Kaluanui Booster Station

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96843
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December 23, 1996

Mr. Gary Gill, Director
Office of Environmental Quality Control
Central Pacific Plaza, 4th Floor
220 South King Street
Honolulu, Hawaii 96813

Dear Mr. Gill:

Subject: Finding of No Significant Impact for the Board of Water Supply Proposed Kaluanui Booster Station, Kaluanui, Koolauloa, Oahu, TMK: 5-3-11: Portion 09

The Board of Water Supply has reviewed the comments received during the public comment period which began on April 8, 1996. We have determined that the environmental impacts of this project have been adequately addressed as discussed in the final environmental assessment (EA) and are therefore, issuing a finding of no significant impact. We request that our proposed booster station project be published as finding of no significant impact in the next Office of Environmental Quality Control (OEQC) Bulletin.

Attached are the completed OEQC bulletin publication form and four copies of the final EA for your review.

If you have any questions, please contact Barry Usagawa at 527-5235.

Very truly yours,

RAYMOND H. SATO
Manager and Chief Engineer

Attachments

cc: Engineering Design Group, Inc.

1997-01-08-OA-FEA-Kaluanui
Booster Station

FINAL
Environmental Assessment

KALUANUI BOOSTER STATION

Kaluanui, Ko'olauloa, Hawai'i

Board of Water Supply
City and County of Honolulu

December 1996

1997-01-08-OA-~~FEA~~-Kaluanui Booster Station

FINAL
Environmental Assessment

KALUANUI BOOSTER STATION

Kaluanui, Ko'olauloa, Hawai'i

Board of Water Supply
City and County of Honolulu

December 1996

Final Environmental Assessment
Kaluanui Booster Station

Summary Sheet

Project: This project involves constructing a pumping station to improve Board of Water Supply service in transmitting water from existing sources through an existing transmission pipeline in windward O'ahu. The purpose of the project is to construct a booster station to reduce head-loss and the resulting high system pressures in the new 16-inch main along Kamehameha Highway in the Hauula area. The proposed new booster station would consist of a one-story building constructed of concrete blocks to enclose the pumping equipment. The building would be about 40 feet on each side for a total area of 1,600 square feet. Equipment inside the building would consist of electric motors, pumps, controls, valves and pipes. The building would be located within a fenced area of about 0.5 acres. The site is at the entrance to Sacred Falls State Park, and would be accessed via a driveway from Kamehameha Highway.

Location: Kaluanui, Ko'olauloa, Hawai'i
City and County of Honolulu
Tax Map Key: 5-3-11:09
Project Site: Less than 0.6 acres (including access driveway).

Approving Agency: Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, Hawai'i 96843

Proposing Agency: Board of Water Supply

Consultant: Engineering Design Group
Attn: Mr. Edgar K. M. Lee
1525 Young Street
Honolulu, Hawai'i 96826
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Appendices

1 Description of the Proposed Action

1.1 **Technical characteristics.** This section describes the location and purpose of the project and how it would be accomplished.

1.1.1 **Location and purpose of the project.** The proposed project is located (Exhibit 1, Location Map) about 124 feet inland of Kamehameha Highway adjacent to the parking lot at Sacred Falls State Park and about 50 feet from the Park property line. The purpose of the project is to construct a booster station to reduce head-loss and the resulting high system pressures in the new 16-inch main along Kamehameha Highway in the Hauula area.

1.1.2 **How the project will be accomplished.** The project will be accomplished by the Board of Water, City and County of Honolulu, who will use a contractor for the construction work.

1.1.3 **Dimensions of the project.** The site plan for the project is shown in Exhibit 2. The building which would house the booster station is 40 feet square (1,600 square feet) and is single story. It will be sited near the center of a fenced area 150 feet square (22,500 square feet). The site will be accessed via a fenced driveway 124 feet long and 25 feet wide (3,100 square feet).

1.1.4 **Description of the project.** The project consists of site preparation including minor grading and filling. A trench will be excavated between the site and Kamehameha Highway for installation of connecting transmission lines to the water transmission line along the highway. The trench will be backfilled and landscaped after excavation. The building (Exhibits 3 and 4) which will house the motors, pumps, controls, valves and pipe connections will be constructed of concrete blocks (walls, 8 inches thick) with a concrete roof. The building will be acoustically treated so that sound levels will not exceed State Department of Health nighttime noise limits of 45 dBA. After construction, the site will be landscaped.

The acoustic treatment includes use of 8-inch thick walls, a dense concrete roof at least 2 inches thick, installation of an acoustical ceiling and wall panels inside the

building, the use of hollow metal doors with compression seals, and window silencers.

1.2 **Socio-economic characteristics.** This section discusses the impacts of the proposed project on the community in terms of both social and economic effects.

1.2.1 **Economic impacts on the community at large.** The project reduces water pressure in the transmission line in this area to levels which will extend the life of pumping equipment and pipelines. The project generally benefits the community at large because it will reduce the cost of water transmission through a reduction in maintenance and repair costs associated with high pressures in the existing system.

1.2.2 **Provision of income for the county or state and creation of employment opportunities in areas with high unemployment rates.** The project provides benefits through jobs related to its implementation. This is beneficial at this time of economic recession in Hawaii.

1.2.3 **Targeted segment of the population.** No specific segment of the population is targeted because this project has general public benefit.

1.2.4 **Population density.** The project has no effect on population density because it merely maintains the existing conditions and does not increase the capacity of the transmission system.

1.2.5 **Recreational facilities.** The project site is within the boundaries of the Sacred Falls State Park. It is located in an open, grassy field slightly inland and approximately adjacent to the existing parking lot. Planning and siting of the proposed facility has been done in coordination with the State Department of Land and Natural Resources, Division of State Parks. (See Appendix A for copies of correspondence regarding the pre-assessment and draft environmental assessment.)

1.2.6 **Child care provisions.** There are no child care provisions in relation to the proposed project.

1.2.7 **Relocations of residences.** No relocation of residences would occur.

1.2.8 **Costs of the proposed project and economic analysis.** The estimated cost of construction of the proposed project is approximately $1.4 million.

1.3 **Environmental characteristics.** This section discusses the potential effects of the proposed project on the physical environment. (See Exhibit 6, Photographs of Site.)

1.3.1 **Aesthetics.** Residents of four homes adjacent to the north boundary of Sacred Falls State Park now have a view out their back yards of a row of iron wood trees, portable toilets, and an open grassy field. This view will change because the proposed project will occupy part of the grassed area (50 feet away from the property line) although it will be screened by the ironwood trees. Also, landscaping is included in the plans to further screen the proposed project. In addition, the structure includes architectural features.

Park-goers hiking to Sacred Falls will walk by the proposed facility and observe it. At present, they walk through an open field. The site will be screened from passers-by through use of landscaping.

From the viewpoint of persons driving along Kamehameha Highway, the view will probably be little affected because the site is presently screened by trees and shrubs. These, coupled with additional landscaping should present a minimal view of the driveway entrance for the facility, but not of the building itself.

1.3.2 **Air pollution.** There would be some effects during construction and these would be mitigated per county and state rules. There would be no long term effects because the proposed project includes no air pollution sources and would not generate significant differences in traffic from the existing conditions.

1.3.3 **Traffic congestion.** There will be little effect on traffic except during periods when construction materials are delivered to the site. Such traffic will consist of heavy trucks and trailers. They will operate during normal working hours and will follow existing regulations regarding road clean-up (if necessary) resulting from this traffic.

1.3.4 **Noise levels.** There will be some increase in noise levels during construction of the project. This will occur during normal working hours. Contractor's equipment is required to meet Department of Health *noise regulations.*

There will be some increase in noise levels over those which exist at present. Noise measurements were taken on April 26, 1995 between 8:45am and 9:20am (Appendix B, *Initial Acoustical Recommendations for Kaluanui Booster Station Building*). Based on these measurements, the design of the proposed facility includes acoustical measures so that at the property line, noise from the proposed facility may slightly exceed ambient levels, and will meet State Department of Health standards for the nighttime noise limit (45 dBA).

1.3.5 **Effects on water quality.** The project has no effect on water quality. This small site (less than 0.6 acres) is located on a relatively flat area and there is a depression which forms a detention area between the site and the highway. Storm water tends to pond in this entire area and the proposed project will not affect this condition. Construction practices will prevent erosion of soil from the site by storm runoff through the use of silt fences around the site and the contractor will be required to construct a gravel ingress and egress pad. Additional measures could be applied as needed, and could be required of the contractor. An NPDES permit application for hydrotesting (see Appendix D) in the form of Notice of Intent to be Covered Under General Permit is being applied for from the State Department of Health by the BWS. Because the proposed project does not include excavation below ground water elevations, there is no requirement for an NPDES permit for construction dewatering.

1.3.6 **Other environmental effects.** The site is located in a flood hazard area and the proposed project will be constructed with a finish floor elevation of 9 feet, which is

above the base flood elevations of 6 and 8 feet above mean sea level. There are no other environmental effects.

2 Description of the Affected Environment

2.1 **Location.** The proposed project is located at the entrance to Sacred Falls State Park. This location is approximately at latitude: 21° 36' 30" and longitude: 157° 54' 05".

2.2 **Land ownership and tenancy.** The land is owned by the State of Hawaii and managed by the Division of State Parks.

2.3 **Land use.** At the proposed project site, the land is an open grassy field which is between the parking lot for the Sacred Falls State Park, and the actual entrance to the trail leading to Sacred Falls.

2.4 **Land and related water use plans.**

2.4.1 City and County of Honolulu. The land is designated preservation in the Ko'olauloa Development Plan and is zoned P-2. The proposed project is considered a **Utility Installation, Type A** (46 kilovolt transmission substations, vaults, water wells and tanks and distribution equipment, sewage pump stations and other similar uses) which has a minor impact on adjacent land uses (*Land Use Ordinance*, City and County of Honolulu). According to the Planning Department (see their memorandum dated February 23, 1996 in Appendix A), the proposed project is considered to be minor because it would not facilitate growth and an amendment to the Koolauloa Development Plan Public Facilities Map is not required.

The proposed project is within the boundary of the SMA (Special Management Area). Construction in this area must be aproved by the Department of Land Utilization, City and County of Honolulu after review of an application by the Board of Water Supply for an SMA permit.

2.4.2 State of Hawaii. The majority of land in the inland (*mauka*) area of Sacred Falls State Park is designated as a Conservation District (Exhibit 6, Land Use Districts). A portion of the land at lower elevations and near Kamehameha Highway is designated as an Agriculture District (stemming from its past history as sugar cane fields). A narrow strip of land along the inland side of Kamehameha Highway is designated as an Urban District. The driveway of the proposed project is in the Urban District and the pump station facility itself is in both the Urban and Agriculture Districts.

The Office of State Planning has evaluated the Kaluanui Stream area and concluded that if development should be proposed which "...might have a negative impact on [Kaluanui Stream's] resources, such development should be thoroughly and critically reviewed, and that it would be appropriate in such a situation to prepare a petition that the Agriculture District designation be changed to Conservation for this area." (1992, Office of State Planning, page 183-184)

The master plan [Exhibit 7, Location of Proposed Project in Relation to Sacred Falls State Park Master Plan (1978)] for the Sacred Falls State Park shows a landscaped area at the location of the proposed site. The proposed site is considered acceptable to the Division of State Parks.

2.4.3 Federal. There are no federal plans for the area, but there is a flood hazard map called the Flood Insurance Rate Map (FIRM) which is issued by the Federal Emergency Management Agency (FEMA). The FIRM designates base flood elevations above mean sea level at the site based on the flood which has one chance in 100 of occurring in any year (the so-call "100-year" flood). The base flood elevations at the proposed site are 6 and 8 feet because the site falls on the demarcation line. The proposed project will be constructed on fill to raise it above these elevations to 9 feet above mean sea level. The site is not in the floodway.

2.5 **Flora.** The site is a flat grassed area which is frequently mowed. There are trees near the proposed project site (ironwoods, coconuts and false *kamani*) and one coconut tree will be relocated.

2.6 **Fauna.** No animals were observed during two field trips although the area probably supports common birds, mongoose, mice or rats, and feral cats.

2.7 **Water Quality.** The site is within the drainage basin of Kaluanui Stream, and is approximately 1,100 feet north of the stream. The Pacific Ocean is approximately 200 feet east of the site. There are no water bodies affected by the proposed project. The site is in a generally level area which slopes very gently towards the stream and the sea. Between the site and the Highway, there is a depression slightly below the grade of the highway and storm water runoff from the site and surrounding areas will tend to pond here prior to overtopping the highway and flowing into the ocean. Storm water ultimately can flow to the stream overland. The stream is characterized by a flood plain overflow area of dense *hau* along its banks which is low lying and covered with water during storm runoff periods, and runoff from the site and surrounding areas will eventually reach this location before entering the stream. Temporary measures to be applied to the site during construction, coupled with the natural topography at this location will generally prevent water quality in the stream or the ocean from being significantly worsened by the proposed project during construction.

2.8 **Significant habitats.** There are no significant habitats at the proposed project site.

2.9 **Historical, archeological and cultural sites.** The project site and its immediate vicinity has been investigated by staff archaeologists from the State and their reports are listed in the reference section. Copies of relevant reports or sections of reports are included in Appendix C, *Historic and Archaeological Resources.* In sum, these studies (April 5, 1978; October 3, 1977; both by Griffin and Yent) included test coring in the vicinity of the proposed project site. No cultural remains were found. Also, an archaeological reconnaissance found no surface cultural materials (September 19, 1977, Griffin and Yent).

2.10 **Adjacent natural resources.** Sacred Falls, Kaluanui Stream and the Pacific Ocean are nearby.

2.11 **Sensitive habitats or bodies of water adjacent to the proposed project.** The Pacific Ocean is a sensitive body of water near the proposed project, but not adjacent to it, being

on the other side of Kamehameha Highway. Kaluanui Stream is to the south of the proposed project site. There is a natural retention area which has a lower elevation than the highway and runoff from the proposed site will pond in this areas before overtopping the highway.

3 Major Impacts and Alternatives Considered

3.1 **Positive significant impacts.** The proposed project will reduce operating costs and maintenance requirements for the Board of Water Supply 16-inch water transmission line along Kamehameha Highway.

3.2 **Negative significant impacts.** There are no negative significant impacts of the proposed project.

3.3 **Alternatives considered, if applicable.** The alternative of no action was considered and rejected because it would not address the project objectives of cost reduction and increased reliability of water transmission in the area.

An alternative to construct a new pumping station (use of the Punaluu Reservoir to provide a constant water supply into the proposed booster) was evaluated and rejected because construction of a major transmission line would be required.

Several alternative pumping stations sites were considered. These included a location in Hauula (rejected because it could not accommodate larger flows without increased transmission capacity to reduce head loss); a location in Punaluu (rejected because the suction pressure would be too low and a long transmission main would be required between Kamehameha Highway and the site; and the recommended Kaluanui site.

At the Kaluanui location, three alterative sites were evaluated by project engineers and agency officials. They selected the proposed site as appropriate with the least impact to the Park. The other two sites were further inland and would have had a greater intrusive impact on the undeveloped nature of the Park.

4 Proposed Mitigation Measures

4.1 **Potential problems and appropriate mitigation including best management practices.** There are four potential problems related to the proposed project. Each is mitigated using best management practices as follows.

4.1.1 Potential Problem of Visual Intrusion into the Environment. This problem is addressed through the use of (1) architectural treatment of the building itself as well as location of the building in a remote area of the Park and, (2) use of landscaping to screen the structure.

4.1.2 Potential Problem of Noise. This problem is addressed by (1) use of acoustical measures in the building structure and design and, (2) location of the proposed facility 50 feet from the property line in order to meet noise limits imposed by the State Department of Health.

4.1.3 Location of the Site in a Flood Hazard Area. The site will be constructed above the base flood elevations and the site is not in the floodway.

4.1.4. Location of the Site in a Special Management Area Near a Stream and the Ocean. Coastal zone management and Special Management Area locations require that proposed projects do not degrade nearby receiving waters, and meet planning objectives for such areas. The small size of the project (0.6 acres) and its location within a relatively flat area will be favorable factors resisting erosion and runoff into the ocean (200 feet distant, across Kamehameha Highway) and Kaluanui Stream (1,600 feet distant). There is a low-lying area between the site and the highway which will tend to pond during rain storms and retain runoff so that it will not enter the ocean unless flood flows overtop the highway. Site is gently sloped towards the stream which is bordered by an overflow *hau* thicket which tends to filter and buffer storm waters from lands bordering the stream. Erosion control measures at the site (silt curtains, gravel ingress and egress pads) and inspections will further reduce the possibility of erosion during construction. It is likely that the Sacred Falls State Park

existing unpaved parking lot (several times larger than the proposed construction site) near the site will contribute more eroded material than the proposed project. Storm runoff will tend to pond and stand at the site instead of rapidly flowing offsite and eroded material, if any, will tend to be deposited on the large grassy areas surrounding the proposed project site.

The BWS is also applying for a Special Management Area permit from the Department of Land Utilization.

4.2 **Mitigation or preservation plan prepared for the Department of Land and Natural Resources State Historic Preservation Division.** Because there are no historic properties at the proposed project site, a preservation plan is not applicable.

4.3 **Copy of the approval letter for the plans from the State Historic Division.** The Division has reviewed a preliminary Draft and a Draft EA and has written that there are no significant impacts from the proposed project. A copy of the correspondence is included in Appendix A.

5 Determination

5.1 **Primary and secondary consequences; cumulative, short, and long-term effects.** The primary consequences of this project would be to reduce costs of water transmission to Board of Water Supply customers. Secondary consequences, cumulative, short and long term effects are generally beneficial with regard to water service. The grassed environment of the Park at the project site will be permanently changed to accommodate construction of the proposed facility.

5.2 **Determination letter from the approving agency (Negative Declaration).** After reviewing the Draft Environmental Assessment and comments, no significant impacts of the proposed project are anticipated (see below for discussion and see Appendix A for copies of all letters regarding the coordination of this EA, and the BWS responses).

5.3 **Findings and reasons supporting the determination including justifying evidence.** Chapter 200 (Environmental Impact Statement Rules) of Title 11 Administrative Rules of the State Department of Health specifies criteria for determining if an action may have a significant effect on the environment. These are discussed below in the context of the proposed project. Based on the following findings, it appears that the proposed project will have no significant adverse environmental impacts.

5.3.1 Involves an irrevocable commitment to loss or destruction of any natural or cultural resource. The project site has been modified extensively and has no natural or special resources. The proposed project has no effect on other such resources in the area.

5.3.2 Curtails the range of beneficial uses of the environment. The proposed project does not cause a significant change from the existing condition of the Sacred Falls State Park at the selected project site. The site is near Kamehameha Highway and the park's parking lot, and the site has been previously used as a baseyard for construction.

5.3.3 Conflicts with the State's long-term environmental policies or goals and guidelines as expressed in Chapter 344, Hawaii Revised Statutes, and any revisions thereof and amendments thereto, court decisions or executive orders. The proposed project does not conflict with long-term State environmental policies or goals in that it does not significantly reduce the recreational opportunities at Sacred Falls State Park.

5.3.4 Substantially affects the economic or social welfare of the community or State. The proposed project improves the health, social and economic well-being of the affected residents.

5.3.5 Substantially affects public health. Public health and safety is generally benefited by the proposed project.

5.3.6 Involves substantial secondary impacts, such as population changes or effects on public facilities. This project provides an improvement to an existing public facility, the 16-inch water transmission line along Kamehameha Highway. As such it will have no effect on population size or on other public facilities.

5.3.7 Involves a substantial degradation of environmental quality. There will not be a substantial degradation of environmental quality from this project.

5.3.8 Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions. *The proposed project is consistent with* existing water needs of the population.

5.3.9 Substantially affects a rare, threatened or endangered species, or its habitat. There are no rare, threatened, or endangered species on the project site.

5.3.10 Detrimentally affects air or water quality or ambient noise levels. There will be minor short-term effects on air quality and noise levels during construction but these pose nuisance levels and will be regulated by conformance to public health regulations. The proposed siting and acoustic treatments will allow the project to meet State Department of Health noise limits.

5.3.11 Affects an environmentally sensitive area such as a flood plain, tsunami zone, erosion-prone area, geologically hazardous land, estuary fresh water, or coastal waters. The proposed project is within a flood zone AE as designated on the Federal Emergency Management Agency's Flood Insurance Rate Map. It will be constructed on a pad comprised of compacted fill to raise it above the base flood elevation of 8 feet above mean sea level. The proposed project affects no environmentally sensitive areas.

6 Identification of Agencies, Organizations and Individuals Consulted

The following narrative summarizes the coordination with key agencies and with the Neighborhood Board as of this date of writing. Letters of coordination are included in Appendix A. A table at the end of this section summarizes the coordination and permit requirements for this project.

6.1 State of Hawaii.

6.1.1 Department of Land and Natural Resources. In May 1996, Mr. Gilbert Coloma-Agaran, Deputy Director signed (for Director and Chairperson of the Board of Land and Natural Resources, Mr. Michael Wilson) the title sheet approval block of the plans for the proposed project.

6.1.1.1 Division of State Parks. The Division was contacted regarding the selection of the site. A copy of the Draft EA was sent to the Division. Signature of the Chairperson constitutes approval of the project on behalf of the Department and the Division.

6.1.1.2 Historic Preservation Division. The Division was informally contacted to obtain archaeological information concerning the proposed project site and a list of references obtained is provided as part of this EA. HPD reviewed a preliminary Draft EA and concluded that the proposed project would have "no effect" on historic sites. This letter is included in Appendix A. A copy of the public review Draft EA was sent to the Division and they confirmed their earlier response (see their letter dated March 22, 1996 in Appendix A).

6.1.1.3 Office of Conservation and Environmental Affairs. The site is not in a Conservation District and there is no need for a Conservation District Use Application.

6.1.2 Department of Health. A copy of the Draft EA was sent to the Department. No comments were received. The BWS is in the process of applying for an NPDES permit for water which will be discharged from the site during hydrostatic testing. A copy of the draft permit application as filed with DOH is included in Appendix D of this EA.

6.1.2.1 Office of Environmental Quality Control. Four copies of the Draft EA were sent to OEQC along with *The Environmental Notice* publication form. In their response (May 7, 1996 copy in Appendix A) to the Draft EA, OEQC: 1) asked what mitigation measures will be used to control construction run-off from flowing into the nearby ocean and stream, and 2) asked for inclusion of the location of the existing parking lot for Sacred Falls State Park on Exhibit 7 in the Draft EA.

Discussion of measures to control construction runoff has been made in the Final EA, and Exhibit 7 has been modified per the request. Generally these measures include the use of a silt curtain around the site, and the placement of a gravel blanket for ingress and egress to the site, coupled with inspections which can require additional measures if found necessary.

The project site in area is less that 0.6 acres including the access driveway. The entire site and immediate vicinity is relatively flat and most runoff will pond in the immediate area before it can cross the highway into the ocean. As such, the site conditions tend to be of relatively low erosion hazard.

