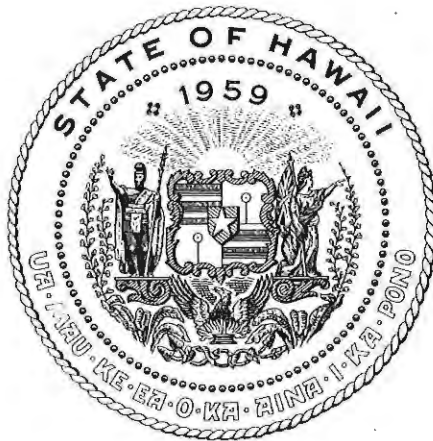


STATE LAND USE DISTRICT BOUNDARY REVIEW

Executive Summary

OAHU



Office of the Governor
OFFICE OF STATE PLANNING

1992



EXECUTIVE CHAMBERS
HONOLULU

JOHN WAIHEE
GOVERNOR

FOREWORD

The State Land Use District Boundary Review takes a bold step toward defining what kind of Hawaii we want to leave as our legacy for future generations. The growth and protection of our precious islands must be planned, and planned carefully.

This review sets forth the direction for urban growth that is needed for housing and economic development in our fair State. Rather than reacting to proposals by landowners and developers, this review has allowed the State to plan for development well into the next century. It provides for an adequate supply of urban lands in locations which can be efficiently serviced by infrastructure and other public facilities and which will not have adverse impacts on our environmental, cultural and agricultural resources.

While economic development is essential, it simply must not threaten our fragile environment. This review identifies the unique and special areas that are part of our heritage. Our native forest, wetland and stream ecosystems and rare flora and fauna habitats must be protected. Significant historic sites, coastal areas and scenic and open space resources are other treasures which must be safeguarded for future generation.

The protection of our watersheds is also critical to assure that we have the groundwater resources to support the growth of our population.

While the final decisions for the reclassification of lands identified in this report are left to the Land Use Commission, the information provided in this review will be the standard by which land use decisions will be judged in the future.

JOHN WAIHEE



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PREFACE

The most recent Five-Year Boundary Review began in 1990 and concluded in 1992. It was an opportune time to conduct an assessment of our State Land Use District boundaries. Hawaii was emerging from a period of intense development pressures and many areas that residents thought were "safe" from development, in fact, were not.

Many were saying that it was time to step back and reassess our lands and their designations before the next wave of investment hit. Many questioned whether we wanted every square inch of these islands developed and asked whether anything would be left for future generations.

Agriculture was changing; a way of life disappearing. The old, large-scale sugar and pineapple plantations were downsizing or closing. The projected outlook for diversified agriculture was mixed. The visitor industry was the State's dominant industry and was largely dependent on Hawaii's natural scenic beauty.

In conducting the boundary review, we turned to the Constitution:

"For the benefit of present and future generations,
the State ... shall conserve and protect Hawaii's
natural beauty and all natural resources ..."

Article XI, Sec. 1
Hawaii State Constitution


Therefore, a major focus of the review was to protect Hawaii's special areas before they were placed in jeopardy or irretrievably lost.

When we examined the actual lands in the districts, we found that many sensitive environmental resources were in the Agricultural District which left them vulnerable to development. Many of the lands in the Agricultural District were agricultural in name only. The boundary review has recommended that sensitive environmental areas be reclassified to the Conservation District or be protected by other means.

The review has also sought to direct growth and provide lands to meet long-range needs for housing and economic development. Some of this has already been addressed in the extensive statewide urbanization of land over the last five years. More land was urbanized during the last five years than during the prior ten-year period, primarily for affordable housing. However, the review has identified areas which are desirable and suitable for urbanization in order to direct growth to these areas.

Finally, we have worked to retain sufficient agricultural lands to meet the industry's changing needs and to provide open space.

The Office of State Planning is deeply appreciative of the many individuals, organizations and agencies that helped in this process and thanks them for their time, advice and concern for Hawaii's limited land resources.


Harold S. Masumoto
Director

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I. INTRODUCTION

Purpose of the Five-Year Boundary Review

The purpose of the Five-Year Boundary Review is to conduct a statewide, comprehensive, policy-oriented examination of State land use district classifications. It provides the Land Use Commission the opportunity to review urbanization proposals from a broad, comprehensive and long-range viewpoint rather than incrementally on a case-by-case basis. It also provides an opportunity to identify conservation or agricultural resources which are not in the appropriate land use district and should be reclassified.

Section 205-18, HRS, of the State Land Use Law, requires the Office of State Planning (OSP) to undertake a review of the classification and districting of all land in the State every five years. Upon completion of the Five-Year Boundary Review, a report of findings and recommendations will be submitted to the State Land Use Commission. The Office of State Planning may then initiate petitions for boundary amendments to implement the report.

The Legislature reinstated the Five-Year Boundary Review in 1985 in order to emphasize long-range planning in the land use decision-making process. The boundary review report provides the basis for recommending changes to existing land use district boundaries during the Five-Year Boundary Review and provides guidance for future land use decisions.

This report summarizes the boundary review for the Island of Oahu. Separate reports have been prepared for Kauai, Hawaii, and Maui, Molokai and Lanai. The review recommends no changes in the classifications for Niihau and the Northwestern Hawaiian Islands and, therefore, a separate report has not been prepared on these areas.

1991-92 Review - Direction and Scope

The 1969 Five-Year Boundary Review was conducted with the philosophy that "the elements of land, air and sea are resources to be managed for the welfare of present and future generations." The 1991-92 Boundary Review has been conducted with the same philosophy in mind. Specifically, the Five-Year Boundary Review has been guided by Article XI, Section 1, of the Hawaii State Constitution which states: "For the benefit of present and future generations, the State ... shall conserve and protect Hawaii's natural beauty and all natural resources ..."

Factors that shaped the direction and scope of the 1991-92 Five-Year Boundary Review were:

- (1) Statutory provisions which require the review to focus on the Hawaii State Plan and County Plans;
- (2) Continuing discussion of constitutional provisions relating to important agricultural lands and the finding that there are significant acreages in the Agricultural District which contain conservation resources;

- (3) The need to revise boundaries based on new information and growing public awareness and support for protection of Hawaii's natural resources; national attention which has been focused on Hawaii's native species extinction crisis; and Act 82, SLH 1987, which calls for reclassifying high quality native forests and the habitat of rare native species of flora and fauna into the Conservation District;
- (4) Recommendations in the Hawaii Water Resources Protection Plan that call for increased protection of watersheds; and
- (5) The need to provide urban land to meet population and economic growth needs and promote infrastructure planning.

A. Statutory Provisions

The Land Use Law provides that OSP shall focus its review on the Hawaii State Plan and County General Plans and County Development and/or Community Plans. The Hawaii State Planning framework includes the State Plan itself as well as State Functional Plans. Seven State Functional Plans relating to physical resource needs and development were approved in 1991. The major theme for these physical Functional Plans was "balanced growth" and focused on the promotion of a balanced growth approach in the use of our limited resources. This theme provided direction for the boundary review and weighed heavily in the decision to conduct a physical resources-oriented assessment rather than an administrative or organizational review and to focus on the protection of natural resources.

The County General, Development/Community Plans and specific regional plans were closely examined for policy direction, particularly for the location of urban growth areas. In addition, a technical study was conducted to identify differences between existing State land use districts and County Plan designations. An assessment of these areas of inconsistency was conducted in order to recommend the appropriate State land use designation.

B. Continuing Discussions Over LESA

There have been a number of proposals put forward to implement Article XI, Section 3, of the Hawaii State Constitution which calls for the identification and protection of important agricultural land. One of these proposals recommended by the Land Evaluation and Site Assessment (LESA) Commission would have taken all non-important agricultural land out of the Agricultural District and placed these lands and Urban District lands into a new district under County jurisdiction. Of the approximately 1.9 million agriculture acres in the existing Agricultural District, 700,000 acres would be retained as important agricultural land while 1.2 million acres would go into this new district. The State would still have land use responsibilities in regulating conservation land and important agricultural land. For these conservation and important agricultural lands, the existing dual land management system would apply since both State and County approvals would be required for development.

However, there were a number of reservations regarding the LESA Commission proposal. A major reservation included the concern that there were conservation resources in the Agricultural District which should not go into an urban-type district but instead should be reclassified to the Conservation District. A pilot study undertaken by OSP in 1987 found that there were significant acreages in the Agricultural District with potential conservation value. Thus, it was felt that the Five-Year Boundary Review should specifically examine areas in the Agricultural District which merit reclassification to the Conservation District.

C. Need to Revise Boundaries Based on New Information and Growing Support for Protection of the Environment

The general trend is that lands have been slowly taken out of the Conservation District. There were 2,009,087 acres in Conservation in 1969 and 1,960,976 in 1990. At the same time, there has been a growing awareness of and support for the need to protect Hawaii's natural resources. Further, there has been new information which has been developed since the last boundary review, for example, on the location of rare and endangered species. Rare and endangered species were not specifically addressed during previous reviews. There has been also data and information collected as a result of statewide recreation and water resources planning, stream studies and other studies which serve to identify conservation resources. The Five-Year Boundary Review provides an opportunity to assess this new information and propose areas for reclassification to the Conservation District.

In addition, Hawaii's native species extinction crisis has received national attention. Approximately 75 percent of species extinctions recorded in the U.S. has occurred in Hawaii. Currently, 25 percent of all rare and endangered plants and animals in the U.S. is found in Hawaii. Proper classification of conservation resources is one of many steps which must be taken to affirmatively address this crisis.

Act 82, SLH 1987, states that the Legislature finds that Hawaii has several rare species of plants, animals, and fish that are found nowhere else in the world. The Legislature also finds that Hawaii has sizable areas of high quality native forests which are not in the Conservation District. The Act further states that to the maximum extent practicable, it is the intention of the Legislature to preserve Hawaii's unique native flora and fauna by reclassifying such areas as Conservation Districts.

D. Water Resources Protection Plan

The 1978 Hawaii State Constitutional Convention proposed and the electorate approved a new section on water resources which became Article XI, Section 7. This section in part states that the State has an obligation to protect, control and regulate the use of Hawaii's water resources for the benefit of its people. The State Water Code, Act 45-87, was adopted pursuant to Article XI, Section 7, of the Hawaii State Constitution. The Hawaii Water Plan and its component Water

Resources Protection Plan were prepared as required by the Water Code. The plan calls for increased protection of watersheds. Therefore, a Watershed Protection Study was conducted for the Five-Year Boundary Review to identify areas which should be protected as important watersheds. High priority areas were identified for study as budgetary limitations precluded a study of the entire State.

E. Urban Land Needs and Infrastructure Planning

Infrastructure is a major limiting factor affecting growth and development in all Counties of the State. In addition, new wastewater rules do not allow individual wastewater systems for developments exceeding 50 dwelling units. As such, infrastructure planning among landowners/developers and between the public and private sector will become even more critical in the years ahead. The Land Use Commission (LUC) can play a major role in promoting infrastructure planning and development by delineating future areas of growth consistent with County and regional plans so that landowners and developers can make long-range commitments for the provision of infrastructure.

In addition, the Land Use Law and Land Use Commission Administrative Rules provide that the Urban District contain sufficient land to meet a ten-year projection. As a result, the boundary review looked at urban land requirements with respect to meeting population and economic needs for the next ten years. A 25 percent surplus factor was added on to account for lands which may be held out of the market for various reasons. The projections are also on the high side because existing densities and a 5 percent vacancy factor were used; household size was projected to decrease significantly and the redevelopment of existing urban areas at higher densities was not taken into account.

The boundary review has recommended the reclassification of lands to the Urban District to meet population and economic growth needs for the next ten years and to assure predictability in infrastructure planning.

Background of the Boundary Review

The 1969 Review

There are no readily available statistics on acreages reclassified during the 1969 boundary review. However, the review found that there was sufficient vacant urban land to meet projected growth for the next ten years on Oahu and Maui County. Additions to the Urban District were primarily made to refine district boundaries to include areas of existing urban use or accommodate public facilities. For Hawaii County, the study found that available vacant urban lands could accommodate three times the anticipated growth of resident population. Changes were made primarily to refine district boundaries. Many resort area proposals were submitted for Hawaii County. Available growth projections did not substantiate the need for redistricting most of the areas at the time of the review. However, some changes were made in response to detailed requests. For Kauai County, although the present

Urban Districts were sufficient to accommodate foreseeable growth, the location and distribution of these areas did not necessarily provide for specific locational needs determined in the County General Plan. Adjustments were made for residential areas, and the proposed resort areas at Princeville and Keoniloa Bay at Poipu were urbanized.

One of the major contributions of the 1969 review was to add certain lands along the shoreline to the Conservation District. The original land use boundaries were based heavily on forest reserve boundaries and steep slopes, although some shoreline/coastline areas were included. The 1969 review specifically examined the shoreline, river valleys and areas of steep topography. Many areas with scenic resources were also added to the Conservation District.

With respect to the Agricultural District, there were relatively minor additions to the Agricultural District on all islands.

The 1974 Review

During the 1974 boundary review, 4,731 acres were reclassified from the Agricultural to Urban District (significantly less than the 13,104 acres that landowners and developers proposed for urbanization).

Areas urbanized included Waipio, Ewa Town and Oneula on Oahu; Waikoloa, Kaupulehu and Kealakehe on Hawaii; Wailuku and Wailuku Heights on Maui; and Kapaa and Nukolii on Kauai.

Approximately 33,278 acres were reclassified from Conservation to Agriculture (primarily from the mauka Kona area in the Keauhou ahupuaa). There were 23,871 acres reclassified from Agriculture to Conservation (15,000 acres of which were in Kapapala, Hawaii). Over 3,000 acres went from Urban to Agriculture (1,680 acres were at Kaluakoi and planned for hotel use) and 679 acres were reclassified from Urban to Conservation. The Urban to Conservation reclassifications included lands at Kahaluu, Heeia Fishpond, and Hawaii Kai on Oahu for open space and at Hapuna and Keei, South Kona in Hawaii for open space.

On Molokai, three areas planned for hotel use, Puaahala, Paialoa, and Kaluakoi, were reclassified from the Urban District to the Agricultural and Conservation Districts.

II. STUDY METHODOLOGY

The Five-Year Boundary Review process included reviews of the Hawaii State Plan, State Functional Plans, County General Plan and County Development and/or Community Plans, baseline studies, resource mapping through the State's Geographic Information System, a Public Information and Participation Component, and extensive coordination with State, County and Federal agencies and other public and private organizations and individuals.

Baseline Studies

The following are baseline studies conducted for the State Land Use District Boundary Review:

- County Plans and State Land Use District Review and Mapping Study, PBR, Hawaii, addresses the requirement to review County General Plans and County Development and/or Community Plans. The study examines the relationship between existing State land use district boundaries and County plan designations.

Development or Community Plan maps were overlaid onto State land use district boundary maps and guidelines were developed to show which classifications were consistent with each of the State's Urban, Rural, Agricultural or Conservation Districts. Areas of inconsistency between State and County land use designations were identified and highlighted so that these areas could be further examined to determine the appropriate State land use classification.

- The Urban Land Requirements Study, Wilson Okamoto & Associates, examined urban land in the State to determine how much urban zoned land is required to accommodate population and economic growth for the next five, ten and twenty years. Key components of this analysis include determining the existing supply of vacant urban lands in each County, assessing the general suitability of these lands for development, relating the supply to anticipated future demands for urban lands including residential, industrial, commercial, resort and public uses and identifying urban land requirements.
- Infrastructure Constraints and Opportunities Study, Eugene P. Dashiell, AICP, Planning Services, assesses infrastructure constraints and opportunities by County and planning area. Major infrastructure systems including airports, harbors, highways, water systems, sewerage and solid waste are examined.
- Agricultural Resources Study, Deloitte & Touche, analyzes issues and trends in the State's major agricultural industries and assesses their outlook.
- Watershed and Water Recharge Areas, University of Hawaii Water Resources Research Center, identifies high priority watershed and water recharge areas that should be reclassified to the Conservation District. The Hawaii Water Code and Hawaii Water Plan call for increased protection of

Public informational meetings were also conducted statewide from March-June 1992 to solicit comments on the draft report. The Office of State Planning also met with a number of organizations and community groups to present the draft proposals and obtain public input.

Resource Mapping/State Geographic Information System

One of the objectives of the review is to build up long-term capabilities in land use planning. The emphasis on a physical resources-oriented review led to use of the State Geographic Information System for this project.

Data layers added to the system to assist in the boundary review included State land use districts, vegetation maps which identify areas of native vegetative growth, State forest reserves, State natural area reserves, marine life conservation districts, national wildlife refuges and parks, rare and endangered species from the Heritage Program of The Nature Conservancy, native bird habitats, lands in sugarcane and pineapple cultivation and lava flow hazard zones. Overlays of resource information were prepared and examined to identify areas for potential reclassification.

The State Geographic Information System was an invaluable land use planning tool which assisted greatly in the analysis and presentation of complex information.

III. APPROACH

This boundary review places high priority on the protection of Hawaii's conservation resources. Watersheds, habitats of rare and endangered species, wetlands, special streams, historic sites, and coastal, open space and scenic resources are all heritage resources which require protection for the benefit of future generations.

However, there will be opposition to placing lands into the Conservation District. Landowners who have had plans for more intensive use of their properties will object because only certain types of uses are allowed in the Conservation District. Some land use options which would greatly increase the value of these lands may be foreclosed.

Other landowners who may only want to continue existing uses object to the additional regulations and paperwork which may be involved to obtain permits to expand or change uses in the Conservation District.

Objections may also be raised because lands which could have been used to provide some community benefit as a trade-off for urban zoning would already be protected through Conservation districting.

In addition, the Counties raise homerule concerns. Conservation lands fall under the jurisdiction of the Board of Land and Natural Resources rather than the County. The Counties would prefer to retain regulatory control over these lands.

Nonetheless, despite potential opposition, the statute requires that the review be conducted. Further, it is in the long-term interest of the State that these valuable assets be reclassified into the Conservation District.

The reclassification of lands requires review and approval by the Land Use Commission under quasi-judicial proceedings.

Because it can be expected that some petitions to reclassify lands to the Conservation District will be contested, the justification for initiating a petition to reclassify land into the Conservation District must be strong. Therefore, there are two types of Conservation District recommendations in the report. Priority #1 areas have been identified as top priority recommendations for Conservation reclassification which OSP will initiate petitions for. These are recommendations which have strong justification and can withstand the scrutiny of contested case proceedings.

Priority #2 Conservation recommendations include areas which OSP recommends but will not be initiating petitions because of budgetary constraints. Priority #2 areas also includes areas which have been identified as containing conservation resources, but documentation of these resources is not strong enough to defend a petition under contested case proceedings. It further includes areas where other methods have been agreed to, to prevent changes in use or in certain instances, to even enhance identified conservation values.

The purpose of identifying Priority #2 Conservation recommendations is to alert State and County agencies, the Land Use Commission, and the public that the land contains certain conservation values which should be considered in any petition for reclassification. It should also alert the landowner as to the State's position in the event that these areas are proposed for development.

During the review, the question of whether to submit proposed legislation to amend the Land Use Law to allow the Land Use Commission (LUC) to conduct the boundary review under quasi-legislative rather than quasi-judicial proceedings arose. Under the quasi-legislative process, the LUC would hold hearings on the report and proposed amended land use maps. After the hearing, the LUC would adopt or reject the proposed map amendments.

Under quasi-judicial proceedings, the State would submit a petition to the LUC; the LUC holds a hearing; the landowner may request to intervene; and the LUC may approve, approve with modifications or deny the petition.

The advantage of the quasi-legislative proceedings would be that changes would be more directly based on public input and more policy-oriented in nature. Quasi-judicial proceedings are heavily fact-based. Further, because of the amount of information needed to support a reclassification and the procedures involved, the number of reclassifications that can be considered are limited. Reclassifications under these procedures are also site-specific rather than broad-brush proposals.

The decision was to retain the contested case process as it provides for careful scrutiny of all petitions--urban, agricultural and conservation--and allows the landowner or other affected parties to intervene under contested case procedures. Therefore, no amendments to the statute to change the proceedings have been proposed.

However, because the Five-Year Boundary Review is a comprehensive, overall review, petitions under the Five-Year Boundary Review should be reviewed in the same broad fashion, and OSP may request that the LUC review petitions by region or subject area, e.g., watersheds.

Land Use Commission Petition Stage

The Office of State Planning will file petitions to reclassify Priority #1 areas with the Land Use Commission. In this case, OSP and the respective County planning departments are mandatory parties to the petition. Landowners, as well as any other parties with standing, may intervene in the proceedings by filing an application with the Land Use Commission.

The procedures of the Land Use Commission are guided by Chapter 205, HRS, and the LUC Administrative Rules. The petitioner is required to serve copies of the petition to affected landowners. Public notice of the hearing on the proposed boundary amendment is also required.

The Land Use Commission will conduct a hearing on the proposed boundary amendment. Six affirmative votes are necessary to approve any boundary amendment.

IV. CONSERVATION, AGRICULTURAL, RURAL AND URBAN DISTRICT ISSUES

Conservation District Issues

Management of Conservation Resources. Landowners and environmental groups have both raised the point that proper management is needed to protect Hawaii's rare and endangered species. They contend that zoning is not enough. It is true that zoning is only one element of an array of actions needed to protect conservation resources. Zoning is the allocation of land resources to meet certain desirable community goals, but other things also need to take place to achieve those goals. Just as zoning lands Urban does not guarantee that these lands will be developed and provide houses and jobs, zoning lands Conservation does not guarantee that rare and endangered species will be preserved. For example, reclassification into the Conservation District may not solve the problems of pigs, banana poka and fire.

However, although Conservation designation does not address these natural forces which are so destructive to Hawaii's wildlife, it can protect these lands from man-made intrusions, e.g., construction and development which have also historically eliminated many natural areas. Placing limitations on intensive use of these lands can help to assure that there is a resource left to protect.

If lands remain in the Agricultural District, the potential for more intensive use of the land exists. Within the Agricultural District, agricultural subdivisions and golf courses (C, D and E lands) are permissible uses.

There are more restrictions on uses within the Conservation District and an environmental assessment is required before lands can be reclassified out of the Conservation District. Therefore, where high quality conservation resources were present, it was determined that the best course of action was to recommend that they be classified in the Conservation District.

Uses Within the Conservation District. From a landowner's perspective, there are too many restrictions on uses in the Conservation District. The permits that are required for uses in the Conservation District are disincentives and cause landowners to object to lands going into the Conservation District. It is acknowledged that restrictions on uses are needed in the Conservation District to protect fragile resources. However, it can be argued that not all uses should have to go through the same scrutiny. For example, why should conservation-oriented organizations such as the U.S. Fish and Wildlife Service have to obtain Conservation District Use Applications (CDUA) for fencing, laying pipes or similar uses in the Conservation District. If taro farming is a compatible use in wetlands because it keeps areas open for waterbirds, or aquaculture a compatible use in fishponds, should a CDUA be required for these uses?

From an environmentalist's perspective, Conservation District rules may not be restrictive enough. For example, residences and golf courses may be permitted in certain subzones within the Conservation District.

To address the concern that lands will be reclassified to the Conservation District but not protected, e.g., that residences or golf courses will be permitted, OSP is generally recommending as Priority #1 areas which meet the criteria for the protective, resource or limited subzones. OSP will support designation of these areas into the protective, resource or limited subzones.

Existing statutes grandfather non-conforming uses in the Conservation District. Thus, if lands are reclassified to the Conservation District, existing uses are allowed to continue. A CDUA will only be required for an expansion of an existing use or a new use. Grandfathering of existing uses when lands are reclassified to the Conservation District is a way to not adversely impact current landowners while preventing additional harm to the resource and limiting more intensive use of the property. For the County of Hawaii, there may be areas which are used for grazing where the "grandfather" provision would apply.

Both landowners and environmental groups have pointed to a need for examination of Conservation District rules. It may be worthwhile to begin such an examination before the Five-Year Boundary Review is completed.

Scenic, Open Space and Wilderness Resources. The Land Use Law recognizes scenic, open space and wilderness areas as conservation resources. The original delineation of boundaries and the 1969 review included these areas in the Conservation District.

Open space and scenic resources were identified as important topics during the existing boundary review largely because of the debate over LESA and important agricultural lands. Agricultural lands are an open space resource. One of the initial objectives of the review was to identify open space and scenic resources in the Agricultural District which should be reclassified to the Conservation District. This proved to be very difficult to do and has been accomplished only to a very limited extent. The report does contain recommendations to reclassify some of the more outstanding scenic and open space areas in the State to the Conservation District, e.g., Olomana. However, there are many other scenic and open space resources which potentially should be in the Conservation District but have not been recommended for reclassification. This is because such resources are measured and valued qualitatively rather than quantitatively and further studies are needed to determine the significance of specific resources and to justify reclassification by the LUC. It is recommended that such studies be pursued because scenic resources are so important to Hawaii's visitor industry.

Wilderness areas should also be considered. The term wilderness here is not meant to denote Federally designated wilderness areas. The term refers to areas which may not contain rare or endangered plants or animals, may not have watershed value or contain steep slopes, etc., but have value primarily as natural areas. These may, for example, include areas which are heavily vegetated with non-native species.

These natural areas contribute to the overall landscape and are part of what makes Hawaii an attractive and special place. Care needs to be taken that these areas are not incrementally lost and reclassified to urban or agriculture simply because they do not contain rare and endangered species or are not of watershed value.

However, as with open space resources, OSP did not identify and recommend areas for reclassification during the review solely on wilderness values because the evaluation would have been qualitative in nature and difficult to support before the Land Use Commission.

Retention of Conservation District Boundaries. The review found that with the exception of Oahu and Kauai, large acreages of additional urban lands were not needed. Moreover, urban growth for the next ten years on all islands can be accommodated by the redistricting of agricultural land not needed to sustain sugar, pineapple or diversified agricultural operations. Sufficient important agricultural land will remain to meet agricultural production goals. Redesignation of Conservation District land is not needed to meet urban land requirements for the next ten years or to meet agricultural production goals.

Therefore, except for one area in Hawaii County, the review did not recommend that conservation land be reclassified out of the Conservation District.

In general, it is recommended that lands be retained in the Conservation District unless the Land Use Law is changed to establish an Open Space District, and that any future proposals to reclassify Conservation District land continue to be carefully assessed. If an Open Space District is established, lands which have low value as conservation or agricultural resources but which have open space value and are not needed for urban uses could be included in this district.

Coastal Conservation Issues. At several of the public informational meetings, participants proposed that a continuous greenbelt strip along the coastline be placed into the Conservation District. The Office of State Planning has not included this as a boundary review recommendation because this type of blanket statewide change should be addressed through legislation or by the Counties. OSP proposed legislation in 1991 to increase the shoreline setback to 40 feet in the Urban District and 150 feet in non-Urban Districts with exceptions for small lots. This bill did not pass. However, the Counties already have the authority under Chapter 205A to establish setbacks greater than the minimum established in that Chapter and thus a more immediate solution to this issue may rest with the County governments.

The boundary review does identify specific areas along the coastline which should be reclassified to Conservation because of their resources or to conform to County plans.

Agricultural District Issues

The existing Agricultural District contains lands with soils which are only marginally good for agriculture as well as lands with good soils. The reasons for this go back to the initial delineation of land use district boundaries. After the Land Use Law was adopted in 1961, the LUC adopted temporary boundaries. Generally, the LUC renamed the forest and water reserve zones as Conservation Districts and divided the remainder of the land into "urban" and "non-urban," temporarily classifying the non-urban as "agriculture."¹

Upon further and more detailed analysis, permanent boundaries were recommended by the Commission's consultants, Harland Bartholomew & Associates.² The Urban District was expanded to include a liberal allocation of land for anticipated population growth. The boundaries of the interim Conservation District were also modified considerably. State land leased for Agriculture was included in the Agricultural District as were lands in the original forest reserve suitable for agriculture. In other locations, the Conservation boundaries were extended to include areas subject to erosion, wilderness areas, unique examples of lava flows, areas of outstanding scenic quality, recreational and historic sites. Agricultural District boundaries were based on the soil classification, existing agricultural land uses, topography, rainfall and consultation with experts.

The Commission conducted meeting and public hearings and modified and subsequently adopted land use district boundaries.

The consultants encountered certain special problems during the course of their study, problems which are still applicable today. One of these problems was the appropriate disposition of so-called "wastelands" which are neither suitable for high-grade agricultural nor urban development, also called "residual" lands. They noted that 1) under the provisions of Act 187, the Land Use Law, there are no unidentifiable land uses or residual lands, 2) "residual" areas are sometimes viewed as land to be considered waste but such areas are also identified as wilderness and may contain plant or animal life, making them appropriate for Conservation designation, 3) the resources at the peripheral boundaries of the Agricultural and Conservation Districts may approach a line of diminishing positive identification, and 4) there is a need for the exercise of value judgments in the delineation of Conservation and Agricultural District boundaries in many parts of the State.³

¹ Harland Bartholomew and Associates, Land Use Districts for the State of Hawaii, Recommendations for the Implementation of the State Land Use Law, Act 187, SLH 1961, January 11, 1963, pp. 9-10.

² Ibid.

³ Ibid., pp. 17-19.

The question of what to do with lands in the Agricultural District that are not suitable for high-grade agricultural use still exists. Moreover, while it is the State's intention to protect important agricultural land pursuant to the Hawaii State Constitution, the future will bring further questions and concerns relating to the entire Agricultural District because of the changing face of agriculture in Hawaii.

Overall, acreages in sugarcane and pineapple are declining and are projected to decline further although there are individual plantations that remain very healthy. Diversified agriculture is growing and over the years, significant acreages have been planted in macadamia nuts. However, diversified agriculture is not expected to be able to utilize all of the lands taken out of sugar and pineapple.

Agricultural use has been one means of keeping areas in open space and providing related open space benefits. Fields of sugarcane, for example, have enhanced the scenic beauty of the islands. However, there is uncertainty as to the nature and strength of the sugar industry in Hawaii. Proponents of open space will no longer be able to rely on sugar or pineapple to provide open space as companies continue to shrink the size of their plantations. Some landowners of former sugar and pineapple lands have gone into alternative crops such as oats and coffee and this should be encouraged.

However, there is a growing recognition that open space is a valuable resource in its own right and should be protected and managed. Open space enhances the value of surrounding communities, provides buffer areas, scenic vistas, and facilitates efforts to manage and direct urban growth.

As stated earlier, this review initially looked at the issue of agriculture and open space but in many ways found it difficult to address under the existing land use categories. The establishment of a new district, an Open Space District, and a tightened-up Agricultural District containing only important agricultural lands has been under discussion by the Legislature and provides a solution to the agriculture/open space dilemma.

Rural and Urban District Issues

The boundary review recommends that certain lands be urbanized to meet urban land requirements for the next ten years and include a 25 percent surplus. Questions have been raised as to whether this land will actually be developed and specifically whether it will be developed to address the need for affordable housing. It has been suggested that taxation be used as an incentive. It has also been proposed that the provisions on agricultural dedication which allows lands in the Urban District to be dedicated to agriculture be reviewed to determine whether this provision has been facilitating the "holding" of lands rather than the development of urbanized lands.

The recently enacted "use it or lose it" provision can also be utilized to promote development of urbanized lands. Affordable housing requirements can be addressed during the petition process.

Expediting the permit process has also been raised as a concern. To facilitate implementation of the review and expedite development in areas which the review has determined are appropriate, the Office of State Planning will be requesting the Land Use Commission to change some of its detailed requirements on the form and content of petitions during the boundary review.

V. TYPES OF RECOMMENDATIONS

The following explains the types of recommendations included in this report.

Reclassifications to the Conservation or Agricultural District

Priority 1. These are areas that OSP will likely petition for in FY 92-93 and beyond. These include areas which require protection, i.e., conservation resources for which there are sufficient documentation and justification to support a petition under contested case proceedings.

Priority 2. These are areas that are recommended as lower priority. They include, for example, conservation resources: a) which are already protected because of government or non-profit ownership with conservation objectives such as national parks; b) that are significant but not of as high quality or abundance as other areas or not as critical to meeting a specific conservation objective such as protecting endangered birds; c) which are believed or known to contain conservation resources but further survey work is necessary to either verify resources or determine appropriate boundary lines; d) which are of high quality but resource constraints limit the number of petitions which can be prepared; e) but other methods are available to protect the identified conservation values.

Reclassifications to the Urban and Rural Districts

Recommendations for areas appropriate for reclassification to the Urban and Rural Districts are identified. The Office of State Planning may initiate petitions for certain State, County and private lands which are recommended in the State Land Use District Boundary Review reports for reclassification to the Urban and Rural Districts. The decision as to which petitions OSP will initiate will be based on policy considerations, additional information, conditions on development and the availability of manpower and financial resources.

Department of Hawaiian Home Lands (DHHL)

DHHL lands containing conservation resources and lands proposed for urbanization have been identified in the report. However, these lands are not subject to the State Land Use Law according to the Hawaiian Homes Commission Act of 1920, and action will not be taken on these lands.

VI. SUMMARY OF OAHU RECOMMENDATIONS

A. Conservation District

Conservation District designation serves to protect Hawaii's unique and fragile environmental resources. Assuring that these precious resources are included in the Conservation District also helps to reduce future land use conflicts by confirming that it is the State's intent that these resources be protected. For example, conflicts over Heeia Marsh on Oahu may have been avoided if this important wetland and waterbird habitat had been in the Conservation District rather than the Urban District.

The examination of State land use districts on Oahu found the need to address the following critical areas:

1. Watersheds
2. Wetlands
3. Special Streams
4. Scenic Resources and Unique Physiographic Areas
5. Coastal and Open Space Resources
6. Areas Necessary for the Protection of Kaneohe Bay Water Quality

WATERSHEDS

Leeward Koolau Watershed. This recommendation extends the Conservation District along the leeward Koolau range for the purpose of watershed protection. The recommended area was identified by the University of Hawaii Water Resources Research Center. A total of 3,909 acres are being proposed for reclassification from Agricultural to Conservation in the leeward Koolau Watershed.

