NAVY/MARINE CORPS ACTIVITIES

CAMP BUTLER

OKINAWA JAPAN MASTER PLAN

SEPTEMBER 1980

DEPARTMENT OF THE NAVY

PACIFIC DIVISION

NAVAL FACILITIES ENGINEERING COMMAND

FACILITIES PLANNING DEPARTMENT

DEPARTMENT OF THE NAVY

PACIFIC DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
(MAKALAPA, HI)
PEARL HARBOR, HAWAII 96860

202:DQ:tw
11010.1
Ser 7548
12 September 1980

From: Commander, Pacific Division, Naval Facilities Engineering Command
To: Commander, Naval Facilities Engineering Command

Subj: Final Master Plan for MCB Camp S. D. Butler, Okinawa, Japan; forwarding of

Ref: (a) NAVFACENGCOMINST 11010.63A of 26 Dec 1979
(b) MCO P11000.12 of 3 Feb 1976

Encl: (1) Subject Master Plan dtd Sep 1980 (20 cys)

1. The Final Master Plan for MCB Camp Butler is forwarded as enclosure (1) for CMC approval and distribution at the Washington level in accordance with references (a) and (b).

2. An initial Draft Master Plan was submitted in March 1978. The subsequent acquisition of Camp Kinser required a second Draft Master Plan which was submitted in January 1980. All applicable comments on the second Draft Master Plan have been incorporated in the Final Master Plan.

3. The Okinawa Regional Profile, which supplements this Plan, was distributed by separate correspondence. Master plans for MCAS (H) Futenma, Okinawa, Japan, and Camp Fuji, Japan, are being published separately.

4. This submittal completes action on the subject Master Plan until updating is directed.

Sincerely,

T. C. KELLEY
Head, Facilities
Planning Department

Copy to:
CINCPACFLT (1 cy)
COMMARCORBASESPAC (4 cys)
COMUSJAPAN (1 cy)
COMNAVFORJAPAN (2 cys)
CG MCB Camp Smedley D. Butler (20 cys)
CO MCAS (H) Futenma (4 cys)
COMFLEACT Okinawa/NAF Kadena (4 cys)
Resident Battalion, Camp Shields (1 cy)

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

LIST OF TABLES

A. EXECUTIVE SUMMARY

Marine Corps Base, Camp Smedley D. Butler (MCB Camp Butler) consists of eight camps, two training areas and an air station on Okinawa, along with a training camp complex at Camp Fuji, Japan. This Master Plan covers the eight Okinawa camps (Camp Kinser, Camp Foster, Camp Kuwae, Camp Courtney, Camp McTureous, Camp Hansen, Camp Schwab (including Henoko Ammunition Storage Area), Camp Onna Point) and the base camp at the Northern Training Area. U.S. Marine Corps Air Station (Helicopter) Futenma, (MCAS (H) Futenma), Okinawa, and Camp Fuji, Japan, are addressed in separate Master Plan publications.

Marine Corps forces at MCB Camp Butler consist of five major commands--MCB Camp Butler, the 3rd Marine Division, III Marine Amphibious Force (III MAF), the 1st Marine Aircraft Wing (1st MAW), and the 3rd Force Service Support Group (3rd FSSG).

This Master Plan for MCB Camp Butler was prepared by the Pacific Division, Naval Facilities Engineering Command (PACNAVFACENGCOM). It provides a basis for orderly development, recommends specific facility sites for near-term programmed projects and establishes land use schemes that will permit the siting of any additional facilities required to support changes in mission or base loading.

The following areas of concern at MCB Camp Butler were identified during the development of this Master Plan:

a. The unaccompanied personnel housing facilities throughout the camps are substandard because they contain open bays and gang toilets and in some cases are overcrowded.

b. There are insufficient exchange/morale/recreation facilities in the camps to support the personnel compliment, most of whom are on 12-month unaccompanied tours.

c. There are insufficient storage, maintenance and administration facilities.

d. The local environmental protection regulations have an adverse impact on military operations.

Major recommendations include:

a. Implement a progressive (two-stage) unaccompanied personnel housing rehabilitation program to upgrade the living conditions of the existing quarters and pursue funding for new buildings. Initial effort would be to provide partitions and central air conditioning, followed by construction of bathrooms for each room.

b. Construct higher density (multi-story) buildings at all camps to insure that required facilities can be sited within the developed areas of each camp, while maintaining open areas for troop training and outdoor recreation.

c. Develop a permanent cantonment area at the Northern Training Area base camp.

d. Standardize signs on base and initiate a traffic and circulation study by the Military Traffic Management Command.

e. Develop an overall landscaping plan for all camps, emphasizing the use of plants which require minimum maintenance.

B. INTRODUCTION

1. Location

MCB Camp Butler is located on Okinawa and is the base support command for Marine Corps ground forces on the island and at Camp Fuji in Japan. MCB Camp Butler is made up of a number of individual camps and training areas. Figure B-1 shows the land parcels used by Marine Corps ground forces, including Camps Kinser, Foster, Kuwae, Courtney, McTureous, Hansen, Onna Point, Schwab/Henoko, and the Northern Training Area. Camp Fuji, a training camp on the eastern slopes of Mount Fuji on Honshu Island, Japan, is covered by a separate document. MCAS (H) Futenma is a part of MCB Camp Butler but will be the subject of a separate Master Plan because of a separate operational command chain.

2. Planning Objectives

The Master Plan planning objectives are to provide a realistic and orderly development scheme for each camp. It identifies specific sites for current facility deficiencies and provides a land use plan as a guide for siting any future requirements to support the activity's missions and tasks.

3. Planning Approach

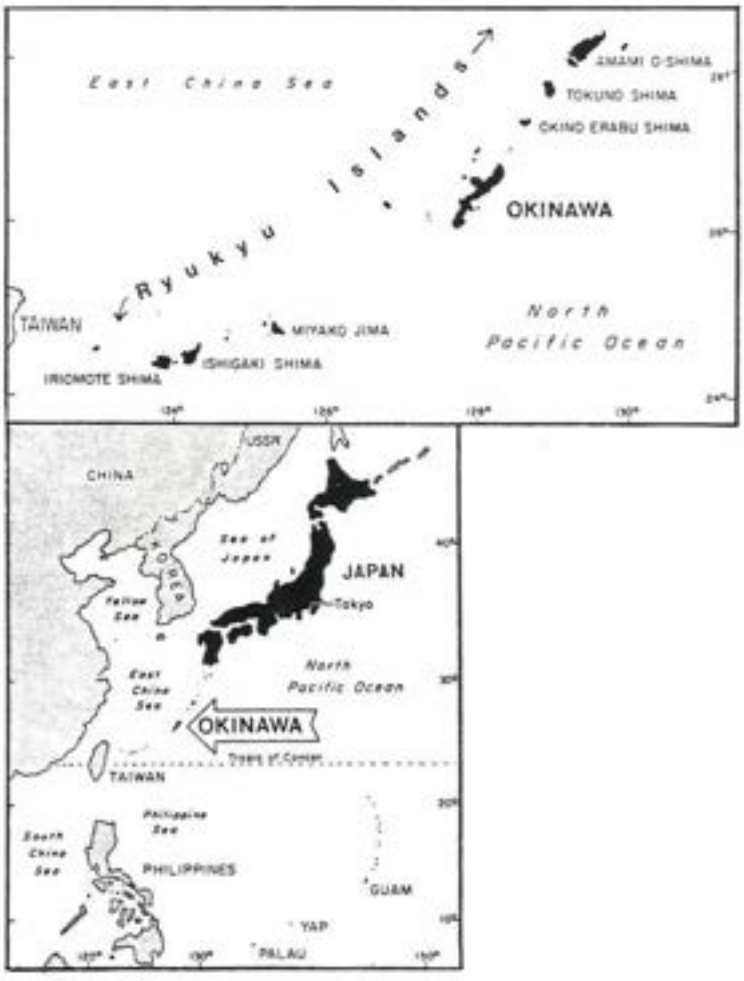
This master planning effort began with the gathering and analysis of facility requirements data, along with on-site inspections and interviews in 1977. A Prefinal Plan was published in November 1977 but was tabled pending final decisions about the acquisition and use of Camp Kinser. The second iteration of the Plan began with an on-site planning effort in June 1979 and was distributed in early 1980. This final plan incorporates comments concerning the two draft versions.

4. Scope

This Master Plan is based on requirements generated by the most recent planning and programming documents developed in CY 1979. The proposed land use plan allocates sufficient area to satisfy all basic facility requirements.

5. Use of the Master Plan

This Plan is intended to be a viable document and can be adjusted to accommodate changes. The narrative portion of the Plan provides a sufficiently broad analysis to insure the orderly development of all near-term and far-term facilities.



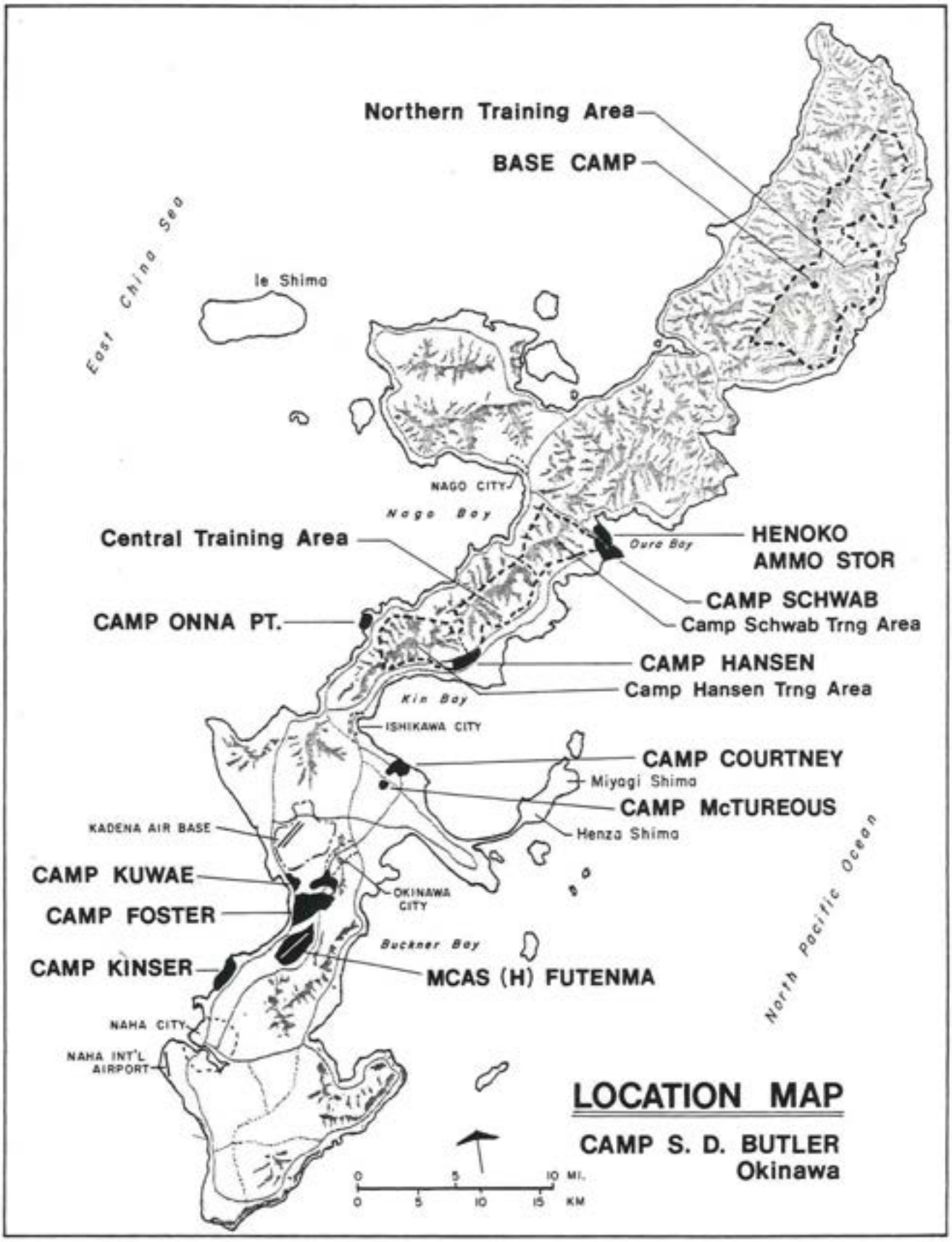

Northern Training Area
BASE CAMP
East China Sea
Ie Shima
NAGO CITY
Nago Bay
Central Training Area
Oura Bay
HENOKO
AMMO STOR
CAMP SCHWAB
Camp Schwab Trng Area
CAMP ONNA PT.
CAMP HANSEN
Camp Hansen Trng Area
Kin Bay
ISHIKAWA CITY
CAMP COURTNEY
Miyagi Shima
CAMP McTUREOUS
KADENA AIR BASE
Henza Shima
CAMP KUWAE
CAMP FOSTER
OKINAWA CITY
Buckner Bay
CAMP KINSER
MCAS (H) FUTENMA
North Pacific Ocean
NAHA CITY
NAHA INT'L AIRPORT
0 5 10 MI.
0 5 10 15 KM
LOCATION MAP
CAMP S. D. BUTLER
Okinawa

FIGURE B-1

C. METHODOLOGY

The normal methodology developed for preparing a master plan includes the following steps as outlined in Figure C-1.

1. Data Collection

Data collection consisted of the accumulation of information about the activity and surrounding area including the planning documents, maps, environmental data base and other pertinent data. Historical data, information about land use constraints and man-made considerations, such as existing adjacent land uses, were also collected. Finally, the best available projections of future requirements were obtained. This information was supplemented by discussions with appropriate personnel at the activity and the chain of command. Two prefinal plans were published.

2. Development of Planning Objectives

The development of planning objectives was accomplished in coordination with the activity and the chain of command following review of the basic data.

3. Evaluation and Analysis

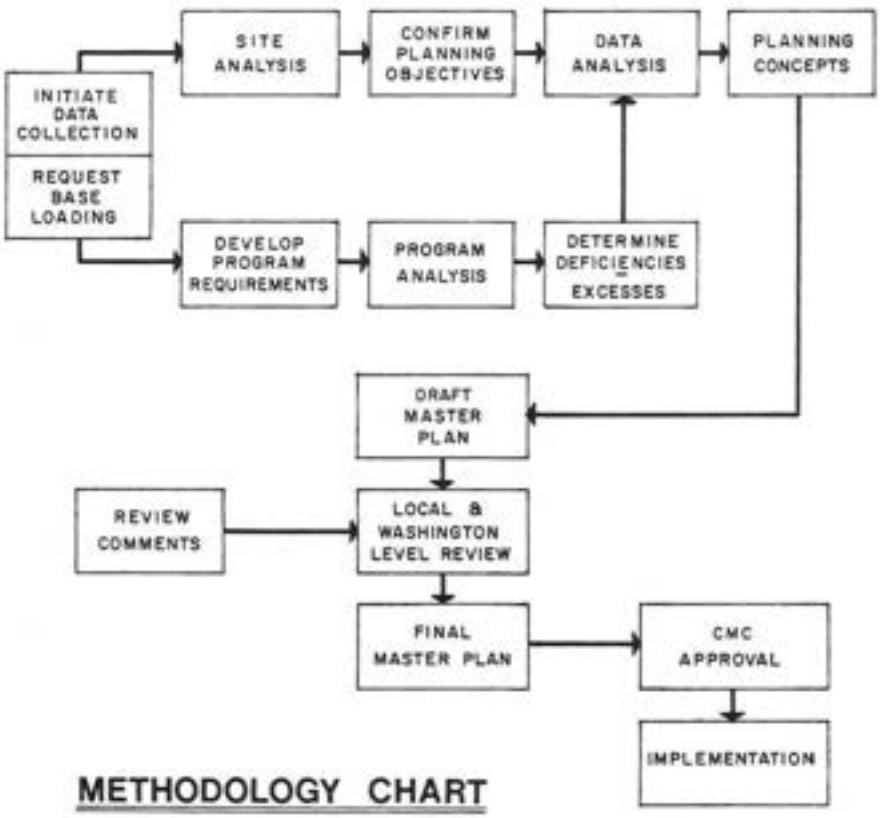
An on-site evaluation of existing conditions was made with MCB Camp Butler personnel. Problem areas were reviewed and alternative solutions were discussed. Analyses were made of the data gathered from existing documents, from the on-site visit and from discussions with activity personnel. The ability of the camp to accommodate future requirements was evaluated. Conclusions/recommendations were developed to support the activity mission and planning objectives, giving priority consideration to environmental and fiscal constraints.

4. Draft Reports

The results of the efforts of the above steps were published in November 1977 and January 1980. Distribution to all interested commands within the Marine Corps was made for review comments and discussion.

5. Final Report

Reviews and comments on the draft reports were incorporated into the Plan and this final Master Plan published. Upon Commandant of the Marine Corps (CMC) approval, the Plan will become the guide for all future development of MCB Camp Butler.



METHODOLOGY CHART

FIGURE C-1

D. OKINAWA OVERVIEW

1. Introduction

This section is a very brief summary of data contained in the Okinawa Navy/Marine Corps Regional Profile, which provides an Okinawa-wide data base for Okinawa activities.

2. Location

Okinawa (1,175 square kilometers (km) in area) is the largest of the Ryukyu Islands and is located about 1,600 km southwest of Tokyo (see Figure D-1).

3. Geology (See Figure D-2)

Okinawa is part of the exposed crest of a large submarine ridge. It has two distinct physiographic provinces--a series of high, discontinuous mountains to the north, and open, rolling uplands to the south. Maximum elevation is about 550 meters.

4. Meteorology

Okinawa is located at the latitude of Miami Beach and has a similar climate, with mild winters and humid summers. Rainfall averages about 2.1 meters per year, and typhoons are common, especially between May and November (see Figure D-3).

5. Population and Employment

The 1975 census shows an Okinawan population of just over 1 million people--up almost 100,000 from the 1970 census.

6. Transportation

All land transportation on Okinawa is by highway vehicle. Most inter-base access is adequate, except for peak-hour traffic congestion (see Figure D-4). Four scheduled airlines serve Okinawa with over 40 flights per day, and there is daily ocean passenger service to the outer islands and Japan.

The island-wide speed limit is 40 KPH except on the Okinawa Expressway, and movement of heavy military vehicles is very restricted on civilian roadways.

FIGURE D-1

FIGURE D-2

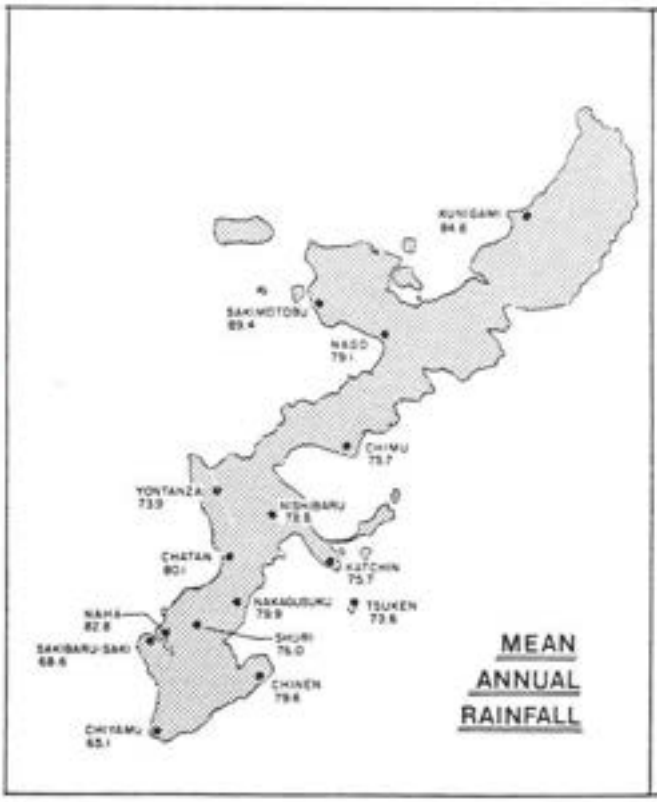


FIGURE D-3

FIGURE D-4

E. MCB CAMP BUTLER OVERVIEW

1. MCB Camp Butler Today

a. Location (Refer back to Figure B-1). MCB Camp Butler consists of eight major camps spread over an area 50 kilometers in length from Camp Kinser on the western coast of Southern Okinawa to Camp Schwab/Henoko in the northeastern part of the island. Camps Foster, Kuwae, Courtney, McTureous, Hansen, Schwab/Henoko, and Onna Point lie in between. MCB Camp Butler also includes the Northern Training Area located in Northeast Okinawa. MCAS (H) Futenma, Okinawa, and Camp Fuji, a training camp on the slopes of Mount Fuji, Honshu Island, Japan, are part of MCB Camp Butler and are covered in separate Master Plan publications.

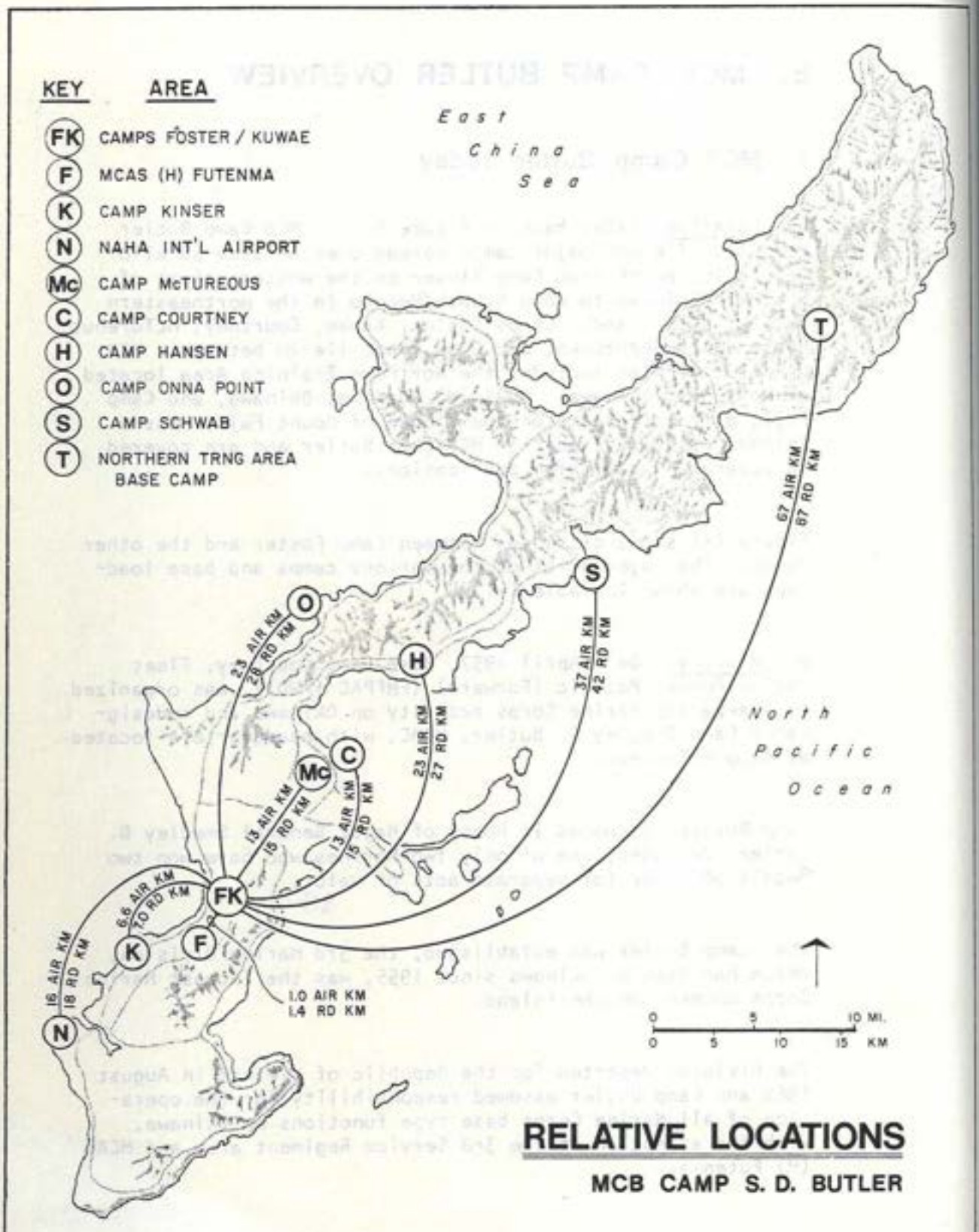
Figure E-1 shows distances between Camp Foster and the other camps. The major units of the various camps and base loadings are shown in Table E-1.

b. History. On 1 April 1957, Base Camp Courtney, Fleet Marine Force, Pacific (Forward) (FMFPAC (FWD)), was organized as a separate Marine Corps activity on Okinawa and redesignated Camp Smedley D. Butler, USMC, with headquarters located at Camp McTureous.

Camp Butler was named in honor of Major General Smedley D. Butler, deceased, one of only two Marines who have won two Medals of Honor for separate acts of valor.

When Camp Butler was established, the 3rd Marine Division, which had been on Okinawa since 1955, was the largest Marine Corps command on the island.

The Division departed for the Republic of Vietnam in August 1965 and Camp Butler assumed responsibility for the operation of all Marine Corps base type functions on Okinawa, with the exception of the 3rd Service Regiment area and MCAS (H) Futenma.



RELATIVE LOCATIONS

MCB CAMP S. D. BUTLER

FIGURE E-1

Table E-1

MARINE CORPS UNITS
AND BASE LOADING

LOCATION	OFF	ENL	DOD	LN — Local Nationals
Camp Kinser				
3rd FSSG	139	2,299	1	10
MCB Camp Butler/Misc	11	282	121	535
Subtotal	150	2,581	122	545
Camps Foster/Plaza/Kuwae				
3rd FSSG	59	1,166	468	1,659
MCB Camp Butler/Misc	236	1,081		
12 Mar Reg	120	1,288		
MAF Band	1	61		
1st MAW	179	1,408		
Subtotal	595	5,004	468	1,659
Camp Hansen				
3rd FSSG	69	980		
3rd Mar Div	183	3,064		
MCB Camp Butler/Misc	12	51	24	188
Subtotal	264	4,095	24	188
Camp Courtney				
3rd FSSG	4	19		
MCB Camp Butler/Misc	3	34	3	49
III MAF	98	173		
CTF-76	27	66		
3rd Mar Div	137	821		
Subtotal	269	1,113	3	49
Camp Schwab				
3rd FSSG	7	105		
MCB Camp Butler/Misc	2	21	9	50
3rd Mar Div	145	2,806		
Subtotal	154	2,932	9	50
Camp McTureous				
3rd Mar Div	1	10		
MCB Camp Butler/Misc	0	22	5	57
Subtotal	1	32	5	57
Camp Henoko				
3rd FSSG	13	246		
Camp Shields				
3rd FSSG	3	14		
Camp Onna Point				
3rd Mar Div	20	211		
MCB Camp Butler/Misc		4		1
Subtotal	20	215	0	1
MCAS (H) Futenma				
(Refer to MCAF Master Plan for Units)				
Subtotal	406	2,612	8	100
Northern Training Area	2	35		
TOTAL LOADING ON OKINAWA	1,877	19,079	639	2,649
Camp Fuji				
(Refer to Camp Fuji Master Plan for Units)				
Total	13	114	0	42
Camp Kuwae				
NAVREGHEDCEN	114	328	108	175

In October 1965, Camp Butler moved its headquarters to Camp Courtney where HQ FMFPAC (FWD) had been established about four months previously.

On 1 July 1969, Camp Butler was designated a Marine Corps Base. The DEPCG FMFPAC (FWD) was assigned primary duties as CG MCB Camp Butler, with additional duties as DEPCG FMFPAC (FWD) and Deputy Commander, Marine Corps Bases, Pacific (Forward) (DEPCOMMARCORBASESPAC (FWD)). The staffs of MCB Camp Butler and FMFPAC (FWD) were combined into a single headquarters.

With the redeployment of the 3rd Marine Division to Okinawa and the establishment of the 1st Marine Expeditionary Force, HQ FMFPAC (FWD) was deactivated on 7 November 1969, and MCB Camp Butler was moved from Camp Courtney to Camp McTureous.

In June 1975, CG MCB Camp Butler was named Okinawa Area Coordinator, filling the role formerly held by the Commander, U.S. Army Garrison, Okinawa (USAGO), as coordinator of matters affecting any two or more of the U.S. Armed Forces on Okinawa. As Army personnel strength on Okinawa declined, the former USAGO Headquarters at Camp Foster and many other facilities were vacated, and in August 1975, MCB Camp Butler moved to Building 2 at Camp Zukeran (now Camp Foster).

The 1st MAW Headquarters moved to Camp Foster on 20 April 1976 from Iwakuni, thus locating MCB Camp Butler and 1st MAW Headquarters in Building 2.

Camp Kinser (formerly the Makiminato Service Area) was acquired from the U.S. Army in 1978, and re-named Camp Kinser in 1980. Both name changes follow the Marine tradition of naming camps after Medal of Honor winners.

2. Military Planning Data

a. Description of Major Commands. The activities at MCB Camp Butler can be compared to a college or university, in that its primary mission concerns the education and training of military personnel. In this sense, Marine Corps Base can be thought of as the staff which provides housing, utilities,

land, buildings and administrative services. In addition to basic combat infantry training and rifle qualification, specialized training in guerilla warfare and field training in the most modern weapon systems are conducted at the camp. Combat Support Schools with specialized courses in engineering and demolition and Service Support Schools with specialized courses of training in food service, disbursing, supply, automotive driving and vehicle maintenance are conducted.

The 3rd Marine Division and the 3rd FSSG are the major tenants of MCB Camp Butler. The 3rd Marine Division is the nucleus of the Marine Corps Western Pacific force-in-readiness. Its primary function is to maintain a combat ready force of Marine Corps personnel, whose mission is to attack, close with the enemy and destroy or capture him. The 3rd FSSG provides maintenance, supply, engineering and medical support.

In March 1977, the U.S. Army Hospital, Camp Kuwae, was redesignated the U.S. Naval Regional Medical Center, Okinawa (NAVREGMEDCEN Okinawa). NAVREGMEDCEN Okinawa will continue to provide complete medical services for all assigned military personnel and their dependents on Okinawa. NAVREGMEDCEN Okinawa personnel and all facility improvement funding programs are completely independent of the other commands at MCB Camp Butler.

b. Mission. The missions for each of the major activities of MCB Camp Butler and their major tenant commands are as follows:

MCB Camp Butler. Provide training facilities, logistical support and limited administrative support for Fleet Marine Force units on Okinawa and at Camp Fuji, Japan.

3rd Marine Division. Execute amphibious assault operations and such operations as may be directed, supported by Marine Corps aviation, Force Troops units and naval forces.

3rd FSSG. To provide sustained combat service support (CSS) to a Marine Division, MAW including isolated components thereof, either when in garrison, deployed separately, or deployed as a MAF, MAB, or MAU executing amphibious operations and subsequent operations ashore.

NAVREGMEDCEN Okinawa. Provide general/specialized clinical and hospitalization services for active duty Navy and Marine Corps personnel, active duty members of the other Armed Services, dependents of active duty personnel and other persons as authorized by current directives. Provide coordinated dispensary health care services as an integral element of the Naval Regional Health Care System. Provide common support services to all assigned activities. Cooperate with military and civil authorities in matters pertaining to health, sanitation, local disasters and other emergencies.

U.S. Naval Regional Dental Clinic, Okinawa (NAVREGDENCLINIC Okinawa). Provide complete dental service to Navy and Marine Corps shore activities, units of the operating forces and other authorized personnel in assigned geographic area. Provide coordinated dental health care services as an integral element of the Naval Regional Health Care System, including shore activities as may be assigned. Perform such other functions or tasks as may be directed by the Chief, Bureau of Medicine and Surgery (BUMED).

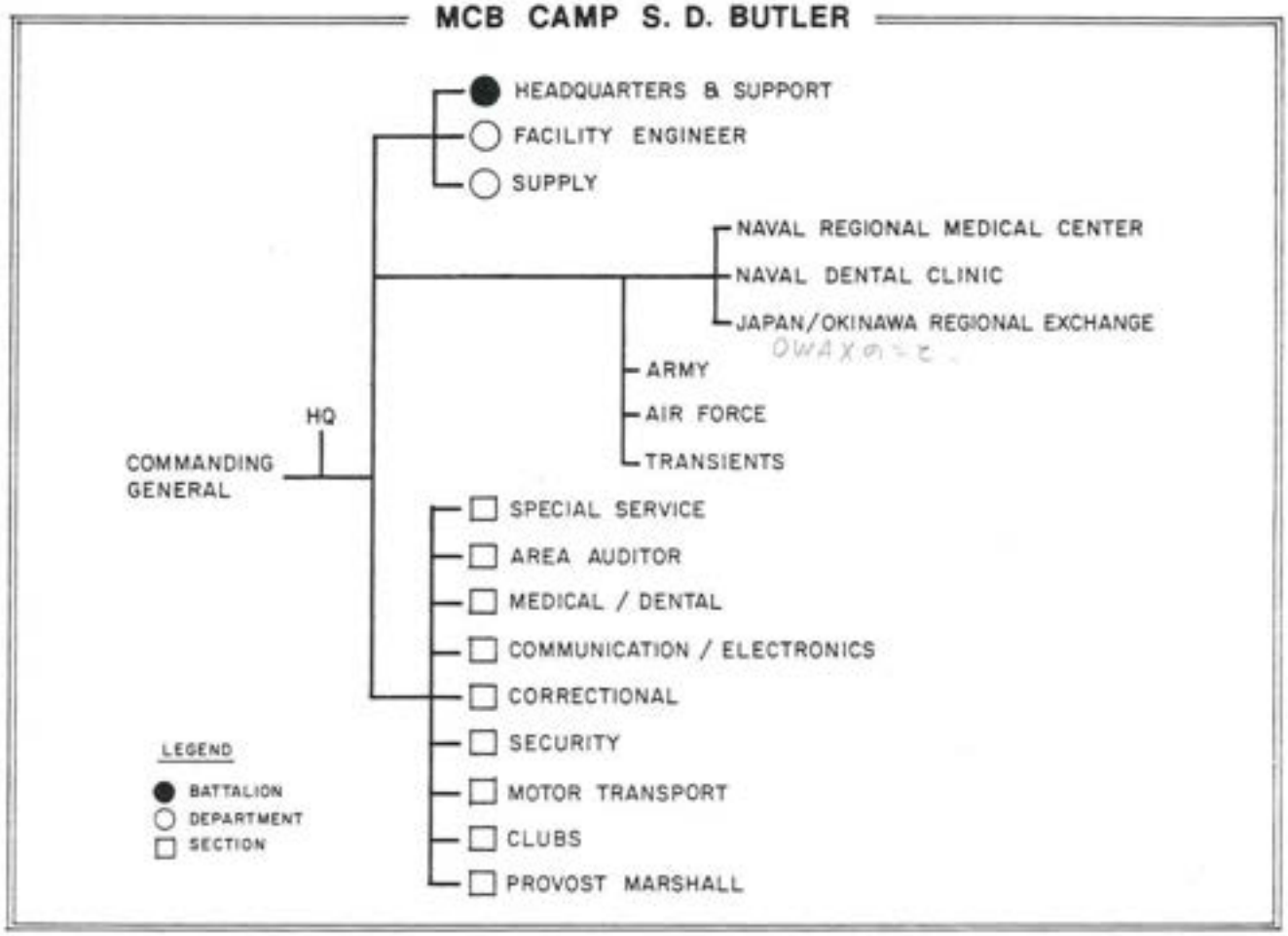
c. Organizational Relationships. The administrative organizations of the three major activities and their tenant commands are illustrated in Figure E-2. NAVREGMEDCEN Okinawa, NAVREGDENCLINIC Okinawa and the Okinawa-wide Area Exchange (OWAX) are tenants under MCB Camp Butler.

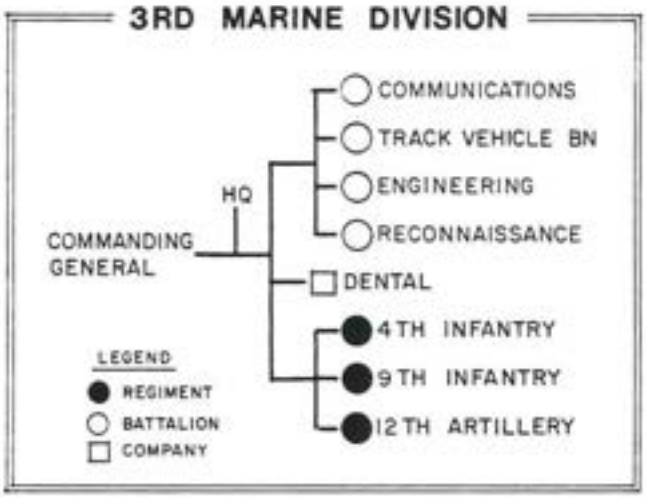
d. Base Loading. The base loading of MCB Camp Butler is shown in Table E-1.

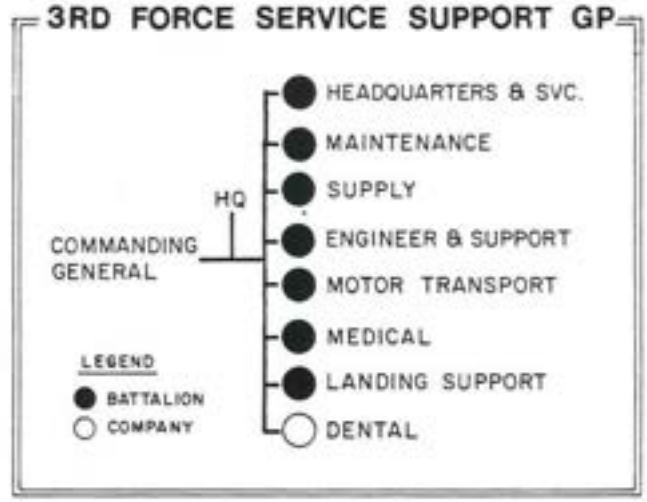
Facility requirements for each camp, submitted to CMC in June 1979, form the basis of this Plan.

3. Tenants and Supported Activities

a. NAVREGMEDCEN Okinawa. The hospital at Camp Kuwae and branch dispensaries at the various Marine Corps camps are operated by NAVREGMEDCEN Okinawa. NAVREGMEDCEN Okinawa is a shore activity in an active operating status under a Commanding Officer, and under the command and support of BUMED. NAVREGMEDCEN Okinawa is under the area coordination authority of the Commander in Chief U.S. Pacific Fleet (CINCPACFLT),







ORGANIZATION CHARTS

FIGURE E-2

with local coordination provided by the Commander, Fleet Activities, Okinawa/U.S. Naval Air Facility, Kadena (COMFLEACT Okinawa/NAF Kadena).

The mission and functions of NAVREGMEDCEN Okinawa, as directed by BUMED, are: command and operate the Okinawa Naval Regional Health Care System; provide dispensary, general clinical and hospitalization services for authorized personnel; serve as responsible central agency for the resolution of complaints, deficiencies and problems to improve health care services to all beneficiaries; conduct an education and public relations program to enhance patient, staff and command satisfaction; conduct a personnel management program for selective rotation of Medical Department personnel between regional medical facilities for educational, training and experience purposes to achieve more efficient and effective use of health care resources.

b. Department of Defense (DOD) Schools on Okinawa. Two of the nine DOD schools on Okinawa (Kubasaki High School and Zukeran Elementary School) are on Marine Corps property at Camp Foster. The overall system is described here as a matter of general interest. The schools on Okinawa have undergone significant enrollment changes in the past few years. As recently as 1973, the DOD schools had student enrollments in excess of 12,000. The trend for the past four years has been one of reduced student enrollment to a current figure of about 7,000.

c. Family Housing. The Air Force administers family housing units on Okinawa, located as follows:

	UNITS	
Makiminato Housing Area	972	(Due to close 1983)
Kadena Air Base	2,256	
Foster	1,521	
Kuwae	154	

365 additional units are planned for Camp Kuwae.

4. Stars and Stripes

The Okinawa office of the Stars and Stripes distributes the daily morning paper and is the wholesale supplier for all reading material carried by OWAX outlets on the island.

5. Red Cross

The American Red Cross acts as a 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.

6. American Express

The American Express International Banking Corporation has been authorized by the DOD 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.

7. Commissary

As mandated by Program Budget Decision 253R of 10 December 1975, realigning the functional responsibilities of the military services on Okinawa, the Air Force, in addition to its commissary operations at Kadena Air Base and the Makiminato Housing Area, took over the Naha Housing Area commissary outlet on 1 May 1976 and the Camp Butler commissary on 1 March 1977. The Central Administration Office, with a staff of 28 American civilians, is situated in Camp Kinser.

8. OWAX

The Army/Air Force OWAX oversees 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 personal service concessions. Facilities are situated at Camps Kinser, Courtney, McTureous, Hansen, Schwab, Foster, Onna Point, Shields and Kuwae, MCAS (H) Futenma, Northern Training Area, White Beach, Torii, Makiminato Housing Area, and Kadena Air Base. Total space allotted, including central warehousing at Camp Kinser amounts to about 810,000 square feet.

F. ACTIVITY ANALYSIS / LAND USE PLAN

1. Camp Foster

a. Environmental Setting

(1) Location (See Figure F-1). Camp Foster is located along the southwestern coastline between Okinawa City (population 91,330) and Kadena Air Base on the north, and Ginowan City (population 53,835) and MCAS (H) Futenma to the south. Access to both camps is from National Highways 58 and 330, which run north and south, and from 30 and 130 which run east and west.

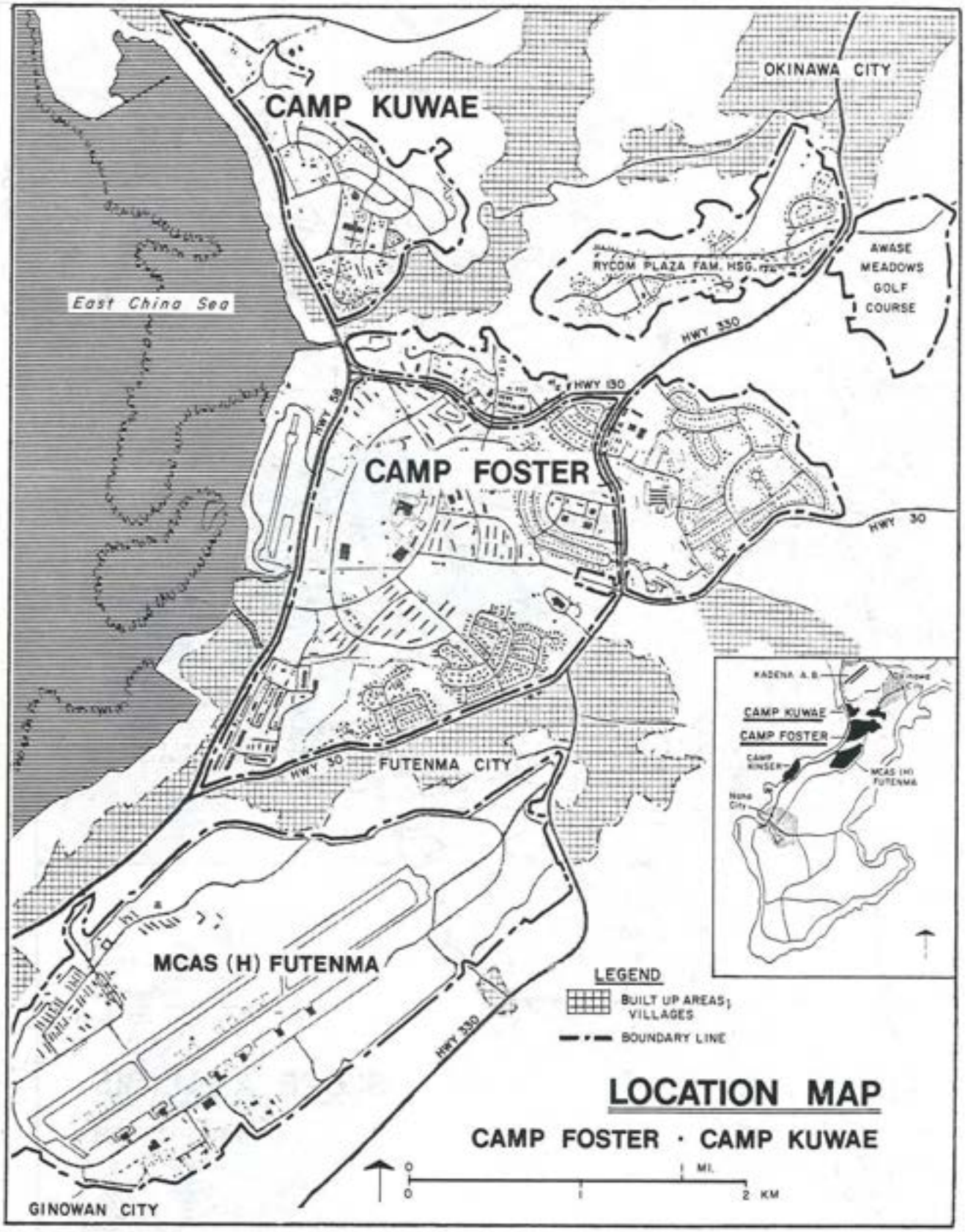
(2) Size. Camp Foster contains 754 hectares of land, most of which is developed and used for administration, housing, maintenance and personnel support. A few areas remain undeveloped which include the steeper terrain bordering the north and east boundaries.

(3) Topography (See Figure F-2). Topography in this area can be categorized into four types: the coastal plain bordering National Highway 58 with elevations running from 3 to 5 meters; the sloping areas to the east where development has occurred by terracing; the small plateaus bordering National Highway 330; and the ridges and gulches which occur mainly on the eastern half.

(4) Soils. Soils of the hill areas are primarily Ishikawa loam--a deep, rapidly drained acid soil, low in fertility. It consists of pale-brown, friable loam, 8 to 12 cm deep over clay. The coastal soil is Awase clay. A detailed description of the type of soils found at Camp Foster is shown on Figure F-3 and Table F-1.

(5) Historic/Archeologic Sites. There are no known registered historic/archeologic sites within this area.

CAMP FOSTER



LOCATION MAP

CAMP FOSTER · CAMP KUWAE

FIGURE F-1

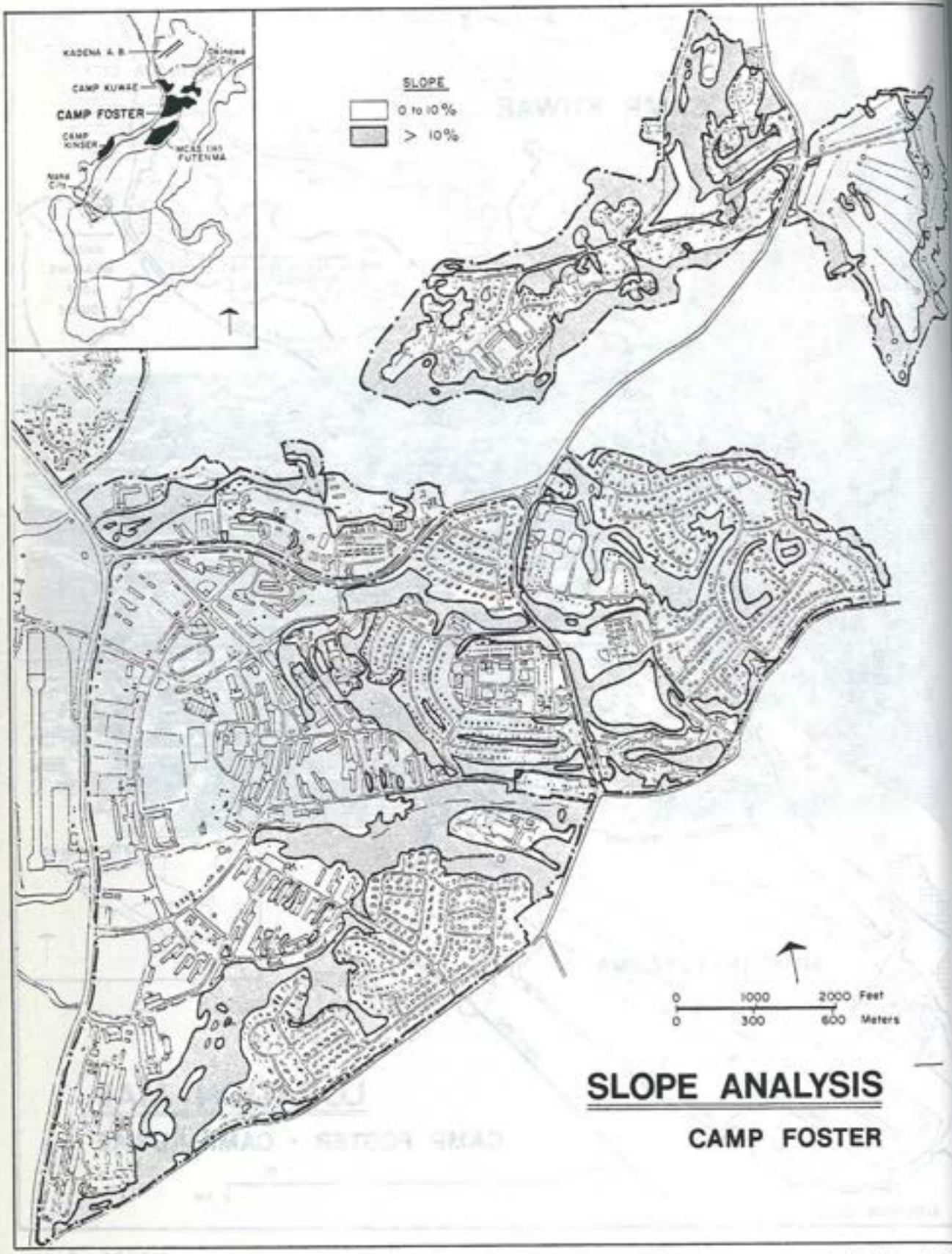

KADENA A. B.
CAMP KUKAE
CAMP FOSTER
CAMP KINSER
MCAS (H) FUTENMA
SLOPE
0 to 10%
> 10%
0 1000 2000 Feet
0 300 600 Meters
SLOPE ANALYSIS
CAMP FOSTER

FIGURE F-2

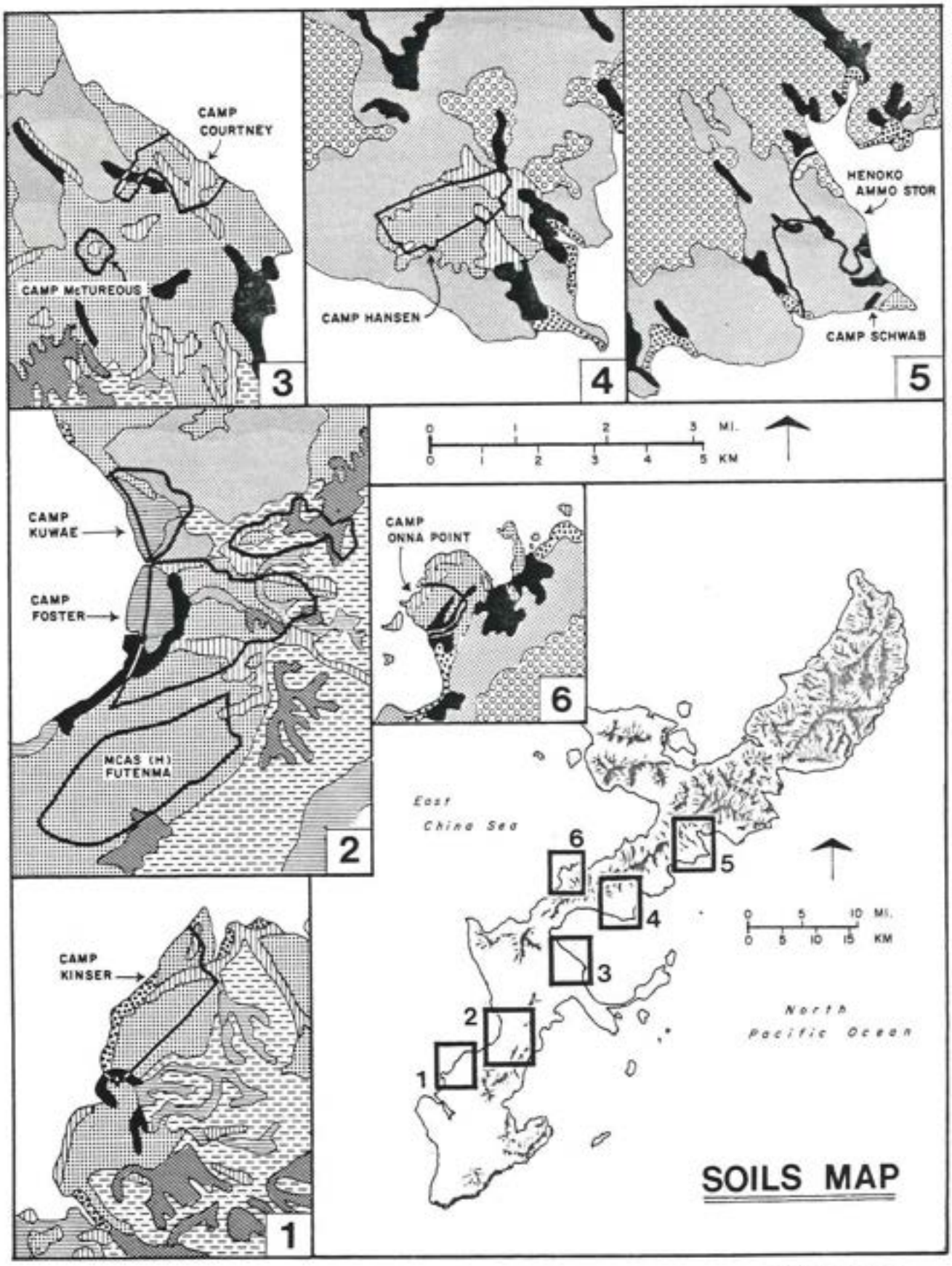

CAMP COURTNEY
CAMP McTUREOUS
3
CAMP HANSEN
4
HENOKO AMMO STOR
CAMP SCHWAB
5
0 1 2 3 MI.
0 1 2 3 4 5 KM
CAMP KUWAE
CAMP FOSTER
MCAS (H) FUTENMA
2
CAMP ONNA POINT
6
East China Sea
6
5
4
3
2
1
0 5 10 MI.
0 5 10 15 KM
North Pacific Ocean
CAMP KINSER
1
SOILS MAP

FIGURE F-3

Table F-1

DOMINANT SOILS & DESCRIPTION	ENGINEERING CHARACTERISTICS	TERRAIN
Akamaru and Aha soils. Deep, fertile, most poorly drained alluvial soils on coastal flats and flood plains. Slightly to medium acid loam, clay loam, and sandy loam more than 6 feet deep, without distinct topsoil and subsoil layers. Akamaru soils, the gray wet soils of rice paddies, occupy 80 per cent of the unit. During the growing season they are flooded; rarely is the water table more than 2 feet below the surface. The other 20 per cent is of Aha soils, which are brown, well-drained, and generally without water for rice production.	Lean clay (ML) or sandy clay (ML) with plasticity index between 10 and 25, and liquid limit between 20 and 50. Permeable; voids-ratio moderately high; readily compacted when drained and controlled. Fairly good for subgrade and fills; unsuited for base course. Fair to good foundation for light structures, poor for heavy. Depth to bedrock is more than 6 feet and commonly exceeds 20. Most areas are wet, unfavorable sites for buildings	Level wet lowland mostly on coastal flats; some in narrow valley bottoms. Akamaru soil. Nearly level well-drained lowland mainly in narrow valley bottom. Aha soils.
Awase clay. Alluvial clay on coastal flats and flood plains. Deep fertile crumbly calcareous clay of olive-gray color, becoming grayer and distinctly mottled with depth. Slowly permeable and very slowly drained. On the coastal flats the water table generally is within 2 feet; in the interior valleys it is at or near the surface during wet seasons but below 5 feet or absent during dry. Limited water restricts production of rice to about 10 per cent of the total area. Most rice paddies are shallow excavations with their surfaces at the water table.	Fat clay (CH) with plastic index of about 28, and liquid limit of about 55. Slowly permeable, voids-ratio high to medium. Poorly drained, with shallow water table. Poor but usable for subgrade; poor for foundations. Depth to bedrock of hard compact clay ranges from 3 to 20 feet but seldom is less than 6. The areas are wet, and generally unfavorable for buildings.	Level wet lowland, about 3/4 on coastal flats and 1/4 on bottom of interior valleys.
Shioya loamy sand. Grayish-brown loamy sand consisting of grains of limestone, minor impurities, and a small amount of organic matter; grading, about 1 foot below the surface, into nearly white impure coral sand. Consists of lime sand beach deposits darkened with organic matter. Of low fertility; too limy for some crops; too pervious for irrigation of rice.	Impure coral sand (SP), poorly graded, nearly free of fines below the surface foot; non-plastic, freely permeable and rapidly drained. Excellent material for subgrade and if confined, for fills; poor but perhaps usable for base course and aggregate. Good foundation. Favorable building sites except for location on coasts where hazard of typhoon damage may be severe.	Nearly level raised beaches.
Okinawa clay loam and Chinen stony clay. Two related fertile well-drained clayey soils, one deep, the other shallow and stony, occurring together on limestone plains. Both are very crumbly, or strongly granular; although clayey and plastic, they are porous, permeable, and of good tilth. Generally the soil reaction is about neutral; where depth to limestone exceeds 10 or 15 feet, the soil is slightly to medium acid. Okinawa clay loam, the deep soil that occupies 70 per cent of the unit; has surface soil of dark-brown clay loam 5 to 10 inches thick over subsoil of strong-brown to yellowish-red permeable clay, underlain by limestone at depths of 3 to 20 feet. Chinen stony clay, the shallow stony soil occupying 30 per cent of the unit, consists of dark-brown to brown clay or clay loam with loose fragments and outcrops of the limestone bedrock. The effective or average soil depth is about 15 inches; within horizontal distances of a few inches the actual depth fluctuates between 0 and 3 feet or more. In this soil, stone occupies 10 to 30 per cent of the surface and prevents use of agricultural machinery. Neither soil has water for production of rice.	Fat clay (CH) with plasticity index between 18 and 39, liquid limit between 39 and 72; porous and permeable, voids-ratio high; well-drained; depth to bedrock is 3 to 20 feet in 70 per cent of the area, 0 to 3 feet in 30 per cent. Generally favorable sites for location of buildings, but poor to very poor for foundations; unsuitable for base course. Fair to poor for fills less than 50 feet, and very poor for fills more than 50 feet in height. Subgrade failure is rare or has not occurred on surfaced roads and runways; the limestone bedrock is cavernous and collapse of local areas has occurred.	Limestone plains Okinawa clay loam Gently sloping Sloping Hilly Chinen stony clay Gently sloping Sloping
Shuri clay, gently sloping. Olive-colored crumbly calcareous clay 6 to 20 inches deep over raw bedrock of hard, compact, impervious clay. Slowly drained, moderately fertile; no water is available for rice production.	Fat clay (CH) with plasticity index between 22 and 31, liquid limit between 49 and 56. The natural clay formation which underlies the soil at 6 to 24 inches below the surface is densely compacted and of good supporting power when dry. When disturbed and wet this clay substratum disintegrates and becomes unsatisfactory for base, subgrade, or fill. Foundations for heavy structures require special site investigations. The substrata are impervious and underdrainage is impossible.	Gently sloping upland

DOMINANT SOIL & DESCRIPTION	ENGINEERING CHARACTERISTICS	TERRAIN
 Shuri clay and rough broken land. Moderately sloping to steep upland occupied by crumbly clay soils very shallow over bedrock of compact, impervious clay (Shimajiri formation). Moderately sloping areas, which constitute 60 per cent of the unit, are of Shuri clay and similar to soil unit 5 except for greater slope and somewhat less depth of soil, which averages about 7 inches and rarely exceeds 12. The steep areas, 40 per cent of the unit, are a mixture of similar but even shallower soil and outcrops of raw clay bedrock. Water for rice culture is not available.	Fat clay (CH) less than 12 inches thick over dense, impervious clay bedrock. Same engineering characteristics as Unit 5 above, except steep areas are subject to soil and land slides. This hazard is inherent and common to all slopes greater than 30 per cent.	Upland Sloping and hilly. Steep escarpments
 Ishikawa loam. Deep, rapidly drained acid soil, low in fertility and mostly steep and nonarable but well-suited for forestry, consisting of a thin surface soil of pale-brown friable loam 3 to 6 inches deep over subsoil of yellowish-red strongly acid permeable clay loam or sandy clay. Developed under forest mostly from thick deposits of acid sandy clays and clayey sands but locally from fine-grained schist or feldspathic sandstone. The soil needs phosphorous, potash, nitrogen, and lime for good yields of most field crops or good pasture. Tea thrives. Almost none of the area has water for culture of rice. Okinawa pine and other forest trees thrive. The areas indicated on the map include many small bodies of other soils including (1) an inextensive closely related but slightly more fertile soil, Yagachi clay loam, which has brown to reddish-brown surface soil (2) narrow valley bottoms of Akamaru and Aha soils, and (3) acid soils shallow over schist.	Fat clay (CH) or sandy clay (CL) with plastic index between 10 and 35, liquid limit between 28 and 52; percentage of fines between 50 and 90, and medium to high voids-ratio. Fairly good for subgrades and fills, when properly compacted. Unsuitable for base course. Shrinkage high. Well-drained. The areas are mostly inaccessable by existing roads and have terrain that makes road construction expensive. Slopes and cuts erode badly if bare, and need vegetation. Depth to hard bedrock is more than 3 feet and generally exceeds 20.	Dissected upland Moderately steep Hilly Steep
 Shallow acid soils. Forested light-colored acid loamy soils of low fertility, less than 15 inches deep over partly weathered bedrock which is generally fine-grained schist or feldspathic sandstone. Shallow soils on steep slopes unsuited for cropland or grazing but valuable for forestry.	Lean clay (CL) or sandy clay (CL) less than 15 inches deep over partly weathered bedrock. Steep terrain unfavorable for road construction.	Mountainous and very hilly upland
 Rough stony land. Limestone mountains and steep slopes, having a few inches of fertile dark-brown crumbly clay or clay loam over bedrock interspersed with bare outcrops of limestone that occupy 20 to 75 per cent of the surface. Nonarable; nutritious grasses will thrive and afford good grazing; good land for forestry; cycads, which have been planted in many areas, afford considerable starch for the natives.	Limestone mantled with a few inches of fat clay (CH). Rough terrain unfavorable for location of roads.	Limestone mountains and steep slopes.

(6) History. MCB Camp Butler moved to Camp Foster (then Camp Zukeran) in August 1975 after the facilities were vacated by the Army forces. The 12th Marines moved from Camp Hauge to Camp Foster, and Camp Hauge was closed. The 1st MAW Headquarters moved to Camp Foster (then Camp Zukeran) in April 1976 from Iwakuni, thus locating MCB Camp Butler and 1st MAW Headquarters at this camp. The 3rd FSSG moved from Camp Foster to Camp Kinser in 1978 to 1979 and its place taken by the MWSG from Iwakuni.

(7) Base Loading. Refer to Table E-1.

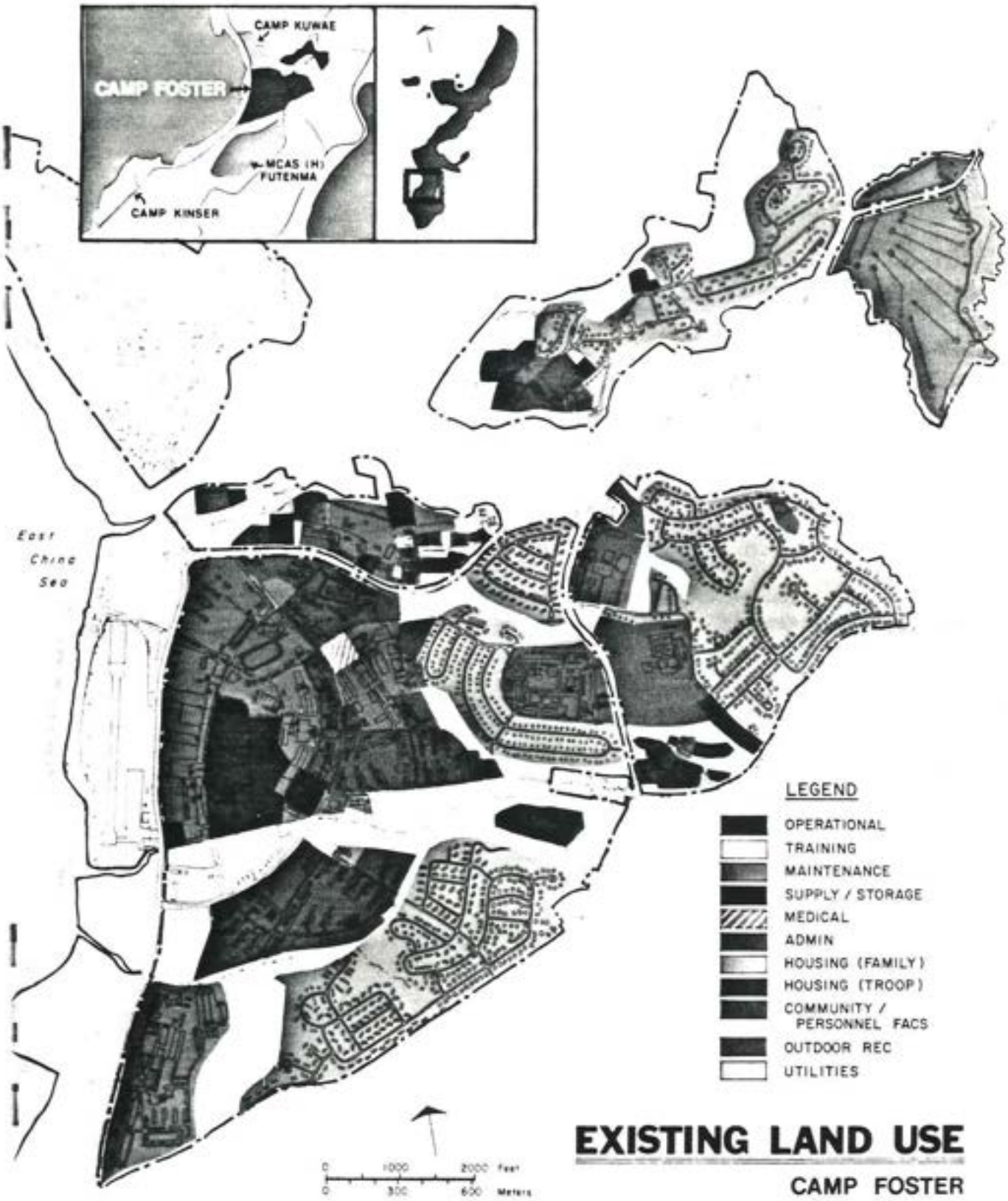
b. Existing Land Use / Facilities

(1) Existing Land Use (See Figure F-4). Camp Foster contains flat to gently sloping terrain and is used for housing, administration, maintenance, troop training, and personnel support facilities. The complex is fully developed.

