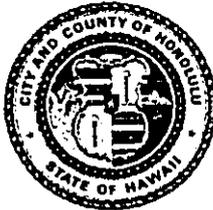


DEPARTMENT OF WASTEWATER MANAGEMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
HONOLULU, HAWAII 96813

RECEIVED

JEREMY HARRIS
MAYOR



'95 JAN -9 AM 11:57

OFFICE OF
QUALITY

FELIX B. LIMTIACO
ACTING DIRECTOR
CHERYL K. OKUMA-SEPE
Deputy Director

WEA 95-2

January 5, 1995

Director
Office of Environmental Quality Control
220 S. King Street, 4th Floor
Honolulu, Hawaii 96814

Dear Sir:

Re: Negative Declaration for the Honolulu Beneficial
Sludge Reuse Project using the N-Viro Soil Process

The Department of Wastewater Management has reviewed the comments received during the 30-day public comment period which began on November 23, 1994. The Department of Wastewater Management has determined that this project will not have significant environmental effects and has issued a negative declaration. Please publish this notice in the January 23, 1995 OEQC Bulletin.

We have enclosed a completed OEQC Bulletin Publication Form and four copies of the final EA.

Please contact Mr. James Honke at 527-5040 if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Felix B. Limtiaco", is written over the typed name and title.

FELIX B. LIMTIACO
Acting Director

Enclosures

1995-01-23-0A-PEA Honolulu Beneficial Sludge Reuse JAN 23 1995
using N-Viro Soil Process

HONOLULU BENEFICIAL SLUDGE REUSE
PROJECT USING THE N-VIRO SOIL PROCESS

at

KAOMI LOOP, KAPOLEI, HAWAII
(TMK: 1-9-1-26: 31)

FINAL ENVIRONMENTAL ASSESSMENT

Submitted to:

Department of Wastewater Management



ASSOCIATES, INC.
ENGINEERS/ARCHITECTS

JANUARY 1995

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SECTION 1

SECTION 1
INTRODUCTION AND SUMMARY

1.1 APPLICANT/PROPOSING AGENCY

N-Viro International Corporation
Oakland, California

1.2 APPROVING AGENCY

Department of Wastewater Management
City and County of Honolulu

1.3 AGENCIES CONSULTED IN MAKING THE ASSESSMENT

1. Solid and Hazardous Waste Branch, Hawaii State Department of Health
2. Wastewater Branch, Hawaii State Department of Health
3. Clean Water Branch, Hawaii State Department of Health
4. Clean Air Branch, Hawaii State Department of Health
5. Department of Land Utilization, City and County of Honolulu
6. Department of General Planning, City and County of Honolulu
7. Department of Wastewater Management, City and County of Honolulu

8. Commission on Water Resources Management, Department of Land and Natural Resources, State of Hawaii
9. Hawaii State Land Use Commission
10. Hawaii State Office of Environmental Quality Control
11. Historic Sites Preservation Office, Department of Land and Natural Resources, State of Hawaii
12. Office of Conservation and Environmental Affairs, Department of Land and Natural Resources, State of Hawaii

SECTION 2

SECTION 2
PROJECT DESCRIPTION

N-Viro International Corporation proposes to construct a facility which will be capable of converting up to 50 dry tons per day of dewatered sewage sludge solids from the City and County of Honolulu Wastewater Treatment Plants (WWTPs) to a high quality pasteurized product using the patented N-Viro Advanced Alkaline Stabilization with Subsequent Accelerated Drying (AASSAD) process. The product will be suitable for beneficial reuse as a soil conditioner or amendment.

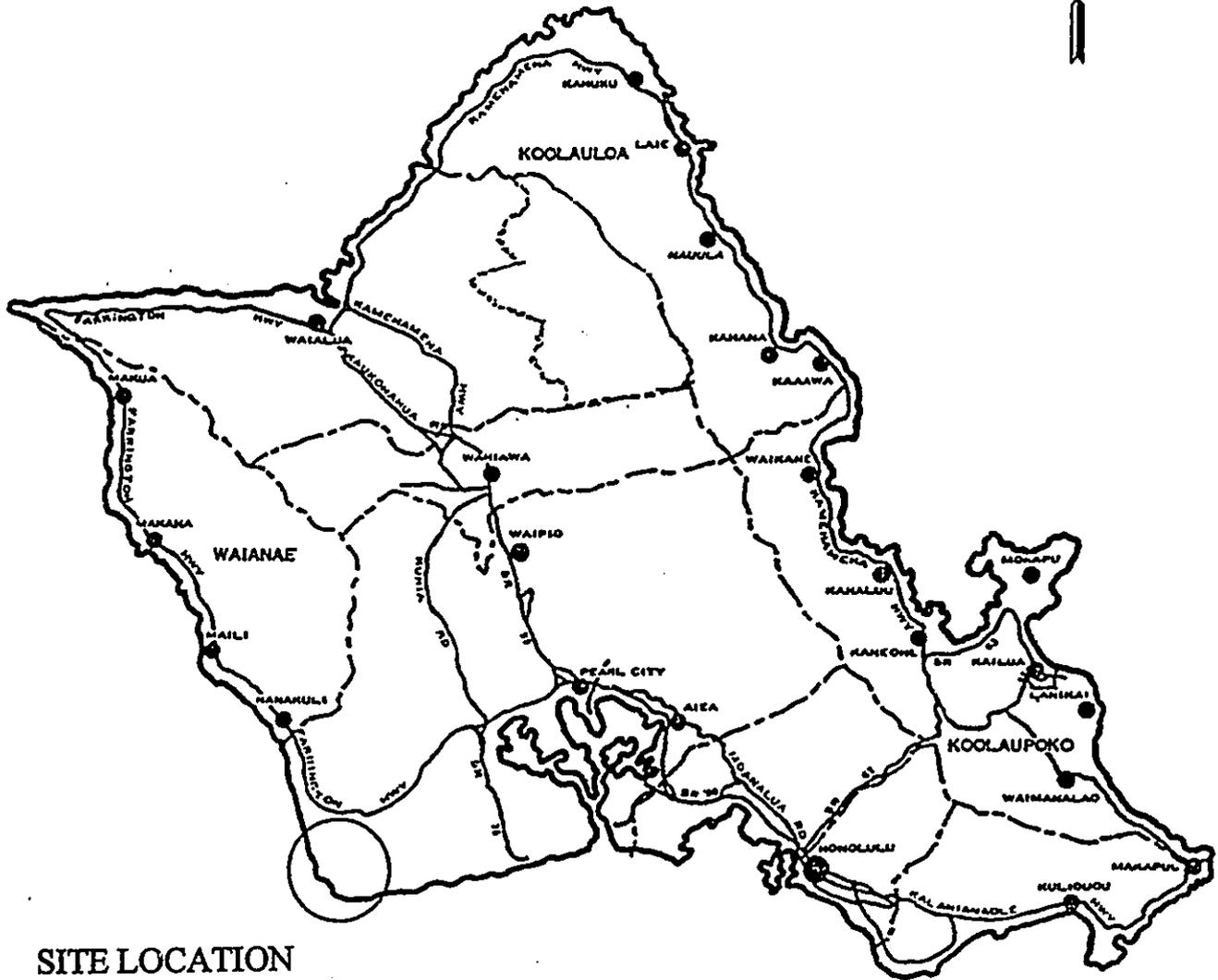
The proposed site is located in the James Campbell Industrial Park (JCIP) on the Ewa plain of the southwest coast of the island of Oahu, as shown in Figure 2-1. The JCIP is bounded by Malakole Road to the north, the U.S. Naval Air Station Barbers Point to the east and by the Pacific Ocean to the south and west. A vicinity map of JCIP is shown in Figure 2-2.

The subject property is a 1.7 acre parcel located in the southwestern corner of JCIP at 91-120 Kaomi Loop. The property Tax Map Key is 1-9-1-26:31 with coordinates Latitude 21° 15' 15.10" N and Longitude 158° 06' 44.59"W. The subject property is shown in Figure 2-3.

2.1 SITE HISTORY

The project site, along with the rest of what is now the JCIP, was purchased by James Campbell in 1877. The area was known as Honouliuli Ranch at the time and was used primarily for grazing and piggeries. The area was considered too arid for agriculture until the first artesian well was drilled by the James Campbell Estate in the 1930's. In 1958, the Estate of

OAHU



SITE LOCATION

FIGURE 2-1 PROJECT LOCATION MAP

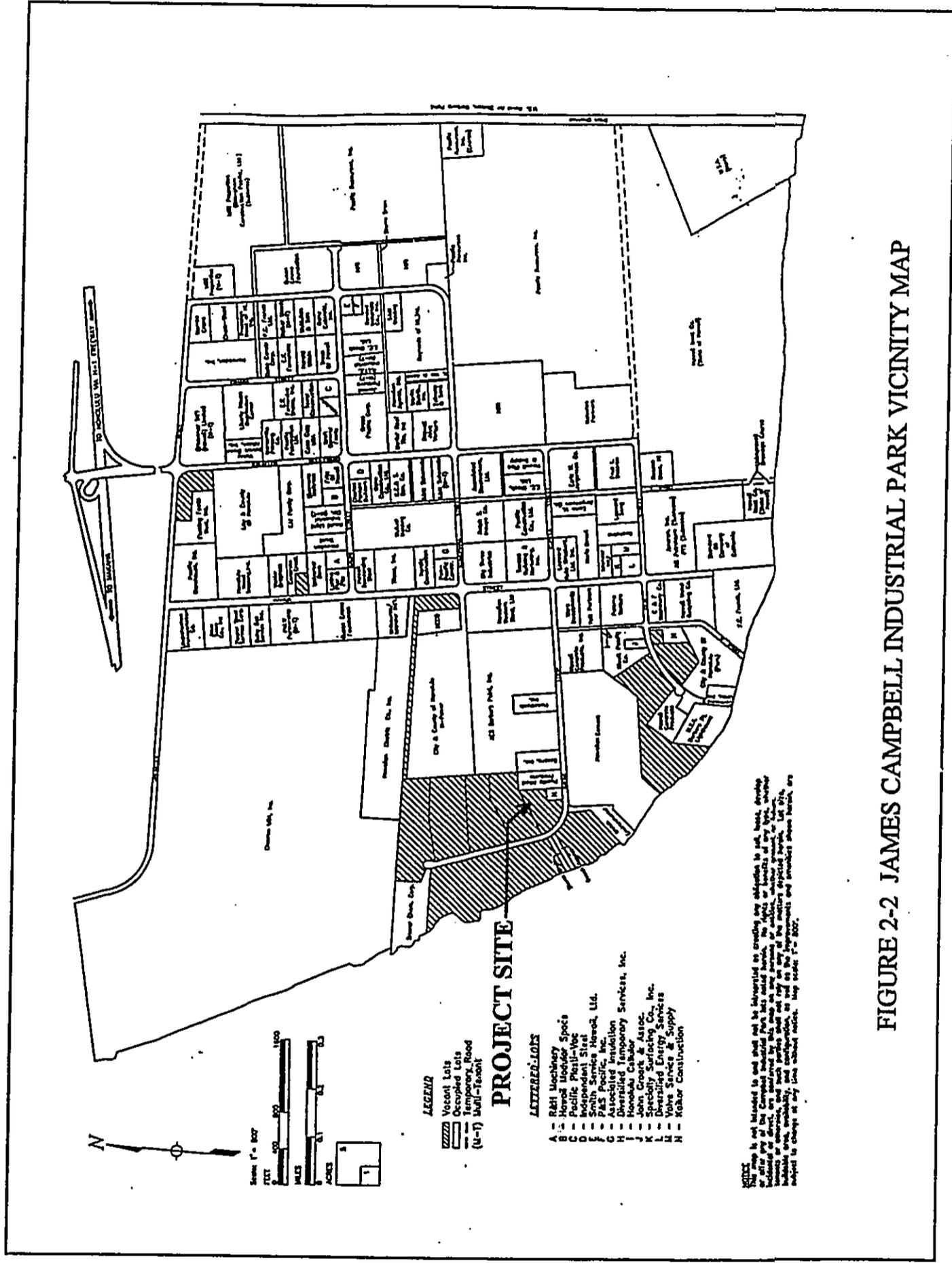
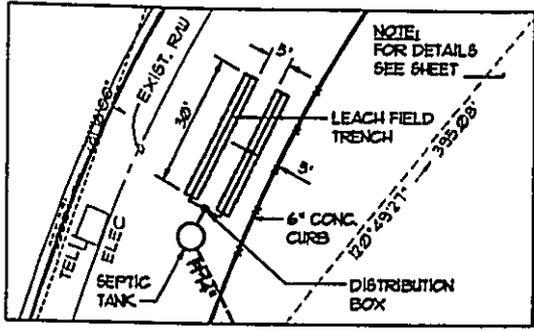
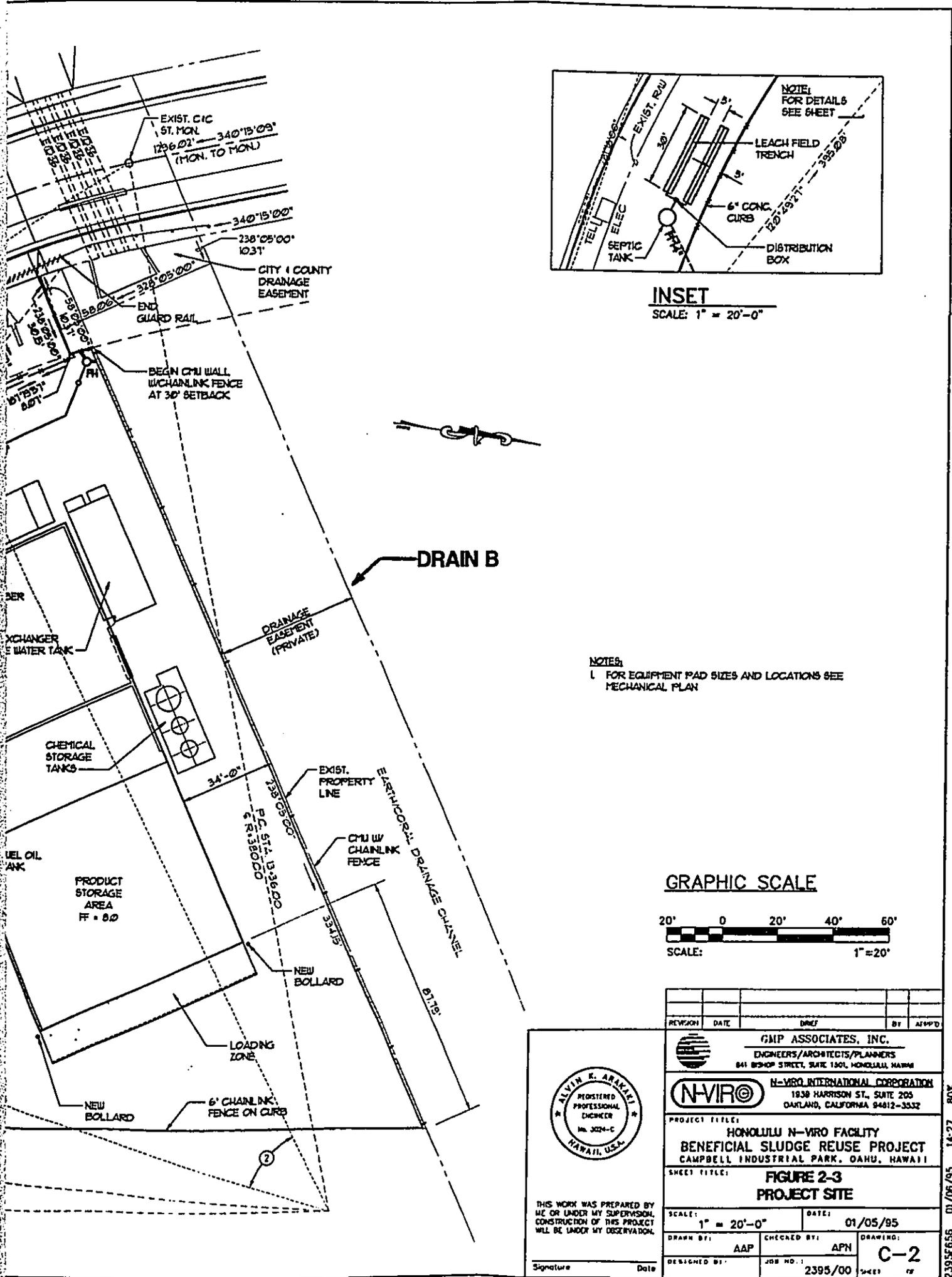