6.1.3 Department of Transportation. A copy of the Draft EA was sent to the Department. By letter of response dated March 27, 1996 (copy included in Appendix A), the Department stated that the proposed project is not anticipated to have an adverse impact on State transportation facilities and that plans for construction within the State highway right-of-way must be submitted to DOT for review and approval. Also signed, April 3, 1996

6.1.4 Commission on Persons with Disabilities. The Commission has reviewed and commented on the plans for the proposed project. They noted that the plan "...appears to meet the Americans with Disabilities Accessibility Guidelines (ADAAG), per Hawaii Revised Statues (HRS) 103-50." A copy of their letter is included in Appendix A.

6.1.5 Senator Mike McCartney, 23rd District. A copy of the Draft EA was sent to the Senator. No comments were received.

6.1.6 Representative Colleen Meyer, 46th District. A copy of the Draft EA was sent to the Representative. No comments were received.

6.2 **City and County of Honolulu.**

6.2.1 Department of Land Utilization. The DLU is the designated Coastal Zone Management agency and is responsible for review or waiver of the Special Management Area permit. A copy of the Draft EA was sent to the Department. By letter of response dated April 9, 1996 (copy included in Appendix A), the Department stated that: 1) A Special Management Are Use Permit is required, and 2) the proposed project appears to be in Flood Zone AE with a base flood elevation of 6 and 8 feet above mean sea level. The final EA should address how the project will comply with the "Flood Hazard District" requirements under Section 7.10 of the Land Use Ordinance.

With regard to the need for a Special Management Area permit, BWS is in the process of requesting an SMA permit for the proposed project.

Information regarding the location of the proposed project in a flood zone, and the base flood elevations (BFE) is included in the final EA.

6.2.2 Planning Department. A copy of the Draft EA was sent to the Department. In an earlier memo, the Planning Department determined (see their memorandum dated February 23, 1996 in Appendix A) that the proposed project is considered to be minor because it would not facilitate growth and an amendment to the Koolauloa

Development Plan Public Facilities Map is not required. In their response dated May 7, 1996 (copy in Appendix A) to the Draft EA, the Department: 1) noted that the project site is designated for Park use on the Koolauloa Development Plan Land Use Map; 2) noted that the Koolauloa Development Plan Public Facilities Map shows a symbol for publicly funded water system improvements from Hauula to Kaipapau along Kamehameha Highway, within 6 years; 3) referred to their memo of February 23 that a Development Plan amendment is not required; and 4) stated that they have no objections to the proposed project.

6.2.3 Department of Public Works. A copy of the Draft EA was sent to the Department. By letter of response dated March 29, 1996 (copy included in Appendix A), the Department: 1) requested an expanded discussion on water quality, surface runoff pattern, and any NPDES-related discharge permits such as construction dewatering and hydro testing; 2) stated that if a drain connection to the City storm drain system is proposed, then a private drain connection permit will be required; and 3) asked who (U.S. Army Corps of Engineers or FEMA) has jurisdiction because the proposed project is in a flood zone and what is the base flood elevation that a building needs to be constructed above. The requested expanded discussion and answers to questions has been included in the appropriate sections of this final EA.

An NPDES permit is required for hydro testing and subsequent discharges. A copy of the NPDES permit application (as submitted for review to the State Department of Health) is attached as Appendix D to this EA. The site (less than 0.6 acres, including the access road) is in a relatively flat area and runoff will tend to pond in the vicinity. It is of a generally low erosion hazard condition.

No construction below the water table is anticipated so the need for construction dewatering is unlikely.

No drain connection to the City storm drain system is proposed.

The U.S. Army Corps of Engineers has no jurisdiction over the proposed project because the site does not affect wetlands or other waters of the United States. FEMA (Federal Emergency Management Agency) is involved only because that agency has established the base flood elevations at the site. Regulation of construction on the site rests with the City and County of Honolulu. The proposed

project will be constructed with a finish floor elevation of 9 feet which is above the base flood elevations of 6 and 8 feet above mean sea level.

6.2.4 City Council Member Steve Holmes. A copy of the Draft EA was sent to the Council Member. No comments were received.

6.3 **United States Government.** No contacts have been made with U.S. Government agencies because they have no jurisdiction in this matter. As noted above, the City and County of Honolulu has jurisdiction over construction in flood hazard areas, and the proposed project will be constructed above the base flood elevations.

6.4 **Organizations and Individuals.** Copies of the preliminary Draft EA and Draft EA were sent to the Ko'olauloa Neighborhood Board. No comments were received.

References

September 9, 1977, *Memorandum: Results of Archaeological Survey and Testing in the Interim Development Portion of Sacred Falls State Park*, From Martha Yent and Agnes Griffin, to Robert Fletcher, Department of Land and Natural Resources (DLNR), Division of State Parks.

September 19, 1977, *Memorandum: Results of archaeological reconnaissance survey along the entrance road at Sacred Falls State Park, and recommendations concerning road widening*; From Martha Yent and Agnes Griffin, to Robert Fletcher, Department of Land and Natural Resources (DLNR), Division of State Parks.

October 3, 1977, *Memorandum: Results of archaeological survey and testing in the makai portion of Sacred Falls State Park*, From Martha Yent and Agnes Griffin, to Robert Fletcher, Department of Land and Natural Resources (DLNR), Division of State Parks.

March 1978, *Sacred Falls State Park* (Master Plan), DLNR, Division of State Parks, Outdoor Recreation and Historic Sites, prepared by Phillips Brandt Reddick.

April 5, 1978, *Memorandum: Result and Recommendation on Test Coring Conducted at Sacred Falls State Park*, From Agnes Griffin and Martha Yent, to Robert Fletcher, Department of Land and Natural Resources (DLNR), Division of State Parks.

May 1981, *Archaeological Investigations Sacred Falls State Park Kaluanui, Ko'olauloa, Oahu*, DLNR, Division of State Parks, prepared by Staff Archaeologists (Martha Yent and Jason Ota).

July 1984, *Revised Environmental Impact Statement for the Kaluanui Wells, Ko'olauloa, Oahu, Hawaii*, Honolulu Board of Water Supply, prepared by VTN Pacific.

October 22, 1986, *Land Use Ordinance* (Ordinance No. 86-96, as amended), Department of Land Utilization, City and County of Honolulu.

August 1989, *Notice of Determination Negative Declaration Land Acquisition Sacred Falls State Park, Kaluanui, Ko'olauloa, Oahu*, Department of Land and Natural Resources, Division of State Parks, Outdoor Recreation and Historic Sites.

April 1991, *Environmental Impact Assessment for an Exploratory Well and Access Road at Kaluanui*, Oahu, Honolulu Board of Water Supply, prepared by Maguire Group, Inc.

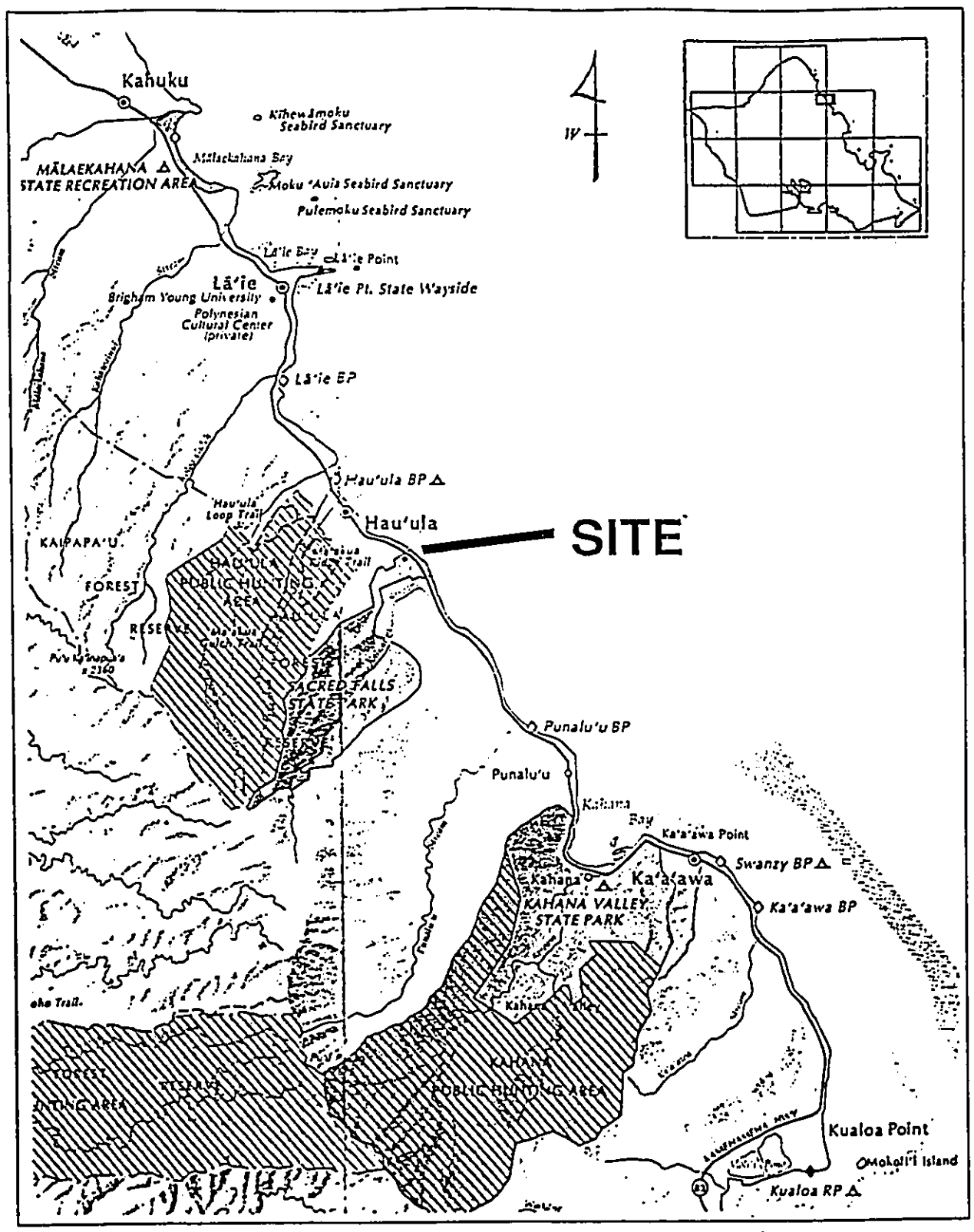
September 1991, *Environmental Assessment for a 16-inch Transmission Main from Hauula to Kaipapau, Oahu, Hawaii*, Honolulu Board of Water Supply, prepared by Wilson Okamoto & Associates, Inc.

1992, *State Land Use District Boundary Review, Oahu*, Office of State Planning.

June 16, 1994, *Memorandum: Your memo of March 31, 1994 on Hauula Booster Station Site Selection*, From Planning Branch to Richard Matsui, Honolulu Board of Water Supply.

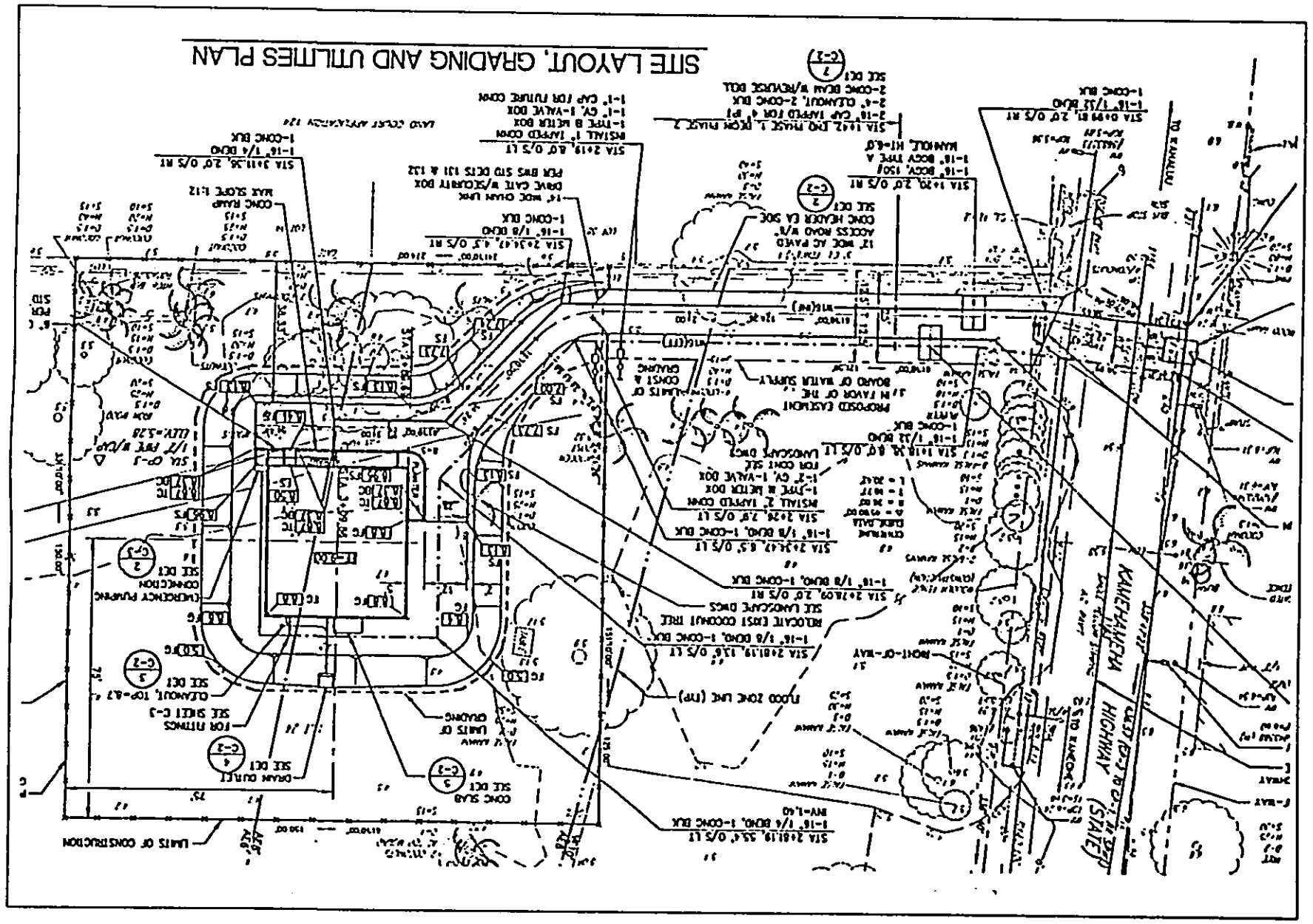
Exhibits

1 Location and Vicinity Map
2 Site Layout, Grading and Utilities Plan
3 Building Floor Plan
4 Building Elevation: North and East
5 Building Elevation: South and West
6 Land Use Districts
7 Location of Proposed Project in Relation to Sacred Falls State Park Master Plan (1978)
8 Photographs of Site

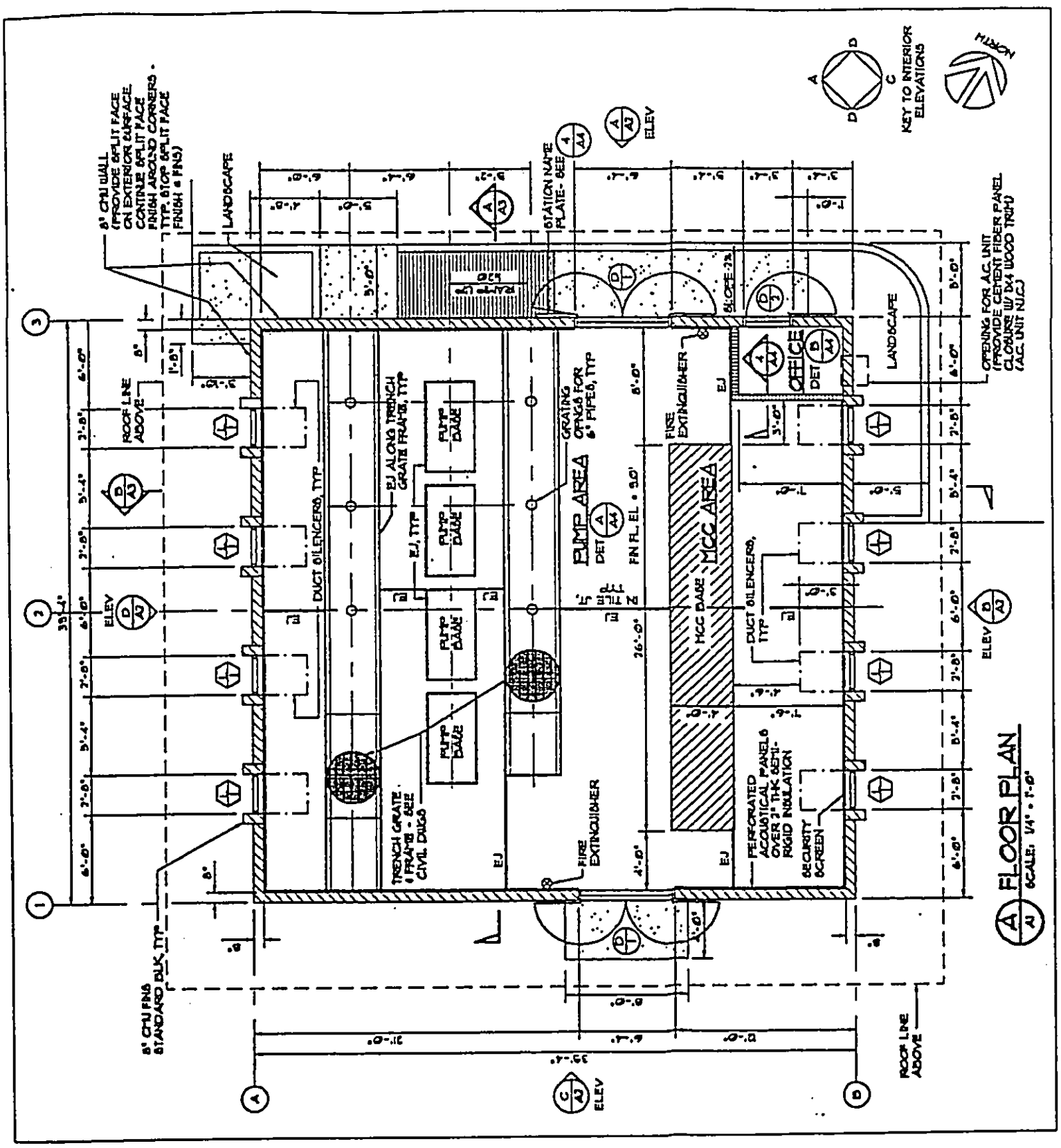


LOCATION AND VICINITY MAP
Exhibit 1

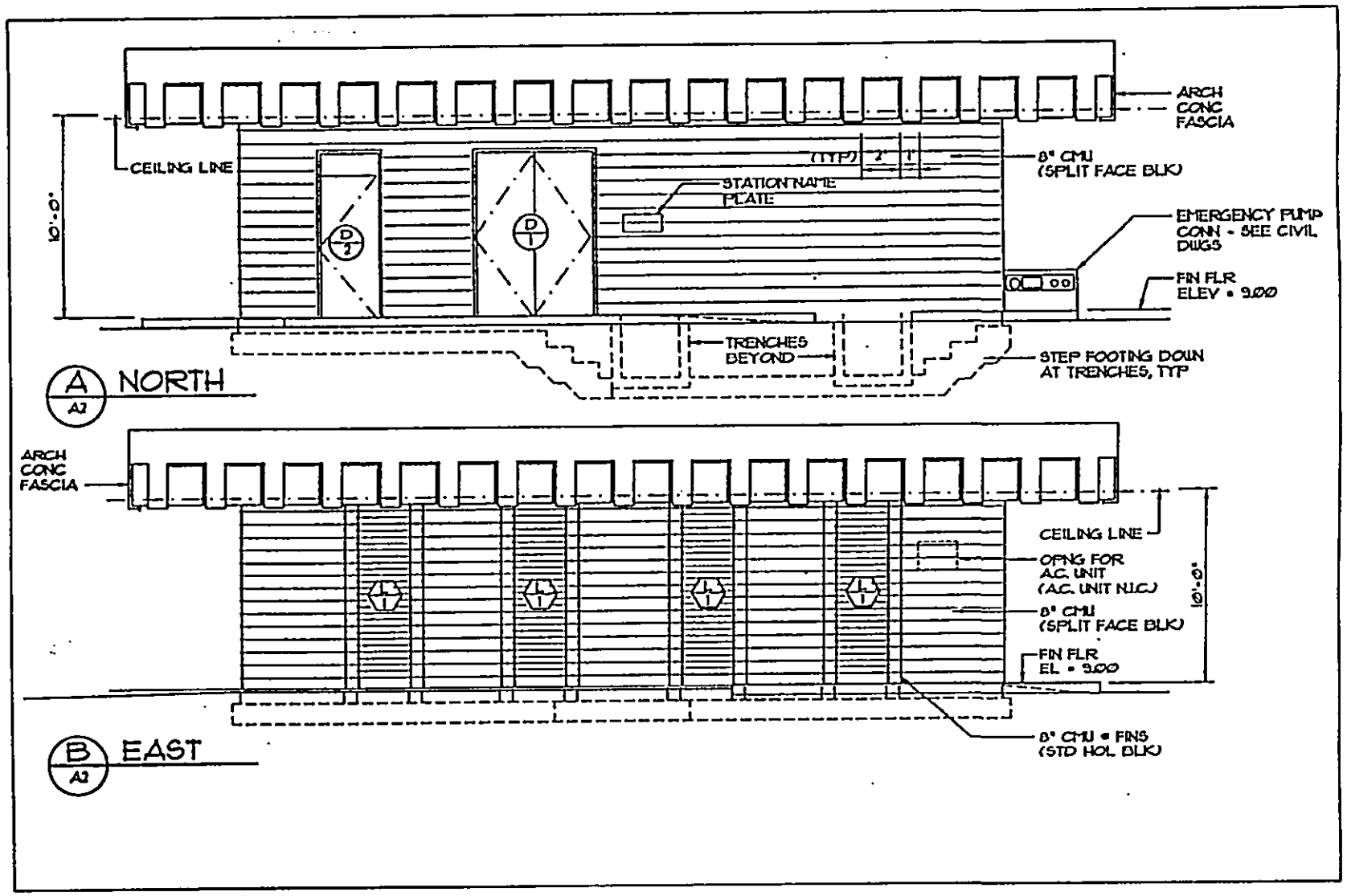
(Adapted from *O'ahu Recreation Map*, DLNR, Cartography by Manoa Mapworks, Inc.)



