FINAL

ENVIRONMENTAL IMPACT STATEMENT

FOR

MELEMANU WOODLANDS - PHASE III

WAIPIO, EWA, OAHU

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

ROBERT B. JONES, AICP
URBAN PLANNER / CONSULTANT

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WAIPIO, EWA, OAHU

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Prepared by

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September 5, 1985

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I. SUMMARY

Towne Realty, Inc. proposes to rezone and develop 70± acres of land in Central Oahu mauka of H-2 Freeway and within Waikakalaua Gulch, Waipio, Ewa, Oahu. The project, to be called Melemanu Woodlands Phase III, will ultimately develop approximately 1,122 units within seven areas of Waikakalaua Gulch and stretch approximately one mile mauka of H-2 Freeway. The project represents the final phase of development within Waikakalaua Gulch as initiated by Headrick Development Company. Headrick Development Company went bankrupt and the work is being continued by Towne Realty, Inc. under the auspices of the bankruptcy court.

The project involves the construction of on-site roadways, drainage systems, sewer system, water system, underground electric and telephone systems. Off-site construction will include development of a water well within Wahiawa and upgrading the Board of Water Supply's transmission system from Wahiawa down Kamehameha Highway to Leilehua Golf Course Road.

Melemanu Woodlands Phase III will be constructed over a period estimated between five and seven years. Construction cost for site development as well as building is estimated in excess of 50 million dollars.

The environmental impacts associated with the project include increased traffic locally and regionally; realignment of Waikakalaua Stream; temporary impacts associated with construction activities; noise impacts associated with Wheeler Army Airfield; and a permanent demand placed on public utilities and facilities. Mitigation measures are proposed for all impacts identified and it does not appear that any impact, either singularly or cumulatively, is unacceptable.

Alternatives to the project have been explored. Included among the alternatives are no action, reduced density develoment, and development without realigning segments of Waikakalaua Stream. All alternatives have been rejected by the applicant based on the fact that they do not achieve the objectives of the proposed project or there is no significant impact prohibiting the project from proceeding as generally planned.

Irreversible and irretrievable commitments of the project relate to the land. Once the project is completed, all other options will be unavailable. Commitments on energy, water supply and manpower will also be exhibited by the project. However, these commitments have not been considered significant as compared to the present island-wide supply and demand.

II. DESCRIPTION OF PROPOSED ACTION

A. Project Location

Melemanu Woodlands Phase III is located within Leeward Oahu at Waipio, Ewa, Oahu (see Location Map - Figure 1). The proposed project, as shown on Figure 2 (Proposed Development Plan) consists of 70± acres of land mauka of H-2 Freeway within Waikakalaua Gulch. The 70± acres are a part of 223 acres, all of which are owned by Waikalani Development, Inc. and are described by Tax Map Key 9-5-02: 4,6 and Portion of 11. Figure 3 shows the Tax Map covering the property.

B. Statement of Objectives

Melemanu Woodlands Phase III is the final phase of Master Plan Development initiated by Headrick Development, Inc. in 1971. The total Waikakalaua Gulch housing project consists of Waikalani

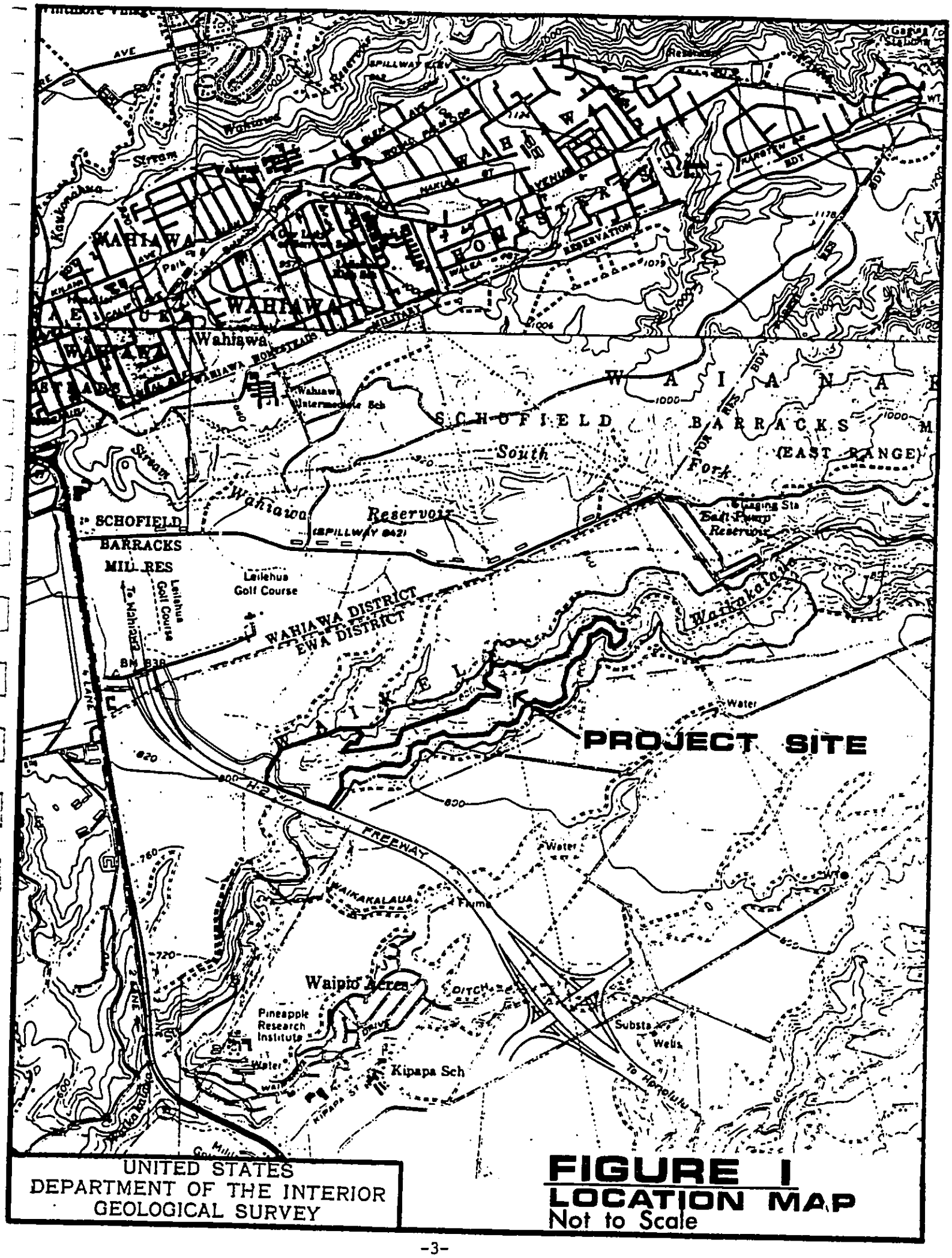
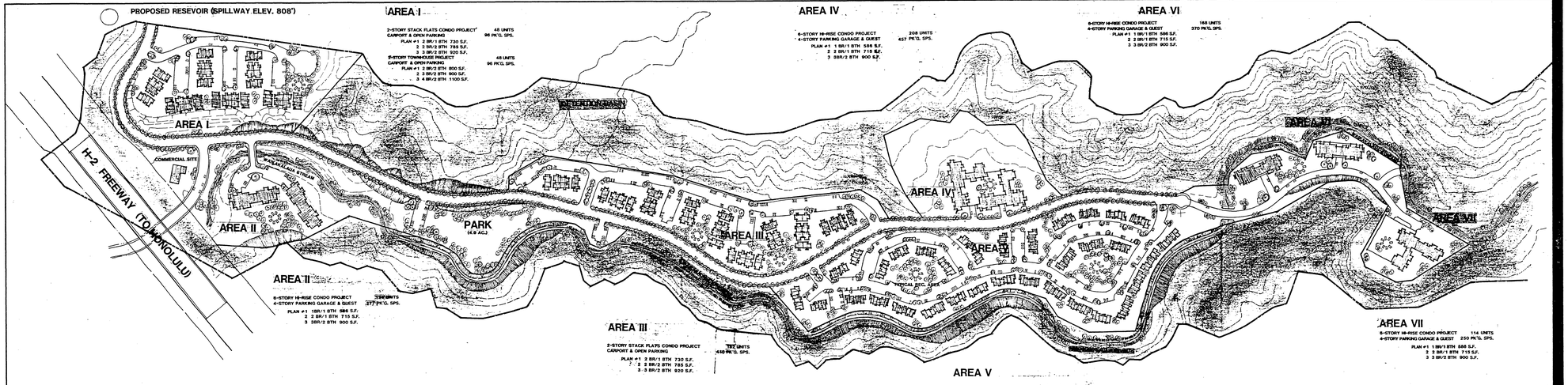


FIGURE 1
LOCATION MAP
Not to Scale



MARCH 6, 1986 0 100 200

PROPOSED DEVELOPMENT PLAN

LAND-USE INTENSITY CALCULATION

R-6 ZONE MAX. F.A.R. = .35

PROJECT MAXIMUM ALLOWABLE FLOOR AREA = 1,082,466 S.F.

(71 A.C. X 43560 = 3,092,760x.35)

AREA I					
STACK FLATS		(48 UNITS)			
	PLAN #1 730x12		8760		
	#2 785x18		14130		
	#3 920x18		16560	39450	
TOWNHOMES		(48 UNITS)			
	PLAN #1 800x12		9600		
	#2 900x18		16200		
	#3 1100x18		19900	45600	
AREA II					
HIGH-RISE CONDOS		(126 UNITS)			
	PLAN #1 586x31		18166		
	#2 715x48		34320		
	#3 900x47		42300	94786	
AREA III					
STACK FLATS		(192 UNITS)			
	PLAN #1 730x56		40880		
	#2 785x63		49455		
	#3 920x63		57960	148295	
AREA IV					
HIGH-RISE CONDOS		(208 UNITS)			
	PLAN #1 586x58		33988		
	#2 715x75		53625		
	#3 900x75		67500	155113	
AREA V					
TOWNHOMES		(223 UNITS)			
	PLAN #1 800x56		52800		
	#2 900x61		72900		
	#3 1100x61		88100	214800	
AREA VI					
HIGH-RISE CONDOS		(168 UNITS)			
	PLAN #1 586x48		28128		
	#2 715x60		42900		
	#3 900x60		54000	125028	
AREA VII					
HIGH-RISE CONDOS		(114 UNITS)			
	PLAN #1 586x34		19924		
	#2 715x40		28600		
	#3 900x40		36000	84524	
MISC. SUPPORT FACILITIES				50000	
COMMERCIAL SITE				3000	
TOTAL		1122 UNITS		960,596 S.F.	≤

PROJECT TABULATION

	NO. UNITS	NO. PK'G. SPCS.
AREA I	96	180
II	126	277
III	182	410
IV	208	457
V	228	513
VI	168	370
VII	114	250
TOTAL	1122	2457 (2.19 PK'G./UNIT AVG.)

MELEMANU WOODLANDS III

developer:
TOWN REALTY, INC.
PEARL CITY, HAWAII (808) 455-9065

architect/planners:
THE GRANADA GROUP, INC.
IRVINE, CA. (714) 250-0353

civil engineer:
GRAY, HONG & ASSOCIATES, INC.
HONOLULU, HAWAII (808) 521-0306

FIGURE 2

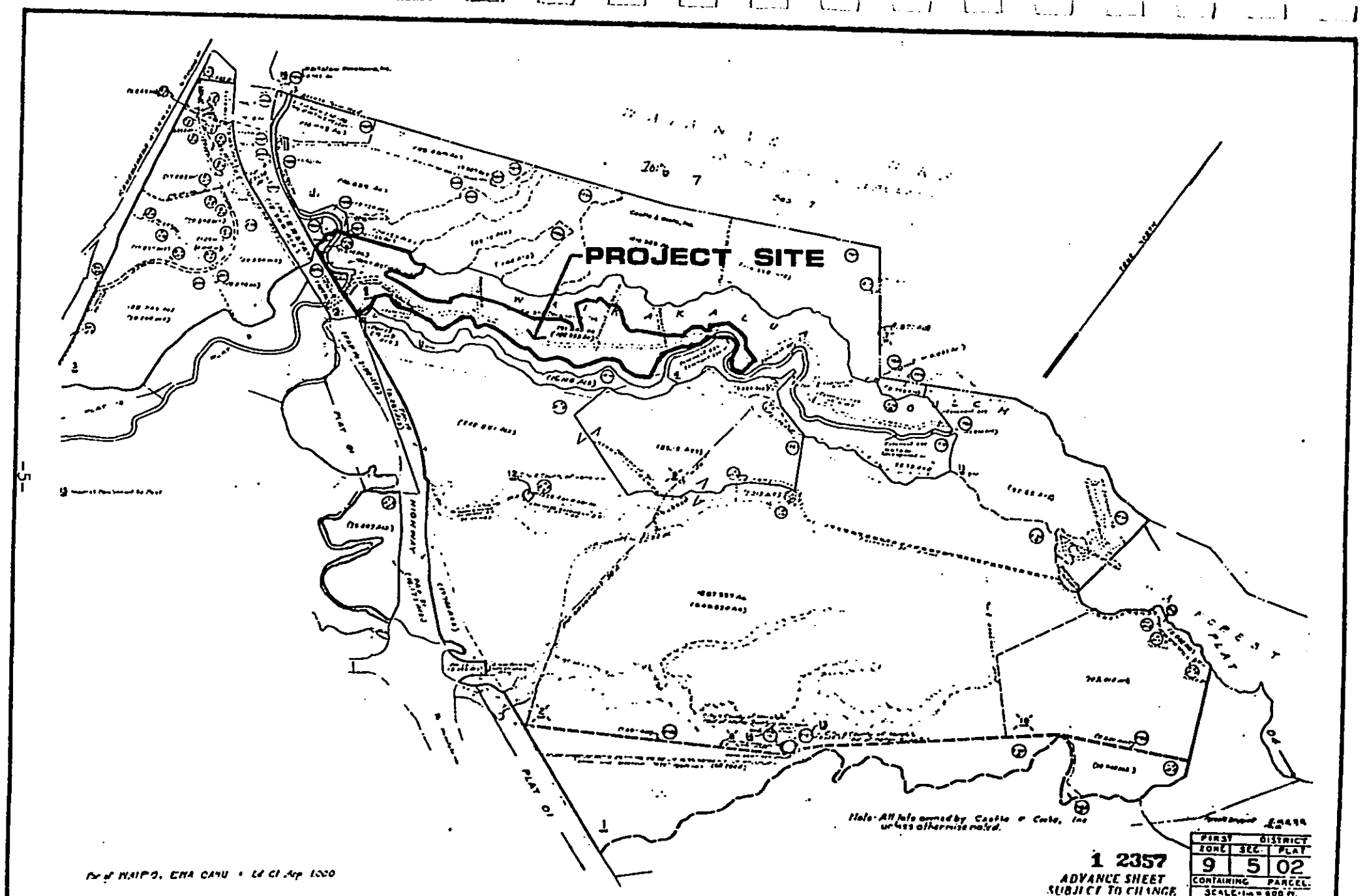


FIGURE 3
TAX MAP KEY
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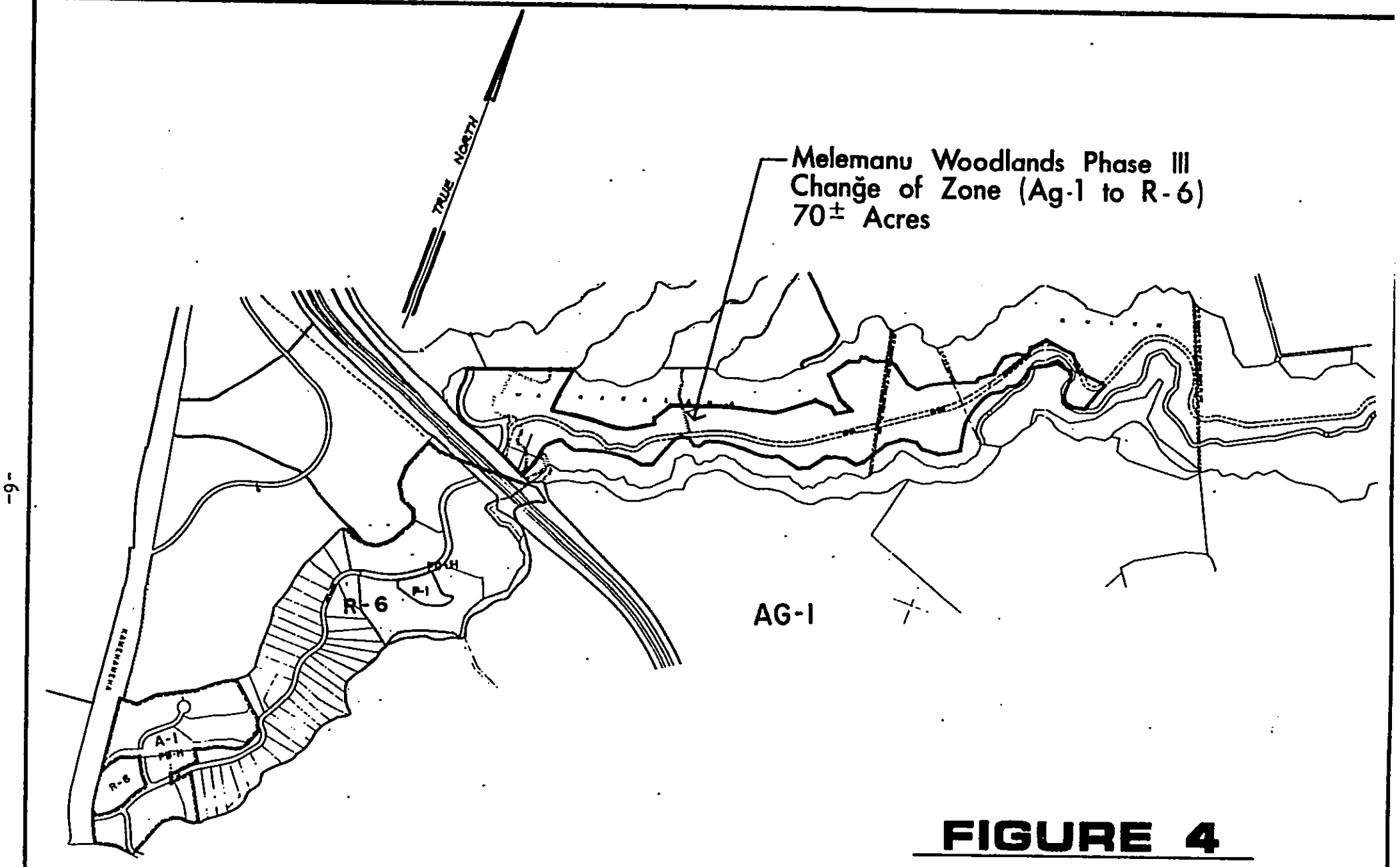


FIGURE 4

PORTION OF ZONING MAP

Not to Scale

Woodlands Phase I and Phase II, both makai of the H-2 Freeway and Melemanu Woodlands Phase III. During development of Phase II, Headrick Development, Inc. went bankrupt. Towne Realty, Inc. under the auspices of the bankruptcy court, has resumed development. As of this date, Towne Realty, Inc. has completed the two condominium projects within Waikalani Woodlands Phase II comprising 288 units. Waikalani Woodlands Phase II has two remaining building complexes which will be completed.

Towne Realty, Inc. further has an option to develop the 70± acres of land located above H-2 Freeway within Waikakalaua Gulch identified as Melemanu Woodlands Phase III. It is proposed to exercise this option and to submit an application to the City and County of Honolulu for change of zone on the subject 70± acres from the existing agricultural zoning to R-6 residential zoning. Upon the change of zone approval by the City and County of Honolulu, a Planned Development Housing (PD-H) will be sought. The project will provide 1,122 additional housing units for Oahu. In addition, Towne Realty, Inc. has agreed to commit 15% of the project's housing to low and moderate income groups. This commitment for low and moderate income housing was made during the 1983 Development Plan Annual Review.

C. General Description of the Action's Technical, Economic, Social and Environmental Characteristics

1. Technical Characteristics

Melemanu Woodlands Phase III will be located totally within an R-6 Residential Zoning District upon approval of the change of zone application. As previously referenced, the area

identified as R-6 Residential will be 70± acres. Figure 4 shows the existing zoning for the area and the requested zoning for the project site. The lands on the steeper gulch walls will all be zoned P-1 Preservation.

The project will create stacked flat type units, town homes and six-story condominium units. The Site Plan shown on Figure 2 contains a summary of the type of units by various areas for the project. The total number of units proposed is 1,122 units. These units will be constructed over an estimated five to seven year period.

Work necessary to complete the project includes grading, roadway improvements, drainage improvements, sewer improvements, water system improvements and underground electrical and telephone system improvements. A description of each area of work is as follows.

a. Grading: The proposed project is located mauka of the H-2 Freeway and within Waikakalaua Gulch. The upper reaches of the project extend approximately one mile into the gulch from the freeway boundary. The average width of the gulch is approximately 1,200 feet and the gulch floor elevation varies between 650 feet (MSL) at its lower end to 750 feet (MSL) at the mauka project boundary. The gulch walls vary in steepness between 3:1 (horizontal to vertical) and 1:1, and extend an average of 200 feet vertically to the plateau above. Entrance to the gulch at the lower portion of the project is relatively narrow and follows Waikakalaua

LEGEND

- 700 — Existing Contour
- 1:1 Slope (unless noted otherwise)
- Noise Monitoring Station

400 200 0 400 800

Scale in Feet

MELEMANU WOODLANDS - PHASE II

WAIPIO, EWA, OAHU HAWAII

Tax Map Key: 9-5-02:1&5, Por. 11

Prepared By: Gray, Hong & Assoc. Inc. Consulting Engineers 119 Merchant St. Rm. 607

FIGURE 5

PRELIMINARY ROADWAY ALIGNMENT AND ENGINEERED SLOPES

stream. However, once through the entrance, the valley floor expands with widths reaching 600 feet.

Grading is required to accommodate the alignment and profile of the 56-foot wide right-of-way that will be the main arterial extending through the valley. Based on grading completed within Phases I and II the of Melemanu Woodlands project, it is anticipated that cut slopes and fill slopes will typically average 1:1 and 2:1, respectively. Preliminary soil engineering reconnaissance verifies this assumption, however, a complete soils report will be performed prior to actual preparation of any grading plan to substantiate the engineered cut and fill criteria.

Grading will also be required to realign the Waikakalaua Stream channel. Figure 5 shows the preliminary grades for the roadway and driveways as well as where cut slopes are proposed for the roadway alignment and stream alignment. All grading will be done in conformance with the project's soils engineer's recommendations.

Preliminary earthwork quantities include 100,000 cubic yards of excavation for the 56-ft. right-of-way and 75,000 cubic yards of excavation for stream realignment. All excavated material will be utilized onsite in the form of engineered fill within the abandoned Waikakalaua Stream channel. There will be no need for import or export of material.

b. Roadway: The project will require approximately one mile of access roadway. This roadway will be a City and County standard 56-foot right-of-way. Within the roadway will be water and sewer, as well as underground electric, telephone and television cable. The curb-to-curb pavement width on a 56-foot wide roadway is 40 feet.

Various project areas within Phase III will have driveways leading from the 56-foot right of way to parking areas surrounding each building. These driveways will be AC paved with curb and sidewalk. Specific design of driveway sizes will be accomplished at the working drawing phase of the project. A preliminary layout is indicated on Figure 2 and Figure 5.

c. Drainage: Waikakalaua Stream above the H-2 Freeway produces a 50-year design peak discharge of 7,000± cubic feet per second (cfs). Development of Melemanu Woodlands Phase III will increase this discharge by 78 cfs. While the increase is less than two percent of the 100-year design peak discharge, downstream conditions can be aggravated if the increase in runoff is not controlled. It is proposed to construct a detention basin within the Phase III development which will provide storm runoff storage for Melemanu Phase II and Melemanu Phase III. In addition, the detention basin will also provide storage for the Mililani High-Tech Park which is proposed on the plateau adjacent to Melemanu Phase III. The detention basin will effectively

store runoff generated by the foregoing development and meter it into Waikakalaua Stream at a rate that ensures the peak discharge does not exceed that which can presently occur. It is anticipated that the storage required in the proposed detention basin will be 80 acre-feet. The detention basin will have the appearance of an empty earthen dam except during rainfall periods when water will be stored with controlled discharge into Waikakalaua Stream.

A detention basin was constructed as a part of Phase II and this basin operates under the same principles described above. Upon completion of the new detention basin within Phase III, the previously constructed detention basin will be abandoned. The preliminary drainage report contained in Appendix A will be processed through the City and County for approval. The drainage report quantifies the detention principles described above for the project area.

It is also proposed to realign approximately 2300 linear feet of Waikakalaua Stream within the Phase III project area. The purpose of this realignment is to provide more efficient use of the flat areas within the Waikakalaua Gulch and to eliminate horseshoe bends which currently exist in the project area. Similar type work has been done by a former owner, Mr. Harold Stearns, on Waikakalaua Stream upstream and downstream of the Phase III

area. As evidenced by 30 years of existence, the integrity of the new stream alignment has been remarkable. There is no significant evidence of erosion regarding the previous realignment work. However, the previous realignment work was done under standards which are less critical than those that exist today. It will be the design philosophy to keep the stream realignment work in as natural a condition as possible, but also recognizes the realigned sections must be approved by the Department of the Public Works as well as the Department of Land Utilization. In addition, the Corps of Engineers has indicated that a Department of the Army Permit is required. The Department of the Army Permit Process requires a Federal Consistency Determination from the Hawaii Coastal Zone Management Program.

Regardless of the type of channel section used for realignment, it will be possible through engineering design to ensure that the downstream conditions with respect to velocity will be no different than those which presently occur. This will further ensure that there is no additional aggravation to downstream conditions. Figure 6 shows typical sections which will be discussed in detail with both the Department of Land Utilization and Public Works for use within this project. These details will also be submitted to the Corps of Engineers regarding the Department of the Army Permit Application.

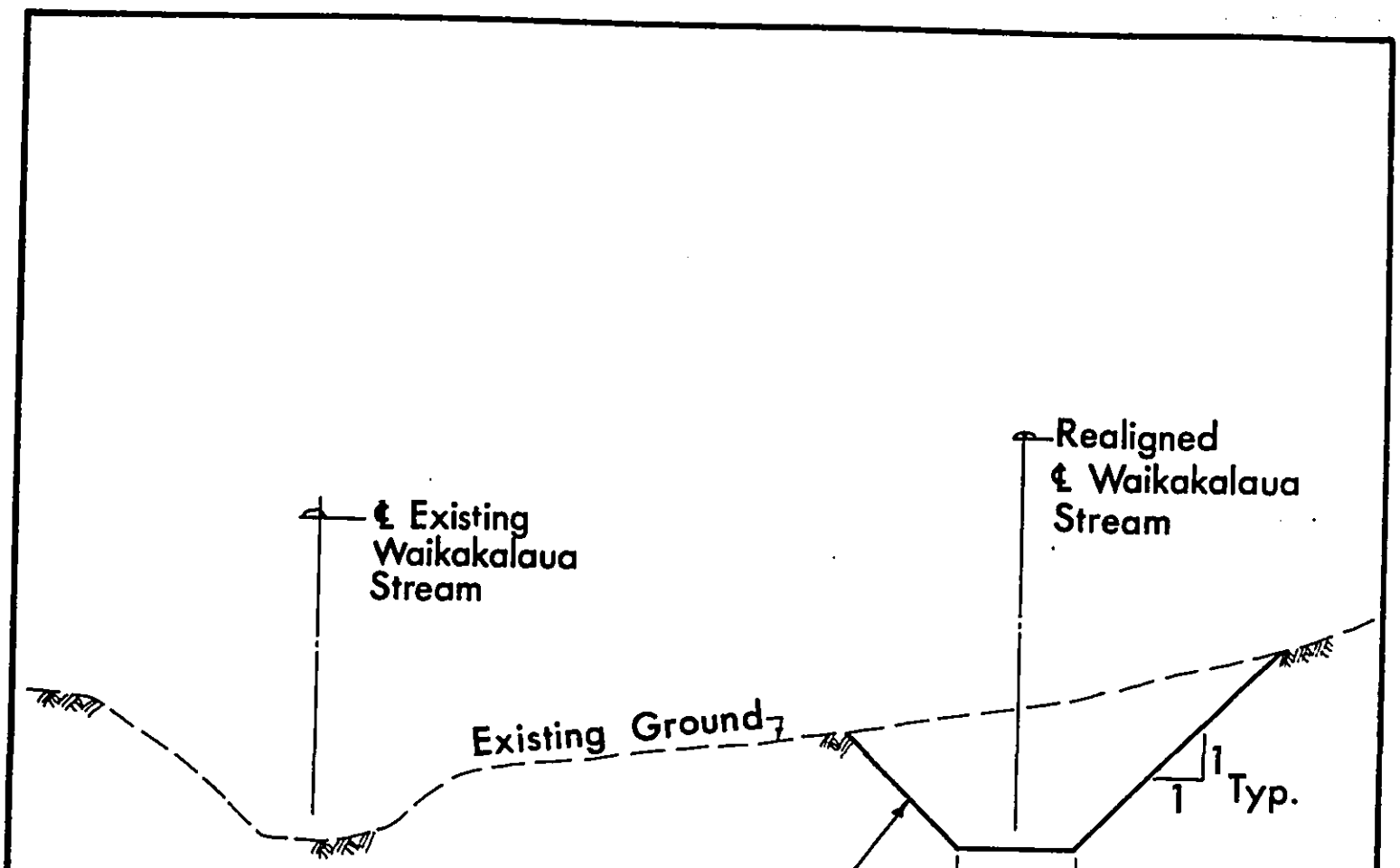


FIGURE 6

TYPICAL STREAM REALIGNMENT

Scale : 1" = 30'

The project site is within Zone C, as identified on the Federal Insurance Administration's Flood Insurance Rate Maps. Zone C is identified as areas of minimal flooding. A final drainage report will be prepared prior to preparation of construction plans which will establish the water surface elevations within Waikakalaua Stream during a 100-year design storm. Finished floors of all habitable units will be a minimum of 5 feet above this water surface elevation.

d. Water: Water for the project will be made available from developing a dormant well at the Board of Water Supply's corporation yard in Wahiawa. Through joint cooperation with the neighboring Mililani High-Tech Park, the combined projects will develop 1.3 mgd. The project site is within the Pearl Harbor Ground Water Control Area (PHGWCA) and a permit for source development has been granted by the Department of Land and Natural Resources to the Board of Water Supply to allow use of the foregoing identified source. Additional water development is available in the Pearl Harbor basin due to reduced pumping by agricultural activities.

The Board of Water Supply has submitted an application to the Drinking Water Section of the Department of Health for the purpose of obtaining source approval for the existing well in the Board of Water Supply Corporation Yard. This

application procedure examines the quality of water with respect to the Safe Drinking Water Act (P.L. 93-523).

In addition to the foregoing source development, through joint cooperation between Mililani High-Tech Park and Melemanu Woodlands Phase III there will be an improved transmission system from Wahiawa down Kamehameha Highway to Leilehua Golf Course Road and into both projects. Melemanu Woodlands Phase III will then, on its own, provide necessary internal storage and transmission systems for its project. Water tank storage requirement for Melemanu Phase III is 0.5 million gallons. A Water Master Plan has been developed for Phase III as shown on Figure 7 and this plan has been approved by the Board of Water Supply. Working drawings will be based on the approved water master plan. All water system improvements will be dedicated to the Board of Water Supply.

e. Sewer Improvements: Melemanu Woodlands Phase III is the third increment of development within Waikakalaua Gulch. As a part of the previous two increments, the Melemanu projects have entered into and completed agreements with the City of Honolulu to:

i. Contribute $500,000± for the expansion of the Mililani Sewage treatment plant and;

ii Construct and dedicate to the City a sewage pump station to transmit sewage from the Melemanu area to the Mililani STP.

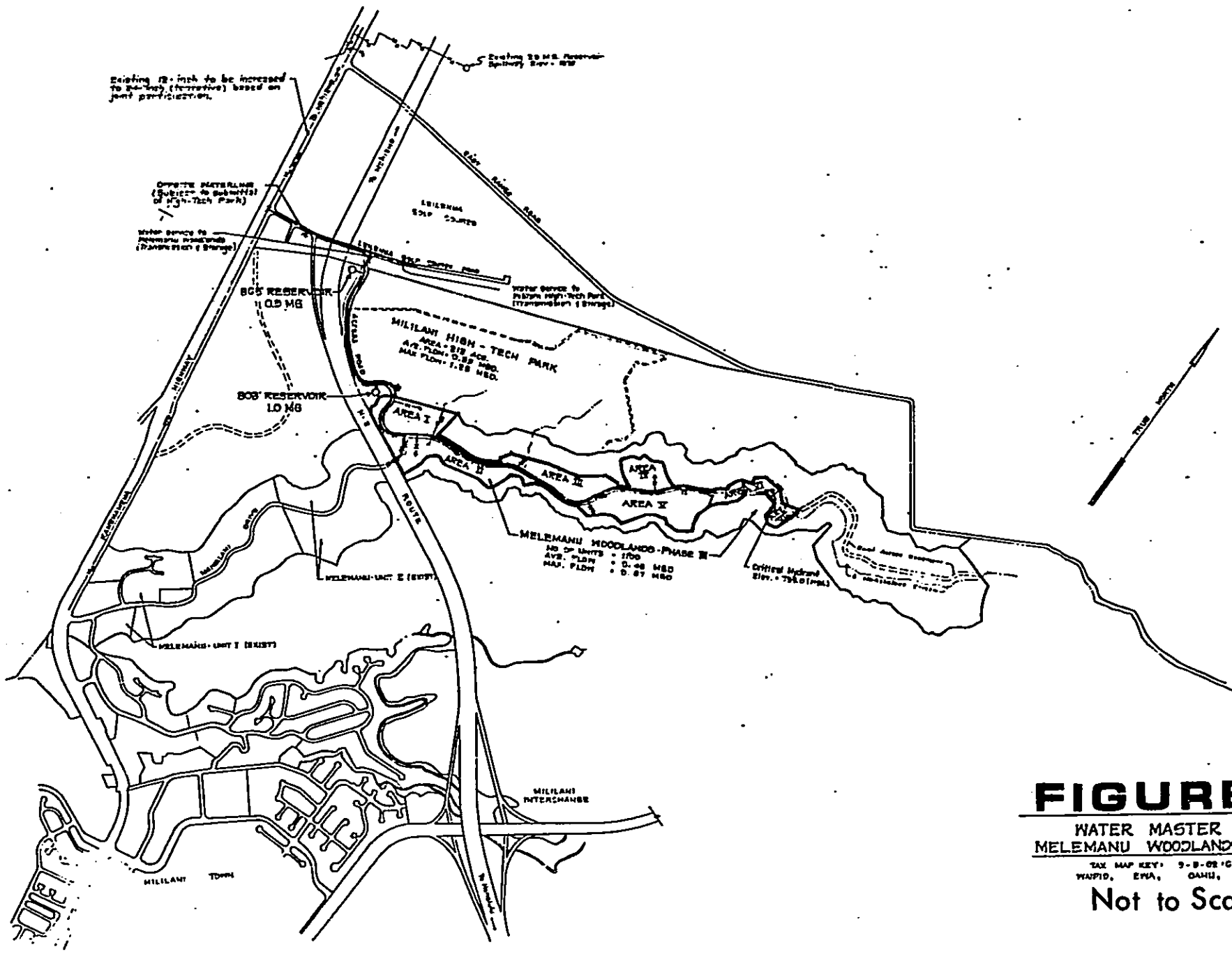


FIGURE 7

WATER MASTER PLAN
MELEMANU WOODLANDS PHASE III

TAX MAP KEY: 9-8-02 'G, POR. 8
WAIPIO, EWA, OAHU, HAWAII

Not to Scale

The foregoing agreements and improvements were completed at a total cost of $1,500,000 to the developer and assured that 3,000 units could connect to the City's Mililani STP and be accommodated by the Waipio sewage pump station. The total number of units now anticipated to be connected to the City's system, including Melemanu Phase III, will not exceed 2,400 units. Therefore, the existing system is adequate.

f. Underground Electric, Telephone and Cable Service: These utilities will be provided to Melemanu Phase III. Connection to Hawaiian Electric Company's and Hawaiian Telephone Company's existing system will be at the lower end of the Melemanu Phase III. Both Hawaiian Electric Company and Hawaiian Telephone Company will review and approve construction plans for underground service. Existing systems appear adequate; however, both utilities have long range planning to accommodate the project if the existing system is not adequate.

Hawaiian Electric Company has 46 kv and 12 kv power lines crossing the site. These power lines will be relocated as necessary with appropriate new easements provided to Hawaiian Electric Company. Construction plans will be prepared for all relocation work and these plans will be processed through Hawaiian Electric Company and the City and County of Honolulu.

g. Solid Waste Collection: Solid waste collection will be by private waste haulers as presently occurs within Phase II or by City and County of Honolulu Refuse vehicles or by a combination of the two systems. As a requirement for City and County refuse vehicles to service the area the project will need to meet Refuse Division standards. This area will be examined in detail at the Planned Development Housing Permit stage of the project.

h. Landscaping: A landscaping plan will be developed for the project. Landscaping will consist of grassed areas in the parks and in the vicinity of buildings. In addition, flowering plants and trees will also be utilized throughout the project. Major existing trees will be retained where appropriate. A complete landscaping plan suitable for residential development will be developed during the PD-H phase of project review.

2. Socio-Economic Characteristics

a. Housing Needs: There is a definite need for housing units on the Island of Oahu. As documented in the Development Plan Amendment Application for this project (processed during the 1983-84 annual review), the following points were made:[1]

"i. A 5 percent vacancy rate is required on the Island of Oahu to assure choice and mobility of housing consumers. However, the vacancy rate for single-family residences between 1977 and 1981 did not exceed 0.6 percent. The vacancy rate for multi-family units during the same period did not exceed 2.9 percent and did not exceed 2.1 percent since 1979.

ii. Approximately 58,000 new units will be needed by 1990 to meet the demand.

iii. The U. S. Department of Housing and Urban Development guidelines consider a sales price of $60,000-$65,000 reasonable for low/moderate income housing and $80,000-$85,000 suitable for gap-group housing. In addition, the State Hawaii Housing Authority permits sales prices of units at slightly over $100,000 as affordable to the gap-group. A sales price range for this project in the range of $85,000 to $100,000 will help serve gap-group housing consumers and should funds such as Community Block grant or other subsidies be available, the low/moderate income consumer could be helped."

Based on the foregoing information, it is apparent that there is a significant and real need to provide housing. Further, the upland location, even though within a picturesque setting, does not command the sales price of multi-family units located elsewhere. A ceiling of $120,000 is very realistic for the area.

As a part of the project's Amendment Application to the Central Oahu Development Plan, a commitment to provide 15 percent of the project's housing to low/moderate income levels was made.

b. Employment Opportunities: Any project of this nature will provide employment for all the construction trades involved with housing development. The project is phased and construction will stretch over an estimated five years. Therefore, even though this type of construction is sometimes considered temporary, it will in reality provide long-term employment for many working individuals. The construction cost of the complete development will be in excess of $50,000,000.

c. Public Facilities: The project site has been within the State urban boundary since 1977 and, therefore, considered within overall master planning for schools, libraries, parks and other similar public facilities. Tax dollars from the project and its owners will contribute proportionately to these facilities as required.

The project will additionally provide park areas for recreation. The area to be provided for a park (5.6± acres) more than doubles the City's park dedication requirements. Park facilities will be developed through consultation with the City's Department of Parks and Recreation. Forms of recreation which can be considered include tennis courts, swimming pools, little league fields, soccer fields, barbeque areas and passive recreation.

3. Social Characteristics

The residential nature of the development will create an atmosphere typical to that of residential developments located in the general area. The two closest project areas are Waikalani Woodlands Phase I and Waikalani Woodlands Phase II, and it is fair to assume that the social characteristics of Phase III will be very similar in nature to those that occur in the previous two phases. The children living within the Melemanu Woodlands Phase III area would use existing schools utilized by their neighbors in the area. The majority of working parents would commute to work, and during non-working

hours, the shopping, socializing and recreational needs of the Melemanu Woodlands Phase III residents would be similar to that existing residents in the area.

Waikalani Woodlands Phases I and II have appeal to the military and their dependents due to the priximity to Wheeler Air Force Base and Schofield Barracks. Concurrently, relatively short duty tours (typically two to three years) make the availability of rental units within waikakakalaua Gulch additionally attractive. First time homeowners are also interested in the project due to the relatively lower purchase prices. Therefore, social mix of the existing projects in Waikakalaua Gulch is young families and military. It is reasonable to project that this trend will continue with Phase III.

4. Environmental Characteristics

There are no notable viewplanes which will be affected by the proposed development. Based on literature review and field surveys, there are no rare, endangered or unique plants or animals on any section of the site. All flora and fauna present are introduced species and are common within the State.

The project will be connecting to the City and County of Honolulu sewer system and no subsurface disposal will occur affecting the underlying water table.

Drainage from and around the site enters Waikakalaua Stream and ultimately discharges to the ocean at the west loch of Pearl Harbor. A relatively small portion of the drainage basin will be

modified to retain storm water runoff as well as realign Waikakalaua Stream in segments. As previously referenced, the design principle is to ensure Waikakalaua Stream characteristics prior to discharging downstream from the projects have conditions essentially the same as prior to improvement.

At present it is estimated that runoff from the residential development will increase certain pullutant loads within Waikakalaua Stream. The most noticeable source of pollution is probably hydrocarbon residuals from automobile emissions. This is not believed to be significant.

D. Use of Public Funds or Lands for the Action

No public funds or lands will be used for the project. All on-site construction costs will be borne by the developer and off-site costs with respect to water will be jointly borne by the developer and Mililani High-Tech Park. New roads will be created for public use and will be dedicated to the City and County of Honolulu.

E. Phasing and Timing of Action

The actual phasing and timing for the construction of improvements is dependent on the state of the economy and other marketing considerations. Generally, it is anticipated that the total project will be developed over a five to seven year period. It is unlikely that construction can begin prior to early 1986.

F. Summary Technical Data

1. "Development Plan Amendment Application, Request to Amend Central Oahu Development Plan for TMK 9-5-02: Portion 4, 6 & 11 (83/CO-19A)", prepared by Tyrone T. Kusao, A.I.C.P., City Planning Consultant, July 15, 1983.

2. Hawaii State Plan.

3. "Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii," Foote et al., U. S. Department of Agriculture, Soil Conservation Service, U. S. Government Printing Office, 1972.

4. "Melemanu Woodlands-Preliminary Soil Report, Waipio, Oahu, Hawaii," Walter Lum & Associates, March 18, 1971.

5. "Soils Investigation Report-Melemanu Unit II, Waipio Valley, Oahu," United Engineering Laboratories, Inc., March 1973.

6. "Report of Soils Investigation-18 Acre Site, Melemanu Woodlands," United Engineering Laboratories, Inc., July 3, 1973.

7. "Soils Investigation Report-Access Road, Melemanu," United Engineering Laboratories, Inc., July 25, 1973.

8. "State of Hawaii Data Book," Department of Planning and Economic Development, 1983.

9. "Melemanu Woodlands Traffic Impact Statement," Brian Gray & Associates, Inc., March 8, 1972.

10. "Traffic Impact Study-Hawaii High Technology Park, Mililani, Hawaii," Parsons, Brinkerhoff, Quade & Douglas, Inc., April 1983.

11. "Hali 2000 Study Alternatives and Final Report," Wilbur Smith & Associates, June, 1984.

12. "Final Environmental Impact Statement for a 476-Acre Development at Mililani Town, Hawaii," prepared by VTN Pacific,Inc. for U.S. Department of Housing and Urban Development, Honolulu Area Office, HUD-R09-EIS-82-04F, 1983.

G. Historic Perspective

The Waikakalaua Gulch area was one of the first Royal Grants issued and the records show possession by one John Neddles Gilman as Grant #6 in 1846 from Kamehameha III. Ownership was acquired by Castle and Cooke in the 1930's and Waikakalaua Gulch lands were leased to tenants for farming.

The gulch land had no value to Castle and Cooke for pineapple production, and Harold Stearns acquired the land. While under Stearn's ownership, forty-three one acre farm lots were developed at the lower end of the main Waikakalaua Gulch.

Harold Stearns sold the remainder of the gulch to the Reverend Harold Headricks in 1969 and Headricks development, Inc. initiated the projects now referred to as Waikalani Woodlands Phase I and Waikalani Woodlands Phase II. Headrick Development, Inc. utlimately filed for bankruptcy and development rights presently belong to Towne Realty, Inc.

III. THE RELATIONSHIP OF THE PROPOSED ACTION TO LAND USE PLANS, POLICIES, AND CONTROLS FOR THE AFFECTED AREA

A. State Land Use Designation

The State Land Use designation for the project site and the surrounding area is "Urban."

B. Hawaii State Plan

The Hawaii State Plan identifies the goals, objectives and policies of the State to serve as a broad guide for future development. The following are the objectives and policies of the Hawaii State Plan which are relevant to the proposed project and a discussion of how the proposed action relates to them.[2]

1. Population

Section 5(b)1: "Manage population growth statewide in a manner that provides increased opportunities for Hawaii's people to pursue their physical, social and economic aspirations while recognizing the needs of each county."

The proposed development will provide housing choices for median-income families in an area already designated as "Urban" by the State General Plan.

2. Economy

Section 6(a)6: "Strive to achieve a sustained level of construction activity responsive to, and consistent with, State growth objectives."

The proposed development will create construction job opportunities over a period of several years.

Section 6(a)15: "Promote and protect intangible resources in Hawaii, such as scenic beauty and the aloha spirit, which are vital to a healthy economy."

No viewplanes will be sacrificed. Instead, the valley willbe converted into attractive residential area.

Section 7(a)6: "Assure the availability of agriculturally suitable lands with adequate water to accommodate present and future needs."

The proposed development does not conflict with this objective. The site has never been used for significant agricultural purposes. However, the plateaus above Waikakalaua Gulch have been extensively used for pineapple cultivation.

3. Physical Environment

Section (11)b3: "Take into account the physical attributes of areas when planning and designing activities and facilities."

Based on the topography and the availability of infrastructure, the proposed subdivision is economically viable, as demonstrated by previous incremental development within the valley

Section 11(b)6: "Encourage the protection of rare and endangered plant and animal species and habitats native of Hawaii."

There are no rare or endangered plants or animals on the project site.

Section 12(b)4: "Protect those special areas, structures, and elements that are an integral and functional part of Hawaii's ethnic and cultural heritage."

There are no significant archeaological or cultural artifacts on the project site as evidenced by an archaeological reconnaissance conducted within the gulch.

Section 12(b)5: "Encourage the design of developments and activities that complement the natural beauty of the islands."

No view planes will be sacrificed by the proposed development. The project's overall design is intended to emphasize the valley atmosphere.

Section 13(b)2: "Promote the proper management of Hawaii's land and water resources."

The project site will place additional demand on the ground water supply. However, appropriate review will be done by the Department of Land & Natural Resources as well as the Board of Water Supply to ensure that there are still adequate reserves of ground water for growth on Oahu.

Section 13(b)3: "Promote effective measures to achieve desired quality in Hawaii's surface, ground, and coastal waters."

During the construction phase, appropriate and effective measures must be taken to ensure that sediments contained in the runoff are contained on the site. After construction, the development should have negligible effect on the quality of ground water, surface water and coastal waters. Design concepts will be utilized to ensure that stream flow characteristics leaving the project site are substantially identical to the preconstruction characteristics.

Section 13(b)7: "Encourage urban developments in close proximity to existing services and facilities."

The proposed development site is close to existing residential development. Infrastructure necessary to support the project already exists or can be provided without using extraordinary means. Shopping centers and business are available and accessible in Wahiawa and also in Leeward Oahu.

4. Facilities Systems

Section 14(b)3: "Ensure that required facility systems can be supported within resource capacities and at reasonable cost to the user."

As discussed above, the necessary facility systems (water, waste disposal, utilities) are already in existence or they can be readily provided.

5. Housing

Section 19(a)1: "Greater opportunities for Hawaii's people to secure reasonably priced, safe, sanitary, livable homes located in suitable environments that satisfactorily accommodate the needs and desires of families and individuals."

The proposed development will primarily provide housing in the median-income price range which will be located in pleasant surroundings. Some low and moderate cost units will also be included in the project. There is also a commitment for 15% of the project's housing to be devoted to low and moderate income groups.

Section 19(b)3: "Increase home ownership and rental opportunities and choices in terms of quality, location, cost, densities, style and size of housing."

The proposed development will enhance the number of choices of housing available on Oahu, especially within central Oahu.

6. Leisure

Section 23(b)4: "Promote the recreational and educational potential of natural resources having scenic, open space, cultural, historical, geological, or biological values."

No area of significant recreational or educational potential will be sacrificed.

C. Oahu General Plan (City and County of Honolulu)

The 1983-84 annual review of the Central Oahu Development Plan redesignated the 70± subject acres from agricultural to urban. Figure 8 shows the portion of the Development Plan for Central Oahu which includes the project. It should be noted that the general shape of the Development Plan boundary differs from that identified on all other figures showing project boundaries. This is due to the fact that the Development Plan boundary is less than the 70± acres intended for redesignation in the Annual Review. The discrepancy between the Development Plan Map and the 1983-1984 Annual Review

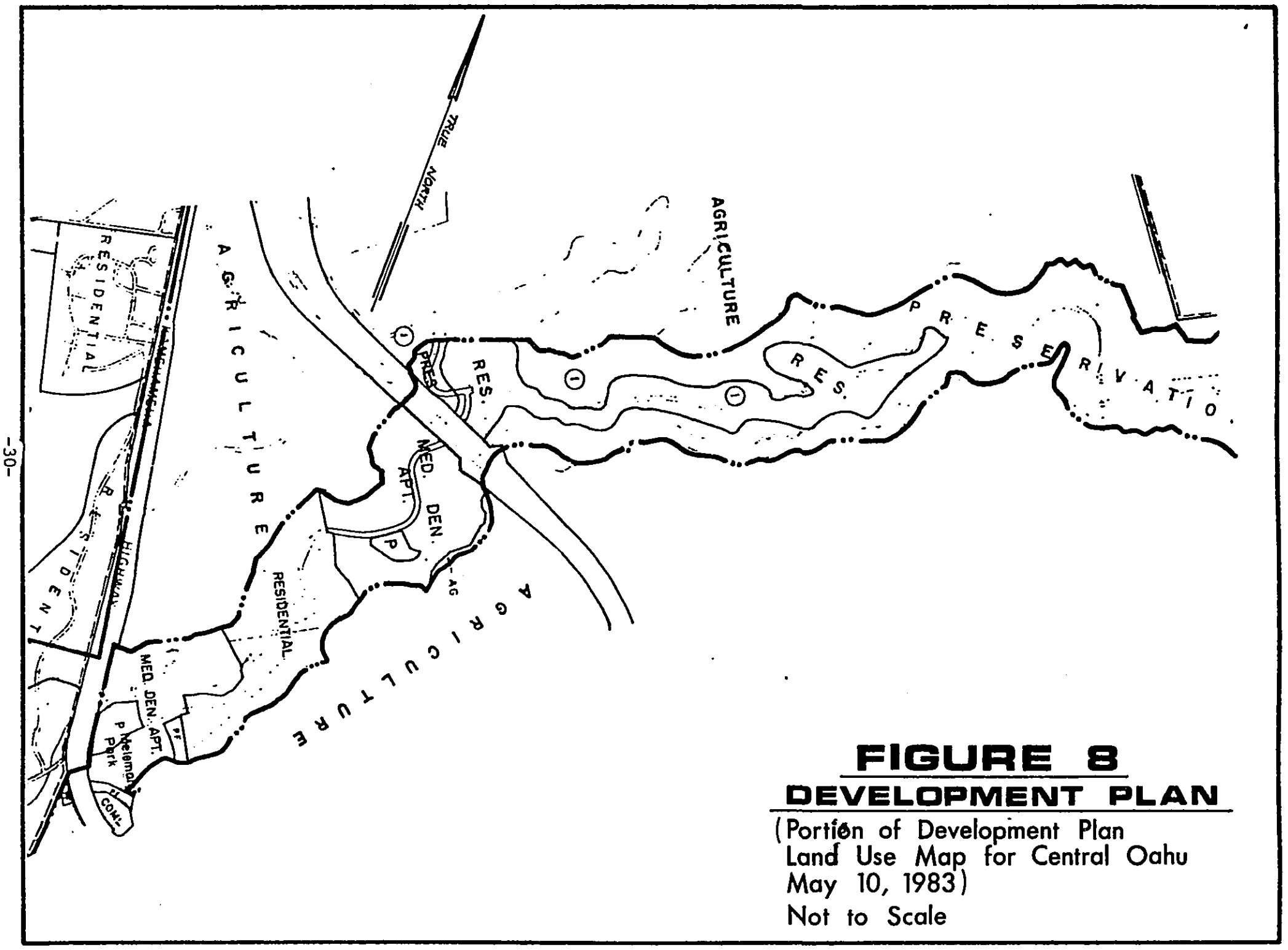


FIGURE 8
DEVELOPMENT PLAN

(Portion of Development Plan
Land Use Map for Central Oahu
May 10, 1983)
Not to Scale

narrative has been reviewed by the Department of General Planning and Corporation Council, and a determination was subsequently made that the 70± acres is the controlling factor. The area shown in all other figures represents 70± acres.

The following items regarding the Oahu General Plan were referenced within the application of the Development Plan amendment.