Privately owned real estate bordering Camp Foster is fully developed for commercial and residential development. This type of land use is expected to continue in the private sector.

Maintenance facilities, supply warehouses and open storage areas occupy a strip averaging 300 meters wide east of National Highway 58 from Camp Foster and north to Route 130. Open storage and outdoor/indoor recreational fields and buildings occupy the central area just east of the maintenance strip. Troop housing and personnel support facilities surround the recreational complex on the east side. Family housing is the primary land user on the east side of Camp Foster. Within this housing area are an Exchange complex, the headquarters area and an area occupied by an elementary school and a high school.

Facilities maintenance and administrative facilities are located in the north-central sector of Camp Foster just above Route 130. In the northeast sector, family housing, 4-man unaccompanied personnel housing quarters and an 18-hole golf course are the primary land users.



EXISTING LAND USE

CAMP FOSTER

FIGURE F-4

(2) Existing Facilities. There are about 1,800 buildings with 5.66 million square feet of floor space at this complex. The buildings are predominantly of permanent concrete construction and are in reasonably good repair. A few substandard buildings are located at the industrial area, the Public Works area, and at the elementary school.

A summary of floor space by function is provided in Table F-2, and a narrative description of major facilities follows the table.

The Camp Foster installation may be considered to consist of two separate complexes--an industrial complex (formerly the 3rd FSSG area) at the south end of the camp just east of Highway 58, and a typical cantonment/housing complex of Public Works, administrative and support facilities that make up the balance of the camp, and account for 90 percent of the acreage of the camp (see Figure F-5).

Table F-2

EXISTING FACILITIES
CAMP FOSTER

CAT CODE	DESCRIPTION	# OF SPACES*	TOTAL FLOOR AREA (SF)	OTHER
100	OPS & TRNG FACS	22	63,001	
	(Marine Corps--Used by Others)	(12)	(74,331)	
123	Fillg Sta	3	322	34 OL
124	Operatg Fuel Stg			3,350 GA
131	Comm Bldgs	2	3,869	
	(Army & AF)	(5)	(68,556)	
143	Armory, Freight Stg, Flam Stg	7	38,075	
	(Army)	(5)	(3,462)	
171	Acad Instr, Applied Instr	10	20,735	
	(Army)	(2)	(2,313)	
200	MAINT FACS	74	396,218	
	(Marine Corps--Used by Others)	(5)	(63,839)	
211	Paraloft Packg	6	37,370	
214	Auto Veh Maint, Refueler Shop, Org Shop, Field Maint Shop	29	195,687	
	(AF)	(1)	(3,868)	
215	Ord Maint Shop	4	26,173	
217	Elecnx Maint Shop, Comm Stg	16	61,776	
	(AF)	(2)	(37,914)	
218	Flam Stg	2	144	
219	Facs Maint Shop, Maint Stg	17	73,068	
	(AF)	(2)	(22,057)	
400	SUPPLY FACS	41	444,331	
	(Marine Corps--Used by Others)	(10)	(56,621)	
421	Ready Mag	1	120	
441	Gen Whse, Stg/Out-of-Stores, Supptd Act Supply Sys, Flam Stg, SERVMART	40	444,331	
	(Army & AF)	(10)	(56,621)	
451	Open Stg			425,554 SY
500	MEDICAL & DENTAL FACS	3	23,608	
540	Dental Clinic	1	3,607	5 OU
550	Dispensary	2	20,001	
600	ADMIN FACS	76	495,671	
	(Marine Corps--Used by Others)	(4)	(15,520)	
610	Admin, Data Processg, Comptroller, Safety, Legal Ofc, HQ	76	495,671	
	(Army)	(4)	(15,520)	
700	HSG & COMMUNITY FACS	262	665,346	
	(Marine Corps--Used by Others)	(1,136)	(2,346,640)	
710	Fam Hsg (AF)	(1,120)	(2,098,661)	(1,524 FA)
720	Unaccompanied Personnel Hsg	108		4,398 MN
720	Dining Fac	9		3,040 MN
720	Bach Hsg Stg	10	1,767	
730	Community/Personnel Suppt-- (Army & AF) (Includes Dependent School under AF management)	(16)	(247,979)	
740	Exchange/Morale/Rec	110	627,636	
750	Outdoor Courts/Play Fields/ Swim Pool			16/3/4 EA
800	UTILITIES DISTR & ROADS			
812	Elec Distr Lines			789,733 LF
832	Sanitary Sewer Collect Sys			300,098 LF
842	Water Distr Sys			133,752 LF
851	Roads			29 MI

*Does not match building totals. Some buildings have multiple uses.

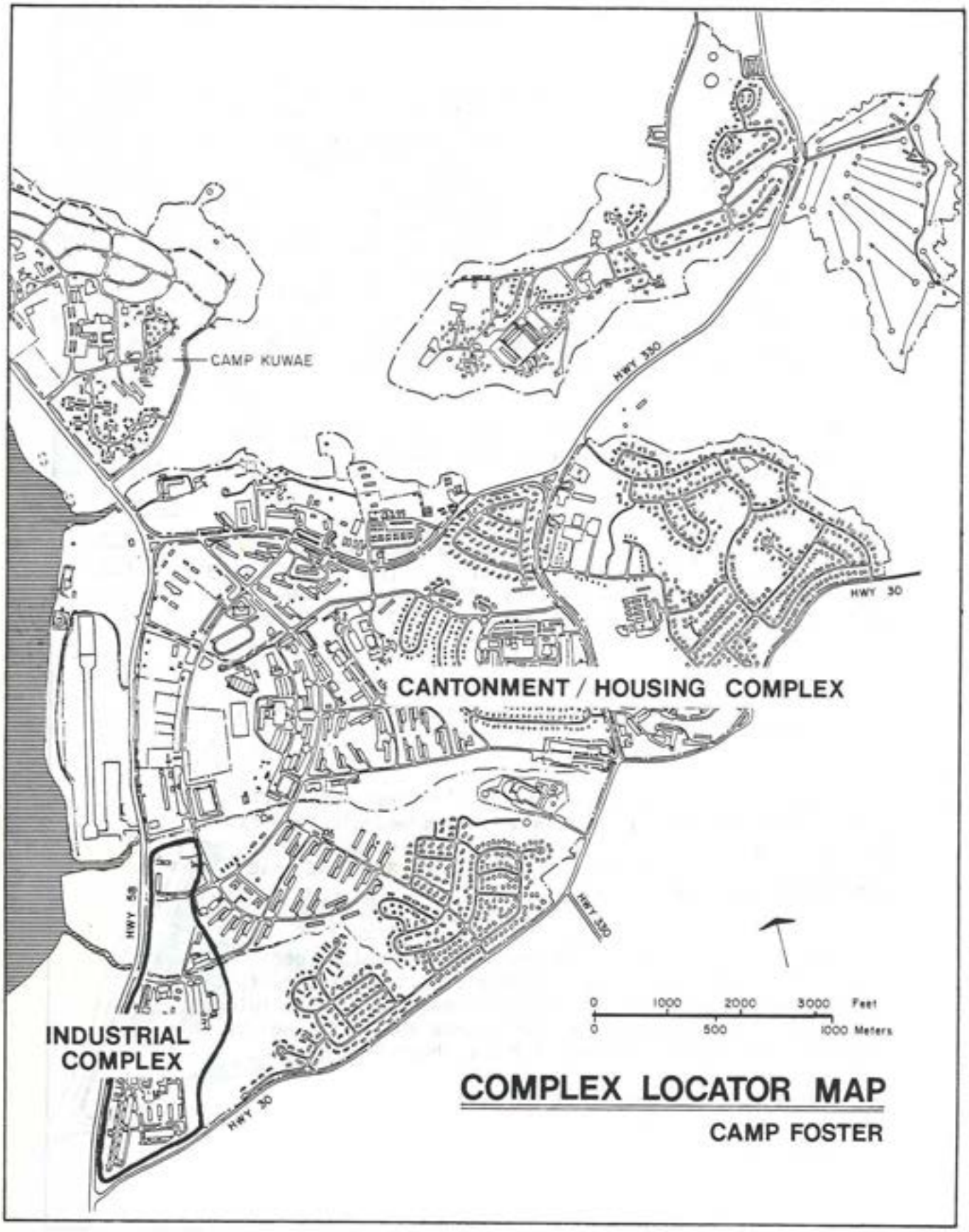

CAMP KUWAE
HWY 330
HWY 30
CANTONMENT / HOUSING COMPLEX
HWY 58
HWY 330
INDUSTRIAL COMPLEX
HWY 30
0 1000 2000 3000 Feet
0 500 1000 Meters
COMPLEX LOCATOR MAP
CAMP FOSTER

FIGURE F-5

(a) The industrial complex was developed for the 3rd FSR (now 3rd FSSG). It consists of the following major permanent structures, all of single-story construction and built in 1961 and 1962 (refer to the adjacent picture and Figure F-6): Buildings 1101, 1102, 1103, 1104 and 1106 are 100 feet wide by 400 feet long and 21 feet high. They were built for use as warehouses. Buildings 1101 and 1102 were vacant at the time of the on-site survey because of the ongoing move to Camp Kinser by most of the 3rd FSSG. Building 1102 is planned for club storage to be transferred from the REX area at Camp Courtney. Building 1102 is used by the Landing Support Battalion of the 3rd FSSG, and Buildings 1104 and 1106 by MCB Camp Butler functions.

Building 1107, with an area of 11,000 square feet, is used by the Ordnance Maintenance Platoon of the 3rd FSSG. The function will remain at Camp Foster.

Buildings 1108, 1109, 1111, and 1119 are used by MWSG-17, which has been relocated from Iwakuni. Buildings 1108, 1109 and 1111 are maintenance buildings of 11,000 to 12,000 square feet, while Building 1119 is a 10,000 square foot administration facility.

Building 1120 is a 20,000 square foot structure used for maintenance and storage.

Building 1121 is an 11,000 square foot maintenance facility used by MCB Camp Butler for communication and electronics maintenance. Building 1123 is a warehouse structure of 25,000 square feet used by portions of the 3rd FSSG that will remain at Camp Foster.

Buildings 1126, 1127 and 1128 are warehouses of 40,000 square feet and 20,000 square feet and a 13,000 square foot administration building, all assigned to MWSG-17. Building 1136 is a 10,000 square foot maintenance shop also used by MWSG-17. Buildings 1126 and 1128 are shown in Plate 1.

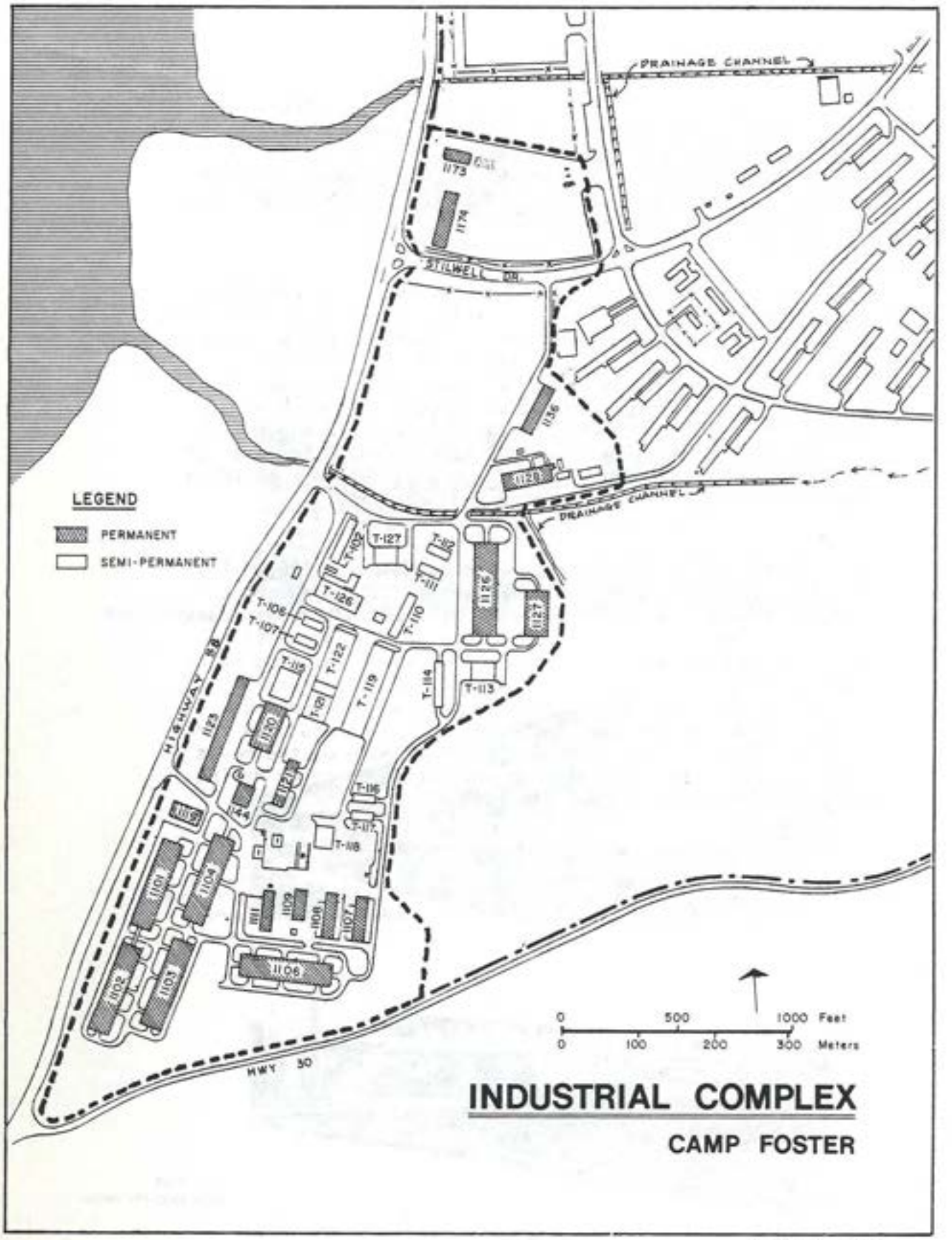

DRAINAGE CHANNEL
1173
1174
STILWELL RD.
1136
1120
DRAINAGE CHANNEL
LEGEND
PERMANENT
SEMI-PERMANENT
T-102
T-127
T-111
T-126
T-110
T-106
T-107
T-122
T-115
T-121
T-119
1176
1127
T-114
T-113
HIGHWAY 58
1123
1120
1124
1144
T-116
T-117
T-118
1101
1104
1102
1103
1111
1112
1108
1107
1106
0 500 1000 Feet
0 100 200 300 Meters
HWY 30
INDUSTRIAL COMPLEX
CAMP FOSTER

FIGURE F-6

There are two additional permanent structures across Stilwell Drive to the north that may be considered part of the Foster storage and maintenance formerly used entirely by the 3rd FSSG. These are Buildings 1173 with 6,000 square feet and 1174 with 15,000 square feet of space used by the 9th Motor Transport Battalion of the 3rd FSSG. These functions will remain at Camp Foster.

This permanent complex is supplemented by 17 semipermanent buildings (4,000 square feet or more), all of which were in use at the time of the field visit. Eight of the buildings (Nos. T-106, T-110, T-111, T-113, T-115, T-119, T-121 and T-126), with an aggregate area of about 108,000 square feet, are considered storage buildings. Another eight (Nos. T-102, T-107, T-112, T-114, T-116, T-118, T-122 and T-127), with a total floor area of 67,000 square feet, are used for maintenance functions, while one 4,000 square foot building (No. T-117) is used for shipping and receiving.

The functions in eight of the buildings (Nos. T-106, T-110, T-111, T-113, T-117, T-119, T-121 and T-126), with about 100,000 square feet of floor area, will ultimately be transferred to Camp Kinser. The buildings will be adequate or they can be made adequate for warehousing or selected maintenance functions. They would be used to help offset a shortfall of 32,000 square feet of general warehousing requirements for the Camp Foster area. Other end uses for the buildings will be dependent on the timing of the moves to Camp Kinser and the relative priorities of other Marine Corps requirements at that time.

BLDG 1128
ADMIN BLDG

BLDG 1126
SUPPLY WAREHOUSE

BLDG 1171
UEPH

BLDG 1146
UOPH / OFFICERS MESS

(b) The cantonment/housing complex, for purposes of this discussion, has been further broken down into a number of areas (see Figure F-7). These are addressed sequentially, moving generally from left to right.

The organic maintenance and supply area (Figure F-7, Area A) consists of three maintenance compounds and a supply compound. The maintenance compounds are on the strip of land between Highway 58 and Mississippi Street. The first compound is used jointly by MWCS-18 and the Air Force. The primary building is a 45,000 square foot, single-story, concrete and metal structure (No. 5851, Plate 2). It is used by MWCS-18 for both organizational and electronics maintenance, and by the Air Force for electronics. The Air Force uses over 28,000 square feet of the buildings and is the dominant user. The compound also has a small permanent administration building of 1,800 square feet, used by the Army. The Army also uses a 17,000 square foot temporary building for storage. Another semipermanent building of 9,000 square feet is used by MWCS-18 for electronics maintenance.

The next compound north is used by the 12th Marine Regiment for both motor transport and ordnance maintenance, and as a motor pool area. Motor transport maintenance is performed in Building 5827 (see Plate 2), a permanent 11,000 square foot maintenance structure, and six smaller permanent buildings with an aggregate total of another 12,000 square feet. Ordnance maintenance is conducted in a semipermanent building with an area of about 9,000 square feet (No. T-5829). There is an indicated requirement for another 8,000 square feet of space for ordnance maintenance.

The third compound is used by MCB Camp Butler as a motor pool and motor transport maintenance area, and as an overflow Facilities Maintenance function. There are four major permanent buildings (over 5,000 square feet each), housing vehicle maintenance and Building 5803 for Public Works. These are supplemented by a number of smaller structures housing administrative, dispatch and other support functions.

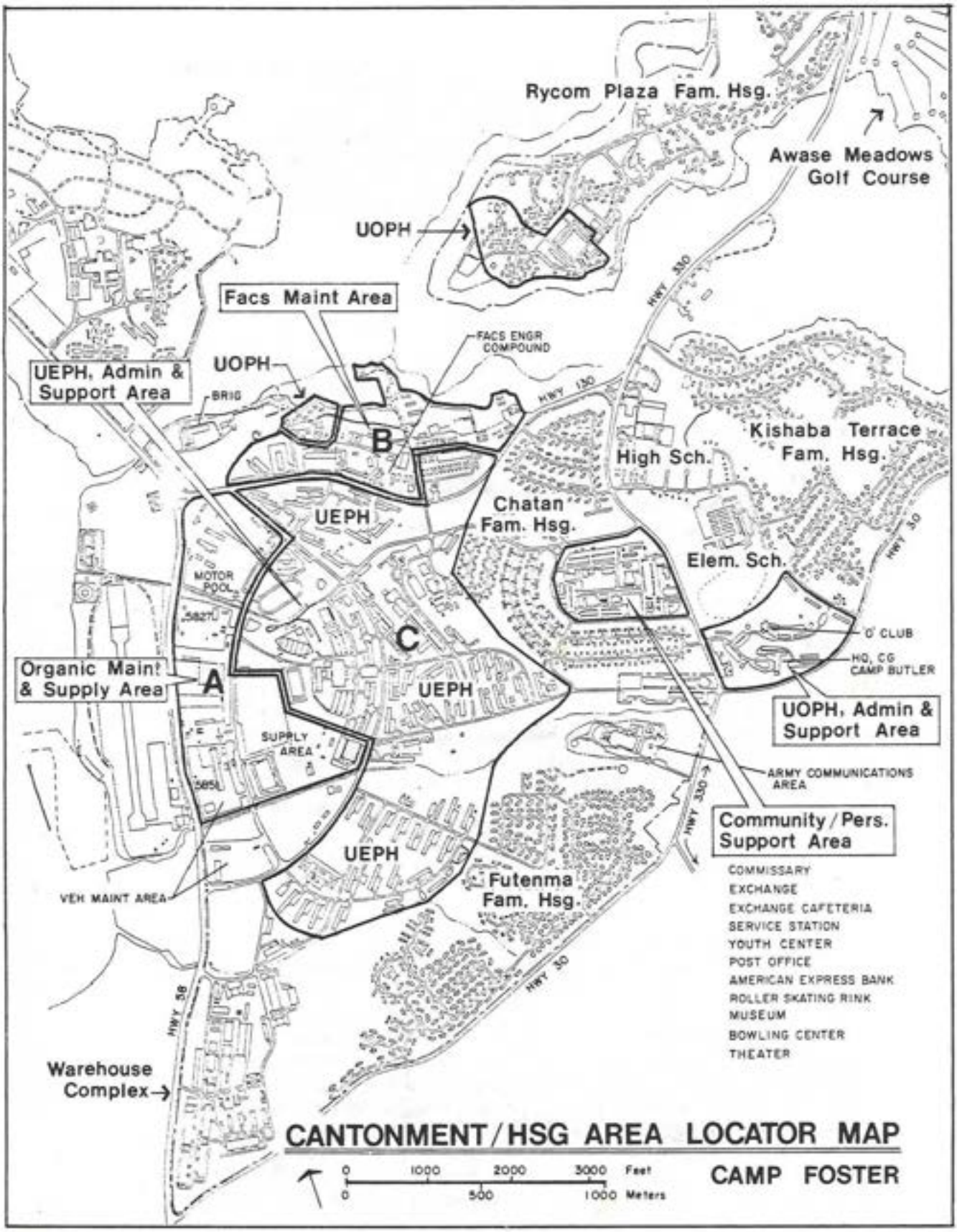

Rycom Plaza Fam. Hsg.
Awase Meadows Golf Course
UOPH
Facs Maint Area
FACS ENGR COMPOUND
UEPH, Admin & Support Area
UOPH
BRIG
B
HWY 330
HWY 130
Kishaba Terrace Fam. Hsg.
High Sch.
UEPH
Chatan Fam. Hsg.
Elem. Sch.
HWY 50
MOTOR POOL
5827U
C
O' CLUB
HQ, CG CAMP BUTLER
Organic Maint & Supply Area
A
UEPH
UOPH, Admin & Support Area
SUPPLY AREA
5850
ARMY COMMUNICATIONS AREA
Community / Pers. Support Area
COMMISSARY
EXCHANGE
EXCHANGE CAFETERIA
SERVICE STATION
YOUTH CENTER
POST OFFICE
AMERICAN EXPRESS BANK
ROLLER SKATING RINK
MUSEUM
BOWLING CENTER
THEATER
UEPH
Futenma Fam. Hsg.
VEH MAINT AREA
HWY 58
HWY 50
Warehouse Complex
CANTONMENT / HSG AREA LOCATOR MAP
0 1000 2000 3000 Feet
0 500 1000 Meters
CAMP FOSTER

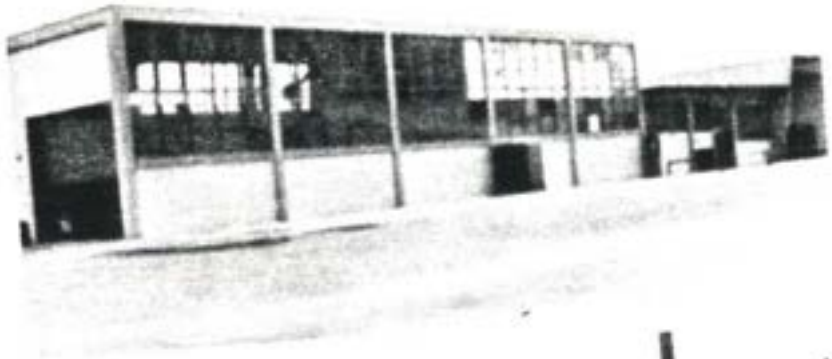
FIGURE F-7

The supply compound is east of Mississippi Street. MCB Camp Butler supply operates a 60,000 square foot warehouse/Servmart building and a large, open storage area bordering Mississippi Street. The Army continues to operate two warehouses--a 38,000 square foot permanent structure and a 17,000 square foot steel building on opposite sides of the area. The Army also performs electronics maintenance in a former parachute shop 10,000 square feet in area.

There is a noncontrolled (no guards) Public Works and service area north of Route 130 (see Figure F-7, Area B). Except for a single 12,000 square foot administration building used by the 12th Marine Regiment, the functions in the area are relatively independent of the Main Base, so that the isolation imposed by Route 130 does not cause any problems.

The Air Force operates an appliance repair and general warehousing operation out of permanent warehouse building and a self-help equipment pool for family housing in a butler building. Several support functions such as CCPO and a laundromat are found in quonset hut structures. The main camp fire station is in the area, as are ten small, four-bedroom UOPH units. An old brig is behind a ridge in the northwest corner currently used as a Special Services Issue Office. The remaining buildings house the Public Works function for the camp, as well as the Facility Engineer Headquarters for all of MCB Camp Butler. Facilities include a 25,000 square foot shop building, a 15,000 square foot shop building and a 5,000 square foot administration building (No. 352, Plate 2), as well as a number of semipermanent warehouse and shop buildings, and a 15,000 square foot quonset hut complex that houses the Public Works engineering function.

The UEPH, administration and support area (Figure F-7, Area C) contains a total of 49 permanent two and three-story UEPH buildings. There are 40 two-story units and 6 three-story units built by the Army between 1952 and 1957. All of these units were built with gang toilets. There are open bay squad rooms on each end and smaller NCO rooms in the center. Building 481 (Plate 4) is a typical three-story unit, and Building 1171 (Plate 1) is a two-story unit. The two-story units are rated potentially adequate for 89 people, and the three-story units potentially adequate for 115 people in the latest Unaccompanied Personnel Housing Survey. In addition, there are three new three-story UEPH buildings



BLDG 5851
ELECTRONICS MAINT SHOP/
ORGANIZATIONAL MAINT SHOP (MC)
ELECTRONICS MAINT SHOP (A.F.)

BLDG 5827
AUTO ORGANIZATIONAL MAINT SHOP

BLDG 352
FACILITY ENGINEER OFFICE

BLDG 364
DOICC

PLATE 2

built in 1979 by the GOJ. They have gang toilets and 100 individual rooms each. They have been rated for 100 people (E-4 and below) in the Unaccompanied Personnel Housing Survey.

Some of the buildings have medical, administrative or support functions in all or part of the ground floor. This nondesignated use may be quantified by comparing the "theoretical" UEPH capacity of the 49 buildings (4,550) with the Unaccompanied Personnel Housing Survey potential (4,140) showing a potential 410 spaces used for other purposes. Additionally, two other former UEPH units are totally used for administration and transient quarters bringing the total to 588 additional people that could be accommodated in the structures if they were all converted to UEPH units. It should be noted, however, that with the current base loading the camp is well balanced, there being no requirement for additional spaces using the lower 4,046 inventory figure. Four of the buildings are currently outgranted to the Army; however, these are counted as Marine Corps assets in the long-range evaluation of the area.

Administrative functions are distributed through the UEPH structures, supplemented by four administration buildings near the industrial complex.

There is a relatively complete grouping of personnel support buildings more or less centrally located within the area. These include a large (113,000 square feet) gymnasium and field house (Building 5900, Plate 4), a 50-meter swimming pool and bathhouse, five playing fields, a track, a 13,000 square foot Enlisted Club, a bowling alley, a smaller (18,000 square feet) gymnasium, two libraries, an NCO Club, a 750-seat theater, a chapel, a dispensary, and a dental clinic.

There are two remote UOPH areas--one area almost within the Facilities Maintenance compound consisting of 9 four-bedroom units and one area behind the Rycom Plaza housing area with 39 four-bedroom units, 2 forty-eight room units and 1 seventy-six room unit. There are also five older two-story units (38 rooms each) near the main administration building in a combination UOPH, administration and support area. There are a total of 258 potential spaces in the above listed buildings, and a request for 426 spaces. This results in a deficit of 168 spaces; however, the shortfall seems to be

more theoretical than actual, especially given the excess at Camp Kinser, which will be addressed later.

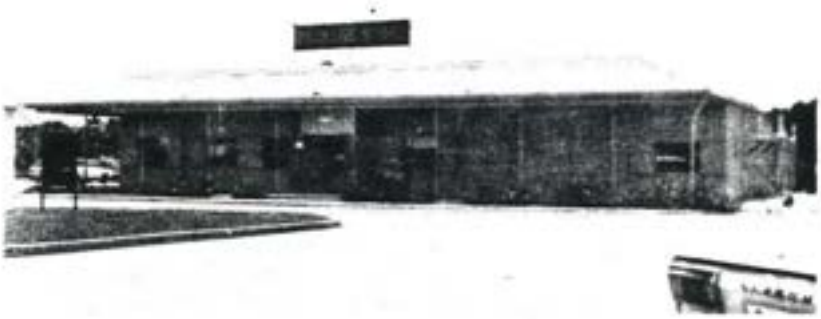
This combination UEPH/administration and support area contains the main MCB Camp Butler administration building (Building 2, Plate 4), with MCB Camp Butler and 1st MAW administration in a two-story, 79,000 square foot building, along with a 7,000 square foot photo lab building, an 11,000 square foot telephone exchange building, and a 15,000 square foot Officers Club (Building 8, Plate 4).

Camp Foster also houses a large community/personnel support area located so that it is much more convenient for family housing residents than for the unaccompanied enlisted personnel who must traverse family housing areas to reach the facilities. Major facilities are an Exchange with outlets (41,000 square feet), a cafeteria (10,000 square feet), a commissary (34,000 square feet), a bank (9,000 square feet), a post office (11,000 square feet), a former package store and museum (4,000 square feet), a bowling alley (12-lane), a nursery/child care center (5,000 square feet), a theater (1,000-seat), an Exchange service station with five islands, and a youth center (9,000 square feet). Additional youth center and child care facilities have been recommended. Otherwise, the facilities are adequate.

There is also an 18-hole golf course with clubhouse (Awase Meadows) on the camp.

The Army operates a communications station out of a 50,000 square foot communication center on base. This facility is not included in Marine Corps plans. The radome, however, has a significant visual impact.

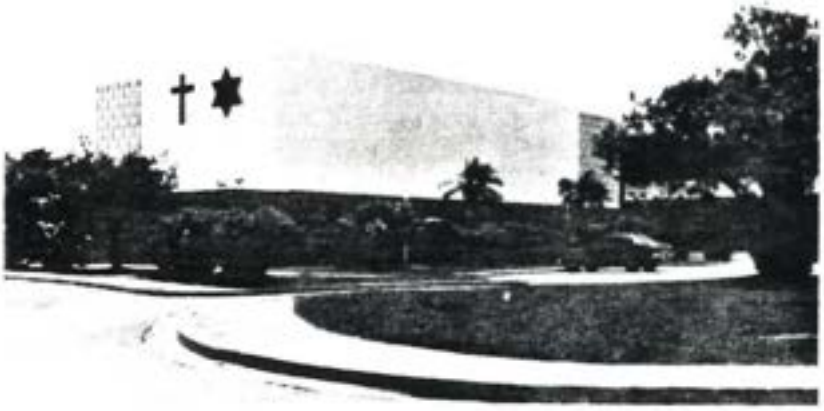
There are four family housing areas and two schools on the base. These are administered by the Air Force and are addressed in the Okinawa Regional Profile dated November 1978.



BLDG 311
PACKAGE STORE

NEW 3-STORY
UEPH BLDG

BLDG 460
NCO CLUB



BLDG 450
CHAPEL

BLDG 481
UEPH

BLDG 5900
FIELD HOUSE

BLDG 2
MCB CAMP BUTLER HQ

BLDG 6
MCB OFFICERS CLUB

(3) Utilities. Existing utility systems for Camp Foster are shown on Figures F-8 and F-9.

(a) Primary Electrical Distribution System. There are six 13.8 KV feeders from the Foster Substation and one feeder from the Futenma Substation supplying electrical power to Camp Foster. The seven feeders are interconnected forming a complex compound loop network.

Sectionalization of the system is accomplished by 23 manually operated oil switches to provide for isolating faults, transferring loads, load break and disconnection of service.

(b) Steam, Space Heating and Domestic Hot Water Systems. Steam from oil-fired boilers provides for space heating and domestic hot water at messes, clubs, living quarters and support facilities.

Space heating is provided by hot water radiators, hot air furnaces, central/unitary heating systems employing hot water or steam coils, or electric duct heaters. Hot water for heating is provided by oil-fired boilers.

Domestic hot water is provided predominantly by steam heat exchangers. Some facilities employ either oil-fired hot water boilers or electric water heaters.

(c) Air Conditioning. Air conditioning at the Marine Corps camps is essentially limited to mess halls, clubs, unaccompanied senior officers housing and communication facilities. The air conditioning systems are mainly direct expansion systems consisting of air handling units with both cooling and heating coils. The larger facilities utilize chilled water systems.

The unaccompanied enlisted and SNCO housing units and the unaccompanied junior officers housing units at the other Marine Corps camps are not air conditioned.

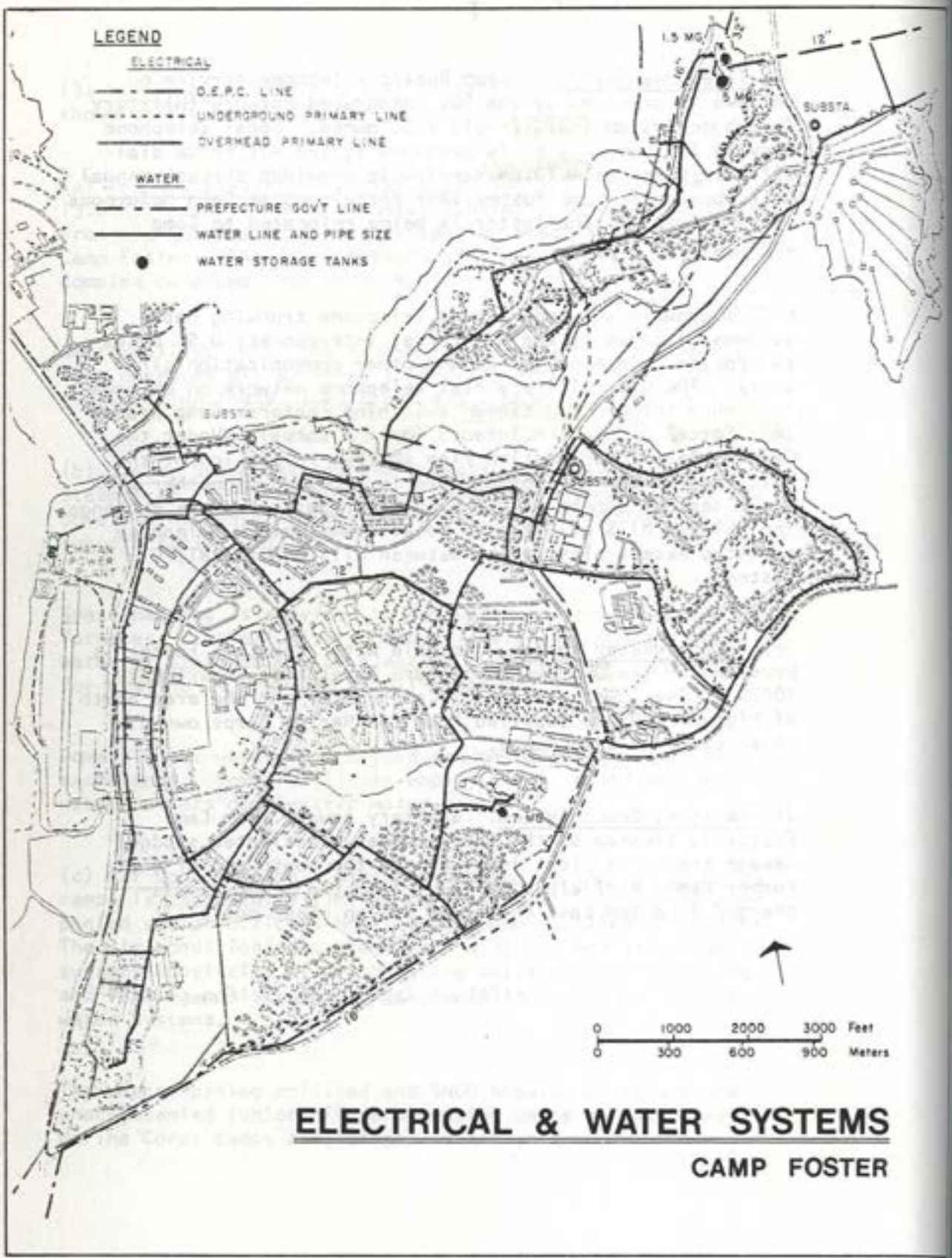
(d) Telephone Service. Camp Butler telephone service on Okinawa is provided by the DOD integrated network (Military Telephone System (MITS))--all U.S. owned. Local telephone service for Camp Foster is provided by the Air Force dial office. Overseas AUTOVON service is provided through manual switchboards at Camp Foster (Air Force) and at Camp McTureous (Marine Corps). The latter is being relocated to Camp Courtney.

MITS microwave and underground telephone trunking cable systems, managed by the Air Force, interconnect U.S. bases to provide telephone trunks and other communication circuits. The U.S. military dial telephone network on Okinawa is linked through two tandem switching centers--Camp Foster (Air Force) and Camp McTureous (Marine Corps). Under the Okinawa Base Consolidation Plan (OBCP), relocation of the McTureous tandem to another site is required, together with the disestablishment of the Camp McTureous telephone exchange. The Okinawa MITS utilizes no local "commercial" telephone services except city trunks between MITS and the NTTPC system.

(e) Potable Water System. Potable water for Camp Foster is provided by the Okinawa Prefecture Enterprise Department (OPED). The lower portion of Camp Foster and the area north of Highway 130 are supplied from the Marine Corps owned water plant at Camp Kuwae.

(f) Sanitary Sewer System. Sanitary sewage from Camp Foster is treated by the OPG secondary (activated sludge) sewage treatment plant located near the south end of the former Hamby Airfield. Effluent from the plant is discharged into the East China Sea via an ocean outfall.

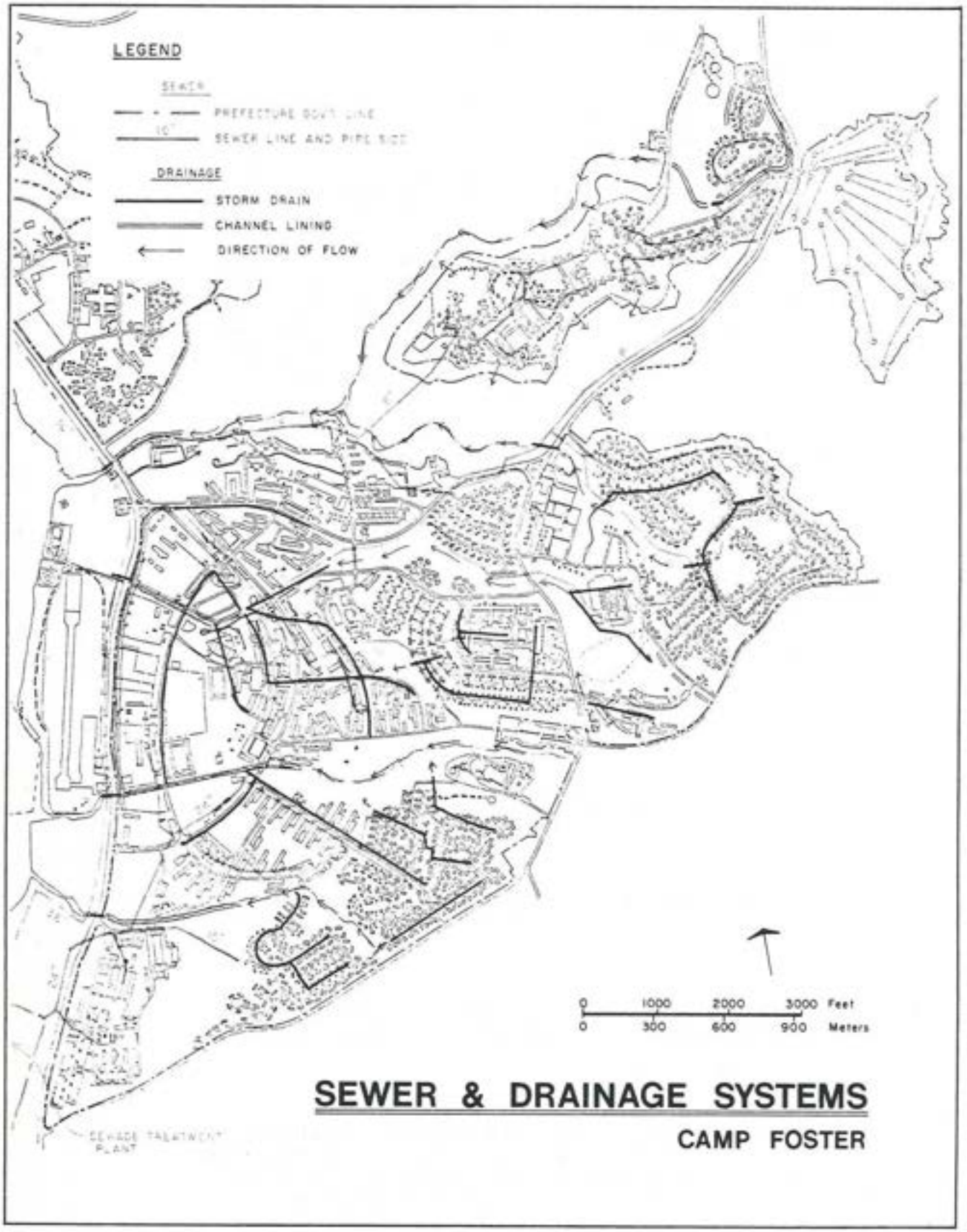
Okinawa Prefectural Government



ELECTRICAL & WATER SYSTEMS

CAMP FOSTER

FIGURE F-8



SEWER & DRAINAGE SYSTEMS

CAMP FOSTER

FIGURE F-9

c. Proposed Land Use

(1) Circulation. National Highways 30, 58, 130, and 330, running through Camp Foster, provide adequate means of access from most of the island. There are 59 kilometers of paved roads and 284,186 square meters of paved parking areas at Camp Foster. The on-base road system is well constructed with wide roads, safe intersections and minimal road grades. Traffic circulation is generally satisfactory. Limited traffic congestion occurs during peak hours, mainly at the access points from the national highways to the camp complex; even then, waiting periods of no more than one minute are normally experienced. The recent change to a left hand driving pattern has resulted in some confusion within parking lots, so that a traffic study has been conducted.

Adequate pedestrian concrete sidewalks are provided for in the unaccompanied personnel and family housing areas. These walks connect with community/personnel support centers such as the Exchange, theater, gymnasiums, ball fields, etc.

Plans now exist to construct three prefectural roadways in the Camp Foster area:

(a) The Okinawa Expressway will slash through the Kishaba Terrace and Plaza Housing Areas necessitating relocation of about 50 units of family housing.

(b) An access road is proposed to link the two parts of Kitanakagusuku Village now separated by the Awase Meadows Golf Course.

(c) Upgrading Highway 330 is planned from the entrance to Kubasaki High School/Sada Housing to the entrance of the Army Communications Site.

(2) Area Constraints. The major natural constraint to the physical development of the complex is the steep terrain defined on Figure F-2.

(3) Planned Land Use. Except for a proposed visual barrier planting plan along the buffer zone (discussed later), there are no differences between the existing and proposed land use plans for Camp Foster (refer back to Figure F-4).

2. Camp Kuwae

2. Camp Kuwae

a. Environmental Setting

(1) Location (Refer back to Figure F-1). Camp Kuwae lies on the western coastline between Kadena AFB and Camp Foster. It is located 16 kilometers northeast of Naha International Airport. Okinawa City lies about 5 kilometers due east of Camp Kuwae.

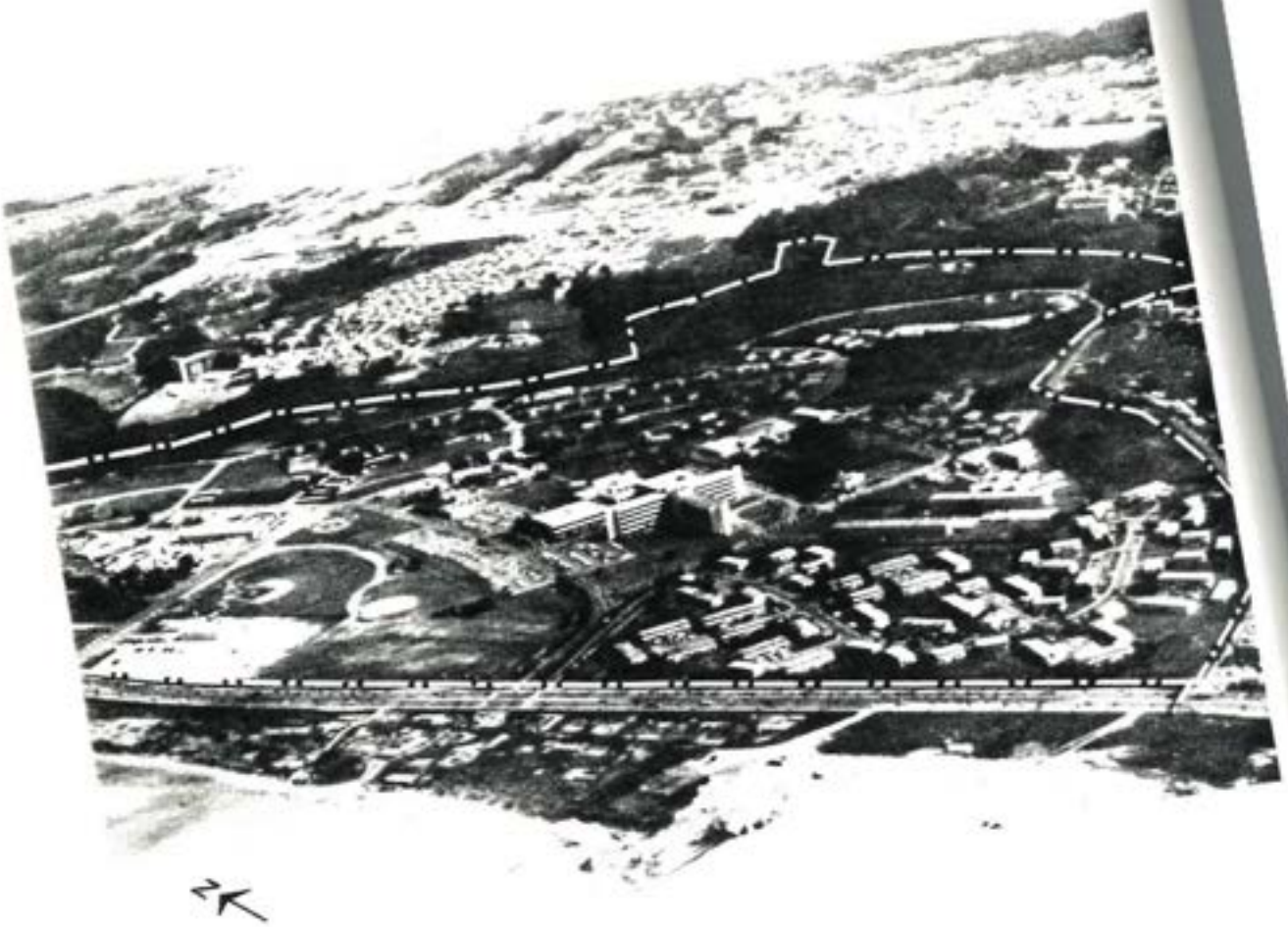
(2) Size. Real estate at Camp Kuwae is roughly triangular in shape and contains 107 hectares of land area. It is fully developed to support the only military Regional Medical Center on Okinawa.

(3) Topography (See Figure F-10). Terrain at Camp Kuwae is predominantly flat. Steep slopes and hilltops do occur along the eastern boundary on about 15 percent of the total area. Elevations on the plain run between 2 meters along National Highway 58 to 10 meters along the base of the steep slopes. Elevations in the steeper areas run between 10 and 45 meters. Almost all of the level areas have been developed, although many of the existing facilities are of temporary construction. The steeper areas are covered with brush and trees.

(4) Soils. Soil characteristics at Camp Kuwae can be classified into two categories--Awase clay which occurs in the flat, coastal area and Ishikawa loam which occurs in the steeper areas. Descriptions of both these soils is shown on Figure F-3.

(5) Historic/Archeologic Sites. There are no known registered historic/archeologic sites at Camp Kuwae.

(6) History. Camp Kuwae is a former Army installation operating under the control of the USAGO. It served as the Regional Medical Center for all military personnel and dependents on Okinawa. With the reduction of Army troops on the island, the installation was transferred to MCB Camp Butler in March 1977.



CAMP KUWAE

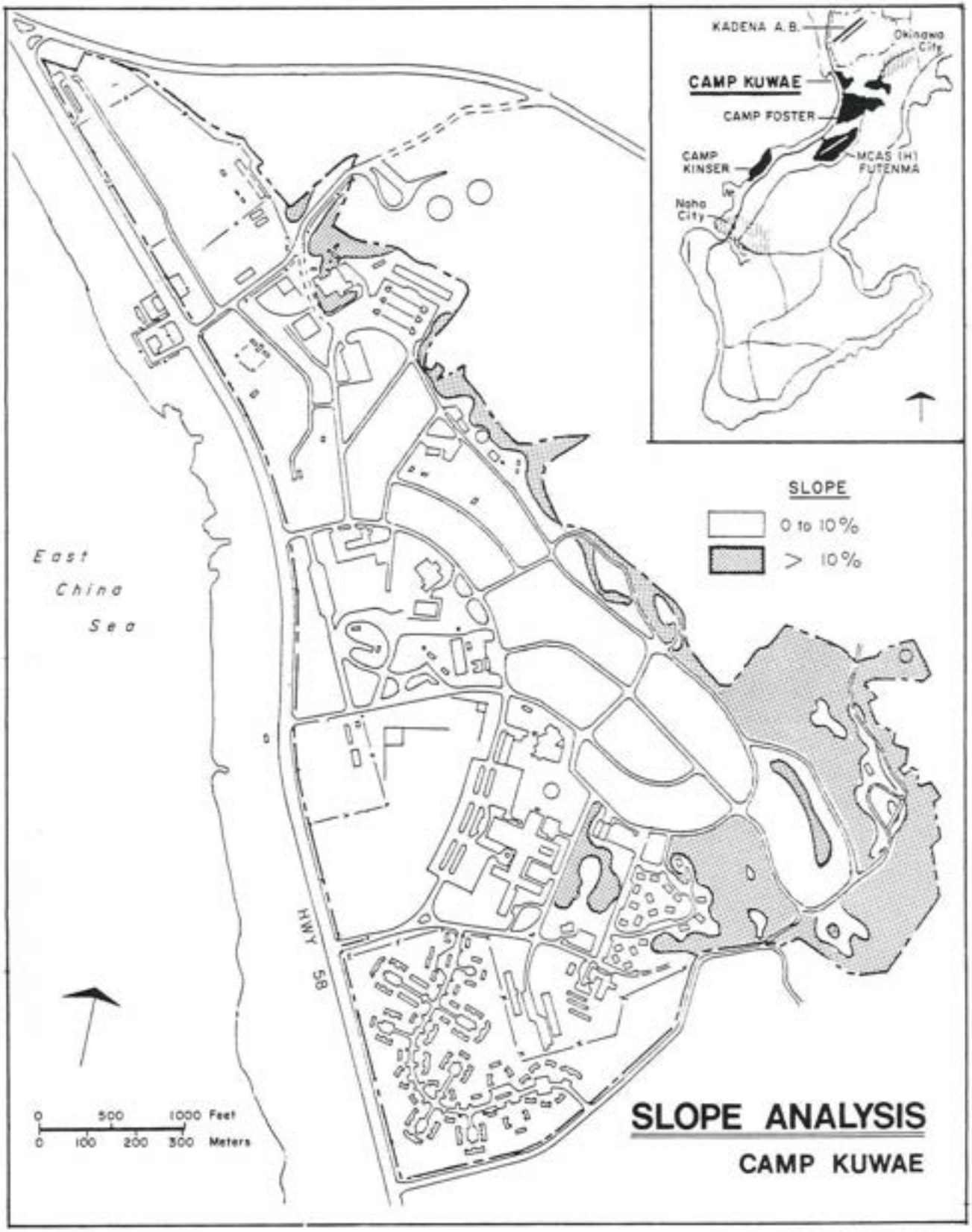

KADENA A.B.
Okinawa City
CAMP KUWAE
CAMP FOSTER
CAMP KINSER
MCAS (H) FUTENMA
Naha City
SLOPE
0 to 10%
> 10%
East China Sea
HWY 58
0 500 1000 Feet
0 100 200 300 Meters
SLOPE ANALYSIS
CAMP KUWAE

FIGURE F-10

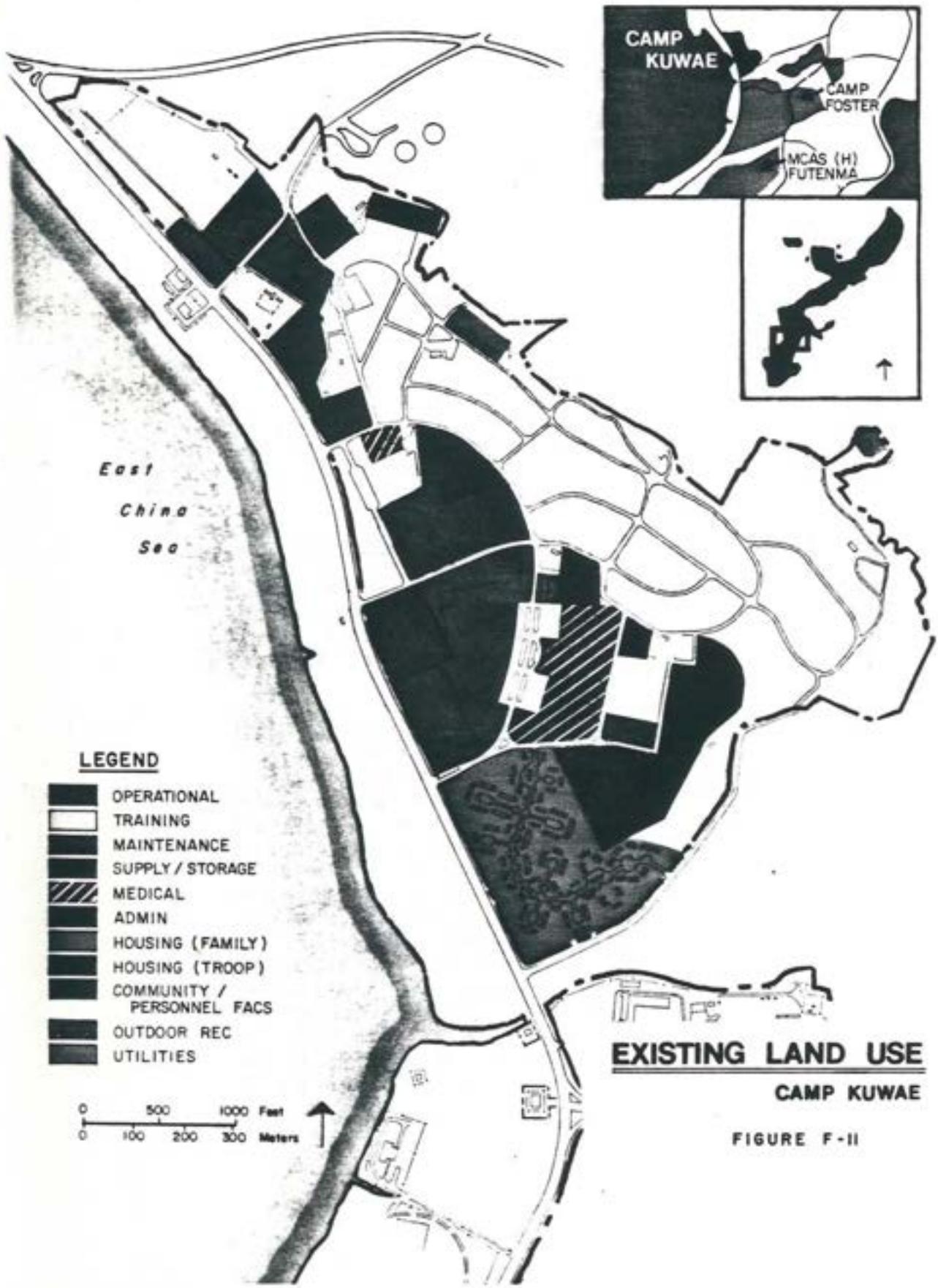
The facilities and real estate at Camp Kuwae are now carried on the Marine Corps plant account but the hospital related facilities and unaccompanied personnel housing will be operated by the CO NAVREGMEDCEN Okinawa under an Interservice Support Agreement.

(7) Base Loading. Refer to Table E-1.

b. Existing Land Use / Facilities

(1) Existing Land Use (See Figure F-11). Camp Kuwae contains primarily flat land bordering National Highway 58. Most of the area was developed with temporary structures, which have been demolished.

The 250,000+ square foot hospital building is located in the south-central plain of the base. Family and unaccompanied personnel housing occupies the area south of the hospital. With few exceptions, these groups of buildings are the only permanent structures on the base. General storage buildings, mainly quonset huts, are located along the east-central boundary. Exchange functions are centrally located in the camp. Open recreation ball fields are located along the western boundary adjacent to National Highway 58. The main OWAX building (No. 399) and a 162-room temporary lodging facility are located in the northeast sector of the camp. Vehicular maintenance functions occupy the north sector.



EXISTING LAND USE

CAMP KUWAE

FIGURE F-11

(2) Existing Facilities (See Figure F-12). At the time of Marine Corps acquisition, there were 271 buildings with over 1 million square feet of floor space at Camp Kuwae. Included are 680,000 square feet of permanent concrete buildings consisting primarily of family and unaccompanied personnel housing units and the main hospital. The remaining buildings were substandard and were demolished to make way for new Air Force family housing.

There are also six outdoor playing courts, three ball fields and two picnic areas.

For purposes of describing the installation, Camp Kuwae has been divided into eight separate areas (see Figure F-12), which are discussed in sequence in the following paragraphs:

(a) Family Housing Area 1. This complex in the southerly corner of Camp Kuwae contains 154 family housing units (in duplex and four-plex buildings). The Marine Corps holds plant account, and the units are administered by the Air Force. Family housing has been addressed in the Okinawa Regional Profile.

(b) Unaccompanied Personnel Housing and Support Area 2. This area contains a chapel and a small (12-student) DOD school for exceptional students, along with the Camp Kuwae unaccompanied personnel housing facilities. The chapel (150-seat) is on Marine Corps plant account and it is supported by the Camp Kuwae BFRL. All other facilities are on NAVREGMEDCEN plant account. One exception is the DOD school which is out granted to the Air Force. There are three permanent two-story UEPH buildings and a quonset hut used for enlisted berthing. The potential capacity of the permanent buildings is 236 people, a figure which essentially satisfies the requirements. UOPH spaces consist of 20 small four-bedroom units which can be made adequate for two W-1 and above officers each. Requirements can be essentially met by squeezing 20 junior officers into five of the units although the units would then be considered inadequate.

(c) Main Hospital Area 3. The dominant feature of this area is the five-story concrete hospital building. The structure has nearly 255,000 square feet of floor space, of which some 14,000 square feet is used for support purposes (Exchange outlets, cafeteria, post office and recreation areas). The facility is maintained as a 200-bed unit, with a contingency expansion capability of another 200 beds (400-bed total). The area also includes the hospital's supply building, the ambulance operations area and a quonset hut used as a Public Works office. There are two playing fields (one baseball, one softball) in the area.

(d) Administration and OWAX Area 4. This is a block of relatively large, semipermanent and temporary metal buildings, with a housing office, various Exchange service outlets, and a hospital laboratory. Nearly 30,000 square feet of facilities are used by the OWAX and are supported by the Marine Corps BFRL for Camp Kuwae. The Navy laboratory (Pacific Command Blood Donor Center) is not supported by the NAVREGMEDCEN Okinawa BFRL; however, BUMED has recommended that this requirement be validated.

Basic Facility Requirement List

HOSPITAL BLDG

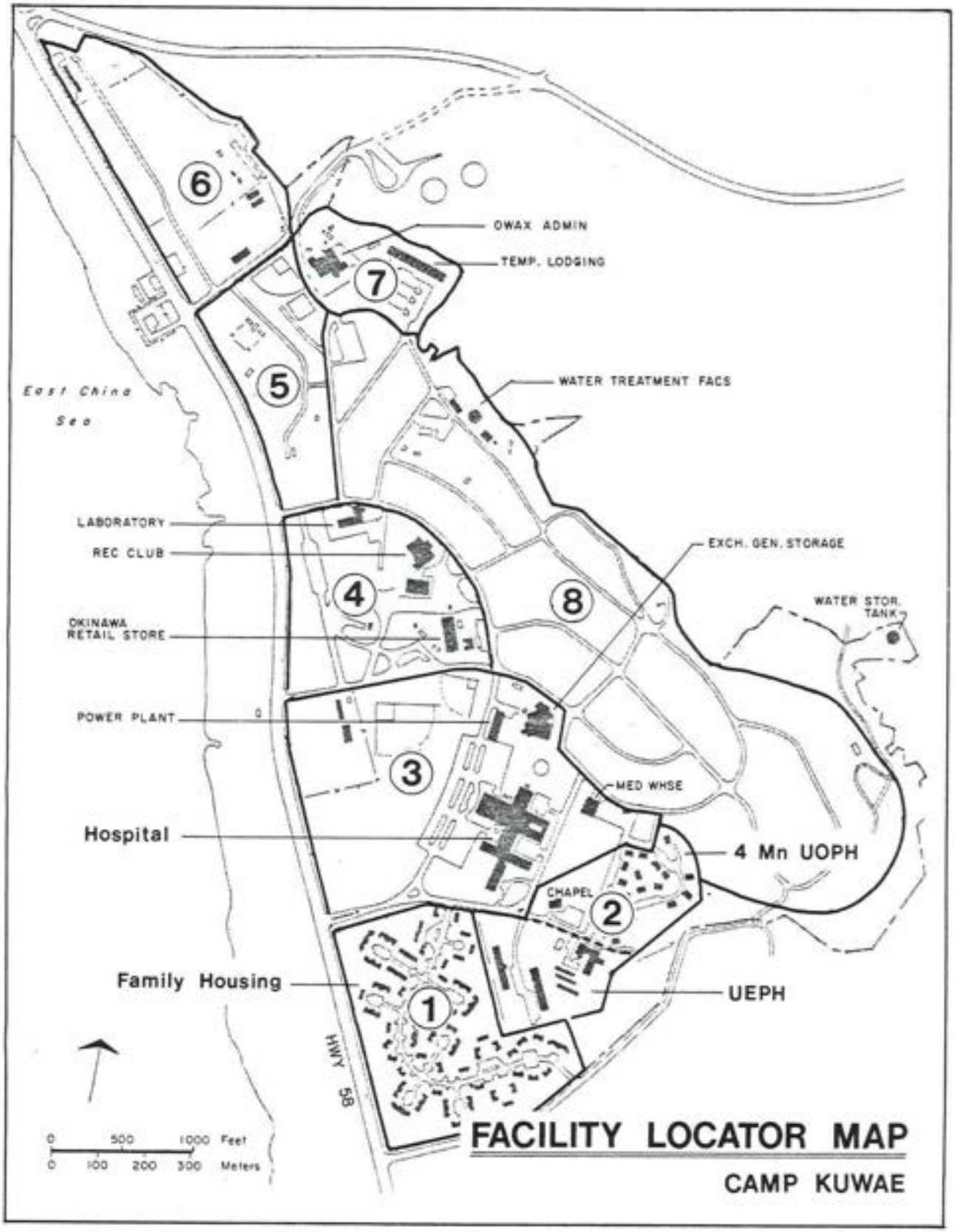

6
7
5
4
3
2
1
8
OWAX ADMIN
TEMP. LODGING
WATER TREATMENT FACS
East China Sea
LABORATORY
REC CLUB
EXCH. GEN. STORAGE
WATER STOR. TANK
OKINAWA RETAIL STORE
POWER PLANT
MED WHSE
Hospital
4 Mn UOPH
CHAPEL
Family Housing
UEPH
HWY 58
0 500 1000 Feet
0 100 200 300 Meters
FACILITY LOCATOR MAP
CAMP KUWAE

FIGURE F-12

(e) Recreation Area 5. This area is mostly open and contains a tennis court complex, a softball field, a small dependent nursery school and an Exchange outlet for automobile sales. The automobile sales function (1,500 square feet) is supported by the Marine Corps BFRL; the nursery school is not.

(f) Former Vehicle Maintenance Area 6. This area contains temporary and semipermanent buildings. The Ryukyu Bus Company uses two butler buildings of about 4,000 square feet each, the University of Hawaii uses another 4,700 square feet for an automotive school, and the Marine Corps uses another 4,000 square feet for maintenance storage. None of the uses is supported by the BFRL. The Marine Corps once planned to release the area to make room for road construction; however, road plans changed. There are no plans for the area.

