequate protection). Record all measurements in field notebook.

how would you know benzene conc?

Monitor LEL levels in work area. If LEL >10%, stop work, remove sources of heat and ignition, and continue monitoring. If LEL >15%, stop work until LEL <10%.

Site Control Measures: 1) Place used protective gear and decontamination equipment in containers for proper disposal; 2) no smoking within 500 feet of work area; 3) no source of heat or ignition within 500 feet of work area if greater than 10% LEL reading measured; 4) no eating, drinking, or smoking on-site; 5) bring drinking water; 6) decontaminate boots and sampling equipment prior to leaving site; 7) inform workers (including non EBA workers) on-site of elevated HC or benzene readings and document.

Decontamination Procedures (personal and equipment): Decontaminate boots and soil sampling equipment with TSP and water. Wash and rinse sampling equipment with deionized water. Store rinse water in 55-gallon drums (labeled) pending receipt of laboratory results or discharge rinse water into contained stockpile awaiting final disposal or treatment.

Decontaminate heavy equipment by scrapping loose material then wash with steam cleaning unit. Collect and combine loose material and rinsate in stockpile awaiting final disposal or treatment.

Hospital/Clinic: Alameda Hospital **Phone:** 510-523-4357 (Emergency)

Hospital Address: 2070 Clinton Avenue, Alameda, CA (see Hospital Map)

SITE SAFETY PLAN (Continued)

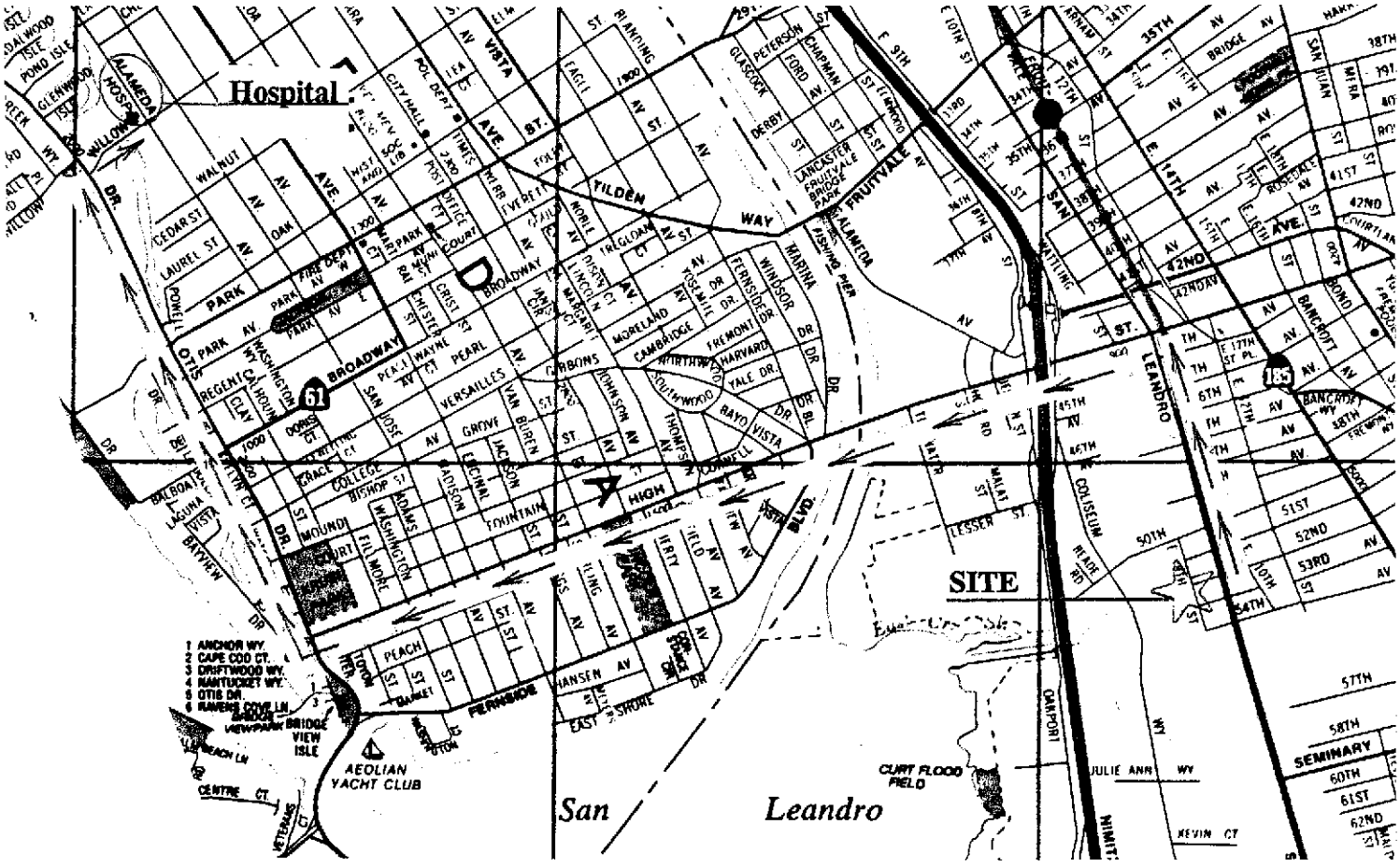
Directions:

1) Go East on 52nd Street, turn left (north) on San Leandro Street.
2) Turn Left (west) on High Street.
3) Turn right (north) on Otis Dr.
4) Turn right (east) on Willow Street, follow signs to ermergency room

Paramedic: 911 **Fire/Police Dept.:** 911

Emergency Procedures: Call 911 for fire or serious injury. Proceed to hospital (see map) if necessary for minor injuries. Call Duane Butler (707) 544-0784.

Hospital map



6.0 SITE SAFETY PLAN (Continued)

Prepared by: Erik Phenix

Date: October 14, 2000

Reviewed/Approved by: Christine Scheib

Date: 10/13/00 Christine Scheib

Read by: **Date:**

Read by: **Date:**

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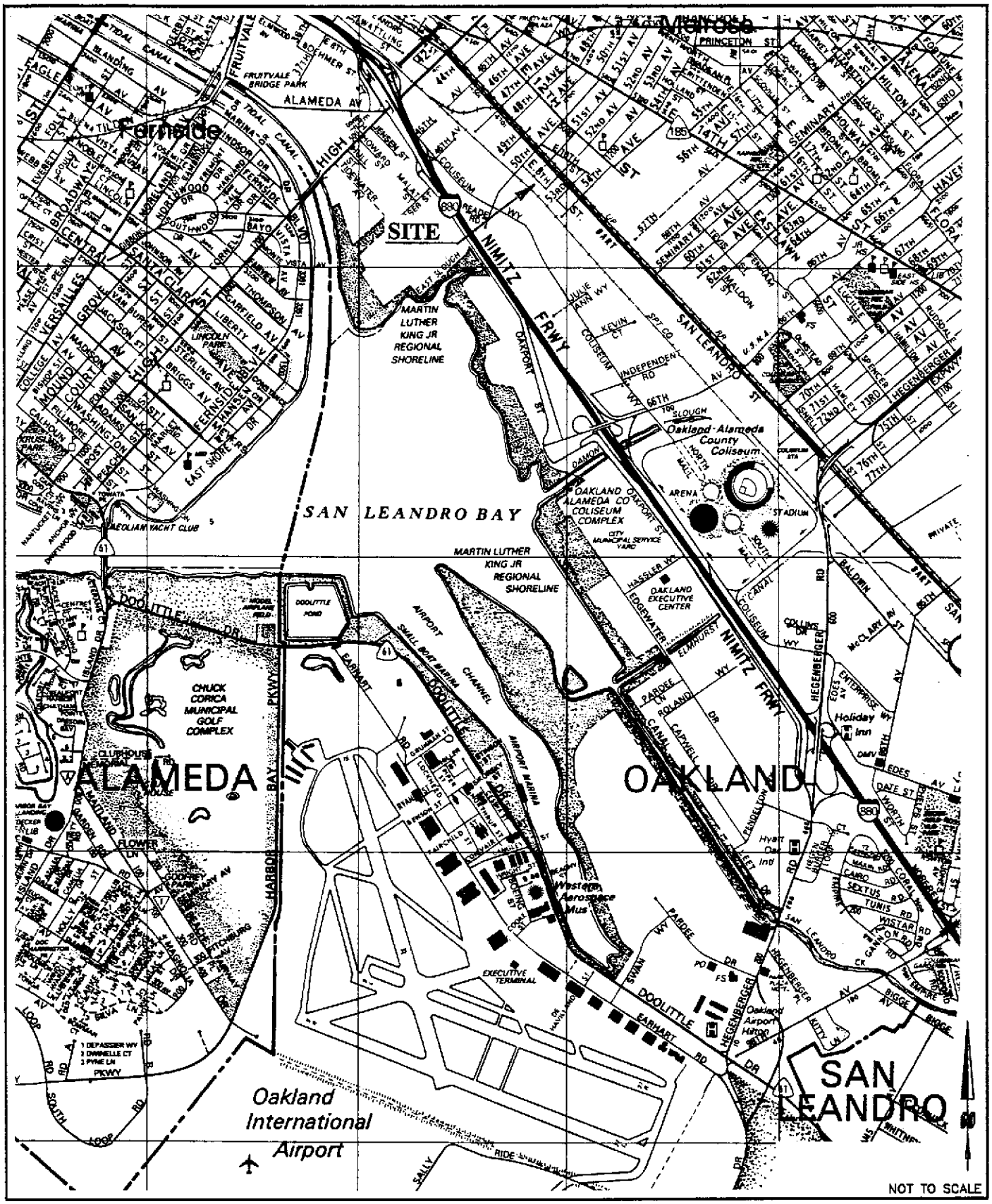