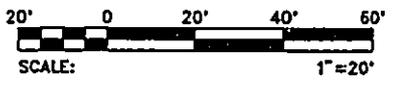
FIGURE 2-2 JAMES CAMPBELL INDUSTRIAL PARK VICINITY MAP



INSET
SCALE: 1" = 20'-0"

NOTES
1. FOR EQUIPMENT PAD SIZES AND LOCATIONS SEE MECHANICAL PLAN

GRAPHIC SCALE



REVISION	DATE	BY	APPROV'D

ALVIN K. ARAKELI
REGISTERED
PROFESSIONAL
ENGINEER
No. 3024-C
HAWAII, U.S.A.

GMP ASSOCIATES, INC.
ENGINEERS/ARCHITECTS/PLANNERS
841 BISHOP STREET, SUITE 1501, HONOLULU, HAWAII

N-VIRO
N-VIRO INTERNATIONAL CORPORATION
1938 HARRISON ST., SUITE 205
OAKLAND, CALIFORNIA 94612-3532

PROJECT TITLE:
**HONOLULU N-VIRO FACILITY
BENEFICIAL SLUDGE REUSE PROJECT
CAMPBELL INDUSTRIAL PARK, OAHU, HAWAII**

SHEET TITLE:
**FIGURE 2-3
PROJECT SITE**

SCALE: 1" = 20'-0" DATE: 01/05/95

DRAWN BY: AAP CHECKED BY: APN DRAWING: C-2

DESIGNED BY: JOB NO.: 2395/00 SHEET: 12

Signature _____ Date _____

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James Campbell developed the James Campbell Industrial Park. Utilities and roads were put in, and the lots were cleared and graded.

A search for aerial photographs of the area resulted in four photos taken over a span of 42 years. The earliest photo, shown in Figure 2-4, was taken in 1952 and shows the entire JCIP covered with vegetation. When the second photo was taken in 1969 (Figure 2-5), the JCIP had already been developed, and Kaomi Loop, as well as the drainage ditch to the north of the project site, had been built. Hawaiian Cement and a few small buildings are shown in the vicinity of the subject property, and most of the land surrounding the project site had been cleared and graded. Several more facilities were built between 1969 and 1982, as shown in Figure 2-6. However, the majority of the land adjacent to the subject property continued to remain undeveloped. The latest aerial photo taken in 1994 (Figure 2-7) shows the AES Barbers Point and H-Power facilities on the eastern and northeastern boundaries of the project site. However, the adjacent land to the north and west of the subject property remains undeveloped. The visual chronology provided by these photos indicates that the proposed project site has always been vacant.

2.2 PROPOSED FACILITIES

The proposed building, with a total area of 18,055 sq. ft., will enclose the sludge unloading pad, the product mixing equipment, the dryer system and the product storage area. In addition to the building, there will be four silos, approximately 42 feet in height, containing alkaline admixtures. An office, which will be separate from the building, will also be built.

The parking lot will include five compact stalls and one handicapped stall.

