# Soil Management Plan
# 9th Street and Broadway Redevelopment
# Oakland, California

Prepared for

**City of Oakland Public Works Agency**
**Environmental Services Division**
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Oakland, California 94612-2034

HLA Project No. 49600.5

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## PLATES



## DISTRIBUTION

# 1.0 INTRODUCTION

This Soil Management Plan (SMP) has been prepared by Harding Lawson Associates (HLA) on behalf of the City of Oakland, Public Works Agency, Environmental Services Division (the City). The SMP describes soil management procedures to be used during site preparation and grading activities at the 9th Street and Broadway Redevelopment Project, Oakland, California (the Site, Plates 1 and 2). This plan is not intended to supersede any existing site grading plan, stormwater management plan, dust control plan, or health and safety plan.

HLA understands that the City of Oakland Redevelopment Agency (the Redevelopment Agency) has entered into an agreement to transfer the property at 9th Street and Broadway to a developer for construction of a low-rise hotel, hereafter referred to as the Garden Hotel project. The general contractor for the Garden Hotel is N. L. Barnes Construction Company Inc. (Barnes). This SMP addresses potential soil contamination, soil handling procedures to minimize the offsite migration of contaminants, and soil disposal at offsite facilities. This document is intended as guidance to Barnes, their subcontractors and consultants for the disposal and onsite management of the soils that will be disturbed during grading activities.

HLA understands that Barnes will prepare and oversee the implementation of a site-specific health and safety plan that addresses all health and safety issues for construction of the Garden Hotel. This health and safety plan should protect workers from potential for exposure to hazardous materials or health hazard as defined in Title 8, California Code of Regulations (CCR), Section 5192. All personnel participating in the field must be trained in the general and specific hazards unique to the job and, if applicable, meet recommended medical examination requirements. All site personnel and visitors should follow the guidelines, rules, and procedures contained in the safety plan.

In 1999, HLA submitted the Risk-Based Corrective Action (RBCA) Evaluation to the City and the Alameda County Environmental Health Division (County) (*HLA, 1999b*). The RBCA evaluated exposure of onsite personnel to contaminants present at the Site. On the basis of the RBCA evaluation, HLA concluded that soil with chemical concentrations above Tier I Risked Based Screening Levels (RBSL) or Tier II Site Specific Target Levels (SSTLs) are not anticipated to be encountered during the relatively shallow grading and excavation activities planned for the redevelopment of the Site. Based on the results of investigations conducted at the Site, the grading activities planned at the Site can be performed without the need for a licensed hazardous materials contractor or specially trained health and safety personnel. However, trained personnel will be provided for certain trades as required by Barnes. Soils designated for offsite disposal should be tested for the known onsite contaminants as referenced in the RBCA report. Soil characterized as hazardous waste during construction will require a licensed hazardous materials contractor for excavation and offsite disposal.

HLA understands that the grading activities will include the excavation, placement, and compaction of the existing soils. This SMP describes how the soil should be managed and disposed, if necessary. Construction activities will be well above the groundwater table; it is not expected that groundwater will be encountered and, therefore, groundwater issues are not addressed in this SMP.

## 1.1 Site Description

The 9th Street and Broadway property presently provides approximately 55,000 square feet of public parking, bounded by Broadway on the northwest, 9th Street on the southwest, Franklin Street on the southeast, and the Transpacific Building on the northeast (Plate 2).

Information provided by the Redevelopment Agency indicates that the Site's previous uses included print shops, paint supply shops, a

battery shop, a garage, a laundry, and a janitorial supply distributor (*HLA, 1993*). Two Bay Area Rapid Transit (BART) tunnels convey the KAL and KAR lines beneath the Site as shown on Plates 2 and 3. The top of the shallower tunnel is approximately 17 feet below ground surface (bgs).

## 1.2 Redevelopment Plan

The Developer has entered into an agreement with the Redevelopment Agency to take ownership of the Site and construct a five-story hotel, referred to as the Garden Hotel. Construction is scheduled to begin in May 2000. The hotel will be constructed with slab on grade and spread footing foundations; no piles will be used. Upon completion, the Garden Hotel is anticipated to occupy approximately 35,000 square feet on the northwestern portion of the Site. The southeastern portion of the Site will be developed under a separate plan, which has not been finalized. HLA understands that the soil management procedures outlined herein apply to both portions of the Site. Plate 3 shows the proposed redevelopment plans for the Site.