The present route of the Conservation District through the leeward mountains of Oahu approximately parallels the trace of the Koolau crest, but in places sharp inland indentations eliminate appreciable areas from benefitting groundwater recharge and moderating direct surface runoff. Valley sides and bottoms were given particular attention. Where possible, the boundary line in the valleys was pushed seaward to preserve the fragile terrain from disruption, thereby adding to the water retention potential of the area.

WETLANDS

A number of wetlands not in the Conservation District which have been identified as important in the State Conservation Lands Functional Plan, State Recreation Functional Plan, State and Federal Recovery Plans, County Development Plans, or by the Department of Land and Natural Resources (DLNR) and the U.S. Fish and Wildlife Service have been recommended for inclusion in the Conservation District. A buffer area around the wetland is recommended to regulate uses, e.g., construction of structures adjacent to the wetland which may potentially impact water birds.

On Oahu, wetland areas proposed for reclassification include Crowbar Ranch and Dillingham Field Ponds, Makaleha Stream and Wetland, Ukoa Marsh and Loko Ea Fishpond, Punahoolapa Marsh, James Campbell NWR: Kii and Punamano Units, Kahuku Wetlands, Haleiwa Lotus Fields, Waihee Wetlands, Heeia Marsh and Meadowlands, Kawainui Complex and Maunawili Stream, Waikele Wetlands, Bellows AFB Wetlands, Pearl Harbor NWR: Waiawa Unit, and Pearl Harbor NWR: Honouliuli and Apokaa Ponds.

SPECIAL STREAMS

Streams that have been identified in the Hawaii Stream Assessment as containing outstanding aquatic or riparian values including waterbird recovery habitat, or based on new aquatic information provided by DLNR or the U.S. Fish and Wildlife Service and are in the Agricultural District, have been recommended for inclusion in the Conservation District. These streams provide irreplaceable habitat for aquatic and riparian flora and fauna which are much less abundant now than in the past. Hawaii's streams are simple in structure and are absolutely dependent upon runoff from relatively natural areas. A disturbance at any point in a stream may echo through the ecosystem, causing the ecosystem to collapse. The optimal recommendation is the protection of entire watersheds from activities that lead to increased sediment load, pollution and other harmful changes to the stream and ultimately our coastal waters. A ridge-to-ridge approach would stabilize these ecosystems and offer native species the greatest chance of survival and has been recommended for streams where possible. However, in cases where ridge-to-ridge protection is not feasible given existing land use activities, e.g., residences, a 100-foot Conservation District corridor on both sides of the stream as measured from the bank is recommended. Conservation designation would provide for the regulation of uses adjacent to the stream (e.g., grading and construction of structures) to help assure stream protection.

Streams on Oahu proposed for reclassification are Paukauila Stream (including Opaepala and Helemano), Punaluu Stream, Anahulu Stream, Kaaawa Stream, Kaluanui Stream, Maunawili Stream, and Koloa Gulch.

SCENIC RESOURCES AND UNIQUE PHYSIOGRAPHIC AREAS

A number of sites on Oahu are being recommended for reclassification to the Conservation District because of the scenic values they possess or because they are physiographically unique. These areas are Olomana, Koko Crater, Diamond Head State Monument, and the Northern and Windward Waianae range.

Olomana. Olomana is a significant scenic resource and unique physiographic feature in Windward Oahu. While the summit and upper portions of Olomana are in the Conservation District, the lower slopes are in the Agricultural District. The proposed reclassification of Olomana is an extension of the Conservation District along its north and southeast slopes to protect scenic resources.

Diamond Head State Monument. Diamond Head Crater is a significant scenic resource which has been designated a State monument. Most of the crater and monument are in the Conservation District. However, approximately 23 acres on the northeast side of the crater are in the Urban District. Reclassification of this portion of the Diamond Head State Monument from the Urban to Conservation District is recommended to protect scenic resources.

COASTAL AREAS

Two coastal areas are recommended for inclusion into the Conservation District because they possess a combination of scenic, recreational, coastal, and open space resources.

Queens Beach and Sandy Beach. These areas contain significant scenic, recreational, coastal, and open space resources. They are in the State Urban District but are designated "Preservation" on the City and County of Honolulu Development Plan map. The proposed reclassification of this area to the Conservation District would be consistent with the City's designation and serve to protect this coastal resource. This is a Priority #2 recommendation.

Kaena Coastline. The Kaena Coast is a wild and undeveloped coastal conservation resource. It is a high value recreational area. In addition, it contains native coastal vegetation including rare plants. A substantial portion of the area is designated "Preservation" on the North Shore Development Plan map. Given its natural, scenic, recreational, and open space resources, Conservation designation is more appropriate than its current Agricultural designation.

KANEOHE BAY

The Kaneohe Bay Task Force which has been meeting and developing the Kaneohe Bay Master Plan pursuant to Act 208, SLH 1990, submitted proposals for land use district changes.

These proposals were assessed by staff using criteria established for the boundary review. The following areas are recommended for changes because of watershed protection, steep slopes, endemic plants, scenic resources, historic sites, and to protect water quality in Kaneohe Bay.

Waikane Watershed. Approximately 406 acres in Waikane are being recommended for reclassification from the Agricultural to the Conservation District for watershed protection and because of steep slopes. Soil erosion in this valley affects water quality in Kaneohe Bay. In addition, this area contains endemic plants and scenic resources. This is a Priority 2 recommendation.

Waihee Valley Mauka. This 148-acre area also impacts water quality in Kaneohe Bay. The slope in most of the area is greater than 20 percent and mean annual rainfall is approximately 75 inches. Reclassification from Urban to Conservation is recommended.

Hakipuu 200-Foot Elevation Area. An area in Hakipuu above the 200-foot elevation with slope greater than 20 percent is being recommended for reclassification from Agricultural to Conservation to prevent further soil erosion and to protect scenic resources. This area is designated "Preservation" by the County.

Ahuimanu (Kahaluu) Taro Loi System. The Ahuimanu Taro Loi System is a significant cultural resource listed on the National Register of Historic Places and is reported to be Oahu's best example of ancient Hawaiian engineering. The area is designated "Preservation" by the City and County of Honolulu.

OTHER AREAS

Two other recommendations not falling into any of the above categories are identified below:

Hydrologic Zone of Contribution for the Waiawa Shaft. This represents the area through which groundwater contamination of the Waiawa Shaft could occur. Reclassification of this area from Agricultural and Urban to Conservation is recommended to protect the water quality of the Waiawa Shaft, the primary drinking water source for Pearl Harbor. Only undeveloped areas within the Hydrologic Zone of Contribution are being recommended for reclassification.

Kauaopuu. The only known current occurrence of a rare plant is found here. Reclassification will extend the Conservation District to the 600-foot level.

B. Agricultural District

There are more than enough agricultural lands on Oahu to meet agricultural production goals. Important agricultural lands should be maintained in the Agricultural District to assure the viability of the sugar, pineapple, and diversified agricultural industries. However, due to the overriding need for affordable housing on Oahu, "A" and "B" rated lands are being proposed for reclassification to the Urban District in Central Oahu and Ewa. Agricultural District lands shall also be maintained to provide open space and scenic vistas. No additions to the Agricultural District are recommended for Oahu. However, Agricultural District lands with high conservation resources have been recommended for reclassification to the Conservation District.

C. Urban and Rural Districts

Additional acreages are being recommended for reclassification to the Urban District on Oahu. The primary basis for this decision was an analysis of urban land requirements which found that Oahu will have a deficit of approximately 3,685 acres of urban land in 2000. The areas proposed for reclassification are located in Ewa and Central Oahu. There are no rural districts on Oahu and no rural designations are proposed.

Urban Land Requirements

The Urban Land Requirements Study, Wilson Okamoto & Associates, Inc., 1991, examined the need for urban land based upon a comparison of available developable urban land and projected urban land requirements.

Urbanization Trends

As of January 1990, Oahu had 93,675 acres in the Urban District. Between 1976 and 1990, 9,608 acres were reclassified to the Urban District with nearly 70 percent of that occurring in the Central Oahu region. The Ewa region and the Primary Urban Center also experienced a substantial increase in the Urban District at 1,588 acres and 941 acres, respectively. The last five-year period accounts for 68 percent of the total acreage reclassified to the Urban District between 1976 and 1990, or 6,547 acres out of 9,608 acres.

URBAN DISTRICT RECLASSIFICATIONS CITY & COUNTY OF HONOLULU, 1976-1990 BY DEVELOPMENT PLAN AREA (IN ACRES)

	<u>1976-80</u>	<u>1981-85</u>	<u>1986-90</u>	<u>Total</u>
Primary Urban Center	11	894	36	941
Ewa	116	181	1,291	1,588
Central Oahu	590	1,136	4,939	6,665
Koolaupoko	3	42	45	90
Koolauloa	0	6	236	242
North Shore	49	8	0	57
Waianae	25	0	0	25
Total	794	2,267	6,547	9,608

Source: State Land Use Commission in Urban Land Requirements Study, Wilson Okamoto & Associates, 1991.

Developable Urban Land

The study assessed lands in the Urban District to identify developable urban land. These lands were defined as lands which do not contain any permanent development, are relatively level with a slope of less than 20 percent and is otherwise free of readily identifiable environmental constraints. Also excluded from the definition of developable lands were existing golf courses, parks and roadways.

On Oahu, the study found that there are 8,393 acres of developable urban lands. The following table identifies developable lands on Oahu which are in the State Urban District and are County-zoned

Residential, Commercial, Industrial, Resort, Agricultural or Special District. It should be noted that there are substantial amounts of Urban District lands on Oahu which are County-zoned Agricultural and Preservation. There are 4,487 acres of developable urban lands which are County-zoned Agricultural and 2,486 acres which are County-zoned Preservation. This amounts to 64 percent of the total developable lands when all lands within the State Urban District are considered. Some areas such as Queens Beach in Hawaii Kai have been downzoned by the City and County to "Preservation" while retaining Urban District designation. Preservation lands in the Urban District have been excluded from this assessment of available urban lands on the premise that their development is less likely to be allowed by the County.

DEVELOPABLE URBAN LAND
CITY AND COUNTY OF HONOLULU¹
(IN ACRES)

Primary Urban Center	535
Ewa	2,635
Central Oahu	2,002
East Honolulu	605
Koolaupoko	671
Koolauloa	304
North Shore	267
Waianae	<u>1,374</u>
Total	<u>8,393</u>

¹Excludes lands zoned preservation by the County.

Source: Wilson Okamoto & Associates, Urban Land Requirements Study, 1991.

Demand for Urban Land

Future demands for urban land were determined through population and employment projections and through estimated urban land area requirements by Wilson Okamoto & Associates, Inc.. The M-K Series of Population and Economic Projections was utilized. The Office of State Planning is currently evaluating these projections, particularly the visitor industry projections. There are concerns that the visitor industry projections are too high, reflect an over-reliance on that industry, and may become a self-fulfilling prophecy. However, these projections are still recommended for planning purposes.

Residential area requirements assumed existing densities, declining household size, and no redevelopment of existing urban areas. Census data on household size was not available when the study was conducted and the census data shows a higher household size than that reflected in the study. Revision of the projections will be needed for the next five-year boundary review. A 25 percent flexibility factor was added to the total urban land requirement figure to account for lands which

may be held out of use. Such a flexibility factor allows for unanticipated choices of individuals and firms who may acquire land in excess of the estimated need, and it allows for land which may be held out of use because of personal preferences of property owners, unfavorable market conditions, or legal complications which make the land unavailable for immediate development.

Urban Land Requirements

Urban requirements were projected to the year 2000 because of the Land Use Law and LUC rules which provide that the Urban District shall include sufficient reserve areas for urban growth in appropriate locations based on a ten-year projection.

Based on the above-mentioned assumptions and comparisons of available developable urban lands with projections of urban lands needs, Oahu has the need for an additional 3,685 acres of urban lands by the year 2000.

Growth is directed to Ewa and Central Oahu. The State supports the development of a second city in Ewa. The areas recommended for urbanization in Ewa will contribute to the development of the area as an employment center (the Kapolei Business/Industrial Park and the Kapolei Town Center, for example) and will provide land for housing. Further urbanization is directed to the Ewa Plains to infill lands not already in the Urban District.

Urbanization is recommended to allow for the development of Makaiwa Hills and modest expansion of Makakilo.

In Central Oahu, urbanization is recommended in areas adjacent to the existing Urban District to allow for expansion of the existing Gentry Waiawa project.

Under these recommendations, important agricultural lands located below the Waiahole Ditch and on the Waianae side of Waikele Gulch, the pineapple lands of Kunia and the fertile lands north of Wahiawa and extending to Mokuleia will be retained in the Agricultural District.

Impacts on infrastructure are a concern in Ewa and Central Oahu. However, establishing the direction and location of future urban growth will facilitate infrastructure planning by the public and private sectors. This addresses issues regarding predictability raised by members of the private sector and may increase their willingness to make long-term commitments to capital expenditures for infrastructure.

While the Urban Land Requirements Study projects that the greatest deficit in urban lands is expected to occur in Koolaupoko (1,129 acres), expansion of the Urban District in Koolaupoko is not recommended during the boundary review because of impacts on conservation and agricultural resources. Similarly, while small

amounts of urban land appear to be needed in the Primary Urban Center, East Honolulu and Waianae, urbanization is not recommended for these areas. In the Primary Urban Center and East Honolulu, land for urbanization is limited and growth would have to occur in the backs of valleys or on ridges which may pose environmental problems. There does not appear to be a need for urban lands in Koolauloa and the North Shore and these areas should remain predominantly rural, low density areas.

URBAN LAND REQUIREMENTS
1995-2010
CITY AND COUNTY OF HONOLULU

	<u>2000</u>
Primary Urban Center	(277)
Ewa	387
Central Oahu	(276)
East Honolulu	(166)
Koolaupoko	(1,129)
Koolauloa	129
North Shore	125
Waianae	(62)
 Subtotal	 (1,269)
25% Flexibility Factor	(2,416)
TOTAL	(3,685)

Surplus (Deficit) in Acres

Source: Wilson Okamoto & Associates, Inc., Urban Land Requirements Study, 1991.

Urban Recommendations

Additional Urban Lands in Ewa. Four areas comprise this recommendation: the proposed Kapolei Business/Industrial Park; the Kapolei Town Center Area; the area proposed for the Laulani/Fairways development; and the existing Myers/Seibu Golf Course site. In all, 1,823 acres are being recommended for reclassification from Agricultural to Urban. The business/industrial park is projected to create an estimated 4,751 jobs through 2010 and would eventually be the source of an estimated 9,748 jobs. The Town Center and Laulani/Fairways projects are planned to produce a combined total of 3,533 housing units. It is recommended that the developers meet HFDC affordable housing requirements. Infrastructure improvements will also need to be provided.

A 50-acre portion in the Kapolei Town Center is planned for State and County buildings and is included as a separate recommendation.

The Oahu General Plan contains policies to develop a secondary urban center in Ewa with its nucleus in the Kapolei area.

Makaiwa Hills. The 1,356 acres at Makaiwa Hills is also being proposed for reclassification from the Agricultural to Urban District. This project is planned to contain approximately 2,130 single- and multi-family units as well as commercial and other uses. It is recommended that the developer meet HFDC affordable housing requirements. The project is located adjacent to existing urban areas and complements the development of Kapolei as Oahu's second city. However, many of the area's basic services are already at capacity and the project may be required to contribute to infrastructure improvements.

Makakilo Expansion. The proposed reclassification of 87 acres from the Agricultural District to the Urban District in Ewa, Oahu, is intended to allow for the continued development of Makakilo. Planned for this site are single-family housing units and recreational facilities.

Gentry Waiawa Expansion. This project expands on the first phase of Gentry Waiawa which has already been reclassified to the Urban District. The reclassification affects 1,067 acres presently in the Agricultural District. Gentry Waiawa is a master planned community that is planned to be a mix of single-family, low density apartment, medium density apartment, commercial/industrial, golf course, park, and open space uses. It is recommended that the developer meet HFDC affordable housing requirements. Although the proposed action will remove "A" and "B" lands from the Agricultural District, there is an overriding need for affordable housing on Oahu.

VII. PRIORITY LISTING

<i>Site</i>	<i>Change</i>	<i>Acres</i>	<i>Map Code</i>
<i>Priority 1 Conservation and Agricultural Recommendations (OSP intends to initiate reclassification petitions)</i>			
Kaena Coastline	A to C	969	1
Makaleha Stream-100 ft. corridor, Crowbar Ranch & Dillingham Field Ponds	A to C	114	3
Paukaiula Stream and corridor	A to C	3,406	4
Anahulu Stream	A to C	42	6
Ukoa Marsh & Loko Ea Fishpond	A to C	110	7
Punahoolapa Marsh	A to C	51	8
Kahuku Wetlands	A to C	208	10
Punaluu Stream and corridor	A to C	31	13
Kaaawa Stream and Valley (priority 1 portion)	A to C	63	14
Waihee Wetlands	U to C	22	17
Waihee Valley Mauka	U to C	148	18
Ahuimanu (Kahaluu) Taro Loi System	U to C	40	19
Heeia Marsh and Meadowlands	U to C	295	20
Olomana	A to C	503	21
Kawainui complex (Priority 1) and Maunawili Stream (Priority 2)	U to C A to C	155 92	22
Diamond Head State Monument	U to C	24	26
Kalihi Valley Water Recharge Area	U to C	112	27
Leeward Koolau Watershed	A to C U to C	3,862 47	29
Hydrologic Zone of Contribution: US Navy Waiawa Shaft	U to C A to C	410 1,463	30
<i>Priority 2 Conservation and Agricultural Recommendations</i>			
Northern Waianae Range	A to C	5,599	2
Haleiwa Lotus Fields	A to C	32	5
James Campbell NWR: Kii and Punamano	A to C	142	9
Koloa Gulch	A to C	4	11
Kaluanui Stream	A to C	789	12
Kaaawa Stream and Valley (priority 2 portion)	A to C	505	14
Hakipuu 200' Elevation Area	A to C	119	15
Waikane Watershed	A to C	281	16
Bellows AFB Wetlands	U to C	20	23
Queen's Beach and Sandy Beach	U to C	418	24
Koko Crater	U to C	25	25

Pearl Harbor NWR: Waiawa Unit	U to C	24	28
Waikele Wetlands	U to C	26	31
Windward Waianae Foothills	A to C	2,736	32
Pearl Harbor NWR: Honouliuli and Apokaa Ponds	A to C	42	34
Kauaopuu (non-DHHL portion)	A to C	35	41
<i>Urban Recommendations</i>			
Gentry Waiawa Expansion	A to U	1,067	33
Hawaii Raceway Park	A to U	59	35
Barbers Point Harbor Expansion	A to U	141	36
Makaiwa Hills	A to U	1,356	37
Makakilo Expansion	A to U	87	38
Additional Urban Lands in Ewa	A to U	1,823	39
State and County Building Complex	A to U	50	40

TOTAL ACREAGES
BY PRIORITY AND ACTION

Priority 1	A to C	10,914
Priority 1	U to C	1,253
Priority 2	A to C	10,284
Priority 2	U to C	513
Urban	A to U	*4,383

* Acreages for Hawaii Raceway Park and Barbers Point Harbor Expansion are included as part of the Additional Urban Lands in Ewa recommendation.

VIII. LISTING OF RECOMMENDATIONS

1. Kaena Coastline (969 acres) (A to C) Priority 1

This area contains rare and endemic plants and scenic and recreational resources. It is noted as having the best examples of native shrub lands on Oahu. A large portion of the site is designated Preservation by the County.

2. Northern Waianae Range (5,599 acres) (A to C) Priority 2

The Northern Waianae Range contains rare and endemic plants and scenic resources. Most of the area is greater than 30 percent slope. Parts of the recommendation area are designated Preservation by the County.

3. Makaleha Stream, 100-ft. corridor, Crowbar Ranch & Dillingham Field Ponds (114.2 acres) (A to C) Priority 1

This area is habitat for endangered Hawaiian waterbirds. The wetlands have been identified in the Hawaiian Waterbirds Recovery Plan as primary habitat for Hawaiian coot, stilt, koloa, and gallinule. The Hawaii Stream Assessment finds that Makaleha Stream contains outstanding riparian resources.

4. Paukaiula Stream (incl. Opaepala and Helemanu), (3,406 acres) (A to C) Priority 1

Paukaiula Stream and its tributaries, Opaepala and Helemanu, contain rare and endangered species. The stream has outstanding aquatic resources according to the Hawaii Stream Assessment.

5. Haleiwa Lotus Field (32.4 acres) (A to C) Priority 2

Haleiwa Lotus Field provides habitat for endangered Hawaiian waterbirds.

6. Anahulu Stream (41.6) (A to C) Priority 1

Anahulu Stream contains outstanding aquatic resources.

7. Ukoa Marsh and Loko Ea Fishpond (110 acres) (A to C) Priority 1

These areas are habitat for endangered Hawaiian coot, stilt, koloa, and gallinule. Ukoa Marsh is also listed as an important wetland in the Regional Wetlands Concept Plan: Emergency Wetlands Resource Act.

8. Punahoolapa Marsh (50.5 acres) (A to C) Priority 1

Punahoolapa Marsh is part of a larger complex of wetlands in the area which support endangered Hawaiian coot, stilt, koloa, and gallinule. The Hawaiian Waterbirds Recovery Plan identifies this marsh as a primary habitat for endangered Hawaiian waterbirds. The area is designated Preservation by the County.

9. James Campbell NWR: Punamano and Kii Units (142 acres) (A to C) Priority 2

This area is part of a larger complex of wetlands in the area which support endangered Hawaiian coot, stilt, koloa, and gallinule. The Hawaiian Waterbirds Recovery Plan identifies this marsh as a primary habitat for endangered Hawaiian waterbirds. The U.S. Fish and Wildlife Service manages these areas. The County designates these sites as Preservation.

10. Kahuku Wetlands (207.8 acres) (A to C) Priority 1

This area is part of a larger complex of wetlands in the area which support endangered Hawaiian coot, stilt, koloa, and gallinule. The Hawaiian Waterbirds Recovery Plan identifies this marsh as a primary habitat for endangered Hawaiian waterbirds. The site is also a resting area for the Laysan Albatross.

11. Koloa Gulch (3.7 acres) (A to C) Priority 2

Koloa Gulch contains rare and endangered species and is noted for outstanding aquatic resources in the Hawaii Stream Assessment.

12. Kaluanui Stream (789 acres) (A to C) Priority 2

Kaluanui Stream contains outstanding aquatic and recreational resources. Reclassification is proposed to protect rare and endangered species.

13. Punaluu Stream (31 acres) (A to C) Priority 1

This stream contains an abundance of native aquatic species throughout its course. It also contains substantial riparian, cultural, and recreational resources.

14. Kaaawa Stream (Priority 1--63 acres; Priority 2--505 acres) (A to C)

Kaaawa Stream contains an abundance of native aquatic species throughout the stream. A large portion of the affected area consists of lands with slope greater than 20 percent.

15. Hakipuu 200-Foot Elevation Area (119 acres) (A to C) Priority 2

Various areas in Hakipuu Ahupuaa above 200 feet with slope greater than 20 percent are proposed for reclassification to prevent further soil erosion and to preserve scenic resources. The affected area is an extension of the existing Conservation District.

16. Waikane Watershed (281 acres) (A to C) Priority 2

Waikane Watershed is reported to contain endemic plants and animals and scenic resources. Reclassification will help to protect water quality in Kaneohe Bay by minimizing soil erosion. The slope in much of the area is in excess of 30 percent and mean annual rainfall ranges from 65 inches to 110 inches.

17. Waihee Wetlands (22 acres) (U to C) Priority 1

Waihee Wetland provides primary habitat for endangered Hawaiian gallinules. The wetland is identified as important in the Regional Wetlands Concept Plan: Emergency Wetlands Resource Act.

18. Waihee Valley Mauka (147.6 acres) (U to C) Priority 1

Reclassification will help protect the watershed and open space resources. Soil erosion can also be minimized which would benefit the waters of Kaneohe Bay. A large portion of the area has slope greater than 20 percent. Mean annual rainfall is approximately 75 inches.

19. Ahuimanu (Kahaluu) Taro Loi System (40 acres) (U to C) Priority 1

The Ahuimanu Taro Loi System is a significant cultural resource listed on the National Register of Historic Places and is reported to be one of Oahu's best examples of ancient Hawaiian engineering. The area is designated Preservation by the County.

20. Heeia Marsh and Meadowlands (295 acres) (U to C) Priority 1

The wetland is a primary habitat for endangered Hawaiian coot, stilt, koloa, and gallinule. It is designated Preservation by the County.

21. Olomana (503 acres) (A to C) Priority 1

Olomana is a significant scenic resource and a unique physiographic feature. The area proposed for reclassification is an extension of the existing Conservation District.

22. Kawainui Complex (154.8 acres) (U to C) Priority 1; and Maunawili Stream and Corridor (92 acres) (A to C) Priority 2

Kawainui Complex is the largest natural wetland in the State. Most of the wetland is already in the Conservation District. The proposed reclassification will add portions of the wetlands not in the Conservation District to that District. It is primary habitat for endangered Hawaiian coot, stilt, koloa, and gallinule. Most of the area is designated Preservation by the County. The Maunawili Stream and Corridor portion of the recommendation is Priority 2.

23. Bellows AFB Wetlands (20 acres) (U to C) Priority 2

This wetland is primary habitat for endangered Hawaiian coot, stilt, koloa, and gallinule.

24. Queen's Beach and Sandy Beach (418 acres) (U to C) Priority 2

Queen's Beach and Sandy Beach are significant scenic, recreational, and open space resources. The proposed area is designated Preservation by the County.

25. Koko Crater (25 acres) (U to C) Priority 2

Koko Crater is a unique physiographic feature. The area has slope greater than 20 percent.

26. Diamond Head State Monument (24 acres) (U to C) Priority 1

The reclassification is an extension of the Conservation District and involves State-owned land. Diamond Head Crater is a statewide, significant scenic resource.

27. Kalihi Valley Water Recharge Area (112 acres) (U to C) Priority 1

Reclassification to the Conservation District will protect the water supply by reducing contamination and reduction of recharge into the Kalihi shaft.

28. Pearl Harbor NWR: Waiawa Unit (24.5 acres) (U to C) Priority 2

This refuge is part of a larger complex of wetlands scattered along the Pearl Harbor area supporting endangered Hawaiian waterbirds. As stilt habitat along the reef runway is lost, the Pearl Harbor area increases in importance to stilts in Leeward Oahu.

29. Leeward Koolau Watershed (47 acres--U to C); (3,862 acres--A to C)
Priority 1

The proposed area is an expansion of the Conservation District from Aiea to Kawaiiloa. It was recommended in the draft Watershed Protection Study, Water Resources Research Center, University of Hawaii. Reclassification will help to protect the watershed.

30. Hydrologic Zone of Contribution (1,463 acres--A to C);
(410.16 acres--U to C) Priority 1

Reclassification to the Conservation District would reduce the susceptibility of Waiawa Shaft to groundwater contamination. The Hydrologic Zone of Contribution represents the area through which groundwater contamination of the Shaft could occur. The Shaft provides drinking water to several military installations, including Pearl Harbor, and to the Moanalua Shopping Center.

31. Waikele Wetlands (26 acres) (U to C) Priority 2

Waikele Wetlands are part of a larger complex of wetlands scattered along the Pearl Harbor area supporting endangered Hawaiian waterbirds.

32. Windward Waianae Foothills (2,736 acres) (A to C) Priority 2

This area is an open space and scenic resource. Reclassification will extend the Conservation District to include areas with slope greater than 20 percent.

33. Gentry Waiawa Expansion (1,067 acres) (A to U)

Reclassification of this area will help to meet future urban land requirements. The development is adjacent to the initial phase of Gentry Waiawa which is already in the Urban District. The project will contain a mix of single-family, low density apartment, medium density apartment, commercial/industrial, golf course, park, and open space uses.

34. Pearl Harbor NWR: Honouliuli Unit and Apokaa Ponds (42 acres) (A to C)
Priority 2

This is part of a larger complex of wetlands in the Pearl Harbor area which support endangered Hawaiian waterbirds and migratory waterbirds.

35. Hawaii Raceway Park (59 acres) (A to U)

Reclassification of this area will help to meet future urban land requirements. Hawaii Raceway Park contains urban uses.

36. Barbers Point Harbor Expansion (141 acres) (A to U)

Reclassification of this area will help to meet future urban land requirements in an area planned for growth by the State. The proposed action will allow for the expansion of harbor facilities.

37. Makaiwa Hills (1,356 acres) (A to U)

Reclassification of this area will help to meet future urban land requirements. This development will contain approximately 2,130 single- and multi-family units, commercial uses, and other supporting services.

38. Makakilo Expansion (87 acres) (A to U)

Reclassification of this area will help meet future urban land requirements. Single-family units are proposed.

39. Additional Urban Lands in Ewa (1,823 acres) (A to U)

Reclassification of this area will help to meet future urban land requirements in an area supported for growth by the State. The reclassification area includes the proposed Kapolei Business/Industrial Park, Kapolei Town Center, the area proposed for the Laulani/Fairways residential development, and the existing Myers/Seibu golf course. Reclassification is consistent with the Oahu General Plan which contains policies to develop a secondary urban center in Ewa with its nucleus in the Kapolei area.

40. State and County Building Complex (50 acres) (A to U)

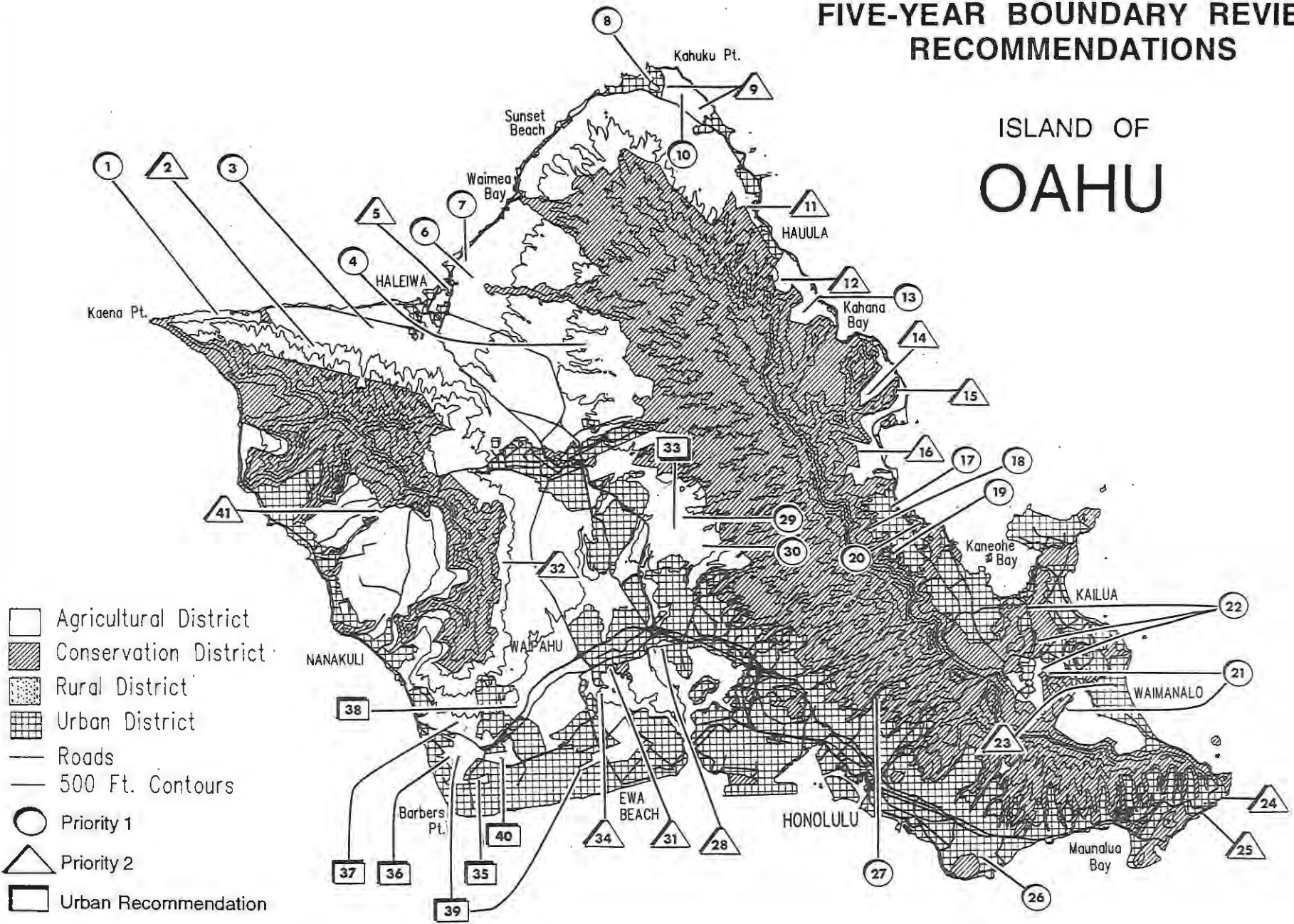
This area is part of the Kapolei Town Center and is planned for State and County facilities.







41. Kauaopuu (non-DHHL portion) (35 acres) (A to C) Priority 2

This is an expansion of the Conservation District to the 600-foot elevation to protect the only known current occurrence of a rare plant. A portion of this site is under the jurisdiction of DHHL. Reclassification will not affect this portion as DHHL is not subject to the State Land Use Law.

