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ENVIRONMENTAL ASSESSMENT

* **KEYSTONE**

BY GENTRY HOMES, LTD. *

FOR THE
HOUSING FINANCE AND DEVELOPMENT CORPORATION
STATE OF HAWAII

Prepared by
Environmental Communications, Inc.
March 1990

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1	Location Map
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I SUMMARY

**CHAPTER 343, HRS
ENVIRONMENTAL ASSESSMENT (EA)**

Action: Applicant

Approving Agency: Housing Finance and Development Corporation
State of Hawaii

Project Name: Keystone by Gentry Homes, Ltd.

Project Description: The proposed project consists of the construction of 395 dwelling units and 20 single-family residential lots targeted for low-moderate and gap group families. Two hundred sixty three (263) units will be single-family detached houses and the remaining 132 units will be in a multi-family townhouse configuration. Twenty (20) single-family lots will be reserved for self-help housing projects. A 4-acre recreation site and a 3-acre church and childcare area are included in the development plan. The property will be developed in lease hold with provisions for each homeowner to acquire the fee.

Project Location: The project is located mauka of Farrington Highway between Hakimo Road and Ulehawa Channel in Nanakuli, Waianae, Oahu.

Tax Map Key: 8-7-07: 4 and 8-7-33: 14 and 19.

Acreage: 53.6 Acres

Present Use: The site has previously been prepared for development with roadways and utilities; however, it presently remains vacant.

State Land Use Designation: Urban

Zoning: R-5 Residential District and P-2 Preservation District; with an overlaying PD-H.

Landowner: State of Hawaii

Applicant: Gentry Homes, Ltd.

II. PROJECT DESCRIPTION

A. Project Location

The proposed project is located mauka of Farrington Highway between Ulehawa Channel and Hakimo Road in Nanakuli, Waianae, Oahu and is identified as TMK: 8-7-07: 4 and 8-7-33: 14 and 19. Access to the project site is proposed on Hakimo Road through Waiolu Street and directly on to Farrington Highway via an existing road right-of-way (Pohai Street).

B. Technical Characteristics

The proposed project consists of the development of 395 dwelling units and 20 single-family residential lots by Gentry Homes, Ltd. for the Housing Finance and Development Corporation, the housing development subsidiary of the State of Hawaii. The subject development will include 263 single family detached houses similar to the Soda Creek subdivision developed by the applicant in Ewa, Oahu. The remaining 132 units will be multi-family, townhouse units similar to those constructed by the applicant in the Haiku Point project in Kaneohe. Twenty (20) finished, ready-to-build single family residential lots will be provided to Housing, Finance and Development Corporation for self-help housing.

The proposed single family dwellings will consist primarily of 3-bedroom 2-bath units while the multi-family dwellings will consist of studio, one bedroom, and 2-bedroom 1-bath units in an eight or twelve-plex configuration. Typical detached units will have approximately 990 to 1,370 square feet of interior space while the multi-family units will range from 414 to 717 square feet.

A 4-acre recreation field will be a central feature of the proposed project. A 3-acre church and childcare site will also be included adjacent to the recreation field.

C. Economic Characteristics

The proposed development is based on the assumption that the existing "public" roadways and utilities within the project site can be brought up to county dedication standards with a minor amount of clean-up and reconstruction work.

The project will be developed under the State's condominium property regime provisions. To assist low-moderate and gap group families to qualify for these units, the property will be developed in leasehold with future options to purchase the fee interest. The estimated current fee value for the site is approximately \$30,000 for single-family units and \$12,000 for multi-family units. A portion of this value will be paid to the State from each closing based on \$12,000 for a single-family unit and \$5,000 for a multi-family unit. Each owner would be obligated to pay lease rent on the remainder of the fee value at three percent (3%) per annum, with provisions for each homeowner to acquire the fee at any time during the ten year period. The fee value would increase at a rate of five percent (5%) per annum from the date of sale until the fee is acquired by the homeowner.