# 2.0 SUMMARY OF ENVIRONMENTAL SITE CONDITIONS

## 2.1 Summary of Investigation History

HLA and Secor International, Inc. (Secor) have conducted three investigations at the Site to address the presence of contaminants: HLA conducted a preliminary soil investigation in 1993; Secor collected soil and groundwater samples and prepared a summary report of the existing soil and groundwater data in 1998; and, in 1999, HLA collected soil and groundwater samples and reported the results to the City and County.

HLA's 1993 investigation evaluated the Site conditions in anticipation of Site development. Twenty-seven soil borings were drilled to depths ranging from 3.5 to 30 feet bgs. Soil samples were tested for total petroleum hydrocarbons (TPH) as gasoline (TPHg), TPH as diesel (TPHd), benzene, toluene, ethylbenzene and xylenes (BTEX), volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and Title 22, CCR, California Administrative Metals list (CAM 17), (antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc). HLA's investigation included a geophysical survey of the Site, (*HLA, 1993*). HLA also installed two groundwater monitoring wells onsite (MW-20 and MW-21) and sampled these two wells, as well as a third well (MW-7), which was located adjacent to the property but originally installed as part of a separate investigation.

In 1998, Secor collected groundwater samples from monitoring wells MW-7, MW-20, and MW-21, and advanced four soil borings on the Site ranging in depth from 4 to 32 feet bgs. The groundwater and soil samples were tested for TPHg, TPHd, BTEX, and VOCs. The soil samples were also tested for lead (*Secor, 1998*).

In 1999, HLA collected groundwater samples from monitoring wells MW-7, MW-20, and MW-21 and advanced two soil borings on the Site. The borings were completed to a final depth of 32 feet bgs after which HLA collected groundwater grab samples through temporary well casings. The groundwater and soil samples were tested for TPHg, TPHd, VOCs, SVOCs, poly-aromatic hydrocarbons (PAHs) and CAM-17 metals (*HLA, 1999a*). HLA completed a RBCA evaluation on behalf of the City for submittal and approval to the Alameda County Environmental Health Division (County) (HLA 1999b). With the approval of the County, HLA abandoned the three groundwater monitoring wells (MW-7, MW-20, and MW-21) in January 2000.

## 2.2 Human Health Risk Assessment

HLA conducted a human health risk evaluation using the RBCA approach recommended by the City of Oakland in *Oakland Risk-Based Corrective Action: Technical Background Document (Oakland, 1999)*. The Oakland RBCA is based on methods developed by the American Society of Testing and Materials (ASTM) in *Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites* (*ASTM, 1995*). Because the presence of structures and pavement will prevent direct contact with soil and groundwater by future hotel workers, the only potentially complete exposure pathway at the Site for these receptors is inhalation of vapors emitted by VOCs in soil and groundwater. Therefore, for subsurface soil (defined as soil below 3 feet) and groundwater, the pathways evaluated in the RBCA were inhalation of vapors in indoor and outdoor air. HLA evaluated exposure to contaminants in the surface-soil by construction workers using the Oakland RBCA approach for direct contact with exposed soils. Consistent with Oakland guidance (*Oakland, 1999*), HLA used RBSLs and SSTLs for this evaluation.

Note that the Oakland RBSLs and SSTLs for workers are based on commercial worker

exposure assumptions, such as 25 years exposure duration at the Site. This assumption is highly conservative for exposure during construction because construction workers are expected to be present at the Site for less than one year. All detected chemicals in soil were selected as soil chemicals of potential concern (COPCs).

Tier 1 RBSLs (*Oakland, 1999*) were compiled for the following potential receptors and exposure pathways:

- Commercial (construction) worker receptor-direct exposure to surface soil via ingestion, dermal contact, dust inhalation, and outdoor vapor inhalation
- Commercial (hotel) worker receptor-inhalation of vapors from subsurface soil in indoor and outdoor air
- Commercial (hotel) worker receptor-inhalation of vapors from groundwater in indoor and outdoor air.