DOCUMENT CAPTURED AS RECEIVED

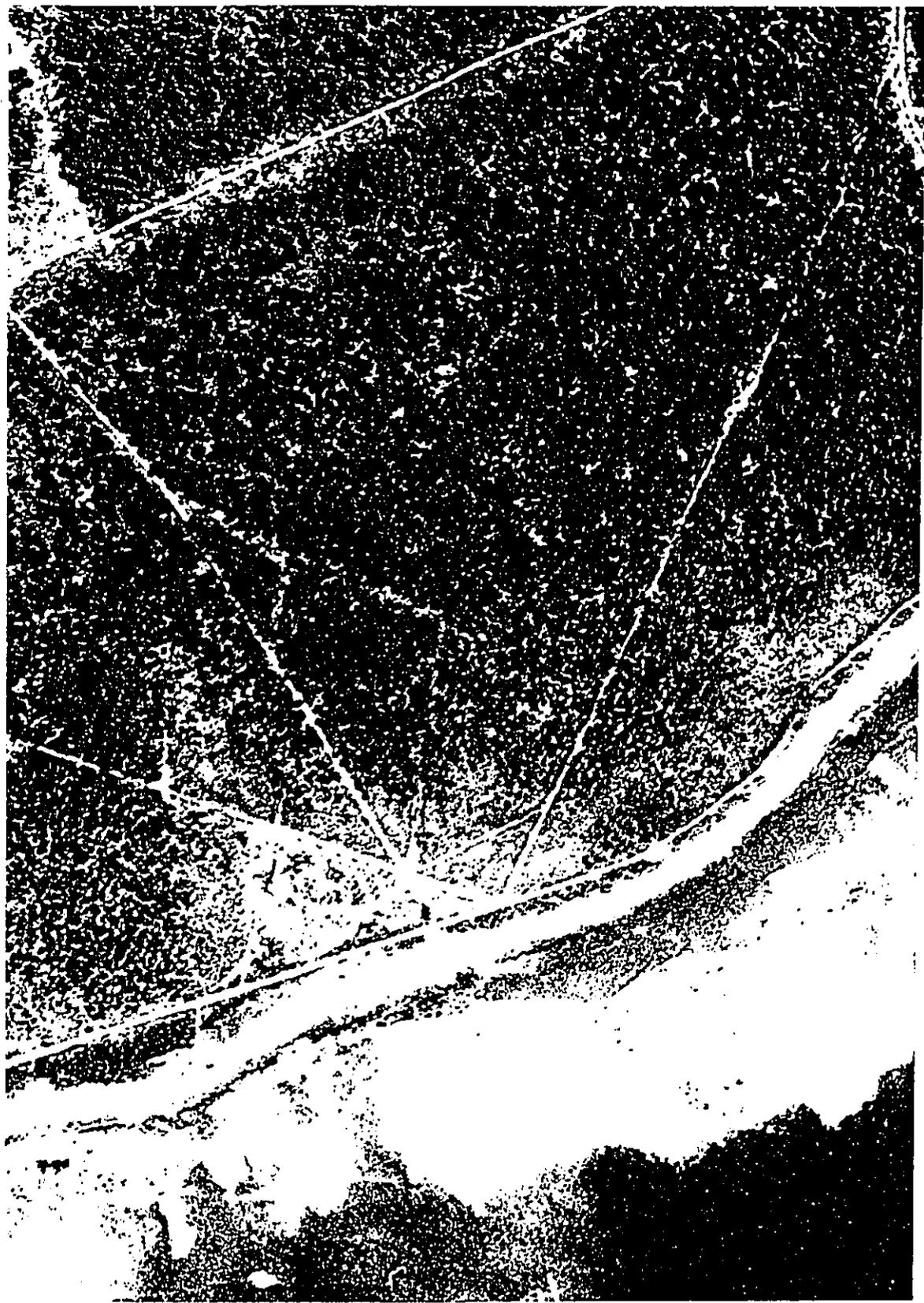


FIGURE 2-4 AERIAL PHOTO - 1952

DOCUMENT CAPTURED AS RECEIVED

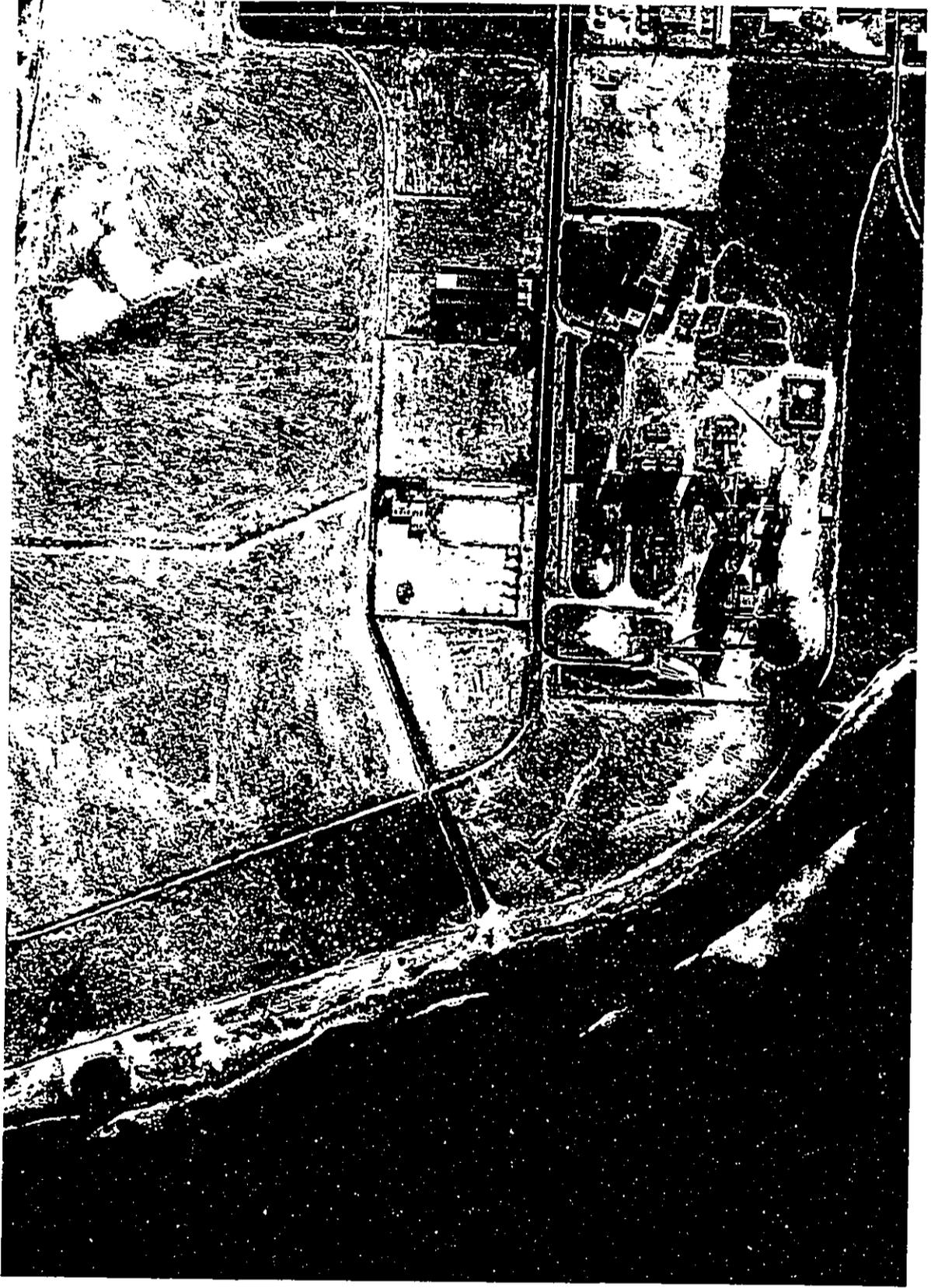


FIGURE 2-5 AERIAL PHOTO - 1969

DOCUMENT CAPTURED AS RECEIVED

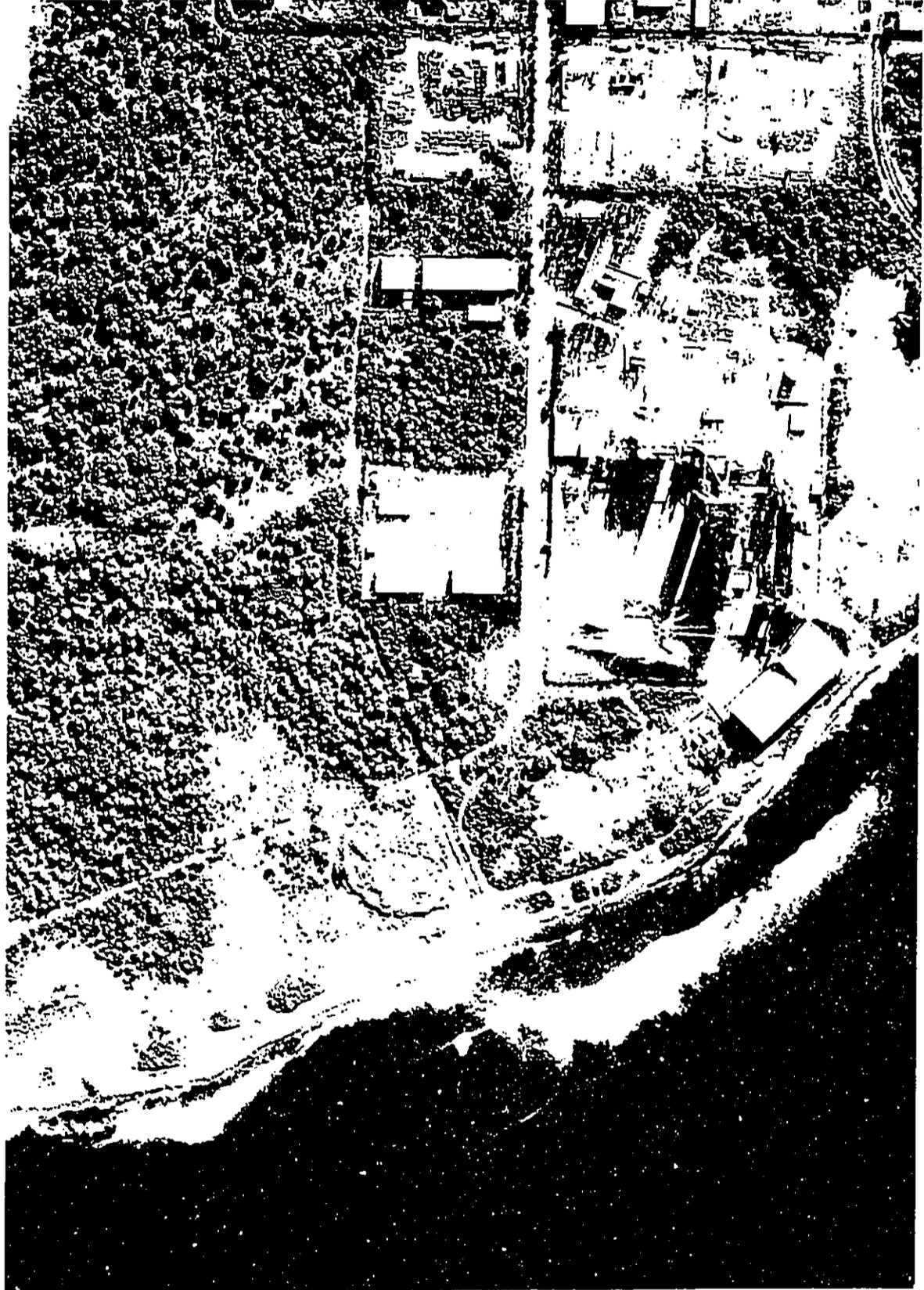


FIGURE 2-6 AERIAL PHOTO - 1982

DOCUMENT CAPTURED AS RECEIVED

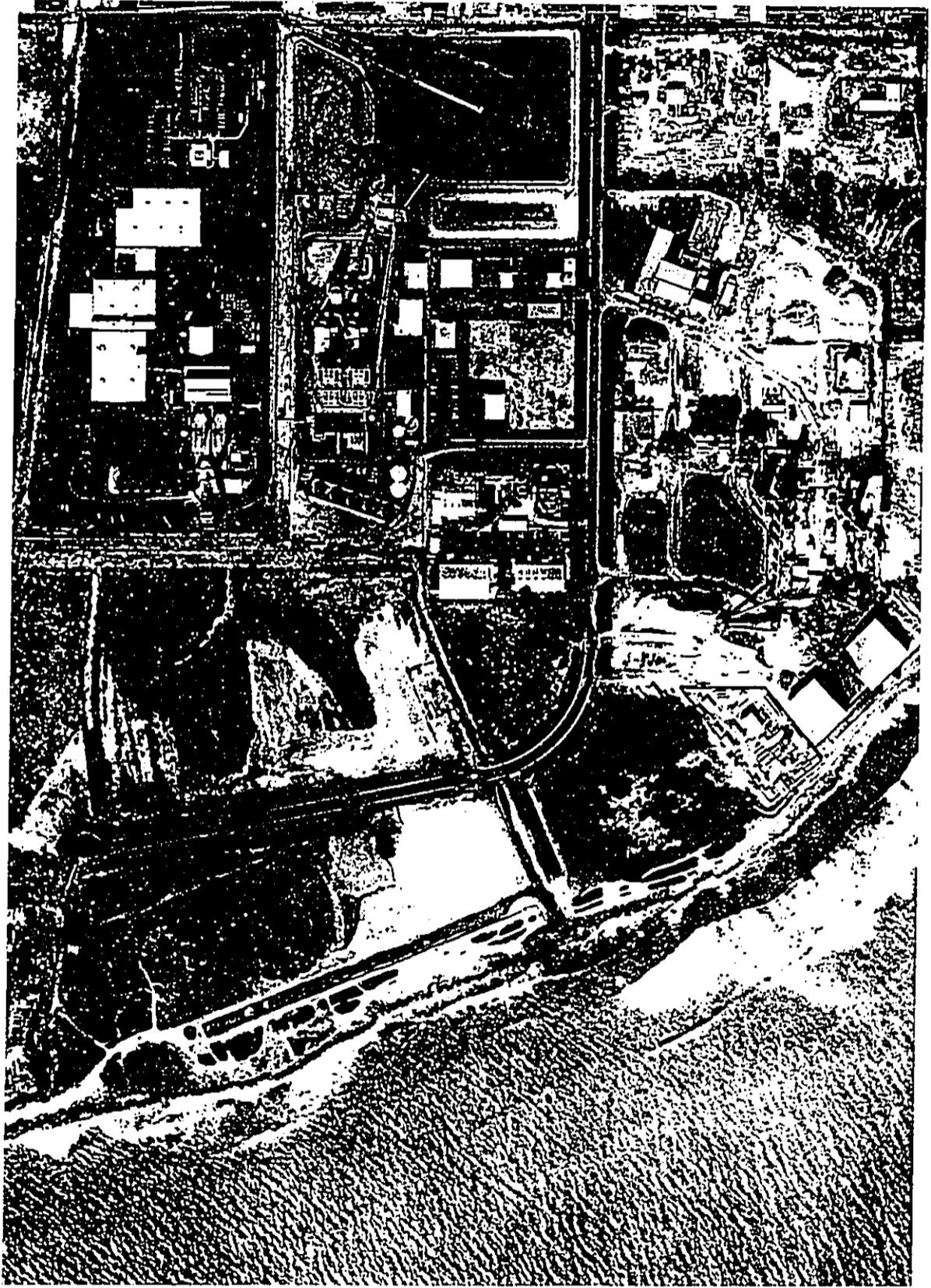


FIGURE 2-7 AERIAL PHOTO - 1994

Landscaping will be provided within a 30-foot buffer zone from the existing curb line. A concrete masonry wall with a chain link fence will be built along the northern property boundary, while the eastern property boundary will have a 6-inch concrete curb with a chain link fence. Figure 2-8 shows a layout of the building, as well as the placement of the landscaping and fencing.

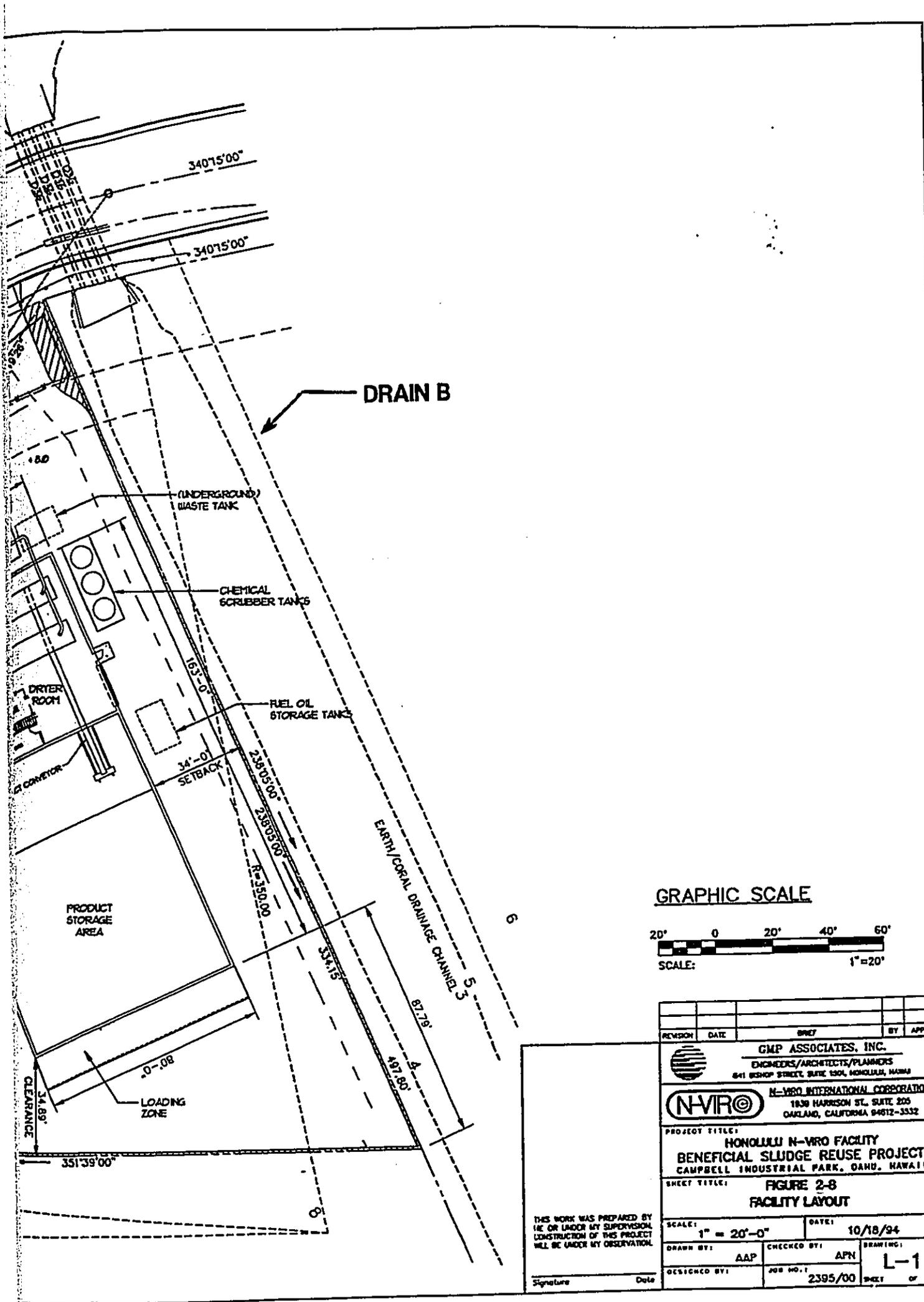
2.3 DEVELOPMENT SCHEDULE AND COST

Construction is scheduled to begin in June of 1995 with operations scheduled to commence in March of 1996. The estimated construction cost of the project is \$5,000,000.