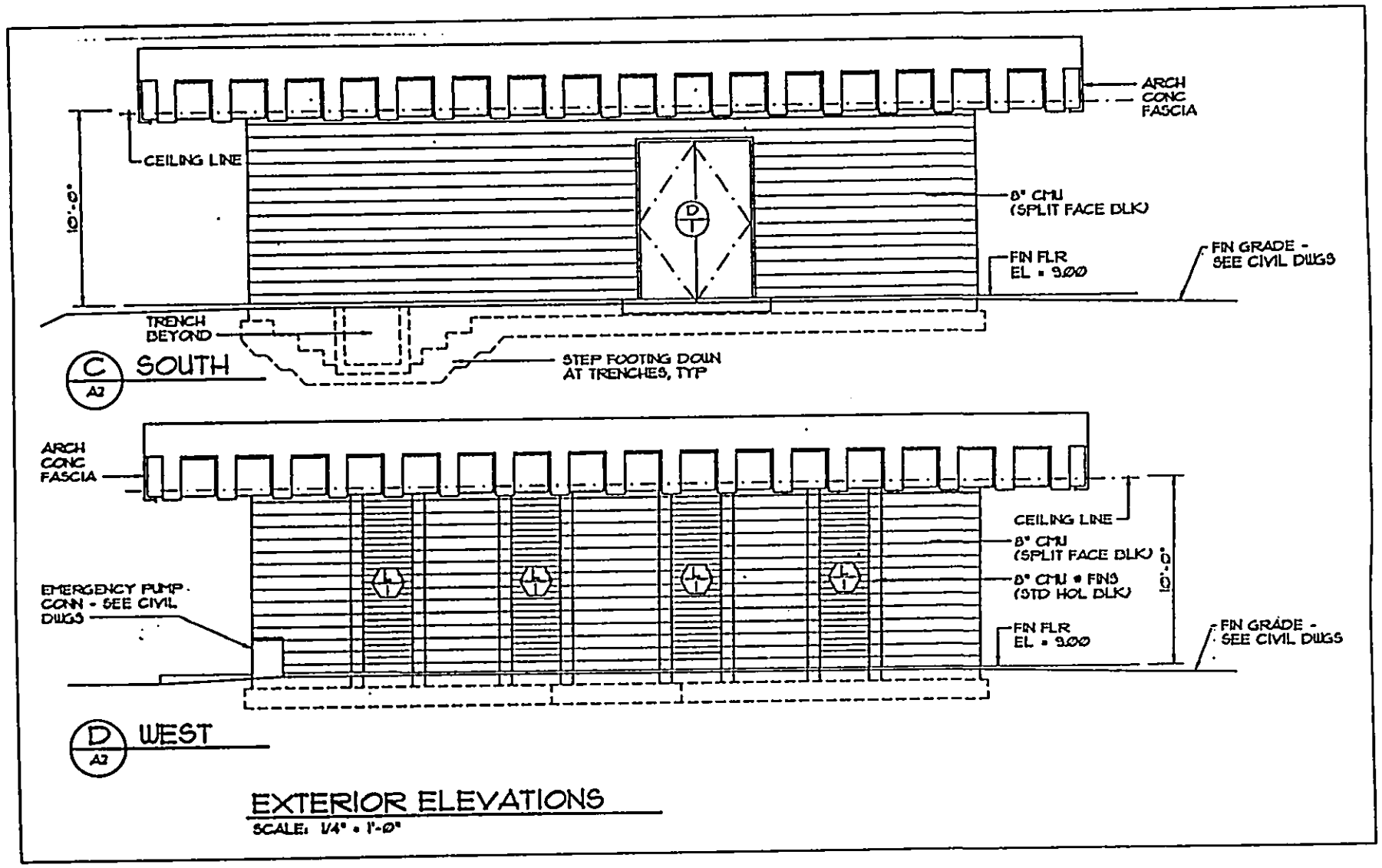
SITE LAYOUT, GRADING & UTILITIES PLAN
Exhibit 2



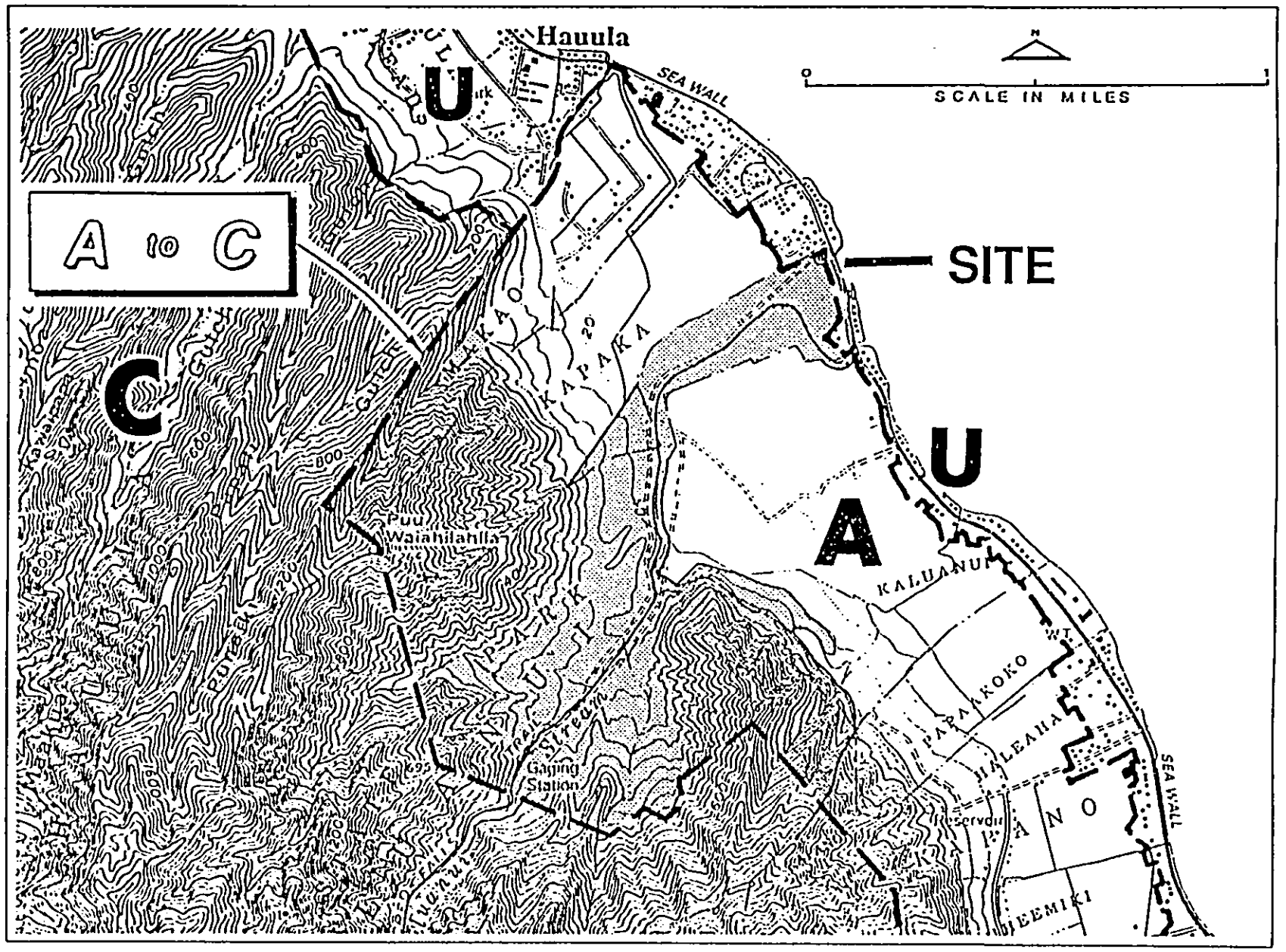
BUILDING FLOOR PLAN
Exhibit 3



BUILDING ELEVATION (North and East)
Exhibit 4

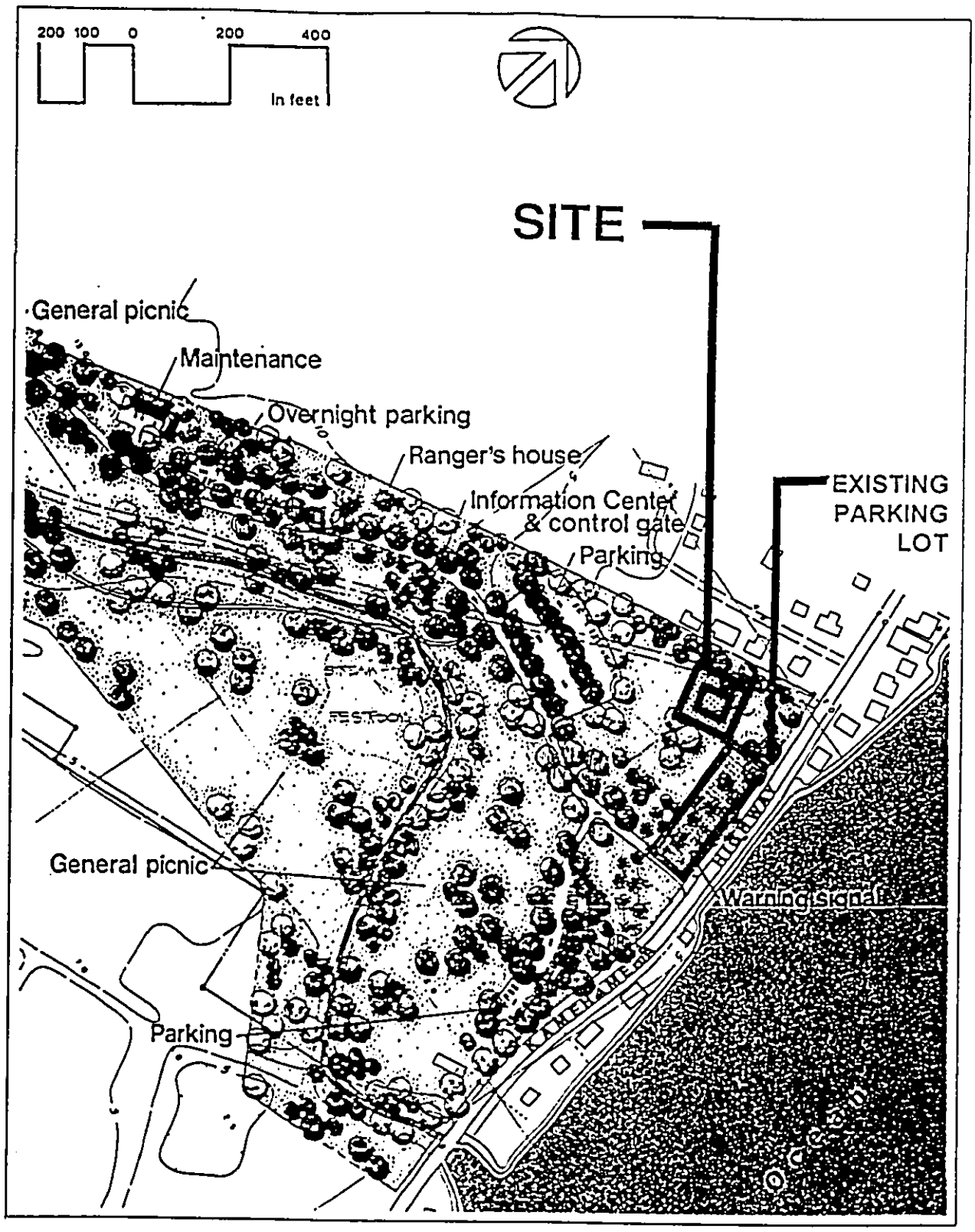


BUILDING ELEVATION (South and West)
Exhibit 5



(Adapted from State Land Use District Boundary Review, OSP, Figure 24)

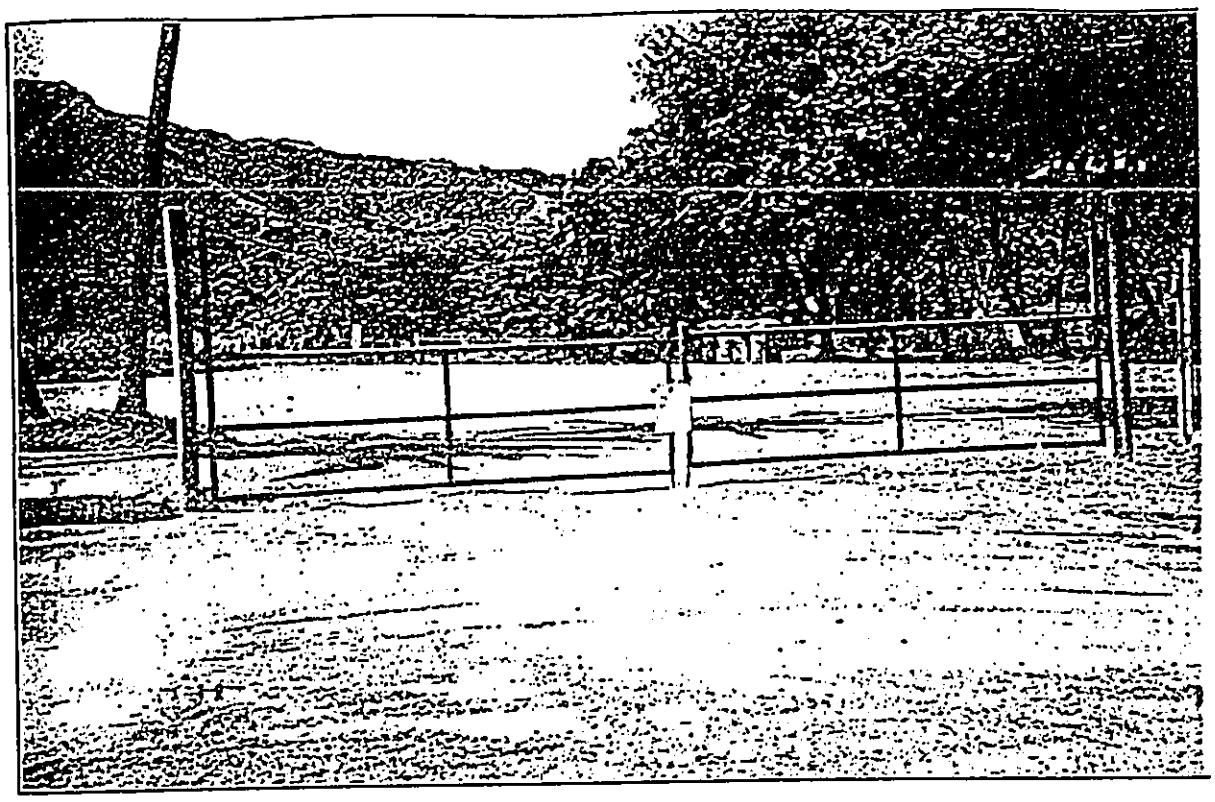
LAND USE DISTRICTS
Exhibit 6



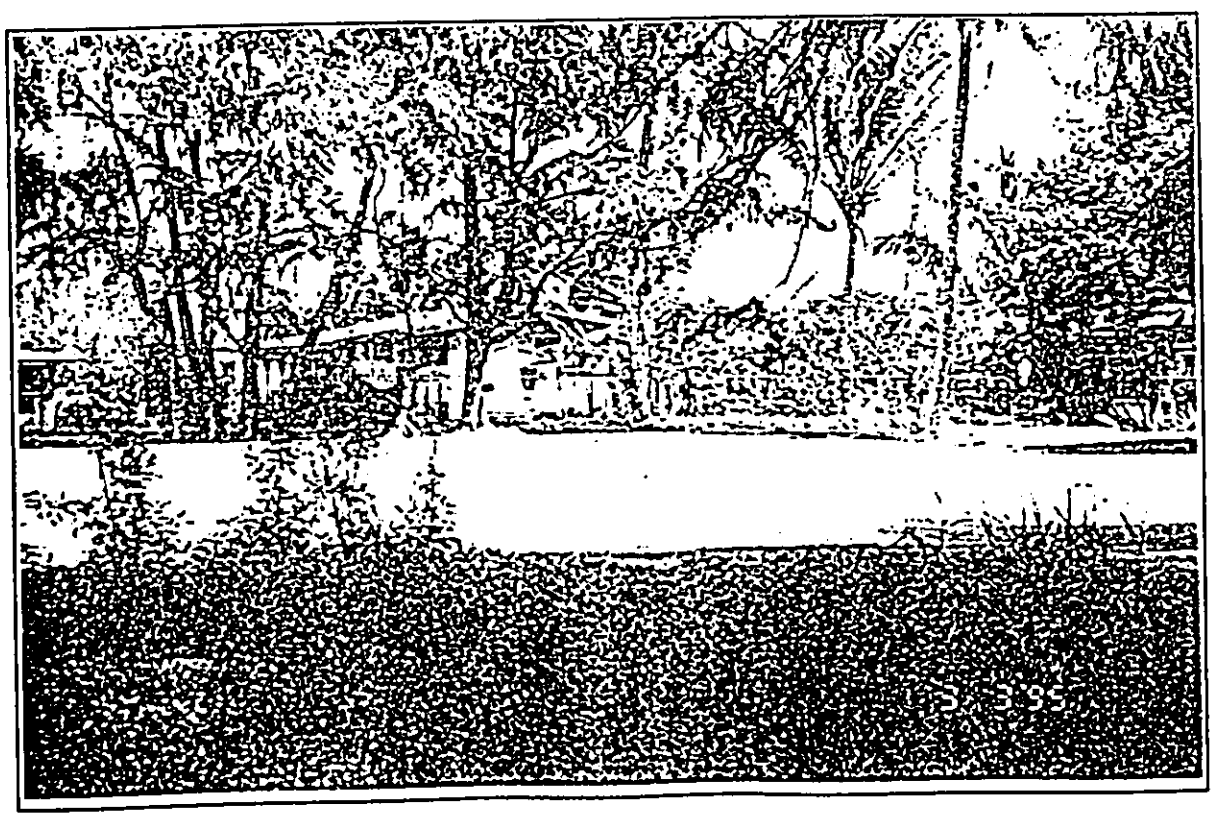
LOCATION OF PROPOSED PROJECT IN RELATION TO
SACRED FALLS STATE PARK MASTER PLAN (1978)

(Adapted from *Sacred Falls Park Master Plan, DLNR, prepared by PBR*)

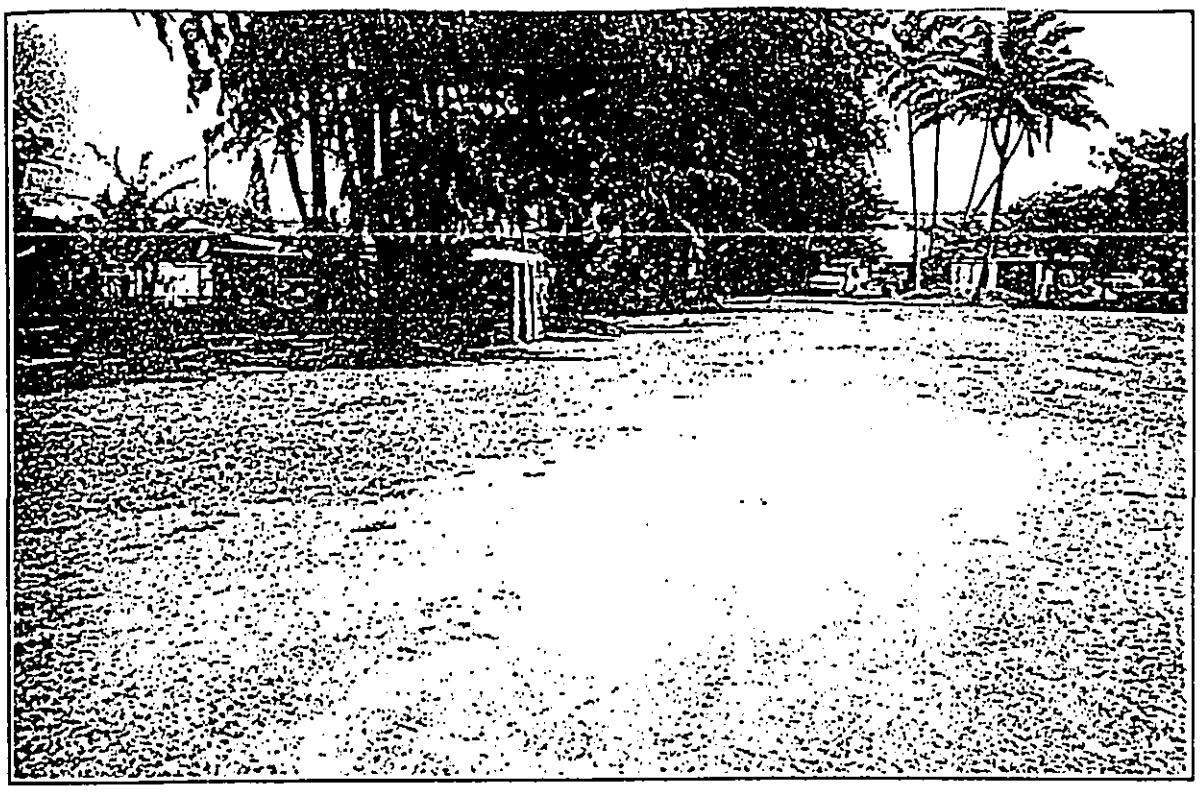
Exhibit 7



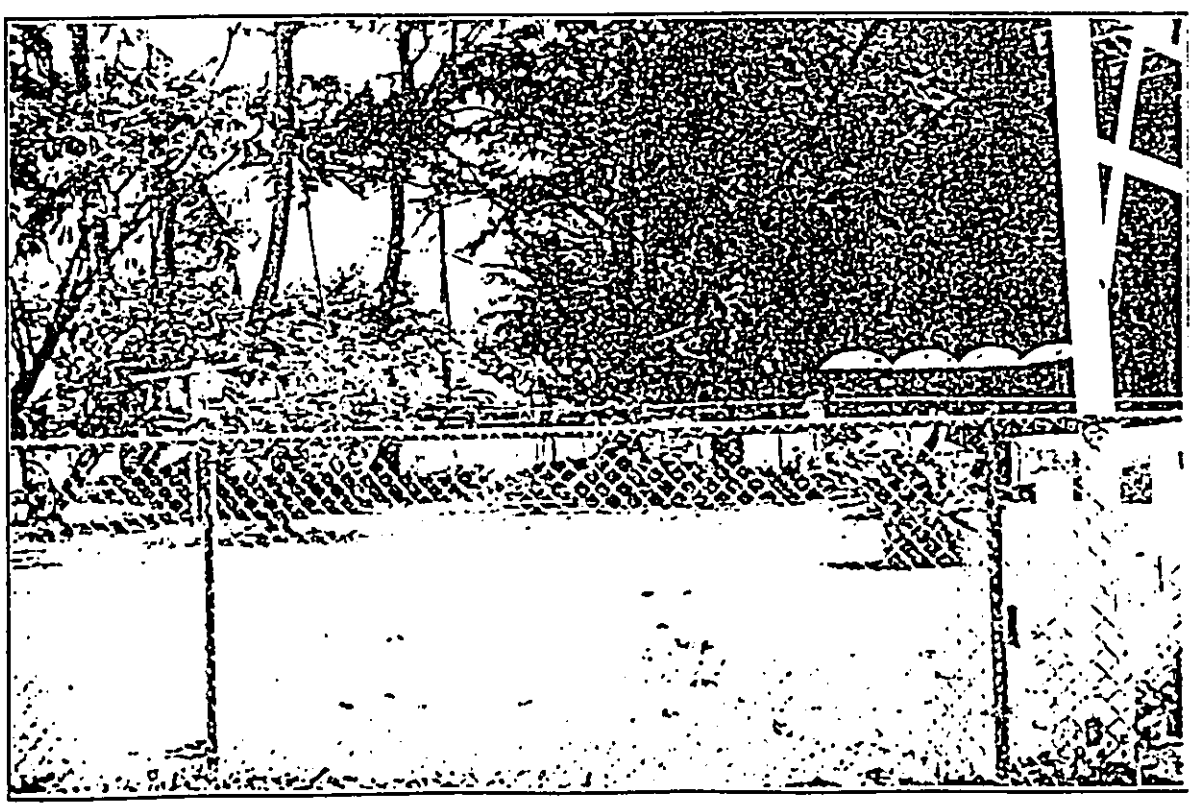
Site Location. Looking towards the mountains from the existing parking lot for Sacred Falls State Park. The proposed project site is approximately in the middle of the photograph but on the other side of the gate. Entrance to the Park trail is in the background. *Note portable toilets* near residences adjacent to Park property line.