Tier 1 evaluation for construction workers exposed to surface soil found that the exposure point concentrations (EPCs) for arsenic, benzo(a)anthracene, benzo(a)pyrene, and indeno(1,2,3-cd)pyrene were higher than the RBSLs for the direct soil contact pathway. EPCs are concentrations of the COPCs at locations where exposure of the receptors is assumed to take place (i.e., exposure points). However, a Tier 2 evaluation was performed to evaluate exposure of construction workers to surface soil.

Results of the Tier 2 RBCA evaluation indicate that potential exposure to arsenic, benzo(a)anthracene, benzo(a)pyrene, and indeno(1,2,3-cd)pyrene in soil via ingestion, dermal contact, dust inhalation, and vapor inhalation are considered unlikely to result in unacceptable health risks at the Site under the exposure conditions evaluated. COPCs without RBSLs were evaluated using U.S. EPA Region 9 preliminary remediation goals (PRGs). No exceedances were noted.

To summarize, the RBCA evaluation of detected chemicals at the Site demonstrated that unacceptable cancer risks and noncancer health effects are unlikely to occur for construction workers potentially exposed to chemicals in soil.

# 3.0 SOIL MANAGEMENT PLAN

On the basis of the review of soil and groundwater analytical data from the Site and the RBCA evaluation, exposure to soil with chemical concentrations above the RBSLs or SSTLs is not expected. This SMP therefore addresses soil management practices with the intent to either contain all the excavated soils within the limits of the Site or to dispose of the soils offsite at a permitted landfill. However, the potential exists for construction activities to encounter contamination at concentrations higher than encountered in past investigations. HLA, the City, and Barnes will coordinate activities so that HLA personnel will be onsite during earthwork activities to observe soil management practices and to assist in the identification of contaminated soil. However, because HLA will not be onsite on a full time basis during grading, this SMP assumes that Barnes' health and safety plan will provide for monitoring such that soil with levels of contamination above the RBSLs or SSTLs will be noted, and Barnes will inform HLA immediately that the presence of such contaminated material is suspected.

## 3.1 Grading Activities

The Garden Hotel will be constructed with a shallow foundation system extending to depths in the range of 2 to 4 feet. The development plans calls for construction of a pool that will require an excavation of 7 to 8 feet bgs. Well holes for hydraulic elevators will extend approximately 50 to 55 feet below finished ground floor elevation. The Garden Hotel will cover the northwestern portion of the Site with buildings, walkways, and a small parking area. Landscaped areas will use clean imported fill.

Barnes is first planning the demolition of the parking lot facility in early May 2000, followed by the grading and excavation activities for the new buildings. HLA anticipates that the demolition debris of asphalt and concrete will generally be free of soil and that the debris will be stockpiled and off-hauled and disposed at a permitted landfill or recycling facility. Barnes will then excavate and recompact the existing soils in the upper 7 to 12 feet to provide a better foundation layer for the proposed structures. Barnes anticipates soil off-haul during structural and utilities excavations. Although HLA's RBCA evaluation did not consider construction worker's exposure to soils deeper than 3 feet bgs, HLA has reviewed the chemical concentrations of soil samples collected between 3 and 13 feet bgs, and found that no chemical concentrations exceeded the RBSLs or the SSTLs. Therefore, the data indicate that the contractor's risk of exposure should not increased by excavating to a depth of 13 feet.

HLA understands that Barnes will contact HLA when the well holes for the hydraulic elevators are installed, and HLA will observe the soil for the presence of contaminants. If appropriate, HLA or another City contractor should sample and analyze the soil cuttings from the well holes to evaluate if the soils can be reused onsite or should be stockpiled for offsite disposal.