> "The Year 2,000 Urbanized Areas map constituting part of Policy 4, Objective C, Population designates the subject property in the urban fringe category. The proposed residential use for this site conforms to the urban fringe classification.
>
> Economic, Objective A, Policy 6 - Encourage the continuation of a significant level of federal employment on Oahu. Objective G, Policy 4 - Encourage the continuation of a fairly high level of military - related employment in the Hickam-Pearl Harbor, Wahiawa and Kailua-Kaneohe areas.
>
> Comments: The proposed development is supportive of these policies by providing needed, affordable housing in proximity to major federal installations at Schofield Barracks and Wheeler Air Base. Further away but still within easy commuting distance due to completion of the H-2 freeway are: Hickam A.F.B., Pearl Harbor Naval Shipyard and the Helemano Radio Station.
>
> Economic, Objective C - To maintain the viability of agriculture on Oahu. Policy 4 - Provide sufficient agricultural land in Ewa, Central Oahu and the North shore

to encourage of the continuation of sugar and pineapple as viable industries."

Comments: Central Oahu contains some of the most productive agricultural lands on Oahu. The utilization of unproductive lands such as in the instant case to provide needed housing helps in maintaining agriculture as a viable industry by not encroaching onto productive agricultural lands.

Housing, Objective A - To provide decent housing for all the people of Oahu at prices they can afford." Policy 3 - Encourage innovative residential development which will result in lower costs, added convenience and privacy, and more efficient use of streets and utilities."

Comments: The track record for this development team speaks for itself in conforming to objective A above. Most of the purchasers for Units I and II have been first time home buyers, and that situation should be no different for the Unit III development. The use of vacant gulch lands for housing development resulted in lower land costs which have been passed on to the purchasers. In many ways Headrick's development can be classified as innovative in lowering housing costs.

Housing, Objective C - To provide the people of Oahu with a choice of living environments which are reasonably close to employment, recreation, and commercial centers which are adequately served by public utilities.

Policy 1 - Encourage residential developments that offer a variety of homes to people of different income levels and to families of various sizes."

Comments: This project will definitely provide the people with a choice insofar as outlay for housing is concerned. In comparing the sales price of homes in major new developments in central Oahu such as Mililani and Gentry Waipio, the units in this development are priced at the lower end of the total spectrum. Aimed at the first time home buyers, the units are not large but adequate with two and three bedroom units. With the completion of the H-2 Freeway access to major places of employment is no longer a problem. Nearby employment centers are Schofield Barracks, Wheeler field and in Wahiawa is only a short distance away. Commercial centers are in nearby Mililani Town as well as in Wahiawa. Infrastructure and public utilities will be discussed below."[1]

Directly related to the Development Plan are the Facility Plans. Melemanu Woodlands Phase III will create roadway, new water facilities and sewer lines. An application to amend the existing Central Oahu Facilities Plan will be processed in the near future. Figure 9 shows the proposed modifications to the Plan.

D. Zoning - City and County of Honolulu

The proposed project site is currently zoned Ag-1 Agriculture. Change of zone is required for residential development of the site.

Preparation of an EIS is a prerequisite for submittal of an application for the change of zone. Figure 4 shows the existing zoning for the area as well as the proposed zoning for the project.

IV. DESCRIPTION OF THE ENVIRONMENTAL SETTING AND THE PROBABLE IMPACT OF THE PROPOSED ACTION

A. Physical and Chemical Characteristics

1. Physical Geography

Central Oahu consists of a plateau between the Waianae mountain range and Koolau mountain range. The plateau reaches an elevation of approximately 1,000 ft. and generally slopes towards Pearl Harbor. Various gulches have been cut through the plateau from the leeward side of the Koolau mountain range and ultimately extend to the shoreline along leeward Oahu. These gulches were cut by erosion over geological time. Today there are predominantly intermittent streams within these gulches, however, some of the larger gulches contain streams of a perennial nature.

The project site is within Waikakalaua Gulch, which is a well defined gulch as described above. Waikakalaua Stream is within this gulch and is generally considered a perennial stream, however, it has been observed at no-flow conditions during dry periods.

The gulch has a broad floor and valley walls varying in steepness of 30 to 60 percent rising to the central plateau approximately 200 feet above the gulch floor.

The project's technical description identified that grading would be required to provide roadway alignment and to realign

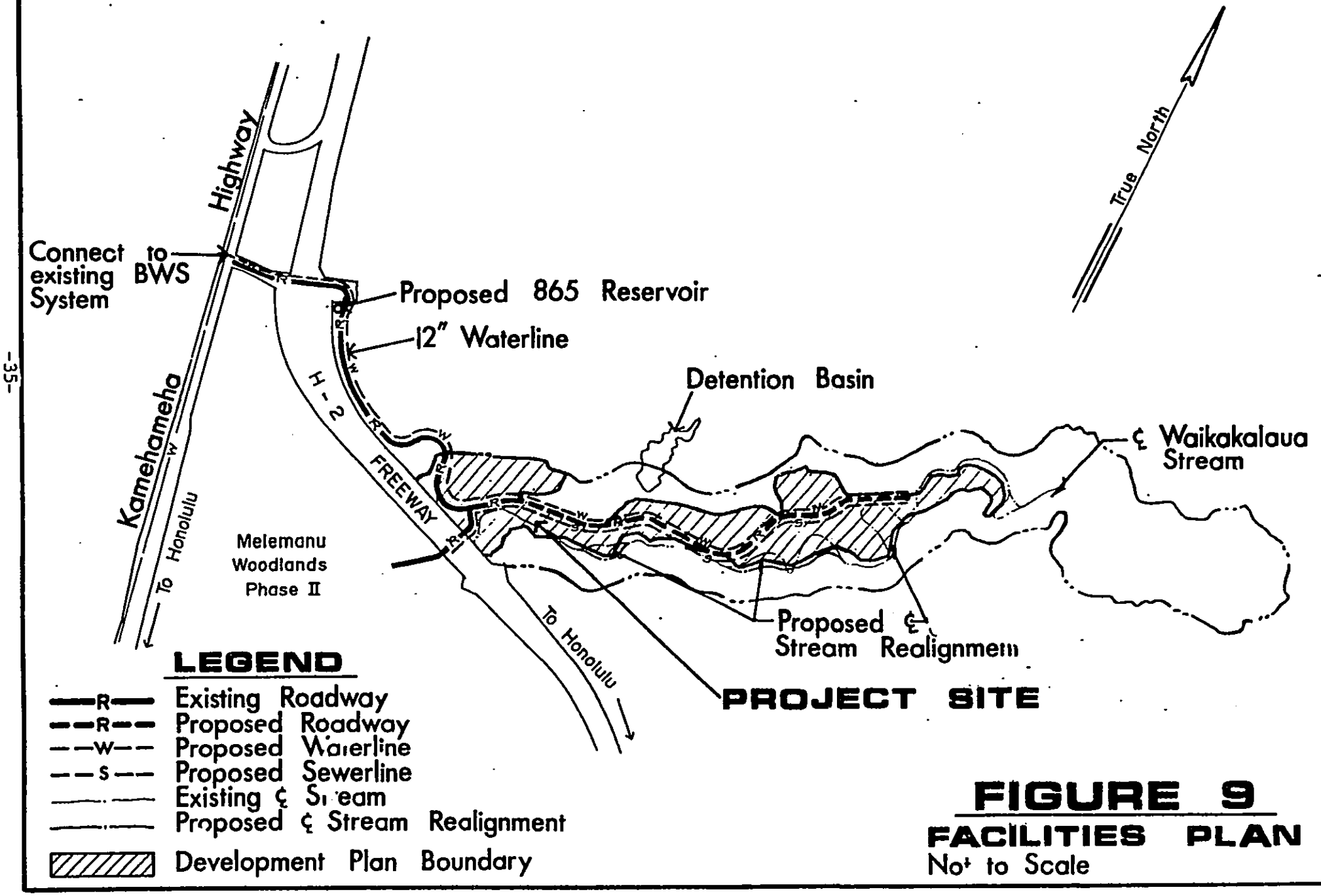


FIGURE 9

FACILITIES PLAN

Not to Scale

sections of the Waikakalaua Stream channel. Grading will change natural slopes to engineered slopes. This, in itself, will have no effect on the physical characteristics of the area. However, grading within the Waikakalaua Stream channel will physically change the characteristics of stream flow in the vicinity of the realignment. This will be an impact of the project and if not properly mitigated, and can cause aggravation downstream.

2. Soils

The Soil Conservation Service[3] identifies soils in the area as Helemano silty clay and Kawaihapai silty clay. The Helemano series typically exists on the side of V-shaped gulches as exist within Waikakalaua Gulch. Runoff is medium to very rapid and erosion hazard is severe to very severe based on the slope. The Kawaihapai series is characterized by stony areas within drainage ways.

In addition to the soils information available from the Soil Conservation Service, numerous soils studies have been conducted within Waikakalaua Gulch for Phase I and Phase II developments.[4,5,6,7] Borings previously taken indicate silty clays and decomposed rock exist throughout the gulch. Previous soils engineering recommendations allowed cut slopes at 3/4:1 (H:V) at 10 ft. benches approximately every 25 ft. in vertical height. Typical recommendations for fill areas allowed a 2:1 (H:V) slope.

The Soils Conservation Service mapping and the recommendations of actual on-site soils exploration are somewhat contradictory. However, it should be recognized that the Soil Conservation Service mapping is general in nature whereas the soils exploration was site specific. Soil Conservation Service mapping clearly indicates the hazard regarding the steep V-shaped gulch walls, however, no work is proposed in these areas. Therefore, based on on-site investigations, the soils appear suitable for residential development and no impact is anticipated.

3. Surface Water Quality

Waikakalaua Stream in low flow conditions can be relatively clear. However, during rainy periods when runoff increases, the stream carries a substantial amount of sediment load. During grading operations when slopes are exposed, soil will be carried away and the sediment load within Waikakalaua Stream will increase. This condition will occur until exposed slopes have been revegetated. After ground cover has been reestablished, the amount of soil erosion should be equal to or less than that which presently occurs.

Construction of the realigned stream channel section should have negligible impact on soil erosion. The realigned segments will be isolated from the stream during construction and only carry stream flow after completely in place. The realigned channel sections will modify the existing stream flow characteristics for several hundred feet downstream of the

realignment, but not have any effect on downstream areas currently subject to flooding.

4. Ground Water Quality

The project should not have a significant effect on ground water quality on Oahu. The predominant amount of ground water recharge to the island's water system occurs in the forest reserves above the project site. However, the coastal plain area such as Waikakalaua Gulch does provide for ground water recharge. Creation of impervious surfaces such as roadways and building does technically reduce the ground water recharge capability, but in reality this reduction is not significant.

Based on the fact that the project is utilizing a detention basin to store and meter surface water runoff into Waikakalaua Stream, it does provide a possibility to enhance ground water recharge. As originally conceived, the detention basin would only contain water during storm periods and store very little water for any period of time. However, the outlet pipe leading from the detention basin to Waikakalaua Stream can be elevated within the detention basin to allow a small amount of ponding to occur within the detention basin after storm water runoff would have normally dissipated. This will allow additional recharge within the detention basin every time rainfall occurred.

5. Air Quality

Activities occuring in Central Oahu which affect air quality are traffic and agriculture. The State of Hawaii Data Book[8] reports that 44±% and 4±% of the air pollutant load in the

County of Honolulu are produced by motor vehicles and agricultural burning, respectively. Due to the high intensity of agriculture and lower traffic volumes in Central Oahu, the percentage of emissions related to agriculture will be higher locally and the percentage related to traffic will be lower.

The State of Hawaii and Federal Ambient Air Quality Standards (AQS) have been established for seven classes of pollutants. The primary standards have been established to prevent adverse health impacts while secondary standards have been established to prevent decreased visibility, diminished comfort levels, damage to vegetation, animals or property, or a reduction in the overall aesthetic quality of the atmosphere. The State's AQS are generally more stringent than the Federal AQS. Air quality pollutants measured on Oahu are hydrocarbons, ozone particulates, sulphur dioxide and nitrogen dioxide. The only pollutant which sometimes exceeds State AQS standards on Oahu is carbon monoxide and this only occurs at locations of high vehicular traffic density. Therefore, the assumption has been made that the air quality within Waikakalaua Gulch in the area presently is good except for intermittent periods when sugar cane fields and pineapple wastes are being burned.

The proposed project will have an effect on the air quality of the area due to the fact that urbanization will create additional automobile traffic. It is not anticipated that urbanization will reduce the air quality to that which exceeds air quality standards for Oahu. This statement is based on the

fact that air quality standards are only presently exceeded in locations of high vehicular traffic density such as in Honolulu proper.

However, to further substantiate the foregoing paragraph, an effort has been made to review previous Environmental Impact Statements prepared for projects in the area and extrapolate relevant facts which reinforce the assumption that air quality will not be significantly impaired. The closest new development is Mililani Town and an Environmental Impact Statement for a 476-acre development was completed in 1983.[12] This document identified 2,090 proposed dwelling units in addition to the 6,139 units which presently exist. Air quality modeling was conducted to determine carbon monoxide levels at the sidewalk adjacent to heavily traveled collector streets. The following data has been extracted from the Mililani EIS relating traffic counts, units, level of service and carbon monoxide concentration:

Air Quality Data Contained In
EIS for 476-Acre Development
at Mililani Town, Hawaii, 1983

VPH*	Units	Level of Service	1 Hour C.O. Concentration Miligrams per Cubic Meter
534	1,186	B	< 10
1,184	2,630	C	10-12
2,807	6,240	E	30-35
		1-Hour State Standard	10
		1-Hour Federal Standard	40

*One Direction

The assumptions utilized to generate the foregoing numbers included:

1. Worst case meteorological conditions.
2. VPH relating to traffic headed in one direction.
3. Peak hour trip generation factor of 0.45 trips per unit.

By comparison, traffic projections for the Melemanu Woodlands (see Section IV.D, pg. 48-60) show the peak hourly volume does not exceed 1,033 vph where there is an adjacent sidewalk. Based on this information, it appears that the assumption that Melemanu Woodlands will not lend to significant impairment of air quality is a reasonable assumption.

During construction, a temporary air quality impact can result from fugitive dust created during earthwork activities. Most fugitive dust is created by heavy construction equipment moving over unpaved roadways. In addition, heavy equipment also generates air pollution in the form of engine exhaust.

6. Noise

There are no activities occurring within Waikakalaua Gulch mauka of the freeway and all noise occurring is from outside sources. The major source of outside noise in the area comes from fixed wing and rotor-driven aircraft leaving and entering Wheeler Air Force Base. The flight pattern of these vehicles under Instrument Flight Rules (IFR) passes over the project site and Waikakalaua Gulch mauka of the freeway. Air Installation Compatability Use Zone (AICUZ) information is not available,

however, such a study is proposed. The Department of the Air Force indicates the study will be available in late 1986.

The Department of the Army reports that it receives intermittent complaints regarding noise from helicopters entering and leaving the Wheeler Base and the air Force indicates the noise level will be in excess of 65 db from time to time. Both Departments recommend disclosure to perspective owners regarding noise. This outside source of noise will have an impact on the project.

Due to the fact that the AICUZ study will not be available until late 1986, a copy of an Environmental Noise Assessment for Airfield Noise Monitoring at Wheeler Army Airfield has been obtained and incorporated in this document as Appendix F. This study was conducted over a forty-two day period between November 4 and December 15, 1982 for the purpose of assessing noise impact from operations at Wheeler Army Airfield in the neighboring communities.

The noise assessment generated A-weighted, day-night sound levels (Ldn or DNL) and compared the data to the U. S. Department of Housing and Urban Development (HUD) noise zones. These noise zones are defined as follows:

Zone 1: Is defined as the area where the DNL is less than 65 decibels (dbA). This area is acceptable for noise-sensitive land uses, including housing, schools and medical facilities.

Zone II: Is defined as the area where the DNL is between 65 and 75 dbA. This area is normally unacceptable for noise-sensitive land uses.

Zone III: Is defined as the area where the DNL is greater than 75 dbA. This area is clearly unacceptable for noise-sensitive land uses.

Figure 10 shows the location of eight noise monitoring sites as well as the Melemanu Woodlands project site. As reported in Appendix F, the measured DNL at five of the community monitoring sites (Sites 1, 3, 4, 6 & 8) is less than 65 dbA. The dbA at Site 5 was reported at 65.8 for the monitoring period. However, the DNL at Site 5 is questioned since of the 36 daily DNL reported, only one daily value exceeded 65.0 dbA and this value was attributed to Hurricane Ewa.

Since the time of the Noise Assessment, the Wheeler Airfield flight paths have been adjusted and the number of manuevers has increased. The currently proposed AICUZ study to be completed in late 1986 will provide additional DNL information.

In addition to noise attributed to aircraft from Wheeler Army Airfield, the Army has also identified that training activities occur in the Schofield Barracks Military Reservation East Range. Training utilizes Battle Noise Simulators (pyrotechnics) and blank ammunition. The East Range Boundary follows the Wahiawa/Ewa District Boundary. The buffer between the East Range and Melemanu Woodlands Phase III is approximately 1,500 feet. This buffer area is also the location of Oceanic Properties proposed High-Tech Park.

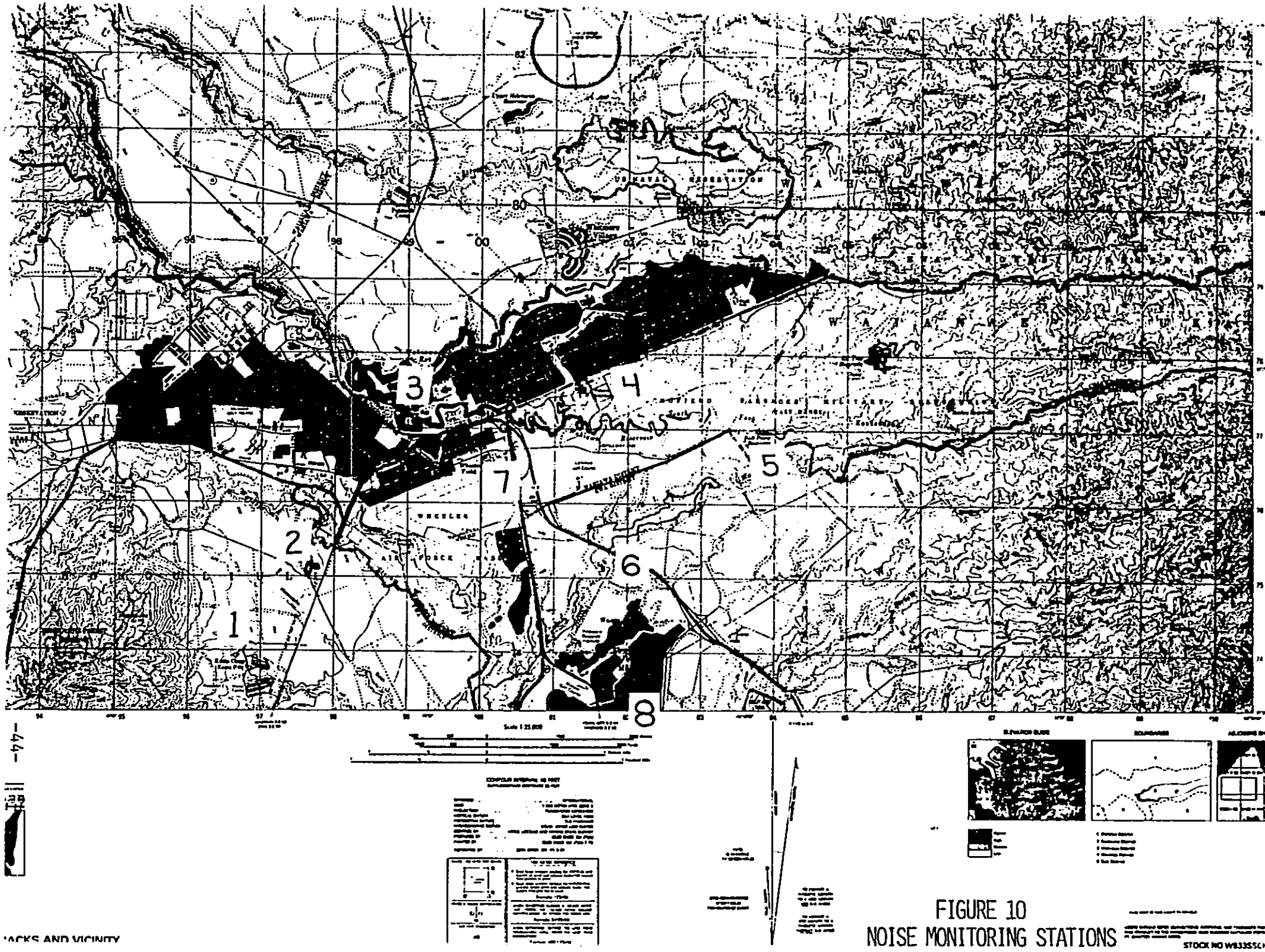


FIGURE 10
NOISE MONITORING STATIONS
WAAF STUDY

The H-2 Freeway is located at the makai boundary of the project and lies below Waikalani Woodlands Phase II and Melemanu Woodlands Phase III. The H-2 Freeway is elevated over Waikakalaua Gulch. To assess the noise level resulting from the Freeway morning rush hour, noise levels were measured on Tuesday, September 3, 1985. The monitoring period was between 6:30 a.m. and 8:30 a.m. at the locations shown on Figure 5. A tripod mounted Bruel and Kjaer Type 2205 sound level meter was utilized and noise levels were observed over a 5-minute intervals and the range observed was recorded. Four 5-minute observation periods were conducted at each noise monitoring site. The noise level range observed at both sites varied between 52 and 58 dbA with levels reaching 62 dbA when a semi-tracker trailer passed the project site.

7. Climate

The climate of the project site is typical of Central Oahu. The temperature normally varies betwen 68 and 76 degrees Fahrenheit. The average annual rainfall is approximately 40 inches per year. The proposed project will have no impact on climate.

8. Agriculture

The project site, even though surrounded by lands previously used for agriculture, has never been used for intensive agricultural purposes. Therefore, the project should have nosignificant impact on agriculture.

B. Biological Characteristics

1. Flora

Flora within Waikakalaua Gulch consists of a wide variety of introduced plants and trees. Plant species observed on the site include bamboo, banana, California grass, guava, lantana and albizia. There is no evidence of endangered plant species in the area.

The project will remove a significant portion of the introduced plants and in turn replace them with other varieties to be determined during the detailed development of the landscape plan. Major trees will be identified on the topographic survey and saved when possible.

No direct impact on flora is foreseen through development of Melemanu Woodlands Phase III.

2. Fauna

Surveys were conducted to identify aquatic animals, amphibians, reptiles, birds and mammals which utilize the site as a habitat and determine the impact if development occurs. The aquatic survey was conducted by Mr. Kelly Archer and the terrestrial vertebrates survey was conducted by Mr. Andrew J. Berger (see Appendices B and C).

Stream fauna identified include the short fin molly, guppy, green swordtail, crayfish and bufo toad. Terrestrial vertebrates identified include doves, pigeons, barn owl, bulbuls, thrushes, bluebirds, mynas, cardinals, rats, mongoose, cats and dogs.

No rare or endangered, endemic or indigenous species were observed or believed to be present. No significant impact is anticipated on either aquatic animals or terestrial vertebrates.

C. Cultural Factors

1. Land Use

The site has had minor land uses over the years. Evidence of some of these uses are present in the form of building foundations, bridges (one existing and one collapsed), stream realignment and military remnants. Presently the site is used by dirt bikers on weekends. There is also evidence of sewer pipe and residual building materials probably used on earlier phases of the project. However, the site is predominantly overgrown with introduced types of vegetation. No existing land uses will be significantly impacted through development.

2. Archaeological and Historic Resources

An archaeological reconnaissance was conducted by Mr. Joseph Kennedy (see Appendix D). The complete site was surveyed and one feature consisting of an unirrigated terrace most likely used for the cultivation of taro or sweet potato was observed in the vicinity of the detention basin. No additional work is recommended for the site with respect to archaeology. However, as a standard precaution, should a previously unidentified site be encountered during construction, work will be stopped in the immediate vicinity to assess the need for mitigative work, if warranted.

3. Aesthetics and Viewplanes

There are no viewplanes within the gulch. The gulch floor is approximately 200 ft. below the plateau above and provides an isolated environment within the gulch. Due to the overgrown state of the gulch, the aesthetic value is presently marginal. Therefore, no impact is expected on aesthetics or viewplanes.

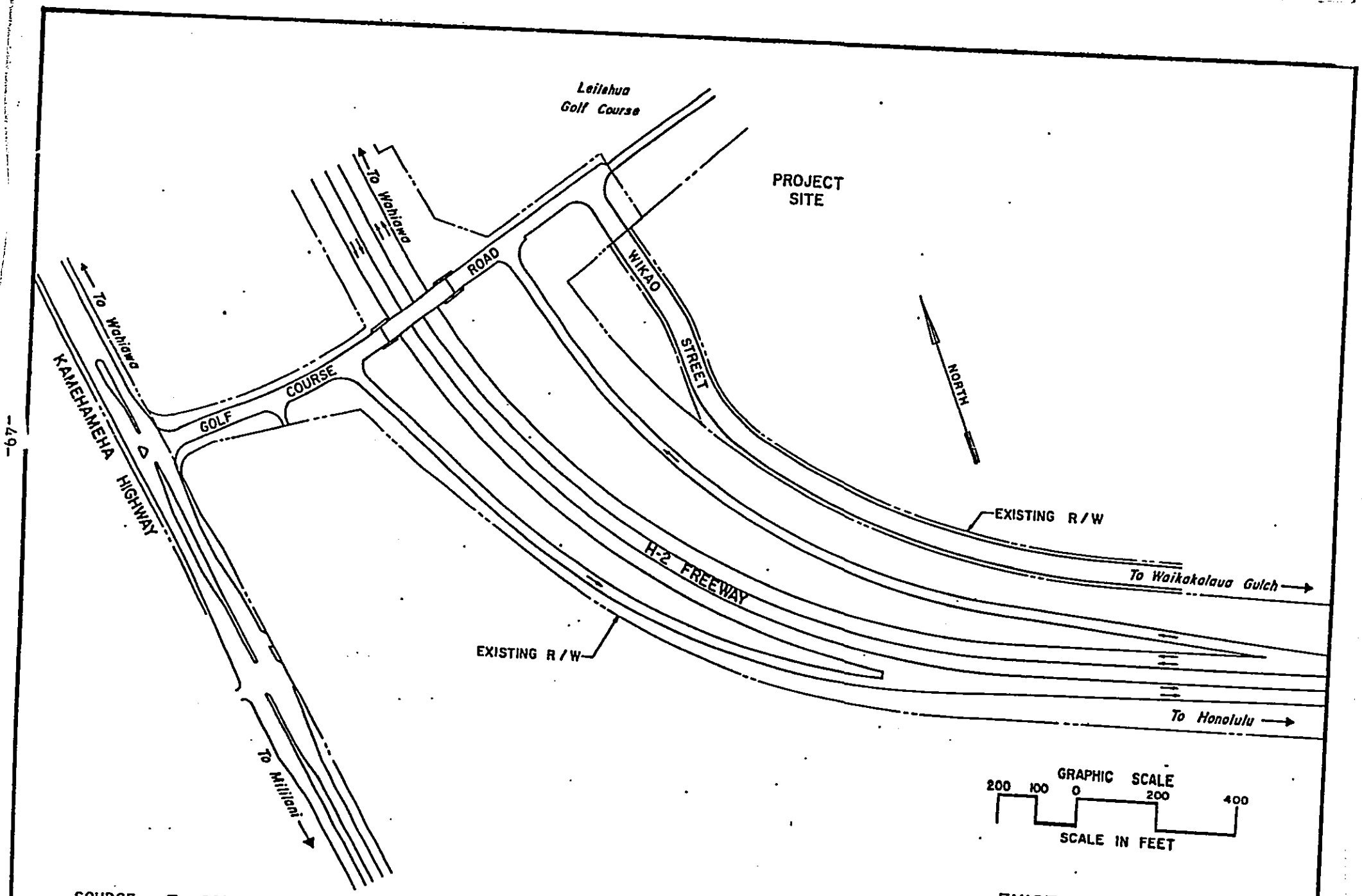
D. Traffic

1. Location

Melemanu Woodlands Phase III is located immediately east of the H-2 freeway and in the general vicinity of the Leilehua H-2 interchange. Wikao Street provides access from Waikakalaua Gulch to Leilehua Golf Course Road which in turn provides access to the H-2 Freeway via Kamehameha Highway. The roadway and highway system in the vicinity of the project site are shown on Figure 11.

2. Background

Melemanu Woodlands Phase III is the final phase of a three phase development within Waikakalaua Gulch initiated by Headrick Development, Inc. In 1972 a traffic impact statement[8] was prepared to identify future traffic volumes generated from the three phased project. At that time it was anticipated that Phase I would have 698 units, Phase II would have 610 units and Phase III would ultimately have 1,780 units. In addition, there were 48 existing one-acre lots between Phases I and II. The total number of units in Waikakalaua Gulch would ultimately be 3,136 and this population base would produce 1,891 peak hourly



SOURCE: Traffic Impact Study, Hawaii Technology Park, Mililani, Hawaii, Parsons, Brinkerhoff, Quade & Douglas, Inc., April 1983, (Prepared for Oceanic Properties, Inc.)

EXISTING CONDITIONS

FIGURE 11
ROADWAY AND FREEWAY
EXISTING SYSTEM

vehicles. It was further anticipated that access would be available for all three phases and the one-acre lots via Kamehameha Highway or Wikao Street.

Since that original Environmental Impact Traffic Statement, the location of access points has changed. Waikalani Drive does not continue from Kamehameha Highway through all three phases to Leilehua Golf Course Road. Instead, Phase I development and the 48 one acre lots have access solely to Kamehameha Highway. Phase II development and the proposed Phase III development have access only via Wikao Street to Leilehua Golf Course Road.

3. *Existing Conditions*

Wikao Street, leading into Waikakalua Gulch, serves Waikalani Woodlands Phase II. At present 288 units are constructed within this project. The Wikao Street right-of-way is 70 ft. and contains a curb to curb width of 54 ft. Leilehua Golf Course Road is a two lane roadway between Kamehameha Highway and Leilehua Golf Course Road. The Golf Course Road crosses the State's H-2 freeway right-of-way. There are single lane access ramps leading to and from the south bound lanes of the H-2 freeway. Leilehua Golf Course Road forms an intersection with Kamehameha Highway. Kamehameha Highway is four-lane divided highway with two lanes of traffic in each direction. A schematic diagram of the area showing all traffic lanes as well as existing peak traffic hour counts are shown on Figure 12.

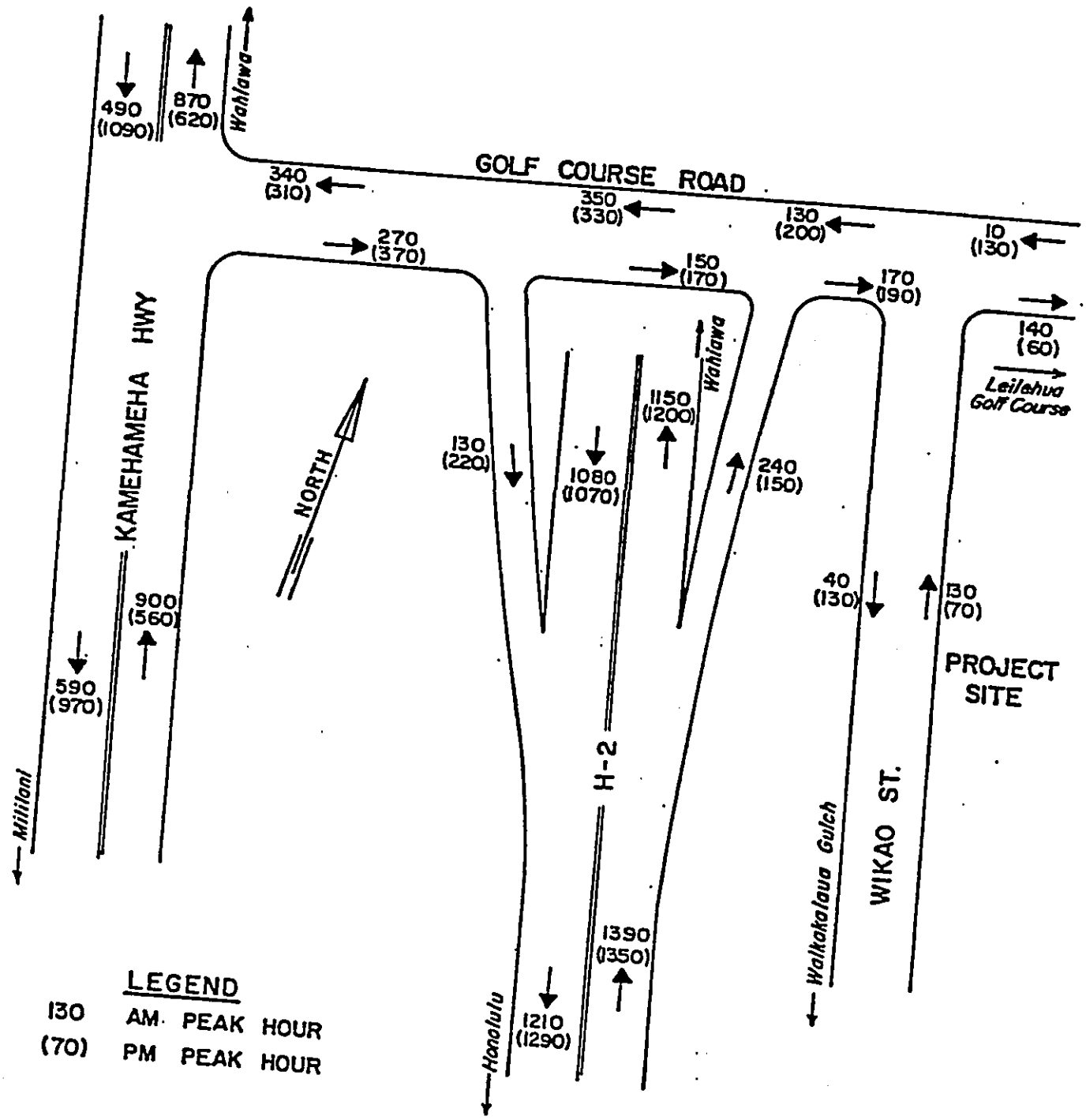


FIGURE 12

EXISTING TRAFFIC VOLUMES

NOT TO SCALE

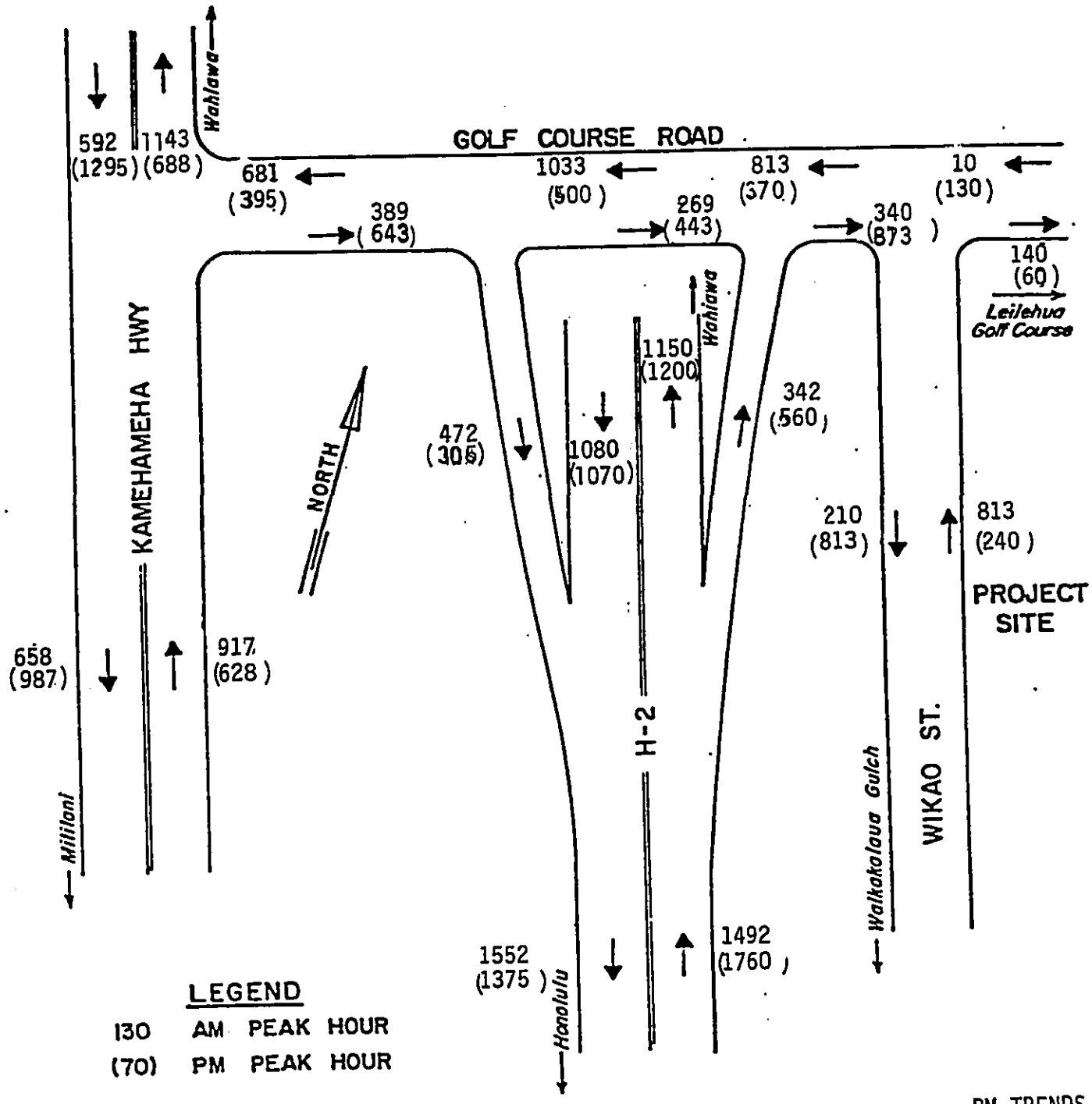
SOURCE: Traffic Impact Study, Hawaii Technology Park, Mililani, Hawaii, Parsons, Brinkerhoff, Quade & Douglas, Inc., April 1983 (Prepared for Oceanic Properties, Inc.)

4. Proposed Conditions

Based on a trip generation factor of 0.6, 839 additional peak hourly vehicles will be generated by development of Melemanu Woodlands Phase III (1,122 units) and completion of Waikalani Woodlands Phase II (276 units). These traffic volumes have been superimposed on the existing peak hourly volumes and are shown on Figure 13.

Subsequently, utilizing the foregoing projections, a critical lane movement analysis was done at the Leilehua Golf Course Road and Kamehameha Intersection. This intersection has been analyzed based on the fact that it will be the location of the greatest amount of congestion resulting from development within Waikakalaua Gulch.

A critical lane analysis summarizes approach volumes to an intersection and identifies conflicting movements. The total conflicting movements are then compared to generally accepted standards. In the case of the subject intersection, the total conflicting movements under existing conditions (see Figure 14) is 560 and under future conditions (see Figure 15) total 930. The generally recognized range where congestion occurs is between 1,200 and 1,500 conflicting movements. The projected intersection conflicting movements compares favorably to the generally recognized range, however, regardless of a strict numbers comparison, the traffic from Melemanu Woodlands will add to congestion at the Kamehameha Highway/Leilehua Golf Course Road intersection. However, this congestion does not warrant intersection improvements.



LEGEND

130 AM PEAK HOUR
(70) PM PEAK HOUR

AM TRENDS

80/20 Distribution

80% as follows:
- 40% to Wahiawa
- 50% to Town via H-2
- 10% to Town via Kam

20% as follows:
- 30% from Wahiawa
- 60% from Town via H-2
- 10% from Town via Kam

PM TRENDS

80/20 Distribution

80% as follows:
- 30% from Wahiawa
- 60% from Town via H-2
- 10% from Town via Kam

20% as follows:
- 40% to Wahiawa
- 50% to Town via H-2
- 10% to Town via Kam

FIGURE 13

FUTURE TRAFFIC TRENDS

NOT TO SCALE
WITH MELEMANU PHASES II & III

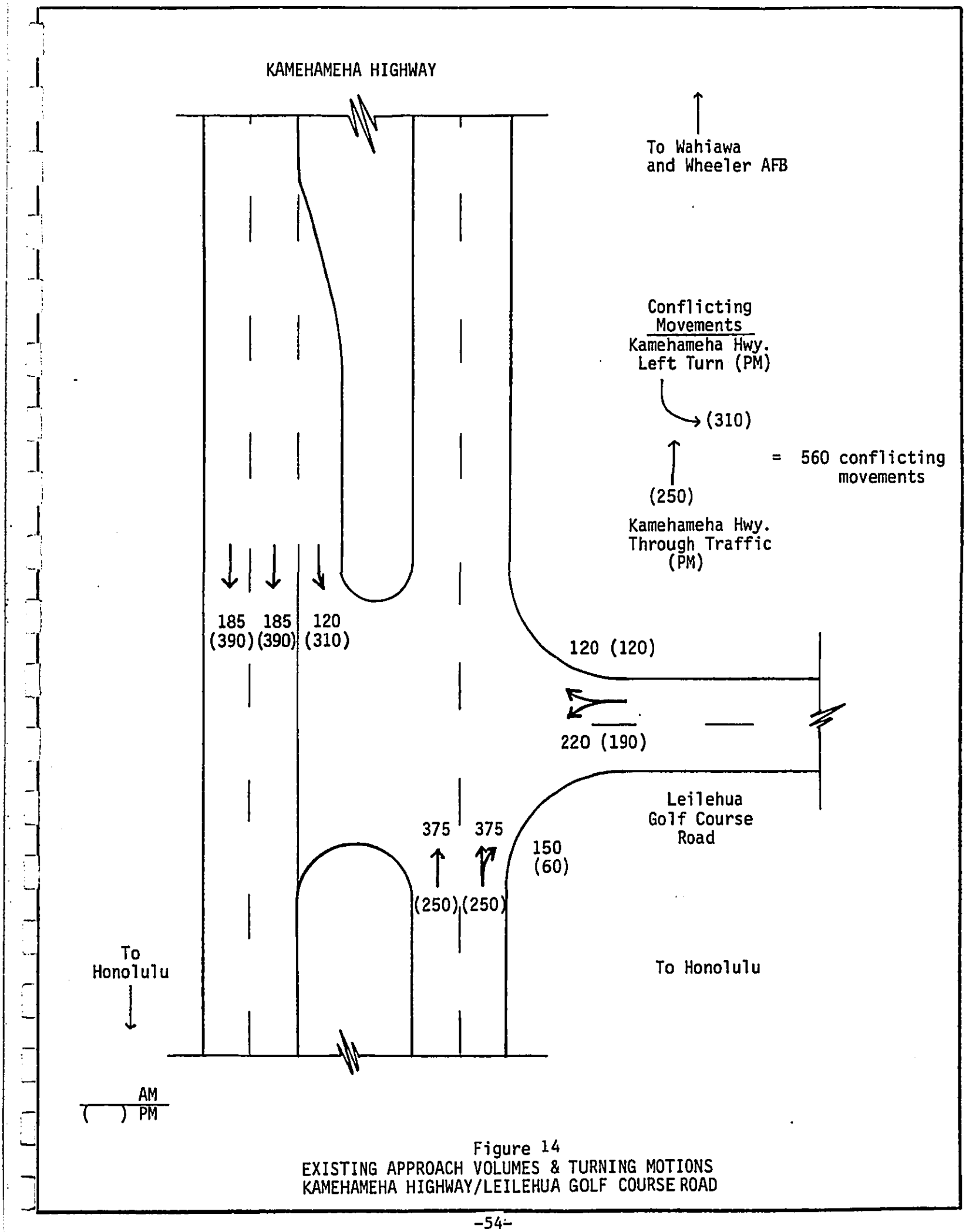


Figure 14
EXISTING APPROACH VOLUMES & TURNING MOTIONS
KAMEHAMEHA HIGHWAY/LEILEHUA GOLF COURSE ROAD

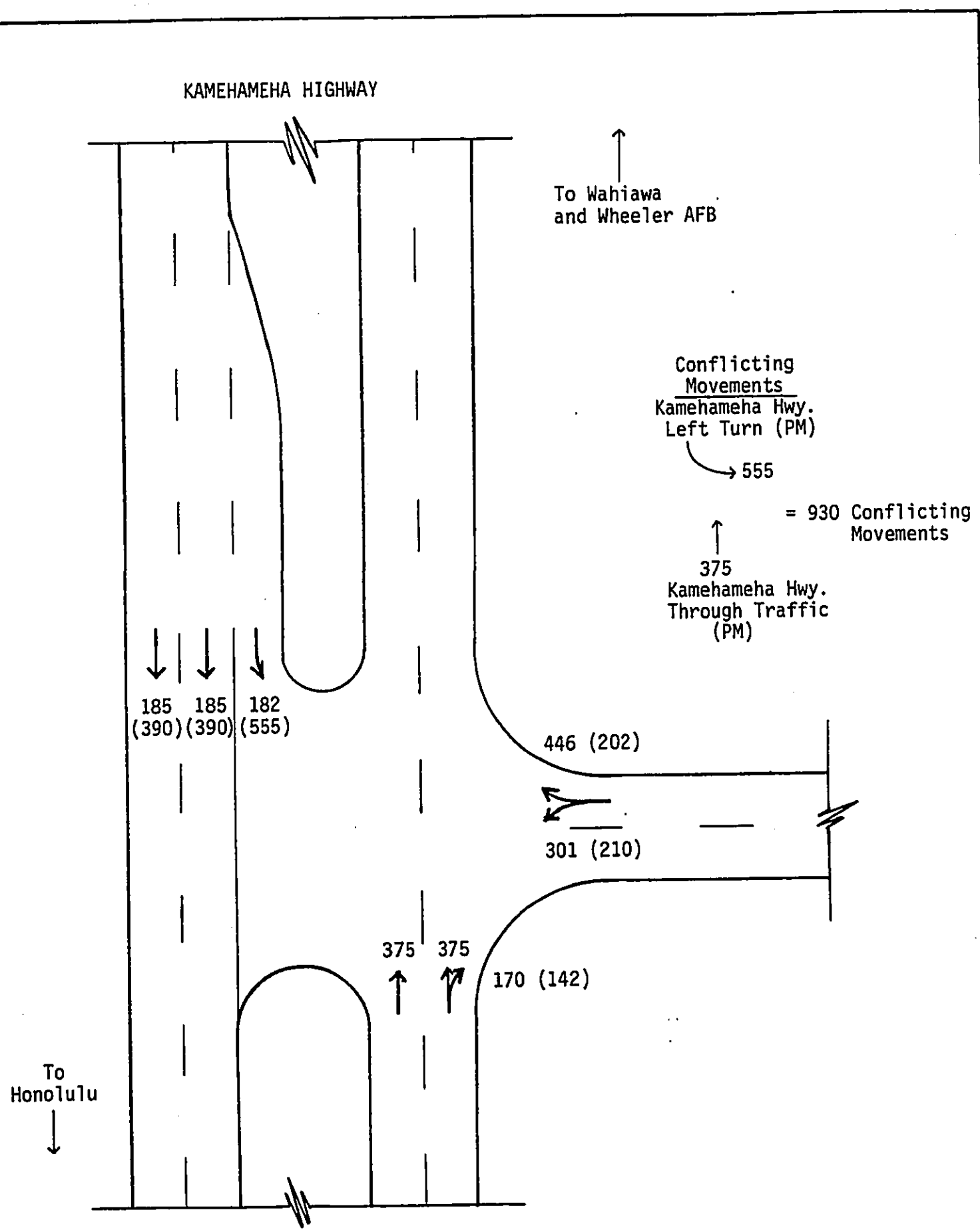


FIGURE 15
FUTURE APPROACH VOLUMES & TURNING MOTIONS
KAMEHAMEHA HIGHWAY/LEILEHUA GOLF COURSE ROAD

The projected traffic volumes on Leilehua Golf Course Road will increase the difficulty of making a left turn to the H-2 Freeway as well as increase the difficulty of making a left turn from the H-2 Freeway off-ramp onto Leilehua Golf Course Road. The projected peak hour volumes do not indicate that the difficulty of making these maneuvers will be significantly impaired. Nonetheless, Melemanu Woodlands will be completed in phases over a five to seven year period, and it will be possible to periodically assess the need for traffic modifications. Leilehua Golf Course Road has sufficient width to allow a left turn lane to the H-2 Freeway on-ramp if future traffic growth necessitates a lane addition. However, if Mililani High-Tech Park is implemented, the foregoing considerations with respect to improvements solely to accommodate Melemanu Woodlands become immaterial.

5. Mililani High-Tech Park

Mililani High-Tech Park is a proposed project on the plateaus above Waikakalaua Gulch which would utilize Leilehua Golf Course Road as a major point of ingress and egress. The project is being developed by Oceanic Properties, Inc. and a Traffic Impact Study[9] was prepared by Parsons, Brinkerhoff, Quaid & Douglas, Inc. in April of 1983. This traffic impact study had the following major recommendations relating to traffic.

a. Widening and Realignment of Golf Course Road would be necessary to serve large volumes of traffic which would be generated by the development.

b. A second bridge across H-2 would be necessary.

c. Kamehameha Highway would be expected to serve much of the generated traffic; improvements would be necessary on Kamehameha Highway and Golf Course Road intersection. Employer supported incentives at appropriate times to provide the needed transportation service to decrease the traffic generating potential.

The currently envisioned scheme of proposed improvements resulting from Mililani High-Tech Park are shown on Figure 16.

The traffic impact study for Mililani High-Tech Park did not recognize that additional traffic would be generated on Wikao Street resulting from development of Melemanu Woodlands Phase III and completion of Waikalani Woodlands Phase II. Upon ultimate development in the gulch, the peak hourly volume on Wikao Street will be approximately 1,019 vehicles per hour. The foregoing study utilized 200 vehicles per hour. This information has been provided to Oceanic Properties, Inc. for their use in master planning for the High-Tech Park. The additional traffic generated on Wikao Street will change the peak hourly vehicle counts as projected in the 1983 study, however, will not change the magnitude of improvements projected with respect to the High-Tech Park's ultimate plans.

6. Regional Traffic Consideration

It is beyond the means of this environmental impact statement to provide specific traffic analysis except in the localized area previously identified. However, the project will

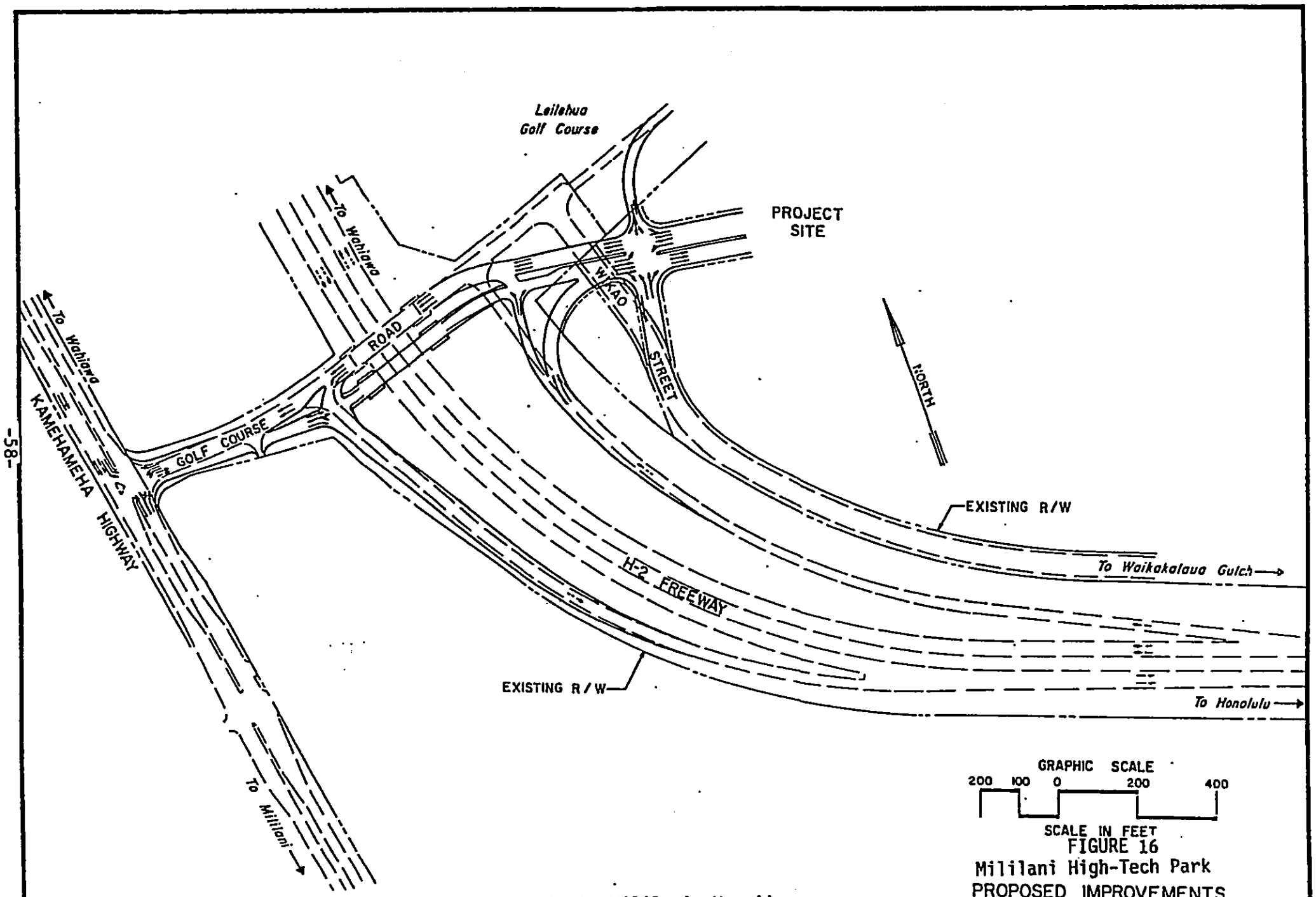


FIGURE 16
Mililani High-Tech Park
PROPOSED IMPROVEMENTS
(FULL DEVELOPMENT)

SOURCE: Traffic Impact Study, Hawaii Technology Park, Mililani, Hawaii, Parsons, Brinkerhoff, Quade & Douglas, Inc., April 1983, (Prepared for Oceanic Properties, Inc.)

also have an effect on regional traffic on Oahu. In particular, population growth within Central Oahu and Ewa and the corresponding traffic growth within these areas will impact major roadway corridors which are already congested such as the Honolulu corridor between the H-2 freeway and the downtown area.