Site Location. Looking at residences on adjacent side of Park property line (marked by chain link fence), from approximately in center of proposed site. No trees would be removed.



Site Location. Looking towards ocean from approximate edge of proposed site which would be located along and to the right of the paved road in the center of the photograph.



Site Location. This view taken from the access street into the adjacent residences. The proposed site is far in the background of the photograph, behind the ironwood trees and the portable toilets.

Appendix A

Correspondence Regarding the Pre-Assessment and Draft Environmental Assessment

List of Correspondence

1. Board of Water Supply and Board of Land and Natural Resources
Subject: Consent of Right to Entry, September 6, 1994

2. Engineering Design Group to Department of Land and Natural Resources
Subject: Coordination of Site Selection Process

3. State of Hawaii, Historic Preservation Division, Department of Land and Natural Resources
Subject: "No effect" on historic sites

4. Commission on Persons with Disabilities
Subject: Plans appear to meet ADAAG

5. Engineering Design Group to Ko'olauloa Neighborhood Board
Subject: Coordination of preliminary Draft EA

6. Department of Land Utilization to BWS
BWS to DLU
Subject: Draft Environmental Assessment

7. Planning Department to BWS
BWS to PD
Subject: Draft Environmental Assessment

8. Department of Public Works to BWS
BWS to DPW
Subject: Draft Environmental Assessment

9. Department of Land and Natural Resources to BWS
BWS to DLNR
Subject: Draft Environmental Assessment

10. Office of Environmental Quality Control to BWS
BWS to OEQC
Subject: Draft Environmental Assessment

11. Department of Transportation to BWS
BWS to DOT
Subject: Draft Environmental Assessment

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands on this 6th day of September, 1996.

STATE OF HAWAII

By _____
Its Chairperson and Member
Board of Land and Natural
Resources

Owner

BOARD OF WATER SUPPLY
City and County of Honolulu

By _____
Its Manager and Chief Engineer

Board

APPROVED AS TO CONTENTS

By _____
Board of Water Supply

APPROVED AS TO FORM AND
LEGALITY

_____
Deputy Corporation Counsel

CONSENT OF ENTRY

STATE OF HAWAII, by its Board of Land and Natural Resources, owner of that certain property bearing Tax Map Key 5-3-11:09, situate at Kaluanui Valley, Oahu, Hawaii, hereinafter called the "Owner," for and in consideration of the sum of ONE DOLLAR ($1.00) to it paid by the BOARD OF WATER SUPPLY, City and County of Honolulu, hereinafter called the "Board," the receipt whereof is hereby acknowledged, does hereby consent to the entry by the Board including its agents, servants and contractors for the purpose of conducting an environmental assessment study in the area and the design for a Booster Pumping Station on State land as shown on the map attached hereto as Exhibit "A" and made a part hereof.

It is mutually understood that this consent of entry is granted upon the following terms:

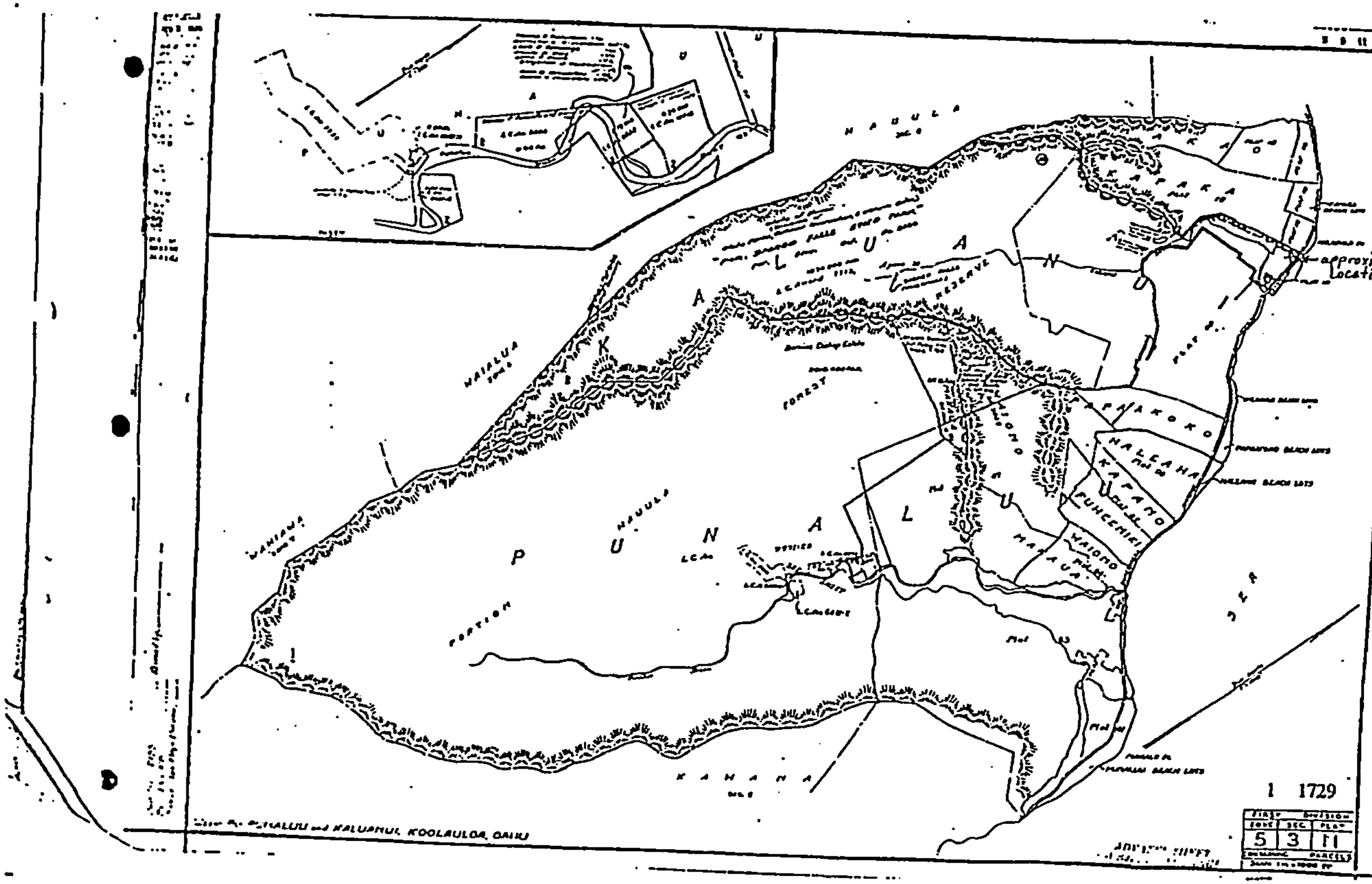
1. That the entire cost of the work proposed to be done and all other expenses incidental thereto will be borne by the Board.

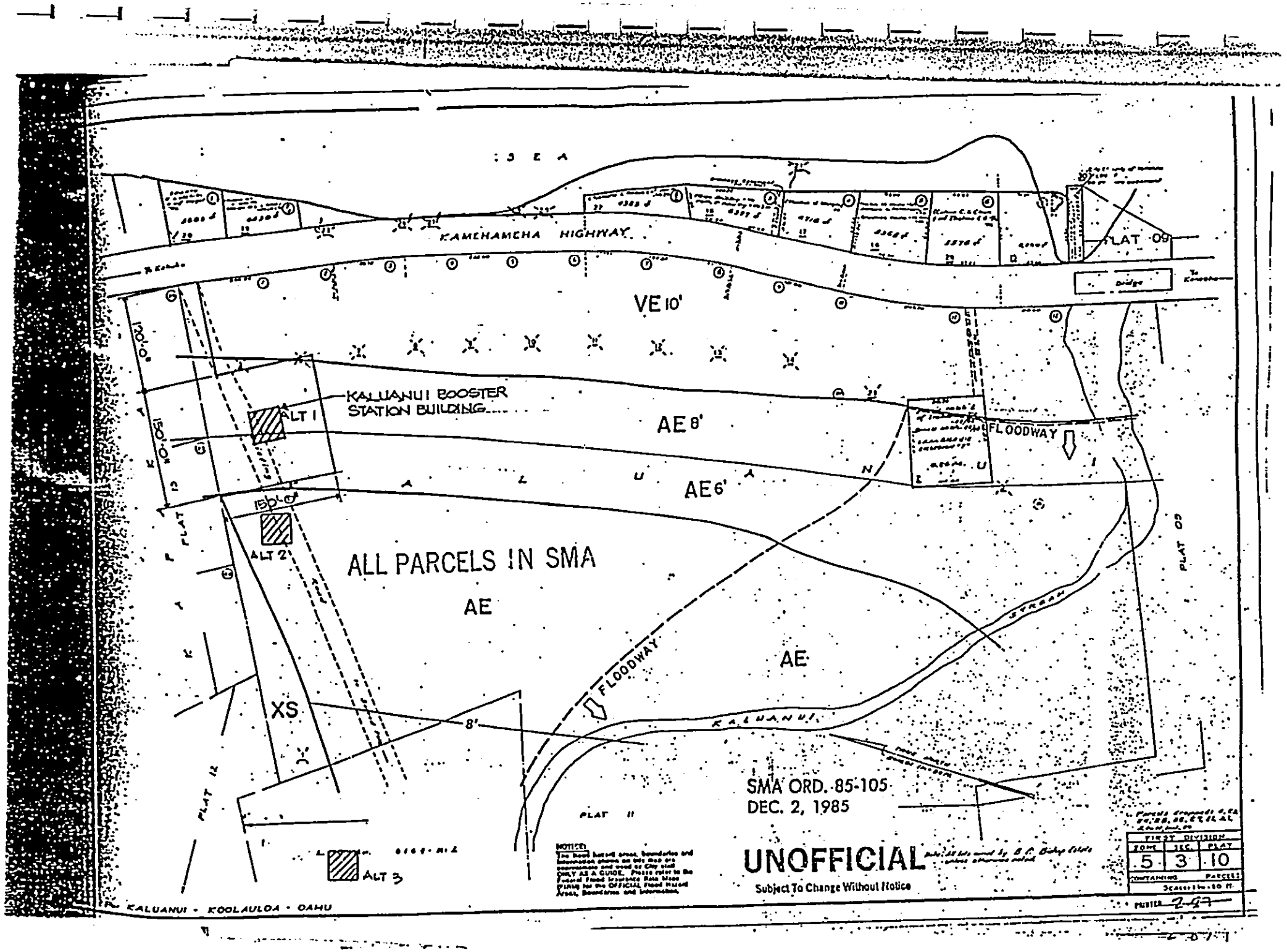
2. The Board will exercise due care and diligence to prevent injury to persons and damages to or destruction of property belonging to the State.

3. That this consent of entry shall expire two (2) years from date of this consent of entry.

4. That the Board shall indemnify and save harmless the State against all loss or damage to the aforementioned property or to the property of others and from all liability for injury to or death of persons in the manner provided by law when such loss, damage, injury or death is caused by the Board in the exercise of the rights granted under this consent of entry.

5. That this consent of entry shall be binding upon and shall inure to the benefit of the parties hereto and their respective successors and assigns.


HAUULA
KAPAKA
PUNALUU
FOREST
RESERVE
WAIALUA
KAHANA
PAAKOKO
HALEAHA
KAPANO
PUHEEMIKI
SEA
Plot 53
approximate Location
1 1729
5 3 11
PUNALUU and KALUANUI, KOOLAULOA, OAHU



ENGINEERING DESIGN
GROUP, INC.
CONSULTING ENGINEERS
1525 Young Street
Honolulu, Hawaii 96826
Phone (808) 942-4400

May 30, 1995

Mr. Michael Wilson
Chairperson
Department of Land and
Natural Resources
1151 Punchbowl Street, Room 310
Honolulu, Hawaii 96813

Attn: Mr. Clyde Hosokawa
State Parks Division

Re: **Kaluanui Line Booster Station**
Kaluanui, Oahu, Hawaii
TMK: 5-3-10

Dear Sir:

The Board of Water Supply is planning to construct a booster station in the Sacred Falls State Park so that adequate pressures can be maintained in the water main running along Kamehameha Highway.

Several alternative sites for the booster station were discussed with Clyde Hosokawa, Division of State Parks. The site selected is located along the edge of the park in a location that Clyde Hosokawa felt would not interfere with future park development. Note that the proposed booster station includes a small office for the State's use as requested.

The Board of Water Supply would like to request that the area shown on the attached plan be transferred to them for the above stated purposes. If this meets with your approval and the State will transfer this land to the Board of Water Supply, please indicate your tentative approval by signing a copy of this letter and mailing it to back to us in the enclosed self addressed envelope.

Mr. Michael Wilson
Department of Land and
Natural Resources

Attn: Mr. Clyde Hosokawa
State Parks Division

May 30, 1995

This tentative approval will allow work on the Environmental Assessment and building plans and specifications to proceed. The Board of Water Supply will negotiate the final terms of the transfer and prepare the necessary parcel maps and descriptions for your review and approval.

Please call Edgar Lee at 942-4400 or Francis Fung at 527-5203 if you have any questions or need any further information.

Very truly yours,

Edgar K.M. Lee

EDGAR K. M. LEE

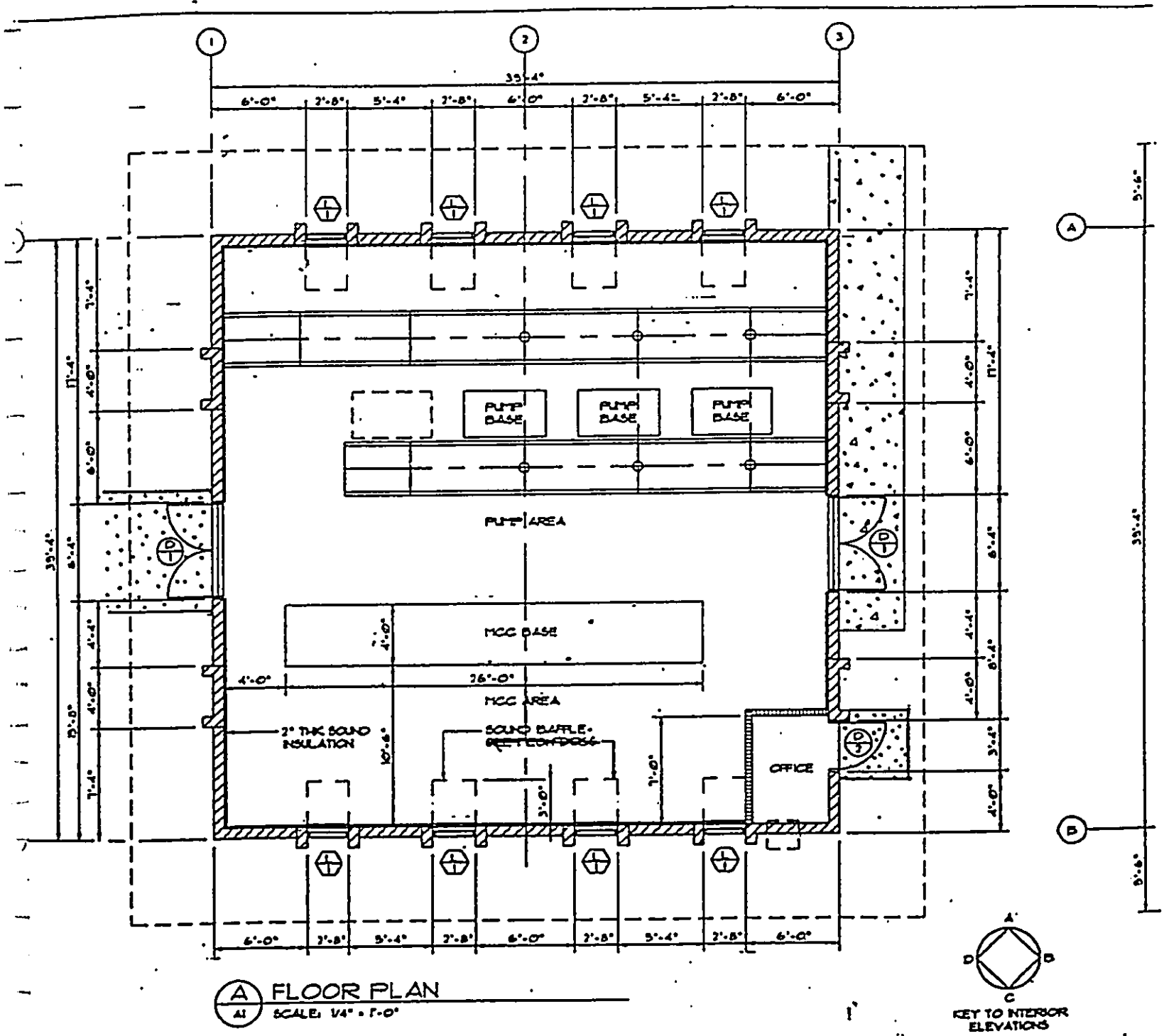
EKML:de

cc: Mr. Francis Fung
Board of Water Supply

Tentatively Approved:

_____

Chairperson, Board of Land and Natural Resources, State of Hawaii



REVISION	BY	DESCRIPTION	DATE	APPROVED

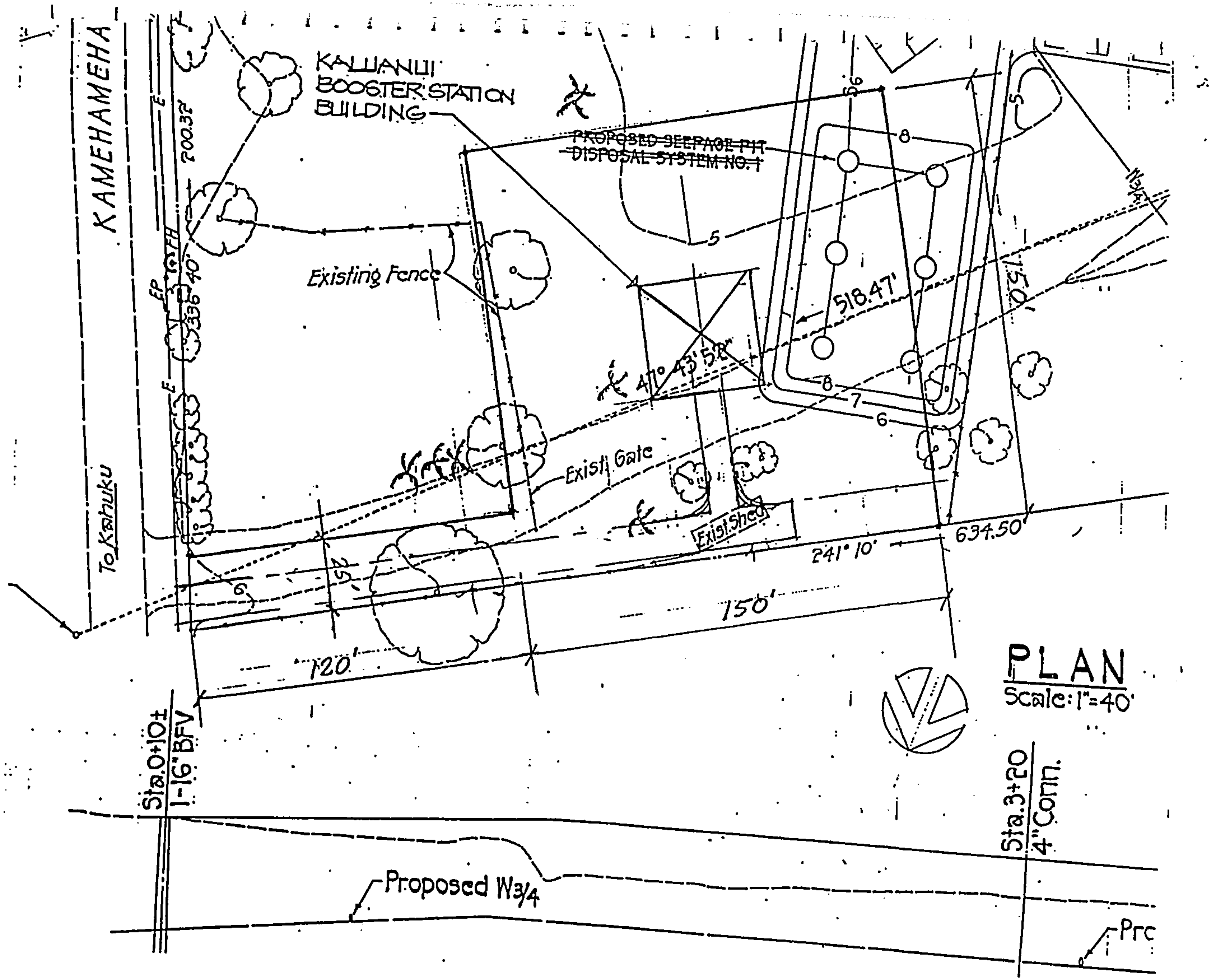
BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU

Kaluanui Line Booster Station

APPROVED: _____ DATE:
CHIEF PLANNING AND ENGINEERING BRANCH

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

DESIGNED | DRAWN | CHECKED | FILE NO.
FIELD BOOK NO. | SCALE | SHEET ___ OF ___ SHEETS


KAMEHAMEHA
To Kahuku
KALUANUI BOOSTER STATION BUILDING
PROPOSED SEEPAGE PIT DISPOSAL SYSTEM NO. 1
Existing Fence
Exist. Gate
Exist. Shed
518.47'
47° 43' 58"
241° 10'
634.50'
150'
120'
25'
200.32'
336.40'
Sta. 0+10±
1-16" BFV
Sta. 3+20
4" Conn.
Proposed W3/4
PLAN
Scale: 1"=40'

ENGINEERING DESIGN
GROUP, INC.
CONSULTING ENGINEERS
1525 Young Street
Honolulu, Hawaii 96826
Phone (808) 942-4400

November 7, 1995

Mr. Don Hibbard
State Historic Preservation Officer
Historic Preservation Division
33 South King Street, 6th Floor
Honolulu, Hawaii 96813

Re: **Kaluanui Line Booster Station, Board of Water Supply**

Dear Mr. Hibbard:

The Honolulu Board of Water Supply is preparing an environmental assessment to evaluate the potential impacts of construction of a booster pumping station in the vicinity of the parking lot and entrance to Sacred Falls State Park. We have enclosed an in-house review draft copy of the draft environmental assessment for your consideration. During its preparation we consulted reference materials from your office related to archaeological studies of the area in question and no historic or pre-historic sites have been identified. We would welcome the opportunity to discuss this with you or a member of your staff. If you feel this would be useful, please call Barry Usagawa (527-5235).