### 3.1.1 Identification of Contaminated Soil

If Barnes encounters any signs of contamination, Barnes should first contact the City and HLA to evaluate the extent of the contamination prior to continuing with earthwork activities. Signs of contamination include volatile organic chemical odors, discoloration, or sustained readings on the photo-ionization detector (PID) above the action level concentrations in the health and safety plan prepared by Barnes. The City, HLA, or another contractor to the City may then sample and analyze the suspect material, compare the measured concentrations to the RBSLs and SSTLs, and evaluate if removal of the material is required by a hazardous materials contractor. If removal from the Site is required, then the City should designate a hazardous materials contractor to mobilize equipment and personnel to excavate and dispose of the material. Confirmation sampling should be conducted after the material has been excavated to check

that soil with chemical concentrations that exceed the RBSLs or SSTLs do not remain.

Visual observations and direct-reading instrument monitoring of the soil with a PID should be used to monitor the soil quality. If PID readings exceed the health and safety plan's action levels, the City, HLA, or another contractor to the City will determine how to address the contamination and the conditions under which construction can proceed.

## 3.2 Soil Management

This section describes the procedures for handling soil that is to remain onsite or be disposed of offsite, stormwater and dust control, stockpiling, testing, and transportation of potentially contaminated soil.

### 3.2.1 Onsite Soil Management

#### 3.2.1.1 Stormwater Control

The contractor should provide adequate controls to prevent the migration of soil or contaminants to the storm drains. Barnes should install all erosion and sediment control devices and inspect and repair them after each rainfall event as necessary. Soil stockpiles areas should be bermed to prevent sediment from migrating from the stockpile area to the storm sewer system. Sediment from stockpile run-off should be contained onsite using silt fences, booms, or other available techniques. The run-off water should be allowed to soak into the soil onsite, and no offsite migration should be allowed.

#### 3.2.1.2 Dust Control

This section presents the procedures that should be followed to control dust during earthwork activities. The goals of these dust control measures are to limit a net increase in dust emissions at the downwind side of the Site.

The primary potential exposure pathway to the public is inhalation of dust generated during grading and excavation. To prevent potential airborne migration of particular matter, Barnes should comply with a strict dust control program during all grading operations. The primary methods of controlling dust should be application of water and/or dust suppressant foam. Barnes should apply sufficient water or suppressant foam to control dust migration.

Water should be sprayed over areas where dust may be generated. Additional water may be applied in a fine spray to prevent exposed soil from drying out during excavation and hauling. Haul roads should be wetted with water from water trucks or other means. During demolition of the remaining pavement, a water mist should be sprayed on the work area, as necessary, to control dust. The quantity of water applied should be regulated to prevent offsite runoff. Temporary berms should be installed to prevent runoff, if necessary. If the water techniques do not adequately control the dust, chemical agents such as 3M Company's FX9162 or equivalent unstabilized foam may be used.

If visual observations indicate that downwind dust concentrations are greater than upwind levels on any given day, Barnes should increase the application of water or dust-suppressant foam. Barnes may also implement other construction practices to minimize the dust migration.

### 3.2.2 Offsite Disposal

#### 3.2.2.1 Soil Stockpiling

The contractor should move the potentially contaminated soil designated for offsite disposal to a stockpile area. The contractor should cover all stockpiles at times when he is not adding soil to the stockpiles and at the end of each day. The stockpiles should remain covered with plastic sheeting until transported offsite. The stockpiles should be underlain with a plastic liner having a minimum thickness of 10 mils. The contractor should protect the liner from damage by equipment. Soil samples of the stockpiles should be collected and analyzed to determine the proper offsite disposal location. If the stockpiled material is know to contain hazardous volatiles, the contractor should notify the Bay Area Quality Management District.

Once the stockpile is accepted for disposal, it should be loaded into trucks and covered prior to leaving the Site. All soil characterized as hazardous material should be transported by a licensed waste hauler with hazardous wastes manifests signed by the City. When the excavation and removal of contaminated soil is complete, all grading and excavation equipment must be cleaned of excess soil to minimize migration of soil offsite.

### 3.2.2.2 Stockpile Testing

Soil for offsite disposal should be characterized using procedures and methods recommended by the landfill or recycling facility, and consistent with hazardous waste classification based on criteria established in Title 22, CCR. At a minimum, the stockpiled soil should be tested with one four-point composite sample for every 50 cubic yards of soil for the following constituents: TPHd, TPH as motor oil (TPHmo), soluble concentrations of CAM 17 metals, and physical properties; reactivity, corrosivity, and ignitability (RCI).