EBA

WESTERN STUCCO PRODUCTS
5115 EAST 8TH STREET
OAKLAND, CALIFORNIA

LOCATION MAP

FIGURE
1
JULY 1997
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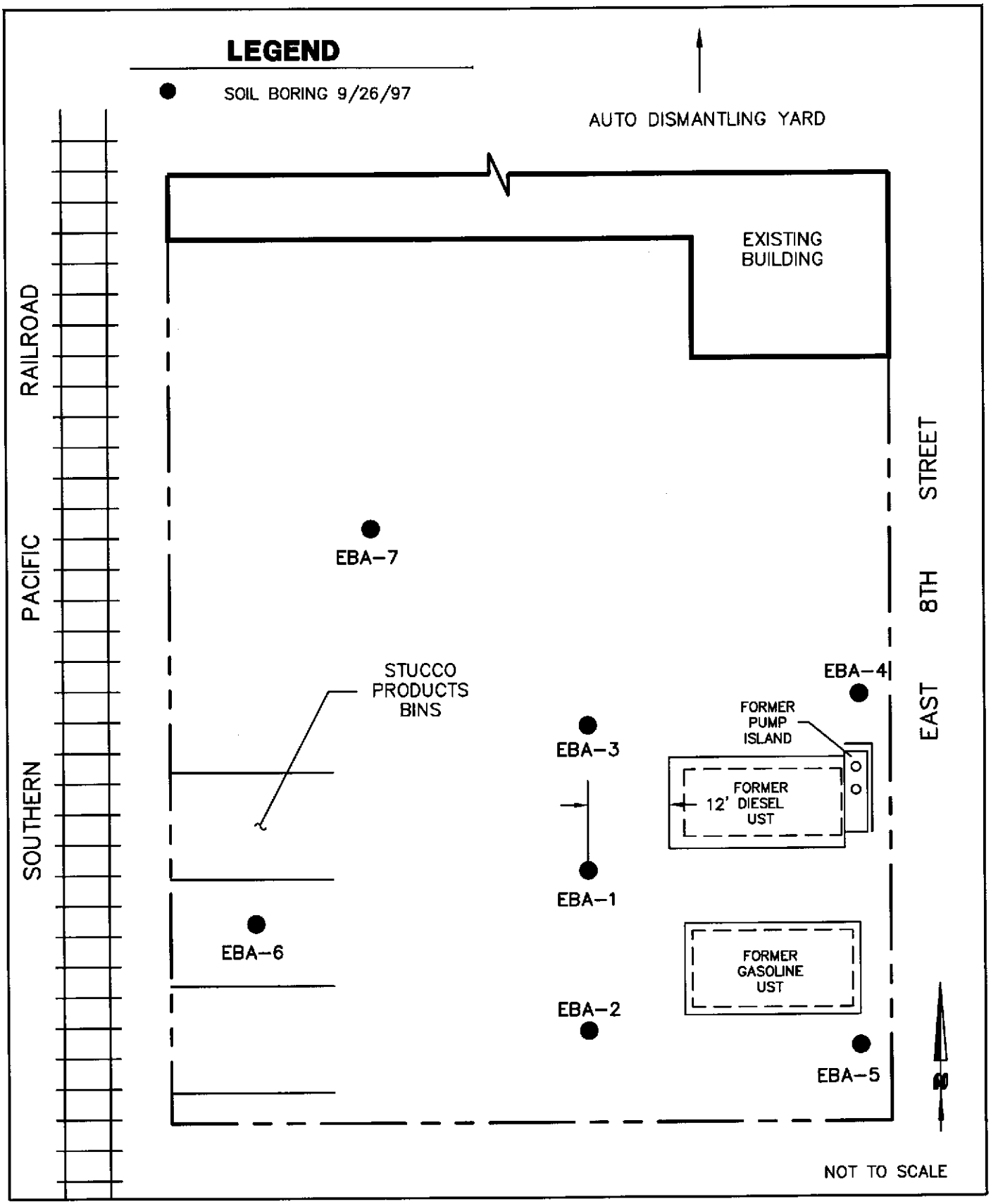

