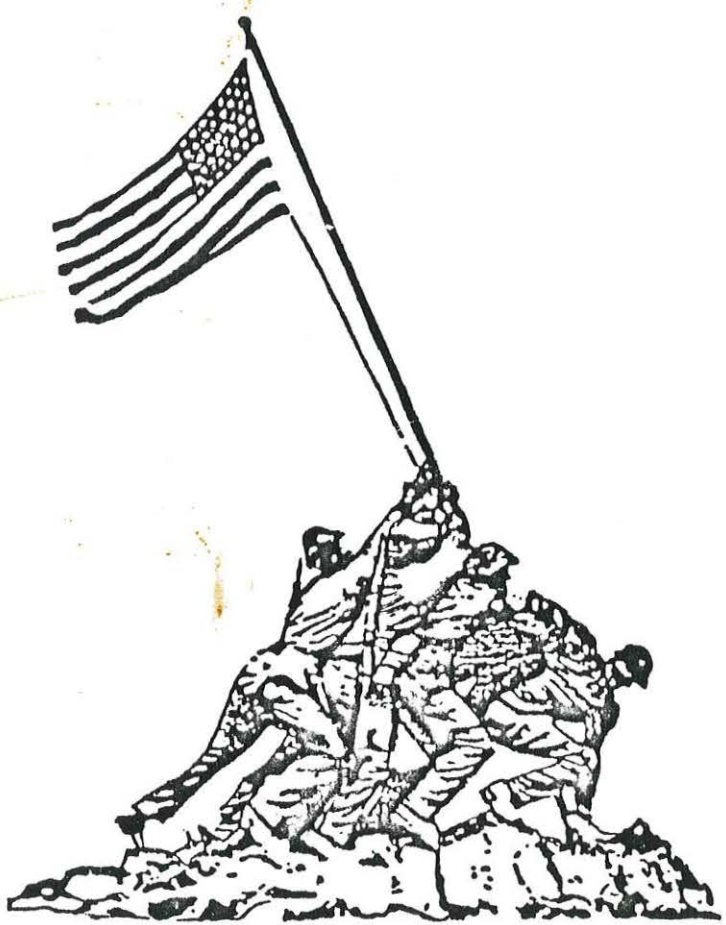


DECEMBER 1986

MCB CAMP SMEDLEY D. BUTLER

CAMP HANSEN

MASTER PLAN

OKINAWA
JAPAN

A. EXECUTIVE SUMMARY

1. INTRODUCTION

This Plan was prepared by the Public Works Branch of the Facilities Engineer Division, Marine Corps Base Camp Smedley D. Butler. Its purpose is to act as a guide for the future use and facility development of USMC Camp Hansen, Okinawa, Japan.

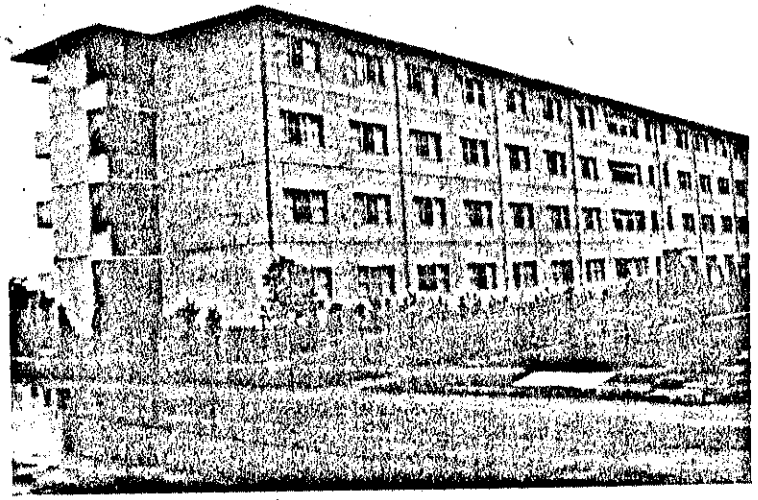
2. MCB CAMP S.D. BUTLER

Marine Corps Base, Camp Smedley D. Butler, Japan, is comprised of eight major USMC camps on Okinawa and Camp Fuji on Honshu Island, as illustrated by Plates A-1 and A-2. Including maneuver areas, MCB Camp Butler constitutes more than 81,456 acres and 3,527 buildings and structures with a replacement value in excess of $1.3 billion dollars.

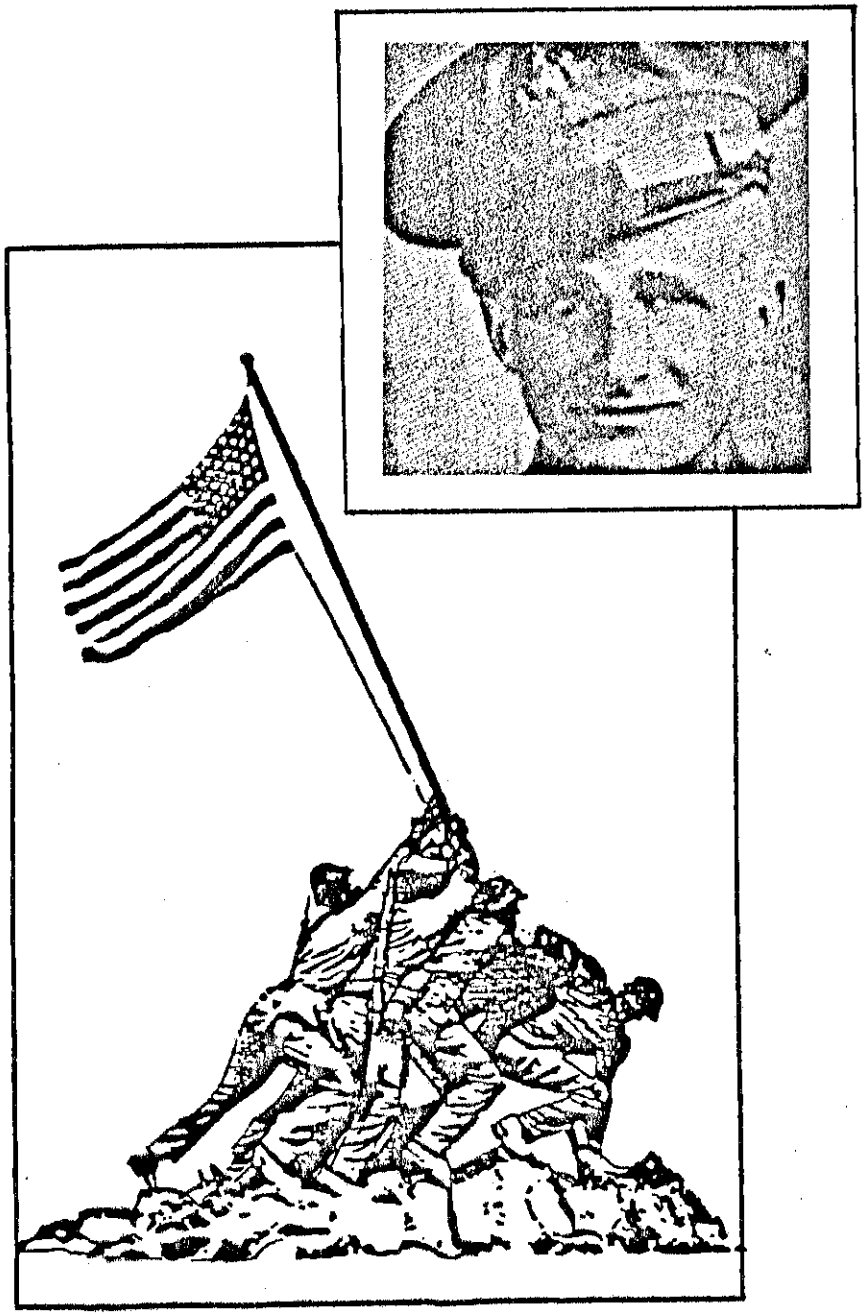
3. CAMP HANSEN

Camp Hansen (USFJ Facility Number 6011) is a component of MCB Camp Butler, and provides support for the various units of the 9th Marine Regiment. Elements of the 3d Marine Division, headquartered at Camp Courtney, are located at Camp Hansen, including Division Schools, Truck Company, the 3rd Combat Engineer Battalion, and the 7th Communications Battalion. Elements of the 3d Force Service Support Group, headquartered at Camp Kinser, are also located at Camp Hansen, including the 9th Engineer Support Battalion, the 3rd Medical Battalion, the 3rd Dental Company, and the Explosive Ordinance Disposal unit of Ammunition Company, 3rd Supply Battalion. Current programmed strength for Camp Hansen consists of 6,555 Marines (338 officers and 6,217 enlisted personnel), 29 Naval officers, 338 Naval enlisted personnel, and 11 civilians. A summary of programmed strength is shown by Figure A-1.

This Master Plan examines Camp Hansen, the Hansen Training Area (South Central Training Area), Kin Red and Kin Blue Beach Training Areas, and Gimbaru Training Area. These facilities are combined for consideration of Basic Facilities Requirements when analyzed by the Facilities Engineer, MCB Camp Butler.



BEQ 2655, typical of new host-nation construction at Camp Hansen



IN MEMORIUM

PRIVATE DALE M. HANSEN

Private Dale Merlin Hansen was born December 13, 1922 in Wisner, Neb. Twenty-three years later he was awarded the highest medal for bravery a service member can receive.

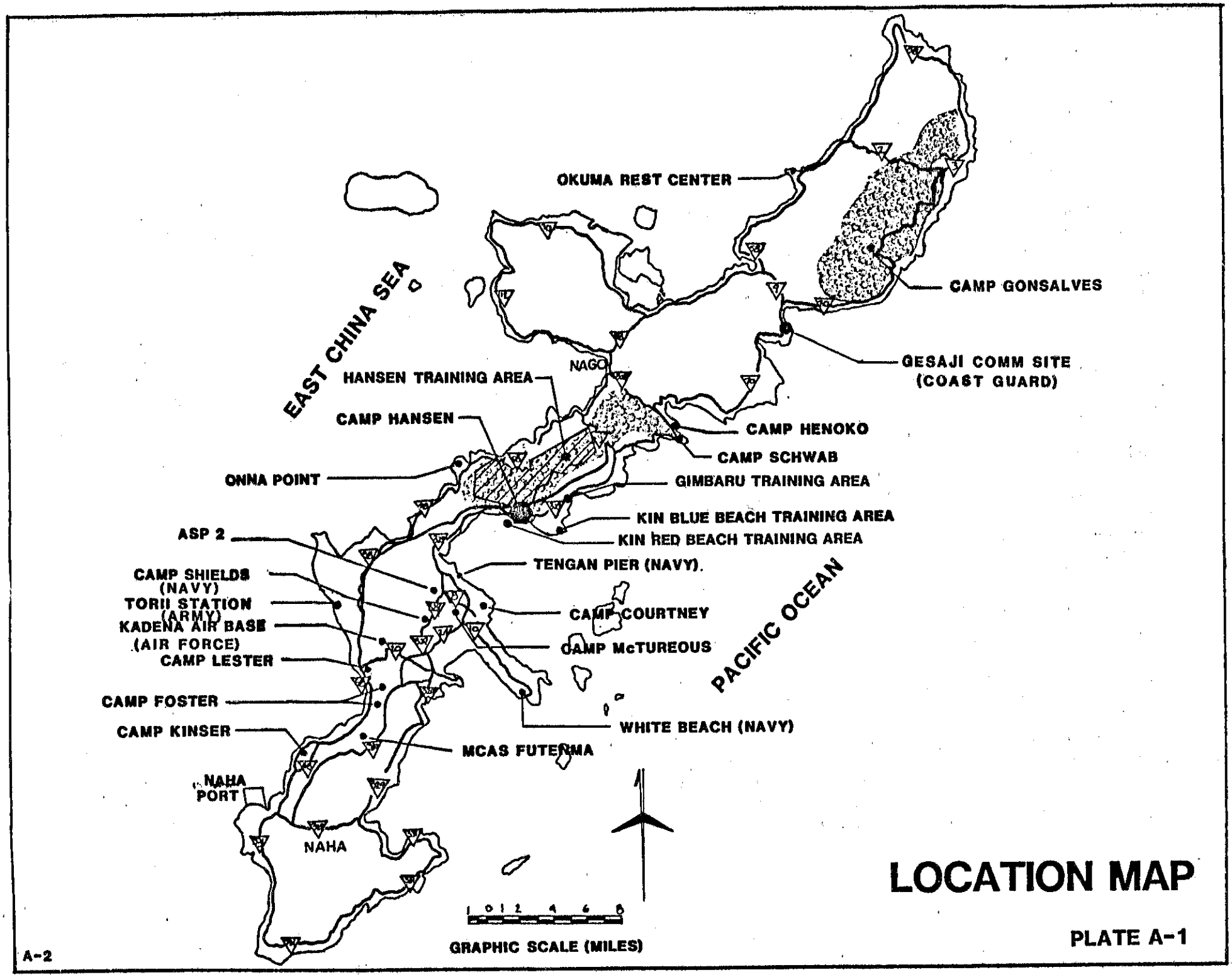
It was May 7, 1945, E Co.,2ND BN, 1st Marines, 1st MARDIV, was in action against Japanese forces on Okinawa. Their mission was to capture and hold Shima hill in the Ryukyu Chain.

E. Company had begun its assault up the hill. Suddenly they began to receive a heavy barrage of small arms fire and waves of incoming mortar rounds. With his unit pinned down and soundly aware of their situation. Hansen armed himself with a rocket launcher, crawled to an exposed position and destroyed a strategically located hostile pillbox.

Out of ammunition and his weapon subsequently destroyed by enemy fire, he seized a rifle and continued his one-man assault up the hill. Reaching the crest of the ridge he opened fire on six enemy soldiers, killing four before his rifle jammed. Attacked by the remaining two, he defeated them in close combat and then climbed back to cover.

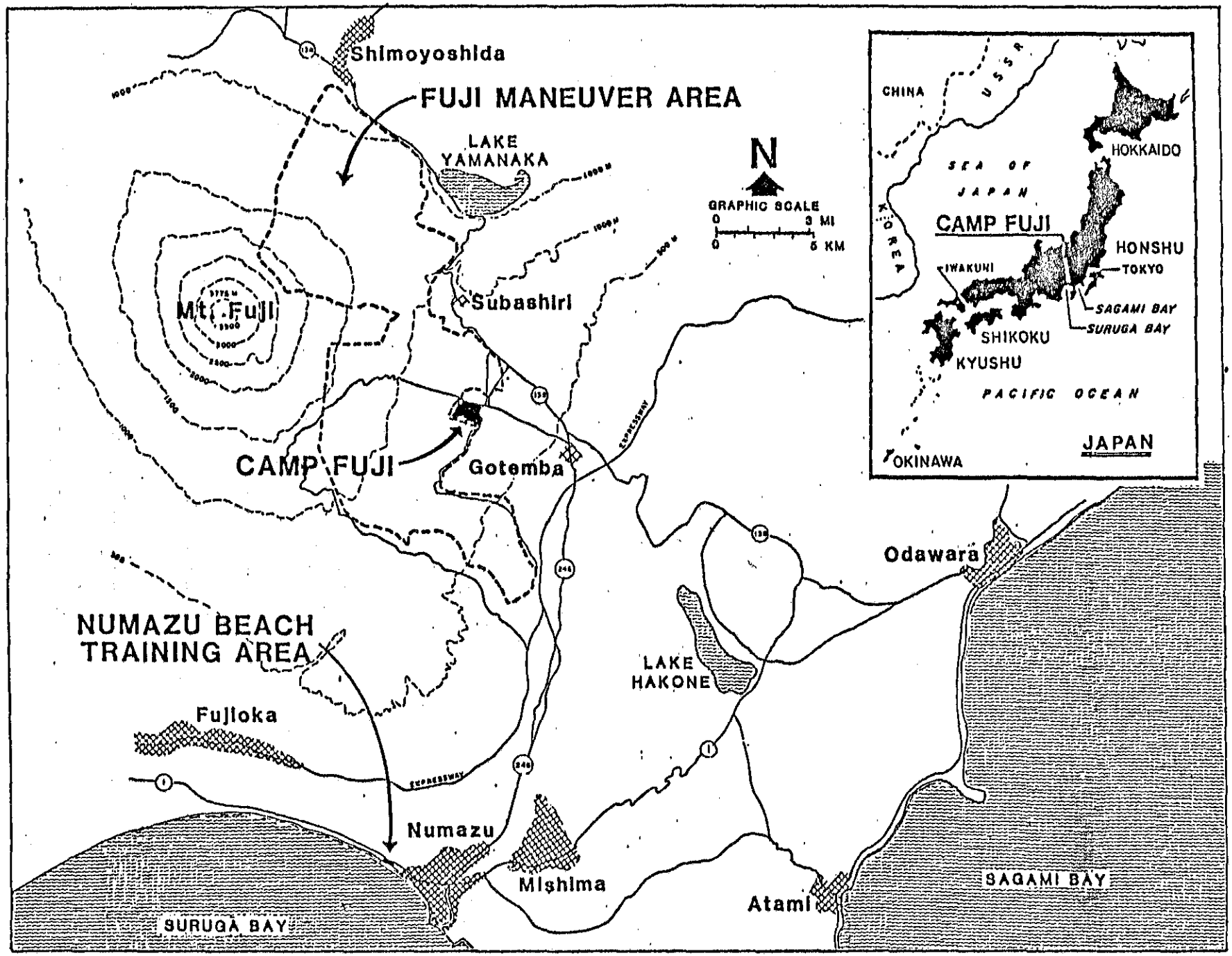
Determined to destroy his foe, he returned with another weapon and a supply of grenades and fearlessly engaged a strong mortar position and annihilated eight more enemy troops.

Hansen's disregard of all personal danger contributed essentially to the success of his company's mission and the siege of their objective. His great personal valor in the face of the extreme peril reflects the highest credit upon himself and the U.S. Naval Service.



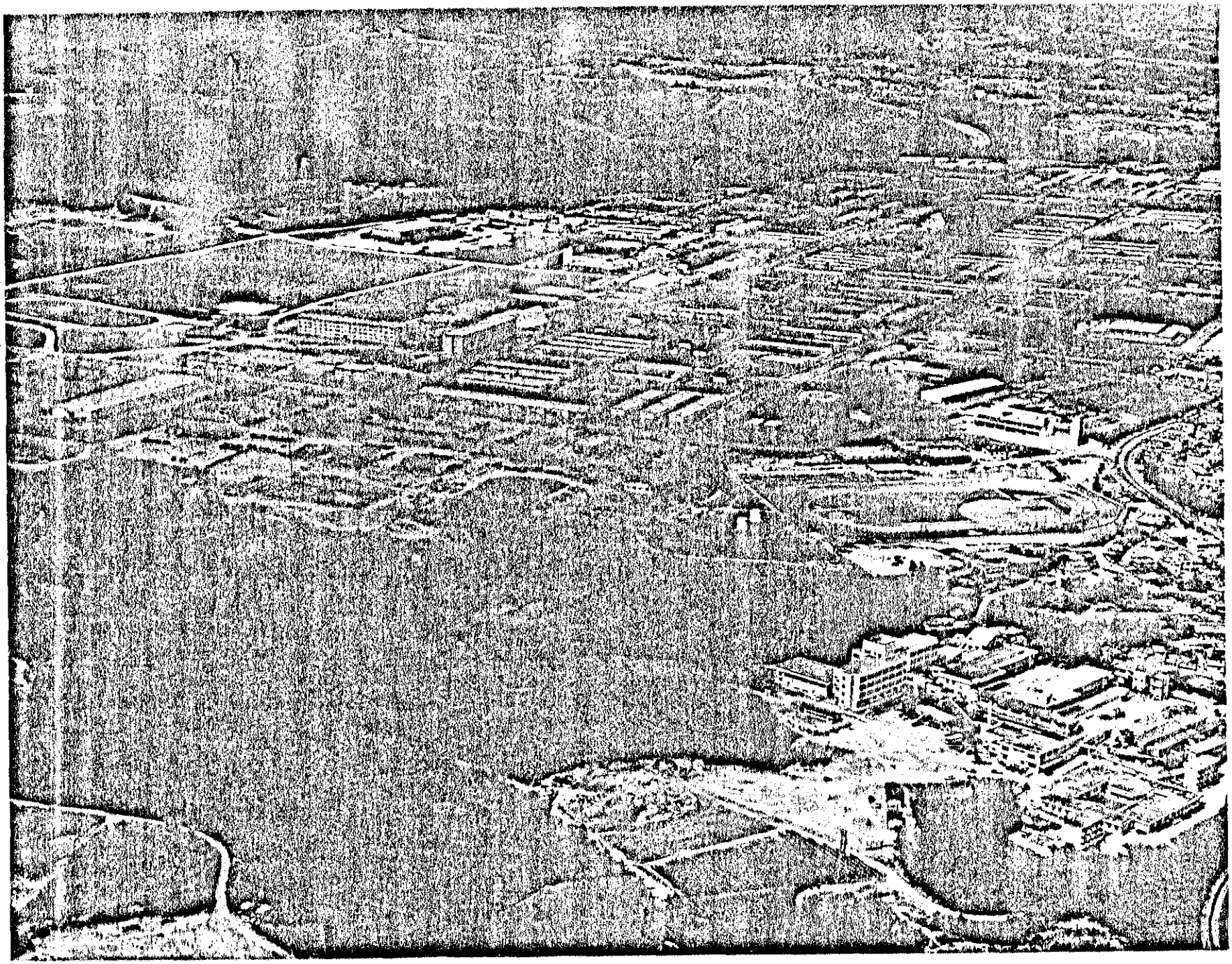
LOCATION MAP

PLATE A-1

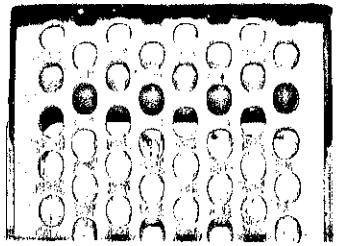


LOCATION MAP
CAMP FUJI

PLATE A-2

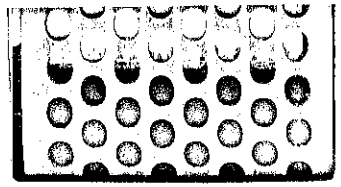


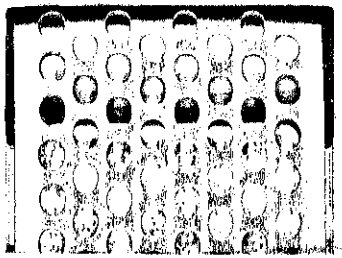
CAMP HANSEN LOOKING NORTH-EAST



4. PURPOSE OF THE PLAN

The primary purpose of the Master Plan is to provide a realistic, orderly, and achievable development scheme for Camp Hansen, taking into account the interrelationships and needs of the component organizations and users within the installation, and recognizing the natural and man-made environmental constraints which limit and define construction opportunities. Other objects are the identification trends and potential growth importing on land utilization, and the inventory of information vital to future planning episodes.

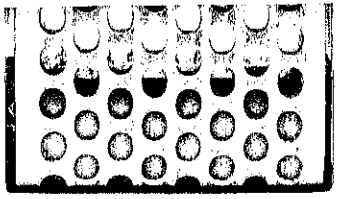




5. METHODOLOGY

Because of the dynamic and volatile nature of host-nation construction programs, Facilities Engineer for MCB Camp Smedley D. Butler directed in 1983, the in-house publication of a family of Master Plans which precipitated the timely resolution of facilities issues and assisted the capture of over $200 million in the host-nation funding.

The draft Master Plan for Camp Hansen was published in August 1985. This "final" Master Plan itself represents only a fragile milestone subject to continued policy and programming change at an international level. With this in mind, the final Master Plan must be viewed as a stepping stone in a dynamic intercourse expected to challenge facilities planners and installation commanders through the 1990s.



EXISTING CONDITIONS

The purpose of this section is to report the data base developed during the Data Collection Phase of the Master Plan. Information is graphically portrayed by map plates, illustrations, and tables.

This section is divided into a Regional Overview of Okinawa, a discussion of the Natural Planning Factors at Camp Courtney, and a report on man-made infrastructure.

1. REGIONAL OVERVIEW

The Okinawa Regional Profile published in November 1978 by Pacific Division, Naval Facilities Engineering Command, is considered a companion document to this master plan. Readers are invited to review the regional profile for general background on Okinawa and military holdings.

A. INTRODUCTION

The Ryukyu Islands, of which Okinawa is the largest, are part of a chain extending from Japan to New Guinea and forming the geographic limits of the West Pacific Ocean from 45° North Latitude to 0° Latitude. The Sea of Japan, the East China Sea and the South China Sea separate these islands from mainland Asia.

The Ryukyus are strategically located in this island chain and are within easy reach of some of the most important cities in Asia. Okinawa is centrally located between Japan and Taiwan and consist of 72 islands divided into three major groups: Okinawa Gunto, Miyako Gunto and Yaeyama Gunto. The translation for "gunto" is "group of islands." These three guntos make up a total land area of 848 square miles. The Okinawa Gunto contains an area of 544 square miles with the main island of Okinawa having 454 square miles of this total.

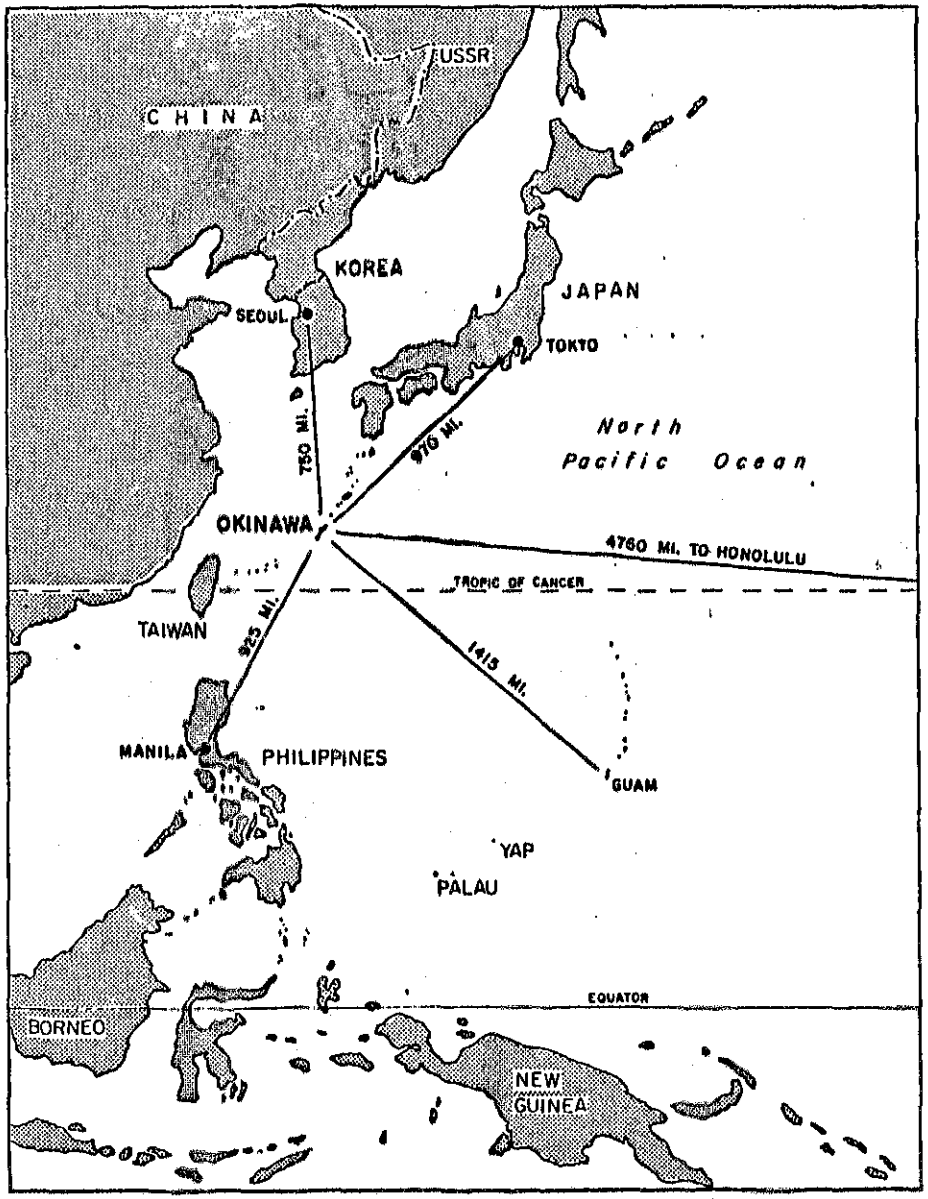
Figure D-1 shows the geographic relation of Okinawa to thereto of Japan and Asia.

B. HISTORY

The original inhabitants of the Ryukyu Islands are believed to have moved southward from Japan proper some 3,000 years ago.

Ethnically, the people of Okinawa are a mixture of at least three groups: Mongolian, Ainu and Malayan. As writing was introduced from Japan in the 14th century, the history of Okinawa prior to that time is based on oral sagas, and is unfortunately incomplete.

Formal trade began with China in 1372 when the Okinawans paid tribute to the Ming Dynasty. The prosperous trade between the two countries proved a great benefit to Okinawa.



REGIONAL MAP

FIGURE D-1

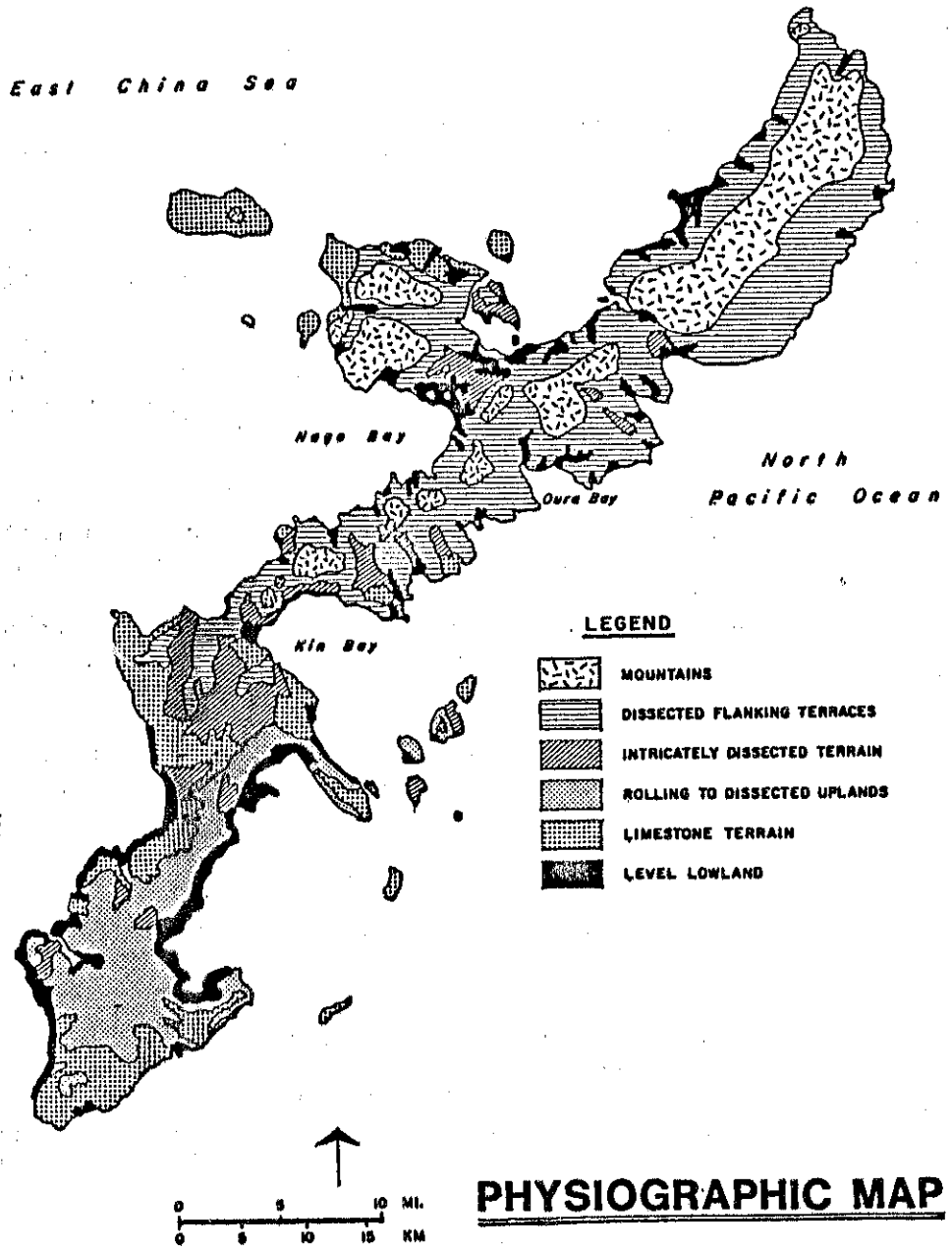
Okinawa was divided into three kingdoms until the 15th century. At that time, Sho Hashi became king of the central kingdom and subsequently conquered all of Okinawa. He established his government in the new capital of Shuri.

A "golden age" for the Ryukyus extended from 1398 to 1573. During this period, the Okinawa people maintained contacts with Japan, China and as far away as Indonesia and Thailand. Okinawan folk crafts were perfected, and music, poetry and dance flourished.

In 1609, samurai warriors from Kyushu Island in southern Japan invaded Okinawa. For the next 270 years, Okinawa remained "independent" but was forced to pay tribute. Tightrope diplomacy was practiced as the Okinawans still payed tribute to China and did not want to offend neither the Japanese nor the Chinese.

The situation became trickier when Commodore Perry's fleet landed in Naha in 1851 to open trade and relations with the United States. Other European expeditions soon followed, and the Japanese feared losing control of Okinawa to "outside interests."

Japan sent a military expedition to the island in 1868. In 1879, Okinawa became a Japanese prefecture. The official language became Japanese, and the education and political system of the island were rapidly standardized with that of mainland Japan.



PHYSIOGRAPHIC MAP

FIGURE D-2

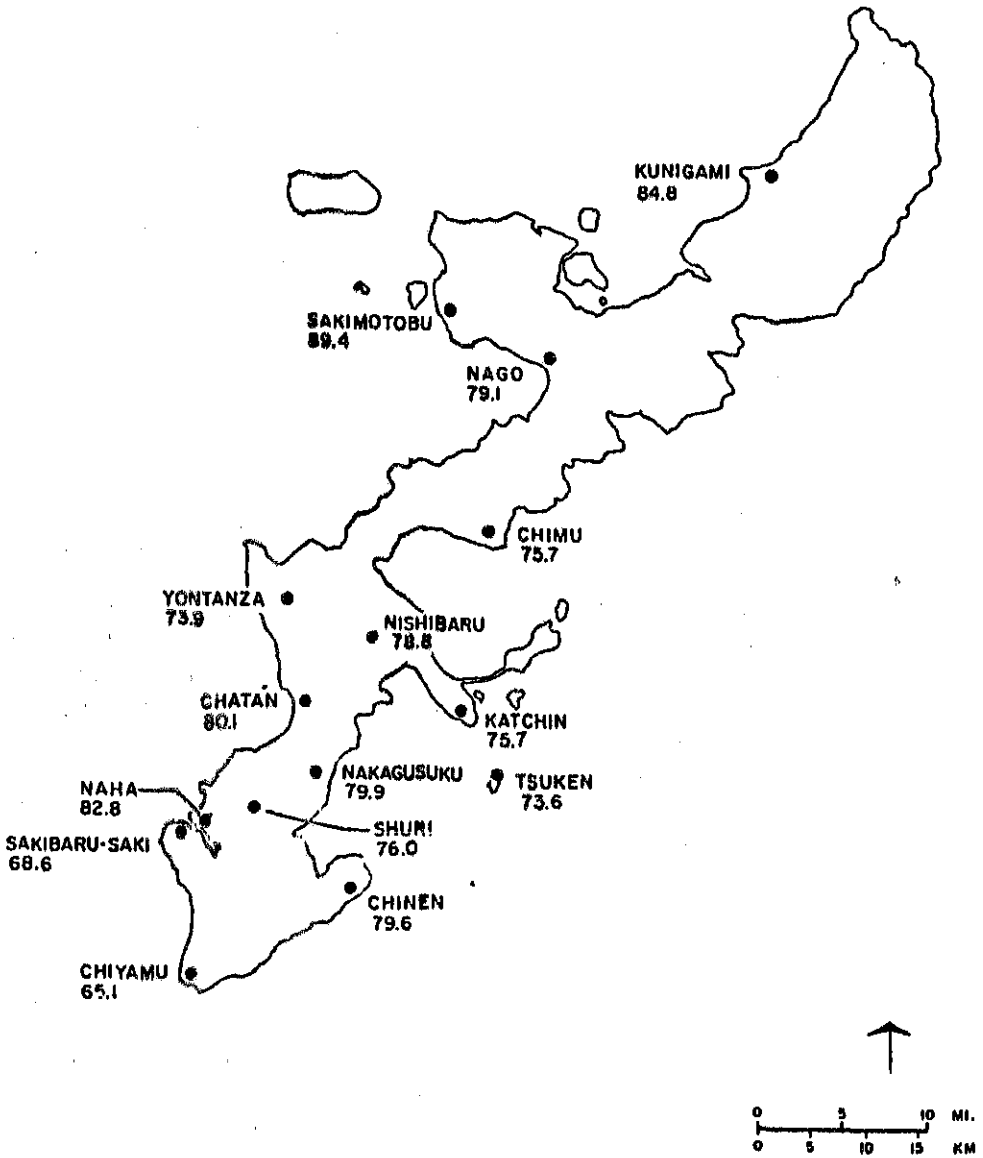
Due to its geographical situation, Japan turned Okinawa into a bastion to guard its southern approaches during World War II. The Okinawans suffered greatly at the close of the war in 1945. The three month Battle of Okinawa caused widespread destruction and the deaths of over 100,000 non-combatant Okinawans, in addition to military casualties of 60,000 Americans and 110,000 Japanese. The Ryukyu Islands were returned to Japanese sovereignty in 1972.