After receiving stockpile analytical results, the disposition of the soil should be evaluated by Barnes or the City to classify the soil as hazardous or nonhazardous. The appropriate disposal facility should be identified by Barnes or the City, and the results should be forwarded to the facility for confirmation of the soil's acceptance for disposal.

### 3.2.2.3 Soil Transportation

Upon selecting the disposal facility, the contractor should load and off-haul the soil with trucks that are fully licensed and permitted to carry that respective waste classification (i.e., hazardous or nonhazardous). If the soil has been characterized as hazardous, a hazardous materials contractor must be used. The trucking shall be conducted in compliance with California Department of Transportation (DOT) regulations and in accordance with other applicable federal and local regulations.

If the material has been characterized as hazardous waste, the following information should be recorded in the transportation log of each truck:

- Waste type
- Designated disposal facility name and location
- Waste profile number
- Waste manifest or bill-of-lading number
- Date shipped
- Truck number.

A City representative should sign as the generator, all bill-of-lading and/or manifests. The driver should also sign the shipping papers and a copy should be retained by the hazardous material contractor. These shipping papers should accompany the driver during transport to the disposal facility. The disposal facility should sign the papers, and copies should be returned to City.

The contractor should minimize the offsite tracking of potentially contaminated soil on the trucks to the extent possible by preventing the trucks from passing over wet soils and by cleaning their wheels upon exiting the Site, if necessary.

## 4.0 SUMMARY AND RECOMMENDATIONS

- Barnes should prepare a site specific health and safety plan that describes the major work activities and the potential hazards to construction personnel including exposure to chemicals in soil described in the referenced reports.
- Soil that is designated for offsite disposal should be sampled for known contaminants for adequate characterization as per Title 22 of the CCR.
- Barnes should notify the City when the excavation for the Site's elevators is planned. HLA, the City, and Barnes will coordinate activities so that HLA will be onsite to observe the soils cuttings, and evaluate if they can remain onsite and be used as fill material, or if they should be disposed offsite.
- The City, HLA, or another City contractor should respond immediately to a notification by Barnes that they have encountered signs of potential contamination. Depending on the observed degree of contamination relative to the RBSLs or SSTLs, the soil should be excavated and stockpiled and samples should be collected and analyzed to see if the soil concentrations exceed the RBSLs or SSTLs. Clearance soil samples should also be collected to confirm that all material above the RBSLs or SSTLS have been removed.
- The City should transmit this soil management plan to the County and request their approval. The City should also advise the County of the schedule for the grading activities.
- Barnes should implement this SMP.

## 5.0 REFERENCES


American Society for Testing and Materials (ASTM), 1995. *Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites.* E1739-95.