(g) OWAX Administration and Transient Housing Area 7. This area houses a large five-story temporary housing structure and the main administration function of OWAX. The OWAX function is supported by the Marine Corps BFRL.

(h) Former Cantonment Area 8. This area formerly contained a number of quonset huts and small butler buildings. Most of the buildings have been demolished to make way for family housing. The one facility that will remain is the water treatment plant that provides an independent potable water supply for the hospital.

(3) Utilities. Existing utility systems for Camp Kuwae are shown on Figures F-13 and F-14.

(a) Primary Electrical Distribution System. The power for this area is supplied from one substation at Kuwae. The network essentially consists of two feeder systems, each serving the power house. There is also a simple loop arrangement between the two feeders. The distribution system has two primary voltages, 13.8 KV and 4,160 V. The majority of the area, including the hospital, is connected to the 13.8 KV system. The 4,160 V circuit covers the older section of Camp Kuwae, which consists of Toyland, Furniture Mart, and many unoccupied quonsets. The two feeders are

connected to the following areas: Kuwae F-1: Old stockade area, unaccompanied personnel and family housing, and the 4,160 V circuit. Kuwae F-6: Hospital only. Kuwae F-1 can also be used as alternate feeder for the hospital. Kuwae F-6 is also connected to the Foster Substation via Feeder S-6. The primary distribution system consists of both overhead and underground (man-hole-duct) sections.

(b) Steam, Space Heating, Hot Water and Air Conditioning. The Utilities Support building primarily services the 254,720 square foot hospital building. The major equipment in Building 6010 consists of four 300 KW emergency diesel generators, four 350-ton centrifugal chillers, five cooling towers, three 175 BHP package boiler units, two 7 1/2 HP air compressors, two 5 HP vacuum pumps and four transformers with a total capacity of 2,750 KVA. These provide the hospital with emergency power during commercial outages, chilled water for air conditioning, steam for space and hot water heating, low pressure air, and vacuum services. The hospital has a central oxygen system, 24 air handler units, 234 room fan-coil units, 5 hot water generators, 6 elevators, two 1,000 KVA transformers and numerous other items of equipment.

(c) Telephone Service. Military telephone service on Okinawa is provided by MITS--all U.S. owned. Local telephone service in the MCB Camp Butler complex is provided by Marine Corps dial telephone exchanges at Camps McTureous, Courtney, Hansen, Schwab and Kuwae, MCAS (H) Futenma and White Beach. The Air Force dial office at Camp Foster serves only Camp Foster. Overseas AUTOVON service is provided through manual switchboards at Camp Foster (Air Force) and at Camp McTureous (Marine Corps).

(d) Potable Water System. Potable water is also processed at the water purification plant operated by the Marine Corps on Camp Kuwae. Potable water is available from OPED. The on-base distribution system is shown on Figure F-11.

(e) Sanitary Sewer System. Sanitary sewage from Camp Kuwae is treated by the OPG secondary (activated sludge) sewage treatment plant at Hamby Airfield. Effluent from the plant is discharged into the East China Sea via an ocean outfall.

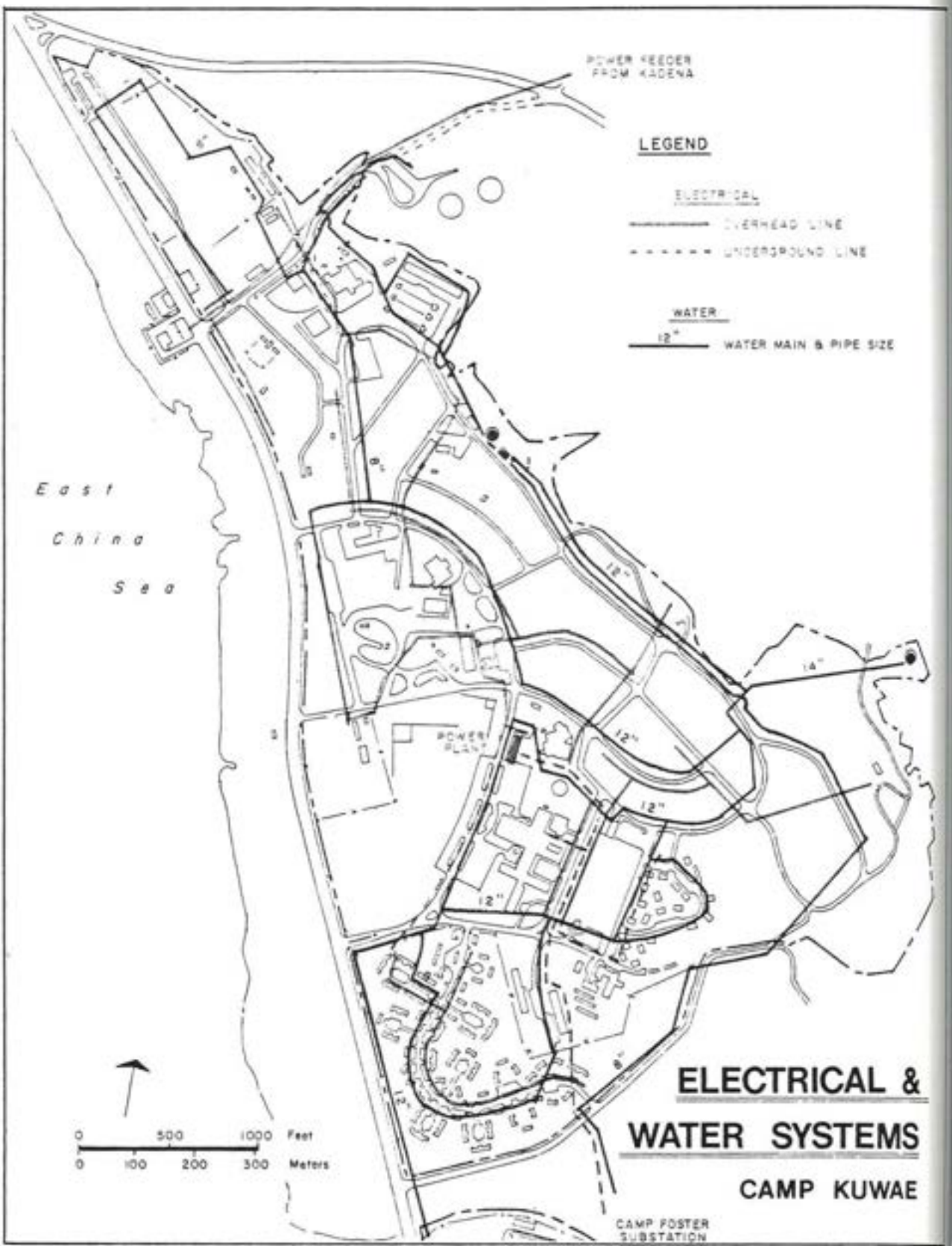

POWER FEEDER FROM KADENA
LEGEND
ELECTRICAL
OVERHEAD LINE
UNDERGROUND LINE
WATER
12"
WATER MAIN & PIPE SIZE
East China Sea
POWER PLANT
CAMP FOSTER SUBSTATION
0 500 1000 Feet
0 100 200 300 Meters
ELECTRICAL & WATER SYSTEMS
CAMP KUWAE

FIGURE F-13


LEGEND
DRAINAGE
STORM DRAIN
CHANNEL LINING
DITCH
CULVERT
East China Sea
0 500 1000 Feet
0 100 200 300 Meters
SEWER &
DRAINAGE SYSTEMS
CAMP KUWAE

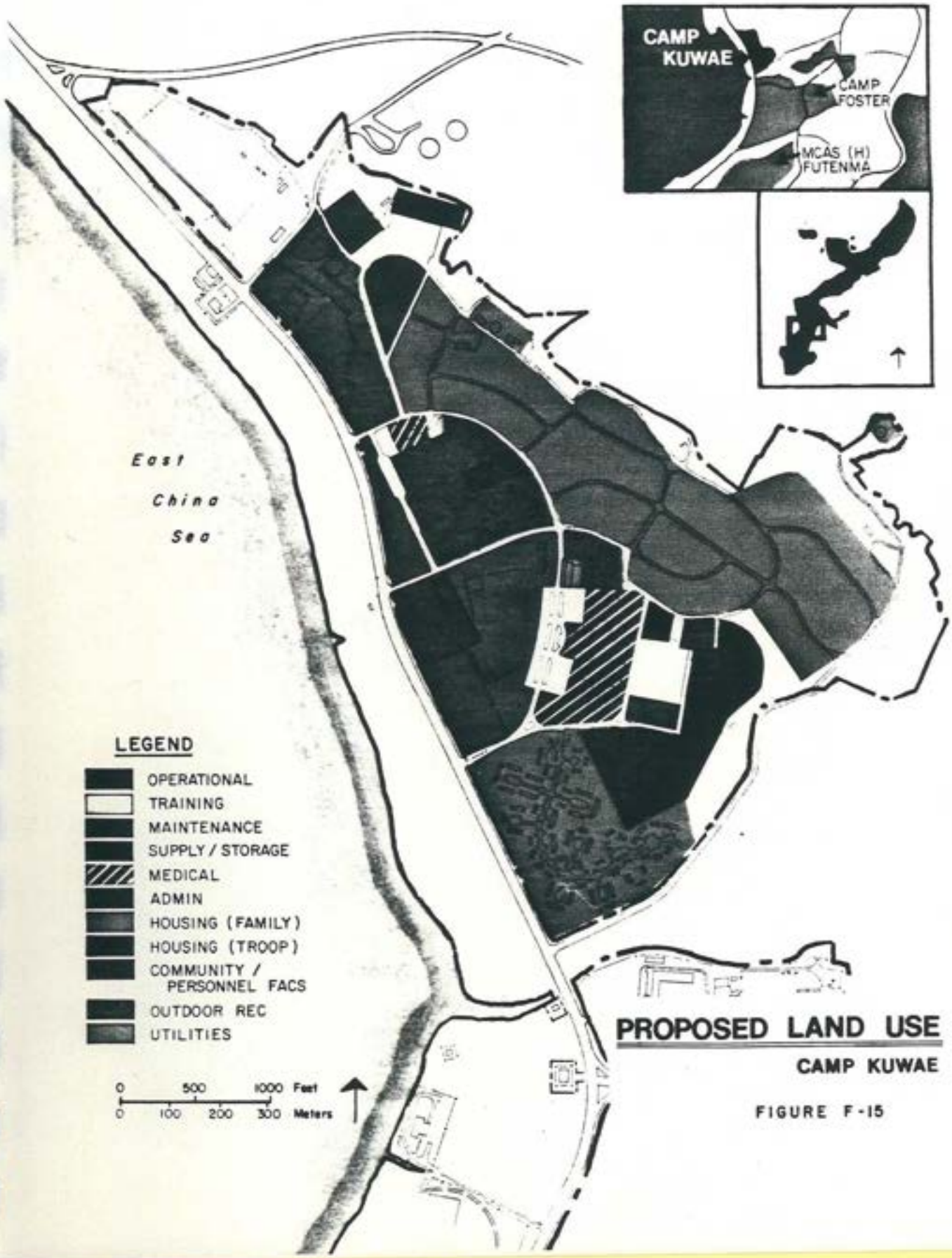
FIGURE F-14

c. Proposed Land Use

(1) Circulation. Vehicular and pedestrian traffic circulation is adequate on the base. Access to the base is from National Highway 58, which is a six-lane divided highway.

(2) Area Constraints. The major natural constraint to the physical development at Camp Kuwae is the steep terrain defined on Figure F-10. One other minor constraint is the helicopter landing pad located just north of the main hospital building which requires air traffic flight safety clearances. The adjacent Chatan Village has planned to utilize land north of Baltimore Street for village expansion. Although no plans exist for release of this area, the Government of Japan (GOJ) will not build facilities in this area. This imposes a significant constraint on the land available for family housing, DOD school construction, and any other construction financed by GOJ.

(3) Planned Land Use. The Air Force developed a plan for housing, school recreational facilities, and an access road to Kadena Air Base over those areas marked 5, 6, 7, and 8 on Figure F-12. The resulting land use is shown on Figure F-15. The potential impacts of this development on Marine Corps and NAVREGMEDCEN Okinawa operations are discussed in the CIP section.



PROPOSED LAND USE

CAMP KUWAE

FIGURE F-15

3. Camp Courtney

a. Environmental Setting

(1) Location (See Figure F-16). Camp Courtney is located along the eastern coastline in Central Okinawa near Tengan Village and approximately 5 kilometers southeast of Ishikawa City, population 17,365.

Access to Camp Courtney is provided by Local Highway 24, which is connected to National Highway 329 at two locations northwest and southwest of the camp. Okinawa City is located about 7 kilometers southwest of Camp Courtney.

(2) Size. Camp Courtney contains 140 hectares of gently sloping land. Housing, administration, equipment maintenance, supply and training functions are the principal uses of the land.

(3) Topography (See Figure F-17). Camp Courtney is located on a low bluff overlooking the Pacific Ocean. Average elevation is about 30 meters with scattered knolls and steep slopes. A steep drop occurs along the southeast shoreline and diminishes to a flat shoreline at the northeastern corner of the camp. Over 70 percent of the terrain is sloped less than 10 percent and is suitable for facility development.

(4) Soils (See Figure F-3). Soil at the camp consists chiefly of Chinen stony clay. There are also some scattered areas of Okinawa clay loam underlain by limestone. Several limestone hills with steep slopes are within the camp. Additional soil descriptive data are shown on Figure F-3 and in Table F-1.

(5) Historic/Archeologic Sites. There is a historic site at Deika Hill on Camp Courtney (see Figure F-17). Text of the marker is as follows:

"In the 15th Century, this was the site of the castle of Lord Tengan Taroti, the second son of Lord Okawa, who reigned in nearby Agena Castle.

CAMP COURTNEY

CAMP COURTNEY - REX AREA

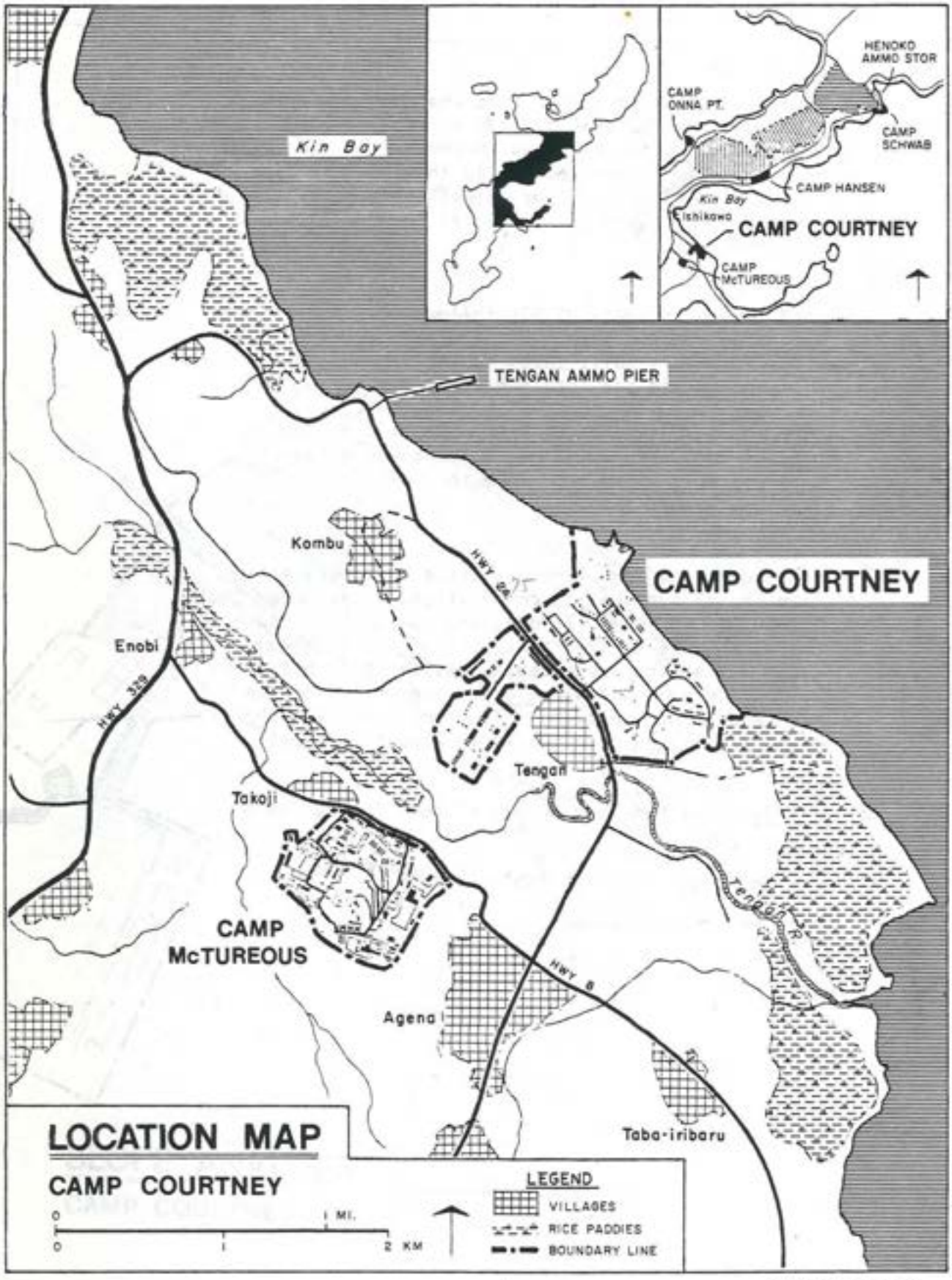

Kin Bay
HENOKO AMMO STOR
CAMP ONNA PT.
CAMP SCHWAB
CAMP HANSEN
Kin Bay
Ishikawa
CAMP COURTNEY
CAMP McTUREOUS
TENGAN AMMO PIER
Kombu
HWY 58
CAMP COURTNEY
Enobi
HWY 329
Tengan
Takoji
Tengan R.
CAMP McTUREOUS
HWY 8
Agena
Taba-iribaru
LOCATION MAP
CAMP COURTNEY
0
1 MI.
0
1
2 KM
LEGEND
VILLAGES
RICE PADDIES
BOUNDARY LINE

FIGURE F-16

Lord Okawa was the son of Lord Iha who controlled Ishikawa from the Iha castle. It was traditional that the first son ascended to control of the principal family castle. While the younger sons extended family control by establishing castles in the outlaying areas to rule local farmers and fishermen.

"Lord Tengan and many of his followers were killed in a struggle for power, but other feudal Lords their survivors built tombs in the site of this hill and buried the Lord and his men there.

"During WWII, the bodies of the Japanese soldiers were added to the tombs since this site was a Japanese strong-point.

"Descendants of Lord Tengan and his followers still live in the surrounding communities. They have such names as Agena, Tengan, and Kawasaki. Ancestor worship is an important part of the Buddhist religion, so the descendants consider this hill hallowed ground and place great importance on the maintenance of the tombs. The families visit the site formally twice annually in August and April."

(6) History. See MCB Camp Butler history in Section D.

(7) Base Loading. Refer to Table E-1.

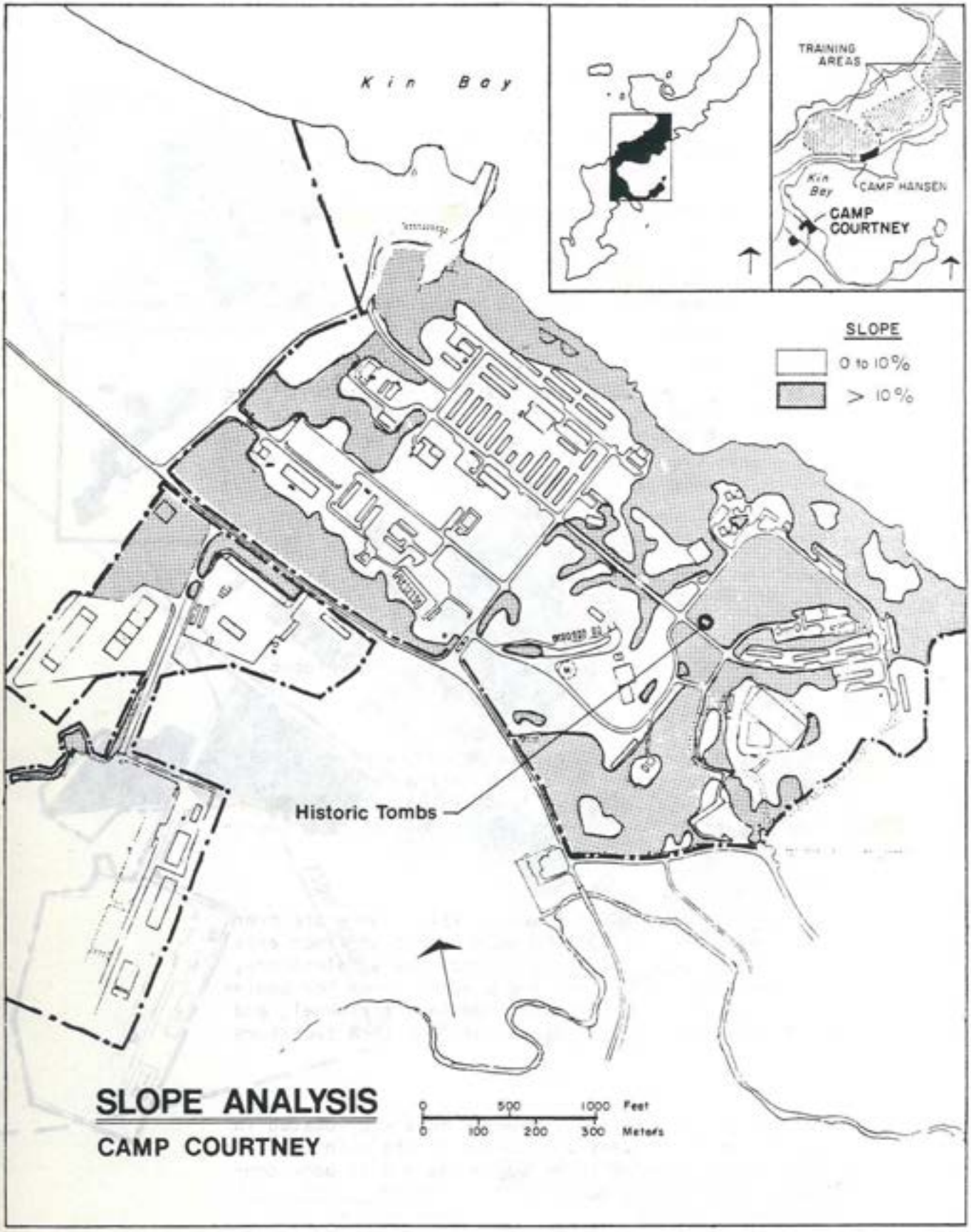

Kin Bay
TRAINING AREAS
Kin Bay
CAMP HANSEN
CAMP COURTNEY
SLOPE
0 to 10%
> 10%
Historic Tombs
SLOPE ANALYSIS
CAMP COURTNEY
0 500 1000 Feet
0 100 200 300 Meters

FIGURE F-17

b. Existing Land Use / Facilities

(1) Existing Land Use (See Figure F-18). Camp Courtney is used mainly for administration, housing and training functions. UEPH, dining facilities, and Unit Headquarters occupy the north sector of the camp. Division Headquarters is located west of the UEPH area across a large, open training/recreation area. Storage and vehicular maintenance facilities are in the REX area, located still further west of the Division Headquarters on the west side of Local Highway 24.

UOPH units are grouped along the southeastern corner of the camp along Behan and Jackson Streets. The Officers Club is located beside the highest knoll on the camp but still retains a scenic view of much of Kin-wan Bay and the eastern coastline in the vicinity of Camp Hansen.

A ball field complex, surrounded by open areas and areas covered by trees and brush, occupy the camp's south sector.

Land use around the camp consists mainly of undeveloped, brush lands and scattered, small villages.

Chief of Naval Operations (CNO) Exemption CFAO-EIA-76 authorizes the handling of up to 3.5 million pounds net explosive weight (NEW) of Class 1, Division 1, on Tengan Pier. The resultant safety zone covers most of Camp Courtney.

(2) Existing Facilities (See Figure F-19). There are over 120 buildings, with over 690,000 square feet of floor area at Camp Courtney. Many of the buildings are single-story, concrete, permanent structures and provide space for administration, unaccompanied personnel housing, personnel, and supply. The Division Headquarters building is a two-story concrete structure.

Temporary butler buildings and quonset huts are located in the southwest and west-central sectors of the main camp and in the REX area. Many of these buildings are in poor condition and are currently vacant.

EXISTING LAND USE

CAMP COURTNEY

FIGURE F-18

Floor areas of the buildings by functions are shown in Table F-3 and are based on the PACNAVFACENGCOM engineering evaluation documents completed in June 1979.

(a) Operational Facilities

Helicopter Pad. A helicopter pad is located in a clear area 200 meters east of the Main Gate. This pad satisfies current requirements, and the approach and departure safety zones conform to aircraft safety criteria.

Filling Station. The filling station has four service outlets. It is adequate and satisfies present requirements.

Armory. There is one armory serving a separate battalion command and all other tenants at the camp. This function occupies 1,460 square feet and shares a building with the police station. The space satisfies current requirements.

(b) Maintenance Facilities

Automotive Organizational Shop. This function consists of the dispatch office, containing 570 square feet, and the maintenance shop (Building 4108, Plate 5), containing 8,218 square feet of floor area. Both buildings are of permanent concrete construction and satisfy current requirements.

Electronics/Communication Maintenance Shop. Shop spaces for this function occupy Building 4102 (not shown), which contains 4,089 square feet and a 12,328 square foot portion of Building 4103 (Plate 5). These buildings are of concrete construction, in sound condition, and satisfy current requirements.

(c) Supply Facilities. Buildings designated for supply functions include four permanent, ten semipermanent and seven temporary buildings, with a total floor area of 202,787 square feet. Of these, five semipermanent and six temporary buildings, containing 118,284 square feet, are in poor condition and are not used. The vacant buildings are located mainly in the REX area. The remaining buildings with a total floor area of 84,503 square feet are considered adequate and satisfy current warehouse requirements.

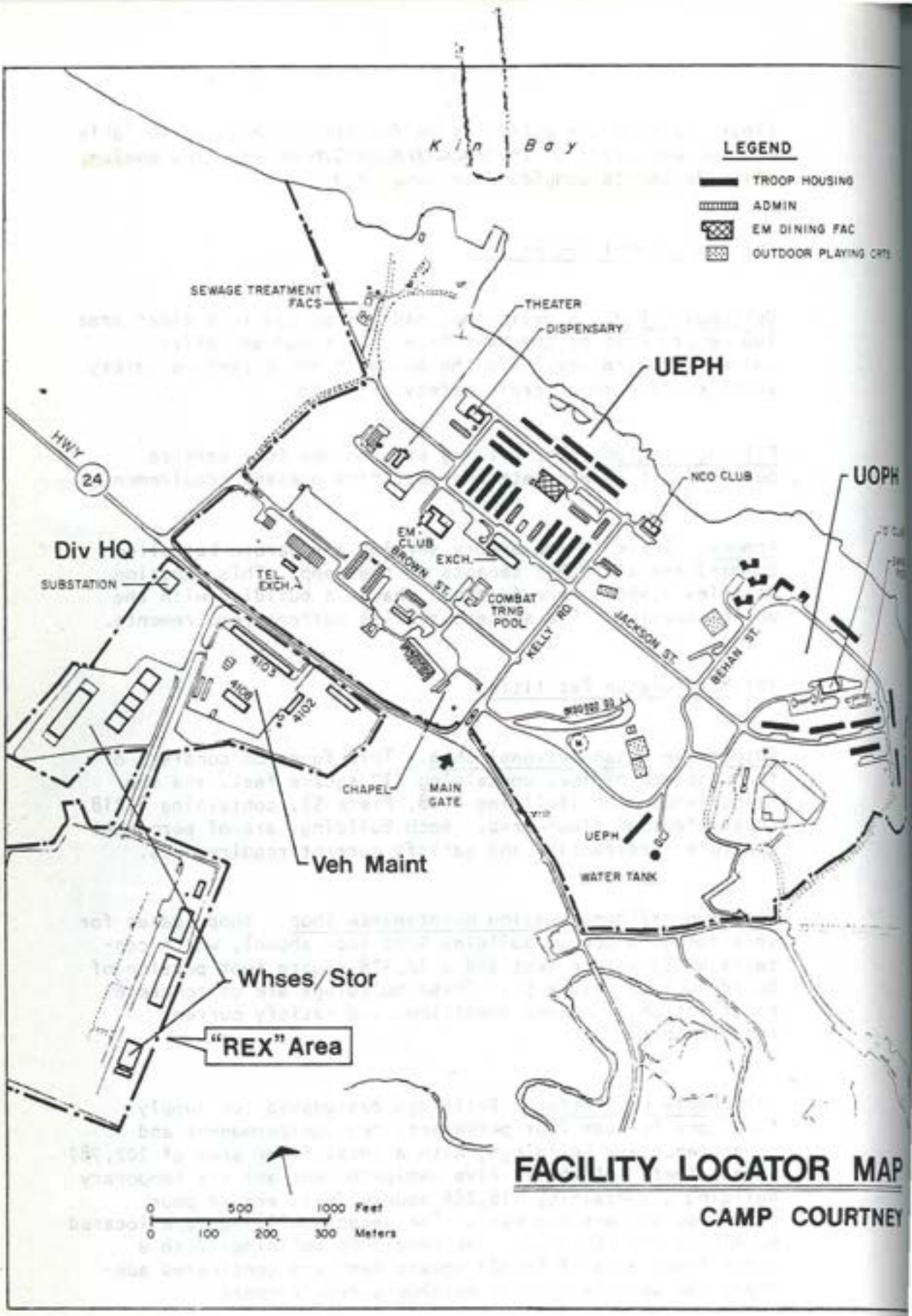

Kin Bay
LEGEND
TROOP HOUSING
ADMIN
EM DINING FAC
OUTDOOR PLAYING CRTS
SEWAGE TREATMENT FACS
THEATER
DISPENSARY
UEPH
UOPH
HWY 24
NCO CLUB
Div HQ
SUBSTATION
TEL EXCH
EM CLUB
EXCH.
BROWN ST.
COMBAT TRNG POOL
KELLY RD
JACKSON ST.
BEHAN ST.
4103
4106
4102
CHAPEL
MAIN GATE
UEPH
WATER TANK
Veh Maint
Whses/Stor
"REX" Area
0 500 1000 Feet
0 100 200 300 Meters
FACILITY LOCATOR MAP
CAMP COURTNEY

FIGURE F-

Table F-3

EXISTING FACILITIES
CAMP COURTNEY

CAT CODE	DESCRIPTION	# OF SPACES*	TOTAL FLOOR AREA (SF)	OTHER
100	OPS & TRNG FACS	4	1,627	
111	Helo Pad			1 EA
123	Fillg Sta			4 OL
131	Phone Hse, Terminal Eqpt Bldg	3	167	
143	Armory	1	1,460	
179	Combat Trng Pool			1 EA
200	MAINT FACS	8	64,405	
214	Auto Org Shop	3	44,788	
217	Elecnx/Comm Maint	2	16,417	
219	Grounds Eqpt	3	3,200	
400	SUPPLY FACS	21	202,787	
441	Whse	21	202,787	
500	MEDICAL/DENTAL FACS	2	5,200	
540	Dental	1	1,040	2 OU
550	Medical	1	4,160	5 BD
600	ADMIN FACS	18	107,587	
610	Admin, Co. HQ	18	107,587	
700	HSG & COMMUNITY FACS	94	315,685	
720	UOPH	11	61,553	109 PN
	UEPH	19	114,260	608 PN
	Dining Fac (Enl & Off)	3	18,408	1,023 PN
	Other	2	1,920	
730	Sentry Hse, Locker Rm, Police Sta	9	4,071	
740	Exchange/Morale/Rec Facs	30	95,313	
750	Outdoor Play Courts			5 EA
	Outdoor Play Field			3 EA
	Swim Pool (Off)			1 EA
	Skeet Range			1 EA
800	UTILITIES			
812	Elec Distr Sys		200,300 LF	
832	Sanitary Collect Sys		26,900 LF	
842	Water Distr		49,300 LF	
851	Roads		9.7 MI	

*Does not match building totals. Some buildings have multiple uses.

(d) Medical/Dental Facilities. The medical dispensary and dental clinic are located in a single-story concrete structure. The dispensary occupies 4,160 square feet, has a five-bed patient capacity and satisfies current requirements. The dental clinic has three dental operating units and needs three additional operating units to satisfy the present requirements.

(e) Administration Facilities. Administration functions occupy 92,047 square feet in 13 permanent and adequate concrete buildings, and 15,540 square feet in 5 temporary substandard structures. These spaces are used as headquarters for all unit levels from division down to companies. The 3rd Marine Division requires administration space amounting to 83,100 square feet but occupies only 56,417 square feet of adequate floor area (Building 4211, Plate 5), leaving a shortfall of 26,683 square feet. The 9th Marine Amphibious Brigade also needs 14,500 square feet of administration space, but currently has none. The 9th MAB is now at Camp McTureous, but will be relocated to Camp Courtney when suitable facilities are available. The total shortfall for these two high level units is 41,183 square feet.

The administration spaces for the battalion and company level units are adequate in terms of condition and size.

(f) Housing and Personnel Support Facilities

Unaccompanied Personnel Housing. Unaccompanied personnel housing for both officers and enlisted personnel are in single-story, permanent, concrete buildings. The UOPH units, located in the southeastern sector of the camp, have semi-private baths and air conditioning (Building 4412 (Plate 6) is typical). The UEPH units, located in the northeastern sector of the camp, have open bays and gang showers. To conform with DOD criteria, all unaccompanied personnel housing units will require private baths, appropriate partitioning to comply with personnel space requirements and air conditioning. There is a requirement for 70 additional officer spaces and 276 additional enlisted spaces at Camp Courtney.

There is one 1,000-man mess hall which is adequate to satisfy current requirements.

BLDG 4108
AUTOMOTIVE ORGANIZATIONAL SHOP

BLDG 4103
ELECTRONICS / COMM MAINT SHOP

BLDG 4211
III MAF, 3RD MAR DIV HQ

BLDG TE-1
DIVISION ADMIN OFFICES

Personnel Support Facilities. Some of these facilities are of permanent construction, adequately sited on base and satisfy current requirements. These facilities are listed below.

DESCRIPTION	FLOOR AREA (SF)
Bank	750
Post Ofc	1,090
Enlisted Club	9,286*
Library	2,080
Location Exchange	7,124
SNCO Club	4,723*
Officers Club	10,929

*See Buildings 4218 and 4334 (Plate 6).

Some personnel support functions are located in substandard, deteriorated buildings, while others do not have any assigned space. These functions will require new, adequate spaces to satisfy the current requirements as shown below.

FUNCTION	FLOOR AREA REQMT (SF)	CURRENT SPACE PROVIDED
Fire Sta	3,000	None
Police Sta	1,650	290
Exchange Cafeteria	6,300	None
Chapel	8,550	2,184*
Family Svc Ctr	1,150	960*
Amusement Ctr	1,800	None
Exchange Svc & Auto Repair Sta	2,540	None
Hobby Shop	3,400	None
Spec Svcs Issue Ofc	2,580	192
Bowling Alley	6,000	None
Gym	21,000	6,112*
Theater	6,500	4,953**
Boat House	5,800	None
Educ Svcs Ofc	8,700	5,360

*Substandard quonset hut.
**Substandard butler building.

BLDG 4412
TYPICAL SINGLE STORY UOPH UNIT

BLDG 4334
NCO CLUB

non-commissioned officer
F-18

BLDG 4218
ENLISTED CLUB

BLDG TE-39
THEATER

(3) Utilities. Existing utility systems for Camp Courtney are shown on Figures F-20 and F-21.

(a) Primary Electrical Distribution System. The main area of Camp Courtney has a simple one-feeder radial system. Three physically separated areas (Motor Pool, Special Services warehouses and Camp Tengan) are also connected to this feeder. Another separated area (REX storage complex) is also serviced from the Tengan Substation but via Agena Substation which is only a 13.8 KV switching station. This routing of the REX area feeder is unnecessary; the area could be connected to the feeder servicing the main Camp Courtney. Sectionalization of the network is accomplished with air switches; there are no RAL-type oil switches at Camp Courtney. The primary distribution system is almost entirely overhead.

Camp Courtney has experienced some power system problems.

(b) Steam, Space Heating and Domestic Hot Water Systems. Steam from oil-fired boilers provides for cooking, space heating and domestic hot water at messes and clubs.

Space heating for the messes and clubs employs air handling units with hot water heating coils. The duct work connected to the air handling units provides space heating in the winter and air conditioning in the summer. Space heating for living quarters is provided by hot air furnaces which route heated air either in overhead air ducts or in air ducts below the floor and up through baseboard registers.

Domestic hot water is provided predominantly by oil-fired boilers and by electric water heaters in some buildings. Some boilers employ a separate closed loop between the oil-fired boilers and the domestic hot water supply. The closed loop system provides for longer boiler operating life and lower boiler maintenance costs. Existing boilers without closed loops are being considered for modification to closed loop systems by the activity.

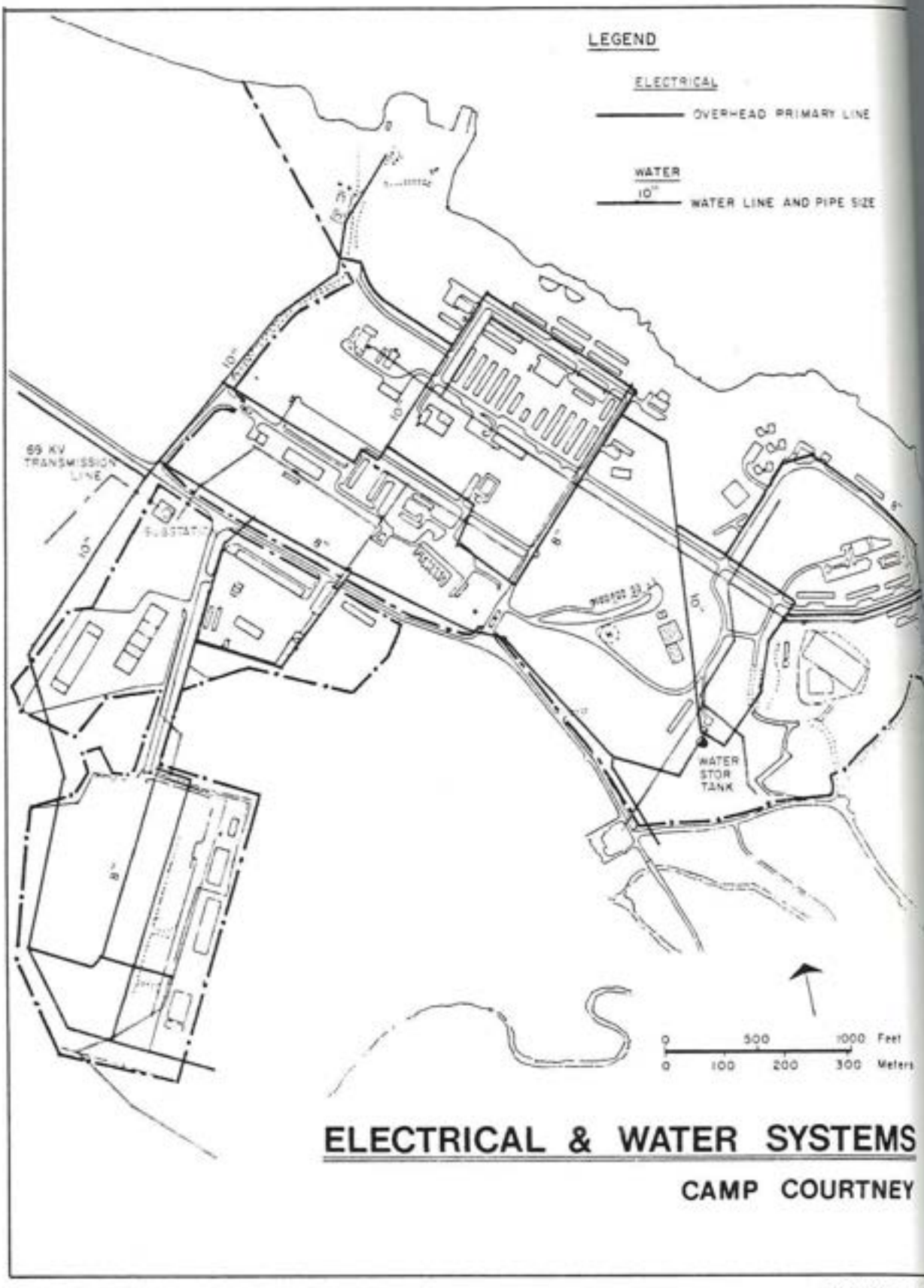
(c) Air Conditioning. Air conditioning at the Marine Corps camps is essentially limited to mess halls, clubs, UOPH, and communication facilities. The air conditioning systems are mainly direct expansion systems consisting of air handling unit with both cooling and heating coils. The larger facilities utilize chilled water systems.

(d) Telephone Service. Military telephone service on Okinawa is provided by MITS--all U.S. owned. Local telephone service in the MCB Camp Butler complex is provided by Marine Corps dial telephone exchanges at Camps McTureous, Courtney, Hansen, Schwab and Kuwae, MCAS (H) Futenma and White Beach. Overseas AUTOVON service is provided through manual switchboards at Camp Foster (Air Force) and at Camp McTureous (Marine Corps). The Camp McTureous telephone exchange is being relocated to Camp Courtney.

(e) Potable Water System. Potable water for Camp Courtney is provided by the Tengan Water Treatment Plant operated by the OPED. Water is treated with alum, chlorine, activated carbon, polyphosphates, fluorides and soda ash. Local storage capacity is 400,000 gallons in a ground storage tank. Distribution mains are primarily 6 inches and 12 inches in size and are made adequate for a fire demand of 1,500 GPM by two 1,000 GPM fire pumps.

Okinawa Prefecture Enterprise Department

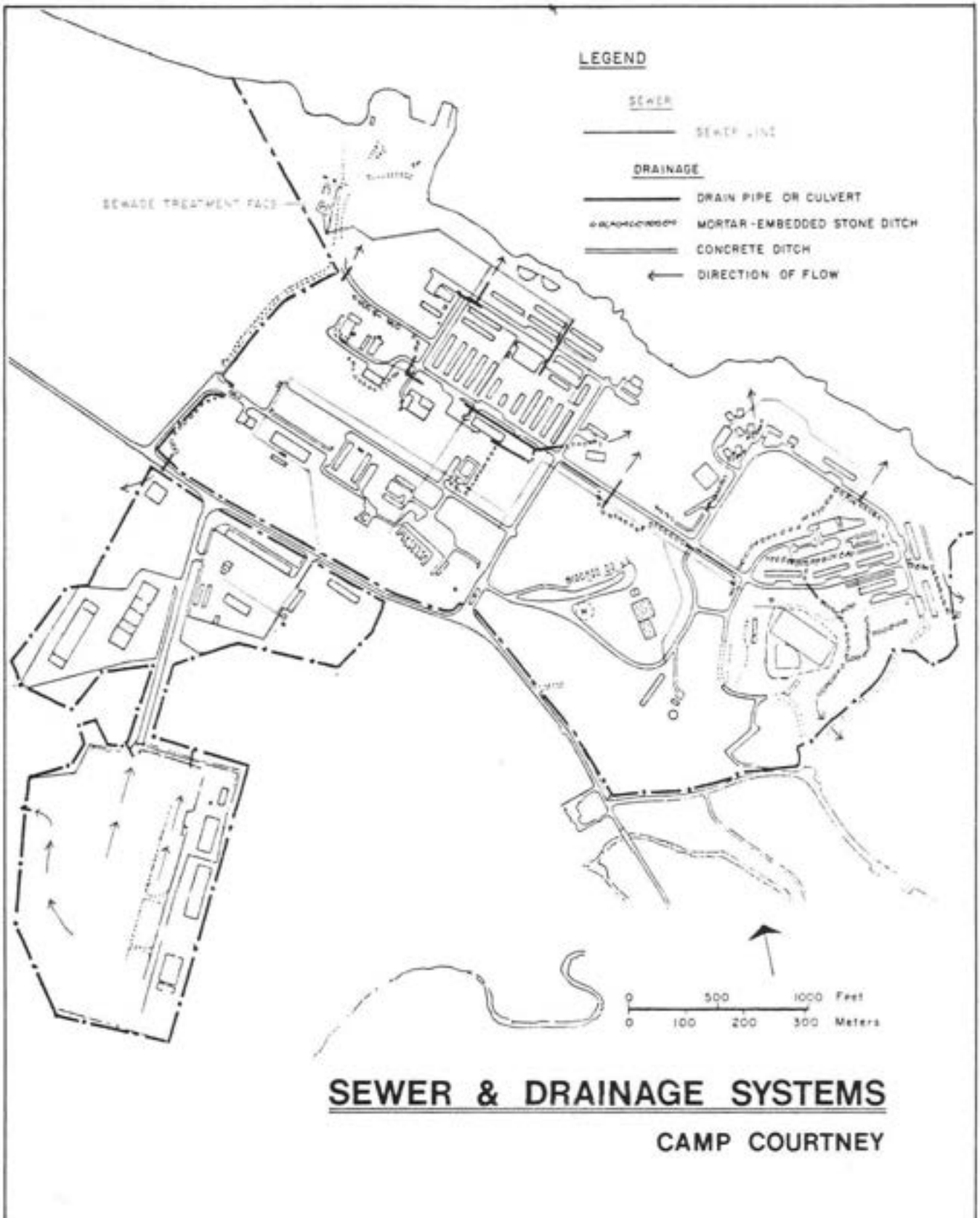
(f) Sanitary Sewer System. Sewage collection for Camp Courtney is provided by centralized, gravity sewers from six to eight inches in size and by four-inch force mains with three pump stations. Treatment is by Imhoff Tank and chlorination. Effluent is discharged into the ocean. Long-range plans include construction of a sewage treatment plant by GOJ.



ELECTRICAL & WATER SYSTEMS

CAMP COURTNEY

FIGURE F-2



SEWER & DRAINAGE SYSTEMS

CAMP COURTNEY

FIGURE F-21

c. Proposed Land Use

(1) Circulation. There are 15.3 kilometers of paved roads, 24,000 square meters of parking area and approximately 8,000 meters of concrete sidewalk at Camp Courtney.

On-base vehicular traffic and parking pose no problems because there is very limited use of passenger vehicles. The majority of military personnel at Camp Courtney do not own vehicles because they are on one-year unaccompanied tours to Okinawa.

(2) Area Constraints. CNO Exemption No. CFAO-EIA-76 permits the handling of up to 3.5 million pounds NEW of ammunition at Tengan Pier. The resulting explosives safety quantity distance (ESQD) circle of 7,590 feet blankets most of Camp Courtney (see Figure F-22) and requires site approval by the Department of Defense Explosives Safety Board (DDESB) for normal construction, repair, or modification of facilities.

(3) Planned Land Use (See Figure F-23). Camp Courtney is substantially developed. Additional buildings planned are administration, housing and personnel support facilities which are generally sited within each existing functional area.

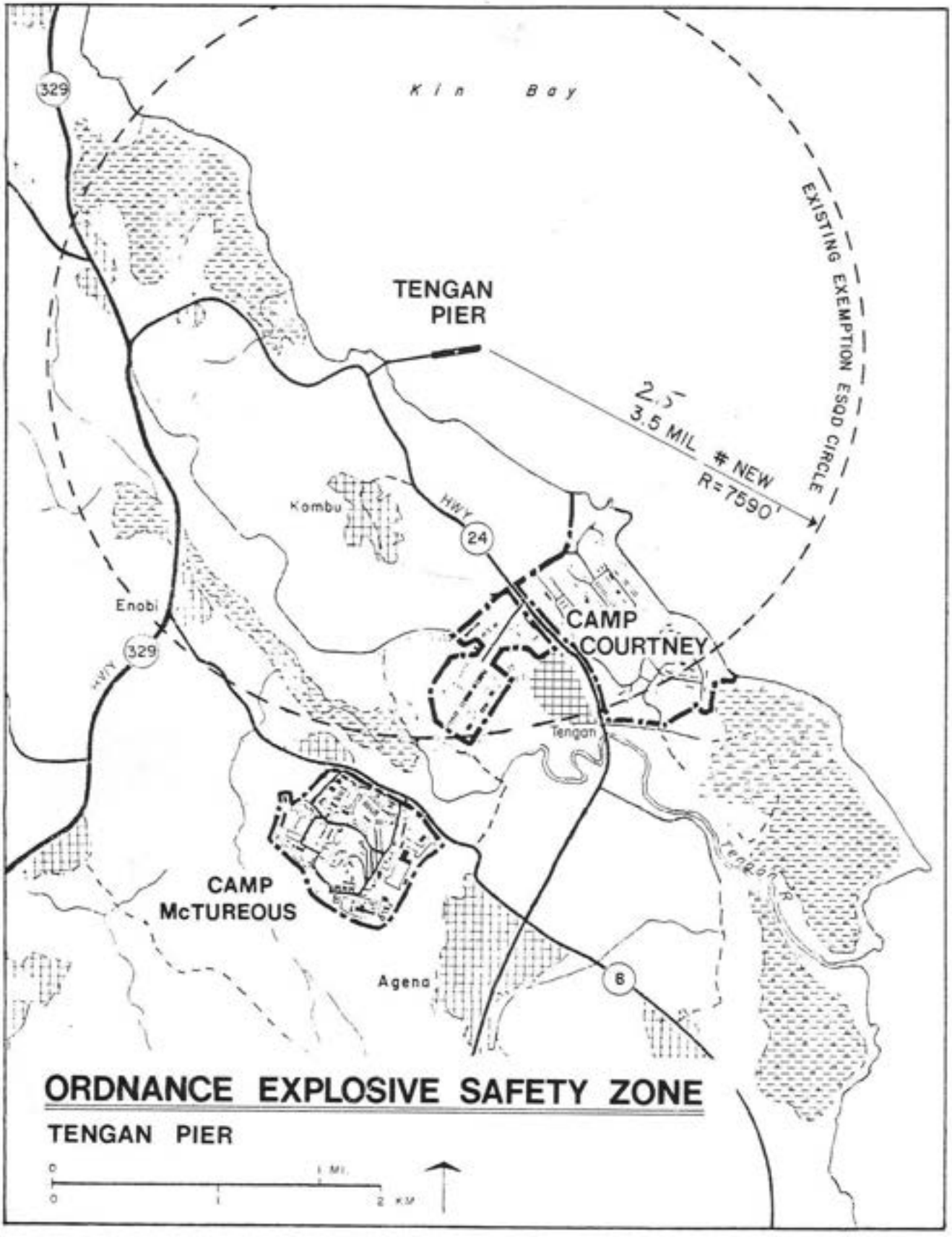
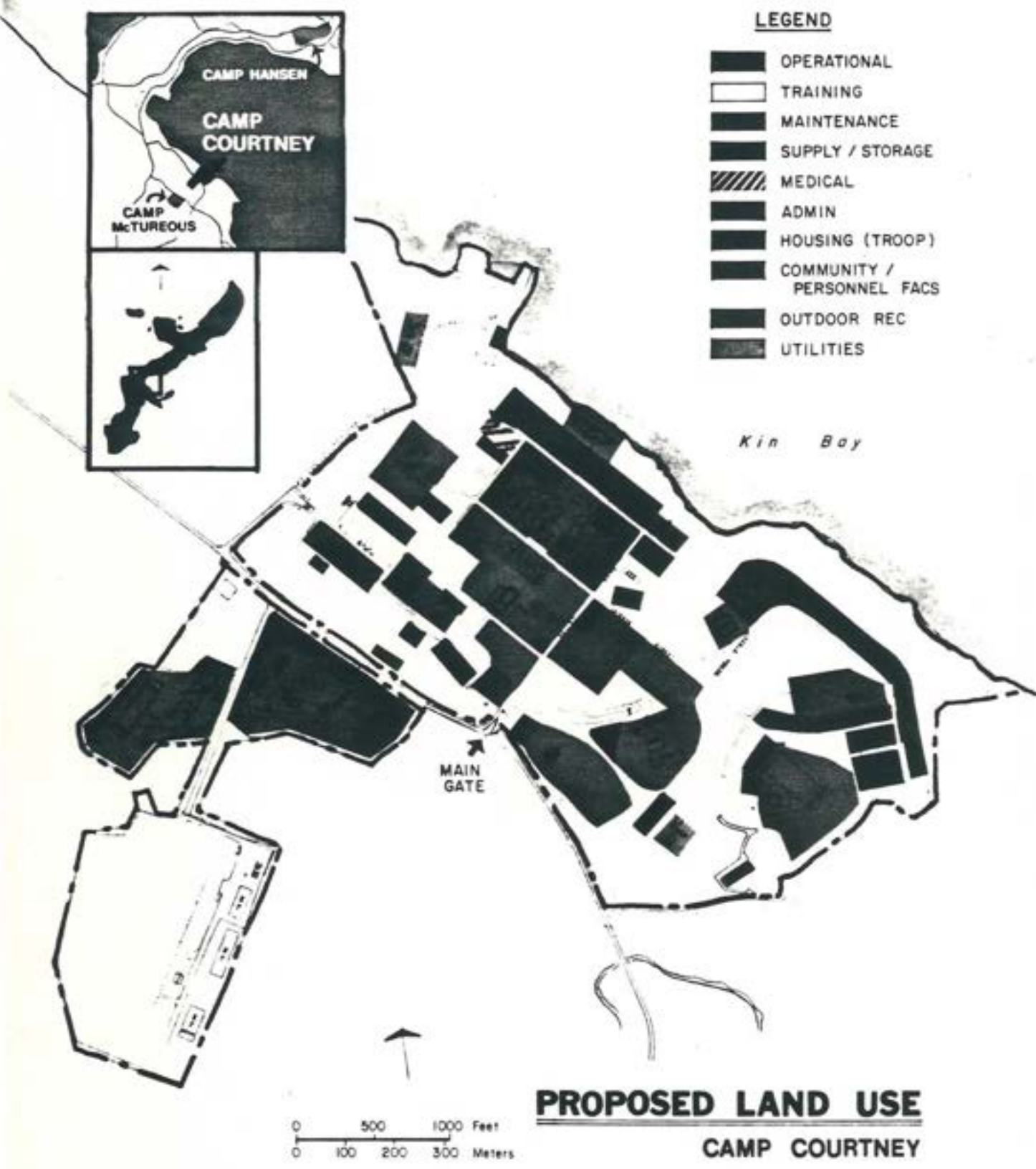

Kin Bay
329
TENGAN PIER
EXISTING EXEMPTION ESQD CIRCLE
2.5
3.5 MIL # NEW
R=7590'
Kombu
HWY
24
Enobi
329
HWY
CAMP COURTNEY
Tengan
CAMP McTUREOUS
Agena
6
ORDNANCE EXPLOSIVE SAFETY ZONE
TENGAN PIER
0
1 MI.
0
1
2 KM

FIGURE F-22



PROPOSED LAND USE

CAMP COURTNEY

FIGURE F-23

4. Camp Hansen

a. Environmental Setting

(1) Location (See Figure F-24). Camp Hansen is located in East-central Okinawa approximately 45 kilometers northeast of Naha International Airport. The area is bordered by Kin Town (population 10,120) on the south and east, and by a relatively low-lying mountain range on the north. Elevations of the nearby range vary from 50 to 366 meters. The city of Ishikawa (population 17,365) lies approximately 5 kilometers southwest of Camp Hansen.

Vehicular access to Camp Hansen is provided for by two gates fronting National Highway 329 located at Kin Village. Major highways leading to Camp Hansen are National Highway 329 and the Okinawa Expressway. An access ramp exists between the expressway and National Highway 329 just west of Camp Hansen. A cross-island road, Route 104, connects National Highway 329 to National Highway 58 on the west coast, passing through the Camp Hansen Training Area.

(2) Size. Camp Hansen and the central training area contain 5,144 hectares of land, with 190 hectares developed and used for administration, troop housing, maintenance and personnel support. The remaining land is located north of the expressway and is devoted to training, including small arms firing, artillery firing and tank/troop maneuvers.

(3) Topography (See Figure F-25). Terrain at the camp is mostly level, with slopes of 10 percent or less. The rifle range area located north of the expressway and some areas between ridges also have slopes 10 percent or less. About 70 hectares of level land at the rifle range area could be used for facility development. About half of this developable area, however, lies inside the Hansen Reservoir Watershed and will require careful planning for development to insure that the integrity of the watershed is maintained.

The remaining land north of the expressway, is mostly hilly and is used for ground troop training.

CAMP HANSEN

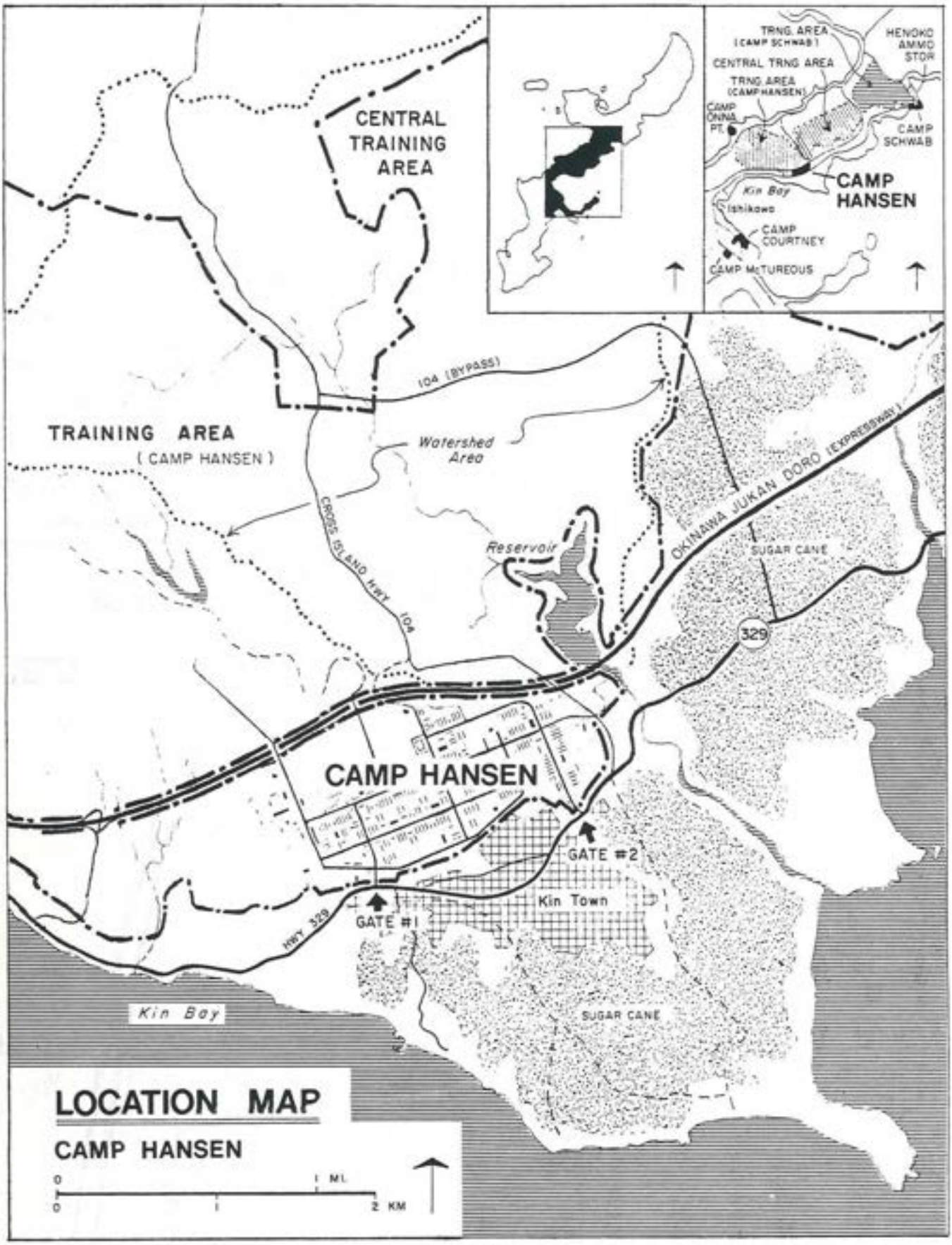

CENTRAL TRAINING AREA
TRNG. AREA (CAMP SCHWAB)
HENOKO AMMO STOR
CENTRAL TRNG AREA
TRNG AREA (CAMP HANSEN)
CAMP ONNA PT.
CAMP SCHWAB
CAMP HANSEN
Kin Bay
Ishikawa
CAMP COURTNEY
CAMP McTUREOUS
104 (BYPASS)
TRAINING AREA
(CAMP HANSEN)
Watershed Area
CROSS ISLAND HWY 104
Reservoir
OKINAWA JUKAN DORO (EXPRESSWAY)
SUGAR CANE
329
CAMP HANSEN
GATE #2
GATE #1
Kin Town
HWY 329
Kin Bay
SUGAR CANE
LOCATION MAP
CAMP HANSEN
0
1 MI.
0
1
2 KM

FIGURE F-24

(4) Soils. Soils of the northern part of the base consist of Chinen stony clay, a shallow stony soil of brown clay with loose fragments and outcrops of the limestone bedrock.

Soils of the southern part of the camp consist of Okinawa clay loam, with surface soil of dark-brown clay loam over subsoil of brown to yellowish red clay underlain by limestone.

Drainage in these soils is moderate to rapid except where material is compacted, thus restricting drainage and causing formation of puddle areas.

A detailed description of the type of soils found at Camp Hansen is shown on Figure F-3.

(5) Historic/Archeologic Sites. There are no known registered historic/archeologic sites at Camp Hansen.

(6) History. Camp Hansen is located on a former airfield (Chimu Airfield) which was used by U.S. forces during WWII. Camp Hansen is the largest camp constructed by the Marine Corps on Okinawa.

(7) Base Loading. Refer to Table E-1.

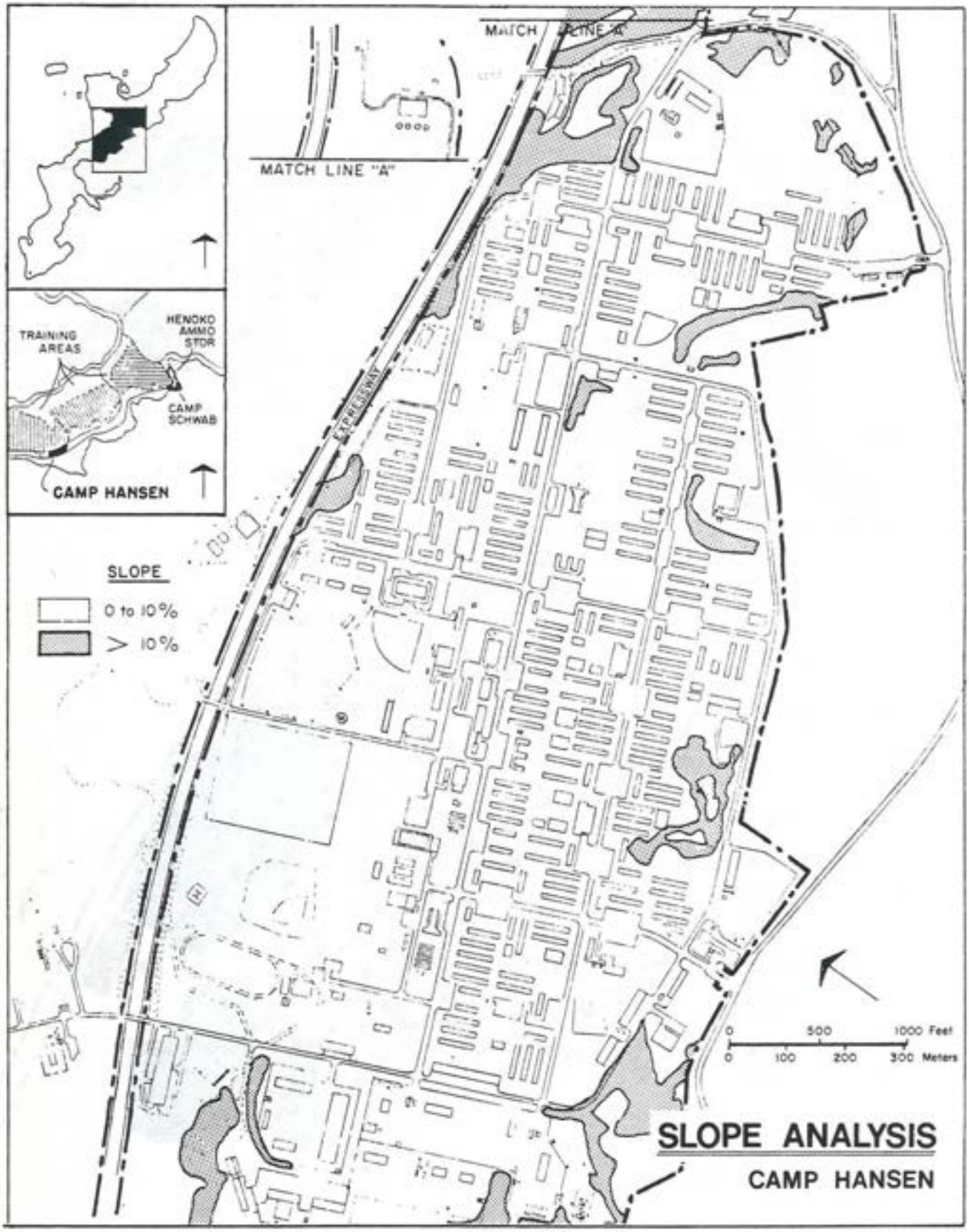

MATCH LINE "A"
MATCH LINE "A"
TRAINING AREAS
HENOKO AMMO STOR
CAMP SCHWAB
CAMP HANSEN
EXPRESSWAY
SLOPE
0 to 10%
> 10%
0 500 1000 Feet
0 100 200 300 Meters
SLOPE ANALYSIS
CAMP HANSEN

FIGURE F-25

b. Existing Land Use / Facilities

(1) Existing Land Use (See Figures F-26 and F-27). The developed camp is located south of the Okinawa Expressway. Approximately 80 percent of this area contains unaccompanied personnel housing interspersed with administration and personnel support facilities. Officer housing is located in the south-central sector, while enlisted housing dominates the other areas.