C. GEOLOGY

1. GEOLOGIC SETTING

Okinawa and most other islands of the Ryukyus are formed by an exposed crest of a large, curved submarine ridge that extends about 750 miles from the south tip of Kyushu Island, Japan, to the northeast coast of Taiwan. The ridge is separated from the Philippine Sea basin by steep slopes and the Ryukyu Trench, which lies more than 24,000 feet deep to the south of Okinawa. Another trough about 7,000 feet deep lies between the ridge and the shallow platform of the East China Sea to the northwest.

These formations are known collectively as the Ryukyu Arc. The arc is one of several geologically active zones along the western side of the Pacific Basin. It is the site of numerous earthquakes, and on its western side, active volcanoes. A physiographic map is illustrated by Plate D-2.



MEAN ANNUAL RAINFALL
cm

FIGURE D-3

2. HYDROLOGIC DATA

Conspicuous difference is observed between the central and southern districts and the northern district of Okinawa Island in terms of topography and geology. The central and southern districts feature gentle hills with few rivers. The soft pelite basement overlain by vesticular Ryukyu limestone forms an effective subterranean basin for ground water storage. On the contrary, the northern district features steep mountains mainly consisting of late Mesozoic slate, phyllite, and schist.

Approximately 300 rivers are found in Okinawa Prefecture. However, the size of these rivers is generally small and only 37 rivers have a significant watershed. Most of the rivers are steep brooks of shore streams, apt to result in abrupt inundation following a short-time downpour. Flash floods are a constant problem.

In the central and southern districts are large rivers such as the Ishikawa, Tengan, Hija, and Kokuba Rivers. Most rainfall penetrates into the ground and forms subterranean streams.

D. METEOROLOGY

Okinawa is characterized by a humid subtropical climate due to its proximity to the Tropic of Cancer and the warming influence of the Kuroshio, or Black Current. The Kuroshio is a major ocean current which originates from equatorial currents

east of Taiwan and passes west of Okinawa, northward to Japan. Temperatures, salinity and transparency of Kuroshio waters are typically high. The Kuroshio is the north Pacific's equivalent of the Gulf Stream and has a moderating effect on nearby coastal waters and climate. Winters are mild and summers humid. The yearly average temperature on Okinawa is 22.4°c (72.3°F). Wind blows from northeast in winter and southeast in summer.

1. TEMPERATURE

The average weather data indicates a mild average annual temperature of 22.4°C (72.5°F), an average summer temperature of 28.1°C (82.6°F) in July, and an average winter temperature of 16°C (60.8°F) in January.

2. PRECIPITATION

Large rainfall is generally observed in the rainy season (June) and the typhoon season (August). Total annual precipitation reaches (84 inches with an average monthly high of 11.5 inches in June and an average low of 4.6 inches in December. Distribution of mean annual rainfall is illustrated by Figure D-3. The average annual humidity is 77 percent.

3. WIND

Following the gradual diminishing of the northeast seasonal wind which peaks in January, the rainy season comes from spring to early summer. It is called "Sumanbosu" and is followed by the summer seasonal wind which is known as "Kachipe". The sumanbosu is not unlike the tsuyu of mainland Japan. Yearly average wind velocity is 11.2 mph, mostly from the northeast. A wind rose is shown as Figure D-4.

4. SOLAR INFORMATION

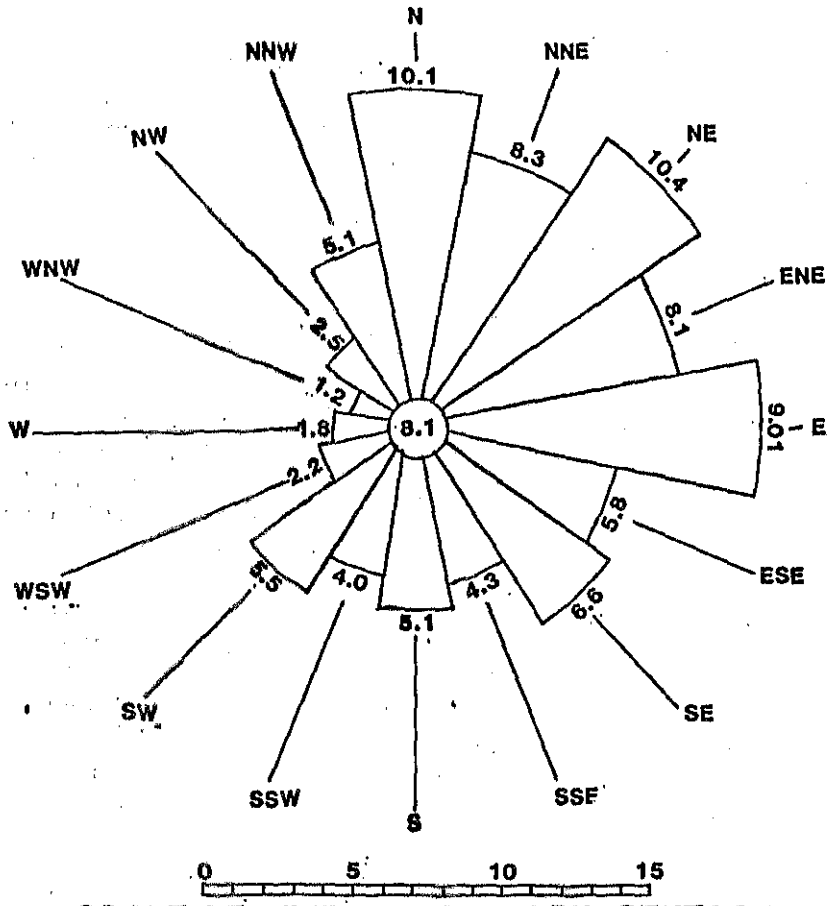
The duration of sunshine is 2,047 hours a year and the percentage of possible sunshine is 46% a year.

E. FLORA AND FAUNA

1. FLORA

The overall vegetation of Okinawa was surveyed in 1973-1975 by the Japan Environment Agency and includes several different general vegetative cover types. Much of northern Okinawa is characterized by a broad-leafed and needleleafed forest predominated by Castanopsis custidata and Pinus lutchuensis substitutional communities. Pines, firs, juniper, wax trees, hemp palms, cycads, bamboos, bananas, and ferns are found in the northern region. The southern third of Okinawa includes several weed communities and M sinensis-zoysia japonica communities. Oak, mountain tea flower and tree ferns are found in the southern region, as well as mangrove swamps in undisturbed areas.

The vegetation on Okinawa varies from tropical at sea level to subtropical at elevations above 1,300 feet. Even at lower elevations however, the climate is not wet enough to support the rain



SCALE OF WIND DIRECTION PERCENTAGE

DIRECTIONAL WIND ROSE AT COURTNEY

FIGURE D-4

forest type growth of the true tropics. Both trees and shrubs are relatively small, and the natural cover is difficult to penetrate. In the limestone areas especially, normally tall trees are stunted by lack of water, and twisted and bent by winds. Many native forest stands in the south were destroyed during the Battle of Okinawa (1945) and in the north by overcutting.

2. FAUNA

A. LAND MAMMALS

There is the usual assortment of domesticated animals in Okinawa. Additionally, there are Japanese deer, mongooses which have been imported, and the indigenous Ryukyu wild pig and Amami black hare. There are also many types of rats, mice and bats.

B. REPTILES AND AMPHIBIANS

There are, at least, five species of venomous snakes on Okinawa. All are locally called "habu". There is also a marine snake with poisonous fangs, as well as several species of non-poisonous snakes. There are also frogs, toads, geckos and several species of turtles.

C. BIRDS

There are many varieties of land and sea birds on Okinawa, from sparrows and finches to ducks and herons.

D. ENDANGERED SPECIES

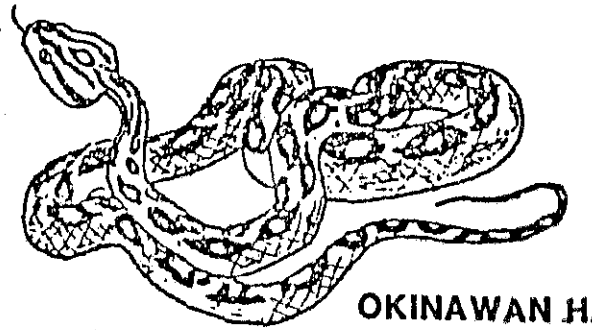
The latest published list of Endangered and Threatened Species pursuant to the Endangered Species Act of 1973, as amended, appear in the Federal Register of July 20, 1983. Three Okinawan species appear in the list:the Iriomote cat (Felis [Mayailurus] iriomotensis), the Ryukyu sika deer(C nippon keramae), and the Ryukyu rabbit (Pentalagus furnessi). None of these species are found on the main island of Okinawa. No plant species from the Ryukyu Islands appear in the list of endangered and threatened plants.

Plants and animals of the Ryukyus regarded by the Japanese Government as cultural assets are discussed in paragraph 1k.

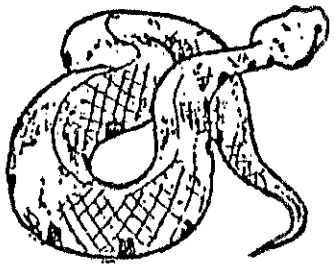
E. AQUATIC BIOLOGY AND MARINE RESOURCES

Freshwater fish populations on Okinawa are scarce, particularly in central and southern Okinawa where urban and agricultural activities have disturbed aquatic habitats. However, Okinawa is known for its diverse and plentiful marine resources. The mixing of the plankton-rich warm Kurochio current and the cool northern waters produces excellent fishing grounds. Tuna, marlin, swordfish, squid, cuttlefish, octopus, echinoder, shellfish, and seaweed are commonly harvested from offshore waters.

Coral reefs surround the island of Okinawa. Reef areas have been damaged by silt associated with upland development and runoff. The Crown of

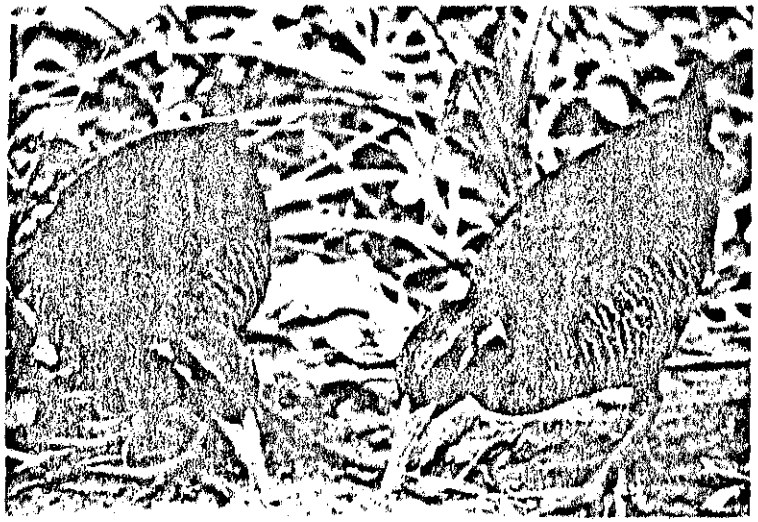


OKINAWAN HABU

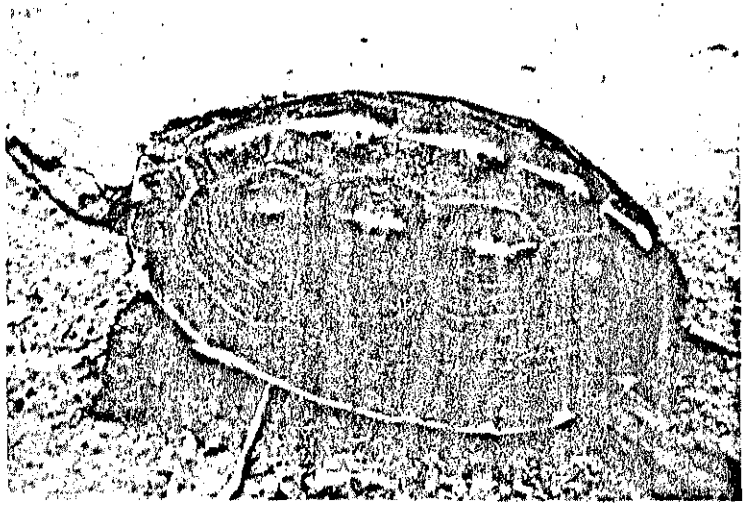


HIMEHABU

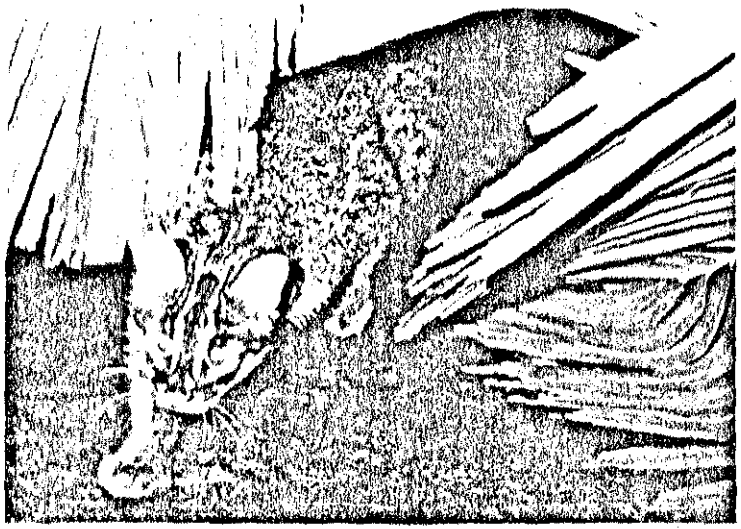
SAKISHIMA HABU



YANBARU KUINA (North Okinawa)

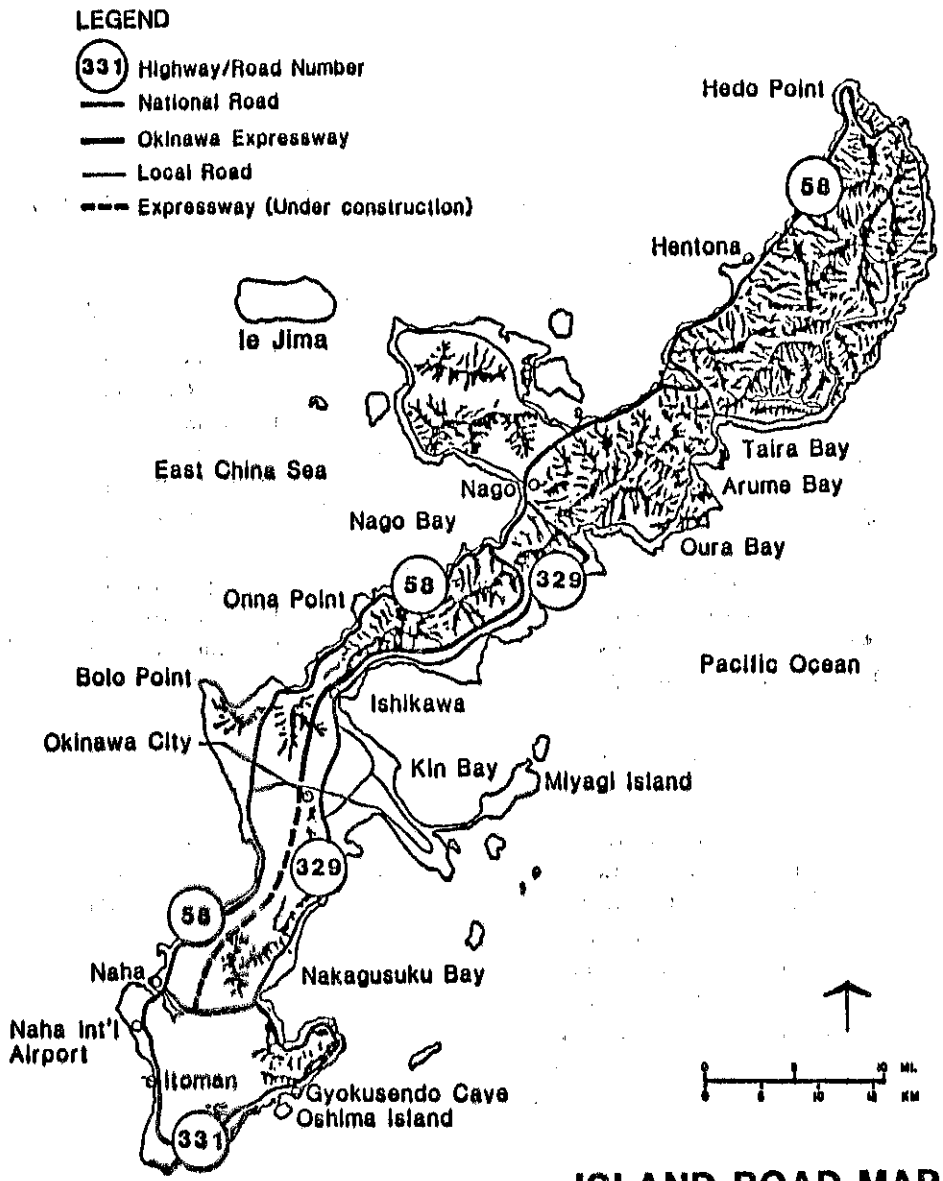


RYUKYU YAMAGAME TORTOISE (North Okinawa)



IRIOMOMOTE WILDCAT (Iriomote Island)

NOGUCHI GERA WOODPECKER (North Okinawa)



ISLAND ROAD MAP

FIGURE D-5

Thorns starfish (Acanthaster planci) has also contributed to periodic damage and destruction of coral reefs.

F. POPULATION AND EMPLOYMENT

The population of Okinawa Prefecture was relatively stable at about 575,000 people from 1920 until 1940. During the Battle of Okinawa in 1945, some 100,000 civilians lost their lives. By the end of hostilities, another 50,000 Okinawans serving in the Japanese Armed Forces were killed. In late 1945, however, an estimated 150,000 people who had migrated to Japan or Japanese-held territories returned, offsetting the decimation of war. The total population then began increasing, topping one million people in the 1975 census.

According to the 1985 national census, Okinawa Prefecture has 1,179,116 residents, a 6.6 percent increase over 1980. The figures show there are 580,966 men and 598,150 women. Naha, the prefectrual capital, is the most populous city with 303,680 people. Okinawa City has 101,205 residents; Urasoe (near Camp Kinser) has 81,612; Ginowan (near MCAS Futenma) 69,206; and Kin (near Camp Hansen) 10,006.

G. ECONOMICS

Traditionally, the Ryukyu Islands people have been farmers and fishermen. However, since World War II, other industries have expanded faster than agriculture and its relative economic importance has decreased. The U.S.military presence in support of the Korean and Vietnam conflicts precipitated this economic change, although urbanization has continued to accelerate since reversion in 1972.

Currently, about 20 percent of the total Okinawa area is cultivated.

Traditional Okinawa fishing practices have been displaced by modern commercial operations. Tuna fleets fish as far away as the coast of West Africa. However, the fishing industry accounts for about one percent of the Gross National Product and employs only a few thousand people.

Commercial mining is limited to cement and aggregate manufacturing. Two major oil companies, Gulf and Esso, have established refineries for processing crude oil brought from the Middle East. Service and tertiary industries make up the major sector of the economy. These include wholesale and retail trade, finance and investment, real estate, transportation, communication, services and utilities. Both the U.S. military presence and a growing number of mainland Japanese tourists help support these industries.

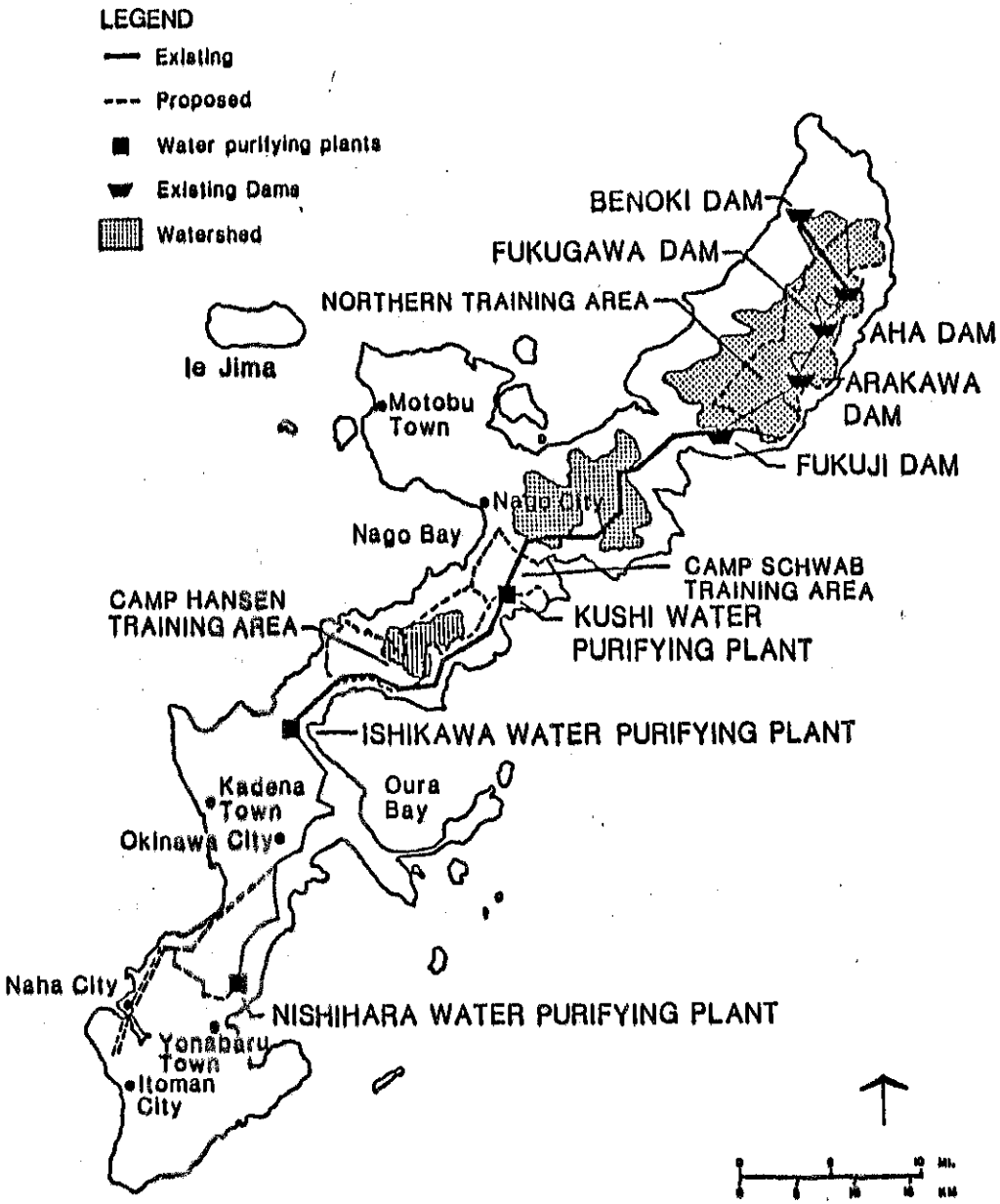
H. TRANSPORTATION

1. LAND TRANSPORTATION

Land transportation on Okinawa is by highway vehicle except occasionally in the rural areas, where horses, water buffalos and tractors are sometimes used to draw a variety of vehicles. By the time of reversion in 1972, there were over 2,000 miles (3,200 km) of roads, both hard surfaced and coral surfaced. Some additional roads (such as the 15-mile long (25 km) Okinawa Expressway) and a 3-mile (5 km) causeway to Henza and Miyagi Islands have been built since, but the major efforts have been in upgrading existing roads. All major coast and cross-island roads are now hard surfaced. Figure D-5 shows the major roads and highways on Okinawa.

2. AIR TRANSPORTATION

Five scheduled airlines service Okinawa through the Naha International Airport (formerly NAF Naha). The U.S. Military Airlift Command (MAC) schedules flights between Kadena Air Base and such diverse destinations as Norton AFB, California; Yokota, Japan; Korea; and Clark Air Base, Philippines, with an average of three flights per day.



WATER DAMS & RELATED WATERSHEDS

FIGURE D-6

3. OCEAN TRANSPORTATION

Daily ocean passenger services is available between Naha and the outlying Ryukyu Islands as well as mainland Japan. Automobile ferry service is also available.

Ocean freight is delivered and picked up at Naha: at the old Army controlled port and the "New" Naha Harbor, 1 or 2 miles north. Shipments are either break-bulk or roll-on/ roll-off containers because there are no shoreside container cranes to handle loading and offloading operations.

I. UTILITIES

1. WATER

Water resources on Okinawa have traditionally been considered adequate, except for drought periods when potable water is rationed. The island-wide water resources are controlled by two political entities. The Government of Japan (GOJ) controls most of the supply, but until recently, was providing only 30 to 40 percent of the total supply except during periods of drought, when sources controlled by the Okinawa Prefecture Enterprise Bureau (OPEB) could not provide the balance of 60 to 70 percent of demand. In these cases, GOJ would increase the allocation to 50 or 60 million gallons per day, depending on the severity of the drought.

The Fukuji Reservoir, designed and constructed by the U.S. Army Corps of Engineers in the late 1960's to hold a maximum storage capacity of 13.6 trillion gallons, is the largest source of water in Okinawa and is fully controlled by GOJ. In recent years, GOJ started construction work to upgrade the storage capacity at Fukuji to cope with projected increased demand.

The development and modernization of Okinawa has resulted in a constant increase in demand for water by the local and military population as well as the industrial sector. The average daily demand for water in 1982 was 89 million gallons against a minimum average daily supply of water of 87 million gallons.

The average daily demand for water was projected to increase to 123 million gallons by 1985 and to 140 million by 1990.

As of mid-June 1985, the actual average daily demand, however, was below 100 million gallons per day. Also, as of mid-June 1985, GOJ was providing for 60 percent of the average daily demand from the Fukuji Reservoir, with the remaining 40% of supply originating at OPEB controlled sources.

The percentage of total demand provided by GOJ controlled sources is not a fixed permanent amount. This contribution is established based on agreement between GOJ and OPEB, with periodic adjustments depending on the season and available volumes stored in the reservoirs at that particular time.

GOJ increased the storage capacity of the Fukuji Reservoir using two different techniques. First, the dam and spillway height were raised to increase storage capacity. Second, the outlets of four new reservoirs were designed to empty directly into Fukuji reservoir. The completed reservoirs are Arakawa, Aha, Fukugawa, and Benoki, with a combined available raw water supply of 127 million gallons per day.

By 1990, the GOJ plans to increase the average daily water supply to 165 million gallons per day by improving the Hijagawa water supply and constructing additional dams at Heinan, Okukubi, Haneji and Kanna.

The OPEB controlled water resources consist of the Tengan, Kin, and Sukeyama Reservoirs, the run off from a few drainage ditches or streams which is collected during and after rainstorms (if the reservoirs are not overflowing), and deep wells (they have some inside Kadena Air Base).

The possibility of obtaining ground water in other areas south of Kadena has been explored but the treatment of quantities and quality of water available has been determined not to be cost effective. Presently, only a few gasoline service stations are using water from wells to wash automobiles.

The OPEB will not consider treating water from drainage ditches and streams within the heavily populated southern portion of Okinawa. The storm drainage systems in the southern portions of Okinawa is highly contaminated by industrial and household wastes. The quality of potable water generated from these sources would be poor when compared with existing OPEB and GOJ sources. Except for Camp Schwab, the Northern Training Area (NTA), and portions of Camps Foster/Lester, potable water provided to U.S. Bases on Okinawa by municipalities is from OPEB's distribution lines.

The water supply at NTA consists of a small stream intercepted and treated in a new water treatment plant constructed in 1984 and pumped into a pressure tank inside the plant.

Figure D-6 shows the water dams and related watersheds on Okinawa.

Typical water treatment includes coagulation, flocculation, clarification, filtration, pH adjustment and chlorination. The normal water supply to Camp Foster and the Air Station originates at the Koza Water Treatment Plant (Tybase) in the northeastern side of Kadena Air Base. However, to preclude complaints from the local population on the differences in hardness level of potable water produced by different treatment plants, water from different plants is mixed in an attempt to provide a uniform quality to all municipalities.

2. SEWAGE

The Okinawa Perfectural Government and Municipalities south of Kadena operate and maintain local sewage treatment plants and collection systems. Camps Hansen, Courtney and Schwab operate and maintain Marine Corps owned sewage treatment plants, constructed by the Government of Japan during the early 1980's. Thsee plants are adequate for present and future requirements.

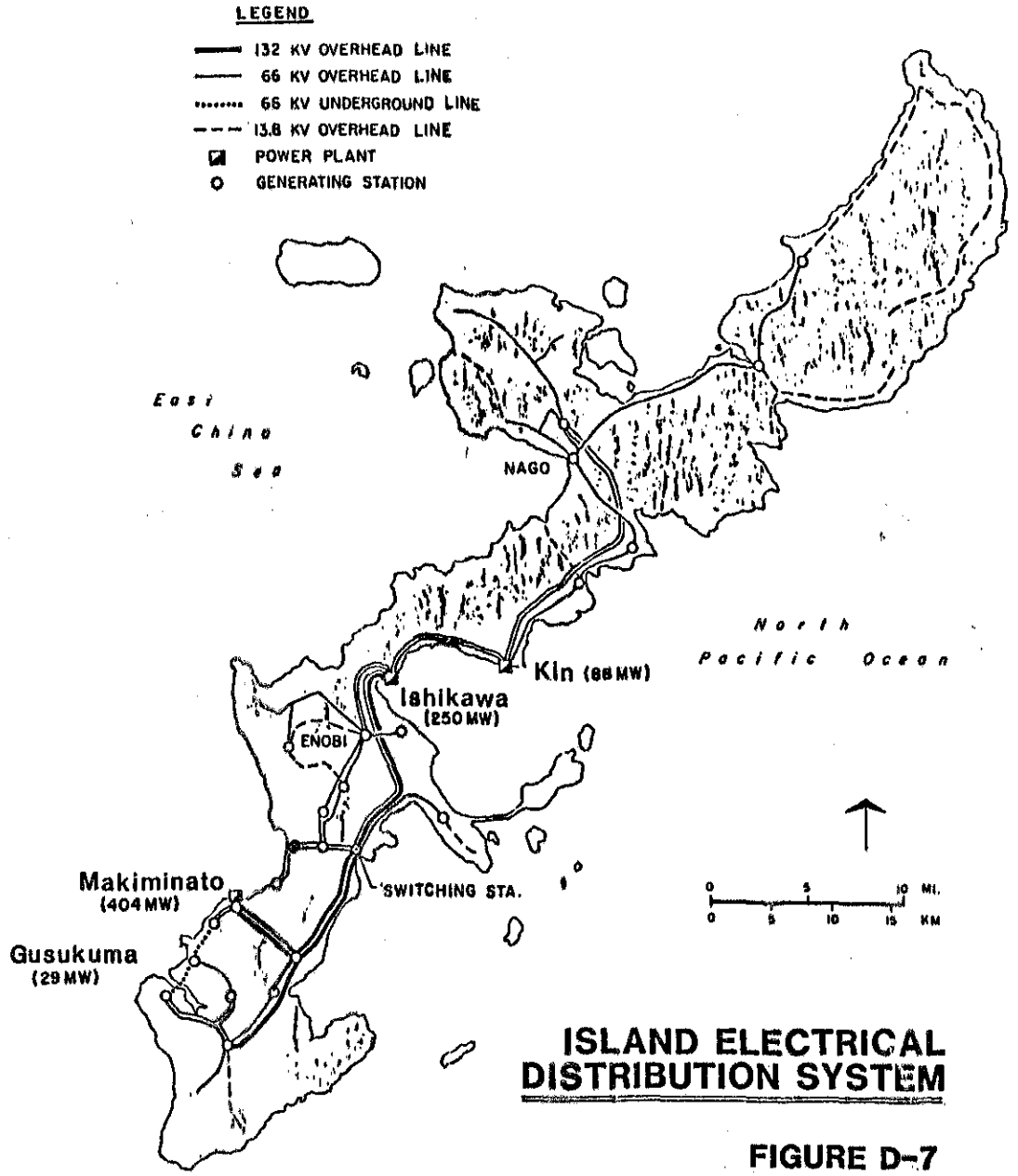
3. COMMERCIAL POWER SYSTEM

All of the island power is provided by the Okinawa Electric Power Corporation (OEPC), as shown by Figure D-7. OEPC has four power plants with the following capacities:

TABLE D-1
OEPC GENERATORS

	NO.	CAPACITY (MW)	Total (MW)
Gushukuma	1	29.0	29
Makiminato	4	130.0	520
Ishikawa	2	125.0	250*
Kin	4	22.0	88
TOTAL			887

* Note: To be increased to 406 MW in 1986, and to 562 MW in 1987.



ISLAND ELECTRICAL DISTRIBUTION SYSTEM

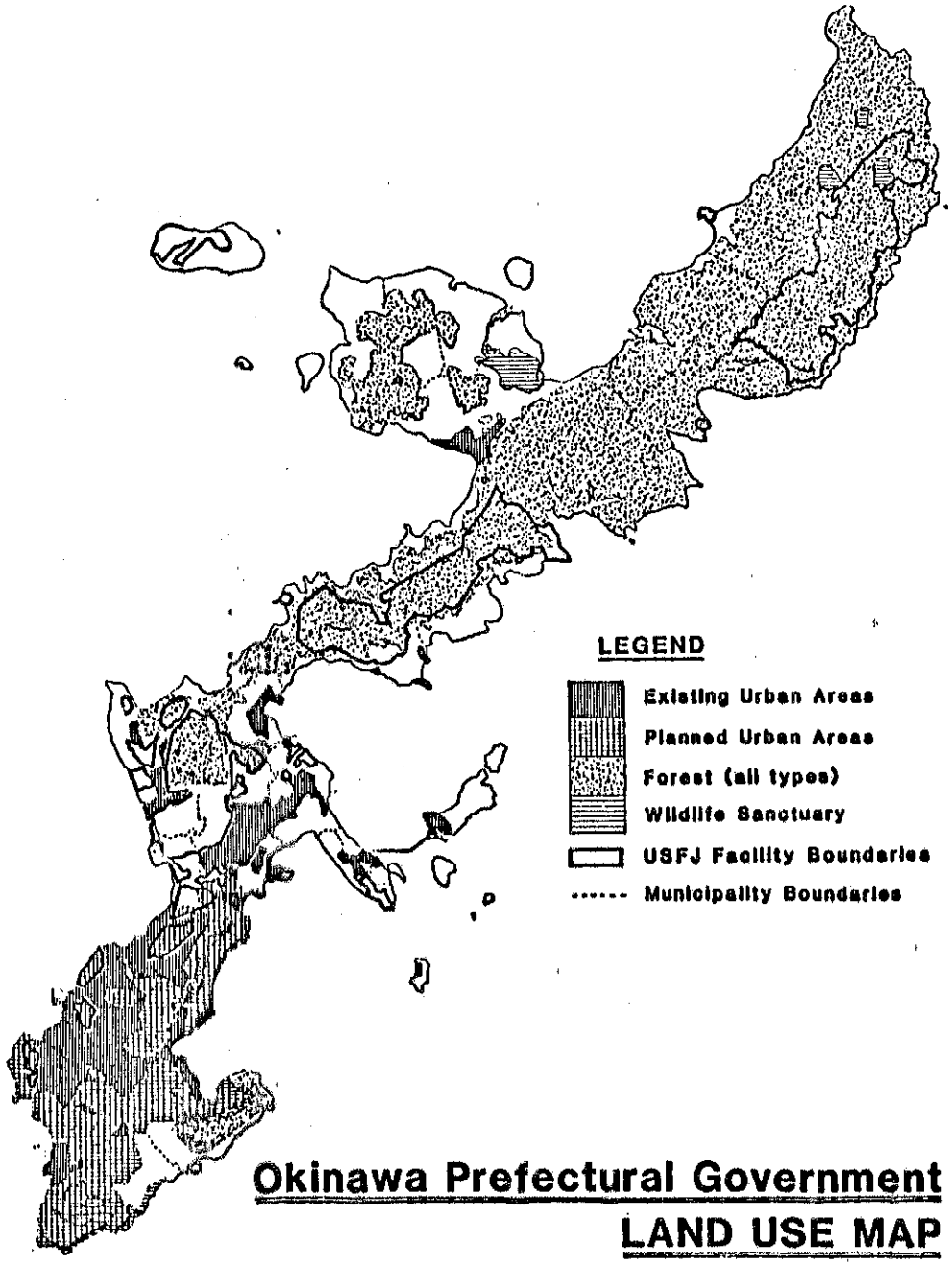
FIGURE D-7

4. SOLID WASTE

Solid waste disposal throughout Okinawa is by sanitary landfill. A maintenance service contract for solid waste disposal is issued through OICC Okinawa and managed by the Camp Butler Facilities Maintenance Officer. It requires proper disposal of solid wastes.