FIVE-YEAR BOUNDARY REVIEW RECOMMENDATIONS

ISLAND OF OAHU



-  Agricultural District
-  Conservation District
-  Rural District
-  Urban District
-  Roads
-  500 Ft. Contours
-  Priority 1
-  Priority 2
-  Urban Recommendation

A to C

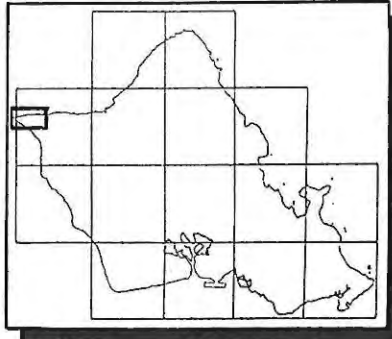
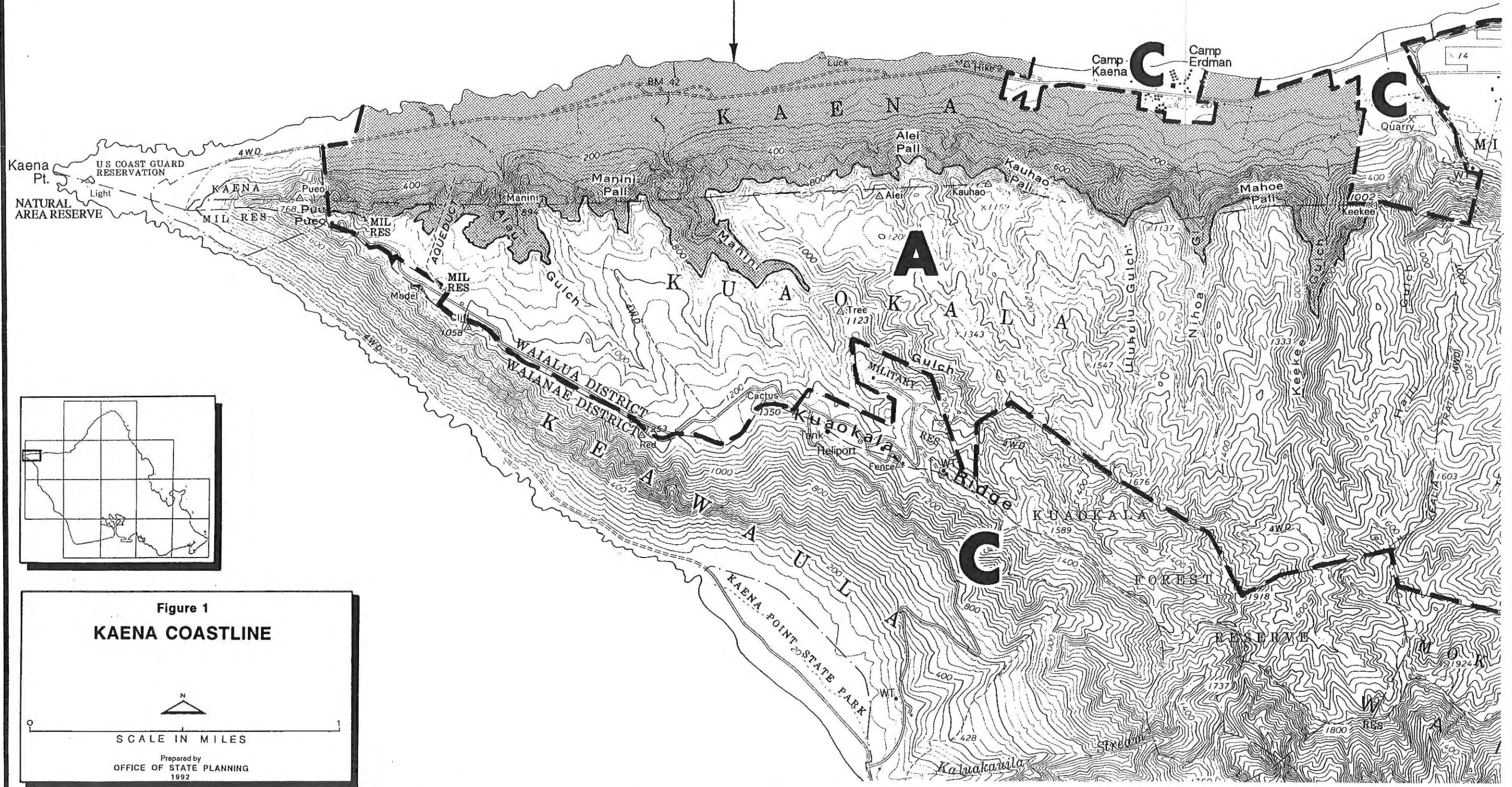


Figure 1
KAENA COASTLINE

N

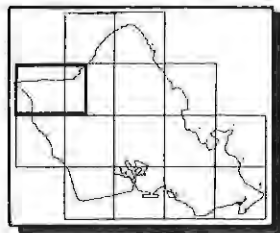
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 SCALE IN MILES

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 1992

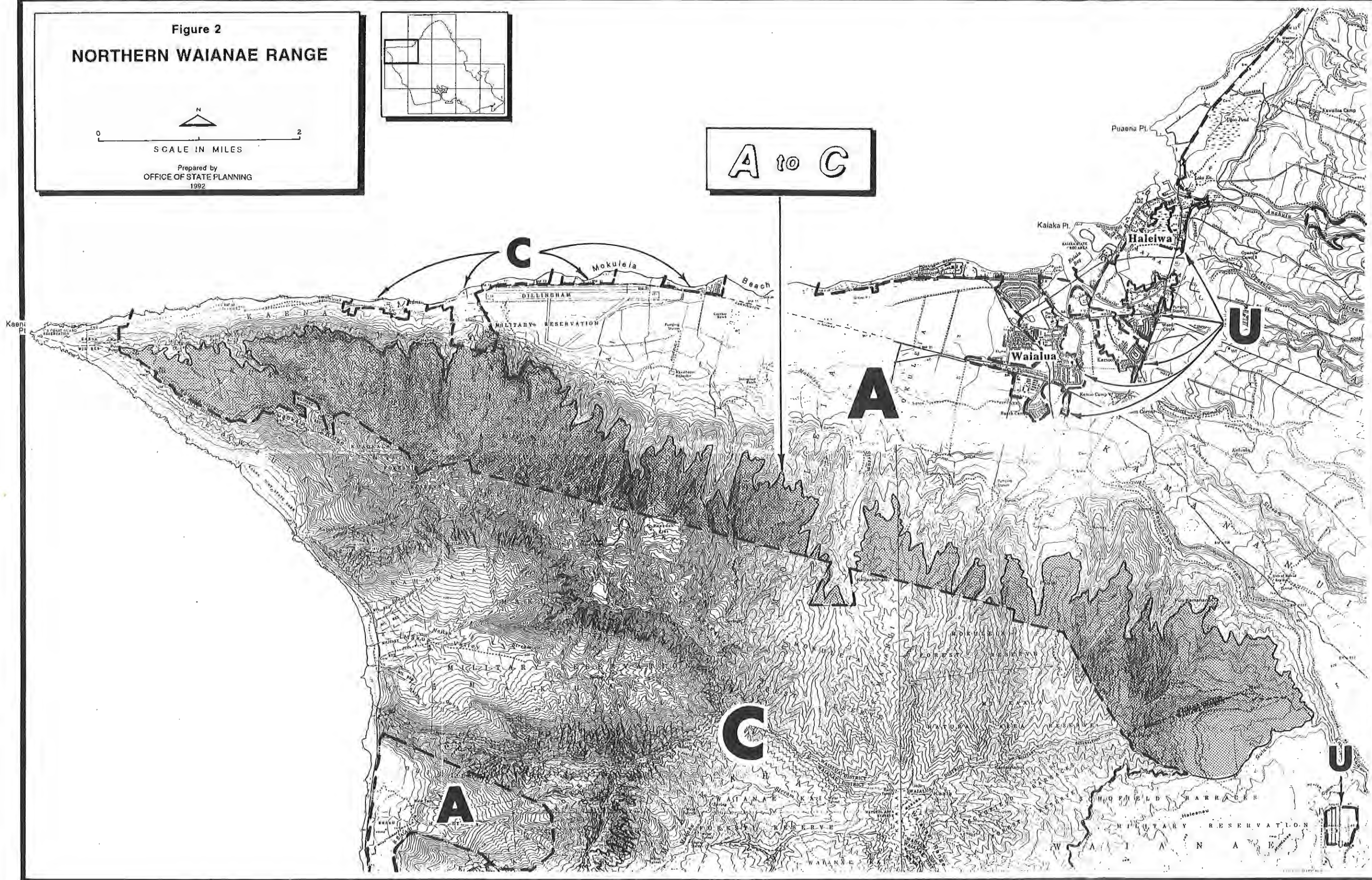
Figure 2
NORTHERN WAIANAE RANGE

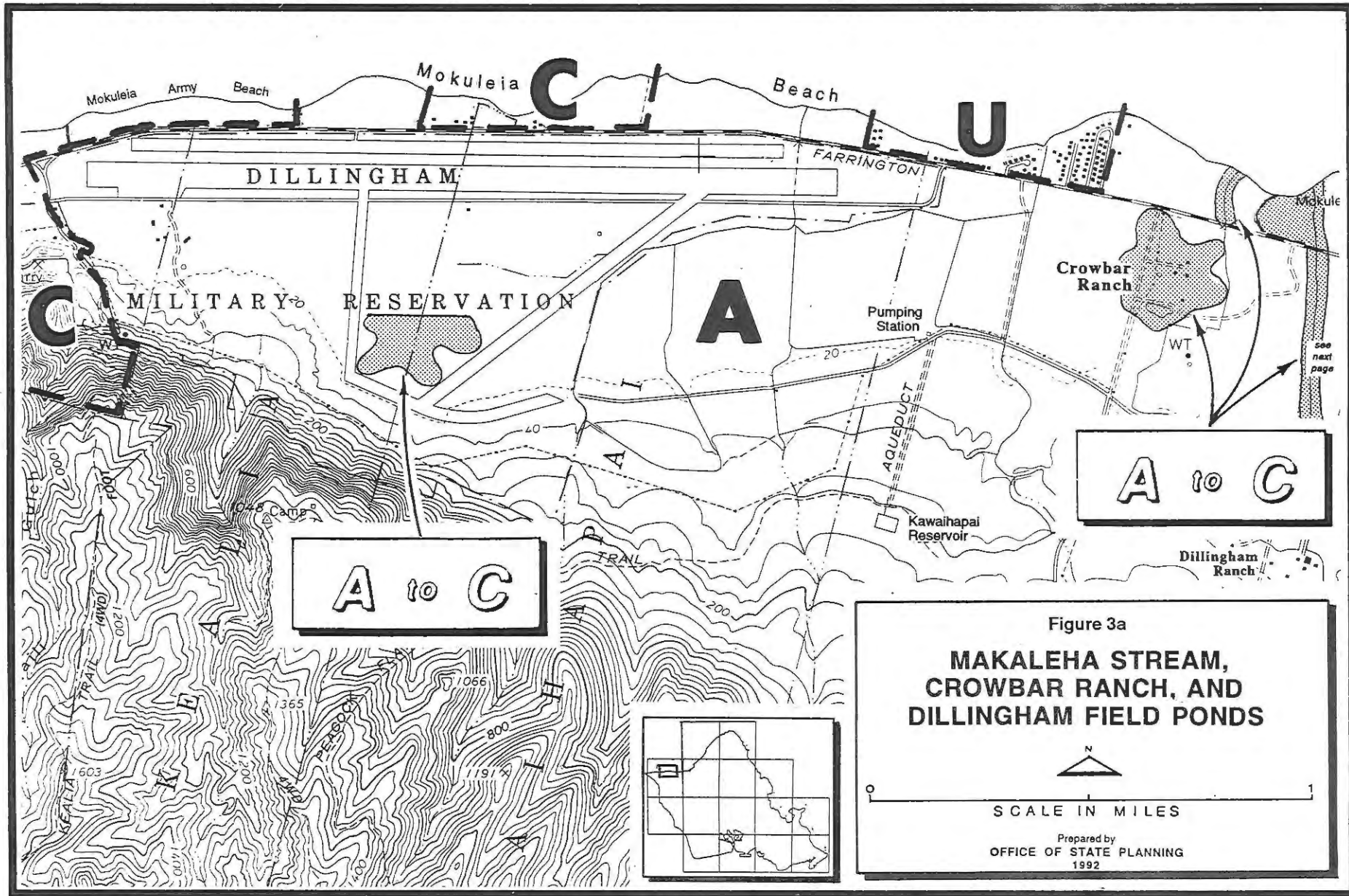


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1992



A to C





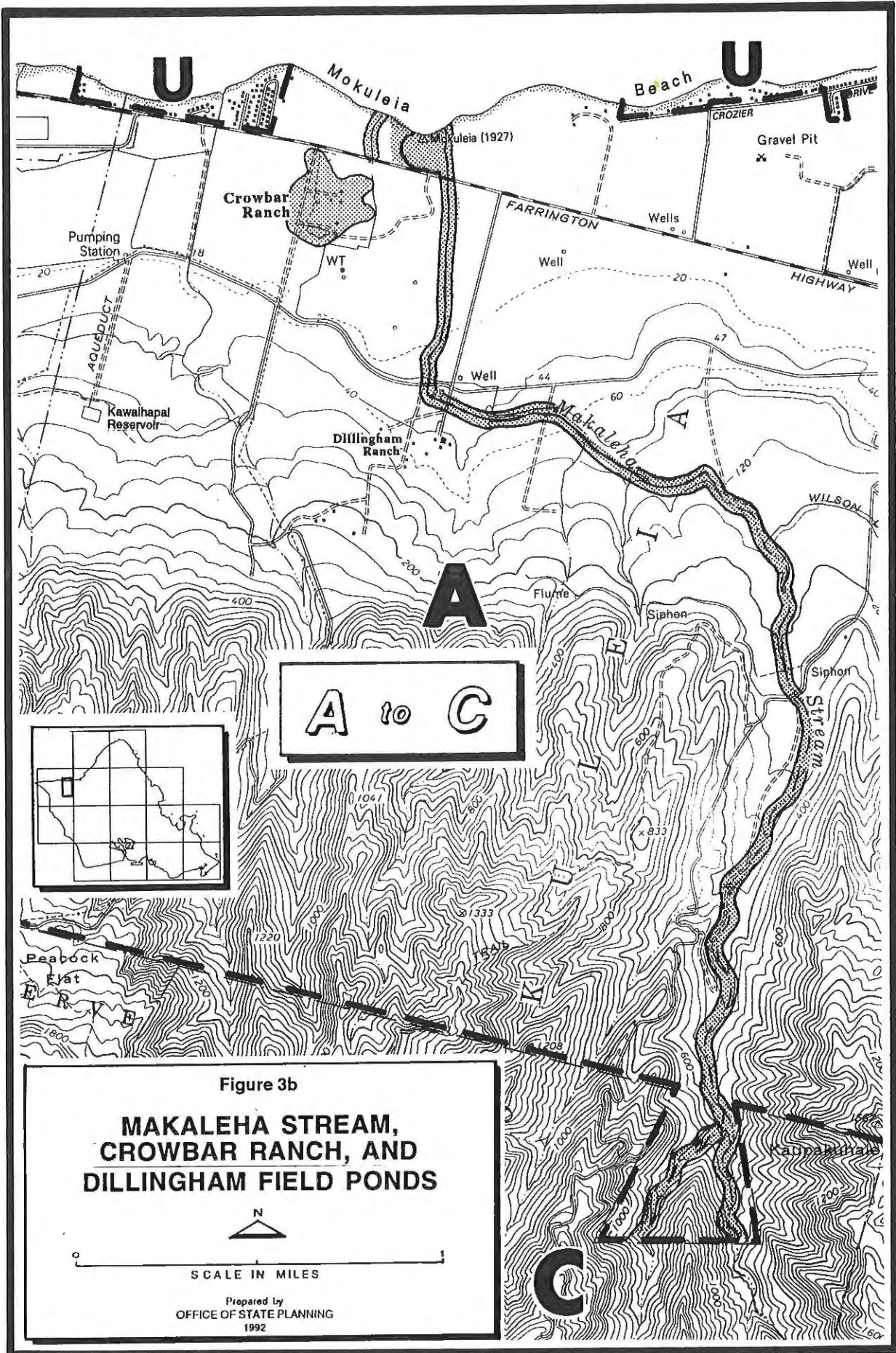
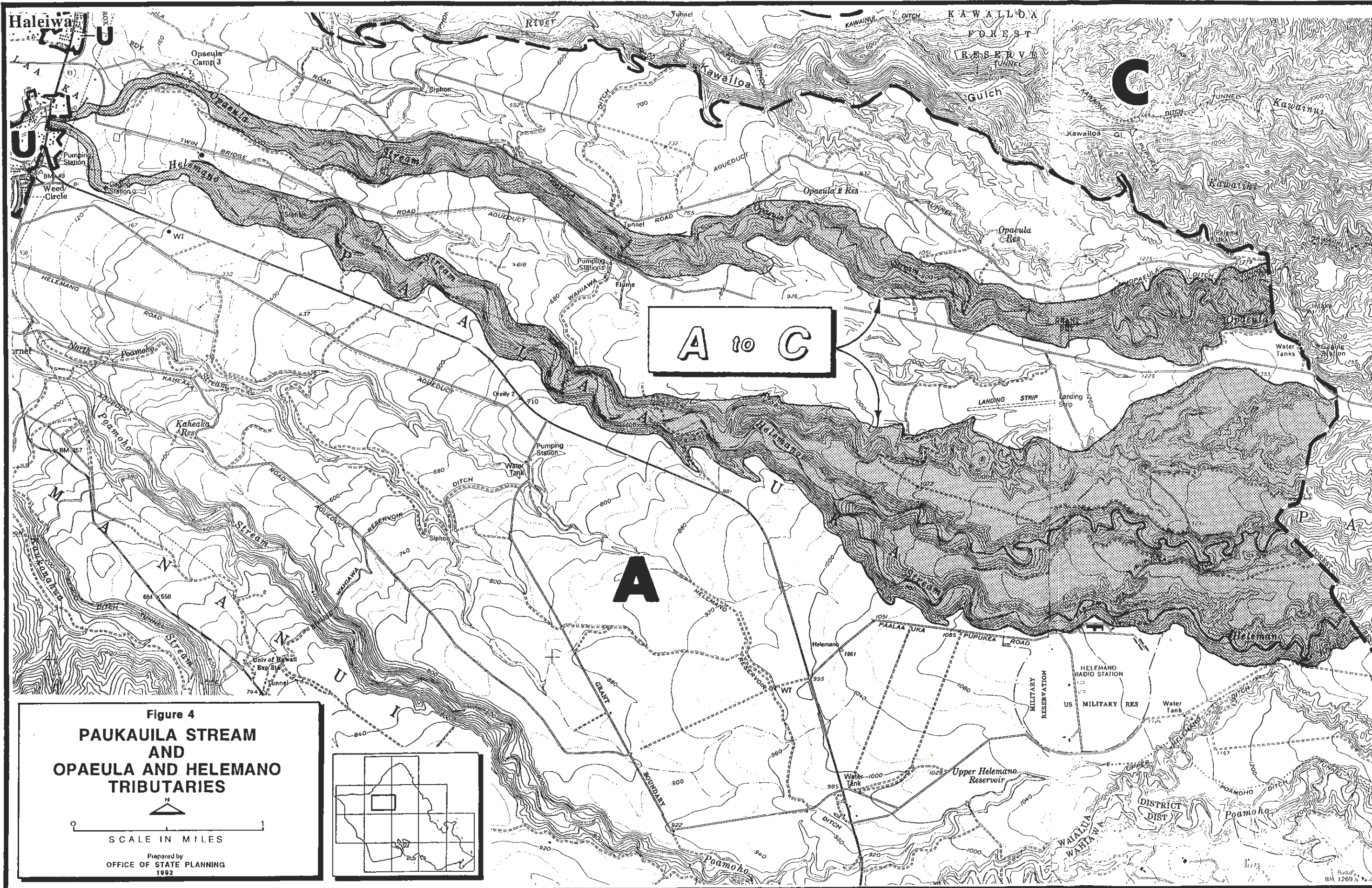


Figure 3b
**MAKALEHA STREAM,
 CROWBAR RANCH, AND
 DILLINGHAM FIELD PONDS**

N

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 SCALE IN MILES

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 1992



**Figure 4
PAUKAUILA STREAM
AND
OPAEULA AND HELEMANO
TRIBUTARIES**

SCALE IN MILES

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1952

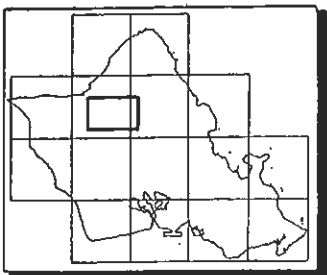
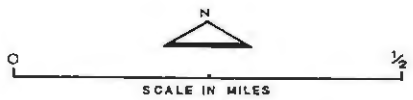
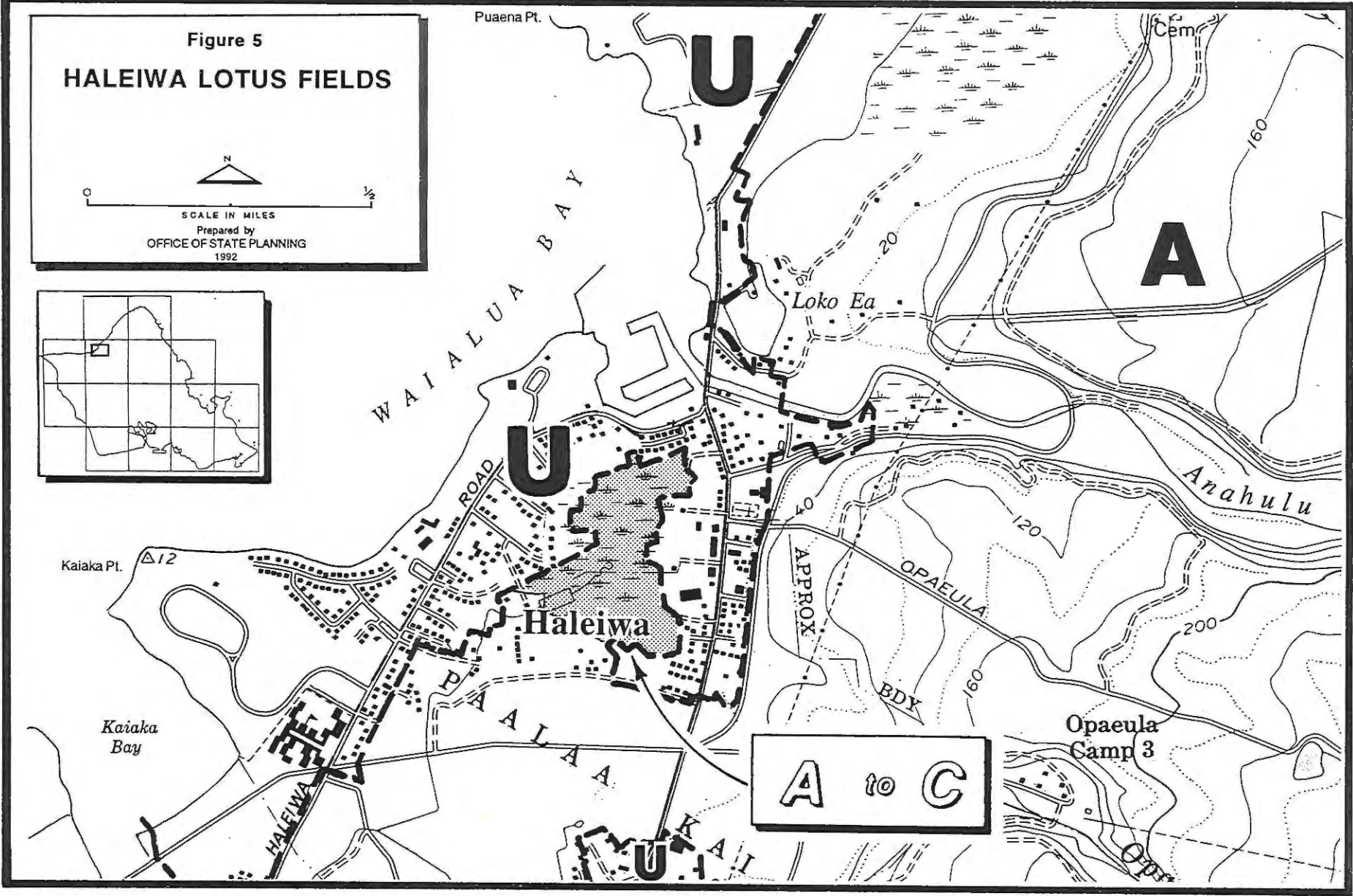
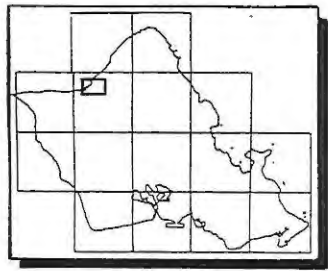


Figure 5
HALEIWA LOTUS FIELDS



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1992



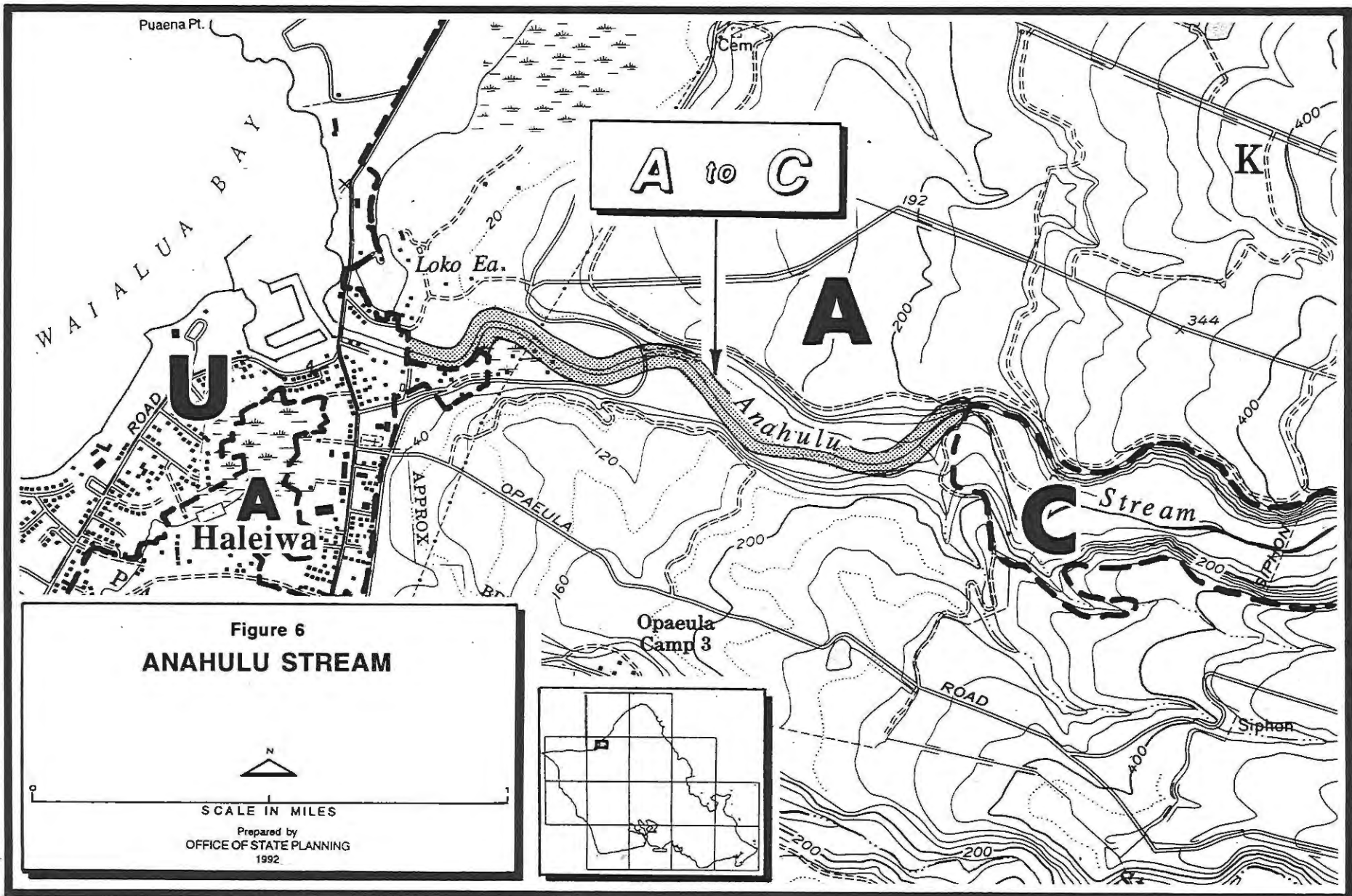
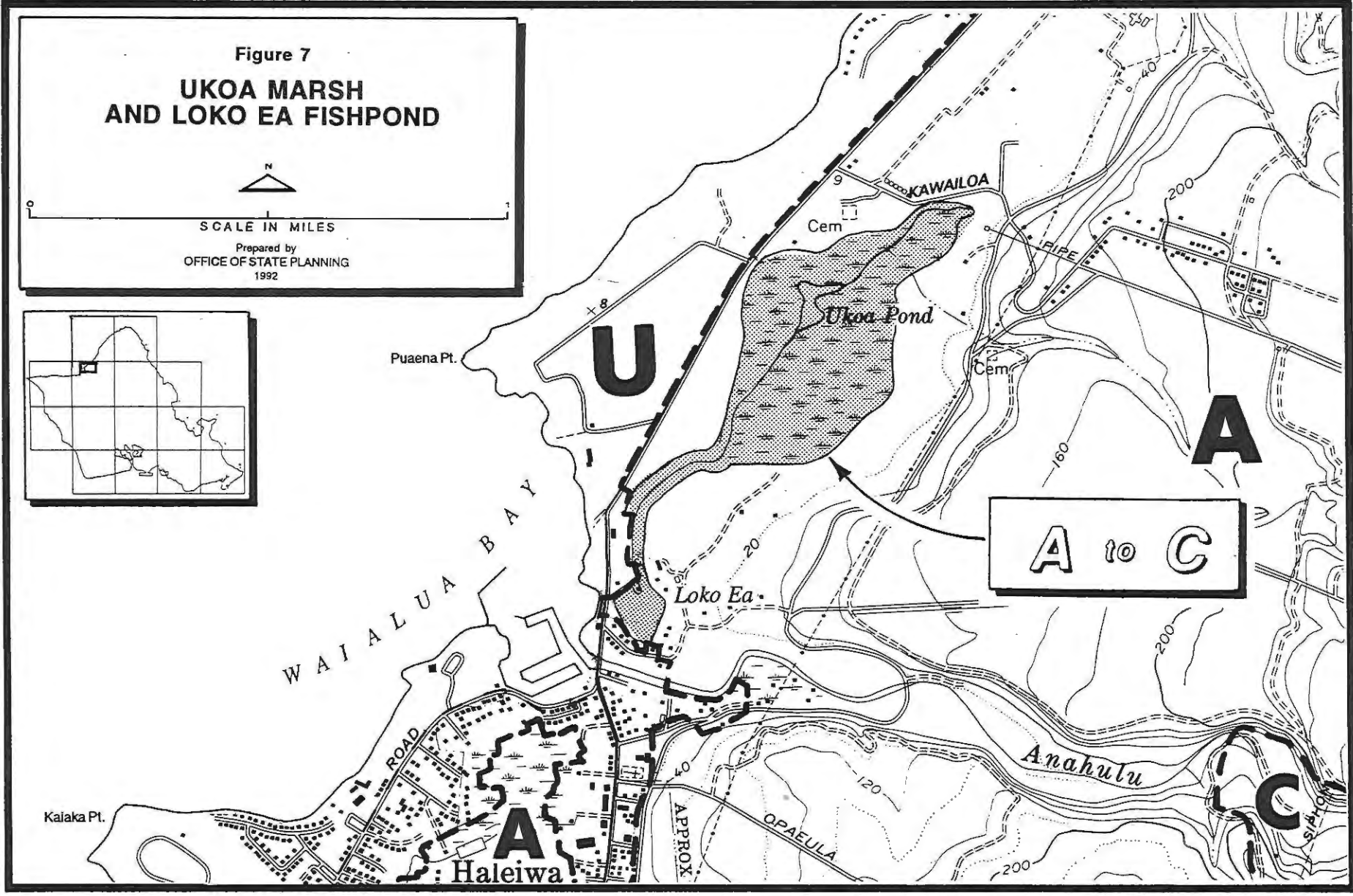
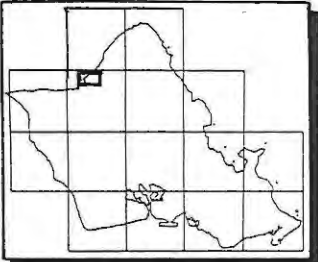


Figure 6
ANAHULU STREAM

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OFFICE OF STATE PLANNING
 1992