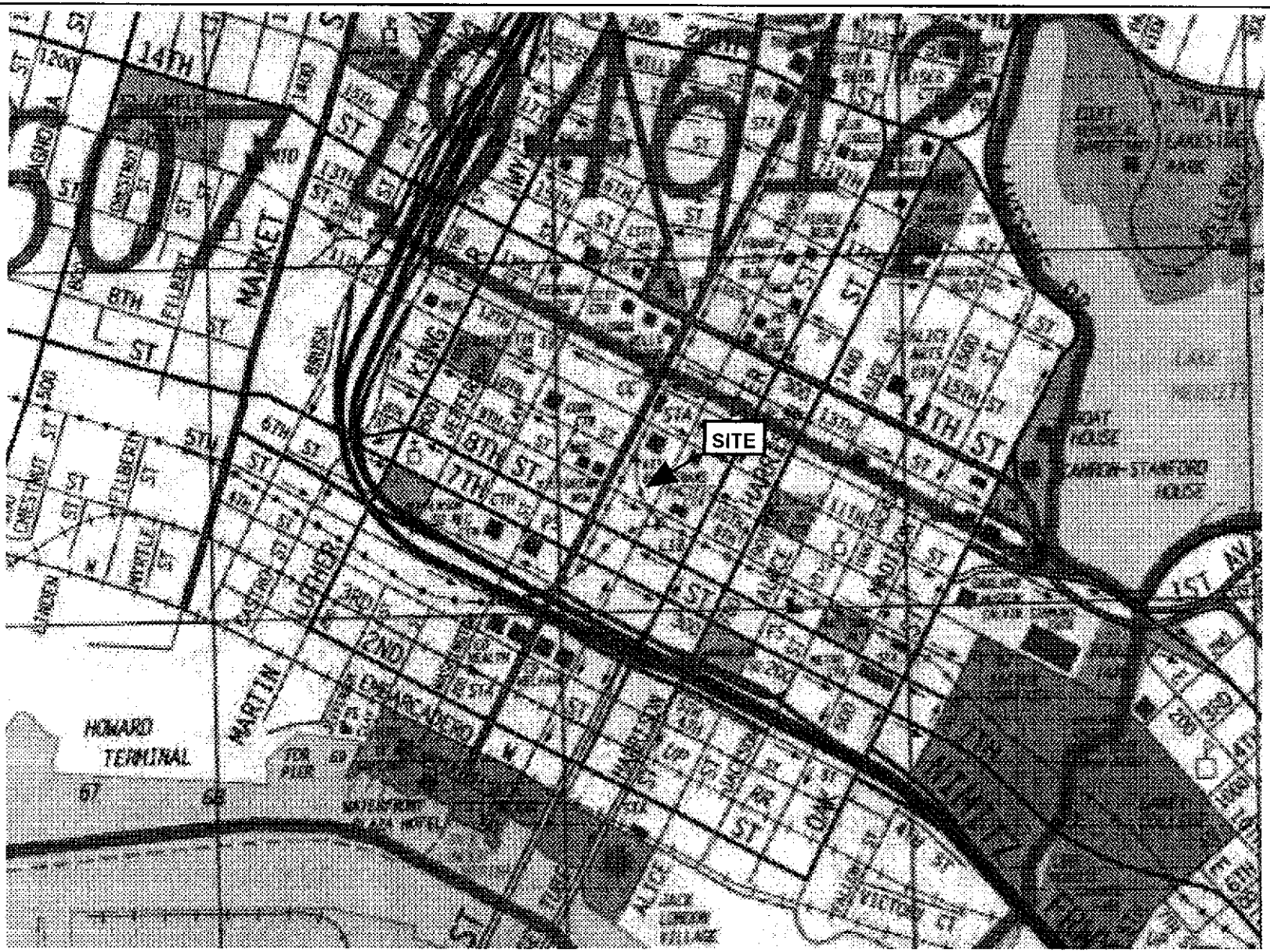
Harding Lawson Associates, (HLA) 1993. *Preliminary Soil Characterization, Oakland Broadway Block, Chinatown Redevelopment Project Area, 9th Street and Broadway, Oakland, California.* November 11.

_____, 1999a. *Results of Soil and Groundwater Investigation, 9th Street and Broadway, Oakland, California. Feasibility Study, Middlefield-Ellis-Whisman Area, Mountain View, California.* September 29.

_____, 1999b. *Risk-Based Corrective Action (RBCA) Evaluation, 9th Street and Broadway Oakland, California.* October 28.

City of Oakland (Oakland), 1999. *Oakland Risk-Based Corrective Action: Technical Background Document. Environmental Services Division.* May 17.

Secor, 1998. *Summary Report for Limited Soil and Groundwater Investigation at 9th Street and Broadway in Oakland, California.* April 27.