J. LAND OWNERSHIP

The singularity of Okinawan real estate lies in the subdivision of privately owned land divided into often minute fragments of varying shapes. For example, at one time, the U.S. held, under private lease arrangement, approximately 51,000 acres which consisted of about 139,000 separate parcels belonging to some 38,000 different landowners. Land utilization studies conducted by the Japanese Government in the 1970's indicate that most of northern Okinawa is covered by forest and scattered cultivated areas while most of southern Okinawa is characterized by cultivated and built-up (urbanized) areas, with paddies, scrublands and grassland scattered throughout the island. Land use on Okinawa is illustrated by Figure D-8.



Okinawa Prefectural Government

LAND USE MAP

FIGURE D-8

K. CULTURAL PROPERTIES

The Cultural Properties Protection Law of April 1974 designates Historic Sites, Places of Scenic Beauty and Natural Monuments throughout Japan which are worthy of protection. Standards for the Historic Sites designation include shell mounds, ancient burial mounds, palace remains, Shinto shrine and Buddhist temple remains, checking station remains, etc., which are of scientific value in appreciating the history of Japan.

The "Places of Scenic Beauty" designation includes bridges, gardens, mountain torrents, beaches, mountains, etc., which are of scientific value or excel in scenic beauty.

The "Natural Monuments" designation includes animals (and their habitats) which are well known or unique to Japan. Flora designated as natural monuments include rare trees, giant trees, primeval forests, alpine flora zones, boundary areas for the distribution of flora, etc. Geological features and minerals which are designated natural monuments include rocks, minerals, dykes, river and marine erosional features, limestone topography, lava caves, thermal springs, etc.

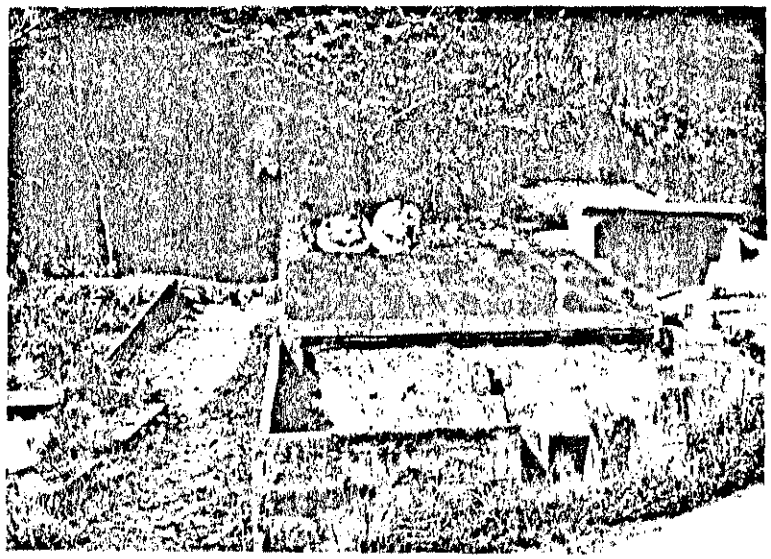
Eight animal species designated as National or Prefectural natural monuments for central and northern Okinawa islands are listed in Table D-2. Natural monuments which are known from other islands of the Ryukyus are not listed here, but are described in various publications of the Okinawa Prefecture Education Commission.

Natural parks are those parks which have been designated under the provisions of the Japan National Park Law. Three classes are designated, depending upon the degree and scale of scenic beauty: National Parks (NP); Quasi-National Parks (QNP) and Prefectural Parks.

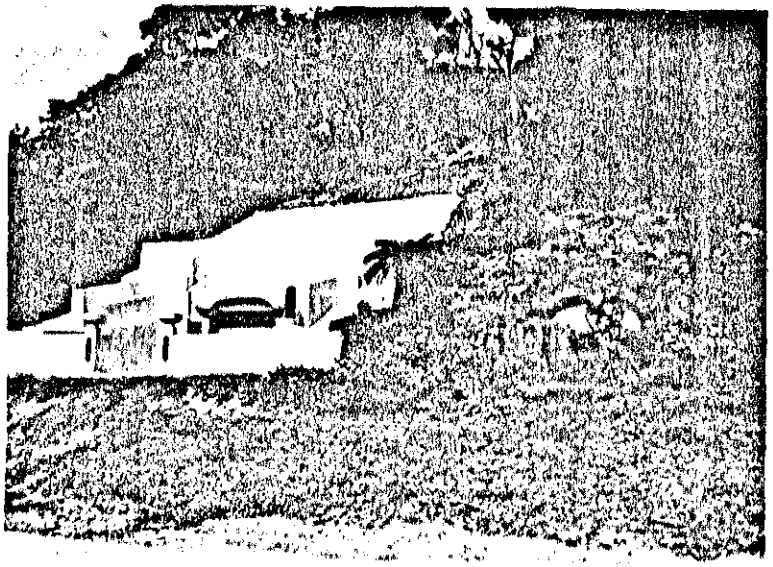
Okinawa island has two Quasi-National Parks. The larger QNP includes most of the western shoreline of central and northern Okinawa (Okinawa Kaigan QNP) while the smaller includes the southernmost tip of the island (Okinawa Senseki QNP). A national park has been designated south of the main island of Okinawa (Iriomote NP). Numerous public (City) parks are also found on Okinawa.

There are many intangible elements which contribute to Okinawa's unique and interesting culture. Some of these could be considered relevant to projects involving wooded areas, streams or other natural areas. Ancient customs often involved veneration of hearth deities and of sacred groves, trees, streams and mountains which were associated with good spirits. Potable water was particularly important to the early Okinawans, and the attribution of divinity of springs and fresh streams is still common. Many of Okinawa's religious beliefs still emphasize love of nature and harmony with the sun, moon tides, storms, trees and hills. These are also expressed in song, dance and oral history.

Tombs are conspicuous and culturally significant elements of the Okianwan landscape. Because of their increasingly important significance as cultural constraints (see Section F), a brief description of tombs and other archeological landscape features is provided as Appendix L-5.



TOMBS AT SOUTH CAMP COURTNEY



"TURTLE-BACK" TOMBS

TABLE D-2
NATIONAL AND PREFECTURAL CULTURAL ASSETS ON OKINAWA

Level	Category	Name	Location
Natl.	Historical Site	Ruins of Agena Castle	Gushikawa City
Natl.	Historical Site	Iha Shellmound	Ishikawa City
Natl.	Natural Monument	Kenaganezumi (Rat)	Northern Okinawa
Natl.	Natural Monument	Noguchi gera (Woodpecker)	Northern Okinawa
Natl.	Natural Monument	Dugong	Waters off Ryukyus
Natl.	Natural Monument	Akahige (Bird)	Okinawa & Yaeyama
Pref.	Historical Site	Ruins of Iha Castle	Ishikawa City
Pref.	Natural Monument	Futao-chu (Butterfly)	Okinawa Is.
Pref.	Natural Monument	Konoha-cho (Butterfly)	Okinawa, Ishigaki, Iriomote
Pref.	Natural Monument	Togenezumi (Rabbit)	Northern Okinawa
Pref.	Natural Monument	Ryukyu Yamagame (Tortoise)	Northern Okinawa

From "Cultural Assets of Okinawa" by the Education Commission of the Okinawa Prefecture, 1975.

2. NATURAL FACTORS

A. LOCATION

Camp Hansen, facility number 6011, is situated along the eastern coastline in central Okinawa near the town of Kin and approximately 5 kilometers northeast of Ishikawa City.

B. PHYSIOLOGY

Camp Hansen is located on level terrain between the high, rugged mountains of the Central Training Area and a dissected terrace dropping off from the town of Kin to the Pacific Ocean. It is physically bounded by the Okinawa Expressway to the north and Highway 329 to the south, seperating the installation from the town of Kin. Constraining slopes of 10% or greater, generally considered unsuitable for construction, are illustrated on the Natural Constraints Map (Plate F-3).

C. GEOLOGY

Camp Hansen is located in the northern physiographic province of Okinawa, characterized by high, rugged mountains broad, flanking deeply disected terraces and an irregular cliffed coast. Broad bays separated by large promontories indent the eastern coast. (The western side of the province is relatively straight with a few promontories and small bays.) As shown by the Geology map (Plate D-1), a normal fault runs northwest to southeast through the camp.

Camp Hansen is predominately late sedimentary rock composed of buff to tan, poorly consolidated and cemented, organic limestone and calcareous gravel (Naha formation).

The calcarenite member of this formation (Tn), accounting for nearly 100% of Camp Hansen proper, is an indistinctly bedded, poorly consolidated partially cemented, buff to yellowish-tan limestone composed of sand-sized particles with much fine powdery calcium carbonite. The sand-sized particles are mostly shell fragments of foraminifers and mollusks. Poorly cemented when first exposed, a hardened surface of well-cemented but porous limestone develops whenever exposed to air for appreciable periods of time.

To the north, the training area bordering Camp Hansen consists primarily of gravel member of the Naha formation (Tng).

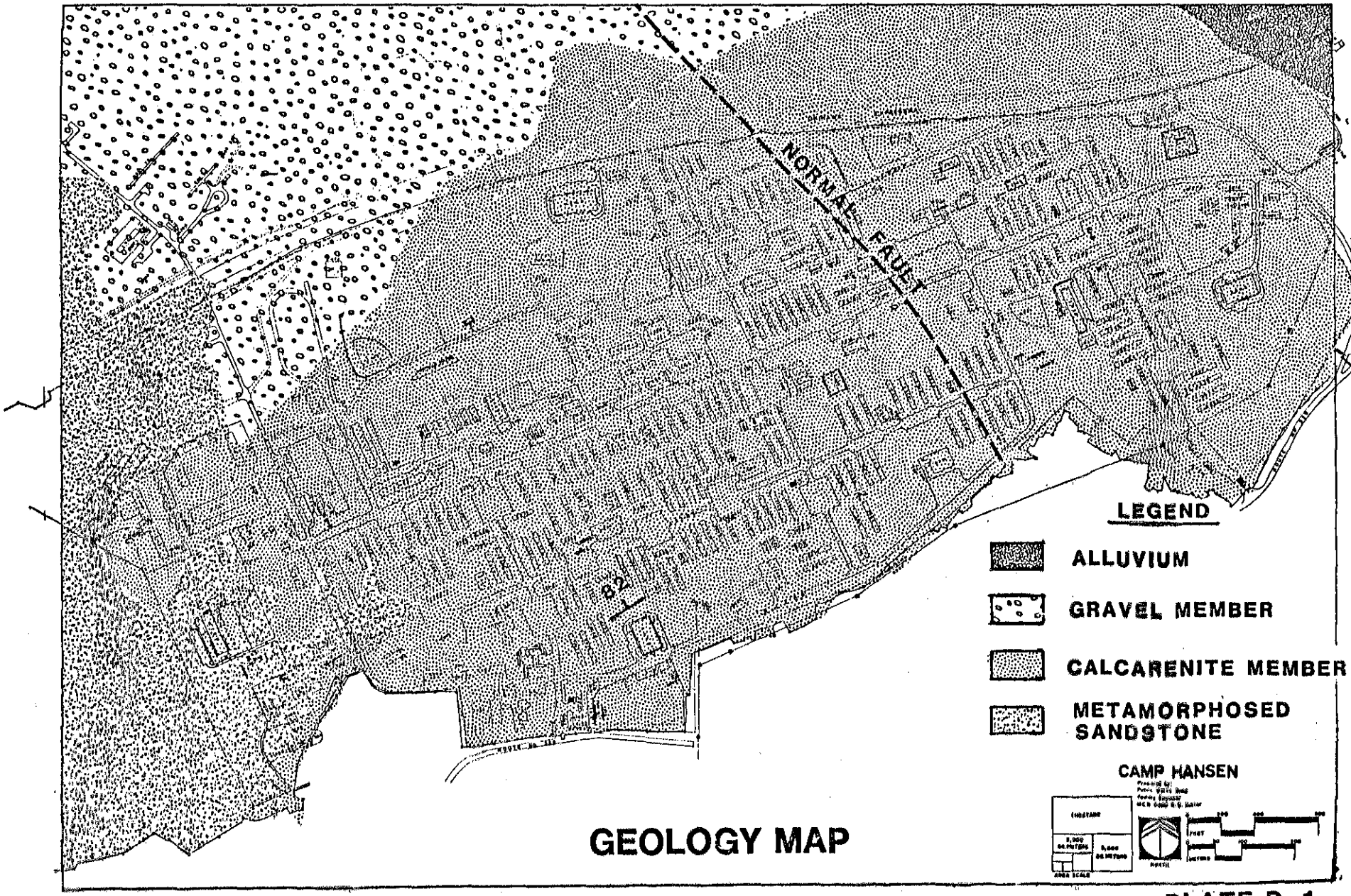
South of Camp Hansen is metamorphosed arkosic, sandstone of Kayo Formation (PK) with interbedded slate, clay slate, phyllite and conglomerate. Most exposures are deeply weathered.

D. SOILS

There are three soil units at Camp Hansen identified on Plate D-2. They are:

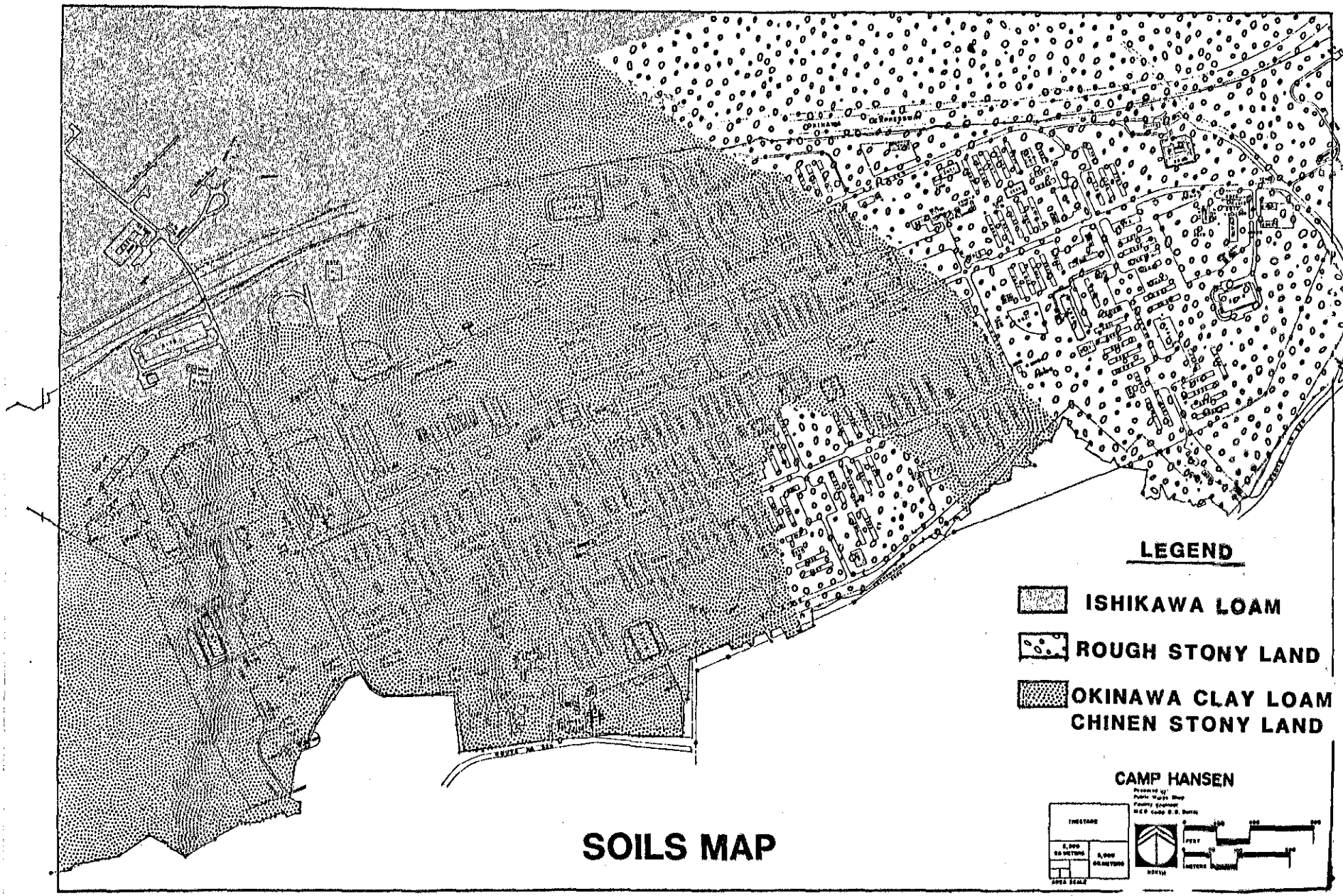
1. OKINAWA CLAY LOAM

Okinawa Clay Loam consists of dark-brown to brown crumbly clay loam, the residuum from



GEOLOGY MAP

PLATE D-1



SOILS MAP

PLATE D-2

raised-reef limestone. The surface gradient ranges from gentling sloping to hilly. The soil is deep, fertile, and well drained. Horizons are faintly developed. Reaction is neutral (pH 7.0) to slightly acid (pH 6.0). Okinawa clay loam is normally well drained (through internal percolation) and the soil depth ranges from 3 to 80 feet, with an average depth between 10 to 20 feet. This soil predominates most of Camp Hansen.

2. ISHIKAWA LOAM

Ishikawa loam consists of deep acid soils, low infertility, well drained, and found on dissected high Marine-terrance remnants. Surface run off is medium to rapid and depth to water table 20-50 feet. Thickness of soil averages is 6 to 30 feet. This soil is found along the northwest border of Camp Hansen adjacent to the Central Training Area.

3. ROUGH STONY LAND

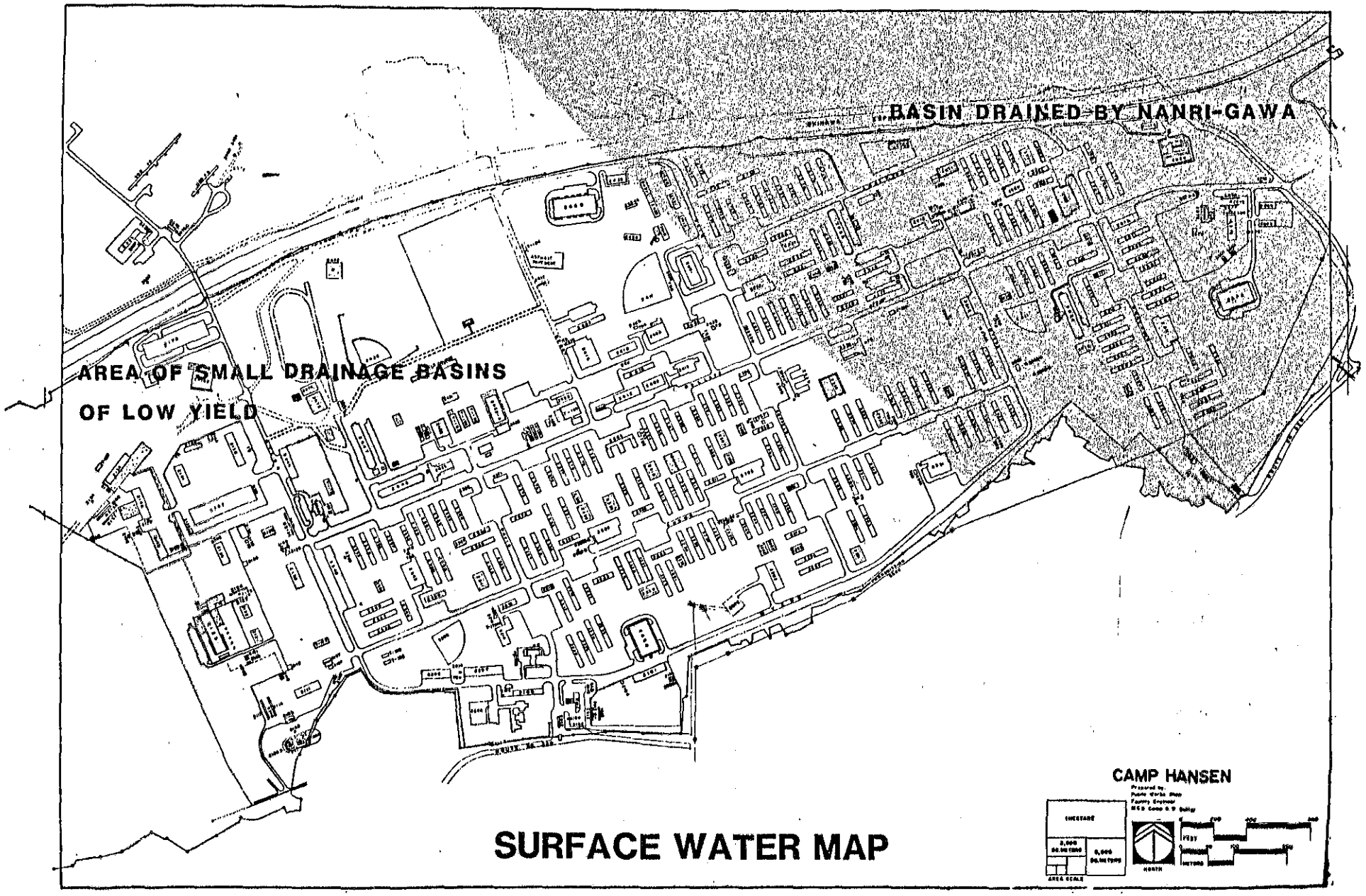
Rough stony land consists of steep or rough stony land with little soil development, made up of limestone outcrops, among which are irregular patches of shallow soil, or pockets of deep soil, similar to Chinen stony clay. 30 - 75 percent of the land is occupied by limestone outcrops, blocks, and bonldeps. The prevailing slopes range from 50 - 100 percent, a substantial portion 25 - 50 percent, and a small portion 15 - 25 percent. Surface runoff is slow to medium, and internal drainage is rapid. Vegetation consists of cutover small pine, brush, grass and a few cycads, whereas original vegetation was probably forest of broad-leaven evergreen and pine. The land is unsuited for corps and is poorly suited for forest. It is found in the northeast corner of Camp Hansen, which drains into the Nanri River.

Soil analysis by the Okinawa Environmental Research Laboratory was conducted at five locations at Camp Hansen (April 1985). The pH ranged from 7.9-8.3, available phosphorous was under .01mg/100g dry soil, and exchangeable potassium ranged from .06-.10mg/100g dry soil was sand between 2.0-0.1mm particle diameter and 40% was clay with a particle diametes below .01 mm. Planting at Camp Hansen requires additional soil environment as per Table D-3.

REQUIRED SOILS NUTRIENT SUPPLEMENT

	Soil	Organic Soil conditioner	Fertilizer N : P : K (12 : 6 : 6
Tree	1 m^3	80kg/ m^3	500g/ each
Shrub	1 m^3	80kg/ m^3	50g/ each

TABLE D-3



SURFACE WATER MAP

PLATE D-3

E. HYDROLOGY

The Nanri-gawa (Nanri River) northeast of Camp Hansen drains an area of 5.2 square miles. Surface runoff contributes 94% of the flow and subsurface runoff about 6%. The ground water probably enters the basin from the limestone area under Camp Hansen. This limestone is capable of yeilding over 200,000 gallons per day from each drilled well. The water is very hard and free from bacterial pollution.

The north third of Camp Hansen contributes surface runoff to the Nanri-gawa while the south two-thirds is an area of small drainage basins of low yield.

The Ground Water Map is reproduced as Plate D-3 and the surface water map as Plate D-4.

Nanri-gawa flowing southeast

F. VEGETATION

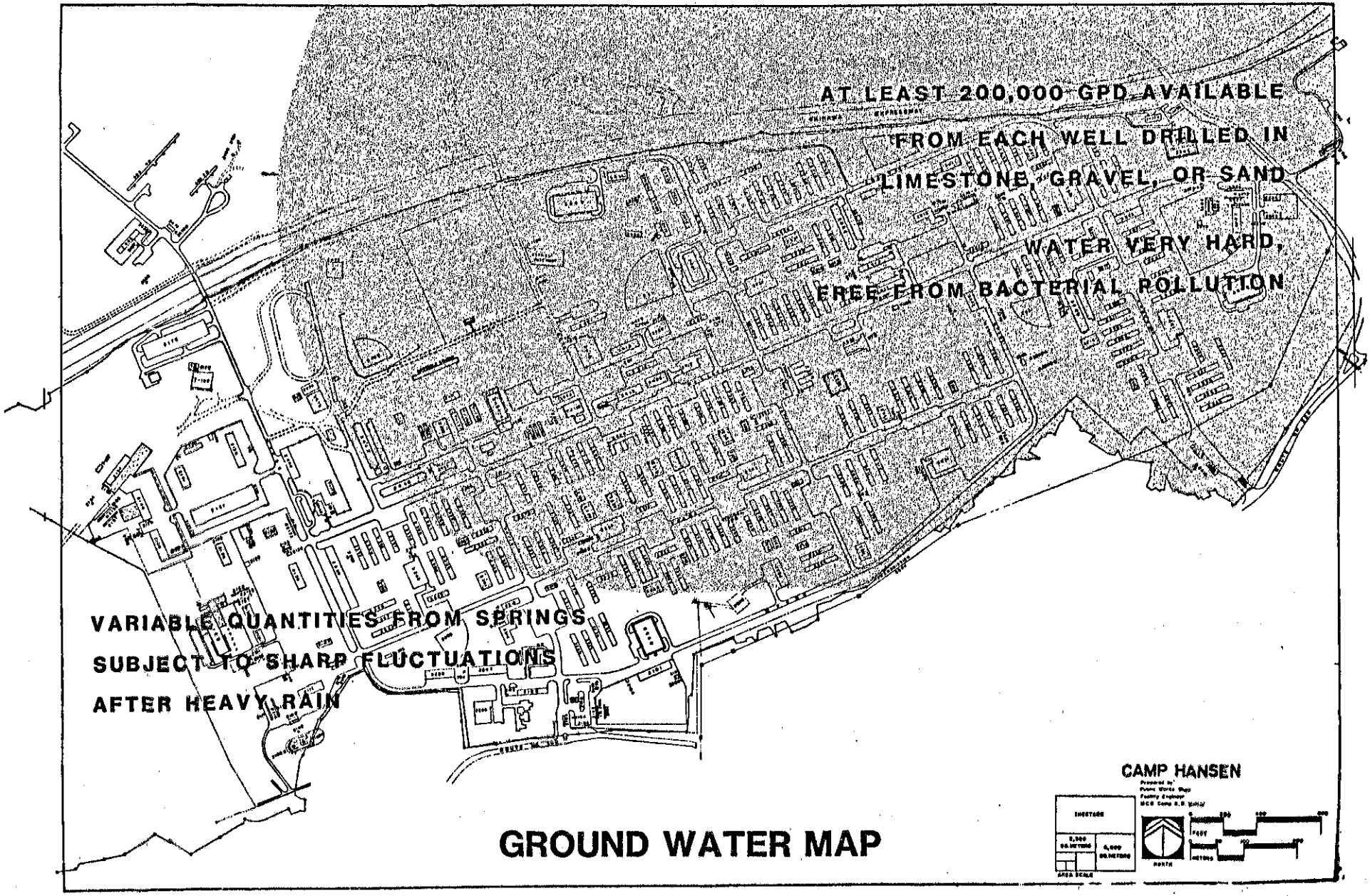
The Natural Constraints map (Plate F-4) illustrates natural areas of vegetation at Camp Hansen. A list of major species is presented as Appendix L-3. The natural vegetation at Camp Hansen is removed during the construction of the Chimmau Airfield, and most vegetation at Camp Hansen represents substitutional planting.

Camp Hansen is located in the northern Okinawan subregion of the evergreen broad-leaved forest zone, characterized by psychotrio-castanopsion sieboldii associations. The surrounding area includes Costonopis Cuspidata forest and pinus lutchuensis substitutional communities.

3. INFRASTRUCTURE

A. ELECTRICAL POWER

Normally, Camp Hansen is serviced by OEPC's 88-Mega Watt (MW) Power Plant located in the Town of Kin. However, power transmission lines are interconnected, in a loop system, and power provided to the camp at any particular time can be originated at any of the other three power plants operated by OEPC. As listed in paragraph 9.c above, OEPC has a total 887 MW generating capacity. Oil is presently used as the only source of fuel for the existing power plants. Two additional generators, presently under construction at the Ishikawa Power Plant, will use coal as fuel. These two 156 MW generators are scheduled to go into service in November 1986 and November 1987, respectively and will

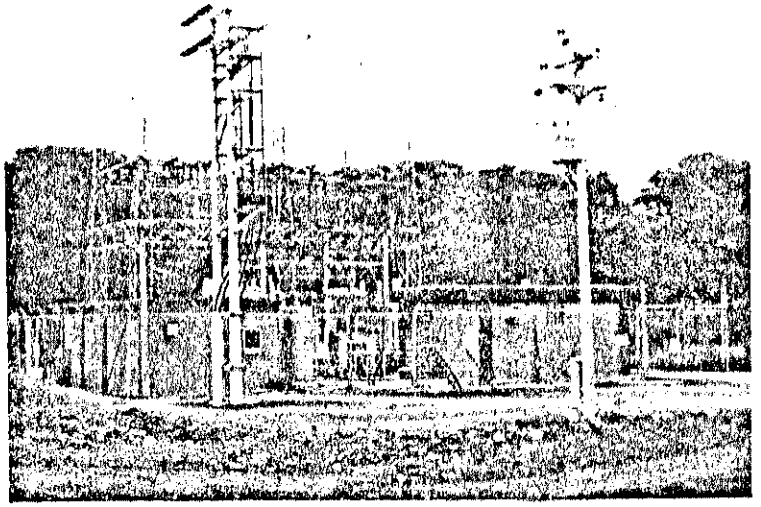


GROUND WATER MAP

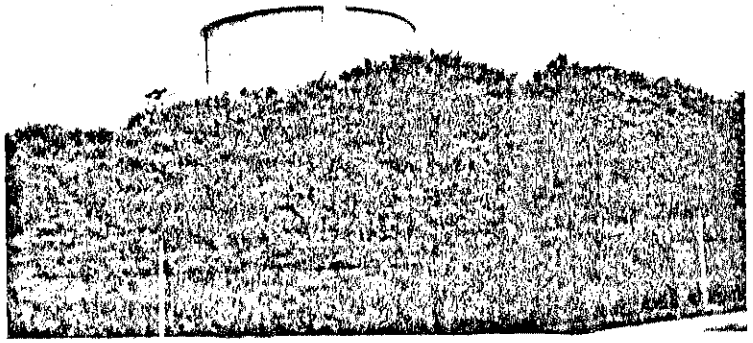
PLATE D-4

increase OEPC's total power generating capacity to 1,199 MW by November 1987. The OEPC owned Kin Sub-station, located inside Camp Hansen, transforms the 66,000 volt (66kv) provided from the power plant to the 13.8 kv primary distribution systems in Camp Hansen. The camp has two primary power distribution systems commonly known as "feeders". Both feeders are simple radial systems and although of identical power characteristics, cannot be interconnected for cross-servicing facilities in the event of failure at one of them because electricity consumption from each feeder is chargeable at different rates. Electricity rates are commercial power and Special High Voltage rates for feeders No. 1 and 2, respectively. Commercial power rates are substantially higher than Special High Voltage which was established to serve mostly industrial areas. Both existing feeders will be replaced under an approved FY85 major repair (M2) project.

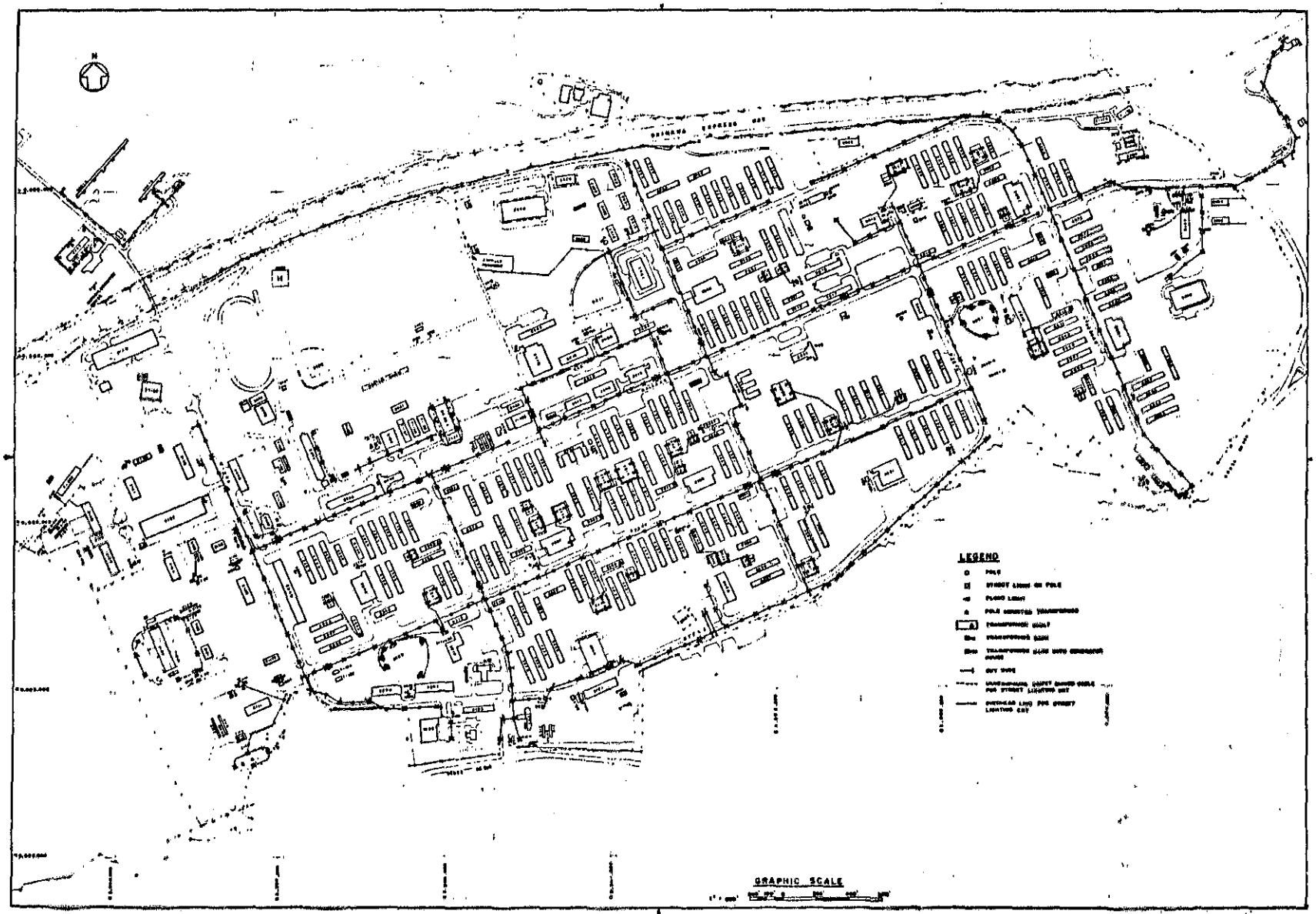
Plate D-5 shows the Primary Electrical System for Camp Hansen and Plate D-6 the street lighting system.



OEPC owned Kin sub-station in Camp Hansen



OEPB owned 100,000 gallon elevated water tank in Camp Hansen



STREET LIGHTING

PLATE D-6

E. COMMUNICATIONS-ELECTRONICS

Military telephone service on Okinawa is provided by the DOD integrated dial network (MITS)--all U.S. owned. Local telephone service for the station is provided by the Marine Corps dial central office at Camp Courtney. Overseas AUTOVON service is provided through manual switchboards at Camp Foster (Air Force) and at Camp Courtney (Marine Corps). The on-base local telephone distribution cable system is an underground plant. The communication system for the camp is shown by Plate D-10.