Figure 7
**UKOA MARSH
AND LOKO EA FISHPOND**



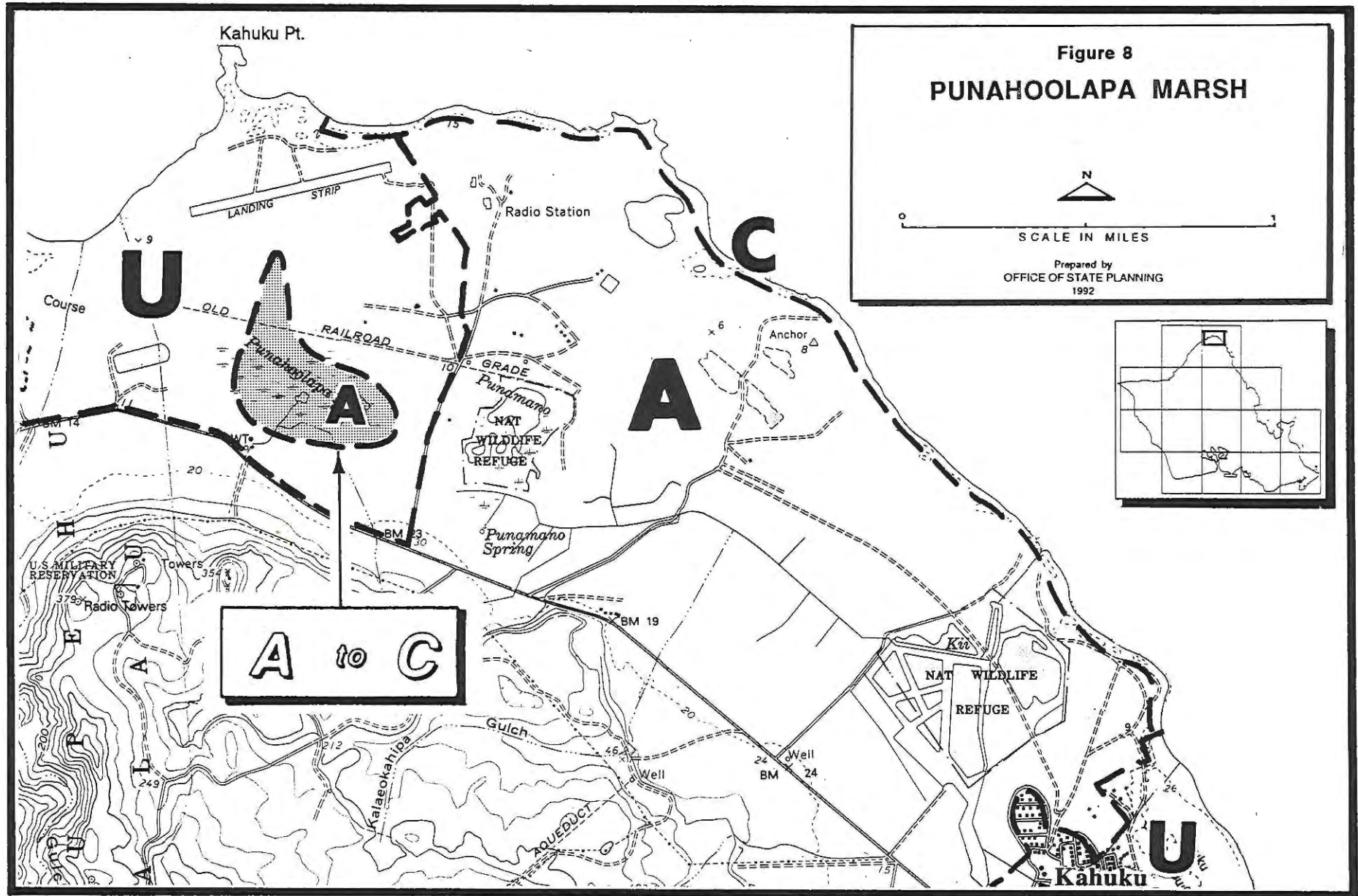
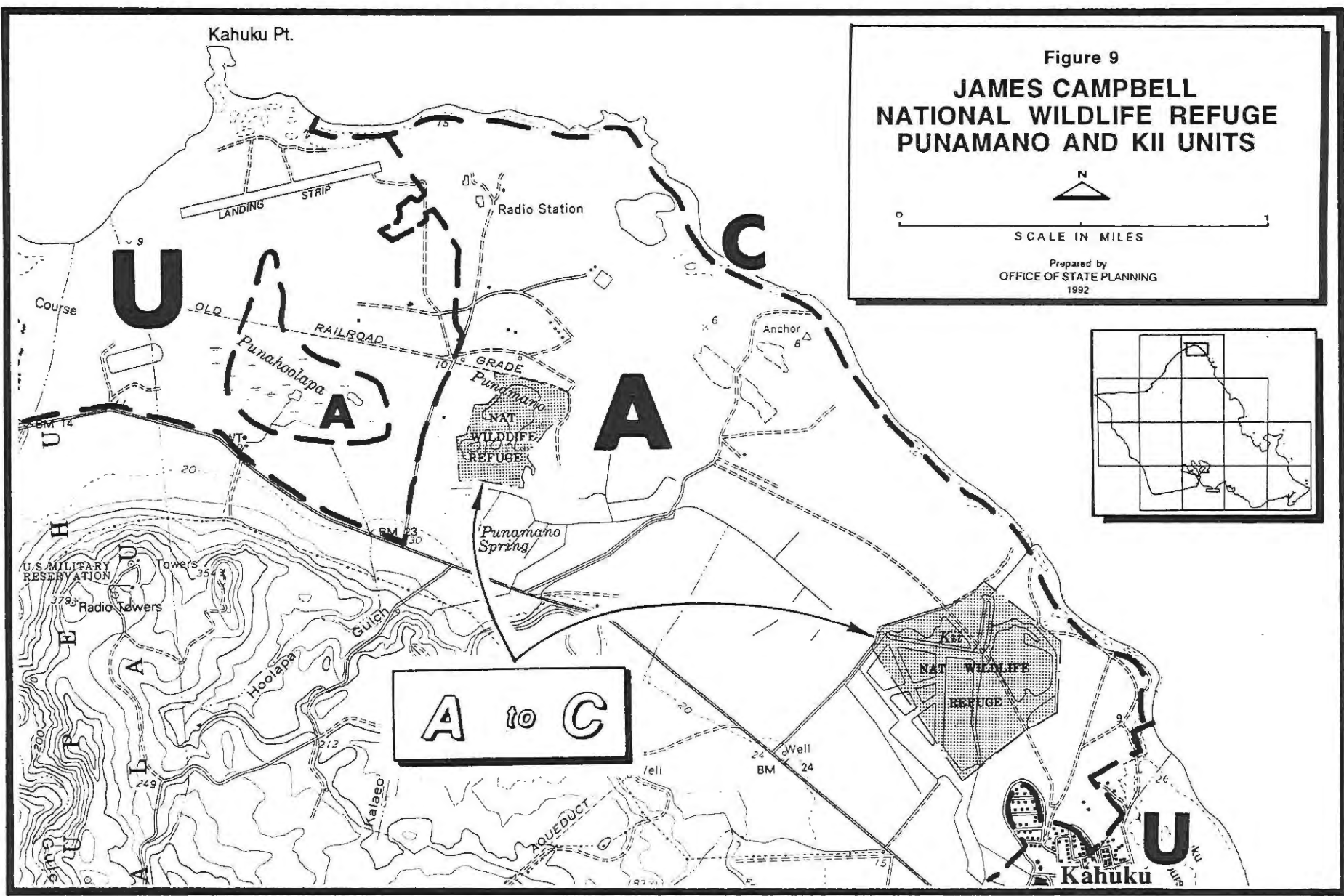
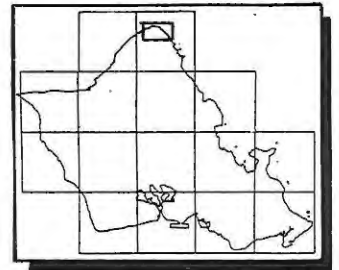


Figure 9
**JAMES CAMPBELL
 NATIONAL WILDLIFE REFUGE
 PUNAMANO AND KII UNITS**



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 1992



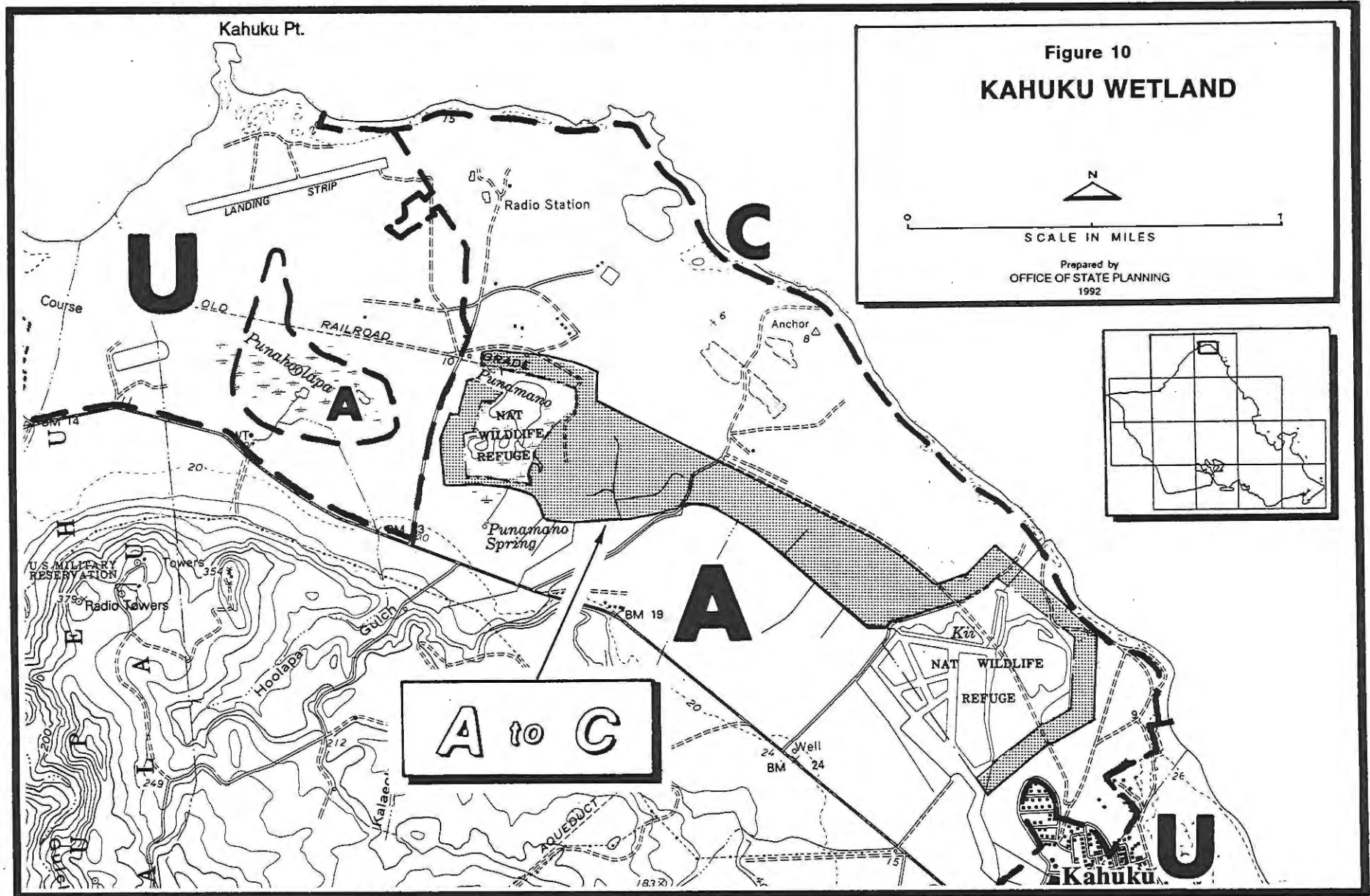
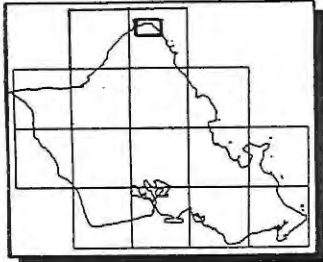


Figure 10
KAHUKU WETLAND

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 SCALE IN MILES

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 1992



A to C

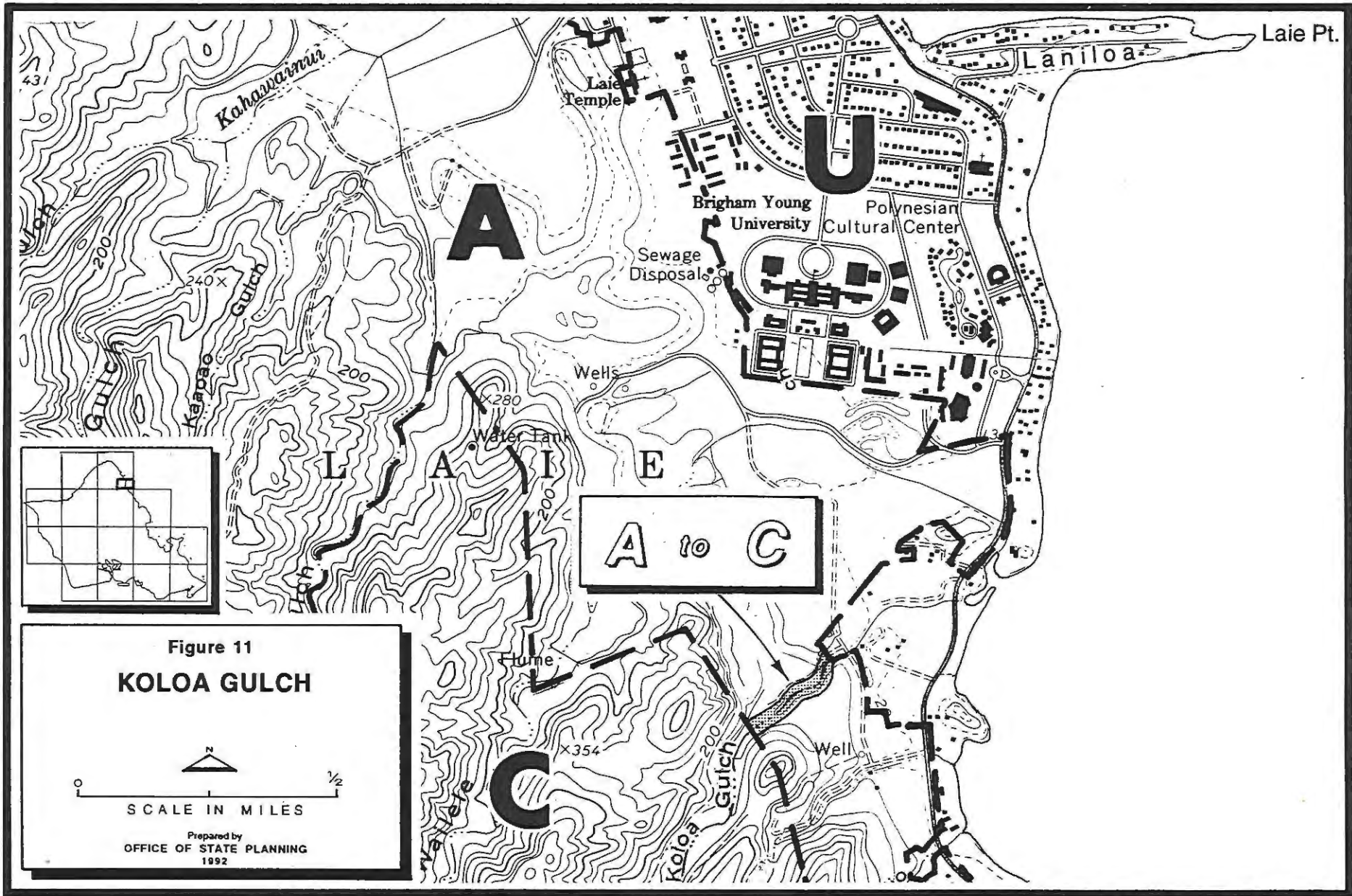
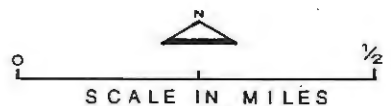


Figure 11
KOLOA GULCH



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1992

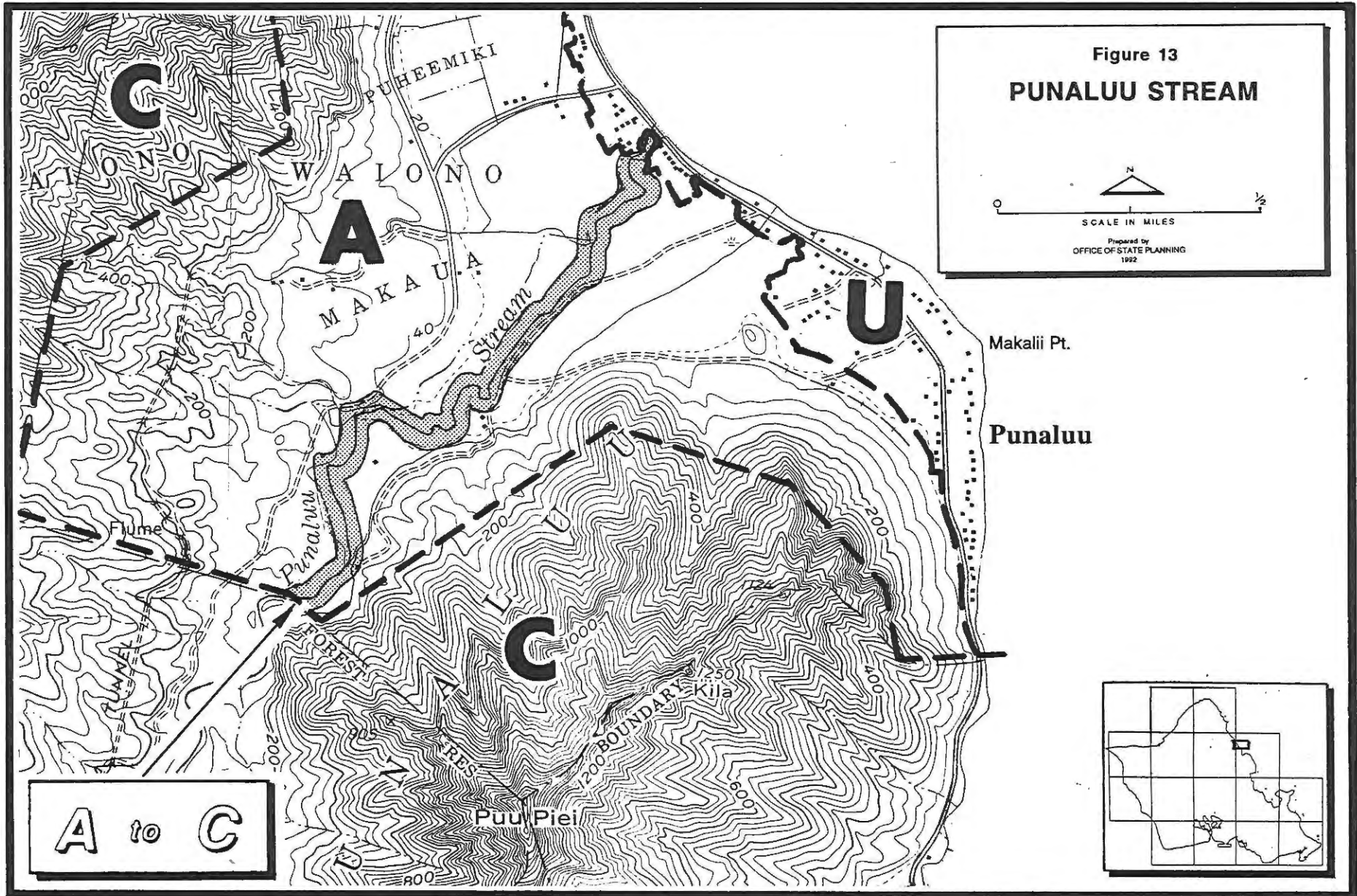


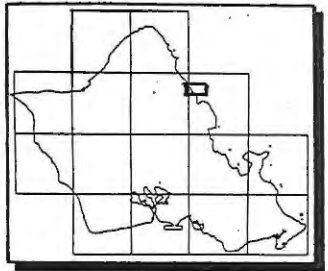
Figure 13
PUNALUU STREAM

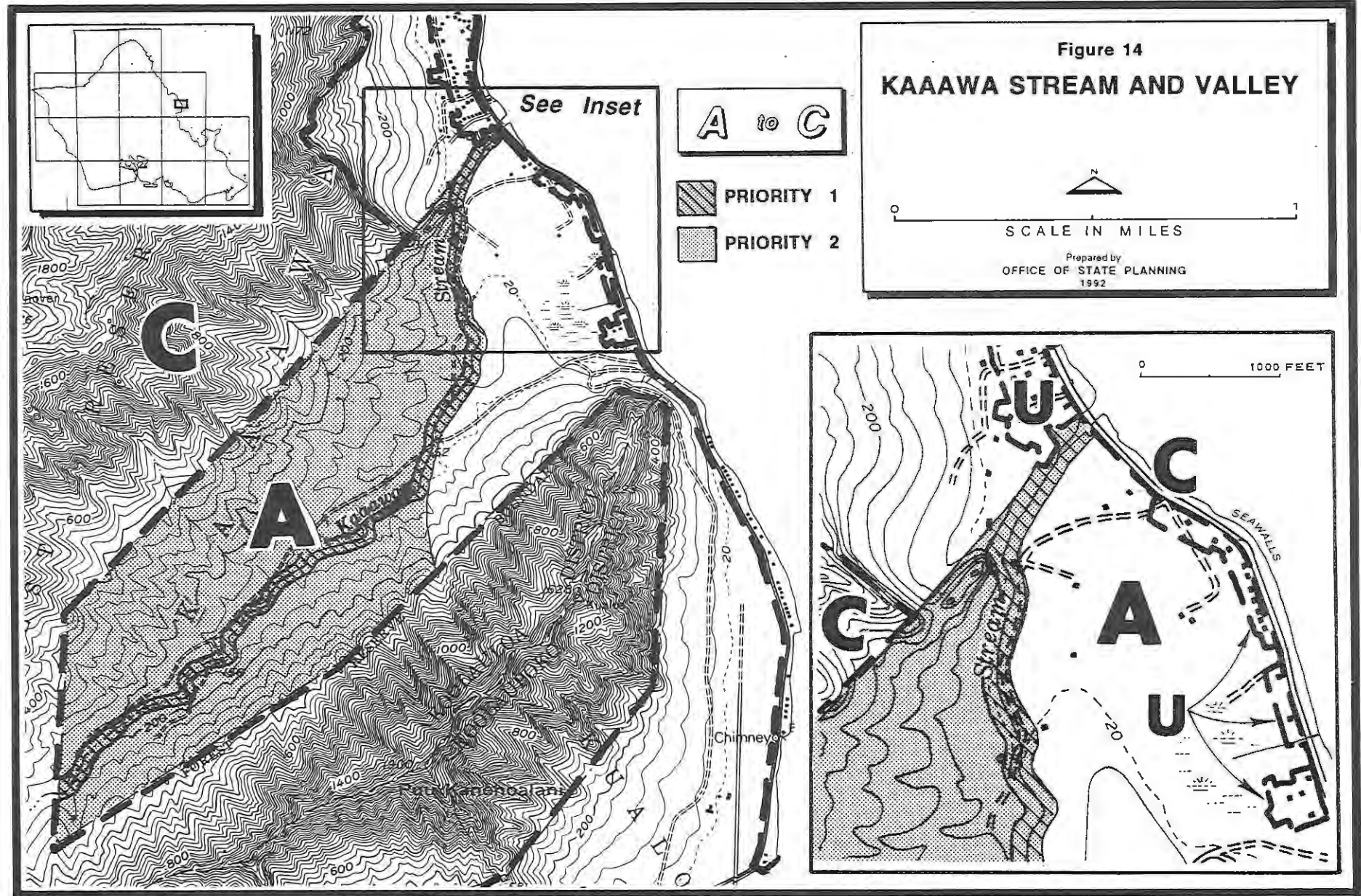
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SCALE IN MILES

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 1952





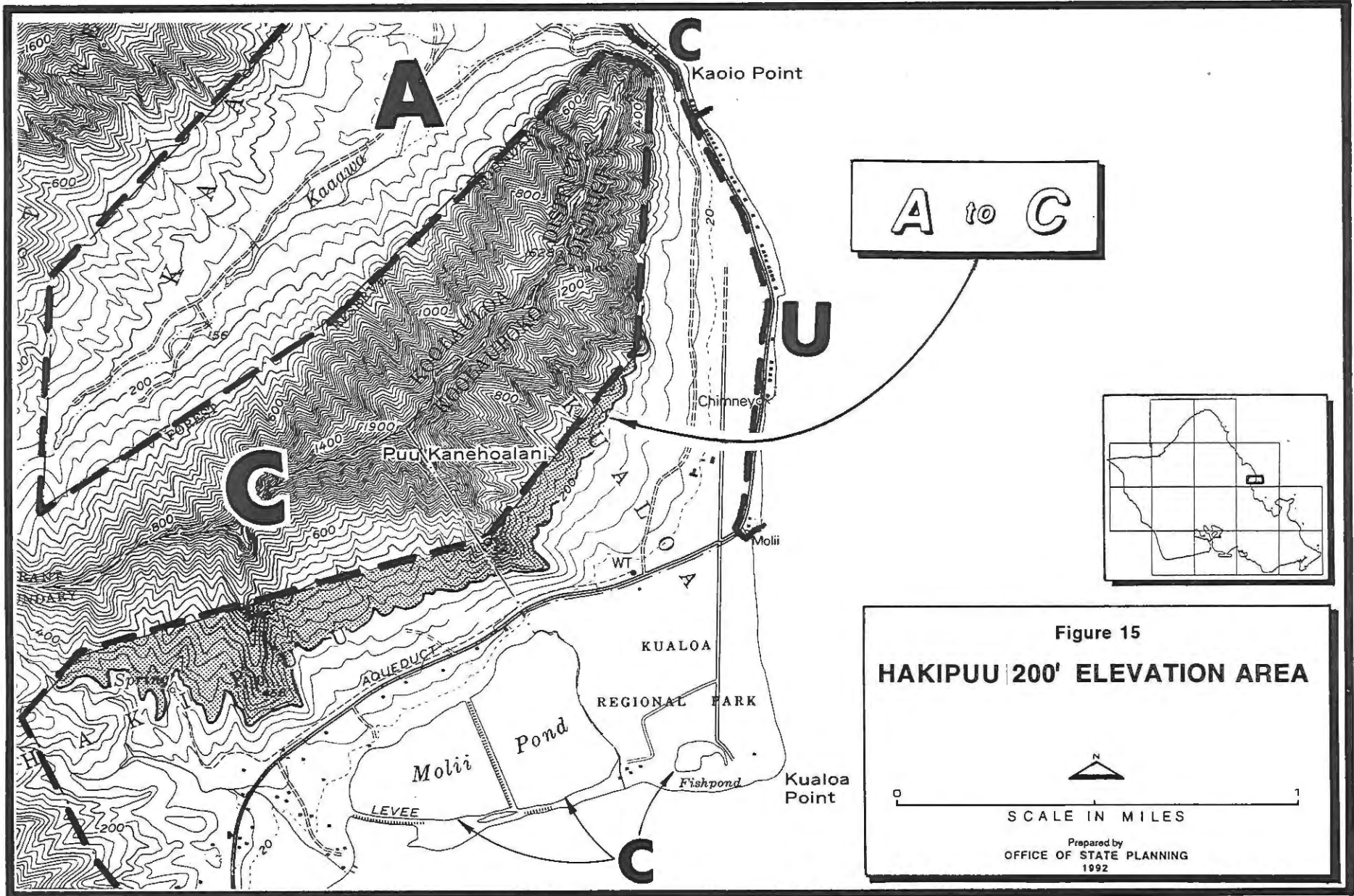
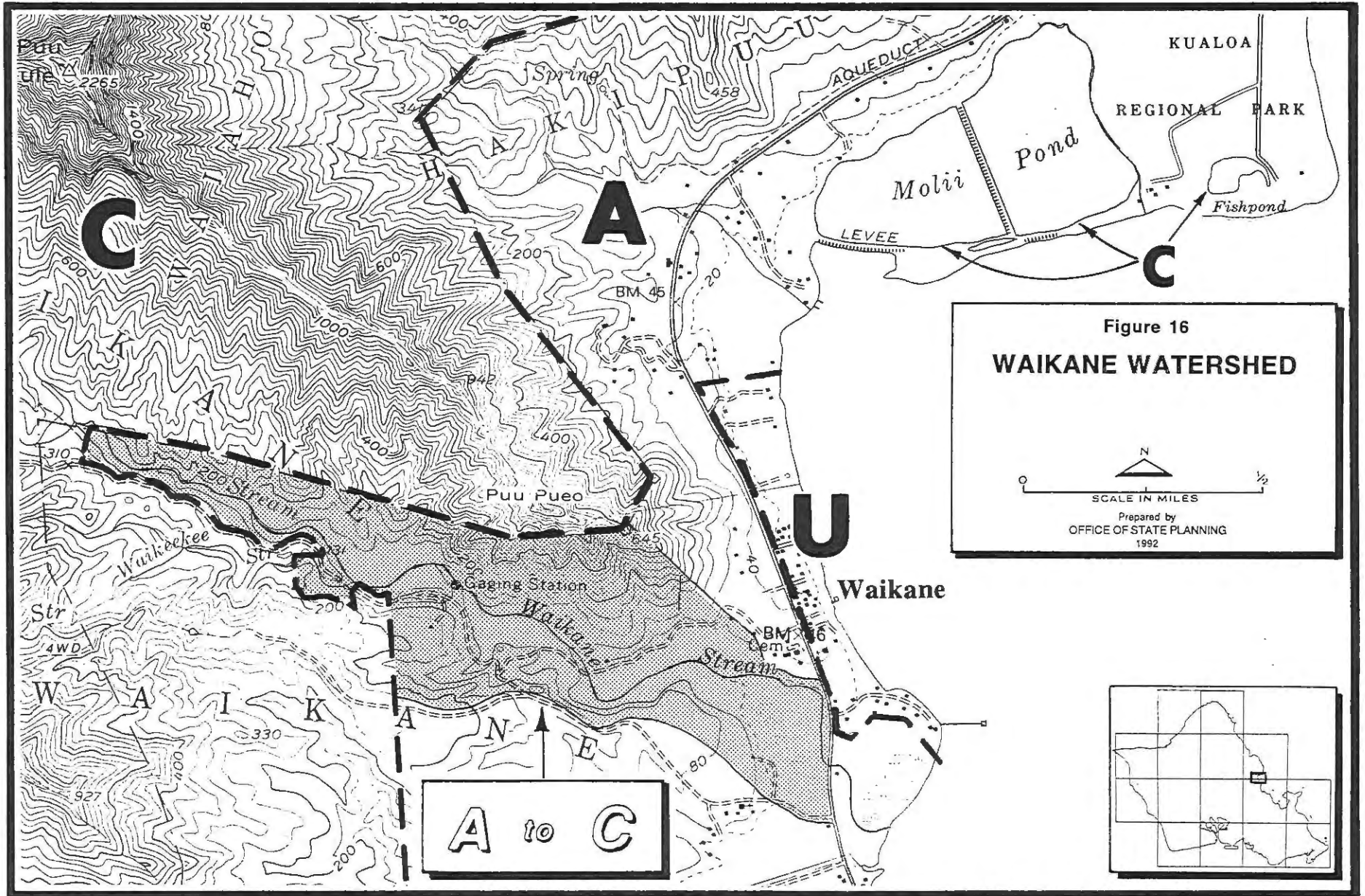