A study entitled "Hali 2000 Study of Alternative Analysis"[10] was prepared for the Oahu Metropolitan Organization specifically to address increased traffic and its effect on the Leeward/Central Oahu/downtown corridor. At present there are no committed projects to improve capacity in this corridor and deterioration is expected if alternatives are not provided. The study further goes on to discuss six system-wide transportation alternatives for this corridor to meet travel needs by the year 2000. The alternatives are shown on Figure 17. No specific alternative was recommended as a part of this study. However, projects such as Melemanu Woodlands Phase III were types of the projects that were considered in the growth of Central Oahu and incorporated into this study.

E. Public Utilities and Services

1. Water

As presented in the description of the project's technical characteristics, water will be made available to Melemanu Woodlands Phase III by connection to the Board of Water Supply's existing transmission system at Kamehameha Highway. The Board's system will also be improved from Kamehameha Highway through Wahiawa to provide additional transmission capacity. Additional

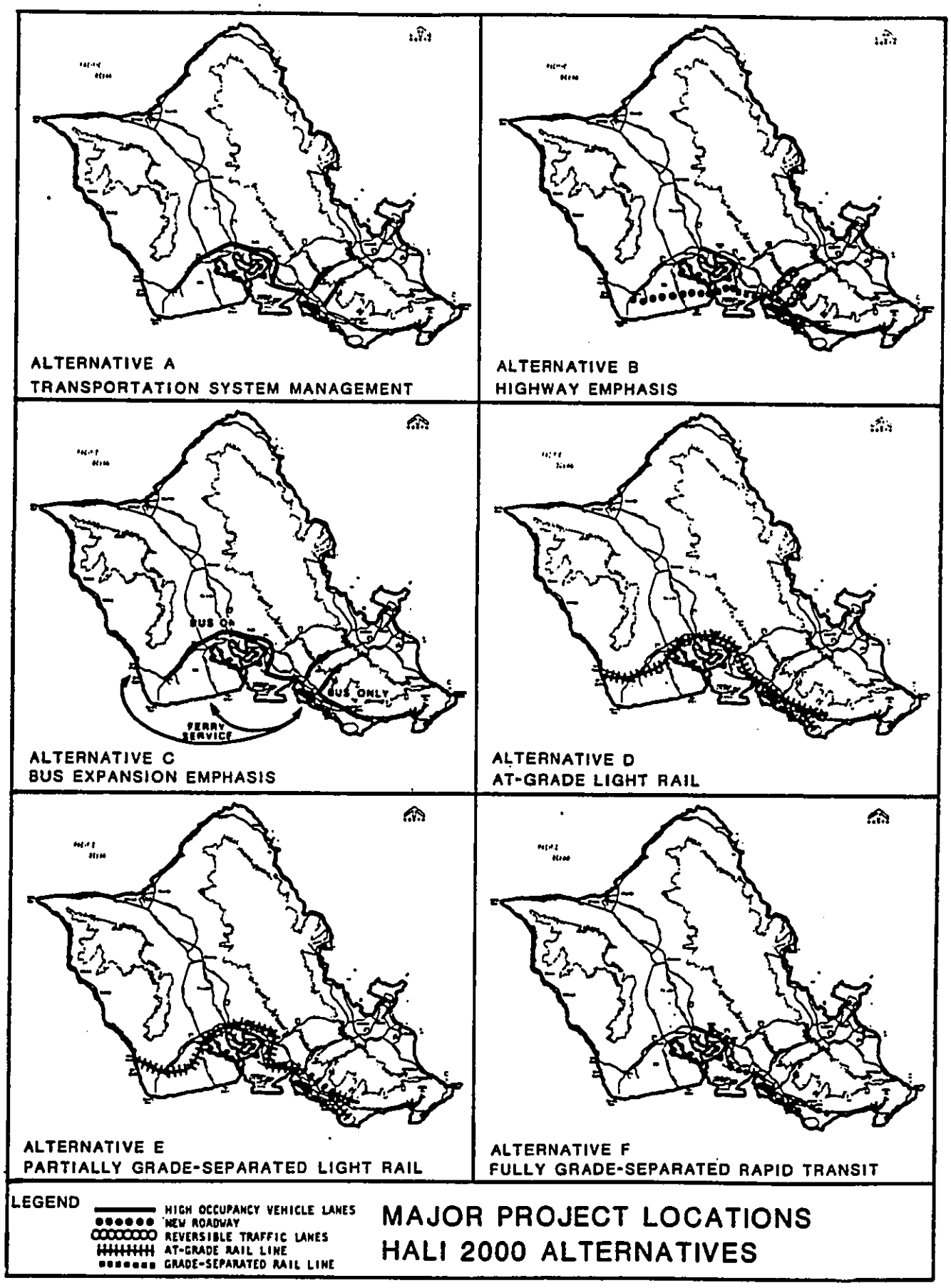


FIGURE 17

SOURCE: "Hali 2000 Study Alternatives and Final Report," Wilbur Smith & Assoc., June 1984, (Prepared for OMPC)

source will be provided through the development of a well in Wahiawa.

Melemanu Woodlands Phase III will have an impact on the Board of Water Supply System since the water source will be water from the Pearl Harbor basin. There is only a certain amount of water available for development within the Pearl Harbor basin. Presently the Pearl Harbor basin has a sustainable yield of 225 mgd. Allocation of water withdrawn from this basin is controlled by the Department of Land and Natural Resources and additional water can be developed as a result of decreased agricultural usage. The Board of Water Supply has requested and received a Use Permit from the Department of Land and Natural Resources for pumpage at the presently dormant Wahiawa II well. A portion of the permitted pumpage is available for this project. Thus, even though the project will have an impact on water there will ample review by the Department of Land and Natural Resources and the Board of Water Supply to ensure the impact of this particular project is not significant and will not jeopardize existing demands or result in pumping rates exceeding the sustainable yield. The current withdrawal rate is 202.5 mgd.

The project will not have any impact on the Board of Water Supply's transmission or storage capacity since the project will be specifically providing improvements to ensure the Board's system is adequate. The cost of all on-site water system improvements will be borne by the Developer. The cost of off-

site improvements will be shared among various parties on a proportionate share basis.

2. Sewage Treatment and Disposal

The project site is presently vacant and no sewage is generated on the land mauka of the freeway. Upon ultimate completion of the project, approximately 300,000 gallons of sewage will be generated daily. The impact of this additional sewage flow will be felt by the existing City and County wastewater collection and disposal systems.

However, this impact was recognized in the initial stages of Phase I and Phase II development of Waikakalaua Gulch. As a result, the project has already contributed in excess of 1.5 million dollars in improvements to the City's systems to ultimately allow the connection of 3,000 units to the City and County sewer system. The project will not realize completion of the 3,000 units originally anticipated and only 2,400 units will be constructed. Therefore, the impact of increased services with respect to sewage treatment and disposal have already been recognized and means have been taken to mitigate the impact.

3. Telephone and Electric Services

Telephone and electric services that will ultimately serve Melemanu Phase III exist in Central Oahu and can be made available to the project. No significant impact is anticipated with respect to telephone and electric service.

4. Solid Waste Collection

Private refuse collection vehicles presently pick up refuse in the area. This practice will continue for Melemanu Woodlands Phase III, although based on compliance with Refuse division standards, City and County refuse vehicles could also service the area. The project will create an increased demand on the island's refuse collection vehicles, land fills and incinerators, as well as an increased demand for refuse collection and worker employment. The average cost of municipal collection is approximately $165.00 per houseland per year excluding landfill operation.

5. Police and Fire Protection

The gulch area presently has adequate police and fire protection. However, the Fire Department's response time is approximately 5 to 8 minutes instead of the desired 3 to 5 minutes. The proposed project will increase the work load for police patrols and potentially increase the demand on the Fire Department. The project will be constructed with hydrants maintaining adequate fire flow, pressure and spacing to augment the Fire Department's fire fighting capabilities. The increased demand on the Police Department and potentially increased demand on the Fire Department are not considered to be significantly adverse. Property taxes from the proposed project will partially be utilized to increase necessary services.

6. Schools

Public schools available in the area are Wheeler Elementary, Wheeler Intermediate and Mililani High School. It is projected that Melemanu Woodlands Phase III will produce between 200 and 310 children utilizing these public schools. The schools are presently at capacity, and the State must be kept informed of the development schedule to ensure additional classroom space is available.

7. Recreation

There are no existing recreational facilities on the project site. The closest recreational facilities are located in the Wahiawa and Mililani areas which are within a two mile distance. Melemanu Phase III can potentially increase the usage of recreational sites in the Central Oahu area. However, the project will be developing 5.6 acres of park facilities. The park plans will be coordinated with the City and County Department of Parks and Recreation.

8. Mass Transit

The only means of mass transit currently available in Central Oahu in the vicinity of the project site is the City and County of Honolulu bus system. Bus service is presently available at Wahiawa, Kamehameha Highway at the intersection of Leilehua Golf Course Road and at Mililani Town. The bus system runs on a regular schedule with additional bus service, including express service, during the peak a.m. and p.m. hours. There is no bus service into Waikakalaua Gulch.

Development of Melemanu Woodlands Phase III and Waikakalaua Gulch will generate potential bus users. However, due to the limitation on the stops presently in the area, bus usership is not expected to be substantial. The utilization of buses as a form of mass transit is rather diminished due to the fact that there are insufficient buses on the island to meet the peak demands. Bus routes are periodically modified and additional buses may be added to a particular route when the demand becomes unusually heavy. However, this is usually at the expense of an existing bus route that has not demonstrated as great a demand.

F. Socio-Economics

The project site is near Wahiawa, and the residential communities of Mililani, Waipio acres, and the existing phases of development within Waikakalaua Gulch. Also included in the immediate area are Schofield Barracks and Wheeler Air Force Base military reservations. Surrounding as well as separating these various communities are some of the State's prime agricultural land. This area of Central Oahu has been identified as urban fringe.

Residents of Central Oahu rely on downtown Honolulu, the adjacent military reservation and Wahiawa for employment. A smaller amount of residents also rely on the agricultural activities surrounding Central Oahu area for employment. Mililani is identified as a low density suburban community. Wahiawa is also identified as a low-density community and is further identified for its close association with major military facilities and its related housing. Existing development within Waikakalaua Gulch is similar to that of

Mililani as well as Wahiawa and relies on Honolulu, Wahiawa, the military and agriculture for employment. Melemanu Woodland will also exhibit similar characteristics and no significant socio-economic impacts are anticipated.

V. ANY PROBABLE ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

Melemanu Woodlands Phase III is anticipated to have the following unavoidable adverse environmental effects:

A. Construction activities will cause temporary increases in noise levels and air quality deterioration. The surface water quality deterioration related to construction will also occur.

B. Permanent demands will be placed on island utilities such as water, sewer, electric and telephone systems.

C. Project will generate increased levels of traffic on Leilehua Golf Course Road, Kamehameha Highway, and the H-2 Freeway. The effects of this increased traffic will be felt locally as well as at distances farther from the project such as the central corridor of Honolulu. The effects of this increased traffic will be congestion and air quality deterioration.

D. Public facilities, that is schools, fire protection, police protection, libraries and recreational facilities will have increased demands.

VI. ALTERNATIVES TO THE PROPOSED ACTION

A. No Action

No action would leave the project in its existing condition. The benefit of this action would be that none of the adverse impacts would be realized. The adverse effect of no action would be that the

housing demand would persist and additional pressures would be generated to develop residential housing. No action will not attain the objectives of the proposed project, and this alternative has been rejected.

B. Reduced Density Development

There are certain costs associated with development of Melemanu Woodlands Phase III which are essentially set. For example, water system improvements remain the same unless substantial density reduction is considered. Detention basin construction requirements are essentially the same regardless of the size of development and funds have already been utilized for sewer system improvements based on development of a larger scale than that which is presently envisioned. Finally, one of the more significant costs of the project is the interior roadway leading up to the valley which essentially remains the same regardless of the size development. Therefore, reducing density does not correspond to reduced development costs or particularly minimize adverse impacts.

In reality, from a development perspective the proposed unit count already exemplifies a reduced density development. The maximum floor area ratio (FAR) for a Planned Development Housing project is 35 percent of the project area. Based on the proposed layout shown on Figure 2, the Floor area ratio is only 30 percent. Based on the foregoing facts, the alternate of additionally reduced density has also been rejected.

C. Development Without Realigning Waikakalaua Stream Gulch

The project can be designed to keep Waikakalaua Stream in its present configuration. However, retention of the existing stream

alignment translates into increased construction costs since bridges will be necessary to provide access to areas across the stream. Further, the use of bridges as the means of access to separated areas is less desirable from a safety perspective. In addition, the main arterial roadway leading up the valley will require a different alignment requiring more earthwork.

From an engineering perspective, Waikakalaua Stream can be realigned without aggravating downstream conditions. In addition, there will be no impacts to native stream fauna. Finally, creation of a wider open area within the valley creates better siting options and planning options for development. Therefore, with all factors being equal, the option of development without realigning the stream has been rejected until such time as the major impact is identified or the cost for realigning becomes prohibitive.

VII. THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

Development of the site will establish long-term productivity as a source of median income housing for Oahu residents. The site in its present configuration has little potential for agriculture, has no unique or rare biota, and no significant historical or archaeological artifacts have been documented. No scenic views will be lost. Therefore, it is not contemplated that the beneficial uses of the environment will be jeopardized by this development. However, once the development is constructed, all future options regarding use of the environment will be foreclosed.

VIII. MITIGATION MEASURES TO MINIMIZE IMPACT

The following measures are proposed to mitigate the adverse impacts outlined in Section V.

1. The adverse effects of construction noise will be mitigated by performing construction work using construction equipment during daytime hours and during weekdays. The grading activities or activities which produce high noise levels will not be allowed during holidays, weekends or before 7:00 a.m. or after 6:00 p.m. In addition, the Contractor is responsible for obtaining a noise permit. Conditions of the noise permit are identification of activities which will exceed 55 decibals as well as a description of methods, i.e., muffler and enclosure which will be utilized to reduce higher noise levels. The noise permit is a part of Title II, Administrative Rules Chapter 43, Community Noise Control for Oahu, as administered by the State of Hawaii Department of Health. All permit conditions of Chapter 43 must be complied with with respect to construction activities.

Traffic noise from heavy construction vehicles traveling to and from the site must also comply with the provisions of Title II, Administrative Rules Chapter 42, Vehicular Noise Control for Oahu, also administered by the Department of Health. These rules establish noise level limits of the vehicles as measured from a distance varying between 20 and 50 feet.

The adverse effects of air quality deterioration will be mitigated by wetting down loose soils when earthwork activities occur or when earth surfaces are exposed. Vehicular emissions

from internal combustion engines of construction vehicles will be minimized by ensuring that engines are in proper operating condition. Surface water quality deterioration during construction will be mitigated by using an erosion control plan during the grading period. The plan will be reviewed and approved by the City and County of Honolulu. Erosion control will be in the form of performing the work during dryer perids of the year and utilizing effective filter berms, sediment traps and sediment ponds. The maximum size grading increment which can be opened at any one time is 15 acres. Every grading increment must be completed and grassed prior to opening of an additional increment.

2. The long-term adverse effects of surface water quality deterioration resulting from surface runoff are not anticipated to be significant. Permanent landscaping will be utilized to mitigate surface runoff. Landscaped areas will have a greater tendency to retain rainfall and runoff.

3. The project's impact on utilities such as water, sewer, electric and telephone service will be mitigated primarily by ensuring there is anadequate capacity within these utilities prior to implementing the project. As long as there is sufficient supply to meet the existing and future demand imposed by this project, it is believed the impact is sufficiently mitigated.

4. The impacts on traffic resulting from the project are related to regional impacts since Melemanu Woodlands Phase III by itself will not provide a substantial impact to local roadway and

freeway system. This project by itself does not propose any direct mitigation measures regarding the impact on regional traffic.

However, it has long been recognized that there will be an impact on regional traffic resulting from this project as well as the cumulative growth of all projects on Oahu. For this reason, specific studies such as the Hali 2000 Study Alternatives Analysis were prepared for the Oahu Metropolitan Planning Organization. This type of study, as well as additional analysis will be conducted to determine appropriate solutions to regional traffic considerations.

5. Increased demand on public facilities such as police, fire, schools, libraries and recreational facilities will be primarily mitigated by increasing tax base and increasing revenues to support these public facilities. In addition, Melemanu Woodlands Phase III is specifically providing park facilities in excess of the minimum requirement of the City and County of Honolulu.

6. Noise impacts on the project from Wheeler Air Force Base fixed wing and rotor-driven aircraft can potentially affect occupants. The impact will be minimized by appropriately informing potential occupants (tentants/homeowners) and by utilizing building materials that attenuate sound, if appropriate. Noise impact can also be mitigated through adjustment of Wheeler Army Airfield flight paths.

IX. ANY IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Implementation of the Melemanu Woodlands Phase III development will present an irreversible and irretrievable commitment on the land. The project implementation will also represent an irreversible and irretrievable commitment on all utilities and facilities which would serve the area. These facilities and utilities are roadways, water, sewer, solid waste, schools, fire protection, police protection and recreational facilities. A major portion of the utilities commitment are the utilization of manpower and materials. With respect to resources, only the commitment on the land is non-renewable for all practical purposes. The water commitment for the project involves a renewable resource. As long as the demand on the water system does not exceed the sustainable yield, this renewable resource will continue to exist.

X. AN INDICATION OF WHAT OTHER INTERESTS AND CONSIDERATIONS OF GOVERNMENT POLICIES ARE THOUGHT TO OFFSET THE ADVERSE ENVIRONMENTAL EFFECTS OF THE PROPOSED ACTION

It is inherent that any proposed action will have adverse environmental effects. However, government policy normally directs growth and development in areas suitable for growth with an underlying concern for the environment. Areas with obvious or notable environmental ramifications are normally protected.

The adverse environmental impacts of the proposed project are the typical for residential development, and even if the proposed project could be constructed on alternative sites, the impacts would remain essentially unchanged or possibly increased in scope. Therefore, the countervailing benefit to providing housing for a market where there is a real demand will always be at some expense to the environment. The

project's most notable effects relate to drainage and traffic. Adequate means are available and have been discussed to demonstrate that the impacts related to drainage can be eliminated. The impact related to traffic is a regional consideration which has been long been recognized and planning options are being studied.

XI. ORGANIZATIONS AND PERSONS CONSULTED

An Environmental Impact Statement Preparation Notice was published in the EQC Bulletin on April 23, 1985 for the Melemanu Woodlands Phase III at Waipio, Ewa, Oahu. On April 30, 1985, Preparation Notices and requests for consultation comments were sent to the agencies and groups identified in the table on the following page. Of the 36 requests for comments, 25 groups or agencies responded with comments and all responses were answered. Appendix E contains a copy of the Environmental Impact Statement Preparation Notice. All consultation comments and responses are included within Appendix G. The following list identifies agencies and groups contacted for comments. In addition to the foregoing comments, various consultants and experts have helped to prepare portions of the Draft Environmental Impact Statement. Persons and firms responsible for the preparation of the Environmental Impact Statement include Gray, Hong & Associates, Inc., Civil and Sanitary Engineers; Tyrone Kusao, City Planning Consultant; Joseph Kennedy, Archaeological Consultants of Hawaii; Kelly M. Archer, Stream Biologist; Dr. Andrew J. Berger, Zoologist.

AGENCIES AND ORGANIZATIONS INVOLVED IN THE CONSULTATION PERIOD

Agency	Date Notice Mailed	Date of Comment	Date of Response
City and County of Honolulu			
Building Department	4/30/85	5/6/85	6/26/85
Honolulu Fire Department	4/30/85	5/9/85	6/26/85
Department of General Planning	4/30/85	None	
Department of Parks and Recreation	4/30/85	5/20/85	6/26/85
Board of Water Supply	4/30/85	5/16/85	6/26/85
Police Department	4/30/85	5/14/85	6/26/85
Department of Public Works	4/30/85	5/13/85	6/26/85
Department of Transportation Services	4/30/85	5/6/85	6/26/85
Department of Land Utilization	4/30/85	None	
Department of Housing and Community Development	4/30/85	5/13/85	6/26/85
City Council	4/30/85	5/24/85	6/26/85
State			
Department of Education	5/16/85	6/13/85	6/26/85
Department of Transportation	4/30/85	5/24/85	6/26/85
Department of Planning and Economic Development	4/30/85	5/20/85	6/26/85
Department of Land & Natural Resources	4/30/85	6/12/85	6/26/85
Department of Health	4/30/85	5/28/85	6/26/85
Office of Environmental Quality Control	4/30/85	None	
Department of Agriculture	4/30/85	5/31/85	6/26/85
Department of Accounting and General Services	4/30/85	5/15/85	6/26/85
Environmental Center, University of Hawaii	4/30/85	None	
Water Resources Research Center, University of Hawaii	4/30/85	5/9/85	6/26/85
Federal			
Department of the Army, Corps of Engineers	4/30/85	5/15/85	6/26/85
Department of the Army, Director of Facilities Engineering	5/15/85	6/7/85	6/26/85
Department of the Army, Operations Branch	5/21/85	5/29/85	6/26/85
Department of the Air Force	5/15/85	6/11/85	6/26/85
U. S. Department of the Interior, Fish and Wildlife Service	4/30/85	5/20/85	6/26/85
U. S. Department of Agriculture, Soil Conservation Service	4/30/85	5/30/85	6/26/85

Other

Mililani/Waipio/Melemanu Neighborhood Board No. 25	4/30/85	None	
Waikalani Woodlands Home Assoc.	4/30/85	None	
Commercial Finance, Ltd.	4/30/85	None	
Wahiawa Community & Businessman's Association	4/30/85	5/22/85	6/26/85
Mr. Harold T. Stearns	4/30/85	5/29/85	6/26/85
Oceanic Properties, Inc.	4/30/85	None	
Honorable John A. Chanin, Trustee for Headrick Development	4/30/85	None	
Standard Finance Company	5/3/85	None	
Servco Financial Corporation	5/3/85	None	
Imperial Finance	5/3/85	None	

XII. LIST OF NECESSARY APPROVALS

A. Federal Government

Corps of Engineers - Department of the Army Permit

B. State of Hawaii

1. Department of Health - Noise Permit, Construction Plan Approval
2. Federal Consistency Determination - Hawaii Coastal Zone Management Program

C. City and County of Honolulu

1. City Council - Change of Zone
2. Department of Land Utilization - Construction Plan Approval
   - Plan Development Housing Permit
3. Department of Public Works - Grading Permit, Construction Plan Approval
4. Department of Transportation Services - Construction Plan Approval
5. Board of Water Supply - Construction Plan Approval
6. Department of Parks and Recreation - Construction Plan Approval
7. Department of General Planning - Facilities Plan Amendment

D. Private

1. Hawaiian Electric Company - Construction Plan Approval
2. Hawaiian Telephone Company - Construction Plan Approval

XIII. ORGANIZATIONS AND PERSONS INVOLVED IN PUBLIC REVIEW PERIOD

The draft Environmental Impact Statement review period was extended from 30 days to 45 days. During the review period, 25 agencies and/or interested parties responded with comments regarding the draft Environmental Impact Statement. All review comments, as well as responses to these comments, are contained in Appendix H. The review comments have resulted in changes to the text of the draft Environmental Impact Statement and these changes are summarized below:

1. The water master plan has been approved by the Board of Water Supply and this plan is included in the final document.
2. A Federal Consistency Determination, in conjunction with the Hawaii Coastal Zone Management Program, is necessary as a part of the Department of the Army Permit Application process.
3. The Department of Land and Natural Resources has issued a Use Permit from pumpage to Wahiawa Well II within the Wahiawa Board of Water Supply Corporation Yard. This well is a source that will supply water to Melemanu Woodlands Phase III.
4. Hawaiian Electric Company currently has 46 kv and 12 kv distribution lines within Waikakalaua Gulch serving Melemanu Woodlands Phases I and II.
5. Additional air quality information has been provided through a comparison of air quality studies conducted at Mililani Town.
6. An Environmental Noise Assessment has been obtained from the Army and has been discussed in the text as well as appended.
7. Field measurements with respect to H-2 Freeway noise have been obtained and reported.

8. Future traffic volumes, as depicted on Figure 13, have been revised to reflect the fact that 276 units of Waikalani Woodlands Phase III have been constructed.

XIV. SUMMARY OF UNRESOLVED ISSUES

1. The preliminary Drainage Report for Melemanu Woodlands, Phase III has not been approved. This report delineates and quantifies the methodology to ensure that the peak discharge within Waikakalaua Stream does not exceed its current peak discharge. Detention basin facilities are proposed for use to ensure non-aggravation to downstream areas should the peak discharge for Waikakalaua Stream increase.

2. It is proposed to realign portions of Waikakalaua Stream within Melemanu Woodlands Phase III. It is desired to keep the realigned stream section as natural as possible. However, standards of the Department of Public Works must also be achieved. The Environmental Impact Statement identifies the various types of sections which could be utilized (natural section, CRM and/or concrete), however, the actual section has not been determined.

APPENDIX A

PRELIMINARY DRAINAGE REPORT

PRELIMINARY DRAINAGE REPORT

FOR

MELEMANU WOODLANDS PHASE III

Prepared by:

Gray, Hong & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

August 1985

TABLE OF CONTENTS

List of Tables

I. Introduction

A preliminary drainage report has been prepared for Melemanu Woodlands Phase III for the purpose of determining the increased runoff quantities resulting from urbanization and for the purpose of designing storage facilities. Storage facilities, in the form of a detention basin, are proposed to ensure that the net peak discharge to Waikakalaua Stream does not exceed the existing peak discharge. The downstream area is subject to flooding and the principle of non-aggravation is being utilized to ensure Melemanu Woodlands Phase III development does not further jeopardize downstream conditions.

A supplemental drainage report will be prepared at a future date. The supplemental report will provide a stream profile and appropriate sections for existing as well as realigned portions of Waikakalaua Stream. It is proposed to realign parts of the stream to eliminate horseshoe bends and to allow more efficient utilization of the flat areas for residential development. The proposed realignment work is a minimum of 3,500 linear ft. upstream from areas subject to flooding, and due to the distance, the stream will be able to return to its existing flow characteristics. Therefore, we do not believe realignment of the stream has any impact on the downstream 1-acre lots.

The Melemanu Woodlands Phase III project requires processing of an environmental impact statement, change of zone application, and a Plan Development Housing Permit application. The environmental impact statement for the proposed project is currently being prepared and will include this preliminary drainage report. In addition, the EIS will also identify the various types of realigned stream sections that will be considered in the final drainage report. The channel sections will vary between a natural section and a concrete lined section.

II. Background

Melemanu Woodlands Phase III is the final increment in the development of Waikakalaua Gulch as master planned by Headrick Development Company, Inc. Phase III and part of Waikalani Woodlands Phase II are presently being developed by Towne Realty, Inc. resulting from bankruptcy of the Headrick firm. Previous drainage reports have been prepared and submitted to the City and County of Honolulu and the following summarizes these reports:

Report	Date Prepared	Description
Melemanu Woodlands Unit II Preliminary Drainage Study of Waikakalaua Stream	9/28/72	Establish floodway for Phase II development.
Melemanu Woodlands Unit III Hydrologic Study	1/31/73	Establish floodway for Phase III development.
Melemanu Woodlands Waikakalaua Stream Study and Drainage Report	7/18/74	Final report to 9/28/72 Preliminary Drainage Report which accurately determined flood plain and cross sections for Waikakalaua Stream within Phase II
Revised Drainage Report on Melemanu Woodlands Unit II	6/28/74 (approved 7/31/74)	Determines storage requirement for a detention basin to reduce the peak flow resulting from urbanization of Phase II.

III. Project Location

Melemanu Woodlands Phase III is located in Central Oahu within Waikakalaua Gulch approximately midway between Wahiawa and Mililani. Exhibit 1 shows Melemanu Woodlands Phase III, Melemanu Woodlands Phase II (existing) and the proposed future Mililani High-Tech Park. Exhibit I also shows the drainage basin for Melemanu Woodlands Phase III. The drainage basin for Phase III is 2,200 acres.

IV. Description of the Proposed Work

Development of Melemanu Woodlands Phase III and the Mililani High-Tech Park will increase the total amount of runoff generated. It has become an accepted practice to reduce the peak discharge resulting from urbanization by use of detention basins. These detention basins, in effect, meter surface runoff into an existing water shed at a reduced rate, allowing the net peak stream discharge to not exceed pre-developed levels. Such a system is proposed jointly for the High-Tech Park project as well as Melemanu Woodlands. Exhibit 2 shows the location of the major features of the detention system as well as the urbanized areas utilizing the basin.

V. Calculations

Design calculations have been compiled for Waikalani Woodlands Phase II, Melemanu Woodlands Phase III and Mililani High-Tech Park to determine the existing quantity of runoff and the increased quantity of runoff resulting from urbanization. The rational formula and a 100-year rainfall intensity have been utilized to predict increased runoff. The criteria and calculations are included in Table 1. Table 1 indicates that the combined projects create a total of 526 cfs increased runoff.

The detention basin has been subsequently sized utilizing the procedures documented in the publication entitled "Routing Flood to Reservoirs," Alfred R. Pangen, P. E., American Society of Civil Engineers. The calculations for determining the storage requirements are contained in Table 2.

It is important to identify that the methodology utilized to determine increased runoff resulting from urbanization and detention basin sizing rely on empirical equations. The rational method has been selected in this case due

to the fact that the affected area is a relatively small portion of the total drainage basin and also due to the fact that the City and County Drainage Standards contain criteria that can be readily applied to the developed sites. It is not possible without significant detailed analysis and numerous assumptions to predict the impact of urbanization on a small portion of a drainage basin. However, even if the detailed analysis were conducted, the number of assumptions necessary to predict results would reduce the credibility. The method used has been accepted by the City and County on other projects, and although approximate, will give conservative results.

Discharge from the detention basin will be to Waikakalaua Stream at a rate of 210 cfs based on the calculations contained in Table 2. Entrance control will govern sizing of discharge piping from the reservoir and a schematic diagram of the detention basin overflow is shown in Figure 3. The detention basin will also have an emergency overflow consisting of open channel swale sections cut into the undisturbed ground around the fill utilized to create the detention basin. The preliminary location and sizes are shown on Figure 4.

Upon implemention of the detention basin, the need for a previously constructed detention basin will be eliminated. Therefore, the existing basin constructed adjacent to the access road and as a part of Phase II will be abandoned.

VI. Downstream Conditions

As referenced in the introduction to this report, the downstream area is currently subject to flooding. Specifically, 48 subdivision lots exist between Waikalani Woodlands Phases I and II (see Figure 1). The houses on these lots

have been constructed close to the stream and the potential exists for serious damage due to the proximinty to the stream and the existing finished floor elevations.

Downstream drainage conditions were previously aggravated as a result of the construction of the H-2 Freeway. This freeway construction diverted 200± acres of runoff into Waikakalaua Stream upstream of the subject lots. This represented a 500 ± cfs or 7± percent increase in the peak discharge of Waikakalaua Stream based on the City and County of Honolulu's design discharge curves (Plate 6).

All of the H-2 Freeway interceptor diversion occurs downstream of Melemanu Woodlands Phase III and the previous diversion is totally independent with respect to this project.

It is in consideration to the downstream conditions that the use of a detention basin is being proposed. The detention basin will ensure that the design peak discharge does not exceed existing conditions.

TABLE I
DESIGN CRITERIA
INCREASED RUNOFF FROM
URBANIZED AREAS

1. Existing Development - Waikalani Woodlands Phase II and Access Road (Wikao Street).

Total Area	52.0 acres
Runoff Prior to Development	219.0 cfs
Runoff Resulting from Urbanization	288.2 cfs
Increase in Runoff	69.2 cfs, say 69.0

(See Report entitled "Revised Drainage Report on Storage Requirement for Melemanu Woodlands Unit II, June 28, 1974 [approved July 31,1974]).

2. Melemanu Woodlands Phase III

Utilize $Q = CIA$

Where Q = Flow, cfs
C = Runoff Coefficient
I = Rainfall Intensity Corrected for Time of Concentration, in/hr
A = Area, acres

and $Q_{increase} = Q_{development} - Q_{existing}$

Q_{exist}

Utilize c = 0.52 (lower portion Band 2 @ 4.0 in/hr See Drainage Standards, Table 1)

i = 4.0 in/hr (Tm_{100}, U.S. Dept. of Commerce Technical Paper No. 43)

T_c = 10 min. (utilize Plate 3, Drainage Standards and 300 ft. lenth, average grass/ poor grass, maximum 20% slope)

I = (4.0 in/hr)(2.3) (Tc of 10 minutes corresponds to 2.3 correction factor, see Plate 4, Drainage Standards)

A = 55.8 acres (Area to be disturbed with grading, building and landscaping)

$Q_{exist} = (0.52)(4.0)(2.3)(55.8) = 267$ cfs

$Q_{developed}$

C = 0.65 (Acceptable range varies between 0.55 and 0.70)

i = 4.0 in/hr No change.

tc = 10 minutes (Assume 100 linear feet of grassed swale to inlet and 400 linear feet of pipe system at 2% to stream at 5 ft./sec. velocity. Utilize Plate 3, Drainage Standards:
Tc Swale = 10 minutes
Tc Pipe = 1.3 minutes
Tc Total = 11.3 minutes
Use 10 minutes)

I = (4.0)(2.3) (Tc of 10 minutes corresponds to 2.3 correction factor. See Plate 4, Drainage Standards.)

A = 55.8 acres

$Q_{developed} = (0.65)(4.0)(2.3)(55.8) = 334$ cfs

and $Q_{increase} = 334 - 256 = 78$ cfs

3. Mililani High-Tech Park

Utilize Q = CIA and;
$Q_{increase} = Q^{development} - Q_{existing}$

Q_{exist}

C = 0.52 (Partially overgrown, partially barren fallow pineapple fields, See Band 2, Drainage Standards, Table 1 @ 4.0 in/hr.)

i = 4.0 in/hr (Tm_{100}, U. S. Dept. of Commerce Technical Paper No. 43)

Tc = 22 minutes (Utilize Plate 5, Drainage Standards, L = 5,000 ft., H = 980 ft.- 850 ft.- 130 ft., Rouse Curve)

$I = (4.0 \text{ in/hr})(1.60)$ (Tc of 22 minutes = 1.6 factor Plate 4, Drainage Standards)

$A = 212$ acres

$Q_{exist} = (0.52)(4.0)(1.60)(212) = 706$ cfs

$Q_{developed}$

$C = (0.80)$ (Acceptable range varies between 0.80 and 0.90)

$i = (4.0 \text{ in/hr})$ No change

Tc = 22 minutes (Assume 250 feet paved/grass surface to inlet at 1% slope and pipe system 6,000 linear feet at 1% and 10 ft/sec. Utilize Plate 3, Drainage Standards:
Tc Pavement = 12.5 minutes
Tc Pipe = 10.0 minutes
Tc Total = 22.5 minutes
Use 22 minutes)

$I = (4.0 \text{ in/hr})(1.60)$ (Tc of 22 minutes = 1.6 factor, Plate 4)

$Q_{developed} = (0.80)(4.0 \text{ in/hr})(1.6)(212) = 1085$ cfs

and $Q_{increase} = 1085 \text{ cfs} - 706 \text{ cfs} = 407$ cfs

Summary of Increased Runoff

Project	Area Acres	Qexist cfs	Qdeveloped cfs	Q increase cfs
Phase II & Access Road (Wikao St.)for Phase III	52	219	288	69
Phase III	55.8	256	334	78
High-Tech	212	706	1,085	379
Totals	319.8	1,181	1,707	526

TABLE 2
MELEMANU WOODLANDS
DRAINAGE ANALYSIS TO DETERMINE
STORAGE REQUIREMENTS

STORAGE	Area 1 Adjacent to the Access Road
Area	151 Ac
L	5,000 ft.*
H	130 ft.*
t_c	22 min.
Correction Factor	1.6
$i_{50\ years}$	4.0 in/hr
I	6.0 in/hr
C	0.8 (developed)
Q	773 cfs
Q_{ave}	387 cfs
Q_{rev}	247 cfs
I_{rev} - CA	2.04 in/hr
Correction $Factor_{Rev}$ = I_{rev} - $i_{50\ years}$	0.51
$t_{c\ (rev)}$	180 min.
Storage time = $t_{c\ (rev)}$ - t_c	158 min.
Storage Volume in c.f. = Storage Time (sec) X Q_{ave}	3,400,000 c.f.

*See Figure 2 for representative locations for determining L and H.

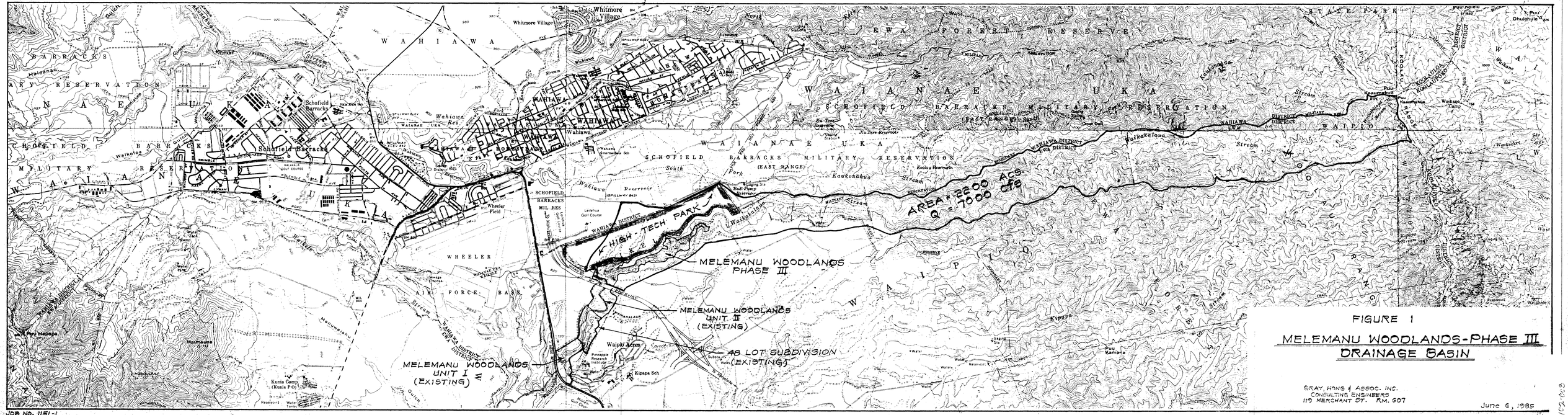


FIGURE 1

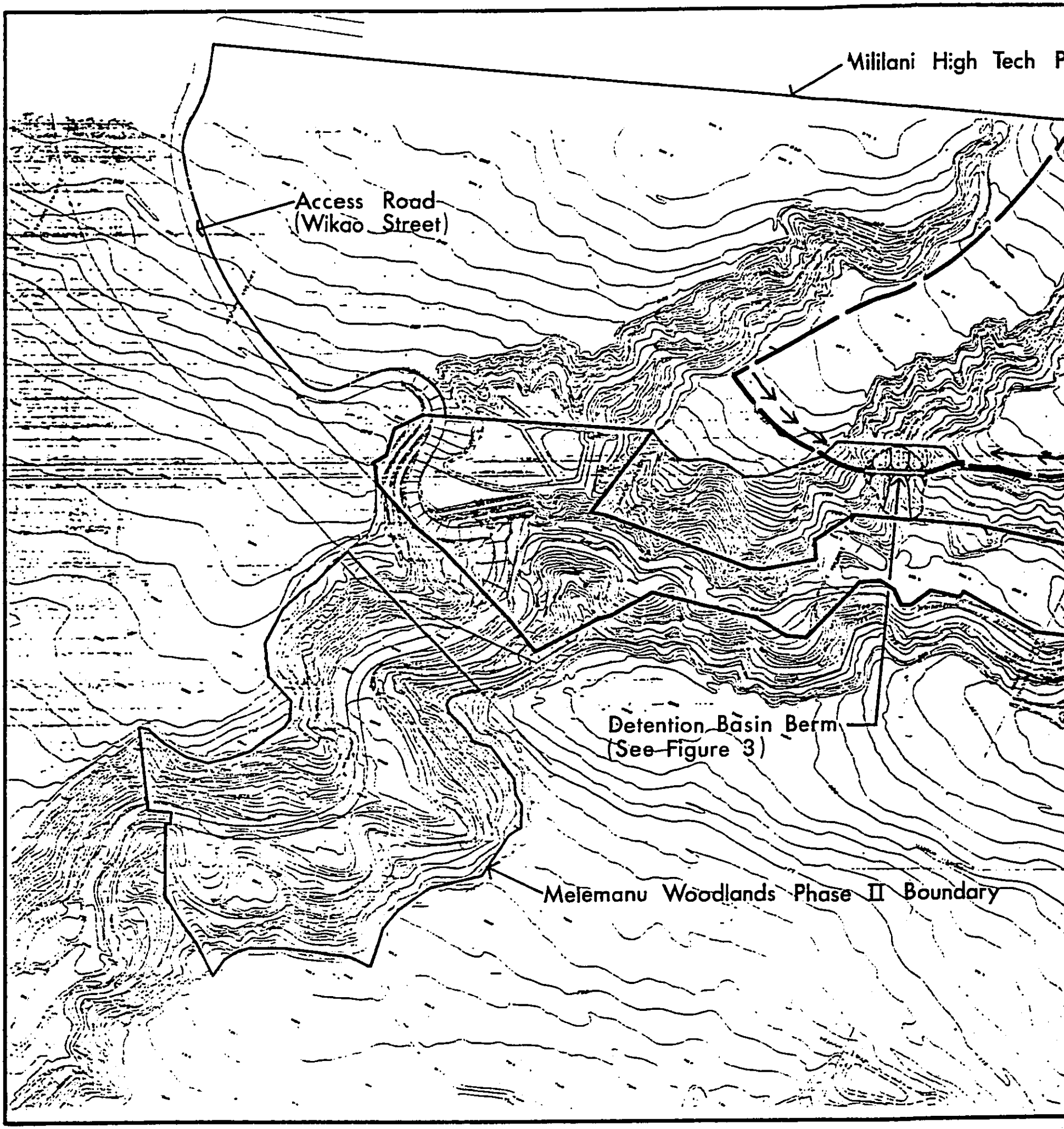
MELEMANU WOODLANDS-PHASE III

DRAINAGE BASIN

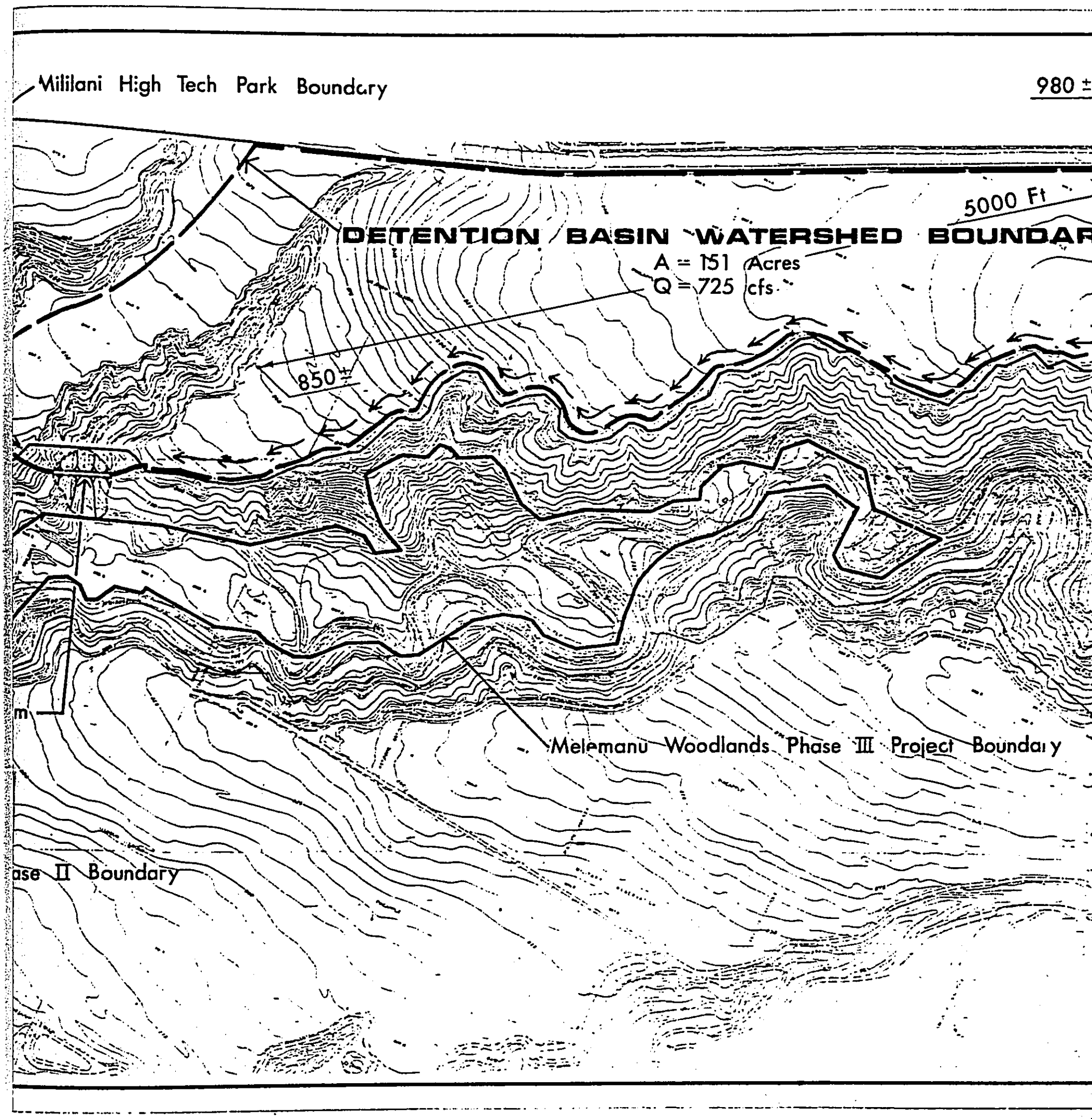
GRAY, HONG & ASSOC. INC.
CONSULTING ENGINEERS
119 MERCHANT ST. RM. 607

June 6, 1985

JOB NO. 1151-1


Mililani High Tech P
Access Road
(Wikao Street)
Detention Basin Berm
(See Figure 3)
Melemanu Woodlands Phase II Boundary

1151


Mililani High Tech Park Boundary
980 ±
5000 Ft
DETENTION BASIN WATERSHED BOUNDAR
A = 151 Acres
Q = 725 cfs
850 ±
m
Melemanu Woodlands Phase III Project Boundary
ase II Boundary

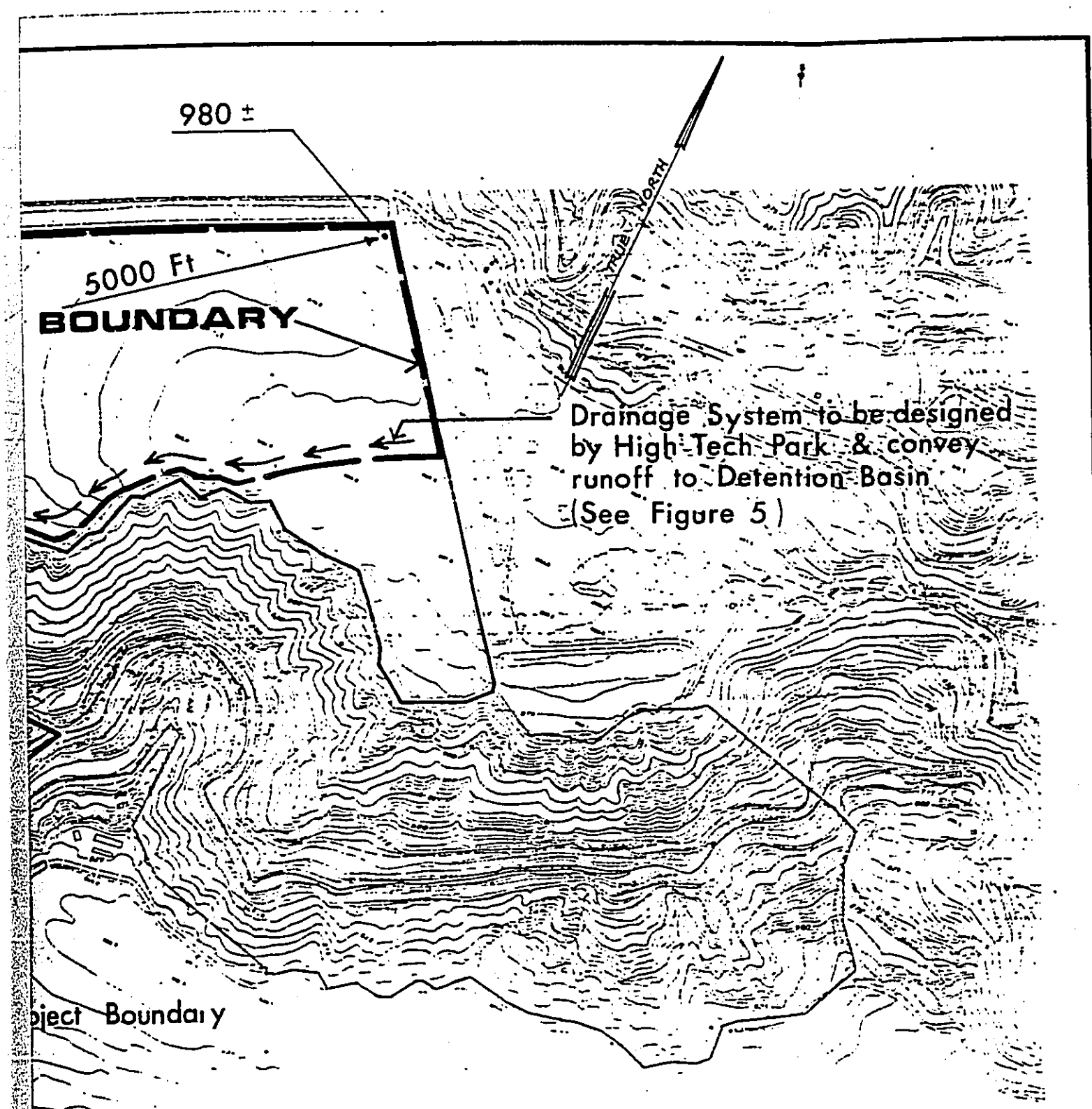


FIGURE 2

DETENTION BASIN LOCATION AND WATERSHED AREA

Scale: 1" = 500'