F. LAND USE AND REAL ESTATE

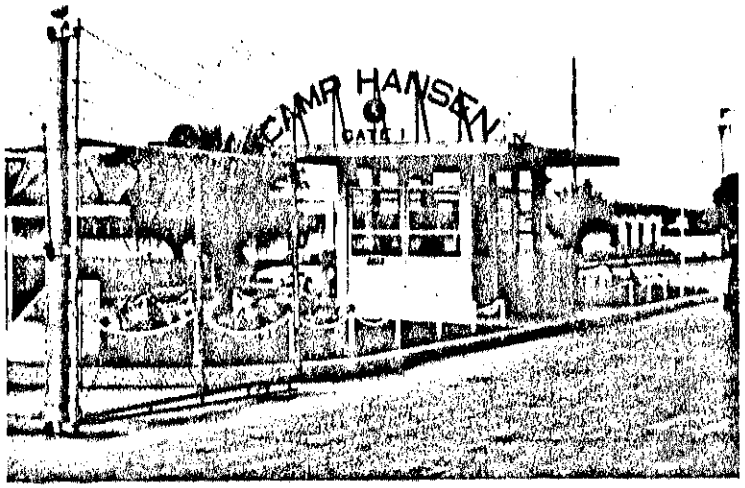
Camp Hansen (Facility Number 6011) contains 12,695.13 acres, including 281.9 acres of improved (paved) surface. 154.95 acres have been released to the Government of Japan since reversion on 15 May 1972. The populated area of Camp Hansen, together with various training areas in the vicinity of Kin, are shown by Plate D-11. Kin Red Beach Training Area (Facility Number 6019) contains four acres, Kin Blue Beach Training Area (Facility Number 6020) contains 97.85 acres, and Ginbaru Training area (Facility Number 6017) contains 121 acres. All training areas assigned to Camp Hansen are shown by Plate D-12, including the Hansen Impact Area and the Hansen North Training Area, both in the Central Training Area (CTA) of MCB Camp Butler. A Real Estate Summary Map is provided as Plate D-13.

Table D-4 tabulates joint use of facilities agreed to with local municipalities and other agencies. 1.24 acres are outgranted to the United Services Organization (USO) for use of Building 2214 and T-179. Other licenses agreements include the outgrant of Buildings T-103 and T-104 to the Bank of Ft. Sam Houston, Building 2420 to the Navy Federal Credit Union and Building 2397 (Telephone Exchange) to the Army AIJCS. Futaba Komuten Company has a license for landfill in association with host-nation construction for Camp Hansen.

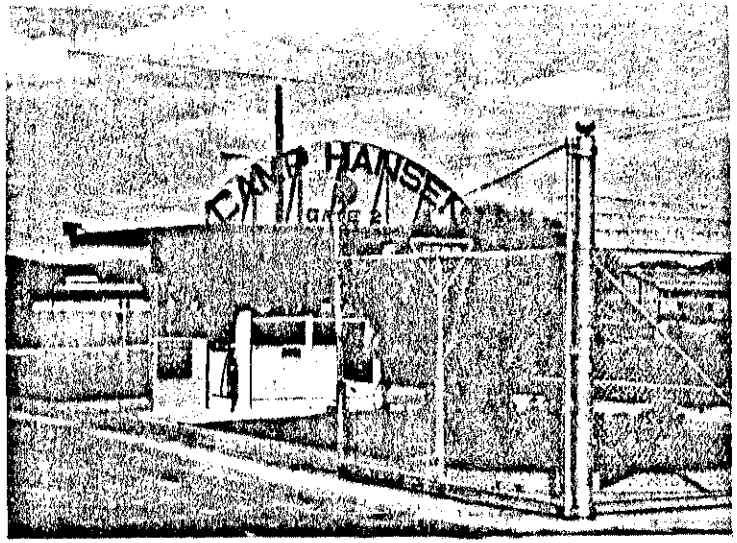
G. BUILDING STRUCTURE

Few structures constructed before 1960 remain at Camp Hansen, which was an airstrip at the close of World War Two. Important facilities are shown on Plate D-14, a Base Locator Map. Existing Land Use is depicted by Plate D-15. The Camp is serviced by two gates providing entry from Highway 329 in Kin. Headquarters units, administrative support facilities, and billeting are concentrated in the central area of the Camp, with Community Support Facilities at the hub. Recreational facilities are located throughout the Camp, with a large open area to the northwest. Maintenance, storage, and industrial facilities flank the Camp to the west and east.

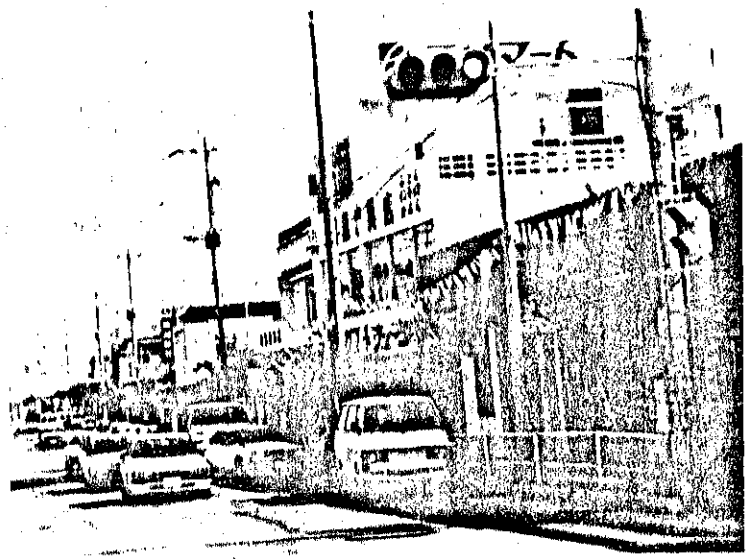
The Okinawa Expressway to the north to some extent seperates the populated area of Camp Hansen from the Hansen Training Area, with the exception of the Confinement Facility and Range Facilities accessed by bridge. As available land south of the Expressway is utilized for construction, sites north of the Expressway must be considered for future projects.



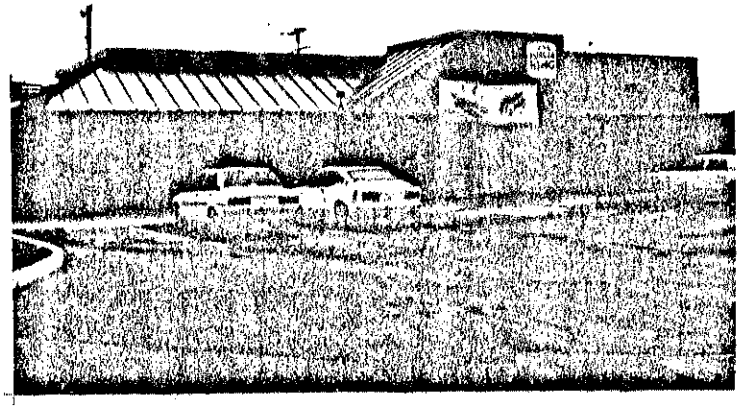
Camp Hansen Gate One



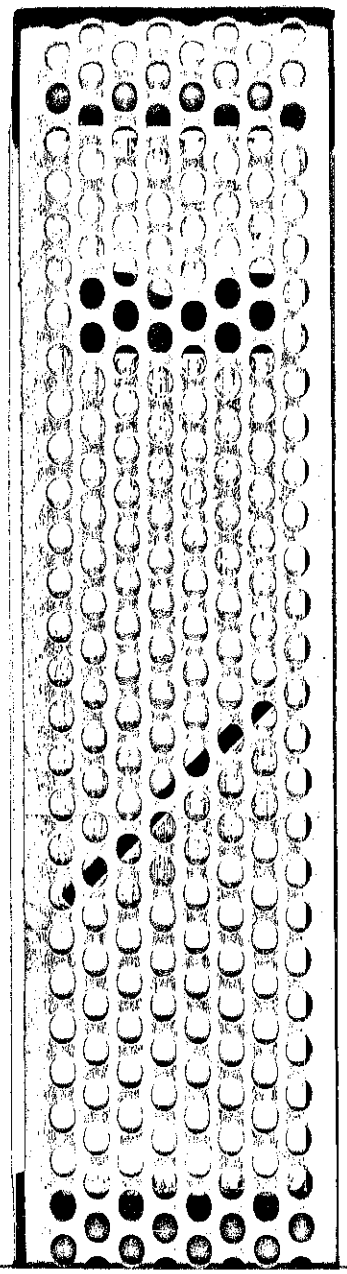
Camp Hansen Gate Two

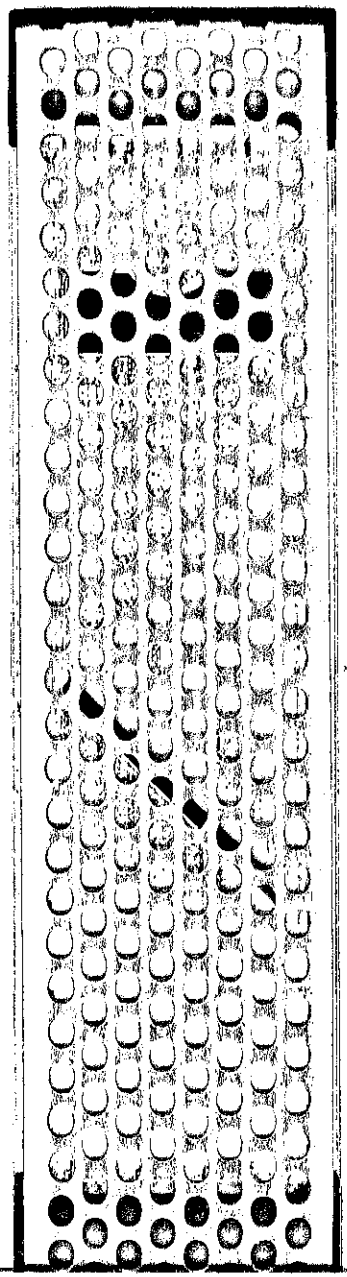


Town of Kin along Highway 329



Burger King





E. REQUIREMENTS ANALYSIS

MCB CAMP BUTLER

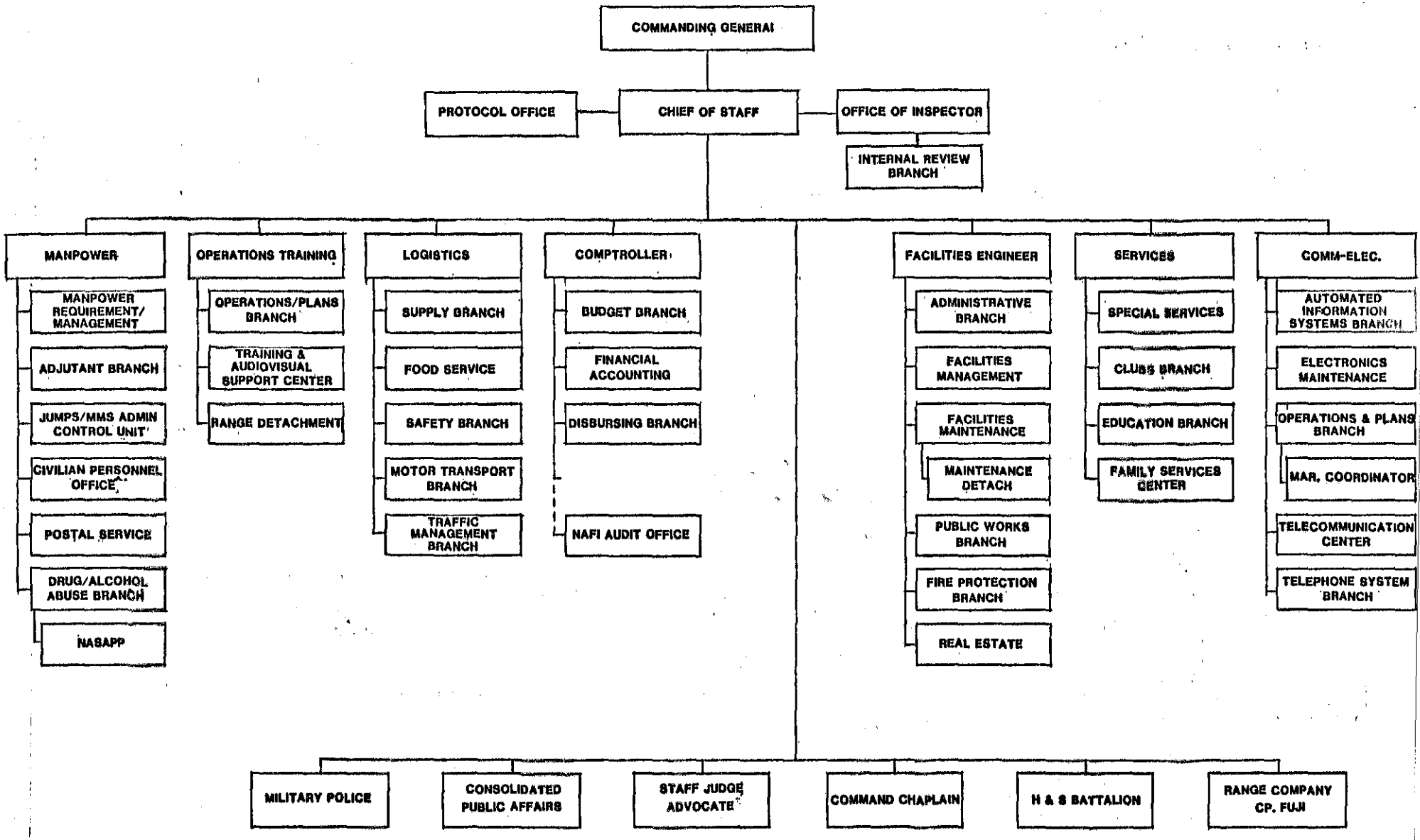


FIGURE E-2

supported by Marine Corps aviation and naval forces. Although it has been specifically designed for participation in amphibious operations, it also has an inherent capability of operating in a sustained land warfare campaign when appropriately reinforced. Because the division does not contain any organic aviation units, these units will normally be attached to, or operate in support of, the Marine division to meet mission requirements, such units would be assigned from Marine Aircraft Wings (MAWs). The organization of the 3d Marine Division is illustrated by Figures E-3

The mission of the 3d MARDIV is to execute amphibious assault operations and such operations as may be directed by the III MAF, supported by the 1st MAW and the 3d FSSG. The Headquarters for the 3rd Marine Division is located at Camp Courtney.

Several units of the Headquarters Battalion of the 3d Marine Division are located at Camp Hansen, including Division Schools and Truck Company. Facilities utilized by Truck Company are illustrated by Plate E-2.

C. 9TH MARINE REGIMENT

The 9th Marine Regiment, subordinate to the 3d Marine Division, is headquartered at Camp Hansen, as well as its three Infantry battalions. Facilities are shown on Plate E-3.

The battalions are the basic tactical units with which the regiment accomplishes its mission. Each battalion consists of a headquarters and

3RD MARINE DIVISION

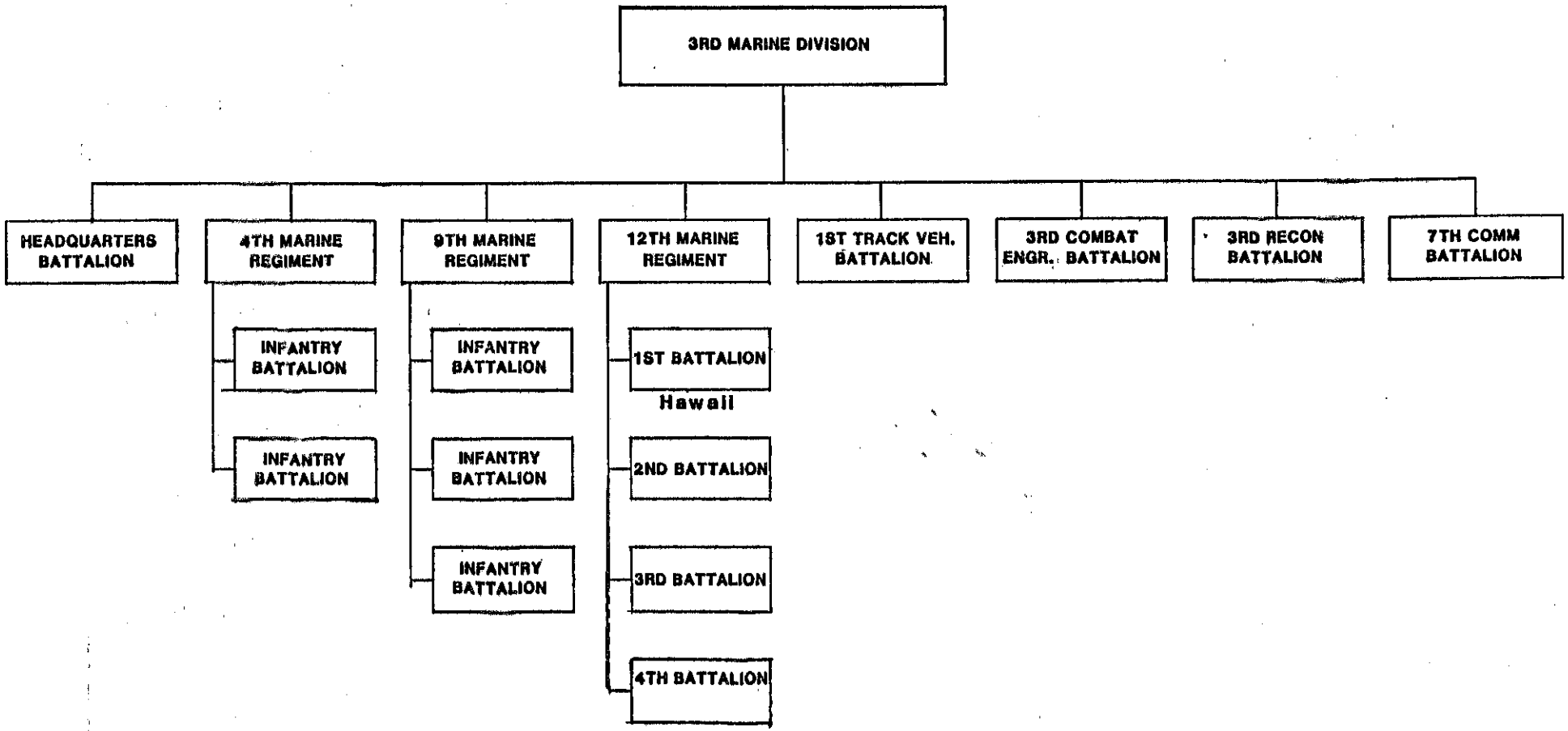
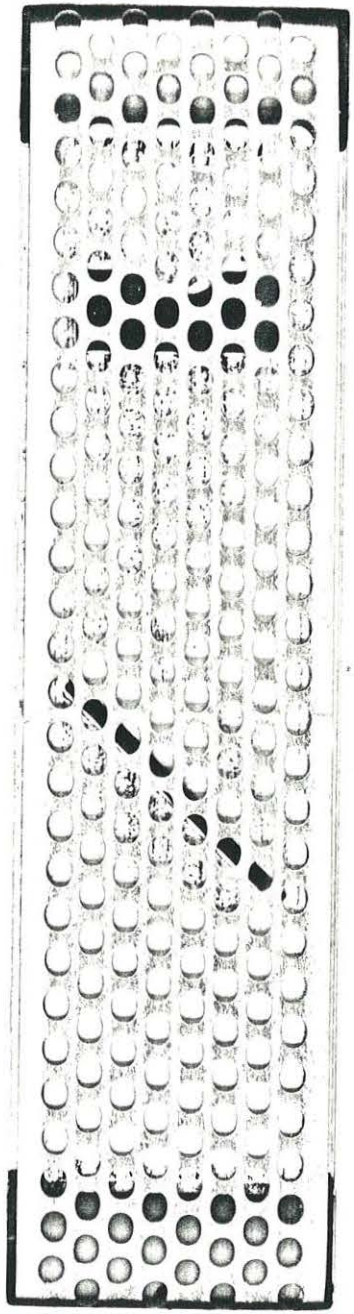


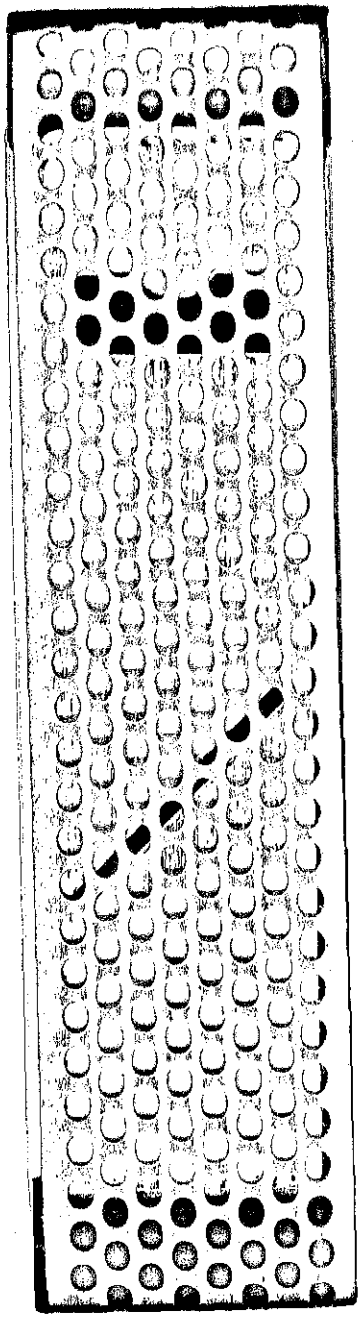
FIGURE E-3

service company, and four rifle companies and a weapons company. The primary mission of the infantry regiment is to locate, close with, and destroy the enemy by fire and maneuver or to repel his assault by fire and close combat. The regiment is the major element of close combat power of the Marine division and, with appropriate attachments, is capable of sustained independent operations. The Regiment, with its organic battalions, is a permanent organization with a staff capable of integrating the efforts or organic, attached, and supporting units.

D. 3D COMBAT ENGINEER BATTALION

The 3rd Combat Engineer Battalion, subordinate to the 3rd Marine division, is located at Camp Hansen. The Combat Engineer Battalion (817 officers and men) consists of a Headquarters and Service company, one engineer support company, and four engineer companies. The Battalion's mission is to increase the combat effectiveness of the Marine division by rendering close combat engineering support of a pioneer nature to meet those essential requirements that are habitual under moderate conditions of climate, weather, and terrain. The battalion provides both tactical and logistic-type support. It is organized to provide one engineer company for each infantry regiment and its associated task elements and one company to provide engineer support for shore party and division rear areas as required. Operations of these companies in support of forward elements will generally be decentralized in the extreme. The engineer support company furnishes personnel, equipment, and appropriate task units for augmentation of





the engineer companies. Construction support will be limited to essentials, highly temporary in nature, and designed to minimum standards to meet basic combat requirements. Reinforcement will be provided to meet requirements generated by inmoderate conditions of climate, weather, and terrain.

Facilities utilized by the 3rd Combat Engineer Battalion are illustrated by Plate E-2.

E. 3D FORCE SERVICE SUPPORT GROUP

The Headquarters for the 3d Force Service Support Group (3d FSSG), operationally under the III MAF, is located at Camp Kinser, although some units of the 3d FSSG are located at Camp Hansen.

The mission of the 3d FSSG is to provide sustained combat service support to the 1st MAW and 3d MARDIV, including isolated components. This includes garrison components, deployed seperately or as part of III MAF, 9th MAB or a MAU, executing amphibious operations and subsequent operations ashore. Facilities used by 3d FSSG on Camp Hansen are shown on Plate E-4.

F. 9TH ENGINEER SUPPORT BATTALION

The 9th Engineer Support Battalion, subordinate to the 3d FSSG, is located at Camp Hansen. Facilities of the 9th Engineer Support Battalion are shown by Plate E-5.

The Engineer Support Battalion consists of a Headquarters and Service company, a support company, a bridge, three engineer companies, and two back fuel companies. It has the general mission of increasing the combat effectiveness of the landing force by accomplishing general engineer missions of deliberate nature. Within the battalion, the bridge company maintains, six foot-bridges (maximum length each---315 feet) and three fixed aluminum panel highway bridges (maximum length each---276 feet) to support the heaviest loads of the landing force. The battalion is also capable of providing technical supervision for the construction of bridges and rafts. (Personnel to emplace bridges must come from the engineer companies). The two bulk fuel companies are each capable of operating eight amphibious assault bulk fuel systems, each with a capacity of 600,000 gallons.

G. 3D MEDICAL BATTALION

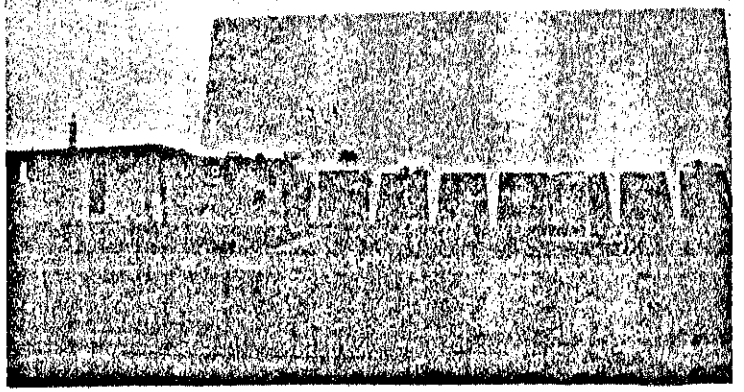
The 3d Medical Battalion, subordinate to the 3d FSSG, is located at Camp Hansen. The Medical Battalion consists of one Headquarters and Service company, five collecting and clearing companies, and a hospital company. Its primary mission is to provide for collection, clearing, and/or treatment of sick and wounded in support of MAB-sized or greater units. Its hospital company provides resuscitation and primary definitive surgical facilities as well as the ability to establish a 200-bed hospital for relatively minor wounded, sick, and/or injured personnel. Facilities are shown by Plate E-6.

H. 3D DENTAL COMPANY

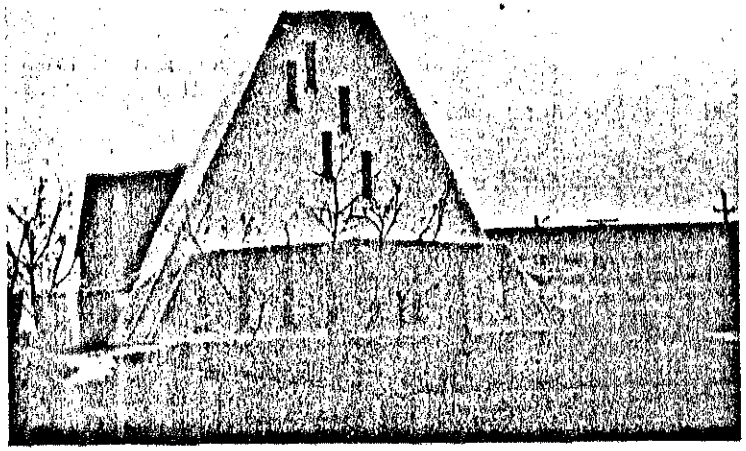
The Camp Hansen Dental Clinic is staffed by personnel of the 3d Dental Company, 3d Dental Battalion, 3d FSSG. This battalion is headquartered at Camp Kinser. There are four dental companies in the FSSG. Each is capable of being deployed as a unit or providing detachments for elements of the division, wing, or any site Marine air-ground task force (MAGTF). The unit deployed has the ability to maintain the dental health of its supported unit and provide specialized care of casualties who have sustained injuries and the face and mouth. Facilities are shown by Plate E-6.

I. EOD

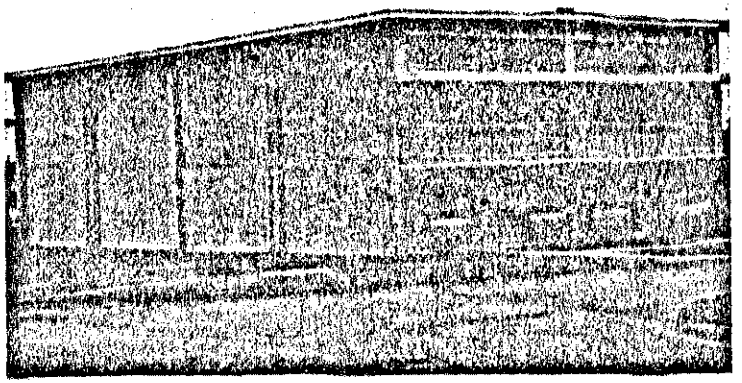
Tne Explosive Ordinance Disposal (EOD) unit is organic to Ammunition Company, 3rd Supply Battalion, 3rd FSSG. Facilities are shown on Plate E-2.



Chapel, Building 2538



Chapel, Building 2435



Handball Court, Building 2437

COMMUNITY SUPPORT FACILITIES

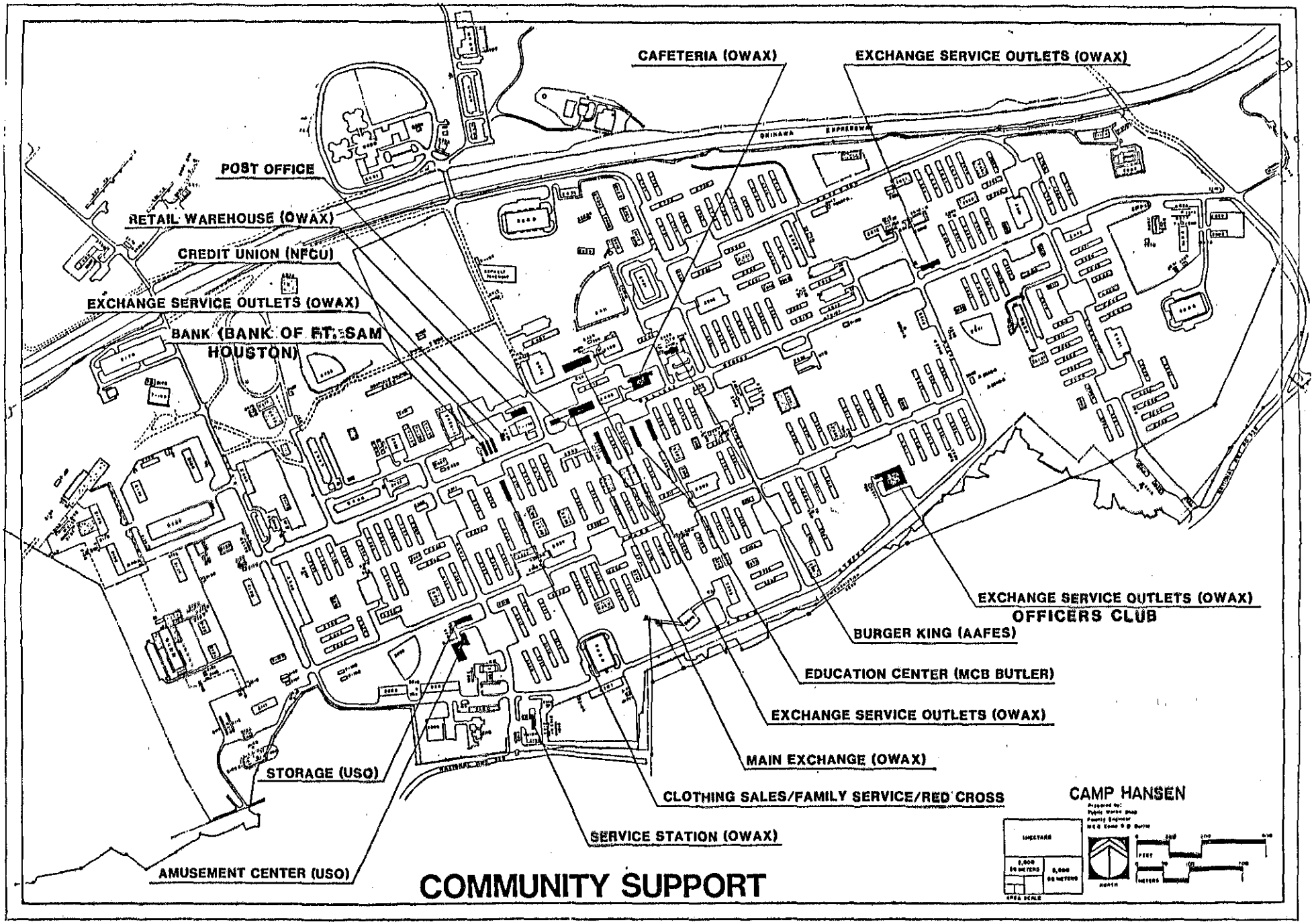

CAFETERIA (OWAX)
EXCHANGE SERVICE OUTLETS (OWAX)
OKINAWA EXPRESSWAY
POST OFFICE
RETAIL WAREHOUSE (OWAX)
CREDIT UNION (NFCU)
EXCHANGE SERVICE OUTLETS (OWAX)
BANK (BANK OF FT. SAM HOUSTON)
EXCHANGE SERVICE OUTLETS (OWAX)
OFFICERS CLUB
BURGER KING (AAFES)
EDUCATION CENTER (MCB BUTLER)
EXCHANGE SERVICE OUTLETS (OWAX)
MAIN EXCHANGE (OWAX)
STORAGE (USO)
CLOTHING SALES/FAMILY SERVICE/RED CROSS
SERVICE STATION (OWAX)
AMUSEMENT CENTER (USO)
CAMP HANSEN
COMMUNITY SUPPORT

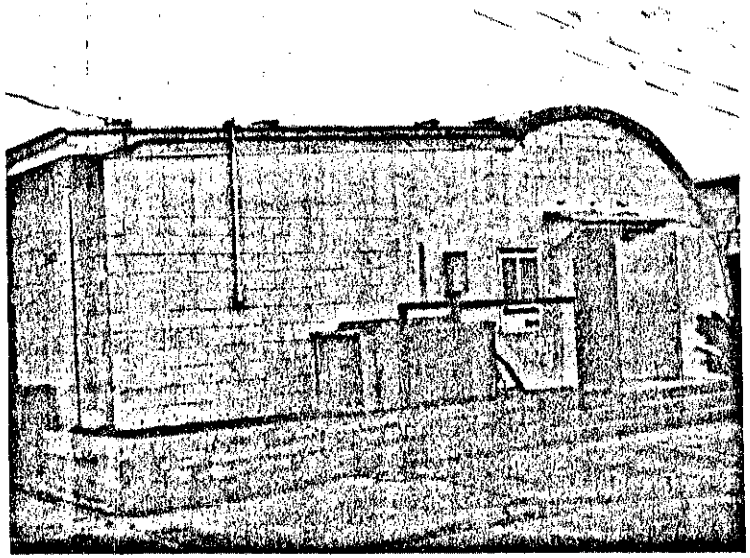
PLATE E-7

J. RED CROSS

The American Red Cross acts as medium of communication between the American people and their Armed Forces. Emergency communication service relative to illnesses, deaths, births, marital and other family problems, is available on a 24-hour basis through the message centers of the military services. Facilities are shown on Plate E-7.

K. BANK OF FT. SAM HOUSTON

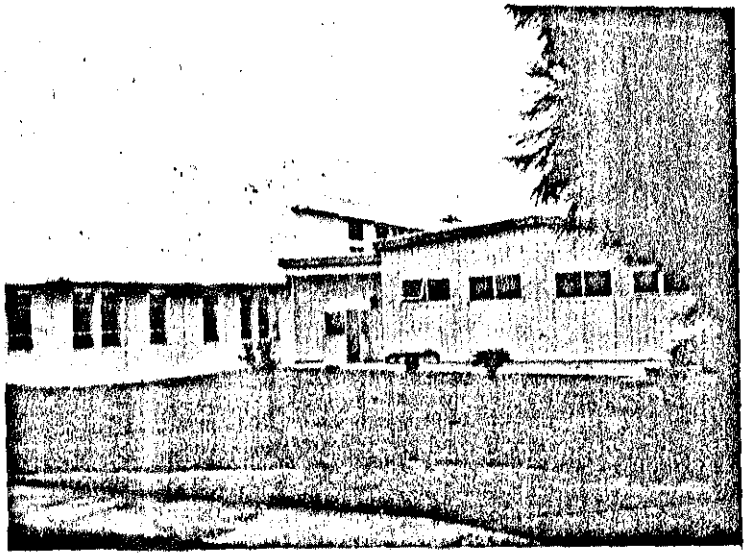
The Bank of Fort Sam Houston has been authorized by the Department of Defense to operate military banking facilities at various bases on Okinawa for the exclusive use of Armed Forces personnel and their dependents. The military service operating the respective bases furnish all facilities support. Facilities are shown on Plate E-7.