EBA

WESTERN STUCCO PRODUCTS
5115 EAST 8TH STREET
OAKLAND, CALIFORNIA

HISTORICAL SOIL BORING LOCATIONS

FIGURE
2
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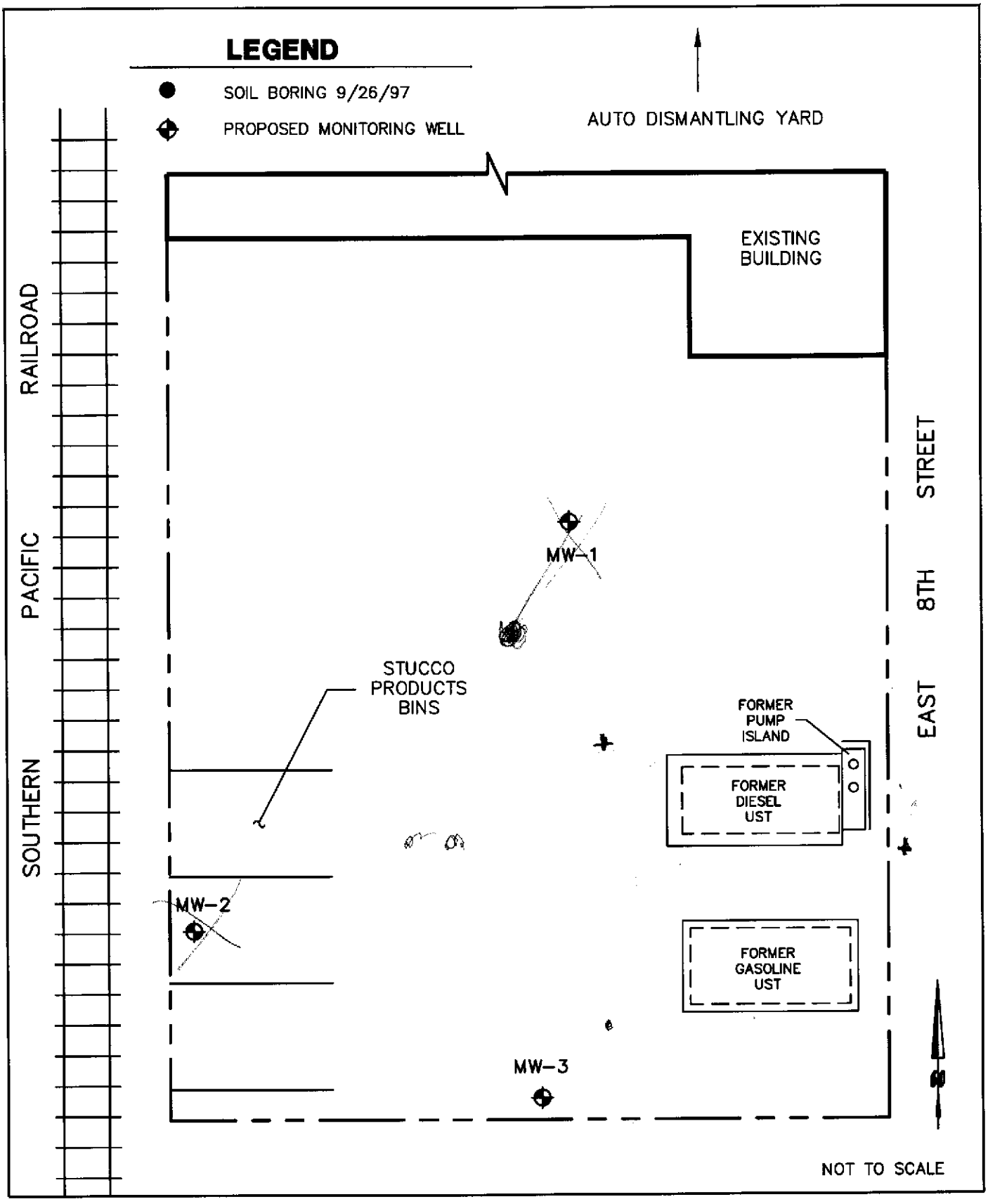