A large, level, grassed area, located in the northwest sector just south of the expressway, is used for outdoor recreation, ball fields, track and field, and parade grounds.

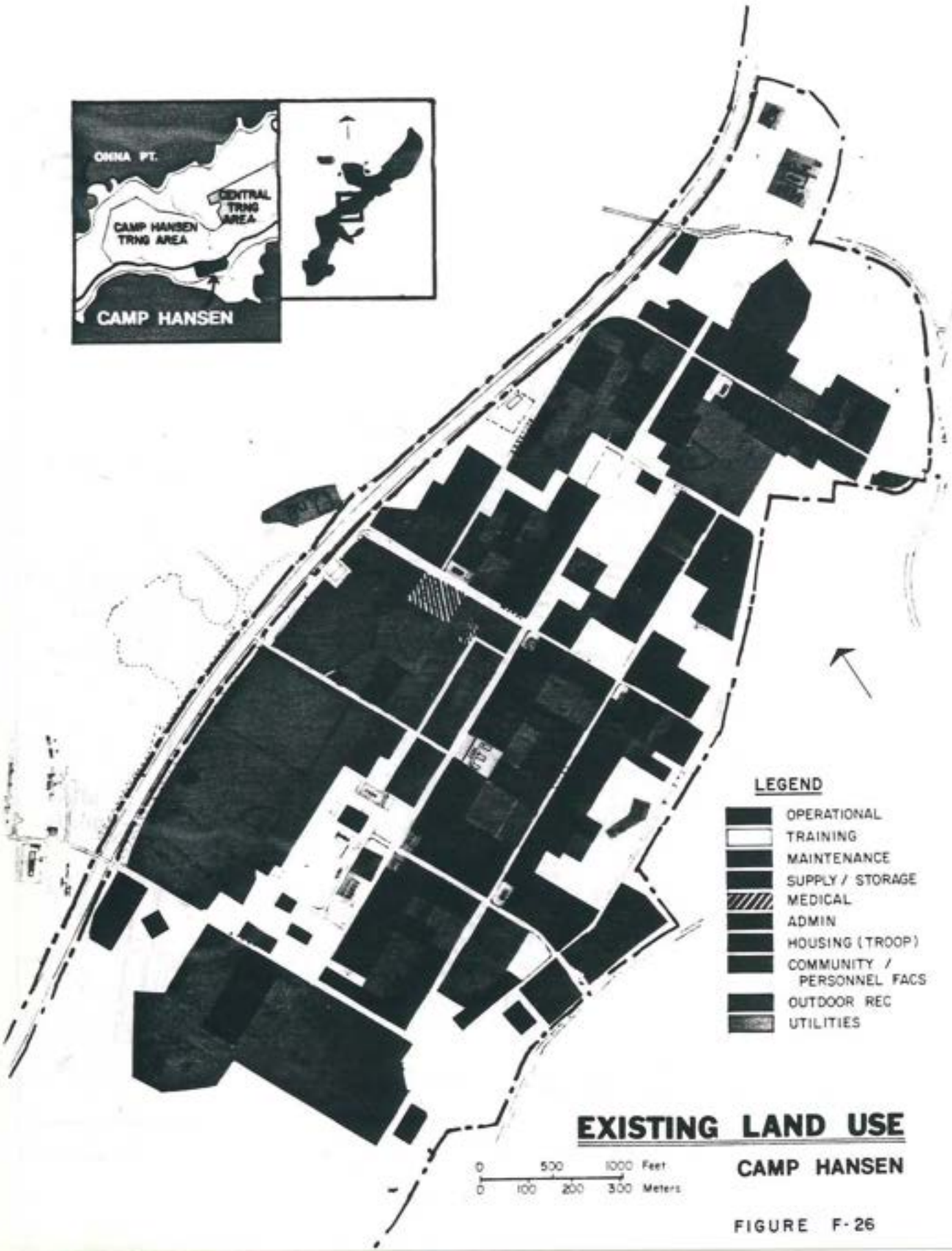
General warehouses and vehicular maintenance facilities occupy about 20 percent of the area along the western and southwestern edges of the camp.

Some private tombs are located near Gate 2.

The area north the expressway is devoted to troop training (see Figure F-28). There are 4 known distance ranges, 2 jungle-lane ranges, 15 combat ranges, numerous maneuver areas and limited beach landing sites. There is also a 2,600-acre impact area.

Route 104, a two-lane, lightly-surfaced road, passes through the training area outside of the impact zone and connects National Highway 329 on the east coast with National Highway 58 on the west coast.

(2) Existing Facilities. There are over 360 buildings containing nearly 1.9 million square feet of floor space at Camp Hansen. The buildings are predominantly of well-maintained permanent, single-story, concrete construction. The floor areas of these facilities are listed in Table F-4 by general functions.



EXISTING LAND USE

CAMP HANSEN

FIGURE F-26

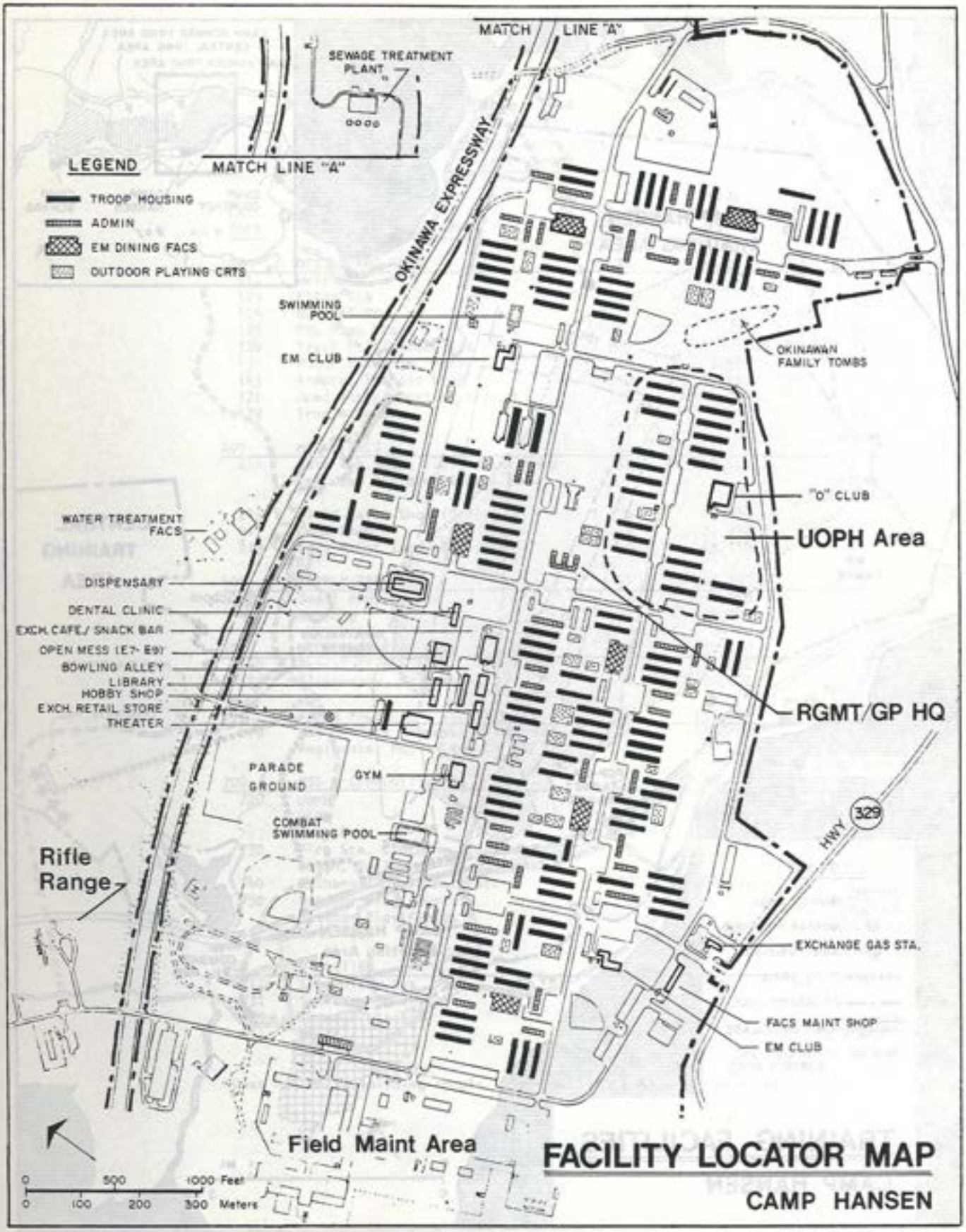

MATCH LINE "A"
SEWAGE TREATMENT PLANT
MATCH LINE "A"
LEGEND
TROOP HOUSING
ADMIN
EM DINING FACS
OUTDOOR PLAYING CRTS
OKINAWA EXPRESSWAY
SWIMMING POOL
EM CLUB
OKINAWAN FAMILY TOMBS
"O" CLUB
UOPH Area
WATER TREATMENT FACS
DISPENSARY
DENTAL CLINIC
EXCH. CAFE/ SNACK BAR
OPEN MESS (E7- E9)
BOWLING ALLEY
LIBRARY
HOBBY SHOP
EXCH. RETAIL STORE
THEATER
RGMT/GP HQ
PARADE GROUND
GYM
COMBAT SWIMMING POOL
HWY 329
Rifle Range
EXCHANGE GAS STA.
FACS MAINT SHOP
EM CLUB
Field Maint Area
0 500 1000 Feet
0 100 200 300 Meters
FACILITY LOCATOR MAP
CAMP HANSEN

FIGURE F-27


CAMP SCHWAB TRNG AREA
CENTRAL TRNG AREA
CAMP HANSEN TRNG AREA
CAMP COURTNEY
CAMP HANSEN
Kin Bay
HWY 58
CAMP HANSEN TRAINING AREA
1700 YDS
4400 YDS RAD
MG RANGE
ROUTE 104
Sobaro
INFILTRATION COURSE
CENTRAL TRAINING AREA
Ige
Kin Bay
POP-UP TARGET RANGE
RIFLE RANGE
OKINAWA EXPRESSWAY
CAMP HANSEN Billeting Area
COMBAT VILLAGE
HWY 329
Kin
LEGEND
IMPACT AREA
MORTAR POSITIONS
GUN POSITIONS
TANK TRAIL
BOUNDARY LINE
TOWN OR VILLAGE
LOOSE OR LIGHT SURFACE ROAD
TRAINING FACILITIES
CAMP HANSEN
0 1 MI
0 1 2 KM
J

FIGURE

Table F-4

EXISTING FACILITIES
CAMP HANSEN

CAT CODE	DESCRIPTION	# OF SPACES*	TOTAL FLOOR AREA (SF)	OTHER
100	OPS & TRNG FACS	28	68,283	
111	Helo Pad			2 EA
123	Fillg Sta			16 OL
124	Op Fuel Stg			84,000 GA
125	POL Pump Sta			200 GM
126	Truck Fill/Unload Sta			2 OL
131	Phone Exchange, MARS	2	3,454	
143	Armory, Transit Shed	8	22,120	
171	Acad Instr, Applied Instr	18	42,709	
179	Trng Ranges			5 EA
200	MAINT FACS	52	185,048	
214	Auto Veh Shop, Field Maint Shop	34	123,560	
	Veh Wash Patform, Grease Rack			24 EA (32,083 SF)
215	Field Maint Shop (Ord)	6	27,886	
217	Comm Shop	6	20,292	
219	Facs Maint Shop, Base Stg	6	13,310	
400	SUPPLY FACS	51	225,795	
421	Small Arms Mag	2	1,068	
441	Gen Stg	14	164,000	
500	MEDICAL/DENTAL FACS	5	30,120	
540	Dental Clinic	1	4,080	10 OU
550	Dispensary, Bn Aid Sta	4	26,040	
600	ADMIN FACS	50	195,107	
610	Admin, Data Processg, Disbursg, Regimental HQ, Bn HQ, Co. HQ	50	195,107	
700	HSG & COMMUNITY FACS	193	1,188,043	
720	UOPH	22	141,240	320 PN
	UEPH	114	729,000	3,586 PN
	Mess Fac	6	114,120	6,000 PN
730	Fire Sta, Clothing Store, Sentry Booth, Toilet	15	23,024	
740	Exchange/Morale/Rec Facs	36	180,659	
750	Outdoor Play Courts			35 EA
	Outdoor Play Fields			3 EA
	Swim Pool			1 EA
800	UTILITIES			
812	Elec Distr Sys			346,331 LF
832	Sanitary Sewer Sys			71,948 LF
842	Water Distr Sys			102,546 LF
851	Roads			32.3 MI

*Does not match building totals. Some buildings have multiple uses.

(a) Operational Facilities

Helicopter Pads. There are two helicopter pads located within the outdoor recreation/parade ground area in the northwest sector of the camp. These helicopter pads are appropriately sited, although both pads should be enlarged.

Filling Station. There are four filling stations ideally located in major vehicular maintenance/parking areas of the camp. Each station has four outlets. Existing facilities satisfy present requirements.

Communications. The telephone exchange building (3,150 square feet) and the MARS building (514 square feet) are permanent concrete structures in sound condition. These buildings satisfy present requirements.

Armory/Personal Property Storage. There are 7 separate armories occupying floor areas ranging from 550 square feet to 3,060 square feet, for a total of 12,145 square feet. These functions share spaces in headquarters buildings or warehouse buildings. The armories are used to support units/detachments of the 3rd Marine Division, 3rd FSSG, and Marine Corps Base, Camp Butler. The buildings are adequate and satisfy present requirements.

Personal property storage is located in a 9,975 square foot concrete structure, which satisfies current requirements.

Academic Instruction/Range Storage. There are eight classrooms totaling 24,510 square feet located in permanent and adequate buildings, and three classrooms totaling 7,008 square feet located in temporary, deteriorated, substandard quonset huts. The temporary buildings should be replaced to satisfy the total present requirement of 31,500 square feet. These classrooms are used to support Division school and related functions.

Maintenance and storage floor space for the training ranges and school occupy 11,191 square feet in seven buildings. Building 2382 (Plate 7) is typical of the permanent buildings.

Training Ranges. Camp Hansen has a known distance rifle range and a pistol range, each with 50 firing points. In addition, there are two training courses relating to obstacles and combat techniques. All of these training ranges are located in the north sector of the camp and are separated from the built-up area by a vehicular expressway. These ranges satisfy current requirements (see Figure F-28).

(b) Maintenance Facilities

Vehicular Maintenance Shops. Maintenance shops for organizational equipment, motor transportation, and engineer equipment occupy 113,780 square feet in 31 permanent concrete buildings and 9,780 square feet in three temporary substandard buildings. Spaces in the permanent buildings are adequate but a shortfall of 42,690 square feet still exists for these functions. Building 2111 (Plate 7) is typical of the permanent facilities.

Field Maintenance Shop (Ord). Third and fourth echelon maintenance functions occupy 27,886 square feet in six permanent and adequate buildings. The two largest maintenance buildings (Nos. 2148 and 2149), containing 10,296 square feet each, are in the western sector of the camp. An additional 13,314 square feet is required to satisfy the total requirement of 41,200 square feet. See Plate 7 for a picture of Building 2148.

Communications Maintenance Shops. These shops occupy a total of 20,292 square feet in six permanent concrete buildings. These spaces satisfy present requirements.

Facilities Maintenance. The Facilities Maintenance shops are in a permanent building, containing 5,820 square feet, and in a deteriorated quonset hut, containing 1,920 square feet. A requirement for 7,740 square feet exists for this function, leaving a shortfall of 1,920 square feet.

Base maintenance storage is in four buildings, containing a total of 5,570 square feet, with less than 2,000 square feet classified adequate. The total storage requirement is 5,700 square feet, leaving a deficit of over 3,700 square feet.

(c) Supply Facilities. General storage occupies 224,727 square feet in 49 buildings. There are 25 quonset huts (45,280 square feet) which are planned for demolition (see Plate 7). The remaining 179,447 square feet of floor space are in adequate buildings scattered throughout the camp. The total requirement is for 304,043 square feet, leaving a shortfall of 124,596 square feet.

(d) Medical and Dental Facilities. The dental clinic building is a single-story, concrete building centrally located in the camp and contains ten operating units. The camp dispensary contains 15,140 square feet. In addition, there are three battalion aid stations occupying another 10,900 square feet. The total requirement for medical facilities is 24,000 square feet of floor space, which leaves an excess of 2,040 square feet. This excess space could be used for organizational storage.

(e) Administration Facilities. Administration functions occupy 195,107 square feet in 50 buildings--all permanent, single-story, concrete buildings. Sixty-two percent, or 122,503 square feet, is used as headquarters for regimental-size units down to company-size units. In general, these spaces satisfy present requirements. Building 2662 (Plate 8) is typical. Excess spaces exist in some of the buildings but are too small to be used for other functions.

(f) Housing and Community Facilities

Unaccompanied Personnel Housing. Unaccompanied personnel housing for both officers and enlisted personnel are in single-story, permanent, concrete buildings (see Plate 8). To comply with DOD unaccompanied personnel housing criteria, the single-story quarters will require private baths, partitioning to meet personnel space requirements and air conditioning. There is a requirement for 660 more unaccompanied personnel housing spaces at this camp.

Dining Facilities. There are six 1,000-man dining halls, each containing 19,020 square feet. All are to be air conditioned.

BLDG 2382
DIVISION SCHOOL-CLASSROOMS

BLDG 2148
TRACK VEH SHOP-ORD MAINT

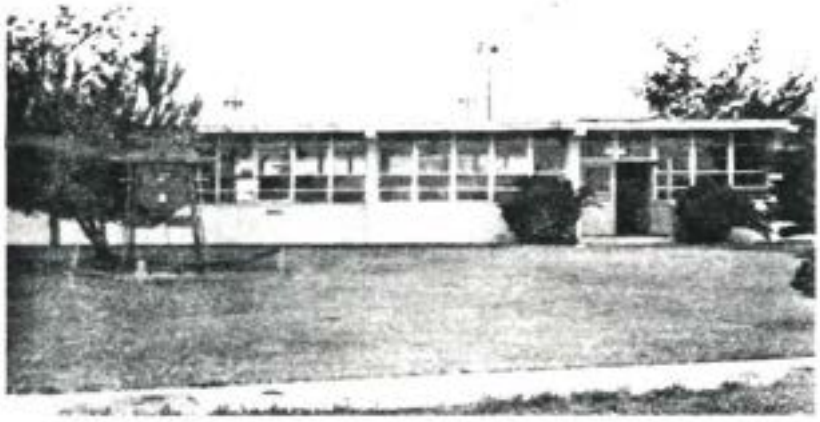
BLDG 2111
VEH MAINT SHOP

TEMP SUPPLY QUONSET HUTS

Personnel Support Facilities. In general, these facilities are of permanent construction and are centrally located at Camp Hansen. Some of the more prominent personnel support buildings are listed below:

DESCRIPTION	FLOOR AREA (SF)
Post Exchange	7,000
Cafeteria (The Buccaneer)	7,600
Chapels	16,572*
USO Club	9,368
Hobby Shop	9,204
Bowling Alley	8,102
Gym	12,080
Theater	17,290
Officers Club	15,736
Enlisted Club	9,368
SNCO Club	11,424

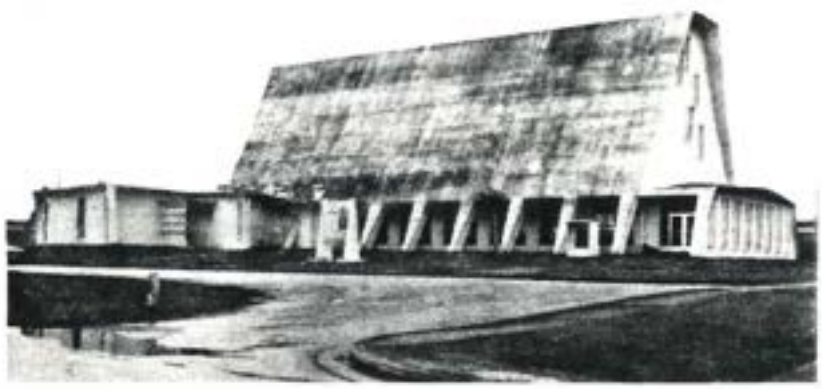
*See Plate 8 for typical chapel.



BLDG 2662
HQ

UEPH

BLDG T-165
GYMNASIUM



BLDG 2538
CHAPEL

(3) Utilities. Existing utility systems for Camp Hansen are shown on Figures F-29 and F-30. The utility systems were installed along with the original facilities.

(a) Primary Electrical Distribution System. The network is a two-feeder, primary loop system. Sectionalization of this system is accomplished by load break air switches. The primary distribution system is mainly overhead with only short, underground sections.

(b) Steam, Space Heating and Domestic Water Systems. Steam from oil-fired boilers provides for cooking, space heating and domestic hot water at messes and clubs.

Space heating for the messes and clubs employs air handling units with hot water heating coils. The duct work connected to the air handling units provides space heating in the winter and air conditioning in the summer. Space heating for living quarters is provided by hot air furnaces which route heated air either in overhead air ducts or in air ducts below the floor and up through baseboard registers.

Domestic hot water is provided predominantly by oil-fired boilers and by electric water heaters in some buildings. Some boilers employ a separate closed loop between the oil-fired boilers and the domestic hot water supply. The closed loop system provides for longer boiler operating life and lower boiler maintenance costs. Existing boilers without closed loops are being considered for modification to a closed loop system by the activity.

(c) Air Conditioning. Air conditioning at Camp Hansen is essentially limited to clubs, unaccompanied senior officers housing, and communication facilities. The air conditioning systems are mainly direct expansion systems consisting of air handling unit with both cooling and heating coils. The larger facilities utilize chilled water systems.

(d) Telephone Service. Military telephone service on Okinawa is provided by MITS--all U.S. owned. Local telephone service in the Camp Butler complex is provided by Marine Corps dial telephone exchanges at Camps McTureous, Courtney, Hansen, Schwab and Kuwae, MCAS (H) Futenma and

White Beach. Overseas AUTOVON service is provided through manual switchboards at Camp Foster (Air Force) and at Camp McTureous (Marine Corps).

(e) Potable Water System. Camp Hansen has no on-base potable water storage tanks and relies entirely on the civilian water company to provide water for domestic and fire demands. Water is collected and stored in the nearby Hansen Reservoir, which is operated by OPED. This reservoir also provides some water to the Ishikawa Treatment Plant, although Camp Hansen water is treated at the nearby OPED operated Kin Water Treatment Plant. Prior to reversion, both the reservoir and the treatment plant were operated by the Marine Corps. Distribution mains range from 4 to 14 inches in size. Inadequate water storage capacity exists at Camp Hansen. An MCON project (P-187) has been submitted to provide additional capacity.

(f) Sanitary Sewer System. The collection system at Camp Hansen is centralized with lines varying in size from 6 to 18 inches and has one 100 GPM ejector pump. Treatment is provided by four Imhoff Tanks and effluent is chlorinated and discharged into the Ukukubi River below the Camp Hansen Dam. The system is operated by the Marine Corps.

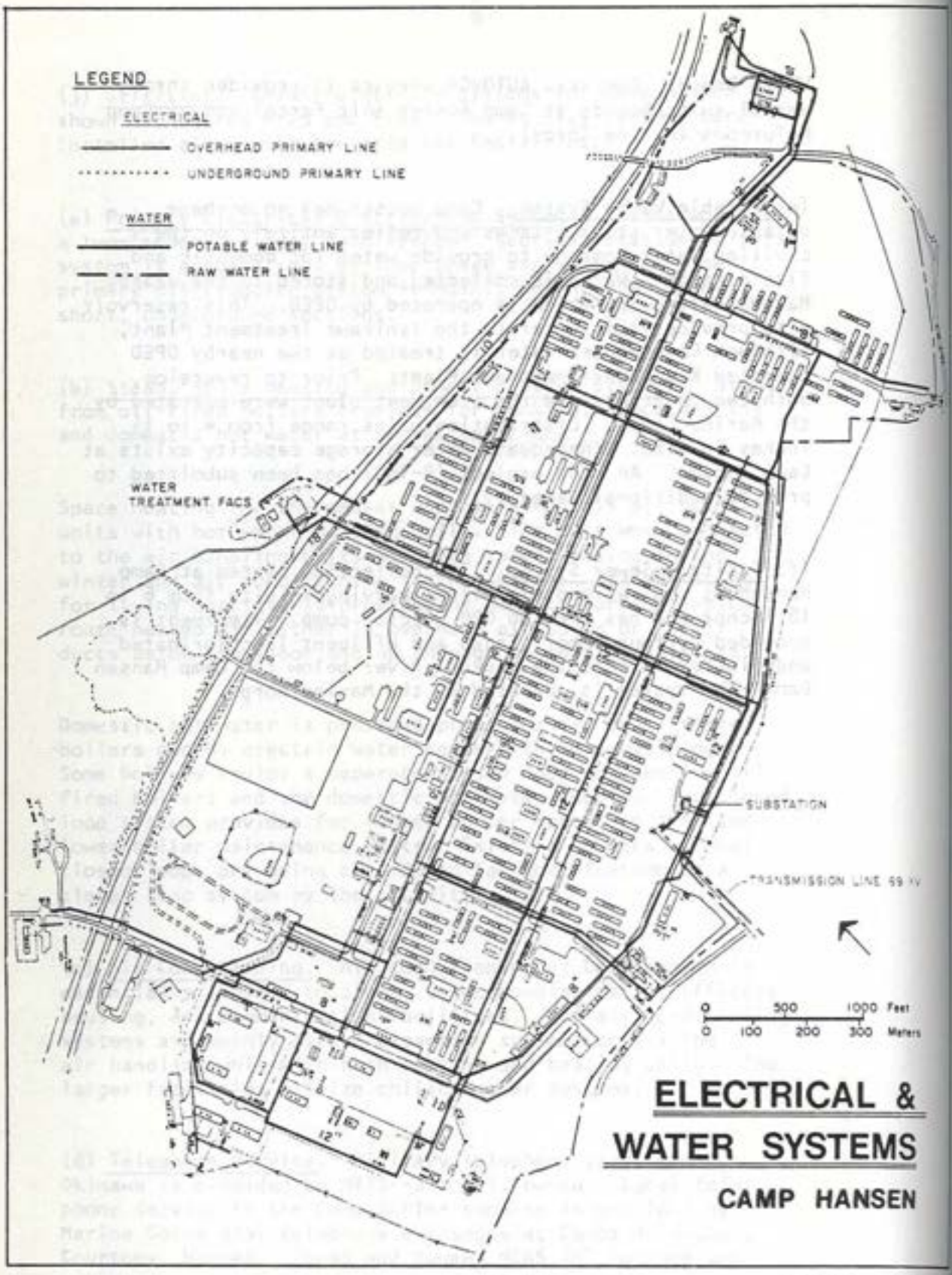

LEGEND
ELECTRICAL
OVERHEAD PRIMARY LINE
UNDERGROUND PRIMARY LINE
WATER
POTABLE WATER LINE
RAW WATER LINE
WATER TREATMENT FACS
SUBSTATION
TRANSMISSION LINE 69 kV
0 500 1000 Feet
0 100 200 300 Meters
ELECTRICAL & WATER SYSTEMS
CAMP HANSEN

FIGURE F-29

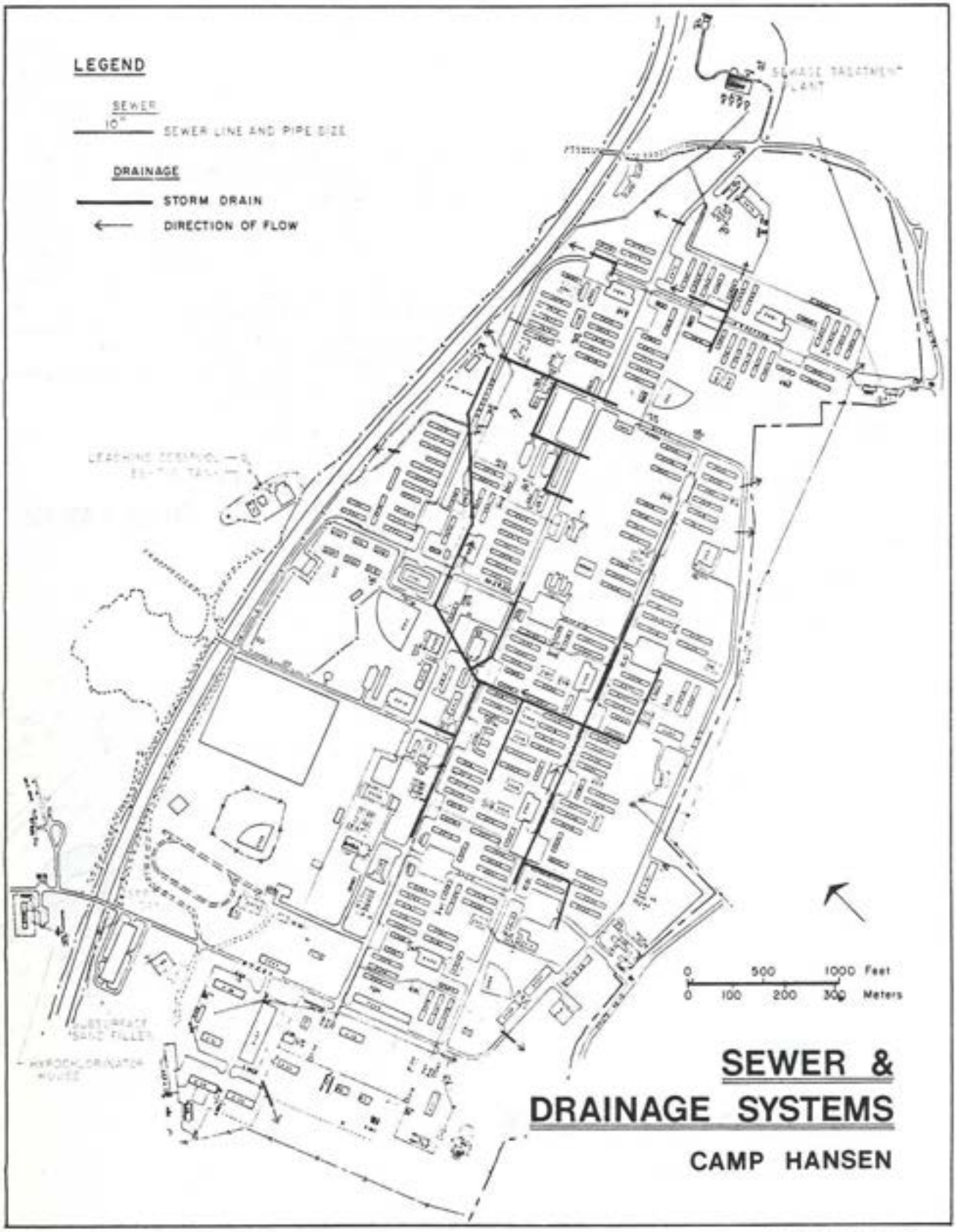

LEGEND
SEWER
10"
SEWER LINE AND PIPE SIZE
DRAINAGE
STORM DRAIN
DIRECTION OF FLOW
SEWAGE TREATMENT PLANT
0 500 1000 Feet
0 100 200 300 Meters
SEWER &
DRAINAGE SYSTEMS
CAMP HANSEN

FIGURE F-30

c. Proposed Land Use

(1) Circulation. There are 52 kilometers of paved roads, 206,700 square meters of parking and about 41,900 meters of concrete sidewalks at Camp Hansen. On-base vehicular circulation and parking are adequate.

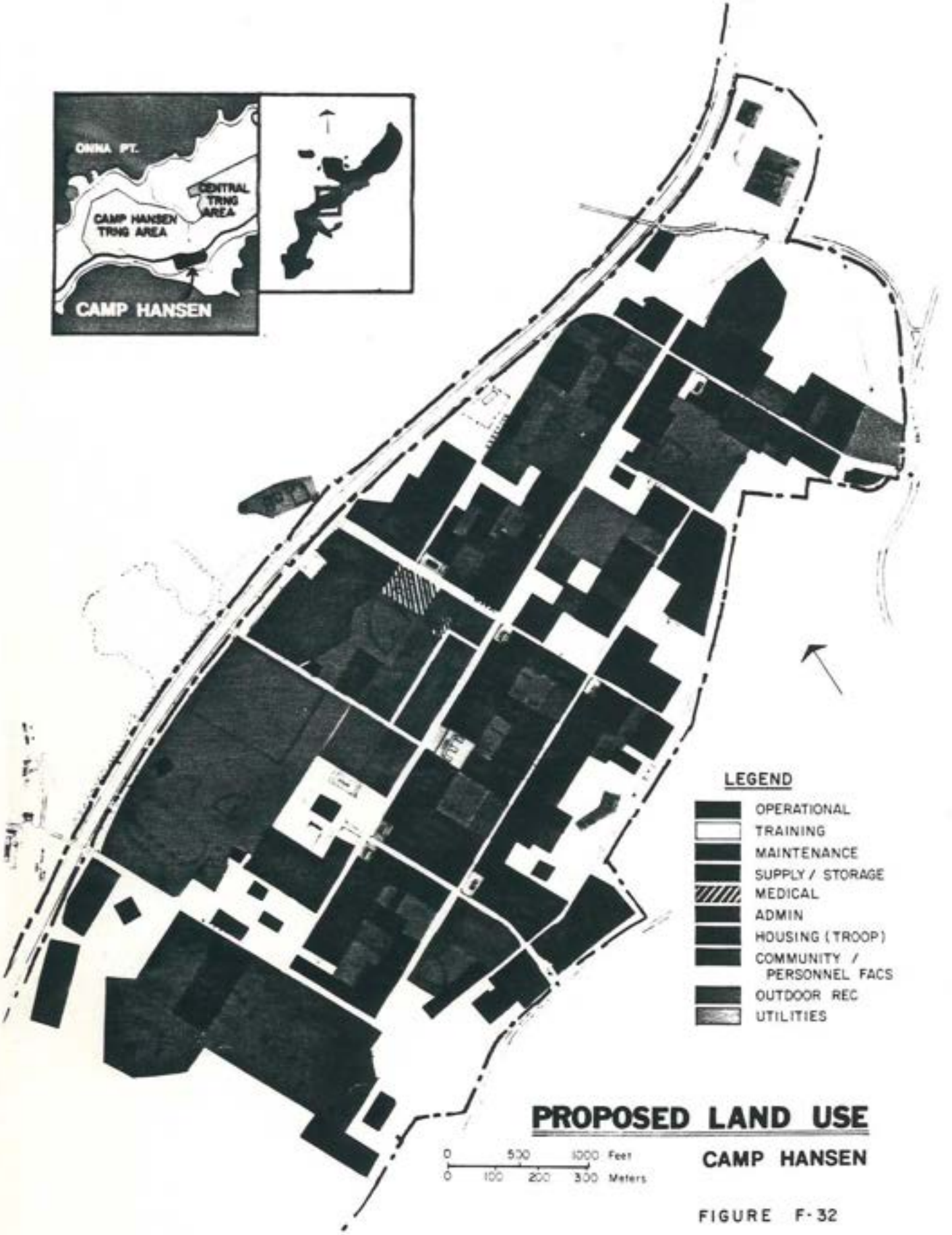
(2) Area Constraints. There are three constraints to the physical development at Camp Hansen. The largest limitation is the target impact area north of the expressway. Related to this impact zone are the safety zones required for the small arms ranges (see Figure F-31). Facility construction inside these areas is prohibited. Development adjacent to these areas should be carefully reviewed for personnel safety. The second area constraint is the aircraft safety zone required for helicopter operations to support administrative functions. The aircraft safety zone (clear zone) is that area which extends under the visual flight rule (VFR) approach/departure surface until the surface is 50 feet above the established landing area elevation. The third constraint is the slope constraint (see Figure F-31). The terrain containing slopes exceeding 10 percent should be carefully reviewed for cost development feasibility.


TRAINING AREA
IMPACT AREA
ONNA PT.
HWY 58
EXPRESSWAY
HWY 329
CAMP HANSEN
0 1 MI
0 2 KM
CLEAR ZONE
Helo pad
SLOPE
> 10%
0 500 1000 Feet
0 100 200 300 Meters
AREA CONSTRAINTS
CAMP HANSEN

FIGURE F-31

(3) Proposed Land Use. The proposed land use plan shown on Figure F-32 represents planned functional use designations for land at Camp Hansen.

The designation of specific uses for land will help to prevent the uncontrolled development of the camp and will reduce conflicting land uses. Because the proposed land use map will be used to control the siting of all new facilities at the camp, it is the major product of the Master Plan. Camp Hansen is essentially developed. Additional buildings planned are generally sited within each functional area. The temporary quonset huts in the south-central sector of the camp will be demolished and replaced by new multi-story UEPHs. Most of the support facilities are within a ten-minute walking distance from any bachelor housing area.



PROPOSED LAND USE

CAMP HANSEN

FIGURE F-32

5. Camp Schwab / Henoko Cantonment Area and Ammunition Storage Area

a. Environmental Setting

(1) Location (See Figure F-33). This section covers Camp Schwab, Camp Schwab Training Area and the Henoko Ammunition Storage Area. The complex is located in North-central Okinawa on the lower slopes of a low mountain range. Mount Kushi, elevation 335 meters, lies northwest of the complex. The complex is located approximately 15 kilometers northeast of Camp Hansen. The village of Henoko lies southwest of Camp Schwab.

Access to the complex is provided by National Highway 329, which runs through the area along the east coast and connects with National Highway 58 on the west coast.

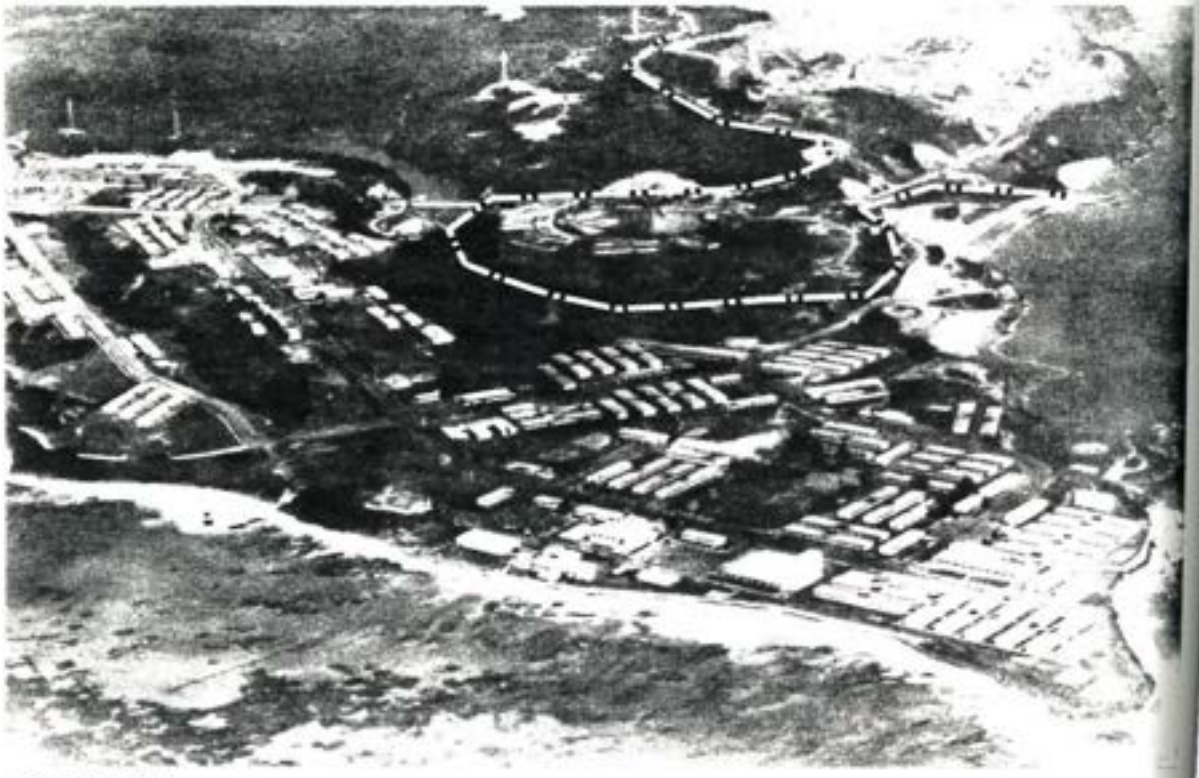
There are two gates to Camp Schwab, one of which remains open 24 hours a day. Two gates are also provided for the Henoko Ammunition Storage Area--one to the administration/support area and the other to the magazine storage area. Road access to the training area is provided from National Highway 329 across Camp Schwab.

(2) Size. Camp Schwab and the training area contain 2,060 hectares of land. Approximately 60 hectares of gently sloping land is used for facility development.

The Henoko Ammunition Storage Area contains 115 hectares of land with approximately 12 hectares used for billeting and support, and the balance used for ordnance storage and operations.

(3) Topography (See Figure F-34). Terrain at this complex is predominantly steep and irregular. The training area, located between National Highway 329 and a high mountain ridgeline running along the long axis of Northern Okinawa, contains many narrow ridges and deep gulches. Intermittent streams generally flow in a southeasterly direction toward the ocean. Camp Schwab Reservoir, with a drainage basin of about 465 hectares, is located in the training area just

HENOKO AMMO STORAGE



CAMP SCHWAB

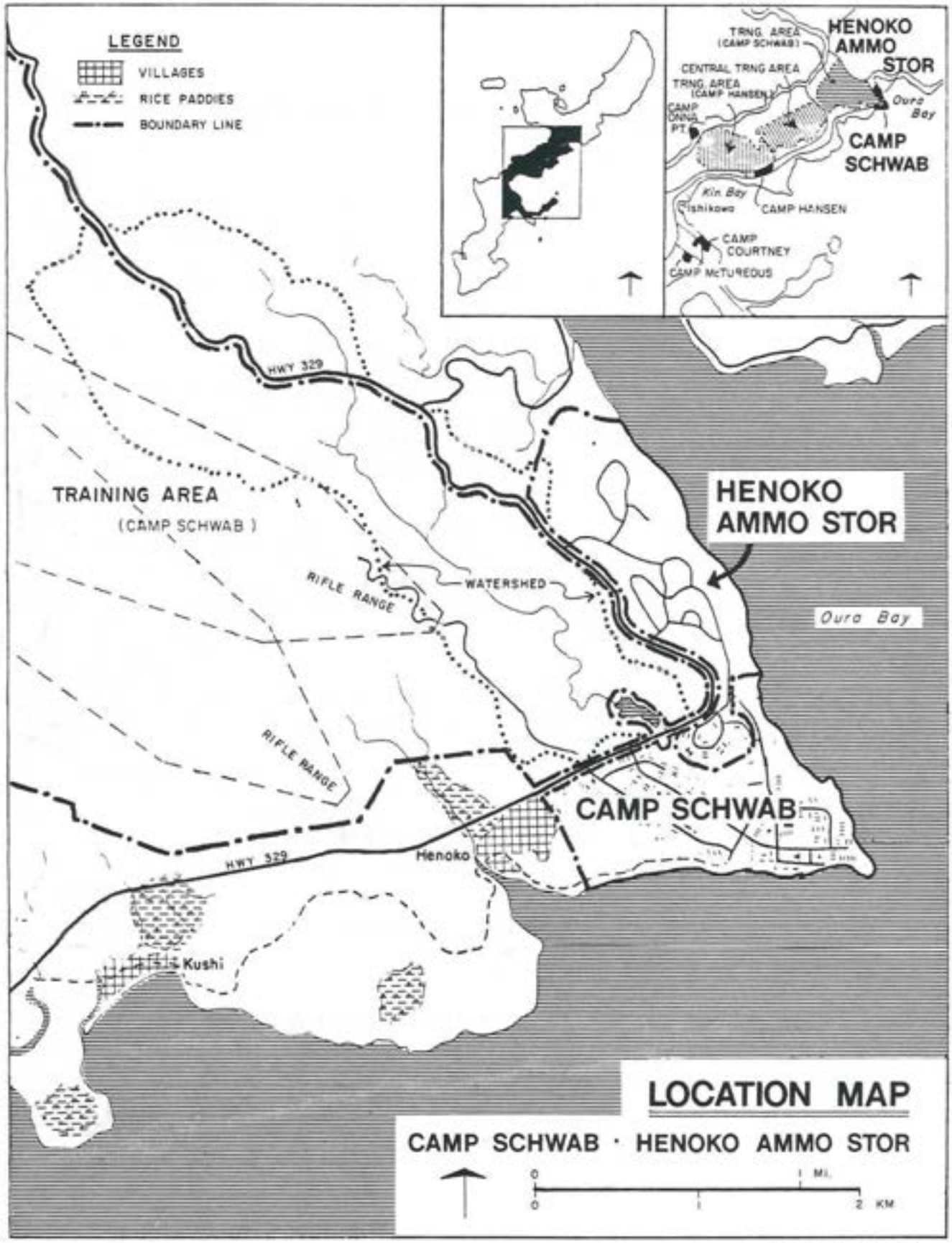

LEGEND
VILLAGES
RICE PADDIES
BOUNDARY LINE
TRNG AREA (CAMP SCHWAB)
HENOKO AMMO STOR
CENTRAL TRNG AREA
TRNG AREA (CAMP HANSEN)
CAMP ONNA PT.
Ouro Bay
CAMP SCHWAB
Kin Bay
Ishikawa
CAMP HANSEN
CAMP COURTNEY
CAMP McTUREOUS
HWY 329
TRAINING AREA
(CAMP SCHWAB)
HENOKO AMMO STOR
WATERSHED
RIFLE RANGE
Ouro Bay
RIFLE RANGE
CAMP SCHWAB
HWY 329
Henoko
Kushi
LOCATION MAP
CAMP SCHWAB · HENOKO AMMO STOR
0
1 MI.
0
1
2 KM

FIGURE F-33

northwest of Camp Schwab. Elevations in the training area run from about 4 meters at the streams to 332 meters at Mount Kushi.

Facility development occurs mainly near the shoreline where the terrain slopes are moderately level. Buildings for Camp Schwab are located on two adjacent parallel ridges and a large level area at the eastern corner of the complex.

The Henoko billeting area is located north of the Camp Schwab development across a deep gulch and a stream which serves the Camp Schwab Reservoir Watershed. The billeting area is relatively level. Terrain at the magazine storage area is steep and irregular, causing the magazine locations and alignments to be non-uniform (see Figure F-35).

(4) Soils (See Figure F-3). Soils of the lower camp complex consist chiefly of Chinen stony clay, a brown clay or clay loam with loose fragments of the limestone bedrock. Soils of the upper camp area consist chiefly of Ishikawa loam--a deep, rapidly drained acid soil.

Soils of the northwest part of the training area are almost entirely of light-colored, acid, loamy soils of low fertility over schist or sandstone.

The smaller, southeast section in the lower part of the watersheds is Ishikawa loam. Refer back to Figure F-3 for additional soils data.

(5) Historic/Archeologic Sites. No historic/archeologic sites have been identified in the area.

(6) History. See MCB Camp Butler history in Section E.

(7) Base Loading. Refer to Table E-1.

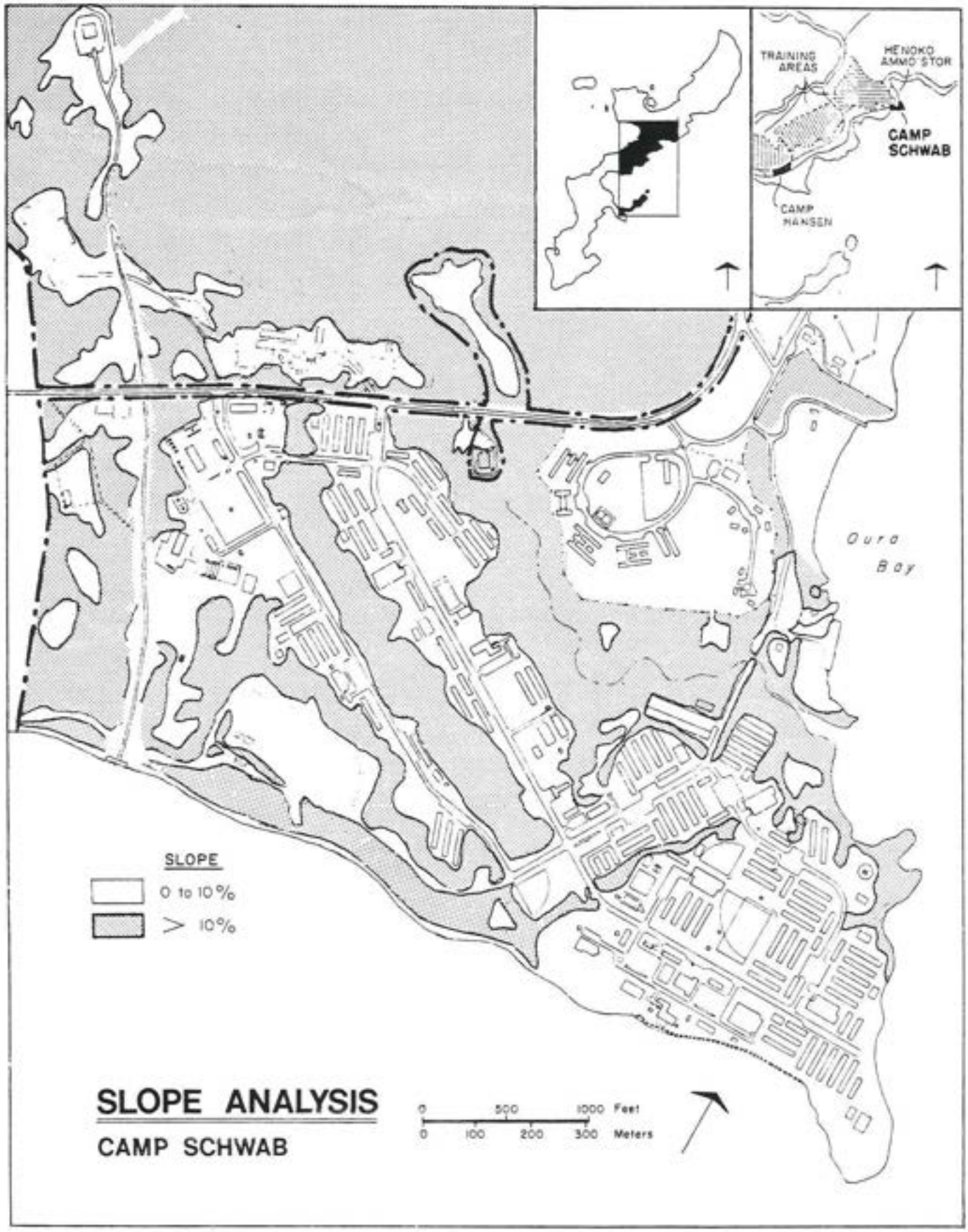

TRAINING AREAS
HENOKO AMMO STOR
CAMP SCHWAB
CAMP HANSEN
Ouro Bay
SLOPE
0 to 10%
> 10%
SLOPE ANALYSIS
CAMP SCHWAB
0 500 1000 Feet
0 100 200 300 Meters

FIGURE F-34

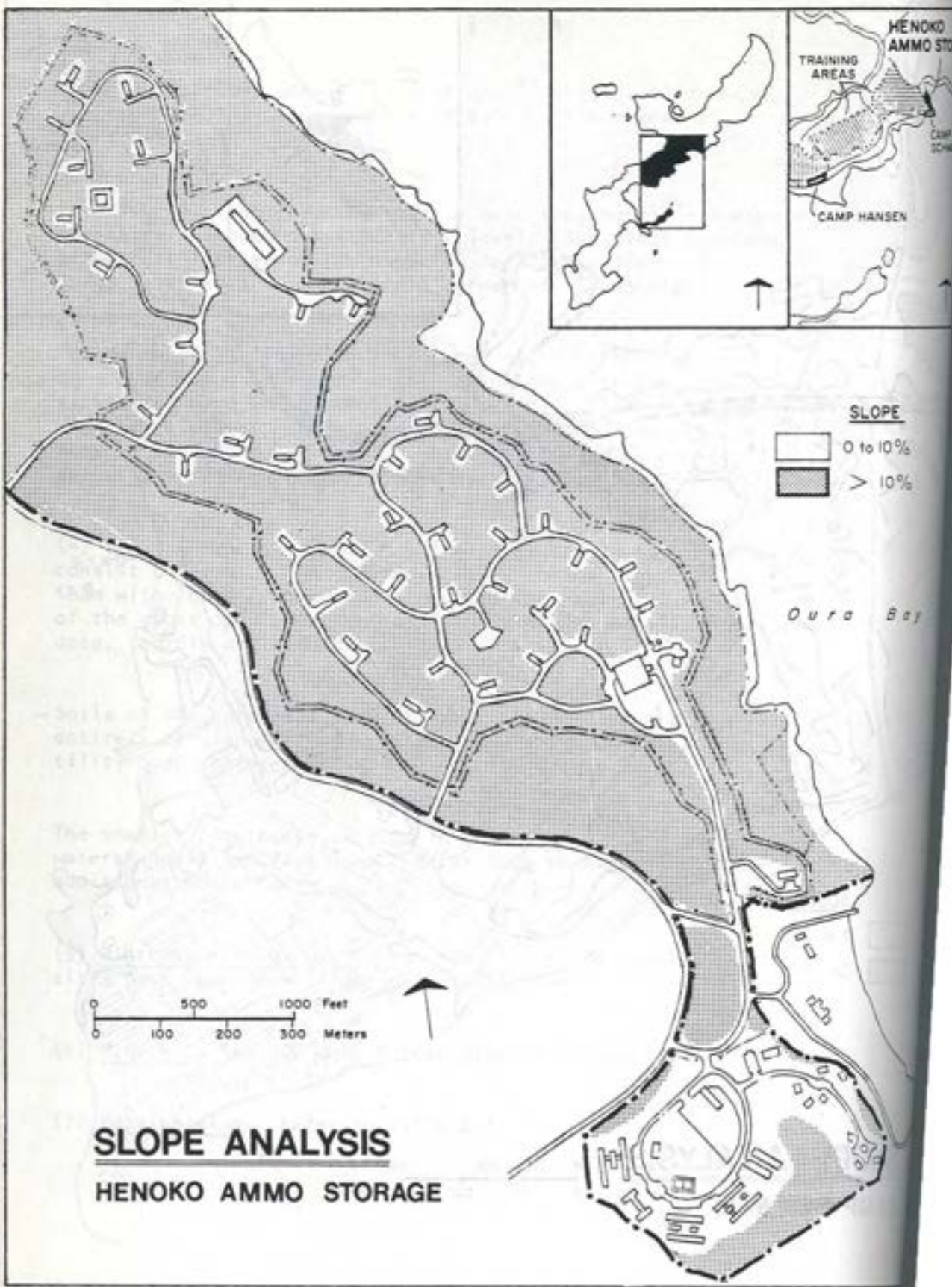

HENOKO
AMMO STO
TRAINING
AREAS
CAMP HANSEN
SLOPE
0 to 10%
> 10%
Ouro Bay
0 500 1000 Feet
0 100 200 300 Meters
SLOPE ANALYSIS
HENOKO AMMO STORAGE

FIGURE F

b. Existing Land Use / Facilities

(1) Existing Land Use (See Figure F-36). The built-up area of Camp Schwab is confined to the peninsula overlooking the Pacific. This area is used primarily for unaccompanied personnel housing, administration, maintenance, and personnel support facilities. The remaining area is used primarily for training.

(2) Existing Facilities--Camp Schwab and Henoko Cantonment Area (Refer to Figure F-37 and Table F-5). There are approximately 165 buildings with over 900,000 square feet of floor space. The buildings are predominantly single-story, concrete structures and are in a good state of repair. Floor areas by functions are shown in Table F-5.

(a) Operational Facilities

Helicopter Pads. A full-sized, adequate helicopter pad (Structure 3625) is located on the eastern shoreline along Tipton Drive adjacent to UEPH unit Building 3614. Another helicopter pad is located on a bluff near the UOPH unit Building 3329 on Franklin Street. A third helicopter pad is located on the parade grounds adjacent to the Tactical Aviation Fuel Dispensing System (TAFDS) and is used for helicopter refueling.

Filling Station. Two filling stations have four outlets each and are in good condition. Presently, only one is used, which satisfies current requirements.

Communications. The telephone exchange building contains 2,970 square feet of floor space, is structurally sound and satisfies present requirements. The MARS building contains 464 square feet and also satisfies present requirements.

Armory. Battalion-size armories are located in three buildings, utilizing a total floor area of 9,498 square feet. The buildings are of permanent construction and substantially satisfy the total camp requirement of 9,600 square feet of floor space.

Training Buildings. Academic instruction classrooms occupy 4,012 square feet in three buildings--all permanent and adequate buildings. These spaces satisfy the total requirement of 4,050 square feet.

Training Ranges. Camp Schwab has a rifle range and a pistol range, each with 50 firing points. There is also an obstacle course and a pop-up target range. These ranges are adequate and satisfy current requirements. These ranges are ideally located north of Route 329 away from the built-up area.

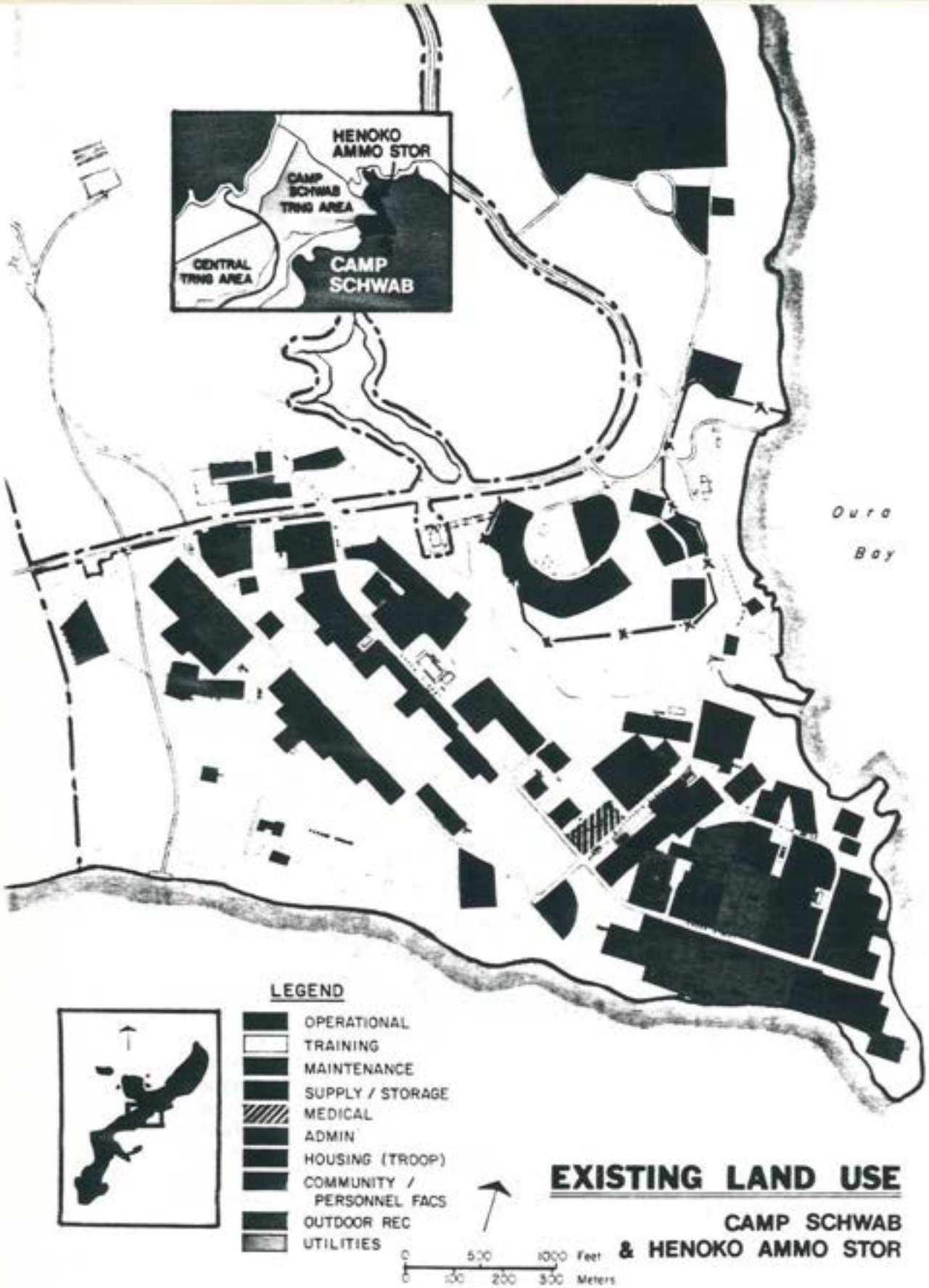
(b) Maintenance Facilities

Vehicular Maintenance Shops. Spaces for amphibious vehicle maintenance functions are located in three buildings containing a total of 19,228 square feet. Two buildings are semipermanent, pre-engineered, metal buildings, containing 8,000 square feet and 4,000 square feet, respectively. Building 3208 is a concrete structure containing 7,228 square feet. The total requirement is 42,600 square feet. A deficit of over 23,000 square feet exists.

Auto Organizational Shop. This function occupies 17,767 square feet in five permanent and adequate buildings. The two largest buildings contain 8,216 square feet and 8,252 square feet of floor area, respectively. The total camp requirement for this function amounts to 31,275 square feet, leaving a deficit of 13,508 square feet.

Electronics/Communications Maintenance Shops. Shop spaces for this function utilize 19,270 square feet in four permanent concrete buildings. Two buildings were originally constructed for administration functions. These spaces are functionally adequate. A shortfall of 10,530 square feet still exists to satisfy the total requirement of 29,800 square feet.

Facilities Maintenance. The Facilities Maintenance Shop is located in a single-story, concrete structure containing 3,510 square feet. Space for pavement and grounds equipment is located in three buildings containing 3,920 square feet. All of these buildings satisfy the current Public Works floor area requirement.



EXISTING LAND USE

CAMP SCHWAB & HENOKO AMMO STOR

FIGURE F-36

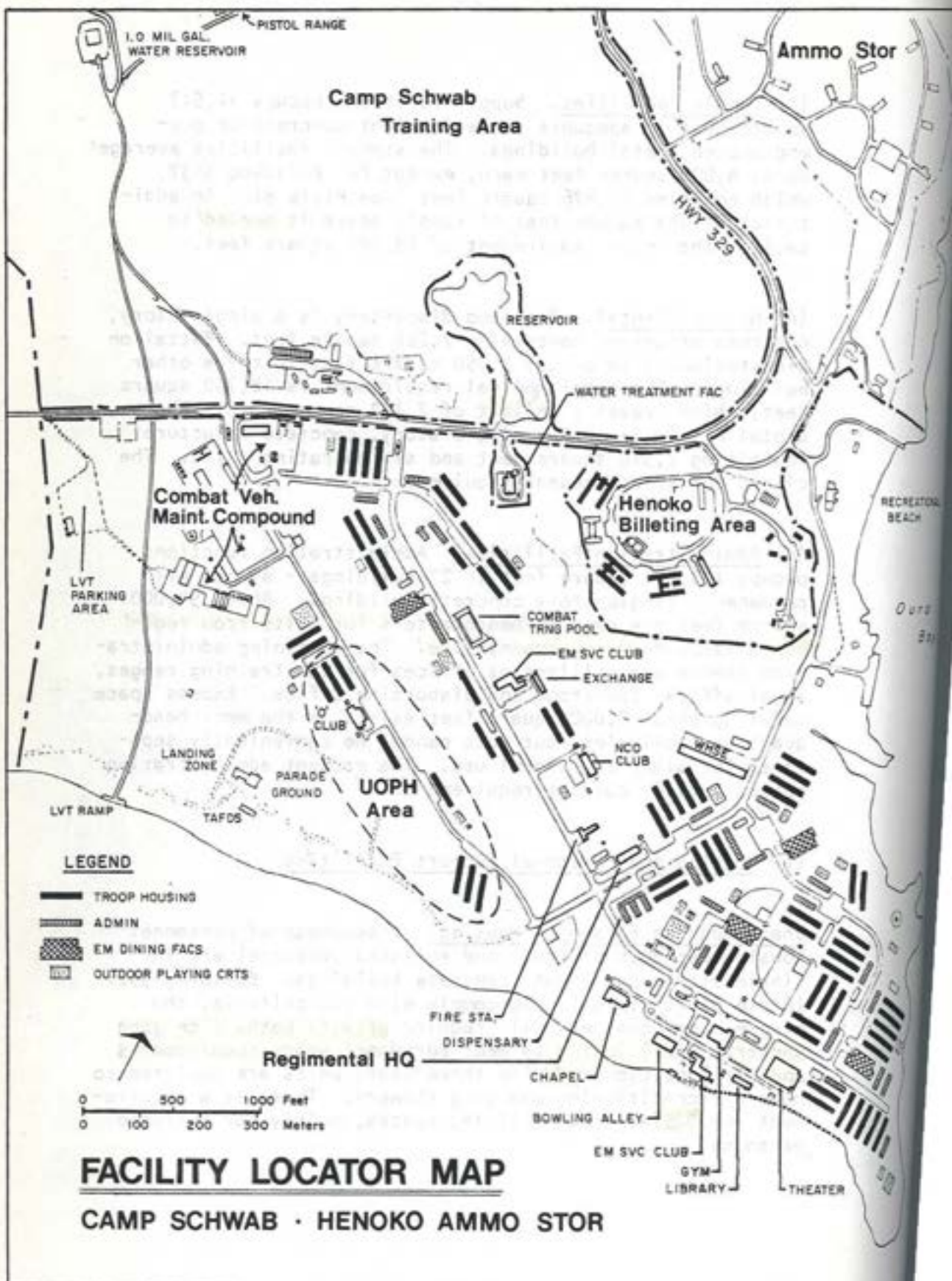
(c) Supply Facilities. Supply functions occupy 41,517 square feet of adequate space in eight concrete or pre-engineered, metal buildings. The storage facilities average about 4,000 square feet each, except for Building 3437, which contains 21,476 square feet (see Plate 9). An additional 21,483 square feet of supply space is needed to satisfy the total requirement of 63,000 square feet.