Bank of Ft. Sam Houston, Building T-103

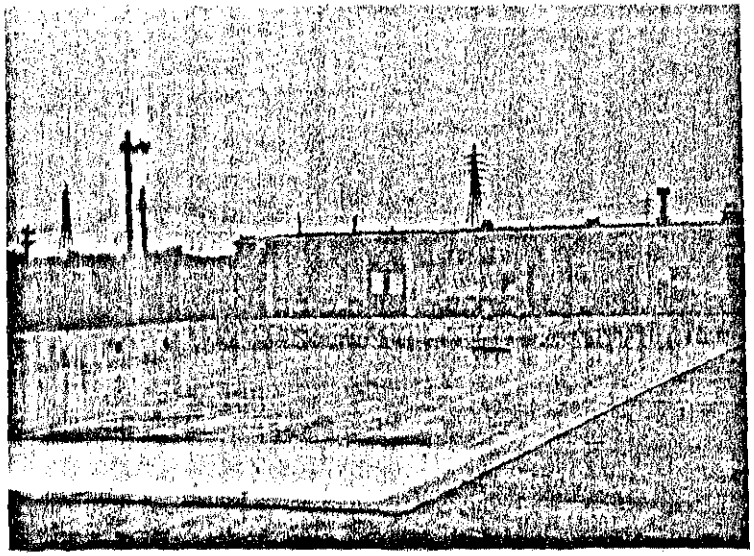
L. OWAX

The Army/Air Force Okinawa Area Exchange (OWAX) overseas all Exchange operations on Okinawa. Employment is about 650 American civilians, largely dependents of Armed Forces personnel and about 800 local nationals to provide service to approximately 55,000 authorized customers. The Okinawa Exchange system includes 30 retail branches, 49 food service outlets, 5 gas stations and over 275 personnel service concessions. Facilities are situated at Camps Kinser, Courtney, McTureous, Hansen, Schwab, Foster, Onna Point, Shields, and Lester, at MCAS Futenma, the Northern Training Area, White Beach, Torri Station, and Kadena Air Base. The headquarters for OWAX is situated at Camp Lester. User locations are illustrated by Plate E-7.

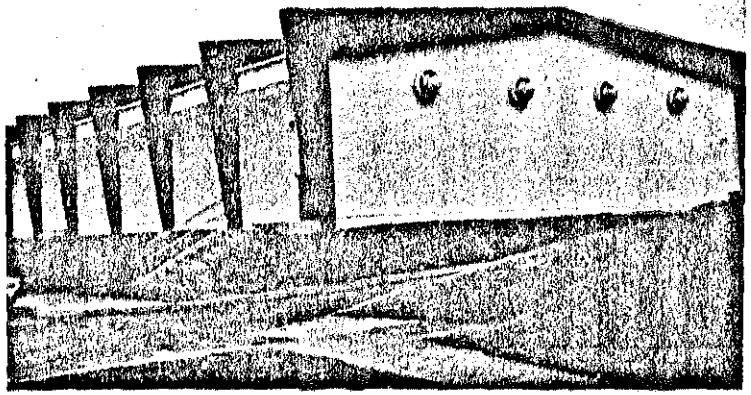


Gymnasium, Building T-165

Main Theater, Building 2416

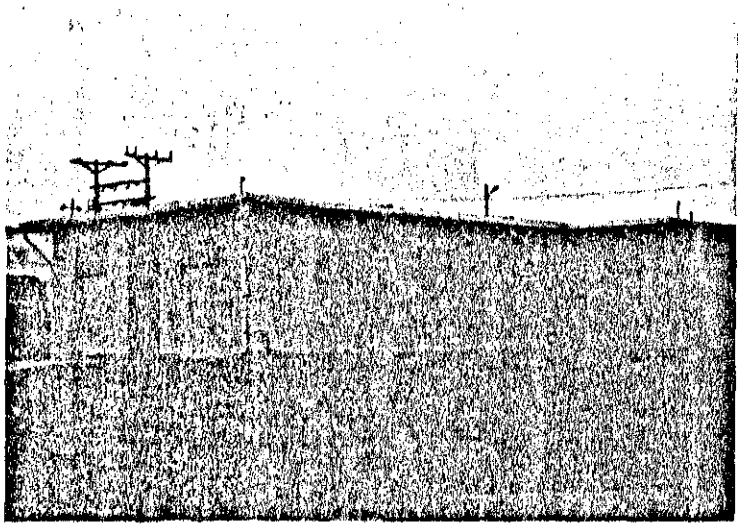


Swimming Pool, Facility 2428-A

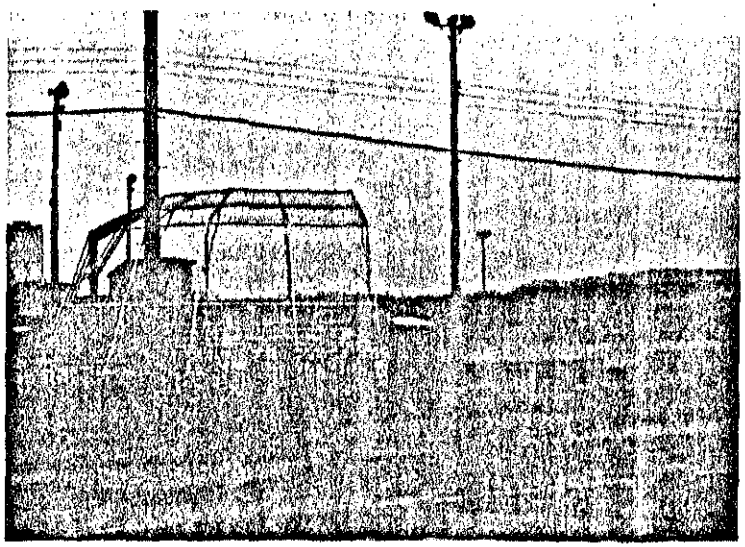


Bowling Center, Building

COMMUNITY SUPPORT FACILITIES

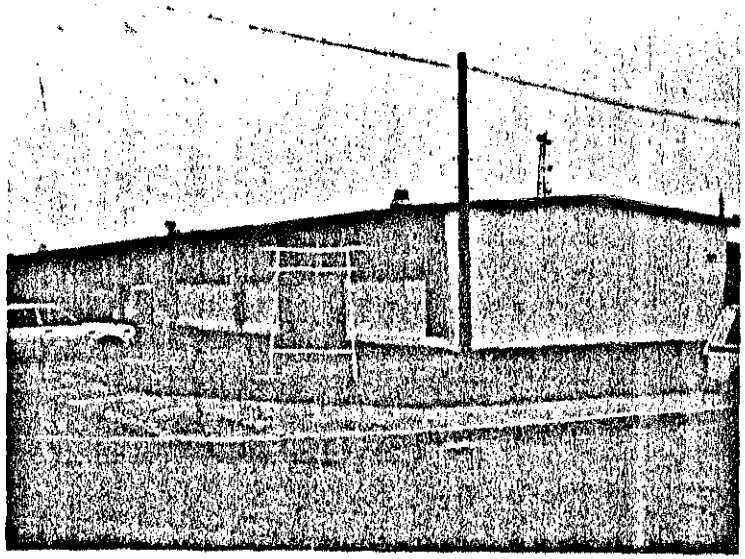


Navy Federal Credit Union, Building 2420



Ballfield vicinity Building 2401

USO, Building 2214



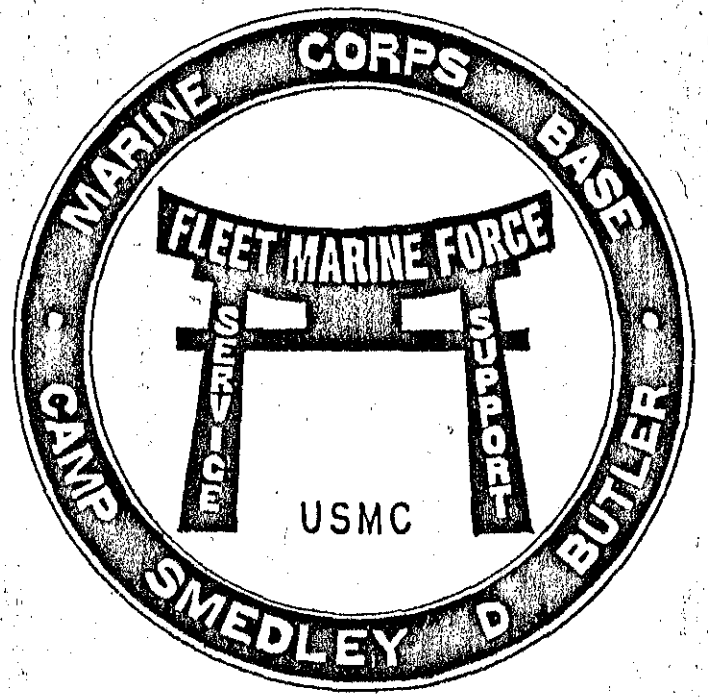
Library, Building 2412

COMMUNITY SUPPORT FACILITIES

FOUO/NOFORN

CAMP HANSEN

MASTER PLAN

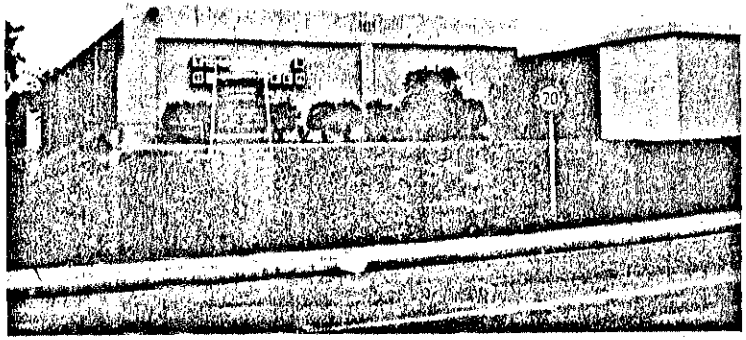


OKINAWA, JAPAN

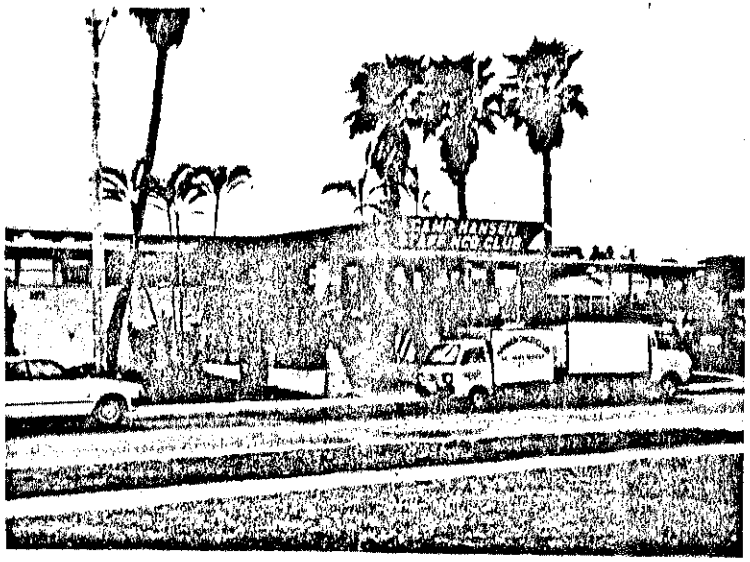
PREPARED BY: FACILITIES ENGINEER MCB CAMP BUTLER OKINAWA, JAPAN

December 1986

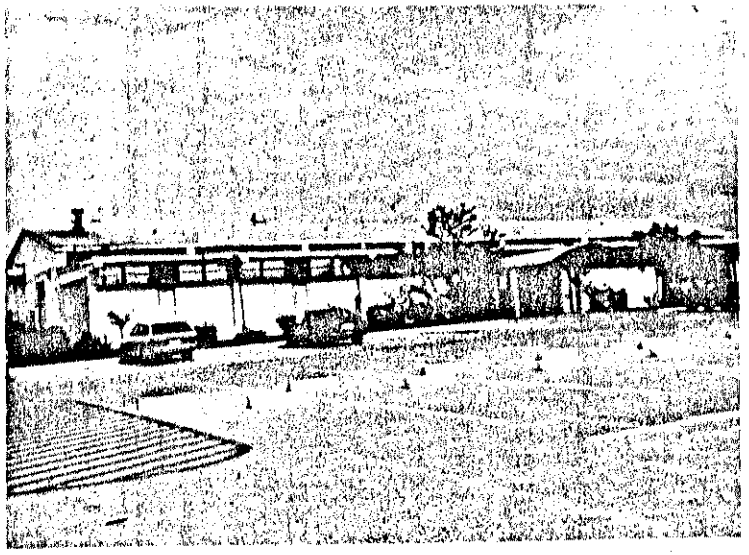
FOUO/NOFORN



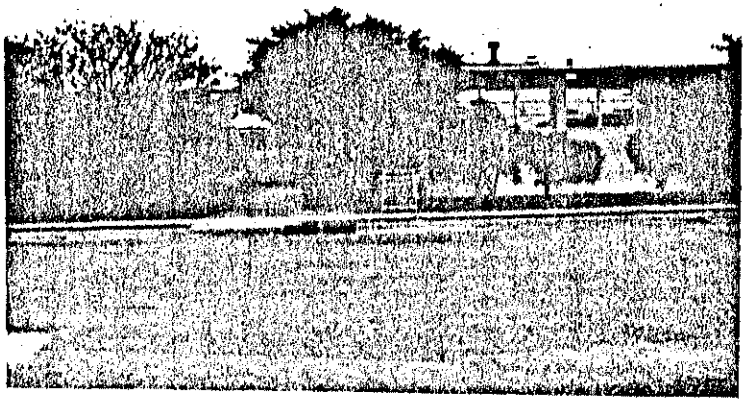
Buccaneer Cafeteria, Building 2415



Staff NCO Club, Building 2408

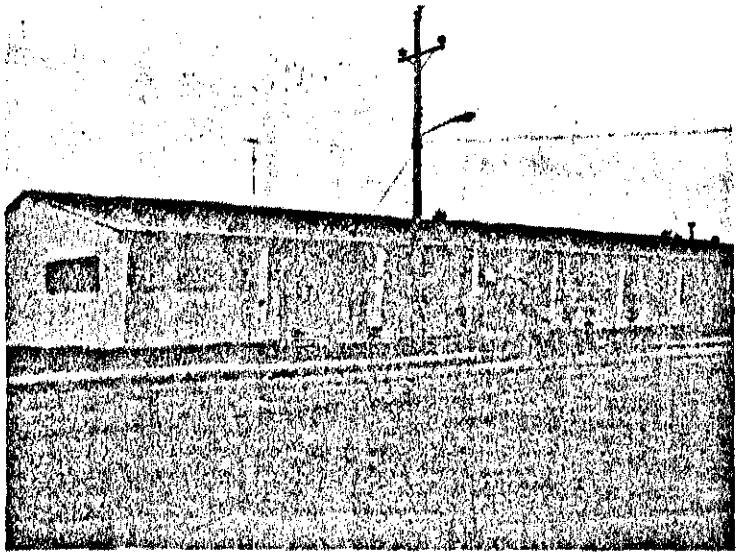


Officers Club, Building 2531

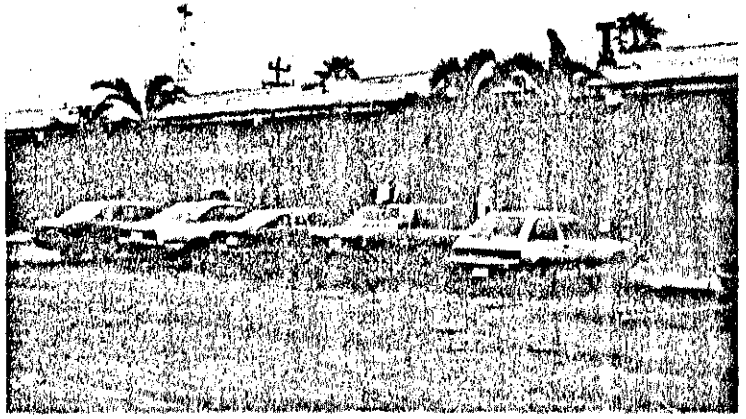


EM Club, Building 2612

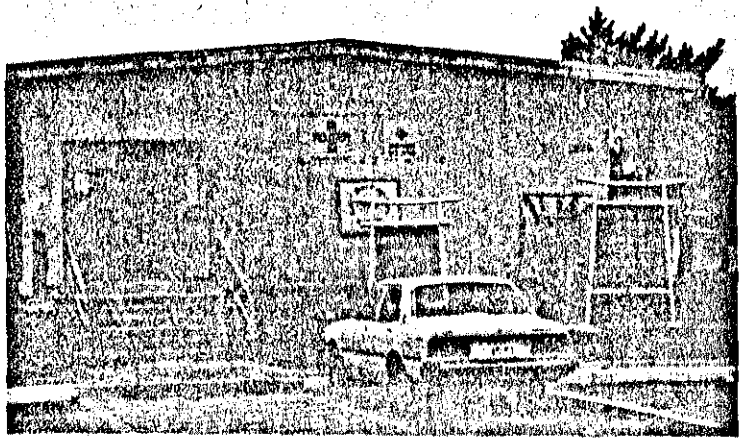
COMMUNITY SUPPORT FACILITIES



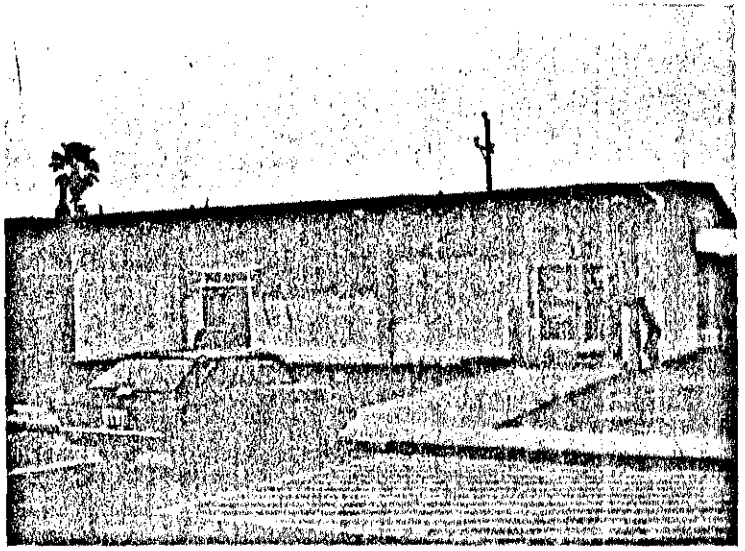
Hobby Shop/Audio Sales,
Building 2410



Main Exchange, Building 2413

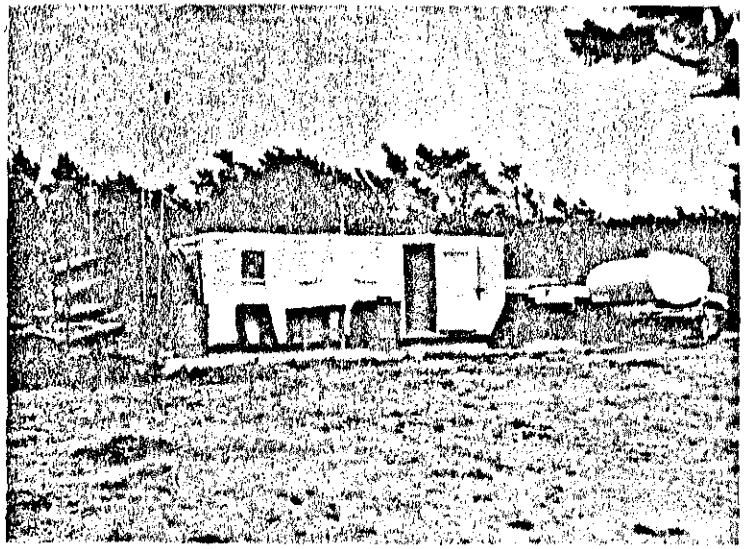


Red Cross/Education Center

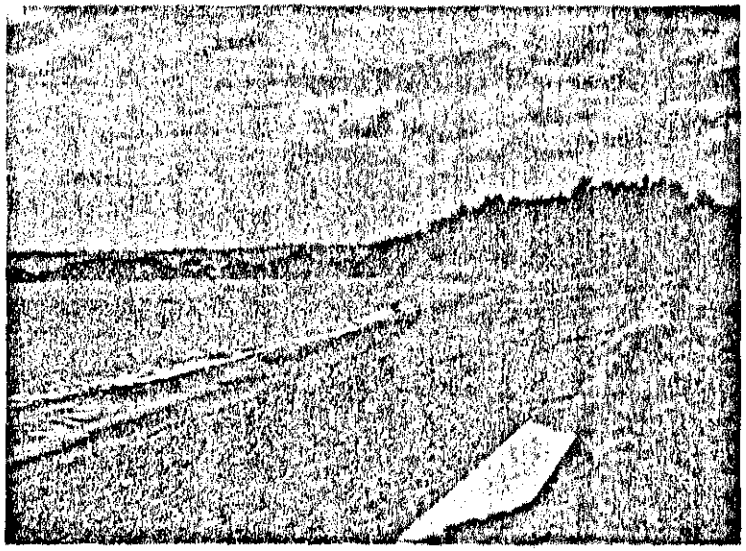


Post Office, Building 2414

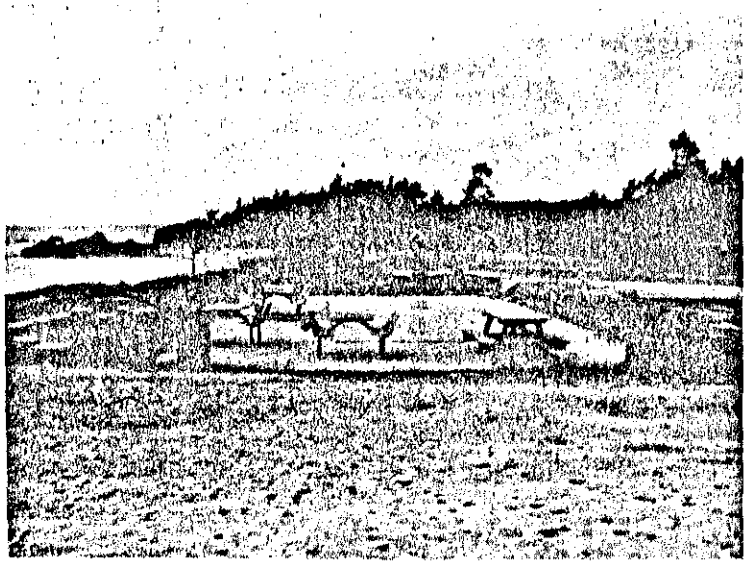
COMMUNITY SUPPORT FACILITIES



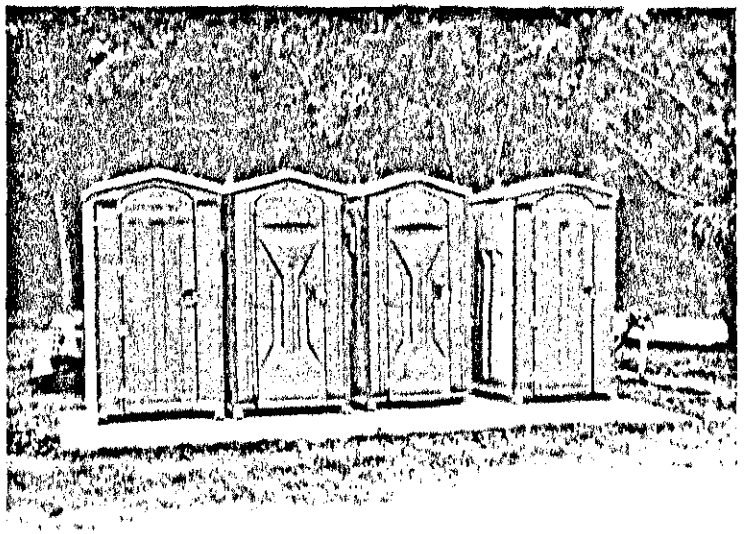
420 SF Special Services Building



Kin Blue Beach Looking West



Picnic Tables



Limited Restroom Facilities

EXISTING RECREATIONAL FACILITIES AT KIN BLUE BEACH

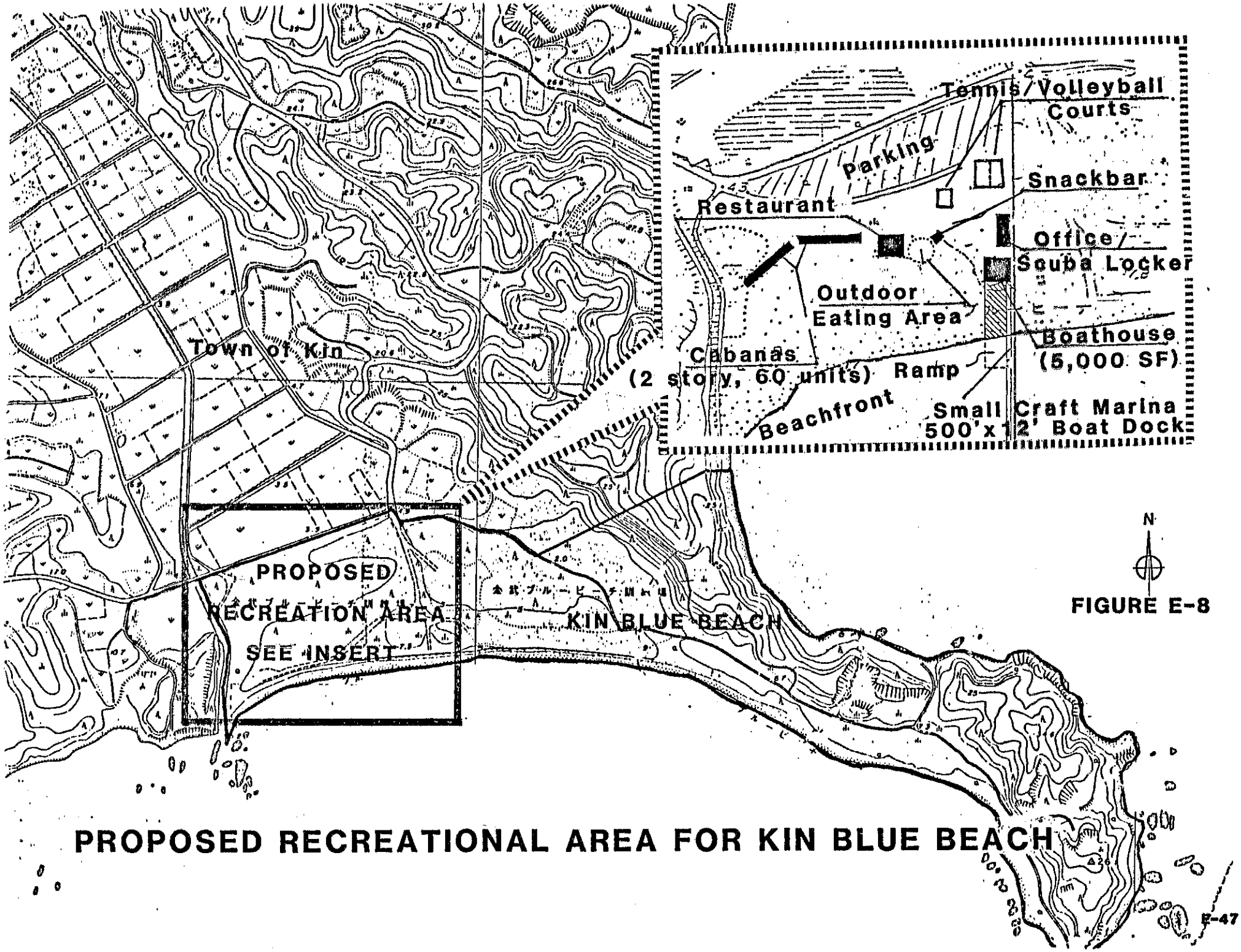
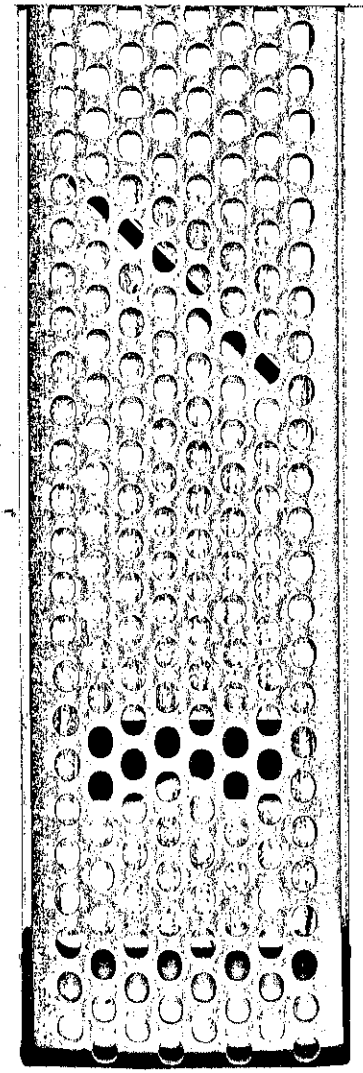


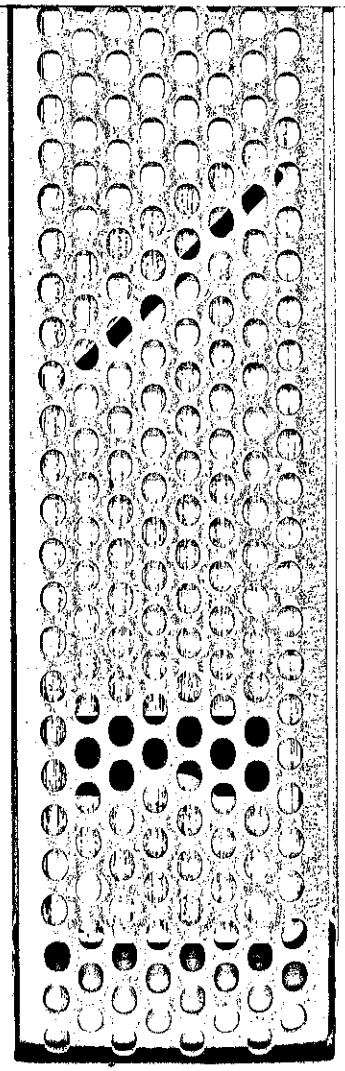
FIGURE E-8

PROPOSED RECREATIONAL AREA FOR KIN BLUE BEACH

F. DEVELOPMENT CONCEPTS

1. PROGRAM DYNAMICS





A. NATURAL VEGETATION

The limited natural vegetation in the northeast should be retained as a visual resource and for erosion control.

B. STEEP SLOPES

Slopes greater than 10% are costly for construction and should be avoided. The use of these sites as cut and fill sites is under consideration.

C. SUSCEPTIBLE GEOLOGY

Areas of potential seepage of hazardous waste into ground water, which would drain into the Nanri River, require close consideration for Environmental Projects.

4. CULTURAL CONSTRAINTS

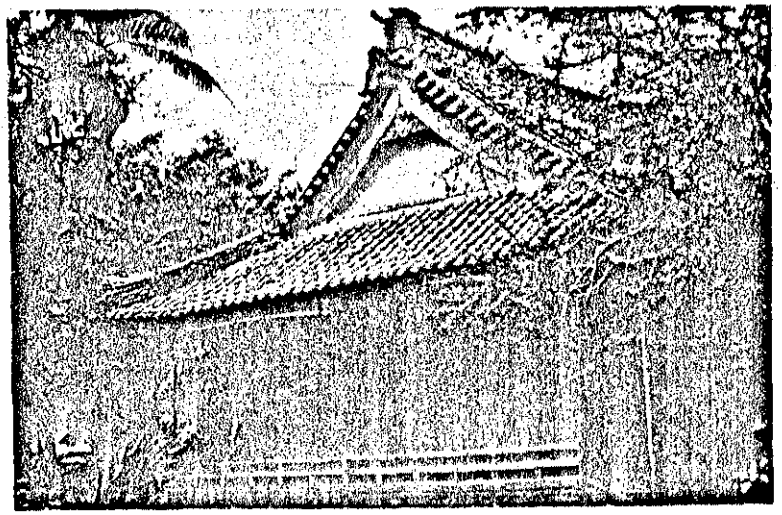
As shown on Plate F-4 several cultural considerations are evident at Camp Hansen. The cultural importance of these sites varies.

A. TOMBS

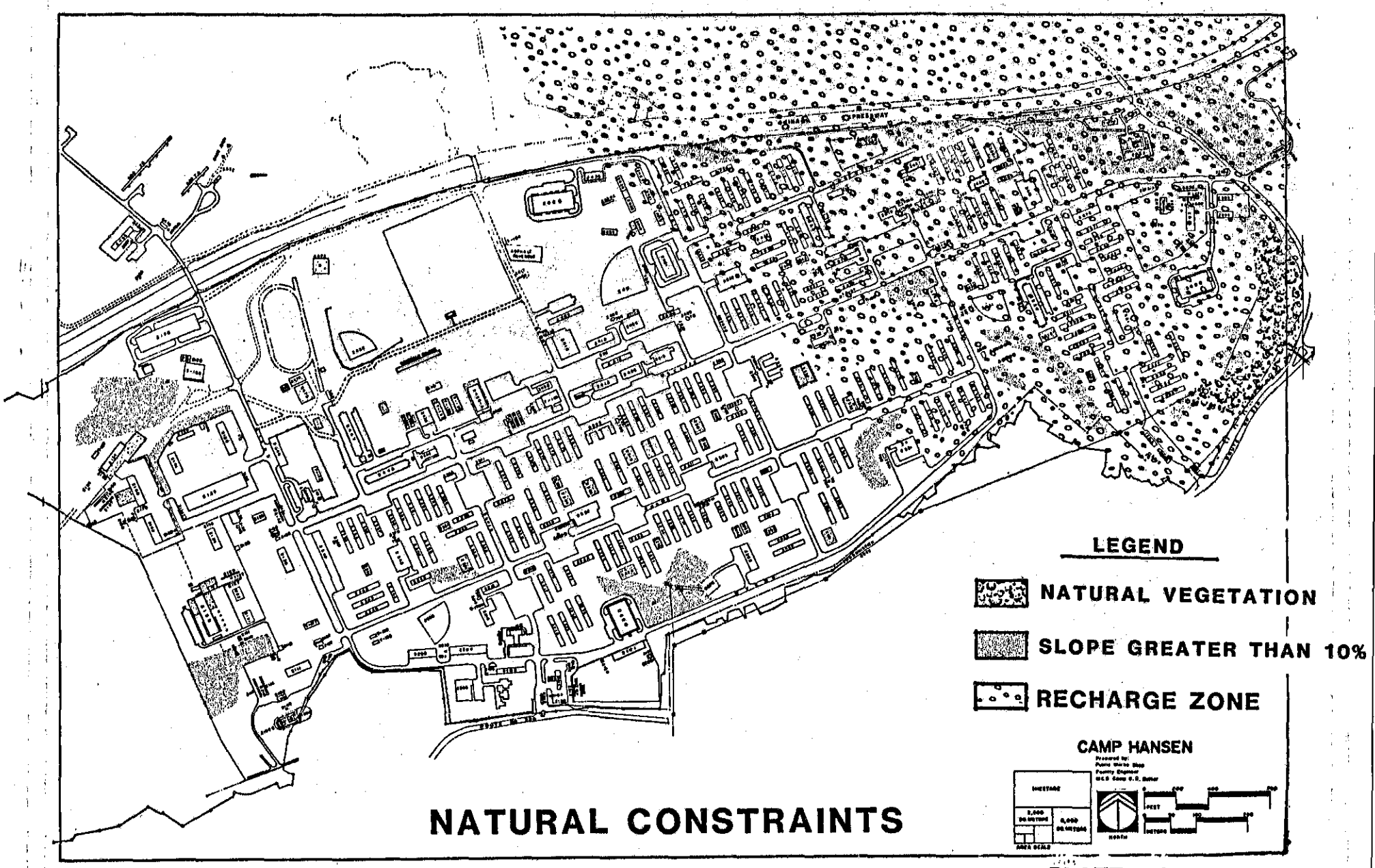
Several tombs exists at Camp Hansen. The Okinawan culture involves ancestor worship and the tombs often contain the ashes of ancestors. To many Okinawans the family tomb is more important than their home, since it will become their permanent residence when they die.

B. KANNON TEMPLE IN KIN

Of the many interesting cultural assets in the surrounding community, special mention is made of the Kannon-ji (Kannon Temple) about one mile north of Camp Hansen. The temple is one of few old Budhist temples not attached to a Shinto Shrine, and was founded by the Japanese Budhist priest Nisshu in 1552. Originally a Zen temple, it was changed to a Shingon sect temple in the 12th century. Kannon is a god of mercy and small children, and offerings of incense, rice, sake and childrens toys are brought to the temple grounds.