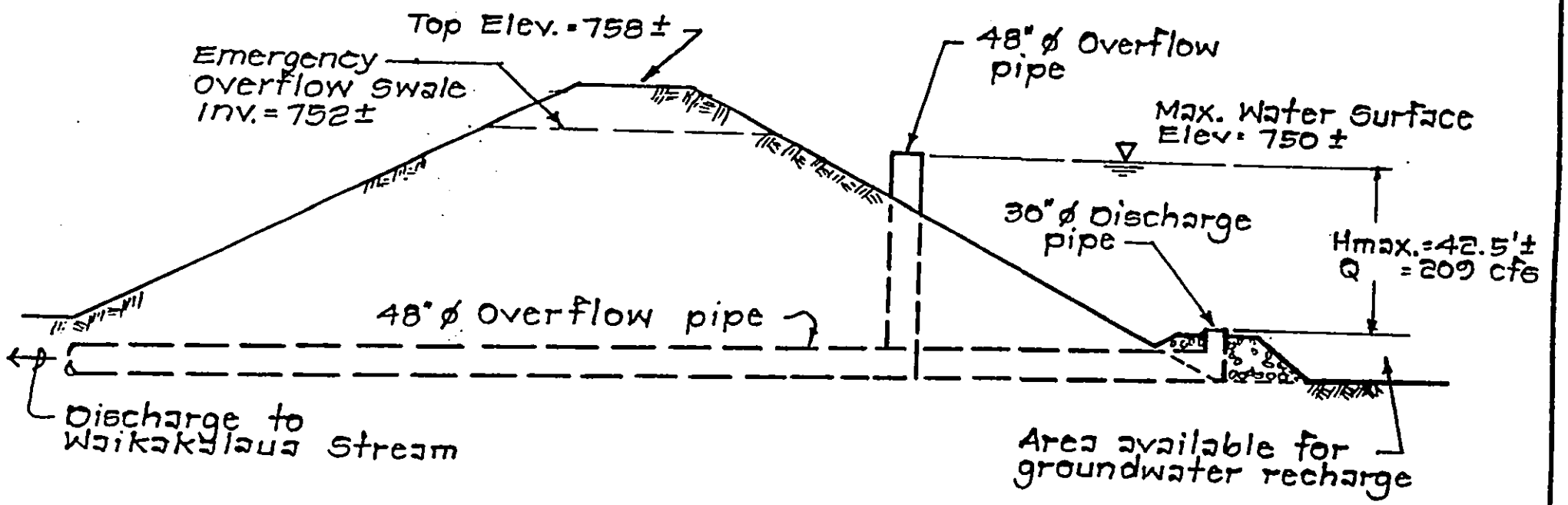


FIGURE 3

SCHEMATIC DIAGRAM
OUTLET STRUCTURE AT DETENTION BASIN

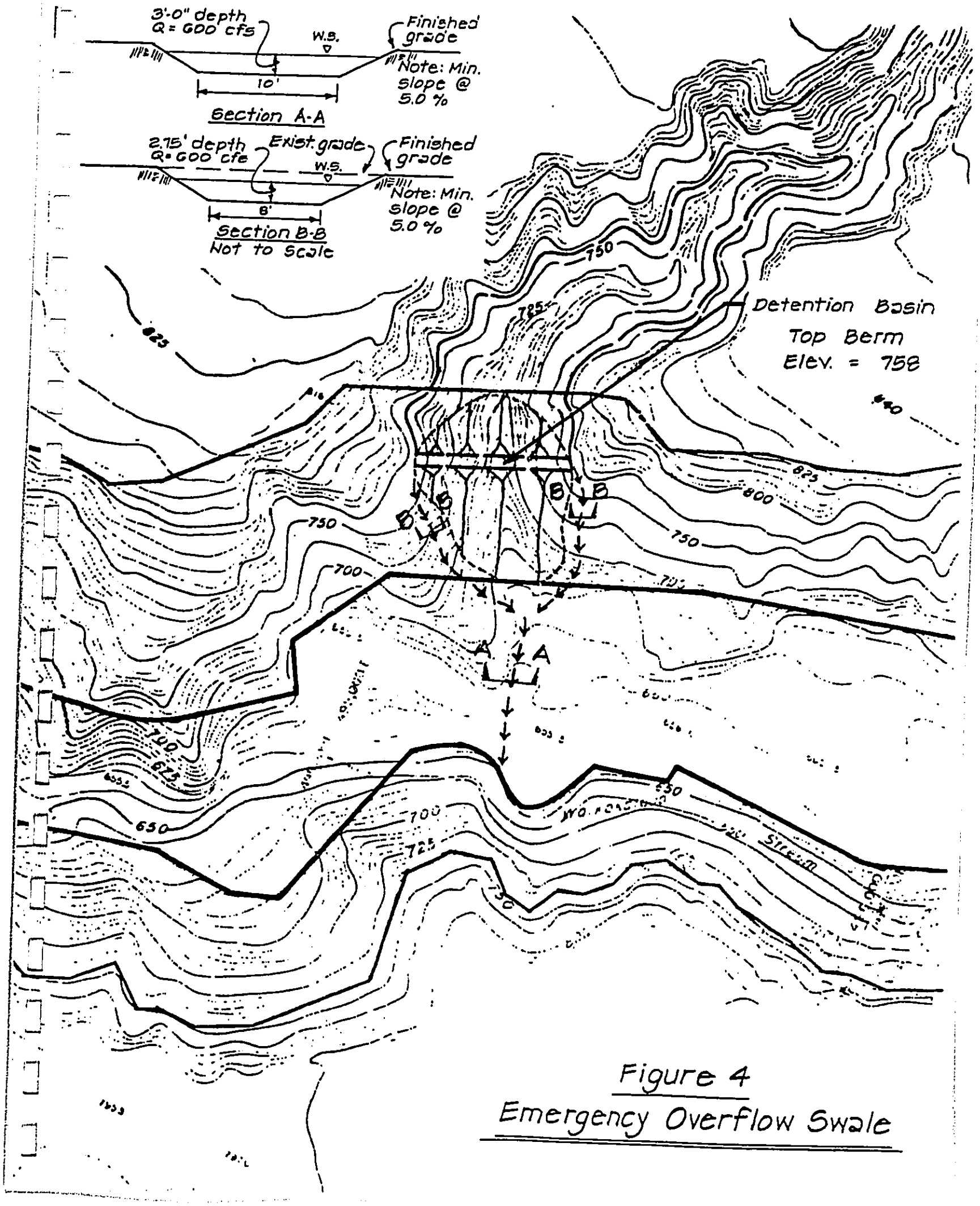
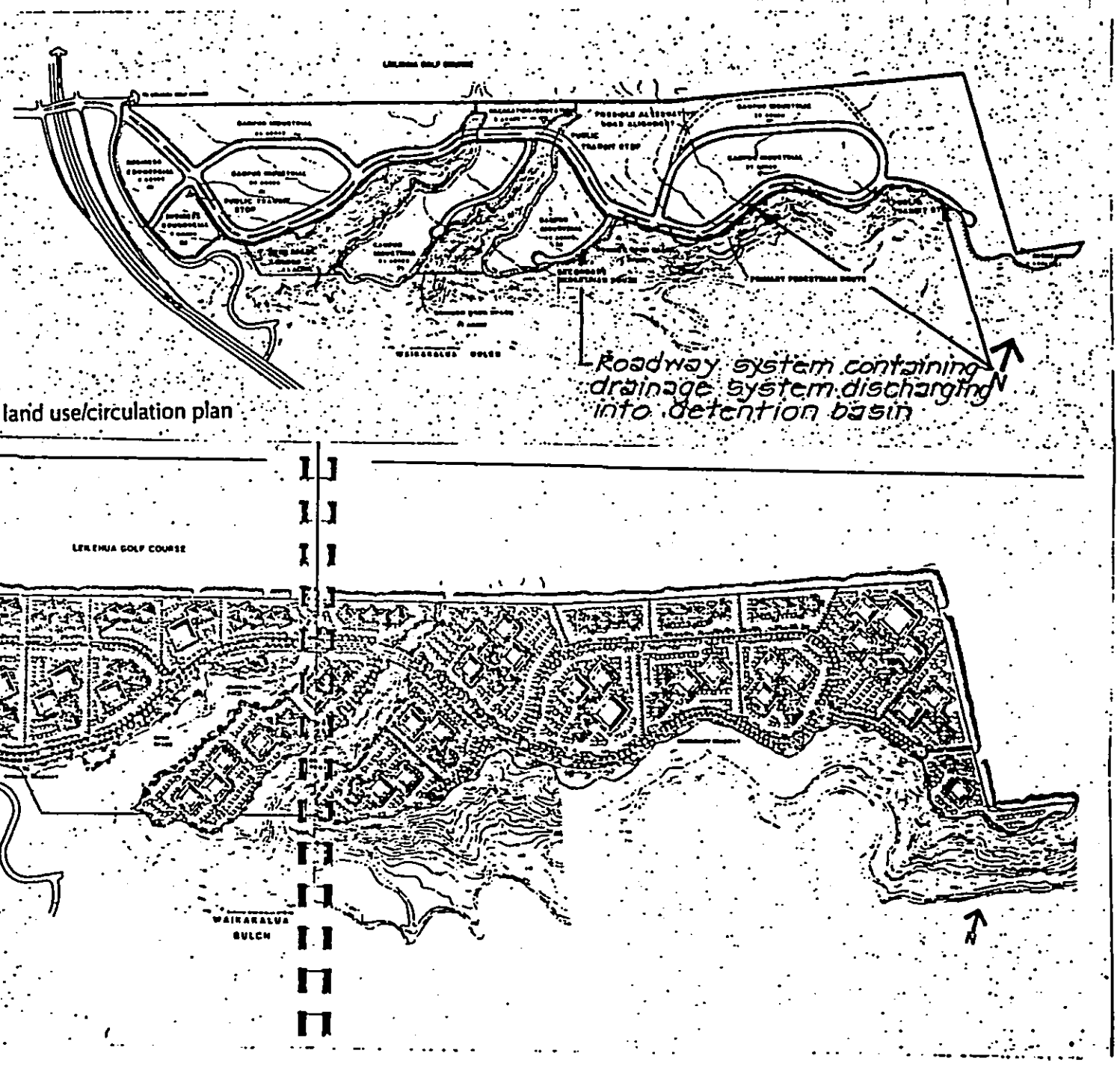


Figure 4
Emergency Overflow Swale

HIGH-TECH PARK
MASTER PLAN
FIGURE 5



land use/circulation plan

illustrative plan

APPENDIX B

TERRESTRIAL VERTEBRAE OF LOWER
WAIKAKALAUA GULCH, MAUKA OF H-2 FREEWAY

Terrestrial Vertebrates of Lower Waikakalaua Gulch, Mauka of the H-2 Freeway

By Andrew J. Berger

This study was made at the request of David Bills of Gray, Hong & Associates, Inc. We met for a site visit at approximately 9:00 a.m. on May 6, 1985, and were driven to the upper boundary of the proposed Melemanu Woodlands Phase III. Mr. Bills and I then walked down to the H-2 Freeway overpass. I also made observations on the birds in the completed phase of the project makai ofthe H-2 Freeway overpass.

The Habitat

Dr. Charles Lamoureux will make a thorough study of the vegetation, and I doubt if he will find many, if any, endemic plant species at the site. All of the plant species that I observed in the area were introduced species: e.g., bamboo, banana, California grass, guava, lantana, and albizzia. There are large areas of erosion where there are no plants at all. Because of recent rains in the Koolau mountain, the stream was full and fast flowing and the water was laden with silt.

Reptiles and Amphibians

There are no endemic amphibians or land reptiles in the Hawaiian Islands. All, therefore, have been introduced by man. None are of any significance for an environmental impact study. In fact, the bullfrog (Rana catesbeiana), introduced from North America as early as 1867, is a serious predator on the newly hatched ducklings of the endangered Hawaiian duck or Koloa (Anas wyvilliana) and undoubtedly of the downy young of the Hawaiian coot and gallinule. Eleven species of lizards (primarily

skinks and geckos) occur on Oahu (McKeown, 1978). All are insect eaters, and they adapt well to both urban and rural areas.

Birds

Three groups of birds occur in the Hawaiian Islands: 1. endemic, birds that are unique to the islands, and, therefore, are not found naturally in any other part of the world; 2. indigenous, birds that are native to the islands but which also are found in other parts of the Pacific Basin, and 3. introduced or alien birds, those that have been brought to the islands by man.

I. Endemic Birds

I saw no endemic birds during my field studies. There is no habitat within many miles of the proposed site for any of the Hawaiian forest birds. In fact, few endemic forest birds still survive on the island of Oahu. There is no suitable habitat for any of the endangered water birds. It is possible that the Pueo or Hawaiian owl (Asio flammeus sandwichensis) occurs in the general region, although this owl is now uncommon on Oahu. The Pueo is a permanent resident on all of the main islands in the chain. The Pueo differs from most other owls in that it is diurnal in habits, often seen soaring at considerable heights or relatively low over the ground and hovering before pouncing on their prey, typically mice and rats. I doubt that the owl finds the habitat suitable for foraging for food; it certainly is unsuitable for nesting.

II. Indigenous or native birds.

These are birds that occur in Hawaii but also in other parts of the world, particularly the Pacific Basin. They are native to the Hawaiian Islands but are not unique to them. None are classified as endangered or threatened with extinction. In this category are 22 species of seabirds, the Hawaiian black-crowned night heron or Aukuu, and a number of migratory birds that spend their winter or nonbreeding season on the Hawaiian Islands and other islands in the Pacific Ocean. These migratory species had returned to their breeding ground in Alaska or Siberia, and I saw none. From August to the end of April I would have expected to have found the lesser golden plover (Pluvialis dominica fulva) foraging on lawns and along dirt roads or jeep trails. In Hawaii, the golden plover is found from sea level to about 10,000 feet on Maui and Hawaii. It frequents lawns in urban areas, golf courses, weedy pastures, open areas in the mountains, and mud flats along beaches and ponds. The proposed project would have no adverse effects on this species. There is no suitable habitat for the Hawaiian black-crowned night heron in the project area.

III. Introduced or alien birds

More than 170 species of birds have been introduced to the Hawaiian Islands by man since 1796 (Berger, 1981). I identified the following on and adjacent to the project site.

A. Order Columbiformes

a. Family Columbidae, Pigeons and Doves.

1. Spotted or Lace-necked dove, Streptopelia c. chinensis.
This Asian dove was introduced to the Hawaiian Islands at an early date; the exact date is unknown but the birds are said to have been common on Oahu by 1879 (Caum, 1933). The species is now common to abundant on all islands and is classified as a gamebird in Hawaii. Although it occurs in areas where the rainfall exceeds 100 inches per year, the highest densities are found in drier areas, especially where the alien kiawe and koa haole are dominant plants. Schwartz and Schwartz (1949), for example, found densities as great as 200 birds per square mile in dry areas on Molokai. The diet, as determined by examining crop contents, was found by the Schwartzes to consist of 77 percent weed seeds and about 23 percent fruits; animal matter was "almost negligible." However, tapeworm parasitism was found to be heavy, indicating that the small amount of arimal matter eaten by the doves was important in contracting the worm parasites. The spotted dove occurs throughout the project area.

2. Barred dove or Zebra dove, Geopelia striata.
This dove is said to have been introduced to Hawaii, from Australia, sometime after 1922 (Bryan, 1958). It now is abundant on all of the islands. Zebra doves also prefer drier areas where weeds seeds are abundant. Schwartz and Schwartz (1949) reported densities as great as 400 to 800 birds per square mile in some areas on Oahu

(e.g., Barber's Point to Makaha) and Molokai less than 25 years after the doves had been introduced to the islands. This dove also is considered to be a gamebird in Hawaii. The diet consists of about 97 percent seeds and other plant materials; the 3 percent animal matter includes several species of beetles, weevils, and wireworm larvae. Although both doves are predominatly seed eaters, they are thought not to compete for food because they eat different kinds of seeds, a factor related to the considerable difference in size of the birds and their bills. The Zebra dove is common at the project site and adjacent areas.

B. Order Strigiformes

b. Family Tytonidae, Barn Owls

3. Barn Owl, Tyto alba pratincola

Barn owls differ from other owls in that they have a heart-shaped facial disc of feathers, hence the name of "monkey-faced owl." Barn owls were first released on Oahu in 1959. Like the mongoose much earlier, the owls were introduced with the hope that they would prey upon rats in the sugarcane fields of the island. Few studies of the food habits of the barn owl have been conducted in Hawaii, but one study done on the island of Hawaii revealed that about 90 percent of the food consisted of house mice (Tomich, 1971). Byrd and Telfer (1980) reported that barn owls had killed more than 100 seabirds and their chicks on Kauai and Kaula Island. Barn owls are nocturnal in habits and I did not see any during my

daytime field work. It is probable, however, that barn owls occur in the general region of the project site. The lower portion of Waikakalaua gulch, however, does not provide any suitable nesting sites for the birds.

C. Order Passeriformes

a. Family Pycnonotidae, Bulbuls

4. Red-vented Bulbul, Pycnonotus cafer

Although all members of this old-world family are listed as "prohibited entry" by the State quarantine division of the Department of Agriculture, two species of bulbuls are now well established on Oahu. The history of the spread of this species since the mid-1960s has been discussed by Berger (1975a,1981). The red-vented bulbul is now widely distributed from Hawaii Kai to Wahiawa and beyond. Bulbuls eat fruit as well as insects and they cause considerable damage to fruit farmers.

b. Family Turdidae, Thrushes & Bluebirds

5. Shama, Copsychus malabaricus

Shama is the Hindi name for this thrush, which is native to India, Nepal, Burma, Malaysia, and throughout Indonesia. The Hui Manu imported birds in 1940 and released them on Oahu in Nuuanu Valley and "at some homes in the 2400 block on Makiki Heights Road" (Harpham, 1953. Lorin Gill saw the Shama in Pauoa Flats and in upper Manoa Valley in 1949. The Shama is now common on both the windward and leeward sides of Oahu. Although often a shy species, typically keeping hidden in lush vegetation, they also are inquisitive, so that they often can be induced to approach an observer who imitates the bird's clear, whistle-like song. In such places as Waimea Falls Park, where the birds become accustomed to people, the birds often perch on a bare branch only a few feet away.

I heard several shamas singing at the project site as well as in adjacent areas.

c. Family Sylviidae, Old-World Warblers

6. Japanese Bush Warbler, Cettia diphone cantans

This bush warbler or Uguisu was first released on Oahu by the Territory of Hawaii Board of Agriculture and Forestry in 1929, presumably because it is a "voracious feeder on insects of many kinds" (Caum, 1933). Bush warblers also were released by the Hui Manu on at least five dates between January 6, 1931 and December 26, 1941 (Berger, 1975b, 1976). The species is now very common in the Koolau mountains. The birds were in full song during my field trips to the project site in the first week of May 1985 and I heard at least 10 different birds singing in the area for the Phase III development.

d. Family Zosteropidae, White-eyes and Silver-eyes

7. Japanese White-eye, Zosterops j. japonicus

The Japanese name for this bird is Mejiro. It was first imported from Japan by the Territorial Board of Agriculture and Forestry in 1929. There were later importations by the "Hui Manu and by private individuals," and Caum (1933) said that by 1933, the bird was known to be established on Oahu and "possibly on Kauai." The white-eye has been a remarkably successful exotic species and I believe it now to be the most abundant song bird in the Hawaiian Islands. It occurs from sea level to tree line on Maui and Hawaii and it is found in the driest and the wettest habitats in the islands. It is common in all habitats adjacent to and including the project site. Because of their liking for fruit, the white-eye

sometimes is a serious pest to fruit growers. The California Department of Food and Agriculture recommended that their importation, transportation, or possession be prohibited in that state (Keffer et al., 1976).

e. Family Sturnidae, Starlings and Mynas

8. Common Indian Myna, Acridotheres tristis

The common myna is native to Sri Lanka, India, Nepal, and adjacent regions. It "was introduced from India in 1865 by Dr. William Hillebrand to combat the plague of army worms that was ravaging the pasture lands of the islands" (Caum, 1933). The myna is an abundant and familiar species, being found in residential and urban areas, as well as in the vicinity of human habitation in rural areas and even in the mountains (e.g., Pohakuloa on Hawaii island.) Mynas were common in the vicinity of the H-2 Freeway overpass and in the residential area makai of the overpass.

f. Family Ploceidae, Weaverbirds and Their Allies

9. Ricebird or Nutmeg Mannikin, Lonchura punctulata

Also called the spotted munia, this species has a wide distribution in Asia and the Philippines. It was first imported to Hawaii about 1865 by Dr. William Hillebrand. Caum (1933) wrote that this species "feeds on the seeds of weeds and grasses and does considerable damage to green rice." Rice is no longer grown in Hawaii, but the Ricebird is now abundant on all of the islands (see House Finch regarding the destruction of sorghum crops

by these two species). Ricebirds are highly gregarious and it is not uncommon to see flocks of a hundred or more birds at certain times of the year. It also is a prolific species that nests throughout the year in Hawaii. Ricebirds are not inhabitants of dense forests or thickets but they occur wherever they are roads, trails, or open spaces where there is a supply of weed seeds. Ricebirds occur throughout the general area of the project site.

10. House Sparrow, Passer domesticus

Also called the English Sparrow, nine birds were first imported from New Zealand in 1871. Caum (1933) wrote that "whether or not there were further importations is not known, but the species was reported to be numerous in Honolulu in 1879." The house sparrow is now an abundant species on all of the islands, typically being found in the vicinity of man and his buildings. In North America, the house sparrow became a serious pest and many thousands of dollars were spent in attempts to control the population. The sparrow apparently never became a pest in Hawaii. They are omnivorous in eating habits, eating seeds, insects, and their larvae. House sparrows were seen in the present residential area as well as in the thickets of the proposed Phase III area.

g. Family Fringillidae, Cardinals, Buntings, & New-World Sparrows

11. Red-crested Cardinal, Paroaria coronata

This bird traditionally has been called the Brazilian Cardinal in Hawaii, but the native range includes Uruguay, Paraguay, Brazil, and parts of Boliva and Aregentina. The species was released in Hawaii on several occasions between 1929 and 1931 (Caum, 1933). It now is well established in all of the lowland areas of Oahu and thus occurs in the Waikakalaua gulch region.

12. Cardinal, Cardinalis cardinalis.

Also called the Virginia cardinal and Kentucky cardinal, this species was released several times in Hawaii between 1929 and 1931 (Caum, 1933). Its native range is the eastern part of North America east of the plains and northward into Ontario. It now is a common species in both residential and rural areas on Oahu. This was a conspicuous bird in the proposed project site because the males were in full song.

13. House Finch, Carpodacus mexicanus frontalis

The House finch was introduced to Hawaii from California "prior to 1870, probably from San Francisco" (Caum, 1933). This finch is now abundant in both urban and rural areas and probably is the second most commom songbird species in Hawaii today. Although house finches (sometimes called the papayabird in Hawaii) may eat overripe papaya and other soft fruits, the species is predominantly a seed eater. House finches and ricebirds

caused a great deal of damage to experimental sorghum crops planted on Kauai and Hawaii during 1971 and1972. A report by the State Senate Committee on Ecology, Environment, and Recreation said that "ricebirds and linnets [=house finch] caused a 30 to 50 percent loss in the sorghum fields at Kilauea on Kauai last year. . . . seed-eating birds at Kohala ate 50 tons of sorghum grain in a 30-acre experimental field that was expected to produce 60 tons" (Honolulu Advertiser, March 14, 1972, page B-2). The house finch occurs throughout the region.

Mammals

I. Endemic Mammals

The only endemic Hawaiian land mammal is the Hawaiian bat (Lasiurus cinereus semotus), a subspecies of the American hoary bat. The Hawaiian bat is found primarily on the islands of Hawaii and Kauai (Tomich, 1969; Kramer, 1971). I know of no evidence that there is a resident population on the island of Oahu.

II. Introduced Mammals

All of the introduced species of mammals have proven to be highly detrimental to man, his buildings, his agricultural crops, and/or to the native forests and their birdlife. None, therefore, is of concern as far as detrimental effects resulting from the proposed use of the land for this project.

Some of these mammals were first brought to the Hawaiian Islands by Captains Cook and Vancouver before 1800 (e.g., pigs,

cattle, goats).

With the possible exception of the house mouse (Mus musculus), all of the smaller alien mammals prey on birds, their eggs, or young. These small mammals include the roof or black rat (Rattus rattus), Polynesian rat (Rattus exulans), Norway rat (Rattus norvegicus), small Indian mongoose (Herpestes auropunctatus), feral cat (Felis catus), and feral dog (Canis familiaris). The rats and the mouse also cause great damage to agricultural produce as well as to homes and industrial plants.

All of these alien mammals are irrelevant to an environmental impact assessement because none have any redeaming feature. It would, in fact, be a great boon to the islands if it were possible to exterminate all of them.

Conclusions

1. Virtually all of the plants at the project site are introduced plants, many of which are considered to be pest species. There also are large, bare, erosion areas, completetly devoid of any vegetation. Such erosion areas in the valley account for the great quantities of silt carried by the stream.

2. Because there are no endemic amphibians or land reptiles in the Hawaiian Islands, all of those that are present are alien or introduced species. Some (e.g., the bullfrog) pose a threat to the endangered waterbirds. All of these introduced animals are irrelevant to an environmental impact assessment.

3. The Hawaiian bat is the only endemic land mammal in the Hawaiian Islands and it is not a permanent resident on the island of Oahu.

4. All of the remaining mammals found on and adjacent to the project site are introduced species and all are serious pests to man, his activities and products, and to the native fauna. The three species of rats prey on ground-nesting birds, and even some tree-nesting birds, and the mouse and the rats cause great damage to agriculture as well as to homes and industrial plants. If it were possible to exterminate all of these introduced pests, it would be a great boon to the islands. Their presence on and adjacent to the project area, therefore, is irrelevant to an environmental impact assessment.

5. A smilar statement can be made about the 13 species of introduced birds discussed in this report. An example of the destructiveness of small grain crops by the ricebird and the house finch has been mentioned earlier. The doves and the myna have been implicated in spreading the seeds of noxious plants, such as Lantana camara. The barn owl has been shown to kill birds on Kauai. The bulbul and the white-eye cause considerable damage to fruit crops. To be sure, some of the introduced birds apparently cause no damage to crops or to the endemic bird species and their presence provides pleasure to many people. But, development, including landscaping and elimination of erosion scars actually would provide habitat for more of the introduced bird species. Therefore, we can say that these alien birds are irrelevant to an impact assessment.

6. Finally, I can see no legitimate biological reasons for opposing the proposed development in Waikakalaua gulch.

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APPENDIX C

BIOLOGICAL SURVEY OF WAIKAKALAUA STREAM

BIOLOGICAL SURVEY OF WAIKAKALAUA STREAM

Submitted to: Gray, Hong and Associates, Inc.

by

Kelly M. Archer
Stream Biologist
June, 1985

INTRODUCTION

Waikakalaua Stream originates in the Koolau Mountains within the Ewa Forest Reserve located east of Wahiawa, Island of O'ahu. Waikakalaua flows into Waikele Stream near Mililani and empties into West Loch, Pearl Harbor. The estimated discharge of Waikakalaua Stream during this study was less than 1 cubic foot per second (cfs); however, the 50 year design peak discharge is apparently about 7,000 cfs (Ref. 1).

This survey was conducted to inventory the Waikakalaua Stream fauna within an approximate 70 acre region which is the proposed site for a Planned Development Housing project known as Melemanu Woodlands Phase III. Waikakalaua Stream meanders along the gulch floor and is characterized by slow-flowing pools and short riffle areas. The substrate ranges from thick silt deposits to infrequent cobble and boulder reaches. The vegetative canopy is generally open. The gulch area within the proposed project site has apparently been used as a dump (refuse) site for many years. Automobiles and other objects are conspicuous within the stream itself.

As part of the Melemanu Woodlands project, the stream is to be realigned to flow along the southeastern wall of the gulch. This will allow more of the gulch floor to be utilized for Phase III and remove the need for bridges on the site.

METHODS

Study Site

The entire stream was surveyed from the makai end of the project (mauka of the H-2 Freeway) to approximately one kilometer above the mauka boundary. Special emphasis was given to the three horseshoe-like meanders which will be eliminated by the proposed stream channel realignment.

Sampling

Visual sampling, including the use of a face mask and snorkel, was employed during this survey. This method involves careful, thorough examination from alongside and within the stream. Visual sampling is an effective method for sampling small, pool-studded stream reaches (Ref 2). The species observed were identified and relative abundances noted.

RESULTS

Table I is a list of the aquatic fauna found in Waikakalaua Stream during this survey. Identified were three species of fish, one crustacean and one amphibian species. Each species was found to maintain a relatively small population. All of the aquatic fauna found are introduced or alien species.

DISCUSSION

Using the criteria developed for Windward O'ahu streams (Ref 2), Waikakalaua can be identified as a low quality stream. The complete absence of native fauna, substantial silt deposits and the poor flow characteristics of the stream support this assessment.

Additional support comes from this survey's inability to locate any diadromous stream fauna. Apparently, even the ubiquitous Tahitian prawn, Macrobrachium lar, does not exist in Waikakalaua Stream.

The lack of native fauna in Waikakalaua Stream is not surprising given the extent of development which has occurred throughout the Pearl Harbor watershed. Stream channelization and the accompanying characteristic of low water quality (Ref. 3) greatly reduce the chance of successful completion of the diadromous life cycle of native stream fauna (Ref. 4). Waikakalaua is a tributary to Waikele Stream which is heavily channelized at low elevations. Water is also diverted from the Waikele Stream system at a number of locations for agricultural purposes (Ref. 5). Both of these types of stream alterations modify stream conditions and thus favor the competitive alien stream fauna.

CONCLUSIONS

Potential Impacts of Melemanu Woodlands Project

In view of the low biological quality of Waikakalaua Stream, the proposed housing development will probably not adversely affect the biology of the stream given that some care is taken during the construction phase of the project. Erosion control measures should be instituted to prevent increasing the silt load of Waikakalaua Stream unnecessarily, and a narrow "buffer zone" along the stream bed must be maintained to protect riparian vegetation; this vegetation provides both shelter and organic material to the stream community.

The proposed stream realignment may, in fact, enhance the esthetic quality of the stream. Eliminating the stagnant pools located in the meanders could improve the flow characteristics of Waikakalaua Stream within the project site. It would be appropriate, however, to maintain as natural a stream bed as possible within the realigned segment to insure suitable habitat for stream fauna.

LITERATURE CITED

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4. Hathaway, C.B., Jr. 1978. Stream channel modification in Hawaii. Part C: Tolerance of native stream species to observed levels of environmental variability. FWS/OBS-78/18, USFWS National Stream Alteration Team, Columbia, Missouri.

5. Timbol, A.S. and Maciolek, J.A. 1978. Stream channel modification in Hawaii. Part A: Statewide inventory of streams; habitat factors and associated biota. FWS/OBS-78/16, USFWS National Stream Alteration Team, Columbia, Missouri.

TABLE 1. Stream fauna identified in Waikakalaua Stream, June, 1985.

Species	Common Name	Origin
FISH		
Poecilia mexicana	Shortfin molly	introduced
Poecilia reticulata	guppy	introduced
Xiphophorus helleri	green swordtail	introduced
CRUSTACEANS		
Procambarus clarkii	crayfish	introduced
AMPHIBIANS		
Bufo marinus	Bufo toad	introduced

All species were found in relatively small numbers.

APPENDIX D

AN ARCHAEOLOGICAL SURVEY OF WAIKAKALAUA, OAHU

AN ARCHAEOLOGICAL SURVEY AT WAIKAKALAUA, OAHU

TMK 9-5-02: 4,6,&11

June 1985

Prepared for: Gray Hong & Associates
119 Merchant St
Honolulu, Hawaii 96813

Prepared by: Archaeological
Consultants of Hawaii
3060 Huelani Dr.
Honolulu, Hawaii 96822

INTRODUCTION

In May, 1985, Archaeological Consultants of Hawaii, Inc. conducted a reconnaissance survey of 70 acres in Waikakalaua Gulch, Island of Oahu, TMK 9-5-02: 4,6 and Portion 11. A single archaeological site was recorded on this property.

PHYSICAL SETTING

The subject parcel is a gulch located in the Ewa District and the ahupua`a of Waikele. The surveyed area is located mauka of the H2 Freeway and extends approximately 1 mile inland within the boundaries of the walls of the gulch. The average width of the gulch is approximately 1200 feet and the gulch floor elevation varies between 650 feet (Mean Sea Level) at its lower end to 750 feet (Mean Sea Level) at the mauka project boundary. The gulch walls vary in steepness between 3:1 and 3:2. A permanent stream runs the length of the gulch. Ground vegetation includes guava, (Psidium guajava), strawberry guava (Psidium cattleianum), mountain apple (Eugenia malaccensis), albizzia (Albizzia moluccana), silver oak (Grevillea robusta), koa-haole (Leucaena glauca) common `ape (Xanthosoma robustum), bamboo (P. japonica), kukui (Aleurites moluccana), and a variety of grasses.

A jeep road runs the length of the property and crosses two concrete bridges in the mauka portion of the property. One of these bridges has collapsed. The Wahiawa side of the gulch in the makai section of the property shows signs of significant erosion. There is also physical evidence of earth moving activities in the gulch most likely related to stream diversion and widening that was carried out while the property was in the possession of Harold Stearns.

The majority of the soil in Waikakalaua Gulch is identified as low intensity Helemano Silty Clay. This soil has been described as appearing on the sides of V-shaped gulches and

> In a representative profile the surface layer is dark reddish-brown silty clay about 10in. thick. The subsoil, about 50 in. thick, is dark reddish-brown and dark-red silty clay that has subangular blocky structure...

> substratum is soft, highly weathered basic igneous rock. The soil is neutral in the surface layer and neutral to slightly acid in the subsoil...Permeability is moderately rapid, and the erosion hazard is severe to very severe.
>
> (Foote, et al, p. 41)

The remaining soil pockets are of the high intensity Kawaihapai Clay Loam which has been described as:

> soil [where] runnoff is slow to medium and ... workability is slightly difficult due to the slope. The soil is used for sugarcane and pasture.
>
> (Ibid. p.64)

PREVIOUS ARCHAEOLOGICAL WORK IN THE AREA

There has been no previous archaeological work done in Waikakalaua Gulch nor has there been any work in the immediate area. In their Sites of Oahu, however, Sterling and Summers quote Gilbert McAllister and make a passing reference to the subject parcel.

> Site 132. According to Fornander Waikakalaua is the place where the invading chiefs from Hawaii met Mailikukahi, moi of Oahu, in battle:
>
> The fight continued from there to Kipapa Gulch. The invaders were throughly defeated and the gulch is said to have been literally paved with the corpses of the slain and received its name Kipapa from this circumstance. Punaluu was slain on the field which bears his name, the fugitives were pursued as

far as Waimano, and the head of Hilo was cut off and carried in triumph to Honouliuli, and stuck up at a place still called Poo-Hilo.

(Summers and Sterling p.31)

HISTORY

The recorded history of the ownership of Waikakalaua Gulch begins very early. The gulch was among the first Royal Grants issued. It came into the possession of one John Neddles Gilman as Grant #6 in 1846 from Kamehameha III. A document in the State of Hawaii Archives, and translated in Honolulu by E.H. Hart in 1846 stated:

> This is what I know, from the time of Kamehameha First, Kaikialamea was the Chief who accepted tribute from this land, Makue, was the konohiki, Makue gave it to Waimaka, his wife - Waikakalaua - the uplands is Kalakwohia, the sea is Pahau, the fishpond of this land of Waikakalaua is Honohono, to Waikakalaua belongs Waiahualele, Waikele belongs to Waikakalaua. Another portion of Waikakalaua is Nio, one sand hill Ulemoku is a portion of Waikakalaua.
>
> from Kuene

There are no Land Commission Awards for Waikakalaua Gulch.

Little is known of the ownership or doings on the land until the 1930's when the property was acquired by Castle and Cook. Apparently the land was never actually used by this large corporation but instead was leased out in small parcels as pasture land for cattle and small farm plots (Stearns 1983:208). Harold Headrick (personal communication) told me that portions of the valley were being used as a flower farm when he entered the picture in the 1960`s.

The geologist Harold Stearns acquired title to the property and was involved in a complicated set of dealings over development rights from 1955 to 1964. Harold Headrick of Headrick Development Inc. took over in 1970 until a later bankruptcy.

METHODOLOGY

The entire corpus of the subject parcel (70+ acres of Waikakalaua Gulch) was surveyed on foot by one archaeologist and two assistants over a four day period in May of 1985. The area was divided into sections and each section was the object of repeated east/west sweeps with survey members spaced five meters apart.

Document research was carried out at the Department of Land and Natural Resources, Historic Sites Division, The Archives of the State of Hawaii, The State Survey (Map Division) of the State of Hawaii, The Bureau of Land Management (State of Hawaii), The Main Library, State of Hawaii and the Hamilton Library, University of Hawaii. A meeting was also arranged through Mr. David Bills of Gray, Hong and Associates with Mr. Harold Headrick, a former owner of the property.

SURVEY RESULTS - A SINGLE ARCHAEOLOGICAL SITE

A single archaeological site was discovered on the subject parcel. This was an unirrigated terrace - most likely for the cultivation of dry taro or sweet potato. The terrace was located in a narrow swale on the Wahiawa side of the gulch. The terrace measured just over 75 feet long and was just under 1 foot high. A test trench was dug to sterile in the bed of the terrace in hopes of recovering datable material and indeed a small kukui nut was recovered for our efforts. Unfortunately the single nut was to small to submit for a radiocarbon date (personal communication: M. Tammers, Beta Analytic, Coral Gables Florida). The test excavation did reveal that there was no indication of an indurated or hardened pan that is usually associated with irrigated taro. It is therefore a reasonable supposition that this site was used for the cultivation of sweet potato or dry land taro.

CONCLUSIONS

After a careful examination of the subject parcel and the historic and archaeological documents relating to it, I see no further need for additional archaeological work on this piece of property.

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APPENDIX E

ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE
MELEMANU WOODLANDS, PHASE III, WAIPIO, EWA, OAHU

CHAPTER 343, HRS
ENVIRONMENTAL IMPACT STATEMENT (EIS) PREPARATION NOTICE

Applicant/Landowner	:	John D. Chanin, Trustee for Headrick Development, Inc., Bankrupt
Agent	:	Gray, Hong & Associates, Inc.
Accepting Authority	:	Department of Land Utilization (DLU), City and County of Honolulu
Project Location	:	Waikakalaua Gulch, mauka of H-2 Freeway, Waipio, Ewa, Oahu (See Exhibit 1)
Tax Map Key	:	9-5-02: 4, 6 and Portion 11
Proposal	:	Develop 1,100-unit residential community on 70± acres
Request	:	Rezoning from AG-1 Agricultural District to R-6 Residential District, based on 1984 amendment to the Central Oahu Development Plan redesignating the property from Agriculture to Residential
Determination	:	EIS Required

I. PROPOSED ACTION

An option exists for Towne Realty, Inc. to develop 70± acres of land located within Waikakalaua Gulch (see Exhibit 2). This land is currently held by Mr. John A. Chanin, Trustee for Headrick Development, Inc., which is bankrupt. It is proposed through this option to submit an application to the City and County of Honolulu for change of zone on the subject 70± acres from its existing agricultural zoning to R-6 Residential Zoning. Upon the change of zone approval by the City and County of Honolulu's City Council, an application for a Planned Development Housing (PD-H) will be sought from the DLU.

The project is known as Melemanu Woodlands Phase III and follows on the previous development of Phases I and II farther down Waikakalaua Gulch, on the makai side of the H-2 Freeway. The EIS will describe the history of the property, the background of the project and its relation to earlier phases, and previous land use approvals granted.

The proposed Planned Development Housing will provide a maximum of 1,100 units. Units will vary to include townhouses, two-story flats, and six-story apartments. In addition to the new dwelling units, the project will also provide 5.6 acres of park site and commercial space for a convenience center. The project will be phased and,

tentatively, ultimate development is anticipated to take approximately five years. Exhibit 3 shows the preliminary layout of the project. The EIS will describe development phasing, as well as the positive urban design elements of the proposal.

The project will entail grading as well as on-site construction of roadways, a drainage system, water system, connection to existing sewer systems and underground electric, telephone and cable systems. The following is a synopsis of technical characteristics of the project.

A. Technical Characteristics

1. Grading: The proposed project is located mauka of the H-2 Freeway and within Waikakalaua Gulch. The upper reaches of the project extend approximately one mile into the gulch from the freeway boundary. The average width of the gulch is approximately 1,200 feet and the gulch floor elevation varies between 650 feet Mean Sea Level (MSL) at its lower end to 750 feet (MSL) at the mauka project boundary. The gulch walls vary in steepness between 3:1 and 3:2, and extend an average of 200 feet vertically to the plateau above. Entrance to the gulch at the lower portion of the project is relatively narrow and follows Waikakalaua Stream. However, once through the entrance, the valley floor expands with widths reaching 600 feet. Topography is shown in Exhibit 2, while Exhibit 4 shows proposed infrastructure systems.

Grading is required to accommodate the alignment and profile of the 56-foot wide right-of-way that will be the main arterial extending through the valley. Based on grading completed in Phases I and II of the Melemanu Woodlands project, it is anticipated that cut slopes will typically average 1:1 and fill slopes will be 2:1. A complete soils report will be performed prior to actual preparation of any grading plan to verify the engineered cut and fill criteria.

Grading will also be required to realign the Waikakalaua Stream channel. Three horseshoe-shaped bends meander through the gulch, and realigning these bends is required to enhance the development

and eliminate the need for bridges. This grading will also be done in conformance with the soil engineer's recommendations. Significant effort will also be utilized to create a natural realigned stream appearance. This will require input from both the City's DLU and Department of Public Works (DPW), since safety as well as aesthetics play a role in this phase of the project development.

While the magnitude of earthwork (cubic yardage) is not known at this point, there should be little difficulty in ensuring that the quantities balance and no imported or exported material will be required. From both an engineering perspective as well as an aesthetic perspective, it is appropriate to minimize the amount of earthwork required.

2. Roadway: The project will require approximately one mile (5,280 linear feet) of access roadway. This roadway will be a City and County standard 56-foot right-of-way. Within the roadway will be water and sewer, as well as underground electric, telephone and T. V. cable utilities.

3. Drainage: Waikakalaua Stream provides a 50-year design peak discharge of 7,000+ cubic feet per second (cfs). Development of Melemanu Woodlands Phase III will increase this discharge by 91 cfs. While the increase is less than two percent of the design peak discharge, serious downstream conditions can be aggravated if the increase in runoff is not mitigated. It is proposed to construct a detention basin within the Phase III development which will provide detention for Melemanu Phases I and II, as well as, Melemanu Phase III. In addition, the detention basin will also provide storage for the Mililani High-Tech Park which is proposed on the plateau adjacent to Melemanu Phase III. The detention basin will effectively store all increased flow generated by all the foregoing development and meter it into Waikakalaua Stream without increasing the existing runoff. It is anticipated that the storage required in the proposed detention basin will be 22 acre-feet. The detention basin will have the appearance of an empty earthen dam except during rainfall periods when water will be stored with controlled discharge in Waikakalaua Stream.

4. Water Supply: Water for the project will be made available from developing a dormant well at the Board of Water Supply's Corporation Yard in Wahiawa. Through joint cooperation with the neighboring Mililani High-Tech Park, both projects will develop 1.3 mgd from this existing, yet undeveloped source. The State is presently in the process of determining whether additional source development within the Pearl Harbor basin is acceptable.

   In addition to the foregoing source development, joint cooperation between the Mililani High-Tech Park and Melemanu Phase III will produce an improved transmission system from Wahiawa down Kamehameha Highway to Leilehua Golf Course Road and to both projects. Melemanu Phase III will then, on its own, provide necessary internal storage and transmission systems. The water tank storage requirement of Melemanu Phase III is 1.5 million gallons. The location of the facilities for storage and transmission systems will be on-site and subject to Board of Water Supply approval. All water system improvements will be dedicated to the Board of Water Supply.

5. Sewer Improvements: The proposed Melemanu Woodlands Phase III is the third increment of development within Waikakalaua Gulch. As a part of the previous two increments, the Melemanu projects have entered into and completed agreements with the City and County of Honolulu to:

   a. Contribute $500,000± for the expansion of the Mililani Sewage Treatment Plant (STP); and

   b. Construct and dedicate to the City a sewage pump station to transmit sewage from the Melemanu area to the Mililani STP.

   The foregoing agreements and improvements were completed at a total cost of $1,500,000 to the developer and assured that 3,000 units could connect to the City's Mililani STP and be accommodated by the Waipio sewage pump station. The total number of units now anticipated to be connected to the City's system, including Melemanu Phase III, will not exceed 2,400 units. Therefore, the existing system is adequate.

6. Underground Electric, Telephone and Cable Service: These utilities will be provided in accordance with applicable City and County Ordinance and all will be underground within the main arterial right-of-way.

7. Traffic: Melemanu Phase III will ultimately contain 1,100 units. Based on a 0.7 vehicle/per/hour (VPH) trip generation factor, the project will have 770 vehicles entering and/or leaving the valley during the peak traffic hour. All vehicles will use the access road already constructed which connects to Leilehua Golf Course Road which, in turn, has access ramps to the H-2 Freeway.

   Traffic generated from the project is not anticipated to have significant impact on the area. The roadway system is adequate and has controlled access to the Freeway. When Melemanu Woodlands was initially conceived, the total project (Phases I, II and III) anticipated 3,136 total units. Present design indicates that the total units contained in all Melemanu phases will not exceed 2,400.

   Traffic was analyzed in 1972 using the higher total unit projection and was evaluated in conjunction with construction of the existing access road. The amount of traffic now estimated to ultimately use the access road, Leilehua Golf Course Road and the H-2 Freeway, will be correspondingly reduced.

B. Socio-Economic Characteristics

1. Housing Needs: There is a definite need for housing units on the Island of Oahu. The EIS will document the following points:

   a. A five percent vacancy rate is required on the Island of Oahu to assure choice and mobility of housing consumers. However, the vacancy rate for single-family residences between 1977 and 1981 did not exceed 0.6 percent. The vacancy rate for multi-family units during the same period did not exceed 2.9 percent and did not exceed 2.1 percent since 1979.

   b. Approximately 58,000 new units will be needed by 1990 to meet the demand.

c. The U. S. Department of Housing and Urban Development guidelines consider a sales price of $60,000 - $65,000 reasonable for low-moderate income housing and $80,000 - $85,000 suitable for gap-group housing. In addition, the State Hawaii Housing Authority permits sales prices of units at slightly over $100,000 as affordable to the gap-group.

Based on the foregoing information, it is apparent that there is a significant and real need to provide housing. Further, the upland location, even though within a picturesque setting, does not command the selling price of multi-family units located elsewhere. A ceiling of $120,000 is very realistic for the area.

As a part of the project's Amendment Request to the Central Oahu Development Plan, the applicant made a commitment to provide 15 percent of the project's housing to low/moderate income families. The City Council's Committee Report reflects the Council's understanding that 15 percent of the project's units would be provided for low/moderate income households, and the remainder would be provided for gap-group households.

2. Employment Opportunities: Any project of this nature will provide employment for all the construction trades involved with housing development. The project also has significant size as to include phasing which will stretch over an estimated five years. Therefore, even though this type of construction work is sometimes considered temporary, it will, in reality, provide long-term employment for many individuals. The construction cost of the complete 1,100 unit development will be in excess of $50,000,000.

3. Public Facilities: The project site has been within the State urban boundary since 1977 and, therefore, considered within overall master planning for schools, libraries, parks and other similar public facilities. Tax dollars from the project and its owners will contribute proportionately to these facilities as required.

The EIS will evaluate the adequacy of existing municipal police, fire, mass transit, and refuse collection services to serve the proposed project. The cost to the public of providing any necessary additional services will be estimated.

The project will additionally provide park areas for recreation. The area to be provided for a park (5.6± acres) more than doubles the City's park dedication requirements.

C. Environmental Characteristics

1. Terrain: As previously described, the topography of the project site is typical of most gulch settings. A relatively level and, in parts, broad gulch floor gives way to walls ranging from 25 percent grade to 67 percent grade. At the top of the gulch walls exist a plateau. All development is proposed in the lower portion of the Waikakalaua Gulch where the slope does not exceed 25 percent.

   Care will be taken to minimize the disturbance to the existing topography for both aesthetic and economic reasons. All grading will be performed in accordance with a plan approved by the City and County as well as in conformance with an Erosion Control Plan also approved by the City and County. A soils report and a preliminary grading plan shall be prepared and included in the EIS.

2. Drainage: Waikakalaua Stream passes through the gulch and at times can produce storm runoff in the magnitude of 7,000 cubic feet per second (cfs). Through joint consultation with the City and County's DPW and DLU, the approved drainage plan will satisfy the need for safety as well as aesthetics.

   The use of a detention basin will ensure that increased runoff rates do not occur in the Waikakalaua Stream. The basin will be sized to retain and gradually dissipate 10-acre feet of runoff into Waikakalaua Stream. A preliminary drainage plan shall be prepared and included in the EIS.

3. Archaeology: A complete archaeological reconnaissance survey will be conducted, and findings will be reported in the EIS. This reconnaissance will identify and document artifacts which may be located on the site. The reconnaissance will further provide recommendations for mitigative actions, should significant features be present. All archaeological work will be filed with appropriate agencies, including the Historic Sites Office of the Department of Land and Natural Resources (DLNR).

4. Flora and Fauna: A survey will be made to document flora and fauna in the project area. As with the archaeological work, the reports covering flora and fauna will include appropriate recommendations should significant findings be revealed. These reports will also be included in the EIS.

5. The EIS will review the project location relative to aircraft noise and accident potential zones extending from Wheeler Air Force Base. Potential impacts on the proposed project will be described.

II. AFFECTED ENVIRONMENT

The proposed Melemanu Woodlands Phase III project site covering 70± acres is presently vacant. Residential development exists immediately adjacent to the site in the form of Melemanu Woodlands Phase I and Phase II. The Development Plan designates the subject 70± acres as urban, and the applicant intends to apply for a change of zone from Agricultural zoning to R-6 Residential. The affected environment will include:

A. Terrain: Through urbanization, the flatter areas within the gulch will be cleared and grading will be accomplished to facilitate the roadway and building foundations. All earthwork will be accomplished in accordance with City standards for earthwork and erosion control procedures. The EIS will evaluate the potential long-term effects and short-term construction impacts of earth-moving activities.

B. Drainage: (1) The applicant proposes to alter the existing drainage pattern to realign portions of the Waikakalaua Stream channel. The EIS will describe the type of stream channel to be constructed and proposed aesthetic features of the channel. The EIS will also present an alternative site plan retaining the natural stream alignment. (2) The project and its adjoining neighbor, Mililani High-Tech Park, will produce 345 cfs of additional runoff to the design peak discharge for Waikakalaua Stream. The impact to the drainage basin will be mitigated by utilizing a 22 acre-feet capacity detention basin which will effectively store runoff and gradually discharge the stored volume into the stream so the peak discharge does not exceed that which presently occurs. During the preparation of the EIS, the applicant will consult with the appropriate public agencies to confirm the viability of the preliminary drainage plan and the proposed mitigating measures.

C. Water: The project will require expansion of the existing source, storage and transmission components of the Board of Water Supply system. All expansion will be solely funded by the developer and will be in conformance with a master plan approved by the Board.

D. Flora and Fauna: The project area will be disturbed. There are no known endangered species in the area. However, the EIS will present surveys of both existing flora and fauna, including stream fauna. The potential impacts of construction and stream channelization on stream fauna will also be described.

E. Archaeology: An archaeological reconnaissance survey will be conducted to document the significance of any archaeological features on the project. The reconnaissance will provide recommendations should items of significance be located.

F. Sewage Disposal: Capacity is reserved for the project by way of previously completed projects. No significant impact is anticipated.

G. Traffic: The proposed project will add additional vehicles to tne roadway and freeway systems in the area. The systems have been previously analyzed using traffic projections higher than those which are now

projected. It is not anticipated that the traffic generated by this project will significantly impact traffic. The project has its own access road leading to Leilehua Golf Course Road which in turn provides access to the freeway. The freeway will be a primary destination for most occupants of the project.

In consultation with the City Department of Transportation Servies and the State Department of Transportation, the applicant will prepare and include in the EIS a traffic impact analysis.

III. REASONS SUPPORTING DETERMINATION

The decision to require an EIS for this project is based upon Section 1:31, "Significance Criteria and Procedures," of the State EIS Regulations. Based on the environmental assessment, we find that the project may have significant effects including, but not limited to, the following: the effects of proposed grading and drainage improvements onsite and offsite; the public cost of providing municipal services; the effects on Waikakalaua Stream, its fauna, natural beauty and recreational potential, due to the proposed channelization; the effects on population growth in Central Oahu owing to the proposed Planned Development - Housing application; and the noise and accident potential associated with the proximity of Wheeler AFB.

The preparation of the EIS must adhere to Subpart E of the "EIS Regulations." All studies and/or data pertaining to the site and the proposed development should be included in or appended to the EIS.

IV. AGENCIES TO BE CONSULTED

The following agencies should be consulted in the preparation of the EIS:

CITY & COUNTY

Board of Water Supply
Building Department
City Council
Department of General Planning
Department of Housing & Community Development

Department of Parks & Recreation
Department of Public Works
Department of Transportation Services
Fire Department
Police Department

STATE OF HAWAII

Department of Accounting & General Services
Division of Public Works
Department of Agriculture
Department of Health
Department of Land & Natural Resources
Department of Planning & Economic Development
Department of Transportation
Office of Environmental Quality Control

UNIVERSITY OF HAWAII

Environmental Center
Water Resources Research Center

FEDERAL

U.S. Air Force, Wheeler Air Force Base
U.S. Army, Schofield Barracks
U.S. Army Corps of Engineers
U.S. Department of Agriculture,
Soil Conservation Service
U.S. Fish & Wildlife Service

COMMUNITY ORGANIZATIONS

Community Associations
Neighborhood Boards

APPROVED John P Whalen
JOHN P. WHALEN
Director of Land Utilization

JPW:sl

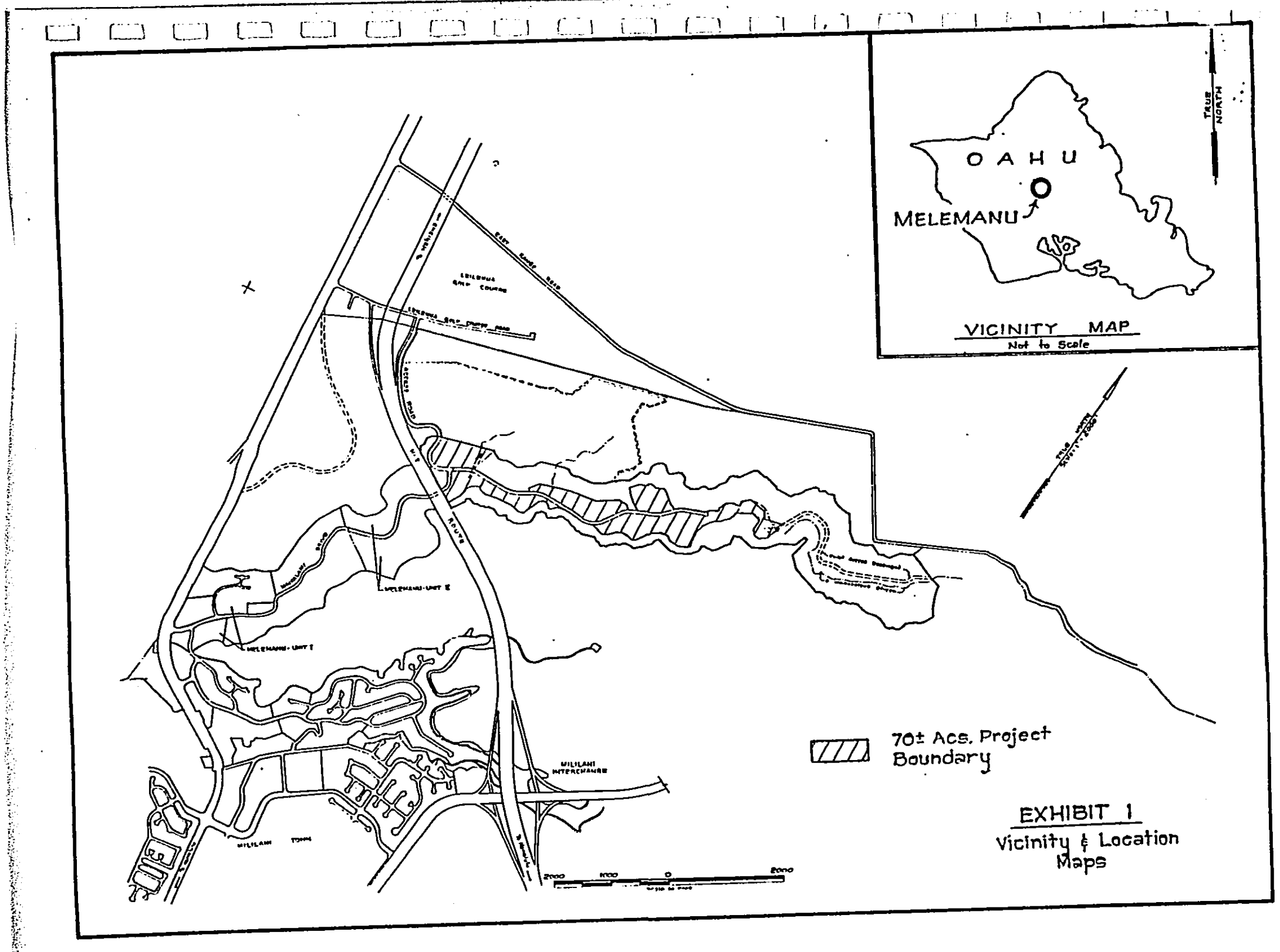

EXHIBIT 1

Vicinity & Location Maps

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

158°01'30"

602000m E.