2.4 PROJECT NEED

The future population growth within the City and County of Honolulu is expected to strain the current capacities of the City's Waimanalo Gulch Sanitary Landfill and the H-Power incinerator facility. Alternatives to landfilling and incineration, like the N-Viro process, offer a clean, enclosed process which produces a pasteurized, soil-like material versatile enough to be used in place of topsoil for landfill cover, landscaping, land reclamation and agricultural applications. The marketing of the N-Viro product can result in a reduction in the amount of municipal wastewater sludge disposed of in landfills, or incinerated in sludge incinerators.

The proposed N-Viro facility is designed to process up to 50 dry tons per day of dewatered sludge from all of the City and County of Honolulu's municipal WWTPs. The bulk of the sludge is produced at the two largest plants, Sand Island and Honouliuli. Current sludge production (1994) is approximately 30-36 dry tons per day. The City expects that with expanded



GRAPHIC SCALE



REVISION	DATE	BY	APPROVED
GMP ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS 841 BISHOP STREET, SUITE 1504, HONOLULU, HAWAII			
 N-VRO INTERNATIONAL CORPORATION 1830 HARRISON ST., SUITE 205 OAKLAND, CALIFORNIA 94612-3332			
PROJECT TITLE: HONOLULU N-VRO FACILITY BENEFICIAL SLUDGE REUSE PROJECT CAMPBELL INDUSTRIAL PARK, OAHU, HAWAII			
SHEET TITLE: FIGURE 2-8 FACILITY LAYOUT			
SCALE: 1" = 20'-0"		DATE: 10/18/94	
DRAWN BY: AAP	CHECKED BY: APN	L-1 SHEET OF	
DESIGNED BY:	JOB NO.: 2395/00		
Signature _____	Date _____		

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISORIAL CONTROL AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

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service, population growth, plant expansions and process modifications, sludge quantities will increase during the ten-year term of N-Viro's contract.

SECTION 3

SECTION 3

ENVIRONMENTAL SETTING

This section describes the environmental setting of the project including: the existing land use designations; surrounding land uses; climate; hydrology; topography; geology and soils; flood hazards and surface drainage; earthquake hazards; flora and fauna; and archaeological and historic sites.

3.1 EXISTING LAND USE DESIGNATIONS FOR THE SITE

The N-Viro facility site falls within the State Urban Land Use District. Therefore, a Conservation District Use Permit is not needed. The existing state land use designations are shown in Figure 3-1.

The proposed site is designated "I-2" on the City and County of Honolulu Development Plan Use Map as shown in Figure 3-2. Because the beneficial sludge reuse facility use is classified as waste disposal and processing, a Conditional Use Permit, Type 2, is required and has been applied for.

3.2 SURROUNDING LAND USES

All of the JCIP falls within the State Urban Land Use District and is designated "I-2" on the City and County of Honolulu Development Plan Use Map.

Twelve properties fall within a 1000-foot radius of the project site. Eight of the

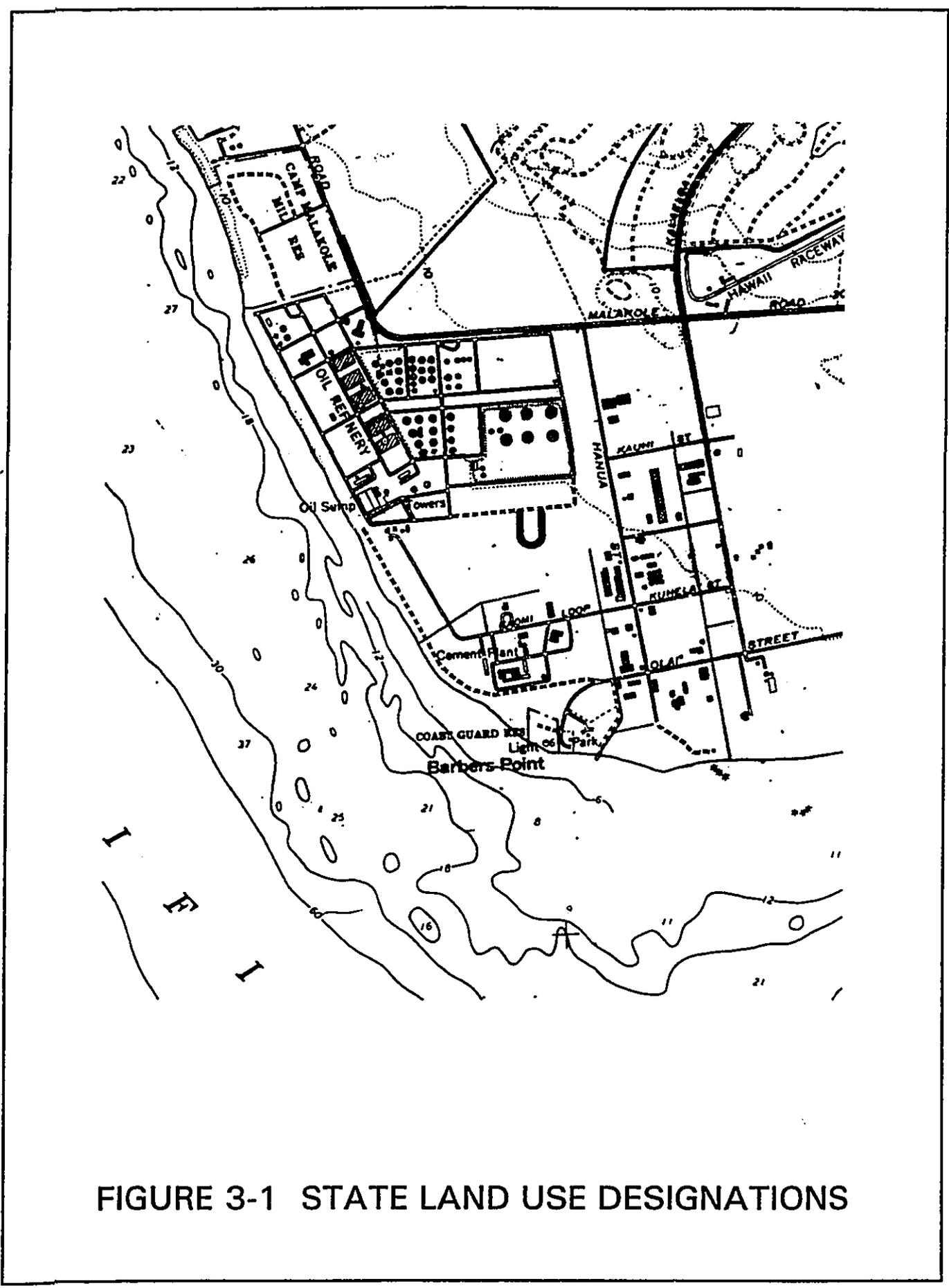


FIGURE 3-1 STATE LAND USE DESIGNATIONS

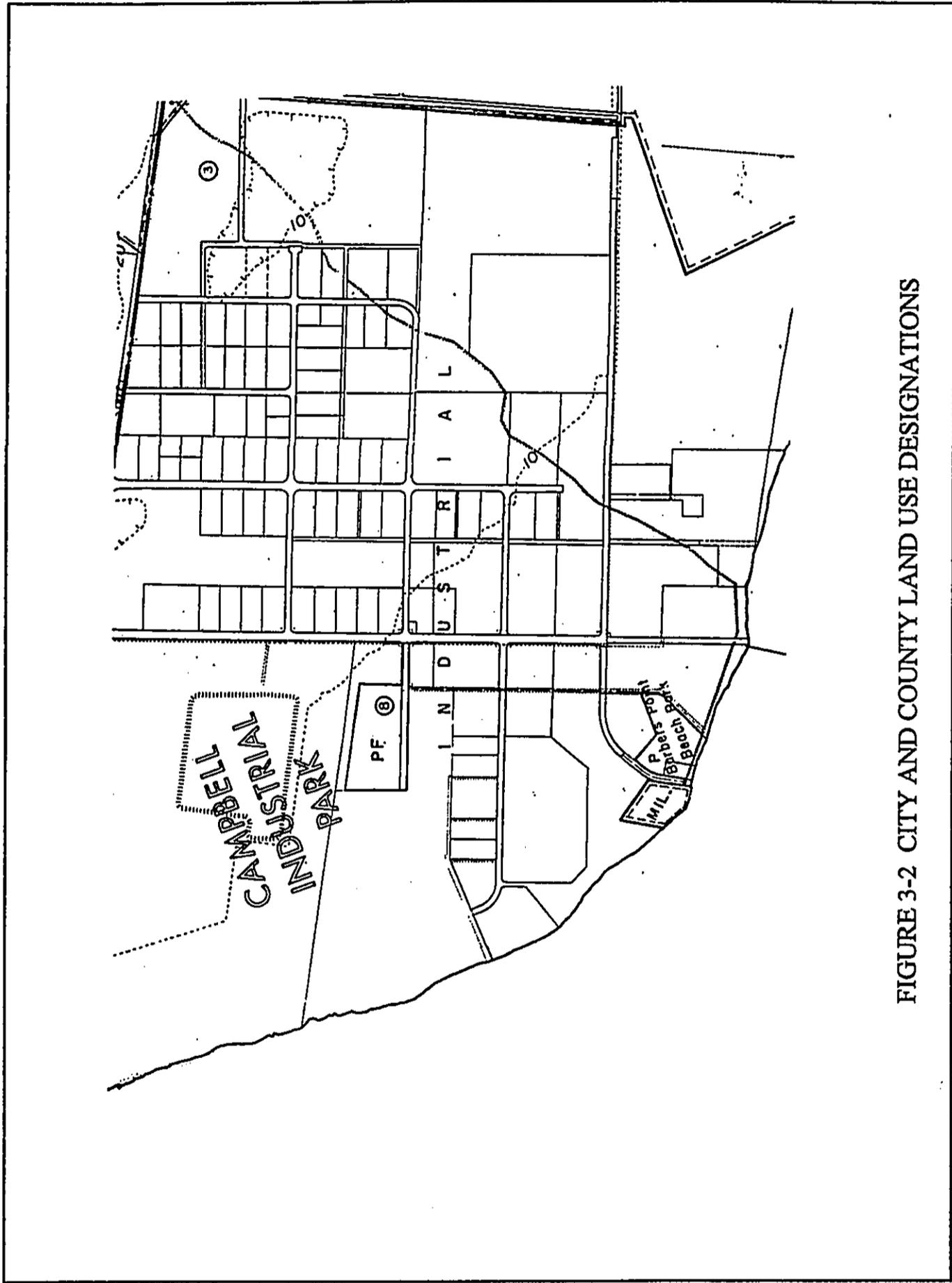


FIGURE 3-2 CITY AND COUNTY LAND USE DESIGNATIONS

twelve properties have some kind of industrial facility on them, while the other four are vacant.

- | | |
|---|---|
| 1. Pacific Allied Products: | Manufacturer of styrofoam products |
| 2. Gaspro, Inc.: | Manufacturer of gas products, sales and distribution |
| 3. Hawaiian Cement: | Manufacturer and supplier of cement and cement products |
| 4. Unitek Environmental: | Environmental consultant and contractor |
| 5. Lot is currently vacant | |
| 6. Lot is currently vacant | |
| 7. Lot is currently vacant | |
| 8. Lot is currently vacant | |
| 9. City & County of Honolulu: | H Power - garbage to energy facility |
| 10. AES Barbers Point, Inc: | Coal fired power plant |
| 11. C&F Machinery Corp.: | Metal fabricating shop |
| 12. Honolulu Cellular &
John Groark & Assoc. Inc.: | Office building and warehouse |

The twelve adjacent properties are shown in Figure 3-3.