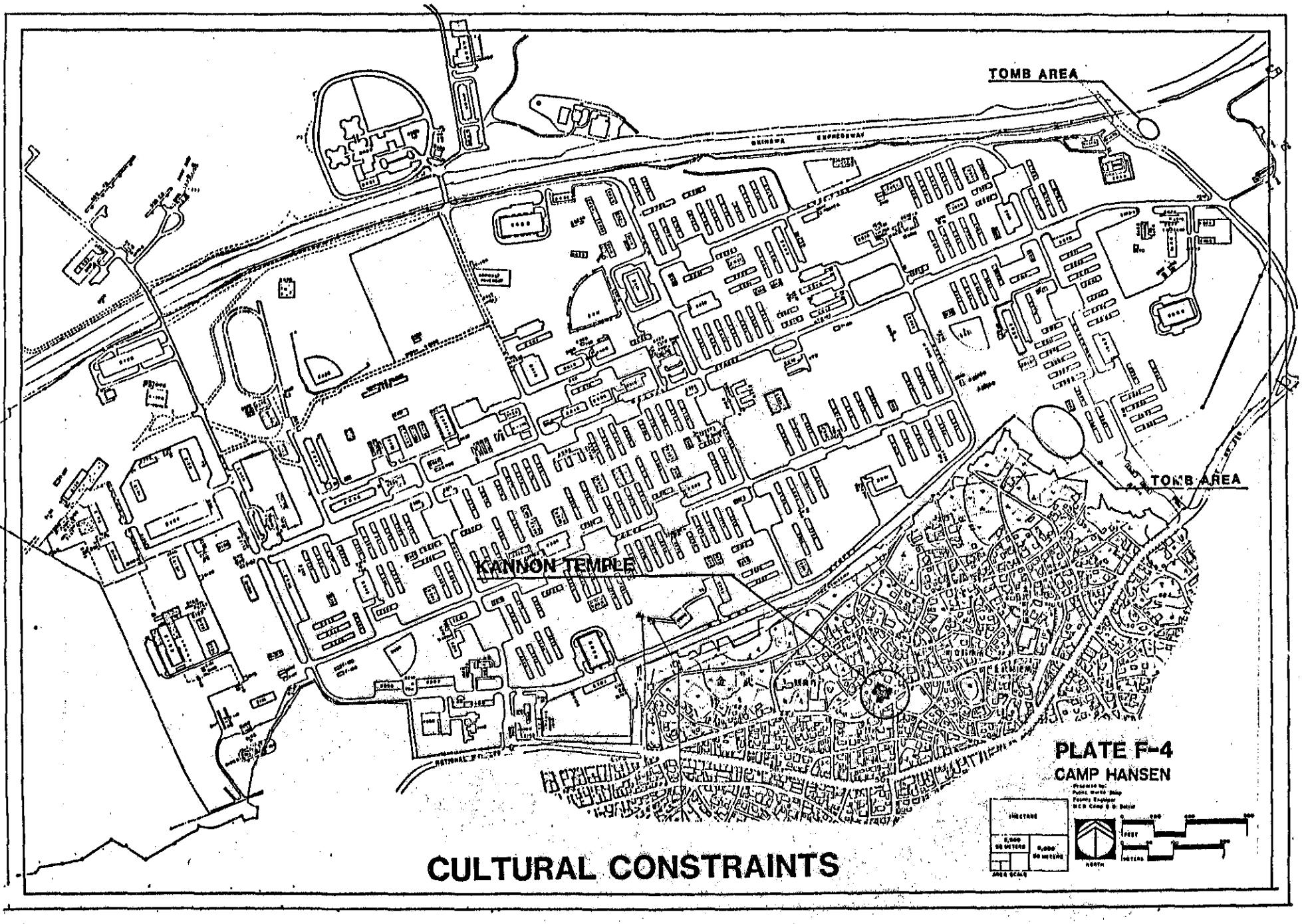


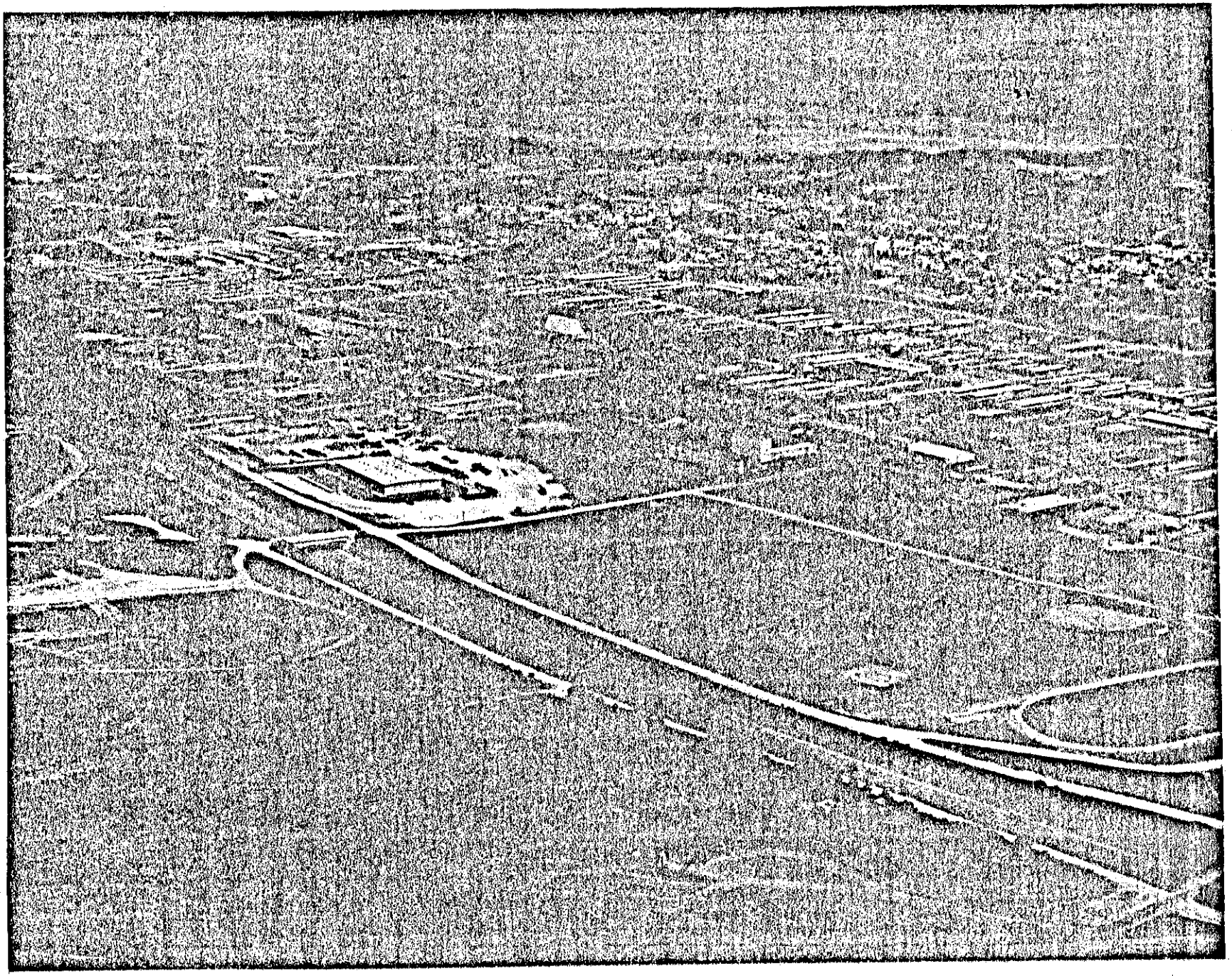
Kannon Temple In Kin



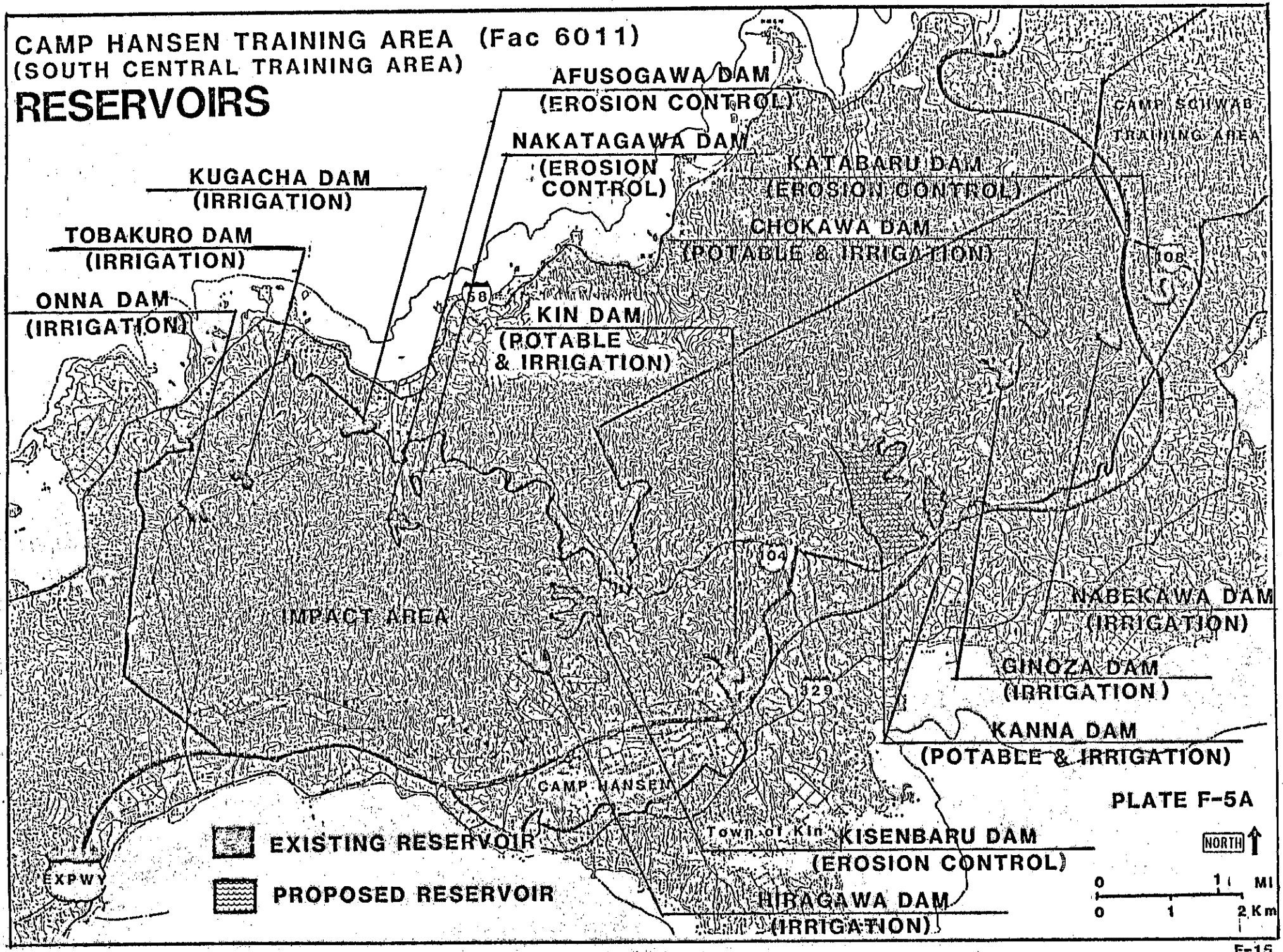
NATURAL CONSTRAINTS

PLATE F-3


TOMB AREA
TOMB AREA
KANNON TEMPLE
PLATE F-4
CAMP HANSEN
CULTURAL CONSTRAINTS



OKINAWA EXPRESSWAY AND CAMP HANSEN LOOKING SOUTHEAST


CAMP HANSEN TRAINING AREA (Fac 6011)
(SOUTH CENTRAL TRAINING AREA)
RESERVOIRS
AFUSOGAWA DAM
(EROSION CONTROL)
NAKATAGAWA DAM
(EROSION
CONTROL)
KUGACHA DAM
(IRRIGATION)
TOBAKURO DAM
(IRRIGATION)
ONNA DAM
(IRRIGATION)
KIN DAM
(POTABLE
& IRRIGATION)
KATABARU DAM
(EROSION CONTROL)
CHOKAWA DAM
(POTABLE & IRRIGATION)
CAMP SCHWAB
TRAINING AREA
58
108
104
IMPACT AREA
NABEKAWA DAM
(IRRIGATION)
GINOZA DAM
(IRRIGATION)
329
KANNA DAM
(POTABLE & IRRIGATION)
CAMP HANSEN
Town of Kin
KISENBARU DAM
(EROSION CONTROL)
HIRAGAWA DAM
(IRRIGATION)
EXPWY
EXISTING RESERVOIR
PROPOSED RESERVOIR
PLATE F-5A
NORTH
0 1 MI
0 1 2 Km

G. CAPITAL IMPROVEMENTS PLAN

The Capital Improvements Plan represents a list of projects with anticipated funding source, that are programmed to resolve the deficiencies made evident by the Activities Facilities Plan. This Section describes the funding source, projects selected to compete for funds within that funding source, and the proposed siting for those projects. A description of construction sequencing and related problems is discussed in Section I, Site Development Plan.

The description of each project discussed in this section includes the siting rationale. All sitings conform to Proposed Land Use Plan. Several out-year projects discussed in this section are as yet unsited. None of the projects generate ESQD arcs nor radiation hazards. Aircraft noise and airfield safety considerations are not applicable. No projects are sited within any Explosive Safety Quantity Distance Arc.

1. FACILITIES IMPROVEMENT PROGRAM

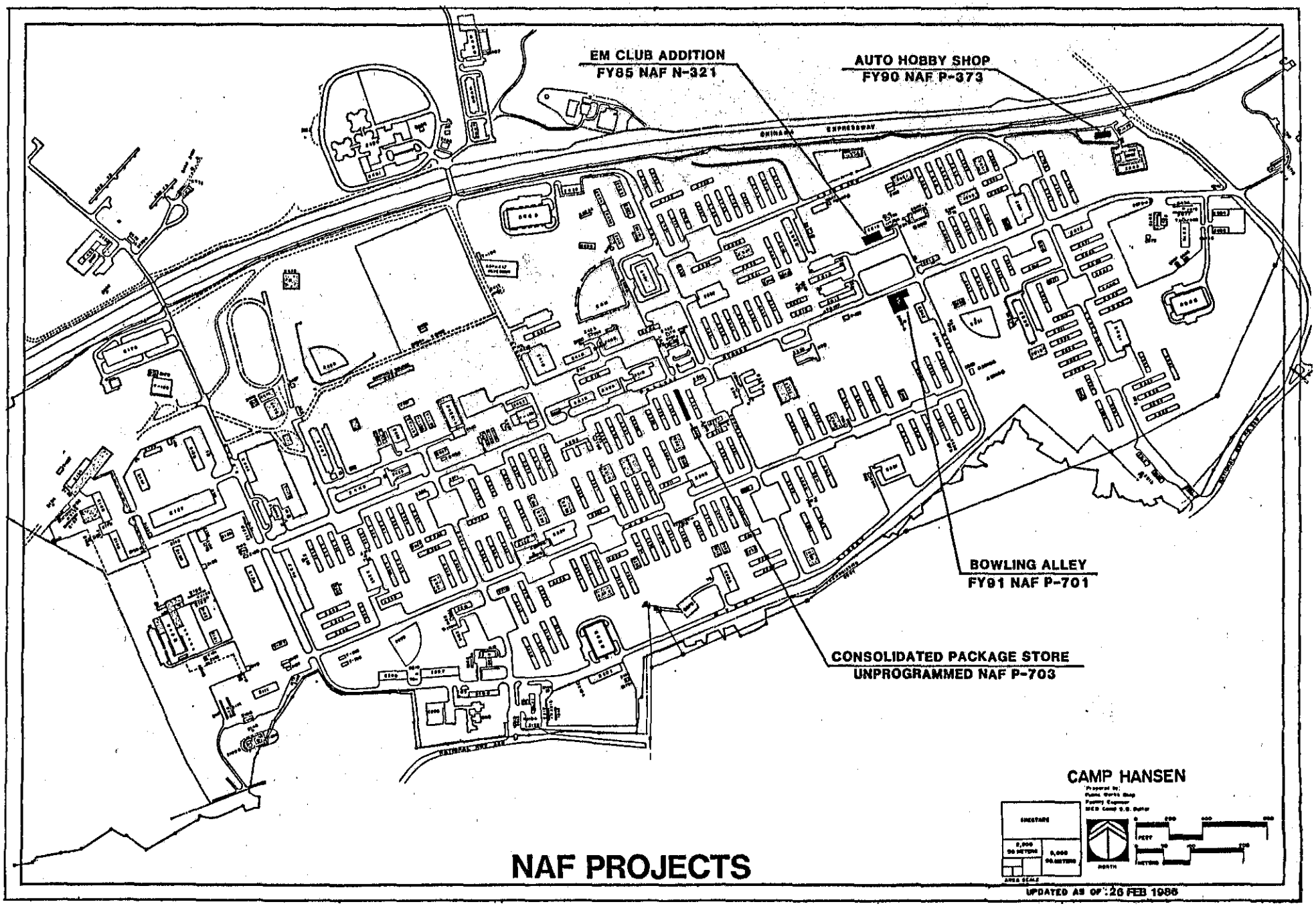
The FIP program was initiated by the Government of Japan in April 1979 to provide an additional form of GOJ cost sharing beyond that provided by the 1977 and 1978 labor cost sharing agreements.

Although a GOJ program, the FIP was developed in response to U.S. initiated exploratory discussions in 1978. It provides a means by which the GOJ can share units and satisfy U.S. Forces facility requirements unobtainable through other programs, including a preceding program of replacing obsolete facilities on a quid-pro-quo basis.

4. NON-APPROPRIATED FUND (NAF) CONSTRUCTION

Community and MWR facilities are all those included in military real property category codes 740 and 750. These facilities are classified in the NAVCOMPT Manual for the purposes of determining the extent of Government financial responsibility in their support, and to provide specific policies and guidance for funding.

It is the policy of the CMC to provide, maintain and operate adequate facilities to accommodate a well-rounded MWR program to ensure the mental and physical well being of Marine Corps military and civilian personnel. The funds to convert



NAF PROJECTS

PLATE G-9

this policy into adequate facilities come from either appropriated or non-appropriated sources. The type of facility or work to be performed determines the funding source. Appropriated funds are used solely for construction of the larger facilities that do not generate revenues. NAF projects are illustrated on Plate G-10.

A. BOWLING CENTER (P-701)

Category Code: 740-40
Quantity: 12,398 SF (10 lanes)
Cost: $3,200,000
Funding Year:

1. PROBLEM

The existing bowling facility at Camp Hansen is only 10 lanes, too small for the more than 6,000 personnel assigned, expansion of the existing facility is not feasible due to site constraints.

2. RECOMMENDATION

Construct a one-story 12,398 SF (10 lane) Bowling Center.

3. SITING CONSIDERATIONS

This project is compatible with the Proposed Land Use Plan.

4. PHASING

None.

5. DEMOLITION

None.

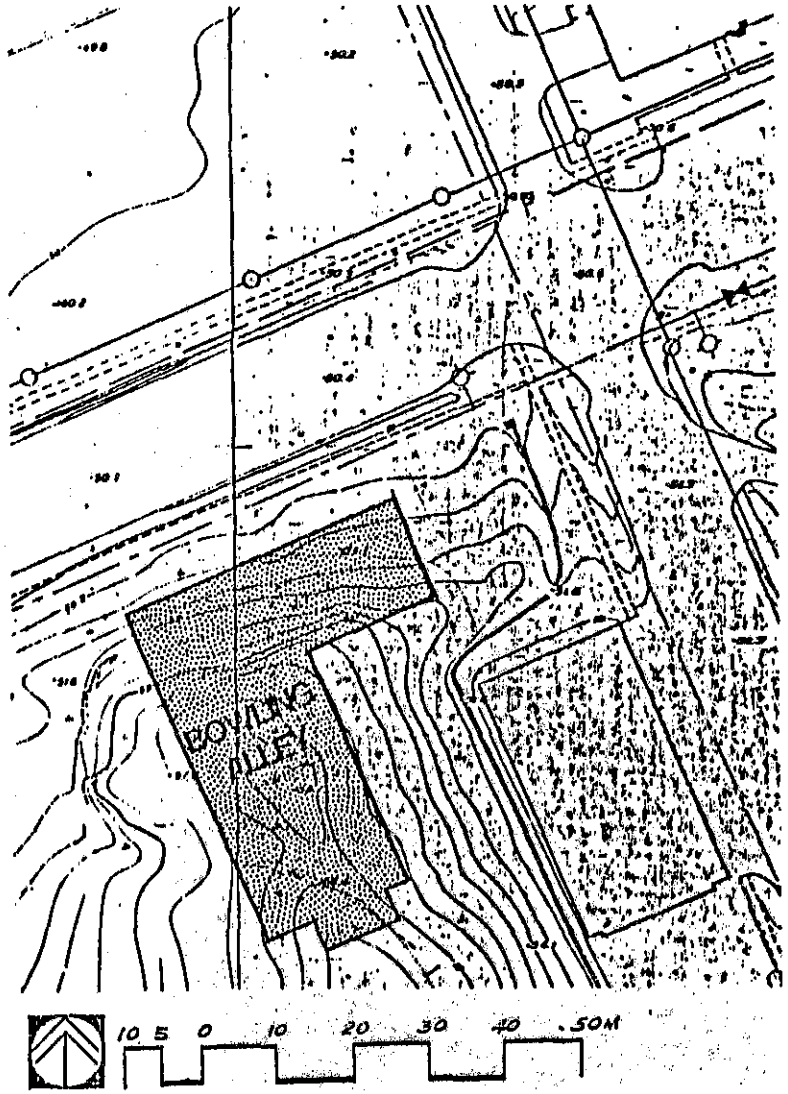


FIGURE G-16

B. AUTO HOBBY SHOP (P-373)

Category Code: 740-38
Quantity: 4,000 SF
Cost: $720,000
Funding Year:

1. PROBLEM

An Auto Hobby Shop is required to maintain POV's. Due to the relatively low cost of purchasing a POV on Okinawa, a greater percentage of service members own them than at other overseas or stateside installations. However, the cost of POV maintenance and repair can be expensive. Currently, much personnel professional POV maintenance and repair takes place in parking lots and driveways. Certain jobs cannot be done out-of-doors due to the

2. RECOMMENDATION

Construct a 4,000 SF one-story Auto Hobby Shop. Special features to include hydraulic lifts, carbon monoxide exhaust systems, compressed air, overhead doors, welding and battery shop exhaust systems, and trench drains with POL seperators.

3. SITING CONSIDERATIONS

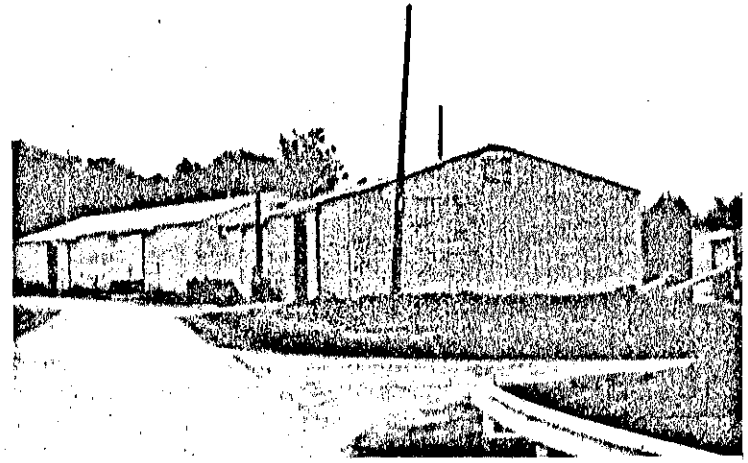
Inadequate Building T-174 will be demolished to make room for the Auto Hobby Shop. The Project is sited in an area zoned for compatible Land Use.

4. PHASING

None.

5. DEMOLITION

Building T-174 will be demolished.



T-174, site of P-373 Auto Hobby Shop

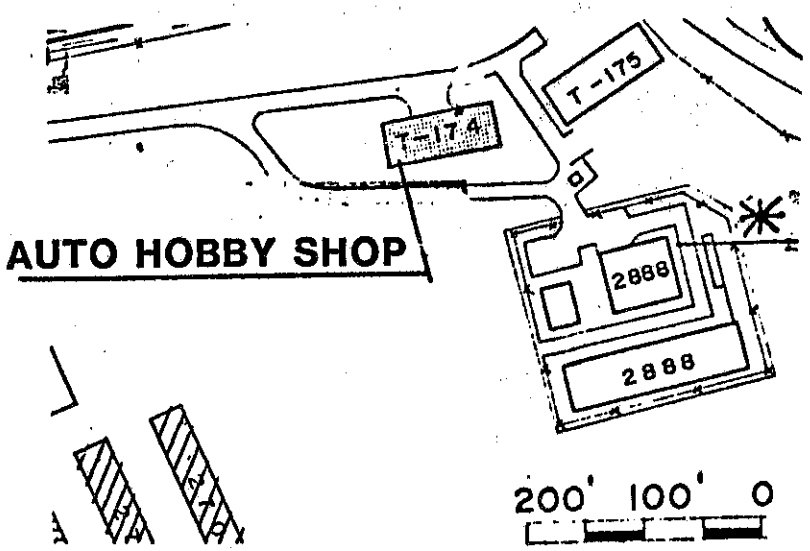


FIGURE G-17

C. CONSOLIDATED PACKAGE STORE CONVERSION (P-703)

Category Code: 740-71
Quantity: 3,500 SF
Cost: $150,300
Funding Year:

1. PROBLEM

Full package retail sales are operated in both the Staff NCO Club and the Officer Club, tying up several hundred square feet of valuable storage space in these facilities. Enclisted ranks can only buy beer due to current operational constraints.

2. RECOMMENDATION

Renovate 3,500 SF of Building 2393 to house a consolidated package store and provide a 12 ton A/C unit.

3. SITING CONSIDERATIONS

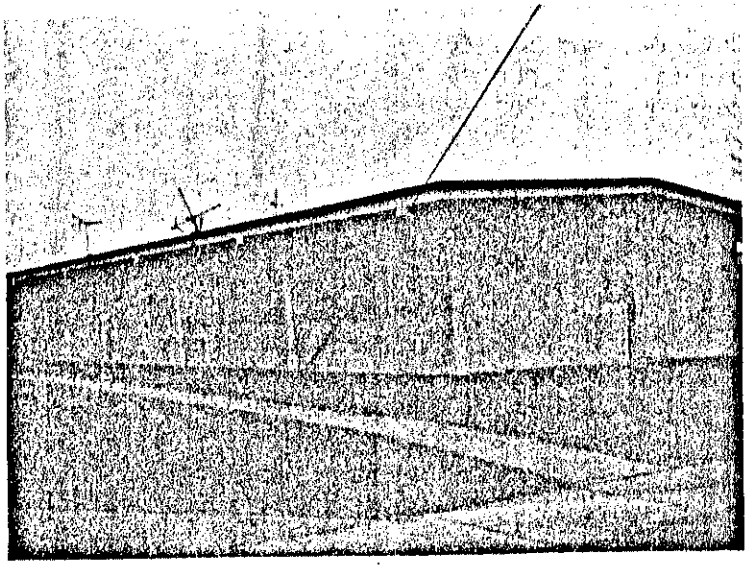
The availability of Building 2393 and its central location, compatible with the Proposed Land Use Plan, were considered.

4. PHASING

Reuse of the storage space in the SNCO and Officer Clubs will be handled by local projects.

5. DEMOLITION

None.



Building 2393 (P-703)

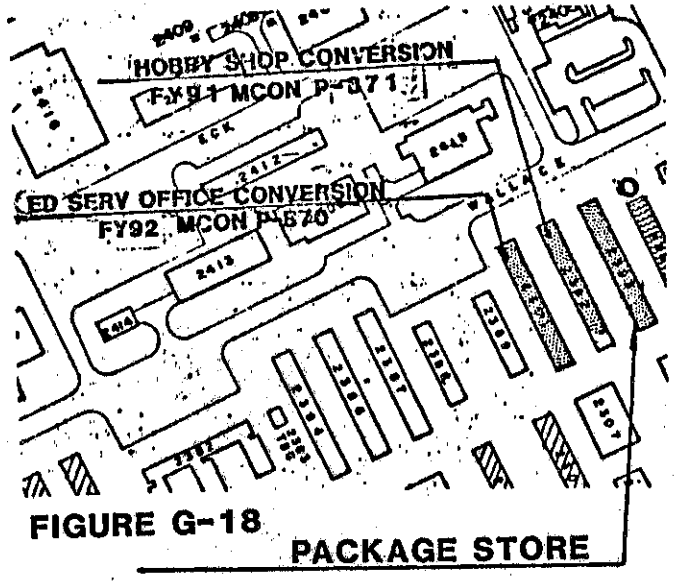


FIGURE G-18 PACKAGE STORE

D. EM CLUB ADDITION (N-321)

Category Code: 740-63
Quantity: 1,209 SF
Cost: $1,000,000
Funding Year: FY85

1. PROBLEM

Camp Hansen has a 21,623 SF deficiency in this Category Code. The existing facility (Building 2612) is poorly layed our and most areas are undersized for the demand. The cramped single-purpose spaces make operations inefficient.

2. RECOMMENDATION

Construct a 1,209 SF addition to house an NCO lounge, a game room and an office. Rennovate interiors in the rest of the facility by removing walls in the Ballroom and expanding the storage and Dining Areas.

3. SITING CONSIDERATIONS

Addition to existing Building 2612.

4. PHASING

None. Club will close during the major portions of construction.

5. DEMOLITION

Interior demolition only.

EM Club Building 2612

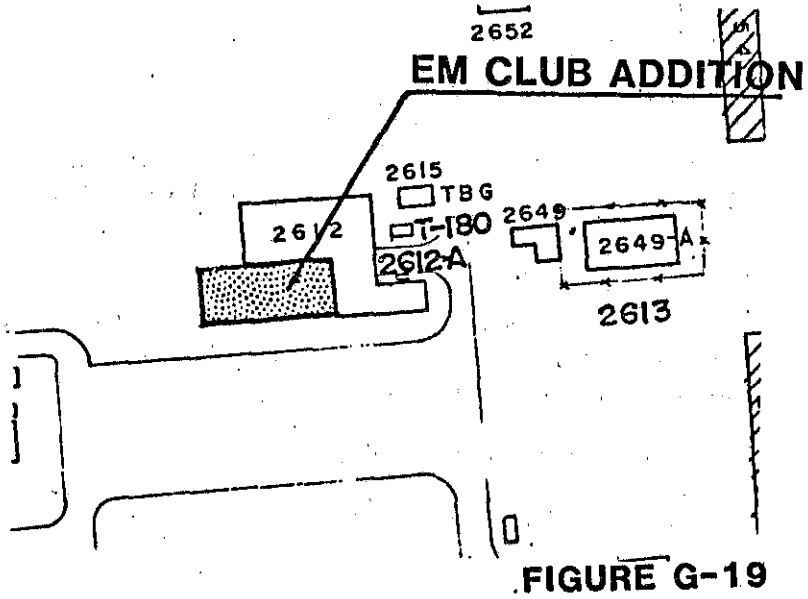


FIGURE G-19

H. ENERGY CONSERVATION PLAN

1. BACKGROUND

Presidential Executive Order (PEO) 12003 of July 1977 requires that all new U. S. Government buildings be 45 percent more energy efficient than similar buildings existing in 1975.

In addition to the 45 percent reduction in consumption mandated by PEO 12003 for new buildings, it also mandates a 20 percent reduction of energy usage in existing buildings, between FY75 and FY85. DOD augmented this requirement by an additional one percent per year, between FY85 and FY2000, to a total of a 35 percent reduction.

Commencing with the July 1975 relocation of Headquarters, MCB Camp Butler from Camp McTureous to Camp Zukeran, Camp Butler started experiencing a radical change of its facilities physical structure. After the acquisition of Camps Zukeran (renamed Foster), Kuwae (Lester) and Makiminato Service Area (Kinser) from departing Army Commands, Camp Butler disposed of obsolete facilities at Camp Hague, Yaka Beach and Iha Castle and started an orderly program for disposal and/or replacement of other obsolete, energy inefficient facilities within the Base. A radical decline in the consumption of heating fuel per SF of facility was experienced. The present consumption per SF of building is 56 percent below FY75 consumption. This reduction in consumption can be attributed to the use of facilities with considerably less space heating load requirements than facilities used during FY75. Records indicate that consumption of fuel for production of domestic hot water had increased, on an annual basis, until FY84. The most probable significant causes of these increases are the use of an increased number of washing machines and decreased efficiency of boilers due to aging and oversizing. There are less people per SF of building than during FY 75. When the required heating load is considerably less than the design capacity of the boiler or the boiler is oversized for existing requirements, boiler efficiency decreases. Existing boilers were designed for larger loads than presently required. When the number of personnel assigned to a building is reduced, it results in the existing boilers for production of domestic hot water being oversized for the required load. The acquisition of additional UEPH and UOPH buildings allowed for a reduction in occupancy of these buildings with a corresponding reduction of requirements for hot water. Boilers originally designed to supply hot water for more than twice the present building occupancy are operating at a significantly lower efficiency than their potential maximum and consequently use more fuel per capita. It is not cost effective to replace existing boilers with smaller boilers, just to improve their efficiency, because of the large number of UEPHs which will be replaced in the near future, under the JFIP. Also, it had been observed that maids, employed by UEPH and UOPH occupants, secured the cold water supply to washing machines and used only hot water to operate them. In addition to this wasteful practice, full volumes of water were being used for light loads. To remedy this situation the hot water

supply to washing machines was disconnected and water temperatures reduced to 110°F maximum where sufficient hot water storage capacity necessary to supply peak demand was available.

In spite of apparent wasteful practices, consumption of heating fuels per SF of existing buildings has been reduced by 56 percent. However, consumption of electricity has been reduced by only 14.5 percent as of the end of FY84. The base energy conservation record had dropped from 32.6 percent below the FY75 baseline during FY82 to 28.3 below the baseline during FY83. There was a temporary improvement during FY84 however, the increase in consumption trend is anticipated to continue over the next several years as existing non-air conditioned buildings are air conditioned or replaced with air conditioned buildings, unless more stringent conservation measures are implemented.

To persue this trend recommendations by three energy conservation surveys accomplished during FY83 and FY84 are being implemented together with the more stringent design requirements of the latest edition of DOD 4270.1-M, Construction Criteria Manual. For example Chapter 8 of DOD 4270.1-M requires building insulation to comply with minimum established requirements, whether cost effective or not, when new air conditioning systems are installed or existing systems are replaced. It also requires that all cost effective energy conservation improvements to the building be identified and either accomplished or scheduled for implementation prior to/or concurrent with the mechanical equipment change before proceeding to design and sizing of mechanical equipment for heating and/or air conditioning.

It is possible for Camp Butler to continue complying with PEO 12003 but it will require the complete eradication of misuse and waste. Every echelon of leadership within the Base is responsible for prevention of waste or misuse which used to be commonplace within many areas of the base.

Only the state of the art on energy conservation technology, with rigid, tamper proof controls, will preclude Camp Butler falling into noncompliance with the conservation goals established by higher headquarters. These goals are attainable only if efficient design and rigid controls to limit consumption to the absolute minimum requirements are provided as prescribed by current DOD and Marine Corps regulations.

2. CONSERVATION PLAN

A. GENERAL

(1) Provide an Energy Management System (EMS) to control all phases of production and consumption in large buildings, such as the base exchange. Although these buildings are not under direct control of Camp Butler, they are large users of non-reimbursable energy. Camp Butler is required to support these facilities but cannot control their operations.

(2) Provide an EMS for small groups of buildings, such as bachelor quarters,

warehouses, and other community support facilities. The monitoring and control equipment should be located in spaces manned 24 hours per day.

(3) Install utility meters for each new facility which is not connected to a central production and distribution plant. At central plants, provide utility meters to measure both consumption and production. This is required by MCO P11000.9B.

(4) Where possible, consider architectural alternatives such as building orientation width/length ratio, number of stories, exterior wall construction, reduced window areas, and tinted glazing or solar film.

(5) All new buildings must comply with "U" factor requirements in Table 8-1 of DOD 4270.1-M, Construction Criteria Manual.

(6) Provide setback controls for all heating and air conditioning systems.

(7) Implement requirements of paragraphs 8-3.2.C and 8-4.1 of DOD 4270.1-M.

B. ELECTRICITY

(1) Include the installation of watt-hour meters in the designs of new lighting systems for outdoor facilities which have not been previously lighted. Energy consumed by these facilities can be deleted from DEIS-II reports, if adequately metered. Under DEIS-II, all energy consumed as a utility is chargeable to the SF in existing buildings unless it can be determined, by actual metering, that a portion of the energy was not consumed by existing buildings in the base line.

(2) Design all lighting systems for the minimum authorized DOD lighting standards as prescribed by NAVFACINST 11012.146. Task lights to supplement standard lighting is authorized where adequately justified.

(3) Provide only the most efficient lighting systems consistent with requirements. Sectionalize areas and provide electronic motion detector switches to automatically turn off unneeded lights.

(4) Provide programmable electronic time control for lighting and equipment not otherwise controlled by an EMS. All lighting systems, appliances, and heating/air conditioning systems which provide for personnel comfort must be secured during periods of non-occupancy.