7000m N.

27'30"

Wahiawa

Wahiawa Intermediate Sch

SCHOFIELD BARRACKS MILITA

(EAST RANGE)

South Fork

Wahiawa Reservoir

(SPILLWAY 842)

Earl Pump Reservoir

Leilehua Golf Course

WAHIAWA DISTRICT

EWA DISTRICT

Waikakalaua

Water

To Waianae

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Waipio Acres

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Pineapple Research Institute

Kipapa Sch

To Honolulu

Substa

Wells

Mililani Gulf Course

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WAIAHOLE

Waipio Uka

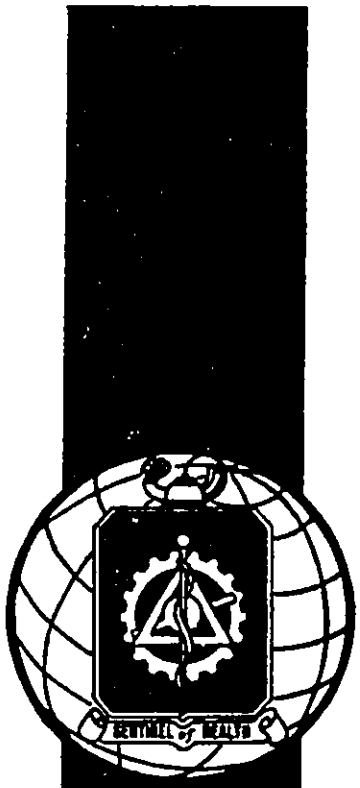
EXHIBIT 2
U.S.G.S. MAPPING

APPENDIX F

ENVIRONMENTAL NOISE ASSESSMENT NO. 52-34-0449-84
AIRFIELD NOISE MONITORING, WHEELER ARMY AIRFIELD
4-NOVEMBER-15 DECEMBER 1982

USASCH

AV DIV



UNITED STATES ARMY ENVIRONMENTAL HYGIENE AGENCY

ABERDEEN PROVING GROUND, MD 21010

ENVIRONMENTAL NOISE ASSESSMENT NO. 52-34-0449-84
AIRFIELD NOISE MONITORING
WHEELER ARMY AIRFIELD, HAWAII
4 NOVEMBER - 15 DECEMBER 1982

DEPARTMENT OF THE ARMY
U.S. ARMY ENVIRONMENTAL HYGIENE AGENCY
ABERDEEN PROVING GROUND, MARYLAND 21010

Dr. Lewis/slw/AUTOVON
584-3797

REPLY TO ATTENTION OF

HSHB-OB/WP

5 MAR 1984

SUBJECT: Environmental Noise Assessment No. 52-34-0449-84, Airfield Noise Monitoring, Wheeler Army Airfield, Hawaii, 4 November - 15 December 1982

Commander
US Army Western Command
ATTN: APMD
Fort Shafter, HI 96858

EXECUTIVE SUMMARY

The purpose, essential findings, and major recommendations of the inclosed report follow:

a. Purpose. Assess the noise impact from operations at Wheeler Army Airfield (WAAF) in the neighboring communities.

b. Essential Findings.

(1) The measured and predicted day-night sound levels (DNL) at the five monitoring sites in the community are less than the Department of the Army and the US Department of Housing and Urban Development criteria. Therefore, the noise environment in these communities is compatible with noise-sensitive land uses.

(2) The comparison of the predicted and measured DNL's and the lack of a correlation between the DNL and the number of operations indicate that the noise environment in these communities is not dominated by the noise from aircraft operations.

(3) The Installation Compatible Use Noise Zone (ICUZ) noise contours for WAAF extend beyond the installation boundary, enclosing currently undeveloped land.

c. Major Recommendations. Initiate an ICUZ program as required by AR 200-1.

FOR THE COMMANDER:

1 Incl
as (5 cy)

for Kathryn M. Attack
JOEL C. GAYDOS, M.D.
Colonel, MC
Director, Occupational and
Environmental Health

CF:
HQDA (DAEN-ECE-I)
HQDA (DAEN-ZCE)
HQDA (DASG-PSP) wo incl
Cdr, HSC (HSCL-P)
Comdt, AHS (HSHA-IPM)
Cdr, WAAF (2 cy)
Cdr, TAMC (PVNTMED Actv) (2 cy)

DEPARTMENT OF THE ARMY
U.S. ARMY ENVIRONMENTAL HYGIENE AGENCY
ABERDEEN PROVING GROUND, MARYLAND 21010

REPLY TO ATTENTION OF

HSHB-OB/WP

ENVIRONMENTAL NOISE ASSESSMENT NO. 52-34-0449-84
AIRFIELD NOISE MONITORING
WHEELER ARMY AIRFIELD, HAWAII
4 NOVEMBER - 15 DECEMBER 1982

1. AUTHORITY. Letter, HSHK-PV-V, Tripler Army Medical Center, 9 July 1982, subject: ICUZ for Wheeler Army Airfield and Noise Contour Maps for CH-47 and OV-10 Missions.

2. REFERENCES. See Appendix A for a listing of references.

3. PURPOSE. Assess the noise impact from operations at Wheeler Army Airfield (WAAF) in the neighboring communities.

4. GENERAL.

a. Background.

(1) WAAF is located adjacent to Schofield Barracks near the center of Oahu. The airfield is located near pineapple fields which are being rezoned for residential development. With the development in the vicinity of WAAF, the airfield has received many noise complaints from these developments, especially Waikalani Woodlands.

(2) Previous studies by this Agency of WAAF (references 5 and 6) have presented noise contours for existing and proposed operations at WAAF and have identified the need for continuous monitoring of the noise environment in the communities adjacent to the airfield. The noise contours presented in these studies show that the currently developed land is compatible with the noise environment. However, if an Installation Compatible Use Noise Zone (ICUZ) program, as required by AR 200-1 (reference 1), is not initiated by the US Army Western Command, the area that is currently incompatible for noise-sensitive land uses may become developed.

(3) This study presents the results of the continuous monitoring of the noise environment for 30 to 40 days at two control sites on WAAF and six sites in or near the communities adjacent to the airfield. The purpose of these data is to provide a strong empirical basis for future decisions in the ICUZ program.

b. Criteria.

(1) For all noise except large-amplitude impulse noise, the A-weighted day-night sound level (DNL) is used to evaluate the environmental impact of the noise. This noise evaluator is described in Appendix B.

(2) AR 200-1 defines three noise zones, referred to as Zone I, Zone II and Zone III. These noise zones are identical to the zones defined by the US Department of Housing and Urban Development (HUD).

(3) Zone I is defined as the area where the DNL is less than 65 decibels (dBA). This area is acceptable for noise-sensitive land uses, including housing, schools and medical facilities.

(4) Zone II is defined as the area where the DNL is between 65 and 75 dBA. This area is normally unacceptable for noise-sensitive land uses.

(5) Zone III is defined as the area where the DNL is greater than 75 dBA. This area is clearly unacceptable for noise-sensitive land uses.

c. Personnel.

(1) The following persons were contacted during this study:

(a) CW4 George DeSerres, Operations Office, WAAF.

(b) Mr. Larry Hirai, Environmental Management Office, Directorate of Engineering and Housing (DEH), Fort Shafter.

(c) Mr. Roger Hwegawi, Environmental Management Office, DEH, Fort Shafter.

(2) This study was conducted by the following persons:

(a) Mr. Steve Kim, Environmental Science Officer, Preventive Medicine Activity (PVNTMED Actv), Tripler Army Medical Center (TAMC).

(b) Mr. George Taylor, Student Intern, PVNTMED Actv, TAMC.

(c) Mr. Barry Skolnick, Electronics Technician, Bio-Acoustics Division, this Agency.

5. PROCEDURES.

a. Noise Monitoring.

(1) The Metrosonics model db301/652 noise monitoring system was used for the monitoring of the noise environment. This system consisted of a Metrologger (model db301) and a Ceramic Microphone (model mk301R). The system was calibrated before each use with an Acoustical Calibrator (model cL302). The stored data, in the form of 10 minute LEQ's, were read from the Metrologger and printed, using the Portable Metroreader (model db652).

(2) The Metrologger samples the A-weighted sound pressure level at a rate of 4 times per second (4 Hertz). At the beginning of each monitoring period, the Metrologger was switched from "Standby" to "Operate," at which

time the unit computed the LEQ for 10 minute segments of time. The 10 minute LEQ's were stored in the internal memory of the unit. At the end of the monitoring period, the Metrologger was switched from "Operate" to "Standby." The Portable Metroreader was used to read the LEQ's from the Metrologger's memory and print a permanent record of these levels.

b. Noise Contours.

(1) The noise zones for WAAF were generated using the NOISEMAP computer program. This program was developed for the US Air Force by Bolt, Beranek and Newman. It was adapted by the Army Construction Engineering Research Laboratory for Army use by adding the helicopter data base to the existing fixed-wing data base.

(2) The required inputs to the program are the flight tracks and the number of each type of aircraft using each flight track. The aircraft runup times at each runup position are also entered as inputs. The program sums the acoustic energy arriving at many ground points from the airfield operations in the vicinity of the flight tracks to generate the noise contours. These contours are printed out by the computer.

6. FINDINGS.

a. Noise Monitoring.

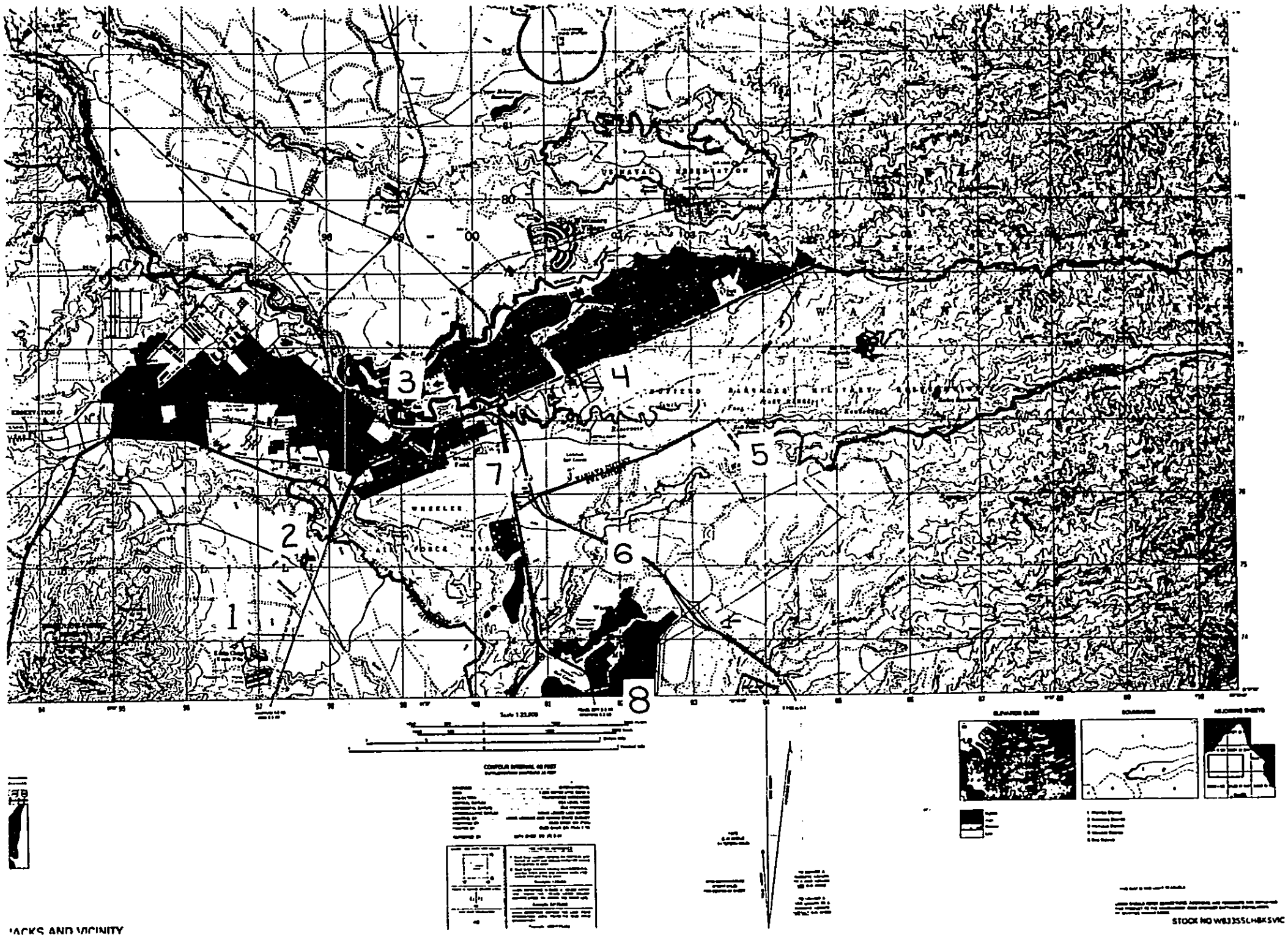
(1) Continuous automated monitoring of the noise environment at WAAF and in the communities adjacent to the airfield was conducted at the eight locations shown in Figure 1 during the period 4 November to 15 December 1982. The daily DNL's at each site are summarized in Appendix C. The daytime and nighttime distributions of the 10 minute LEQ's are summarized in Appendix D.

(2) The minimum, mean and maximum 10 minute LEQ's for each of the 144 daily 10 minute time periods are shown in Figures E-1 to E-8, Appendix E. These figures show the general trends of the LEQ during the 24 hour period. The majority of the maximum 10 minute LEQ values in the adjacent communities were caused by wind noise during the hurricane of 23-26 November 1982.

b. Noise Contour. The noise contour generated by the NOISEMAP computer program for the monitoring period is shown in Figure 2. This contour was generated using the data provided on the Daily Dispatcher's Log (ZV-AV Form 1) and the flight patterns provided by WAAF. The number of operations by aircraft type for the monitoring period are summarized in Table 1.

TABLE 1. SUMMARY OF AIRFIELD OPERATIONS DURING MONITORING PERIOD

Aircraft Type	Number of Operations	Aircraft Type	Number of Operations
UH-1	666	C130	10
AH-1	156	02	202
OH-58	248	A10	1
CH-47	12	C150	219
CH-53	3	C172	68
C12	59	C177	19
U21	37	PA23	17



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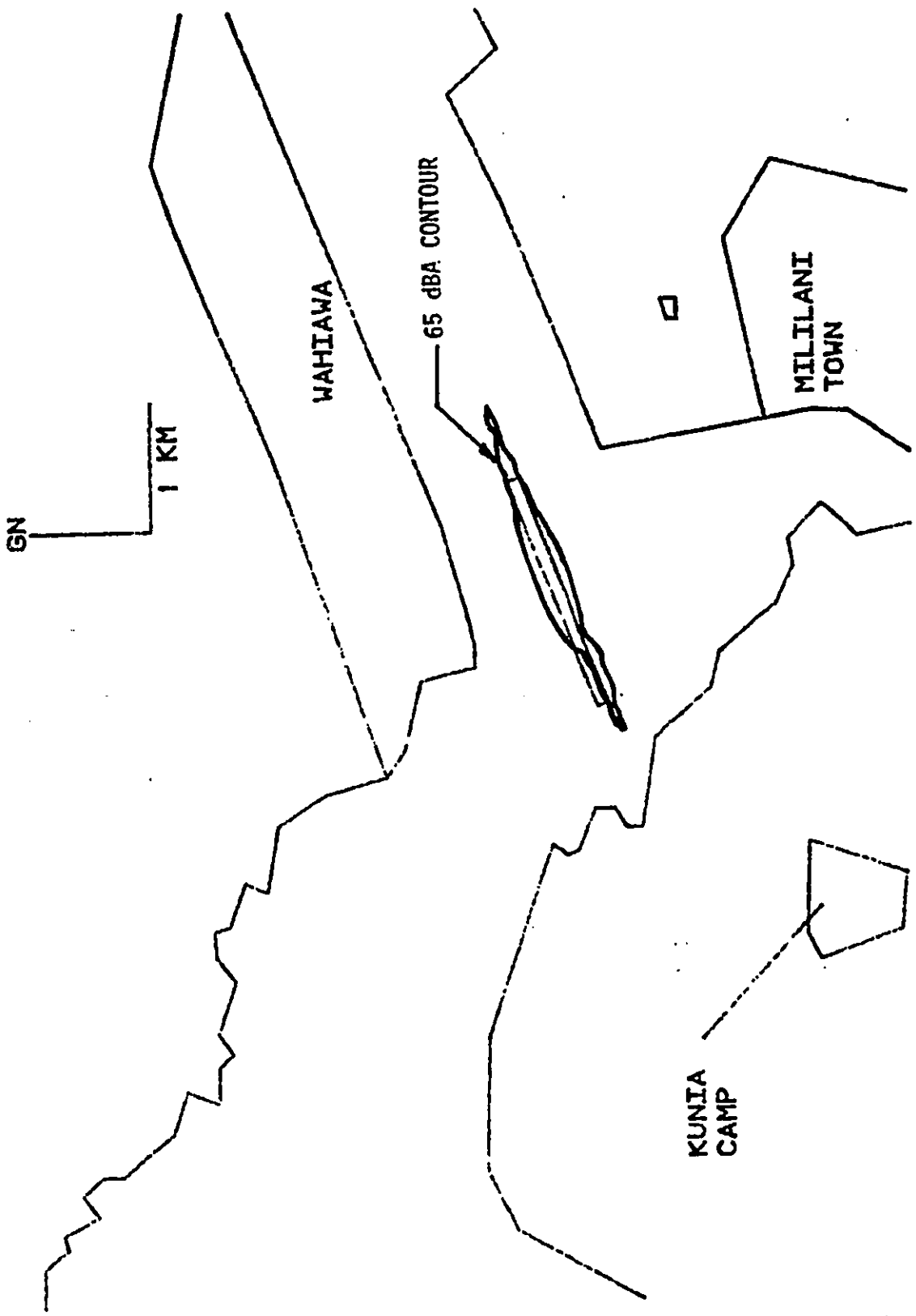

FIGURE 2. NOISE CONTOUR FOR MONITORING PERIOD.

7. DISCUSSION.

a. Comparison of Measured DNL's and Noise Contour with the ICUZ Criteria.

(1) At the five monitoring sites in the community (Sites 1, 3, 4, 6 and 8) the measured DNL for the monitoring period (Appendix C) is less than 65 dBA. The 65 dBA DNL contour is the boundary between the acceptable (Zone I) and the normally unacceptable (Zone II) noise zones. Therefore, the noise environment in these communities is acceptable for noise-sensitive land uses as defined by the Department of the Army (DA) (reference 1) and HUD (reference 4) regulations.

(2) The noise contour (Figure 2) for the monitoring period does not extend beyond the installation boundary. However, since this contour was generated from operational data collected for a short time period (40 days) it should not be used for the WAAF ICUZ program. The previously generated contours (reference 6) should be used for this purpose.

(3) The previously generated noise contours extend beyond the installation boundary, enclosing currently undeveloped land. If this land is developed, its land use will be incompatible with the noise environment. The US Army Western Command should initiate an ICUZ program as required by AR 200-1 to assure the land uses around WAAF remain compatible with the noise environment.

b. Comparison of Measured and Predicted Levels. When the DNL's for the monitoring period at each site are superimposed on the predicted noise contours for the period (Figure 3), the measured DNL is higher than the predicted level (Table 2). The reason for the elevated measured levels is contamination by local noise sources such as an air moving system (Site 2), local vehicular traffic, children playing, and wind. These higher measured levels indicate that the noise environment at these sites in the community is not dominated by the noise from aircraft operations at WAAF.

TABLE 2. COMPARISON OF PREDICTED AND MEASURED DNL's

Monitoring Site	DNL, dBA	
	Predicted	Measured
1	44.8	60.7
2	60.8	66.9
3	44.4	56.2
4	50.3	56.6
5	45.6	65.8
6	41.6	63.5
7	61.2	75.5
8	<40.0	55.4

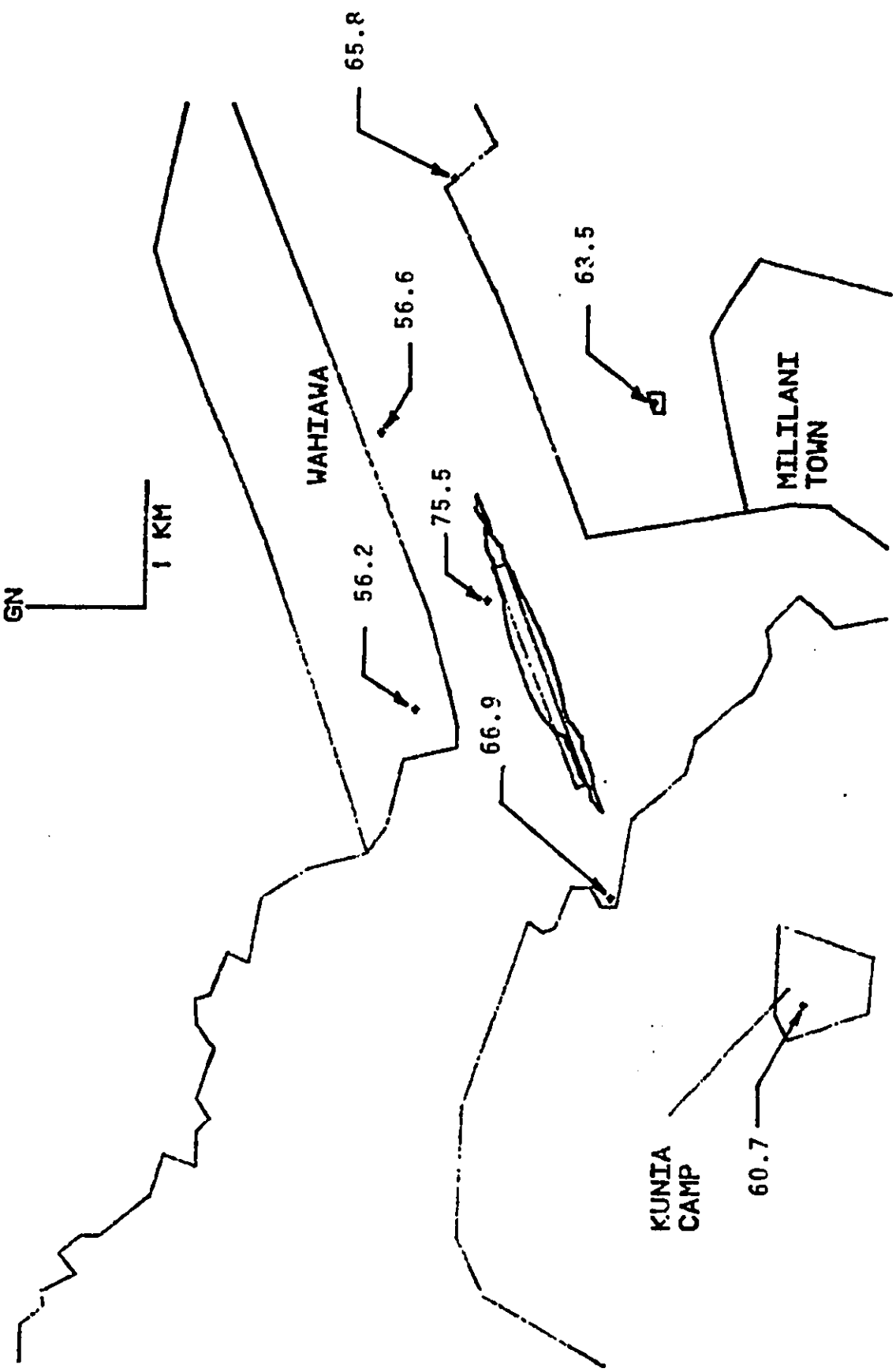

FIGURE 3. DNL's FOR MONITORING PERIOD.

c. Correlation between DNL and Number of Operations.

(1) One way of demonstrating the contamination of the measured data from other sources is with the correlation coefficient. The correlation coefficient was computed between the daily DNL's at each monitoring site and the daily number of operations at the airfield for the monitoring period. These coefficients are listed in Table 3.

TABLE 3. CORRELATION COEFFICIENTS

Monitoring Site	Correlation Coefficient
1	0.06
2	0.71
3	0.01
4	0.01
5	0.00
6	-0.33
7	0.80
8	-0.14

(2) The correlation coefficient, which varies between plus and minus one, indicates the relationship between two sets of data the DNL and the number of operations. If both sets of data are identical (Figure 4a), the correlation coefficient is equal to plus one. If the two sets of data are completely unrelated, (Figure 4b), the correlation coefficient is equal to zero. If one set of the data is the mirror image of the second set about their mean values, (Figure 4c), the correlation coefficient is equal to minus one.

(3) As expected, the correlation coefficients of the two control sites (Sites 2 and 7) indicate a strong correlation or relationship between the daily DNL's and the number of operations. At the sites in the communities, the correlation coefficient is approximately equal to zero or is negative, indicating at these sites, the daily DNL is not a function of the number of operations at WAAF. These coefficients indicate that the noise environment at these sites in the community is not dominated by the noise from aircraft operations at WAAF.

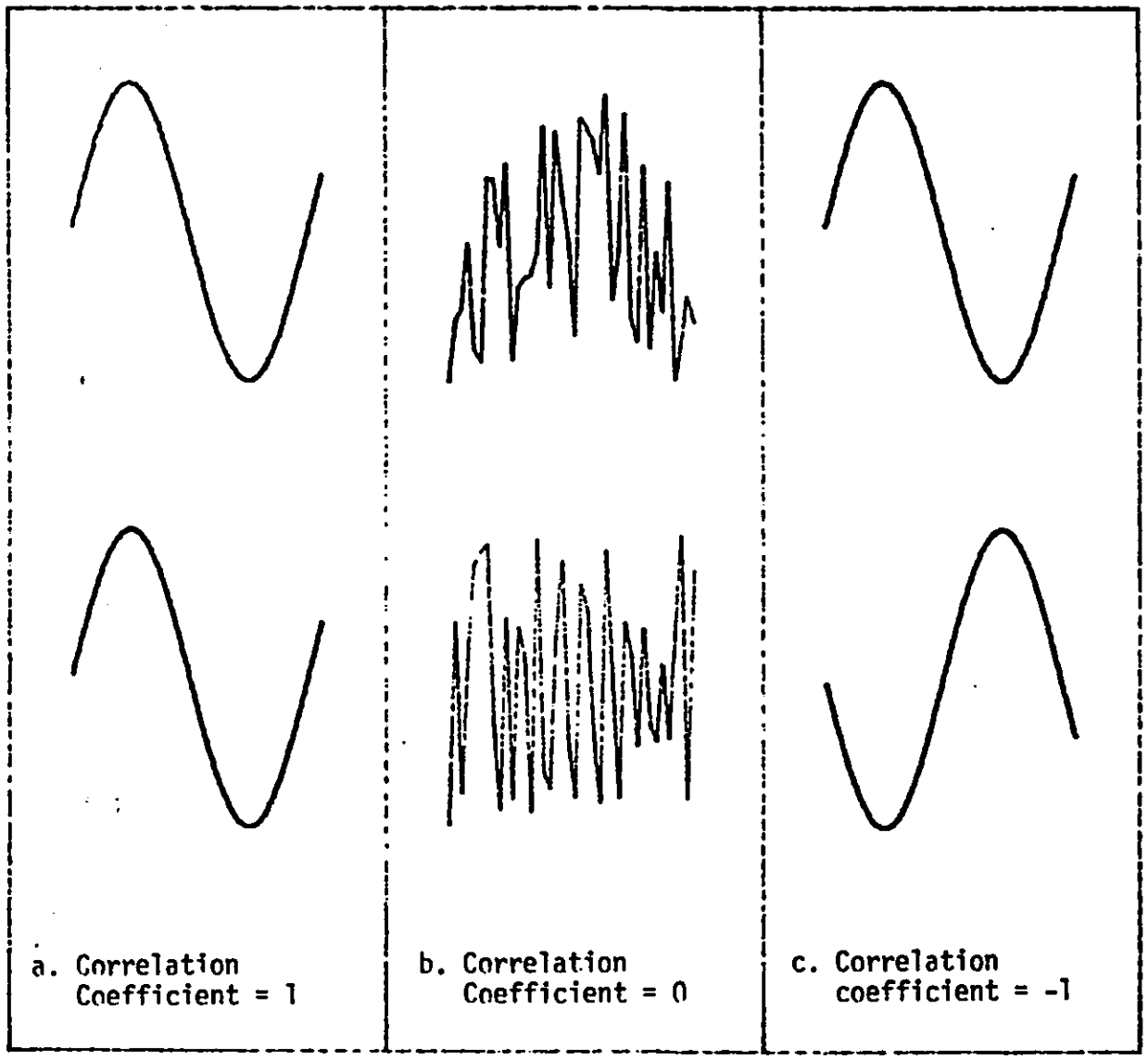

FIGURE 4. CORRELATION COEFFICIENTS OF NOISE.

8. CONCLUSIONS.

a. The measured and predicted DNL values at the five monitoring sites in the community are less than the DA and HUD criteria. Therefore, the noise environment in these communities is compatible with noise-sensitive land uses.

b. The comparison of the predicted and measured DNL's and the lack of a correlation between the DNL and the number of operations indicated that the noise environment in these communities is not dominated by the noise from aircraft operations at WAAF.

c. The ICUZ noise contours for WAAF extend beyond the installation boundary, enclosing currently undeveloped land. The US Army Western Command should initiate an ICUZ program to assure that the land uses around WAAF remain compatible with the noise environment.

9. RECOMMENDATION. Initiate an ICUZ program at WAAF as required by AR 200-1.

Nelson D. Lewis

NELSON D. LEWIS, Ph.D.
Acoustical Engineer
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APPROVED:

Rodney M. Atack

RODNEY M. ATACK, Ph.D.
LTC, MSC
Chief, Bio-Acoustics Division

APPENDIX A

REFERENCES

1. AR 200-1, Environmental Protection and Enhancement, 15 June 1982.

2. AR 200-2, Environmental Effects of Army Actions, 1 September 1981.

3. TM 5-803-2, Environmental Protection: Planning in the Noise Environment, 15 June 1978.

4. Title 24, Code of Federal Regulations, 1983 rev, Part 51, Environmental Criteria and Standards.

5. Letter, HSE-OB/WP, this Agency, 3 December 1981, subject: Environmental Noise Assessment Special Study No. 52-34-0408-82, Wheeler Army Airfield, Hawaii, October 1981.

6. Letter, HSE-OB/WP, this Agency, 2 April 1982, subject: Addendum to Environmental Noise Assessment Special Study No. 52-34-0408-82, Wheeler Army Airfield, Hawaii, October 1981.

7. Letter, HSHB-OB, this Agency, 5 May 1983, subject: Preliminary Report, Environmental Noise Assessment Special Study No. 52-34-0449-83, Wheeler Army Airfield, Hawaii, 4 November - 15 December 1982.

APPENDIX B

ENVIRONMENTAL NOISE EVALUATORS

1. BACKGROUND.

a. Noise is the variation of the air pressure about a mean (atmosphere) pressure. These changes in the atmospheric pressure [100,000 Pascals (14.7 pounds per square inch) (psi)] vary from approximately 0.0006 Pascal ($.08x10^{-6}$ psi) for a whisper at 5 feet to 1,000 Pascals (0.15 psi) for the firing of a M16 rifle at the firer's ear. Because of this large range of sound pressure and the fact that the human ear responds more closely to a logarithmic scale rather than a linear scale, sound pressures are expressed using a logarithmic scale. The sound pressure level (SPL) is defined as:

$$SPL = 10 \log \left(\frac{P}{P_0}\right)^2 \qquad (B\text{-}1)$$

where P = sound pressure, Pascals

P_0 = reference sound pressure (0.00002 Pascal).

The SPL is measured in decibels (dB). For example, if the sound pressure doubles, the SPL increases by 6 dB.

b. In environmental noise, the SPL is usually measured using one of the frequency weighting networks of the sound level meter. Since the human ear is more sensitive to sounds of 1,000 Hertz and above than to sounds of 125 Hertz and below, it is appropriate to apply a weighting function to the noise spectrum which will approximate the response of the human ear. The A-weighting frequency network of the sound level meter de-emphasizes the lower frequency portion of the noise spectrum, as shown in Figure B1, to approximate the human ear's response to the noise. Thus, the A-weighting of the frequency content of the noise signal has been found to have an excellent correlation with the human subjective judgment of annoyance to the noise. The SPL's measured using the A-weighting network are expressed as dBA.

2. EVALUATORS.

a. A characteristic of environmental noise is that it is not steady, but varies in amplitude from one moment to the next. To account for these variations in the SPL with time, and to assess environmental noise in a consistent and practical manner, a statistical approach has been used to reduce the time-varying SPL to single numbers. The accepted single number evaluators of environmental noise are the equivalent sound level (LEQ) and the day-night sound level (DNL).

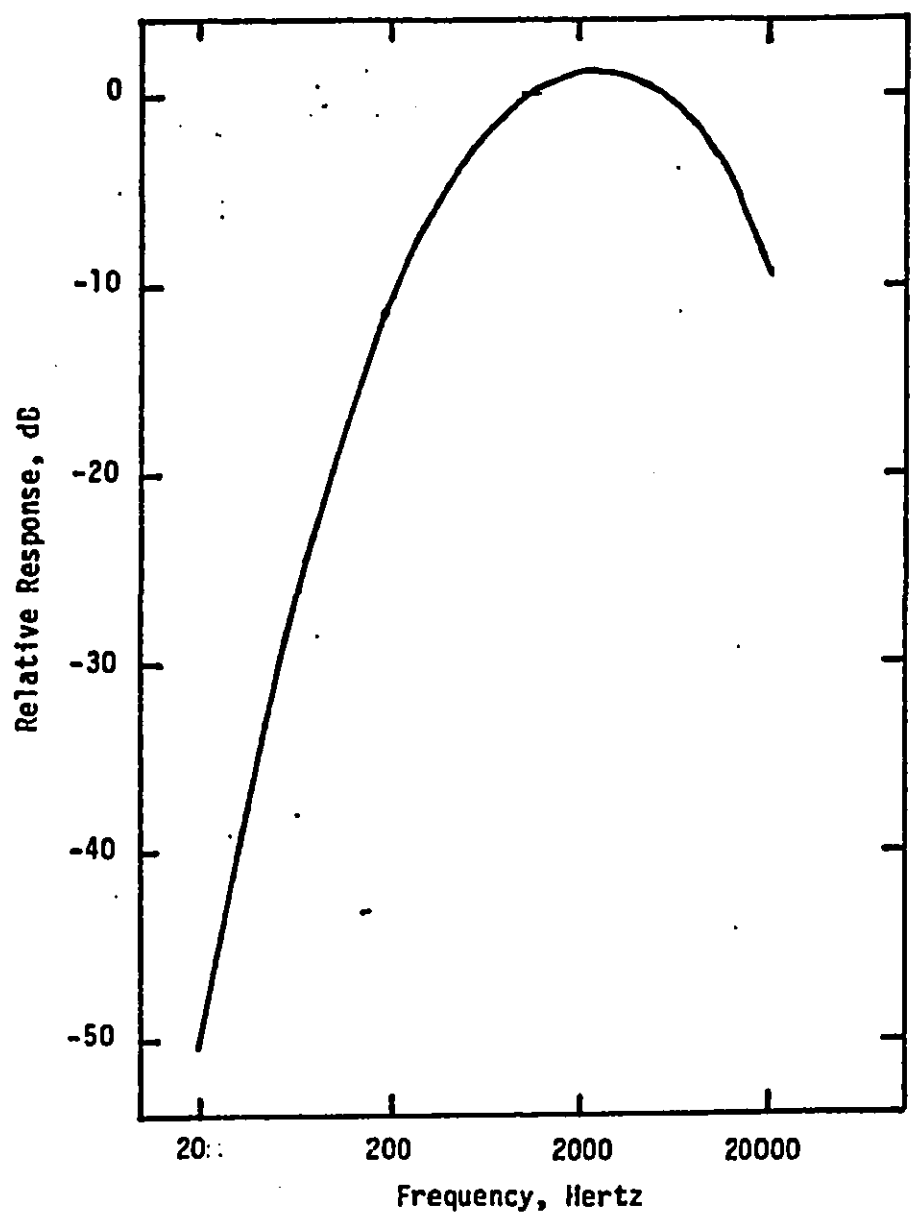


Figure B1, Relative frequency response of the A-weighting network.

b. An LEQ is defined as the equivalent steady state sound level which in a stated period of time would contain the same acoustic energy as the time-varying sound during the same period. Mathematically, for a sampled noise signal, it is equal to:

$$LEQ = 10 \log \frac{1}{N} \sum_{i=1}^{N} 10^{(SPL_i/10)} \qquad (B\text{-}2)$$

where SPL_i is the ith sampled SPL in dB.

N is the total number of samples.

The LEQ is usually computed for a 1 minute, 10 minute, 30 minute, 1 hour, 8 hour or 24 hour segment of environmental noise.

c. As equation (B-2) indicates, the LEQ is an logarithmic average. The logarithmic average puts more emphasis on the higher SPL's than an arithmetic average. For example, if 10 sampled SPL's consist of 9 values at 60 dBA and 1 value at 80 dBA, the LEQ is equal to 70 dBA. The arithmetic average of these SPL's is 62 dBA.

d. The acoustical energy of an event, such as an aircraft flyover, is equal to the LEQ of the event plus a correction factor for the duration of the event. That is:

$$\text{Acoustical Energy} = LEQ + 10 \text{ Log } \left(\frac{T}{T_o}\right) \qquad (B\text{-}3)$$

where: T is the duration of the event in seconds.

T_o is the reference duration (1 second).

e. To assess the added annoyance of the environmental noise during the nighttime hours (2200-0700), the DNL is used. The DNL is the 24 hour LEQ, with a 10 decibel penalty added to the nighttime levels. Using the hourly LEQ's, the DNL is equal to:

$$DNL = 10 \log \frac{1}{24} \left[\sum_{i=1}^{15} 10^{(LEQ_i/10)} + \sum_{j=1}^{9} 10^{(LEQ_j+10)/10} \right] \qquad (B\text{-}4)$$

where: LEQ_i is the LEQ of the ith daytime hour (0700-2200)

LEQ_j is the LEQ of the jth nighttime hour.

3. NOISE CONTOURS.

a. Noise contours are generated using the DNL evaluator. The contours are computed by averaging over the time period of interest, the acoustical energy from the operations of the set of noise sources of interest. The averaging period is usually a busy day or a year. The contours, representing the boundaries between the noise zones, are constructed by connecting points of equal acoustical energy.

b. For example, the contours for an airfield are computed by averaging at many points the acoustical energy arriving at these points from the aircraft operations. As indicated in equation (B-4), a 10 dBA penalty is added to all nighttime operations. The contours for the airfield are constructed by connecting all points having an acoustical energy equal to 65 dBA and connecting all points equal to 75 dBA.

APPENDIX C

SUMMARY OF DAILY DNL's

Date, 1982	DNL, dBA Site Number 1	2	3	4	5	6	7	8
4 Nov	56.6	73.3*	56.6*	56.0*	54.4*	64.5*	82.5*	53.3*
5 Nov	56.8	62.5*	57.7	56.9	54.1	62.9	78.6*	58.4
6 Nov	56.4	-	54.3	52.0	50.9	63.8	-	55.2
7 Nov	50.9	-	55.5	51.3	54.7	64.0	-	52.5
8 Nov	58.3	67.1*	54.5	55.4	61.6	63.1	72.1*	52.9
9 Nov	58.4	68.6	-	55.6	55.9	62.8*	75.5	51.7
10 Nov	63.4*	69.2	56.2*	55.5	60.8	-	78.1	55.4*
11 Nov	-	61.3*	54.8	56.0	50.2*	61.8*	72.7*	-
12 Nov	60.6*	68.2*	55.1	55.3	54.6*	64.2*	75.4*	54.5*
13 Nov	54.2	65.3	53.0	50.6	52.4	62.5	71.1	51.5
14 Nov	54.3	63.6	54.0	56.7	51.7	61.2	70.5	53.2
15 Nov	64.8*	68.3	56.0	56.2*	53.5	61.0	78.6	52.7
16 Nov	-	68.6	57.6	-	56.0	62.7	78.9	52.9
17 Nov	56.9*	68.4	57.2	58.7*	54.4	64.8	77.3	52.5
18 Nov	57.4	67.8	56.0	56.7	65.0	63.8	76.1	52.5
19 Nov	60.2	66.0	54.0	55.6	49.0*	61.9	75.3	52.2
20 Nov	57.9	64.7	53.2	51.6	-	67.2	67.7	52.6
21 Nov	53.4	66.4	53.7	54.2	-	62.6	65.5	51.8

* DNL value not for complete 24-hour period
- no data

Environmental Noise Assessment No. 52-34-0449-84, WAAF, HI, 4 Nov - 15 Dec 82

	DNL, dBA Site Number							
Date, 1982	1	2	3	4	5	6	7	8
22 Nov	55.1	66.0	52.1*	56.8	52.9*	60.6	75.8	52.9
23 Nov	73.6	65.8	-	61.4	80.4	67.2	74.6*	65.6
24 Nov	55.5	65.3	-	50.9	49.9	64.9	-	53.5
25 Nov	55.5*	59.5*	-	51.1*	44.5*	69.0*	-	51.9
26 Nov	58.1	66.3	58.8*	52.3*	49.5*	-	77.8*	52.8
27 Nov	56.6	65.5	55.6	49.9	48.6	-	71.2	52.9
28 Nov	53.7	64.3	55.4	52.9	61.5	-	63.1	51.5
29 Nov	56.5	67.3	55.9	55.7	51.7	62.3*	75.0	52.6
30 Nov	59.6	67.8	56.5	64.3	52.3	62.9	78.4	59.1
1 Dec	55.6	66.0	58.0	59.9	56.6*	61.6	76.9	52.9
2 Dec	56.2	66.9	55.9	57.1	-	62.5	76.9	52.2
3 Dec	55.6	66.6	54.1	54.2	-	58.1*	74.5	52.7
4 Dec	52.7	65.5	63.6	53.3	-	-	69.7	55.3
5 Dec	59.0	64.7	54.3	51.5	-	-	64.6	53.9
6 Dec	63.9*	65.1	54.6	56.2	48.6*	62.9*	60.3*	54.5*
7 Dec	-	66.7	53.6	56.6	51.3	64.0	-	-
8 Dec	55.6*	65.9	55.5	55.4	54.5	62.4	71.9*	-
9 Dec	56.5	68.1	53.7	54.4	52.5	61.2	76.7	-
10 Dec	54.4	64.5	56.3	55.5	55.3	59.8*	77.7	-
11 Dec	51.5	61.8	53.4	53.2	57.6	-	66.8	-
12 Dec	54.8	60.1	58.0	60.4	52.6	-	62.0	-
13 Dec	55.1	64.6	54.7	55.9	51.5	64.7*	72.0	-
14 Dec	58.4	68.7	55.4	57.0	57.4	64.4	77.3	-
15 Dec	61.7*	68.0*	52.9*	51.8*	58.2*	60.4*	76.3*	-
Monitoring Period	60.7	66.9	56.2	56.6	65.8	63.5	75.5	55.4

* DNL value not for complete 24 hour period
- no data

APPENDIX D

SUMMARY OF DISTRIBUTIONS OF 10 MINUTE LEQ's

TABLE D-1. DAYTIME HOURS (0700-2200)

Monitoring Site	Percent of time 10 minute LEQ exceeds 65 dBA	70 dBA	75 dBA	80 dBA	85 dBA
1	5.73	2.14	0.65	0.13	0.10
2	29.37	10.42	0.42	0.09	0.03
3	1.29	0.42	0.13	0	0
4	1.84	0.48	0.15	0.03	0
5	3.47	2.17	1.68	0.88	0.14
6	4.01	0.99	0.41	0.11	0
7	60.51	46.04	23.87	10.34	2.98
8	1.23	0.38	0.08	0.04	0

TABLE D-2. NIGHTTIME HOURS (2200-0700)

Monitoring Site	Percent of time 10 minute LEQ exceeds 55 dBA	60 dBA	65 dBA	70 dBA	75 dBA
1	3.76	1.15	0.22	0	0
2	82.31	5.65	1.74	0.35	0.10
3	1.53	0.21	0	0	0
4	2.75	0.75	0.05	0	0
5	2.99	1.67	0.96	0.54	0.18
6	58.89	3.33	0.18	0	0
7	41.90	23.50	8.86	6.43	1.74
8	1.05	0.37	0.19	0.06	0

APPENDIX E

MAXIMUM, MEAN, AND MINIMUM 24 HOUR TIME HISTORIES

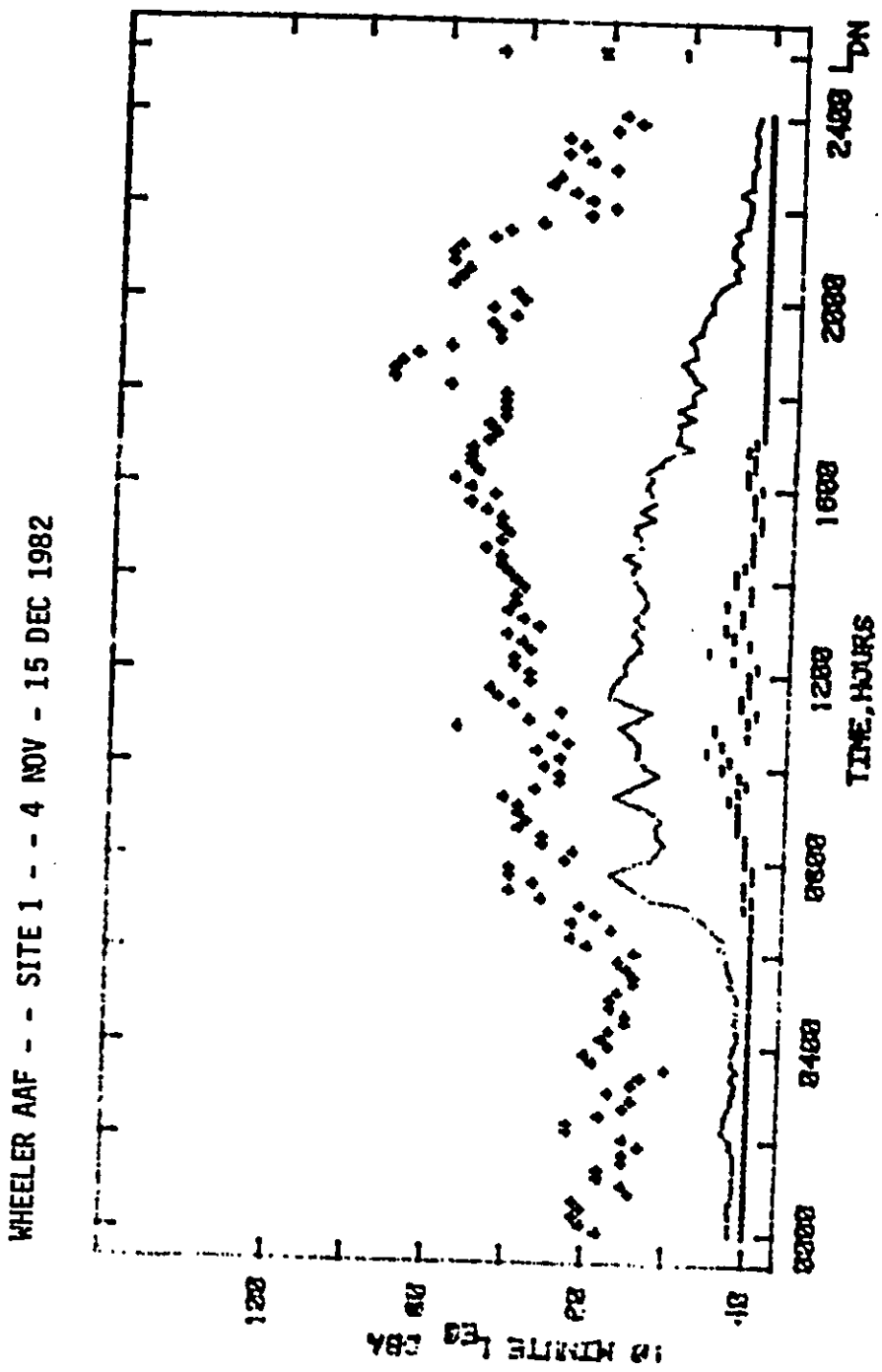


FIGURE E-1. MEAN, MINIMUM AND MAXIMUM 10 MINUTE LEQ's AT SITE 1.

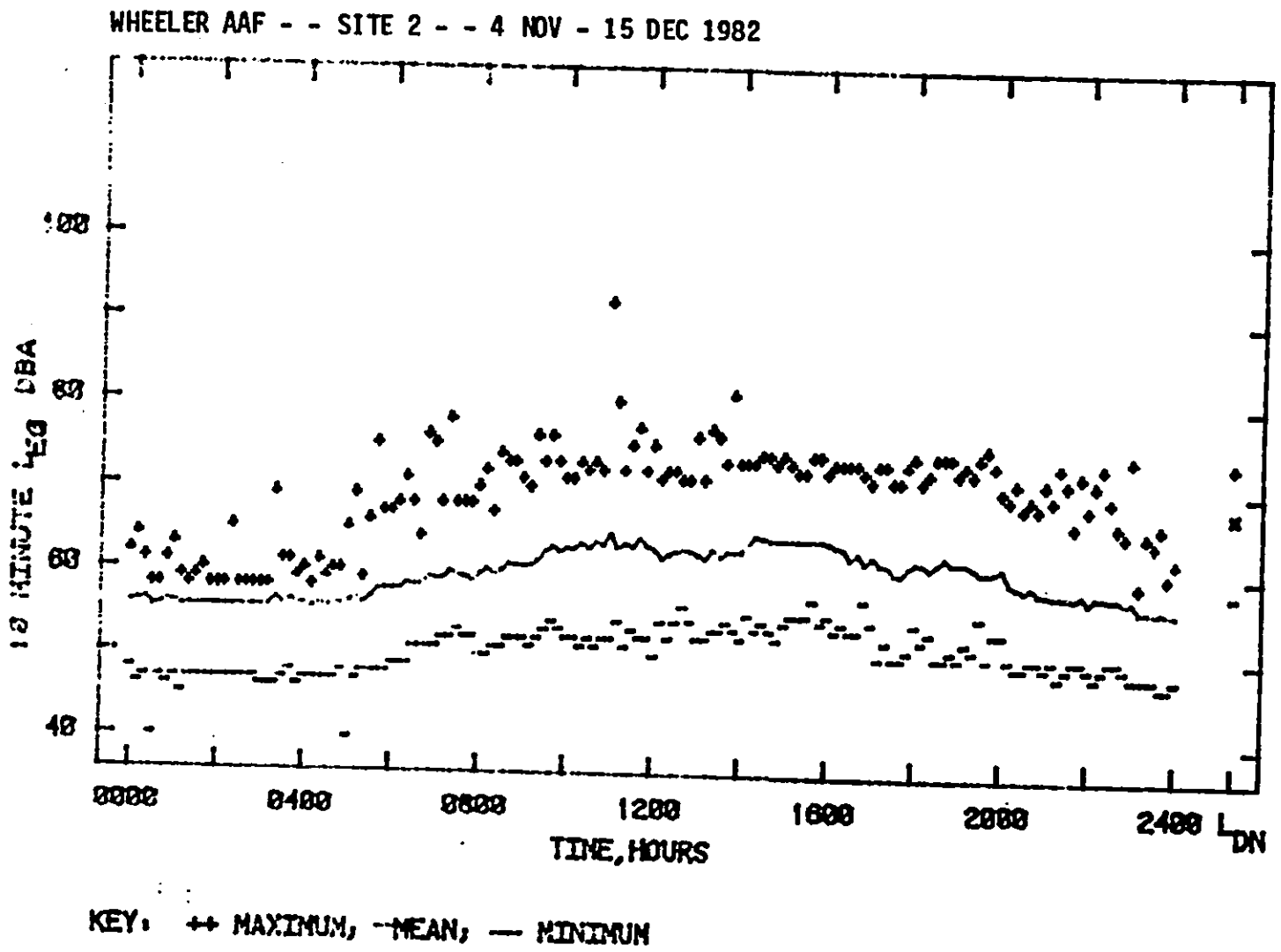
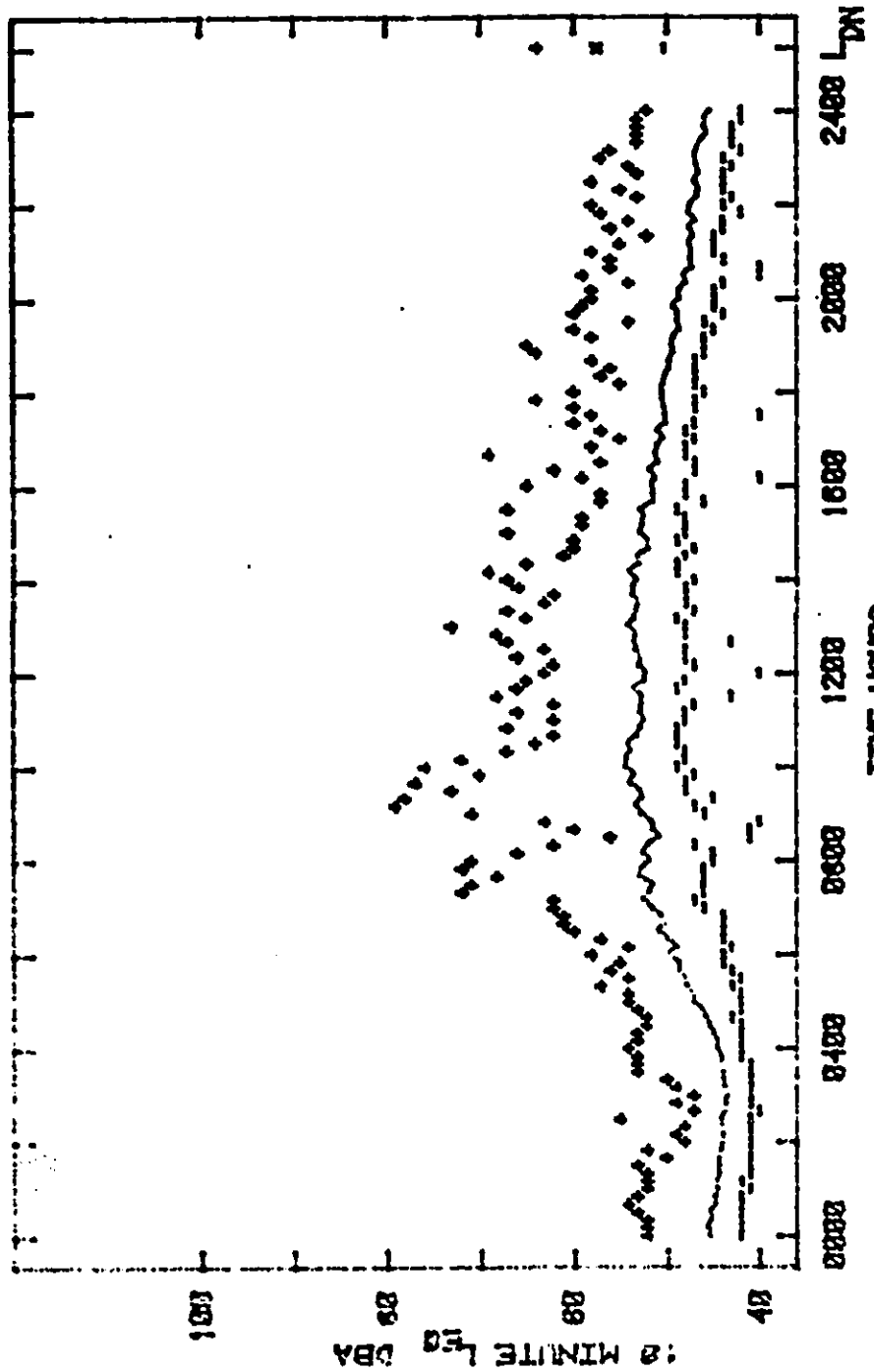


FIGURE E-2. MEAN, MINIMUM AND MAXIMUM 10 MINUTE LEQ's AT SITE 2.