Based on these assumptions and 1989 construction costs, the approximate sales prices for average sized dwellings will be \$69,900 to \$96,900 for multi-family units and \$125,900 to \$145,900 for single-family units.

The cost of all improvements and construction within the project site will be borne by the applicant.

D. Social Characteristics

The proposed project site is presently vacant; however, the site has been designated residential for development on County and State land use control maps. The project site was previously prepared for residential development and is located in a residential area. The area is not heavily populated and is well suited for the proposed residential development. The area will benefit from the planned use since the site is currently vacant, overgrown, and used as an illegal dumpsite. A park will be the central feature of the proposed project. The project is expected to house a population of approximately 1200 based on a population density of 3.25 persons per single family detached dwellings and 2.1 persons per multi-family dwellings.

E. Environmental Characteristics

The project site has been partially prepared for development. It is currently vacant and has been used as an illegal dumpsite and will need to be cleaned and grubbed. The existing roadways will need some repair. Water and sewer will be tested and repaired as required. Conduits for electrical, telephone and CATV have to be installed and additional improvements are necessary to provide service to individual residences. A 35-foot long bridge will be built across the U-2 drainage channel to provide access from the site to Farrington Highway.

III. AFFECTED ENVIRONMENT

A. Project Location

The project site is located mauka of Farrington Highway between Ulehawa Channel and Hakimo Road in Nanakuli, Oahu, Hawaii. Ulehawa Beach Park is located near the project site.

B. Topographic Characteristics

The project site was previously cleared and graded in preparation for a planned housing development in the 1970's. The site has been abandoned since that time and is presently vacant and overgrown with noxious weeds and shrubs. The site is littered with refuse. The site is relatively flat with a drop-off located on the mauka and Kaena boundaries.

C. Hydrological Characteristics

1. Drainage

The project site has a County standard drainage system installed which will discharge surface waters into the existing Ulehawa and U-2 channels.

2. Flood Zone

According to the FIRM (Flood Insurance Rate Map) the majority of the project lies outside of the flood zone in Zone D designated lands (areas in which flood hazards are undetermined). A small portion of the project entry area off of Farrington Highway (approximately 50 feet) is located within Zone AE, an area subject to 100-year flood inundation whose base flood elevation has been determined.

3. Tsunami Inundation

The Civil Defense Tsunami Inundation Maps identify the makai portion of the project site to be within the inundation zone; however since most of the site is more than 1,000 feet inland from the ocean, this is not expected to be a major concern.

4. SMA

The project site is located outside of the SMA. The City and County of Honolulu Special Management Area Maps identify areas makai of Farrington Highway as being within the SMA.

5. Soils

The project is located on an abandoned rock quarry site. Soils which were used to fill the site consist of coral and topsoil and are not particularly notable. The makai boundary of the project site also contains Mamala Stony silty clay loam (McN) according to the Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii by U. S. Department of Agriculture Soil Conservation Service.

This series consists of shallow, well-drained soils along the coastal plains on the islands of Oahu and Kauai. These soils formed in alluvium deposited over coral limestone and consolidated calcareous sand.

The slope range of this soil is 0 to 12 percent, but in most cases the slope does not exceed 6 percent. Stones, mostly coral rock fragments, are common in the surface layer and in the profile.

In a representative profile the surface layer is dark reddish-brown stony silty clay loam about 8 inches thick. The subsoil is dark reddish-brown silty clay loam about 11 inches thick. The soil is underlain by coral limestone and consolidated calcareous sand at depths of 8 to 20 inches. This soil is neutral to mildly alkaline.

Permeability is moderate. Runoff is very slow to medium, and the erosion hazard is slight to moderate. The available water capacity is about 2.2 inches per foot in the surface layer and 1.9 inches per foot in the subsoil. Roots are affected by the coral limestone and consolidated sand. The stones hinder, but do not prevent, cultivation.