Reference: Thomas Brother's Map, 1997

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**VICINITY MAP**
**Soil Management Plan**
**9th Street and Broadway**
**Oakland, California**

PLATE **1**

| DRAWN | PROJECT NUMBER | APPROVED | DATE | REVISED DATE |
|---|---|---|---|---|
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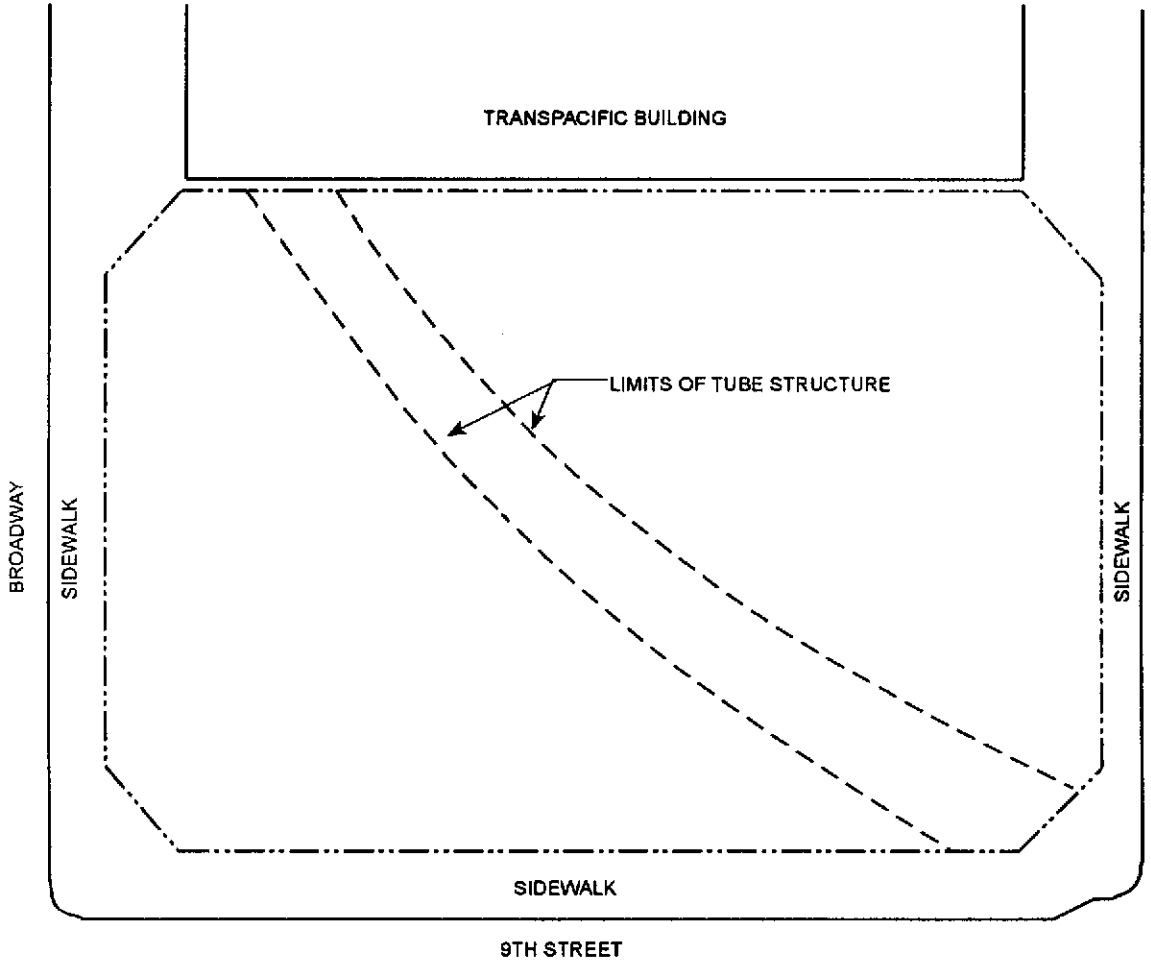
P:/9th & Broadway/SMP




**LEGEND**

Property Line

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SCALE IN FEET

HLA

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**SITE MAP**
**Soil Management Plan**
**9th Street and Broadway**
**Oakland, California**