KEY: ++ MAXIMUM, —MEAN, — MINIMUM

FIGURE E-3. MEAN, MINIMUM AND MAXIMUM 10 MINUTE LEQ's AT SITE 3.

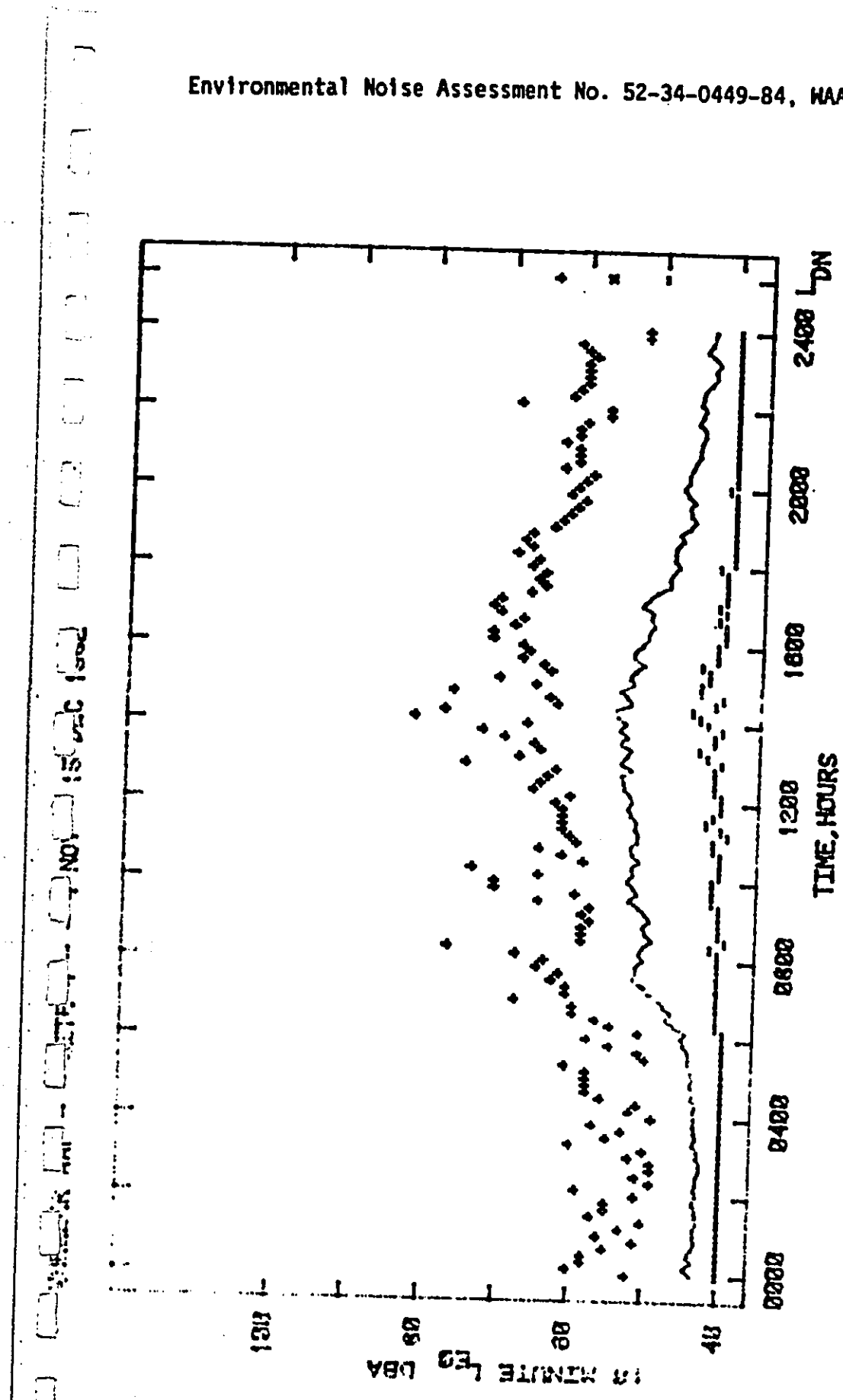


FIGURE E-4. MEAN, MINIMUM AND MAXIMUM 10 MINUTE LEQ's AT SITE 4.

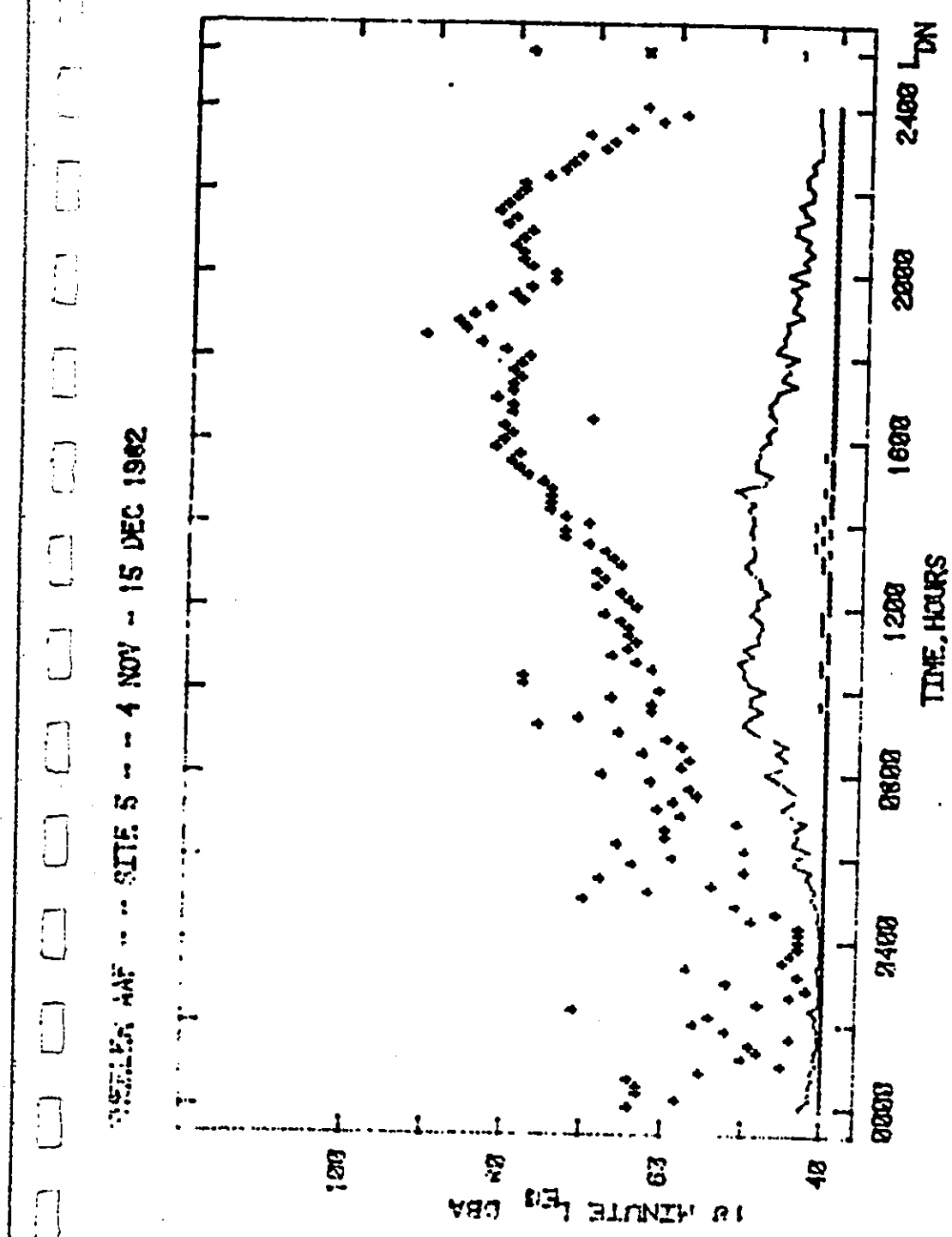


FIGURE E-5. MEAN, MINIMUM AND MAXIMUM 10 MINUTE LEQ's AT SITE 5.

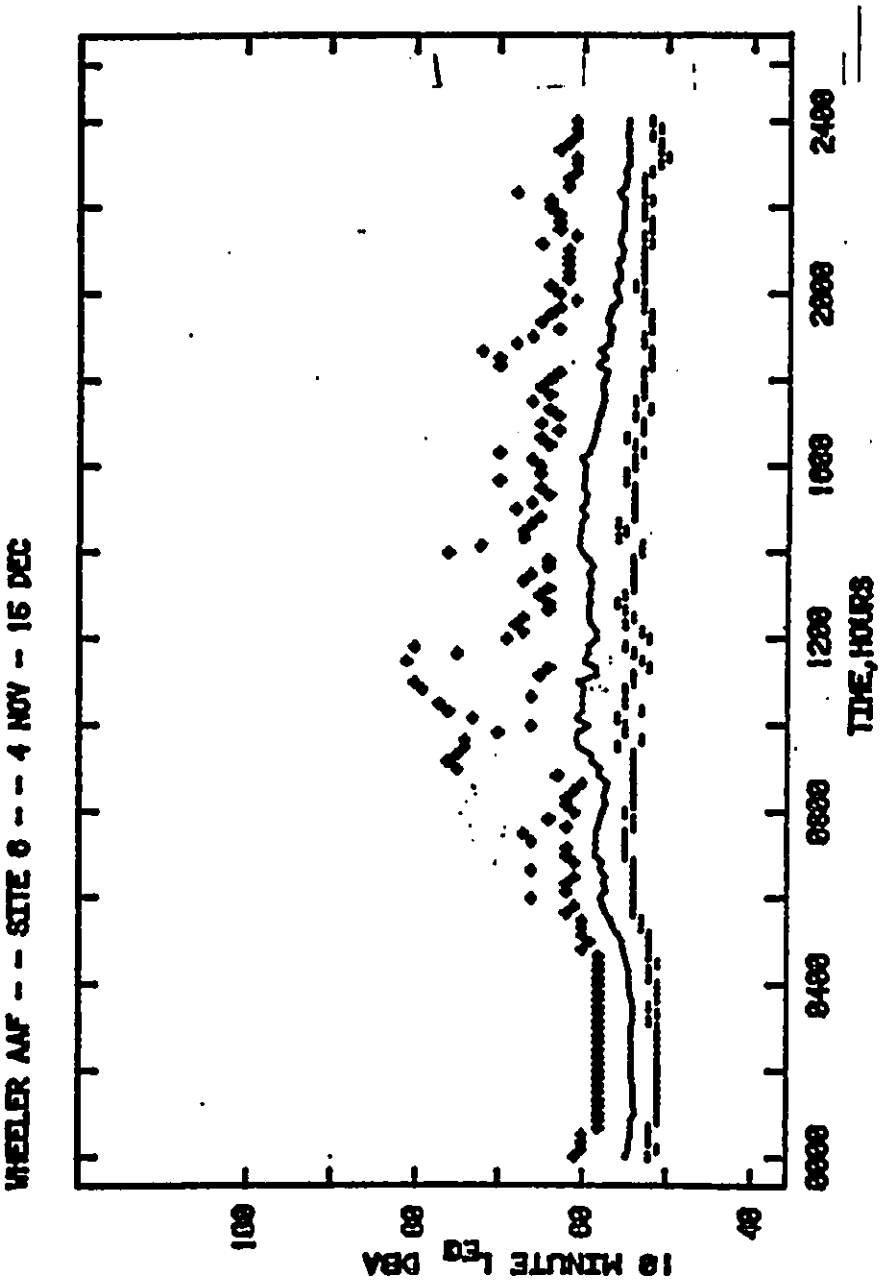


FIGURE E-6. MEAN, MINIMUM AND MAXIMUM 10 MINUTE LEQ's AT SITE 6.

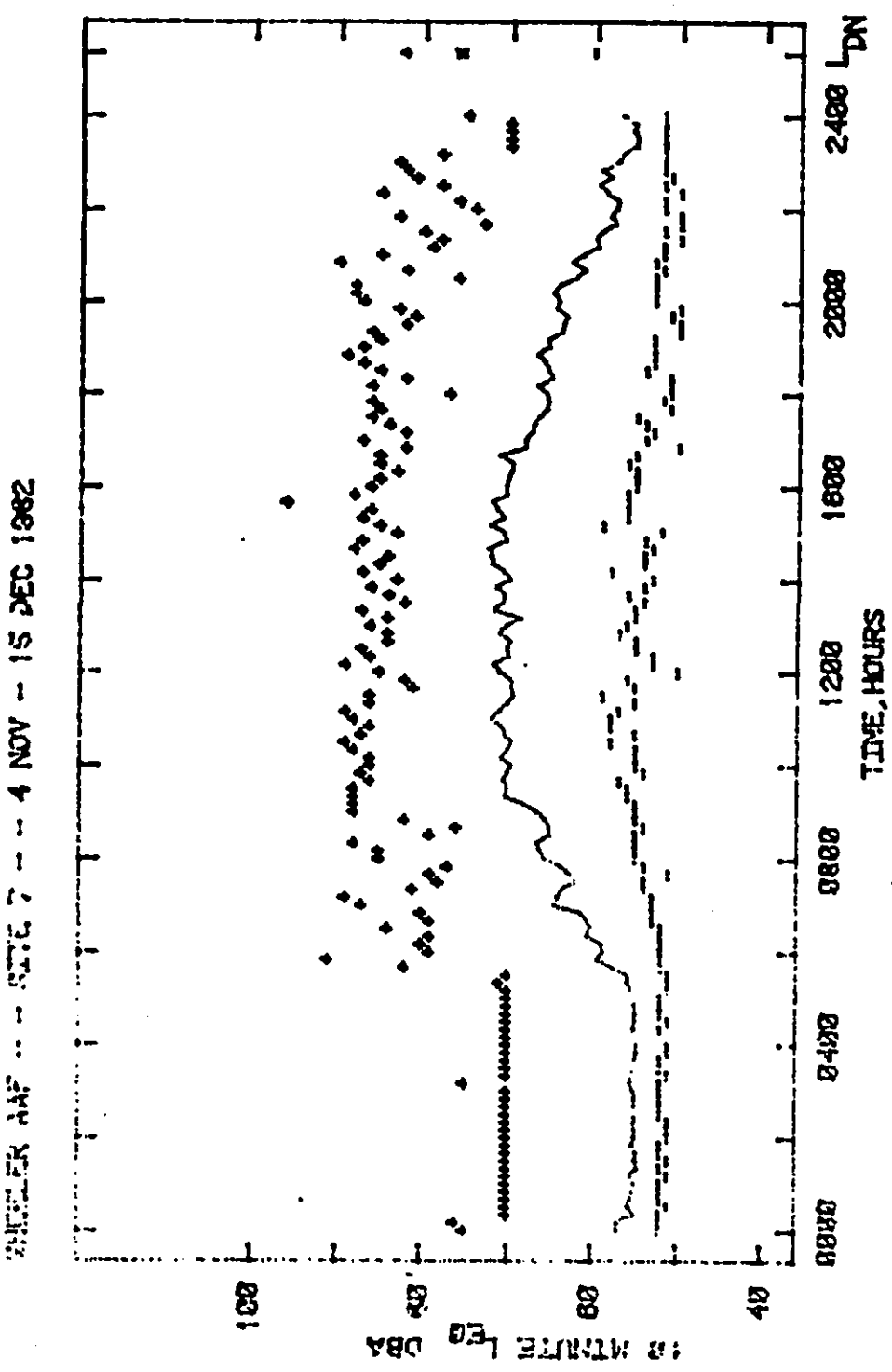


FIGURE E-7. MEAN, MINIMUM AND MAXIMUM 10 MINUTE LEQ's AT SITE 7.

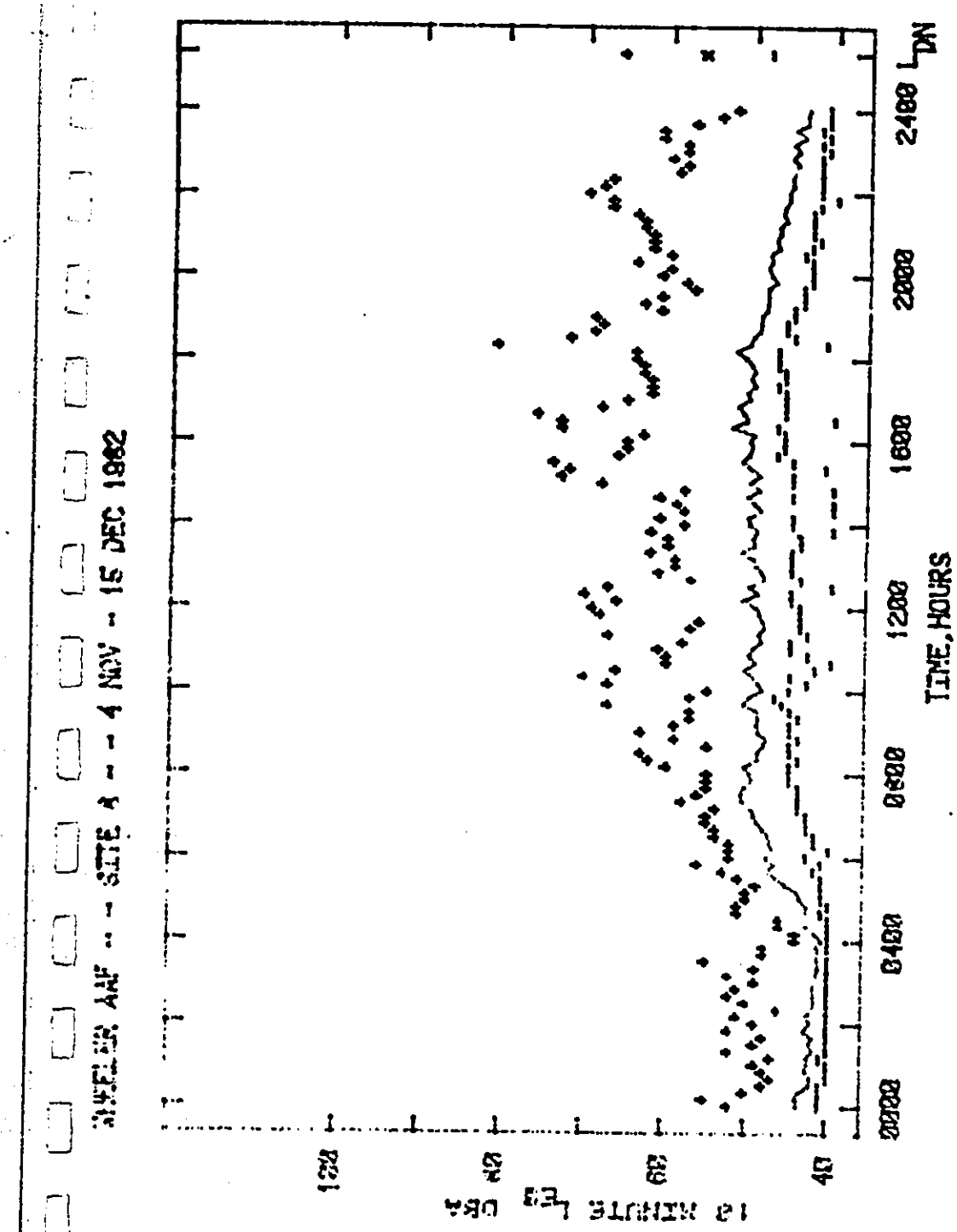


FIGURE E-8. MEAN, MINIMUM AND MAXIMUM 10 MINUTE LEQ's AT SITE 8.

APPENDIX G

CONSULTATION COMMENTS AND RESPONSES

BUILDING DEPARTMENT

CITY AND COUNTY OF HONOLULU

HONOLULU MUNICIPAL BUILDING
650 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. FASI
MAYOR

MAY - [illegible]
Date Received
File:
To: DB
Attn: HERBERT K. MURAOKA
DIRECTOR
1151-1
PB 85-397

May 6, 1985

Mr. Brian L. Gray
Gray, Hong & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Gray:

Subject: Environmental Impact Statement
Preparation Notice
Melemanu Woodlands, Phase III
Waipio, Ewa, Oahu

We have reviewed the Environmental Impact Statement Preparation Notice for Phase III of the Melemanu Woodlands project and have no comments.

Thank you for the opportunity to review the preparation notice.

Very truly yours,

Herbert K. Muraoka

HERBERT K. MURAOKA
Director and Building Superintendent

cc: J. Harada

XII A-1

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

June 26, 1985

Mr. Herbert K. Muraoka
Director and Building Superintendent
Building Department
City and County of Honolulu
650 South King Street
Honolulu, HI 96813

SUBJECT: Melemanu Woodlands Phase III
Environmental Impact Statement
Consultation Comments

Dear Mr. Muraoka:

We thank you for your consultation comments dated May 6, 1985. Your letter will be made a part of the Environmental Impact Statement records.

Should you have any questions regarding this matter please contact our office.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

XII B-1

FIRE DEPARTMENT

CITY AND COUNTY OF HONOLULU

1455 S. BERETANIA STREET, ROOM 305
HONOLULU, HAWAII 96814

File: 1151-GAS
To: DB
Action:

FRANK F. FASI
MAYOR

FRANK K. KAHOOHANOHANO
FIRE CHIEF

LIONEL E. CAMARA
DEPUTY FIRE CHIEF

May 9, 1985

Mr. Brian L. Gray, PE
Gray, Hong & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Gray:

SUBJECT: Request for Consultation Comments
Draft Environmental Impact Statement
Melemanu Woodlands, Phase III
Waipio, Ewa, Oahu

With reference to your letter of April 30, 1985, we have reviewed the information submitted for the above proposed project and submit the following comments for your consideration:

1. Fire protection services are available from the Mililani Fire Station with supportive services available from the Wahiawa Fire Station. Average response time to the proposed site is approximately 6-8 minutes or above the desired response time of 3-5 minutes from the nearest fire station.

   As such, we recommend that non-combustible materials be considered for the interior construction and roofs for all proposed stack flats and townhouses.

2. Detailed plans shall be submitted to our department for review of the access roadways for fire apparatus and to ensure compliance with other provisions of our Fire Code, the Building Code requirements for fire protection, and the Board of Water Supply requirements for fire flow and hydrant installation.

Should additional information be required, please contact Captain John P. Souza of our Fire Prevention Bureau at 523-4186.

Very truly yours,

FRANK K. KAHOOHANOHANO
Fire Chief

XII A-2

FKK:lm
cc: Fire Prevention Bureau

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

June 26, 1985

Mr. Frank K. Kahoohanohano
Fire Chief
Fire Department
City and County of Honolulu
1455 South Beretania Street, Room 305
Honolulu, Hawaii 96814

SUBJECT: Melemanu Woodlands Phase III
Environmental Impact Statement
Consultation Comments

Dear Mr. Kahoohanohano:

We thank you for your consultation comments dated May 9, 1985. Your identification of response times will be incorporated into the environmental impact statement. Your recommendation regarding use of non-combustible materials will also be referenced.

Detailed construction plans will be prepared for review by the Fire Department and the Board of Water Supply. These plans will be circulated through your Department as well as the Board of Water Supply to allow review with applicable codes and regulations. These plans will be prepared after Plan Development Housing is obtained. The detailed construction plans will be designed based on the criteria in the City's Uniform Building Code as well as Board of Water Supply standards.

Should you have any questions regarding this matter, please contact our office. Your consultation comments as well as our response will be incorporated into the Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

119 MERCHANT STREET, SUITE 607 HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

XII B-2

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

FRANK F. FASI
MAYOR

TOM T. NEKOTA
DIRECTOR

Date Received MAY 24 1985
File:
DB
Action:

May 20, 1985

Mr. Brian L. Gray
Gray, Hong & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Gray:

Subject: Recreational Assessment
Melemanu Woodlands, Phase III - Waipio
TMK: 9-5-02:4, 6 and portion of 11

We have made a recreational assessment of the proposed Melemanu Woodlands, Phase III project and make the following comments and recommendations.

We have determined that the proposed development plan for the Melemanu Woodlands project is generally acceptable. The establishment of the proposed 5.6 acre private park and recreation areas throughout the condominium and townhouse complexes will provide the residents the essential areas for recreational use.

The narrow configuration of the Melemanu project area and the types of units proposed to be built makes it important that adequate recreational amenities be provided in the recreation areas. The amenities should be designed to serve a wide range of age groups. The location of the recreation areas should be functionally located and easily accessible to the residents of each residential complex.

Since the project is required to comply with the Park Dedication Ordinance No. 4621, we recommend that early contact be made with our Department to discuss the project's recreational needs and park dedication requirements.

Should you have any questions, please call Mr. Jason Yuen of our Advance Planning Section at 527-6315.

Sincerely yours,

Tom Nekota

TOM T. NEKOTA, Director

XII A-3

TTN:la

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

June 26, 1985

Mr. Tom T. Nekota, Director
Department of Parks and Recreation
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

SUBJECT: Melemanu Woodlands Phase III
Environmental Impact Statement
Consultation Comments

Dear Mr. Nekota:

Thank you for your consultation comments dated May 20, 1985. The project requires processing of an Environmental Impact Statement, Change of Zone Application and Plan Development Housing Application. Specific park plans will be developed prior to preparation of the Plan Development Housing application. Preliminary park plans will be developed and discussed with your staff at this point.

For the purpose of the Environmental Impact Statement and Change of Zone application, we have specifically identified the area allotment for park usage, specifically 5.6 acres. A wide range of park uses will be available for use within this area dimensions exceeding 250 ft. Passive recreational facilities such as barbeque areas, picnic benches, as well as active recreational areas consisting of soccer fields, tennis courts and recreation center are all potential park facilities.

Your consultation comments, as well as this response, will be incorporated into the Environmental Impact Statement. If you have any questions regarding this matter, please contact our office.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

XII B-3

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96843

Date Received MAY 21 1985

File:
To: DB
Action:

May 16, 1985

Mr. Brian L. Gray
Gray, Hong & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Gray:

Subject: Your Letter of April 30, 1985 on the Draft Environmental Impact Statement (Consultation) for Melemanu Woodlands, Phase III, TMK: 9-5-02:4, 6, Por. 11

Thank you for allowing us to review and comment on the environmental document for the proposed development. We offer the following comments:

1. The water master plan for the combined Melemanu Woodlands, Phase III, and the Mililani High-Tech Park should be submitted for our review and approval.

2. The source of water will be either from the well at our Wahiawa Corporation Yard or an alternative well site in Wahiawa. The Board will be submitting an application for a preserved use to the State Board of Land and Natural Resources within the next two months.

If you have any questions, please contact Lawrence Whang at 527-6138.

Very truly yours,

KAZU HAYASHIDA
Manager and Chief Engineer

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. SILLS, PE
MICHAEL H. MOJIMA, PE
ROY T. AOKI, PE

June 26, 1985

Mr. Kazu Hayashida
Manager and Chief Engineer
Board of Water Supply
630 South Beretania Street
Honolulu, Hawaii 96843

SUBJECT: Melemanu Woodlands Phase III
Environmental Impact Statement
Statement Comments

Dear Mr. Hayashida:

We thank you for your consultation comments dated May 16, 1985. The Water Master Plan for Melemanu Woodlands Phase III and Mililani High-Tech Park have been submitted to your office. The Master Plan will become a part of the Environmental Impact Statement.

The Environmental Impact Statement will identify the source of water for the project as described in your May 16 letter.

Should you have any questions regarding this matter please contact our office. Your consultation comments, as well as our response, will become a part of the Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

POLICE DEPARTMENT

CITY AND COUNTY OF HONOLULU

1455 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96814 • AREA CODE (808) 943-3111

FRANK F. FASI
MAYOR

DOUGLAS G. GIBB
CHIEF

BARREN FERREIRA
DEPUTY CHIEF

OUR REFERENCE EC-JS

MAY 16 1985
Date Received
File: 1151-E1
To: DB
Action:

May 14, 1985

Gray, Hong and Associates, Inc.
Consulting Engineers
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Gentlemen:

Subject: Request for Consultation Comments
Draft Environmental Impact Statement
Melemanu Woodlands, Phase III
Waipio, Ewa, Oahu

The Honolulu Police Department is not in favor of residential development that has the potential of adding significantly increased vehicular traffic to the present roads connecting Central Oahu to Honolulu proper. We believe that significant increases of traffic will negatively impact traffic safety if development is encouraged prior to an increase in road capacity and improved mass transportation between the development area and Honolulu.

The present thoroughfare leading into Honolulu from Central Oahu (H-1), does not appear to be capable of handling significant increases of traffic from both Central Oahu and Ewa.

It would be desirable if a determination could be made of the total traffic impact on the existing and planned arteries serving Honolulu from the Central Oahu and Ewa areas. This determination, based on all planned and proposed developments, would greatly assist in determining the traffic safety impact of the individual developments.

While a development as large as Melemanu Woodlands III would result in increased calls for police service, and would add an extensive patrol area, our department is prepared to provide police services for the area, assuming that necessary resources are made available to us.

Sincerely,

DOUGLAS G. GIBB
Chief of Police

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

June 26, 1985

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. MOJIMA, PE
ROY T. AOKI, PE

Mr. Douglas G. Gibb
Chief of Police
Police Department
City and County of Honolulu
1455 South Beretania Street
Honolulu, HI 96814

SUBJECT: Melemanu Woodlands Phase III
Environmental Impact Statement
Consultation Comments

Dear Mr. Gibb:

We thank you for your consultation comments dated May 14, 1985. We have consulted with the Department of Land Utilization, the approving agency, for guidance regarding your request for a determination of the effect of growth on central Oahu and ewa areas on the H-1 corridor serving Honolulu. The EIS will generally state the impacts of cumulative growth on Oahu as relating to the H-1 corridor; however, detailed analysis will not be provided as a part of the Environmental Impact Statement. The traffic section of the Environmental Impact Statement will specifically analyze a project in the vicinity of Leilehua Golf Course Road, H-2 Freeway Interchange and Kamehameha Highway in Central Oahu.

The studies you request regarding the total traffic impact on H-1 corridor and Honolulu have been or are being completed. The Hali 2000 Study Alternatives Analysis by Oahu Metropolitan Planning Organization and Environmental Impact Statement on Honolulu Area Rail Trapid Transit Project are two such studies that will be referenced and discussed in this EIS. All studies indicate that the Honolulu corridor in question will need improvements.

Melemanu Woodlands Phase III has access to Leilehua Golf Course Road via Wikao Street. This is the same road that provides access to Waikalani Woodlands Phase II. This area is presently patrolled. The main road to Melemanu Woodlands Phase III is approximately one mile long and would require patrol service. Property taxes would generate funds to make additional resources available to your Department.

Your consultation comments, as well as our response, will be incorporated into the environmental impact statement. Should you have any questions regarding this matter, please contact our office.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

BLG:lt
cc: Towne Realty, Inc.
1151-1

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

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

FRANK F. FASI
MAYOR

RUSSELL L. SMITH, JR.
DIRECTOR AND CHIEF ENGINEER

ENV 85-108

May 13, 1985

Mr. Brian L. Gray
Gray, Hong & Associates, Inc.
Consulting Engineers
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Gray:

In response to your request for comments on the proposed Melemanu Woodlands, Phase III residential development, we submit the following information.

1. The realignment of Waikakalaua Stream channel may require a Section 404 Permit if the discharge of fill material is contemplated. We understand that the U.S. Army Corps of Engineers will be consulted.

2. The use of a detention basin to store all increased flows has been proposed. Will the developer(s) be responsible for the operation and maintenance of the proposed basin?

3. We will not comment on the proposed drainage plan until it has been received and reviewed. Hence, a complete drainage study should be submitted to the Division of Engineering Drainage Section as soon as possible.

4. The existing sewer system is adequate to serve the proposed 1,102 units from the proposed development.

Very truly yours,

RUSSELL L. SMITH, JR.
Director and Chief Engineer

cc: Department of Land Utilization
Division of Engineering
Division of Wastewater Management

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

June 26, 1985

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

Mr. Russell L. Smith, Jr.
Director and Chief Engineer
Department of Public Works
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

SUBJECT: Melemanu Woodlands Phase III
Environmental Impact Statement
Consultation Comments

Dear Mr. Smith:

We thank you for your consultation comments dated May 13, 1985. With respect to your letter, we are forwarding the following information:

1. Realignment work within Waikakalaua Stream will require a Department of the Army permit as administered by the Corps of Engineers. A copy of the Environmental Impact Statement Preparation Notice has been forwarded to the Corps of Engineers.

2. Operation and maintenance of the proposed detention basin will be by the Homeowner's Association.

3. A preliminary Drainage Report is being prepared and will be submitted to your office for review. The Drainage Report will also be included in the Environmental Impact Statement. The status of the Drainage Report will also be identified in the Environmental Impact Statement.

4. The existing sewer system will be identified as being adequate in the Environmental Impact Statement.

Should you have any questions please contact our office. Your consultation comments, as well as our response, will be incorporated into the Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt
enc.
cc: Towne Realty, Inc.
1151-1

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 TELEPHONE (808) 521-0306

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU
HONOLULU MUNICIPAL BUILDING
650 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. FASI
MAYOR

JOHN E. HIRTEN
DIRECTOR

Date Received MAY - 7 1985

To: DB

Attn: 1151-1 EIS

TE4/85-1867
PL 3008-85

May 6, 1985

Mr. Brian L. Gray
Gray, Hong & Associates, Inc.
Suite 607
119 Merchant Street
Honolulu, Hawaii 96813

Dear Mr. Gray:

Subject: Request for Consultation Comments
Draft Environmental Impact Statement
Melemanu Woodlands, Phase III

This is in response to your request of April 30, 1985 regarding consultation comments for your Draft Environmental Impact Statement.

Since the original traffic study was done in 1972, we have an opportunity in 1985 to conduct an "after" study. The study should collect and utilize data to validate traffic generation factors and projections used in the previous study.

In addition, the adequacy of existing intersections should be evaluated.

If there are any questions, please contact Kenneth Hirata of our staff at 527-5009.

Sincerely,

JOHN E. HIRTEN

XII A-7

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

June 26, 1985

Mr. John E. Hirten, Director
Department of Transportation Services
City and County of Honolulu
650 South King Street
Honolulu, HI 96813

SUBJECT: Melemanu Woodlands Phase III
Environmental Impact Statement
Consultation Comments

Dear Mr. Hirten:

We thank you for your consultation comments dated May 6, 1985. The original traffic study done for Phases I, II and III within Waikakalaua Gulch projected peak hourly volumes. Peak hourly volumes were subsequently distributed to the various intersections affected by the project. Since that time, Waikalani Drive has been barricaded and accommodates traffic from Waikalani Woodlands Phase I. The only access to and from Waikakalaua Gulch available to Phase III is Wikao Street.

The Environmental Impact Statement will address traffic generated from Waikalani Woodlands Phase II as well as Melemanu Woodlands Phase III and how it impacts Leilehua Golf Course Road, H-2 Freeway and Kamehameha Highway. Traffic will be analyzed assuming there is no substantial growth in the immediate area. In addition, the effects of Mililani High-Tech Park will also be discussed.

Your consultation comments, as well as this response, will be incorporated into the Environmental Impact Statement. Should you have any questions regarding this matter, please contact our office.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

119 MERCHANT STREET SUITE 607, HONOLULU, HAWAII 96813 TELEPHONE (808) 521-0306

XII B-7

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
HONOLULU, HAWAII 96813
PHONE 523-4191

FRANK F. FASI
MAYOR

ALVIN K. H. PANG
DIRECTOR

MAY 14 1985
Date Received
File: 1151-05
To: DB
Action:

May 13, 1985

Mr. Brian L. Gray, PE
Gray, Hong and Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Gray:

Subject: Draft Environmental Impact Statement
Melemanu Woodlands, Phase III
Tax Map Key: 9-5-02: 4, 6 and 11 (Portion)
Area: 70± Acres
Request: Rezoning request from Agricultural Use to Residential Use on Zoning Map #10.
Proposal: Construct 1,100 housing units under the Planned Development concept.

The proposed development of residential units in the Agricultural District of Zoning Map #10 has been reviewed by the Department of Housing and Community Development.

The Department is mandated to provide housing units for the low- and moderate-income families on Oahu. We are glad to note that the application has made a commitment to provide 15 percent of the project's housing to low- and moderate-income families. Also, the City Council report reflects the understanding that the 15 percent would be provided for low- and moderate-income households and the remainder would be provided for gap group households.

Additionally, we request that the applicant specify:

- The location of the units; and
- The type of units (1-bedroom, 2-bedroom, etc.) to be provided.

We appreciate the opportunity to comment on the proposed development.

Sincerely,

for ALVIN K. H. PANG

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

June 26, 1985

Mr. Alvin K. H. Pang, Director
Department of Housing and Community Development
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

SUBJECT: Melemanu Woodlands Phase III
Environmental Impact Statement
Consultation Comments

Dear Mr. Pang:

Thank you for your consultation comments dated May 13, 1985. The Environmental Impact Statement for the subject project will identify the applicant's commitment to low and moderate income housing as presented in the 1983-1984 annual review to the Central Oahu Development Plan. However, the type and location of units which will be used to fulfill this commitment have not been identified. The project consists of townhomes, two-story stacked flats and six-story highrise condominiums. There are also seven areas identified for incremental growth. It is a reasonable assumption that units developed for low and moderate income families will consist of a proportionate mix of the type of units that the project will develop.

Unit design is only in a conceptual stage. As typical designs for the units are developed it will be much easier to identify types and locations of units which will be utilized to fulfill the lower to moderate income housing requirements. Your office will be consulted throughout the development period, which consists of this Environmental Impact Statement, the Change of Zone application and the Planned Development Housing process.

Should you have any questions please contact our office. Your consultatation comments, as well as our response, will be incorporated into the Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

CITY COUNCIL
CITY AND COUNTY OF HONOLULU
HONOLULU, HAWAII 96813 / TELEPHONE 523-4000

MARILYN BORNHORST
COUNCILMEMBER

May 24, 1985

Date Received JUN 4 1985
File:
Cc: DC
Action:

Mr. David Bills
Gray, Hong and Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Re: Request for Consultation Comments
Draft EIS, Melemanu Woodlands, Phase III

Dear Mr. Bills:

Following are comments and questions based on the EIS Preparation Notice prepared by the Department of Land Utilization (4/22/85) and forwarded to the City Council in Misc. Com. No. 791.

1. (Page 1, last paragraph). What section of ordinance allows the proposed commercial space in an R-6 district?

2. (Page 2, Section A.1., 2nd paragraph). The EIS should show where the cut and fills will be, given the percent slope being cut into, and describe how the cuts will be faced to prevent erosion and to restore natural beauty.

3. (Page 2, last paragraph). What is meant by the word "enhance"? Horseshoe-shaped bends in streams provide a recreational resource. Is not the intent to acquire more land for development by eliminating the natural setting?

4. (Last paragraphs on pages 2 and 3). How will the grading and drainage plans conform to and implement Ordinance 84-54, Section 4.2., paragraphs 2 and 3? It states, "The City's ... streams shall be considered as major scenic, open space and recreational resources. Adequate public access to these resources shall be incorporated as part of developments adjacent to them. Existing natural stream beds and drainage ways shall be retained wherever possible." (emphasis added)

5. (Page 3, last paragraph, and Page 9, Section II.B.).

   . Would it not be better for the detention basin, which "will have the appearance of an empty earthen dam except during rainfall periods", to be designed to hold a minimum amount of water when it is not raining, so that a small lake environment could develop in the detention basin? Such a small lake/large pond would greatly enhance recreation and natural wildlife systems.

   . The drainage system appears to be designed for the peak for 50-year floods. However, we also have much larger peaks occasionally called 100-year storms. Should not the drainage system in such a deep gulch with such a large drainage area be designed for the 100-year storm peak?

   . The purpose of the drainage basin is only to make up for the increased discharge due to the nonabsorbing areas of the development itself. Since the entire gulch and below it is a flood hazard area, is it not appropriate to require this new large development to design the retention basin to retain much more volumn than the increase due to the development itself?

6. (Page 7, Section C.1.). The sentence, "All development is proposed ... where the slope does not exceed 25 percent." seems to indicate that development will take place in areas with slopes up to 25%. As a general rule, the City does not allow development in areas greater than 20%. There have been serious slides in areas with cut and fill as proposed in this development, especially when there is clay soil which is common to river beds. How does this development insure there will not be slides on steep slopes that are cut?

7. (Page 8, Section II, first sentence). The EIS should be very careful not to state or imply that the site is "vacant" as stated here. The site is covered with a lush natural forest and stream bed environment with a great deal of existing life.

8. (Page 9, Section II.D.). The EIS should include a count of trees over six inches in diameter that will be removed, and describe the general characteristics of the environment in areas that will be completely changed by the development.

9. (Exhibit 4). This map seems to show the detention basin site far from the proposed stream alignment. The EIS should explain why this is the best site and how it will provide its function when so far from the natural flow.

Sincerely,

MARILYN BORNHORST
Councilmember

mma

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

June 26, 1985

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. MOJIMA, PE
ROY T. AOKI, PE

Ms. Marilyn Bornhorst
Councilmember
City Council
City and County of Honolulu
Honolulu, Hawaii 96813

SUBJECT: Melemanu Woodlands Phase III
Environmental Impact Statement
Consultation Comments

Dear Ms. Bornhorst:

Thank you for your consultation comments dated May 24, 1985. We are providing the following information in response to the comments you have made:

1. As identified in the Environmental Impact Statement Preparation Notice, a change of zone will be sought for the subject project. In addition, an application for Planned Development Housing will also be sought. The Comprehensive Zoning Code, Article 10, Plan Development, Section 21-10.11.(a)(6) allows convenience establishments as a part of Planned Development Housing Districts. The commerical areas shown on the site plan contained in the Environmental Impact Preparation Notice is intended to comply with this section of the Comprehensive Zoning Code.

2. The Environmental Impact Statement will identify, through narration as well as exhibits, the areas where cut slopes will be required. Fill material will generally be placed within the sections of Waikakalaua Stream which have been abandoned after the stream is realigned. The cut and fill slopes will contain benches every 25 ft. of vertical height to control runoff and erosion. In addition, the areas of the project subject to earthwork will be revegetated as soon after construction as possible. Typically, slopes will be grassed.

3. During the 1983/84 annual review of the Central Oahu Development Plan, 70± acres were designated urban mauka of H-2 freeway for the purpose of developing Melemanu Woodlands Phase III. Horseshoe shaped bends in Waikakalaua Stream do not provide more or less land for development within these 70± urban boundary designation. Realignment of Waikakalaua Stream where these horseshoe bends occur enhances development in that development costs can be reduced. Realignment of these sections of Waikakalaua Stream will not eliminate any recreational value of Waikakalaua Stream.

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

4. Ordinance 84-54, Development Plan Common Provisions, outlines general principles to be utilized in urban design. The open space section of this ordinance generally states that streams shall be considered as major scenic resources and also states that existing natural streams and drainage ways shall be retained whenever possible. This section further goes on to state that channelization, when it must occur, shall be harmonious with the existing setting.

Ordinance 83-7, Development Plan Special Provisions for Central Oahu, identifies the areas within Central Oahu where open space considerations should be given higher priority. The areas identified are: the slopes of the Koolau and Waianae Mountain Range, Kipapa Gulch, Waipio Peninsula, and the Wahiawa Reservoir. Waikakalaula Gulch is not specifically identified in Ordinance 83-7. Finally, Ordinance 83-7 indicates some priority towards development with residential apartment uses within Waikakalaua Gulch.

It is our further understanding that the general principles outlined above are to be implemented by appropriate Ordinances, standards and regulations of the City and County of Honolulu. For that reason, the project is being designed to comply with the applicable rules and regulations as exist for the City and County. These include the Grading Ordinance as well as the Drainage Standards for the Department of Public Works.

Mass grading for Melemanu Woodlands Phase III will be kept to a minimum for both aesthetic and cost reasons. With respect to stream realignment, a good portion of Waikakalaua Stream will remain in its natural condition.

5. The reason for establishing this detention basin on the project site is to ensure the peak discharge in Waikakalaua Stream does not exceed predevelopment conditions. In addition, and as suggested by the Water Resources Research Center, a detention basin will provide for a small amount of ponding to enhance ground water recharge. Creation of a small lake has not been considered. The reason for not considering a lake is that a majority of storage takes place on the neighboring property. An easement will be created for ponding, however, access will be a problem. In addition, the maximum height of ponding or storage will be to the 750 ft. elevation. The plateau above is at the 825 ft. elevation. Notwithstanding the physical constraints of the site for the detention basin, there is also the question of maintenance and liability should a lake be created.

The drainage system for Melemanu Woodlands Phase III will be designed for a peak discharge based on the Department of Public Works Storm Drainage standards. This basis is a 50-year design storm. However, it should be noted that a 50-year peak discharge as predicted by the City standards and is conservative. Fore example, the U. S. Geological Survey document entitled "Water - Resources Investigations 80-84" indicates the 100-year peak discharge for Waikakalaua Stream below the project site is 7,140 cfs.

Melemanu Woodlands Phase III detention basin facilities are being provided to ensure the 50-year peak discharge of Waikakalaua Stream are not increased by development. As indicated in the Preparation Notice, the adjacent Mililani High-Tech Park will also be utilizing the same detention basin. Both projects will also share in the cost for development of the detention basin. Therefore, the project is designing detention facilities for more than just its development.

6. The Environmental Impact Statement Preparation Notice indicated that all development be in the lower portion of Waikakalaua Gulch where the slope does not exceed 25%. Very little if any development will be within the area between 20 and 25% slope. However, all engineered slopes will be constructed in accordance with the soils engineers recommendations. To develop the soils engineering recommendations, borings will be taken at numerous locations on site. An analysis of these borings will determine the appropriate criteria for protection against slope failure.

7. The Environmental Impact Statement will include various reports. Among these reports will be an archaeological reconnaissance and a report on flora within the valley. The Environmental Impact Statement will also describe the existing valley. The site is vacant with respect to development.

8. The EIS will include a discussion on flora within Waikakalaua Gulch. No specific count of the trees over 6" is intended to be included in the EIS. However, it will be the stated intent to retain trees of value. A complete topographic survey of Waikakalaua Gulch will be prepared at a future date prior to detailed plan preparation. Trees which can be saved will be incorporated into the landscape plan.

9. The detention basin is located within a natural gulch. The basis for its location as well as typical sections will be shown in the Environmental Impact Statement and this should clarify its location.

Should you have any questions please contat our office. Your consultation comments, as well as our response, will be incorporated into the Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

Dave B. Bis
for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

GEORGE R. ARIYOSHI
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF EDUCATION
P. O. BOX 2360
HONOLULU, HAWAII 96804

OFFICE OF THE SUPERINTENDENT

FRANCIS M. HATANAKA
SUPERINTENDENT

JUN 19 1985
Date Received
File:
To: DB
Action

June 13, 1985

Mr. Brian L. Gray
Gray, Hong & Associates, Inc.
119 Merchant St., Suite 607
Honolulu, Hawaii 96813

Dear Mr. Gray:

SUBJECT: Draft EIS for Melemanu Phase III

Our review of the subject development indicates that the following student enrollment can be projected:

SCHOOL	GRADE	APPROXIMATE ENROLLMENT
Wheeler Elementary	K-6	140 - 180
Wheeler Intermediate	7-8	20 - 50
Mililani High	9-12	40 - 80

All of the above listed schools are operating at capacity. Additional classrooms will have to be provided to accommodate the projected enrollment increase.

Your assistance is requested in keeping us informed of your development schedule so classrooms can be provided in a timely manner. Should there be any questions, please contact Mr. Howard Lau at 737-4743.

Sincerely,

Francis M. Hatanaka
Superintendent

FMH:jl

cc: V. Honda, OBS
G. Kuwada, Cent. Dist.

AN EQUAL OPPORTUNITY EMPLOYER
XII A-10

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. ADKI, PE

June 26, 1985

Mr. Francis M. Hatanaka
Superintendent
Department of Education
State of Hawaii
P. O. Box 2360
Honolulu, HI 96804

SUBJECT: Melemanu Woodlands Phase III
Environmental Impact Statement
Consultation Comments

Dear Mr. Hatanaka:

Thank you for your consultation comments dated June 13, 1985. Your identification of the schools in the area will be included in the Environmental Impact Statement. The EIS will contain projected development schedule and identify that the project will be constructed over a five to seven year period. Further, the EIS will identify that changes to development schedule will be provided to all appropriate agencies as the development schedule is amended.

Should you have any questions please contact our office. Your consultation comments, as well as our response, will be incorporated into the Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306
XII B-10

GEORGE R. ARIYOSHI
GOVERNOR

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

MAY 30 1985
File: //
To: DB
Action:

WAYNE J. YAMASAKI
DIRECTOR

DEPUTY DIRECTORS
JONATHAN K. SHIMADA, Ph.D.
WALTER T.M. HO
CHERYL D. SOON
ADAM D. VINCENT

IN REPLY REFER TO:
STP 8.10641

May 24, 1985

Mr. Brian L. Gray
Gray, Hong & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Gray:

Request for Consultation Comments
Draft Environmental Impact Statement
Melemanu Woodlands, Phase III
Waipio, Ewa, Oahu

Thank you for the opportunity to input into the preparation of the subject draft environmental impact statement.

It is our understanding that the draft EIS will include a traffic impact analysis. As such, we will reserve our comments until the report has been submitted for our review.

Very truly yours,

Wayne J. Yamasaki
Director of Transportation

XII A-11

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

June 26, 1985

Mr. Wayne J. Yamasaki
Director of Transportation
Department of Transportation
State of Hawaii
869 Punchbowl Street
Honolulu, Hawaii 96813

SUBJECT: Melemanu Woodlands Phase III
Environmental Impact Statement
Consultation Comments

Dear Mr. Yamasaki:

We thank you for your consultation comments dated May 24, 1985. The Environmental Impact Statement for the subject project will include a section on Traffic. Peak hourly traffic volumes will be projected for ultimate development of the project. This traffic will be added to the existing traffic counts on Leilehua Golf Course Road, H-2 Freeway Interchange and Kamehameha Highway and analyzed. The EIS will further identify Mililani High-Tech Park and its proposed improvements.

No specific analysis is proposed to assess regional traffic. However, the cumulative effects of traffic growth on the central corridor of Honolulu will be identified as contained in Oahu Metropolitan Planning Organization's Hali 2000 Study.