6. Biological Characteristics

The site is presently covered with noxious weedy species and Koa haole shrubs. This habitat is likely to contain fauna such as; rats, mice, mongoose, feral dogs, cats, and common insects all of which are generally considered pests. Many species of avifauna are likely to visit the site but it is not expected that the site serves as the habitat for any species outside of the common exotic and urban birds which populate the surrounding urban area. The project site is not a habitat for any rare or endangered species of flora or fauna.

7. Traffic

A Traffic Assessment was conducted for the proposed project by The Traffic Management Consultant, dated February 1, 1990. A summary of the existing traffic conditions in the project area is provided below.

a. Existing Roads

Farrington Highway is a major arterial roadway between Waipahu and Kaena Point on the Leeward side of Oahu. In the vicinity of the project, Farrington Highway is a four lane undivided highway with paved shoulders. The existing land uses along Farrington Highway are a mixture of residential and commercial developments.

Farrington Highway is signalized at Hakimo Road. There are no provisions for an exclusive left turn lane on Farrington Highway at Hakimo Road. At Farrington Highway, Hakimo Road has a one lane approach for left and right turn traffic. Hakimo Road is a two lane collector roadway, extending about two miles in the mauka direction. Development along Hakimo Road is primarily residential.

The project access (Waiolu Street) on Hakimo Road is located about 1100 feet mauka of Farrington Highway. Project access (Pohai Street) on Farrington Highway is located about 1200 feet southeast of the Hakimo Road intersection.

b. Existing Traffic Conditions

The field investigation was conducted on January 25, 1990. Spot traffic counts were taken at the intersection of Farrington Highway and Hakimo Road during the peak periods of traffic. As can be expected, the traffic flow on Farrington Highway is inbound (Honolulu bound) during the morning peak period and outbound during the PM peak period. The intersection of Farrington Highway and Hakimo Road operates well during the peak periods. The side street traffic is relatively low and created only minimal delays on Farrington Highway. The estimated operational Levels of Service (LOS) during the peak hours are LOS "A" during the AM peak hour and LOS "B" during the PM peak hour.

8. Air and Noise Quality

Both the air and noise environments of the project site are good. The only source of vehicular traffic adjacent to the site is located on Hakimo Road and through access on Farrington Highway. The surrounding area is urbanized albeit not with high densities or with any significant noise or air polluting sources nearby.

9. Historic and Archaeological Resources

The project site is located on a former quarry site therefore it is extremely unlikely that any archaeological remains are located on-site. The site has already been prepared for development and very little subsurface work will be required for the proposed development.

10. Infrastructure

The site has been previously prepared for a development similar to the proposed project therefore all infrastructure is considered to be existing. However, the site has been vacant for 15 years and some improvements are required to bring the existing facilities up to a serviceable condition. A roadway was previously constructed to serve the site via Hakimo Road. This system, which includes Waiolu Street, Laiku Street, and Laiku Place, will be improved,

and additional roadways, as designed in the master plan, will be included.

a. Drainage, Sewer, Water Systems

Drainage, sewer and water systems including service laterals have been constructed within the proposed public roads and are adequate to serve the proposed development. Some testing and repairs will be required on the existing lines. Potable water requirements are estimated at 166,000 gallons per day (gpd) and sewage quantities are 120,000 gpd.

b. Electrical, Telephone, Cable TV

Conduits for electrical, telephone and CATV have to be installed and additional improvements are necessary to provide service to individual residences.

11. Public Facilities and Services

a. Police and Fire Protection

Both police and fire protection services are readily available at the Waianae Police Sub-Station and Waianae Fire Station located approximately 4 and 4.5 miles away respectively.

b. Medical Facilities

The Waianae Coast Comprehensive Health Center currently offers the closest medical facility in the Leeward area. The Saint Francis West Medical Center, which is scheduled to open in March of 1990, will offer a full range of services including emergency facilities and a helicopter pad. This facility is located on Fort Weaver Road.

c. Recreational Facilities

The proposed development will include a 4-acre open field recreation area to service residents of the project. Ulehawa Beach Park is also located nearby, makai of Farrington Highway.

d. Schools

Nanakuli Elementary, Intermediate, and High schools are located approximately 1-1/2 miles from the project site. Nanaikapono Elementary School is located approximately 1 mile from the project site. A church and childcare site is planned within the proposed project.