PLATE **2**

| DRAWN | PROJECT NUMBER | APPROVED | DATE | REVISED DATE |
|---|---|---|---|---|
| jgm | 49600.5 | | 2/28/00 | |

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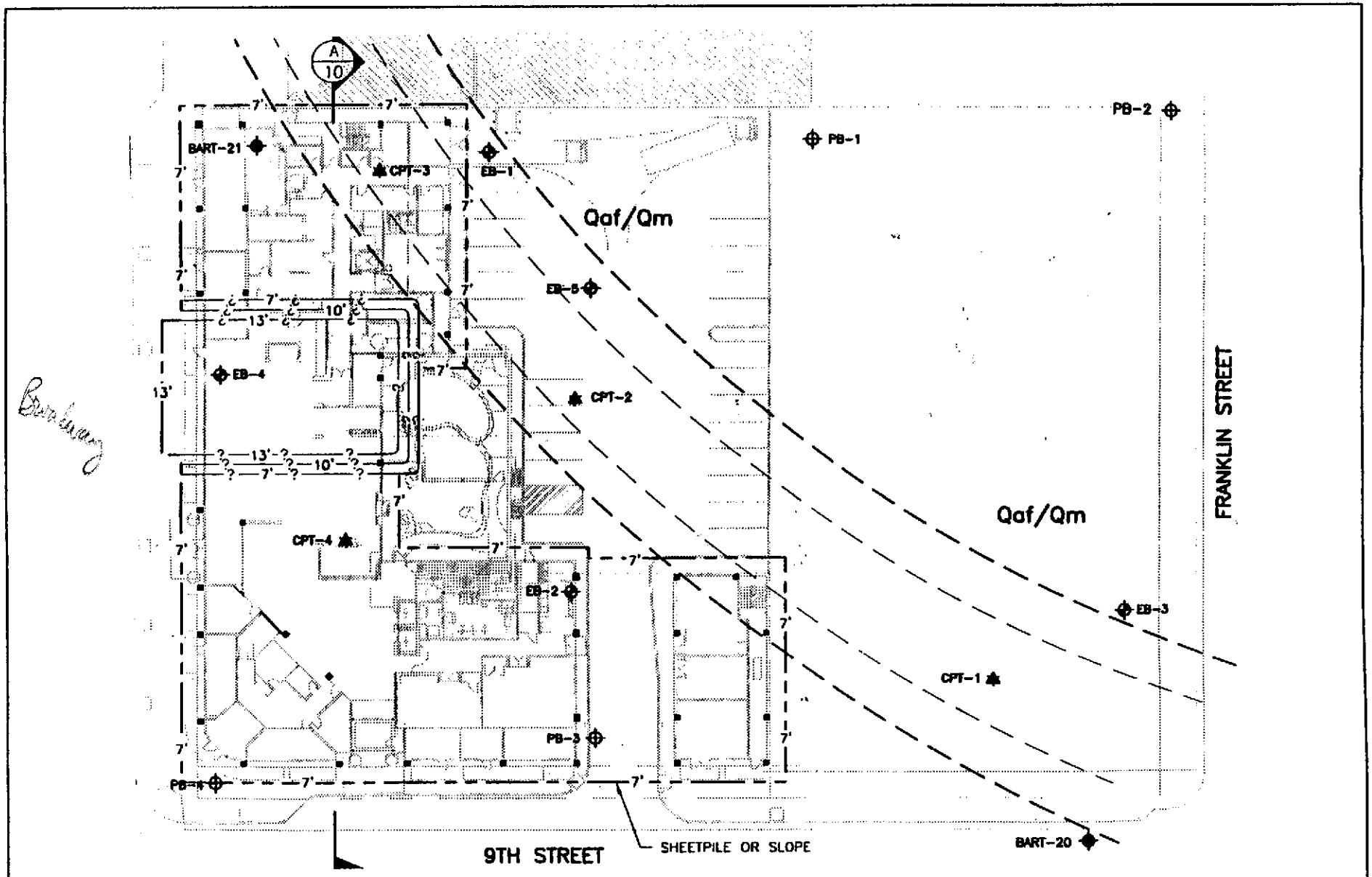


building plan by Patri Merker Architects

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Proposed Garden Hotel Development
Soil Management Plan
9th Street and Broadway
Oakland, California

PLATE 3

| DRAWN | PROJECT NUMBER | APPROVED | DATE | REVISED DATE |
|---|---|---|---|---|
| jgm | 49600.5 | | 2/28/00 | |

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9th Street and Broadway Redevelopment
Oakland, California

March 27, 2000

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