Figure 15
HAKIPUU 200' ELEVATION AREA

SCALE IN MILES

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 1992



Puu
uie 2265

C

A

KUALOA

REGIONAL PARK

Moolii Pond

Fishpond

LEVEE

C

Figure 16

WAIKANE WATERSHED

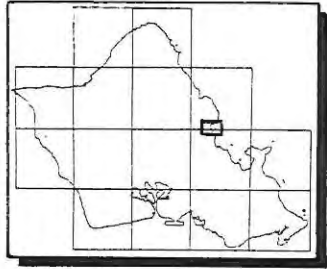


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1992

U

Waikane

A to C



310

Waikakee Stream

Gaging Station

Waikane Stream

BM 16

Str

4WD

W

A

I

K

A

N

E

927

1000

200

330

400

80

Puu Pueo

400

BM 45

200

Spring

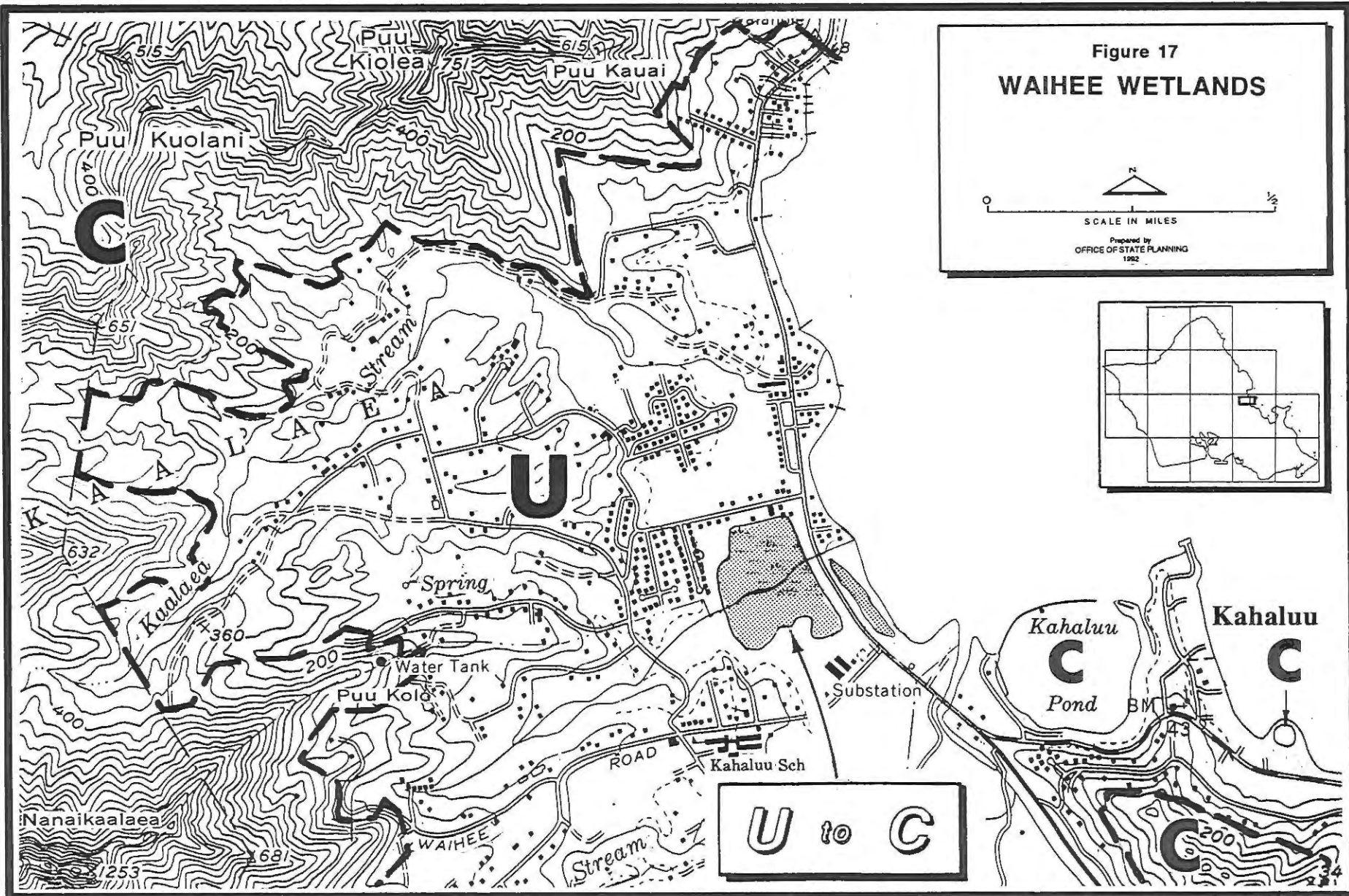
P

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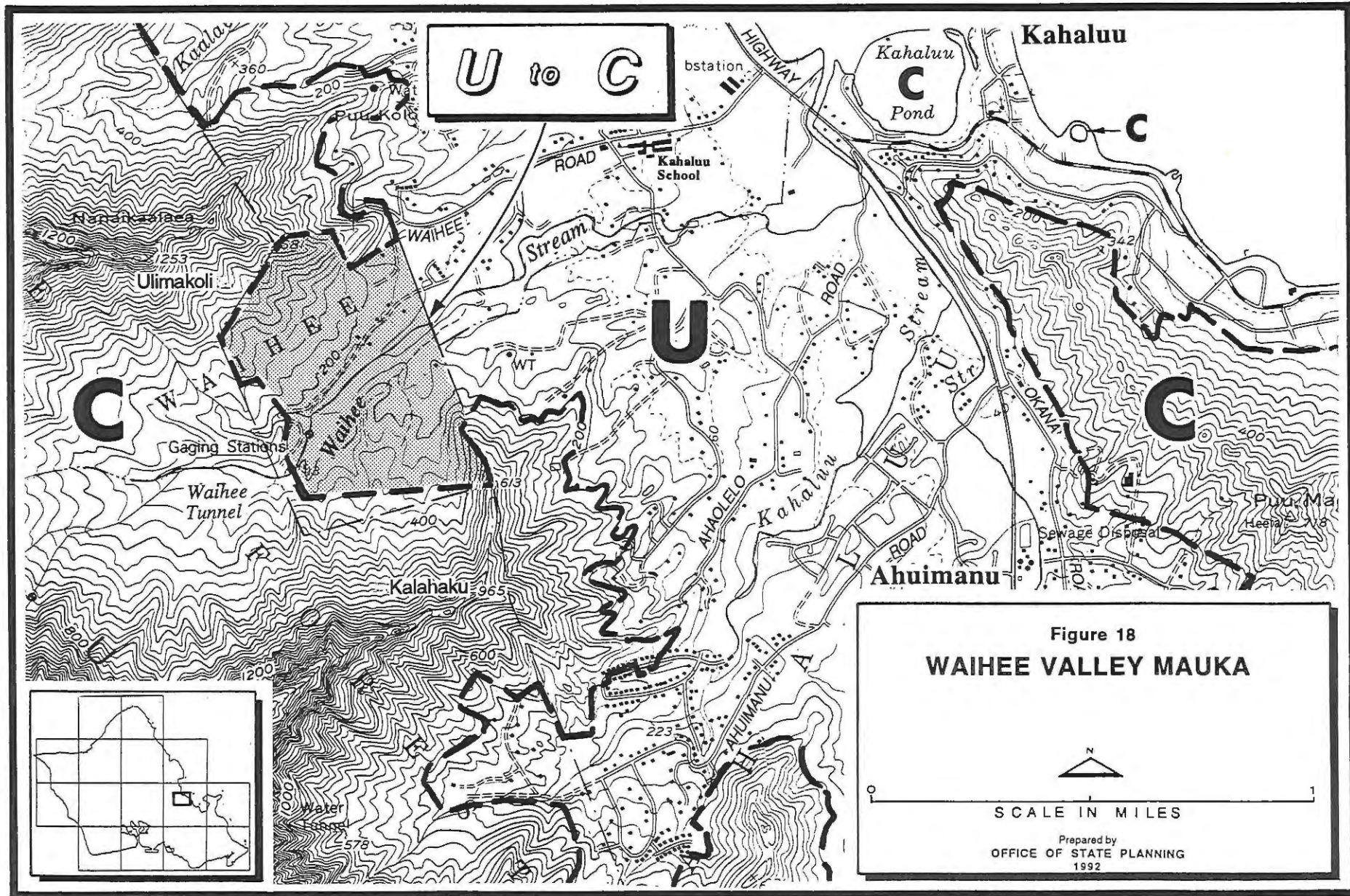


Figure 18
WAIHEE VALLEY MAUKA



SCALE IN MILES

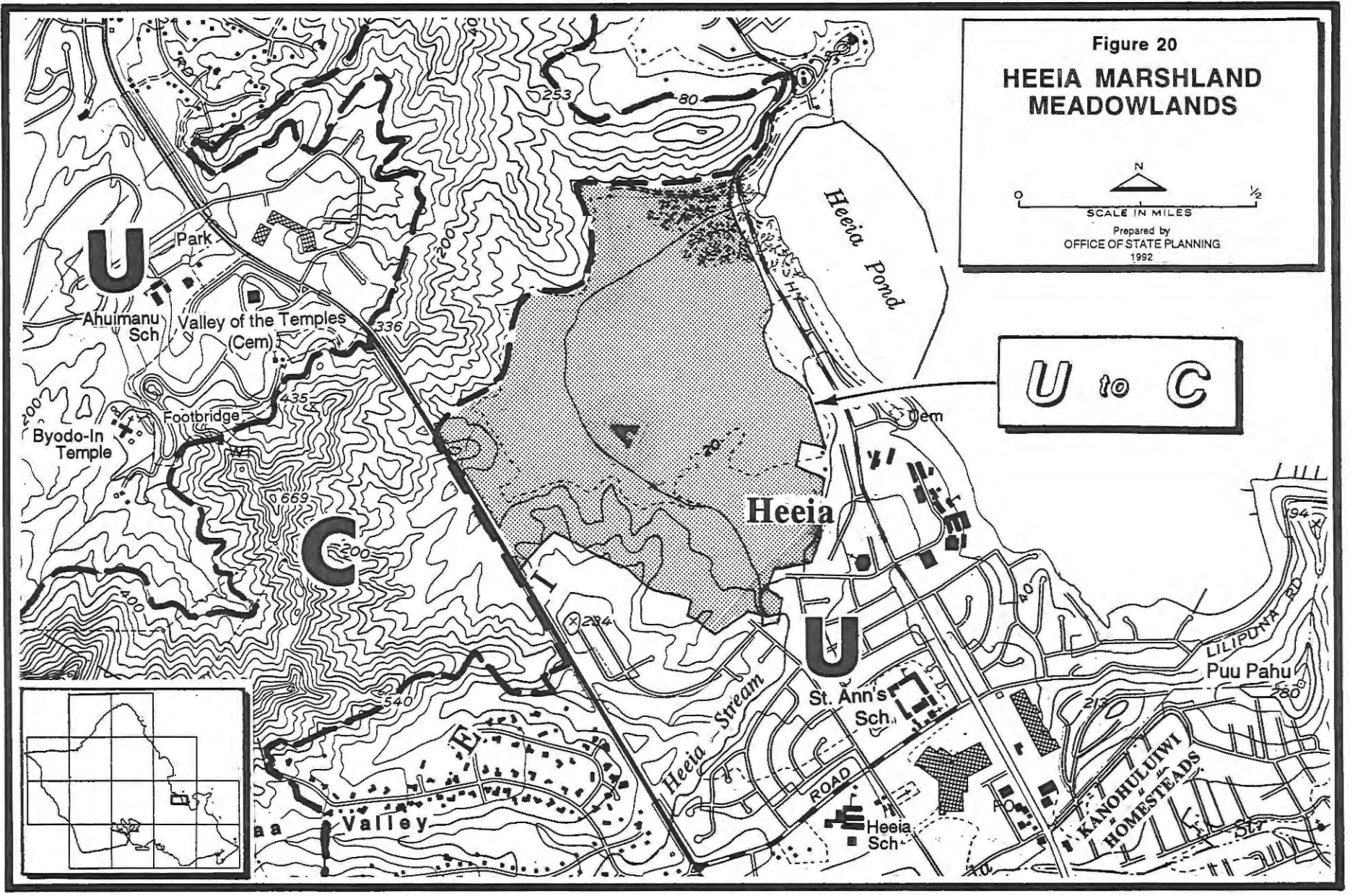
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1992

Figure 20
**HEEIA MARSHLAND
MEADOWLANDS**



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1992

U to C



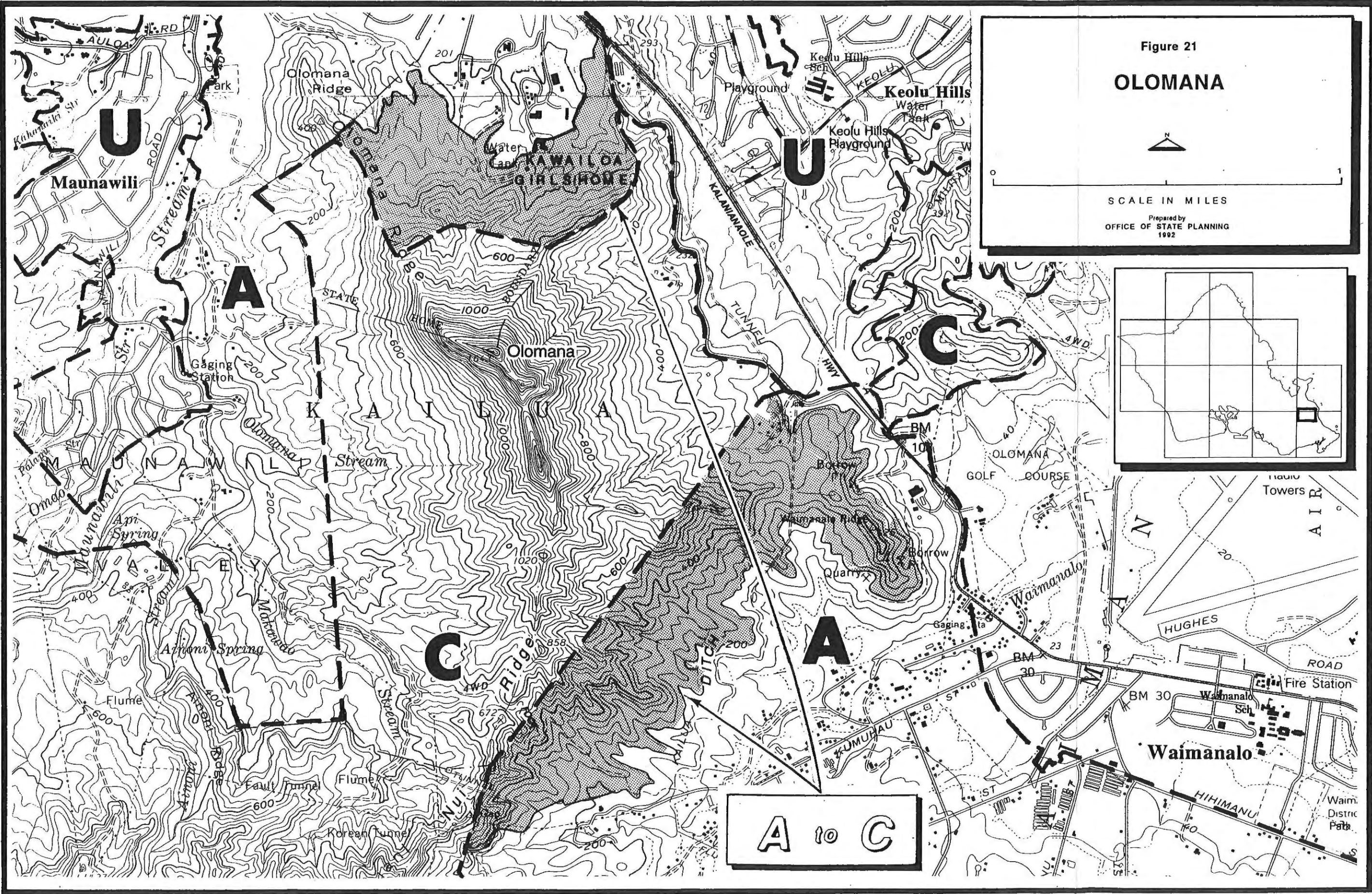


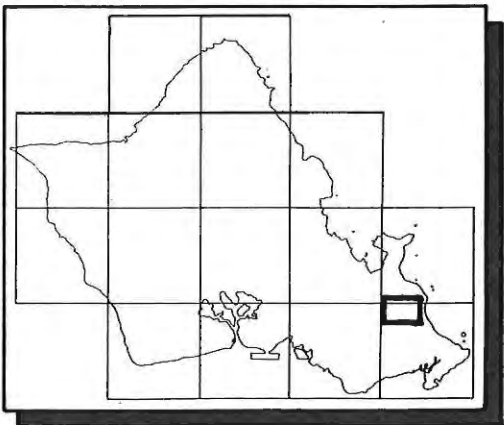
Figure 21

OLOMANA



SCALE IN MILES

Prepared by
OFFICE OF STATE PLANNING
1962



A to C

Figure 22a

KAWAINUI COMPLEX, MAUNAWILI STREAM AND TRIBUTARIES

U to C

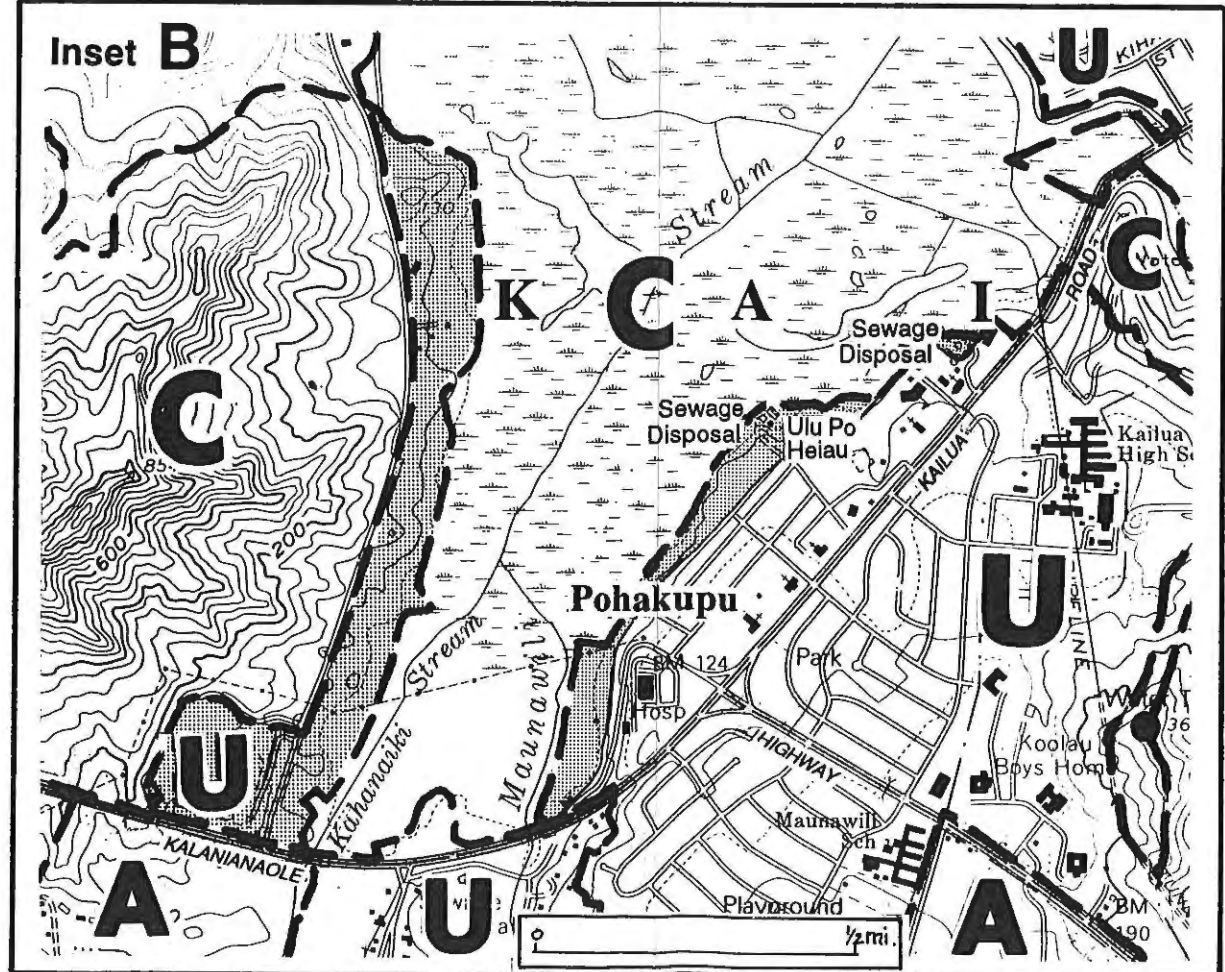
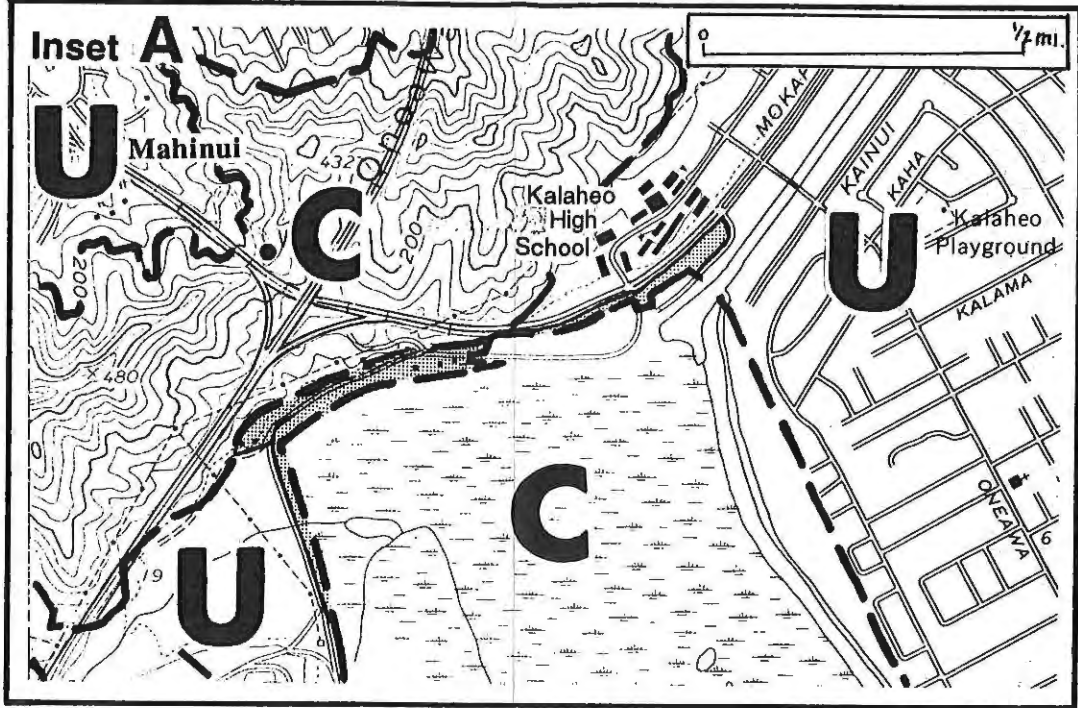
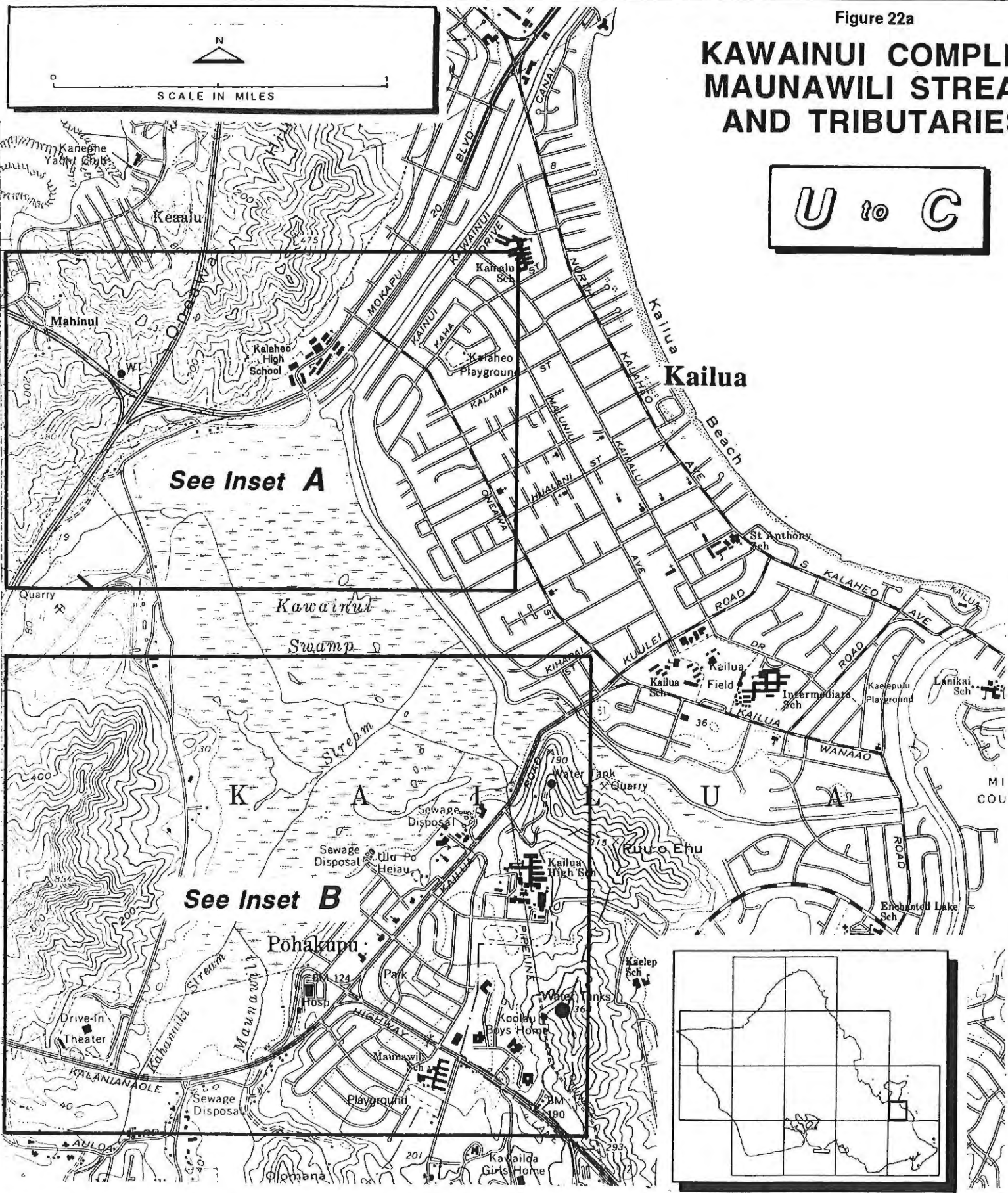
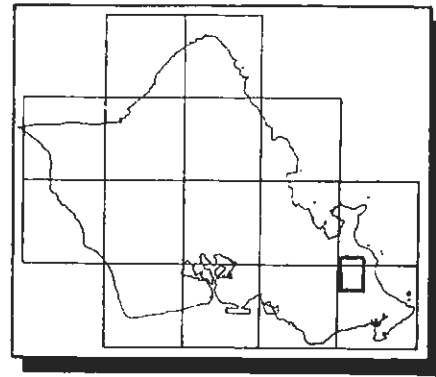
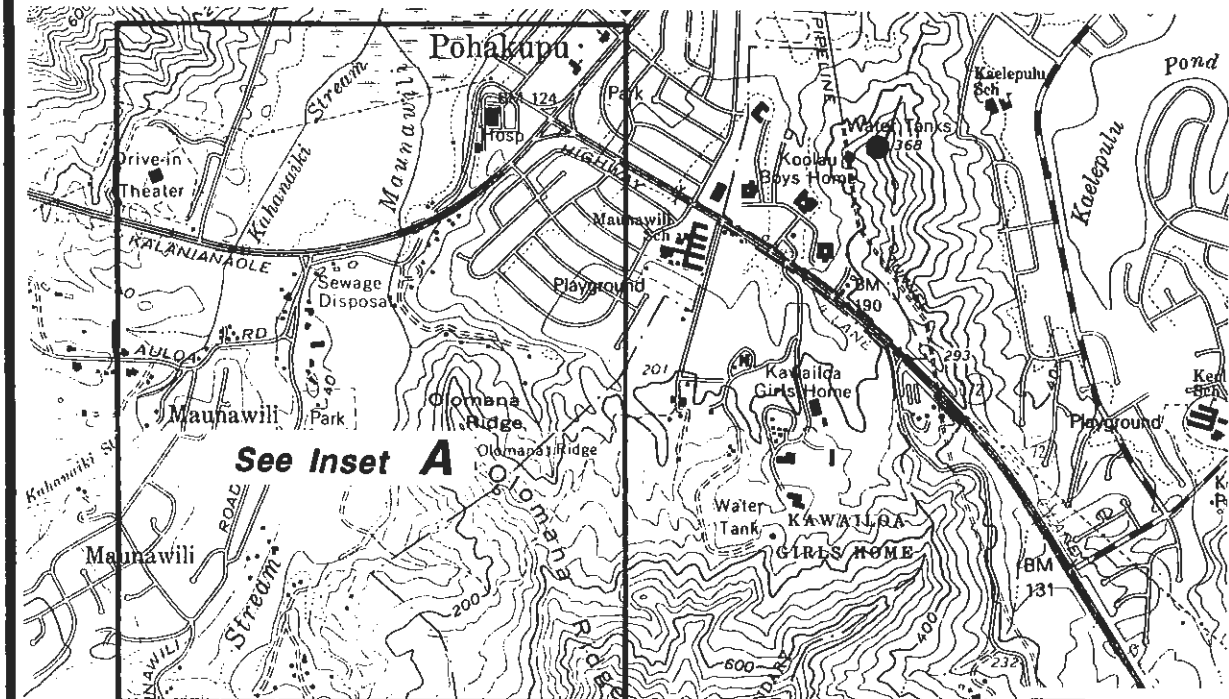


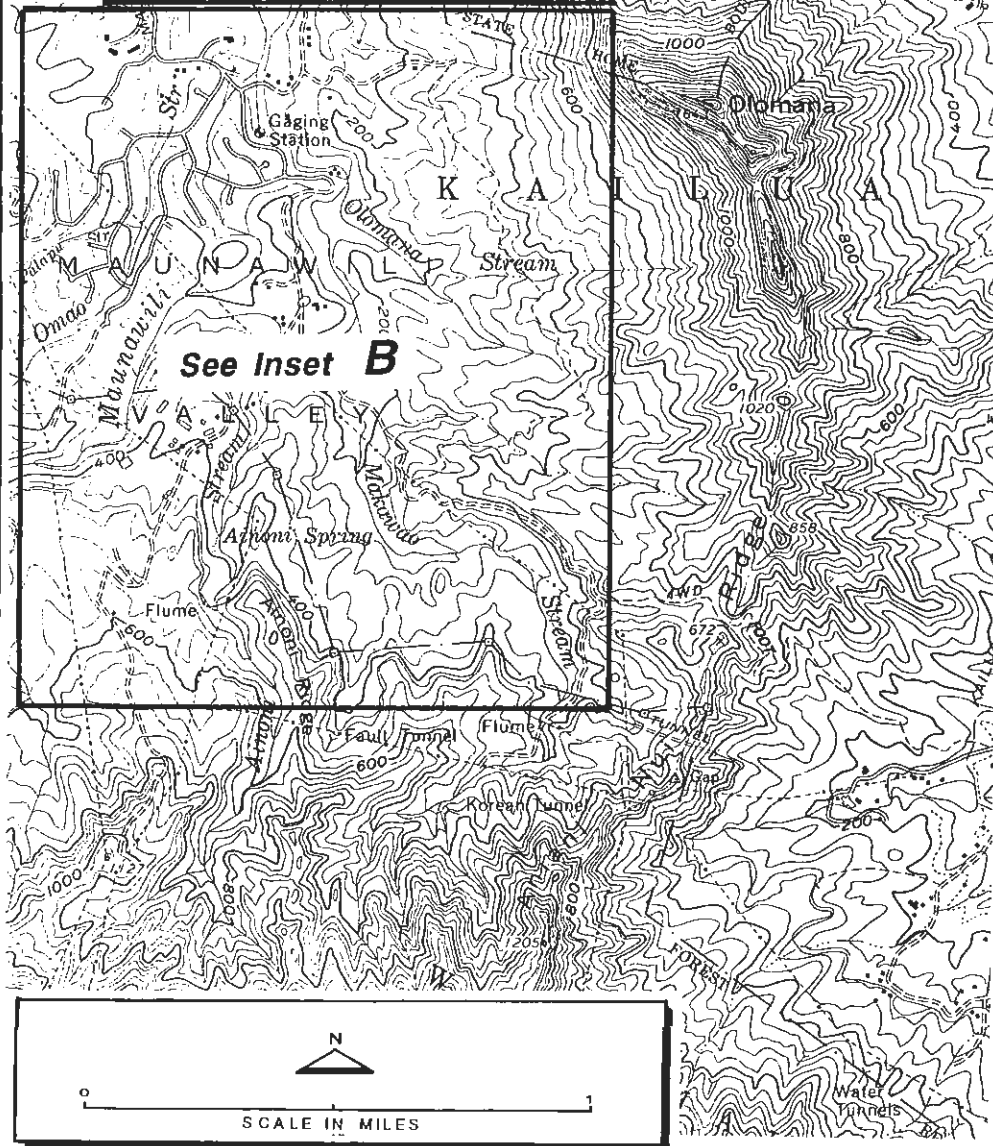
Figure 22b

KAWAINUI COMPLEX, MAUNAWILI STREAM AND TRIBUTARIES

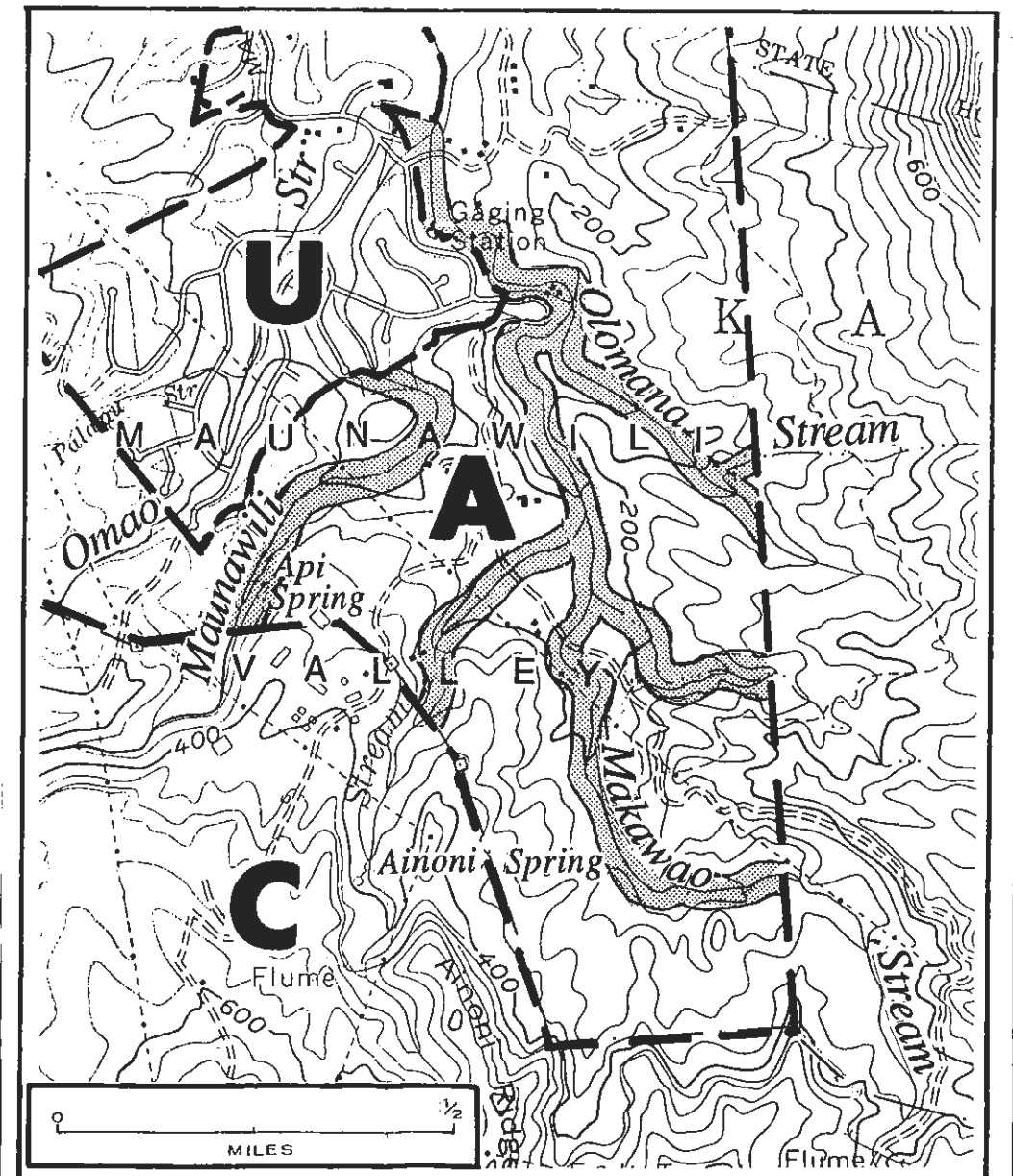
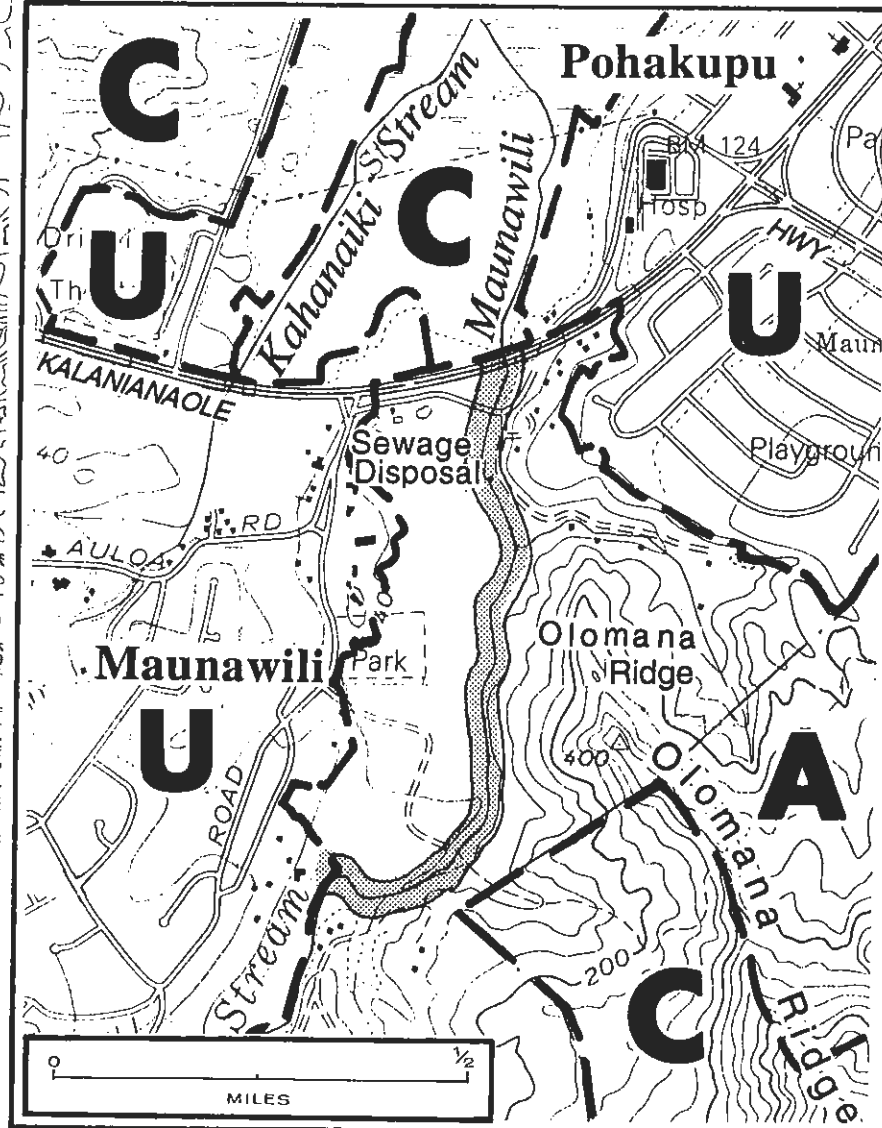
A to C