(d) Medical/Dental. The camp dispensary is a single-story, concrete structure containing 7,228 square feet. Battalion aid stations also occupy 9,350 square feet in three other buildings. The total medical requirement is 18,750 square feet, which leaves a deficit of 2,172 square feet. The dental clinic is also a single-story, concrete structure containing 2,910 square feet and six operating units. The clinic satisfies present requirements.

(e) Administration Facilities. Administration functions occupy 105,671 square feet in 27 buildings-- almost all permanent, single-story concrete buildings. About 94,000 square feet are used as headquarters for units from regimental-size down to company-size. The remaining administration spaces are utilized as offices for the training ranges, legal office, courtroom and disbursing office. Excess space totaling about 9,000 square feet exists in the many headquarters facilities, but this cannot be conveniently separated for other functional use. The present administration spaces satisfy current requirements.

(f) Housing and Personnel Support Facilities

Unaccompanied Personnel Housing. Unaccompanied personnel housing for both officers and enlisted personnel are in single-story, permanent, concrete buildings. Building 3521 (Plate 9) is typical. To comply with DOD criteria, the single-story quarters will require private baths vice gang showers, partitioning to meet personnel space requirements and air conditioning. The three-story units are designed to have air conditioning and gang showers. There is a requirement for 925 additional living spaces, mainly for enlisted personnel.



FACILITY LOCATOR MAP

CAMP SCHWAB · HENOKO AMMO STOR

FIGURE F-

Table F-5

EXISTING FACILITIES
CAMP SCHWAB

CAT CODE	DESCRIPTION	# OF SPACES*	TOTAL FLOOR AREA (SF)	OTHER
100	OPS & TRNG FACS	10	20,769	
111	Helo Pad			3 EA
123	Fillg Sta	1	25	8 OL
124	Op Fuel Stg			84,000 GA
125	POL Pump Fac			400 GM
126	Truck Fill Fac			4 OL
131	Phone Exchange, MARS	2	3,434	
143	Armory	4	9,547	
171	Acad Instr/Range Stg	4	7,763	
179	Trng Ranges			4 EA
200	MAINT FACS	20	70,069	
213	Track Veh Maint, Maint Stg, Paint Locker, Gas Cyl Stg	6	19,553	
214	Auto Org Shop, Dispatch, Parts Procurement	5	17,767	
217	Elecnx/Comm Maint Shop	4	25,270	
219	Facs Maint Shop, Base Stg	5	7,479	
400	SUPPLY FACS	9	42,477	
441	Gen Stg, NBC Stg, Camp Property Stg	9	42,477	
500	MEDICAL/DENTAL FACS	5	19,488	
540	Dental Clinic	1	2,910	6 OU
550	Dispatch Bn Aid Sta	4	16,578	
600	ADMIN FACS	27	105,671	
610	Admin, Courtroom, Disbursg, Regimental HQ, Bn HQ, Co. HQ	27	105,671	
700	HSG & COMMUNITY FACS	112	645,305	
720	UOPH	10	64,200	150 PN
	UEPH	58	368,612	2,048 PN
	Mess Fac	3	57,060	3,000 PN
730	Fire Sta, Clothing Store, Police Sta, Sentry Hse, Bus Shelter	12	16,604	
740	Exchange/Morale/Rec Facs	29	138,829	
750	Outdoor Play Courts			29 EA
	Outdoor Play Fields			3 EA
	Swim Pool			25 ME
800	UTILITIES			
812	Elec Distr Sys			251,974 LF
832	Sanitary Sewer Sys			38,585 LF
842	Water Distr Sys			51,948 LF
851	Roads			11.2 MI

*Does not match building totals. Some buildings have multiple uses.

There are three 1,000-man dining halls. These buildings are structurally adequate and allow each of the three battalions to maintain unit integrity and combat readiness. Building 3613 (Plate 9) is typical.

Personnel Support Facilities. In general, these facilities are of permanent construction and adequately sited at Camp Schwab. Some of the more prominent personnel support buildings are listed below:

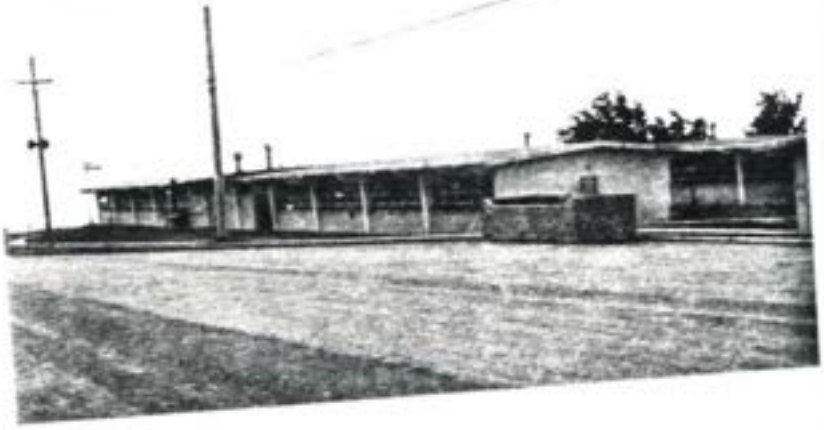
DESCRIPTION	FLOOR AREA (SF)	REMARKS
Officers Club	8,615	
USO Ctr	9,368	
Post Exchange	2,930	
SNCO Club	7,228	
Amusement Ctr	9,000	
Weight Room	10,020	
Beach Pavilion	5,200	
Theater	17,290	See Bldg 3646 (Plate 10)
Library	2,350	
Audio/Stereo Shop	2,990	
Gym	10,174	
Enlisted Club	9,368	See Bldg 3652 (Plate 10)
Post Exchange	2,925	See Bldg 3654 (Plate 10)
Post Ofc	1,770	
Chapel	8,996	See Bldg 3662 (Plate 10)
Bowling Alley	8,064	

(3) Henoko Ammunition Storage Area. The Henoko Ammunition Storage Area contains 34 buildings with 101,923 square feet of floor space, 40 earth-covered ammunition storage igloos with 99,801 square feet of floor area and other miscellaneous improvements.

The billeting area contains three M-wing UEPH units, seven cottage type UOPH structures, a dining hall, an underground administration structure, recreation building including snack bar and Exchange outlet, a security guard building, vehicular maintenance facility, and other miscellaneous facilities.

In addition to the 40 earth-covered igloos, facilities in the magazine area include a weapons maintenance building, a multi-cell magazine operations building, a dog kennel and two ordnance related storage buildings. The area provides excellent storage conditions--double fencing around the entire periphery for security, hard-surfaced roads in good condition, adequate room to allow forklift operations and light standards at all magazines for security and night operations.

BLDG 3437
SUPPLY WAREHOUSE



BLDG 3521
UEPH

NEW 3-STORY UEPH

BLDG 3613
ENLISTED DINING FACILITY

BLDG 3662
CHAPEL

BLDG 3646
THEATER

BLDG 3654
EXCHANGE

BLDG 3652
ENLISTED CLUB

(4) Utilities (See Figures F-38 and F-39)

(a) Primary Electrical Distribution System. The power network consists of a simple, two-feeder, radial system with only one looping connection. The Henoko administrative and ordnance areas are connected to Feeder F-2. Loadbreak switches are used to sectionalize the system. Like Camp Hansen, RAL type oil switches are installed to isolate individual transformers. The primary distribution system is all overhead.

The power system problems experienced here are of the same types and due to the same causes as Camp Hansen. These deficiencies will probably be corrected by the joint Camps Hansen/Schwab/Courtney repair project mentioned earlier.

(b) Steam, Space Heating and Domestic Hot Water Systems. Steam from oil-fired boilers provides for cooking, space heating and domestic hot water at messes and clubs.

Space heating for the messes and clubs employs air handling units with hot water heating coils. The duct work connected to the air handling units provides space heating in the winter and air conditioning in the summer. Space heating for living quarters is provided by hot air furnaces which route heated air either in overhead air ducts or in air ducts below the floor and up through baseboard registers.

Domestic hot water is provided predominantly by oil-fired boilers and by electric water heaters in some buildings. Some boilers employ a separate closed loop between the oil-fired boilers and the domestic hot water supply. The closed loop system provides for longer boiler operating life and lower boiler maintenance costs. Existing boilers without closed loops are being considered for modification to a closed loop system by the activity.

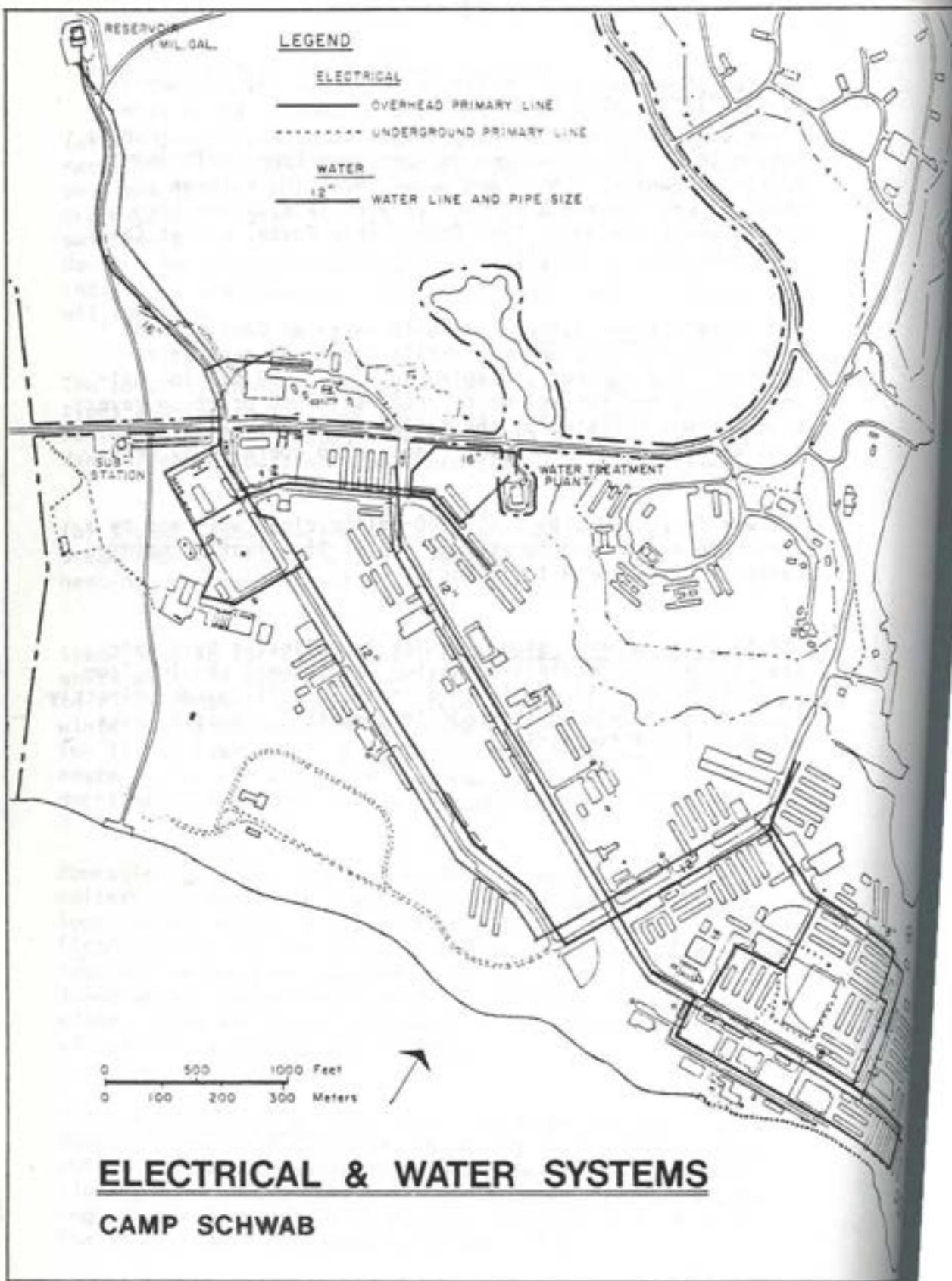
(c) Air Conditioning. Air conditioning at the Marine Corps camps is essentially limited to dining halls, clubs, senior UOPH units, and communication facilities. The air conditioning systems are mainly direct expansion systems employing air handling unit with both cooling and heating coils. The larger facilities employ chilled water systems.

(d) Telephone Service. Military telephone service on Okinawa is provided by MITS--all U.S. owned. Local telephone service in the MCB Camp Butler complex is provided by Marine Corps dial telephone exchanges at Camps McTureous, Courtney, Hansen, Schwab and Kuwae, MCAS (H) Futenma and White Beach. Overseas AUTOVON service is provided through manual switchboards at Camp Foster (Air Force) and at Camp McTureous (Marine Corps).

(e) Potable Water System. Potable water at Camp Schwab comes from the adjacent earth-filled dam and reservoir complex. The dam has a usable capacity of 85 million gallons and is now controlled by OPED, although prior to reversion, it was operated by the Marine Corps. Treatment is provided by the Henoko Water Plant, also operated by OPED.

Storage is provided by a 250,000-gallon clear well and by a 1 million gallon ground storage tank. Distribution mains range in size from 4 to 16 inches.

(f) Sanitary Sewer System. Sewage is collected by a centralized gravity collection system with sewers ranging from 8 to 15 inches. Sewage is chlorinated and discharged directly into the ocean via an 850-foot long outfall. Septic tanks serve isolated facilities.



ELECTRICAL & WATER SYSTEMS

CAMP SCHWAB

FIGURE F

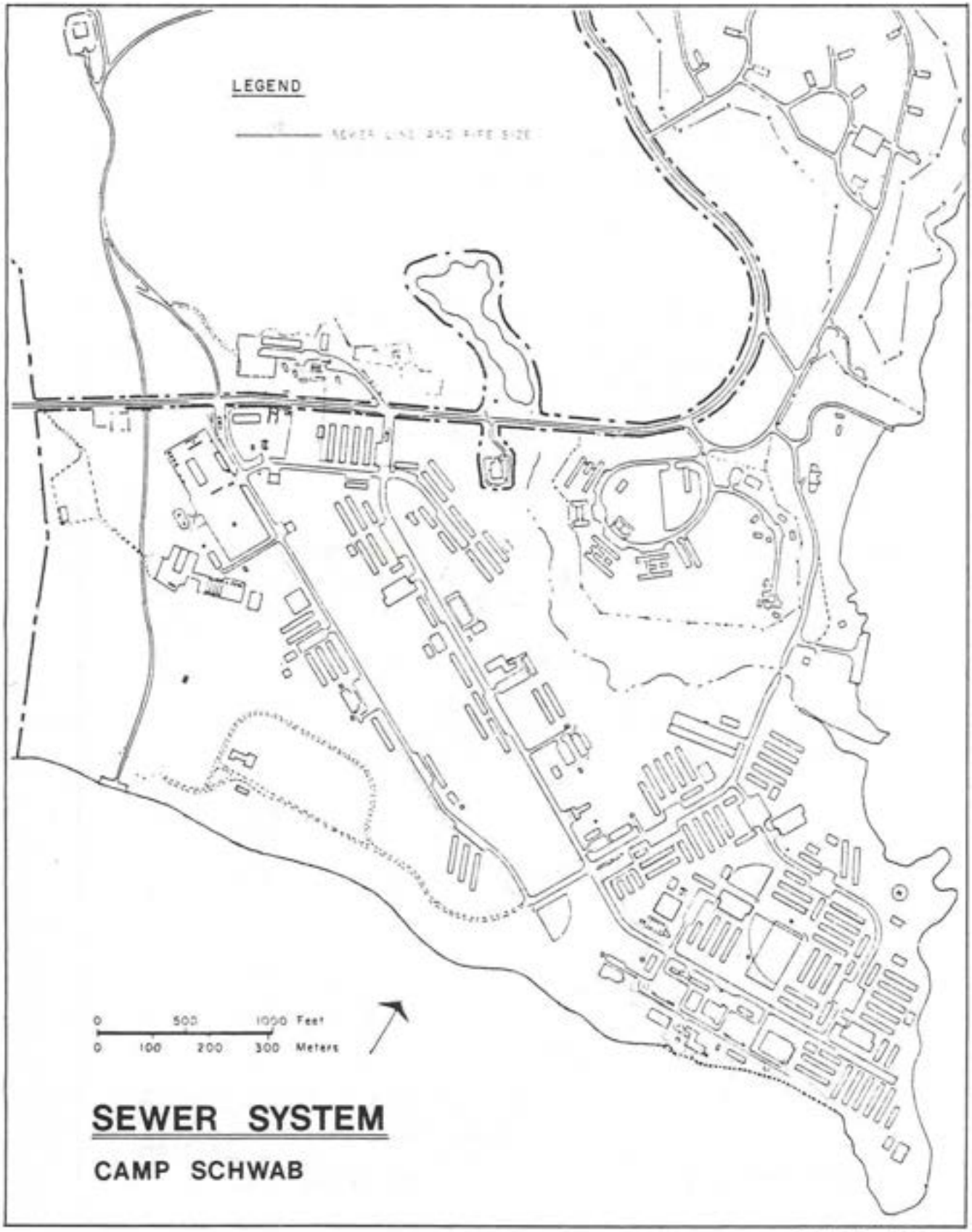

LEGEND
0 500 1000 Feet
0 100 200 300 Meters
SEWER SYSTEM
CAMP SCHWAB

FIGURE F-39

c. **Proposed Land Use**

(1) Circulation. There are 18 kilometers of paved roads, 59,900 square meters of parking areas and about 33,700 meters of concrete sidewalks at Camp Schwab. Vehicular traffic circulation is satisfactory. Few privately owned vehicles are driven on base.

(2) Area Constraints. There are several man-made constraints to the physical development of the Camp Schwab/Henoko complex. As with Camp Hansen, the small arms impact area in the training area is the largest restriction to facility development (see Figure F-27). Another constraint is the explosive safety zone formed by ESQD circles that originate from the storage magazines at the Henoko Ammunition Storage Area.

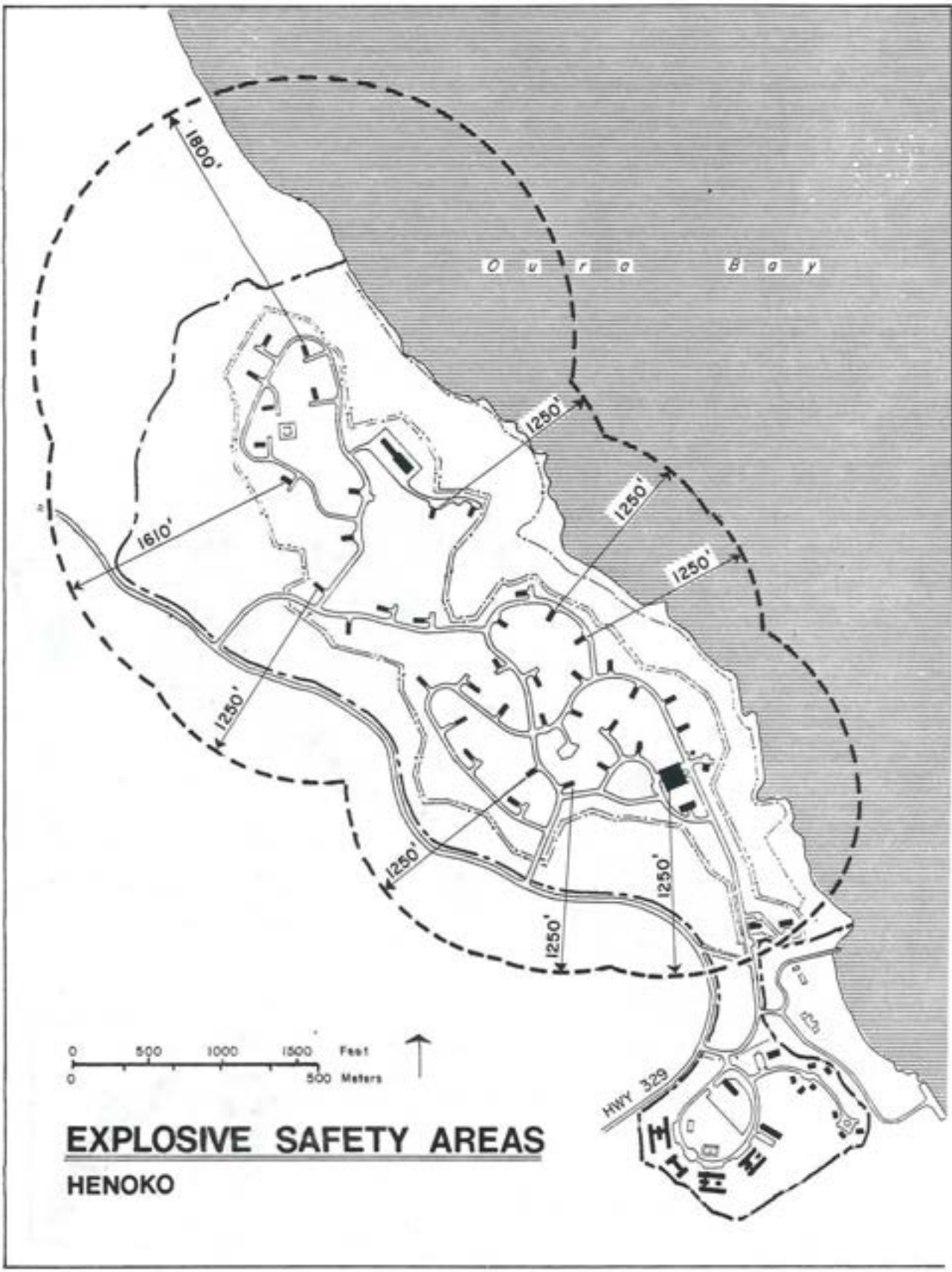
The present explosive safety areas map (Figure F-40) is based on CO Ammo Co. 3rd Sup Bn, 3rd FSSG ltr OPS/GRC/tsf ltr 8023 of 22 December 1978. The limit of the safety zone is established from facilities listed below.

TABLE F-6

FACILITIES WITH CONTROLLING ESQD SAFETY ARCS AT HENOKO

STRUCT NO.	DESCRIPTION	QUANTITY NEW (000)	CLASS	IBD (FT)
1060	Multi-cell Mag	6	Cl 1, Div 1	1,250
1069	Igloo	20	" " " "	"
1068	"	15	" " " "	"
1110	"	20	" " " "	"
1096	"	65	" " " "	1,610
1093	"	500	" " " 2(18)	1,800
1098	"	15	" " " 1	1,250
1081	"	30	" " " "	"
1080	"	500	" " " 2(12)	1,200

The affected land outside the northern boundary is irregular terrain, with ridges and gullies. This real estate belongs to private owners and is partially used for agriculture.



EXPLOSIVE SAFETY AREAS

HENOKO

FIGURE F-40

Oura-wan Bay lies to the east of the magazine storage area. The ESQD impact on the bay is minimal because there is no ship channel inside the safety zone, and the area is rarely used by the public or by military personnel.

Highway 329 traverses inside the explosive safety zone; however, the magazine loading plan generally conforms with the highway distance requirements of NAVSEA OP-5.

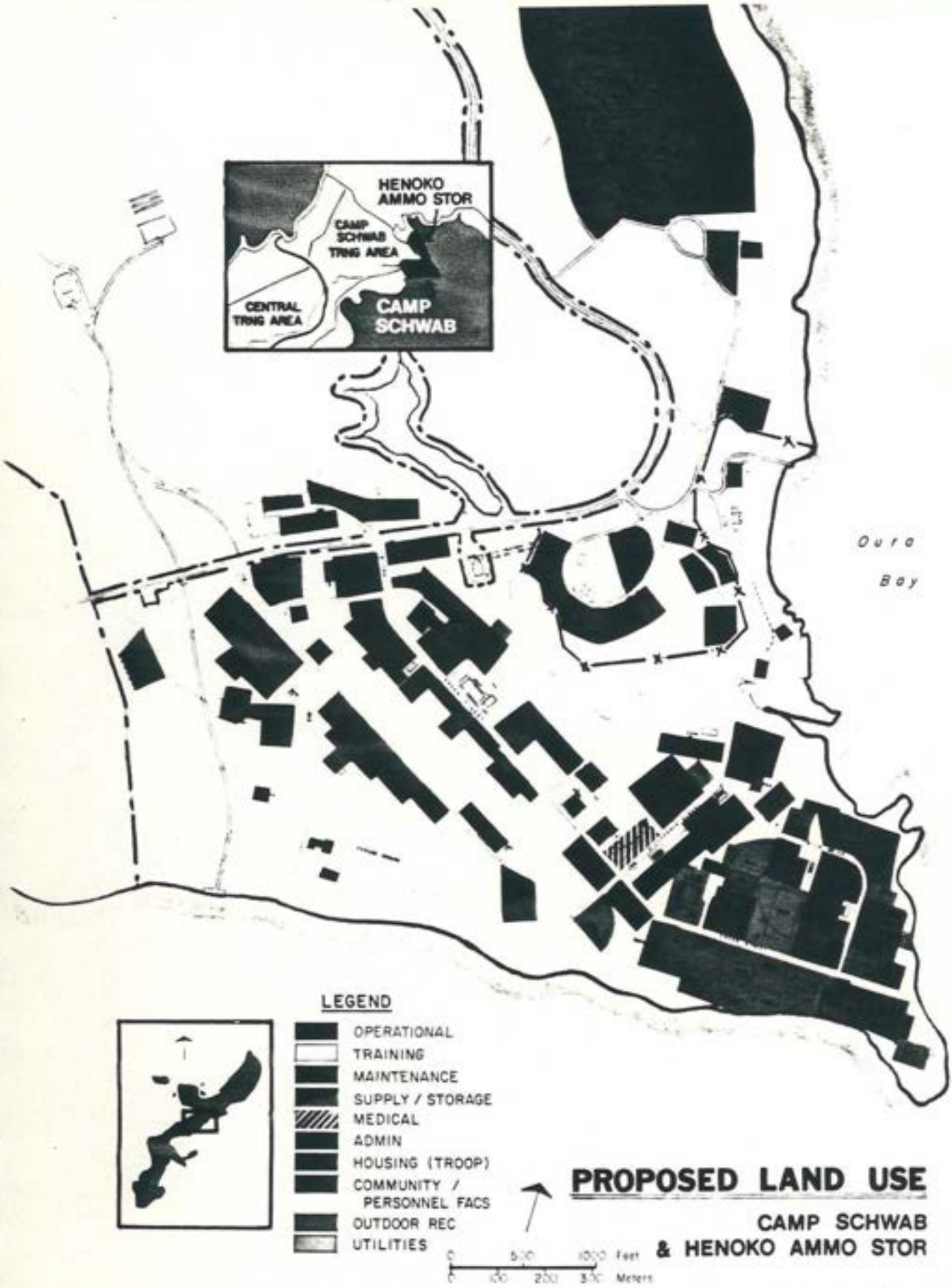
The following waiver and exemption, which were approved by CNO letter serial 411F/320279 of 5 June 1979, are in effect at Henoko Ammunition Storage Area.

CNO Waiver No. 1A-78. Reason for waiver: authorizes a deviation from the requirements of Table 5-4 of NAVSEA OP-5, Volume 1, for Magazine 1081, which does not meet the ESQD criteria in relation to the station boundary. A maximum of 30,000 pounds NEW of Class 1.1 is authorized to be stored in Magazine 1081.

CNO Exemption No. USMC Camp Henoko-E1A-78. Reason for exemption: authorizes a deviation from the requirements of Tables 5-13 and 5-14 of NAVSEA OP-5, Volume 1, to permit storage in the following magazines, which do not meet the ESQD criteria in relation to the station boundary:

BLDG	CLASS	NEW (#)
1080	1.2(12)	500,000
1082	"	"
1093	1.2(18)	"
1111	1.2(12)	"
1112	"	"

(3) Proposed Land Use. The proposed land use plan, shown on Figure F-41, represents planned functional use designations for land at the Camp Schwab/Henoko Ammunition Storage Area.



PROPOSED LAND USE

CAMP SCHWAB & HENOKO AMMO STOR

FIGURE F-41

6. Camp Kinser

a. Environmental Setting

(1) Location (See Figure F-42). Camp Kinser is located on the southwestern coastline of Okinawa adjacent to the most populated municipalities on the island. Camp Kinser borders the cities of Naha, Urasoe and Ginowan, with populations of 274,965, 59,290 and 53,835, respectively. Camp Kinser lies 7 kilometers southwest of Camp Zukeran.

(2) Size. Camp Kinser is approximately oval in shape, about 3,000 meters long by 1,100 meters wide and contains about 310 hectares of land.

(3) Topography (See Figure F-43). The terrain at Camp Kinser contains a relatively level coastal plain and a plateau separated by a steep bank about 10 meters high. The plateau area was once the site of a WWII airfield. Elevations at Camp Kinser average 3 meters near the coastline and about 23 meters on the plateau.

(4) Soils. Soil along the shoreline is mainly Shioya loamy sand consisting of grains of limestone, minor impurities and a small amount of organic matter. The plateau area contains Okinawa clay loam and Chinen stony clay which are well-drained clayey soils, generally well-suited for facilities construction.

A detailed soil description of the soils found at Camp Kinser is shown on Figure F-3.

(5) Historic/Archeologic Sites. There are no known registered historic/archeologic sites at Camp Kinser.

CAMP KINSER

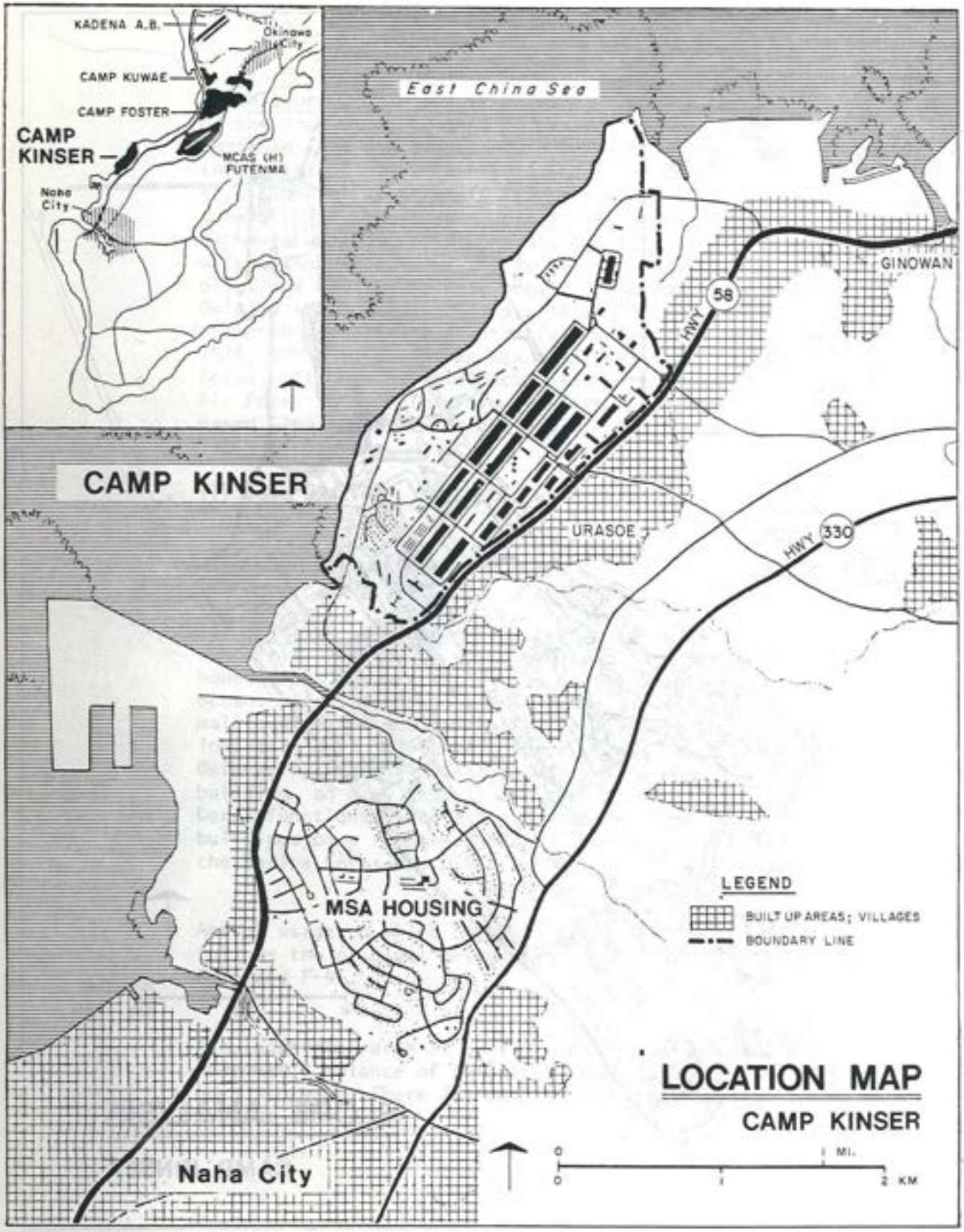

KADENA A.B.
Okinawa City
CAMP KUWAE
CAMP FOSTER
CAMP KINSER
MCAS (H) FUTENMA
Naha City
East China Sea
GINOWAN
58
HWY
CAMP KINSER
URASOE
HWY 330
MSA HOUSING
LEGEND
BUILT UP AREAS; VILLAGES
BOUNDARY LINE
LOCATION MAP
CAMP KINSER
Naha City
0
1 MI.
0
1
2 KM

FIGURE F-42

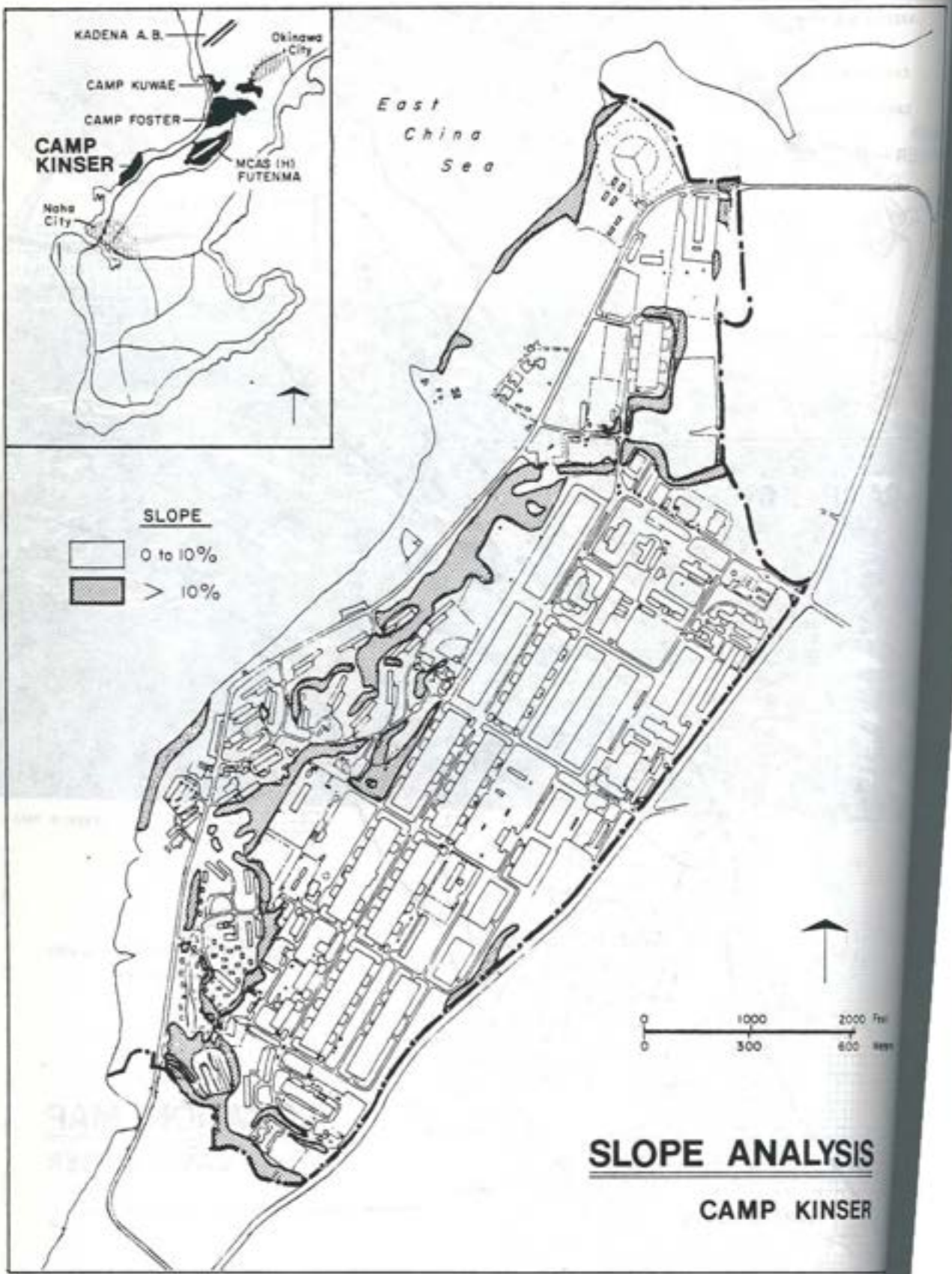

KADENA A.B.
Okinawa City
CAMP KUWAE
CAMP FOSTER
CAMP KINSER
MCAS (H) FUTENMA
Naha City
East China Sea
SLOPE
0 to 10%
> 10%
0
1000
2000 Feet
0
300
600 Meters
SLOPE ANALYSIS
CAMP KINSER

FIGURE F-

(6) History. Camp Kinser is a large logistics complex built by the Army on the site of a WWII airfield. Construction began in 1963 and was completed in 1969. The complex (then the Makiminato Service Area) contained several large facilities sized to support all U.S. forces on Okinawa, including a laundry/dry cleaning plant, a milk plant, a morgue, an Exchange warehouse and cold storage facilities, as well as warehousing facilities for family housing, commissary supplies and OWAX. The Army began a drawdown of forces on Okinawa in the early 1970's, and in 1976, the Air Force was assigned most of the joint services functions. In October 1978, the entire complex was transferred to the Marine Corps, although certain facilities were outgranted to the Air Force for multi-service support functions. It was renamed Camp Kinser in March 1980.

(7) Base Loading. Refer to Table E-1.

b. Existing Land Use / Facilities

(1) Existing Land Use. Camp Kinser consists of a large industrial complex on a plateau adjoining Route 58, with housing and support facilities on the lower land facing the ocean. Significant portions of the industrial area (supply, maintenance and administrative facilities) are used on a long-term basis by the Air Force, Army, Navy, OWAX and Defense Property Disposal Agency, while only one support building, an Army BEQ, is assigned to other than Marine Corps functions. Additionally, the Army uses six other buildings on a temporary basis, so that these will revert to the Marine Corps use plans (see Figure F-44).

Actual usage to which the facilities are put generally follows the original design intent, as shown on Figures F-45 and F-46.

The industrial area is considered fully developed, with a reasonable balance of buildings, roads, parking areas and open storage. There is room for more construction in the support area.

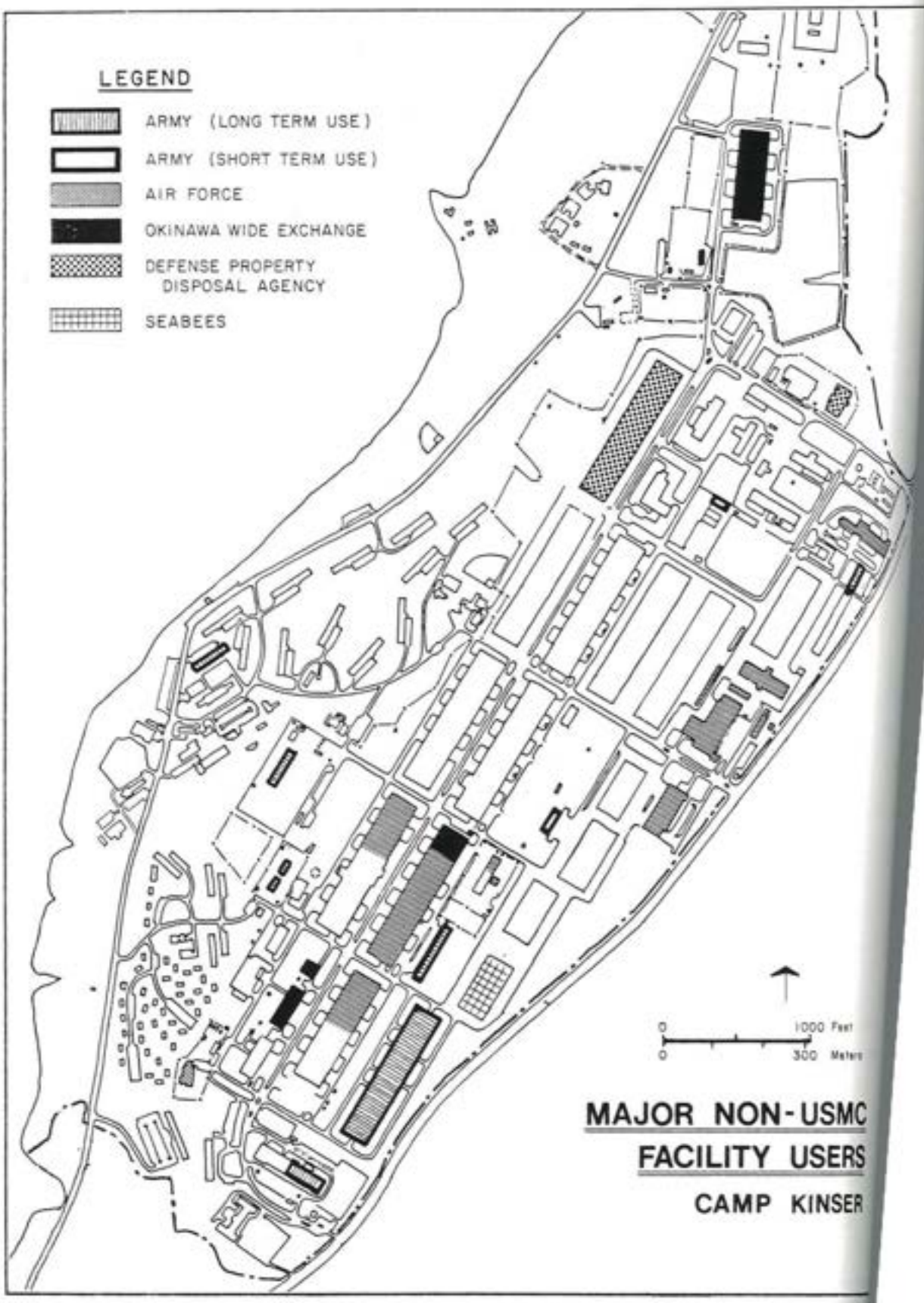
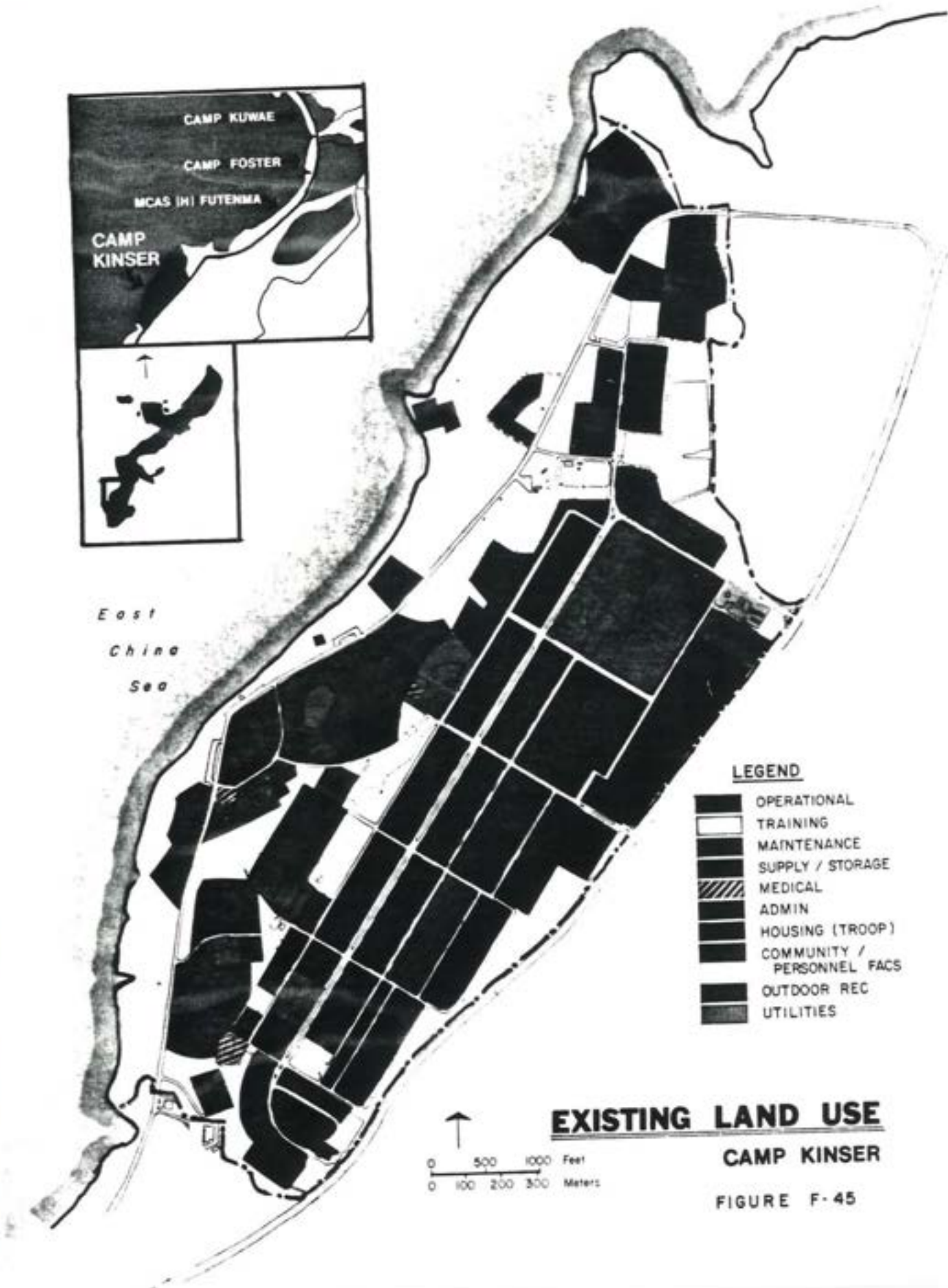

LEGEND
ARMY (LONG TERM USE)
ARMY (SHORT TERM USE)
AIR FORCE
OKINAWA WIDE EXCHANGE
DEFENSE PROPERTY DISPOSAL AGENCY
SEABEES
0
1000 Feet
0
300 Meters
MAJOR NON-USMC FACILITY USERS
CAMP KINSER

FIGURE F-



EXISTING LAND USE

CAMP KINSER

FIGURE F-45

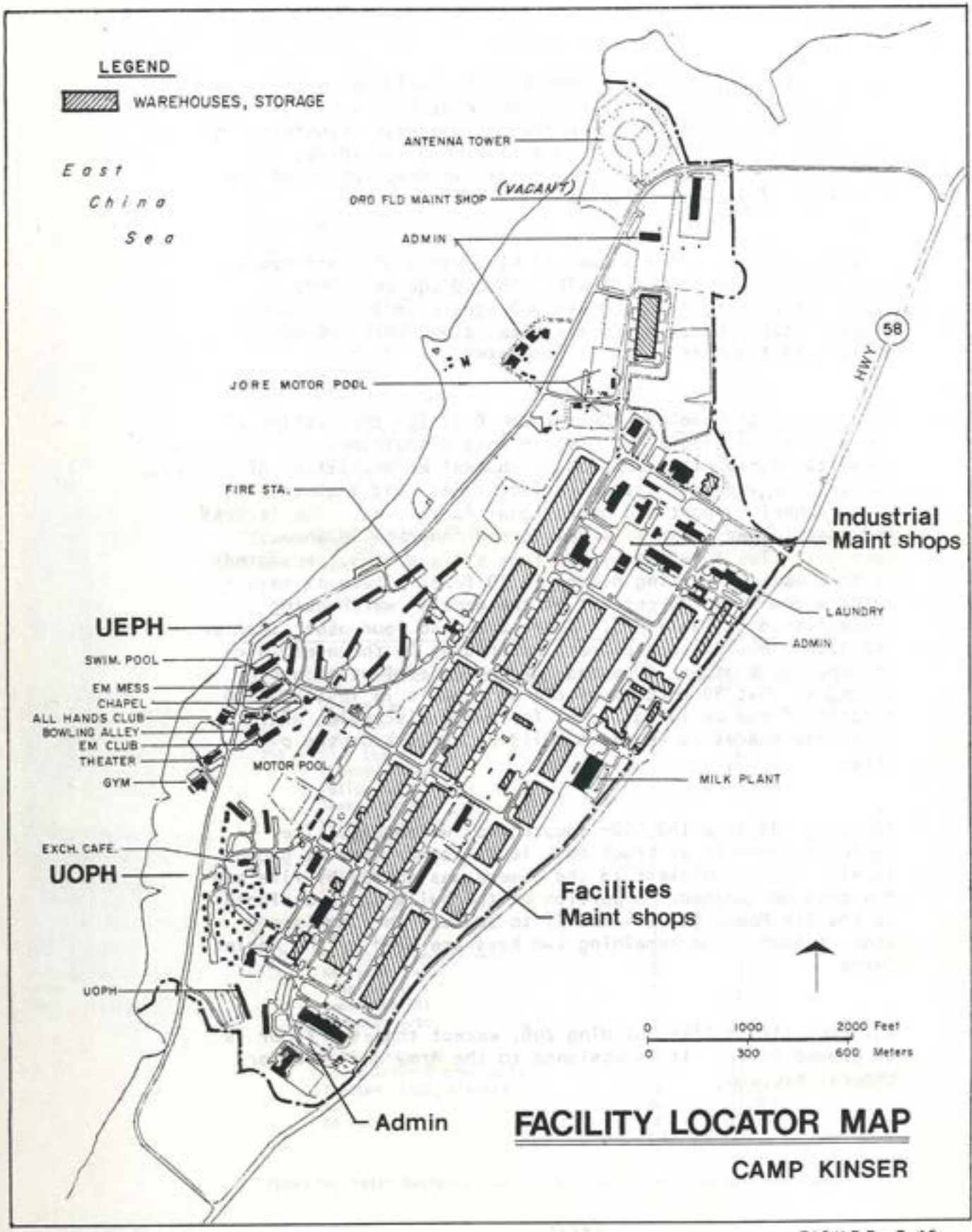

LEGEND
WAREHOUSES, STORAGE
East China Sea
ANTENNA TOWER
DRO FLD MAINT SHOP
(VACANT)
ADMIN
JORE MOTOR POOL
FIRE STA.
HWY 58
Industrial Maint shops
LAUNDRY
ADMIN
UEPH
SWIM. POOL
EM MESS
CHAPEL
ALL HANDS CLUB
BOWLING ALLEY
EM CLUB
THEATER
GYM
MOTOR POOL
MILK PLANT
EXCH. CAFE.
UOPH
Facilities Maint shops
UOPH
0 1000 2000 Feet
0 300 600 Meters
Admin
FACILITY LOCATOR MAP
CAMP KINSER

FIGURE F-46

(2) Existing Facilities. There are 328 buildings with 4.6 million square feet of floor space at Camp Kinser. Buildings are predominantly permanent concrete structures in sound condition. Table F-7 is a listing of buildings by current use category codes. A narrative description of the facilities follows the table.

In addition, there are almost 21 kilometers of paved roads, over 20,000 meters of sidewalk, 276,000 square meters of vehicular parking area and 540,000 square yards (454,000 square meters) of open storage area, along with two ball fields and two outdoor court complexes.

(a) Industrial Complex. See Figure F-47 for the outline of the industrial complex as used in this discussion. It consists mostly of warehouses, with smaller quantities of maintenance and administrative facilities, and a smattering of personnel support and operational facilities. The largest and most impressive are 11 reinforced concrete warehoues, each with five 200-foot by 200-foot storage bays, separated by fire walls. Ceiling height is 20 feet. These 11 structures account for 80 percent of the general warehousing space listed in Table F-7. There are also four other smaller (60,000 to 80,000 square feet) warehouses in the area which account for another 10 percent of the general warehouse space, so that 90 percent of the storage is in less than 20 percent of the buildings. The following discussion of warehouse spaces is keyed to building numbers on the picture.

Building 208 is a 160,000+ square foot warehouse. The building floor is at truck dock level rather than at ground level. The bay closest to the camera was gutted by fire and has been demoloshed. A portion of the building is assigned to the Air Force (Bays 4 and 5) to support the Commissary Store system. The remaining two bays are used by the Marine Corps.

Building 212 is like Building 208, except that the floor is at ground level. It is assigned to the Army and used for general storage.

Table F-7

EXISTING FACILITIES
(OVER 1,000 SF & OVER)
MAKIMINATO SERVICE AREA

CAT CODE	DESCRIPTION	# OF SPACES*	TOTAL FLOOR AREA (SF)	OTHER
100	OPS & TRNG FACS	11	111,866	
123	Fillg Sta	2	1,146	8 OL
131	Comm Ctr	1	3,918	
143	Transit Shed	3	86,931	
	Petroleum Lab/Stg	4	3,533	
171	Applied Instr Bldg	1	16,338	
200	MAINT & PROD FACS	30	295,045	
214	Combat Veh Maint	5	27,448	
	Auto Maint	3	50,708	
	Field Maint	6	86,878	
217	Comm/Elecnx Maint	2	40,852	
218	Machine Shop	2	29,420	
219	Facs Maint Shop/Stg	12	59,739	
400	SUPPLY FACS	89	2,806,121	
431	Cold Stg	4	91,000	
441	Gen Whse	83	2,676,743	
500	MEDICAL/DENTAL FACS	5	32,524	
510	Medical Stg	2	16,059	
530	Morgue	1	10,181	
540	Dental Clinic	1	3,034	10 OU
550	Dispensary	1	3,250	
600	ADMIN FACS	22	211,811	
610	Admin Ofc	22	211,811	
700	MSG & COMMUNITY FACS	182	1,068,709	
721	UEPH	13	324,987	1,415 PN
722	Dining Fac	1	10,085	650 PN
723	UEPH Stg	1	960	
724	UOPH	44	158,012	277 PN
730	Fire Sta	1	6,728	
	Clothing Store	1	11,791	
	Police Sta	3	14,897	
	Sentry Booths	16	827	
	Bakery	1	16,225	
	Lunchroom	1	1,000	
	Pre-school	3	4,105	
	Bus Shelter	15	1,054	
	Latrine	5	1,802	
	Dog Kennel	6	4,756	
	Stg	17	15,440	
	Milk Plant	1	53,022	
740	Exchange & Snacks Outlet	6	17,392	
	Religious Facs	2	7,144	
	Misc Morale	9	47,147	
	Amusement Ctr	1	13,328	
	Exchange Auto	3	5,688	
	Post Ofc	3	14,303	
	Hobby Shop	5	6,003	
	Bowlg Alley/Gym/Handball	4	29,429	
	Theater, Club, Library	4	22,833	
	Stg	14	267,979	
	Ed Facs	2	11,770	

*Does not match building totals. Some buildings have multiple uses.

CAMP KINSER - INDUSTRIAL COMPLEX

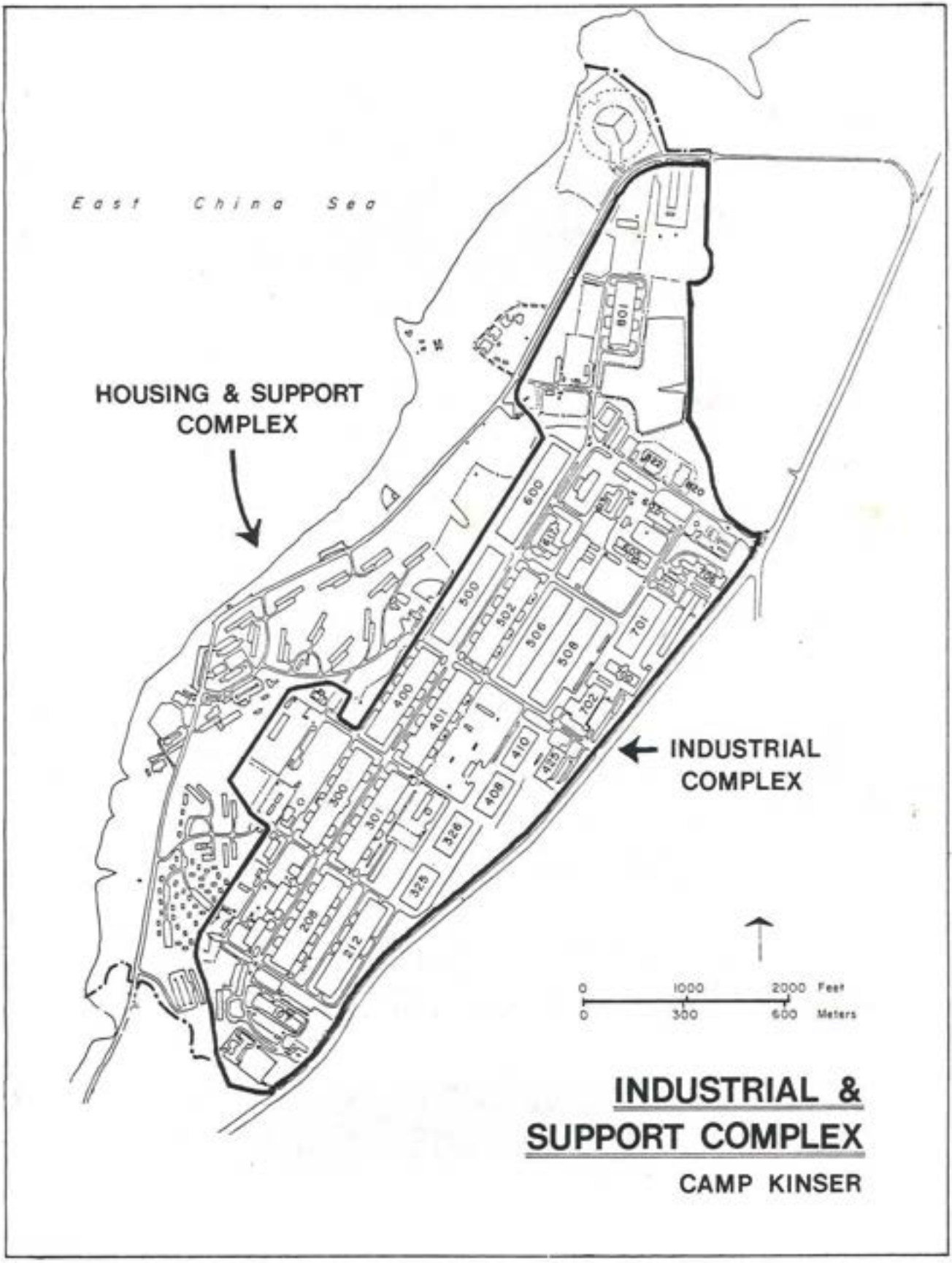

East China Sea
HOUSING & SUPPORT COMPLEX
INDUSTRIAL COMPLEX
0 1000 2000 Feet
0 300 600 Meters
INDUSTRIAL & SUPPORT COMPLEX
CAMP KINSER

FIGURE F-47

Building 300 is essentially a duplicate of Building 208, with an elevated floor. It is used by the Air Force for furniture storage in support of multi-service housing on the island and by the Marine Corps for general storage.

Building 301 is a duplicate of Building 300. Part of one bay is used as the OWAX bakery. The balance is a general purpose warehouse, except for a small (3,200 square feet) Army petroleum laboratory.

Buildings 325 and 326 represent four end bays of what was planned as a typical five-bay, 200,000 square foot warehouse. When construction began, it was discovered that there were subsurface soil problems where the center bay was to be built. Accordingly, the center bay was deleted and two 80,000 square foot, two-bay warehouses were built. Both have ground level floors. Building 325 is used by the Seabees and Building 326 by the Marine Corps Facility Engineer and Marine Air Group 36 (MAG-36).

Buildings 400, 401, 500 and 502 are five-bay (200,000 square feet) warehouses used by the 3rd FSSG. Buildings 400 and 401 have elevated floors, while 500 and 502 have ground level floors. Building 400 is used by the Supply Battalion Supported Activities Supply System (SASSY), while three bays of Building 401 are used by the Supply Battalion's preservation, packaging and packing function. The other two bays are used for shipping and receiving, accomplished by the Headquarters and Service (H&S) Battalion. This latter function is considered an operational function, rather than a warehousing function, so the area shows up under the 100 series of uses in the preceding table and in land use.

Building 500 is used for SASSY and for general warehousing for the Supply Battalion. Building 502 is used for the same purposes and also houses some 16,000 square feet of medical supplies for the Navy's Camp Kuwae operations.

Buildings 506 and 508 are 200,000+ square foot warehouses with ground level floors. Both these buildings have ramps that permit vehicular parking on the roof. They are in use by the Marine Corps for storage of combat ready supply program (CRSP) vehicles.

BLDG 300
WAREHOUSE
(USED FOR FURNITURE STORAGE)

BLDGS 325 & 326
WAREHOUSES

BLDG 500
WAREHOUSE
(USED FOR SASSY)

BLDG 508
WAREHOUSE
(WITH VEHICULAR ROOF PARKING)

Building 408 is a two-bay warehouse similar to Buildings 325 and 326. It is used by the H&S Battalion of the 3rd FSSG for organizational storage. Building 410 is a "nonstandard" concrete warehouse, being only 150 feet wide. This building is also assigned to the H&S Battalion.

Building 600 is a 200,000+ square foot warehouse assigned to the Defense Property Disposal Office. The Defense Property Disposal Office also uses Building 820, a 32,000 square foot permanent building in the top center of the picture, and Building 852, a 32,000 square foot metal building which is in poor repair. This building is not shown, being off the top of the picture.

Warehouses 701 and 801 (barely visible at the top of the picture) are permanent concrete buildings assigned to OWAX. These buildings, with nearly 125,000 square feet of floor space each, are listed in the 700 series category code. OWAX also uses two metal buildings in the left foreground--Building 202 for vending machine repair and Building 204 for warehousing. There is one other warehouse (Building 200), a three-bay metal building of 36,000 square feet in the left foreground of the picture. This is used by the Air Force. The Air Force also operates a cold storage complex for the commissary stores serving all services. The complex has two large, permanent buildings (No. 700 at 36,000 square feet and No. 702 at over 72,000 square feet) and four adjacent smaller buildings with an aggregate floor area of about 20,000 square feet.

Maintenance facilities within the industrial complex consist of an industrial maintenance area (top center of the picture, facing page), a facilities maintenance area (center picture) and a motor transport maintenance area (Army operated) (off the picture to left center). The individual maintenance area has the most sophisticated facilities, with six large, permanent maintenance buildings, as follows: Buildings 605 (40,000 square feet), 607 (29,000 square feet), 609 (15,000 square feet) and 613 (15,000 square feet) were built as ordnance field maintenance shops. All have high bays and will accept large vehicles for maintenance. All have 35 to 40-foot high bays, serviced by cranes, and all are well-suited to any large item maintenance function.

BLDG 605
FIELD MAINT SHOP (ORD)

BLDG 607
MACHINE SHOP

BLDG 613
AUTO MAINT SHOP

BLDG 617
ELECTRONICS MAINT SHOP

Building 613 is a 15,000 square foot building, designed as an engineer field maintenance facility. Design is similar to the four buildings listed above. The building is T-shaped, with one wing of 12-foot height and the other of 40-foot height, with crane service. The high bay portion is suitable for vehicle or heavy equipment maintenance.

Building 617 is a single-story electronics maintenance shop, with over 30,000 square feet of floor area. The building was designed for electrical/electronics maintenance complete with special electrical circuits and air conditioning. In 1975, the building had a problem of severe settling of about 1,600 square feet of floor slab and one concrete wall. A recent engineering survey uncovered voids under the slab. Measures are being taken to correct this problem.

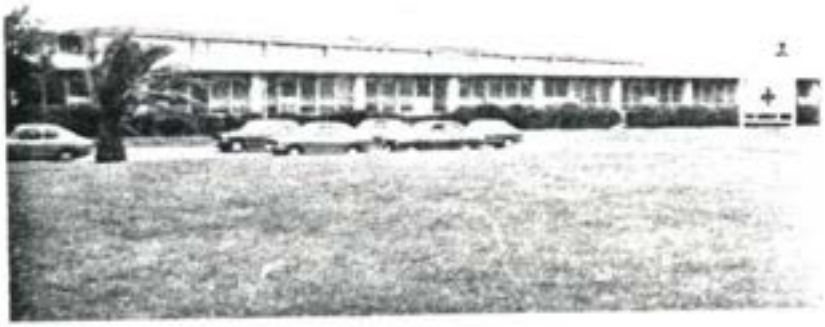
The Public Works area has two large permanent shop buildings--Building 305 with 22,000 square feet and Building 306 with almost 29,000 square feet. Building 305 is used entirely by the Army, and about one-third of Building 306 is used by the Air Force.

The motor transport maintenance area contains a relatively large permanent maintenance shop (Building 350, 16,000 square feet) (off the picture to the left), and several smaller shops and offices. The complex was built as a self-contained motor pool area and is still so used by the Army.