The Department of Education has estimated that the proposed project will increase the student population as follows:

Kindergarten through Grade 6: 150 to 180
Grades 7 through 8: 60 to 80
Grades 9 through 12: 80 to 110

These figures result in a student population increase of 290 to 370 students. DOE had also indicated that a new elementary school is currently under consideration for the area; however, the above increases in students could be accommodated at existing schools with the addition of portable units.

IV. SUMMARY OF MAJOR IMPACTS AND MITIGATIVE MEASURES

The proposed project primarily represents the execution of the Nanakuli Planned Development Housing project formerly planned by Keystone Investment, Inc. in the 1970's. The present applicant has updated the project plan to address the housing demands of the general vicinity. The project, which is being developed for the State of Hawaii, Housing Finance and Development Corporation, is planned to assist low-moderate and gap group families.

A full Environmental Impact Statement (EIS) had been prepared, processed, and accepted by OEQC on May 26, 1973. The purposes of this Environmental Assessment document is to address and update the Traffic portion of that prior accepted EIS.

The project site presently contains partial infrastructure improvements necessary to support the subject project. Only clearing of illegally dumped trash and some reconstruction type repairs will be required before residential construction can commence; therefore, no major impacts are expected on the natural environment. The project will have one significant associated impact, namely traffic, and a 35-foot long bridge will be built across the U-2 drainage channel to provide direct access from the project site to Farrington Highway.

A traffic assessment, conducted by The Traffic Management Consultant, addresses traffic impacts and mitigation measures and is summarized below.

A. Trip Generation

The trip generation characteristics of the proposed project are developed using generally accepted techniques presented in "Trip Generation, 4th Edition", 1987, prepared by the Institute of Transportation Engineers (ITE). Peak hour trip generation characteristics were developed for the 263 unit single family residential housing and 120 unit multi-family owner-occupied residential (condominium) units. ITE trip rates for the day care center were not applicable based upon the available information of the proposed facility. As a worse case condition, it is assumed that the day care center would generate two vehicle trip ends per child during the peak hours of traffic, i.e., one vehicle entering and exiting the project site. It is further assumed that half of the 100 children at the day care center will live within the proposed subdivision, thereby not generating external trips. The trip rates for the church and park are not considered to be significant

during the peak hours of weekday traffic and are not included in the analysis.

The overall project is expected to generate 307 vehicles per hour (vph) during the AM peak hour, 88 entering and 219 exiting the project site. During the PM peak hour, the project is expected to generate 393 vph, 244 vph entering the site and 149 vph exiting the site..

B. Potential Traffic Impacts

The AM peak hour is expected to be the critical period for traffic impacts resulting from the proposed project. Existing traffic patterns indicate that the morning traffic is primarily Honolulu bound, that is, traffic from the project would turn left onto Farrington Highway from the side streets. This left turn movement during the AM peak period is expected to be the critical movement. The return trips during the PM peak hour would result in right turn traffic turning off Farrington Highway. During the PM peak hour, this right turn movement is not expected to significantly impact the intersection operations on Farrington Highway.

The AM peak hour was identified as the critical period for traffic. As a worst case scenario, it was assumed that all the outbound traffic generated by the proposed project would be concentrated at the Pohai Street intersection, turning left to inbound Farrington Highway. Hakimo Road will provide an alternative access however, the Pohai Street egress would provide a more direct exit for Honolulu bound traffic. Trips entering the project site, turning left from inbound Farrington Highway, during the AM peak hour, were assumed to be split between Hakimo Road and Pohai Street. The existing AM peak hour traffic volumes on Farrington Highway are such that an unsignalized Pohai Street intersection would result in extreme delays for side street traffic turning left onto Honolulu bound Farrington Highway.