In the near future we will be circulating the draft EA for public review and would welcome the opportunity to include your views in that draft.

Sincerely yours,

EDGAR K. M. LEE
President

EKML:de

cc: Board of Water Supply / Attn: Mr. Francis Fung

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

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

December 4, 1995

Edgar K.M. Lee, President
Engineering Design Group, Inc.
1525 Young Street
Honolulu, Hawaii 96826

LOG NO: 15922
DOC NO: 9511TD27

Dear Mr. Lee:

SUBJECT: Kaluanui Line Booster Station, Honolulu Board of Water Supply
Kaluanui, Ko`olauloa, O`ahu
TMK: 5-3-10

Thank you for the opportunity to review this proposed project, which will construct a 1,600 square foot, one-story, concrete block booster station in a previously graded area. A review of our records shows that this area has been inventoried for historic sites and that no historic sites were found. Therefore, we believe this project will have "no effect" on historic sites.

If you have any questions please call Tom Dye at 587-0014.

Aloha,

DON HIBBARD, Administrator
State Historic Preservation Division

TD:jk

COMMISSION ON PERSONS WITH DISABILITIES

919 Ala Moana Boulevard, Room 101 • Honolulu, Hawaii 96814
Ph. (808) 586-8121(V/TDD) • Fax (808) 586-8129

DOCUMENT REVIEW

February 20, 1996

Kaluanui Line Booster Station
Kaluanui, Koolauloa, Oahu, Hawaii
for the
Board of Water Supply
City and County of Honolulu

CPD Job #	95-470
Project #	96-00
Project Manager:	(not indicated)
Design Consultant:	Edger K.M. Lee Engineering Design Group, Inc.
Documents Reviewed:	1 plan dated: not indicated Transmittal letter dated: 2/20/96

As submitted, the documents reviewed appears to meet the Americans with Disabilities Accessibility Guidelines (ADAAG) as required by HRS 103-50.

The above constitutes review and recommendations on this project to determine whether or not the building or facility is designed in accordance with the Americans with Disabilities Accessibility Guidelines (ADAAG), per Hawaii Revised Statutes (HRS) 103-50. Final responsibility to comply with HRS 103-50 rests with the State or County agency overseeing the project.

Reviewed by:

Ben Gorospe
Facility Access Coordinator

ENGINEERING DESIGN
GROUP, INC.
CONSULTING ENGINEERS
1525 Young Street
Honolulu, Hawaii 96826
Phone (808) 942-4400

November 7, 1995

Mr. Sam Langi
Chair
Koolauloa Neighborhood Board
P. O. Box 158
Laie, Hawaii 96762

Re: **Kaluanui Line Booster Station, Board of Water Supply**

Dear Mr. Langi:

The Honolulu Board of Water Supply is preparing an environmental assessment to evaluate the potential impacts of construction of a booster pumping station in the vicinity of the parking lot and entrance to Sacred Falls State Park. We have enclosed an in-house review draft copy of the draft environmental assessment for your consideration. We would welcome the opportunity to discuss this with you or a member of your staff. If you feel this would be useful, please call Barry Usagawa (527-5235).

In the near future we will be circulating the draft EA for public review and would welcome the opportunity to include your views in that draft.

Sincerely yours,

Edgar K.M. Lee

EDGAR K. M. LEE
President

EKML:de

cc: Board of Water Supply/ Attn: Mr. Francis Fung

DEPARTMENT OF LAND UTILIZATION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU, HAWAII 96813 • (808) 523-4432

JEREMY HARRIS
MAYOR

PATRICK T. ONISHI
DIRECTOR

LORETTA K.C. CHEE
DEPUTY DIRECTOR

96-01462(JT)
96/EC-25

April 9, 1996

Mr. Edgar K.M. Lee, President
Engineering Design Group, Inc.
1525 Young Street
Honolulu, Hawaii 96826

Dear Mr. Lee:

Draft Environmental Assessment (DEA)
Kaluanui Booster Station
Tax Map Key: 5-3-11: 09

We have reviewed the above-referenced document and have the following comments:

1. The proposed project is located in the Special Management Area. A Special Management Area Use Permit is required.

2. It appears that the proposed work will be located within areas designated as Flood Zone AE with a base flood elevation of 6 and 8 feet mean sea level (DEA, Appendix A, page 5). The Final Environmental Assessment should address how the project will comply with the "Flood Hazard District" requirements under Section 7.10 of the Land Use Ordinance.

Thank you for the opportunity to comment. Should you have any questions, please contact Joan Takano of our staff at 527-5038.

Very truly yours,

PATRICK T. ONISHI
Director of Land Utilization

PTO:am

g:dakalua.jlx

RECEIVED
APR 10 1996
ENGINEERING DESIGN GROUP, INC.

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU

COPY

July 29, 1996

TO: PATRICK T. ONISHI, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM: RAYMOND H. SATO, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY

SUBJECT: YOUR LETTER OF APRIL 9, 1996 TO ENGINEERING DESIGN GROUP, INC. ON THE DRAFT ENVIRONMENTAL ASSESSMENT (DEA) FOR THE KALUANUI BOOSTER STATION PROJECT, KALUANUI, OAHU, TMK: 5-3-11: PORTION 09

Thank you for your review of the subject DEA. We have the following responses to your comments:

1. We will apply for the Special Management Area permit once we have filed the Final Environmental Assessment as a Negative Declaration and construction plans are available.

2. The project will be constructed at a finish floor elevation of nine (9) feet above mean sea level (msl), which is above the base flood elevations of six (6) and eight (8) feet msl. It will also be constructed in compliance with Section 7.10 of the Land Use Ordinance.

If you have any questions, please contact Barry Usagawa at 527-5235.

cc: Engineering Design Group, Inc.

PLANNING DEPARTMENT
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU, HAWAII 96813

JEREMY HARRIS
MAYOR

CHERYL D. SOON
CHIEF PLANNING OFFICER

CAROLL TAKAMAZAWA
DEPUTY CHIEF PLANNING OFFICER

MH 3/96-0654

May 7, 1996

Mr. Edgar K. M. Lee, President
Engineering Design Group, Inc.
1525 Young Street
Honolulu, Hawaii 96826

Dear Mr. Lee:

Draft Environmental Assessment (DEA) for the
Kaluamui Booster Station, Kaluamui, Koolauloa,
Hawaii, Tax Map Key: 5-3-11: Portion of 9

In response to your request of March 11, 1996, we have reviewed the subject DEA and have the following comments to offer:

1. The subject site is designated for Park use on the Koolauloa Development Plan Land Use Map.

2. The Koolauloa Development Plan Public Facilities Map shows a symbol for publicly funded water system improvements from Hauula to Kaipapau along Kamehameha Highway, within six years.

3. In our previous memorandum of February 23, 1996, to the Board of Water Supply, we determined that the proposed project is minor because the proposed improvements will not facilitate growth (see attached). Therefore, an amendment to the Koolauloa Development Plan Public Facilities Map will not be required.

4. We have no objections to the proposed Kaluamui Booster Station.

RECEIVED
MAY - 9 1996
ENGINEERING DEPT

Should you have any questions, please contact Matthew Higashida of our staff at 527-6056.

Sincerely,

Cheryl D. Soon

CHERYL D. SOON
Chief Planning Officer

CDS:js

Attachment

cc: Board of Water Supply
Office of Environmental Quality Control

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU

COPY

June 10, 1996

TO: CHERYL D. SOON, CHIEF PLANNING OFFICER
PLANNING DEPARTMENT

FROM: For RAYMOND H. ~~SATO, MANAGER~~ AND CHIEF ENGINEER
BOARD OF WATER SUPPLY

SUBJECT: YOUR MEMORANDUM OF MAY 7, 1996 TO EDGAR K. M. LEE OF ENGINEERING DESIGN GROUP, INC., REGARDING THE DRAFT ENVIRONMENTAL ASSESSMENT (EA) FOR THE PROPOSED KALUANUI BOOSTER STATION, KALUANUI, KOOLAULOA, HAWAII, TMK: 5-3-11: POR. 09

Thank you for reviewing the draft EA for our proposed Kaluanui Booster Station project.

We note that you have no objections to the proposed project and that an amendment to the Koolauloa Development Plan Public Facilities Map will not be required.

If you have any questions, please contact Barry Usagawa at 527-5235.

cc: Edgar Lee, Engineering Design Group

RECEIVED
JUN 11 1996
ENGINEERING DESIGN GROUP, INC.

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 11TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 523-4341 • FAX: (808) 527-5857

JEREMY HARRIS
MAYOR

KENNETH E. SPRAGUE
DIRECTOR AND CHIEF ENGINEER

DARWIN J. HAMAMOTO
DEPUTY DIRECTOR

ENV 96-074

March 29, 1996

Mr. Edgar K.M. Lee
Engineering Design Group, Inc.
1525 Young Street
Honolulu, Hawaii 96826

Dear Mr. Lee:

Subject: Draft Environmental Assessment (DEA)
Kaluanui Booster Station
TMK: 5-3-10

We have reviewed the subject DEA and have the following comments:

1. Page 4, Section 1.3.5 Effects on Water Quality: Please expand discussion on water quality, describe surface runoff pattern and address any NPDES-related discharge permits, such as construction dewatering and hydrotesting.

2. If a drain connection to City storm drain system is being proposed, then a private drain connection permit will be required.

3. Page 13, Section 6.3 United States Government: Since the proposed project is located in a flood zone, does the FEMA or U.S. Army Corps of Engineers have jurisdiction? What is the base flood elevation that a building needs to be constructed above?

Should you have any questions, please contact Mr. Alex Ho, Environmental Engineer, at 523-4150.

Very truly yours,

KENNETH E. SPRAGUE
Director and Chief Engineer

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU

COPY

July 29, 1996

TO: KENNETH E. SPRAGUE, DIRECTOR AND CHIEF ENGINEER
DEPARTMENT OF PUBLIC WORKS

FROM: RAYMOND H. SATO, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY

SUBJECT: YOUR LETTER OF MARCH 29, 1996 TO ENGINEERING DESIGN GROUP, INC. ON THE DRAFT ENVIRONMENTAL ASSESSMENT (DEA) FOR THE KALUANUI BOOSTER STATION PROJECT, KALUANUI, OAHU, TMK: 5-3-11: PORTION 09

Thank you for your review of the subject DEA. We have the following responses to your comments:

1. The Final Environmental Assessment includes an expanded discussion on water quality, a description of surface runoff patterns, and addresses the National Pollutant Discharge Elimination System (NPDES) related discharge permits. The erosion control measures include placement of a silt fence around the construction site, and a gravel ingress and egress pad. The site and surrounding area are gradually sloping towards the stream and to the ocean. There is a low lying area between the site and the highway, and runoff will tend to pond there. Water flowing towards the stream crosses a large grassy area, and through an extensive "hau" thicket bordering the stream.

   No construction below the water table is proposed, so dewatering is not anticipated. However, an NPDES permit for hydro testing will be applied for from the State Department of Health.

2. A drain connection to City storm drains is not proposed at this time.

3. Federal agencies have no jurisdiction over the subject site. We are coordinating the flood zone requirements with the City's Building Department. The project is located in the AE flood zone with elevations of six (6) and eight (8) feet above mean sea level (msl) as indicated on the Federal Flood Insurance Rate Map. The first floor elevation of the proposed project will be constructed above these elevations at nine (9) feet msl.

If you have any questions, please contact Barry Usagawa at 527-5235.

cc: Engineering Design Group, Inc.

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

MICHAEL D. WILSON, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTY
GILBERT COLOMA-AGARAN

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

March 22, 1996

Mr. Edgar K. M. Lee, President
Engineering Design Group, Inc.
1525 Young Street
Honolulu, Hawaii 96826

LOG NO: 16758
DOC NO: 9603EJ16

Dear Mr. Lee:

SUBJECT: Historic Preservation Review -- Draft Environmental Assessment (DEA), Kaluanui Bocster Station
Kaluanui, Ko'olauloa, O'ahu
TMK: 5-3-10

Thank you for the opportunity to review the DEA for the Kaluanui Booster Station. The document correctly summarizes our comments that we believe that this project will have "no effect" on historic sites. Our comments are included as Appendix A in the DEA.

If you have any questions please call Elaine Jourdane at 587-0015.

Aloha,

DON HIBBARD, Administrator
State Historic Preservation Division

EJ:smf

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU

COPY

July 29, 1996

Mr. Don Hibbard, Administrator
State Historic Preservation Division
Department of Land and Natural Resources
State of Hawaii
33 South King Street, 6th Floor
Honolulu, Hawaii 96813

Dear Mr. Hibbard:

Subject: Your Letter of March 22, 1996 to Engineering Design Group, Inc. on the Draft Environmental Assessment (DEA) for the Kaluanui Booster Station Project, Kaluanui, Oahu, TMK: 5-3-11: Portion 09

Thank you for your review of the subject DEA.

We note that the project will have "no effect" on historic sites. However, in the event any features or remains are uncovered during construction, all work in the vicinity will stop and your office will be notified for disposition of the matter.

If you have any questions, please contact Barry Usagawa at 527-5235.

Very truly yours,

RAYMOND H. SATO
Manager and Chief Engineer

cc: Engineering Design Group, Inc.

P

961342

PE

BENJAMIN J. CAYETANO
GOVERNOR

GARY GILL
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
220 SOUTH KING STREET
FOURTH FLOOR
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186

May 7, 1996

Mr. Raymond Sato
Board of Water Supply
630 South King Street
Honolulu, Hawaii 96843

Dear Mr. Sato:

Subject: Draft Environmental Assessment for the Kaluanui Booster Station

Thank you for the opportunity to review and comment on the subject project. We have the following comments.

1. The project is located 200 feet from the ocean and 1,100 feet from Kaluanui Stream. What are the mitigation measures to control construction run-off from flowing into the nearby ocean and stream?

2. On Exhibit 7, please show the location of the existing parking lot for Sacred Falls State Park.

Should you have any questions, please cal Jeyan Thirugnanam at 586-4185.

Sincerely,

Gary Gill
Director

c: Edgar Lee

JHA

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU

COPY

July 29, 1996

RECEIVED
JUL - 8 1996
Engineering Design Group, INC.

Mr. Gary Gill, Director
Office of Environmental Quality Control
Central Pacific Plaza
220 South King Street, 4th Floor
Honolulu, Hawaii 96813

Dear Mr. Gill:

Subject: Your Letter of May 7, 1996 on the Draft Environmental Assessment (DEA) for the Kaluanui Booster Station Project, Kaluanui, Oahu, TMK: 5-3-11: Portion 09

Thank you for your review of the subject DEA. We have the following response to your comments:

1. Measures to control construction runoff from flowing into the nearby ocean and stream are discussed in the Final Environmental Assessment. Specifically, the erosion control measures include placement of a silt fence around the construction site, and a gravel ingress and egress pad. The site and surrounding area are gradually sloping towards the stream and to the ocean. There is a low lying area between the site and the highway, and runoff will tend to pond there. Water flowing towards the stream crosses a large grass area, and through an extensive "hau" thicket bordering the stream. The vegetation will dissipate flow velocities allowing sediments to settle prior to reaching the stream.

2. Exhibit 7 has been revised to show the location of the existing parking lot for Sacred Falls State Park.

If you have any questions, please contact Barry Usagawa at 527-5235.

Very truly yours,

RAYMOND H. SATO
Manager and Chief Engineer

cc: Engineering Design Group, Inc.

BENJAMIN J. CAYETANO
GOVERNOR

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
JERRY M. MATSUDA
GLENN M. OKIMOTO

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

IN REPLY REFER TO:
STP 8.7276

March 27, 1996

Mr. Edgar K. M. Lee, President
Engineering Design Group, Inc.
1525 Young Street
Honolulu, Hawaii 96826

Dear Mr. Lee:

Subject: Draft Environmental Assessment, Kaluanui Booster Station, Honolulu Board of Water Supply

Thank you for your transmittal of March 11, 1996.

The proposed project is not anticipated to have an adverse impact on our State transportation facilities. Plans for construction work within the State highway right-of-way must be submitted for our review and approval.

We appreciate the opportunity to provide comments.

Very truly yours,

KAZU HAYASHIDA
Director of Transportation

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU

COPY

July 29, 1996

Mr. Kazu Hayashida, Director
Department of Transportation
State of Hawaii
869 Punchbowl Street
Honolulu, Hawaii 96813-5097

Dear Mr. Hayashida:

Subject: Your Letter of March 27, 1996 (STP 8.7276) to Engineering Design Group, Inc. on the Draft Environmental Assessment (DEA) for the Kaluanui Booster Station Project, Kaluanui, Oahu, TMK: 5-3-11: Portion 09

Thank you for your review of the subject DEA.

We note that your department does not anticipate adverse impacts to State transportation facilities. The construction plans for work within the State Highway right-of-way will be submitted for your review and approval.

If you have any questions, please contact Barry Usagawa at 527-5235.

Very truly yours,

RAYMOND H. SATO
Manager and Chief Engineer

cc: Engineering Design Group, Inc.

Appendix B

Initial Acoustical Recommendations for Kaluanui Booster Station Building

Y. Ebisu & Associates
Acoustical and Electronic Engineers

1126 12th Avenue
Room 305
Honolulu, Hawaii 96816
(808) 735-1634

YEA #33.010
April 27, 1995

Engineering Design Group, Inc.
1525 Young Street
Honolulu, Hawaii 96826

Attention: Mr. Edgar Lee

Subject: Initial Acoustical Recommendations for Kaluanui Booster Station Building

Dear Mr. Lee:

The following report describes the results of our sound level measurements of April 26, 1995, and includes my acoustical recommendations for the Booster Station Building. Our design goal is to reduce pump noise levels to 45 dBA or less at the station's property lines, which were assumed to be at least 50 FT from the building's exterior walls.

Measured background ambient noise levels at the station are shown in FIGURE 1. Because the recorded minimum daytime background ambient noise level was less than 45 dBA and because residential properties adjoin the project site, the State Department of Health's nighttime noise limit of 45 dBA was selected as the acoustical design goal.

The following acoustical treatments are recommended for this station:

Building Walls: Dense, hollow, 8" CMU is acceptable. Alternately, a stud wall system which has a minimum STC 45 rating should also be acceptable.

Building Roof: A dense concrete roof of minimum 2" thickness is acceptable. Alternately, a roof-joist-ceiling system which has a minimum STC 45 rating should also be acceptable.

Acoustical Ceiling: Use fiberglass, lay-in ceiling panels which have a minimum NRC Rating of 0.75 when installed in a suspended ceiling.

Acoustical Wall Panels: Nominal 2" thick, acoustical panels which are formed from semirigid insulation and a protective, finish layer. Wall cover-

age should include all bare wall surfaces down to the 1 FT height line. Suggested materials are 1-1/2" thick Owens Corning Type 703 for the semirigid insulation, plus 1/2" thick Aeroflex Duct Liner or 5/8" thick, fiberglass ceiling panel for the outer finish layer. Alternately, 2" thick Type 703 insulation may be protected with Alpro Type F perforated metal panels.

Exterior Doors: Use hollow metal doors which are rated at minimum STC 45 as an entire door, frame, and seal assembly. Use a raised threshold to allow for use of compression seals along the door bottom, rather than automatic drop seals (which require more maintenance). Any removable metal panels above the door should also be a rated at minimum STC 45.

Window Silencers: Use IAC Type 3Ms duct silencers in the ventilation openings of the building.

Pump Vibration Isolators: Use of double-deflection, neoprene vibration isolators, with minimum 0.5" static deflection is recommended to support and isolate the pump/motor assemblies.

If you need additional information regarding these recommendations, do not hesitate to call. Except for the reduced thickness of 2 inches, the acoustical wall panel details should be similar to those recommended for the Aliamanu Generator Building. I may reduce the total coverage area of the 2" thick, acoustical wall panels after I review the preliminary plans.

If the building's ventilation requirements can be satisfied using a lined elbow plus a 3 FT long IAC 3Ms silencer at each window, we can delete all of the 2" wall panels.

Sincerely,

Yoichi Ebisu, P.E.