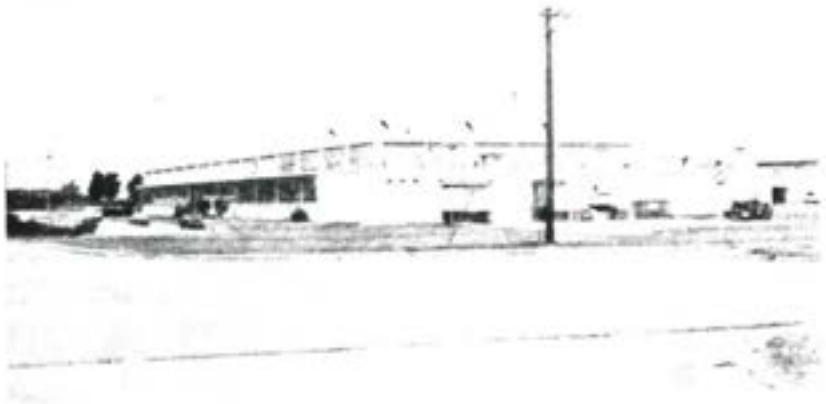
There are two former maintenance buildings across "G" Street in the upper center of the picture. Building 822 is a permanent, 32,000 square foot, single-story building designed as a missile component rework facility, now used as a SASSY warehouse. Building T-827 is a metal building of 16,000 square foot area used as an ORE maintenance shop.

There are four buildings used exclusively for administration purposes. Building 100 (in the left foreground of the picture) is a single-story, 17,000 square foot facility. About 4,400 square feet is used directly for Marine Corps administrative purposes, mostly disbursing. The balance is used by Marine Corps supported activities, including a bank, credit union, Stars and Stripes office, and the Red Cross.

BLDG 107
ADMIN
(CURRENTLY USED BY USAR & MC)



BLDG 100
ADMIN
(3RD FSSG HQ)



BLDG 425
MILK PLANT
(AIR FORCE OPERATED)

BLDG 706
LAUNDRY / DRY CLEANING PLANT
(AIR FORCE OPERATED)

Building 107 is a two-story building, with a floor area of over 103,000 square feet. About 60 percent of the building is used by the Army and the balance by the Marine Corps. The building includes an air conditioned computer area used for that purpose by the 3rd Force Automated Service Center (Medicom) (3rd FASC(M)) operated by the Service Company of the H&S Battalion in providing automated data processing service for all Marine Corps units on the island.

Building 110, located approximately under the camera location and not shown in the picture, is a two-story H-shaped building with a floor area of some 43,000 square feet. It serves as headquarters building for the 3rd FSSG and for its H&S Battalion.

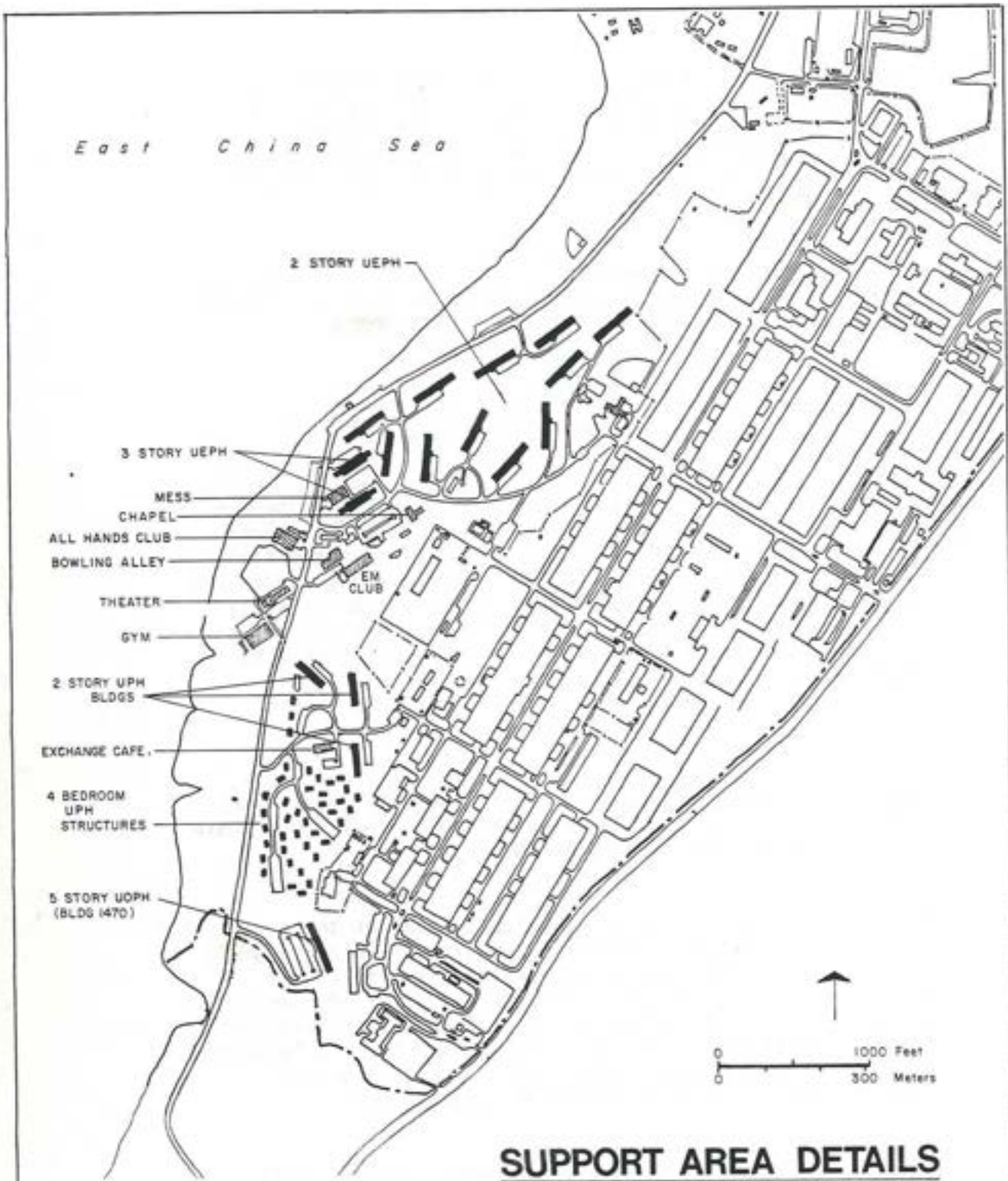
Building 705 is a single-story building just behind Building 701 in the picture. It contains less than 16,000 square feet of floor space and is used as a headquarters building of the 3rd FSSG Maintenance Battalion.

Support functions, in addition to the OWAX warehouses previously mentioned, consist of a milk plant (Building 425), a laundry (Building 706) and a morgue (Building 115), operated in support of all services by the Air Force.

There are no significant requirements for construction of additional facilities in the industrial complex. Exigent Minor MCON (EMM) Project P-274, in the amount of $345,000, provides miscellaneous modifications to several of the buildings to make them better suited to Marine Corps requirements. It also provides two lubrication racks in front of Building 605 and a vehicle inspection rack near Building 615.

(b) Support Complex. The support area lies between the industrial complex and the East China Sea (refer to Figure F-48). Major facilities in the support complex (beginning at the south end) are described in the following paragraph.

Building 1470 is a permanent, five-story, UOPH building built in 1968. It has over 75,000 square feet of floor space and is rated capable of housing 140 officers--more than adequate for the programming limit of 93 reflected in the latest Bachelor Housing Survey.



SUPPORT AREA DETAILS

CAMP KINSER

FIGURE F-48

Immediately north of Building 1470 are 39 permanent, four-bedroom, two-bath, unaccompanied personnel housing structures of 1,350 square feet each. These were originally designed for officers but, because Building 1470 is more than adequate for the officers requirement, they are proposed for SNCO use.

There are three permanent, two-story, UOPH buildings just north of the four-bedroom units. These units have 38 rooms and 19 baths, and are currently occupied by SNCOs.

There is an Exchange cafeteria near the center of this complex in a 5,000 square foot permanent building.

The UEPH complex is further north, consisting of 13 buildings. Eleven of these are two-story, concrete structures built by the Army in 1953. Two structures are three-story, concrete structures built in 1969. The two-story structures can be made adequate for 93 men each, and the three-story buildings for 196 men each. One of the three-story structures is used by the Army and is not available to the Marine Corps. Total capacity of the Marine Corps buildings is 1,214 people, as against a requirement of 2,270 people.

The two-story UEPH units originally had individual dining facilities; however, these have been disestablished. The separate dining facility is rated at 650 men, although there is a requirement for feeding 1,600 men.

There is a personnel support complex located at the south end of the UEPH area. Permanent facilities include an NCO open mess of 11,000 square feet; a gymnasium of 21,000 square feet; a chapel and office, with a total of some 7,100 square feet of floor space; a post office of 3,800 square feet; an amusement center of 13,000 square feet; a location Exchange of 3,300 square feet; and a six-lane bowling alley/crafts shop building of 8,000 square feet.

Other support facilities include a dental clinic (3,000 square feet), a dispensary (3,200 square feet), and a fire station (6,700 square feet).

North of the UEPH complex is a dog kennel complex still used for limited canine activity. Parts of the facility have been assigned to the Provost Marshal and to the University of Hawaii for classrooms.

Across the perimeter road from the kennel is a complex of seven relatively small, permanent buildings, with an aggregate area of about 33,000 square feet. These are used by the Provost Marshal, the Stars and Stripes, educational services, and a pre-school.

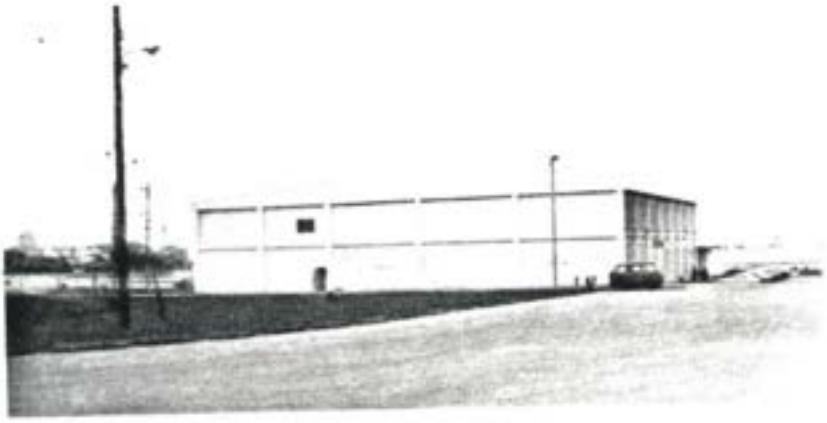
There are significant deficiencies in the support area for which construction is recommended, including unaccompanied personnel housing, a dispensary addition, a dining facility, an Exchange addition, an Exchange cafeteria addition, SNCO and NCO Clubs, and a library addition. Proposals to satisfy these are contained in the CIP section.

BLDG 1470
5-STORY UOPH & OFFICERS CLUB

BLDG 1410
4-BEDROOM, 2-BATH UPH

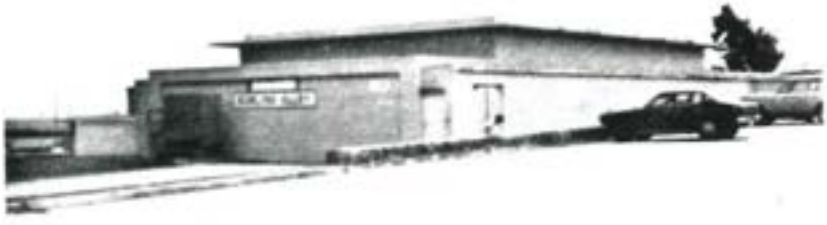
BLDG 1401
2-STORY UOPH

BLDG 1222
3-STORY UEPH



BLDG 1303
GYMNASIUM

BLDG 1300
THEATER



BLDG 1319
BOWLING ALLEY

BLDG 1317
EXCHANGE

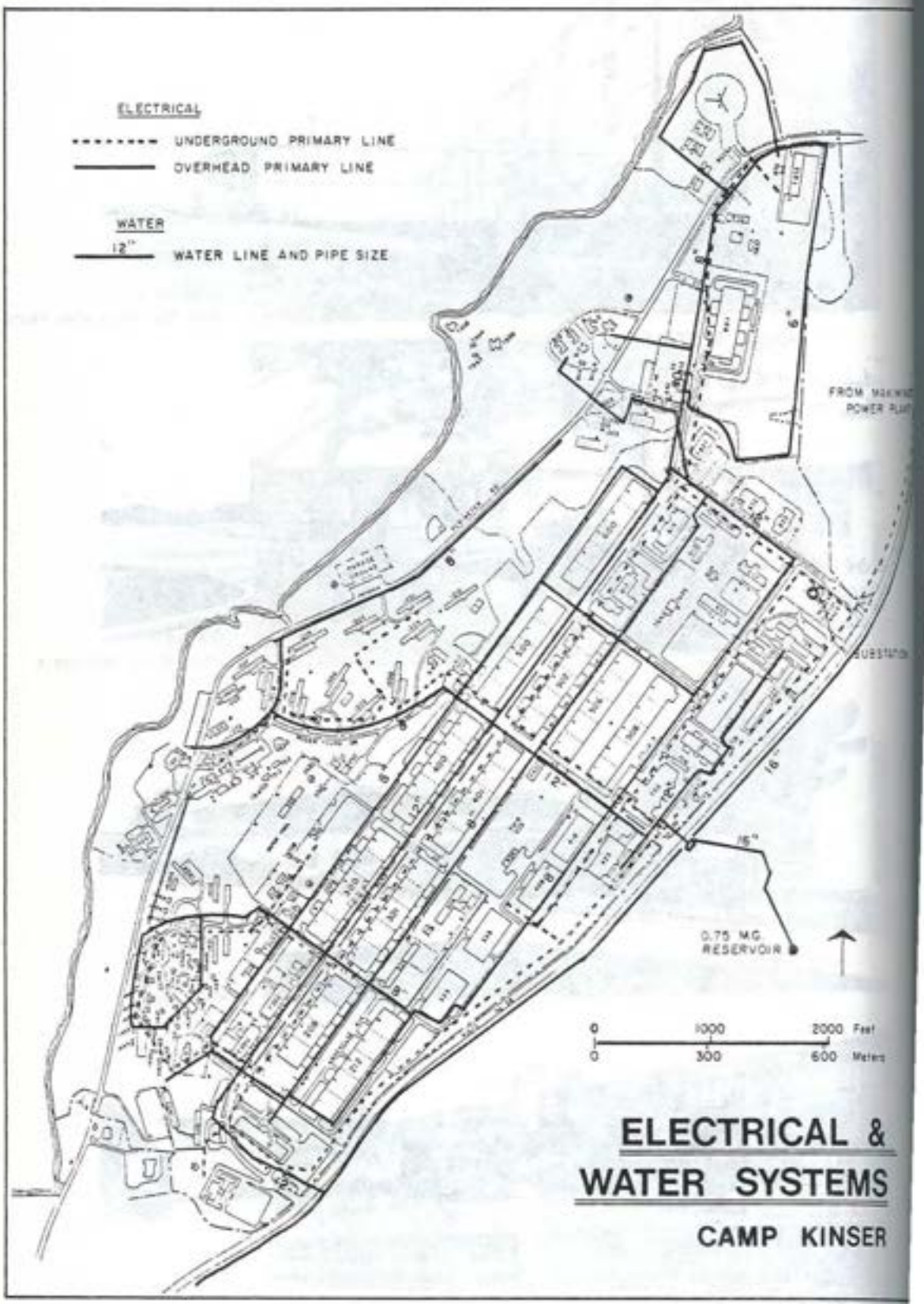

ELECTRICAL
UNDERGROUND PRIMARY LINE
OVERHEAD PRIMARY LINE
WATER
12"
WATER LINE AND PIPE SIZE
FROM MAKING POWER PLANT
SUBSTATION
16"
12"
8"
6"
0.75 MG RESERVOIR
0
1000
2000 Feet
0
300
600 Meters
ELECTRICAL &
WATER SYSTEMS
CAMP KINSER

FIGURE F-48

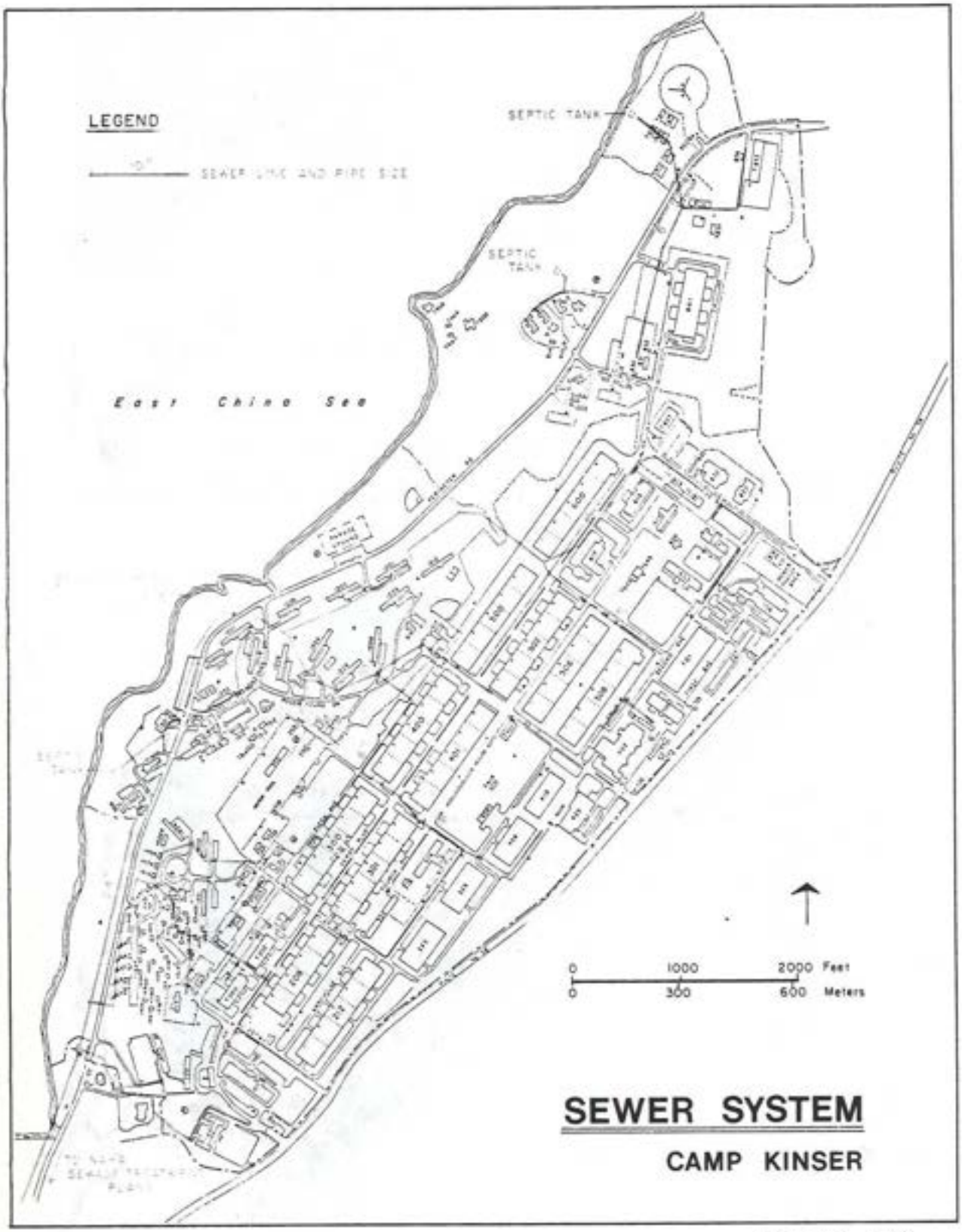

LEGEND
SEWER LINE AND PIPE SIZE
SEPTIC TANK
SEPTIC TANK
East China Sea
0 1000 2000 Feet
0 300 600 Meters
SEWER SYSTEM
CAMP KINSER

FIGURE F-50

c. Proposed Land Use

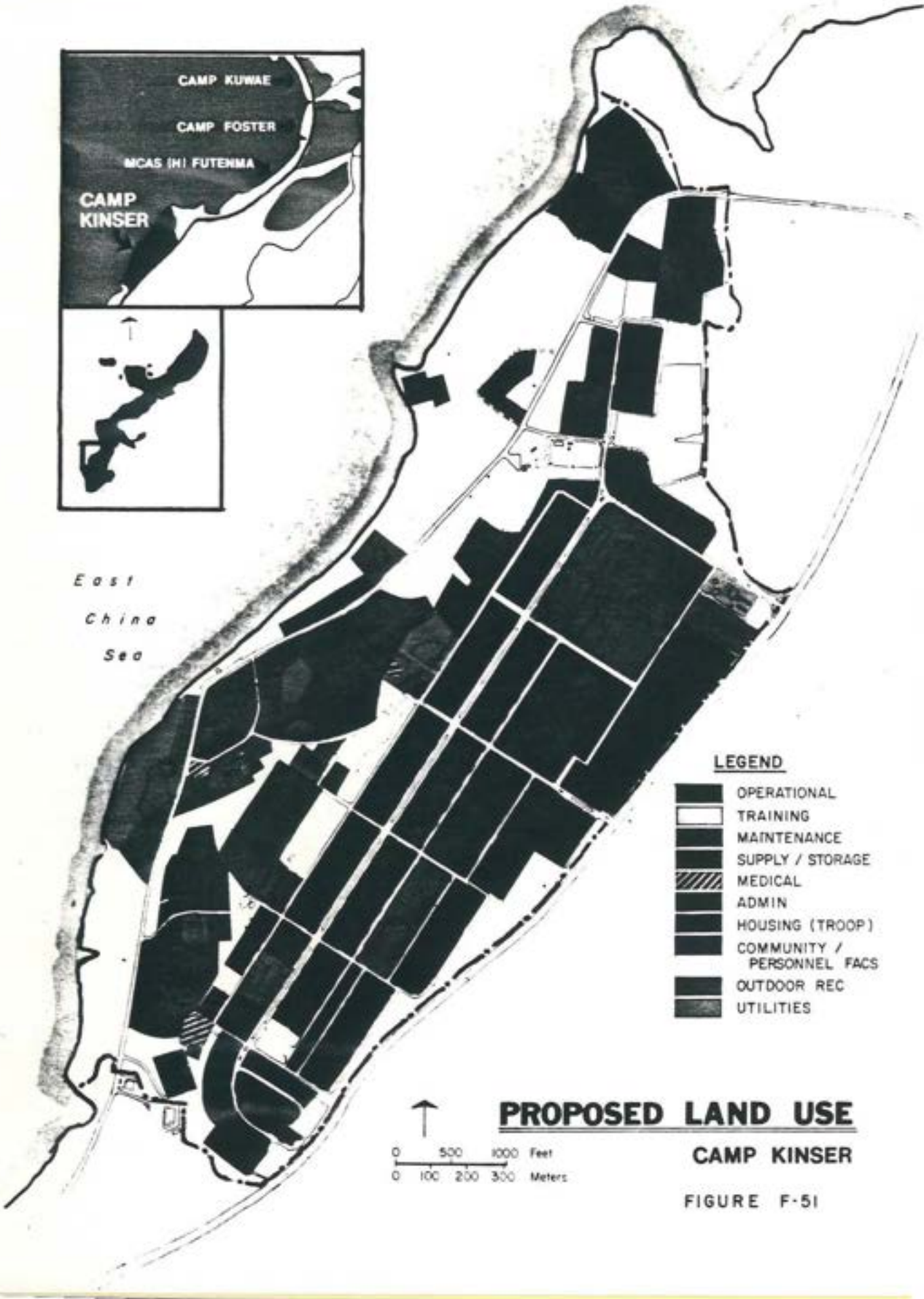
(1) Circulation. Vehicular circulation is adequate for both the industrial and the support complexes. As a matter of fact, the perimeter road, which parallels Route 58, provides a more rapid route during peak traffic hours. Roads are in good repair and appear to have been well designed and constructed.

Pedestrian traffic could benefit from additional walkways, especially between the UOPH (Building 1470) and the personnel support complex.

(2) Area Constraints. There are no man-made constraints to construction at Camp Kinser. Part of the area is too steep for building, as shown in the slope analysis (see Figure F-43).

(3) Proposed Land Use. As noted earlier, there are no significant deficiencies in Marine Corps requirements within the industrial complex. The facilities used by the Marine Corps were selected on the basis of functions. This dictated, for instance, the assignment of the maintenance buildings to the Maintenance Battalion of the 3rd FSSG.

The support area will be further developed, resulting in an addition to the troop housing area. It is also proposed to develop additional outdoor recreation, including swimming beaches in the area between the perimeter road and the East China Sea. Planned land uses are shown in Figure F-51.



PROPOSED LAND USE

CAMP KINSER

FIGURE F-51

7. Camp McTureous

a. Environmental Setting

(1) Location (See Figure F-52). Camp McTureous is located about 2 kilometers southwest of Camp Courtney. Access to the camp is provided by Local Highway 8, from either Local Highway 24 or National Highway 329.

(2) Size. Camp McTureous contains 34 hectares of land.

(3) Topography (See Figure F-53). Camp McTureous contains one steep hill with slopes in excess of 10 percent. The balance of the land is sloping but buildable.

(4) Soils (See Figure F-3). Camp McTureous contains one limestone hill. The balance of the land is Okinawa clay loam and Chinen stoney clay. Additional details may be found in Table F-1 following Figure F-3.

(5) Historic/Archeological Sites. There are privately owned tombs at Camp McTureous but no known registered historic/archeologic sites.

(6) History. See MCB Camp Butler history in Section E.

(7) Base Loading. Refer to Table E-1.

b. Existing Land Use / Facilities

(1) Existing Land Use (See Figure F-54). Camp McTureous has been used primarily as an administrative, storage and cantonment area, supplemented by a vehicle maintenance function. It also houses the only correctional facility on Okinawa, which is used by all services, along with a disciplianry barracks and a rehabilitation center (drug/alcohol) for the Marine Corps.

CAMP McTUREOUS

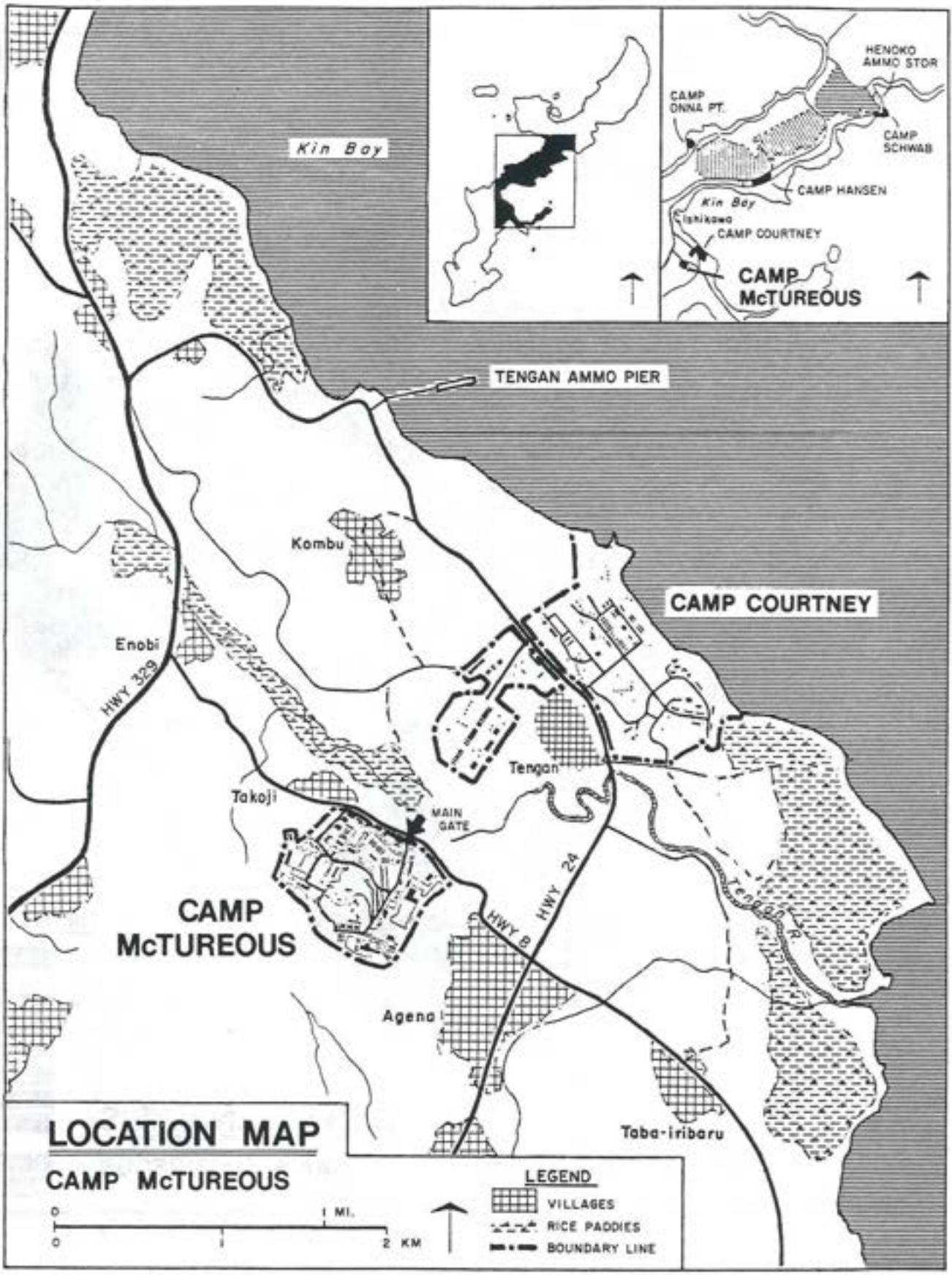
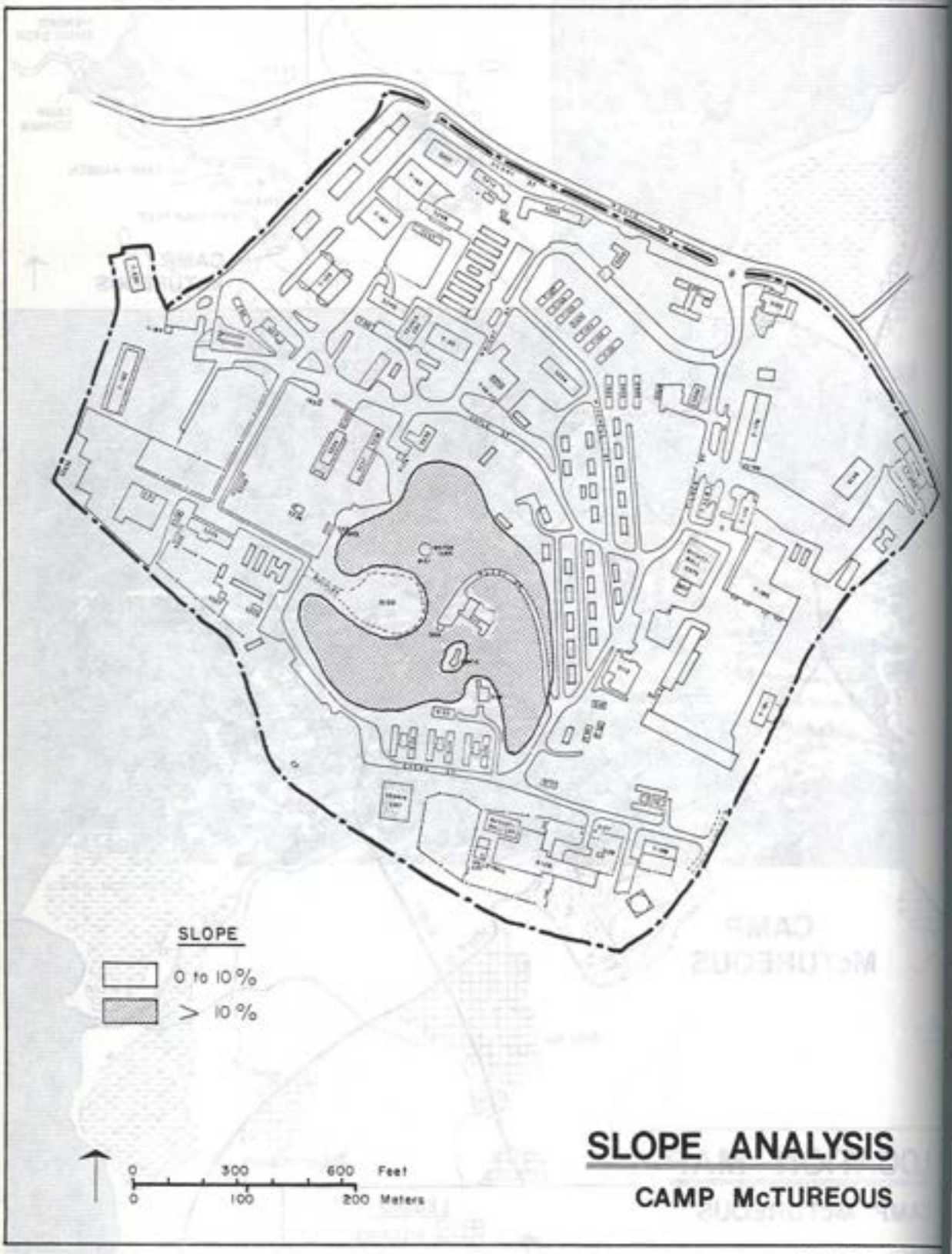

Kin Bay
HENOKO AMMO STOR
CAMP ONNA PT.
CAMP SCHWAB
CAMP HANSEN
Kin Bay
Ishikawa
CAMP COURTNEY
CAMP McTUREOUS
TENGAN AMMO PIER
Kombu
CAMP COURTNEY
Enobi
HWY 329
Tengan
Takoji
MAIN GATE
CAMP McTUREOUS
HWY 24
HWY 8
Agena
Taba-iribaru
LOCATION MAP
CAMP McTUREOUS
0
1 MI.
0
1
2 KM
LEGEND
VILLAGES
RICE PADDIES
BOUNDARY LINE

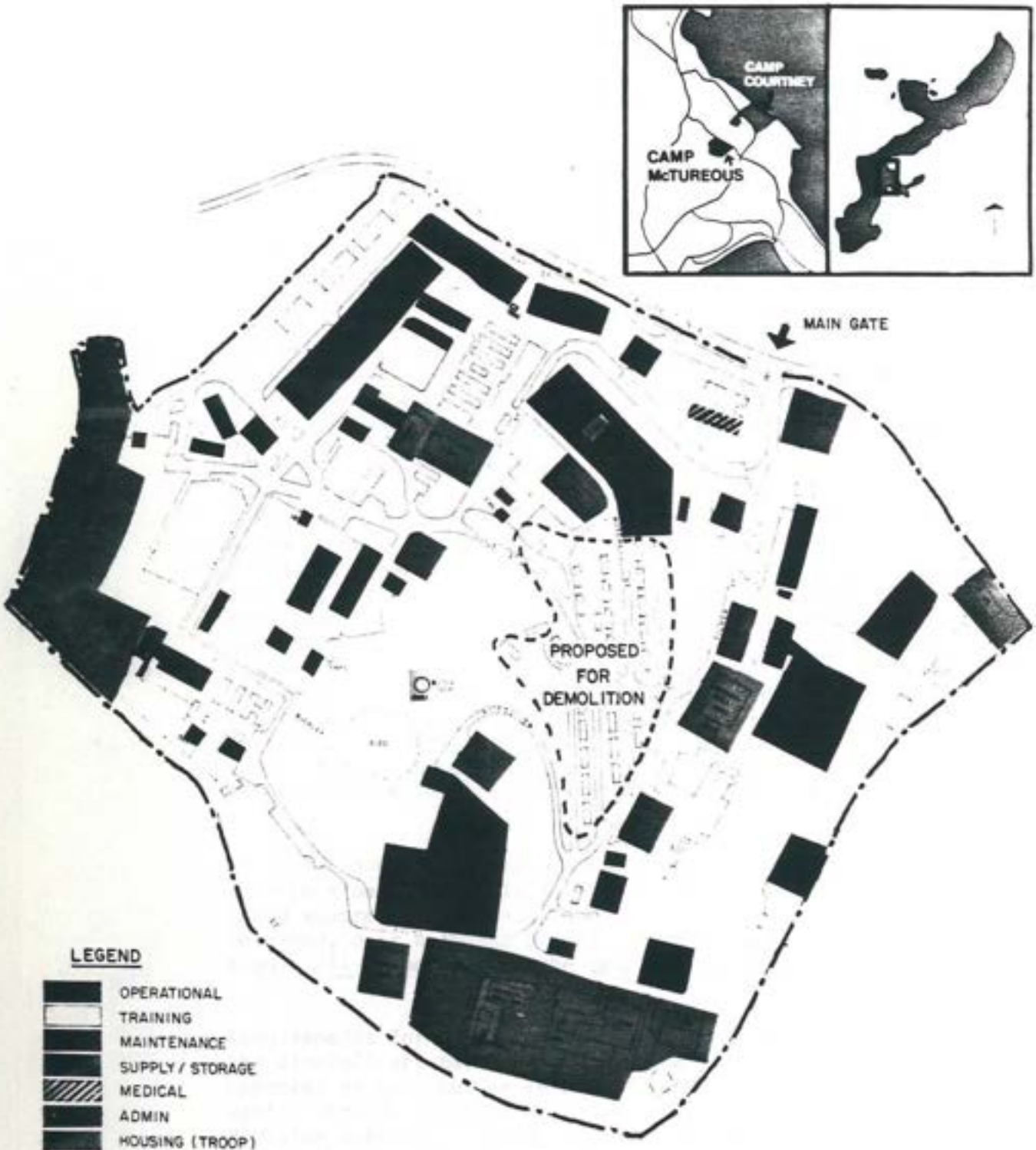
FIGURE F-52



SLOPE ANALYSIS

CAMP McTUREOUS

FIGURE F-53



EXISTING LAND USE

CAMP McTUREOUS

FIGURE F-54

The existing land use patterns at Camp McTureous evolved from a relative paucity of level building sites and a requirement to make maximum use of existing space and facilities. The result is a somewhat random grouping of uses, with functions assigned on the basis of the capability of the individual buildings rather than on its location. The total area is sufficiently small, however, so that this arrangement introduces no serious operational problems.

(2) Existing Facilities (See Figure F-55 and Table F-8). At the time of the most recent engineering evaluation (May 1979), there were 181 buildings at Camp McTureous with an aggregate floor area approaching 450,000 square feet; however, 93 of the smaller buildings with an area of about 140,000 square feet were vacant or lightly used, and had been approved for demolition. These were not evaluated. Although the majority of these buildings were still in place at the time of the field visit for the Master Plan, the buildings proposed for demolition have been listed in this section, but the table kept separate from those proposed for retention. Camp McTureous houses a disciplinary barracks and drug/alcohol abuse center, in addition to regular cantonment facilities. Of the facilities identified for retention, about one-third of the unaccompanied personnel housing spaces (excluding the disciplinary barracks and brig) and 85 percent of the other spaces are in continuous use. The vacant facilities are used for staging exercises or contingency force requirements for the 9th MAB operations.

Most of the buildings to be demolished are of temporary construction (83 of 93), and the majority are small (roughly 1,000 square feet) quonset huts. Of the buildings to be retained, over half (46 of 85) are of permanent construction. All structures in the camp are single-story.

Requirements for Camp McTureous are predicated on retaining the disciplinary barracks and confinement facility to be operated by Camp Butler personnel, and the rehabilitation center (drug/alcohol abuse) to be operated by 3rd Marine Division personnel, along with such MCB Camp Butler personnel as are necessary to operate and maintain the camp proper. Other functions are proposed for transfer to Camp Courtney at such time as new facilities can be built there. Interim use of Camp McTureous (until replacement facilities are available) is discussed in the next section.

Existing facilities to be retained are compared with long-range requirements as follows:

(a) Operational and Training Facilities

Filling Station. There is a five-outlet vehicle filling station supported by 24,000 gallons of aboveground fuel tank.

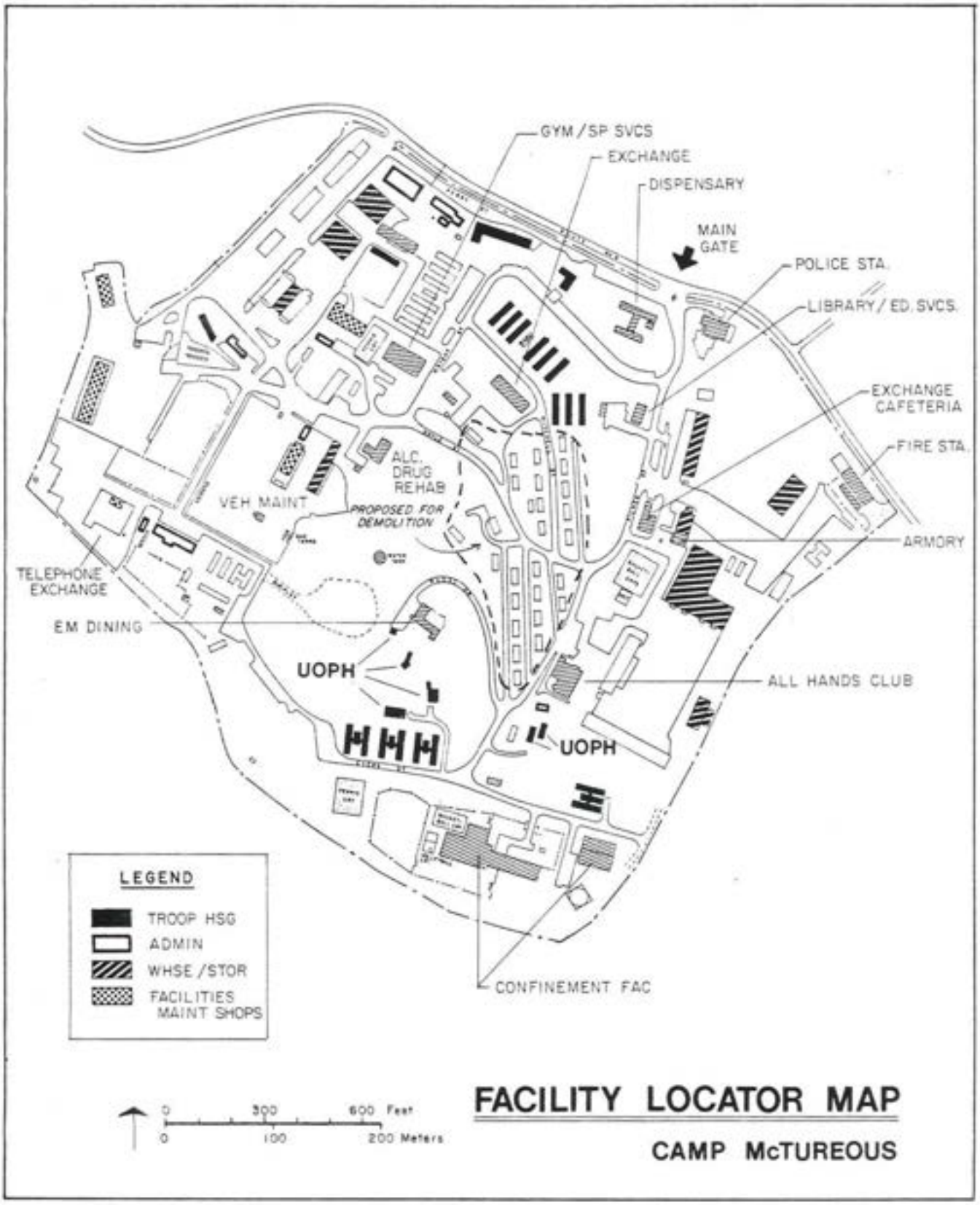
Telephone Exchange. There is a 4,488 square foot telephone exchange building at Camp McTureous. This permanent facility provides AUTOVON service through a manual switchboard for the MCB Camp Butler complex, but it will be moved to Camp Courtney, so there is no long-range requirement for this function.

Armory. A 400 square foot armory is located in a larger, semipermanent, pre-engineered building, the balance of which is used for storage. There is no long-range requirement for an armory.

(b) Maintenance Facilities

Vehicle Maintenance. There is a relatively modern motor vehicle maintenance complex at Camp McTureous. The original complex contained two 5-bay repair buildings of permanent concrete construction. One of these (Building 5234, Plate 16) is still used for maintenance, but the other is now used for storage. The vehicle maintenance complex includes a small (150 square feet) office building, along with two vehicle wash platforms and a large, open, storage area. The functions are proposed for relocation to Camp Courtney.

Material Handling Equipment Maintenance. Material handling equipment maintenance is conducted in Building T-182, a single-story, butler type, metal building, 40 feet wide by 200 feet long. There is no long-range requirement.



FACILITY LOCATOR MAP

CAMP McTUREOUS

FIGURE F-55

Table F-8

EXISTING FACILITIES
(BUILDINGS TO BE RETAINED)
CAMP MCTUREOUS

CAT CODE	DESCRIPTION	# OF BLDGS*	TOTAL FLOOR AREA (SF)		OTHER
100	OP & TRNG FACS	2 (1P/1S)	4,888		
123	Fillg Sta				5 OL
124	Veh Ready Fuel				24,000 GA
131	Phone Exchange	1 (P)	4,488		
143	Armory	1 (S)	400		
200	MAINT FACS	7 (5P/2S)	30,491		
214	Veh Maint Shop	2 (P)	3,542		
	Veh Wash Platform				2 EA
218	MHE Shop	1 (S)	8,000		
219	Facs Maint	4 (3P/1S)	18,949		
400	SUPPLY FACS	16 (7P/6S/3T)	89,410		
441	Gen Supply	16 (7P/6S/3T)	89,410		
500	MEDICAL FACS	1 (P)	6,245		
530	Dispensary	1 (P)	6,245		
600	ADMIN FACS	9 (7P/2T)	25,792		
610	Admin Bldgs	9 (7P/2T)	25,792		
700	HSG & COMMUNITY FACS	52 (26P/8S/18T)	152,020		
721	UEPH	8 (P)	32,364		213 PN
722	Dining Fac	1 (P)	6,011		130 PN
724	UOPH	9 (4P/4T/1S)	10,559		18 PN
725	Troop Hsg Emergency	11 (T)	21,701		140 PN (est)
730	Fire Sta		4,320)		
	Confinement Fac		29,348)		203 PN
	Police Sta		5,731)		
	Gate Hse	12 (9P/2S/1T)	273)	45,298	
	Misc		2,400)		
	Alcohol/Drug/Chapel		3,226)		
740	Exchange/Morale/Rec Facs	9 (5S/4T)	36,183		
750	Outdoor Courts/Fields				8 EA
800	UTILITIES				
812	Elec Distr Lines				124,496 LF
832	Sewer Lines				13,453 LF
842	Water Distr Lines				33,444 LF
851	Roads				4.28 MI
	TOTAL	85 (46P/16S/23T)			

*P = Permanent
S = Semipermanent
T = Temporary

EXISTING FACILITIES
(BUILDINGS APPROVED FOR DEMOLITION)
CAMP MCTUREOUS

CAT CODE	DESCRIPTION	# OF BLDGS	TOTAL FLOOR AREA (SF)	OTHER
100	OP & TRNG FACS	1	1,920	
171	Trng Material Stg	1	1,920	
200	MAINT FACS	5	7,840	
214	Auto Veh Maint	1	960	
219	Facs Maint Shops/Stores	4	6,880	
400	SUPPLY FACS	8	23,624	
441	Gen Supply	8	23,624	
500	MEDICAL/DENTAL FACS	2	4,180	
530	Clinic--Outpatient	1	2,810	
540	Dental Clinic	1	1,370	
600	ADMIN FACS	25	35,657	
610	Admin Bldgs	25	35,657	
700	MSG & COMMUNITY FACS	52	66,310	
721	UEPH	2	1,968	8 PN
722	Dining Fac	1	12,000	
723	Latrine	6	4,960	
724	UOPH	1	1,008	4 PN
725	Troop Hsg, Emergency	34	38,384	475 PN
730	Police Sta/Locker Room/Rehab Ctr	5	5,280	
740	Exchange/Morale/Rec Facs	3	2,710	

Facilities Maintenance. There are four buildings assigned to facilities maintenance. The largest single building (No. 231, Plate 16) consists of three rows of 40-foot wide butler buildings joined together. The area is 12,703 square feet. A permanent structure of some 4,400 square feet is used for telephone repair. A small 440 square foot permanent building and a 40-foot by 100-foot butler building are used for Public Works storage. Public Works functions are proposed for relocation to Camp Courtney so there is no long-range requirement.

(c) Warehouses. There are 16 buildings, totaling about 90,000 square feet, used for warehouses at Camp McTureous. These are grouped on the east and west sides of the camp. The largest single building, a multiple butler, contains 28,000 square feet of floor space, while the smallest is a permanent concrete structure measuring six feet by six feet. Only 7 of the 16 buildings have floor areas in excess of 4,000 square feet. The long-range warehouse requirement is 10,000 square feet.

(d) Medical Facilities. Part of a former administration building with 6,245 square feet of space is being used for medical purposes. The long-range dispensary requirement is 550 square feet.

(e) Administrative Facilities. There are 9 buildings, with a total of over 25,000 square feet of floor space, that are classified as administrative buildings, although three of the smaller ones (total 2,800 square feet) were vacant at the time of the Master Plan field visit. Five of the six buildings in use are of permanent construction, with the largest building at the northeast corner of the camp having a floor area of 8,256 square feet. The total long-range requirement for administration space is 4,195 square feet.

(f) Housing and Community Facilities. There are 52 buildings, with a floor area of over 150,000 square feet, at Camp McTureous that are used for housing and community facilities. Major sub-functions are as follows:

UEPH. The latest Unaccompanied Personnel Housing Survey lists five permanent buildings as UEPH, which are inadequate, but can be made adequate for 161 people. Four of

these were originally built as UOPH. Building 5123 (Plate 16) is typical. These are H-shaped buildings with gang heads in the cross of the "H." One building is a permanent administration building that is proposed for conversion to enlisted housing. Three other permanent buildings were designed as UEPH but have detached heads so cannot be reasonably made adequate, although they have space for 54 people. The long-range base loading is 59 enlisted, plus another 59 for the disciplinary barracks and rehabilitation center.

Dining Facility. Building 5117 (Plate 16), a former Officers Club located on the highest point at Camp McTureous, is used as a dining facility. This is a 6,000 square foot permanent building judged to be adequate to feed the required 130 people to be served.

UOPH. Nine buildings have been identified as UOPH structures. Four structures are of permanent construction and five are semipermanent. The permanent buildings can be made adequate for eight people; the others cannot. Long-range base loading is one office.

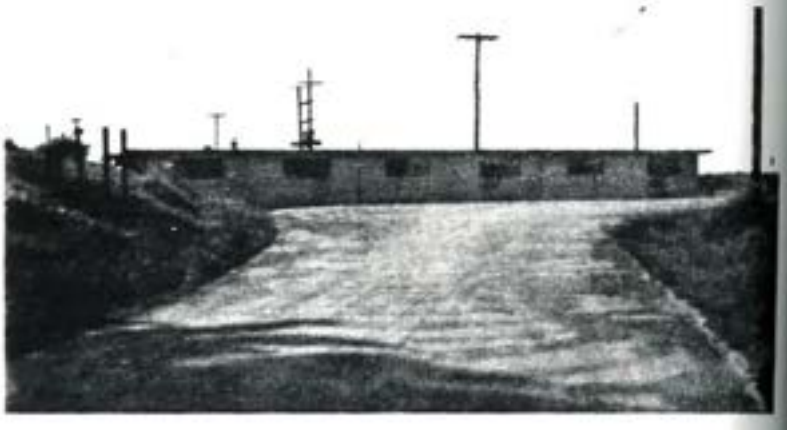
Emergency Troop Housing. Eleven temporary structures have been retained for emergency troop housing. The aggregate area is 21,701 square feet, and the nominal emergency capacity is 251 men. There is no stated requirement.

Confinement Facility. A joint-service confinement facility for all U.S. forces on the island of Okinawa. This permanent facility consists of a single 24,000 square foot building (No. 5128) constructed in 1969 with a design capacity of 150 men. It has been supplemented with two small permanent buildings and a 4,000 square foot butler building. There is a long-range requirement for an additional 12,211 square feet of space in order to meet current criteria for a 100-man facility (refer to Plate 17).

Rehabilitation Center. The chapel at Camp McTureous, a permanent 3,266 square foot structure, is used as a rehabilitation center for drug/alcohol abuse. There is a requirement for an additional 8,774 square feet of living space, which can be met in existing UEPHs.

BLDG 5234
5-BAY VEHICULAR MAINT BLDG

BLDG 231
FACILITIES MAINT
(3 ROWS OF 40' WIDE
BUTLER BLDGS JOINED TOGETHER)



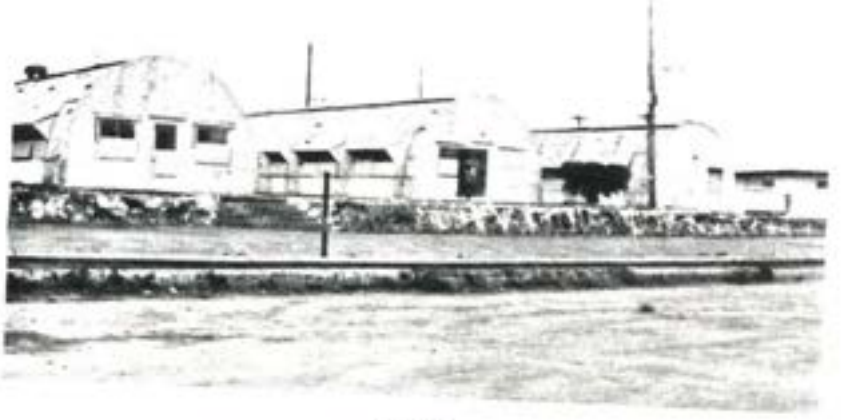
BLDG 5123
UEPH

BLDG 5117
ENLISTED DINING FACILITY

BLDG 5128
CONFINEMENT FACILITY

BLDG 5112
ALL HANDS CLUB

BLDG T-61-A
THEATER



BLDGS T-200, T-201, T-202
TYPICAL QUONSETS
SCHEDULED FOR DEMOLITION

Fire and Police Stations. There is an active fire station at the northeast corner of Camp McTureous, with two buildings totaling 4,320 square feet. The station opens directly onto a public road and provides fire protection service. The police station occupies a permanent 5,731 square foot building just inside the North Gate. The future police station requirement is 2,800 square feet. It is proposed to move the fire station to Camp Courtney.

Exchange, Morale and Recreational Facilities. There are nine buildings used for Exchange, morale and recreation, as follows:

- An Exchange cafeteria, operating in a modified quonset hut. Facility is considered substandard.

- Exchange service outlets, operating in about 2,000 square feet of a 5,720 square foot butler-type building. Facility is considered substandard.

- An Exchange gas station with two outlets and a permanent 96 square foot office building.

- A gymnasium and Special Services Issue Office, operating out of a 60-foot wide, 7,200 square foot, butler-type building. Facility is considered substandard.

- A 266-seat theater, operating in 4,953 square foot butler building (No. T-61A, Plate 17).

- A 6,351 square foot All Hands Club, in a semipermanent building.

- A library and education services office in a permanent, 2,145 square foot building.

- A 4,800 square foot community storage (butler) building.

- One covered handball court.

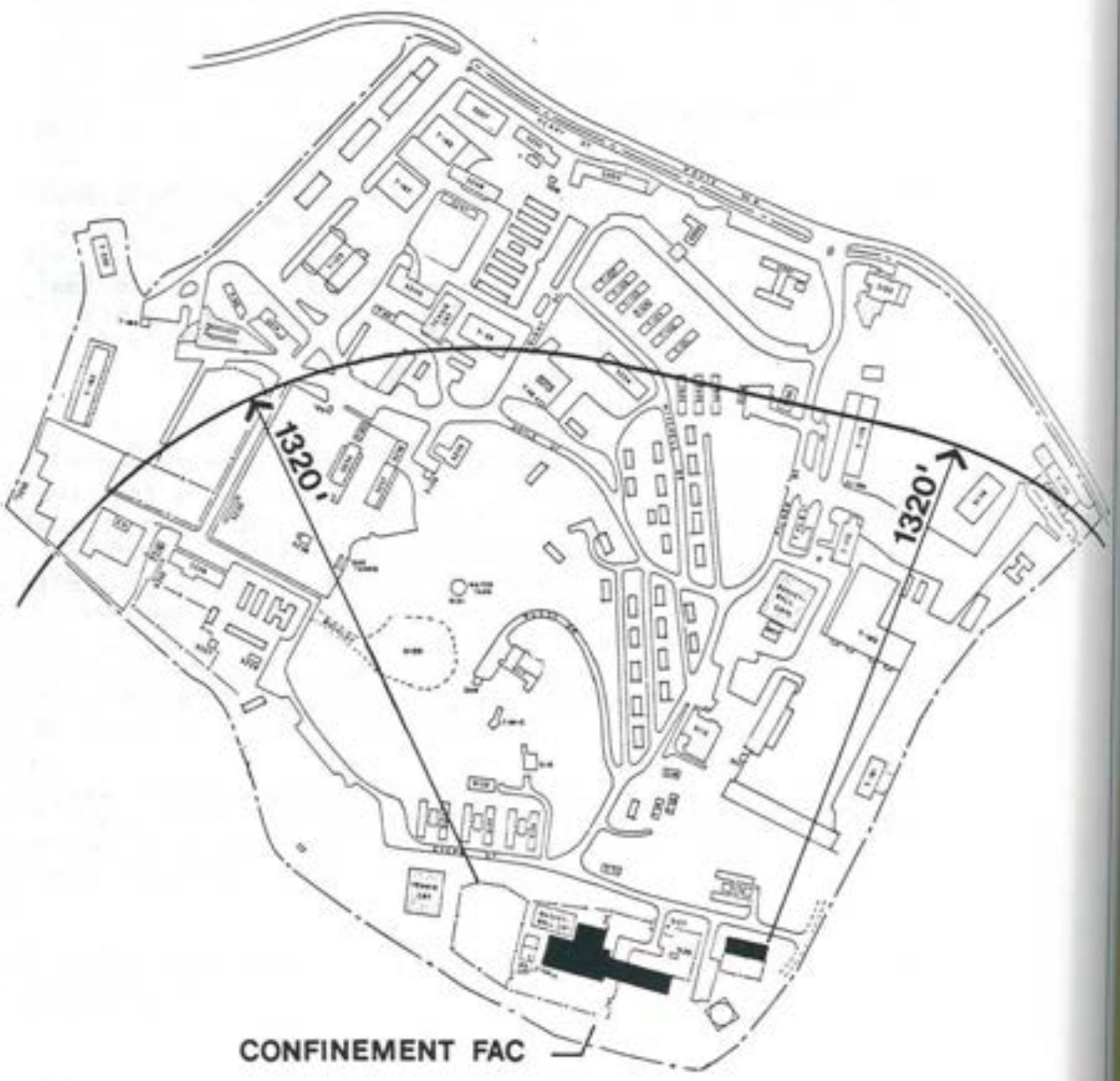
Additionally, there are seven outdoor playing courts and one playing field.

c. Proposed Land Use

(1) Circulation. Vehicle circulation within Camp McTureous is not a problem. The existing road patterns are adequate for automobiles. There is no sidewalk system so pedestrians walk on the roads. Current and projected loadings are low enough so that this is not a severe hazard. Any schemes involving additional development and personnel should include additional sidewalks.

(2) Area Constraints. The only significant man-made constraint to the development of Camp McTureous stems from the presence of the correctional facility. NAVFAC Design Manual No. 37 specifies that many facilities, including family housing, unaccompanied personnel housing and Exchange facilities, should not be located within one-fourth mile of correctional facilities. Conformance to this criterion would eliminate about two-thirds of Camp McTureous from consideration for such facilities (see Figure F-56).

(3) Planned Land Use. No changes are planned to the existing land use (refer back to Figure F-54).



1/4 MILE EXCLUSION

CAMP McTUREOUS CONFINEMENT FAC

FIGURE F-56

8. Camp Onna Point

a. Environmental Setting

(1) Location (See Figure F-57). Camp Onna Point is a cantonment area on the west coast of Okinawa, about 10 kilometers northwest of Camp Hansen. Access to the camp is from National Highway 58.

(2) Size. Camp Onna Point contains 60 hectares of land.

(3) Topography. Camp Onna Point is predominantly flat with elevations varying from 3 to 10 meters.

(4) Soils (Refer back to Figure F-3 and Table F-1). Onna Point contains a strip of rough limestone along the waterfront. The lower elevations are Akamaru and Aha soils, while the main portion of the camp is Okinawa clay loam.

(5) Historic/Archeologic Sites. There are no known registered historic/archeologic sites at Camp Onna Point.

(6) History. Camp Onna Point was developed as an Air Force communications site. Earliest construction dates from 1956. A use permit was granted to the Marine Corps by the Air Force in 1971 and it was subsequently transferred to the Marine Corps. Camp Onna Point has been offered to the GOJ in exchange for replacement facilities to be built elsewhere; however, no response has been received.

(7) Base Loading. Refer to Table E-1.

CAMP ONNA POINT

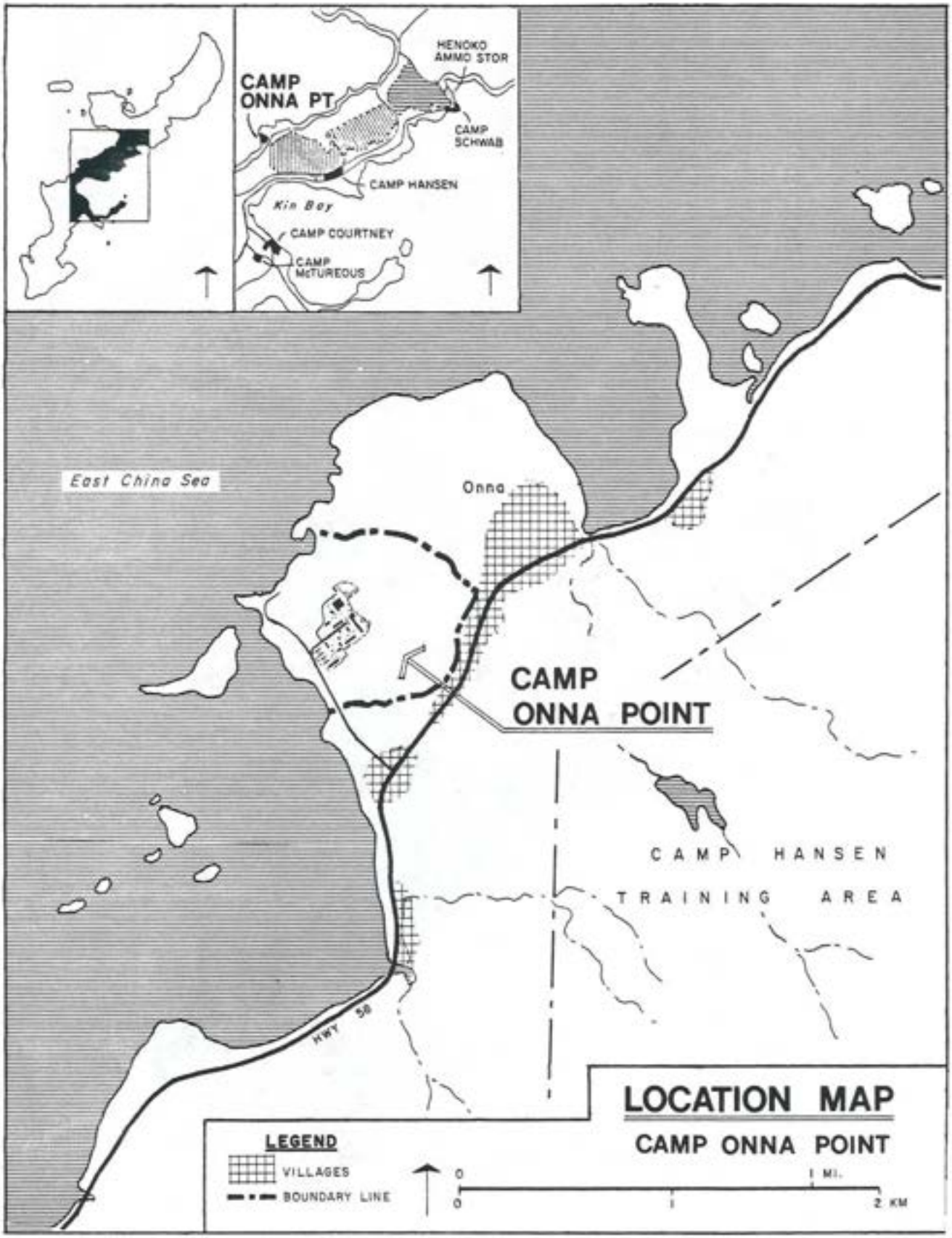

CAMP ONNA PT
HENOKO AMMO STOR
CAMP SCHWAB
CAMP HANSEN
Kin Bay
CAMP COURTNEY
CAMP McTUREOUS
East China Sea
Onna
CAMP ONNA POINT
CAMP HANSEN TRAINING AREA
HWY 58
LOCATION MAP
CAMP ONNA POINT
LEGEND
VILLAGES
BOUNDARY LINE
0
1 MI.
0
1
2 KM

FIGURE F-57

b. Existing Land Use / Facilities

(1) Existing Land Use (See Figure F-58). Camp Onna Point originally had a centrally sited 200-man cantonment area surrounded by communications antennas which have since been removed. The low-lying area between Route 58 and the cantonment area (about 50 percent of the total land) is now being farmed. The open area between the cantonment area and the ocean is not used.

The cantonment area proper consists of a central personnel support complex surrounded on three sides by unaccompanied personnel housing. Administration, storage and maintenance facilities are on the fourth side. There is one beach suitable for recreation.