A sight distance problem currently exists at the intersection of Hakimo Road and Waiolu Street (project access). The curvature of Hakimo Road and the vegetation on the mauka side of Waiolu Street restricts sight distance in the mauka direction for motorists exiting the project site. Otherwise traffic operations during the peak periods should not be significantly affected by the project generated traffic.

C. Mitigating Measures

1. A full service intersection of Pohai Street and Farrington Highway would require traffic signalization. Traffic signal coordination with the Hakimo Road intersection would also be required to minimize delay on Farrington Highway.
2. A minimum 250 foot lines of sight in both directions would be required from Waiolu Street at its intersection with Hakimo Road. This can be accomplished by grading the roadside and/or maintaining the roadside vegetation.
3. More specific design requirements should be included in the design phase of the project. These include peak period traffic counts on Farrington Highway and Hakimo Road, a signal coordination plan, and traffic safety improvements on Hakimo Road in the vicinity of the project access.

TRAFFIC ALLOCATION

ESTIMATED *LEVELS OF SERVICE (LOS)
 (*Based on improvements at Pohai Street only)

<u>% SPLIT</u>		<u>LOS</u>	
<u>Pohai Street</u>	<u>Hakimo Road</u>	<u>Pohai Street</u>	<u>Hakimo Road</u>
100	0	B	A
75	25	B	B
50	50	B	B
25	75	B	B
0	100	A	C

V. ALTERNATIVES CONSIDERED

No alternative other than the "no action" alternative were considered. The no action alternative was not considered viable because the project site has already been prepared for development with the installation of infrastructure improvements and the appropriate governmental land use and zoning designations. The site is in State of Hawaii ownership and would not be of any benefit to the community or the State if it is not utilized. Affordable housing is a paramount concern to the Waianae/Nanakuli community and to the State and the proposed project adds significantly to the affordable housing inventory in the District.

VI. LIST OF PREPARERS AND AGENCIES CONSULTED

A. EIS Preparers and Consultants

Environmental Communications Inc. - EIS Preparers
The Traffic Management Consultants - Traffic Study

B. Agencies Consulted

Department of Education, State of Hawaii
Department of Transportation, State of Hawaii

**VII. DETERMINATION, FINDINGS AND REASONS SUPPORTING
DETERMINATION OF NEGATIVE DECLARATION**

After completing an assessment of the potential environmental effects of the proposed project and consulting with other governmental agencies, it has been determined that an Environmental Impact Statement (EIS) is not required. Therefore, this document constitutes a Notice of Negative Declaration.

Reasons supporting the Negative Declaration determination, using the criteria, policy, guidelines and provisions of Hawaii Revised Statutes Chapters 342, 343 and 344 are as follows.

1. The proposed project is properly zoned and the project site already contains the necessary infrastructure to support the proposed action.
2. The proposed action will not result in an project significantly different from the original, intended and approved use.
3. The proposed action will not adversely affect the physical and social environment.
4. There will be no permanent degradation of existing ambient air and noise levels. During construction operations, air quality and noise levels are expected to be affected, but these effects will be temporary and minor.
5. No residences or businesses will be displaced by this project.
6. There are no known endangered species or animal or plants within the project limits.
7. There are no known natural, historic or archaeological sites within the project limits.
8. Infrastructure and public services to support the proposed project are readily available and will not be affected adversely.
9. There are no secondary adverse effects on future development, population and public facilities.
10. The project is compatible with the General Plan, Development Plan and Land Use Ordinance for the City and County of Honolulu.

11. The State owned site will add a significant number of affordable housing units to the State's housing inventory and will be beneficial to the Waianae/Nanakuli District.