(5) Comply with requirements of paragraph 8-4.12 of DOD 4270.1-M

C. HEAT AND FUEL

(1) Design heating systems to provide only for minimum requirements in the building. DOD established temperature standards must be incorporated in the designs and heating equipment sized accordingly. Do not oversize heating and appurtenant equipment to provide for unneeded or unknown safety factors.

(2) Where possible, provide supplemental heating for small sections of BEQ, BOQ and administrative buildings which are used during periods when the building is not normally occupied to allow securing the central heating system. Supplemental systems, however, should be connected to the same EMS or programmable electronic time control as the central system as necessary to preclude simultaneous operation of both systems.

(3) Adjustable thermostats or automatic setback controls shall have a maximum setting of 72°F (22°C) as manufactured. The use of heating thermostats with settings higher than 72° is prohibited by DOD and Marine Corps regulations. The actual setting, except for medical facilities, shall be the setting required to raise the room temperature to a maximum 65°F - 68°F. Provide outside temperature reset control.

(4) Provide interlocking devices on windows to turn off heating and air conditioning systems when windows are opened. Operation of heating and air conditioning systems with opened windows is probably the most common energy misuse in Camp Butler.

(5) Provide heat recovery for blowdown systems. Provide air preheaters, economizers and other heat recovery equipment. Whenever possible, avoid dumping condensate.

(6) Provide the absolute minimum outside air make-up consistent with actual requirements.

(7) Provide radiant heating only where ever possible. Do not provide convection heating if it can be avoided.

(8) Design domestic hot water systems to provide for minimum requirements. Authorized maximum hot water temperatures, as delivered to the user, are 100°F in facilities without showers or bath tubs and 110°F in bachelor living quarters.

(9) Provide two cold water lines to washing machines in bachelor quarters buildings in lieu of one hot and one cold water lines. This Command has disconnected the existing hot water lines to the approximately 1,200 washing machines presently installed in Camp Butler. Water at the maximum authorized temperature of 110°F does not provide for cleaner or germ-free wash. When the hot water is mixed with cold water, the washing water temperature is approximately 90°F which is not a great improvement over the approximately 70°F temperature of the cold water.

D. AIR CONDITIONING

(1) Design of air conditioning systems shall be in accordance with criteria provided by Chapter 8 of DOD 4270.1-M.

(2) Where possible, provide window or through the wall air conditioners for duty officers and shift workers in large buildings to allow securing central systems during periods of non-occupancy. Window or through the wall units should be controlled by the same EMS or

programmable electronic timer as the central system to preclude simultaneous operation of both systems.

(3) Provide programmable thermostats or as setback controls for each zone. All controls shall be located in spaces accessible only to authorized maintenance personnel.

(4) Provide the absolute minimum outside air make-up consistent with actual requirements.

(5) Provide waste heat recovery systems to capture some of the heat rejected by compressors and use for domestic hot water heating in buildings with hot water requirements, for air preheating in systems requiring dehumidification, and for winter space heating of adjacent spaces where air conditioning systems are used year-round.

(6) For facilities, such as data processing and communications, which require year-round air conditioning, consider reducing the cooling loads by recovering or exhausting some of the heat generated by the equipment for use in adjacent heated areas.

(7) Provide air curtains at doors with heavy traffic to minimize cooling and heating loads. Provide interlocking switches with time relay to turn off air curtain during extended periods of no traffic through the door.

(8) As an alternative to air curtains, provide vestibules at entrances with heavy traffic.

(9) Install tinted glazing or solar film on windows to reduce solar heat gain through glass.

APPENDIX L-1

FACILITIES REQUIREMENTS SUMMARY PLAN

This appendix summarizes basic facilities requirements (BFR) for Camp Hansen, by category code, and includes a list of assets, by tenancy, and proposed projects to resolve known deficiencies. The list includes the Hansen Training Area, Kin Red Beach, Kin Blue Beach, and the Gimbaru Training Area.

The importance of this appendix, however bulky, is that it creates Facilities Planning Documents similar to those found in the Navy Shore Facilities Planning System. FPDs were not used by the U.S. Marine Corps during the preparation of this Master Plan. This appendix enables the facilities manager and facilities planner formatted access to each category code required at Camp Courtney, and has proved highly sucessfull since its introduction as a planning tool. FPDs have since been incorporated into USMC facilities planning as this Master Plan goes to press, and will replace this Appendix when made available.

Figure L-1 illustrates the use of this appendix.

SUMMARY:
Adequate: 16,572 SF
Substandard: 0 SF
16,572 SF TOTAL
16,572 SF BFR
0 SF Deficient

NOTES:

CATEGORY CODE: 730-85 4,500 SF
POST OFFICE IC

DESCRIPTION: This facility provides the postal services required by Camp Hansen.

ASSETS:
2414 P MCB POST OFFICE 1,740 SF
(A)

SUMMARY:
Adequate: 1,740 SF
Substandard: 0 SF
1,740 SF TOTAL
4,500 SF BFR
2,760 SF Deficient

NOTES: Construct 1,500 SF, FY87 R2.

BFRL to be revised to reflect the reduced scope.

CATEGORY CODE: 740-01 12,100 SF
EXCHANGE RETAIL STORE IC 16

DESCRIPTION: This facility provides retail store services for Camp Hansen personnel.

ASSETS:
2413 P OWAX 7,000 SF
(A)

SUMMARY:
Adequate: 7,000 SF
Substandard: 0 SF
7,000 SF TOTAL
12,100 SF BFR
4,900 SF DEFICIENT

NOTES: Convert 1,164 SF in building 2413 from CC 740-08 to CC 740-01, unprogrammed.

Convert 4,602 SF from CC 740-36 in building 2410.

CATEGORY CODE: 740-04 9,800 SF
EXCHANGE CAFETERIA IC 16

DESCRIPTION: This facility provides cafeteria services for personnel at Camp Hansen.

ASSETS:
2415 P OWAX 7,600 SF (A)

CATEGORY CODE: 740 -18 4,375 SF
BANK IC 16

DESCRIPTION: A facility is required to provide banking services for personnel at Camp Hansen.

ASSETS:

T-103	AMEXB	3,306 SF (I)
2374	AMEXB	4,090 SF (A)

SUMMARY:

Adequate:	4,090 SF
Substandard:	0 SF
	4,090 SF TOTAL
	4,375 SF BFR
	285 SF Deficient

NOTES: T-103 to be demolished upon renovation of Building 2374.

CATEGORY CODE: 740-19 1,392 SF
CREDIT UNION IC 16

DESCRIPTION: Credit Unions are private cooperative savings and loan organizations. Facilities for a properly chartered credit union may be provided to serve military personnel permitted in the by-laws of the Credit Union.

ASSETS:

2420	P	NFCU	1,122 SF (A)

SUMMARY:

Adequate:	1,122 SF
Substandard:	0 SF
	1,122 SF TOTAL
	1,392 SF BFR
	270 SF Deficient

NOTES:

CATEGORY CODE: 740-25 2,500 SF
FAMILY SERVICES CENTER IC 16

DESCRIPTION: This facility provides Red Cross services to personnel at Camp Hansen.

ASSETS:

2376	P	MCB DSSC	2,376 SF (A)
2389	P	RED CROSS	1,168 SF (A)

SUMMARY:

Adequate:	4,182 SF
Substandard:	0 SF
	4,182 SF TOTAL
	2,500 SF BFR
	1,682 SF Excess

NOTES: BFRL to be revised.

CATEGORY CODE: 740-28 — 10,700 SF
AMUSEMENT CENTER — IC 16

DESCRIPTION: This facility provides personal, family and recreational services for Camp Hansen personnel. Facilities operated by the United Services Organization (USO) are not a BFR item but are listed for inventory purposes only.

ASSETS:

2214	P	USO	9,368 SF (A)
2415	P	OWAX	2,120 SF (A)

SUMMARY:

Adequate:	11,488 SF
Substandard:	0 SF
	11,488 SF TOTAL
	10,700 SF BFR
	788 SF Excess

NOTES:

CATEGORY CODE: 740-30 — 3 OL
EXCHANGE AUTO REPAIR STATION — IC 16

DESCRIPTION: The Okinawa Area Exchange (OWAX) requires maintenance facilities to service their vehicles and equipment.

ASSETS:

2102	P	OWAX	2 OL (A)

SUMMARY:

Adequate:	2 OL
Substandard:	0 OL
	2 OL TOTAL
	3 OL BFR
	1 OL Deficient

NOTES:

CATEGORY CODE: 740-36 — 7,500 SF
HOBBY SHOP/ARTS AND CRAFTS — IC 16

DESCRIPTION: This facility provides space for hobby/arts and crafts for personnel at Camp Hansen. Due to the remoteness of the Camp and unaccompanied nature of the tours, heavy utilization of the facility is anticipated.

ASSETS:

2410	P	MCB SP SERV	4,602 SF (A)

SUMMARY:

Adequate:	4,602 SF
Substandard:	0 SF
	4,602 SF TOTAL
	7,500 SF BFR
	2,898 SF Deficient

NOTES: Convert 6,420 SF of CC 721-11/12 space to CC 740-36.
Convert building 2410 to CC 740-01.

CATEGORY CODE: 740-37 4,500 SF
SPECIAL SERVICES ISSUE AND OFFICE IC 16

DESCRIPTION: This facility provides management, storage, and issue space for recreational programs.

ASSETS:

2812	P	MCB SPC SV	540 SF (A)

SUMMARY:

Adequate:	540 SF
Substandard:	0 SF
	540 SF TOTAL
	4,500 SF BFR
	3,960 SF Deficient

NOTES: Convert T-159 (4,000 SF) from CC 740-43 to CC 740-37 (Scuba Locker), unprogrammed.

CATEGORY CODE: 740-38 4,000 SF
HOBBY SHOP, AUTOMOTIVE IC

DESCRIPTION: This facility provides space for upkeep of privately owned vehicles (POVs).

ASSETS:

SUMMARY:

Adequate:	0 SF
Substandard:	0 SF
	0 SF TOTAL
	4,000 SF BFR
	4,000 SF Deficient

NOTES: Convert excess CC 721-11/12 space.

CATEGORY CODE: 740-40 17,700 SF
BOWLING ALLEY IC 16

DESCRIPTION: This facility provides 16 lanes of bowling.

ASSETS:

2406	P	MCB SPC SV	8,102 SF (A)

SUMMARY:

Adequate:	8,102 SF
Substandard:	0 SF
	8,102 SF TOTAL
	17,700 SF BFR
	9,598 SF Deficient

NOTES: Construct 9,598 SF, unprogrammed NAF.

CATEGORY CODE: 740-43 42,000 SF
GYMNASIUM IC 16

DESCRIPTION: This facility provides a gymnasium which will include a multi-purpose court (basketball and volleyball), weight lifting rooms, karate/judo workout areas, and other related areas.

ASSETS:

T-159	S	MCB SPC SV	4,000 SF (A)
T-165	S	MCB SPC SV	14,830 SF (S)
2824	P	MCB SPC SV	6,420 SF (S)
2826	P	MCB SPC SV	6,420 SF (S)

SUMMARY:
Adequate: 4,000 SF
Substandard: 27,670 SF
31,670 SF TOTAL
42,000 SF BFR
10,330 SF Deficient

NOTES:

CATEGORY CODE: 740-56 17,200 SF
THEATER IC 16

DESCRIPTION: This facility provides recreational entertainment (live shows and movies) for personnel at Camp Hansen.

ASSETS:

2416 P MCB SPC SV 17,290 SF (A)

SUMMARY:
Adequate: 17,290 SF
Substandard: 0 SF
17,290 SF TOTAL
17,200 SF BFR
90 SF Excess

NOTES:

CATEGORY CODE: 740-60 12,000 SF
OFFICERS CLUB IC 16

DESCRIPTION: This facility provides restaurant service and social activity for Camp Hansen officer personnel.

ASSETS:
2531 P MCB CLUBS 15,736 SF (A)

SUMMARY:
Adequate: 15,736 SF
Substandard: 0 SF
15,736 SF TOTAL
12,000 SF BFR
3,736 SF Excess

NOTES: BFRL requires revision.

CATEGORY CODE: 740-36 31,000 SF
ENLISTED MENS' CLUB IC 16

DESCRIPTION: This facility provides restaurant service and social activity for enlisted personnel at Camp Hansen.

ASSETS:
2612 P MCB CLUBS 9,368 (A)

SUMMARY:
Adequate: 9,368 SF
Substandard: 0 SF
9,368 SF TOTAL
31,000 SF BFR
21,632 SF Deficient

NOTES: Construct 8,000 SF NAF N-321, FY85.

Construct 13,632 SF, unprogrammed NAF, P-728.

CATEGORY CODE: 740-66 — 14,000 SF
SNCO CLUB — IC 16

DESCRIPTION: This facility provides restaurant service and social activities for Staff NCOs at Camp Hansen.

ASSETS:

2408	P	MCB CLUBS	11,424 SF (A)

SUMMARY:

Adequate:	11,424 SF
Substandard:	0 SF
	11,424 SF TOTAL
	14,000 SF BFR
	2,576 SF Deficient

NOTES: Construct 2,576 SF, unprogrammed NAF P-729.

CATEGORY CODE: 740-76 — 5,800 SF
LIBRARY — IC 16

DESCRIPTION: This facility provides recreational reading services and study areas.

ASSETS:

2412	P	MCB SPC SV	5,800 (A)

SUMMARY:

Adequate:	5,800 SF
Substandard:	0 SF
	5,800 SF TOTAL
	5,800 SF BFR
	0 SF Deficient

NOTES:

CATEGORY CODE: 740-78 — 2,600 SF
RECREATION PAVILION — IC 16

DESCRIPTION: This facility provides shelter at recreational areas such as parks, playgrounds and picnic areas.

ASSETS:

T-182	P		1,344 SF (A)
T-183	P		1,344 SF (A)
T-189	P		288 SF (A)
2647	P	MCB CLUB	2,304 SF (A)

SUMMARY:

Adequate:	4,280 SF
Substandard:	0 SF
	4,280 SF TOTAL
	2,600 SF BFR
	1,680 SF Excess

NOTES:

CATEGORY CODE: 740-81 — 20 units
RECREATION LODGE — IC

DESCRIPTION: This facility supports E1-E5 enlisted personnel at all MCB Camp Butler camps, and all personnel and dependents on accompanied tours. The proposed site is at Kin Blue Beach.

ASSETS:

SUMMARY:
Adequate: 0 units
Substandard: 0 units
0 units TOTAL
20 units BFR
20 units Deficient

NOTES:

CATEGORY CODE: 740-84 — 9,600 SF
INDOOR PLAYING COURT — IC 16

DESCRIPTION: This facility provides eight indoor courts for handball, racquetball, and squash.

ASSETS:
2652 P MCB SPC SV 2,304 SF (A)

SUMMARY:
Adequate: 2,304 SF
Substandard: 0 SF
2,304 SF TOTAL
9,600 SF BFR
7,296 SF Deficient

NOTES: Construct 4,800 SF NAF N-228 FY84.
Construct 2,400 SF FIP MC-6011-34, JFY88.

CATEGORY CODE: 740-86 — 6,050 SF
EXCHANGE INSTALLATION WAREHOUSE — IC

DESCRIPTION: This facility provides back-up storage for the location Exchange.

ASSETS:

2432 S OWAX 3,840 SF (S)

SUMMARY:
Adequate: 3,840 SF
Substandard: 0 SF
3,840 SF TOTAL
6,050 SF BFR
2,210 SF Deficient

NOTES: Construct 2,210 SF, unprogrammed R2.

CATEGORY CODE: 740-87 — 10,500 SF
BOATHOUSE — IC

DESCRIPTION: This facility supports the Kin Blue Beach recreation area, with space for office, equipment check-out, repair and storage.

ASSETS:

SUMMARY:
Adequate: 0 SF
Substandard: 0 SF
0 SF TOTAL
10,500 SF BFR
10,500 SF Deficient

NOTES: Construct 10,500 SF unprogrammed NAF.

CATEGORY CODE: 740-88 — 6,750 SF
EDUCATIONAL SERVICES CENTER — IC 16

DESCRIPTION: This facility provides space for the advancement of the academic, technical, and vocational education of military personnel of all grades and ranks in order to enhance their potential to the service.

ASSETS:

2389			2,922 SF (A)

SUMMARY:

Adequate:	6,428 SF
Substandard:	0 SF
	6,428 SF TOTAL
	8,050 SF BFR
	1,622 SF Deficient

NOTES: Construct 1,622 SF unprogrammed R2.

CATEGORY CODE: 740-89 — 6,000 SF
BATHHOUSE — IC

DESCRIPTION: This facility supports the 50-meter Combat Training Pool.

ASSETS:

2428	P	MCB SPC SV	4,160 SF (A)
2649	P	MCB SPC SV	875 SF (A)

SUMMARY:

Adequate:	5,035 SF
Substandard:	0 SF
	5,035 SF TOTAL
	6,000 SF BFR
	65 SF Deficient

NOTES:

CATEGORY CODE: 750-10 — 14 EA
PLAYING COURTS — IC 16

DESCRIPTION: These facilities provide outdoor courts, including tennis courts, basketball courts, and outdoor handball courts.

ASSETS:

170	P	MCB SPC SV	1 EA (A)
2228	P	MCB SPC SV	1 EA (A)
2233	P	MCB SPC SV	1 EA (A)
2242	P	MCB SPC SV	1 EA (A)
2243	P	MCB SPC SV	1 EA (A)
2253	P	MCB SPC SV	1 EA (A)
2306	P	MCB SPC SV	1 EA (A)
2307	P	MCB SPC SV	1 EA (A)
2637	P	MCB SPC SV	1 EA (A)
2642	P	MCB SPC SV	1 EA (A)
2643	P	MCB SPC SV	1 EA (A)
2651	P	MCB SPC SV	1 EA (A)
2660	P	MCB SPC SV	1 EA (A)
2661	P	MCB SPC SV	1 EA (A)
2803	P	MCB SPC SV	1 EA (A)
2813	P	MCB SPC SV	1 EA (A)
2329	P	MCB SPC SV	1 EA (A)
2308	P	MCB SPC SV	1 EA (A)

ASSETS:

2314	P	MCB SPC SV	2 EA (A)
2318	P	MCB SPC SV	1 EA (A)
2326	P	MCB SPC SV	1 EA (A)
2328	P	MCB SPC SV	1 EA (A)
2329	P	MCB SPC SV	1 EA (A)
2341	P	MCB SPC SV	1 EA (A)
2351	P	MCB SPC SV	1 EA (A)
2367	P	MCB SPC SV	1 EA (A)
2473	P	MCB SPC SV	2 EA (A)
2474	P	MCB SPC SV	1 EA (A)
2501	P	MCB SPC SV	1 EA (A)
2528	P	MCB SPC SV	1 EA (A)
2532	P	MCB SPC SV	1 EA (A)
2535	P	MCB SPC SV	1 EA (A)
2602	P	MCC SPC SC	1 EA (A)

SUMMARY:
Adequate: 39 EA
Substandard: 0 EA
39 EA TOTAL
14 EA BFR
25 EA Excess

NOTES: BFRL to be revised.

CATEGORY CODE: 750-20 15 EA
PLAYING FIELD IC 16

DESCRIPTION: This facility provides for twelve softball fields, a baseball field with a superimposed football fields, and a 1440 yard running track.

ASSETS:

2209	P	MCB SPC SV	1 EA (A)
2411	P	MCB SPC SV	1 EA (A)
2426	P	MCB SPC SV	1 EA (A)
2831	P	MCB SPC SV	1 EA (A)

SUMMARY:
Adequate: 4 EA
Substandard: 0 EA
4 EA TOTAL
15 EA BFR
11 EA Deficient

NOTES: Construct 11 EA, unprogrammed NAF.

Special Note: There is a lack of open space at Camp Hansen to meet this requirement.

CATEGORY CODE: 750-30 25 ME
OUTDOOR SWIMMING POOL, INSTALLATION IC 10

DESCRIPTION: This facility provides a 25-meter recreational swimming pool.

ASSETS:

2649A	P	MCB SPC SV	25 ME (S)

SUMMARY:
Adequate: 0 ME
Substandard: 25 ME
25 ME TOTAL
25 ME BFR
0 ME Deficient

NOTES:

APPENDIX L-3

INVENTORY OF PLANT SPECIES

1. CANARY ISLANDS DATE PALM

Local Name: Canaryyashi

Scientific Name: Phoenix canariensis Chaubaud

Place of Origin: Canary Islands

Morphology: Evergreen tree

Blossoming season: April - May

Soil: a. Affinity to sunlight.
b. Rapid growth.

Remarks: 1. This is a very hardy plant that can withstand dry, sandy saline and other types of harsh soil conditions.
2. Able to withstand harsh soil conditions e.g. dry, sandy, or salinic soil.

Maintenance: Remove dead or broken branches, especially after typhoon.

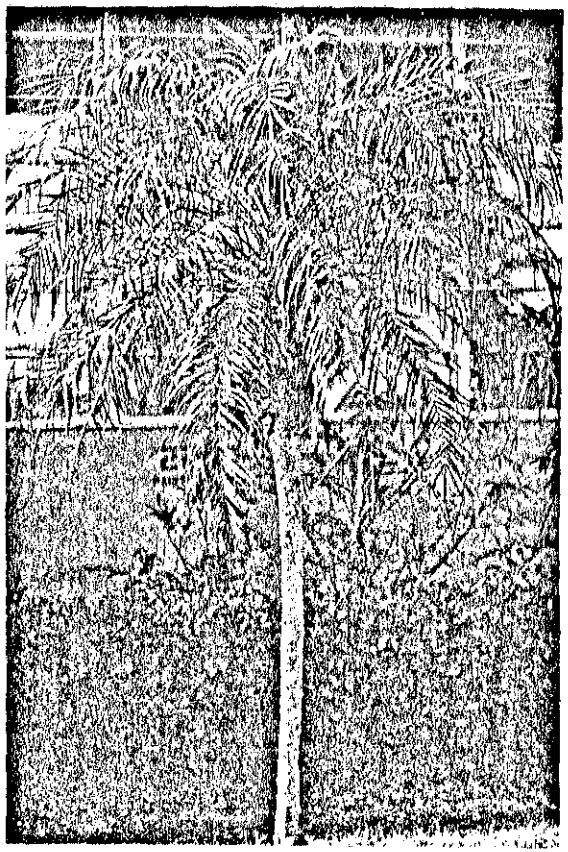
When to apply fertilizer: Apply *Tsubohi Mar-May, Sep-Oct and use organic fertilizer.

Harmful Insects (Season): Matured Taiwan beetle, Yashiozo-mushi at beginning of summer.

Treatment (Pesticide): Diazine...dilute w/water one part to 1000. Apply three times, once every 10 days.

* See Plant Maintenance

2. DWARF DATE PALM



Local Name: Shinoyashi

Scientific Name: Phoenix roebelinii O. Brien

Place of Origin: Indochina

Morphology: Mature height: 8 feet
Crown spread: 8 feet.

Blossoming season: March - June.

Soil:
a. Affinity to sunlight.
b. Normal saline environement.
c. Normal growth.
d. Fair to wind resistance.

Remarks:
1. Very low maintenance.
2. Recommend for use in admin area.
3. Requires partial shade, housing areas or parks.
4. Do not plant closer than four feet from buildings, sidewalks, roads, sewer or waterlines.

Maintenance: Remove dead or broken branches, especially after typhoons.

When to apply fertilizer: Apply * Tsubohi Mar-May, Sep-Oct and use organic fertilizer.

Harmful Insects (Season): Scale Insect.

Treatment (Pesticide): Jimateate...dilute w/water one part to 1000. Apply three times, once every 10 days.

* See Plant Maintenance

3. SPINDLE PALM

Local Name: Totkuriyashimodoki

Scientific Name: Macarena Verschaffeltii

Place of Origin: N/A

Morphology: Evergreen

Blossoming season: March - June.

Soil: a. Affinity to sunlight.
b. Normal saline environment.
c. Normal growth.

Remarks: 1. Available for usage as middle sized palm.

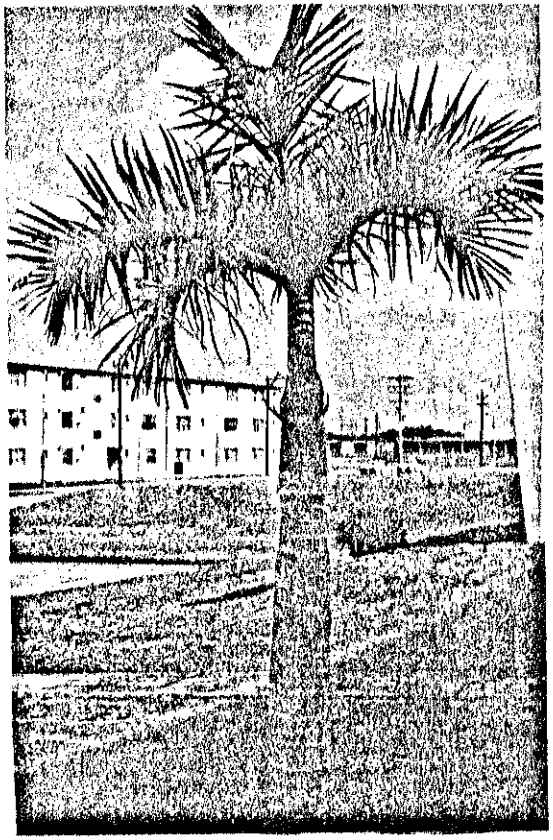
Maintenance: Remove dead or broken branches.

When to apply fertilizer: Apply * Tsubohi Mar-May and use organic fertilizer.

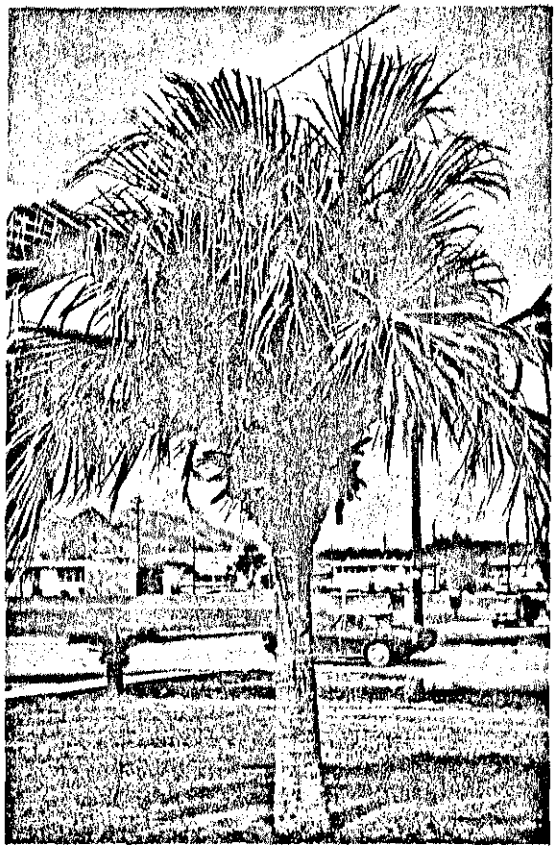
Harmful Insects (Season): Scale Insect

Treatment (Pesticide): Jimateate....dilute w/water one part to 1000. Apply three times, once every 10 days.

* See Plant Maintenance



4. CHINESE FAN PALM



Local Name: Bilow

Scientific Name: Livistona chinensis R. Br.

Place of Origin: Southern Japan. Taiwan

Morphology: Evergreen tree

Blossoming season: March-April

Soil:
a. Affinity to sunlight.
b. Able to withstand saline environment.
c. Normal growth.

Remarks:
1. This is a hardy plant that can withstand much sunlight, dry soil and other harsh soil conditions, good for planting near the ocean.

Maintenance: Remove dead or broken branches especially after typhoons.

When to apply fertilizer: Apply * Tsubohi Mar-May, Sept-Oct and use organic fertilizer.

Harmful Insects (Season): Matured Taiwan beetle, Kimune-kunagaha-mushi at beginning of summer.

Treatment (Pesticide): Seized and killed.

* See Plant Maintenance

5. PETTICOAT PALM

Local Name: Washington Yashi

Scientific Name: Washingtonia filifena H. Wendl

Place of Origin: Southern California, Eastern Arizona, Northwestern Mexico

Morphology: Evergreen tree

Blossoming season: June

Soil: a. Affinity to sunlight.
b. Able to withstand environment.
c. Slow growth.

Remarks: 1. Will grow in sandy or poor soil.

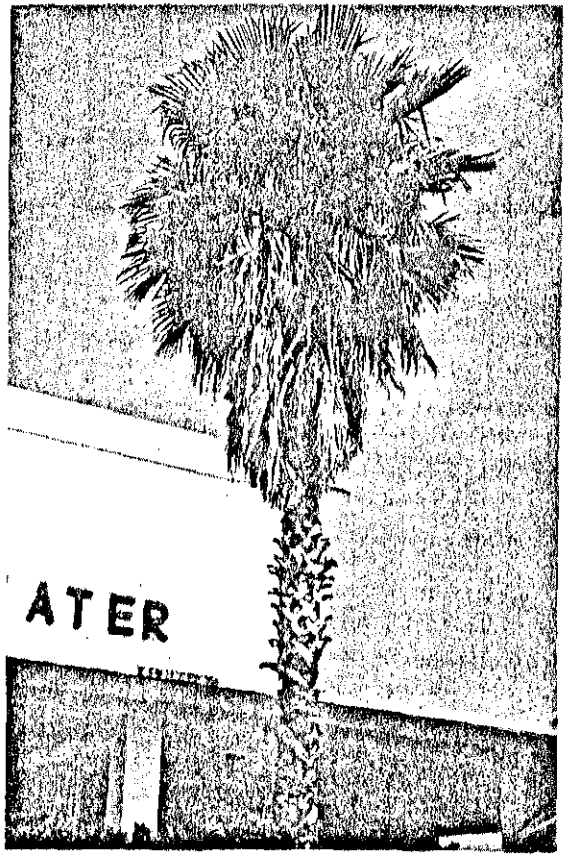
Maintenance: Remove dead broken branches especially after typhoon.

When to apply fertilizer: Apply * Tsubohi Mar-May, Sept-Oct and use organic fetilizer.

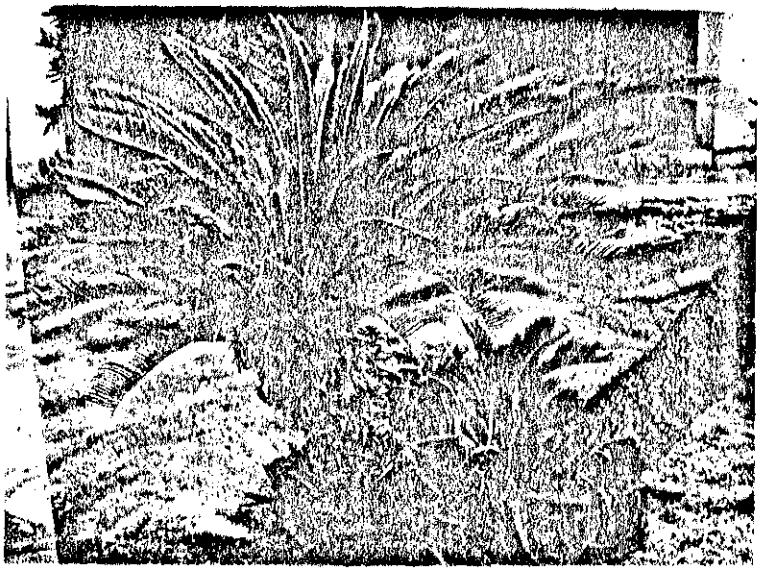
Harmful Insects (Season): Matured Taiwan beetle, Kimune-Kuronagaha-mushi at beginning of summer.

Treatment (Pesticide): Diazine.....dilute w/water one part to 1000. Apply three times, once every 10 days.

* See Plant Maintenance



6. SMALL SAGO PALM



Local Name: Sotestu

Scientific Name: Cycas revoluta Thunb

Place of Origin: Southern Japan

Morphology: Mature Height = 8 feet
Crown spread (30 years) = 10 feet.

Blossoming season: March - April.

Soil: a. Can be grown in direct sunlight or shady areas.
b. Wind resistance, poor.

Remarks: 1. Generally too fragile for use in housing areas or parks.
2. Do not plant closer than 5 feet from buildings, sidewalks, roads, sewer, or water lines.

Maintenance: Remove dead leaves.

When to apply fertilizer: Apply * Tsubohi Mar-May and use organic fertilizer.

Harmful Insects (Season): Scale Insect Sept-Oct.

Treatment (Pesticide): Jimateate....dilute w/water one part to 1000. Apply three times every 10 days.

* See Plant Maintenance

7. LUCHU PINE

Local Name: Ryukyumastu

Scientific Name: Pinus Luchuensic Mayr.

Place of Origin: Okinawa

Morphology: Evergreen tree

Blossoming season:

Soil: a. Affinity to sunlight.
b. Able to withstand saline environment
c. Rapid growth.

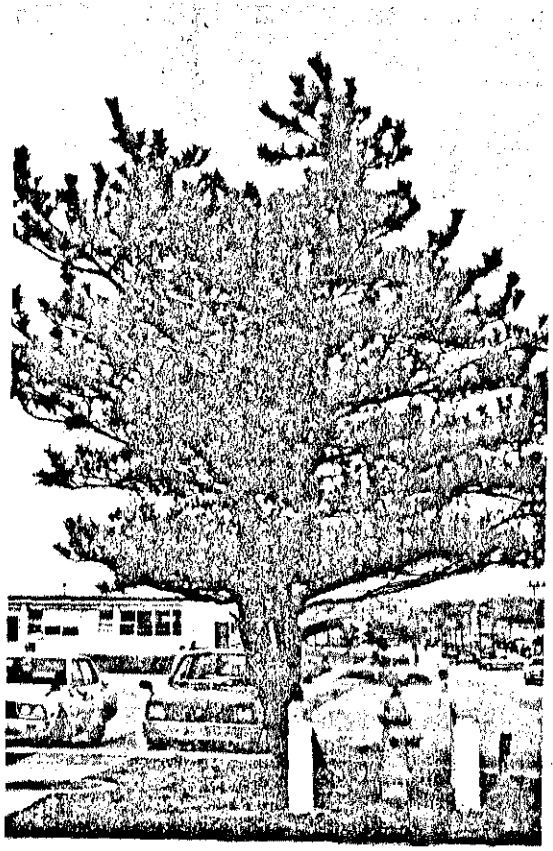
Remarks: 1. Okinawa prefectural tree.
2. Grows well in sunny areas, acidic and pedocal soil.

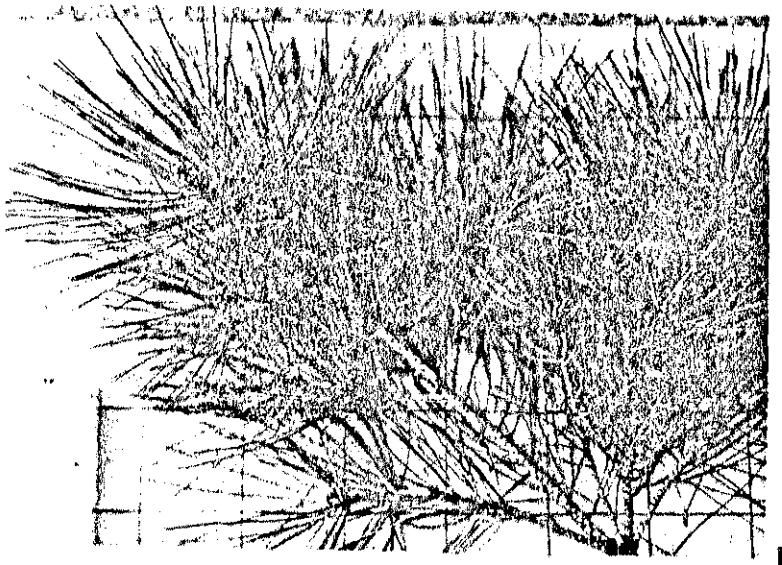
Maintenance: Cut dead or broken branches.

When to apply fetilizer: Apply * Tsubohi Feb-Mar and use organic fetilizer.

Harmful Insects (Season): Pine engraver.

Treatment (Pesticide): Pinetex...dilute w/water one part ot 50 Sept-Dec. As protection, diseased tree should be cut down and burned.





8. INDIAN LAUREL

Local Name: Gajimaru

Scientific Name: Ficus retusa L.

Place of Origin: Southern Japan, China, Taiwan, India, Malaysia, Australia.

Morphology: Evergreen tree

Blossoming season: February - March.

Soil: a. Affinity to sunlight.
b. Able to withstand saline environment.
c. Rapid growth.

Remarks: 1. After maturing, this plant will have a large root and limb system that is good for shade purposes.
2. Pruning may be necessary.