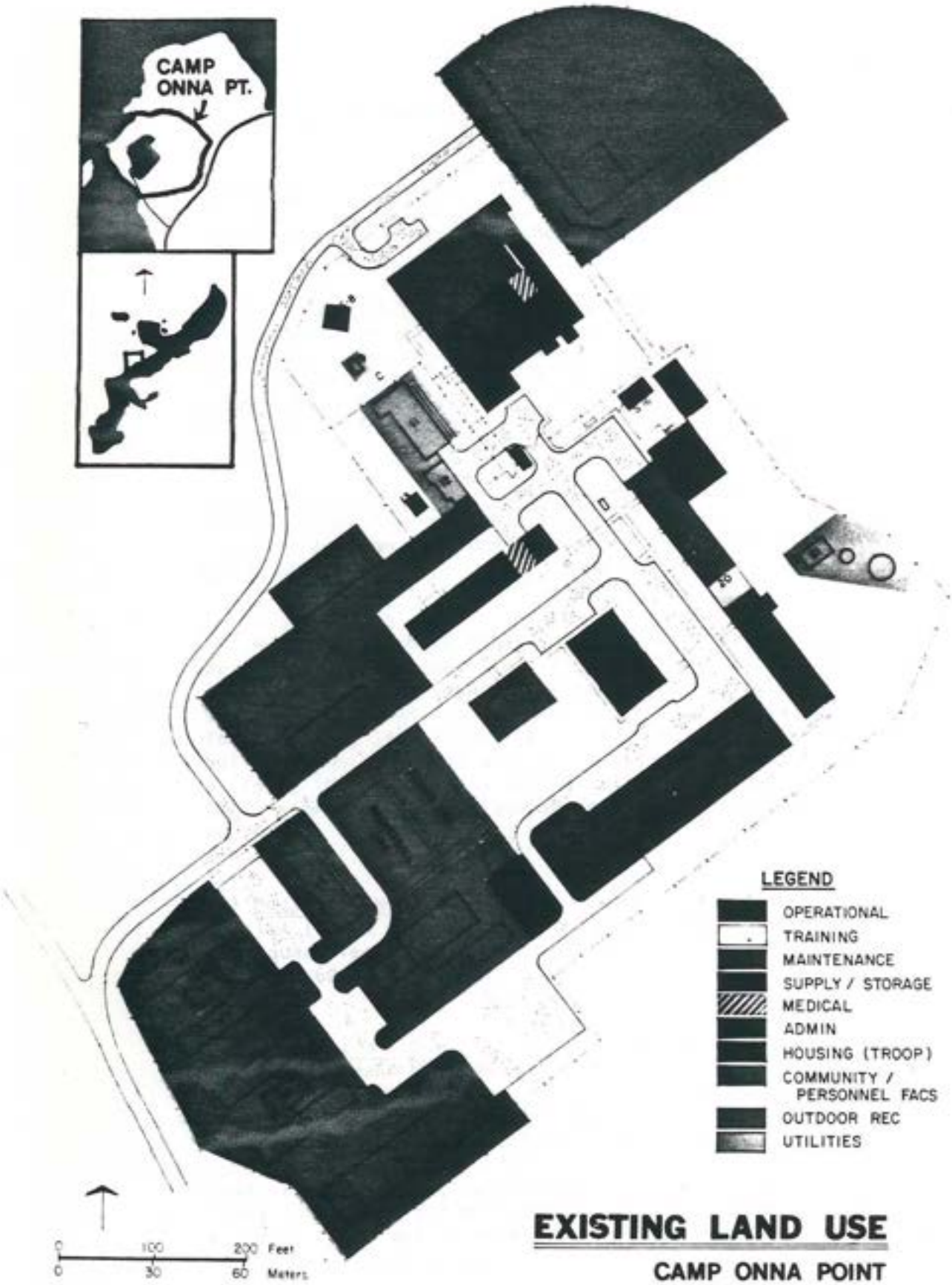
(2) Existing Facilities (See Figure F-59). The Camp Onna Point inventory lists 27 buildings with a total area of slightly over 125,000 square feet. The major functional areas are shown in the existing facilities summary, Table F- 9. The majority of the buildings are of permanent, reinforced concrete construction built by the Air Force between 1956 and 1969. Four of the buildings (No. 10 (administration/storage/maintenance), No. 20 (dining facility/UOPH/administration), No. 25 (SNCO UEPH) and No. 51 (UEPH)) are two-story structures; the rest is single-story. Personnel support facilities include a weight lifting room, an Enlisted Club, a theater and an Exchange. Outdoor recreational facilities consist of a lighted softball field, two lighted playing courts and a swimming beach.

A more detailed discussion follows:

(a) Operational and Training Facilities

Armory. There is a 520 square foot armory within the two-story, multi-purpose building (No. 10). The requirement is 576 square feet, so the existing facility is adequate.

Academic Instruction Facilities. There are classroom facilities totaling 1,452 square feet in the two-story building (No. 20). The requirement is essentially the same (1,500 square feet).



EXISTING LAND USE

CAMP ONNA POINT

FIGURE F-58

(b) Maintenance Facilities

Parachute Loft. A part of Building 10 (2,500 square feet) is used as a parachute loft. The requirement is 4,000 square feet, so there is a shortfall of 1,500 square feet.

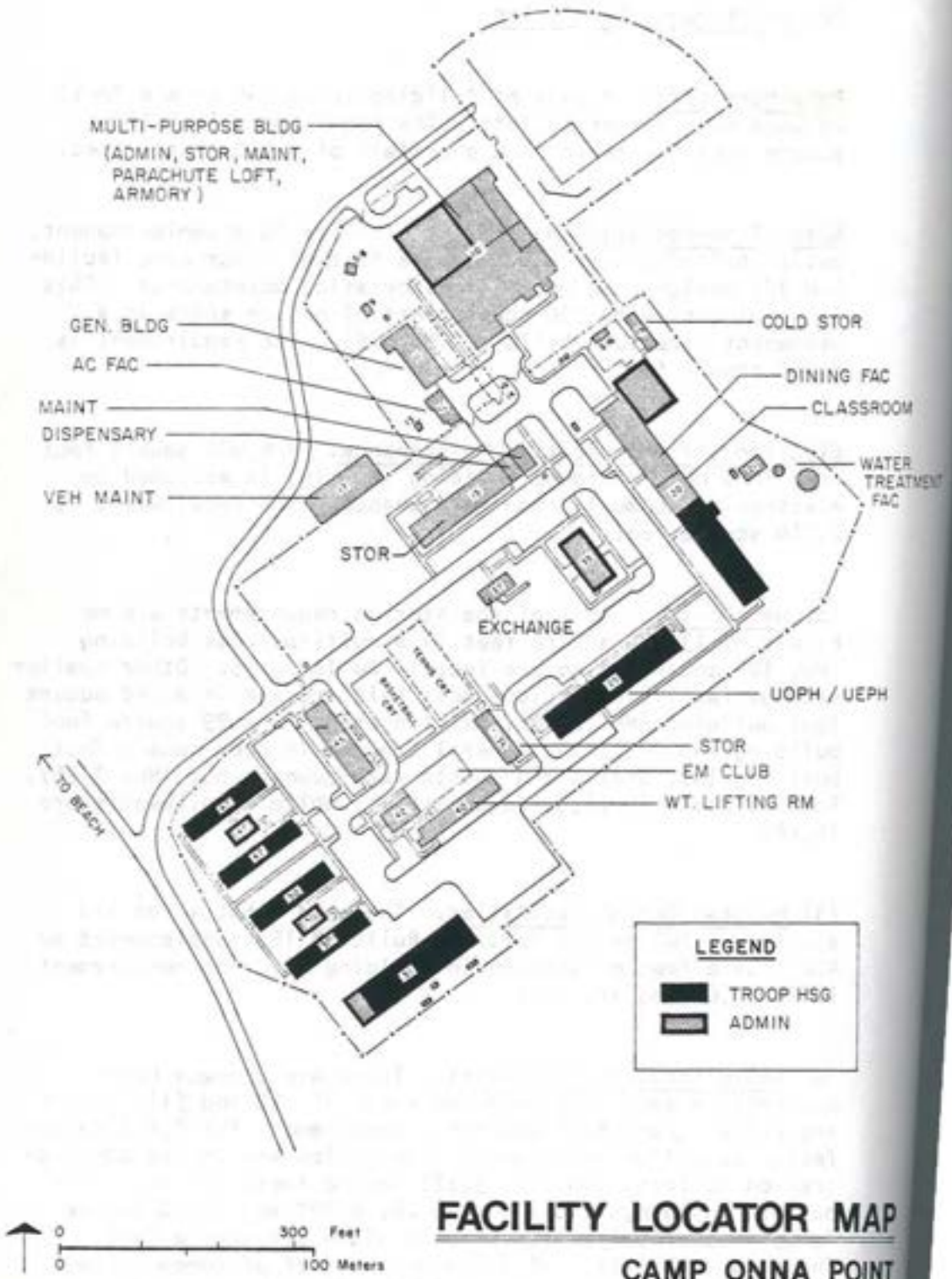
Motor Transportation Maintenance. There is a semipermanent, butler building with 4,000 square feet of floor area (Building 17) assigned to motor transportation maintenance. This is supplemented by 700 square feet of office space in a permanent warehouse building (No. 15). The requirement is 8,500 square feet.

Electronics/Communication Maintenance. A 4,000 square foot area in a multi-purpose building (No. 10) is assigned to electronics/communication maintenance. The requirement is 6,316 square feet.

(c) Warehouses. Most of the storage requirements are met by use of 13,070 square feet in a multi-purpose building (No. 10) and 4,198 square feet in Building 15. Other smaller storage facilities include mess hall storage in a 240 square foot building (No. S-16), paint storage in a 99 square foot building (No. 13), and general storage in a 64 square foot building (No. S-8) and a substandard quonset hut (No. T-36). Total storage is 18,931 square feet, while requirements are 16,240.

(d) Medical/Dental Facilities. There is a battalion aid station (1,200 square feet) in Building 15, supplemented by 420 square feet of storage in Building 10. The requirement is for 1,620 square feet.

(e) Administrative Facilities. There are company headquarters in each UEPH building (Nos. 47, 50 and 51), totaling 2,754 square feet against a requirement for 6,648 square feet. Battalion headquarters facilities are in the administration building (No. 35, 3,221 square feet) and in multi-purpose buildings (Nos. 10 and 20, 6,000 and 5,000 square feet, respectively), for a total of 14,221 square feet. There is a shortfall of 3,894 square feet of company headquarters space and an excess of 7,028 square feet of battalion headquarters space.



FACILITY LOCATOR MAP

CAMP ONNA POINT

FIGURE F

Table F-9

EXISTING FACILITIES
CAMP ONNA POINT

CAT CODE	DESCRIPTION	# OF SPACES[a]	TOTAL FLOOR AREA (SF)	OTHER
100	OP & TRNG FACS	2	1,972	
143	Armory	1	520	
171	Acad Instr Bldg	1	1,452	
200	MAINT & PROD FACS	4	11,200	
211	Parachute Loft	1	2,500	
214	MT Maint	2	4,700	
217	Elecnx Maint	1	4,000	
400	SUPPLY FACS	6	18,931	
441	Gen Stg	6	18,931	
500	MEDICAL FACS	2	1,620	
550	Dispensary	2	1,620	
600	ADMIN FACS	6	6,975	
610	Admin Ofc	6	6,975	
700	HSG & COMMUNITY FACS	18	26,292	227 PN
721	UEPH	5	N/A	202 PN
722	Dining Fac	2	9,558 (250 PN)	
724	UOPH	1	N/A	25 PN
730	Community Facs/Personnel Suppt	3	991	
740	Exchange/Morale/Rec Facs	7	15,743	
750	Outdoor Courts/Fields			3 EA
800	UTILITIES			
811	Elect Power Plant	1	2,728	
812	Elect Distr Lines			18,457 LF
832	Sewer			6,372 LF
840	Water			20,365 LF
851	Roads			4.78 MI

[a]Does not match building totals. Some buildings have multiple uses.

(f) Housing and Community Support Facilities

Unaccompanied Personnel Housing. The Unaccompanied Personnel Housing Survey lists an inventory of 206 UEPH spaces in Buildings 20, 47, 50 and 51 that can be made adequate against a requirement of 194 spaces. Current occupancy is 195 spaces. UOPH spaces are 36 available in Building 25, a requirement of 25 and an actual occupancy 32.

Dining Facility. The dining facility in Building 20 is capable of feeding 250 people, with a requirement of 235.

Police Station. A 920 square foot area in Building 10 is assigned for camp guards and is adequate.

Exchange, Morale and Recreation Facilities. Exchange, morale and recreation activities are housed in six locations as follows:

- Exchange services outlets are located in a substandard quonset hut (1,040 square foot building (No. T-32)).

- A barber shop occupies 140 square feet of a substandard quonset hut (No. T-36).

- A 363 square foot library is located in a multi-use building (No. 20).

- All of the 3,304 square foot building (No. 40) is used as a weight room.

- All of the 4,340 square foot building (No. 42) is used for an Enlisted Club.

- Building 45 is a 5,556 square foot theater.

The total requirement for Exchange, morale and recreation facilities is for 9,000 square feet, as opposed to 13,563 square feet existing.

(3) Utilities. Utilities drawings are not available for Camp Onna Point.

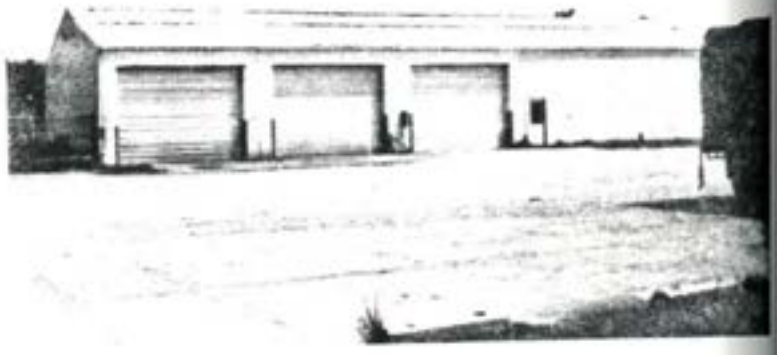
c. Proposed Land Use

(1) Circulation. Circulation, both vehicular and pedestrian, is adequate. There are almost 3,000 feet of sidewalk and 4.78 miles of road, although most of the roads are for access to the cantonment area and the old antenna fields which are not in use.

(2) Area Constraints. There are no formal constraints to further development at Camp Onna Point; however, current farming operations probably preclude expansion to the east.

(3) Planned Land Use. No changes are planned to the existing land use (refer back to Figure F-58).

BLDG 20
MULTI-PURPOSE BLDG
(DINING FACILITY
ACAD. INSTR, LIBRARY, BN HQ, UEPH



BLDG 17
MOTOR TRANSPORTATION MAINT

BLDG 25
UEPH (SNCO)

PLATE

BLDG 51
UEPH, CO HQ

BLDG 45
THEATER

BLDG 37
LOCATION EXCHANGE

PLATE 19

9. Northern Training Area

a. Environmental Setting

(1) Location (See Figure F-60). The Northern Training Area is located in Northeast Okinawa about 87 road kilometers northeast of Camp Foster. The training area is remote, with a semi-improved road system being the only means of highway access. Small villages dot the eastern shoreline adjacent to the training area. Transportation by road from Camp Schwab (the closest camp) takes about one and one-half hours.

(2) Size. The Northern Training Area contains about 8,600 hectares of land, including the Aha Training Area. It is mostly undeveloped and used for troop training.

(3) Topography. Terrain at the Northern Training Area consists of hills and deep gulches. Level areas are extremely limited. The entire training area is in the watershed in which the Government of Okinawa plans to develop a system of dams and reservoirs to provide potable water.

(4) Soils. Soils of the area consist predominantly of forested, light-colored, acid, loamy soils of low fertility, less than 1/2 meter deep over partly weathered bedrock which is generally fine-grained schist or feldspathic sandstone.

(5) Historic/Archeologic Sites. No historic/archeologic sites have been identified in the area.

(6) Base Loading. Refer to Table E-1.

NORTHERN TRAINING AREA BASE CAMP

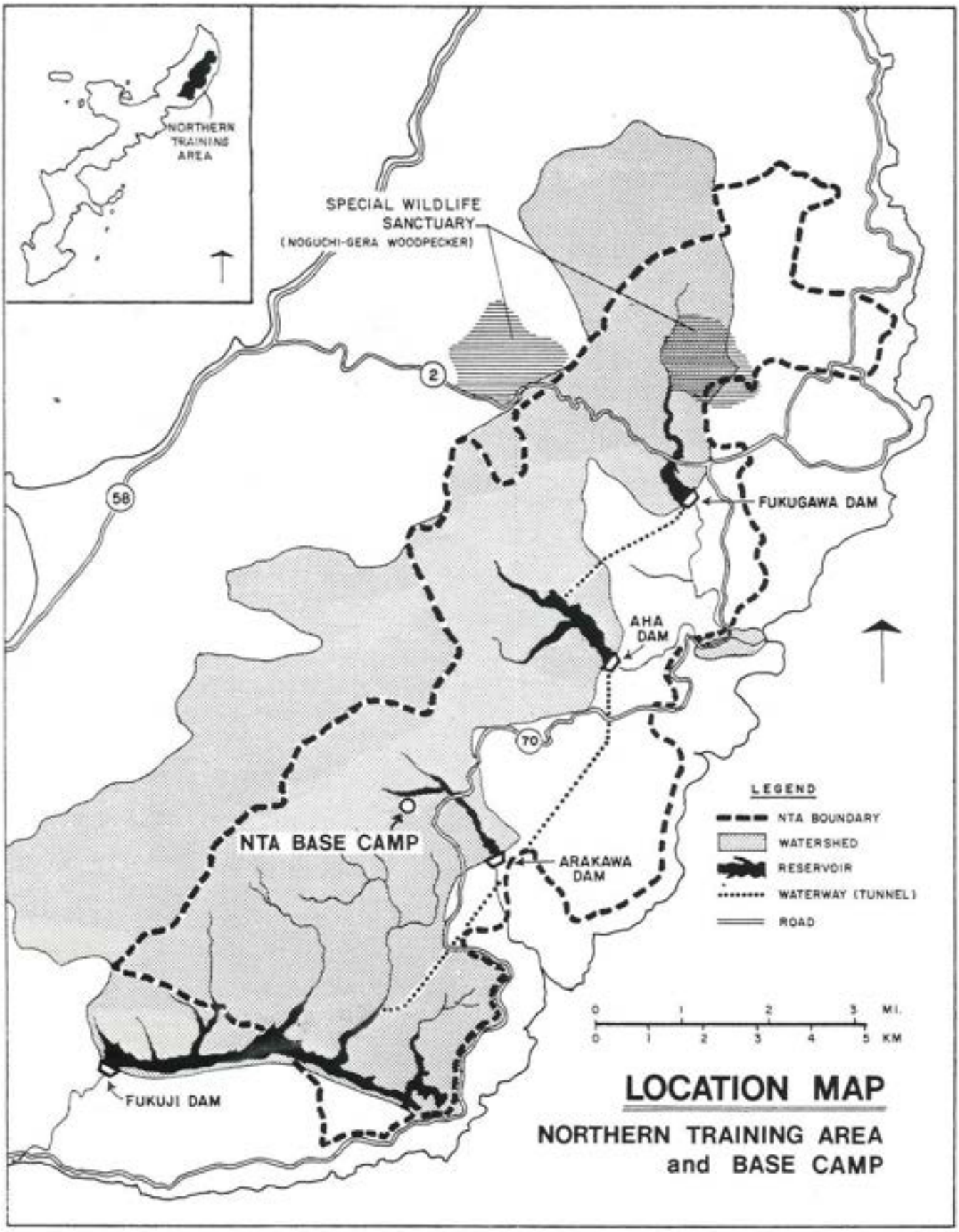

NORTHERN TRAINING AREA
SPECIAL WILDLIFE SANCTUARY
(NOGUCHI-GERA WOODPECKER)
2
58
70
FUKUGAWA DAM
AHA DAM
NTA BASE CAMP
ARAKAWA DAM
FUKUJI DAM
LEGEND
NTA BOUNDARY
WATERSHED
RESERVOIR
WATERWAY (TUNNEL)
ROAD
0 1 2 3 MI.
0 1 2 3 4 5 KM
LOCATION MAP
NORTHERN TRAINING AREA
and BASE CAMP

FIGURE F-60

b. Existing Land Use / Facilities

(1) Existing Land Use (See Figure F-61). The area is mostly undeveloped. The entire area is used for troop training. A base has been established at the south-central sector of the training area for operations, administration and minimal personnel support facilities.

The Northern Training Area can accommodate training of battalion-size units; however, training is usually limited to the company-size units of about 250 men. These troops live in tents at primitive camp sites during their training period.

No live-firing in the area is permitted. Blanks, illuminators, and simulators are allowed.

Seventeen helicopter landing zones are located throughout the training area. Many agricultural plots, mainly pineapple fields, exist in the Northern Training Area.

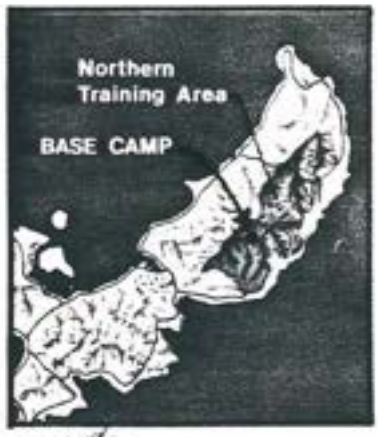
Highway 70 (formerly Highway 13) parallels the training area along the southeastern boundary. Most of this two-lane highway is surfaced with asphaltic concrete pavement but is relatively narrow and winding. Short sections of this highway, including a 3 kilometer stretch near the base camp, remain unpaved.

As mentioned previously, much of the area is planned as a surface water source. Four dams with reservoirs will ultimately be constructed in or adjacent to the area as follows:

- The Aha Dam with a capacity of 19 billion liters and a reservoir area of 80 hectares.

- The Fukugawa Dam with a capacity of 3.8 billion liters and a reservoir area of 36 hectares.

- The Shinkawa Dam with a capacity of 1.8 billion liters and a reservoir area of 20 hectares.



LEGEND

- OPERATIONAL
- TRAINING
- MAINTENANCE
- SUPPLY / STORAGE
- MEDICAL
- ADMIN
- HOUSING (TROOP)
- COMMUNITY / PERSONNEL FACS
- OUTDOOR REC
- UTILITIES

0 300 600 Feet
0 100 200 Meters

EXISTING LAND USE

NTA BASE CAMP

FIGURE F-61

- The Fukuchi Dam which is outside the area but whose 140-hectare area is within the Northern Training Area.

(2) Existing Facilities (Refer to Table F-10 and Figure F-62). The Northern Training Area base camp contains minimum facilities to support training operations. The buildings are mainly temporary quonset huts and butler buildings. Many of the buildings have sagging, wooden floors, leaky roofs, termite-damaged wood framing, and poor lighting. These buildings are generally inadequate to support permanent party personnel who are assigned to the base camp for one year.

(a) Operational Facilities

Helicopter Pads. Two helicopter pads are located at the southeast corner of the base camp. These pads have metal landing mats and are adequately sized. These pads, located on top of knolls, have unobstructed landing and departure paths in all directions.

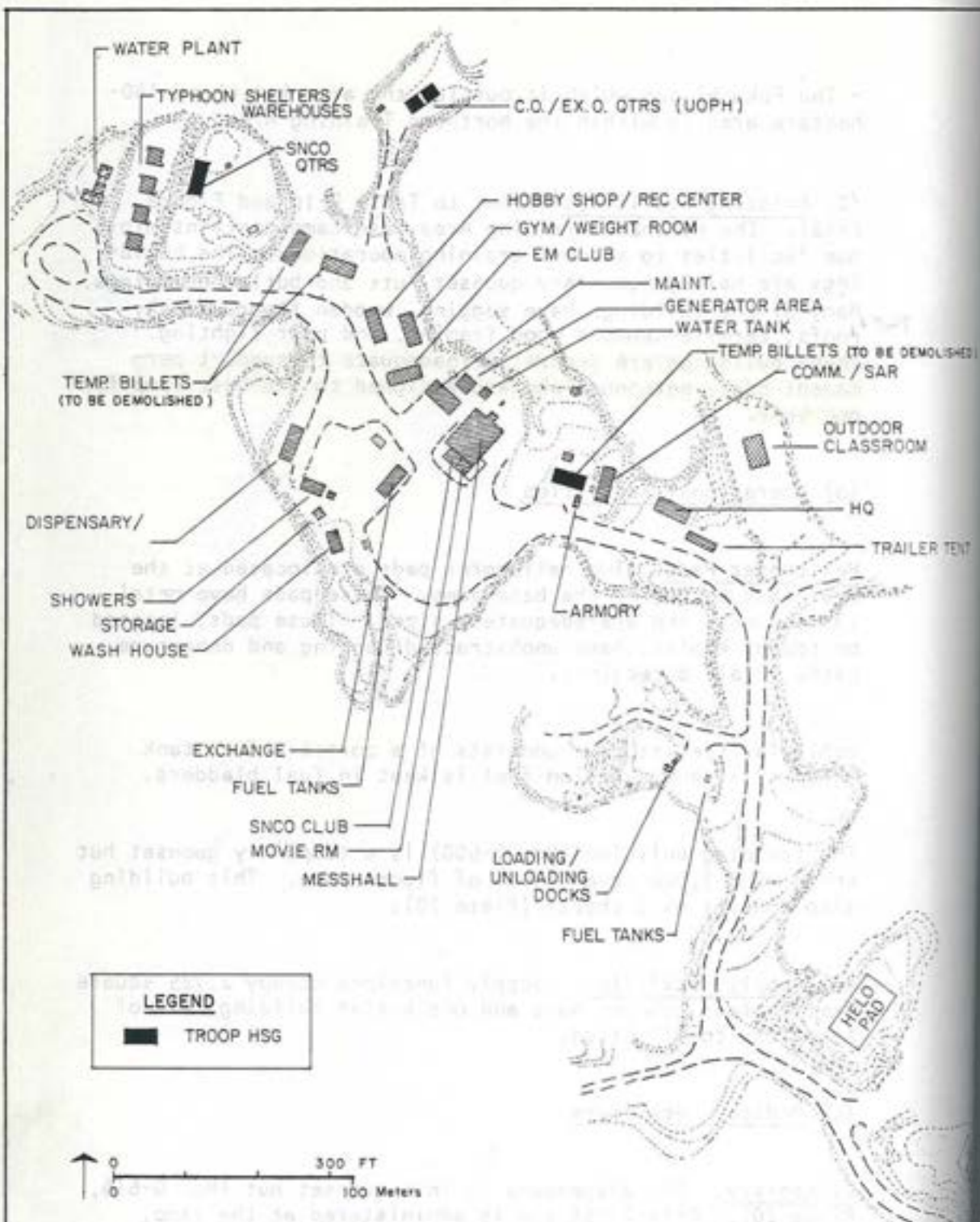
Vehicular fuel storage consists of a portable fuel tank (Plate 21), and aviation fuel is kept in fuel bladders.

The training building (No. D-600) is a temporary quonset hut containing 1,000 square feet of floor space. This building also doubles as a chapel (Plate 20).

(b) Supply Facilities. Supply functions occupy 2,725 square feet in four quonset huts and one butler building, all of temporary construction.

(c) Medical Facilities

Dispensary. The dispensary is in a quonset hut (No. D-616, Plate 20). Only first aid is administered at the camp. Seriously injured personnel are evacuated by helicopter to the NAVREGMEDCEN at Camp Kuwae. A portion of Building D-616 is intermittently used as VIP quarters.



FACILITY LOCATOR MAP

BASE CAMP - Northern Training Area

FIGURE F-

Table F-10

EXISTING FACILITIES
NORTHERN TRAINING AREA BASE CAMP

CAT CODE	DESCRIPTION	# OF BLDGS	TOTAL FLOOR AREA (SF)	OTHER
100	OP & TRNG FACS	1	1,000	
111	Helo Pad			2 EA
124	Op Fuel Stg			3,800 GA
171	Acad Instr Bldg	1	1,000	
400	SUPPLY FACS	4	2,725	
441	Gen Whse	4	2,725	
500	MEDICAL FACS	1	500	
550	Dispensary	1	500	
600	ADMIN FACS	1	1,000	
610	HQ	1	1,000	
700	HSG & COMMUNITY FACS	29	18,639	
721	UEPH	9	8,460	
722	Dining Fac, Cold Stg	2	2,000	25 PN
723	Shower Room	1	600	
724	UOPH	2	1,300	2 PN
730	Latrine	5	205	
730	Fallout Shelter	4	1,520	
740	Exchange/Morale/Rec Facs	6	4,554	

(d) Administration Facilities. The headquarters building (No. D-601, Plate 20) is a quonset hut with a sagging wooden floor. The interior wood framing and siding are termite damaged and the roof leaks badly.

(e) Housing and Support. Eight 20-foot by 50-foot quonset huts serve as UEPHs for the permanent party personnel and transients. A new butler building was recently completed to house SNCOs. Plate 21 shows both types.

The CO and XO are housed in a small wooden structure.

The mess hall (Building NT-168, Plate 20) is a deteriorated, pre-engineered building with metal siding and concrete slab on grade.

The Exchange, Enlisted Club, gymnasium, and Hobby Shop are all 20-foot by 50-foot quonset huts.

(3) Utilities

(a) Electrical. Electrical power is provided by OPED. The power and distribution system is adequate at the present time.

(b) Water. The Marine Corps operates the water system at the Northern Training Area. Water treatment includes only filtration and chlorination. A chlorine residual of 3 ppm is maintained in the Northern Training Area water.

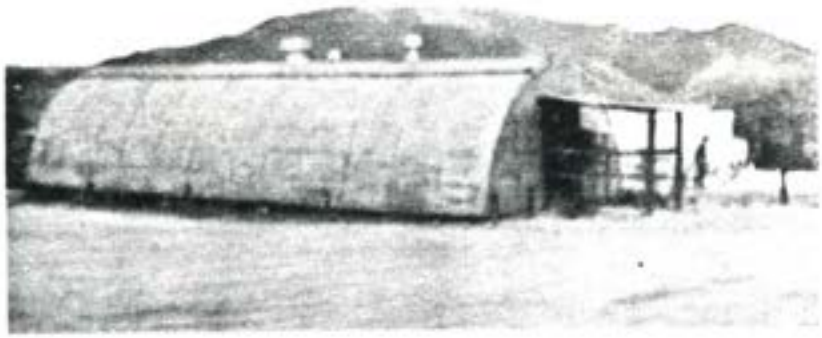
(c) Sewer. Sanitary waste disposal at the Northern Training Area base is as follows:

- Galley wastes are treated in a septic tank, and effluent is disposed of in a leaching field.

- Burn-out heads and seepage pits are used for human waste.

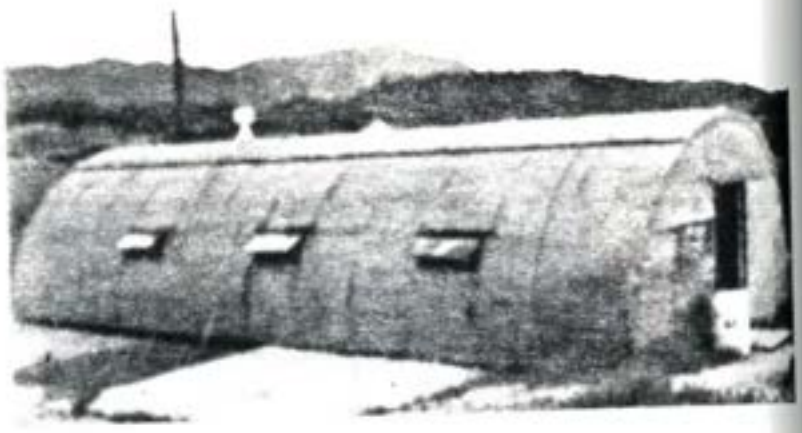
BLDGS 600, 601
CAMP HQ

BLDG NT-166
MESSHALL, STAFF NCO CLUB



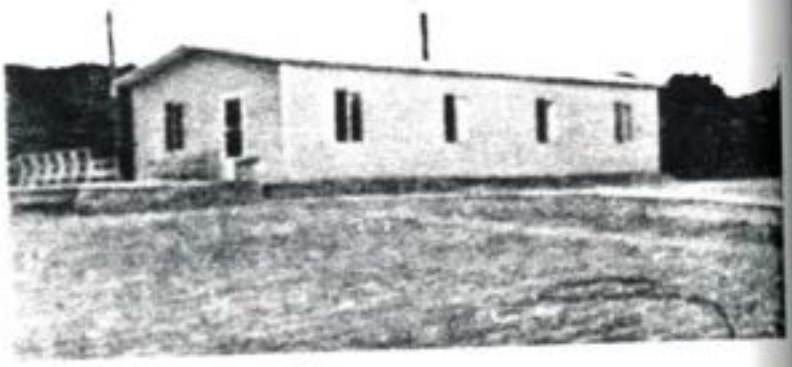
BLDG NT-138
GENERAL STORE

BLDG D-616
DISPENSARY



BLDG D-608
GYMNASIUM

BLDGS 612, 611, 610
UEPH



UEPH

VEHICULAR FUELING FACILITY

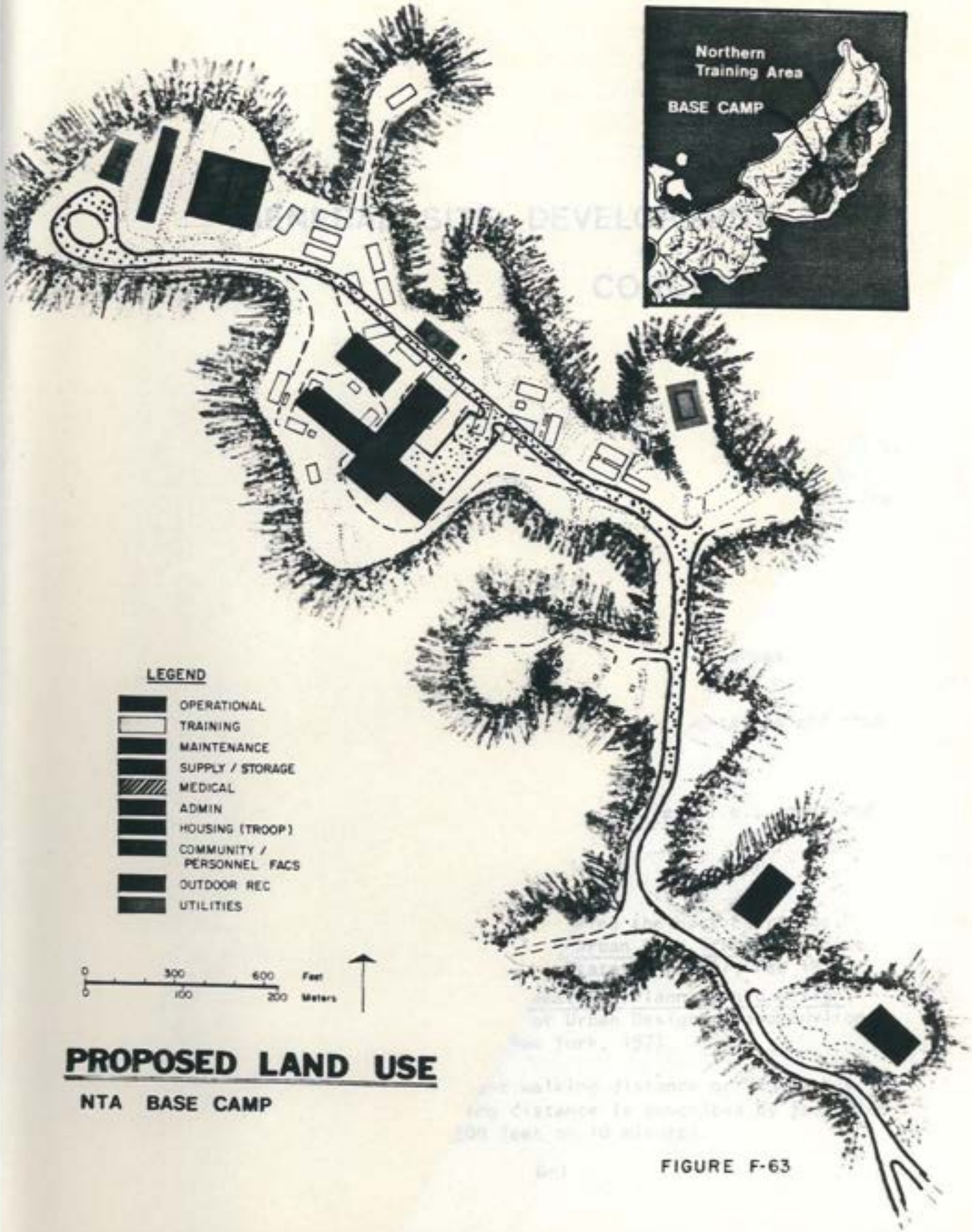
c. Proposed Land Use

(1) Circulation. Circulation is by unpaved roads and trails. Roads should be upgraded to the base camp area. Other roads are adequate for the purpose.

(2) Development Constraints. Whenever practical, construction should be limited to the existing base camp area in order to retain as much of the watershed as possible. In addition, the Noguchi-Gera woodpecker of Northern Okinawa was designated a Special Natural Protected Asset by the Japan National Cultural Property Protection Board in 1976. This involves two separate areas, one of which is in the Northern Training Area (see Figure F-60) and affects 500-600 acres. Limited training is allowed in the sanctuary.

(3) Planned Land Use. The Northern Training Area will remain essentially unchanged in terms of land use. It is planned to consolidate all of the functions at the base camp into one or two buildings to avoid new construction in developed terrain, avoid "domino" construction and reduce energy requirements. The planned land use at the Northern Training Area base camp reflects this consolidation scheme (see Figure F-63).

NOTE: Facility development at the Northern Training Area base camp has been limited to temporary butler buildings and quonset huts. Since the permanent party personnel are assigned to the Northern Training Area for one year and Okinawa is in a typhoon zone, it appears appropriate that permanent type buildings, vice replacement temporary buildings, be constructed. Thus, the requirements shown on the BFRL for the Northern Training Area base camp should be programmed for permanent type construction. The facility requirements and development plan are included in the CIP section.



PROPOSED LAND USE

NTA BASE CAMP

FIGURE F-63

G. GENERAL SITE DEVELOPMENT CONCEPTS

1. Camp Layouts

Most of the Marine Corps personnel on Okinawa are on one-year unaccompanied tours and have a minimum of personal effects. Items such as privately owned vehicles and bicycles are not normally taken along or acquired. Both private and public transportation on base is limited so development must be planned to mitigate these problems.

At each camp, there are two dominant siting considerations--the traditional requirement for compatible land use and a distance consideration occasioned by the fact that most people have to walk from place to place within the camp. Accordingly, most facilities should be within a "tolerable" walking distance (approximately 10 minutes or 2,500 feet)[1/2] from the unaccompanied personnel living areas. Figure G-1 displays an idealized functional distance relationship. The advantages of this scheme include:

- Accommodates unaccompanied military personnel.

- Reduces time transiting between functional areas.

- Reduces requirement for vehicular transportation and thus supports energy conservation programs.

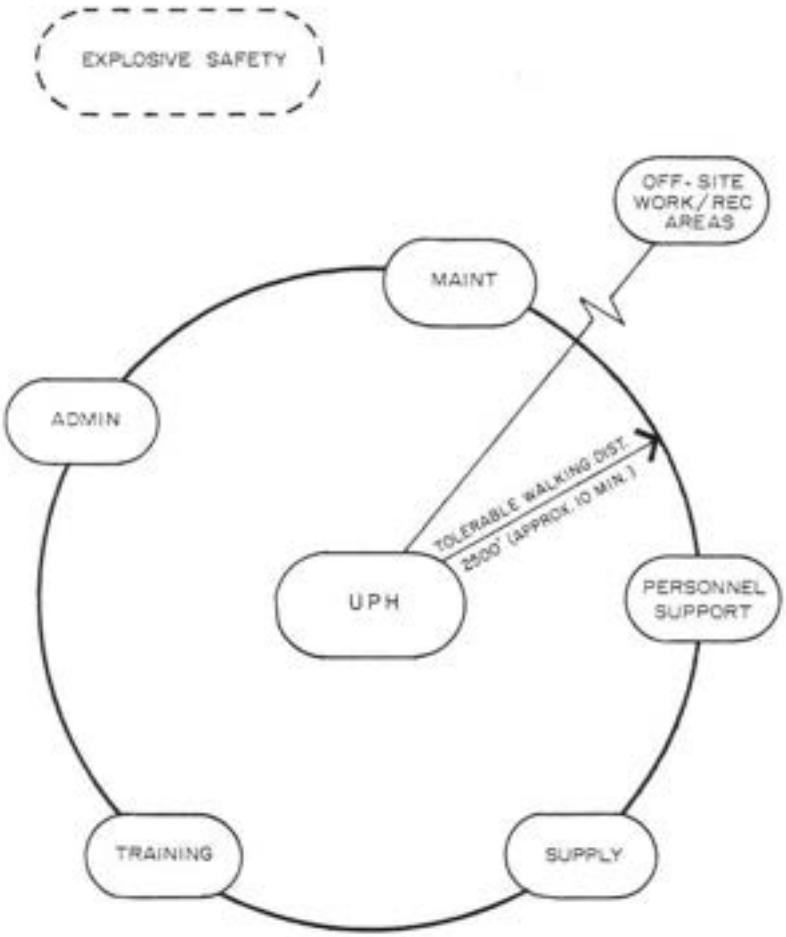
- Reduces quantity of facilities required; i.e., roads and utilities.

1/ Train, Kenneth, Ph.D., "Exploring the Hart Patronage," Transcript of the Seminar on Urban Mass Transit, Office of the Legislative Auditor, State of Hawaii, Feb 1978

2/ Fruin, John J., Ph.D., Pedestrian Planning and Design, Metropolitan Association of Urban Designers and Environmental Planners, Inc., New York, 1971

NOTE: Maximum convenient walking distance or "tolerable limit" of walking distance is described by footnotes 1 and 2 as 2,500 feet or 10 minutes.

When the idealized functional distance relationship scheme is superimposed on the existing generalized land use pattern for the major camps, as shown on Figures G-2 through G-6, it can be seen that there is little conflict, except at Camp Foster, where the Exchange complex is beyond the 10-minute walking distance from many UEPHs.



IDEALIZED FUNCTIONAL DISTANCE RELATIONSHIPS

FIGURE G-1


East China Sea
UOPH
UOPH
BRIG
FACILITIES MAINT
FACILITY ENGR COMPOUND
2500'
UEPH
MOTOR POOL
CHAPEL
CHATAN FAMILY HSG
ORGAN VEH MAINT
VEH OPEN STOR
FIELD HSE
GYM
2500'
UEPH
WHSE
VEH MAINT AREA
UEPH
MHE SHOP
2500'
PACKAGING & PRES
GEN MAINT & SUPPLY STOR
WAREHOUSE COMPLEX
FUTENMA FAMILY HSG
EQUIP MAINT SHOPS
0 1000 2000 Feet
0 300 600 Meters
10 MIN. WALK
CAMP FOSTER

FIGURE G-2

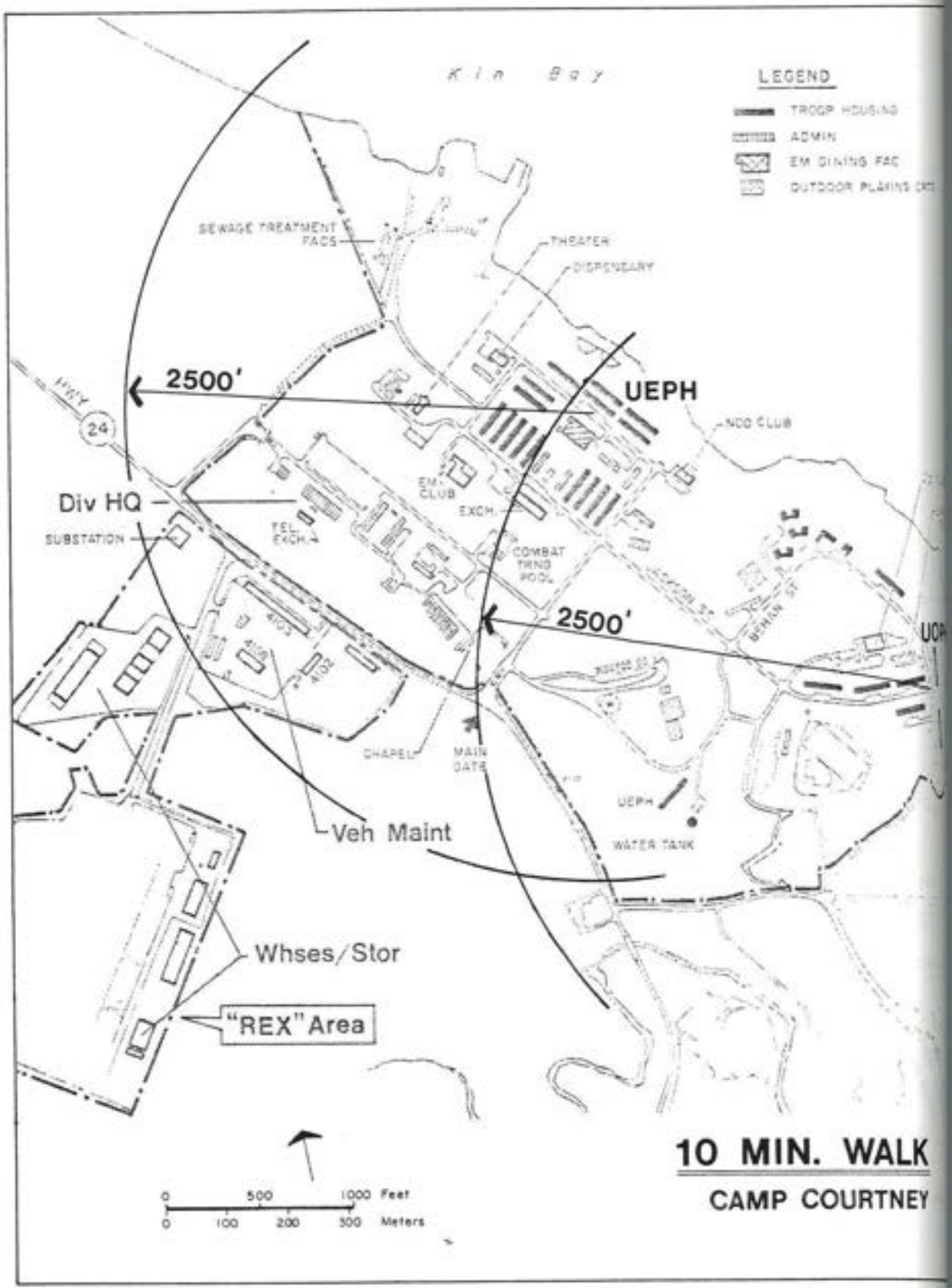

Kin Bay
LEGEND
TROOP HOUSING
ADMIN
EM DINING FAC
OUTDOOR PLAYING
SEWAGE TREATMENT FACS
THEATER
DISPENSARY
2500'
UEPH
HWY 24
NCO CLUB
Div HQ
SUBSTATION
EM CLUB
EXCH
TEL EXCH
COMBAT TRNG POOL
2500'
CHAPEL
MAIN GATE
UEPH
WATER TANK
Veh Maint
Whses/Stor
"REX" Area
0 500 1000 Feet
0 100 200 300 Meters
10 MIN. WALK
CAMP COURTNEY

FIGURE G-1

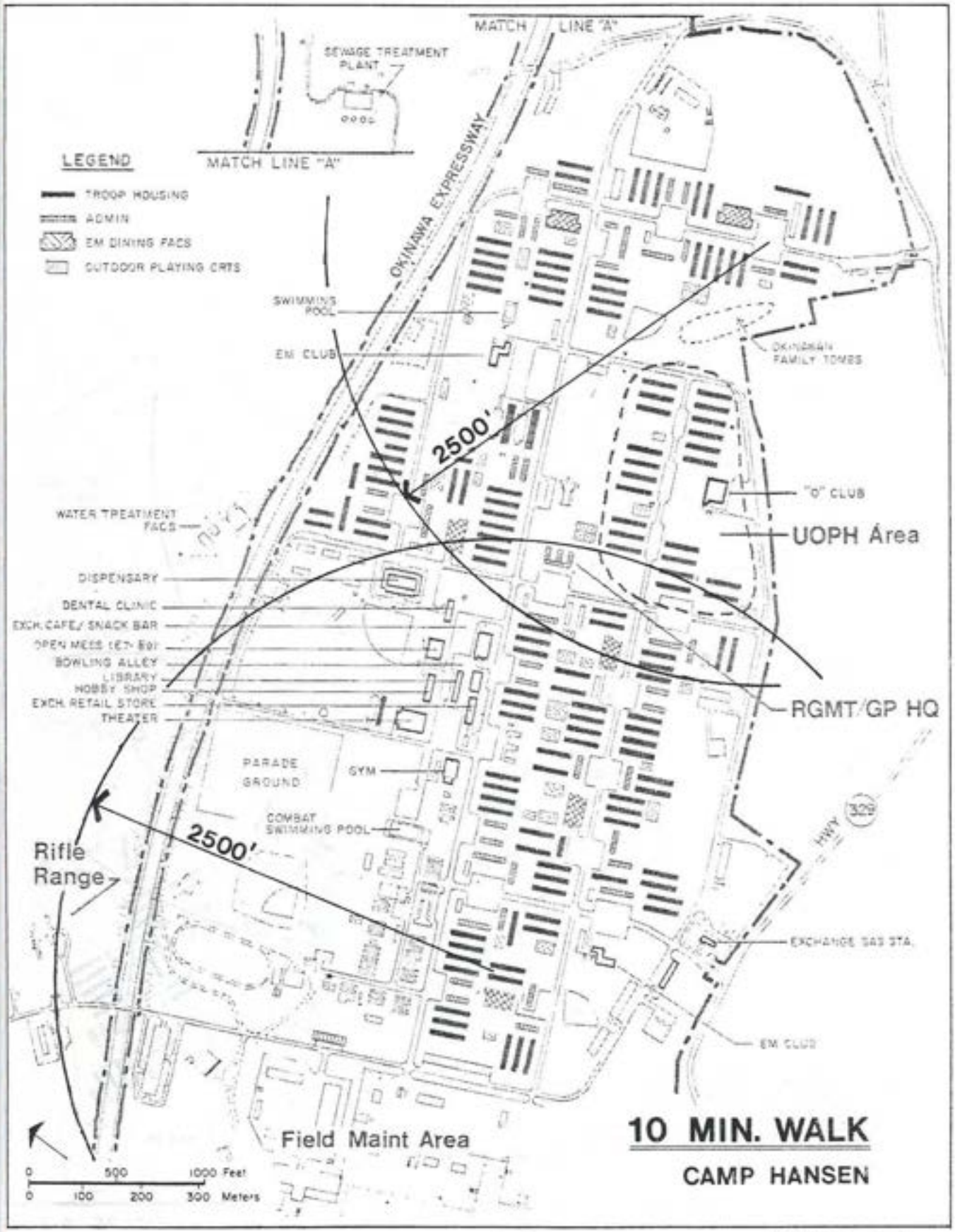
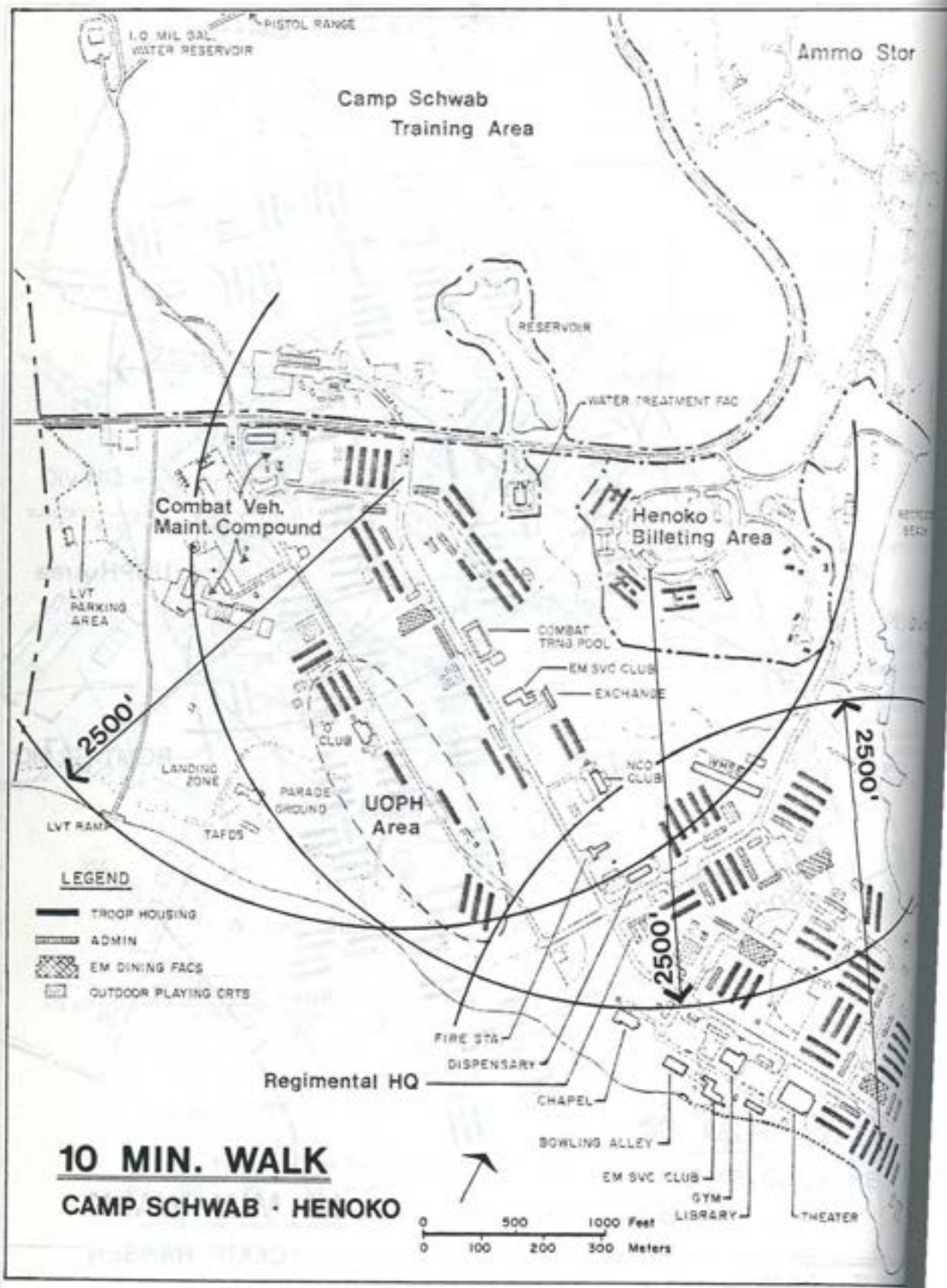

MATCH LINE "A"
SEWAGE TREATMENT PLANT
POOL
MATCH LINE "A"
LEGEND
TROOP HOUSING
ADMIN
EM DINING FACS
OUTDOOR PLAYING CRTS
OKINAWA EXPRESSWAY
SWIMMING POOL
EM CLUB
OKINAWAN FAMILY TOWER
2500'
"O" CLUB
UOPH Area
WATER TREATMENT FACS
DISPENSARY
DENTAL CLINIC
EXCH CAFE/ SNACK BAR
OPEN MESS (E-7 & Bel
BOWLING ALLEY
LIBRARY
HOBBY SHOP
EXCH RETAIL STORE
THEATER
RGMT/GP HQ
PARADE GROUND
GYM
COMBAT SWIMMING POOL
HWY 329
Rifle Range
2500'
EXCHANGE GAS STA.
EM CLUB
Field Maint Area
10 MIN. WALK
CAMP HANSEN
0 500 1000 Feet
0 100 200 300 Meters

FIGURE G-4


I.O MIL GAL. WATER RESERVOIR
PISTOL RANGE
Ammo Stor
Camp Schwab
Training Area
RESERVOIR
WATER TREATMENT FAC
Combat Veh. Maint. Compound
Henoko Billeting Area
LVT PARKING AREA
COMBAT TRNG POOL
EM SVC CLUB
EXCHANGE
2500'
CLUB
LANDING ZONE
PARADE GROUND
UOPH Area
NCO CLUB
LVT RAMP
TAFDS
2500'
2500'
LEGEND
TROOP HOUSING
ADMIN
EM DINING FACS
OUTDOOR PLAYING CRTS
FIRE STA
DISPENSARY
Regimental HQ
CHAPEL
BOWLING ALLEY
EM SVC CLUB
GYM
LIBRARY
THEATER
10 MIN. WALK
CAMP SCHWAB · HENOKO
0 500 1000 Feet
0 100 200 300 Meters

FIGURE


LEGEND
WAREHOUSES, STORAGE
East China Sea
ANTENNA TOWER
ORD FLD MAINT SHOP
(VACANT)
ADMIN
HWY 58
JORE MOTOR POOL
FIRE STA.
Industrial Maint shops
2500'
LAUNDRY
ADMIN
UEPH
SWIM. POOL
EM MESS
CHAPEL
ALL HANDS CLUB
BOWLING ALLEY
EM CLUB
THEATER
GYM
MOTOR POOL
MILK PLANT
EXCH. CAFE
UOPH
2500'
Facilities Maint shops
UOPH
0 1000 2000 Feet
0 500 600 Meters
Admin
10 MIN. WALK
CAMP KINSER

FIGURE G-6

2. Unaccompanied Personnel Housing

The unaccompanied personnel housing spaces at MCB Camp Butler are in single-story, permanent, concrete buildings at Camps Courtney, Hansen, and Schwab. Camp Foster and Camp Kinser have multi-story unaccompanied personnel housing units. The enlisted housing generally has open bays and gang showers, while the officer housing generally has individual rooms, semi-private baths and air conditioning. To comply with DOD criteria, all unaccompanied personnel housing spaces will require partitions, air conditioning and private baths, appropriate to comply with personnel space and comfort requirements. It is recommended that the UEPH units be upgraded by first providing partitions and air conditioning for all units and then by adding exterior bathrooms. This scheme will minimize alteration to the existing concrete building, assure minimal renovation costs, avoid interference with daily use of the housing and allow incrementation of the renovation program. A perspective is shown on Figure G-7.

3. Signs

There is a general lack of standardization in signs at MCB Camp Butler. The result is that signs are difficult to read and, in the case of vehicular traffic, constitute some degree of hazard by distracting the driver for an unnecessarily long period of time. It is recommended that a "standard" design in two or more sizes be developed. These could be pre-painted in quantities, and the lettering added later, as required. Figure G-8 shows two possible designs.

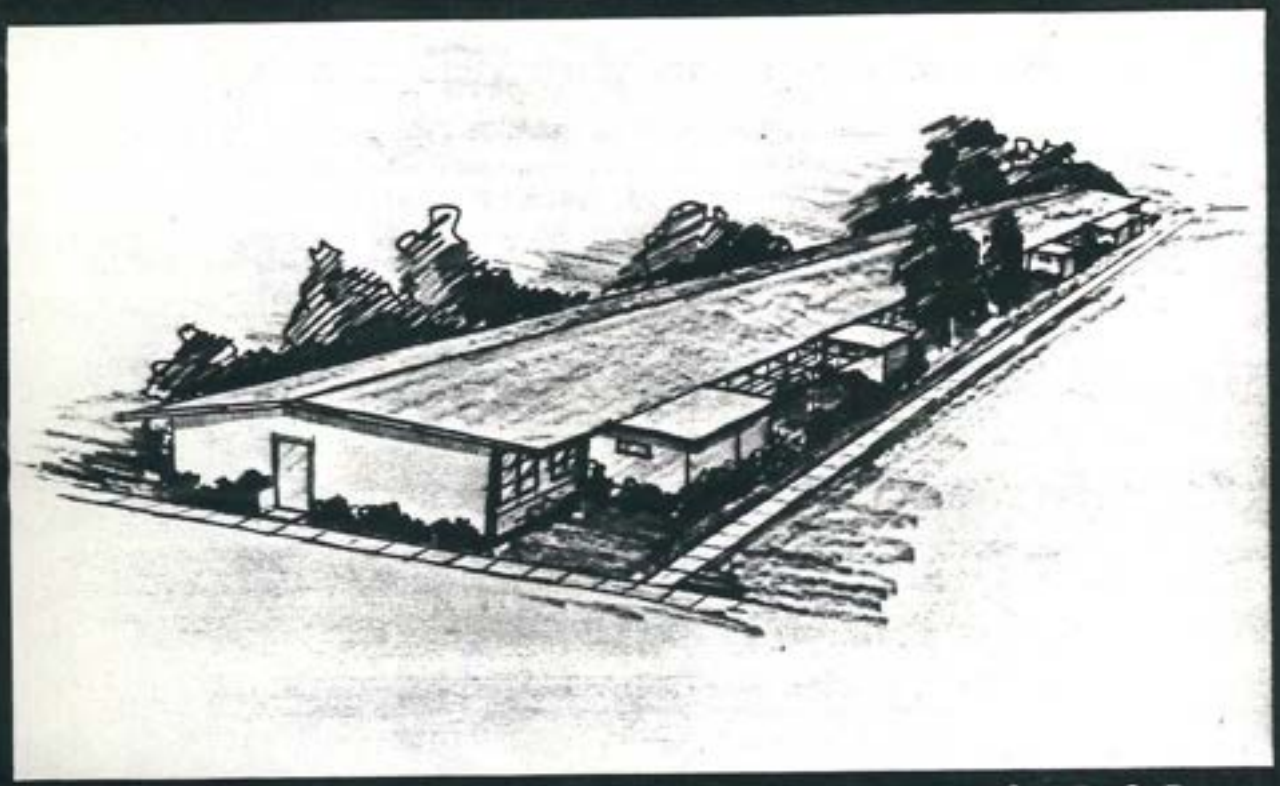


FIGURE G-7

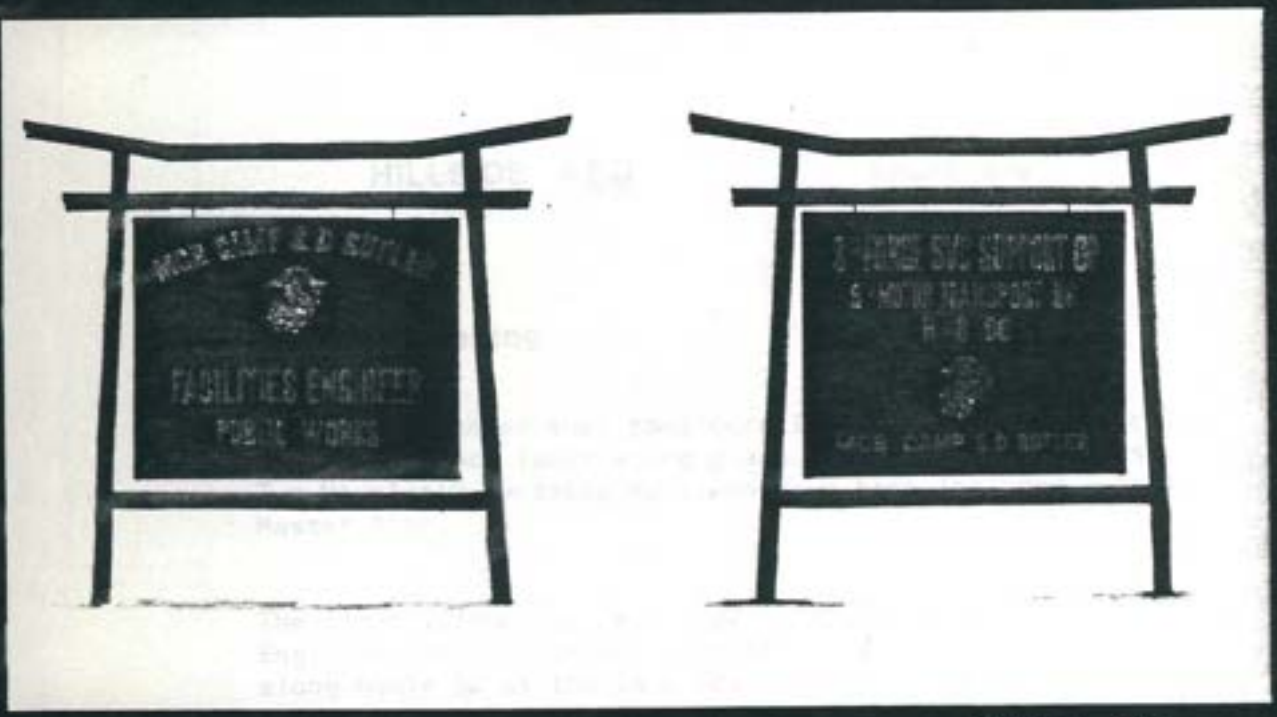
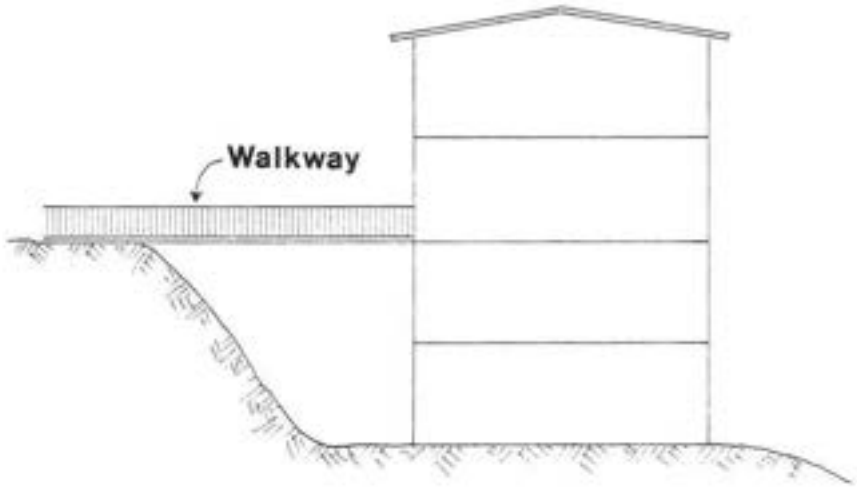


FIGURE G-8

4. Multi-story Unaccompanied Personnel Hsg Bldgs

At Camps Schwab and Courtney, where additional UEPH spaces are required and space is limited, it is recommended that multi-story units be programmed and sited on hillsides so that direct entry to the second or third floor is possible from one side (see Figure G-9).