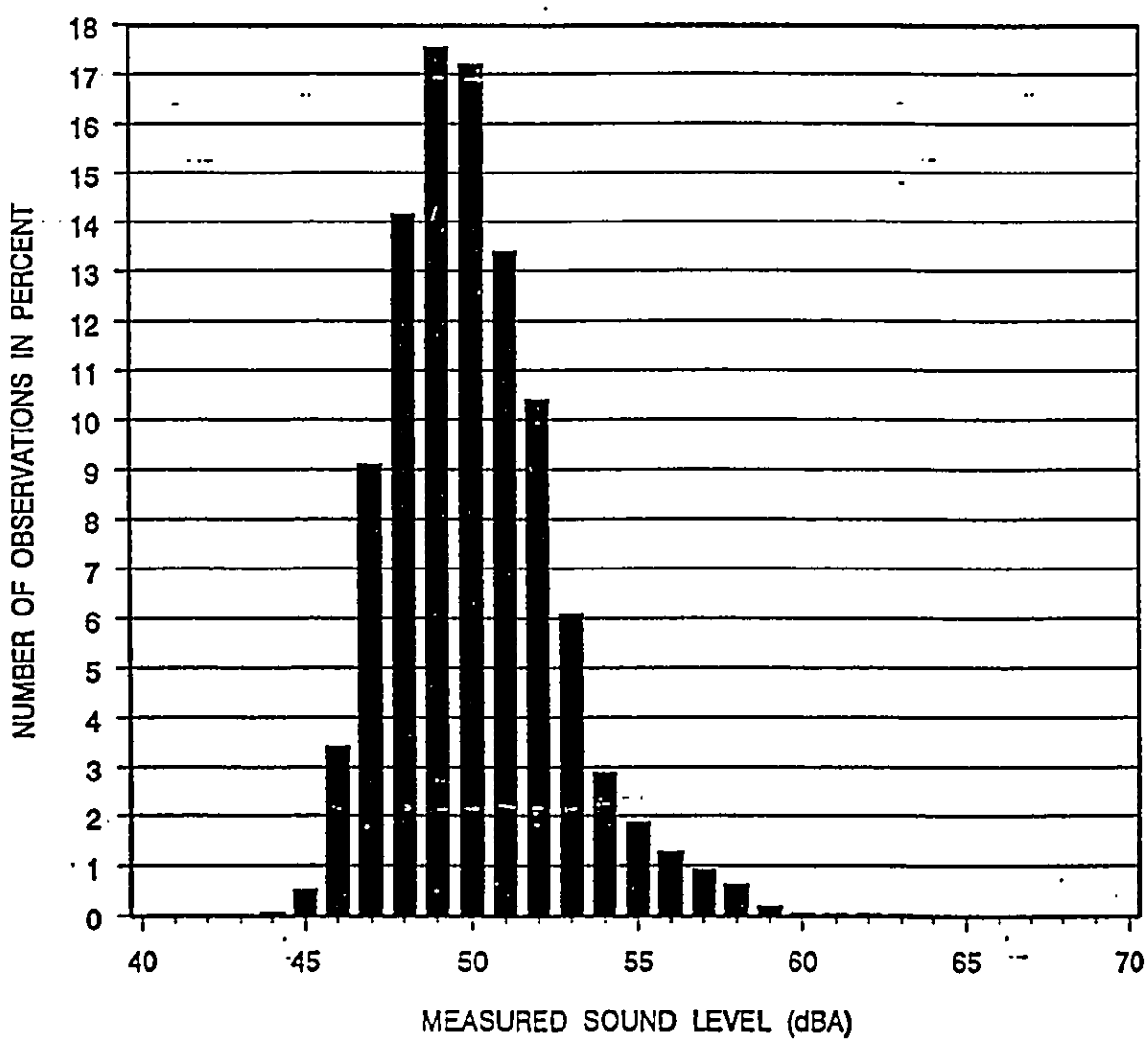
encl.

FIGURE 1

HISTOGRAM OF BACKGROUND AMBIENT NOISE AT KALUANUI BOOSTER STATION

DATE: APRIL 26, 1995
TIME: 0845–0920 HOURS

METER RESPONSE: FAST



Lmax: 64.1 dBA
L10: 52.6 dBA
L50: 49.1 dBA
Leq: 50.2 dBA
Lmin: 43.1 dBA

Appendix C

Historic and Archaeological Resources

GEORGE R. ARIYOSHI
GOVERNOR OF HAWAII

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

DIVISIONS:
CONVEYANCES
FISH AND GAME
FORESTRY
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

FILE NO. _____

April 5, 1978

MEMORANDUM

TO: Robert Fletcher

THROUGH: Patricia Beggerly

FROM: Agnes Griffin, Martha Yent

SUBJECT: Result and Recommendation on Test Coring Conducted at Sacred Falls State Park.

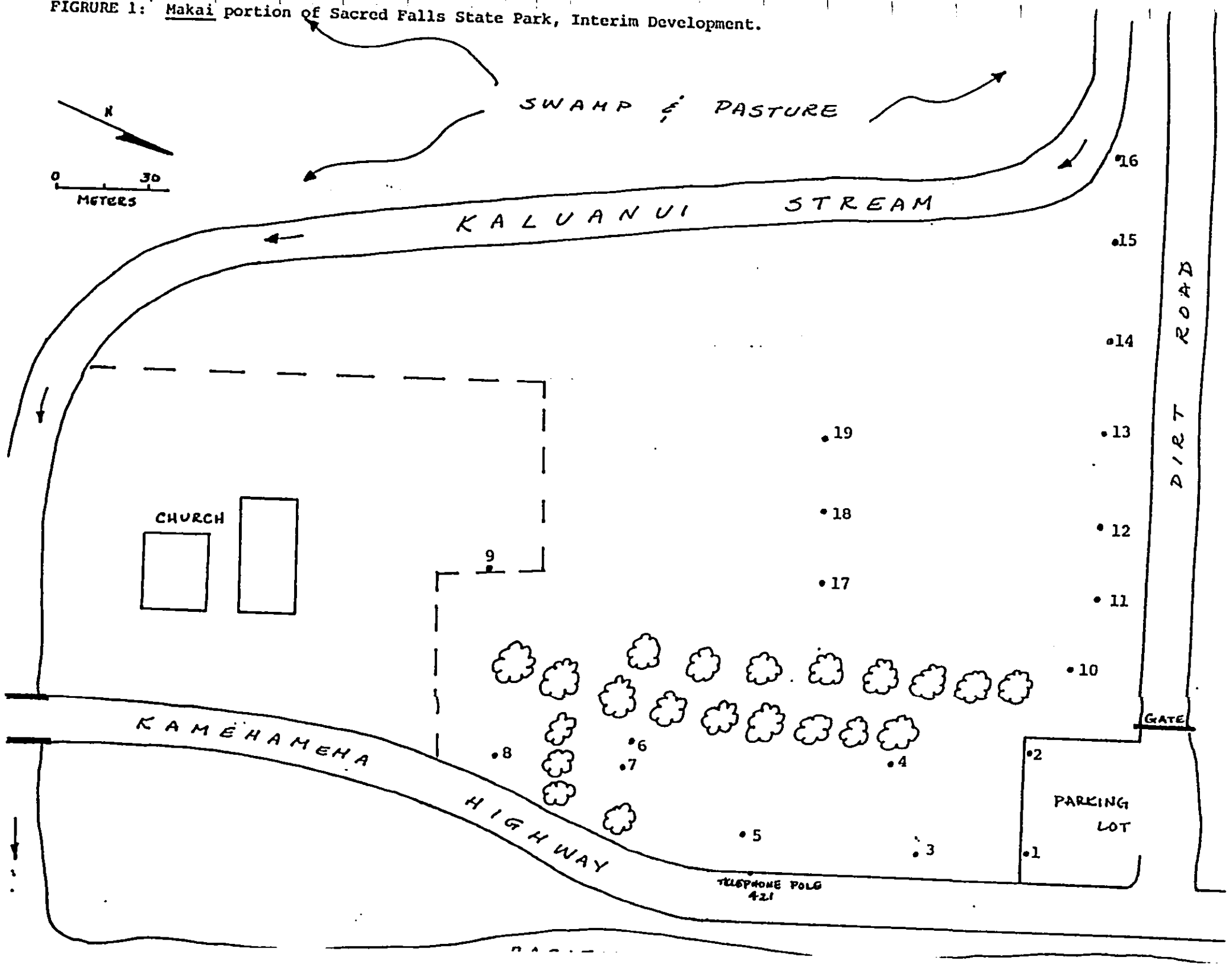
Test coring was conducted at Sacred Falls State Park on March 31, 1978 to determine the presence of subsurface cultural materials that will be endangered by a planned clearing of vegetation and pulling up of big trees with a bulldozer. The area involved is approximately 180m x 250m, and is bounded on the north by the dirt road, the Kaluanui stream on the west, the church ground on the south, and on the east the parking lot and cleared ground.

Test cores were put in every 20-30 meters (whichever is more convenient to use the hand core) in two makai-mauka transects. The first transect was 15m south of the dirt road (cores 10-16), and the second one is another 85m (cores 17-19) from it. Cores 10-13 and 17-19 showed an upper stratum of dark sandy silt underlain by white, coarse, moist beach sand. The upper stratum becomes progressively a clay loam towards the stream (cores 15 and 16). All the test cores revealed no cultural remains under the surface.

Also, previous random test coring (cores 1-9) showed the same results. No surface cultural remains were found in a reconnaissance conducted in the area in September 1977.

Thus, clearing the area of vegetation with a machine is permissible as nothing of archaeological value was found. However, our presence is recommended when big trees will be pulled up for replanting. It is important that deep holes be inspected if anything showed up that we didn't find from our testing.

FIGRURE 1: Makai portion of Sacred Falls State Park, Interim Development.



GEORGE R. ARIYOSHI
GOVERNOR OF HAWAII

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

DIVISIONS:
CONVEYANCES
FISH AND GAME
FORESTRY
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

FILE NO. _____

October 3, 1977

MEMORANDUM

TO: Robert Fletcher

THROUGH: Patricia Beggerly

FROM: Martha Yent, Agnes Griffin

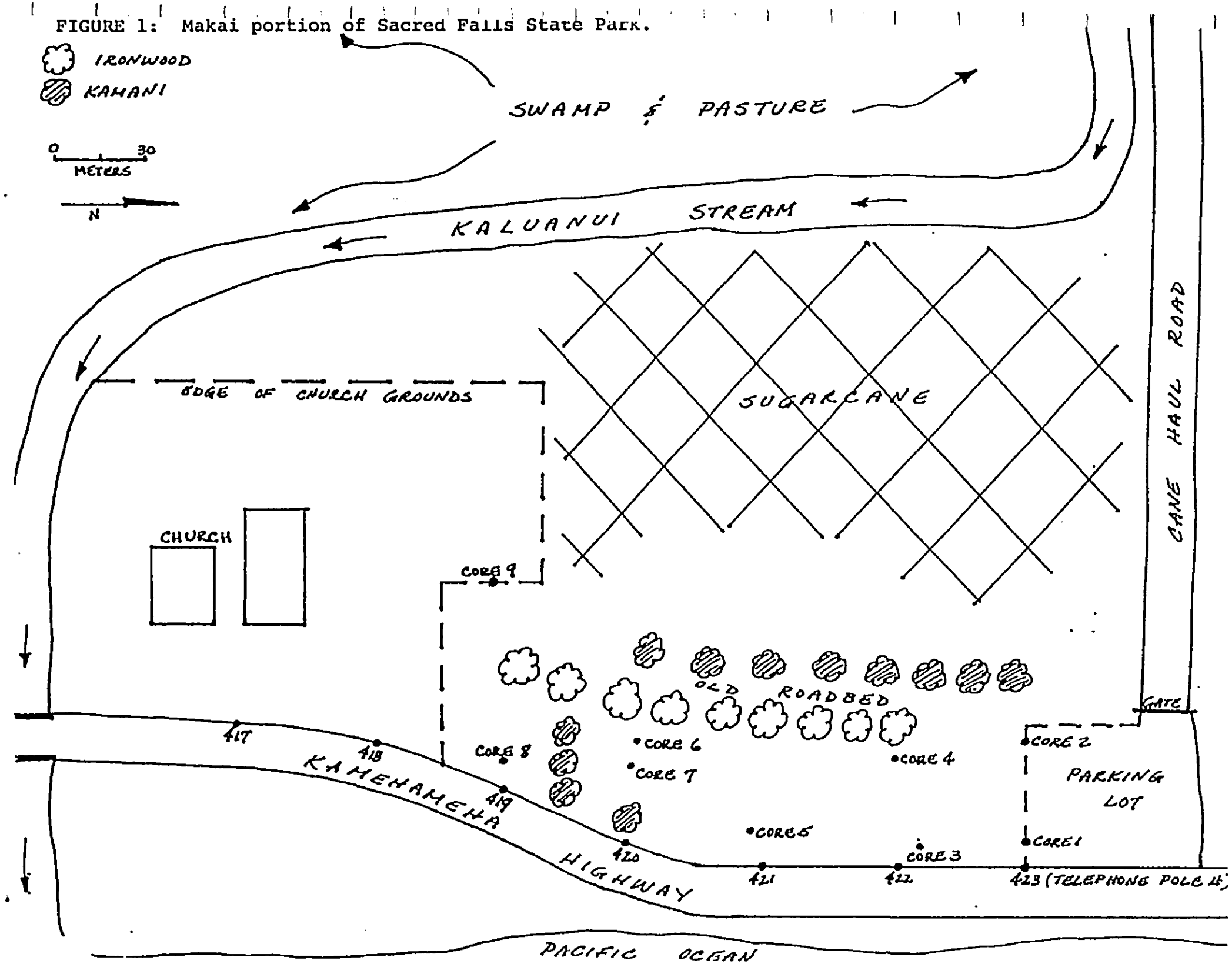
SUBJECT: Results of archaeological survey and testing in the makai portion of Sacred Falls State Park.

The study area at Sacred Falls State Park is defined by Kamehameha Highway on the east, the park entrance road on the north, the row of ironwood trees makai of the sugarcane field on the west, and the church grounds on the south. This strip of land is approximately 40 meters (east-west) by 250 meters (north-south). Formerly, there was a number of residences in this area which is now a grassy strip with a perimeter of kamani trees.

The parking lot adjacent to the entrance road had already been cleared archaeologically and subsequently graded. The parking lot covers a square area of 40 meters on a side. The next phase south of the parking lot called for leveling the ground and the eventual construction of picnic tables. The archaeological fieldwork for this area was carried out over two days, September 22 and 29, 1977. There was no cultural evidence on the surface and seven cores were placed throughout the area to test for subsurface deposits (See Fig. 1).

All the cores showed an upper stratum of a dark silty sand with some historic material. This stratum was underlain by a light colored beach sand that became coarser with depth. A layer of coral was encountered at variable depths over a meter. The only material in the light sandy deposit was small, fragmentary, water-worn shell indicating natural deposition. There was no material to indicate a cultural deposit other than the recent historic one. Therefore, the area has been cleared for ground leveling which will affect mainly the upper stratum. Placement of picnic tables will involve excavation to a depth of 18 inches. From our testing, this excavation should not disturb any cultural deposits.

FIGURE 1: Makai portion of Sacred Falls State Park.



:ORGE R. ARIYOSHI
OVERNOR OF HAWAII

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

DIVISIONS:
CONVEYANCES
FISH AND GAME
FORESTRY
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

FILE NO. _____

September 19, 1977

MEMORANDUM

TO: Robert Fletcher

THROUGH: Patricia Beggerly

FROM: Martha Yent, Agnes Griffin

SUBJECT: Results of archaeological reconnaissance survey along the entrance road at Sacred Falls State Park and recommendations concerning road widening.

Plans were made at Sacred Falls State Park to widen the graded entry dirt road from Kamehameha Highway to the former parking lot area and the start of the foot trail up to Sacred Falls. The present road is about 10 feet wide and plans call for widening it to 20 feet. On September 12, 1977, a surface survey was conducted to check the road area for archaeological sites. A transect of at least 10 feet on each side of the road was covered. The entire strip between the road and Kaluanui Stream was surveyed. However, the thick vegetation hampered a thorough reconnaissance, especially the road section from Kamehameha Highway to the bridge. We divided the road into three sections for easier feature location and discussion. Section 1 is the road from Kamehameha Highway to the bridge which crosses Kaluanui Stream on the Punaluu side of the road. Section 2 of the road is from the bridge to the cattle guard with a wooden gate. Section 3 is from the cattle guard to the start of the foot trail.

Section 1 covers a strip 3,000 feet in length. The area has been heavily disturbed by sugarcane cultivation. There is some sugarcane on the Punaluu side (south) of the road in the area where the stream does not parallel the road, a distance of about 800 feet from the highway. The stream in Section 1 is generally wide with a slow waterflow that has not cut steep sides. On the Punaluu side, the distance between the road and the stream varies from 5 to 30 meters (approximately 20 to 100 feet). This strip being too narrow to cultivate, has a dense overgrowth of California grass. The major part of the sugarcane cultivation has been on the Hauula side (north) of the road. The area up to the road has been plowed and

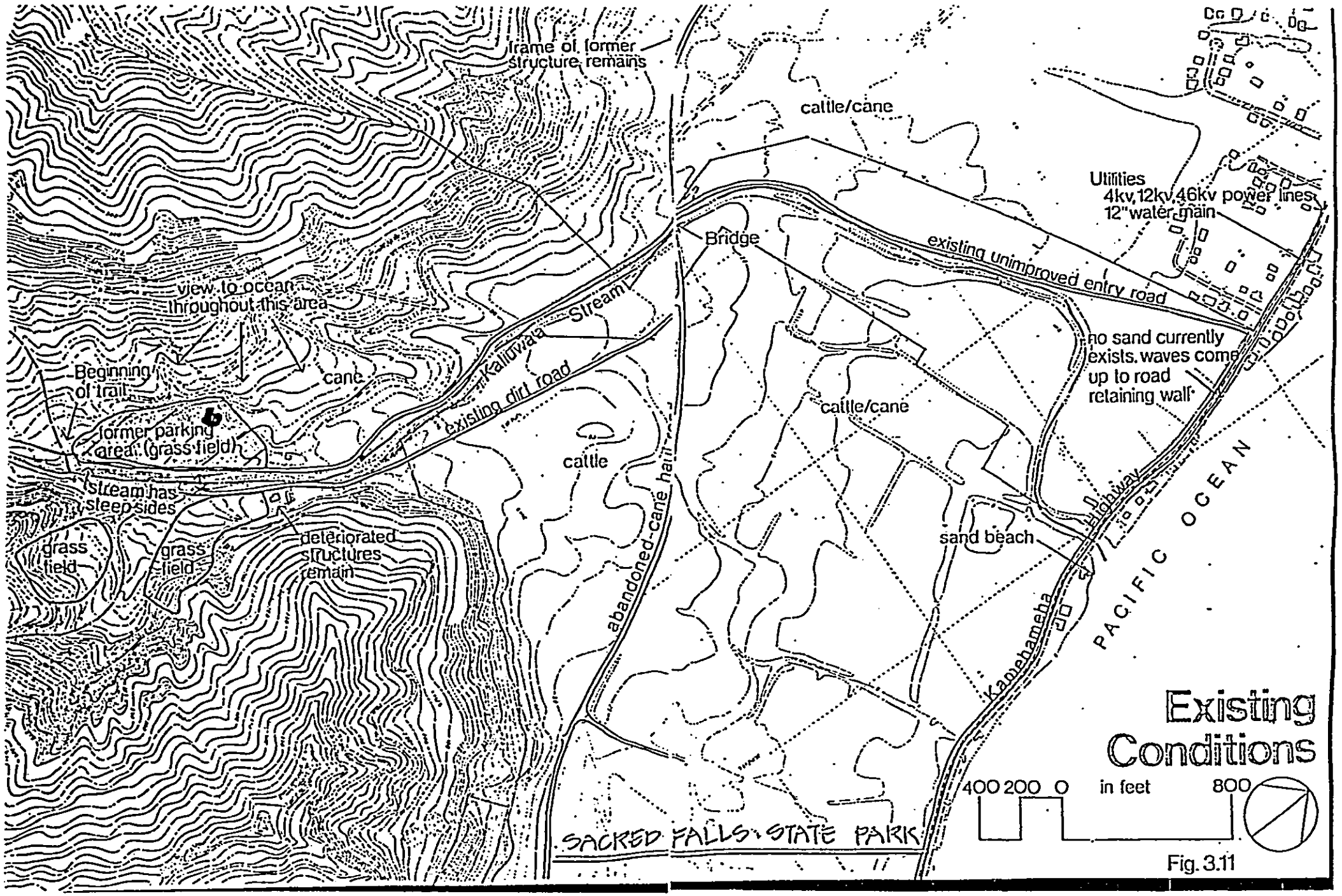


Fig. 3.11

planted many times and any surface structures would probably have been destroyed. An attempt was made to survey through the vegetation where possible but no cultural material was located in Section 1.

Section 2 covers a stretch of over 2,000 feet. The area to the northwest of the bridge is marked by a sloping topography as the valley becomes steeper. Kaluanui Stream in this section is narrower with a faster flow that has cut steeper banks. The deposition of alluvium with basalt pebbles and cobbles is much greater in Section 2 than in Section 1. There is a continuation of the sugarcane on the Hauula side of the road (northwest). The vegetation on the Punaluu side (southeast) is more varied than in Section 1. There are several tree species which include kukui, guava, kamani, Java plum, and Christmas berry with an undergrowth of grasses. We were able to survey this area more extensively than Section 1, especially the relatively clear areas around the trees. One site was located in this section (See discussion below).

Section 3 covers an area about 1,200 feet along the road as well as the former parking area. This area has been modified by the former operators of Sacred Falls. This modification is mostly in the form of landscaping and some leveling for the parking lot. The area is now densely covered with Bermuda grass and the planted trees which include hala, ti, coconut, kamani, and Christmas berry. There is a site on the northwest side of the parking lot which will be investigated at a future date. No sites were located on the Punaluu side of the road in this section.

Previous Archaeological Study

In June 1973, Paul Rosendahl of the Bishop Museum did a walk-through survey of the Kaluanui lands for George Sakoda Realty. The area surveyed in this report is thought to be part of Survey Area 1, which includes "those portions of the lands makai of the valley mouth that are undisturbed by historic-period clearing or cultivation" (Rosendahl 1973:1). In Survey Area 1, Rosendahl recorded only one feature (Site F7-23). It is a stone mound "constructed of stacked and piled cobbles and small boulders, and has a slightly convex top surface" (Ibid.:5). The site we found in our survey was not mentioned or noted at all in the report. It may have been found but noted only in their field books, and for various reasons it was not included in the report. It is also possible that our study area was not included in the survey because of intensive agricultural activities and road construction in the surrounding areas.

Survey Findings

The site is located on the Hauula side of Kaluanui Stream and about 450 meters (1,500 feet) southwest of the bridge.

GEORGE R. ARIYOSHI
GOVERNOR OF HAWAII

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

DIVISIONS:
CONVEYANCES
FISH AND GAME
FORESTRY
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

FILE NO. _____

September 9, 1977

MEMORANDUM

TO: Robert Fletcher

THROUGH: Patricia Beggerly

FROM: Martha Yent, Agnes Griffin

SUBJECT: Results of Archaeological Survey and Testing in the Interim Development Portion of Sacred Falls State Park.

The interim development at Sacred Falls State Park involves the area between Kamehameha Highway on the east; Kaluanui Stream on the west and south; and the Sacred Falls entrance road on the north. A parking lot area is proposed in the area just south of the entrance road - a square area approximately 150 feet (45 M) on a side. The entire interim area, which is an area 1200 feet north-south by 200 feet east-west, was surveyed intensively. The only surface remains were some remnants of house foundations and recent litter and dumpings. The area has also been modified by the planting of rows of iron-wood trees and sugarcane. The sugarcane makes access to the stream on the west difficult. The stream at this point is sluggish and the banks are overgrown with Hau and grass. Consequently, the stream bank was not useful for viewing stratigraphy or locating any cultual horizons.

The two test cores were placed in the proposed parking lot area (see attached map). One was placed near the road while the second was placed 34 meters to the west and more towards the stream. Both showed an upper layer of dark brown loamy sand or topsoil underlain by the sterile light colored beach sand. There was no cultural material in the cores to suggest a cultural deposit below the surface.

Leveling the proposed parking area and placing pole barriers does not present any danger as no archaeological sites were located in the area noted. The excavation for picnic tables in the area just south of the parking lot is probably also clear but we request that an archaeologist be present.

att.