3.3

CLIMATE

The climate characteristics found on Oahu differs significantly from what is commonly ascribed to tropical conditions. Temperatures and humidity are moderate throughout the year and normally, steady trade winds blow from the northeast across the islands. This is a result

ADJACENT PROPERTIES

1. Pacific Allied Products
2. GASPRO, Inc
3. Hawaiian Cement
4. Unitek Environmental
5. Vacant
6. Vacant
7. Vacant
8. Vacant
9. H-Power plant
10. AES Barbers Point
11. C&F Machinery
12. Honolulu Cellular & John Groark & Associates

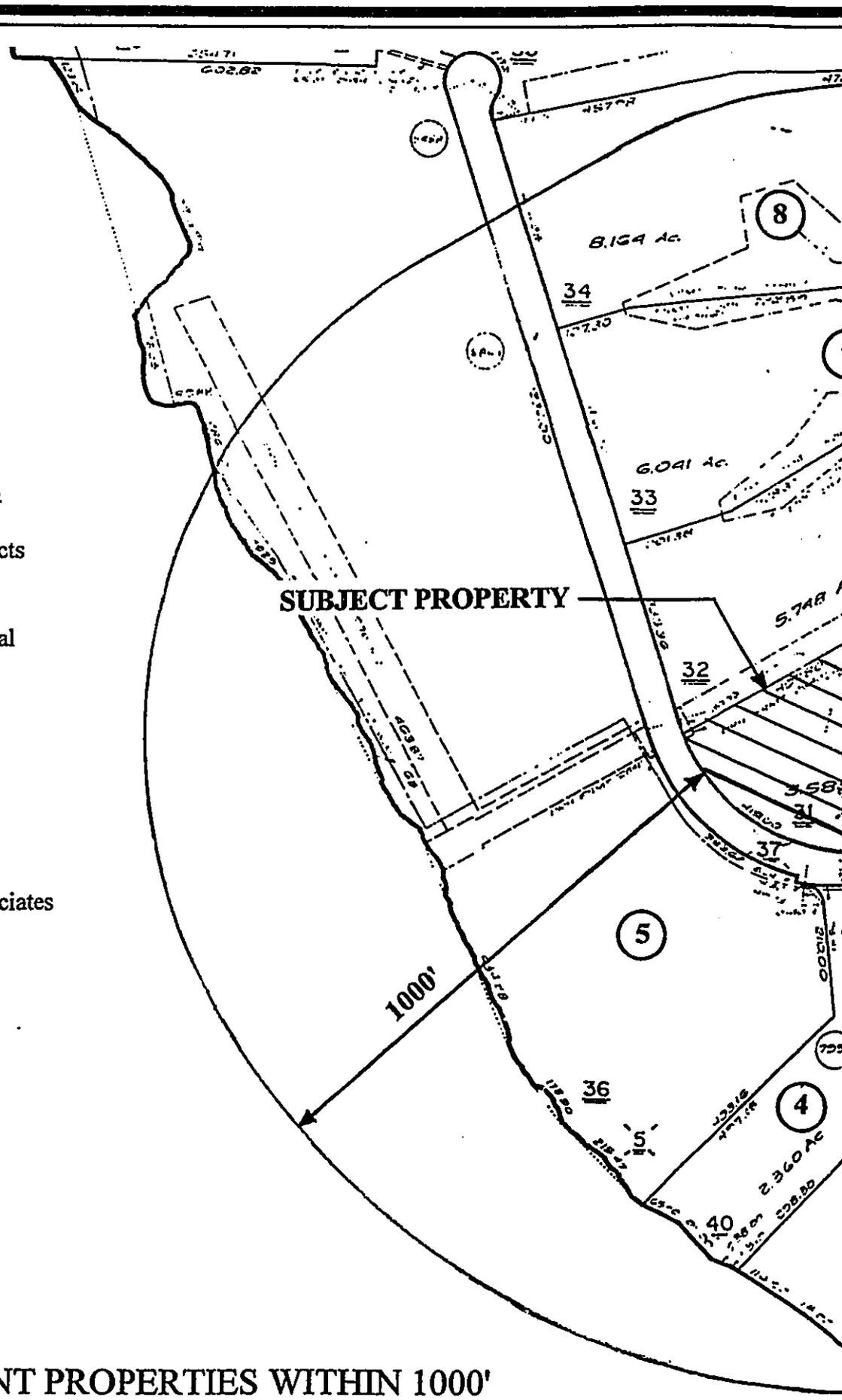
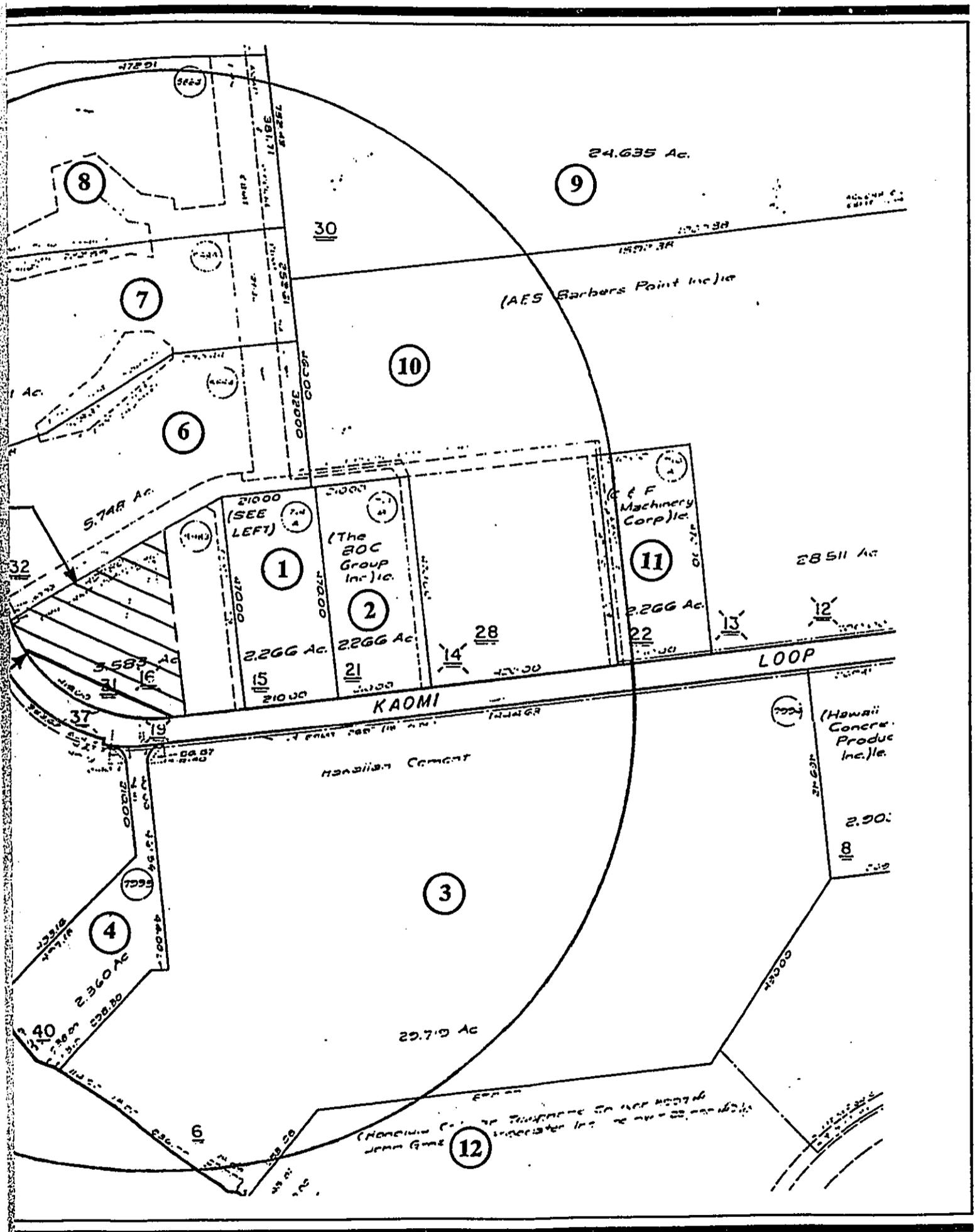


FIGURE 3-3 ADJACENT PROPERTIES WITHIN 1000'

BROR-B



24.635 Ac.

(AES Barbers Point Inc.)

(C & F Machinery Corp.)

28511 Ac.

KAOMI

LOOP

HAWAIIAN CONCRETE

(Hawaii Concrete Producers Inc.)

(Hawaii Concrete Producers Inc.)

8

9

7

10

6

1

11

2

12

3

4

8

12

30

32

28

16

19

7225

40

6

5.748 Ac.

3.587 Ac.

2.360 Ac.

21000 (SEE LEFT)

(The BOC Group Inc.)

2266 Ac.

2266 Ac.

2266 Ac.

2,900

29,719 Ac.

of Oahu's marine location which is remote from any continental land mass, and the presence of a stationary anticyclone (high pressure cell) to the north and east of the Hawaiian Island chain through most of the year.

The JCIP area is characterized as having equable temperatures, persistent trade winds, moderate humidities and slight rainfall. The mean annual temperature during the summer months is 79°F and 72°F during the winter. Northeasterly trade winds predominate during most of the year with a mean speed of 9 knots. Southerly Kona winds occur occasionally, usually during the winter. The average annual rainfall is about 20 inches. Most of the rainfall which occurs in the JCIP is derived from winter storms.

3.4 HYDROLOGY

Sediments of alluvial and marine origin along the coast of Oahu form a semi-impervious barrier called caprock. The caprock retards the fresh groundwater from escaping to the sea.

The project site is situated over the caprock aquifer which overlies the caprock. The caprock aquifer groundwater is found at approximately two feet above mean sea level (MSL) and is subject to tidal influence. Wells that were drilled on adjacent sites have shown the caprock groundwater to be brackish. According to well maps from the Department of Land and Natural Resources (DLNR), there are 15 wells within a one mile radius of the site. The DLNR well logs do not list all of the owners of the wells. Most of the data on the pumping capacities and drafts is also not available. The nearby well locations are shown in Figure 3-4, while a list of the owners and the well numbers is shown in Table 3.1.

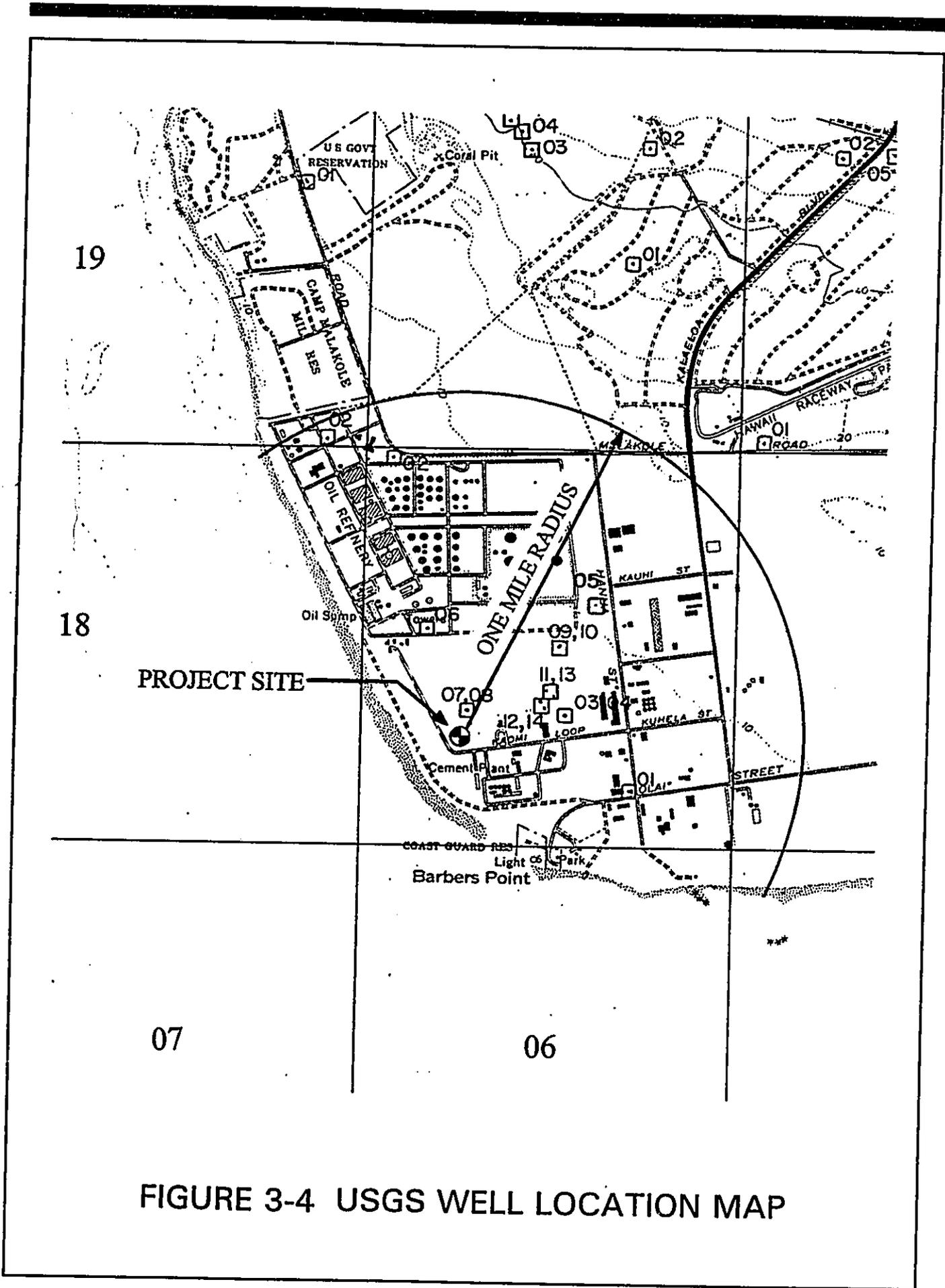


FIGURE 3-4 USGS WELL LOCATION MAP

TABLE 3.1 LIST OF OWNERS AND WELL NUMBERS

<u>WELL NUMBER</u>	<u>OWNER</u>	<u>PUMP CAPACITY (MGD)</u>
1907-02	none listed	none listed
1806-01	Campbell Estate	none listed
1806-02	Chevron U.S.A	none listed
1806-03	Hawaiian Western State	1.58
1806-04	Hawaiian Western State	1.44
1806-05	So. Pipe and Casg	none listed
1806-06	Chevron U.S.A	2.74
1806-07	Dillingham - Conoco	none listed
1806-08	Dillingham - Conoco	none listed
1806-09	C&C H-Power	none listed
1806-10	C&C H-Power	none listed
1806-11	AES Inc.	none listed
1806-12	not listed	none listed
1806-13	AES Inc.	none listed
1806-14	not listed	none listed