Should you have any questions regarding this matter, please contact our office. Your consultation comments, as well as our response, will become a part of the Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.
1151-1

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

XII B-11

DEPARTMENT OF PLANNING AND ECONOMIC DEVELOPMENT

KAMAMALU BUILDING, 250 SOUTH KING ST, HONOLULU, HAWAII
MAILING ADDRESS: P.O. BOX 2359, HONOLULU, HAWAII 96804 • TELEX: 7432220 HIPED

GEORGE R. ARIYOSHI, GOVERNOR
KENT M. KEITH, DIRECTOR
MURRAY E. TOWILL, DEPUTY DIRECTOR
LINDA KAPUNAU ROSEHILL, DEPUTY DIRECTOR

DIVISIONS
BUSINESS AND INDUSTRY DEVELOPMENT DIVISION
ENERGY DIVISION
FOREIGN TRADE ZONE DIVISION
LAND USE DIVISION
PLANNING DIVISION
RESEARCH AND ECONOMIC ANALYSIS DIVISION

OFFICES
ADMINISTRATIVE SERVICES OFFICE
INFORMATION OFFICE

Ref. No. P-1684

May 20, 1985

Date Received: MAY 22 1985
File:
To: DB
Action:

Mr. Brian L. Gray
Gray and Hong Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Gray:

Subject: EISPN for Rezoning from AG-1 to R-6 for Melemanu Woodlands Phase III at Waipio, Ewa, Oahu

We have reviewed the subject preparation notice and have the following comment.

The draft EIS should evaluate the traffic impacts to the leeward highway corridor at the Kalauao screenline caused by this project and other proposed projects in the Central Oahu and Leeward areas. The Oahu Metropolitan Planning Organization's Hali 2000 Study indicates that the highway facilities at the Kalauao screenline have undesirable levels of congestion and delays at morning peak hour travel.

Thank you for the opportunity to review and comment on the subject document.

Very truly yours,

Kent M. Keith

cc: Office of Environmental Quality Control

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. MOJIMA, PE
ROY T. AOKI, PE

June 26, 1985

Mr. Kent M. Keith, Director
Department of Planning & Economic Development
Kamamalu Building
250 South King Street
Honolulu, Hawaii 96813

SUBJECT: Melemanu Woodlands Phase III
Environmental Impact Statement
Consultation Comments

Dear Mr. Keith:

We thank you for your consultation comments dated May 20, 1985. The Environmental Impact Statement for the subject project will have a traffic section. The Oahu Metropolitan Planning Organization's Hali 2000 Study will be discussed with respect to traffic in the Honolulu corridor.

Should you have any questions please contact our office. Your consultation comments, as well as our response, will be incorporated into the Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

GEORGE R. ARIYOSHI
GOVERNOR OF HAWAII

SUSUMU ONO, CHAIRMAN
BOARD OF LAND & NATURAL RESOURCES

EDGAR A. HAMASU
DEPUTY TO THE CHAIRMAN

DIVISIONS:
AGRICULTURE DEVELOPMENT PROGRAM
AQUATIC RESOURCES
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

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

Date Received: JUN 2 1 1985
File: HS1-1 EIS
To: DT)
Action:

June 12, 1985

Mr. Brian L. Gray
Gray, Hong and Associates
119 Merchant St., Suite 607
Honolulu, HI 96813

Dear Mr. Gray:

Thank you for your April 30, 1985 letter seeking our comments on the proposed environmental impact statement for the Melemanu Woodlands project, phase III.

The proposed project is located mauka of the H-2 Freeway within the Waikakalaua Gulch area. The project is within the Pearl Harbor Ground Water Control Area (PHGWCA); hence, permits for DLNR are required if the plans for the project call for the development of ground water within the PHGWCA.

It should be noted that the present sustainable yield within the PHGWCA is 225 mgd and the present withdrawal of ground water is 202.5 mgd. Any further withdrawals of ground water from the PHGWCA requires the necessary permits from DLNR.

Very truly yours,

SUSUMU ONO
Chairperson

XII A-13

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

June 26, 1985

Mr. Susumo Ono
Chairperson
Department of Land & Natural Resources
State of Hawaii
P. O. Box 621
Honolulu, Hawaii 96809

SUBJECT: Melemanu Woodlands Phase III
Environmental Impact Statement
Consultation Comments

Dear Mr. Ono:

We thank you for your consultation comments dated June 12, 1985. The fact that the project site is within the Pearl Harbor Ground Water Control Area (PHGWCA) will be included in the EIS. We will also be identifying the current demand and sustainable yield for the Pearl Harbor basin.

Should you have any questions, please contact our office. Your consultation comments, as well as our response, will be incorporated into the Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

XII B-13

GEORGE R. ARIYOSHI
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HAWAII 96801

MAY 31 1985
Date Received
File: 1151 E85
To: DB
Action:
CHARLES B. CLARK
DIRECTOR OF HEALTH

May 28, 1985

In reply, please refer to:
EPHSD-

Mr. Brian L. Gray
Gray, Hong & Associates, Inc.
119 Merchant St., Suite 607
Honolulu, Hawaii 96813

Dear Mr. Gray:

Subject: Request for Consultation Comments on Draft Environmental Impact Statement for Melemanu Woodlands, Phase III, Waipio, Ewa, Oahu

The following comments should be considered when preparing the Environmental Impact Statement:

1. The proposed project must be designed to comply with the provisions of Title II, Administrative Rules Chapter 43, Community Noise Control for Oahu.

2. Vehicular noise from the H-2 freeway and noise from the project's park and recreation areas may adversely affect residents of the proposed development.

3. Construction activities for the proposed project must comply with the provisions of Title II, Administrative Rules Chapter 43, Community Noise Control for Oahu:

   a. The contractor must obtain a noise permit if the noise levels from the construction activities are expected to exceed the allowable levels of the regulations.

   b. Construction equipment and onsite vehicles or devices requiring an exhaust of gas or air must be equipped with mufflers.

   c. The contractor must comply with the conditional use of the permit as specified in the regulations and conditions issued with the permit.

4. Traffic noise from heavy vehicles travelling to and from the construction site must be minimized near existing residential areas and schools, and must comply with the provisions of Title II, Administrative Rules Chapter 42, Vehicular Noise Control for Oahu.

Sincerely,

MELVIN K. KOIZUMI
Deputy Director for
Environmental Health

XII A-14

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

June 26, 1985

Mr. Melvin K. Koizumi
Deputy Director for
Environmental Health
Department of Health
State of Hawaii
P. O. Box 3378
Honolulu, Hawaii 96801

SUBJECt: Melemanu Woodlands Phase III
Environmental Impact Statement
Consultation Comments

Dear Mr. Koizumi:

We thank you for your consultation comments dated May 28, 1985. The Environmental Impact Statement will have a section regarding noise. The noise section will identify applicable standards as referenced in your letter.

Your letter identifies potential concerns regarding noise during construction. The EIS will contain a section on mitigation measures regarding temporary construction impacts. Noise control, as identified in Chapter 43, will be referenced in this section of the EIS.

Your letter also identifies potentially adverse effects resulting from the project's parks and recreational areas as well as the H-2 freeway. Based on on-site visits, noise levels resulting from H-2 freeway are minimal. In addition, the park facilities and recreational areas will be appropriately laid out to ensure that noise transmission to apartment units and residential units is minimal. Active recreational facilities which generate more noise will be located a farther distance from residential units. In any case, we do not foresee noise from the recreational areas being a problem for the project.

The more significant source of noise affecting the project is from helicopter traffic. This will be discussed in the Environment Impact Statement.

If you have any questions regarding this matter, please contact our office. Your consultation comments, as well as our response, will be incorporated into the Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt
cc: Towne Reality, Inc.
1151-1

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

XII B-14

United States Department of Agriculture

Soil Conservation Service

P.O. Box 50006
Honolulu, HI
96850

Date Received MAY 3 1 19[illegible]
File: 1151 [illegible]
To: DB
Action:

May 30, 1985

Mr. Brian L. Gray, P.E.
Gray, Hong & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, HI 96813

Dear Mr. Gray:

Subject: Melemanu Woodlands, Phase III (DEIS)

We have reviewed the subject statement. The soil is predominantly Helemanu silty clay, 30 to 90 percent slopes (HLMG), according to our soil survey. Permeability is moderately rapid. Runoff is medium to very rapid, and the erosion hazard is severe to very severe. The shrink-swell potential is moderate. A detailed soil engineering study is recommended.

Thank you for the opportunity to review this document.

Sincerely,

Stratford L. Whiting

Stratford L. Whiting
District Conservationist

The Soil Conservation Service is an agency of the Department of Agriculture

XII A-15

SCS-AS-1
10-79

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

June 26, 1985

Mr. Stratford L. Whiting
District Conservationist
United States Department of Agriculture
Soil Conservation Office
P. O. Box 50006
Honolulu, HI 96850

SUBJECT: Melemanu Woodlands Phase III
Environmental Impact Statement
Consultation Comments

Dear Mr. Whiting:

We thank you for your consultation comments dated May 30, 1985. Soil mapping information will be included in the Environmental Impact Statement. In addition to the information contained in the Soils Survey Of the Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii, there is also information regarding previous phases of work within the gulch as well as preliminary reconnaissance for the Phase III project. The additional work is more site specific than that contained in the soil mapping guide. The end result will be that soils will be discussed in a relative amount of detail for the Environmental Impact Statement. A detailed soils engineering study will also be done prior to any construction.

Should you have any questions, please contact our office. Your consultation comments, as well as our response, will be incorporated into the Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 TELEPHONE: (808) 521-0306

XII B-15

GEORGE R. ARIYOSHI
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
DIVISION OF PUBLIC WORKS
P. O. BOX 119, HONOLULU, HAWAII 96810

HIDEO MURAKAMI
COMPTROLLER

MIKE N. TOKUNAGA
DEPUTY COMPTROLLER

Date Received: MAY 16 1985
File: 151-[illegible]
To: DB
Action: [illegible]

LETTER NO. (P)1244.5

MAY 15 1985

Mr. Brian L. Gray
Gray, Hong & Associates, Inc.
Consulting Engineers
119 Merchant Street
Suite 607
Honolulu, Hawaii 96813

Dear Mr. Gray:

Subject: Draft EIS for Melemanu Woodlands, Phase III Consultation Comments

Thank you for the opportunity to provide comments for the subject Draft EIS.

Our only comment is that since the residential development will have some impact on the existing school system, the Department of Education should be consulted.

Should you have any questions, please have your staff contact Mr. Stephen Miwa of the Planning Branch at 548-5742.

Very truly yours,

TEUANE TOMINAGA
State Public Works Engineer

SM:jk

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

June 26, 1985

Mr. Teuane Tominaga
State Public Works Engineer
Department of Accounting and General Services
Division of Public Works
State of Hawaii
P. O. Box 119
Honolulu, HI 96810

SUBJECT: Melemanu Woodlands Phase III
Environmental Impact Statement
Consultation Comments

Dear Mr. Tominaga:

We thank you for your consultation comments dated May 15, 1985. We will be forwarding a copy of the Environmental Impact Statement Preparation Notice to the Department of Education.

Should you have any questions please contact our office. Your consultation comments, as well as our response, will be incorporated into the Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

May 16, 1985

Mr. Francis Hatanaka
Department of Education
State of Hawaii
Queen Liliuokalani Building
1390 Miller Street
Honolulu, HI 96813

SUBJECT: Draft EIS Statement for Melemanu Phase III
Consultation Comments

Dear Mr. Hatanaka:

As requested in the attached May 15, 1985 letter from the Department of Accounting and General Services, we are forwarding one copy of the Environmental Assessment for the subject project. We would appreciate your review of the enclosed assessment as published in the EQC Bulletin and your comments as to the effect on the school system.

Should you have any questions regarding this matter, please contact David Bills of our office.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

Brian L. Gray

DB:lt

encls.

1151

MAY 14 '85

Date Received

File: 1151-E15

To: DB

Action: _____

_____

University of Hawaii at Manoa

Water Resources Research Center
Holmes Hall 283 • 2540 Dole Street
Honolulu, Hawaii 96822

9 May 1985

Mr. Brian L. Gray
Gray, Hong and Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Gray:

SUBJECT: Request for Consultation Comments, Draft Environmental Impact Statement, Melemano Woodlands, Phase III, Waipio, Ewa, Oahu, April 1985

We have reviewed the subject EIS Preparation Notice and offer the following comments:

1. Provisions for a runoff detention basin offers an excellent opportunity for groundwater recharge and irrigation. We suggest that in its design, this potential be explored insofar as possible. Incidentally, on p. 3 the basin's capacity is given as 22 acre-feet, whereas on p. 7 the size is 10 acre-feet.

2. Can (will) the detention basin be incorporated into a recreational (park?) facility for use when it is not storing water?

Thank you for the opportunity to comment. This material was reviewed by WRRC personnel.

Sincerely,

Edwin T. Murabayashi

Edwin T. Murabayashi
EIS Coordinator

ETM:jm

AN EQUAL OPPORTUNITY EMPLOYER
XII A-17

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

June 26, 1985

Mr. Edwin T. Murabayashi
EIS Coordinator
University of Hawaii at Moana
Water Resources Research Center
Holmes Hall 283, 2540 Dole Street
Honolulu, HI 96822

SUBJECT: Melemanu Woodlands Phase III
Environmental Impact Statement
Consultation Comments

Dear Mr. Murabayashi:

Thank you for your consultation comments dated May 9, 1985. The detention basin was originally considered solely to collect and store stormwater runoff for the purpose of ensuring no increase in peak storm discharge. However, we do agree that there is potential for ground water recharge in the detention basin. This can easily be accomplished by raising the outlet elevation within the detention basin to allow a certain amount of ponding to occur after storms have passed.

The size of the detention basin will be clarified in the draft EIS. The Preparation Notice cited capacity of 22 acre ft. in one location and 10 acre ft. in another location. The size was intended to be 22 acre ft., however, prior to preparation of the draft EIS, this size may further increase.

The detention basin is being located in a natural gully. This gully is not suited for recreational activities and there is potential liability should the project encourage recreational use in the gully. In addition, the majority of storage basin volume is within the neighboring property owned by Oceanic Properties.

We thank you for your consultation comments and they will be incorporated in the Environmental Impact Statement along with this response. Should you have any questions, please contact our office.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt

cc: Towne Realty

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 TELEPHONE (808) 521-0306

XII B-17

1151-1

DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER DISTRICT, HONOLULU
FT. SHAFTER, HAWAII 96858-5440

REPLY TO ATTENTION OF

May 15, 1985

Date Received MAY 20 1985
File:
To: DB
Action:

Mr. Brian L. Gray
Gray, Hong & Associates, Inc.
119 Merchant Street
Suite 607
Honolulu, Hawaii 96813

Dear Mr. Gray:

Thank you for the opportunity to review and comment on the EIS Preparation Notice for Melemanu Woodlands, Phase III. The following comments are offered:

a. A Department of the Army permit is required. Please contact Operations Branch at 438-9258.

b. The project site is not within an area mapped by the Federal Insurance Administration. However, the scope of the proposed development including stream realignment and construction of a detention basin, could possibly affect areas downstream of the project site, which have been prone to flooding in the past. The EIS Preparation Notice has mentioned some of the potential problems. We suggest that all aspects of the proposed measures be carefully analyzed to mitigate flood problems in the downstream area. As an example and aside from the increase of discharge due to the residential development itself, it is important to consider the effect of stream realignment which could alter downstream situations significantly.

Sincerely,

Kisuk Cheung
Chief, Engineering Division

Copy furnished:

Department of Land Utilization
City & County of Honolulu
650 S. King St.
Honolulu, Hawaii 96813

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. MOJIMA, PE
ROY T. AOKI, PE

June 26, 1985

Mr. Kisuk Cheung
Chief, Engineering Division
Department of the Army
U. S. Army Engineer District
Ft. Shafter, Hawaii 96858-5440

SUBJECT: Melemanu Woodlands Phase III
Environmental Impact Statement
Consultation Comments

Dear Mr. Cheung:

Thank you for your consultation comments dated May 15, 1985. The Environmental Impact Statement will identify that a Department of the Army permit is required. In addition, the EIS will specifically analyze and discuss the potential problems of urbanization and the effects on downstream areas.

We will be forwarding a copy of the Environmental Impact Statement Preparation Notice to your Operations Branch for their review.

Should you have any questions please contact our office. Your consultation comments, as well as our response, will be incorporated into the Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

May 21, 1985

Department of the Army
Operations Branch
U. S. Army Engineer District, Honolulu
Ft. Shafter, HI 96858

Attention: Mr. Stanley Arakaki

SUBJECT: Melemanu Woodlands Phase III
Department of the Army Permit

Gentlemen:

We have received the enclosed May 15, 1985 letter from the Department of the Army. The letter indicates that a Department of the Army permit is required for the subject project and we should contact your office. We are forwarding a copy of the Environmental Impact Statement Preparation Notice as published in the EQC Bulletin. The Preparation Notice discusses grading and drainage for the project.

With respect to the Department of the Army permit, we would like to emphasize the following points:

1. Realignment of the stream channel will be accomplished by cutting a new stream channel. Upon diversion of stream flow into the new channel, fill material will only be placed into the existing Waikakalaua Stream channel after the channel has been abandoned. Therefore, it is more correct to state that we are filling in an abandoned stream channel. Approximately 75,000 cu. yds. will be placed in the abandoned channel.

2. As identified in the EIS Preparation Notice, increased runoff resulting from urbanization of Phases II and III is 91 cfs. In addition, the Mililani High Tech Park located on the plateau above the Waikakalaua Gulch will also create increased runoff. A detention basin will be located as shown in the Preparation Notice to store runoff and meter it into a stream in a manner that there will be no increase in the design peak discharge. The design concept for the realigned stream channel will ensure that downstream conditions are not aggravated. This includes analysis of velocities and use of energy dissipating devices, if necessary, to assure the stream flow characteristics of stream discharge leaving the project site are very similar to existing conditions. Specific design details will be submitted to and approved by City and County Division of Engineering.

We would appreciate your review of the Preparation Notice and the foregoing items. Your consultation comments regarding this matter will be used in the preparation of the Environmental Impact Statement.

Should you have any questions, please contact our office.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

Brian L. Gray

DB:lt

encls.

cc: Joe Belin

1151-1

DEPARTMENT OF THE ARMY
HEADQUARTERS UNITED STATES ARMY SUPPORT COMMAND, HAWAII
DUNNING HALL
FORT SHAFTER, HAWAII 96858-5000

15 MAY 1985

REPLY TO ATTENTION OF:
Directorate of Facilities Engineering

Date Received MAY 16 1985
File:
To: DB
Action: Ys: L. Hirai
w/ Assess't

Gray and Hong Associates, Inc.
119 Merchant Street
Honolulu, Hawaii 96813

Gentlemen:

As published in the State of Hawaii, Office of Environmental Quality Control April 23, 1985 issue of the OEQC Bulletin, the US Army Support Command, Hawaii (USASCH) requests to be included as a consulted party in the preparation of the Environmental Impact Statement (EIS) for Rezoning from AG-1 Agricultural District to R-6 Residential District for Melemanu Woodlands Phase III at Waipio, Ewa, Oahu.

If you require our assistance during the preparation of the EIS, please contact Mr. Lawrence T. Hirai, Environmental Management Office, Directorate of Facilities Engineering, at 655-0691/0694.

Sincerely,

Ronald A. Borrello
Colonel, Corps of Engineers
Director of Facilities Engineering

XII A-19

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

June 26, 1985

Colonel Ronald A. Borrello
Director of Facilities Engineering
Department of the Army
Headquarters United States Army Support Command
Dunning Hall
Fort Shafter, Hawaii 96850

SUBJECT: Melemanu Woodlands Phase III
Environmental Impact Statement
Consultation Comments

Dear Colonel Borrello:

Thank you for your consultation comments dated May 15, 1985. As per your direction, we have forwarded a copy of the Environmental Impact Statement Preparation Notice to your Environmental Management Office.

Should you have any questions please contact our office. Your consultation comments, as well as our response, will be incorporated into the Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

May 16, 1985

Directorate of Facilities Engineering
Department of the Army
Headquarters United States Support Command, Hawaii
Dunning Hall
Fort Shafter, Hawaii 96858-5000

Attention: Mr. Lawrence T. Hirai,
Environmental Management Office

SUBJECT: Draft EIS Statement for Helemanu Phase III
Consultation Comments

Gentlemen:

As requested in the attached May 15, 1985 letter from Col. Ronald A. Borrello, we are forwarding a copy of the Environmental Assessment for the subject project. We would appreciate your review of the enclosed assessment and receipt of any comments which you feel should be addressed in the Environmental Impact Statement. A copy of the enclosed Assessment has previously been sent to the Administration Services Division, Building 580, Schofield Barracks, Hawaii.

Should you have any questions regarding this matter, please contact David Bills of our office.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

Brian L. Gray

DB:lt

encls.

1151-1

DEPARTMENT OF THE ARMY
HEADQUARTERS UNITED STATES ARMY SUPPORT COMMAND, HAWAII
DUNNING HALL
FORT SHAFTER, HAWAII 96858-5000

07 JUN 1985

JUN 10 1985
Date Received
File:
To: DIB
Action:

REPLY TO ATTENTION OF:
Directorate of Facilities Engineering

Mr. Brian L. Gray
Gray, Hong and Associates, Inc.
Consulting Engineers
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Gray:

Thank you for your letter, dated May 16, 1985, requesting our review of the environmental assessment (EA) for the Helemanu Phase III Development in Waikakalaua Gulch, Oahu. Because the US Army Support Command, Hawaii (USASCH) is responsible for the management of US Army owned or controlled lands in the State of Hawaii, we are the appropriate Army Command to respond to your review request.

The following comments are provided on the proposed project:

a. If nearby Department of Army property will be required (e.g., for routing of a water transmission line), a formal request must be submitted to the Real Estate Management Division, Directorate of Facilities Engineering, USASCH for timely consideration. The request should include a map delineating the needed Army tracts.

b. Noise caused by military and civilian aircraft is already a matter of genuine concern for a significant segment of residents in Hawaii. Because the proposed development will be in close proximity to Wheeler Airfield, the noise generated by air traffic in the area could be disruptive and cause personal annoyance to the residents that will be living in the area. Although the Army exercises care in everyday aviation operations, the large size of the Army helicopter fleet at Wheeler Airfield has and will continue to create some unavoidable disruptive noise in the accomplishment of military missions. Because of present operational constraints imposed by the existing surrounding communities, it is unlikely that there could be significant flight rerouting/timing at Wheeler to alleviate potential aviation noise concerns. Instead, there should be a discussion in the Draft Environmental Impact Statement (EIS) of

other alternatives or mitigation measures that could be accomplished without the necessity of changes to Wheeler aviation operations.

c. Because of recent developments concerning the quality of water from the Schofield Barracks wells, USASCH is also evaluating the possibility of activating the capped Board of Water Supply well in Wahiawa. This would result in more water being available to meet the needs of Schofield Barracks and nearby installations. If the proposed project will utilize this water source, further clarification or confirmation should be sought from the Board of Water Supply and discussed in the Draft EIS.

d. Based on an evaluation of the traffic data presented in the EA, such changes as the installation of traffic signal lights will be warranted at the H-2 access/egress and Leilehua Golf Course Road T-intersections. The planned traffic impact analysis should incorporate present, and not 1972, traffic load and the projected traffic from the proposed Hawaii High Technology Park.

Thank you for the opportunity to comment on the proposed project. If you require additional information, please contact Mr. Lawrence Hirai, Environmental Management Office, at 655-0694.

Sincerely,

for Ronald A. Borrello
Colonel, Corps of Engineers
Director of Facilities Engineering

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

June 26, 1985

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. SILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

Directorate of Facilities Engineering
Department of the Army
Headquarters United States Support Command, Hawaii
Dunning Hall
Fort Shafter, Hawaii 96858-5000

Attention: Mr. Lawrence T. Hirai,
Environmental Management Office

SUBJECT: Melemanu Woodlands Phase III
Environmental Impact Statement
Consultation Comments

Gentlemen:

Thank you for your consultation comments dated June 7, 1985. The following comments are provided in response to your letter:

a. No adjacent Department of the Army property will be utilized (such as for routing of water transmission lines).

b. The Environmental Impact Statement will have a section covering noise. The proximity of the project site to Wheeler Air Force Base and the noise levels generated will be discussed. We have corresponded with the Department of the Air Force regarding this matter. They inform us that "AICUZ" information is not available. This information is in the process of being developed and will not available until September of 1985. The effects of the noise levels will be discussed in the EIS.

Based on the fact that there is potential noise resulting from helicopter traffic entering and leaving Wheeler AFB, the Environmental Impact Statement will identify that this fact will be available to all potential buyers. Noise information will also be available to the Architect for use in design of units.

c. Water usage will be identified in the Environmental Impact Statement. Approval of source development for the project must be granted by the Board of Water Supply. In turn, the Department of Land and Natural Resources must allocate additional water which will be made available to the Board of Water Supply. However, additional water is available from the Pearl Harbor basin due to reduced agricultural activities. Negotiations between the Board of Water Supply and the Department of Land and Natural Resources will determine the additional pumpage available to the Board. These negotiations have been ongoing and should be finalized in the near future. The sustainable yield within the Pearl Harbor basin is 225 mgd. The current demand is 202.5 mgd.

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

d. The Environmental Impact Statement will have a section devoted to traffic. The existing traffic volumes on the adjacent roads will be identified. Subsequently, the ultimate traffic volumes generated from the proposed project will be superimposed on these existing volumes. The major value of the 1972 traffic analysis is that at that time a larger project was envisioned masks of the freeway. The EIS being prepared for the project will not rely on the 1972 traffic impact statement for any other reason other than to document that the traffic from Waikakalaua Gulch was identified at a previous time.

The Environmental Impact Statement will also identify the potential improvements proposed in conjunction with the Mililani High-Tech Park. Traffic generated from Melemanu Woodlands Phase III was not available when a previous study was conducted on High-Tech Park traffic.

Should you have any questions please contact our office. Your consultation comments, as well as our response, will be incorporated into the Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

D. Bill B. Sills
for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER DISTRICT, HONOLULU
FT. SHAFTER, HAWAII 96858-5440
May 29, 1985

REPLY TO ATTENTION OF

Operations Branch

MAY 3 0 '85
Date Received
To: DB
Action:

Mr. Brian L. Gray
Gray, Hong, & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Gray:

This is in response to your letter, dated May 21, 1985, concerning Melemanu Woodlands Phase III at Waikakalaua Stream, Waipio, Oahu, Hawaii.

A Department of the Army permit is required for the filling of the existing stream channel. Please contact my Operations Branch if any clarification or assistance in the permit application is needed.

Sincerely,

Everette A. Flanders
Chief, Construction-Operations Division

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

June 26, 1985

Mr. Everette A. Flanders
Chief, Construction-Operations Division
Department of the Army
U. S. Army Engineer District, Honolulu
Ft. Shafter, Hawaii 96858-5440

SUBJECT: Melemanu Woodlands Phase III
Environmental Impact Statement
Consultation Comments

Dear Mr. Flanders:

We thank you for your consultation comments dated May 29, 1985. The EIS will identify that a Department of the Army permit is required.

Your consultation comments, as well as this response, will be incorporated into the Environmental Impact Statement. We will also enclose in the consultation section a copy of our May 21, 1985 letter to your office that accompanied the Environmental Impact Statement Preparation Notice. Should you have any questions please contact our office.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

Date Received MAY 15 1985
Re:
To: DB
Action:

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 15TH AIR BASE WING (PACAF)
HICKAM AIR FORCE BASE, HAWAII 96853-5000

No Noise Levels

REPLY TO ATTN OF: DEEV (Mr Higa, 449-1831)

14 MAY 1985

SUBJECT: Rezoning From AG-1 Agricultural District to R-6 Residential District for Melemanu Woodlands Phase III at Waipio, Ewa, Oahu

TO: Gray and Hong Associates, Inc.
119 Merchant Street
Honolulu, Hawaii 96813

1. Reference Office of Environmental Quality Control (OEQC) Bulletin No. 8, Vol II, dated 23 April 1985, which gave notice of EIS preparation to support subject rezoning proposal.

2. We are very interested in subject proposal and wish to be consulted in the EIS preparation. As Wheeler AFB is adjacent to the proposed development area and the present flying activity will impact the zoning, we feel we are an integral part of the project.

3. Please contact 15 ABW/DEEV (Mr Fujimoto) at 449-1831 for further questions/coordination.

JERRY C. PULLIUM, Colonel, USAF
Director of Civil Engineering

cc: 15 ABW/DO/PAM
15 ABS/CC

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

June 26, 1985

Colonel Jerry C. Pullium, USAF
Director of Civil Engineering
Department of the Air Force
Headquaters 15th Air Base Wing (PACAF)
Hickam Air Force Base, Hawaii 96853-5000

SUBJECT: Melemanu Woodlands Phase III
Environmental Impact Statement
Consultation Comments

Dear Colonel Pullium:

Thank you for your consultation comments dated May 14, 1985. A copy of the Environment Impact Statement Preparation Notice has been forwarded to the Department of the Air Force and comments dated June 11, 1985 have been received from Colonel Larry D. Hellikson, Commander, United States Air Force.

Should you have any questions please contact our office. Your consultation comments, as well as our response, will be incorporated into the Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

DEPARTMENT OF THE AIR FORCE
15TH AIR BASE SQUADRON (PACAF)
WHEELER AIR FORCE BASE, HAWAII 96854-5000

Date Received: JUN 17 1985
File: 15th-E75
To: DB
Action:
JUN 11 1985

REPLY TO ATTN OF: DE (Capt Vawter, 655-1374)

SUBJECT: Request for Consultation Comments, Draft Environmental Statement, Helemanu Woodlands, Phase III, Waipio, Ewa, Oahu, Hawaii

TO: Gray, Hong and Associates Inc.
Consulting Engineers
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

1. In response to your 30 Apr 85 letter, requesting consultation comments (as identified in subject line above), the following is provided:

a. AICUZ INFORMATION: Current Air Installation Compatability Use Zone (AICUZ) information is not available. An AICUZ study is underway that focuses upon Wahiawa, Waipio Valley, and Mililani areas as they are affected by Wheeler Air Force Base. This study will provide baseline maps and sound exposure levels that should be pertinent to your proposed development. However, it will not be until September 1985 before we receive the first draft reports.

b. AIRCRAFT ACCIDENT AREA: Your proposed development is outside of our "clear zone". The potential for aircraft related accidents is reduced, but still exists. Referencing our attachment #1, you can note a graphic presentation of a 60° straight out departure and an IFR departure. This depiction is close to the scale established in your exhibit 4 - INFRASTRUCTURE, but is not guaranteed. Our concern on both departures center on payload and fuel tank offload during emergencies as well as the possibility of downed aircraft. On the final departure heading, during IFR operations, the probability is extremely high that aircraft will be passing over your development at 500 to 100 feet AGL.

c. AIRCRAFT NOISE AREA: Noise has been a continuous problem to all surrounding residential areas. Your development will be subject to noise levels in excess of 65 DB, from time to time, by both fixed wing and rotor driven aircraft.

d. VEHICULAR TRAFFIC IMPACT: Although your development will not have a direct impact on Wheeler Air Force Base traffic, it will have an effect upon access to and from the installation. During peak periods, Kamehameha Highway, H2 Freeway at Kamehameha Highway and the Leilehua Overpass all suffer from congestion now. An increase in northern bound traffic from your proposed location will only worsen this problem.

2. Wheeler Air Force Base maintains a class "B" airport that services both fixed wing and rotor driven aircraft. If this land is developed, notice should be given to prospective buyers as to the potential for aircraft noise and accident. Should further information be needed, contact Captain Gary Vawter, 655-1374.

LARRY D. HELLIKSON, Colonel, USAF
Commander

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

June 26, 1985

Colonel Larry D. Hellikson, USAF
Commander
Department of Air Force
15th Air Base Squadron (PACAF)
Wheeler Air Force Base, Hawaii 96854-5000

SUBJECT: Melemanu Woodlands Phase III
Environmental Impact Statement
Consultation Comments

Dear Colonel Hellikson:

Thank you for your consultation comments dated June 11, 1985. We will be including the information regarding AICUZ's and identifying the date when such information will be available. We will also identify that the project site is outside the aircraft accident zone. The Environmental Impact Statement will have a section devoted to traffic. This section assumes that a significant portion of the traffic from the project will utilize Kamehameha Highway. However, it is also estimated that this increased traffic will be directly related to Wheeler Air Force Base and/or Schofield Barracks. In any event, the Environmental Impact Statement will analyze traffic on all corridors indicated in your consultation comments.

Should you have any questions please contact our office. Your consultation comments, as well as our response, will be incorporated into the Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

United States Department of the Interior

FISH AND WILDLIFE SERVICE
300 ALA MOANA BOULEVARD
P.O. BOX 50167
HONOLULU, HAWAII 96850

IN REPLY REFER TO:
ES
Room 6307

MAY 21 1985

Date Received MAY 20 1985

File:
To: DB
Action:

Gray, Hong and Associates, Inc
119 Merchant Street
Suite 607
Honolulu, Hawaii 96813

Re: Preparation Notice for a Draft Environmental Impact Statement (EIS), Helemanu Woodlands, Phase III, Waipio, Ewa, Hawaii

We have reviewed the referenced Preparation Notice and offer the following comments for your consideration.

The Service's primary concern regarding the referenced project is the proposed realignment of sections of Waikakalaua Stream. The draft EIS should include the following:

a. engineering designs for the proposed channelized sections;

b. inventory of stream fauna at and upstream of the affected area;

c. discussion of potential adverse impacts associated with stream channelization and construction on native diadromous species;

d. discussion of alternatives that retain the existing stream alignment; and

e. discussion of measures to mitigate adverse impacts associated with stream channelization and construction on native stream fauna.

The Service recommends that the stream fauna surveys include portions of Waikakalaua Stream that lie within the Ewa Forest Reserve. This office is willing to provide technical assistance and identify survey reaches for the stream fauna inventory. We recommend that the stream surveys include visual surveys using a face mask and snorkel and electro-fishing.

This office has several reports on stream channel modification in Hawaii that may be useful in preparing the Draft EIS. Please contact staff Fishery Biologist, Andy Yuen, for further coordination.

We appreciate this opportunity to comment.

Sincerely yours,

for Ernest Kosak
Project Leader
Office of Environmental Services

cc: RD, FWS, Reg 1, Portland, OR
DLU, C&C Honolulu
OEQC
HDAR
EPA, San Francisco

CONSERVE AMERICA'S ENERGY

Save Energy and You Serve America!

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

June 26, 1985

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

Mr. Ernest Kosak, Project Leader
Office of Environmental Services
United States Department of the Interior
Fish and Wildlife Service
300 Ala Moana Boulevard
Honolulu, HI 96850

SUBJECT: Melemanu Woodlands Phase III
Environmental Impact Statement
Consultation Comments

Dear Mr. Kosak:

We thank you for your consultation comments dated May 20, 1985. As a result of your comments, we have contacted Mr. Andy Yuen of your staff. Based on discussions with Mr. Yuen, the Environmental Impact Statement will include the following:

a. Typical engineering sections which could be utilized for the proposed realignment of Waikakalaua Stream.

b. An inventory of the stream fauna within the project area as determined by a stream survey conducted by Mr. Kelly Archer.

c. Discussion of alternatives that retain the existing stream alignment.

Alternatives for channel sections within the realigned sections of Waikakalaua Stream vary from natural sections and partially realigned sections to fully lined sections. The type of actual section will be reviewed and approved by the City. In addition, a Corps of Engineers 404 Permit will be obtained. Based on the results of the stream survey (attached), the proposed relaignment will have negligible effect on stream biology.

Should you have any questions regarding this matter, please contact our office. Your consultation comments, as well as our response, will be incorporated into the Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt
enc.
cc: Towne Realty, Inc.
1151-1

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

GEORGE R. ARIYOSHI
GOVERNOR

JACK K. SUWA
CHAIRPERSON, BOARD OF AGRICULTURE

SUZANNE D. PETERSON
DEPUTY TO THE CHAIRPERSON

State of Hawaii
DEPARTMENT OF AGRICULTURE
1428 So. King Street
Honolulu, Hawaii 96814

Mailing Address:
P. O. Box 22159
Honolulu, Hawaii 96823

May 31, 1985

Date Received JUN 3 1985
File:
No: 108
Action:

Mr. Brian L. Gray
Gray, Hong and Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Gray:

Subject: Request for Consultation Comments on Draft Environmental Impact Statement (DEIS)
Helemanu Woodlands, Phase III
Waipio, Ewa, Oahu
TMK: 9-5-02: 4, 6, por. 11
Acres: 70

The Department of Agriculture has reviewed the EIS Preparation Notice and offers the following comments.

We note that the project site is within the State Land Use Urban District and is designated "Residential" in the Central Oahu Development Plan. Our records also indicate that the project has not been in agricultural use.

We are of the opinion that the approval and construction of the project would not adversely impact the agricultural resources of the area. However, this project would represent the first urban development on lands to the east of the H-2 freeway, between Pacific Palisades and Wahiawa.

Thank you for the opportunity to comment.

Sincerely,

JACK K. SUWA
Chairman, Board of Agriculture

cc: OEQC
DPED

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

June 26, 1985

Mr. Jack K. Suwa
Chairman, Board of Agriculture
Department of Agriculture
State of Hawaii
1428 South King Street
Honolulu, Hawaii 96814

SUBJECT: Helemanu Woodlands Phase III
Environmental Impact Statement
Consultation Comments

Dear Mr. Suwa:

Thank you for your consultation comments dated May 31, 1985. The Environmental Impact Statement will have a section on agriculture identifying that the site has never been intensively used for agriculture and does not have any particular agricultural purposes. This section will also identify that construction of the project will not have an adverse impact on agricultural resources.

Should you have any questions please contact our office. Your consultation comments, as well as our response, will be incorporated into the Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 TELEPHONE (808) 521-0306

Wahiawa Community & Business Ass'n., Inc.

8301 California Avenue
Wahiawa, Oahu, Hawaii 96786
Telephone Wahiawa (808) 621-6531

May 22, 1985

MAY 23 1985
Date Received
File:
To: DB
Action:

Mr. Brian L. Gray
Gray, Hong & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Gray,

SUBJECT: Proposed Melemanu Woodlands, Phase III
water supply source

Dear Mr. Gray,

We are concerned upon learning from the Environmental Impact Statement preparation notice, plans to draw 1.3 MGD for the proposed Melemanu Woodlands, Phase III project, from the dormant well located at the Board of Water Supply Corporation yard in Wahiawa. It also states the proposed high tech park would use this same water source.

It is our understanding Wahiawa sits atop the high water level of the dike system, which overflows to support the Pearl Harbour basin. We believe all possible care should be exercised to control water usage in the Wahiawa area.

The proposed projects, 1,100 units which will possibly accommodate 3,500 people; the industrial water usage which will be high; and another proposed development north of Wahiawa, adjacent to Whitmore Village of 50 acres, accommodating an additional 3,000 people, will tax the water supply greatly.

Thank you for the opportunity to submit our concern.

Sincerely,

Eric Yamauchi
President

Libby Smithe
Master Plan Committee

EY/ls

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. SILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

June 26, 1985

Ms. Libby Smithe
Mr. Eric Yamauchi
Wahiawa Community & Business Ass'n, Inc.
830 L California Avenue
Wahiawa, Oahu, Hawaii 96786

SUBJECT: Melemanu Woodlands Phase III
Environmental Impact Statement
Consultation Comments

Dear Ms. Smithe and Mr. Yamauchi:

Thank you for your consultation comments dated May 22, 1985. The Environmental Impact Statement will identify that the source of water for the project will be either a presently dormant Board of Water Supply well in the Wahiawa Corporation Yard or additional well in the Wahiawa area. Approval must be granted by the Board of Water Supply and by the Department of Land and Natural Resources. The Board of Water Supply has an application to the Department of Land and Natural Resources to allow this source to be tapped and to allow water to be provided to Melemanu Woodlands Phase III and Mililani High-Tech Park as well as other projects. The Department of Land and Natural Resources has additional water which can be allocated for urban projects that has become available as a result of reduced agricultural pumping within the Pearl Harbor basin.

Should you have any questions regarding this matter please contact our office. Your consultation comments, as well as our response, will be incorporated into the Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.
1151-1

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

JUN 3 1985
Date Received

HAROLD T. STEARNS
CONSULTING GEOLOGIST

File:
To: GH
Action:

Hawaii residence:
Apt 445
4999 Kahala Ave
Honolulu, Hawaii 96816

Temporary address on mainland: 477
P O Box 158, Hope, Idaho 83836
May 29, 1985

Gray, Hong and Associates, Inc
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Gentlemen: Re Proposed change of zoning from Agriculture to Residential for Phase III, Kelemanu Woodlands in Central Oahu

Pursuant to your letter to City Council, dated April 30, 1985, stating that "written comments ..... will be incorporated"..... in the Draft Environmental Impact Statement:

It is important for you, and for the City Council, to know that better flood control measures in Waikakalaua Stream must be provided than the proposed "detention basin" because the proposed basin will not be adequate to prevent flooding downstream. The proposed "detention basin" would be filled before peak flow occurred, hence would not store peak flow during brief but very heavy periods known to occur in the Phase II and Phase III areas. The peak flow waters would overflow the narrower widths of the Waikakalaua channel downstream.

This drainage problem was recognized and officially acknowledged when the channel areas were planned, initially, for large farm lots to be developed in Phase III for diversified agriculture.

Detention basins were promised as a compromise to obtain approval for apartment development in the Phase II area but no detention basins were built. Flooding occurred downstream from the Phase II area soon after roofs and pavements increased run-off from the Phase II apartment area. Please be informed that the proposed "detention basin", even if constructed for the proposed Phase III development [illegible] flood control [illegible] in Waikakalaua downstream from the Phase II and Phase III housing projected.

Aloha

Harold T. Stearns

Harold T. Stearns
Former owner of Phase III

HTS/m

cc to City Council
cc to [illegible]

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

June 26, 1985

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

Mr. Harold T. Stearns
Consulting Geologist
499 Kahala Avenue, Apt. 445
Honolulu, HI 96816

SUBJECT: Kelemanu Woodlands Phase III
Environmental Impact Statement
Consultation Comments

Dear Mr. Stearns:

Thank you for your consultation comments dated May 29, 1985. The Environmental Impact Statement for the subject project will have a section specifically devoted to drainage. A preliminary Drainage Report will be submitted to the Department of Public Works for the purpose of establishing a design criteria for the detention basin. This preliminary Drainage Report will be appended within the Environmental Impact Statement.

As you are aware, the lots which you developed downstream have always been subject to flooding. In principle, development upstream can aggravate downstream conditions if appropriate measures are not taken. It has become an established practice across the country as well as within the City and County of Honolulu to utilize detention basins where necessary to store stormwater runoff and meter it into the drainage way at a rate which does not exceed the predeveloped peak discharge. This is exactly the concept which is envisioned for Kelemanu Phase III. This detention basin is further being sized to accommodate increased runoff which is generated from the Phase II development which is also above the downstream one acre lots.

A detention basin with berms and overflow spillway was constructed as a part of Phase II development and this detention basin was located adjacent to the access road within Phase III. This detention basin will be eliminated when the new detention basin is constructed in the Phase III area.

In conclusion, we would like to reiterate that the detention basin for Phase III development is being designed in accordance with established procedures. The sole reason for this detention basin is to ensure that peak discharge is not increased downstream. This information will be included in the Environment Impact Statement.

Should you have any questions, please contact this office. Your consultation comments, as well as this response, will be incorporated into the Environment Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt
cc: Towne Realty, Inc.
1151-1

119 MERCHANT STREET SUITE 607, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

APPENDIX H

DRAFT ENVIRONMENTAL IMPACT STATEMENT
REVIEW COMMENTS AND RESPONSES

Date Received JUL 1 2 1985
File: 1151-1 (D)
To: DB
Action:

HAROLD T. STEARNS
CONSULTING GEOLOGIST

Temporary address on mainland for reply:

P O Box 158, Hope, Idaho 83836
July 7, 1985

Mr Brian L. Gray
Gray, Hong and Associates, Inc
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr Gray, Re Consultation Comments on
Environmental Impact Statement
Melemanu Woodlands, Unit III

This letter is in reply to your letter dated June 26, 1985 which contains an important error which must be corrected.

In the second paragraph of your letter you state...."As you are aware, the lots which you developed downstream have always been subject to flooding.....". This statement is untrue. The stream used to overflow downstrean near the Kam Highway Bridge but has never done so since the late 1950s because I deepened and widened the stream to insure the safety of all areas projected for farm lots. Certainly no overflow ever occurred in the Unit I areas, after realignment and deepening of the channel,until after the pavements and roofs built to serve density apartment housing in Unit II were in place. Unit II was designed, mapped, approved and bonded for 1 and 2 acre farm lots. These facts are all a matter of record and should be accurately reported in your Report. Change in density in the narrow gorge was a mistake which should not now be compounded in Unit III.

The detention basins you propose can have no beneficial effect unless the Unit III brsin is empty at the time of peak discharge,- and then allowed to fill during maximum flow. You state that you plan to control inflow and discharge by metering but I am greatly puzzled to understend your assumption that metering will work. I will appreciate it if you will explain to me what metering system is available that could control flooding from overfull basins during the occasional very heavy runoffs that occur periodicelly in the Waikakalaua Stream.

Aloha

Harold T. Stearns

Harold T. Stearns

HTS/m
cc to Towne Realty, Inc

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

September 3, 1985

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. SILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

Mr. Harold T. Stearns
Consulting Geologist
P. O. Box 158
Hope, Idaho 83836

SUBJECT: Melemanu Woodlands Phase III
Draft Environmental Impact Statement

Dear Mr. Stearns:

We thank you for your letter dated July 7, 1985 commenting on our response to your consultation comments dated May 29, 1985. We are responding to your July 7 letter as a part of the Draft Environmental Impact Statement review process.

Your letter questioned the statement in our June 26, 1985 consultation comment response that "...the downstream area has always been subject to flooding." For clarification, this statement was based on the current peak design curves contained in the Storm Drainage Standards of the Department of Public Works, City and County of Honolulu. The watershed area of Waikakalaua Gulch is approximately 2,500 acres and the City's design curves predict a peak discharge of 7,500 cfs. Therefore, based on this peak discharge the one acre lots would be subject to flooding. However, the relevant point with respect to the downstream one-acre lots is that increased runoff can aggravate downstream flooding conditions.

In addition to the foregoing concern, your letter also expressed questions as to the design principles of the proposed detention basin. The Draft EIS contains what we believe is a layman's description of the working principles of the detention basins as well as a complete preliminary drainage report showing detailed calculations for sizing. We assume at the time of the July 1985 letter you had not seen the Draft EIS and/or the Preliminary Drainage Report with the design calculations. This information should be adequate to understand the working principles of the detention facilities.

Should you have any questions please contact our office. Your review comments, as well as our response, will be incorporated into the revised Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

D B

for Brian L. Gray

DB:lt
1151-1
cc: Towne Realty, Inc.
Harold Stearns' Honolulu Address

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

GEORGE R. ARIYOSHI
GOVERNOR

JUL 12 1985
Received
File: 1151-1 (D)
To: DB Letitia N. Uyehara Director
Action:

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
[illegible] HALEKAUWILA STREET
ROOM 301
HONOLULU, HAWAII 96813
TELEPHONE NO. 548-6915

July 8, 1985

Dear Reviewer:

Attached for your review is an Environmental Impact Statement (EIS) that was prepared pursuant to Chapter 343, Hawaii Revised Statutes and the Rules and Regulations of the Environmental Quality Commission:

TITLE: Rezoning from Ag-1 Agricultural to R-6 Residential District for Melemanu Woodlands Phase III

LOCATION: Waipio, Ewa, Oahu

CLASSIFICATION: Applicant Action

Your comments or acknowledgment of no comments on the EIS are welcomed. Please submit your reply to the accepting authority or approving agency:

Mr. John P. Whalen, Director
Dept. of Land Utilization
650 South King Street
Honolulu, Hawaii 96813

Please send a copy of your reply to the proposing party:

✓ Mr. Brian L. Gray
Gray, Hong & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Your comments must be received or postmarked by: August 22, 1985

If you have no further use for this EIS, please return it to the Office of Environmental Quality Control.

Thank you for your participation in the EIS process.

July 9, 1985
No Comments
Energy Division
DPED

XIII A-2

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

September 3, 1985

State Energy Office
Department of Planning & Economic Development
State of Hawaii
335 Merchant Street, Room 110
Honolulu, Hawaii 96813

SUBJECT: Melemanu Woodlands-Phase III
Draft Environmental Impact Statement

Gentlemen:

Thank you for your acknowledgement dated July 9, 1985 regarding the subject project. Your acknowledgement, as well as this response, will be included in the revised Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

Doug Bo
for Brian L. Gray

DB:lt

cc: Towne Realty

1151-1

GEORGE R. ARIYOSHI
GOVERNOR

FRANCIS M. HATANAKA
SUPERINTENDENT

STATE OF HAWAII
DEPARTMENT OF EDUCATION
P. O. BOX 2360
HONOLULU, HAWAII 96804

OFFICE OF THE SUPERINTENDENT

July 12, 1985

Date Received JUL 17 1985
File:
To: DB
Action:

Mr. John P. Whalen, Director
Department of Land Utilization
City and County of Honolulu
650 S. King Street
Honolulu, Hawaii 96813

Dear Mr. Whalen:

SUBJECT: Melemanu Woodlands Phase III Rezoning EIS

We do not have any additional comment to offer at this time on the subject EIS involving the rezoning of 70+ acres from Ag-1 Agricultural to R-6 Residential.

Our earlier comments have been incorporated into the EIS and are still applicable. Thank you for the opportunity to review the document.

Should there be any questions, please contact Mr. Howard Lau at 737-4743.

Sincerely,

Francis M. Hatanaka

Francis M. Hatanaka
Superintendent

FMH:jl (HL)

cc: V. Honda, OBS
G. Kuwada, Central Dist.
B. Gray, (Gray, Hong & Assoc.)

XIII A-3

AN EQUAL OPPORTUNITY EMPLOYER

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. SILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

September 3, 1985

Mr. Francis M. Hatanaka
Superintendent
Department of Education
State of Hawaii
P. O. Box 2360
Honolulu, Hawaii 96804

SUBJECT: Melemanu Woodlands Phase III
Draft Environmental Impact Statement

Dear Mr. Hatanaka:

We thank you for your review comments dated July 12, 1985. Your review comments, as well as our response, will be incorporated into the revised Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

119 MERCHANT STREET, SUITE 807, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

XIII B-3

Date Received JUL 23 1985
File: 1151-E.S(D)
To: DB
Action:

FB 85-654

July 15, 1985

TO: MR. JOHN P. WHALEN, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM: HERBERT K. MURAOKA
DIRECTOR AND BUILDING SUPERINTENDENT

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT
MELEMANU WOODLANDS, PHASE III
WAIPIO, EWA, OAHU

We have reviewed the draft Environmental Impact Statement for Phase III of the Melemanu Woodlands project and have no comments.

Thank you for the opportunity to review the draft EIS.

HERBERT K. MURAOKA
Director and Building Superintendent

TH:ft
cc: Gray, Hong & Assoc., Inc.
J. Harada

XIII A-4

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

September 3, 1985

Mr. Herbert K. Muraoka
Director and Building Superintendent
Building Department
City and County of Honolulu
650 South King Street, 2nd Floor
Honolulu, Hawaii 96813

SUBJECT: Melemanu Woodlands - Phase III
Draft Environmental Impact Statement

Dear Mr. Muraoka:

We thank you for your review comments dated July 15, 1985 regarding the subject project. Your review comments, as well as our response, will be incorporated into the revised Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

XIII B-4

POLICE DEPARTMENT

CITY AND COUNTY OF HONOLULU

1455 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96814 · AREA CODE (808) 943-3111

FRANK F. FASI
MAYOR

DOUGLAS G. GIBB
CHIEF

STEPHEN FERREIRA
DEPUTY CHIEF

IN REFERENCE DI-GP

JUL 17 1985
Date Received

File:

To:

Action:

July 15, 1985

Mr. John P. Whalen, Director
Department of Land Utilization
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Whalen:

Subject: Rezoning from Ag-1 Agricultural to R-6 Residential District for Melemanu Woodlands Phase III
Waipio, Ewa, Oahu

We have reviewed the draft EIS for Melemanu Woodlands - Phase III and have concluded that our comments submitted to Gray, Hong and Associates, Inc., dated May 14, 1985 are still valid. Melemanu Woodlands - Phase III, when taken into consideration with other proposed development projects in the area, will have a significant, negative impact on an already congested thoroughfare leading into Honolulu from Central Oahu (H-1) during peak traffic hours. Although references to the "Hali 2000 Study of Alternative Analysis" were presented in the draft EIS, no specific alternative to relieve congestion along the Leeward/Central Oahu/downtown corridor was proposed for implementation.

Sincerely,

DOUGLAS G. GIBB
Chief of Police

Attach.
cc: Mr. Brian L. Gray
Gray, Hong & Associates, Inc.

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

September 3, 1985

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

Mr. Douglas G. Gibb
Chief of Police
Police Department
City and County of Honolulu
1455 South Beretania Street
Honolulu, HI 96814

SUBJECT: Melemanu Woodlands - Phase III
Draft Environmental Impact Statement

Dear Mr. Gibb:

We thank you for your review comments dated July 15, 1985 regarding the subject project. Your review comments expressed concern that increased traffic growth in Central Oahu will lead to additional congestion along the Leeward/Central Oahu/Downtown corridor. Your letter also indicated the Environmental Impact Statement had no specific alternative to relieve congestion within this corridor.

With respect to your concerns, the draft Environmental Impact Statement as well as revised Environmental Impact Statement, specifically state that the Melemanu Woodlands - Phase III project is one of the types of project that will add to increased traffic growth within Central Oahu and can ultimately affect the Leeward/Central Oahu/Downtwon corridor. The draft and revised Environmental Impact Statements also identify six alternatives to the travel needs in this corridor by the year 2000. The alternative that will ultimately be selected may be one of the alternatives identified in the Environmental Impact Statement for this project or may be a modification to one of these alternatives. However, this Environmental Impact Statement will make no attempt to predict which alternative will ultimately be selected since the ultimate alternative is not known.