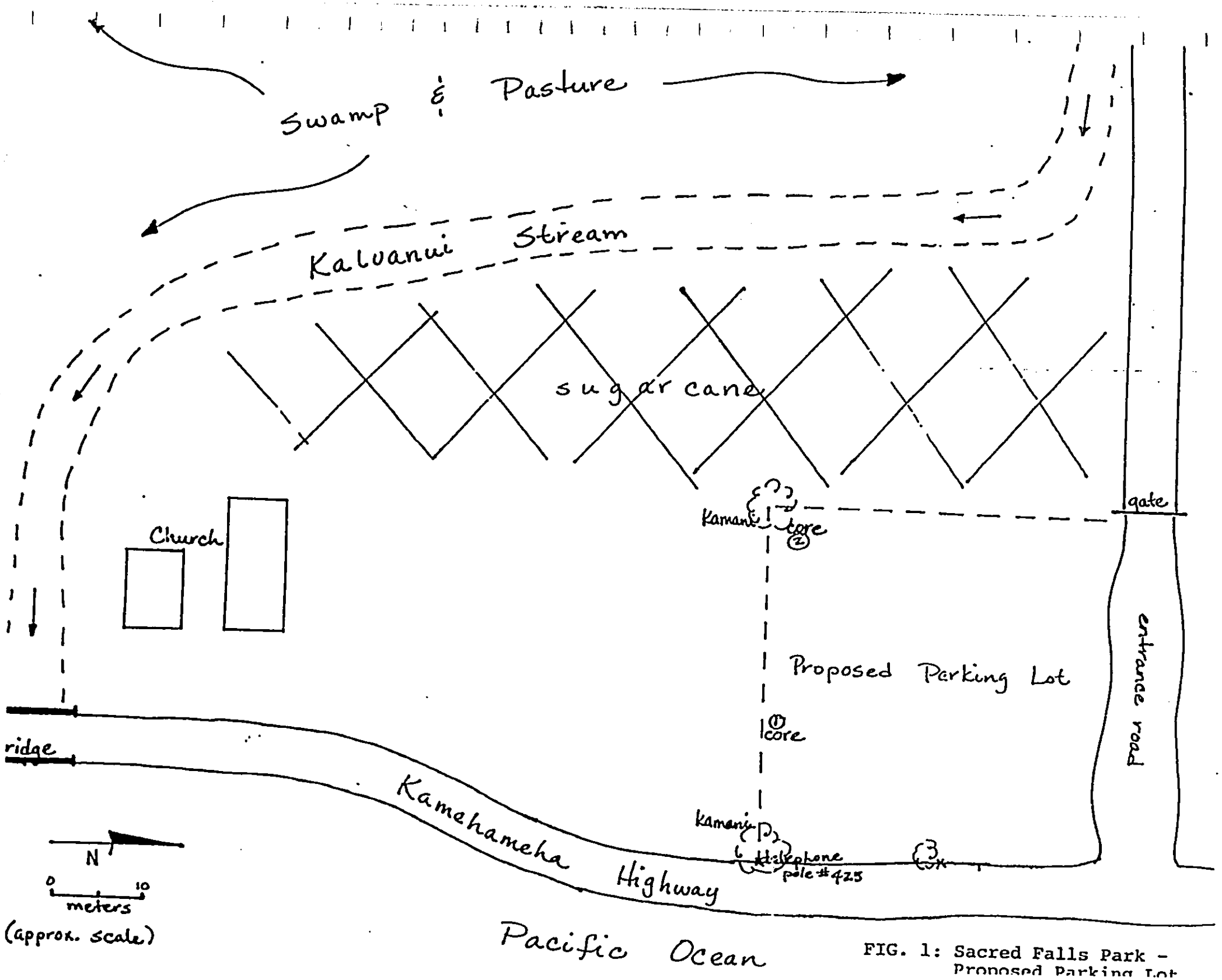


FIG. 1: Sacred Falls Park - Proposed Parking Lot

Appendix D

NPDES-Related Permit for Hydrotesting Water (Notice of Intent to Be Covered Under General Permit)

STATE OF HAWAII
DEPARTMENT OF HEALTH
CLEAN WATER BRANCH

NOTICE OF INTENT TO BE COVERED UNDER GENERAL PERMIT

Pursuant to section 11-55-34.08(b), Hawaii Administrative Rules, this Notice of Intent (NOI) to be covered by a general permit is submitted to the Department of Health.

For Office Use Only

Date Received: _____
Date of Filing Fee Received: _____
Notice of General Permit Coverage I.D. Number: _____
General Permit Type: _____

I. Owner Information

Legal Name: Board of Water Supply

Address*: 630 South Beretania Street

Honolulu, Hawaii 96843

Contact Person: Barry Usagawa, BWS Long Range Planning Section

Telephone No. (808) 527-5235 Fax No. (808) 527-6195

Owner Type: (Check One)

City _____ County XX State _____

Federal _____ Private _____

II. Operator Information

Legal Name: Not Available At This Time

Address*: _____

_____

Contact Person: _____

Telephone No. ( ) _____ Fax No. ( ) _____

* Address must be one where papers can be hand delivered.

If an operator is seeking coverage under a general permit on behalf of the owner, the operator shall provide written evidence that the owner authorizes the operator to apply on behalf of the owner and that the owner agrees to comply with all permit conditions issued.

III. Facility/Site Information

Facility Name: Kaluanui Booster Station

Facility Address: Kamehameha Highway and Sacred Falls Trail
Kaluanui, Koolauloa, Oahu, Hawaii TMK: 5-3-11: Por 9

Contact Person: Elmer Shiraishi, Construction Section

Telephone No. (808) 527-5206 Fax No. (808) 527-6195

IV. Receiving Water Information

1. Name: Pacific Ocean

Coordinates: Latitude 21° 36' 15"N Longitude 157° 54' 00"W

Classification: (Check One)

Inland: Class 1 _____ Class 2 _____ Estuary _____

Marine: Class AA _____ Class A XX Embayment ____

2. Name: _____

Coordinates: Latitude _____ Longitude _____

Classification: (Check One)

Inland: Class 1 _____ Class 2 _____ Estuary _____

Marine: Class AA _____ Class A _____ Embayment ____

3. Name: _____

Coordinates: Latitude _____ Longitude _____

Classification: (Check One)

Inland: Class 1 _____ Class 2 _____ Estuary _____

Marine: Class AA _____ Class A _____ Embayment ____

If the discharge enters a separate storm water drainage system, please provide the following information:

a. the name of the owner of the drainage;
N/A

b. the name of the receiving water into which the drainage system discharges; and
N/A

c. a copy of the permit, license, or equivelent written approval granted by the owner of the system for such a discharge or connection to the system.
N/A

V. Industrial Information

Standard Industrial Classification Code: 4941, Water Supply

Type of Business: Municipal Water Department

List, in descending order of significance up to four (4) 4-digit Standard Industrial Classification (SIC) codes which best describe your facility in terms of the principal products or services you produce or provide. Also, specify each classification in words. These classifications may differ from the SIC codes describing the operation generating the discharge, air emission, or hazardous wastes.

SIC code numbers are descriptions which may be found in the "Standard Industrial Classification Manual" prepared by the Executive Office of the President, Office of Management and Budget, which is available from the Government Printing Office, Washington, D.C. Use the current appropriate SIC code for your facility.

N/A

VI. Discharge

1. Type of Discharge (Check One)

a. N/A Storm water associated with industrial activities as identified in 40 CFR §§122.26 (b) (14) (i) through 122.26 (b) (14) (ix), and §122.26 (b) (14) (xi). (Please provide the additional information as specified in NOI Form B)

b. N/A Storm water associated with construction activity, including clearing, grading, and excavation, except operations that result in the disturbance of less than five acres of total land area, which are not part of a larger common plan of development or sale as identified in §122.26 (b) (14) (x). (Please provide the additional information as specified in NOI Form C)

c. N/A Treated effluent from leaking underground storage tank remedial activities. (Please provide the additional information as specified in NOI Forms A and D)

d. N/A Once through cooling water of less than one (1) million gallons per day. (Please provide the additional information as specified in NOI Form E)

e. XX Hydrotesting water. (Please provide the additional information as specified in NOI Forms A and F)

f. N/A Construction activity dewatering. (Please provide the additional information as specified in NOI Forms A and G)

2. Quantity of Discharge

Flow (gallon per day): Varies between 4,000 GPD to 10,800 GPD

(The flow contributed by each source may be estimated if no data are available. For construction activity, please enter the runoff quantity during 1" storm event. For industrial activity, please enter the runoff quantity while the representitive sample was taken.)

3. Source of Discharge Potable water expected to be provided by Punaluu I and Hauula Wells (Potable water wells)

VII. Period of Discharge (Check the appropriate space(s))

Continuous _____ Seasonal _____ Occassional XX Emergency __

VIII. Map See Attachment Item VIII

A topographic map or maps of the area extending at least to one (1) mile beyond the property boundaries of the facility which clearly show the following:

1. The legal boundaries of the facility; and

2. The location and serial number of each of your existing and proposed intakes and discharge structures.

If an intake or discharge structure associated with the facility is located more than one (1) mile from the plant, include it on the map, if possible. If not, attach additional sheets describing the location of the structure, disposal site, and identify on a 7-1/2 minute series U.S. Geological Survey (or other) map corresponding to the location. If a 7-1/2 minute series map has not been published for the facility site, then use a 15 minute series map from the U.S. Geological Survey. If neither a 7-1/2 nor 15 minute map had been published for the facility sites, use a plat map, including all the requested information.

IX. Flow Chart See Attachment Item IX

Attach a line drawing showing the general route taken by water in the facility from intake to discharge. Describe briefly any treatment system(s) used (or to be used for new discharges). The flow contributed by each source may be estimated if no data is available.

X. Existing Environmental Permits

1. NPDES Permit (Discharges to Surface Water) N/A

2. RCRA Permit (Hazardous Wastes) N/A

3. Facility on SARA 313 List N/A

4. Other (Specify) N/A

XI. Certification (Check appropriate space)

I certify that:

1. For a municipal (XX), state (_____), federal or other non-federal (_____) public agency:
   I am a principal executive officer or ranking elected official; or
2. For a federal agency (_____), I am the chief executive officer of the agency, or I am the senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.
3. I am a general partner for a partnership (_____).
4. I am the proprietor for a sole proprietorship (_____).
5. For a corporation (_____):
   (_____) I am President, Vice President, Secretary or Treasurer of the corporation and in charge of a principal business function, or I perform similar policy or decision making functions for the corporation; or
   (_____) I am the manager of one or more manufacturing, production or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million (in second-quarter 1980 dollars), and authority to sign documents has been assigned or delegated to me in accordance with corporate procedures.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Type of Organization (please circle):

a. sole proprietorship b. partnership c. corporation
(d.) municipal e. state, federal or other non-federal public agency

Signature: _____

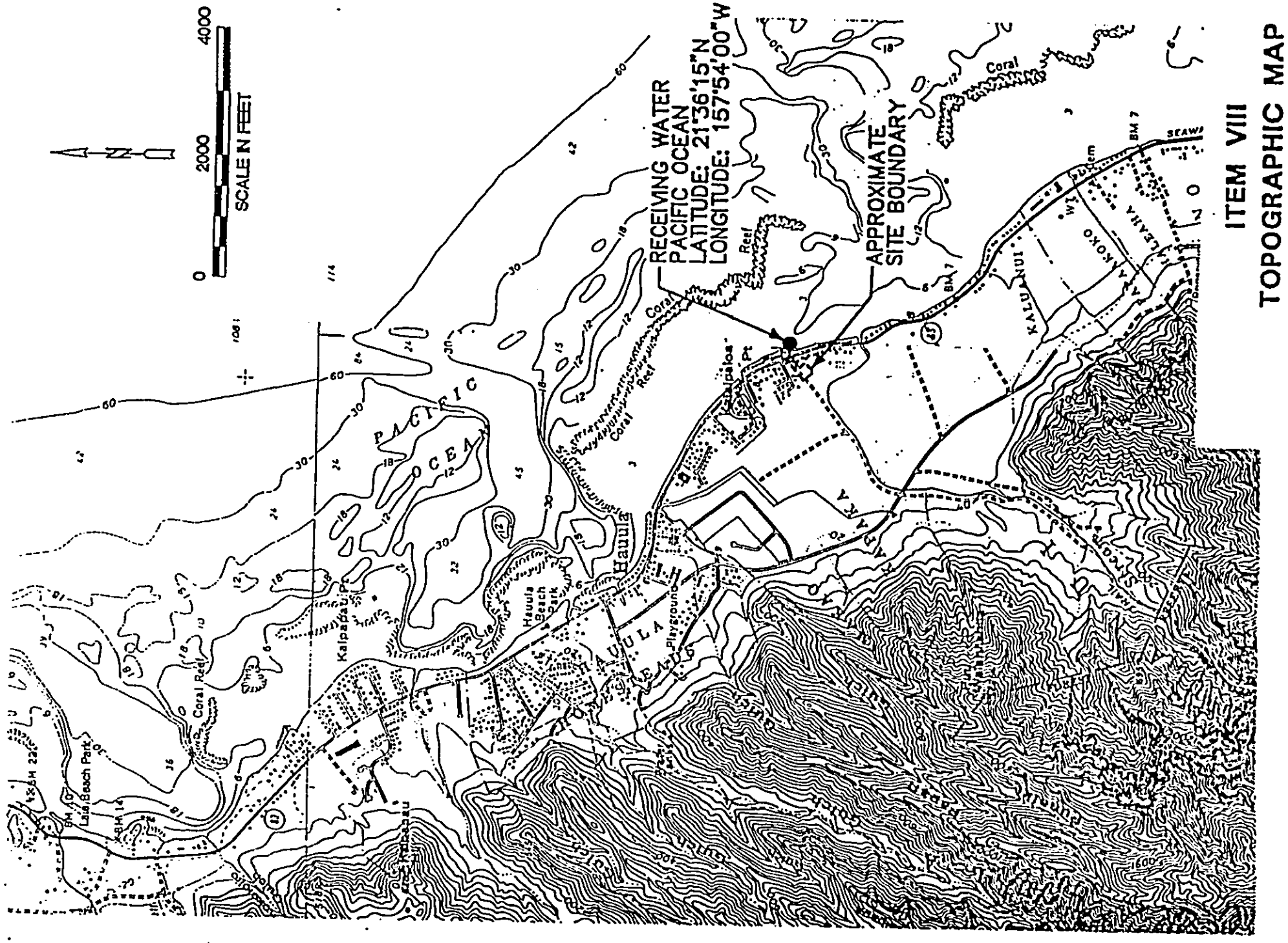
Name: Raymond Sato

Title: Manager and Chief Engineer

Date: _____

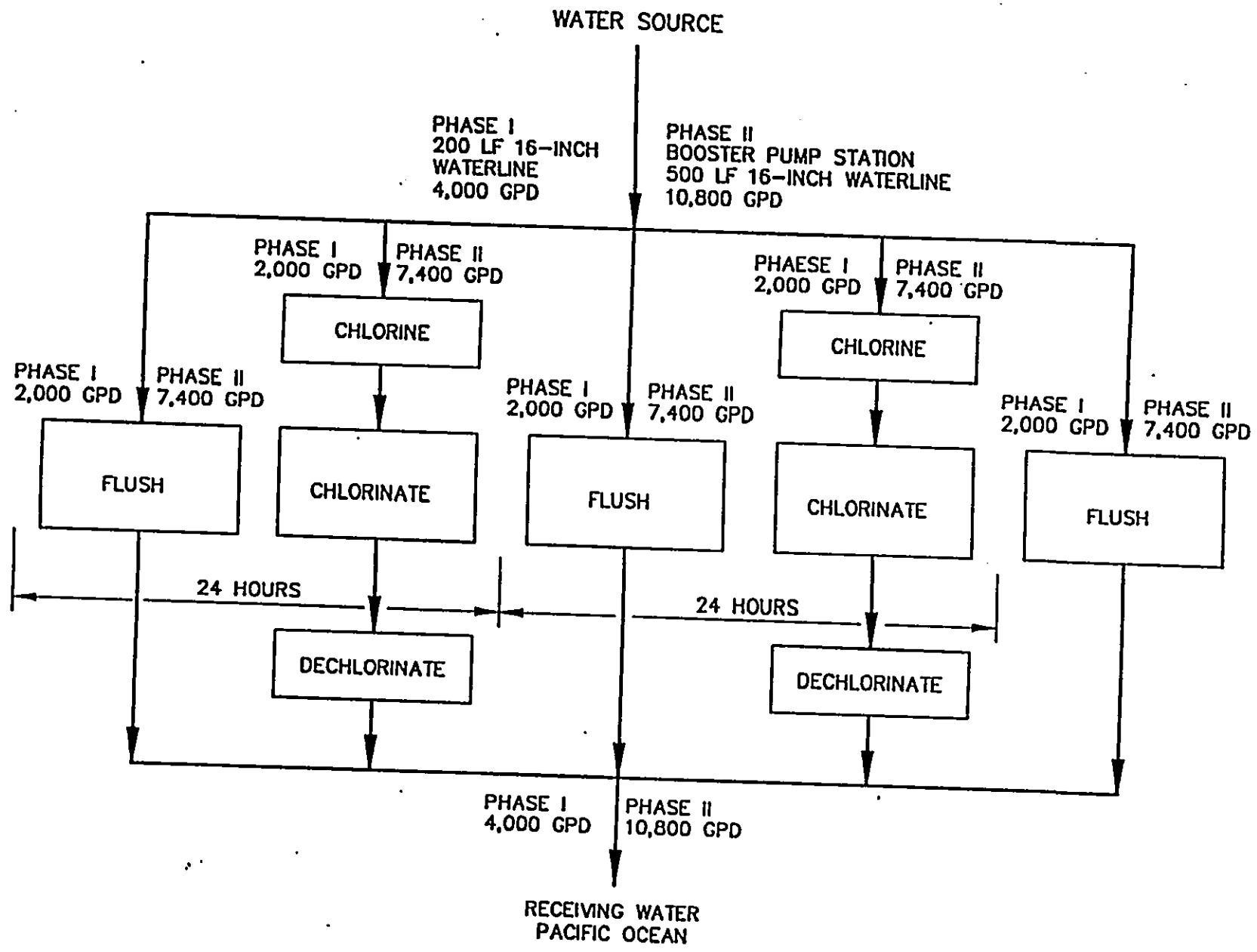
Organization Name: Board of Water Supply

Phone Number: (808) 527-6180



ITEM VIII

TOPOGRAPHIC MAP



ITEM IX
FLOW CHART

NOI Form A

Quality of Discharge

It is the objective of this Form to make known the quality of the present or proposed discharge so that the Department of Health can determine how the present or proposed effluent may affect the quality of the receiving body of water, as established by the Hawaii Administrative Rules Chapter 11-54, Water Quality Standards.

You must use test methods promulgated in 40 CFR Part 136 and, when applicable, the chemical methodology for seawater analyses (see Chapter 11-54, Section 10, adopted October 29, 1992). If a test method has not been promulgated for a particular constituent, you may use any suitable method for measuring the level of the constituent in your discharge provided that you submit a description of the method or a reference to a published method. Your description should include the sample holding time, preservation techniques, and the quality control measures which you used.

The detection limit of the test methods used must reflect the applicable numerical limitations as specified in Chapter 11-54. Indicate "less than" if the concentration is less than the detection limit of the test method used.

If you have two or more substantially identical outfalls, you may request permission from the Director of Health to sample and analyze effluent from only one outfall, and state that the results of the analyses apply to other substantially identical outfalls. If your request is granted by the Director of Health, identify on a separate sheet attached to this form, which outfall you did test, and describe why the outfalls which you did not test are substantially identical to the tested outfall.

The findings indicated below must be obtained from a representative sample (see Hawaii Administrative Rules, Chapter 11-55, Appendix A, Section 14(a) for the definition of representative sample) of the present discharge. Proposed discharges must include estimates for the constituents, pollutants or parameters listed below instead of actual sampling data, along with the source of such estimate.

1. Physical Quality (Check the appropriate column)

	Believe Present	Believe Absent
Floating Debris		
Scum or Foam		XX
Color		XX
Odor		XX
		XX

You must mark "X" in either the "Believe Present" column or the "Believe Absent" column based on your best estimate of the foregoing constituents.

CORRECTION

THE PRECEDING DOCUMENT(S) HAS
BEEN REPHOTOGRAPHED TO ASSURE
LEGIBILITY
SEE FRAME(S)
IMMEDIATELY FOLLOWING

NOI Form A

Quality of Discharge

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1. Physical Quality (Check the appropriate column)

	Believe Present	Believe Absent
Floating Debris		XX
Scum or Foam		XX
Color		XX
Odor		XX

You must mark "X" in either the "Believe Present" column or the "Believe Absent" column based on your best estimate of the foregoing constituents.

2. Chemical Quality

You must test and report for those constituents listed in paragraph a, below. You must also test and report for those constituents listed in paragraph b, below, that you believe to be present in the discharge. (For example, if you manufacture pesticides, you should expect those pesticides to be present in contaminated storm water runoff.) To indicate that each constituent has been considered, fill in each line in paragraphs a and b below. If an item does not apply to you, enter "N/A" (for not applicable) to show that you considered the constituent.