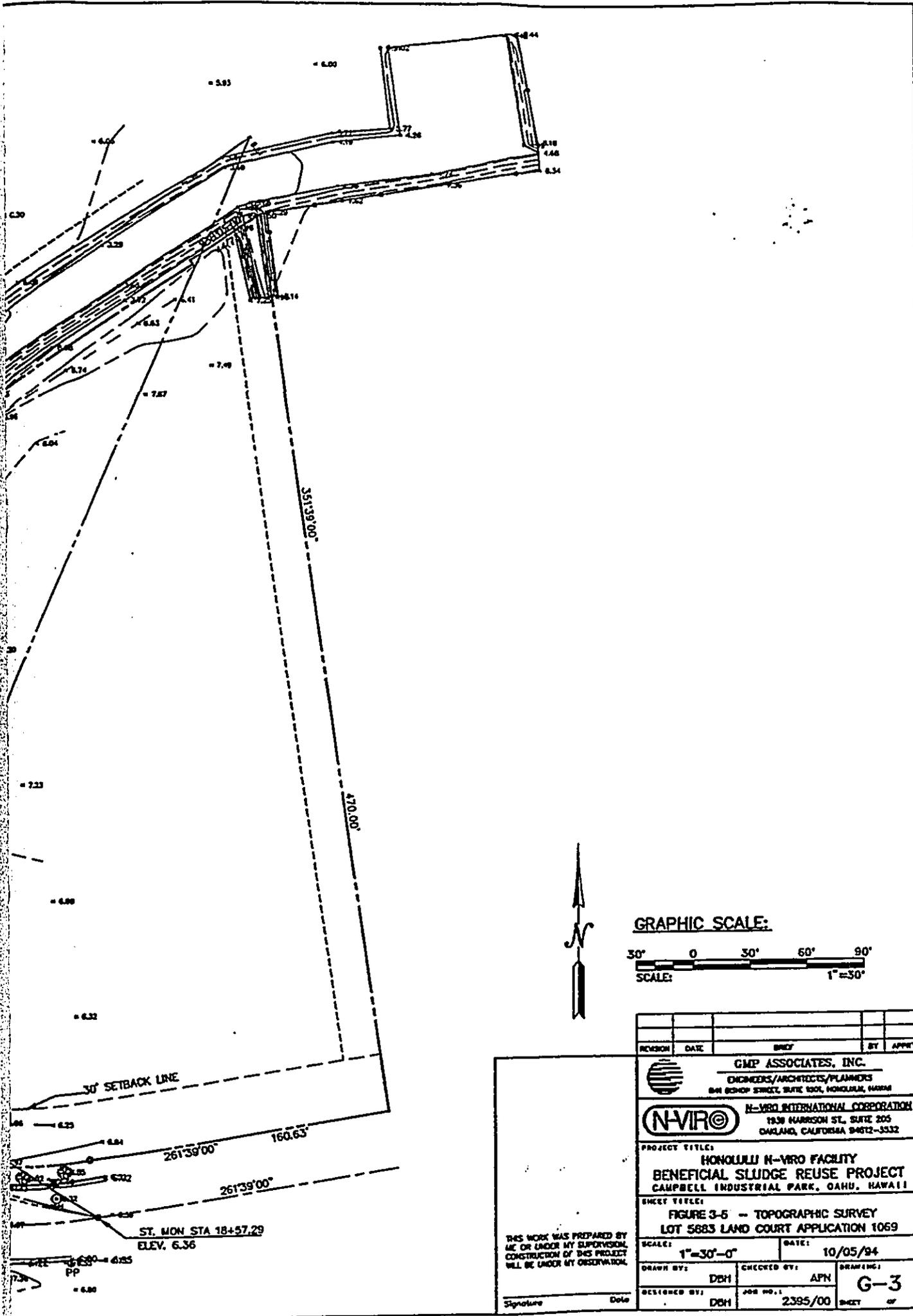
3.5 TOPOGRAPHY

The topography of the project site is generally flat, with existing elevation ranging from approximately five feet above MSL in the front of the lot, to eight feet above MSL towards the back of the lot. The elevation of Kaomi Loop ranges from 6.6 feet to 8 feet above MSL. A topographic survey is shown in Figure 3-5.

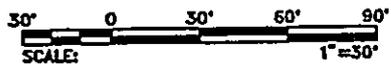
3.6 GEOLOGY AND SOILS

While the Hawaiian Islands were being formed, the ocean level rose and fell from as much as 100 meters below the present level to 30 meters above the present level. This was caused by the changes in the volume of ice on the continents during the glacial period. At some point, when the ocean level was about 8 meters above the present level, an extensive coral reef was formed along the south side of Oahu. This coral reef formed the present Ewa and Honolulu plains.

The soil at the subject property is classified as coral outcrop by the Soil Survey of Islands of Kauai, Maui, Molokai, and Lanai, State of Hawaii (August 1972). Roughly eighty percent of the coral outcrop consists of cemented calcareous sand and coral. The other twenty percent consists of a thin layer of friable, red soil material in cracks, crevices, and depressions within the coral outcrop. Vegetation is sparse in this type of soil, due to high chloride content and low rainfall, and consists mostly of kiawe, koa haole and fingergrass. Small kiawe trees can be seen at the project site.



GRAPHIC SCALE:



REVISION	DATE	BY	APP'D
GMP ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS 841 BISHOP STREET, SUITE 1301, HONOLULU, HAWAII			
N-VIRO N-VIRO INTERNATIONAL CORPORATION 1938 HARRISON ST., SUITE 205 OAKLAND, CALIFORNIA 94612-3332			
PROJECT TITLE:			
HONOLULU N-VIRO FACILITY BENEFICIAL SLUDGE REUSE PROJECT CAMPBELL INDUSTRIAL PARK, OAHU, HAWAII			
SHEET TITLE:			
FIGURE 3-5 -- TOPOGRAPHIC SURVEY LOT 5683 LAND COURT APPLICATION 1069			
SCALE: 1"=30'-0"		DATE: 10/05/94	
DRAWN BY:	CHECKED BY:	DRAWING:	
DBH	APN	G-3	
DESIGNED BY:	JOB NO.:	SHEET	
	DBH	2395/00	

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Signature _____ Date _____

2395SY 10/05/94 11:55 PRELIMINARY

3.7 FLOOD HAZARDS AND SURFACE DRAINAGE

The Flood Insurance Rate Map (FIRM), available through the Federal Emergency Management Agency (FEMA), was used to evaluate the potential flooding and wave damage risk for the study area. Based on map number 150001 0123C, the project site is not located in a 500- or 100-year flood plain. The project site falls within Zone D - areas in which flood hazards are undetermined.

Runoff from the project site and surrounding sites flows into a series of drainage ditches, one of which borders the northern boundary of the subject property. The drainage ditch, also known as "Drain B", is approximately 15 feet wide and 2000 feet long. The water in the drainage ditch passes through four City and County of Honolulu 36-inch culverts under Kaomi Loop before continuing on to the ocean. The drainage ditch along the property is unpaved and moderately vegetated.

3.8 EARTHQUAKE HAZARDS

The island of Oahu is classified as a Seismic Zone 2A area as per the Uniform Building Code, (1991). The new facility will be designed and constructed to resist stresses produced by lateral forces which apply to the Seismic Zone 2A.

3.9 FLORA AND FAUNA

The project site is currently undeveloped and supports natural vegetation such as

kiawe trees and lowland, coastal shrubs and grasses including koa haole, pilgrass and finger grass. There are no known rare or endangered flora species on the project site. However there is one native Hawaiian plant species, *Achyranthes splendens* var. *Rotundata*, which was listed on the federal endangered species list on March 26, 1986, and is located within a 1000-foot radius of the subject property. The *Achyranthes splendens* var. *Rotundata* is located in two fenced-in plant sanctuaries approximately 300 feet and 700 feet north of the subject property. Figure 3-6 shows the locations of the plant sanctuaries in relation to the subject property. Easement numbers 2533, 2534, 2535, and 2536 are used for plant sanctuary purposes.

The animals populating the site are mainly insects, birds and mammals, most of which are common to the Hawaiian Islands. There are no rare or endangered animal species at the site.

3.10 ARCHAEOLOGICAL AND HISTORIC SITES

The project site is located in Campbell Industrial Park, which was mass graded in the late 1950's. Due to this mass grading, it is highly unlikely that a historic or archaeological site will be found. In the event that one is discovered, State law requires that construction work in the area be stopped and the Historic Sites Division of the Department of Land and Natural Resources be notified immediately.

SECTION 4

SECTION 4

PROJECT IMPACTS AND MITIGATIVE MEASURES

The project impacts and their mitigative measures are discussed in the following sections. Some of the impacts discussed are construction noise, air quality, flora and fauna, surface water and groundwater quality, archaeological and historic, traffic, public health and safety and socioeconomic.

4.1 SHORT-TERM IMPACTS AND MITIGATIVE MEASURES

Short-term impacts are generally associated with construction activities such as clearing, grading, building and landscaping. These impacts shall be limited to an estimated construction period of nine months. All construction activities will be contained within the plant property.

4.1.1 Construction Noise

Noise levels at the site are expected to increase due to construction of the new facility. However, the allowable noise level at the James Campbell Industrial Park (JCIP) is set at 70 decibels at the property line due to the heavy industrial activities which occur there. Hawaiian Cement, AES Barber Point, and Pacific Allied Products are just a few of the facilities which surround the project site. In addition, the project site is located over a mile and a half away from any residential areas.

To mitigate noise impacts, the use of mufflers on construction equipment will be

required. Construction equipment is also expected to be properly maintained. Heavy vehicles must be in compliance with Title 11, Hawaii Administrative Rules, Department of Health, Chapter 42, Vehicular Noise Control for Hawaii. Also, construction activities will be limited to normal daylight working hours. In general, the construction phase of the project is expected to have minimal noise impacts.

4.1.2 Air Quality

Overall, construction of the project is expected to have minimal effects on air quality. Air quality impacts may result from clearing/grading operations and exhaust emissions from equipment and vehicles during the construction phase. To prevent dust from becoming a nuisance, the construction contractor will be required to utilize methods such as frequently wetting down of the site with water trucks, grassing and paving areas which have been graded as soon as practicable and placing dust screens around the project site to minimize any dust generated on site. All construction equipment and trucks shall be required to be kept in good operating condition and equipped with adequate emissions controls. Open-bed trucks shall be covered when transporting construction materials.

4.1.3 Flora and Fauna

Construction impacts on flora species are expected to be minimal. The project site currently supports natural vegetation such as kiawe trees and lowland, coastal shrubs. The endangered plant species, *Achyranthes splendens* var. *Rotundata*, is located outside of the property

boundaries, approximately 300 and 700 feet north of the project site. Prevailing northeasterly winds should blow any airborne dust away from the endangered plants. Also, a 30-foot wide drainage ditch between the project site and the *Achyranthes* will prevent any runoff generated on the site from getting to the *Achyranthes*. The *Achyranthes* is surrounded by a chain link fence to protect it from unauthorized entry. The construction contractor will be required to inform its workers of these plants and their protected status.

No known rare or endangered species of fauna have been found at the site. Therefore, no short-term impacts are expected on fauna species.

4.1.4 Surface Water / Groundwater Quality

Construction of the proposed facility should not adversely affect water quality in the area of the project. The only impact on surface water would be from stormwater runoff which can be mitigated by erosion control measures. Dewatering is not necessary for this project. Drainage and erosion control plans are required as part of the permit process, and the plans shall verify that construction operations and runoff water generated by the project shall not adversely affect local water quality. Erosion control measures may include: building berms around the project site to contain stormwater runoff; installing silt fences; immediately landscaping area which have been graded and grading during dry weather.

The project site is situated above the caprock aquifer which is not contiguous to any potable groundwater resources. Impacts on groundwater are considered unlikely.

4.1.5 Archaeological / Historical

The project site is part of a larger area which was mass graded some time between the late 1950's and the early 1960's. It is assumed that any site features of historic or archaeological value have been recovered or destroyed during that period. Presently, no historic or archaeological site is known to exist at the project site, and no short-term impacts due to construction are expected.

4.1.6 Traffic

The proposed N-Viro project site is located at 91-120 Kaomi Loop in the JCIP. Kalaehoa Boulevard is the main thoroughfare leading into the JCIP, and the increase in traffic along this boulevard is within the design of the road system and impacts are considered to be minimal. The current traffic load on Kaomi Loop is light, and the increase due to construction of the facility is not expected to have any significant impacts on existing nearby Campbell Industrial Park tenants.