The pertinent facts that have been reported in this Environmental Impact Statement are that the proposed project will add to the cumulative increased congestion in the Honolulu/Central Oahu/Downtown corridor and that studies are being prepared to determine the most appropriate solution to meet travel needs of the year 2000.

Should you have any questions please contact our office. Your review comments, as well as our response, will be included as a part of the revised Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

Brian L. Gray

DB:lt
cc: Towne Realty
1151-1

119 MERCHANT STREET, SUITE 807, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

GEORGE R. ARIYOSHI
Governor

STATE OF HAWAII
DEPARTMENT OF DEFENSE
OFFICE OF THE ADJUTANT GENERAL
3949 DIAMOND HEAD ROAD, HONOLULU, HAWAII 96816-4495

ALVIN T. LUM
Major General
Adjutant General

DANIEL K. C. AU
Colonel
Deputy Adjutant General

Received JUL 18 1985
File: 1151-1
To: DB
Action: _____

JUL 17 1985

HIENG

Mr. John P. Whalen, Director
Dept. of Land Utilization, C&C Hnl.
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Whalen:

Rezoning from Aq-1 Agricultural to R-6 Residential
District for Melemanu Woodlands Phase III
Waipio, Ewa, Oahu

Thank you for providing us the opportunity to review the above subject development.

We have completed our review and have no comments to offer at this time.

Yours truly,

Jerry M. Matsuda
Major, Hawaii Air
National Guard
Contr & Engr Officer

Enclosure

cc: Gray, Hong & Associates, Inc.

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL B.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. MOJIMA, PE
ROY T. AOKI, PE

September 3, 1985

Jerry M. Matsuda
Major, Hawaii Air National Guard
State of Hawaii
Department of Defense
3949 Diamond Head Road
Honolulu, Hawaii 96816

SUBJECT: Melemanu Woodlands - Phase III
Draft Environmental Impact Statement

Dear Major Matsuda:

We thank you for your review comments dated July 17, 1985 regarding the subject project. Your letter, as well as our response, will be included as a part of the revised Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

DEPARTMENT OF THE NAVY
HEADQUARTERS
NAVAL BASE PEARL HARBOR
BOX 110
PEARL HARBOR, HAWAII 96860-5020

IN REPLY REFER TO:
9510
Ser 002B/1283

JUL 22 1985

Date Received JUL 22 1985
File: 1151-ET.(17)
To: DB
Action:

17 JUL 1985

Mr. John P. Whalen, Director
Department of Land Utilization
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Whalen:

ENVIRONMENTAL IMPACT STATEMENT
REZONING FROM AG-1 AGRICULTURAL TO R-6 RESIDENTIAL DISTRICT
FOR MELEMANU WOODLANDS PHASE III

The EIS for the Rezoning from Ag-1 Agricultural to R-6 Residential District for Melemanu Woodlands Phase III has been reviewed and the Navy has no comments to offer. Since we have no further use for the EIS, the EIS is being returned to the Office of Environmental Quality Control, by copy of this letter.

Thank you for the opportunity to review the EIS.

Sincerely,

P. O'CONNOR
Captain, U.S. Navy
Chief of Staff

Enclosure

Copy to:
Mr. Brian L. Gray
Gray, Hong & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Office of Environmental Quality Control

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

September 3, 1985

Captain P. O'Connor
Chief of Staff
Department of the Navy
Naval Base Pearl Harbor
Pearl Harbor, HI 96860

SUBJECT: Melemanu Woodlands - Phase III
Draft Environment Impact Statement

Dear Captain O'Connor:

Thank you for your review comments dated July 17, 1985 regarding the subject project. Your letter, as well as our response, will be included in the revised Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

Date received JUL 2 3 1985

File: 1151-ETS (D)

To: DB

Action:

July 19, 1985

TO: JOHN P. WHALEN, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM: TOM T. NEKOTA

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT
REZONING FROM AG-1 AGRICULTURAL TO R-6
RESIDENTIAL DISTRICT-MELEMANU WOODLANDS PHASE III
TMK: 9-5-02: 4,6, and por. 11

We have determined that the Environmental Impact Statement for the rezoning from AG-1 Agricultural to R-6 Residential District for the Melemanu Woodlands Phase III is generally acceptable

The applicant is aware of the recreational needs and park dedication requirements for the proposed project. The park plans for the project will be coordinated with our Department.

Thank you for the opportunity to review the EIS report.

Tom T. Nekota
TOM T. NEKOTA, Director

TN:as (Jason Yuen, Advance Planning)
cc: Gray, Hong & Associates

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

September 3, 1985

Mr. Tom T. Nekota, Director
Department of Parks and Recreation
City and County of Honolulu
650 South King Street, 10th Floor
Honolulu, HI 96813

SUBJECT: Melemanu Woodlands - Phase III
Draft Environmental Impact Statement

Dear Mr. Nekota:

Thank you for your review comments dated July 19, 1985 regarding the subject project. Your letter, as well as our response, will be included in the revised Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU

COPY

JUL 25 1985

Date Received
File: 1151-E(ED)
To: DB
Action:

July 23, 1985

TO: JOHN P. WHALEN, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM: KAZU HAYASHIDA, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR MELEMANU WOODLANDS - PHASE III

We have no objections to the proposed rezoning and development of 70+ acres for the Melemanu Woodlands - Phase III project. The developer will be required to install all the off-site water improvements and to pay a proportionate share for the improvements that are necessary to utilize the Board's proposed Wahiawa II Well.

If you have any questions, please contact Lawrence Whang at 527-6138.

KAZU HAYASHIDA
Manager and Chief Engineer

cc: Mr. Brian L. Gray

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

September 3, 1985

Mr. Kazu Hayashida
Manager and Chief Engineer
Board of Water Supply
630 South Beretania Street
Honolulu, Hawaii 96813

SUBJECT: Melemanu Woodlands - Phase III
Draft Environmental Impact Statement

Dear Mr. Hayashida:

We thank you for your review comments dated July 23, 1985 regarding the subject project. The revised Environmental Impact Statement will include the water master plan approved by your office. The revised Environmental Impact Statement will also identify that offsite improvements will be paid for on a proprotionate share basis.

Should you have any questions regarding this matter please contact our office. Your review comments, as well as our response, will be incorporated into the revised Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

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

FRANK F. FASI
MAYOR

DONALD A. CLEGG
CHIEF PLANNING OFFICER

GENE CONNELL
DEPUTY CHIEF PLANNING OFFICER

Date Received JUL 30 1985
File: 1151-EC(5)
To: DB
Action:

WL/DGP 7/85-1912

July 29, 1985

Mr. Brian L. Gray
Gray, Hong and Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Gray:

We have reviewed the Draft Environmental Statement for Phase III of the Melemanu Woodlands project and have no comments.

Thank you for the opportunity to review the subject document.

Sincerely,

Donald Clegg
DONALD A. CLEGG
Chief Planning Officer

cc: Department of Land Utilization

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

September 3, 1985

Mr. Donald A. Clegg
Chief Planning Officer
Department of General Planning
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

SUBJECT: Melemanu Woodlands - Phase III
Draft Environmental Impact Statement

Dear Mr. Clegg:

We thank you for your review comments dated July 29, 1985 regarding the subject project. Your letter, as well as this response, will be included in the revised Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU
HONOLULU MUNICIPAL BUILDING
650 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. FASI
MAYOR

JOHN E. HIRTEN
DIRECTOR

JUL 30 1985
Date Received _____
File: 1.0024 EIS (T)
To: DB
Action: JOSEPH P. MAGALDI, JR.
DEPUTY DIRECTOR

~~TS7/85-3044~~
PL 1.0024

July 29, 1985

MEMORANDUM

TO: JOHN P. WHALEN, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM: JOHN E. HIRTEN, DIRECTOR

SUBJECT: EIS FOR REZONING FROM AG-1 AGRICULTURAL TO R-6 RESIDENTIAL DISTRICT FOR MELEMANU WOODLANDS PHASE III
TMK: 9-5-02: 4, 6, POR. 11

This is in response to the Office of Environmental Quality Control's request of July 8, 1985 for review and comments on the subject EIS.

We have reviewed the EIS and find that the transportation issues related to the project have been addressed.

During our review, we also noticed that the project consists of several private roads and driveways connected to the proposed city street. We recommend that these driveway and private road connections be standard City and County of Honolulu concrete driveways.

If there are any questions, please contact Kenneth Hirata of my staff at local 5009.

Sincerely,

for JOHN E. HIRTEN

cc: Gray, Hong & Associates, Inc.

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. ADKI, PE

September 3, 1985

Mr. John E. Hirten, Director
Department of Transportation Services
City and County of Honolulu
650 South King Street, 3rd Floor
Honolulu, HI 96813

SUBJECT: Melemanu Woodlands - Phase III
Draft Environmental Impact Statement

Dear Mr. Hirten:

We thank you for your review comments dated July 29, 1985 regarding the subject project. Your review comment regarding the use of standard City and County of Honolulu concrete driveways will be followed in construction plan preparation for the subject project. This comment is considered a construction detail and, as such, no revision to the Environmental Impact Statement was considered.

Should you have any questions regarding this matter please contact our office. Your review comments, as well as our response, will be incorporated into the revised Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

110 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

AUG 2 1985
Date Received
File: 1151-EIS(D)
To: DB
Action:

ENV 85-198

July 30, 1985

MEMORANDUM

TO: MR. JOHN P. WHALEN, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM: RUSSELL L. SMITH, JR., DIRECTOR AND CHIEF ENGINEER
DEPARTMENT OF PUBLIC WORKS

SUBJECT: EIS FOR THE REZONING OF MELEMANU WOODLANDS,
PHASE III, WAIPIO, EWA, OAHU

We have reviewed the subject EIS and have the following comments.

1. The existing sewer system is adequate to serve the Phase III development as proposed.

2. We have reservations concerning the drainage report; and for the present time, it is not acceptable. Comments on the drainage report will be submitted directly to the responsible engineer.

For RUSSELL L. SMITH, JR.
Director and Chief Engineer

cc: Gray, Hong and Associates, Inc.

XIII A-12

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. SILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

September 3, 1985

Mr. Russell L. Smith, Jr.
Director and Chief Engineer
Department of Public Works
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, HI 96813

SUBJECT: Melemanu Woodlands - Phase III
Draft Environmental Impact Statement

Dear Mr. Smith:

We thank you for your review comments dated July 30, 1985 regarding the subject project. The draft Environmental Impact Statement contained the Preliminary Drainage Report as was originally submitted to your office. Due to the time constraints in processing the Environmental Impact Statement, an approved Drainage Report cannot be a part of the final EIS and drainage will be identified as an unresolved issue. However, we will continue to work with your office to resolve the details regarding the detention basin and have included the current version of the Preliminary Drainage Report in the revised EIS.

Should you have any questions regarding this matter please contact our office. Your review comments, as well as our response, will be incorporated into the revised Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

XIII B-12

AUG 4 1985

File: 1151-ETC (D)
DLS
To:
Action:

July 31, 1985

Your: 85/Z-9(CC)

Honorable John P. Whalen, Director
Department of Land Utilization
City and County of Honolulu
650 So. King Street
Honolulu, Hawaii 96813

Dear Mr. Whalen:

Thank you for the opportunity to comment on the rezoning of agricultural lands to residential use for the Melemanu Woodlands Phase III project at Waipio.

If the project calls for development of ground water within the Pearl Harbor groundwater control area, a permit from this department will be required.

We recommend that if any previously unidentified sites or remains (such as artifacts, shell, bone, or charcoal deposits, human burials, rock or coral alignments, pavings, or walls) are encountered, please direct the applicant to stop work and contact our historic sites office at 548-7460 immediately. Work in the immediate area should be stopped until the office is able to assess the impact and make further recommendations for mitigative activity, if warranted.

Sincerely,

Susumu Ono

SUSUMU ONO
Chairperson
and
State Historic Preservation Officer

cc: Gray, Hong & Associates

XIII A-13

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

September 3, 1985

Mr. Susumu Ono
Chairperson and
State Historic Preservation Office
Department of Land and Natural Resources
State of Hawaii
P. O. Box 621
Honolulu, Hawaii 96809

SUBJECT: Melemanu Woodlands - Phase III
Draft Environmental Impact Statement

Dear Mr. Ono:

Thank you for your review comments dated July 31, 1985 regarding the subject project. The proposed source of water for Melemanu Woodlands - Phase III is the Wahiawa II well within the Board of Water Supply Corporation Yard within Wahiawa. The Board of Water Supply has applied for and obtained a use permit from your department for pumpage within the Pearl Harbor Ground Water Control Area (PHGWCA). The draft Environmental Impact Statement indicated that action on a use permit was pending. The revised Environmental Impact Statement will indicate that a use permit has been obtained.

The revised Environmental Impact Statement will identify the recommendation that should previously unidentified archaeological sites or remains be encountered, work should stop subject to assessment by your office and appropriate mitigative activity, if warranted.

Should you have any questions regarding this matter, please contact our office. Your review comments, as well as our response, will be included in the revised Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

XIII B-13

GEORGE R. ARIYOSHI
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HAWAII 96801

CHARLES G. CLARK
DIRECTOR OF HEALTH

AUG 6 1985
Date Received ______
File: 1151-258 (D)
To: DB
Action: cc: J. Bein
5/6

In reply, please refer to:
EPHSD

July 31, 1985

Mr. John P. Whalen, Director
Department of Land Utilization
650 S. King St.
City and County of Honolulu
Honolulu, Hawaii 96813

Dear Mr. Whalen:

Subject: Melemanu Woodlands, Phase III - Comments on Draft Environmental Impact Statement and Request for Zone Change

Thank you for allowing us to review and comment on the subject project. We provide the following comments:

Air

Comments should be expressed on the broad, general statements that were made in the Draft EIS section on air quality. No attempt was made to quantify the existing air quality nor the impact that would result from the increased vehicular activity directly and indirectly associated with the project. Also, the assessment did not address the measures that will be taken during the construction phase to mitigate fugitive dust.

Drinking Water

It appears that the proposed project will require new sources for drinking water together with a new storage tank.

The Department of Health is vested with the responsibility to assure that public water systems in the State are providing water which is in compliance with the State's drinking water regulations known as Chapter 20, Title 11, Administrative Rules, and are in compliance with all other applicable terms and conditions of Chapter 20. A public water system is defined as a system serving 25 or more individuals at least 60 days per year or having a minimum of 15 service connections. In the event that the new well is intended to serve these minimum numbers of persons or service connections, please be advised that the well and distribution system will be subject to the terms of Section 11-20-29 and Section 11-20-30 of Chapter 20 respectively.

Briefly, Section 11-20-29 of Chapter 20 requires all new sources of potable water serving public water systems to be approved by the Director of Health prior to their use to serve potable water. Such approval is based primarily upon the satisfactory submission of an engineering report which adequately addresses all concerns as set down in Section 11-20-29. The engineering report must be prepared by a registered professional engineer and bear his or her seal upon submittal.

Section 11-20-30 requires that new or substantially modified distribution systems for public water systems be approved by the Director of Health. Such approval depends upon the submission of plans and specifications for the project prior to construction and the demonstration that the new or modified portions of the system are capable of delivering potable water in compliance to all maximum contaminant levels as set down in Chapter 20 once the distribution system or modification is completed.

In the event that the proposed well is solely intended to serve irrigation or other nondomestic purposes, or if the proposed well will not serve the minimum number to qualify as a public water system as defined earlier, then the new well and distribution system are not subject to Chapter 20 requirements. However, if at some point in the future, the decision is made to use the water for potable purposes, or if the system expands to meet the minimum service population or number of service connections, the source and distribution system will be subject to Section 11-20-29 and Section 11-20-30, respectively, prior to their use to serve the new public water system.

It should be noted that wells in the Wahiawa area has been found to be contaminated with traces of tetrachloroethylene (PCE), and in one case (Schofield shaft) the levels of PCE exceeded the maximum contaminant levels proposed by EPA. The water purveyor, whether it be the Board of Water Supply or the developer, should be made aware of the contamination problem and they should institute alternate plans for new water sources or water treatment if the proposed wells prove to be contaminated.

Noise

1. Draft EIS, Chapter VIII, Mitigative Measures to Minimize Impact, paragraph I, on page 62, in part states that "The grading activities or activities which produce high noise levels will be allowed during holidays, weekends or before 7:00 A.M. or after 4:00 P.M." This statement would not comply with the current noise regulations. Section 11-43-6(3)(I) of Title 11, Administrative Rules Chapter 43, Community Noise Control for Oahu, specifies the following permit conditions for construction activities.

   a. "No permit shall allow construction activities creating excessive noise when measured at or beyond the property line for the hours before 7:00 A.M. and 6:00 P.M. of the same day."

   b. "No permit shall allow construction activities which emit noise in excess of ninety-five dBA at or beyond the property line of the construction site, except between 9:00 A.M. and 5:30 P.M. of the same day."

   c. "No permit shall allow construction activities which exceed the allowable noise levels on Sundays and on the following holidays: New Year's Day, Presidents' Day, Memorial Day, Kamehameha Day, Independence Day, Labor Day, Discoverer's Day, Veterans' Day, Thanksgiving Day and Christmas Day. Activities exceeding ninety-five dBA shall be prohibited on Saturdays."

2. Draft EIS, Chapter VIII, Mitigative Measures to Minimizing Impact, paragraph 6, on page 64, states that "Noise impacts on the project from Wheeler Air Force Base fixed wing and rotor-driven aircraft can potentially affect occupants. The impact will be minimized by appropriately informing potential occupants (tenants/homeowners) and by utilizing building materials that provide varying degrees of soundproofing."

   Since the aircraft fly-over noise will tend to have a more pronounced impact on the subject project, it is recommended that the residential structures be designed to attenuate the aircraft noise to the interior to be within the property line limits of the existing Administrative Rules Chapter 43, Community Noise Control for Oahu.

3. The proposed project must be designed to comply with the provisions of Title II, Administrative Rules Chapter 43, Community Noise Control for Oahu.

4. Vehicular noise from the H-2 freeway and noise from the project's park and recreation areas may adversely effect residents of the proposed development.

5. Construction activities for the proposed project must comply with the provisions of Title II, Administrative Rules Chapter 43, Community Noise Control for Oahu:

   a. The contractor must obtain a noise permit if the noise levels from the construction activities are expected to exceed the allowable levels of the regulations.

   b. Construction equipment and onsite vehicles or devices requiring an exhaust of gas or air must be equipped with mufflers.

   c. The contractor must comply with the conditional use of the permit as specified in the regulations and conditions issued with the permit.

6. Traffic noise from heavy vehicles travelling to and from the construction site must be minimized near existing residential areas and schools, and must comply with the provisions of Title II, Administrative Rules Chapter 42, Vehicular Noise Control for Oahu.

Sincerely yours,

MELVIN K. KOIZUMI
Deputy Director for
Environmental Health

cc: Mr. Brian Gray, Gray, Hong & Associates
Mr. Tyrone Kusao, AICP, Inc.

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

September 3, 1985

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. MOJIMA, PE
ROY T. AOKI, PE

Mr. Melvin K. Koizumi
Deputy Director for
Environmental Health
Department of Health
State of Hawaii
P. O. Box 3378
Honolulu, HI 96801

SUBJECT: Melemanu Woodlands - Phase III
Draft Environmental Impact Statement

Dear Mr. Koizumi:

We thank you for your comments dated July 31, 1985 regarding the subject project. Your comments discussed air quality, drinking water quality and noise. We are providing the following responses to your comments:

Air

The revised EIS contains comparative air quality data resulting from vehicular activity as extracted from an Environmental Impact Statement for a 476-acre development within Mililani Town. This Environmental Impact Statement was completed in 1983. While the magnitude of the Mililani Town project was substantially greater than that proposed at Melemanu Woodlands - Phase III, data contained in the foregoing EIS is relevant to the Phase III project and demonstrates that there should be no significant deterioration in air quality resulting from Melemanu Woodlands - Phase III.

Your review comment letter stated that the draft Environmental Impact Statement did not address measures to mitigate construction phase fugitive dust. This statement is not correct. Section VIII of the draft EIS, as well as revised EIS, specifically identify the proposed mitigation measures to control dust during construction. The proposed method to control to fugitive dust is wetting down of loose soils when earthwork activity occurs or when earth surfaces are exposed.

Drinking Water

The proposed source of drinking water for the project is the Wahiawa II well within the Board of Water Supply Coporation Yard in Wahiawa Town. The Board of Water Supply currently has an application for the Department of Health requesting approval of this source. The application has been prepared to conform to all requirements of Chapter 20 referenced in your review comment letter. The review process will ensure that the well is of suitable quality for drinking water purposes and does not contain contaminants exceeding acceptable levels.

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 - TELEPHONE: (808) 521-0306

Noise

The revised Environmental Impact Statement will correctly state that grading activities or activities which produce high noise levels will "not" be allowed during holidays, weekends or before 7:00 a.m. or after 6:00 p.m. In addition, we have also specifically referenced the following:

1. The need for compliance with Administrative Rules, Chapter 43, Community Noise Control for Oahu.

2. The need to have traffic noise from heavy construction vehicles conform to Administrative Rules, Chapter 42, Vehicular Noise Control for Oahu.

3. Identification that the noise permit is a part of Administrative Rules, Chapter 43, Community Noise Control for Oahu.

In addition to the following modifications to the revised EIS, an environmental noise assessment has been obtained from the U. S. Army and has been included in the revised EIS. This document quantifies noise levels in and around the project site. This information has been included in the revised EIS since an AICUZ study previously thought to be available this fall will not be available until late 1986.

The revised Environmental Impact Statement will also contain field measurements of noise levels associated with the H-2 Freeway.

Should you have any questions regarding this matter, please contact our office. Your review comments, as well as our response, will be incorporated into the revised Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

HAWAIIAN ELECTRIC COMPANY, INC · PO BOX 2750 · HONOLULU, HAWAII 96840

ENV 2-1
NV/G

HEI

Brenner Munger, Ph.D., P.E.
Manager
Environmental Department
(808) 548-6880

AUG 8 1985
Date Received
File: 1151-ECS (5)
To: DB
Action:

August 6, 1985

Mr. John P. Whalen, Director
Department of Land Utilization
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Whalen:

Subject: Draft Environmental Impact Statement for Melemanu Woodlands-Phase III, Rezoning from AG-1 to R-6

We have reviewed the subject project and find that an existing 46 kv line crosses the project site. Based on this impact we have the following comments:

1. The developer must coordinate closely with HECO to ensure that the integrity/reliability of the system is maintained.

2. If the line needs to be relocated the developer shall obtain the necessary new easement and file the required EIS.

3. If any relocation, line or pole, is required, the developer will coordinate all work necessary for a timely relocation.

In addition to the 46 kv line we also have a 12 kv distribution circuit sharing the same right of way. There is also another 12 kv distribution circuit that lies generally along the north edge of the project site that now serves Melemanu. The developer must coordinate closely with us to ensure our existing facilities are maintained.

Thank you for the opportunity to review this Draft Environmental Impact Statement.

Sincerely,

Brenner Munger

Brenner Munger, Ph.D., P.E.
Manager, Environmental Department

cal

cc: Mr. Brian L. Gray ✓
Gray, Hong & Assoc.

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

September 3, 1985

Mr. Brenner Munger, Ph.D., P.E.
Manager, Environmental Department
Hawaiian Electric Company, Inc.
P. O. Box 2750
Honolulu, HI 96840

SUBJECT: Melemanu Woodlands - Phase III
Draft Environmental Impact Statement

Dear Mr. Munger:

We thank you for your review comments dated August 6, 1985 regarding the subject project. The revised Environmental Impact Statement will identify that there is an existing 46 kv line as well as a 12 kv line crossing the project site. The revised EIS will further identify that all relocation work will be coordinated with Hawaiian Electric as well as the City, and that easements will be created for all relocated power lines.

The extent of any power line relocation will be limited to that within the project area. The purpose of this Environmental Impact Statement is to identify all impacts of the project. The inclusion of the relocation of power lines within this Environmental Impact Statement will eliminate the need for any separate Environmental Assessment and EIS preparation with regard to power line relocation.

Should you have any questions regarding this matter please contact our office. Your review comments, as well as our response, will be incorporated into the revised Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

Dan Bills
for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

1151-6351(D)

D F

University of Hawaii at Manoa

Water Resources Research Center
Holmes Hall 283 • 2540 Dole Street
Honolulu, Hawaii 96822

8 August 1985

Mr. John P. Whalen, Director
Department of Land Utilization
650 S. King Street
Honolulu, HI 96813

Dear Mr. Whalen:

SUBJECT: Draft Environmental Impact Statement for Melemanu Woodlands - Phase III, Waipio, Ewa, Oahu, July 1985

We have reviewed the subject DEIS and have no comment to offer. Thank you for the opportunity to comment. This material was reviewed by WRRC personnel.

Sincerely,

Edwin T. Murabayashi
EIS Coordinator

EIM:jm

cc: Brian L. Gray

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. MOJIMA, PE
ROY T. AOKI, PE

September 3, 1985

Mr. Edwin T. Murabayashi
EIS Coordinator
University of Hawaii at Manoa
Water Resources Research Center
Holmes Hall 283
2540 Dole Street
Honolulu, HI 96822

SUBJECT: Melemanu Woodlands - Phase III
Draft Environmental Impact Statement

Dear Mr. Murabayashi:

Thank you for your review comments dated August 8, 1985. Your letter, as well as this response, will be included in the revised Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 - TELEPHONE (808) 521-0306

1151-EIS(F)

DB

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU, HAWAII 96813
PHONE 523-4181

FRANK F. FASI
MAYOR

ALVIN K.H. PANG
DIRECTOR

August 13, 1985

Mr. John P. Whalen, Director
Department of Land Utilization
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Whalen:

Subject: Environmental Impact Statement
Project: Melemanu Woodlands Phase III
TMK: 9-5-2: 4, 6 and Portion of 11
Request: Rezoning from AG-1 Agricultural to R-6 Residential District
Proposal: Construct 1,122 units under the Planned Development-Housing concept.

Thank you for the opportunity to review and comment on the proposed development.

The location of the subject proposal is consistent with the locational element of the Housing Assistance Plan and the Waikahalaua Valley has been identified as a suggested location for the development of government assisted housing projects.

The Department is mandated to provide housing units for the low- and moderate-income families on Oahu. We are glad to note that the applicant has made a commitment to provide 15 percent of the project's housing to low- and moderate-income group.

Please contact Mr. James Miyagi of this Department at 523-4264 who will assist the developer in formulating a program to provide these units.

We will retain the EIS for our files.

Sincerely,

ALVIN K. H. PANG

cc: Mr. Brian L. Gray
Gray, Hong & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

September 3, 1985

Mr. Alvin K. H. Pang, Director
Department of Housing and
Community Development
City and County of Honolulu
650 South King Street
Honolulu, HI 96813

SUBJECT: Melemanu Woodlands - Phase III
Draft Environmental Impact Statement

Dear Mr. Pang:

Thank you for your review comments dated August 13, 1985 regarding the subject project. The developer's commitment with respect to low- and moderate-income housing units will remain in the revised Environmental Impact Statement as presented in the draft version.

Should you have any questions regarding this matter please contact our office. Your review comments, as well as our response, will be included in the revised Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 15TH AIR BASE WING (PACAF)
HICKAM AIR FORCE BASE, HAWAII 96853-5000

AUG 21 1985
ate Received
File: 1151 ESC (5)
To: DB
Action:

REPLY TO ATTN OF: DEEV

19 AUG 1985

SUBJECT: Rezoning from Ag-1 Agricultural to R-6 Residential District for Melemanu Woodlands, Phase III - Draft Environmental Impact Statement

TO: City and County of Honolulu
Dept of Land Utilization
ATTN: Mr John P. Whalen, Director
650 South King Street
Honolulu, Hawaii 96813

1. As indicated in our letter of 11 June 1985, which is also an attachment in the Environmental Impact Statement (page XII A-23), proposed development is within the aircraft flight path departing from Wheeler Air Force Base (AFB).

2. Although proposed measures to inform potential occupants of aircraft noise and to incorporate sound insulation as part of building construction specifications are relevant mitigative measures, our concern still remains as to whether the proposed "residential" land use is compatible with the nearby airfield operation.

3. Our current flight paths are maintained to minimize the impact on existing communities adjacent to Wheeler AFB, such as Wahiawa and Mililani. Continued development of lands adjacent to Wheeler AFB will likely result in unavoidable noise impact.

4. Currently, the Air Force and the Army are jointly developing an Air Installation Compatible Use Zone (AICUZ) program for Wheeler AFB. Unfortunately, the AICUZ is not scheduled to be completed until late 1986.

5. Request that our office continue to be informed regarding the progress of the rezoning request. Should you have any questions, our point of contact is Mr George Fujimoto at 449-1831.

JERRY C. PULLIUM, Colonel, USAF
Director of Civil Engineering

cc: Gray, Hong & Associates, Inc.
ATTN: Mr Brian L. Gray
119 Merchant St., Suite 607
Honolulu, Hawaii 96813

15 ABW/DO/JAC/PAM/SGPB
15 ABS/DE
HQ PACAF/DEEV
326 AD/DO

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL B.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

September 3, 1985

Colonel Jerry C. Pullium, USAF
Director of Civil Engineering
Department of the Air Force
Headquarters 15th Air Base Wing (PACAF)
Hickam Air Force Base, Hawaii 96853

SUBJECT: Melemanu Woodlands - Phase III
Draft Environmental Impact Statement

Dear Colonel Pullium:

Thank you for your review comments dated August 19, 1985 regarding the subject project. With respect to your concerns regarding the subject project, the revised Environmental Impact Statement identifies that the aircraft flight path departing Wheeler Army Airfield passing over the proposed project site. We have also included an Environmental Noise Assessment prepared in 1982 identifying noise levels within the surrounding community. Based on the U. S. Department of Housing and Urban Development (HUD) criteria referenced in the Assessment, the noise level within the project area is not unacceptable. However, the revised Environmental Impact Statement also references that the forthcoming AICUZ noise study will not be completed until late 1986.

Should you have any questions regarding this matter please contact our office. Your review comments, as well as our response, will be included in the revised Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

cc: B. Gray

AUG 2 1 1985
Date Received
File: 1151-615(D)
To: DB
Action:

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
P. O. BOX 50004
HONOLULU, HAWAII 96850

August 20, 1985

Mr. John P. Whalen, Director
Department of Land Utilization
City & County of Honolulu
650 South King Street
Honolulu, Hawaii, 96813

Dear Mr. Whalen:

Subject: Draft EIS for Melemanu Woodlands - Phase III, Waipio, Ewa, Oahu

We reviewed the subject environmental impact statement and offer the following comments for your consideration:

Figure 2 - Will some sort of controlled drainage system be used for the 151-acre Mililani High Tech Park detention basin watershed? As presented in Figure 2, the contours do not appear to agree with the drainage area boundaries shown.

Page 36 - The following statement is made under item 3 in the discussion on Surface Water Quality: "During grading operations when slopes are exposed, soil will be carried away and the sediment load within Waikakalaua Stream will increase." If all of the erosion mitigation measures mentioned on Page 63 are utilized, this may not necessarily be the case.

Page 63 - The maximum number of acres that may be open at one time under the grading ordinance is 15, not 20 as is stated.

Thank you for the opportunity to review the document.

Sincerely,

Francis C.H. Lum

FRANCIS C.H. LUM
State Conservationist

cc:
Mr. Brian L. Gray
Gray, Hong & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, HI 96813

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

September 3, 1985

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

Mr. Francis C. H. Lum
State Conservationist
Soil Conservation Service
U. S. Department of Agriculture
P. O. Box 50004
Honolulu, HI 96850

SUBJECT: Melemanu Woodlands - Phase III
Draft Environmental Impact Statement

Dear Mr. Lum:

Thank you for your review comments dated August 20, 1985. We are providing the following responses to your comments:

Detention Basin Watershed Drainage System

Appendix A of the draft Environmental Impact Statement contained the Preliminary Drainage Report for the project. The revised Environmental Impact Statement will contain the current version of the Preliminary Drainage Report which is being processed through the City and County of Honolulu. The revised Preliminary Drainage Report identifies a drainage system to be installed along the southern border of the watershed boundary. This drainage system, in all probability, will be a pipe system. The type of system, however, is the design responsibility of the engineers for the High-Tech Park. Inclusion of this information in the revised Environmental Impact Statement should clarify the point which you have raised.

Surface Water Quality

We concur with your statement that if all the erosion mitigation measures mentioned within the erosion mitigation section of the EIS are utilized, the soil loss resulting in increased sediment load within Waikakalaua Stream may not necessarily occur. However, due to the format of the Environmental Impact Statement, the environmental setting and probable impacts are identified in one section, whereas mitigation measures are identified in another section. We believe the draft Environmental Impact Statement actually describes the impact with respect to soil loss as well as identifies ways to minimize soil loss during grading. Therefore, we have not changed the revised Environmental Impact Statement with respect to our description regarding this matter.

Grading Ordinance

The revised Environmental Impact Statement will identify that the maximum size grading increment which can be opened at any one time is 15 acres rather than 20 acres as identified in the draft Environmental Impact Statement.

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

Should you have any questions regarding this matter please contact our office. Your review comments, as well as our response, will be included in the revised Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

DEPARTMENT OF PLANNING AND ECONOMIC DEVELOPMENT
KAMAMALU BUILDING, 250 SOUTH KING ST, HONOLULU HAWAII
MAILING ADDRESS P.O. BOX 2359 HONOLULU HAWAII 96804 • TELEX 7430250 HIDPED

GEORGE R. ARIYOSHI
GOVERNOR
KENT M. KEITH
DIRECTOR
MURRAY E. TOWILL
DEPUTY DIRECTOR
LINDA KAPUNILAI ROSEHILL
DEPUTY DIRECTOR

DIVISIONS
BUSINESS AND INDUSTRY DEVELOPMENT DIVISION
ENERGY DIVISION
FOREIGN TRADE ZONE DIVISION
LAND USE DIVISION
PLANNING DIVISION
RESEARCH AND ECONOMIC ANALYSIS DIVISION
OFFICES
ADMINISTRATIVE SERVICES OFFICE
INFORMATION OFFICE

Ref. No. P-2531

August 20, 1985

Date Received AUG 23 1985

To: _____

_____

_____

_____

The Honorable John P. Whalen
Director
Department of Land Utilization
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Whalen:

Subject: DEIS for Melemanu Woodlands, Phase III, Waipio, Ewa, Oahu

We have reviewed the subject draft environmental impact statement (DEIS) and have the following comments relative to the Hawaii Coastal Zone Management Program objectives and policies.

Coastal Hazards: Develop and communicate adequate information on flood and erosion; control development in areas subject to flood and erosion; ensure that developments comply with requirements of the Federal Flood Insurance Program (Chapter 205A-2(c)(6)(A)(B)(C)).

The subject DEIS describes a residential development proposed to be situated at the bottomlands of Waikakalaua Gulch. This area could be inundated if runoff from heavy rainfall is too great to be carried by Waikakalaua Stream. The document also notes that the soil is susceptible to erosion. Given this, the document should discuss the hazards of flood and erosion, particularly with regard to impacts on public health and safety, residential structures, and infrastructure.

Other Concerns

The subject DEIS states the realignment of Waikakalaua Stream may require permits and approvals from the U.S. Army Corps of Engineers and the City and County Departments of Public Works and Land Utilization. Other regulatory mechanisms which may also apply are the Stream Alteration Permit, State Department of Land and Natural Resources, and the Federal consistency determination, Hawaii Coastal Zone Management Program.

Thank you for the opportunity to review and comment on the subject document.

Very truly yours,

Murray E. Towill

Kent M. Keith

cc: Mr. Brian L. Gray,
Gray, Hong & Assoc., Inc.
Office of Environmental Quality Control

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

September 3, 1985

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

Mr. Kent M. Keith, Director
Department of Planning & Economic Development
Kamamalu Building
250 South King Street
Honolulu, Hawaii 96813

SUBJECT: Malamanu Woodlands - Phase III
Draft Environmental Impact Statement

Dear Mr. Keith:

Thank you for your review comments dated August 20, 1985. Your comments suggested that the document discuss flood hazard within Waikakalau Gulch. We would like to point out that the Environmental Impact Statement specifically identified downstream flooding problems and the proposed method in which the downstream conditions will not be aggravated However, the revised Environmental Impact Statement will include information regarding the potential for flooding within the project site and will identify that the project site is within Zone C of the Flood Insurance Rate Mapping Program. Zone C is identified as areas subject to minimal flooding. It will further be identified within the revised Environmental Impact Statement that a final Drainage Report will be prepared which will identify the water surface elevation within Waikakalaua Stream at a peak design discharge equivalent to a 100-year storm. It will also be identified that the finish floor of any habitable unit will be a minimum of five feet above this water surface elevation.

Your review comments also noted that the draft Environmental Impact Statement identifies soils in the area as susceptible to erosion. However, we do not think this is an accurate description of the erosion potential as described in the draft document. The draft EIS reports the Soil Conservation Service mapping studies generally indicate that the soils in the area are generally susceptible to erosion. However, this erosion potential is specifically related to the steep gulch walls rather than the gulch floor where construction is proposed. Further, the draft EIS identifies that the soils in the area has demonstrated remarkable integrity with respect to erosion. This integrity is evidenced by previous stream realignment where nearly vertical cut banks were created, and 30 years after their original construction, there is little or no evidence of erosion.

Your final review comment identifies that a stream alteration permit as well as Federal Consistency Determination may be required in addition to a Department of the Army permit and approvals from the City and County of Honolulu. The revised Environmental Impact Statement identifies the need for a Federal Consistency Determination in conjunction with the Department of the Army permit. However, a stream alteration permit only applies to windward streams.

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

Should you have any questions regarding this matter please contact our office. Your review comments, as well as our response, will be included in the revised Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

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

FRANK F. FASI
MAYOR

JOHN P. WHALEN
DIRECTOR

Date Received AUG 2 1 1985
File: 115 ES-D
To: DB
Action:
(RF)

August 20, 1985

Mr. Brian L. Gray
Gray, Hong & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Gray:

Draft Environmental Impact Statement (EIS)
For Melemanu Woodlands Phase III

We have reviewed the Draft EIS and have the following comments to offer:

1. Excavation and Soils: The Draft EIS states (p. 10) that, in addition to excavation required to create the new stream channel, 100,000 cubic yards of excavation will be required for the main roadway. Since no soils study has yet been performed, you have apparently relied upon the soils studies for Phases I and II to determine preliminary soils engineering standards and to prepare the proposed site plan (pp. 35-36). On a visit to Phase II some time ago, we noted cut slopes which were not revegetated and which appeared to be eroding. Have there been erosion and/or revegetation problems in previous phases? If so, how do you propose to avoid such problems in Phase III?

   Would it be correct to assume that the results of the soils study, when completed, could lead to different engineering standards and to alterations in the site plan?

2. Proposed Stream Realignment: There is very little discussion of the alternative designs for the new portions of stream channel. What kind of design and construction do you propose that would fulfill your stated design philosophy to keep the stream

   "in as natural condition as possible" (p. 15) and would meet drainage design standards as well? Are there other projects which have modelled this kind of innovative solution?

   Your stream biology consultant has recommended maintaining "as natural a stream bed as possible within the realigned segment to insure suitable habitat for stream fauna" (Appendix C). While his study identified no significant native fauna worthy of preservation, nevertheless, the presence of fish and other aquatic life is a major factor in the aesthetic and recreational value of a stream. What channel design features are necessary to provide suitable habitat for stream fauna?

   What percentage of the stream's length within the project is represented by the 2,300 linear feet proposed for realignment?

3. Aircraft Noise Impacts on the Project: In their comments on the EIS Preparation Notice, the Air Force has expressed concern about noise from aircraft using Wheeler Air Force Base. The Air Force is currently preparing an Air Installation Compatibility Use Zone (AICUZ) study, which is scheduled for completion in September 1985. We are concerned about zoning for residential use areas which may have serious noise problems. If the AICUZ information cannot be included in the Revised EIS, it should be noted as an unresolved issue.

4. Fire Response Time: Citing a substandard fire response time from existing facilities, the Fire Department has recommended the use of noncombustible building materials (letter in response to EIS Preparation Notice dated May 9, 1985). The applicant's position regarding this recommendation is not clear. Is the use of noncombustible materials under consideration? Would this entail significant added expense?

5. Reference: Section XII, List of Necessary Approvals (p. 69). Approval for Planned Development - Housing project must be sought from the Department of Land Utilization, not City Council.

If you have any questions, please contact Mr. Robin Foster of our staff at 527-5027.

Very truly yours,

John P. Whalen
JOHN P. WHALEN
Director of Land Utilization

JPW:sl
2350A

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

September 3, 1985

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. MOJIMA, PE
ROY T. AOKI, PE

Mr. John P. Whalen, Director
Department of Land Utilization
City and County of Honolulu
650 South King Street, 7th Floor
Honolulu, Hawaii 96813

SUBJECT: Melemanu Woodlands - Phase III
Draft Environmental Impact Statement

Dear Mr. Whalen:

We thank you for your review comments dated August 20, 1985 regarding the subject project. Our response to your review comments are as discussed below:

Excavation and Soils

In response to your comment regarding revegetation, yes, there have been revegetation problems in previous increments. The soils in the area are relatively sterile and on the acidic side and tend to absorb nutrients. These conditions have created the revegetation problems.

A contract has already been let for landscaping the areas referred to. A landscaping plan consisting of bushes, trees and kikuya grass on the benches is intended to provide an aesthetic visual appearance. It is further hoped that the kikuya grass will spread down the slopes. In addition, several dry land types of plants and vines are being planted to determine the effectiveness for future use.

With respect to your comments regarding erosion, there have been no problems with erosion in previous increments. Although relatively sterile, the soils have high cohesion and do not readily erode. Cut slopes in Phase II and even near vertical slopes within the stream bed of Phase III show little sign of erosion.

It is not expected that the results of a soils study for Phase III will lead to different criteria. The project's soils engineer has already made a site inspection and commented on the apparent uniformity of soils within the entire valley.

Proposed Stream Realignment

As indicated in the draft EIS, it is proposed to create realigned channel sections consisting of natural section, CRM lining or concrete channel. These are the only possibilities for the realigned channel sections. We further believe that Waikakalaua Gulch is a perfect example where natural channel sections have been utilized and numerous years of existence and have revealed no sign of erosion. Specifically, Phase I of Waikalani Woodlands was regraded under the direction of Mr. Harold Stearns prior to the Planned Development

119 MERCHANT STREET, SUITE 807, HONOLULU, HAWAII 96813 - TELEPHONE: (808) 521-0306

Housing project. During this regrading, Waikakalaua Stream was realigned and the meandering bends were filled. No lining was used on the fill portion of the banks, and no sign of erosion is visible in the fill or cut banks. We believe this information further emphasizes the high stability of the soils in the area and further reinforces that lining is not necessary. However, the Department of Public Works, as well as your staff, will be reviewing this matter.

Aircraft Noise Impacts on the Project

The Army has provided an Environmental Noise Assessment performed in 1982 regarding airfield noise monitoring. This information has been included in the revised Environmental Impact Statement. The information contained in the Environmental Noise Assessment shows that noise from Wheeler Army Airfield is below recommended levels. Since the draft EIS, the Air Force has indicated that the AICUZ study thought to be completed in the fall of this year is not scheduled for completion until late 1986. Based on the fact that quantitative noise information has been included in the draft EIS, we have not listed the matter of noise as an unresolved issue. The Environmental Noise Assessment puts the expected noise level from Wheeler Army Airfield into perspective.

Fire Response Time

The revised EIS will indicate the project proposes to comply with all applicable provisions of the Uniform Fire Code and Uniform Building Code regarding fire protection. Fire separations and fire requirements are based on occupancy classification. No significant added expenses are anticipated to adequately comply with applicable codes.

Reference

The final EIS will identify that the Planned Development Housing approval must be obtained from the Department of Land Utilization.

Should you have any questions regarding this matter, please contact our office. Your review comments, as well as our response, will be included in the revised EIS.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt
cc: Towne Realty, Inc.
1151-1

AUG 2 2 1985
Date Received
File: 1151 EIS (D)
To: DB
Action:

21 AUG 1985

Directorate of Facilities Engineering

Mr. John P. Whalen, Director
Department of Land Utilization
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Whalen:

The Draft Environmental Impact Statement (EIS) for Helemanu Woodlands, Phase III, Waipio, Ewa, Oahu has been reviewed. Earlier comments on the proposed action were provided to Mr. Brian L. Gray of Gray, Hong and Associates, Inc. by US Army Support Command, Hawaii letter, dated June 7, 1985.

Based upon our review of the traffic data contained in the Draft EIS, the proposed development will result in significant vehicular congestion in the area of Leilehua Golf Course Road (LGCR), H-2 Freeway, and Kamehameha Highway during peak traffic hours. Current accessibility to and from Wheeler Air Force Base will be adversely impacted. The following specifics are provided for your consideration:

a. Although the Kamehameha Highway and LGCR intersection is identified as most critical, significant congestion will also occur at the on/off ramps to the H-2 Freeway. During peak traffic hours, the left turn from the freeway off-ramp onto LGCR will be extremely difficult. Traffic will back up. Also, vehicles attempting a left turn from LGCR onto the freeway on-ramp will result in significant delays for traffic attempting to reach Kamehameha Highway, unless there is an exclusive left turn lane.

b. Although the left turn from Kamehameha Highway onto LGCR is identified as the only major conflicting movement at this intersection, traffic congestion will be as significant for vehicles attempting to get onto Kamehameha Highway from LGCR.

Thank you for the opportunity to comment on the Draft EIS. If you require additional information, please contact the Environmental Management Office at 655-0694.

Sincerely,

Original signed by
KENNETH G. BELT
Ronald A. Borrello
Colonel, Corps of Engineers
Director of Facilities
Engineering

Copy Furnished:

Mr. Brian L. Gray
Gray, Hong & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

September 3, 1985

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

Colonel Ronald A. Borrello
Corps of Engineers
Director of Facilities Engineering
Department of the Army
Headquarters United States Support Command
Dunning Hall
Fort Shafter, HI 96858-5000

SUBJECT: Melemanu Woodlands - Phase III
Draft Environmental Impact Statement

Dear Colonel Borrello:

We thank you for your review comments dated August 21, 1985 regarding the subject project. The draft Environmental Impact Statement predicts future traffic trends with the completion of Melemanu Woodlands, Phases II and III. The revised Environmental Impact Statement has reduced the anticipated future traffic volumes to account for Melemanu Woodlands Phase II units which have already been constructed. The revised numbers indicate a total reduction in traffic volume of approximately 16%.

Your review comments indicated there would be significant backup and delays with respect to the traffic attempting to make a left turn from the off-ramp of H-2 freeway, as well as from traffic attempting to make a left turn onto the H-2 freeway on-ramp from Leilehua Golf Course Road. We would like to point out that the projected traffic levels will occur approximately seven years after construction begins. These levels will further gradually be reached and allow ongoing evaluation of traffic congestion. We believe the draft Environmental Impact Statement is accurate in its assessment that the proposed increased traffic will add to congestion along Leilehua Golf Course Road. However, we also believe the draft Environmental Impact Statement is accurate in stating that major improvements are not merited by Melemanu Woodlands, Phase III.

The draft Environmental Impact Statement further identifies Mililani High-Tech Park and significant improvements which are proposed for Leilehua Golf Course Road should this project commence. The High-Tech Park proposes immediate changes to Leilehua Golf Course Road which include a left turn lane onto the H-2 on-ramp.

Should you have any questions regarding this matter please contact our office. Your comments, as well as our response, will be included in the revised Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt
cc: Towne Realty, Inc.
1151-1

119 MERCHANT STREET, SUITE 607, HONOLULU HAWAII 96813 · TELEPHONE (808) 521-0306

GEORGE R. ARIYOSHI
GOVERNOR

JACK K. SUWA
CHAIRMAN, BOARD OF AGRICULTURE

SUZANNE D. PETERSON
DEPUTY TO THE CHAIRMAN

State of Hawaii
DEPARTMENT OF AGRICULTURE
1428 So. King Street
Honolulu, Hawaii 96814

Mailing Address:
P. O. Box 22159
Honolulu, Hawaii 96822

August 21, 1985

Date Received AUG 2 2 1985
File: 1151-ESS(D)
To: DB
Action:

MEMORANDUM

To: Mr. John P. Whalen, Director
Department of Land Utilization
City and County of Honolulu

Subject: Draft Environmental Impact Statement (EIS) for
Melemanu Woodlands - Phase III
TMK: 9-5-02: 4, 6, por. 11
Waipio, Ewa, Oahu
Acres: 70

The Department of Agriculture has reviewed the subject Draft EIS and finds that the concerns found in our letter of May 31, 1985 (copy enclosed) have been adequately addressed.

Thank you for the opportunity to comment.

Jack K. Suwa
JACK K. SUWA
Chairman, Board of Agriculture

Attachment

cc: Gray, Hong and Associates, Inc.

"Support Hawaiian Agricultural Products"

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

September 3, 1985

Mr. Jack K. Suwa
Chairman, Board of Agriculture
Department of Agriculture
State of Hawaii
1428 South King Street
Honolulu, Hawaii 96814

SUBJECT: Melemanu Woodlands - Phase III
Draft Environmental Impact Statement

Dear Mr. Suwa:

We thank you for your review comments dated August 21, 1985 regarding the subject project. Your letter, as well as our response, will be included in the revised Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.
1151-1

119 MERCHANT STREET, SUITE 607, HONOLULU, HAWAII 96813 · TELEPHONE (808) 521-0306

FIRE DEPARTMENT

CITY AND COUNTY OF HONOLULU

1455 S BERETANIA STREET, ROOM 305
HONOLULU, HAWAII 96814

FRANK F. FASI
MAYOR

FRANK K. KAHOOHANOHANO
FIRE CHIEF

LIONEL E. CAMARA
DEPUTY FIRE CHIEF

August 21, 1985

AUG 26 1985
Date Received

File:
To: DB
Action:

TO : JOHN P. WHALEN, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM : FRANK K. KAHOOHANOHANO, FIRE CHIEF

SUBJECT: REQUEST FOR ZONE CHANGE - CENTRAL OAHU
MELEMANU WOODLANDS, PHASE III
TAX MAP KEY: 9-5-02: 4, 6, POR. 11

We have reviewed the above proposal for zone change from AG-1 and P-1 to R-6, and conclude that the infrastructure provisions as indicated in the submittal meets applicable requirements of the Uniform Fire Code.

Should additional information be required, you may direct your staff to contact Captain John P. Souza of our Fire Prevention Bureau at 523-4186.

FRANK K. KAHOOHANOHANO
Fire Chief

FKK:smh
cc: Brian L. Gray
Gray, Hong & Associates, Inc.

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL S.C. HONG, PE
DAVID B. BILLS, PE
MICHAEL H. NOJIMA, PE
ROY T. AOKI, PE

September 3, 1985

Mr. Frank K. Kahoohanohano
Fire Chief
Fire Department
City and County of Honolulu
1455 South Beretania Street, Room 305
Honolulu, Hawaii 96814

SUBJECT: Melemanu Woodlands - Phase III
Draft Environmental Impact Statement

Dear Mr. Kahoohanohano:

We thank you for your review comments dated August 21, 1985 regarding the subject project. Your letter, as well as our response, will be included in the revised Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

1151-1

119 MERCHANT STREET, SUITE 807, HONOLULU, HAWAII 96813 · TELEPHONE: (808) 521-0306

Date Received AUG 2 9 1985
File:
To: DB
Action:

28 AUG 1985

Directorate of Facilities Engineering

Mr. John P. Whalen, Director
Department of Land Utilization
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Whalen:

By letter dated August 21, 1985, US Army Support Command, Hawaii commented on the Draft Environmental Impact Statement (EIS) for Helemanu Woodlands, Phase III, Waipio, Ewa, Oahu. Based upon a meeting with Mr. David Bills, Project Engineer with Gray, Hong and Associates, Inc., on August 23, 1985, the following additional comments are provided:

a. Besides noise impacts, the proposed development will result in increased safety concerns from US Army and Air Force aviation activities at Wheeler Air Force Base.

b. Because the quality and intensity of military field training activities have increased recently, especially with the conversion of the 25th Infantry Division to a light division configuration, there is the possibility of training conflicts with the proposed project. The development will be located close to East Range training areas that are presently occupied 200 days each year by units using Battle Noise Simulators (pyrotechnics) and blank ammunition for rifles and machine guns. Northern sections of East Range are unsuitable for the use of pyrotechnics because of nearby residential areas in Kahiawa. These training areas are essential, whose value would be lost if training restrictions were imposed due to the proposed project.

Thank you for the opportunity to provide this additional information on the Draft EIS. If you require any further assistance, please contact the Environmental Management Office at 655-0694.

Sincerely,

Original signed by
Ronald A. Borrello
Colonel, Corps of Engineers
Director of Facilities
Engineering

Copy Furnished:

Mr. Brian L. Gray
Gray, Hong & Associates, Inc.
319 Merchant Street, Suite 607
Honolulu, Hawaii 96813

GRAY, HONG & ASSOCIATES, INC.
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September 3, 1985

Colonel Ronald A. Borrello
Corps of Engineers
Director of Facilities Engineering
Department of the Army
Headquarters United States Support Command
Dunning Hall
Fort Shafter, HI 96858-5000

SUBJECT: Melemanu Woodlands - Phase III
Draft Environmental Impact Statement

Dear Colonel Borrello:

Thank you for your review comments dated August 28, 1985 regarding the subject project. We also thank you for allowing us to meet with your staff on August 23, 1985. The revised Environmental Impact Statement identifies that the departing flight path from Wheeler Army Air Force Base is over the project site. However, as contained in the draft, the revised EIS will identify that the project was outside the airfield's "clear zone."

The revised EIS will also identify the Army's training activities in the East Range and that battlefield noise simulators (pyrotechnics) and blank ammunition for rifles are used. The revised EIS also notes that the distance from the project boundary to potential training is approximately 1,500 feet and the area between the training and the project site is intended for the Mililani High-Tech Park.

Should you have any questions regarding this matter please contact our office. Your review comments, as well as our response, will be included in the revised Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

for Brian L. Gray

DB:lt

cc: Towne Realty, Inc.

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