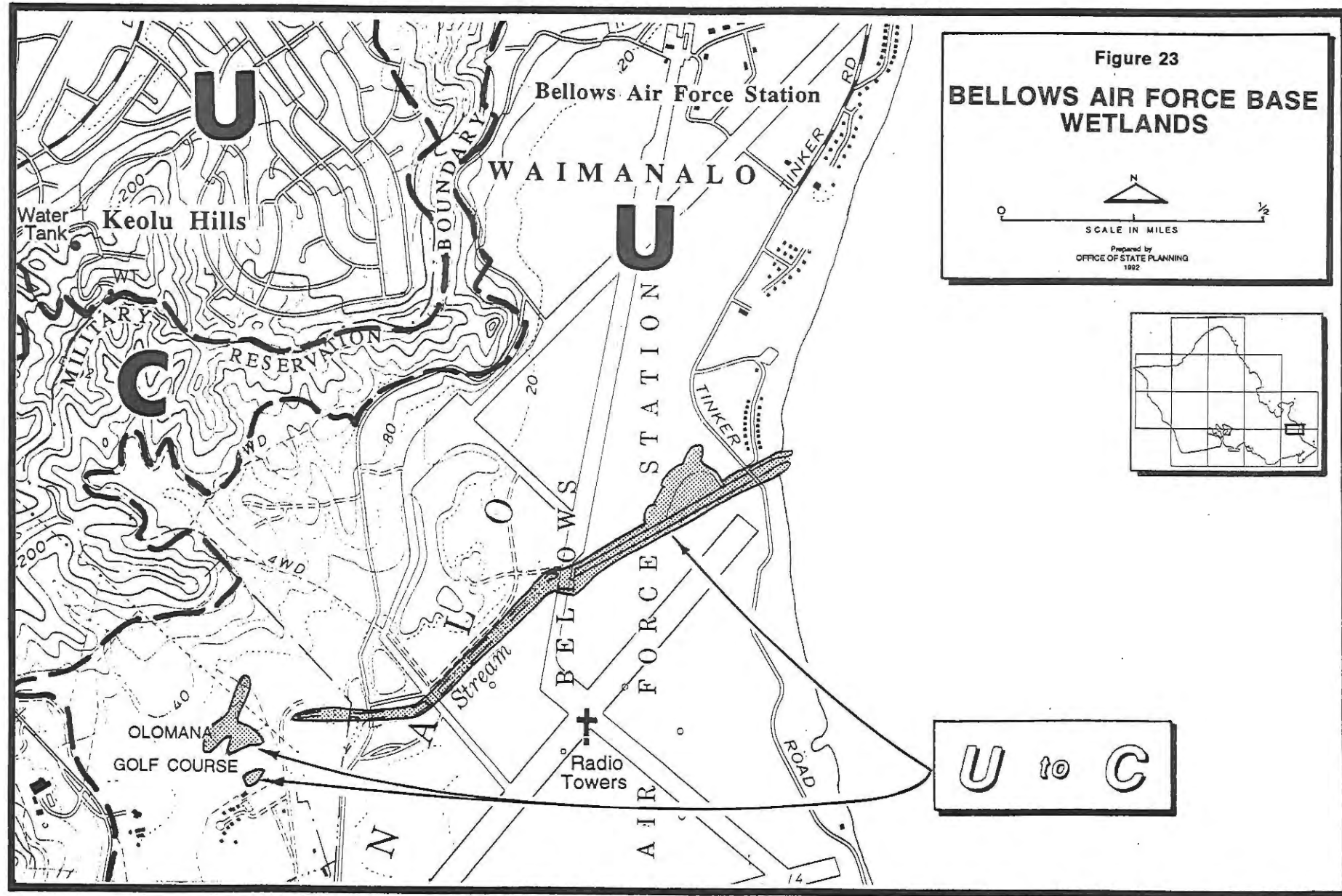


Inset A



Inset B





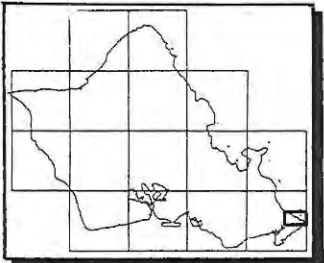
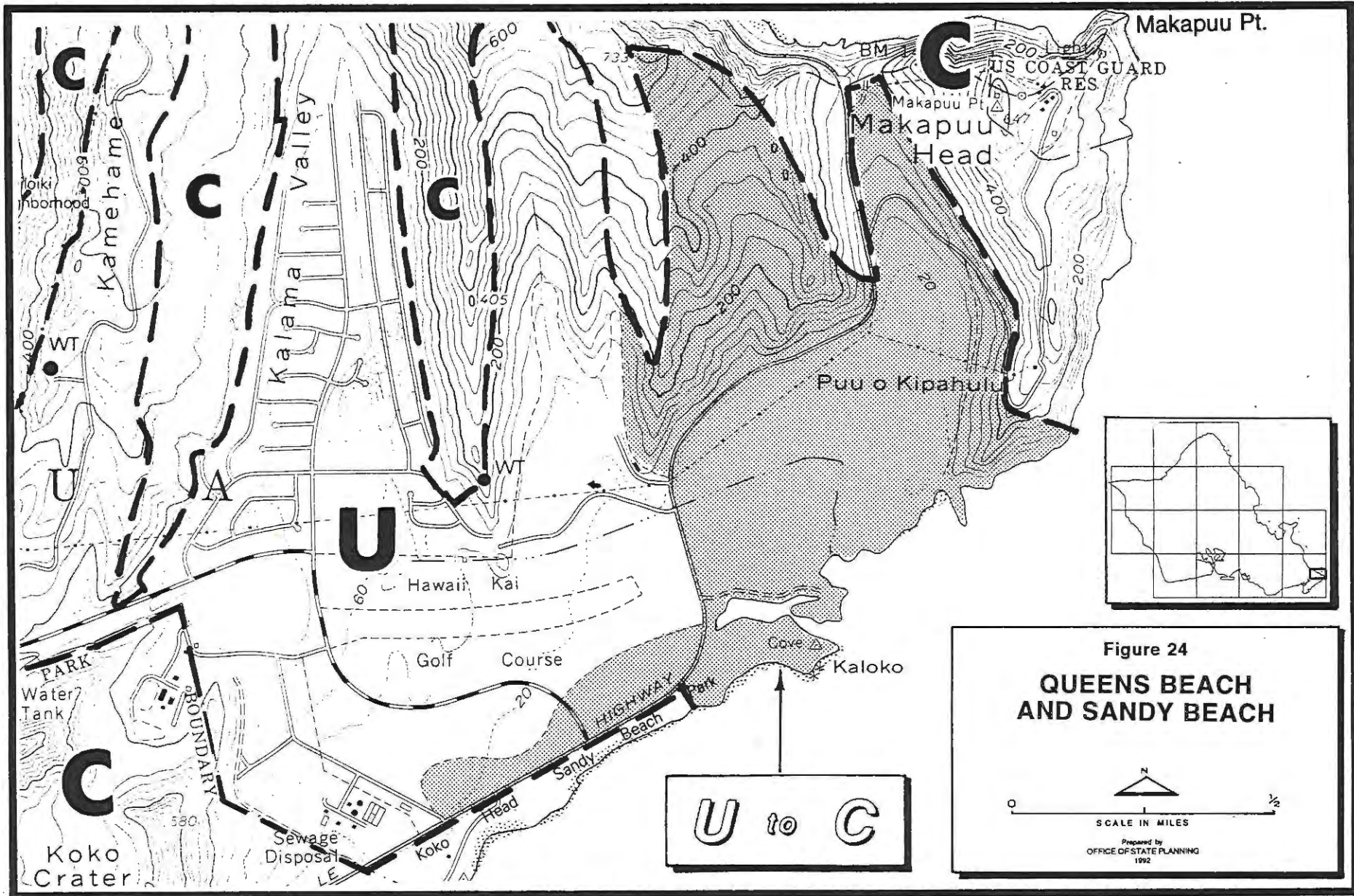
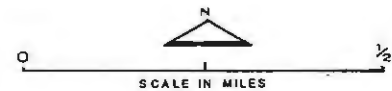


Figure 24
QUEENS BEACH
AND SANDY BEACH

U to C



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 1992

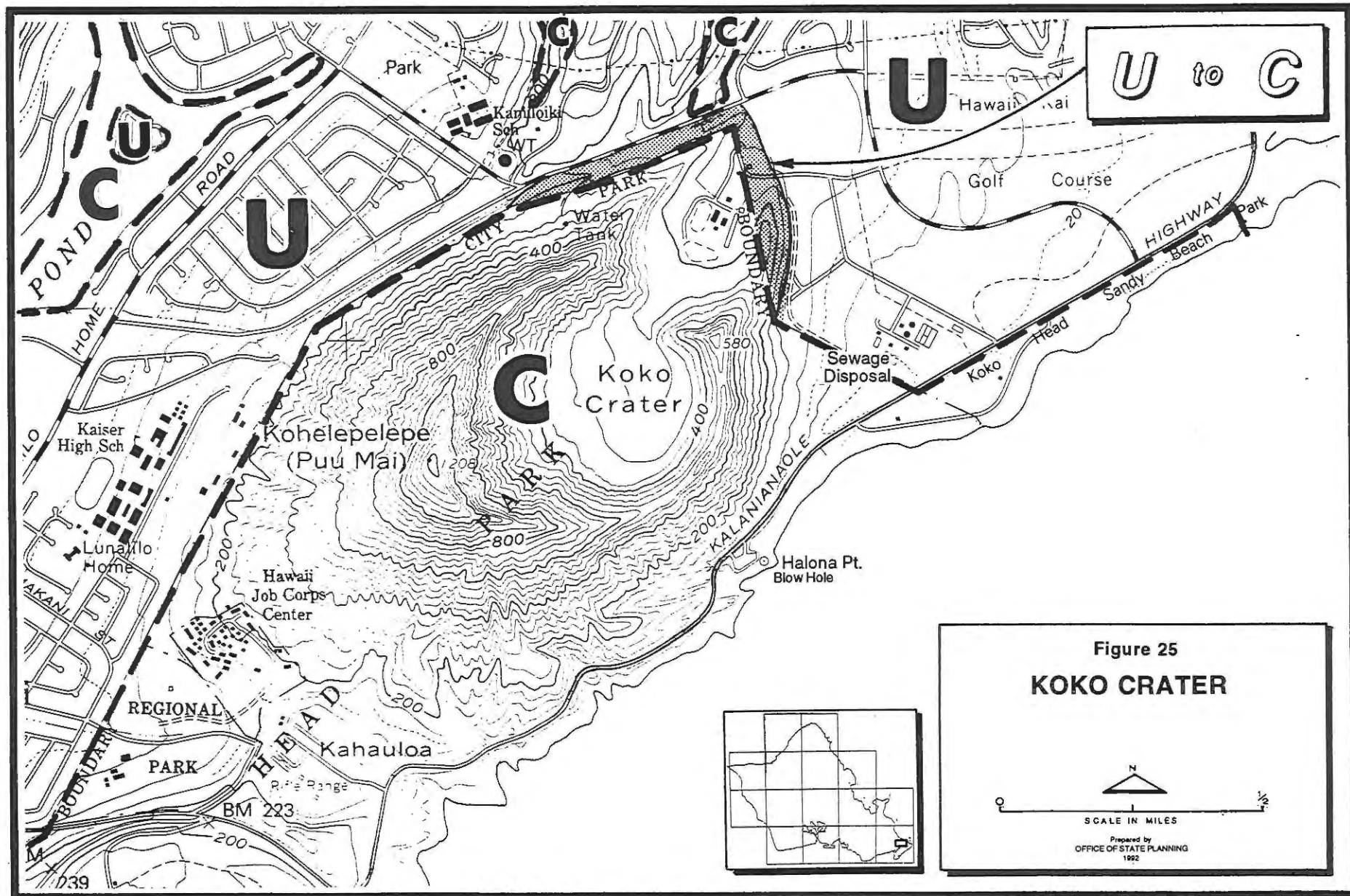
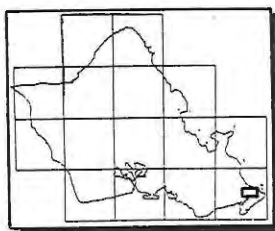


Figure 25
KOKO CRATER



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 1962

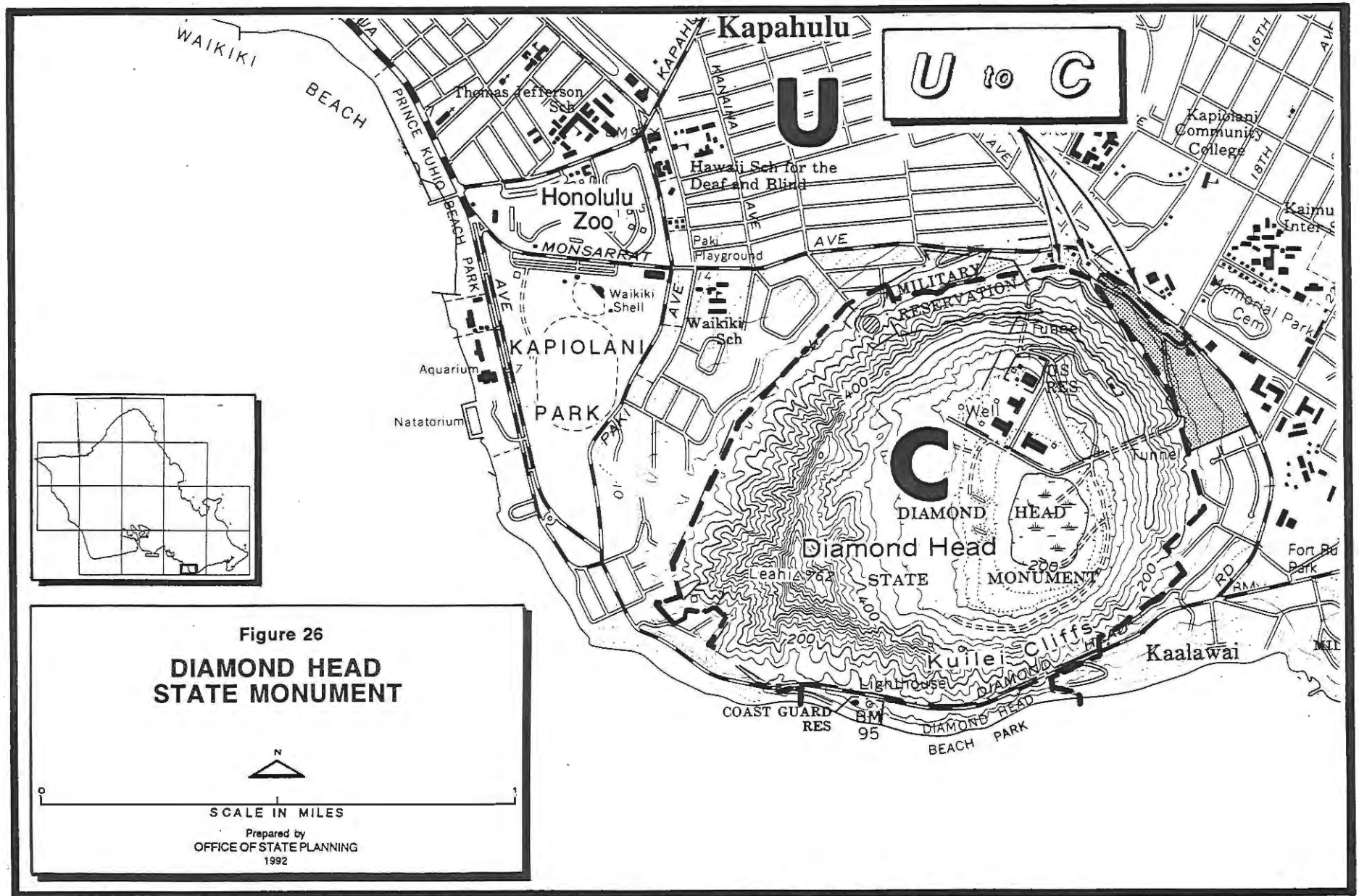


Figure 26
**DIAMOND HEAD
 STATE MONUMENT**



SCALE IN MILES

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 1992

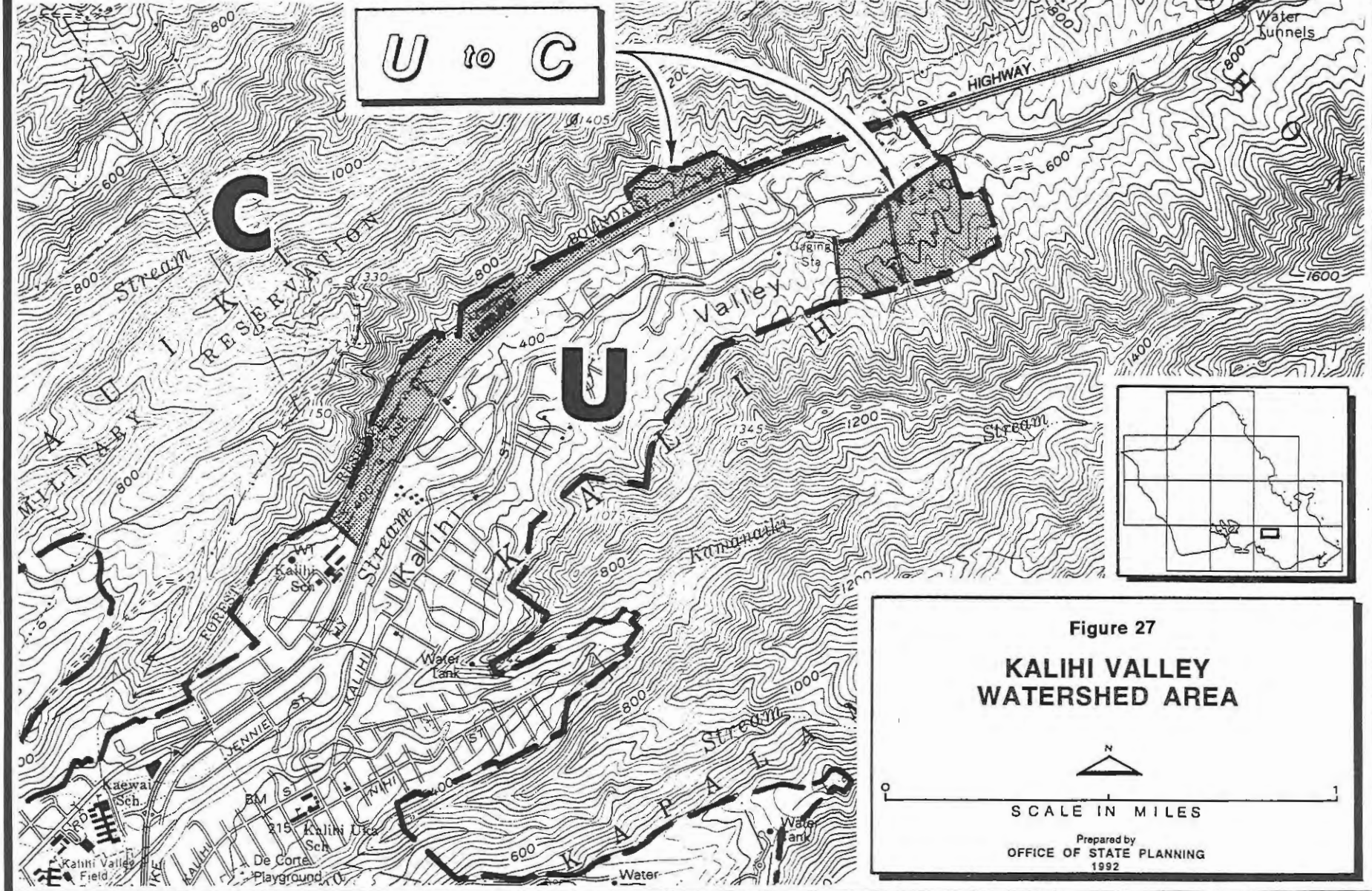
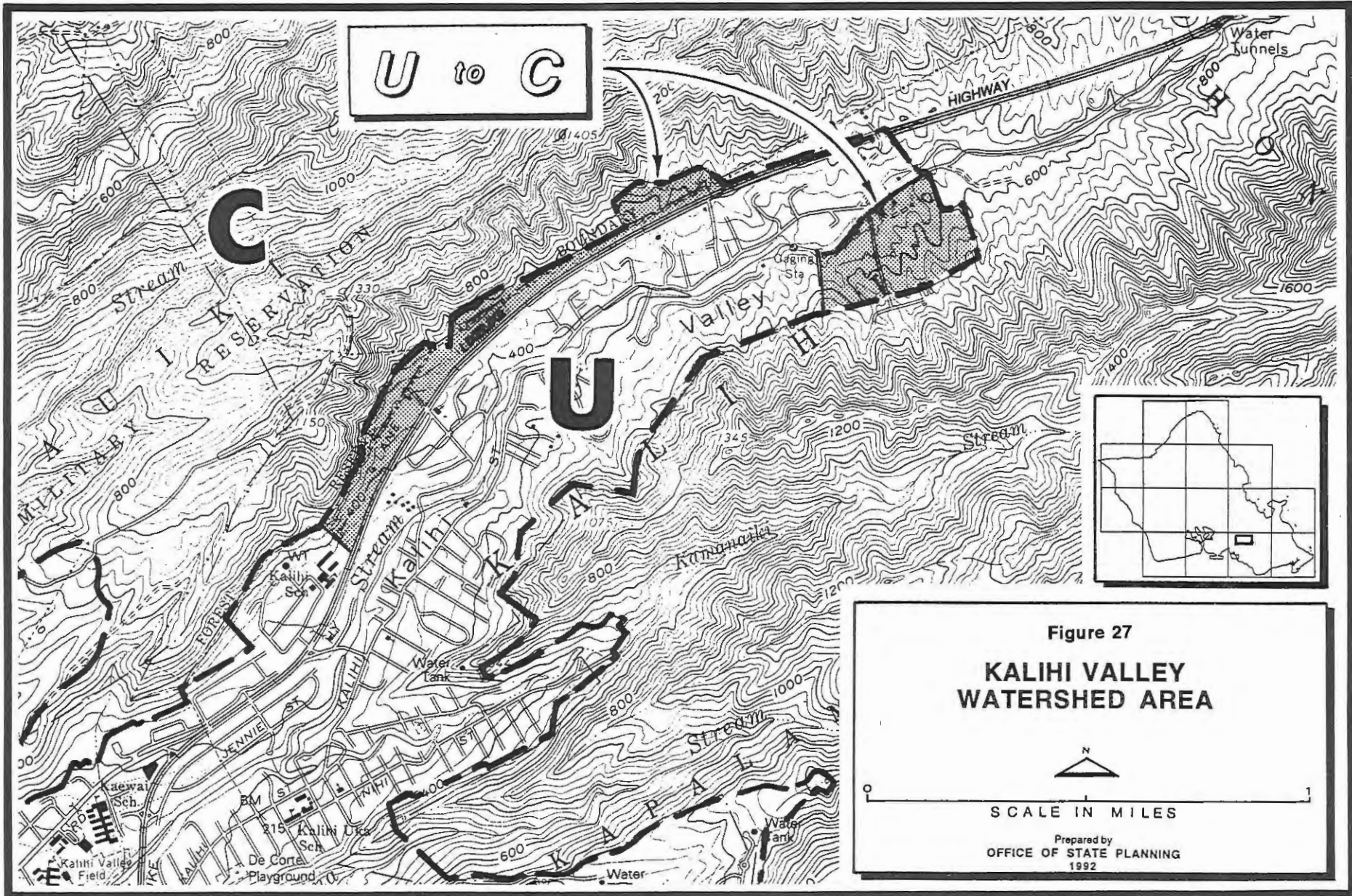
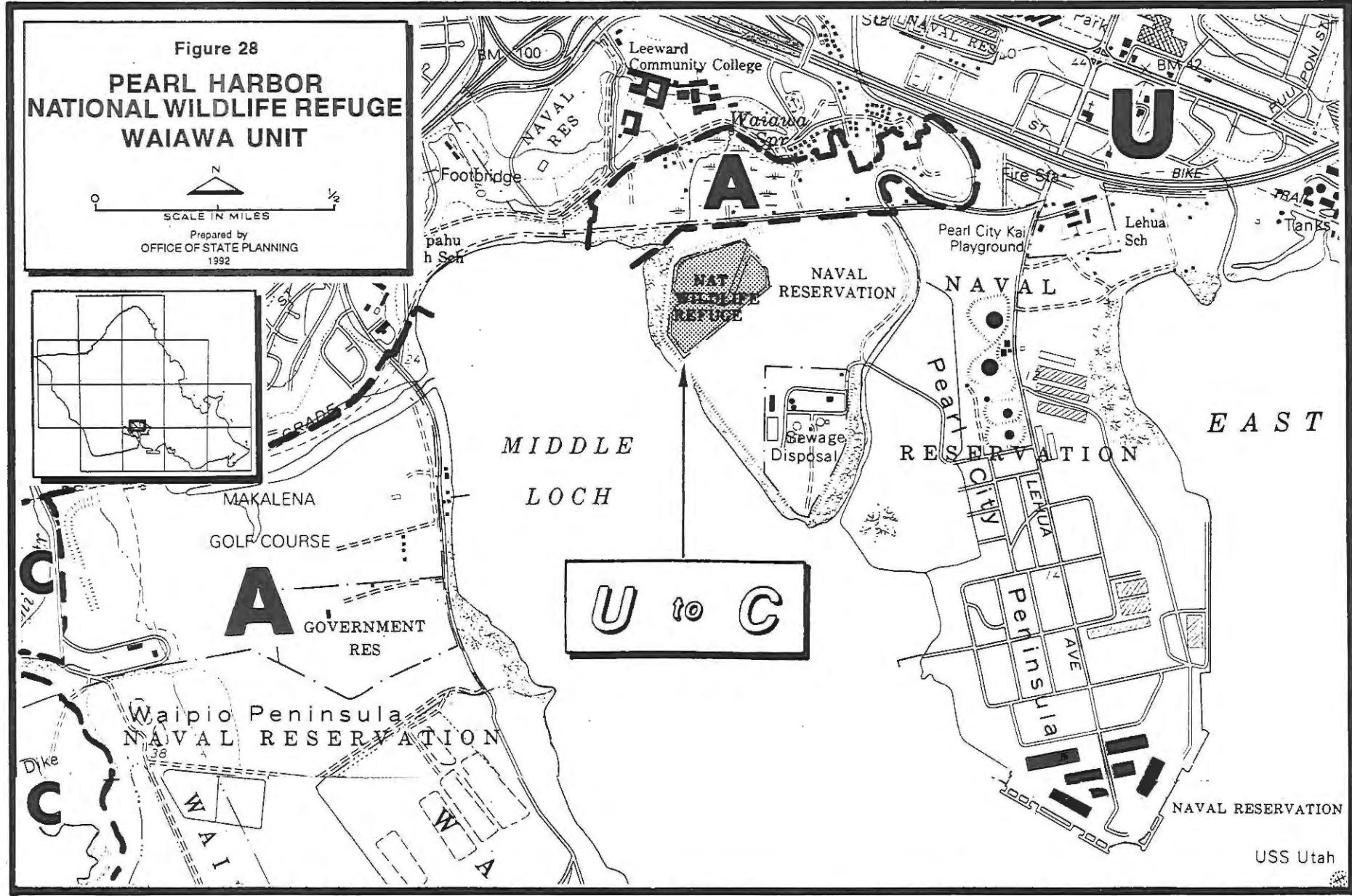
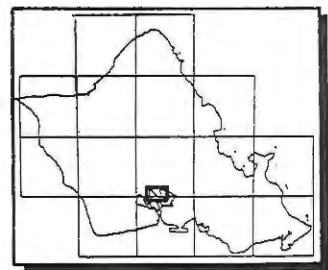
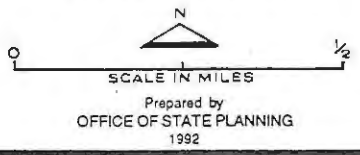


Figure 28
**PEARL HARBOR
 NATIONAL WILDLIFE REFUGE
 WAIAWA UNIT**



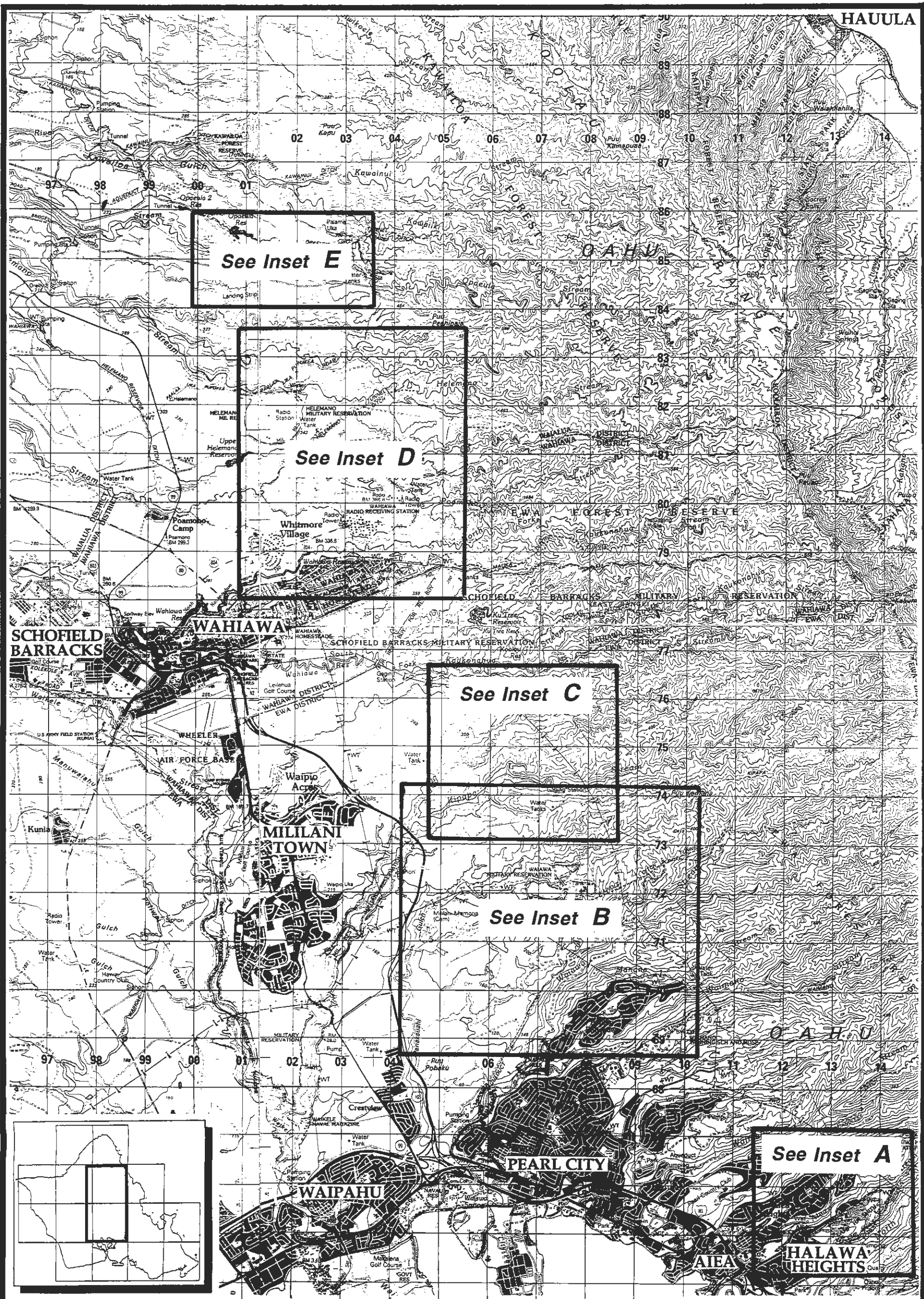


Figure 29a



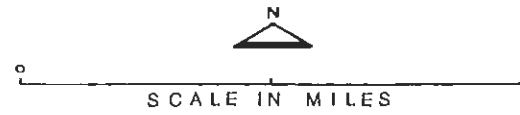
LEEWARD KOOLAU WATERSHED

A to C

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1992

Figure 29b

LEEWARD KOOLAU WATERSHED



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1992

(All insets are drawn at same scale)