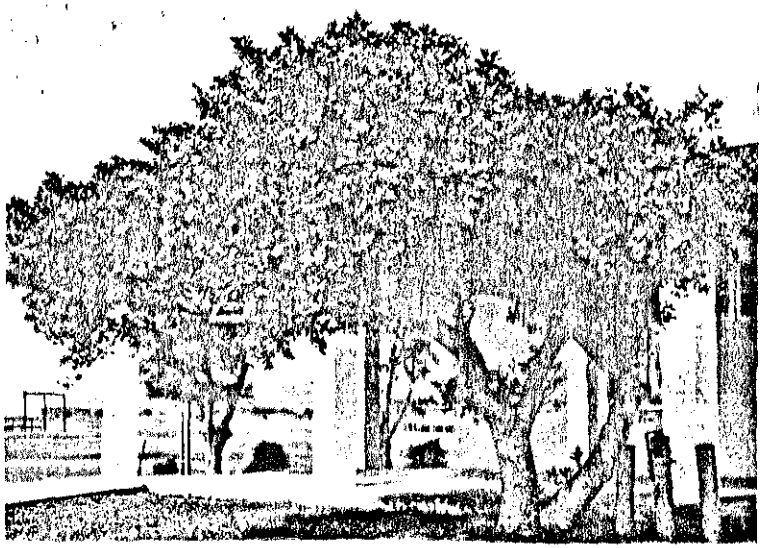
Maintenance: Prune Feb-Mar

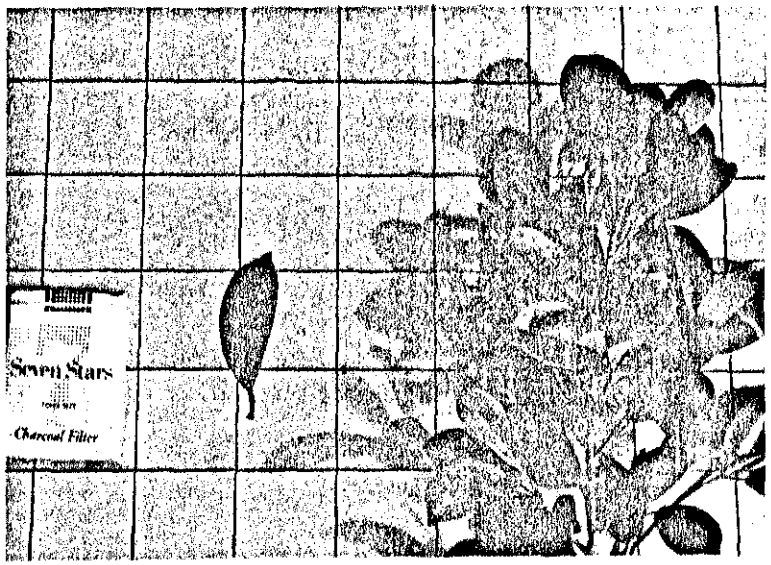
When to apply fertilizer: Apply * Rinpi Mar-May, Sept-Oct and use organic fertilizer.

Harmful Insects (Season): Many varieties of caterpillars; June-July.

Treatment (Pesticide): Diputerix....dilute w/water one part to 1000. Apply anytime.

* See Plant Maintenance





9. INDIAN RUBBER TREE

Local Name: Indogomunoki

Scientific Name: Ficus elastica

Place of Origin: India, Malaysia, Indonesia

Morphology: Evergreen tree

Blossoming season: April - May.

Soil: a. Affinity to unlight.
b. Able to withstand saline environment
c. Rapid growth.

Remarks: 1. Needs to be trimmed to maintain an attractive shape.

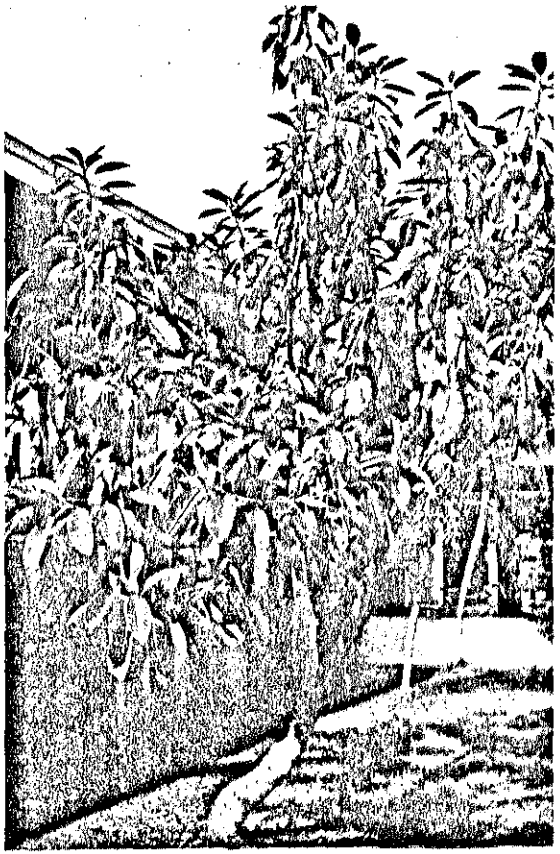
Maintenance: Certain branches must be cut because of thick growth.

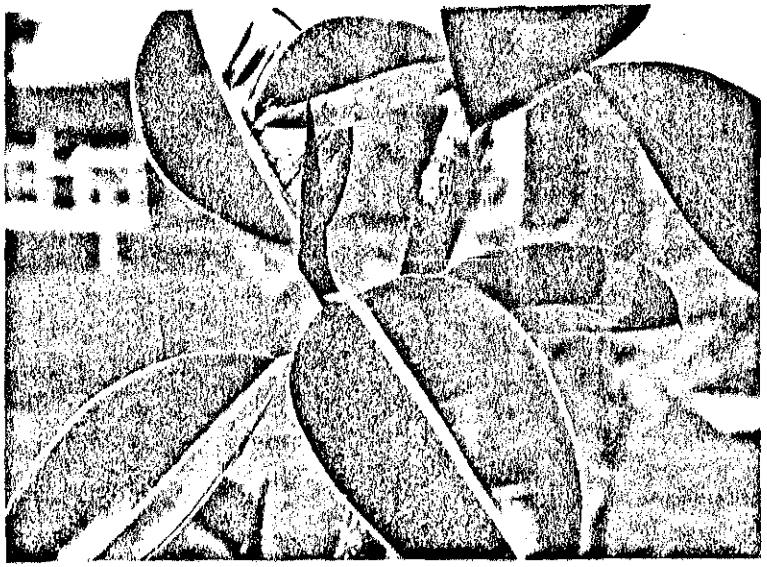
When to apply fertilizer: Apply * Tsubohi May-April, Sept-Oct and use organic fertilizer.

Harmful Insects (Season): Scale Insect; Aug-Oct.

Treatment (Pesticide): Jimateate....dilute w/water one part to 1000. Apply three times, once every 10 days.

* See Plant Maintenance





10. SHIMAGUWA

Local Name: (Above same)

Scientific Name: Norus australis poir

Place of Origin: Taiwan, Korea, Japan, Southern-China

Morphology: Deciduous tree

Blossoming season: March and September-October

Soil: a. Affinity to sunlight.
b. Able to withstand saline environment
c. Rpaid growth

Remarks: 1. Leaf surfaces are dark green and lustrous.
2. Fruit on tree is edible.

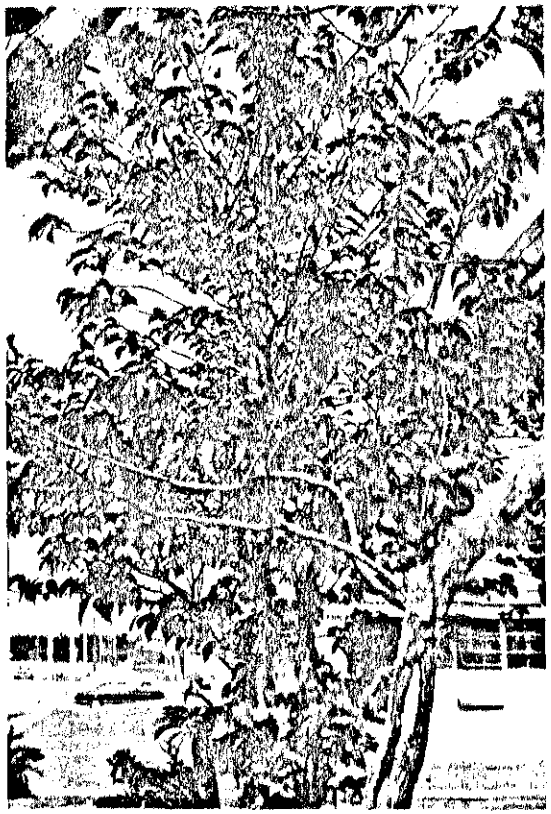
Maintenance: Remove dead leaves.

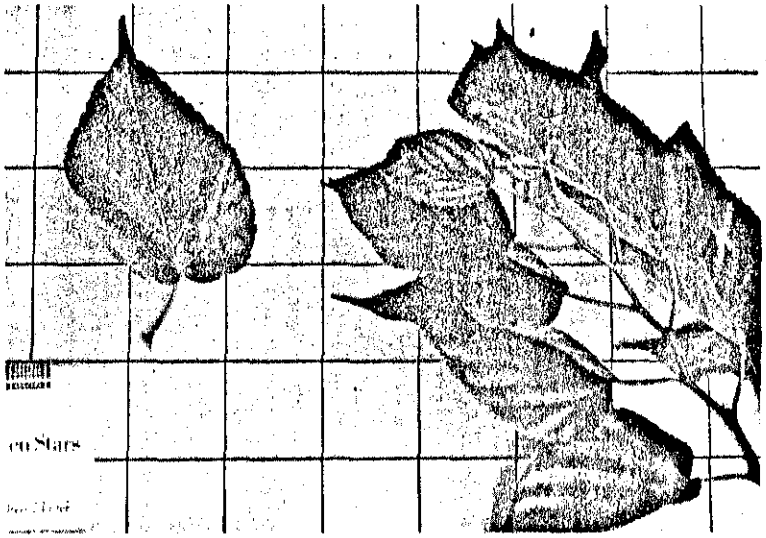
When to apply fertilizer: Apply * Tsubohi April-May and use organic fertilizer.

Harmful Insects (Season): Aphid.

Treatment (Pesticide): DDVP....dilute w/water one part to 1000.

* See Plant maintenance.





11. CORAL TREE

Local Name: Deigo

Scientific Name: Erythtrina variegata var. orientalis merril

Place of Origin: India

Morphology: Deciduous tree

Blossoming season: April - May.

Soil: a. Affinity to sunlight.
b. Able to withstand saline environment.
c. Rapid growth.

Remarks: 1. Okinawa prefectural flower.
2. Good shadetree.

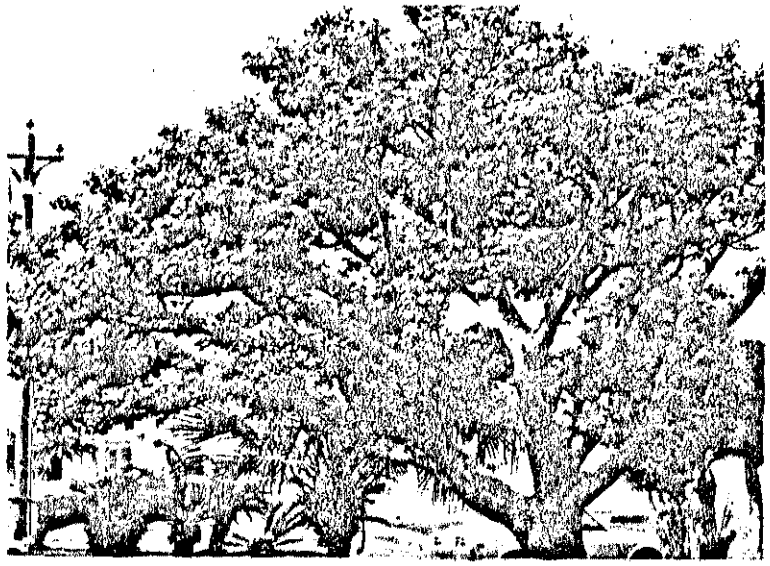
Maintenance: Cut dead or broken branches.

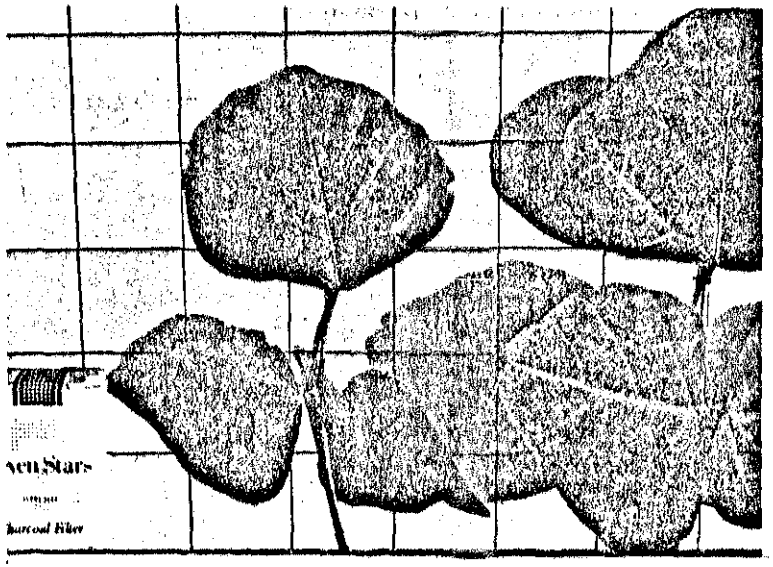
When to apply fertilizer: Apply * Tsubohi May-June and use organic fertilizer.

Harmful Insects (Season): Scale Insect; Mar-Oct

Treatment (Pesticide): Jimateate....dilute w/water one part to 1000. Apply three times, once every 10 days.

* See Plant Maintenance





12. SOSHIJU

Local Name: Soshiju

Scientific Name: Acacia confusa Merr.

Place of Origin: Southern Taiwan, Phillipines

Morphology: Tree, deciduous

Blossoming season: April - May

Soil: a. Affinity to sunlight.
b. Low saline environment.
c. Rapid growth.

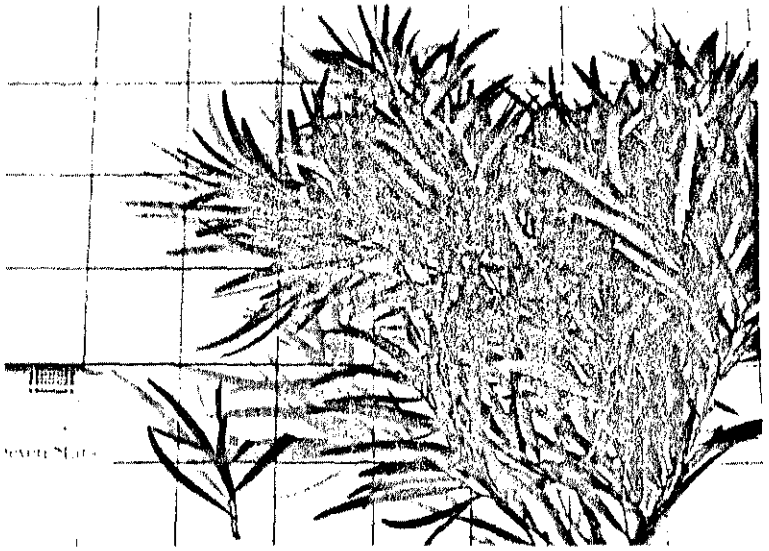
Remarks: 1.

Maintenance: Remove dead branches.

When to apply fertilizer: Apply * Tsubohi
Feb-April and use organic fertilizer.

Harmful Insects (Season): Scale Insect

Treatment (Pesticide): Jimateate....dilute
w/water one part to 1000.
Apply twice, once every 10 days.



13. COAST CASUARINA

Local Name: Mokumao

Scientific Name: Casuarina stricta Ait

Place of Origin: Australia

Morphology: Evergreen tree

Blossoming season: April

Soil: a. Affinity to sunlight.
b. Able to withstand saline environment.
c. Rapid growth.

Remarks: 1. Germinates rapidly pruning is necessary.

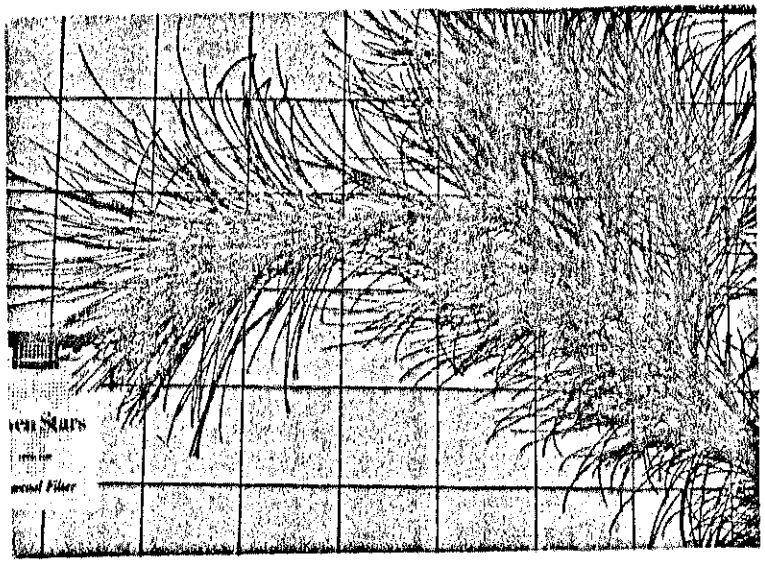
Maintenance: Prune Feb-Mar and before typhoons.

When to apply fertilizer: Apply * Rinpi Mar-May and use organic fertilizer.

Harmful Insects (Season): Scale Insect

Treatment (Pesticide): Jimateate....dilute w/water one part to 1000. Apply three times, once every 10 days.

* See Plant Maintenance



14. CHINESE JUNIPER

Local Name: Kaizukaibuki

Scientific Name: Juniperus Chinensis L. cu. Kaizuka

Place of Origin:

Morphology: Evergreen tree

Blossoming season: April

Soil: a. Affinity to sunlight.
b. Able to withstand saline environment.
c. Slow growth.

Remarks: 1. Grows in any type of soil.
2. Grows in shape of pyramid.

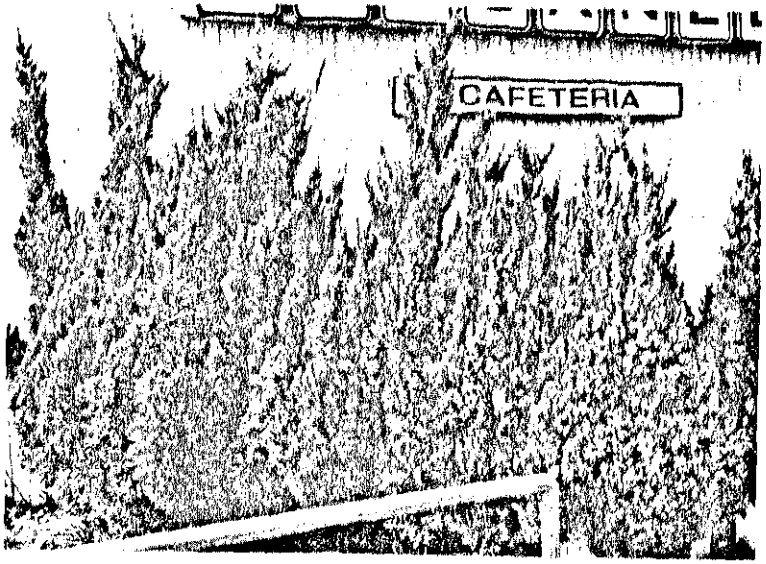
Maintenance: Cut shoots.

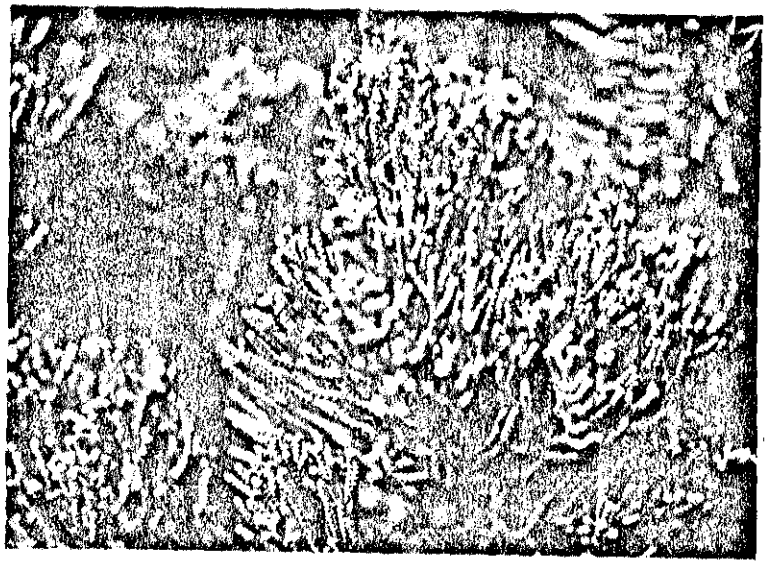
When to apply fertilizer: Apply * Tsubohi May-June and use organic fertilizer.

Harmful Insects (Season): Scale Insect.

Treatment (Pesticide): Jimateate...dilute w/water one part to 1000. Apply three times once every 10 days.

* See Plant Maintenance





15. OLEANDER

Local Name: Kyochikuto

Scientific Name: Nerium Oleander and N. indicum

Place of Origin: Native to areas from Iran to Japan.

Morphology: Evergreen shrub
Mature Height: 30 feet
Crown spread: (30 years): 10 feet
Flowers: white, pink violet, orange
Depending on the plant year round.

Blossoming season: Depending on the plant, year round.

Soil: a.
b.
c.

Remarks: 1. The tree sap is poisonous, so caution should be taken.
2. Can withstand saline soil and smokey environment.

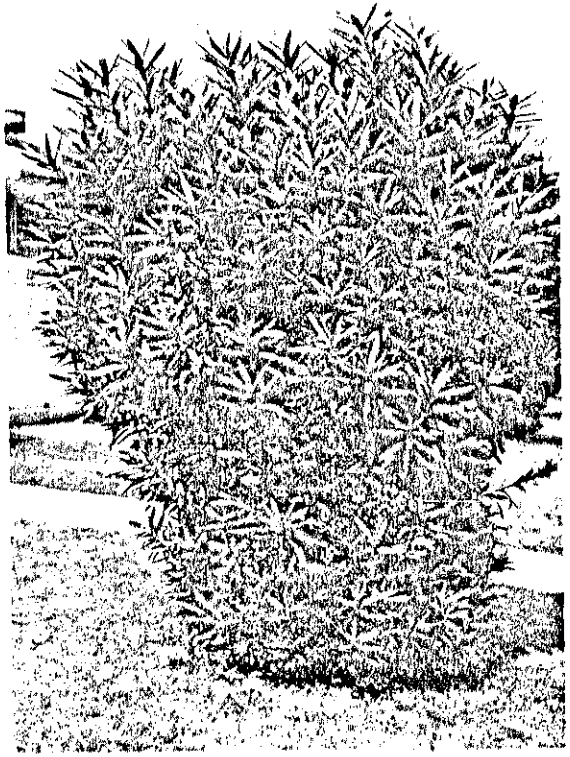
Maintenance: Prune Mar-April

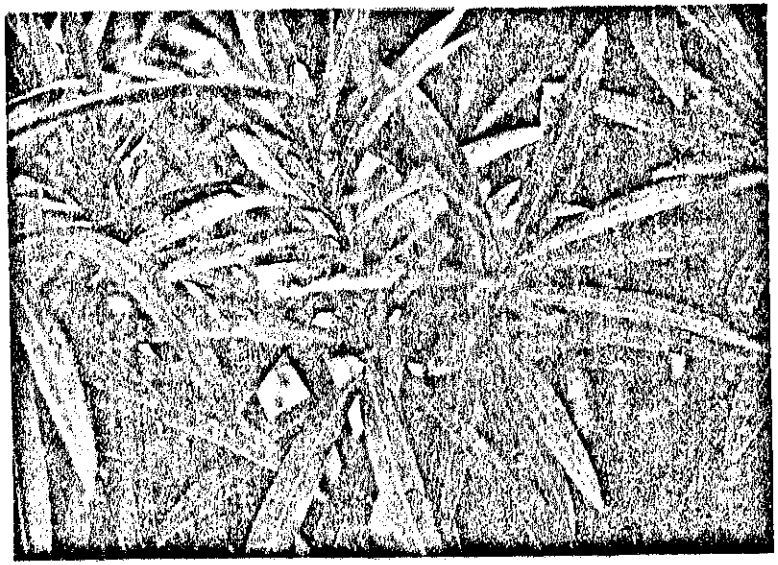
When to apply fertilizer: Apply * Tsubohi Feb-April, Oct-Nov and use organic fertilizer.

Harmful Insects (Season): Kyochikuto-suzumega July-Oct

Treatment (Pesticide): Jimateate or Diputerex...dilute w/water one part to 1000. Apply three times, once every 10 days.

* See Plant Maintenance





16. POINSETTIA

Local Name: Poinsettia

Scientific Name: Euphorbia pulcherrima

Place of Origin: Mexico, Guatemala

Morphology: Evergreen tree

Blossoming season: December-February

Soil: a. Affinity to sunlight.
b. Poor in saline environment.
c. Rapid growth.

Remarks: 1. Grows in sandy, poor deep soil.

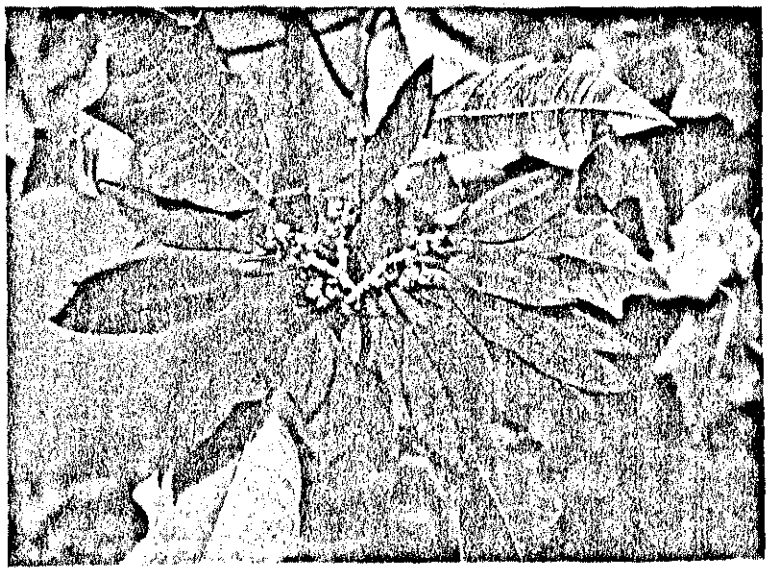
Maintenance: Prune Feb-Mar after blossoming.

When to apply fertilizer: Apply * Tsubohi Mar-April and use organic fertilizer.

Harmful Insects (Season): Scale Insect Sept-Oct.

Treatment (Pesticide): Jimateate...dilute w/water one part to 1000. Apply twice, once every 10 days.

* See Plant Maintenance.



17. CROTON

Local Name: Croton

Scientific Name: Codiaeum Variegtum L.

Place of Origin: Malaysia, Indonesia, Australia

Morphology: Shrublike evergreen.

Blossoming season: Year round.

Soil: a. Affinity to sunlight.
b. Able to withstand saline environment.
c. Rapid growth.

Remarks: 1. Sunshine gives good colour to leaves.

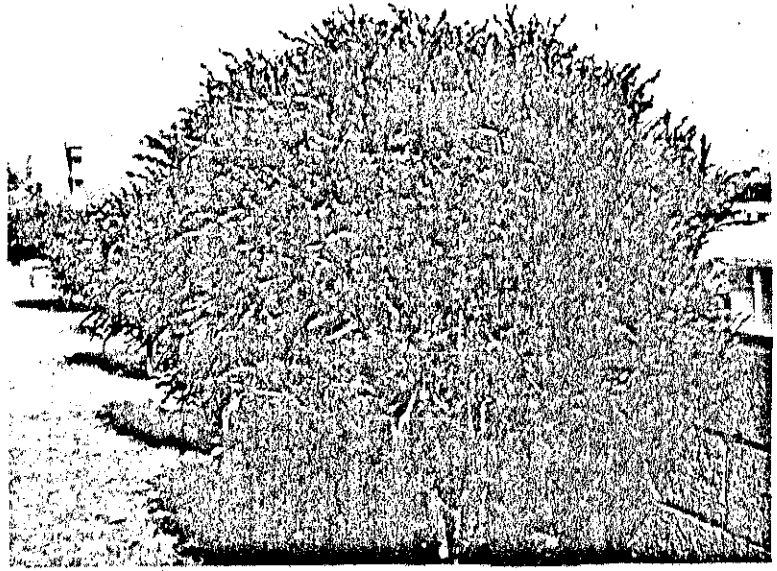
Maintenance: Trim occasionally, need much irrigation in summer.

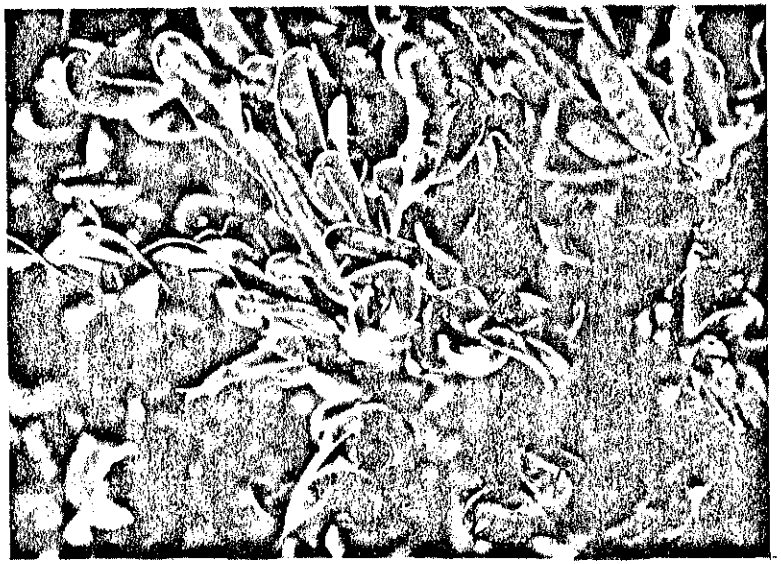
When to apply fertilizer: Apply * Tsubohi Mar-April, Sept-Dec and use organic fertilizer.

Harmful Insects (Season): Scale Insect.

Treatment (Pesticide): Jimateate....dilute w/water one part to 1000. Apply three times, once every 10 days.

* See Plant Maintenance





18. CHINESE HIBISCUS

Local Name: Hibiscus

Scientific Name: Hibiscus rosa-sinensis L.

Place of Origin: East India

Morphology: Evergreen shrub

Blossoming season: March-December

Soil: a. Affinity to sunlight.
b. Normal saline environment.
c. Rapid growth.

Remarks: 1. Since this plant blossoms throughout the year it can be used to beautify certain areas.
2. Grows in any type of soil.
3. Pruning is necessary.

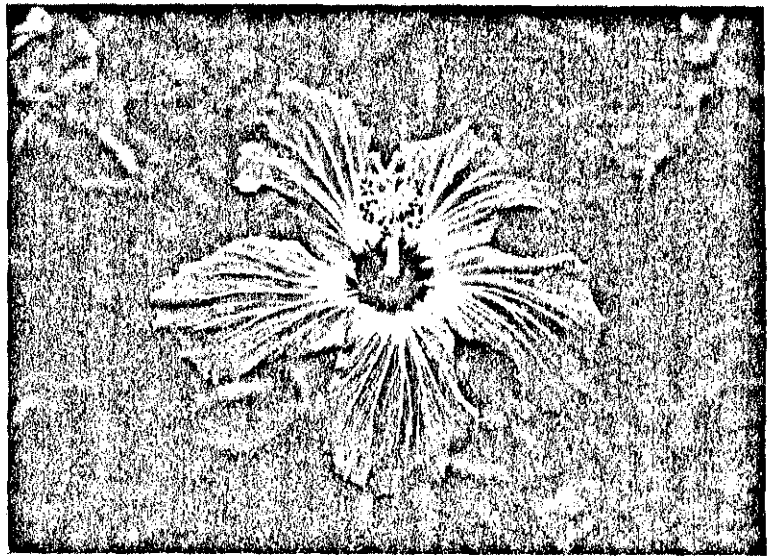
Maintenance: Certain branches when thick cover. Prune Feb-Mar.

When to apply fertilizer: Apply * Tsubohi Mar-April and use organic fertilizer.

Harmful Insects (Season): Aphid, Mar-May.

Treatment (Pesticide): DDVP....dilute w/water one part to 2000. Apply twice, once every five days.

* See Plant Maintenance



19. CENTURY PLANT

Local Name: Ryuzetsuran

Scientific Name: Marginata

Place of Origin: Central America, South Africa

Morphology: Shrub

Blossoming season: May

Soil:
a. Affinity to sunlight.
b. Poor saline environment.
c. Rapid growth.

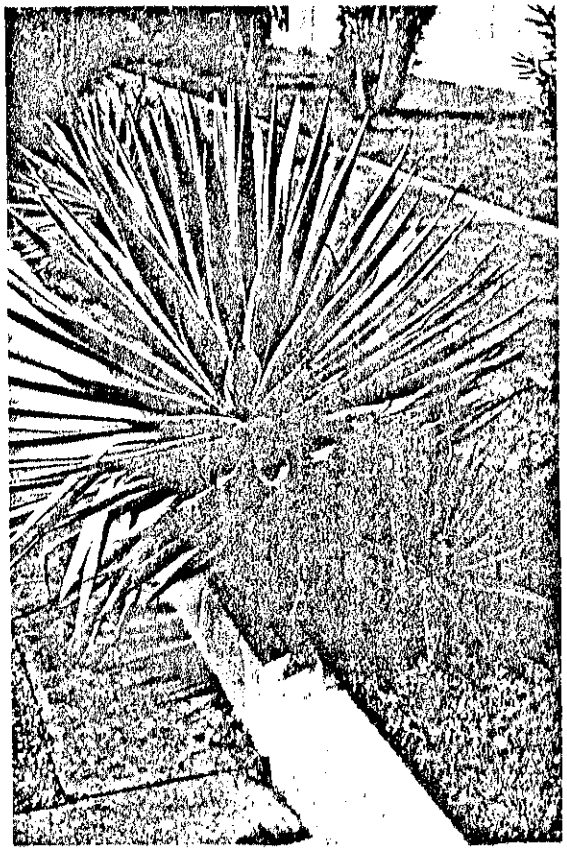
Remarks:
1. Must be well drained. Grow in sandy, poor soil.
2. Does not blossom every year. Once it blossoms, the plant shall perish.

Maintenance: Remove dead or broken branches.

When to apply fertilizer: Apply * Tsubohi May-June, use organic fertilizer.

Harmful Insects (Season): N/A

Treatment (Pesticide): N/A



* See Plant Maintenance

20. JAPANESE SILVERLEAF

Local Name: Tsuwabuki

Scientific Name: Fanfugjum Japonicum

Place of Origin: N/A

Morphology: Pernnial

Blossoming season: January

Soil: a. Requires partial shade.
b. Able to withstand saline environment.
c. Rapid growth.

Remarks: 1. Conditions good for planting near the ocean.
2. Able to withstand shade may be for planted under trees.

Maintenance: Remove dead leaves.

When to apply fertilizer: Apply * Tsubohi Mar-April and use organic fertilizer.

Harmful Insects (Season): Leaf miner moth.

Treatment (Pesticide): DDVP...dilute w/water one part to 1000 occasionally.

* See Plant Maintenance

DEPARTMENT OF THE NAVY
HEADQUARTERS UNITED STATES MARINE CORPS
WASHINGTON, D.C. 20380-0001

IN REPLY REFER TO
11010/2
LFL/294
21 APR 1987

From: Commandant of the Marine Corps
To: Commanding General, Marine Corps Base, Camp Smedley D. Butler, FPO Seattle 98773-5001

Subj: APPROVAL OF PRE-FINAL MASTER PLAN, CAMP HANSEN, OKINAWA, JA

Ref: (a) CG, MCB Camp Smedley D. Butler ltr 11000 Code 14/64/20 of 12 Mar 87

1. We have reviewed the subject document forwarded by the reference. The Master Plan is approved as submitted.

2. This master plan approval constitutes site approval of the projects shown in Sections G and I. Any major deviations must be submitted to this Headquarters for approval.

Copy to:
COMMARCORBASESPAC (15B)
DEPCOMMARCORBASESPAC (FWD)
COMPACNAVFACENGCOM (CODE 20)

Michael P. Downs

MICHAEL P. DOWNS
Colonel, U.S. Marine Corps
Director, Facilities and Services Division
Installations and Logistics Department
By direction of the Commandant of the Marine Corps