4.1.7 Public Health and Safety

The construction contractor shall be responsible for implementing appropriate measures to ensure public health and safety during the construction period. Construction areas will be delineated with no-trespassing and safety signs. Also, measures will be taken to ensure pedestrian safety.

4.1.8 Socioeconomic

Construction of the beneficial sludge reuse facility will provide related jobs for local workers. The purchase of materials from local suppliers will help the local building economy.

4.2 LONG-TERM IMPACTS AND MITIGATIVE MEASURES

The anticipated long-term impacts associated with the operation of the beneficial sludge reuse facility are expected to be confined to the immediate site and to the area's infrastructure.

The following sections describe the project's long-term impacts on flora and fauna, drainage, infrastructure, public health, socioeconomic, land use and planned development.

4.2.1 Air Quality

No significant long-term impacts are expected on the air quality in the vicinity of project site. The processing and receiving areas will be completely enclosed, and emissions control (odor) treatment systems will be provided. An Initial Noncovered Source Permit from the State of Hawaii Department of Health's Clean Air Branch will be obtained, and the N-Viro facility will comply with the applicable air quality regulations.

4.2.2 Flora and Fauna

The plant operations are not expected to have any significant impacts on the local

flora and fauna including the endangered plant species, *Achyranthes splendens* var. *Rotundata*, which is located approximately 300 and 700 feet north of the project site. There will be no leachate or run-off from the materials being processed because the processing and receiving areas are completely enclosed. Therefore, no significant impacts are expected on the local flora and fauna.

4.2.3 Drainage

Preliminary site drainage calculations indicate that storm water runoff due to rainfall is expected to be minimal. The storm water is designed to sheet flow into the drainage ditch along the northern property boundary and onto the driveways which lead to Kaomi Loop. Runoff from the project site is not expected to affect any other properties. The stormwater runoff generated at the existing site is approximately 0.77 cubic feet per second (cfs), while the stormwater runoff for the proposed facility is approximately 1.5 cfs. The flows are based on a one-inch storm event which is specified in the National Pollution Discharge Elimination System (NPDES) general permit application. The increase in flow due to the new facility is not expected to have any significant impacts on the capacity of the drainage ditch. All receiving, processing and product storage areas will be enclosed within the building therefore ensuring that the runoff will not contain any of the material being handled.

An NPDES General Permit for Discharges of Storm Water Associated with Industrial Activity from the State of Hawaii Department of Health's Clean Water Branch will be obtained.

4.2.4 Infrastructure

The proposed beneficial sludge reuse facility will increase demands on local water and power utilities. The amount of potable water which will be allotted to the facility is determined by the Honolulu Board of Water Supply. Power requirements are not expected to have a significant effect on HECO's existing power grid.

Increased developments in Kapolei and Ewa have put greater demands on the region's potable water supply. In response to these changes, the proposed beneficial sludge reuse facility shall consider the use of non-potable water where feasible.

Some parts of the James Campbell Industrial Park are not serviced by sewer lines thereby requiring the installation of an individual wastewater system which needs to be approved by the State of Hawaii Department of Health's Wastewater Branch. The system which the N-Viro facility will be using is a septic tank with a leach field. The septic tank / leach field system is not expected to have any adverse effects on the quality of the groundwater. The wastewater which leaches from the leach field is treated wastewater, and the leach field is required to be at least three feet above the groundwater table. Also, there are no potable groundwater wells in the vicinity of the project site.

4.2.5 Traffic

The impacts of increased traffic along Kalaeloa Boulevard and Kaomi Loop are expected to be minimal. Twenty 18 wheeler semi trucks are expected to arrive at and depart from the facility each day. Four employees will work during the weekdays, and their traffic impacts are

also expected to be minimal. Hawaiian Cement, located across from the N-Viro facility on Kaomi Loop, accepts approximately 80 trucks per day, and Hawaiian Cement is only one of many facilities on Kaomi Loop.

4.2.6 Public Health

Because of its design, the operations of the proposed facility is not expected to have any effects on public health. The processing and receiving areas are completely enclosed with emissions control (odor) treatment systems. There will be no leachate or runoff from the materials being processed. The raw materials and wastes processed at the facility, as well as the finished product, are not readily combustible. The process steps and the equipment selected have been designed to address and minimize to the greatest extent possible the potential for vector attraction.

The N-Viro soil is a safe and pathogen free product which can be used for landfill cover, topsoil blending, land reclamation and many other uses. N-Viro soil meets the United States Environmental Protection Agency 40 CFR, part 503 guidelines for "Exceptional Quality Sludge". In meeting these guidelines, N-Viro is approved for unrestricted distribution.

4.2.7 Socioeconomic

The beneficial sludge reuse facility will have two major benefits. The first is it will help to prolong the life of the City's remaining landfills. Considering the limited capacity of the City's existing landfills and the difficulty and expense of siting new landfills on Oahu, the alternative of converting the sludge into a useful marketable product is in the public's best interest. The second

benefit is that the sludge will be converted from a waste to a resource which can improve the productivity of soils.

Building this new facility is expected to create four permanent positions for local residents.

4.2.8 Land Use and Planned Development

The proposed facility is expected to remain consistent with the industrial land use designation of the project site, as well as the surrounding properties. There are no future plans by the James Campbell Industrial Park (JCIP) to change the use of the area to anything other than an industrial park. Future developments in the area will need to conform to the lease agreement requirement of the JCIP and the land use policies of the City and County of Honolulu and the State of Hawaii.

SECTION 5

SECTION 5

ALTERNATIVES TO THE PROPOSED PLAN

Three alternatives were considered for this project: no action; the upgrade of the sludge incinerators at Sand Island and Honouliuli WWTPs to meet the current regulatory standards and continue landfilling sludge from the other smaller plants; and the initiation of a beneficial reuse program for all wastewater sludge which will convert the sludge into a marketable product. These alternatives are discussed below.

5.1 NO ACTION

The no action alternative would mean that the current practice of landfilling all dewatered sludge at Kapaa and Waimanalo Gulch landfills would continue. This alternative was rejected by the City. Considering the limited capacity of the City's existing landfills and the difficulty and expense of siting new landfills on Oahu, the City's Solid Waste Division has established the goal of diverting as much waste as possible from the current landfills in order to extend their lives. Avoiding or delaying the need for a new landfill will also reduce the environmental, sociological, and economic impacts that accompany siting a new landfill. Diverting sludge from the landfills supports the City's diversion goals.

5.2 UPGRADE OF THE SLUDGE INCINERATORS AT HONOULIULI
WASTEWATER TREATMENT PLANT

The second alternative is the upgrade of the sludge incinerator at the Honouliuli wastewater plant to meet the current regulatory standards, and to continue landfilling sludge from the other smaller plants. The feasibility of continuing to incinerate sludge is uncertain. Increasingly stringent regulations on sludge incinerator emissions; monitoring and reporting requirements; and emission controls could translate into significant additional costs to upgrade the existing incinerator at the Honouliuli WWTP. Discontinuing sludge incineration will eliminate the potential adverse environmental impacts of incineration and make a valuable resource available for reuse. The City considers the incineration alternative to be less viable and less desirable than beneficial reuse.

5.3 BENEFICIAL REUSE PROGRAM

Having rejected the first two alternatives, the City focused on beneficial reuse of its wastewater sludge. In an extensive procurement process, the City evaluated and qualified beneficial reuse technologies, and the N-Viro process was one of three that met the City's standards. N-Viro International Corporation provided the lowest responsive bid that met all of the City's requirements.

SECTION 6

rules. These rules were promulgated to assure the protection of the public health and environment. After the sludge has been subjected to the N-Viro process, the N-Viro soil can be safely used to enhance the properties of soils and their productivity.

SECTION 7

SECTION 7

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

The proposed project requires the commitment of 1.7 acres of land in the James Campbell Industrial Park. The construction of the facilities involves the irreversible and irretrievable uses of energy, labor, materials and capital, including the use of fuel oils for the operation of construction equipment, transportation of materials to and from the site and operation of the N-Viro process equipment.

SECTION 8

SECTION 8

NEGATIVE DECLARATION DETERMINATION

The few potential negative impacts which have been identified in this Final Environmental Assessment should be adequately minimized by the suggested mitigative measures. In accordance with Chapter 343, *Hawaii Revised Statutes*, it has been determined that an Environmental Impact Statement is not required for the proposed N-Viro International Corporation beneficial sludge reuse project. Therefore, this document constitutes a Negative Declaration.

SECTION 9

SECTION 9

LIST OF NECESSARY PERMITS AND APPROVALS

The following permits and approvals are anticipated for the development of the proposed beneficial sludge reuse facility:

- James Campbell Estate (Lease Agreement Requirements)
- Plan Approval - City and County Department of Public Works
- Plan Approval - State Commission of Persons with Disabilities
- Erosion Control Plan Approval - City and County Department of Public Works
- Building Permit - City and County Building Department
- Conditional Use Permit, Type 2 - City and County Department of Land Utilization
- NPDES Permit for Stormwater Discharges Associated with Industrial Activity - State DOH - Clean Water Branch
- Air Quality Permit - State DOH - Clean Air Branch
- Individual Wastewater System Certification - State DOH - Wastewater Branch
- Solid Waste Disposal Facility Permit - State DOH - Solid and Hazardous Waste Branch
- Industrial Wastewater Discharge Permit - City and County Department of Wastewater Management
- BMP - City and County Drainage Department
- State Historic Preservation Office - Department of Land and Natural Resources
- Utility Company Approvals - HECO, HTEL, Cable TV, BWS

SECTION 10

SECTION 10

EA COMMENTS AND RESPONSES

The following agencies were consulted in the review of the Draft Environmental Assessment for the Honolulu Beneficial Sludge Reuse Project using the N-Viro Soil Process.

ADDRESSEE DATE COMMENTS RECEIVED

STATE AGENCIES

Department of Health
Environmental Management Division
Solid and Hazardous Waste Branch
919 Ala Moana Blvd.
Honolulu, HI 96814

Department of Health
Environmental Management Division
Wastewater Branch
919 Ala Moana Blvd.
Honolulu, HI 96814

Department of Health
Environmental Management Division
Clean Water Branch
919 Ala Moana Blvd.
Honolulu, HI 96814

Department of Health
Environmental Management Division
Clean Air Branch
919 Ala Moana Blvd.
Honolulu, HI 96814

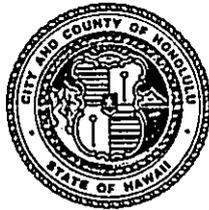
Department of Land and Natural Resources
Division of Water Resource Management
Kalanimoku Building
1151 Punchbowl Street, Room 130
Honolulu, HI 96813

<u>ADDRESSEE</u>	<u>DATE COMMENTS RECEIVED</u>
Land Use Commission Old Federal Building 3335 Merchant Street, Room 104 Honolulu, HI 96813	December 1, 1994
Office of Environmental Quality Control 220 S. King Street, 4th Floor Honolulu, HI 96813	
State Historic Preservation Office 33 South King Street, 6th Floor Honolulu, HI 96813	December 16, 1994
Department of Land and Natural Resources Office of Conservation and Environmental Affairs Kalanimoku Building 1151 Punchbowl Street, Room 131 Honolulu, HI 96813	December 29, 1994
<u>CITY AND COUNTY OF HONOLULU AGENCIES</u>	
Department of Land Utilization 650 S. King Street, 7th Floor Honolulu, HI 96813	December 30, 1994
Department of General Planning 650 S. King Street, 7th Floor Honolulu, HI 96813	December 13, 1994
Department of Wastewater Management 650 S. King Street, 14th Floor Honolulu, HI 96813	

All of the comments received have been addressed in the appropriate sections of the Final Environmental Assessment. Copies of the agency's comments are included in this section.

PLANNING DEPARTMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
HONOLULU, HAWAII 96813



JEREMY HARRIS
MAYOR

CHERYL D. SOON
ACTING CHIEF PLANNING OFFICER
CAROLL TAKAHASHI
DEPUTY CHIEF PLANNING OFFICER

TH 11/94-4612

December 13, 1994

Honorable James Ikeda, Interim Director
Office of Environmental Quality Control
State of Hawaii
Central Pacific Plaza
220 South King Street, 4th Floor
Honolulu, Hawaii 96813

Dear Mr. Ikeda:

Draft Environmental Assessment (EA)
for the Honolulu Beneficial Sludge Reuse Project
Using the N-Viro Process, Kapolei, Hawaii, Oahu

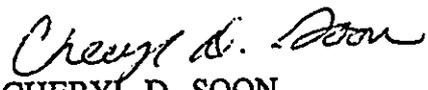
In response to your letter of November 18, 1994, we have reviewed the subject Draft EA and offer the following comments:

1. We have no objections to the proposed project. The proposed facility is consistent with the Industrial land use designation for Campbell Industrial Park as indicated on the Ewa Development Plan Land Use Map, Ordinance 81-80 as amended. Furthermore, the Industrial land use designation has a general height limit of 60 feet as specified under Section 24-3.2(a)(3) of the Development Plan Special Provisions for Ewa.
2. Increased development in Kapolei and Ewa have put greater demands on the region's potable water supply. In view of this trend, and the proposed facility's additional demand on the local water supply for its odor control component, non-potable water should be used where feasible.