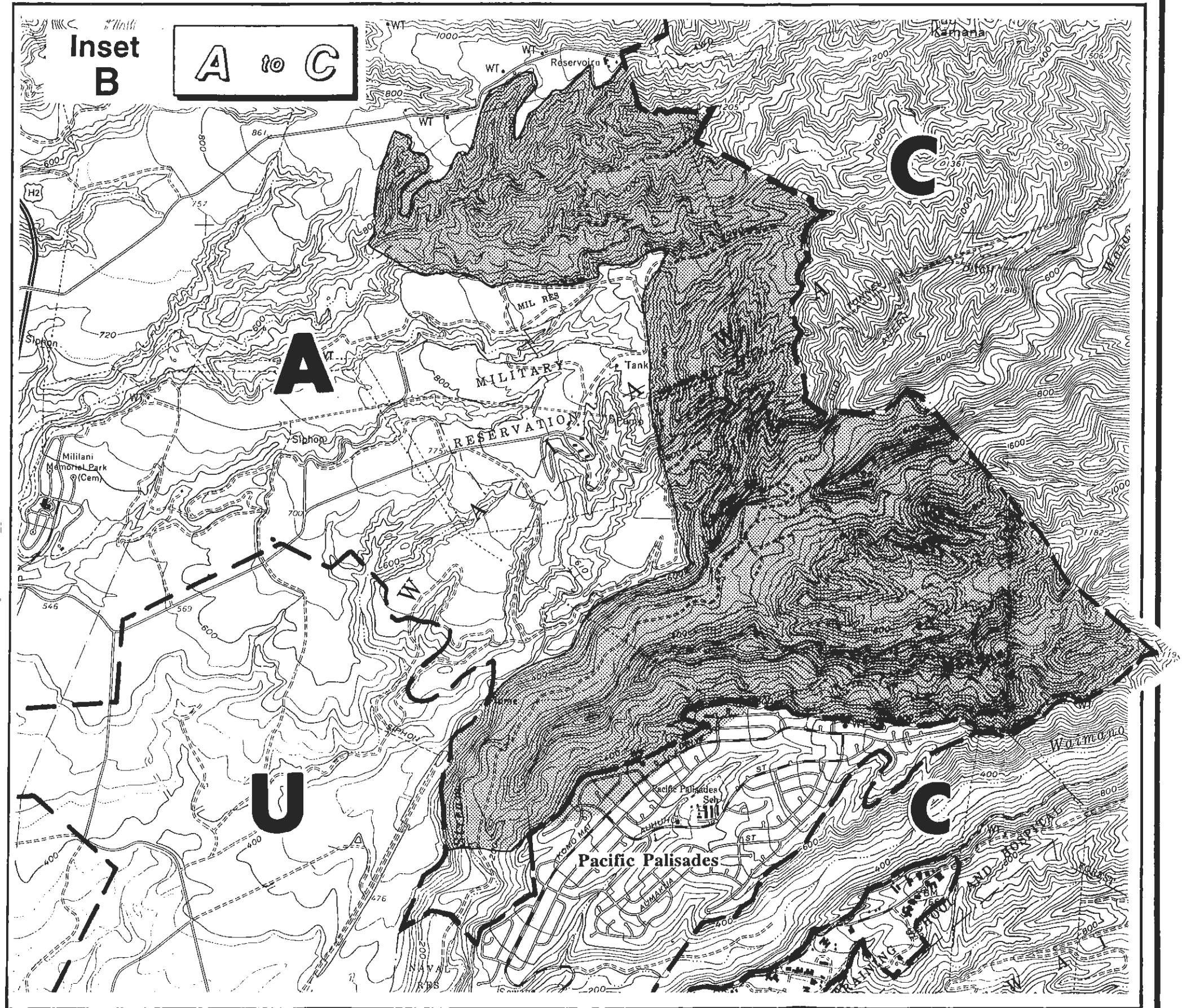
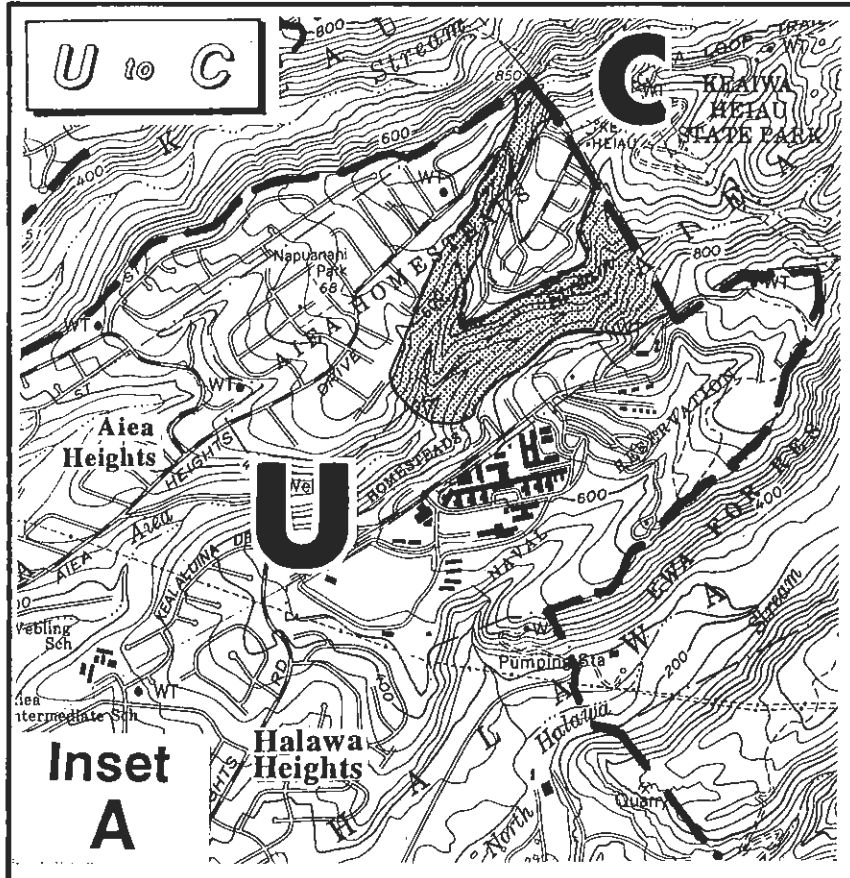
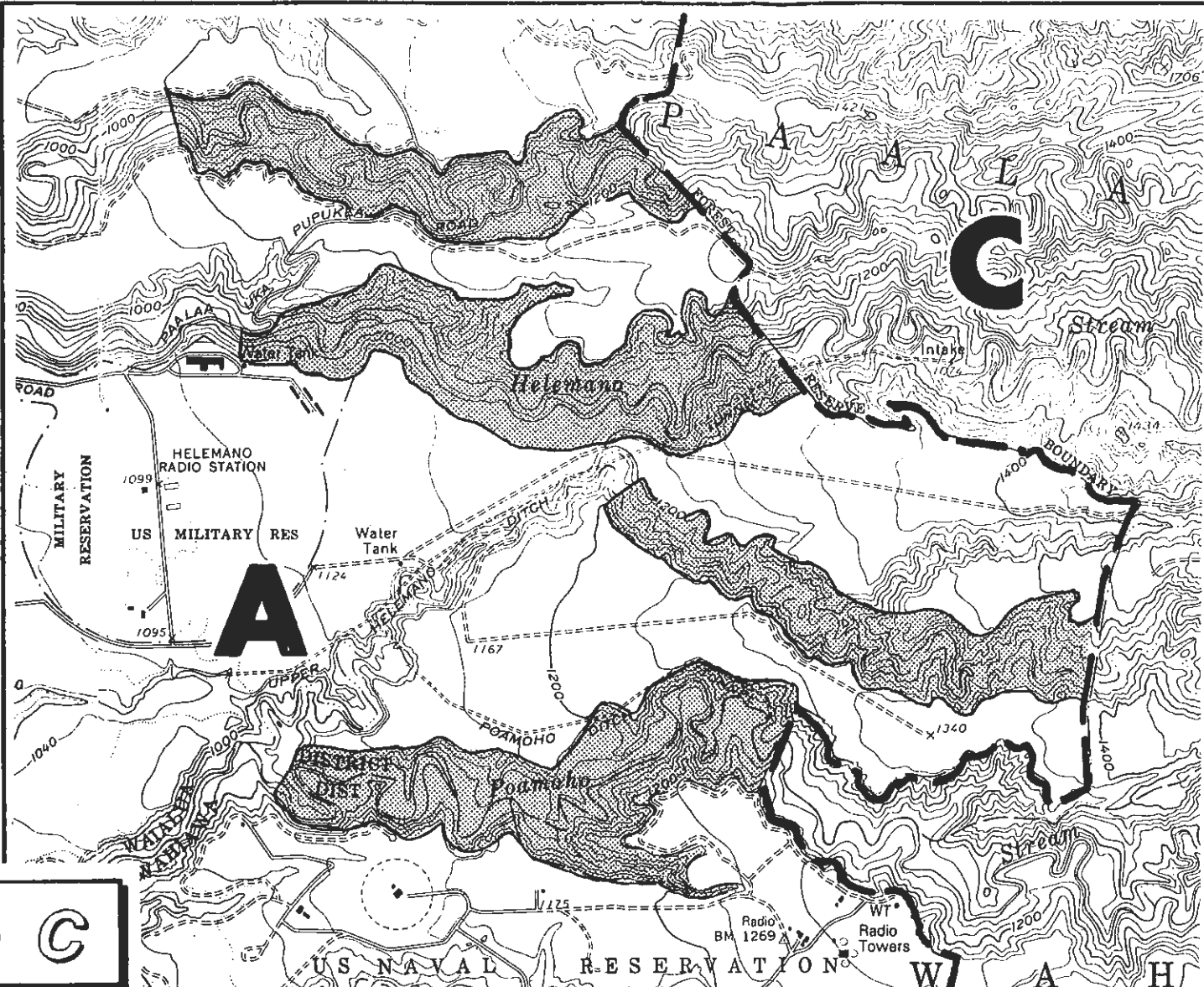
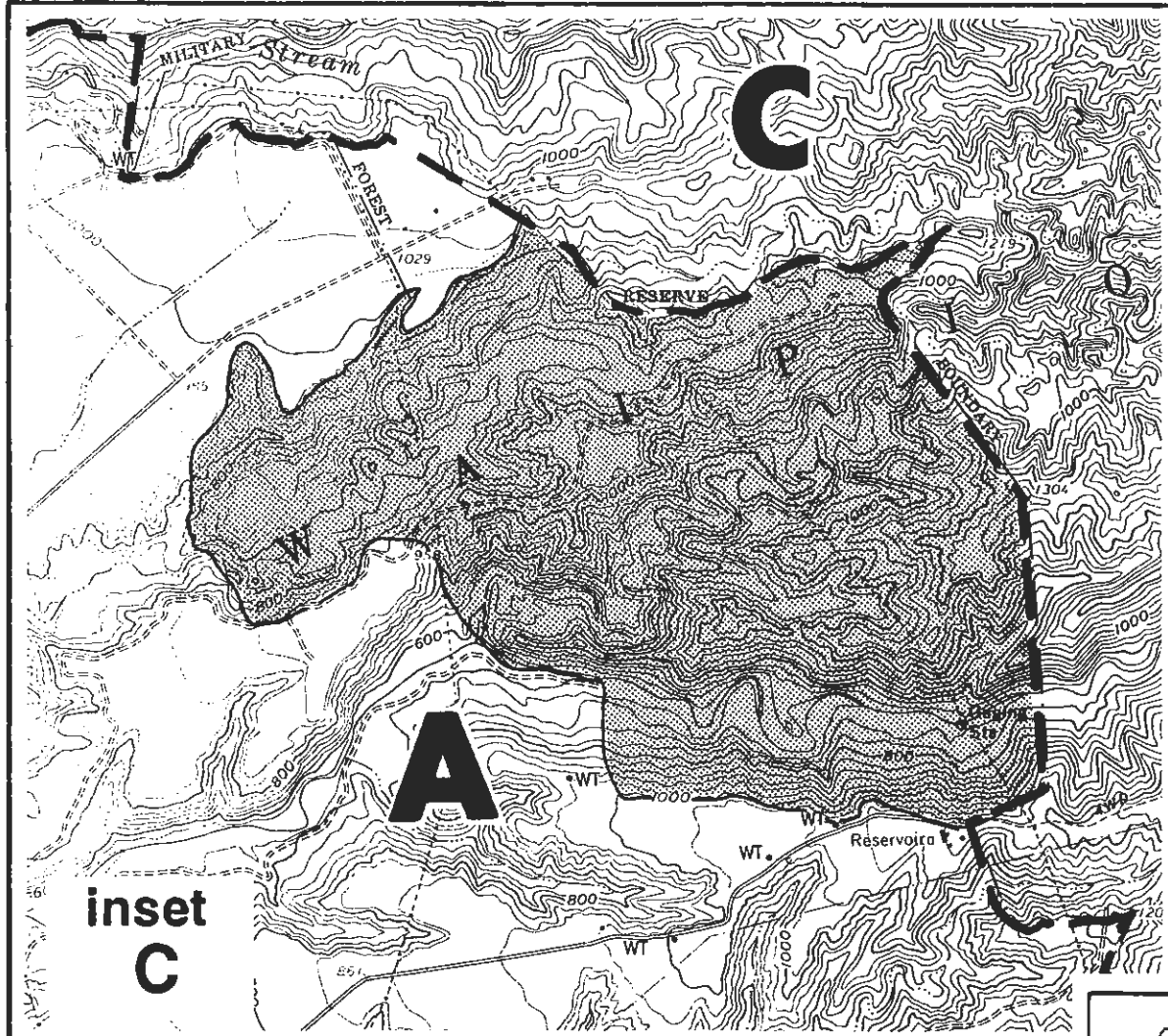
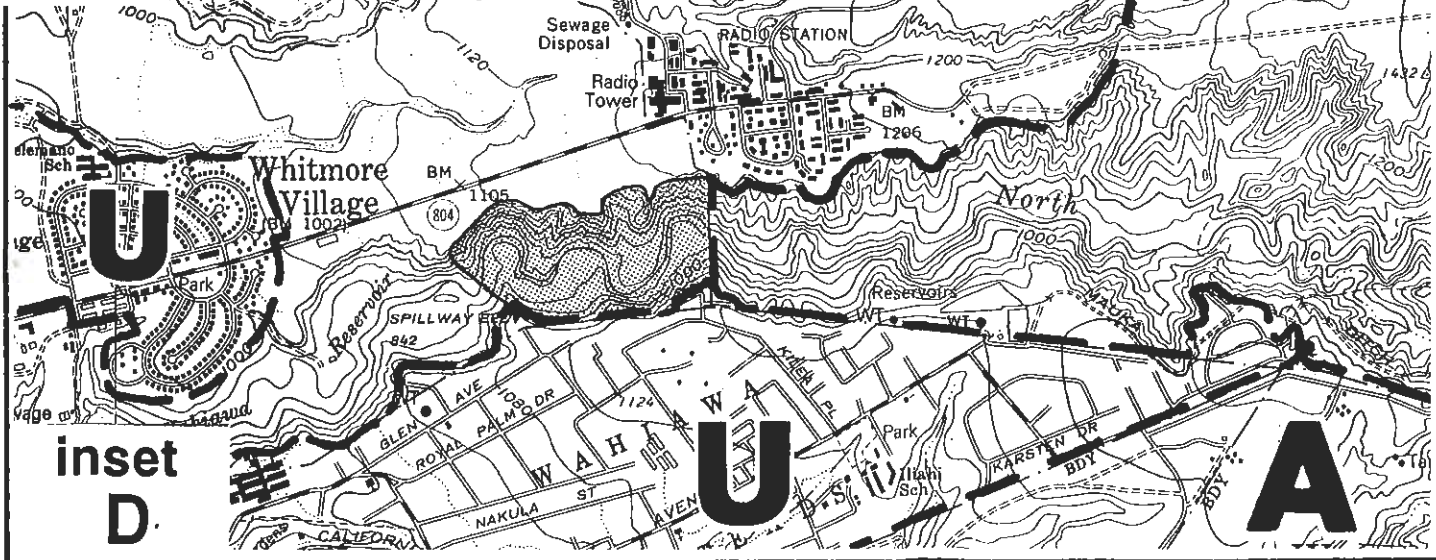
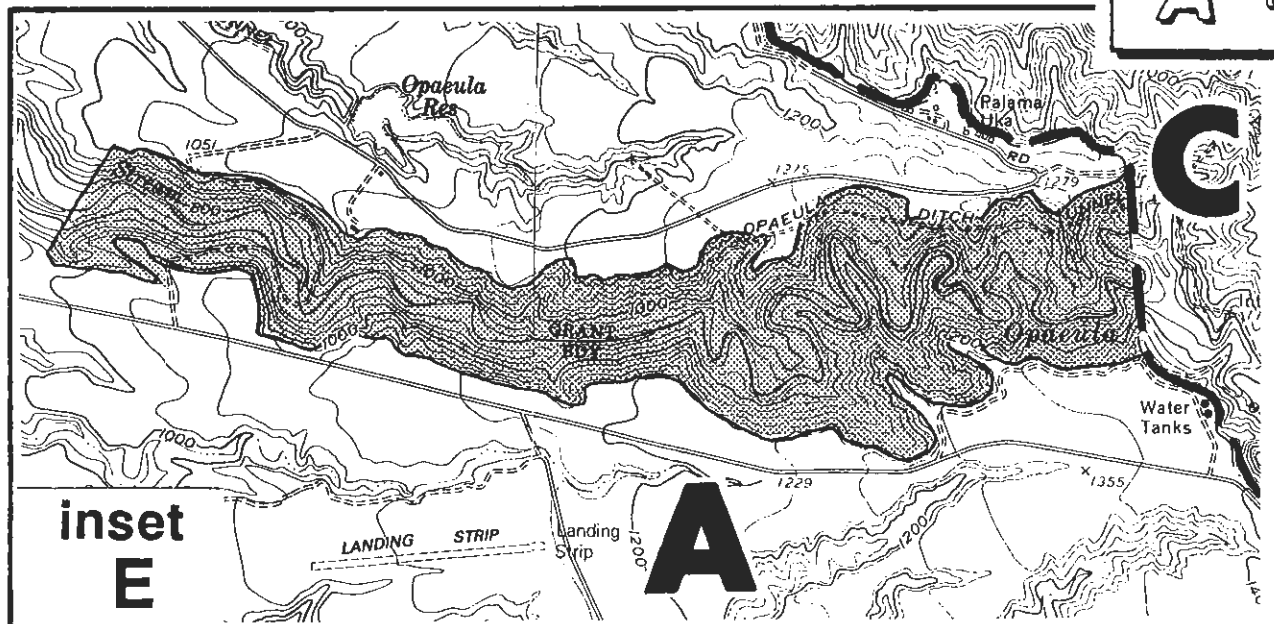


Figure 29c

LEEWARD KOOLAU WATERSHED



A to C



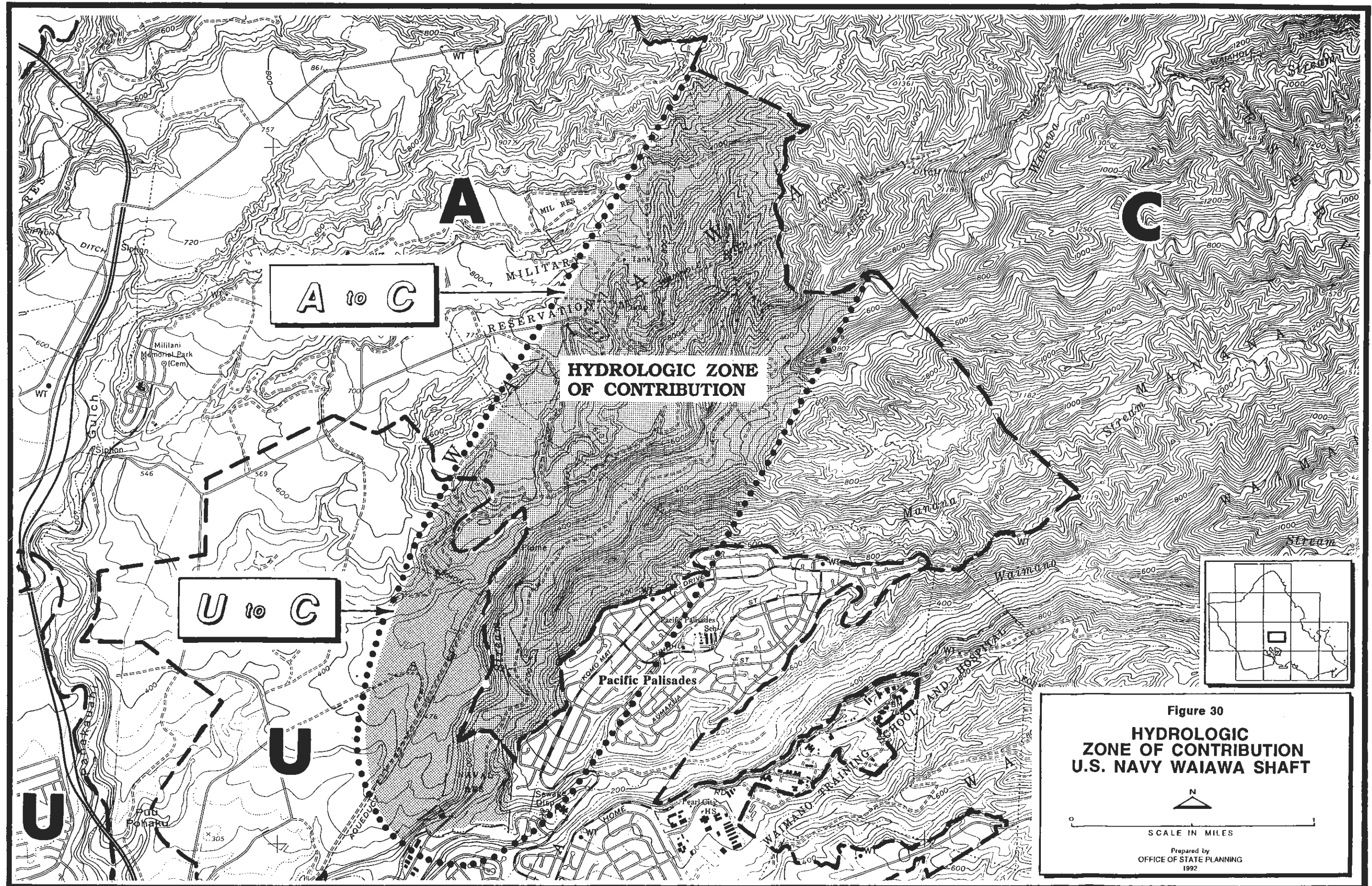


Figure 30
**HYDROLOGIC
 ZONE OF CONTRIBUTION
 U.S. NAVY WAIAWA SHAFT**

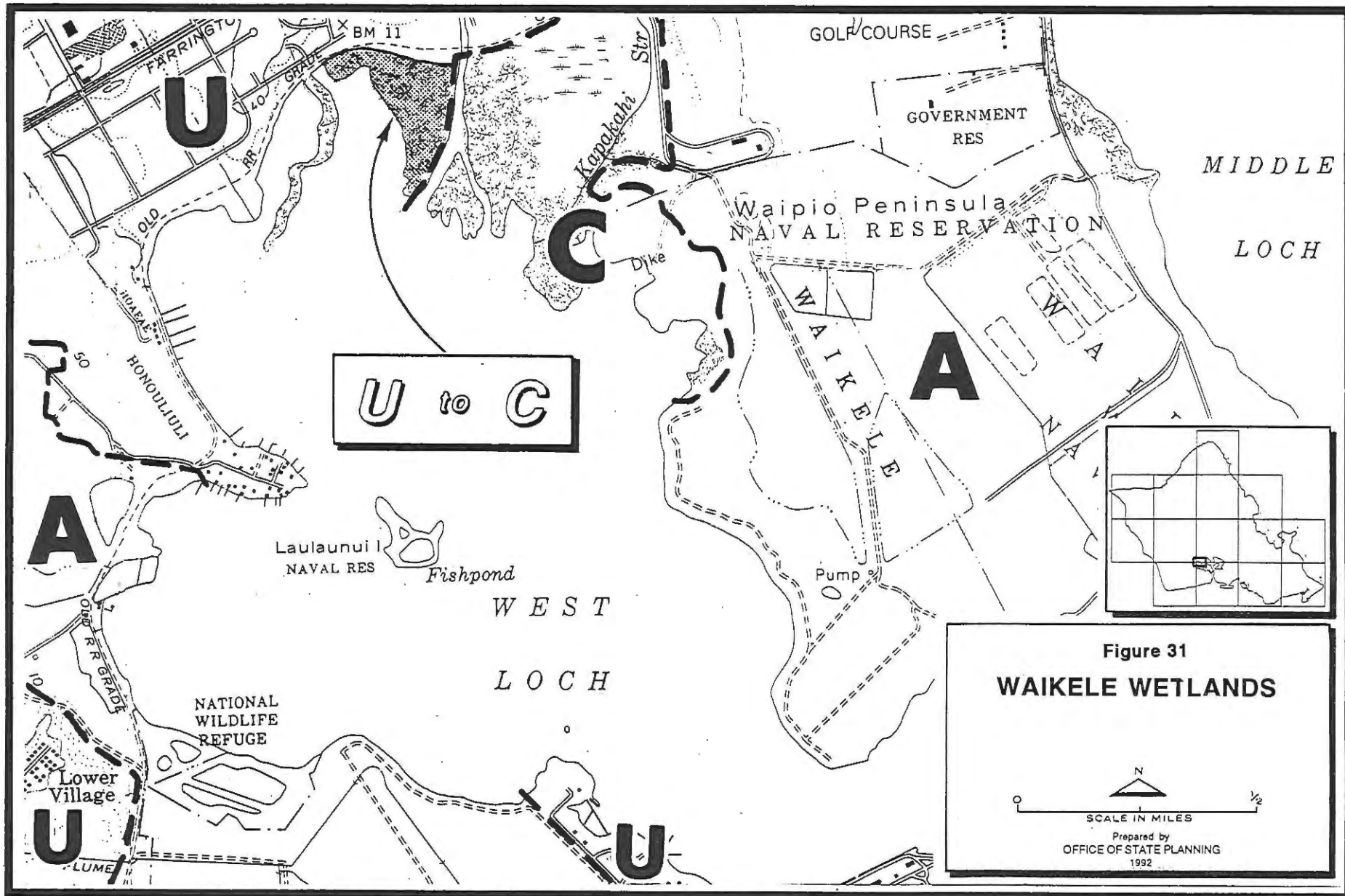


Figure 31
WAIKELE WETLANDS



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1992

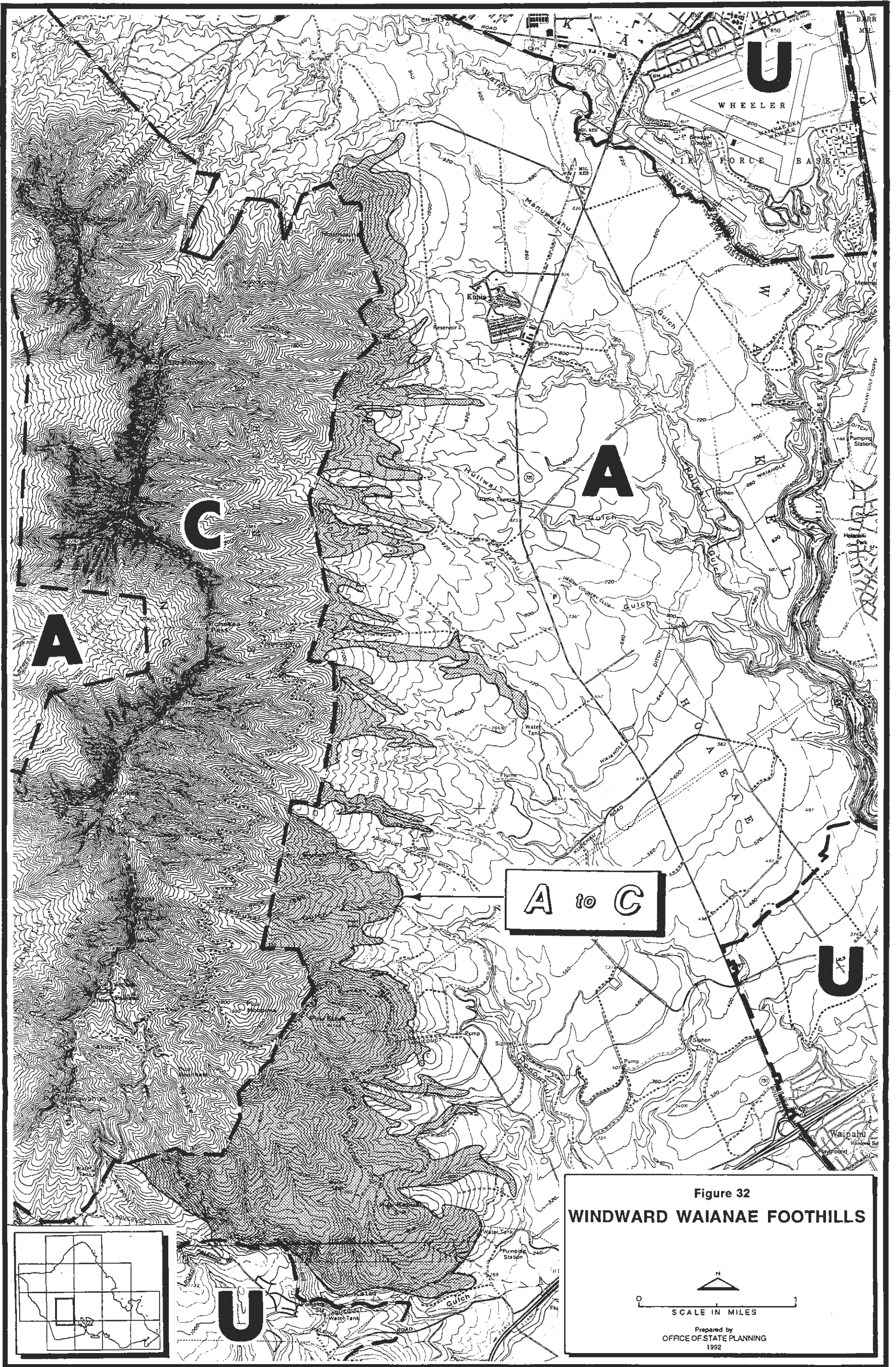


Figure 32
WINDWARD WAIANAE FOOTHILLS

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 SCALE IN MILES

Prepared by
 OFFICE OF STATE PLANNING
 1992

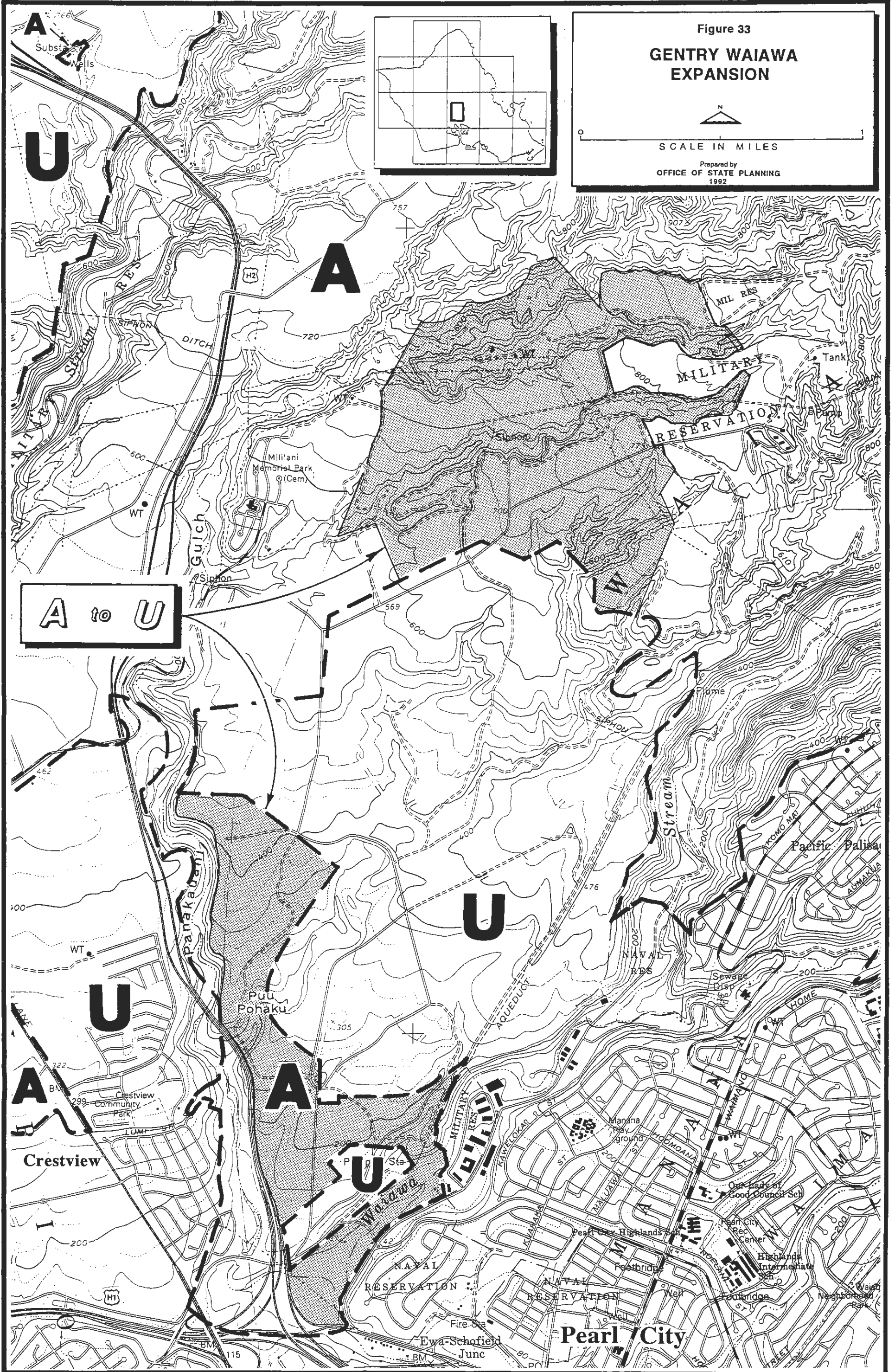
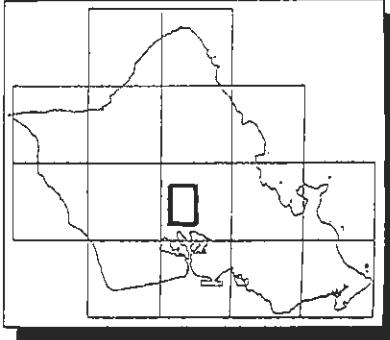
Figure 33