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WESTERN STUCCO PRODUCTS
5115 EAST 8TH STREET
OAKLAND, CALIFORNIA

PROPOSED MONITORING WELL LOCATIONS

FIGURE
3
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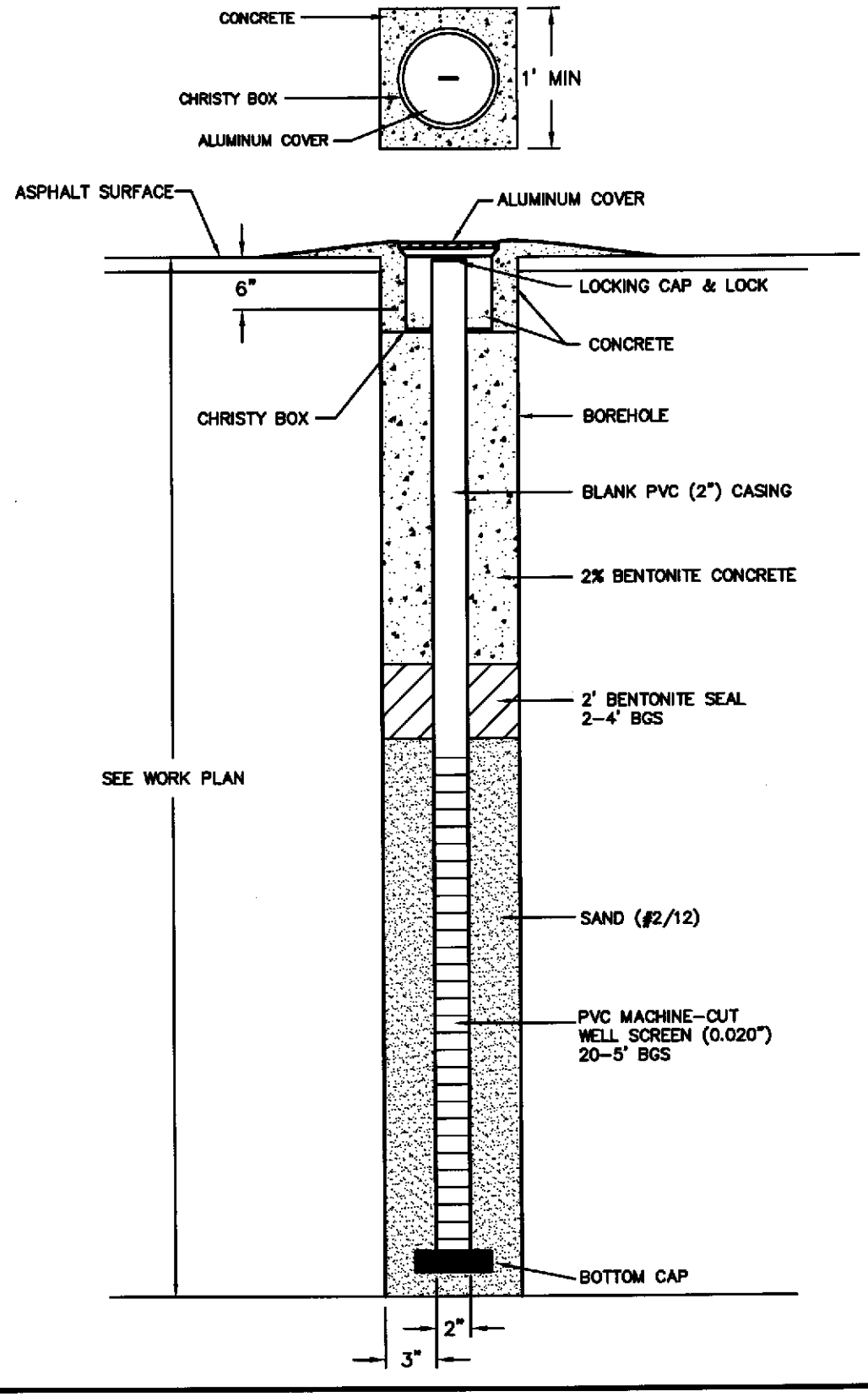

NOT TO SCALE

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WESTERN STUCCO PRODUCTS
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TYPICAL MONITORING WELL

CONSTRUCTION DETAIL

FIGURE
4

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