FIGURE 1
LOCATION MAP

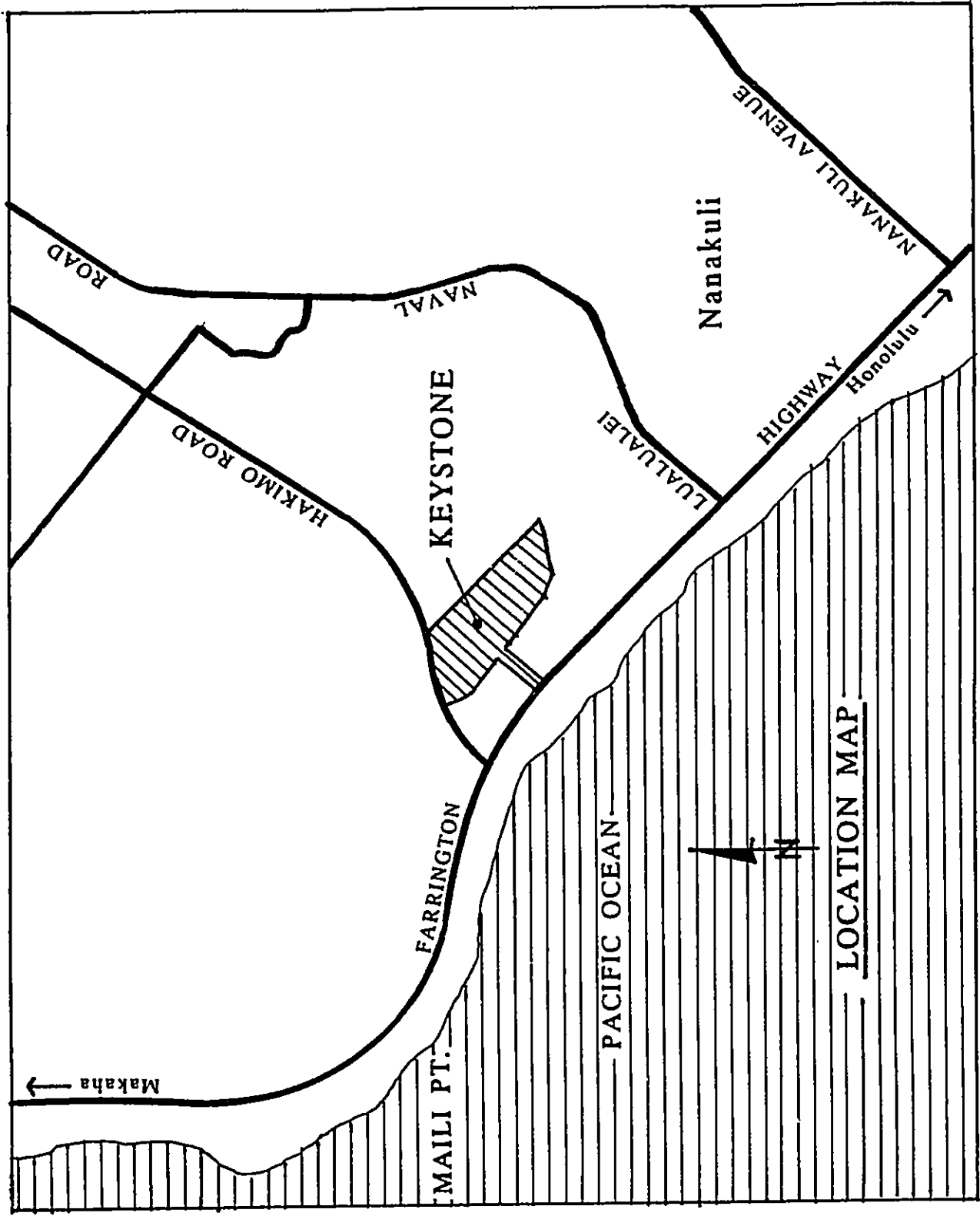


FIGURE 1

FIGURE 2
SITE PLAN

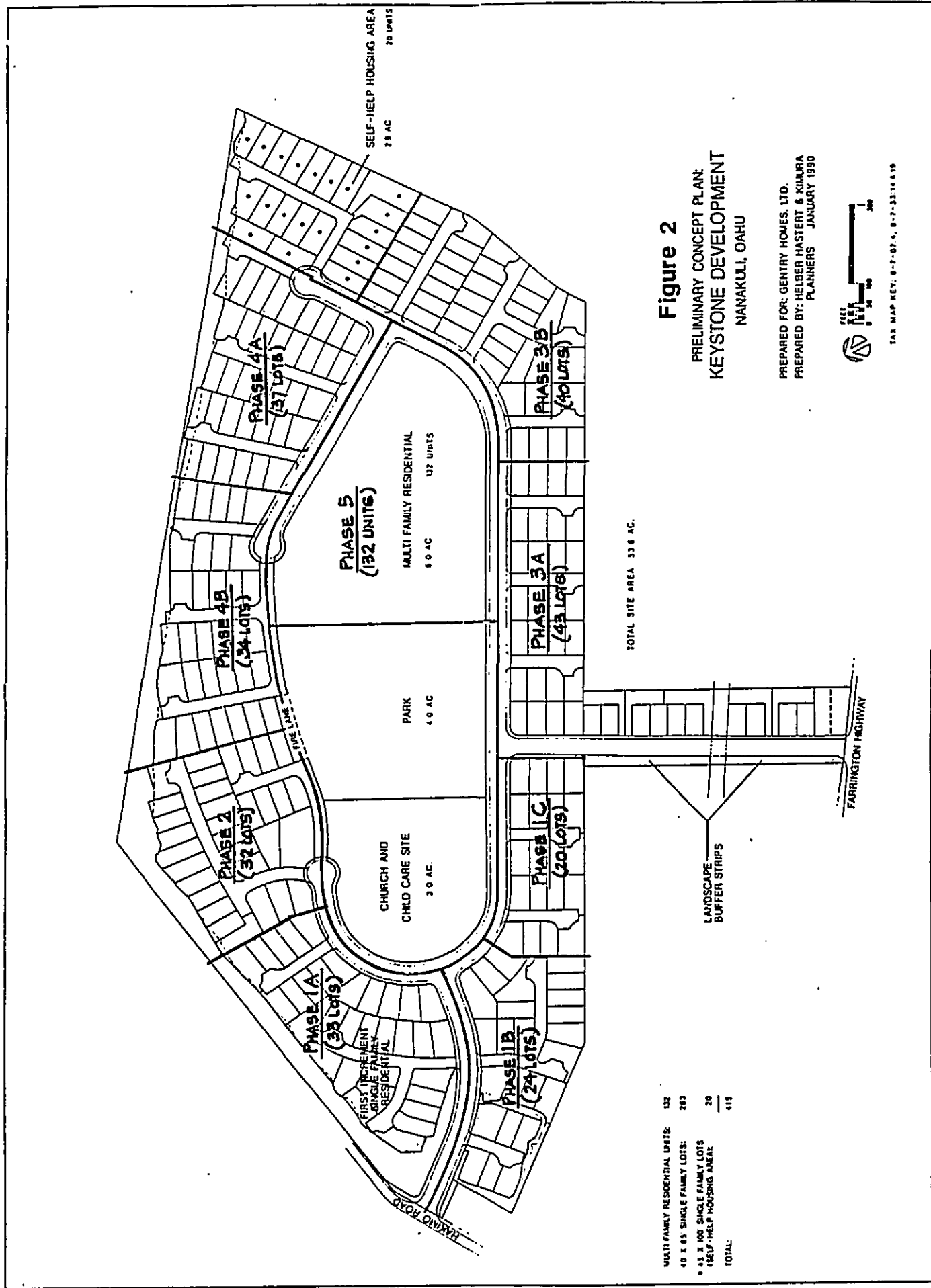


Figure 2
 PRELIMINARY CONCEPT PLAN
 KEYSTONE DEVELOPMENT
 NANAKULI, OAHU

PREPARED FOR: GENTRY HOMES, LTD.
 PREPARED BY: HELBER HASTERT & KUMURA
 PLANNERS JANUARY 1990



TAA MAP KEY: 8-7-87.4, 8-7-3210 & 10