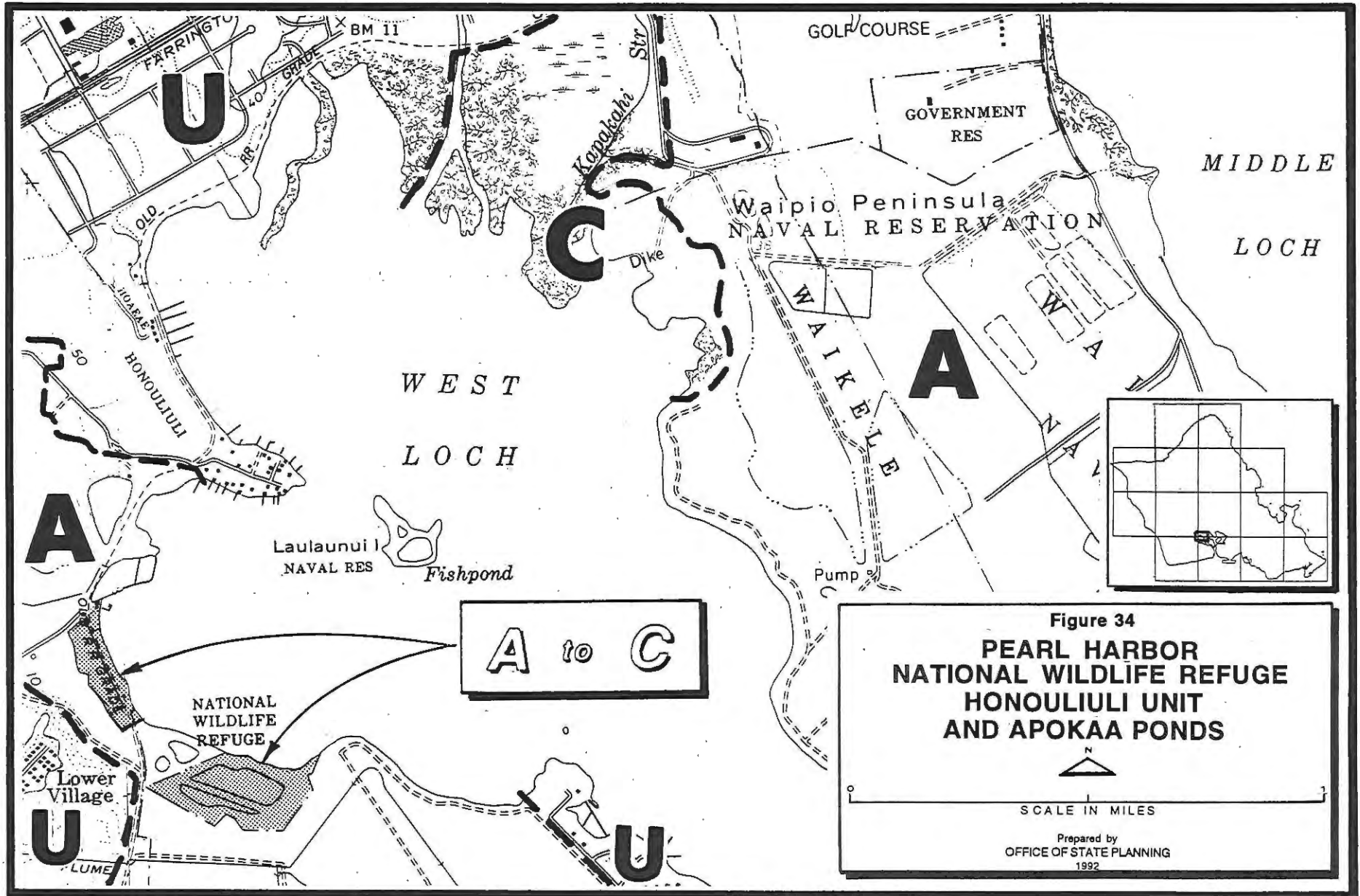
GENTRY WAIAWA EXPANSION



SCALE IN MILES

Prepared by
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1992





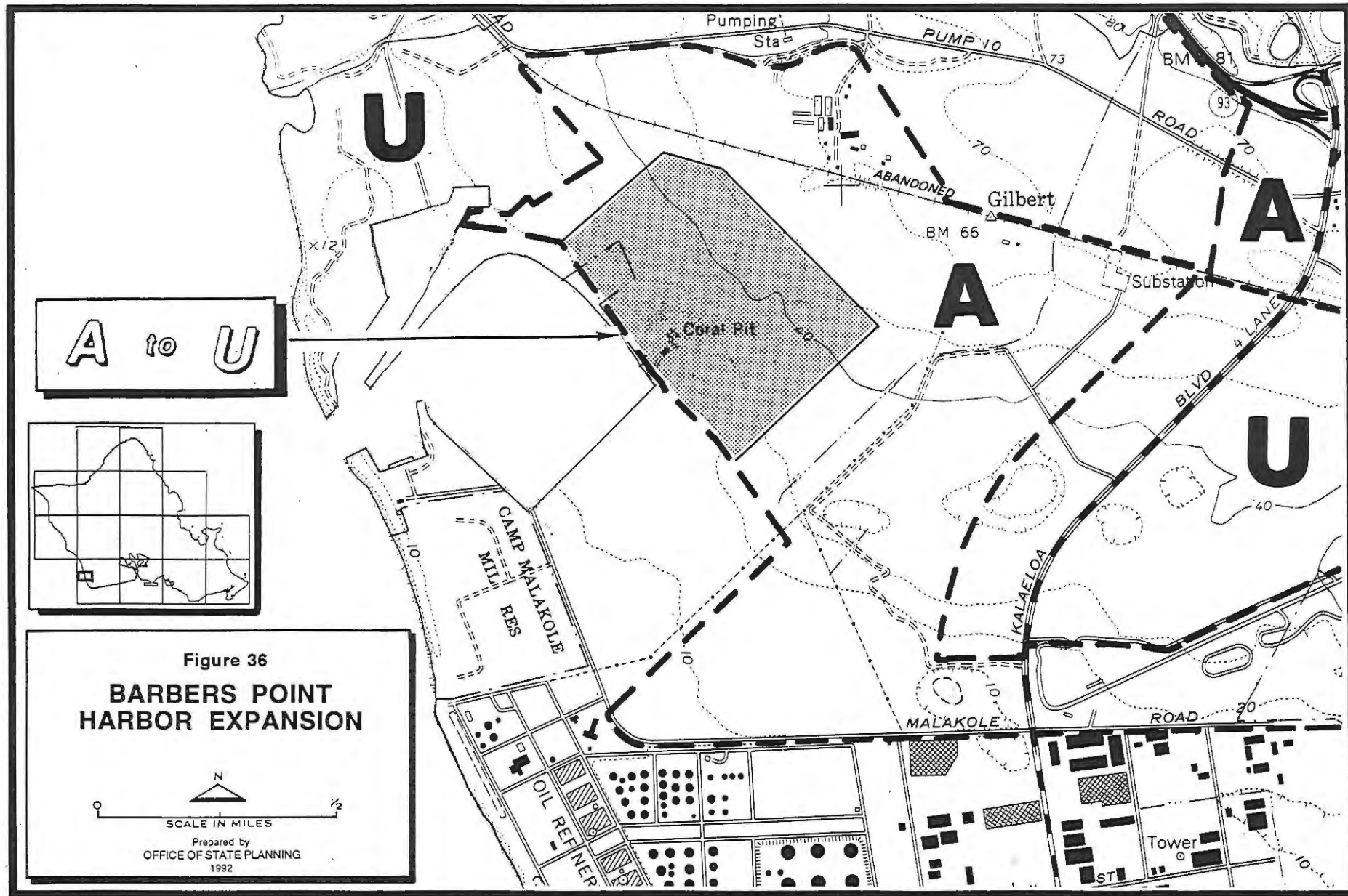


Figure 36
**BARBERS POINT
 HARBOR EXPANSION**



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 1992

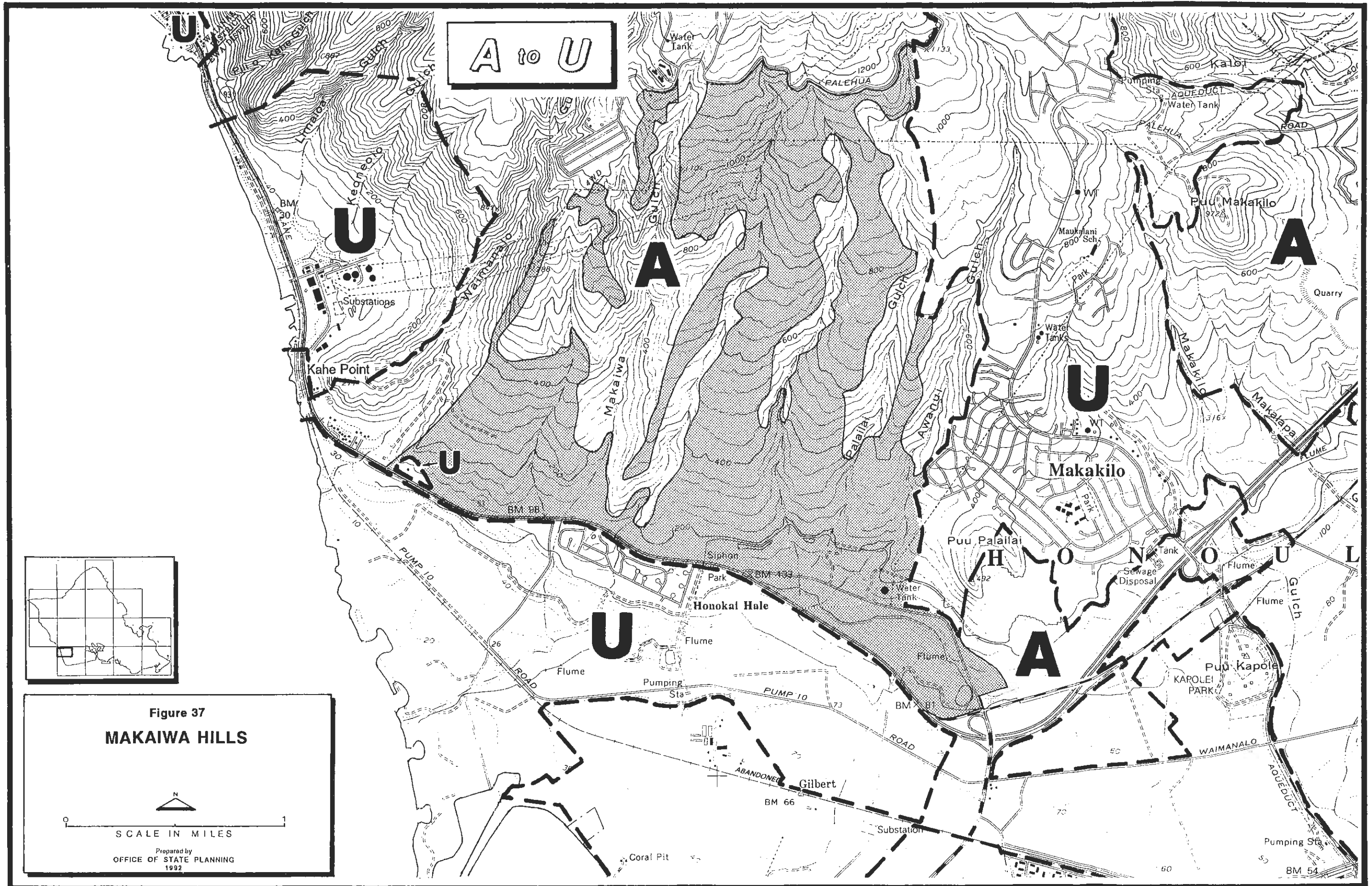


Figure 37
MAKAIWA HILLS

SCALE IN MILES

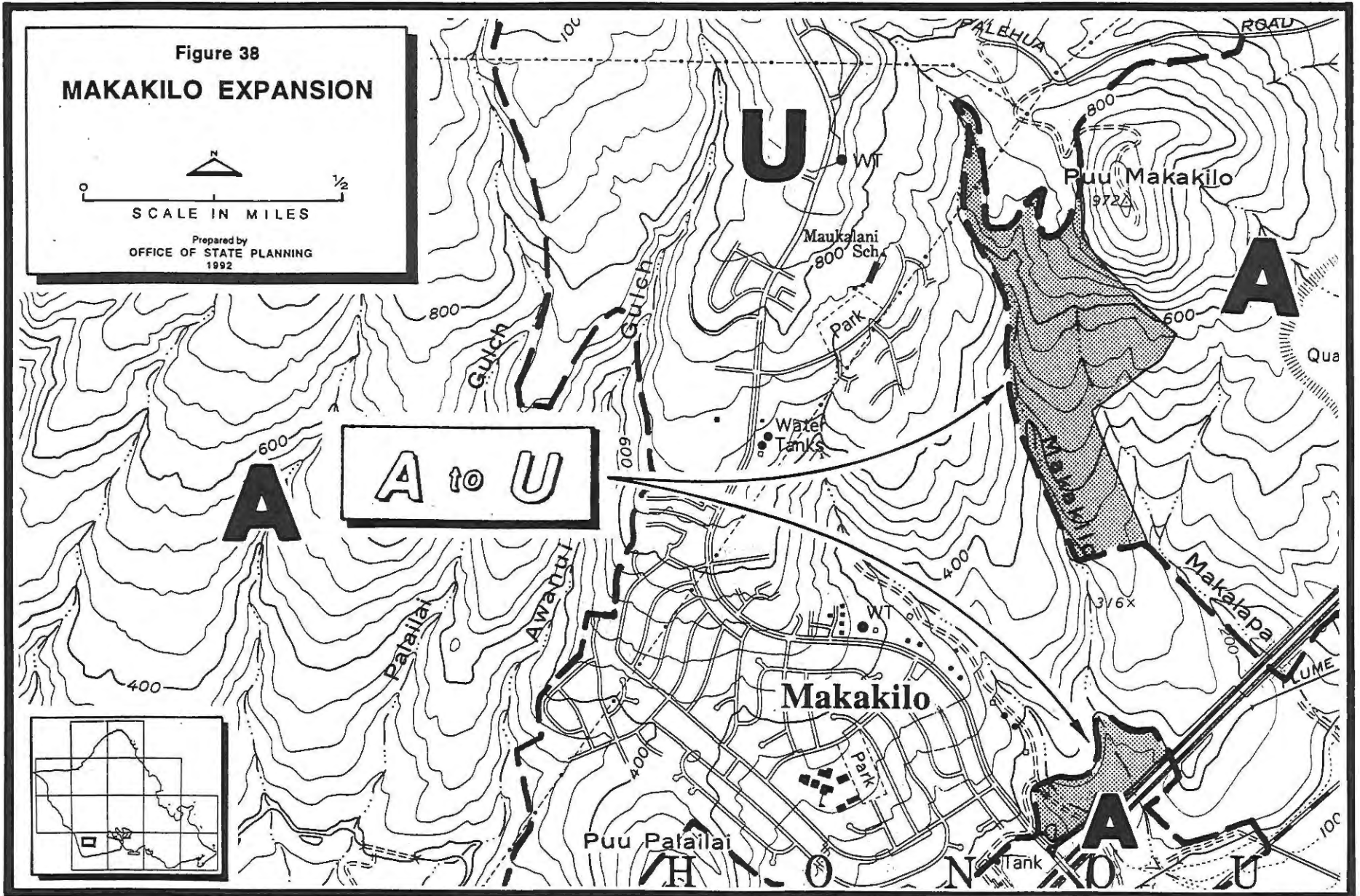
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1992

Figure 38

MAKAKILO EXPANSION



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1992



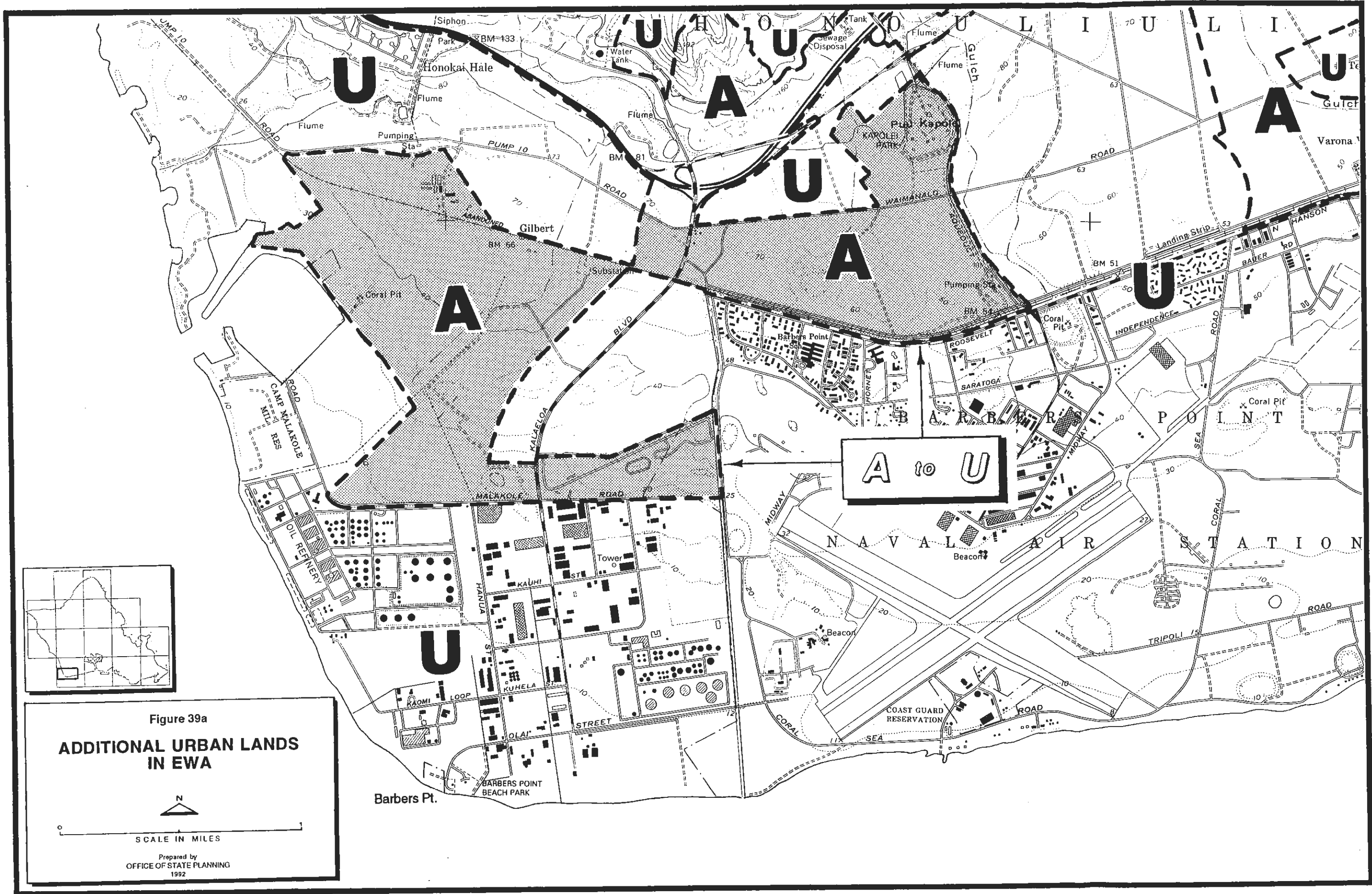
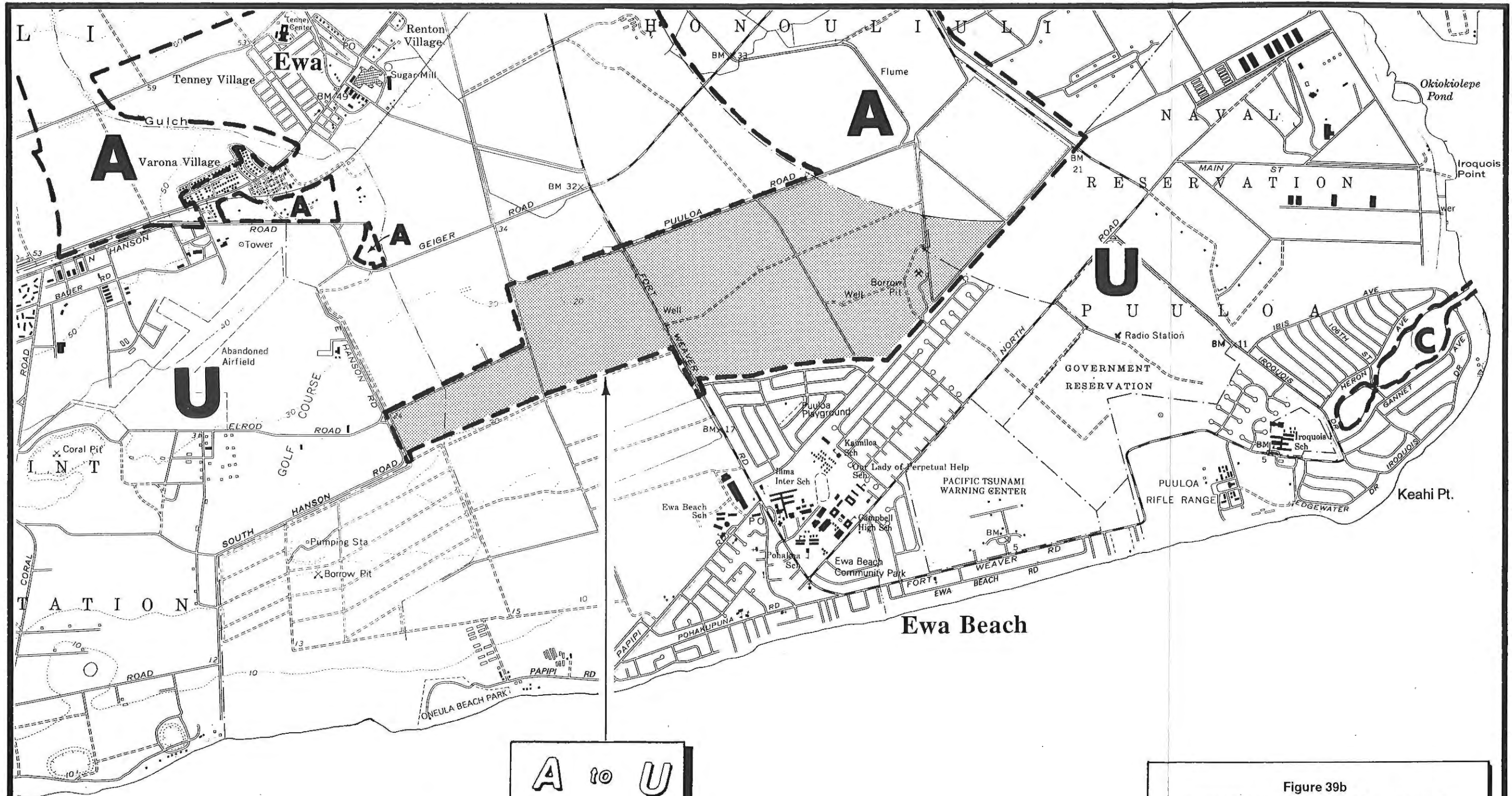


Figure 39a
**ADDITIONAL URBAN LANDS
 IN EWA**

SCALE IN MILES

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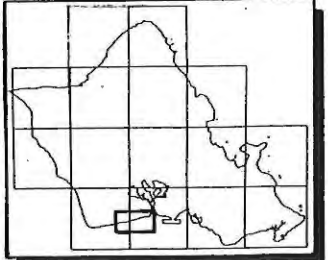
A to U

Figure 39b
**ADDITIONAL URBAN LANDS
 IN EWA**

N

SCALE IN MILES

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 1992



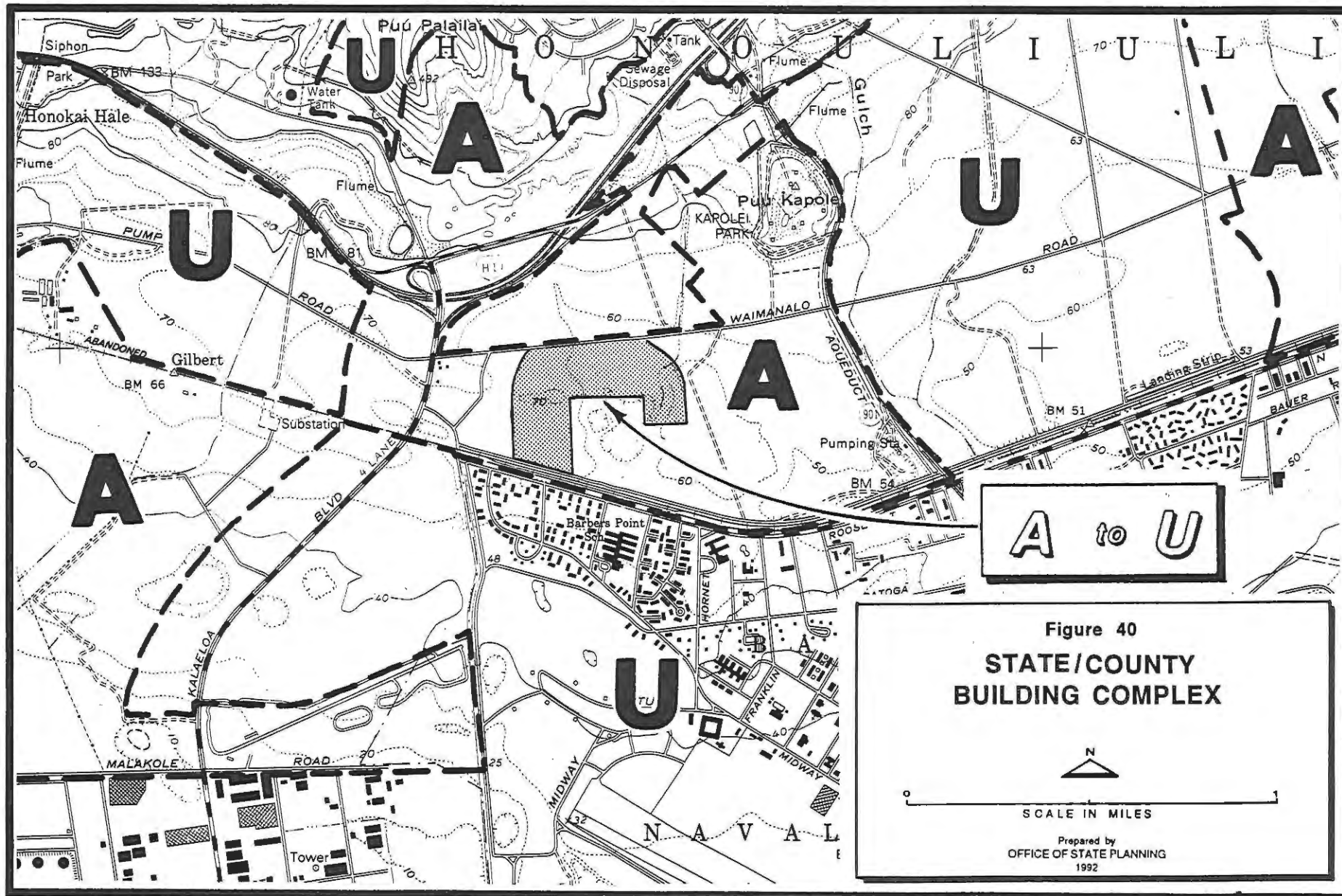


Figure 40
**STATE/COUNTY
 BUILDING COMPLEX**

N

0 1
 SCALE IN MILES

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 1992

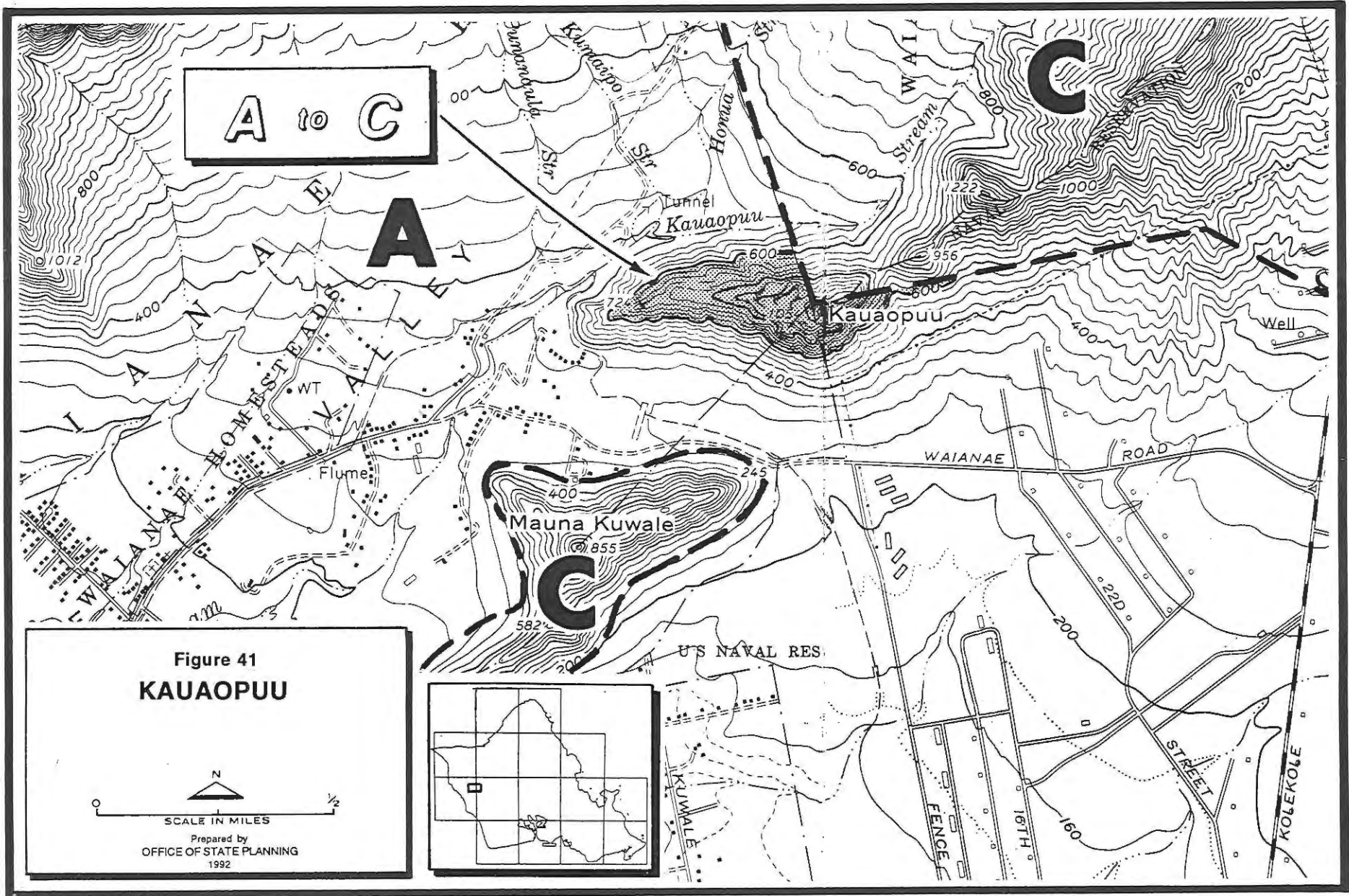


Figure 41
KAUAOPUU

SCALE IN MILES

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