The concentration for the various constituents listed below shall be determined by an analytical method with a detection limit at least as low as the value indicated in the parenthesis immediately following each item (e.g., "Lead (1 ug/l)").

a. Water Quality Constituents

See attached Mineral Analysis for source water

Total Nitrogen (10 ug/l)	ug/l
Ammonia Nitrogen (1 ug/l)	ug/l
Nitrate + Nitrite (1 ug/l)	ug/l
Total Phosphorus (10 ug/l)	ug/l
Turbidity (0.1 NTU)	NTU
Total Suspended Solids (1 mg/l)	mg/l
pH (0.1 Standard Units)	
Dissolved Oxygen (0.1 mg/l)	mg/l
Percent Oxygen Saturation	%
Temperature (0.1°C)	°C
Salinity (0.1 ppt)	ppt
or Chloride (0.1 mg/l)*	mg/l
or Conductivity (1 umhos/cm)*	umhos/cm
Oil and Grease (1 mg/l)	mg/l

* Fresh waters and others samples

b. Toxic Constituents

Acenaphthene (1 ug/l)	N/A ug/l
Acrolein (1 ug/l)	ug/l
Acrylonitrile (1 ug/l)	ug/l
Aldrin (1 ug/l)	ug/l
Aluminum (1 ug/l)	ug/l
Antimony (1 ug/l)	ug/l
Arsenic (1 ug/l)	ug/l
Benzene (1 ug/l)	ug/l
Benzidine (1 ug/l)	ug/l
Beryllium (1 ug/l)	ug/l
Cadmium (1 ug/l)	ug/l
Carbon tetrachloride (1 ug/l)	ug/l
Chlordane (1 ug/l)	ug/l
Chlorine (1 ug/l)	50-100 ug/l
Chloroethers-	
ethyl(bis-2) (1 ug/l)	N/A ug/l
isopropyl (1 ug/l)	ug/l
methyl(bis) (1 ug/l)	ug/l
Chloroform (1 ug/l)	ug/l
Chlorophenol(2) (1 ug/l)	ug/l
Chlorpyrifos (1 ug/l)	ug/l
Chromium (VI) (1 ug/l)	ug/l

Copper (1 ug/l)	N/A ug/l
Cyanide (1 ug/l)	ug/l
DDT (1 ug/l)	ug/l
metabolite TDE (1 ug/l)	ug/l
Demeton (1 ug/l)	ug/l
Dichloro-	
benzenes (1 ug/l)	ug/l
benzidine (1 ug/l)	ug/l
ethane(1,2) (1 ug/l)	ug/l
ethylene(1,1) (1 ug/l)	ug/l
phenol(2,4) (1 ug/l)	ug/l
propanes (1 ug/l)	ug/l
propene(1,3) (1 ug/l)	ug/l
Dieldrin (1 ug/l)	ug/l
Dinitro-	
o-cresol(2,4) (1 ug/l)	ug/l
toluenes (1 ug/l)	ug/l
Dioxin (1 ug/l)	ug/l
Diphenyl-hydrazine(1,2) (1 ug/l)	ug/l
Endosulfan (1 ug/l)	ug/l
Endrin (1 ug/l)	ug/l
Ethylbenzene (1 ug/l)	ug/l
Fluoranthene (1 ug/l)	ug/l
Guthion (1 ug/l)	ug/l
Heptachlor (1 ug/l)	ug/l
Hexachloro-	
benzene (1 ug/l)	ug/l
butadiene (1 ug/l)	ug/l
cyclohexane-	
alpha (1 ug/l)	ug/l
beta (1 ug/l)	ug/l
technical (1 ug/l)	ug/l
cyclopentadiene (1 ug/l)	ug/l
ethane (1 ug/l)	ug/l
Isophorone (1 ug/l)	ug/l
Lead (1 ug/l)	ug/l
Lindane (1 ug/l)	ug/l
Malathion (1 ug/l)	ug/l
Mercury (1 ug/l)	ug/l
Methoxychlor (1 ug/l)	ug/l
Mirex (1 ug/l)	ug/l
Naphthalene (1 ug/l)	ug/l
Nickel (1 ug/l)	ug/l
Nitrobenzene (1 ug/l)	ug/l
Nitrophenols (1 ug/l)	ug/l
Nitrosamines (1 ug/l)	ug/l
Nitroso-	
dibutylamine-N (1 ug/l)	ug/l
diethylamine-N (1 ug/l)	ug/l
dimethylamine-N (1 ug/l)	ug/l
diphenylamine-N (1 ug/l)	ug/l
pyrrolidine-N (1 ug/l)	ug/l
Parathion (1 ug/l)	ug/l
Pentachloro-	
ethanes (1 ug/l)	ug/l
benzene (1 ug/l)	ug/l
phenol (1 ug/l)	ug/l
Phenol (1 ug/l)	ug/l
2,4-dimethyl (1 ug/l)	ug/l
Phthalate esters	
dibutyl (1 ug/l)	ug/l

diethyl (1 ug/l)	N/A	ug/l
di-2-ethylhexyl (1 ug/l)		ug/l
dimethyl (1 ug/l)		ug/l
Polychlorinated biphenyls (1 ug/l)		ug/l
Polynuclear aromatic hydrocarbons (1 ug/l)		ug/l
Selenium (1 ug/l)		ug/l
Silver (1 ug/l)		ug/l
Tetrachloro-ethanes (1 ug/l)		ug/l
benzene(1,2,4,5) (1 ug/l)		ug/l
ethane(1,1,2,2) (1 ug/l)		ug/l
ethylene (1 ug/l)		ug/l
phenol(2,3,5,6) (1 ug/l)		ug/l
Thallium (1 ug/l)		ug/l
Toluene (1 ug/l)		ug/l
Toxaphene (1 ug/l)		ug/l
Tributyltin (1 ug/l)		ug/l
Trichloro ethane(1,1,1) (1 ug/l)		ug/l
ethane(1,1,2) (1 ug/l)		ug/l
ethylene (1 ug/l)		ug/l
phenol(2,4,6) (1 ug/l)		ug/l
Vinyl chloride (1 ug/l)		ug/l
Zinc (1 ug/l)		ug/l

Notes:
i. mg/l = milligrams per liter
ii. ug/l = microgram per liter
iii. ppt = parts per thousand

Glossary of Chemicals

Acenaphthene - Coal tar product used in the manufacturing of dyes and plastics, and as an insecticide and fungicide. Also, detected in-cigarette smoke and gasoline exhaust.

Acrolein - Biocide for weed, algae, mollusk and slime control, and to protect liquid fuels from microorganisms. Also, used in leather tanning, tissue fixation, paper, textiles, crease-proofing cotton, and as a chemical intermediate, plasticizer, copolymer in photography, builder in laundry and dishwashing detergents, and coating for aluminum and steel.

Acrylonitrile - Copolymer used in the production of fibers and plastics (e.g., ABS Acrylonitrile-Butadiene-Styrene plastic), and latexes and chemicals. Banned as a resin for soft drink containers and as a fumigant. Similar toxic effects as cyanide. Carcinogen.

Aldrin - Insecticide, used in ground injection for termite control and non-food plant dip. Registration for other uses cancelled. Metabolizes to dieldrin. Carcinogen.

Antimony - Metal used as a hardening alloy for lead, particularly in lead-acid batteries. Also, used as a semiconductor and in pyrotechnics.

Arsenic - Metal used as an alloy with lead and copper in shot, batteries, and cables. Arsenic trioxide is used as a pigment and as an insecticide, rodenticide, herbicide, sheep and cattle dip, hide preservative, and wood preservative. It was used as a pesticide in the production of canec panels in Hilo. Use in houses is restricted to concentrations below 1.5 percent. Carcinogen.

Benzene - Coal tar and petroleum product used in pharmaceutical and chemical synthesis, including the production of styrene, detergents, pesticides, thinners and inks. Also, used as a cleaner and degreaser, solvent, and gasoline anti-knock additive. Carcinogen.

Benzidine - Aromatic amine used in dye production. Carcinogen.

Beryllium - Metal for various high-technology uses including nuclear reactor moderator, and structural material. Carcinogen.

BHC - Benzene hexachloride. See hexachlorocyclohexane and lindane. Carcinogen.

Cadmium - Metal used in electroplating and coating, alloys, nickel-cadmium batteries, pigments, and in a variety of other industrial areas.

Carbon Tetrachloride - Solvent, grain fumigant, also used in fire extinguishers. Carcinogen.

Chlordane - Insecticide, used for termite control and non-food plant dip. Registration for other uses cancelled. Carcinogen.

Chlorinated Benzenes - Solvents for fats, oils and greases, also used as fumigants, degreasers, lubricants, dielectrics, dye carriers, wood preservatives, and in chemical, pesticide and herbicide production, heat transfer, military pyrotechnics, and termite control. Carcinogen.

Chlorinated Ethanes - Used in the production of tetraethyl lead and vinyl chloride, and as solvents and chemical intermediates. Some forms

carcinogenic.

Chlorinated Phenols - (includes chlorinated cresols) Synthesis of dyes, pigments, resins, pesticides, herbicides, and used directly as flea repellents, fungicides, wood preservatives, mold inhibitors, antiseptics, disinfectants, and anti-gumming agents in gasoline. Chlorinated phenol pesticide products include 2,4-D, 2,4-DCP, 2,4,5-T, 2,3,4,6-TCP, and PCP. Some forms carcinogenic.

Chlorine - Chlorine is commonly used to disinfect wastewater and water supplies, and to control fouling organisms in cooling water systems.

Chloroalkyl ethers - Used in organic synthesis, textiles, ion exchange resins, pesticides, and reaction solvents.

Chloroform - Chemical solvent. Formed in the chlorination of sewage and water supplies. Carcinogen.

2-Chlorophenol - Intermediate in chemical production of fungicides, slimicides, bactericides, antiseptics, disinfectants, and wood and glue preservatives. Can be produced in the chlorination of drinking water and sewage. May be biodegraded.

Chlorpyrifos - Organophosphorus insecticide (a.k.a. Dursban, Lorsban). Used locally for termite control.

Chromium - Metal used in plating, alloys and in pigments. Hexavalent forms are most toxic and are used in cooling tower additives.

Copper - Metal used in wiring, plumbing, electroplating, alloys, insecticides, and in anti-fouling paints.

Cyanide - Used and formed in many industrial processes including steel, petroleum, plastics, synthetic fibers, metal plating, mining, and chemical industries.

DDT - Persistent lipid-soluble chlorinated pesticide. Formerly most widely used. All pesticide uses cancelled except by government agencies and physicians. Metabolizes to DDE and TDE. Carcinogen.

Demeton - Systemic insecticide and acaricide applied as a foliage spray and soil drench.

Dichlorobenzenes - Used in air deodorants, insecticides, chemical production, dyes, herbicides, and degreasers.

Dichlorobenzidine - Used in the production of dyes and pigments, and a curing agent for polyurethanes. Carcinogen.

Dichloroethylenes - Intermediate in chemical production, and in polyvinylidene chloride copolymers in food packaging materials (e.g., Saran) and tank coatings. Degradation products of larger chlorinated hydrocarbons. Carcinogen.

2,4-Dichlorophenol - Used in the production of herbicides (2,4-D), and in mothproofing, antiseptics, and seed disinfectants. Metabolic and photodegradation product of the above.

Dichloropropane - Soil fumigant for nematodes, oil and fat solvent, and degreaser.

Dichloropropene - Soil fumigant for nematodes, used in Hawaii on pineapples. Also, oil and fat solvent and degreaser.

Dieldrin - Persistent insecticide used in ground injection for termite control and as non-food plant dip. Registration for other uses cancelled. Carcinogen.

Dinitro-o-cresol - Pesticide, fungicide, insecticide and miticide. Also, used as a blossom-thinning agent on fruit trees.

Dinitrotoluene - Commercial and military explosive.

Dioxin - Trace contaminant of chlorinated phenols, chlorinated phenoxy acids (especially the herbicide 2,4,5-T and Silvex) and hexachlorophene. Carcinogen.

Diphenylhydrazine - Used as a reagent for the sugars arabinose and lactose and for the production of phenylbutanone and benzidine.

Endosulfan - Insecticide and acaricide (a.k.a. Thiodan). Used on pineapples in Hawaii.

Endrin - Pesticide, rodenticide, and avicide. Used on sugarcane to control the sugarcane beetle. Registration cancelled for control of the sugarcane borer. Teratogen.

Ethylbenzene - Up to 20 percent of gasoline. Widespread commercial use including production of styrene, diluents in paints, and used as insecticides.

Fluoranthene - A polynuclear aromatic hydrocarbon. Primarily a pyrolysis product formed in frying, smoking, incineration, etc. Natural as well as man-made sources. Carcinogen.

Guthion - Organophosphorus pesticide used for many pests on various fruits, melons, nuts, vegetables, field crops, ornamental, and shade trees.

Heptachlor - Insecticide registered for termite control and nonfood plant dip. Registration for other uses cancelled. Carcinogen.

Hexachlorobutadiene - Organic solvent used in chlorine production recovery, in rubber and lubricant production, and as a gyroscope fluid. Carcinogen.

Hexachlorocyclohexane - Broad spectrum insecticide (a.k.a. BHC). Only the gamma isomer, lindane, is currently registered and produced. Carcinogen.

Hexachlorocyclopentadiene - Base of several chlorinated pesticides including: aldrin, dieldrin, chlordane, heptachlor, endrin, isodrin, kepone, mirex, endosulfan, and pentac. Also, used in the production of flame retardants.

Isophorone - Solvent for fats, oils, gums, natural and synthetic resins, cellulose derivatives, lacquers, pesticides and herbicides. Used in chemical and plant growth retardant production.

Lead - A metal used in batteries, gasoline additives, solder, and ammunition.

Lindane - Broad spectrum insecticide used in livestock sprays, forestry, christmas trees, structural treatments, hardwood logs and lumber, dog

sprays, dusts and dips, flea collars, moth sprays, seed treatments, shelf paper, and household sprays. Carcinogen.

Malathion - Organophosphorus insecticide used for many insects including aphids, spider mites, scale insects, house flies, mosquitos, and for insects attacking fruits, vegetables, ornamental and stored products. Used in public health programs to control mosquitos.

Mercury - A metal used in dentistry, electronics, instruments, lamps, metallurgy and formerly in anti-fouling paints.

Methoxychlor - Organochlorine pesticide.

Mirex - Organophosphorus insecticide. Registration cancelled 12/1/77. Mirex was used to control fire ants on pineapples in Hawaii.

Naphthalene - Primary constituent of coal tar. Used in dye production, formulation of solvents, and chemical synthesis. Also used in lubricants and motor fuels, and as a moth repellant, insecticide, anthelminthic, vermicide, and intestinal antiseptic.

Nickel - A metal. Used in alloys, electroplating, and batteries.

Nitrobenzene - Used in the production of aniline dyes, rubber, medicinal, metal polish, shoe black, perfume, and as a combustion propellant and chemical reaction, and crystallizing solvent.

Nitrophenols - 2,4,6 trinitrophenol (picric acid) has been used as an explosive, dye intermediate, reagent, germicide, fungicide, staining agent and tissue fixative, and in photochemicals, pharmaceutical, and metal etching. Mono and dinitrophenol would occur in the environment primarily from discharges from manufacturing plants, or possibly from the degradation of pesticides. They are used in the production of dyes, photochemicals, pesticides, wood preservatives, explosives, and leather treatments. See also 2,4 dinitro-o-cresol.

Nitrosamines - Only small quantities are synthesized for research, and rubber and pesticide production. Primary environmental exposure is probably due to the nitrosation of amine and amide precursors in reactions in air, soil, water, food, and animal systems. Carcinogen.

Parathion - Organophosphorus pesticide used on fruit, nut, vegetable, and field crops.

Pentachlorophenol - Very common pesticide, fungicide, and bactericide (a.k.a. PCP).

Phenol - Used in production of epoxy and phenolic resins, pharmaceutical, germicides, fungicides, slimicides, herbicides, dyes and acids, and as a disinfectant and antiseptic.

Phthalate Esters - Plasticizers used especially in Polyvinyl chloride (PVC) production. Easily extractable, and up to 60 percent of the total weight of plastic. Also, used in the production of pesticide carriers, cosmetics, fragrances, munitions, industrial oils, and insect repellents.

Polychlorinated biphenyls (PCBs) - Used as a transformer and capacitor fluid. Also, used as a heat transfer, hydraulic, compressor, and vacuum pump fluid, plasticizer, and in lubricants and wax-extenders. No longer manufactured in the United States. All pesticide uses eliminated. Carcinogen.

Polynuclear Aromatic Hydrocarbons - Diverse class of compounds formed by incomplete combustion of organic with insufficient oxygen. Examples include benzo [a] pyrene and benz [a] anthracene. Carcinogen.

Selenium - A metalloid element. Used in electronics, rubber production, dandruff shampoo, and a trace element in animal feed.

Silver - A metal. Various electronic, chemical, plating, photographic and dental uses.

TDE - Metabolite of DDT. Carcinogen.

Tetrachloroethylene - Solvent in textile and dry cleaning, metal cleaning, and chemical production (a.k.a. perchloroethylene or PCE). Carcinogen.

Thallium - A metal. Pesticide registration of thallium sulfate cancelled.

Toluene - Aviation fuel and high-octane blending stock, chemical intermediate, thinner, solvent for paints, gums, resins, oils, rubber, and vinyl, and used in plastic cement, chemicals, explosives, and detergents.

Toxaphene - 175 compounds of chlorinated camphene. Formerly the most heavily used pesticide. Registration cancelled in 1982 with exceptions for cattle, pineapples, and bananas. No U.S. production. Persistent in the environment. Carcinogen.

Tributyltin - Tributyltin is of environmental concern primarily because of its use in marine anti-fouling paints. This use has recently been restricted by Congress. Organotins have also been used in agriculture and residential areas to control fungi, and insects including moths, houseflies, cockroaches, and mosquito larvae. The largest use is in stabilizing polyvinyl chloride polymers used in construction materials and food packaging.

Trichlorinated ethanes - Metal degreaser, chemical intermediate, adhesive and resin solvent, pesticide, dry cleaning solvent, formerly used as a fumigant 1,1,2 isomer carcinogenic.

Trichloroethylene - Degreasing solvent in metal industries. Formerly dry cleaning solvent and extractive solvent in foods (a.k.a. TCE). Carcinogen.

Vinyl Chloride - Polymerized in the production of PVC, the most widely used material in the manufacture of plastics. All pesticide uses cancelled (whether an active or inert ingredient) for uses in the home, food handling establishments, hospitals, and enclosed areas. Degradation product of larger chlorinated hydrocarbons. Carcinogen.

Zinc - A metal. Used in alloys, electroplating, galvanizing, batteries, and cathodic protection.

This glossary is for general use, and is not intended to be a complete or definitive reference. The information was obtained primarily from Environmental Protection Agency (EPA) Ambient Water Quality Criteria documents, which are referenced in EPA's Quality Criteria for Water (EPA 440/5-86-001), updated May 1, 1987. Additional information was obtained from the EPA pamphlet "Suspended, Cancelled and Restricted Pesticides," January, 1985, The Condensed Chemical Dictionary, 10th ed. (Van Nostrand Reinhold Co. Inc., New York, 1981), and The Farm Chemicals Handbook (Meister Publishing Company, Willoughby, OH, 1988).

Information on organotins was obtained from the International Organotin

Symposium, held at Halifax, Nova Scotia, in September, 1987, and published in Volume 4 of the Oceans, 127. Proceedings, by the Marine Technology Society, Washington, D.C., and IEEE Ocean Engineering Society, Piscataway, NJ. .

MINERAL ANALYSES

Suburban Sources

LOCATION			Punaluu I (3553-02)	Punaluu II (3553-07)	Punaluu III (3453-07)
Regional head, feet			19.7	20.1	17.19
Specific conductance, micromhos @ 25°C.			235	218	233
pH value			7.95	8.05	8.10
Turbidity			0	1.0	3.3
Color			0.4	3.0	7.9
IN PARTS PER MILLION					
Silica			30	45	27
Calcium			10.3	9.5	11
Magnesium			6.5	7.0	8.5
Sodium			22.1	22.6	20
Potassium			1.2	1.5	1.3
Bicarbonate			55	73	49
Sulfate			4.9	4.7	6.1
Chloride			36	27	42
Fluoride			0.05	0.05	0.05
Nitrate			0.9	0.65	1.2
Phosphate			0.10	0.15	0.1
Iron	)	(	0.02	0.02	0.02
Manganese	)	(	0.02	0.02	0.02
Copper	)	(	0.02	0.02	0.02
Lead	) Less than	(	0.02	0.02	0.02
Arsenic	)	(	0.02	0.02	0.01
Selenium	)	(	0.02	0.01	0.01
Chromium[a]	)	(	0.02	0.01	0.01
Total dissolved solids			167	191	166
Alkalinity			45	60	40
Total hardness			52.5	52.5	62
IN EQUIVALENTS PER MILLION					
Calcium (Ca)			0.514	0.474	0.549
Magnesium (Mg)			.535	.576	.699
Sodium (Na)			.960	.985	.858
Potassium (K)			.031	.038	.033
Bicarbonate (HCO_3)			.902	1.196	.803
Sulfate (SO_4)[b]			.102	.098	.127
Chloride (Cl)			1.021	.769	1.190
Nitrate (NO_3)			.015	.010	.019
TOTALS			4.080	4.146	4.278

a/ Hexavalent only.
b/ Includes fluoride and phosphate as PO_4.

NOI Attachment F

Discharges of Hydrotesting Waters

The following information shall also be included along with the Notice of Intent (NOI) Form 1 and Form A for coverage under the General Permit for discharges of hydrotesting water. Hydrotesting waters means water used to test the integrity of a tank or pipeline.

1. Describe your facility or activity. Indicate if the facility or activity is existing or proposed.

   Proposed construction of a booster pump station and approximately 700 LF of 16-inch water main.

2. Identify the source of the water used in your hydrotesting activity.

   Potable water expected to be provided by Punaluu I and Hauula Wells.

3. The best estimate of the date(s) on which the facility will begin and terminate discharges.

   Mid 1996 to End 1996

4. The average and maximum daily flow rates.

   Average daily flow - 7,400 GPD
   Maximum daily flow - 10,800 GPD

5. The quality of discharge as specified in NOI Form A.

   See NOI Attachment A

NOI Attachment F

Discharges of Hydrotesting Waters

6. Hydrotesting Plan

a. Flow Chart of Hydrotesting Discharge: Schematic Flow Chart provided showing typical route taken by water from source through the treatment system to discharge: See Item IX, Flow Chart. Minimum flushing/chlorination procedures consist of five (5) turnovers per phase: 1) Initial Flush 2) Inject Chlorine 3) Flush Solution & Sample 4) Inject Chlorine 5) Flush Solution & Sample; process is repeated if sample fails SDWA lab text.

b. Mitigative Measures:
   1) Initial flushing should be filtered prior to discharge into receiving waters to remove sediment within pipeline accumulated during construction. Contractor should take necessary precautions to insure pipe, tanks, pumps and appurtenances are installed as clean as possible to minimize flushing and disinfection.
   2) Disinfection waters must be dechlorinated to acceptable levels prior to discharge into receiving waters.

c. Description of Treatment System to Improve Discharge Water Quality: Dechlorination utilizing Sodium Thiosulfate in solution injected into waste stream prior to discharge into receiving waters.

7. Best Management Practice (BMP) Plan

a. Schedule of Hydrotesting Activities: Hydrotesting conducted in five (5) turnovers as previously described.

b. Prohibited Practices:
   1) Disinfection effluent will not be directly discharged into any receiving waters without prior treatment to remove chlorine.
   2) Initial flushing should not be directly discharged without prior filtration and/or treatment.

c. Operating and Maintenance Procedures for Treatment Systems: Disinfection discharges shall cease or rate of discharge reduced if dechlorination cannot be achieved. Constant monitoring of dechlorination system to insure proper proportions of Sodium Thiosulfate to Chlorine. Monitoring pressurized system of water truck if applicable.

8. Hydrotesting Effluent Monitoring Procedures

a. Conduct frequent visual inspections during effluent discharges to insure no change in turbidity, color and odor. If physical changes are observed, discharges shall be terminated until appropriate treatment systems are in place.

b. Representative effluent samples for chlorine shall be collected at discharge point prior to entering receiving waters. Chlorine residuals measured by standard DPD kits and Color Comparators.

c. Effluent Type and Quality: Potable water source is the Punaluu I and Hauula Wells. Chlorine up to 50 mg/l depending on how clean main is installed. Sodium Thiosulfate "Dechlor".