Honorable James Ikeda, Interim Director
Office of Environmental Quality Control
December 13, 1994
Page 2

Thank you for the opportunity to comment on this matter. Should you have any questions, please contact Tim Hata of our staff at 527-6070.

Sincerely,

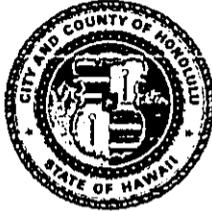

CHERYL D. SOON
Acting Chief Planning Officer

CS:ft

cc: Mr. Michael M. Miyahira, P.E.
GMP Associates, Inc.

DEPARTMENT OF LAND UTILIZATION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
HONOLULU, HAWAII 96813 • (808) 523-4432



JEREMY HARRIS
MAYOR

DONALD A. CLEGG
DIRECTOR

LORETTA K.C. CHEE
DEPUTY DIRECTOR

94-08489 (JT)

December 30, 1994

Mr. Michael M. Miyahira, P.E.
GMP Associates, Inc.
841 Bishop Street, Suite 1501
Honolulu, Hawaii 96813

Dear Mr. Miyahira:

Draft Environmental Assessment (DEA)
Beneficial Sludge Reuse Project
Using the N-Viro Soil Process
Tax Map Key: 9-1-26: 31

Thank you for the opportunity to review the above referenced document.

We concur that the project will require a Conditional Use Permit, Type 2 for waste disposal processing.

Should you have any questions, please call Joan Takano of our staff at 527-5038.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Loretta Chee", is written over the typed name of Donald A. Clegg.

DONALD A. CLEGG
Director of Land Utilization

DAC:am
g:deanviro.jht

4324

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII



KEITH W. AHUE, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES
JOHN P. KEPPELER, II

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
P. O. BOX 621
HONOLULU, HAWAII 96809

AQUACULTURE DEVELOPMENT PROGRAM
AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
CONSERVATION AND ENVIRONMENTAL AFFAIRS
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

RECEIVED
REF:OCEA:DKP
GMP ASSOCIATES, INC.
'94 DEC 29 AM 9 26

FILE NO.: 95-261
DOC. ID.: 5226

Mr. Michael M. Miyahara, P.E.
GMP Associates, Inc.
841 Bishop Street, Suite 1501
Honolulu, Hawaii 96813

DEC 29 1994

Dear Mr. Miyahira:

SUBJECT: Draft Environmental Assessment (DEA): Honolulu Beneficial
Sludge Reuse Project Using the N-Viro Soil Process, Kapolei,
Oahu, TMK: 9-1-36: 31

We have reviewed the DEA information for the subject project transmitted by your letter dated November 18, 1994, and reiterate the comments of our Historic Preservation Division which were previously forwarded to you directly.

We have no other comment to offer at this time. Thank you for the opportunity to comment on this matter.

Please feel free to call Steve Tagawa at our Office of Conservation and Environmental Affairs, at 587-0377, should you have any questions.

Very truly yours,

Keith W. Ahue
KEITH W. AHUE

c: DWM, City & County of Honolulu
OEQC

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

December 16, 1994

97.
KATHI AHUE, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCE

DEPUTIES

JOHN P. KEPPELER II

AQUACULTURE DEVELOPMENT
PROGRAM

AQUATIC RESOURCES
CONSERVATION AND

ENVIRONMENTAL AFFAIRS
CONSERVATION AND
RESOURCES ENFORCEMENT
CONVEYANCES

FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
DIVISION

LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

MEMORANDUM

LOG NO: 13451
DOC NO: 9412EJ13

TO: Roger C. Evans, Administrator
Office of Conservation and Environmental Affairs

FROM: *Don Hibbard*
Don Hibbard, Administrator
Historic Preservation Division

SUBJECT: Draft Environmental Assessment (DEA): Honolulu Beneficial
Sludge Reuse Project Using the N-Viro Process
(File No. 95-261)
Honouliuli, 'Ewa, O'ahu
TMK: 9-1-26:031

We have commented directly to GMP Associates regarding this project. Our comments consisted of the following:

A review of our records shows there are no known historic sites at the project parcel although it has not been surveyed for historic sites. Aerial photographs taken in the early 1970s show that the area appears to have been previously cleared. Archaeological inventory surveys in adjacent parcels to the north, east and west of this parcel did not record any historic sites. Avifaunal remains were found in sinkholes in nearby parcels but were considered of low significance because they yielded the same mixture of extinct and extant bird species excavated in other parts of the Barbers Point Area. It is possible that sinkholes exist on this parcel but because of prior clearing of the area it is likely that they have been destroyed. Because it is unlikely that historic sites remain and the fact that neighboring parcels are devoid of historic sites, we believe that this project will have "no effect" on historic sites.

EJ:jk

DLNR
OCEA

DEC 20 PM 1:30

RECEIVED

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

December 16, 1994

9.7.
KETHI AJIUX, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCE

DEPUTIES

JOHN P. KEPPELER M

AQUACULTURE DEVELOPMENT
PROGRAM

AQUATIC RESOURCES
CONSERVATION AND

ENVIRONMENTAL AFFAIRS
CONSERVATION AND

RESOURCES ENFORCEMENT
CONVEYANCES

FORESTRY AND WILDLIFE
HISTORIC PRESERVATION

DIVISION
LAND MANAGEMENT

STATE PARKS
WATER AND LAND DEVELOPMENT

MEMORANDUM

LOG NO: 13451
DOC NO: 9412EJ13

TO: Roger C. Evans, Administrator
Office of Conservation and Environmental Affairs

FROM: *Don Hibbard*
Don Hibbard, Administrator
Historic Preservation Division

SUBJECT: Draft Environmental Assessment (DEA): Honolulu Beneficial
Sludge Reuse Project Using the N-Viro Process
(File No. 95-261)
Honouliuli, 'Ewa, O'ahu
TMK: 9-1-26:031

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EJ:jk

DLR
OCEA

DEC 23 PM 1:30

RECEIVED

JOHN WAIHEE
GOVERNOR



ESTHER UEDA
EXECUTIVE OFFICER

RECEIVED
GMP ASSOCIATES
'94 DEC 1 11 10 05
STATE OF HAWAII
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM
LAND USE COMMISSION
Room 104, Old Federal Building
335 Merchant Street
Honolulu, Hawaii 96813
Telephone: 587-3822

November 29, 1994

Mr. Michael M. Miyahira, P.E.
GMP Associates, Inc.
841 Bishop Street, Suite 1501
Honolulu, Hawaii 96813

Dear Mr. Miyahira:

Subject: Draft Environmental Assessment (DEA) for the
Honolulu Beneficial Sludge Reuse Project Using the
N-Viro Soil Process, TMK No.: 9-1-26: 31, Kapolei,
Hawaii

We have reviewed the DEA for the subject project transmitted with your letter of November 18, 1994, and confirm that the subject parcel is designated within the State Land Use Urban District.

We have no other comments to offer at this time. We appreciate the opportunity to comment on this matter.

Should you have any questions, please call me or Bert Saruwatari of our office at 587-3822.

Sincerely,

A handwritten signature in cursive script, appearing to read "Esther Ueda".

ESTHER UEDA
Executive Officer

EU:th

cc: OEQC

REFERENCES

REFERENCES

1. "Atlas of Hawaii." University of Hawaii, Department of Geography, University of Hawaii Press (1983).
2. "Environmental Assessment at Kaomi Loop Subdivision, Campbell Industrial Park, Ewa Beach, Hawaii." Unitek Environmental Consultants, Inc. (1990).
3. "Final Environmental Assessment for Proposed Leeward Regional Wastewater Maintenance Facility at Honouliuli Wastewater Treatment Plant." GMP Associates, Inc. (1994).
4. "Review of Hydrologic Data and Sustainable Yield - Waianae Basal Aquifer." Water Resources Associates (1991).
5. "Soil Survey of Islands of Kauai, Oahu, Maui, and Lanai, State of Hawaii." U.S. Department of Agriculture, Soil Conservation Service (1972).

END

CERTIFICATION

I HEREBY CERTIFY THAT THE MICROPHOTOGRAPH APPEARING IN THIS REEL OF
FILM ARE TRUE COPIES OF THE ORIGINAL DOCUMENTS.

2004

DATE

Erin A. Nakamura

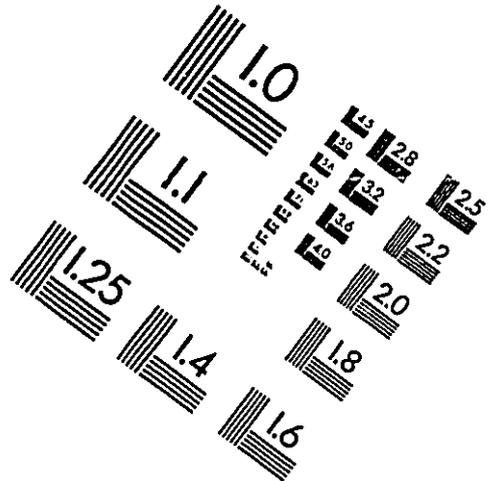
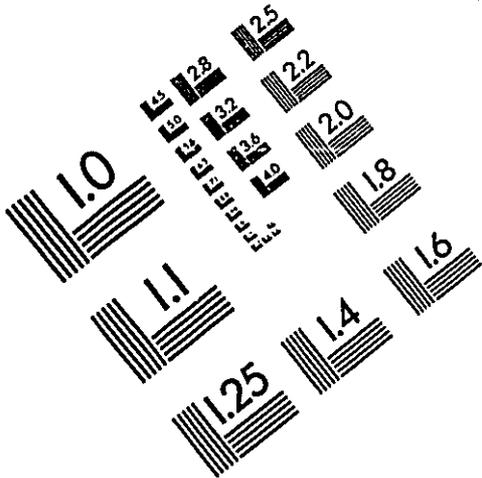
SIGNATURE OF OPERATOR



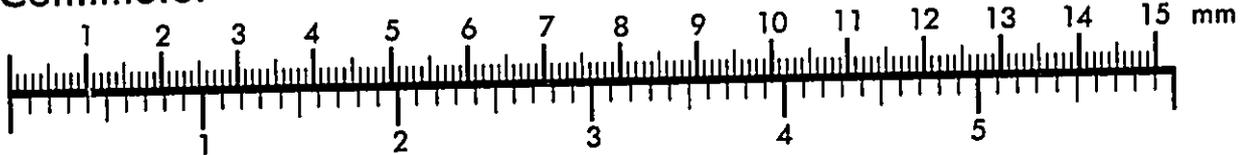
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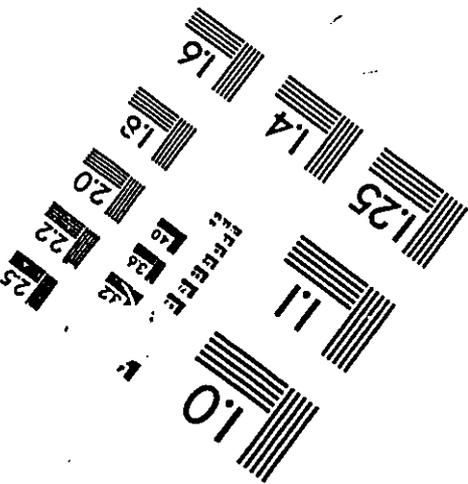
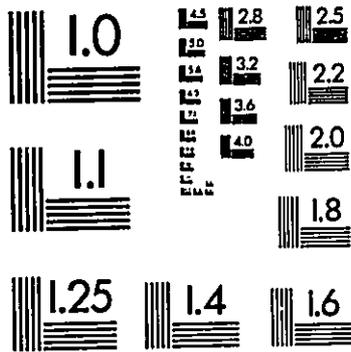
1100 Wayne Avenue, Suite 1100
Silver Spring, Maryland 20910
301/587-8202



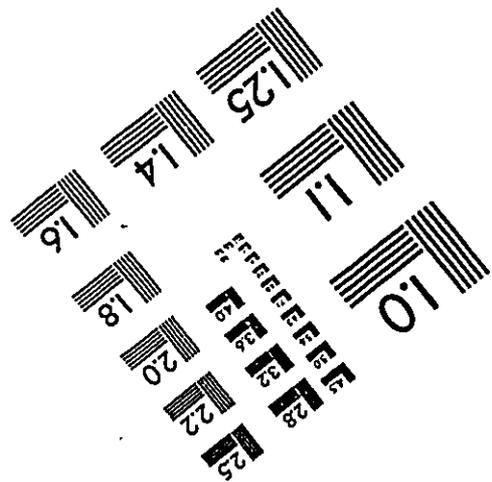
Centimeter



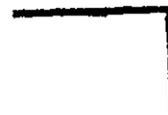
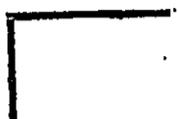
Inches



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