HILLSIDE BEQ

FIGURE G-9

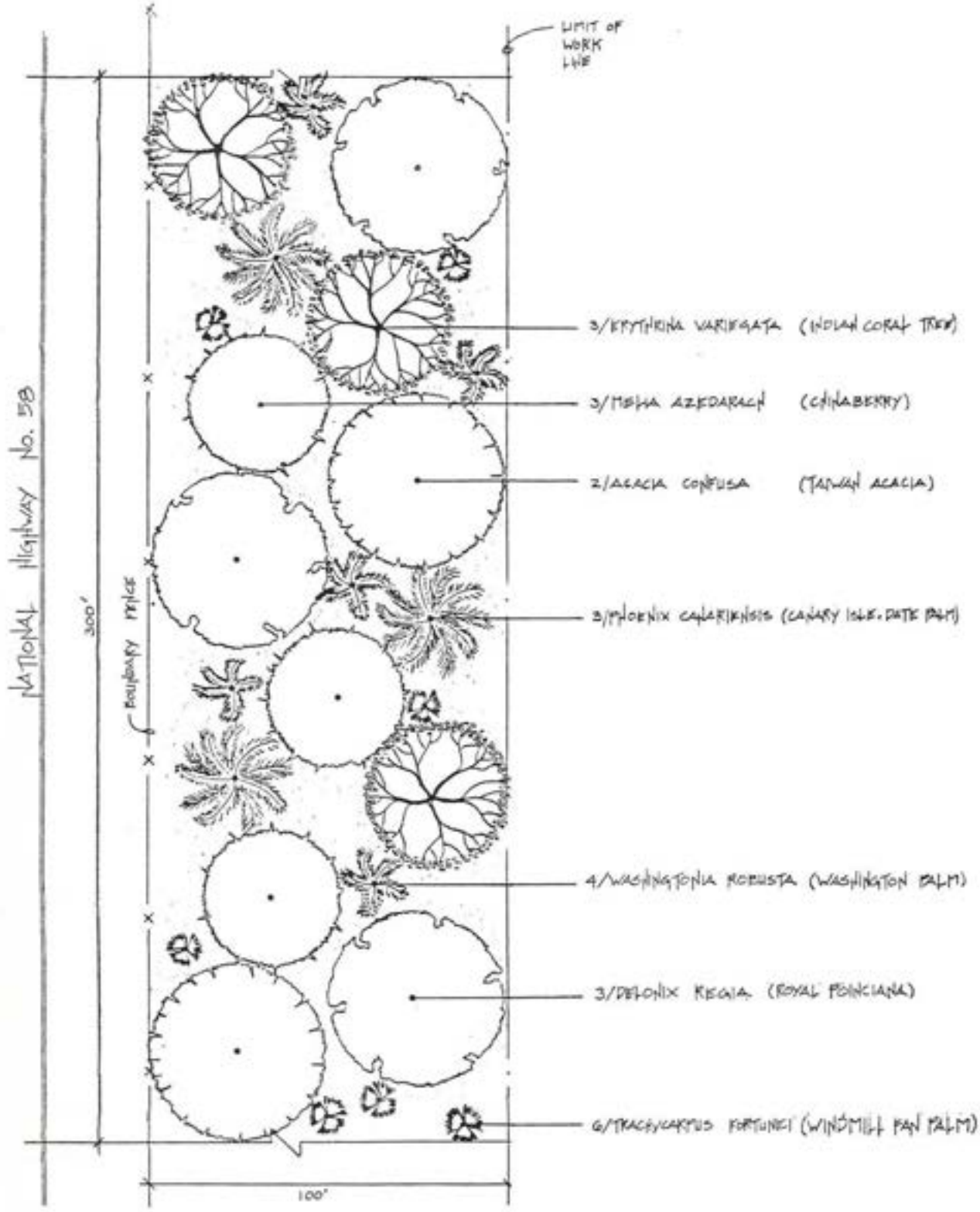
5. Landscaping

It is recommended that consideration be given to developing low maintenance landscaping plans for the various camps. Two "typical" landscaping plans have been included in this Master Plan.

The first scheme was developed at the request of the Facility Engineer for a landscaping buffer scheme that could be used along Route 58 at the Camp Foster area. Figure G-10 is such a scheme.

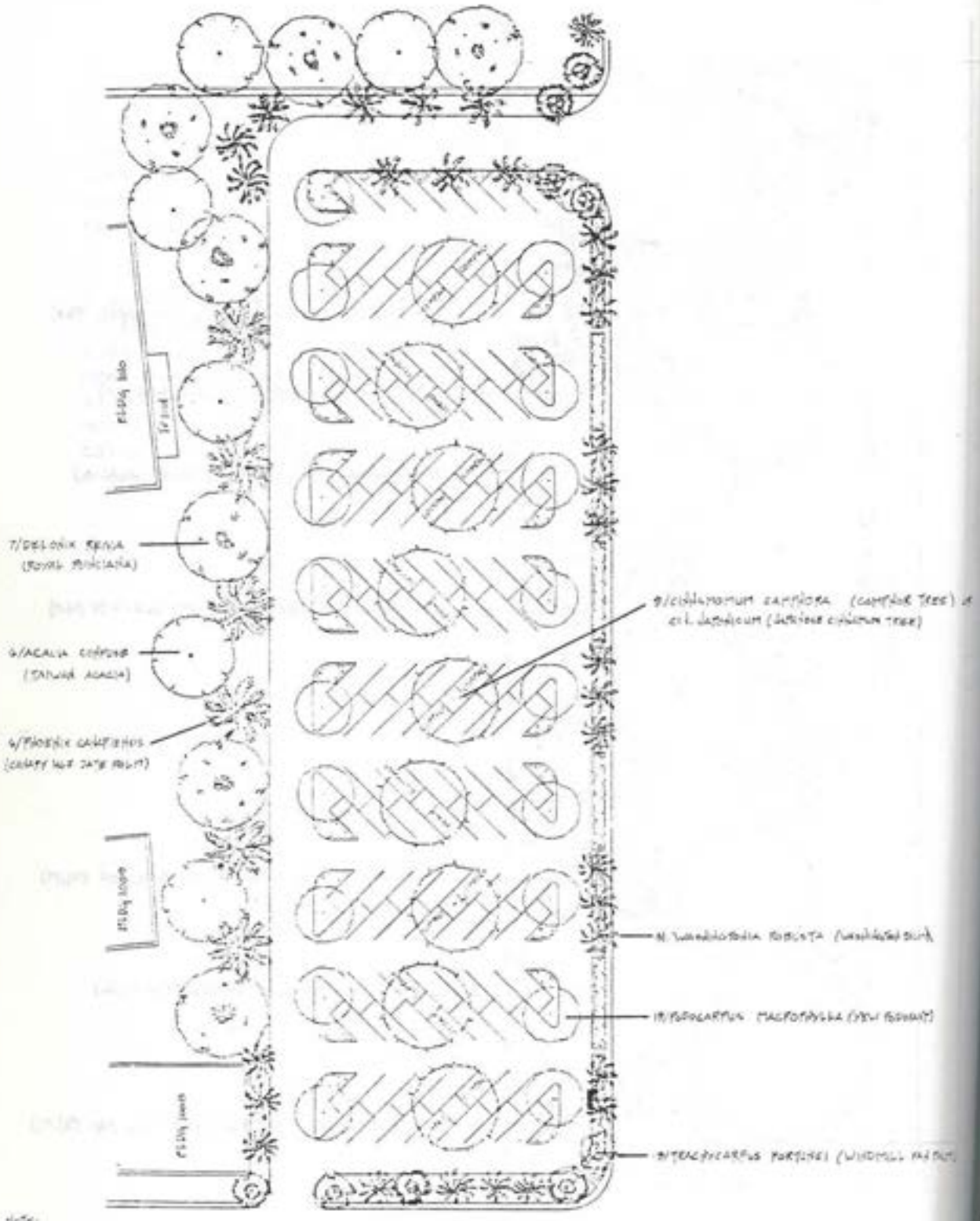
It requires some 420 trees per mile of buffer. The trees were selected for their drought resistance and hardiness. They should be irrigated for the first year to insure that they are well established. Frequency should be once per week. The planting will act as a visual buffer from the highway, beautify the base, and help to diffuse and redirect strong winds.

A second scheme is for a parking lot layout. The open area in the commissary/Exchange complex is shown. It appears that additional parking will be required. In this case, the open area should be considered. If it is landscaped first, as shown in Figure G-11, then the transition to parking will not cause the visual pollution that would otherwise be the case. The same general pattern can be used in other parking areas to improve appearances.



TYPICAL LANDCAPE BUFFER

FIGURE G-10



PARKING LOT & LANDSCAPE PLAN

FIGURE

H. CAPITAL IMPROVEMENTS PLAN (CIP)

1. Introduction

The purpose of this CIP is to provide a link between the Master Plan and the plans for construction of major individual projects.

At the time this Master Plan was prepared, there was no MCON program for Camp Butler. Accordingly, all significant requirements from the 1979 Marine Corps Facility Planning and Programming System (MCFPPS) documents are sited in this CIP without regard to priority (listing is in ascending order of category code).

Additionally, facilities to be provided by the GOJ are included. This funding source is noted in the project description.

2. CIP - Camp Foster

Requirements have been sited as follows (refer to Figure H-1):

Item 1 - Category Code 215-20, Light Gun Shop. If the 12th Marine Regiment maintenance function is to stay in one complex, then an addition to the existing light gun shop (Building 5829) should be programmed (8,000 square feet).

Item 2 - Category Code 730-20, Police Station. This function is currently centrally located on base in a BEQ building. The function is sited on Stilwell Drive, about 500 feet back of Route 58 (16,000 square feet).

Item 3 - Category Code 740-11, Religious Education Building Addition. This has been sited in the parking lot of the chapel, as shown. Additional parking is available on an off-peak basis in lots used by Special Services outlets, the cafeteria and the SNCO Club (6,400 square feet).

Item 4 - Category Code 740-30, Exchange Auto Repair/Car Wash. This function is sited adjacent to the existing Exchange auto repair shop. Existing area is required for parking at the Exchange shop, so the new facility is sited on an adjacent little used end of another parking area, thus expanding the Exchange repair area (2,700 square feet).

Item 5 - Category Code 740-37, Special Services Issue Shop. This function, presently sited in an old substandard and poorly located brig at the northwest corner of the station, is proposed for a site near the field house where much of the equipment would be used and where the Special Services Issue Office is located (21,000 square feet).

Item 6 - Category Code 740-38, Auto Hobby Shop. This is an additive requirement to the existing Auto Hobby Shop (No. T-454), which is a former Army motor pool area. The existing site is well screened from the road and considered satisfactory. Accordingly, a new building near the existing facility is proposed (4,500 square feet).

Item 7 - Category Code 730-55, Youth Center Addition. This requirement is shown as an addition to the existing youth center at the commissary/Exchange area (5,000 square feet).

Item 8 - Category Code 740-60, Officers Club Addition. This requirement is shown as an addition to the existing Officers Club (Building 8) (7,000 square feet).

Item 9 - Category Code 740-63, Enlisted Club Addition. This requirement is shown as an addition to the existing Enlisted Club (Building 429) (7,000 square feet).

Item 10 - Category Code 740-43, Child Care Center Addition. This is shown as an addition to the existing child care center (Building 1011). It will require closing the street between the child care center and the bowling alley; however, this will not have any particular effect on circulation, since the street is one way and lightly used (7,000 square feet).

Item 11 - Category Code 740-84, Indoor Playing Courts. The requirement is basically for additional indoor courts. The requirement has been split into four sites to encourage a maximum number of enlisted people to use the facilities by minimizing walking distance. These can also be expanded to include weight rooms (Category Code 740-43) (12,000 square feet--courts, 14,000 square feet--weight rooms).

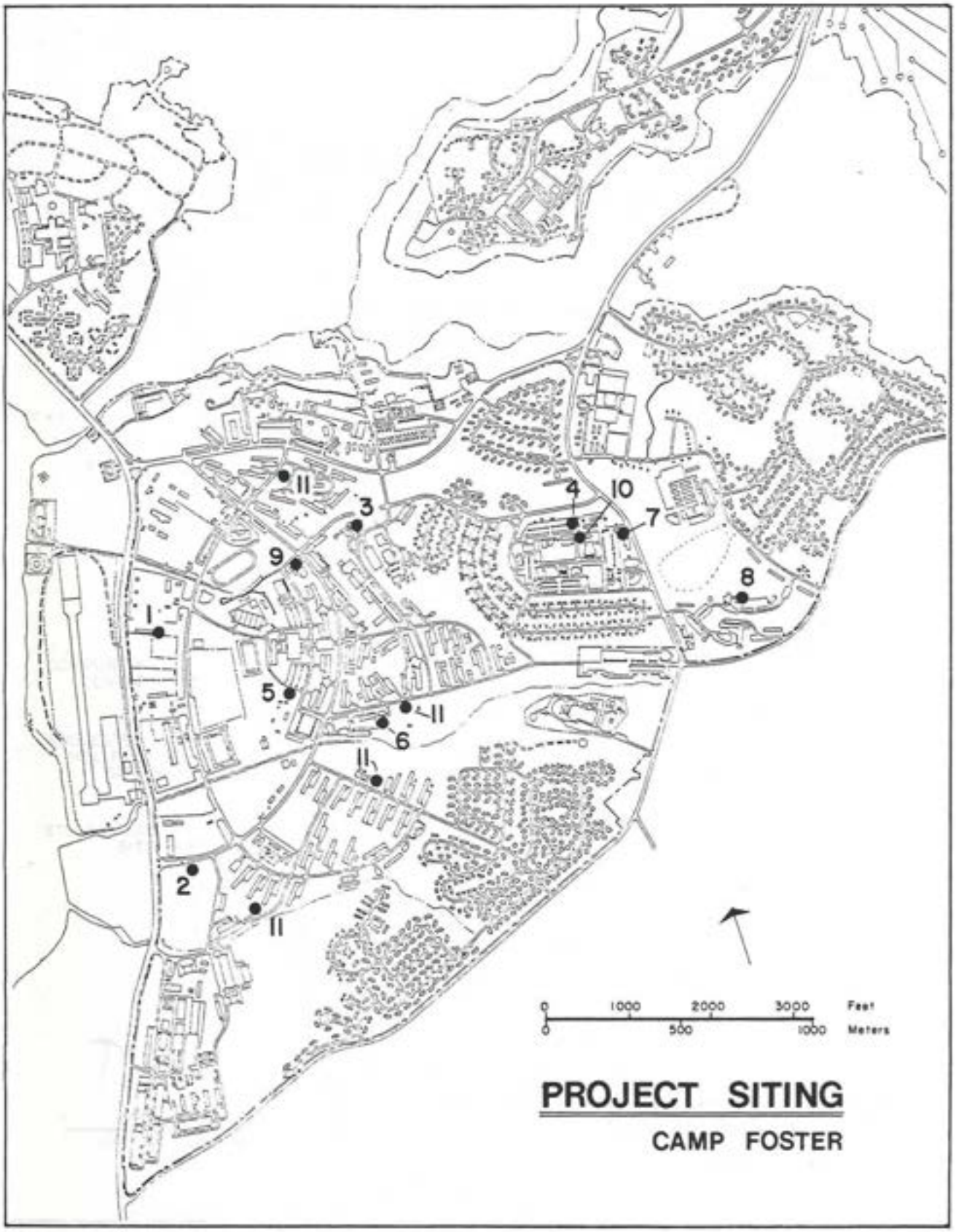

11
3
4
10
7
9
8
1
5
11
6
11
2
11
0
1000
2000
3000
Feet
500
1000
Meters
PROJECT SITING
CAMP FOSTER

FIGURE H-1

3. CIP - Camp Kuwae

Although there are no deficiencies listed in the MCFPPS documents for either the Marine Corps or NAVREGMEDCEN at Camp Kuwae, there are some potential deficiencies and adjustments required. Accordingly, this CIP section has been provided.

Figure H-2 is a development plan incorporating the Air Force's proposal for using Camp Kuwae land.

The CIP also identifies a site in the parking lot for a replacement helicopter pad. The site is less encumbered than the existing helicopter pad.

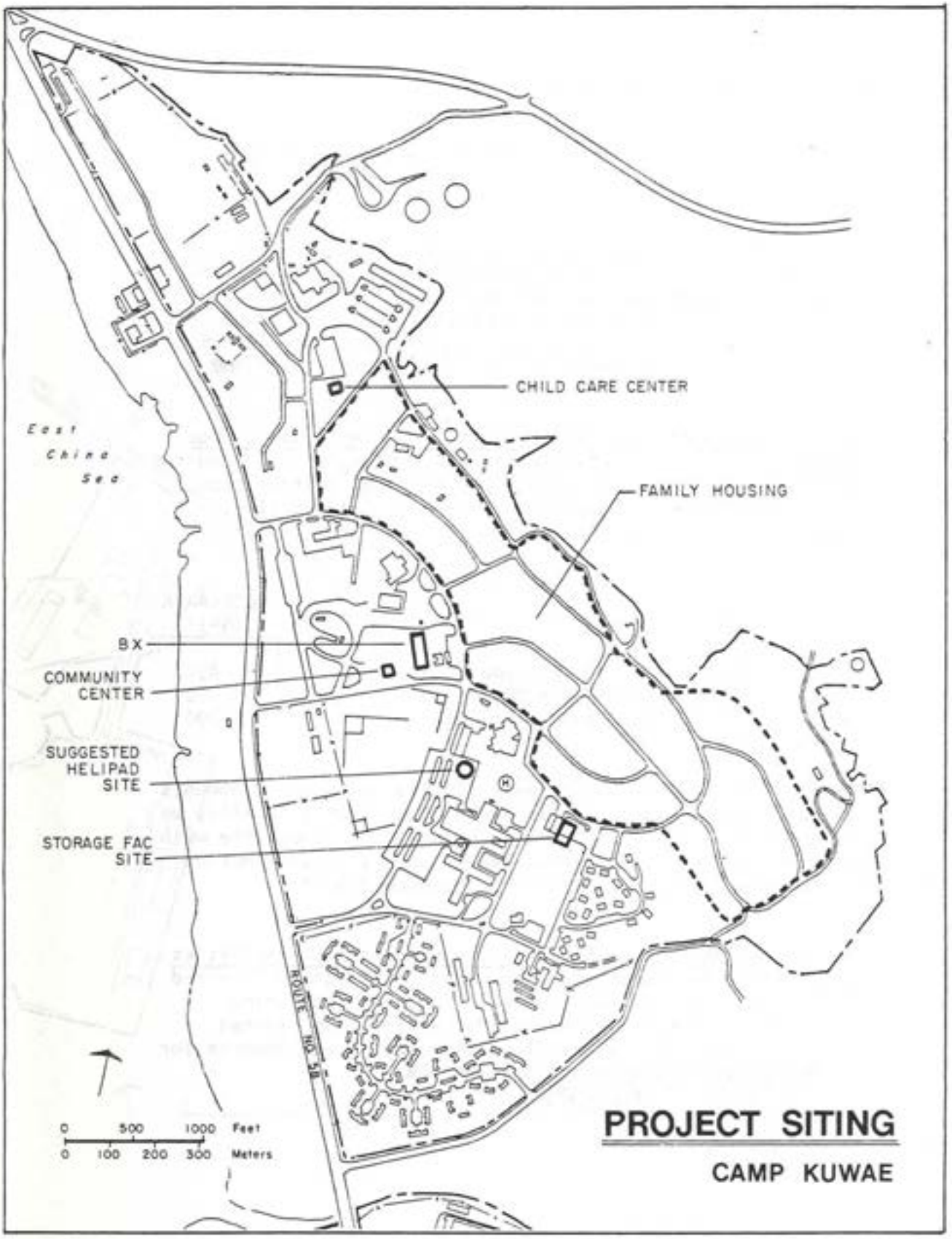

CHILD CARE CENTER
East China Sea
FAMILY HOUSING
BX
COMMUNITY CENTER
SUGGESTED HELIPAD SITE
STORAGE FAC SITE
ROUTE HQ 38
0 500 1000 Feet
0 100 200 300 Meters
PROJECT SITING
CAMP KUWAE

FIGURE H-2

4. CIP - Camp Courtney

The CIP projects are shown on the development plan (see Figure H-3).

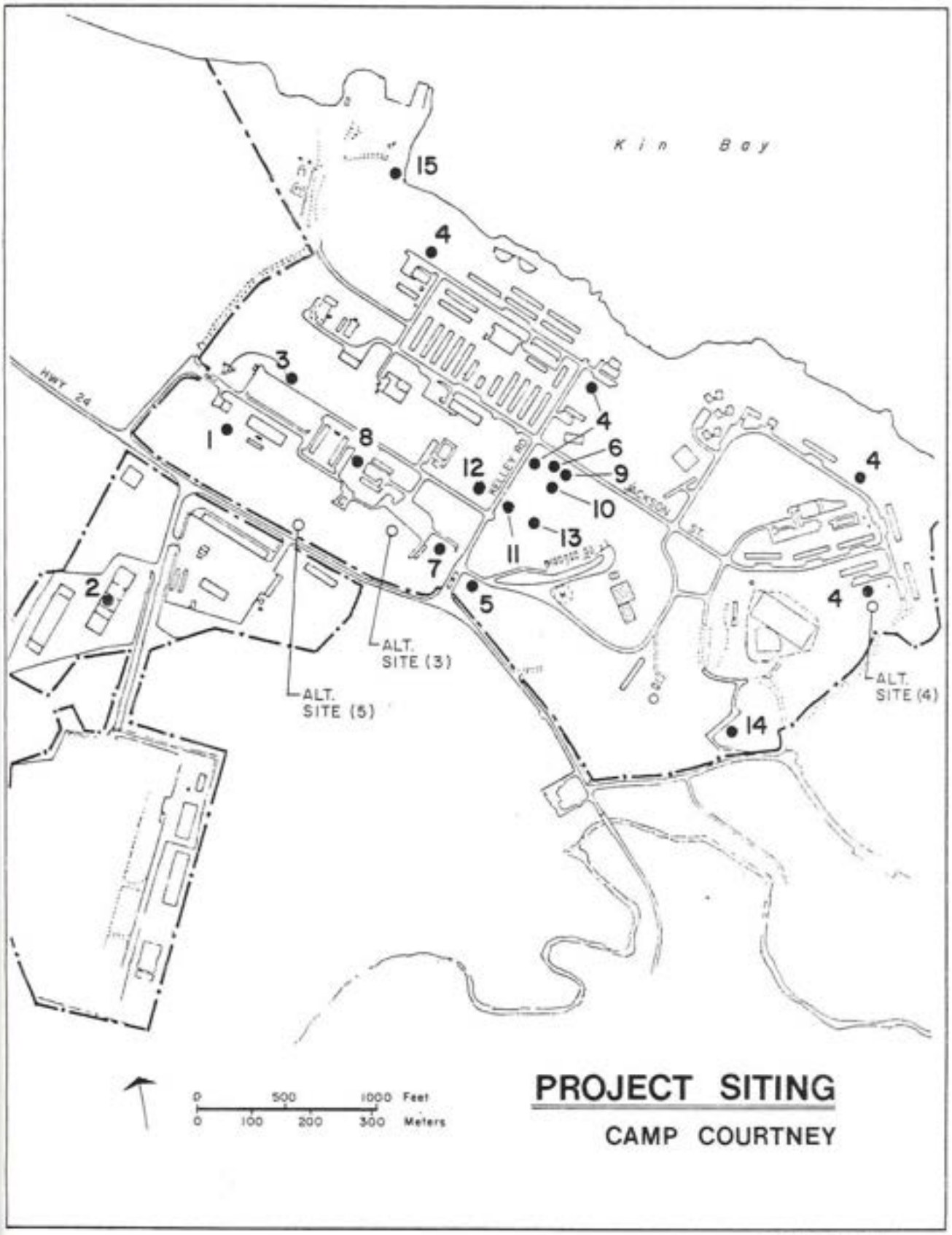
Item 1 - Category Code 131-20, Communications Building. A two-story 8,000 square foot communications (microwave link) building is sited next to the administration building (No. 4211). The site is on top of a knoll, which provides direct line of sight to other microwave communications buildings on the island. This facility will be constructed by the GOJ.

Item 2 - Category Code 219-10, Facilities Maintenance Shop Conversion. A shop containing 14,750 square feet is required to provide facilities to repair and overhaul installation facilities. None is provided at present. In addition, related space is required for the following functions:

FUNCTION	FLOOR AREA (SF)
Cat. Code 219-20, Grounds Equipment Shed	850
Cat. Code 219-25, Expendable/Shops Store	1,100
Cat. Code 219-77, Maintenance Storage	5,700

The total Facilities Maintenance floor area required amounts to 22,400 square feet. It is recommended that a facility be constructed in the "Rex" area. This site is compatible with adjacent land uses and allows easy access to nearby Marine Corps camps supported by this Maintenance Branch.

Item 3 - Category Code 610-70/71, Administration Facilities. A two-story, 42,500-square foot concrete structure is sited across the large vehicular parking from the 3rd Marine Division Headquarters building (No. 4211). The planned structure will satisfy administration space requirements for the 3rd Marine Division and the 9th MAB.



PROJECT SITING

CAMP COURTNEY

FIGURE H-3

A site previously considered for the planned administration building is on the site occupied by temporary, multiple, quonset building. This site has the disadvantage of finding temporary quarters for administration functions while the new building is constructed. It is shown as an alternate site.

Item 4 - Category Code 720, Unaccompanied Personnel Housing (276 spaces required). New unaccompanied personnel housing sites for multi-story buildings are located within existing housing complexes. One exception is the planned UEPH at the intersection of Kelley Road and Jackson Street. The site for this building was fixed and programmed for construction by the GOJ.

Item 5 - Category Code 730-10/20, Fire/Police Station. A fire station/police station (4,650 square feet) is close to the gate to allow easy access to points both inside and outside the camp. An alternate site is on Highway 24, which allows easy access to the NEX area and Camp McTureous, as well as Camp Courtney.

Personnel Support Facilities. An expanded personnel support complex is planned around the Kelley Road/Jackson Street intersection. This central area has open, buildable space and is within 10-minute walking distance from both the enlisted and officers housing areas. It combines with existing facilities (i.e., swimming pool, location Exchange and outdoor recreation fields and courts) to form the nucleus of the support facilities. The following facilities are included:

Item 6 - Category Code 740-04, Cafeteria (6,300 square feet) part of expanded central complex.

Item 7 - Category Code 740-10, Chapel (8,550 square feet) sited on a knoll on site of the present substandard chapel.

Item 8 - Category Code 740-25, Family Services Center (1,150 square feet).

Item 9 - Category Code 740-28, Amusement Center (1,800 square feet).

Item 10 - Category Code 740-36, Hobby Shop (3,400 square feet).

Item 11 - Category Code 740-40, Bowling Alley (6,000 square feet).

Item 12 - Category Code 740-43, Gymnasium (21,000 square feet).

Item 13 - Category Code 740-56, Theater (6,000 square feet).

Additionally, there are two other personnel support facilities sited remote from the core area. These are:

Item 14 - Category Code 740-20, Temporary Lodging (Guest House). This is a GOJ funded project to be constructed in an isolated area on the southern boundary of the camp.

Item 15 - Category Code 740-87, Boathouse (5,800 square feet). This is sited on the only readily accessible parcel of waterfront property available.

5. CIP - Camp Hansen

The CIP projects are shown on the development plan (see Figure H-4).

Item 1 - Category Code 111-20, Helicopter Pad (two required). Expand helicopter pads (Nos. 2417 and 2472) from 140 square yards and 119 square yards, to 1,112 squares yards each to conform with minimum design requirements for VFR use.

Item 2 - Category Code 171-10, Academic Instruction (6,990 square feet). Classroom space requirement for the Division Schools amounts to 31,500 square feet. Adequate spaces, totaling 24,510, exist in several buildings, leaving a shortfall of 6,990 square feet. It is recommended that an addition to the existing Division School (Building 2382) be constructed to satisfy the requirement.

Item 3 - Category Codes 214-51, Organizational Shop and 214-53, Field Maintenance Shop. Maintenance shops are required for organizational, transportation and engineer equipment. There are 113,780 square feet of floor space utilized for this function but still requires an additional 42,690 square feet. To provide adequate space for the various units, four additional buildings of about 10,000 square feet each are sited within the existing vehicular maintenance compounds of the camp.

Item 4 - Category Code 215-60, Field Maintenance Shop (Ordnance). Third and fourth echelon ordnance maintenance is accomplished primarily in Buildings 2148 and 2149, which contain 10,296 square feet each. A building addition of approximately 13,000 square feet is planned, connecting the two existing buildings which will serve as major maintenance shop and will satisfy the present requirement.

Item 5 - Category Codes 219-10, Facilities Maintenance Shop and 219-77, Facilities Maintenance Storage. A 1,920 square foot addition to the Facilities Maintenance Shop (Building 2106) is recommended to satisfy the present deficit. Further, a 4,000 square foot warehouse is sited adjacent to the shop, which will satisfy the current requirement.

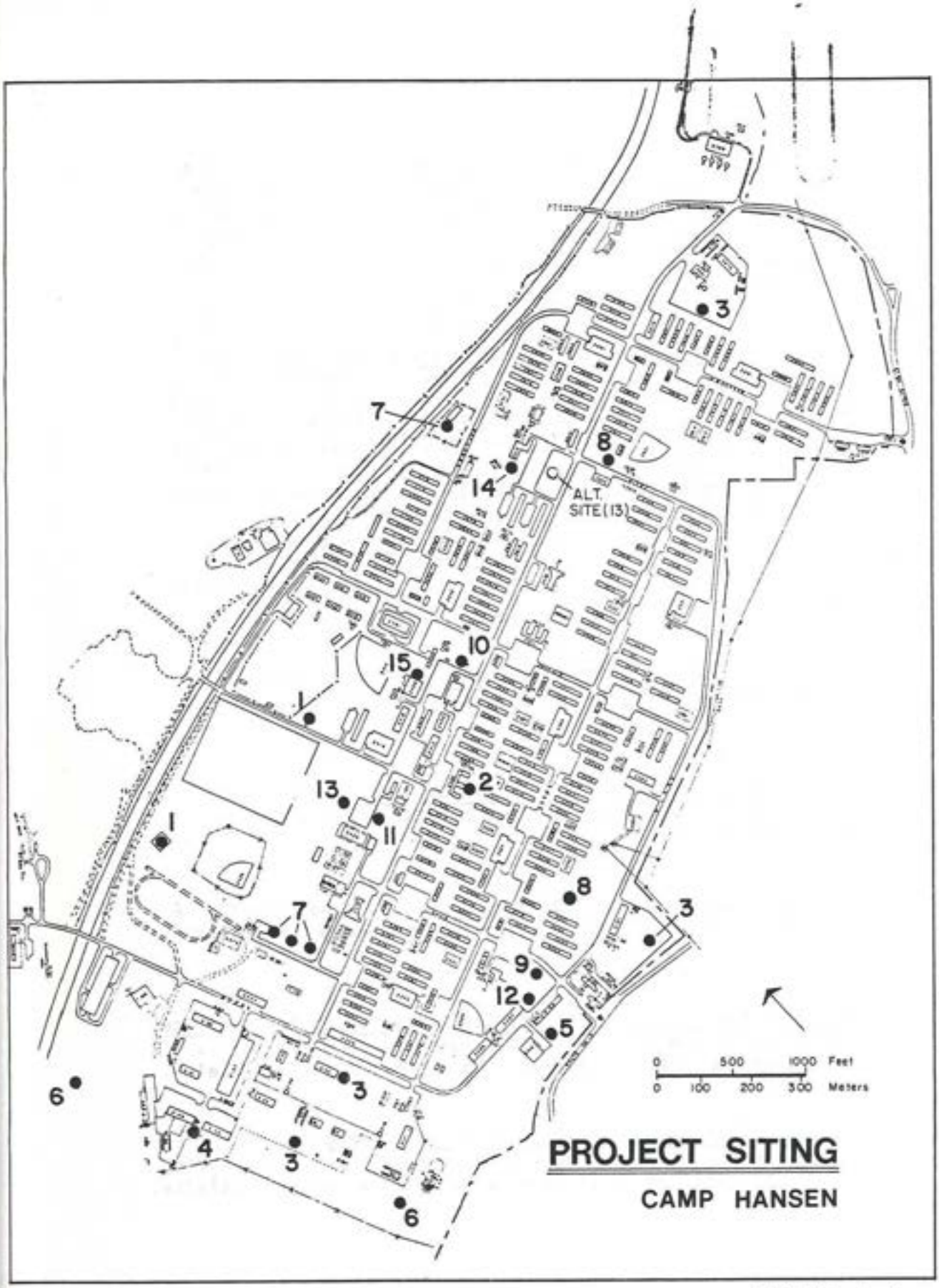

7
14
8
ALT.
SITE (13)
3
10
15
1
2
13
11
1
7
8
3
9
12
5
6
3
4
3
6
0 500 1000 Feet
0 100 200 300 Meters
PROJECT SITING
CAMP HANSEN

FIGURE H-4

Item 6 - Category Code 441-12, Organizational Storage. Two large warehouses are planned to eliminate the current shortfall of 124,596 square feet. A large, 90,000 square foot warehouse is sited at the west-central sector of the camp adjacent to warehouse Building 2176. The other site is at the southwest corner of the camp.

Item 7 - Category Code 721-11/13, Unaccompanied Enlisted Personnel Housing. A shortfall of 660 UEPH spaces exists at Camp Hansen. The deficits are mainly in the senior enlisted (E-6 to E-9) requirements. Sites for four 4-story UEPH structures are shown on the plan. Two sites are adjacent to the west side of the chapel (Building 2435) and are on real estate currently occupied by substandard, antiquated quonset huts. These huts are mostly vacant and are planned for demolition. Two other sites are open and are immediately available for construction. All of the UEPH sites are within convenient walking distance of the centrally located personnel support facilities.

Item 8 - Category Code 723-30, Laundry Facility (4,000 square feet). Two laundromats have been sited to support UEPHs and UOPHs.

Item 9 - Category Code 730-10, Fire Station (3,000 square feet). The fire station is sited near the main gate to allow easy access both on and off base.

Item 10 - Category Code 740-19, Bank (1,900 square feet). A new bank is shown in the existing central personnel support area.

Item 11 - Category Code 740-37, Special Services Issue Office (2,000 square feet). The Special Services Issue Office is sited near the existing gymnasium and outdoor playing fields.

Item 12 - Category Code 740-38, Auto Hobby Shop (4,000 square feet). The Auto Hobby Shop is sited near the exchange service station, which is considered to be a related activity.

Item 13 - Category Code 740-43, Gymnasium (24,920 square feet). Two sites are proposed for the gymnasium. Either would be accessible to about half the unaccompanied personnel housing structures in the camp.

Item 14 - Category Code 740-63, Enlisted Mens Club (20,067 square feet). An addition to the existing club, Building 2612, is proposed.

Item 15 - Category Code 740-66, Staff NCO Club (2,576 square feet). An addition to the existing club building is proposed.

6. CIP - Camp Schwab

The CIP projects are shown on the development plan (see Figure H-5).

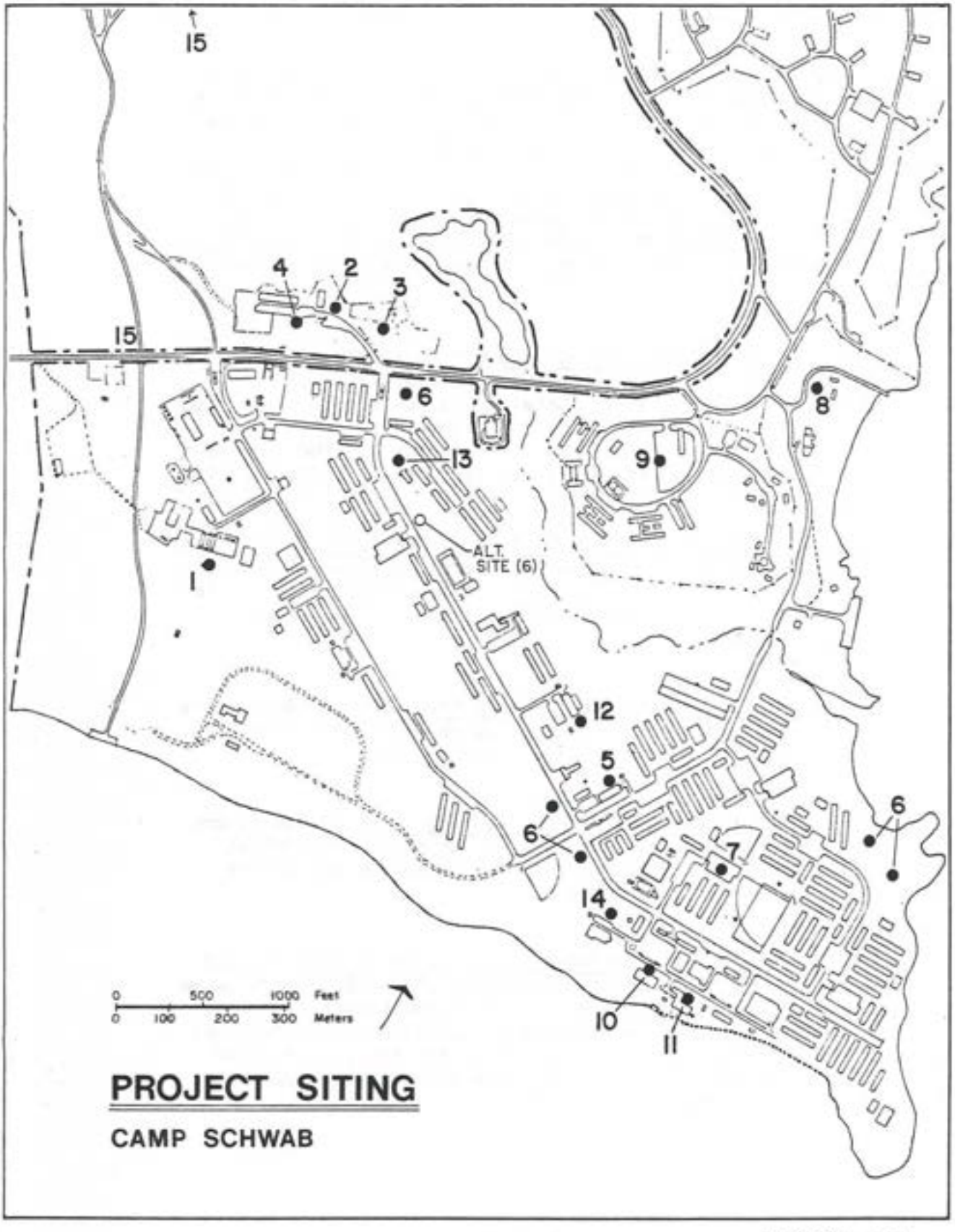
Item 1 - Category Code 213-75, Amphib. Vehicle Maintenance Shop (23,047 square feet). This shop is required to provide work areas to maintain amphibian vehicles of the Track Vehicle Battalion. The total requirement is 42,600 square feet. Existing adequate spaces amount to 19,553 square feet, leaving a shortfall of 23,047 square feet. A new 120-foot by 200-foot maintenance shop is planned on relatively level ground in the existing amphibian maintenance area.

Item 2 - Category Code 214.51, Vehicle Maintenance Shop (13,508 square feet). The existing maintenance shops (Nos. 3206 and 3339) are in the western sector of the camp near Highway 329. Very little developable space remains in this area to construct additional maintenance building and still provide room for maintenance parking. A new area is proposed for development, which is across the Main Gate and north of Highway 329 where sufficient level and developable land exists.

Item 3 - Category Code 217.10, Electronics/Communications Maintenance Shop (10,530 square feet). The existing shops are located among the bachelor housing area of the two infantry battalions. An additional floor space of 10,530 square feet is required. It is proposed to construct a new electronics/communications shop north of the Main Gate to satisfy the requirements of the AMTRACK Battalion.

Item 4 - Category Code 441-12, Supply Facility (Storage Out of Stores) (21,483 square feet). A new warehouse building is planned north of the Main Gate to store organic mount-out stocks and other supplies. This site is on level land but will require the removal of deteriorated and unused quonset huts (Nos. T-18, T-4, T-5, T-6, T-7 and T-8).

Item 5 - Category Code 550-10, Dispensary Addition (2,172 square feet). An addition is planned to the rear of the present dispensary (No. 3427) to satisfy the present requirement.



PROJECT SITING

CAMP SCHWAB

FIGURE H-5

Item 6 - Category Code 721, UEPH. A shortfall of 925 UEPH spaces exists at Camp Schwab. These deficits are mainly in the lower ranked enlisted personnel (E-1 to E-4) and senior enlisted personnel (E-6 to E-9). Sites for five 4-story UEPHs are shown on the plan. This scheme will provide space for the currently required facilities. Generally, the new sites are relatively level and will require minimal site work. Each site affords ample open space between it and surrounding buildings to avoid congestion and improve habitability.

Item 7 - Category Code 740-04, Cafeteria (8,000 square feet). It is proposed to convert the amusement center portion of Building 3541, containing 9,000 square feet, into a cafeteria. Building 3541 was designed originally as a mess hall and will adapt well as a cafeteria. The amusement center function is adequately provided for in Building 3418.

Item 8 - Category Code 740-37, Special Services Issue Office (1,000 square feet). The Special Services Issue Office is located in a dilapidated quonset hut (Building T-26) at the recreation beach. A new facility is required to issue aquatic sports gear.

Item 9 - Category Code 740-38, Auto Hobby Shop (3,000 square feet). An auto hobby shop is sited next to the Exchange service station at the original Camp Henoko.

Item 10 - Category Code 740-40, Bowling Alley (3,636 square feet). An additional four bowling lanes are required at Camp Schwab. An addition to the existing bowling center (Building 3665) is proposed.

Item 11 - Category Code 740-63, Enlisted Mens Club (20,070 square feet). The Enlisted Club (Building 3652) needs to be expanded from 9,530 square feet to 29,600 square feet. It is proposed to provide a two-story addition to the Enlisted Club to provide a scenic ocean view from the second floor and to maintain maximum clear space between the club and nearby buildings.

Item 12 - Category Code 740-66, Staff NCO Club (6,772 square feet). An addition to the SNCO Club (Building 3488) is planned to increase the total floor area to 14,000 square feet.

Item 13 - Category Code 740-84, Indoor Playing Courts (1,825 square feet). An indoor court building is sited adjacent to the UEPH complex near the main gate.

Item 14 - Category Code 740-88, Educational Services Office (9,410 square feet). An educational services office is sited in the support complex in the southwest corner of the base.

Item 15 - Highway Underpass and Pistol Range Relocation. An underpass will be constructed under Highway 329 connecting the LVT Ramp and training area. The pistol range will be relocated, in the interest of safety, at the tank range, GOJ will construct a tank target terminal.

7. CIP - Camp Kinser

Construction requirements have been sited and/or reassignment recommendations made as follows (refer to Figure H-6):

Item 1 - Category Code 131-40, Telephone Exchange Building. As part of base consolidation on Okinawa, the Dial Central Office and Microwave Tower will be relocated to Camp Kinser from the Makiminato Housing Area.

Item 2 - Category Code 550-10, Dispensary Addition (2,250 square feet). An addition to the existing dispensary (Building 519) is planned. The building is well located, being accessible to both the industrial area and the bachelor housing areas.

Item 3 - Category Code 721, UEPH. The UEPH Survey shows a deficit of 511 spaces for E-4 and below, 52 spaces for E-5 and 242 spaces for E-6 and above. At the same time, there is a surplus of bachelor officers spaces. Accordingly, it is recommended that the three 2-story UOPH units (Nos. 1401, 1402 and 1404) with 38 bedrooms each and thirty-nine 4-bedroom UOPH units (various numbers between 1405 and 1470) be used as UEPH facilities. Although these buildings have only one bath for each two rooms, it is recommended that they be assigned to E-6 and above on a one man per bedroom basis, and to E-5 on the basis of two men per bedroom. Thus, of the total 270 bedrooms existing, 242 would be assigned to E-6 and above, and 26 to E-5, thus satisfying the requirement. The E-4 and below requirements must be satisfied with new facilities. Two sites are shown across the perimeter road from the existing complex and will have the effect of a simple expansion of the existing UEPH area. An extra site for E-5 is shown near the "converted" area.

Item 4 - Category Code 722-10, Dining Facility (950 square feet). The dining facility is sited on the most centrally located buildable site in the UEPH complex. This is envisioned as a 500-man, GOJ funded facility, expandable to 1,000 men when additional funds are available.

Item 5 - Category Code 740-02, Location Exchange (3,686 square feet). This is a simple addition to the existing centrally located Exchange (Building 1317).

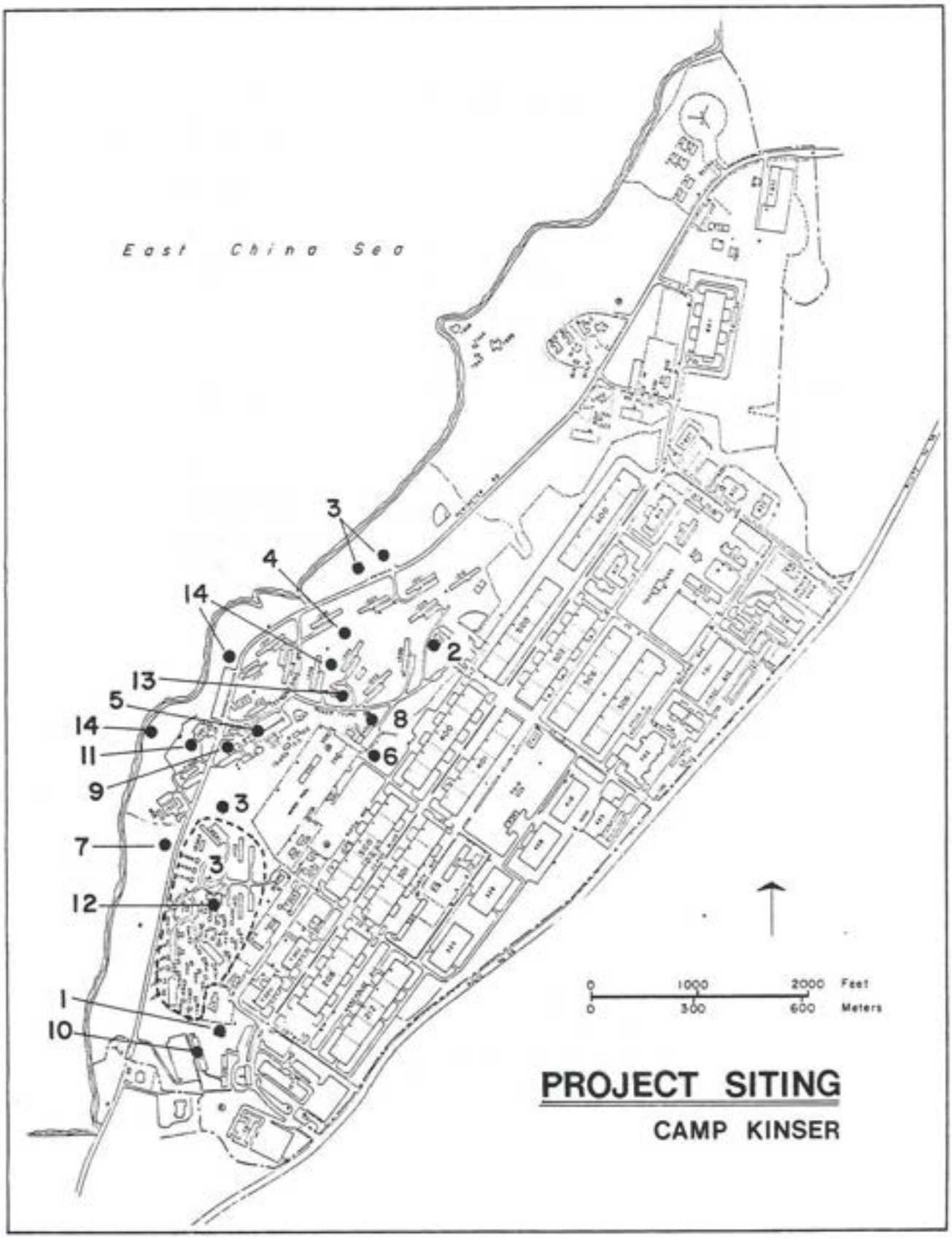

East China Sea
3
4
14
2
13
5
14
8
11
6
9
3
7
3
12
1
10
0
1000
2000
Feet
0
300
600
Meters
PROJECT SITING
CAMP KINSER

FIGURE H-6

Item 6 - Category Code 740-04, Exchange Cafeteria (3,244 square feet). There is a requirement for some 3,244 square feet of additional Exchange cafeteria space over and above the 4,800 feet existing in Building 1400. Rather than expanding that building, a new site has been selected between the industrial complex and the support complex. The facility will then be within a 10-minute walking distance of most of the bachelor housing and a maximum number of daytime work places in the industrial complex. Building 1400 will form the nucleus of an SNCO Club, discussed later.

Item 7 - Category Code 740-30, Exchange Service Station (3,780 square feet). This facility has been sited in an open area along the perimeter road.

Item 8 - Category Code 740-36, Hobby Shop (1,017 square feet). There is an identified requirement for 1,017 square feet of hobby shop space over and above the 4,100 square feet now being used in Buildings 1313, 1314 and 1319. None of the existing buildings is expandable because of topography. Accordingly, a site has been selected near the swimming pool, large enough to build a single 5,100 square foot facility.

Item 9 - Category Code 740-40, Bowling Alley (4,832 square feet). This is proposed as a four-lane addition to the existing bowling alley (Building 1319).

Item 10 - Category Code 740-60, Officers Club (4,400 square feet). It is recommended that a permanent facility be constructed inside the UOPH (building 1470), where space for a temporary club has been assigned.

Item 11 - Category Codes 740-63, Enlisted Mens Club (12,000 square feet), and 740-69, NCO Club. It is recommended that Building 1301 (formerly an All Hands Club, currently an Enlisted Mess (Open)) be expanded to satisfy both these requirements. The kitchen facilities could be common to both clubs, with separate eating and recreation areas.

Item 12 - Category Code 740-66, Staff NCO Club (8,000 square feet). It is recommended that Building 1400 be expanded to satisfy this requirement. It is centrally located in the area of the buildings recommended for conversion to SNCO quarters.

Item 13 - Category Code 740-76, Library Addition (4,544 square feet). This is a recommended addition to the existing library (Building 1212).

Item 14 - Miscellaneous Recreational Facilities. There is a requirement for additional playing courts. Based on the utilization of existing enclosed courts, it is recommended that additional indoor court complexes be programmed, if possible. Additionally, it is suggested that one or two sandy beach areas be developed for recreational purposes. Actual swimming areas would probably require dredging because the extensive fringing reef exposes at low tide; however, attractive picnic areas could be developed with judicious tree planting program.

8. CIP - Camp McTureous

There are stated requirements for additional confinement facility space, for rehabilitation center space, and for a new cafeteria; however, it is not realistic to consider actual construction on site for these facilities. If the 9th MAB replacement facilities, including augment unaccompanied personnel housing spaces, are built at Camp Courtney, then consideration can be given to closing Camp McTureous--either converting it to family housing or releasing it subject to providing a confinement facility, rehabilitation center and disciplinary barracks elsewhere. As a matter of good form, replacements for these functions should be provided elsewhere prior to considering building family housing (refer to the previous paragraph). No additional facilities are proposed for Camp McTureous at this time.

9. CIP - Camp Onna Point

No construction is proposed for Camp Onna Point. Although there are shortfalls in maintenance spaces, there are equivalent excesses in administrative and recreation spaces so that considerable conversion would have to be undertaken before any new construction could be programmed.

10. CIP - Northern Training Area Base Camp

The requirements for the Northern Training Area base camp consist primarily of housing, mess and personnel support spaces. The total floor area requirement is small enough to consider building a single structure which would house all the functions. This concept would reduce energy consumption for space heating, optimize use of remaining available cleared level areas and avoid domino construction (where functions would be disrupted until new buildings are completed).

The functions to be included in the building complex (see Figure H-7) are shown below:

FUNCTION		FLOOR AREA
Admin Ofc		600 SF
UEPH (E-1 to E-4)		17 MN
UEPH (E-5)		9 MN
UEPH (E-6 to E-9)		9 MN
Dining Fac		37 MN
Exchange Food Store		750 SF
Recreation Bldg		8,500 SF
(Library:	500)	
(All Hands Club:	4,000)	
(Hobby Shop:	2,000)	
(Gym:	1,000)	
(Pool Room:	1,000)	

The building is sited on a hilltop in an open and relatively level area. This avoids removing existing buildings until new replacement spaces are completed. The housing portion of the building is planned for two stories because of insufficient buildable real estate. The building orientation and layout are designed to take advantage of the cool prevailing winds.

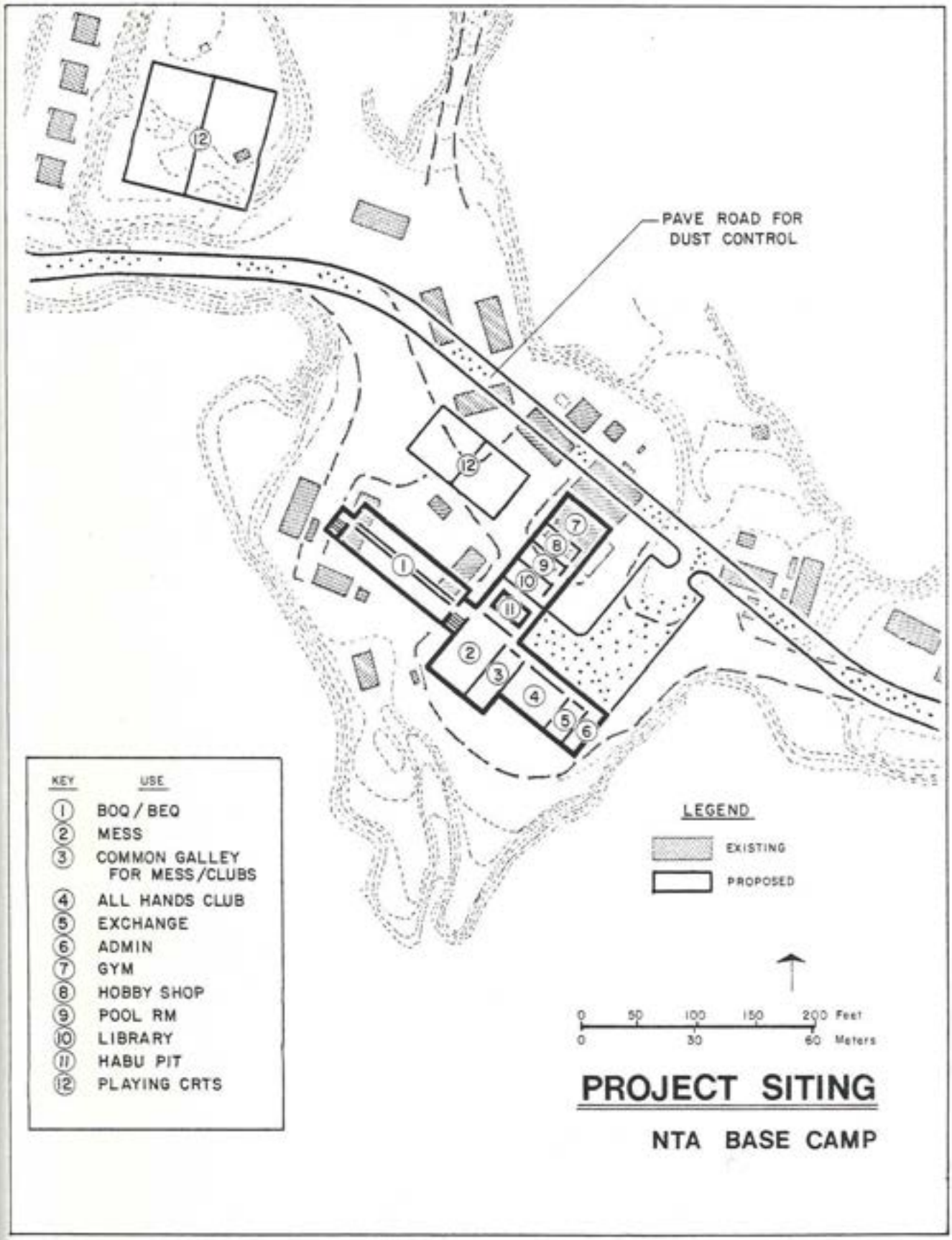

PAVE ROAD FOR DUST CONTROL
KEY USE
1 BOQ / BEQ
2 MESS
3 COMMON GALLEY FOR MESS/CLUBS
4 ALL HANDS CLUB
5 EXCHANGE
6 ADMIN
7 GYM
8 HOBBY SHOP
9 POOL RM
10 LIBRARY
11 HABU PIT
12 PLAYING CRTS
LEGEND
EXISTING
PROPOSED
0 50 100 150 200 Feet
0 30 60 Meters
PROJECT SITING
NTA BASE CAMP

FIGURE H-7

PRELIMINARY
ENVIRONMENTAL ASSESSMENT
[P E A]

MASTER PLAN

FOR

MCB CAMP SMEDLEY D. BUTLER

OKINAWA, JAPAN

SEPTEMBER 1980

Prepared by
Pacific Division
Naval Facilities Engineering Command
in accordance with OPNAVINST 6240.3 Series
in compliance with the
National Environmental Policy Act of 1969

1. PEA

Purpose. This is a PEA for a Master Plan. It is intended to identify broad areas of impact of planning proposals contained in the Master Plan and will not examine, in detail, the environmental impact of each and every project.

Components of the Master Plan will have impact upon the environment, and certain projects may have significant impact. PEAs will be prepared for individual projects as required under MCON submission procedures.

Responsible Office: PACNAVFACENGCOM

Contact: Commander T. C. Kelley, CEC, USN
Head, Facilities Planning Department

Address: Pearl Harbor, HI 96860

Telephone: (808) 471-3088

2. Name of Action

Master Plan for MCB Camp Smedley D. Butler

(X) Administrative ( ) Legislative

3. Description of Action

The project is a Master Plan for MCB Camp Butler, Okinawa, Japan. It is a document which provides guidelines for future land use and facilities development for the mid-range time frame (three to eight years). MCB Camp Butler provides housing, training facilities, logistics support and administrative support for Fleet Marine Force units on Okinawa.

MCB Camp Butler consists of nine major camps spread over a distance of 50 kilometers in length from Camp Kinser in South-central Okinawa to Camp Schwab in the northeastern part of the island.

Near-term major construction projects include bachelor housing buildings, enlisted dining facilities, warehouses, administrative buildings and other facilities. These are planned to be built at Camps Foster, Courtney, Hansen, Schwab, and Kinser.

4. Summary of Impacts

a. Social. The eventual return of real estate and facilities to the GOJ of portions of Camp Courtney and other miscellaneous areas will provide the local population with usable and developable lands.

b. Economic. Economy will improve slightly when U.S. dollars are provided for some new facilities.

c. Water. Overall water consumption is not expected to increase.

d. Sewage. Noticeable increase in sewage discharge not expected. Implementation of sewage treatment projects at the Marine Corps camps will provide cleaner effluent.

e. Solid Waste. Minimal increase in solid waste expected.

f. Energy. Increased consumption of electricity.

g. Transportation. Minimal change.

h. Aesthetic. Minimal change.

I. Flora and Fauna. Minimal impact.

j. Construction. Temporary noise, dust, drainage and transportation impacts.

k. Historical Sites. No impact.

5. Alternatives Considered

a. Proposed development.

b. No action.

c. Alternative locations.

d. Staged implementation.

6. Recommendation

Two major recommendations of this Master Plan, if implemented, will improve the environment. The proposal to consolidate operations which will eventually make available for release real estate to the local economy will improve the social and political environment. The proposal to limit facility development to only within the substantially developed areas will improve the aesthetics while retaining the existing conservation features.

The plan to consolidate/centralize development accommodates unaccompanied military personnel, reduces transit time between functional areas, reduces transportation and fossil fuel requirements and reduces the quantity of facilities required.

No controversial environmental impacts are expected from the implementation of the Master Plan.

PEA

1. Introduction

a. Project Description. The project is a Master Plan for MCB Camp Butler (see Figure I-1). The Plan provides a guide for developing the activity based on military requirements, environmental concerns, current planning criteria, community influences and local government policies.

MCB Camp Butler consists of nine major, separate camps spread over a distance of 50 kilometers in length from Camp Kinser in South-central Okinawa to Camp Schwab in the northeastern part of the island. The camps are Kinser, Foster, Kuwae, Courtney, McTureous, Hansen, Schwab, and Onna Point. MCB Camp Butler also contains the Northern Training Area located in Northeast Okinawa and other miscellaneous installations.

Major recommendations of the Plan include:

(1) Implement a phased (two-stage) unaccompanied personnel housing rehabilitation program to upgrade the living conditions of the existing quarters and pursue funding for new barracks. Initial effort would be to provide partitions and central air conditioning, followed by construction of an external bathroom for each room.

(2) Construct higher density (multi-story) buildings at all camps to insure that required facilities can be built within the developed areas of each camp while maintaining open areas for troop training and outdoor recreation.

(3) Develop a permanent cantonment area at the Northern Training Area base camp.

(4) Pursue the development of supporting plans, including a traffic and circulation study and overall landscaping plans for all of MCB Camp Butler.

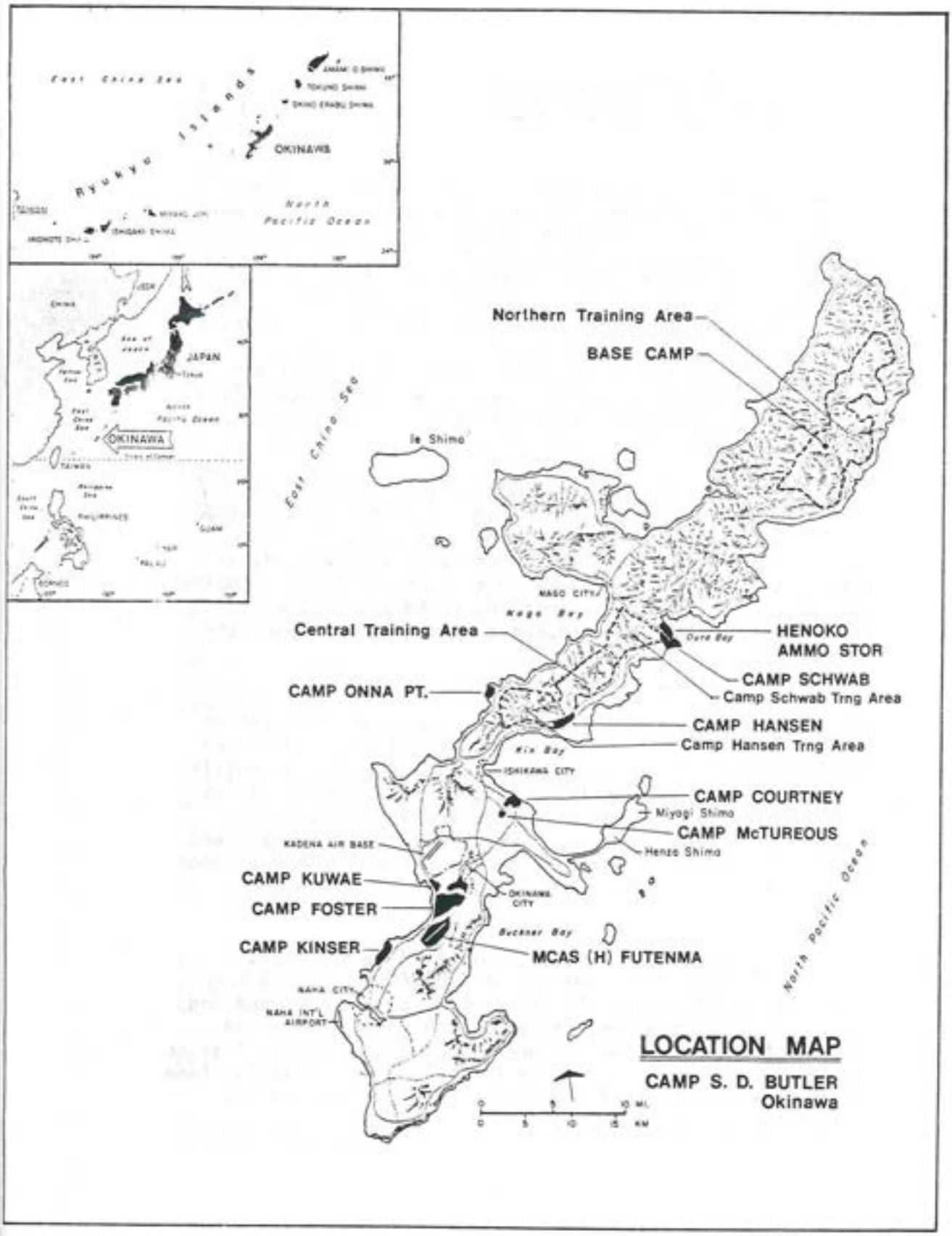

East China Sea
Ryukyu Islands
OKINAWA
North Pacific Ocean
JAPAN
OKINAWA
Northern Training Area
BASE CAMP
East China Sea
Ie Shima
NAGO CITY
Nago Bay
Central Training Area
HENOKO AMMO STOR
Oura Bay
CAMP SCHWAB
Camp Schwab Trng Area
CAMP ONNA PT.
CAMP HANSEN
Camp Hansen Trng Area
Kin Bay
ISHIKAWA CITY
CAMP COURTNEY
Miyagi Shima
CAMP McTUREOUS
Henza Shima
KADENA AIR BASE
CAMP KUWAE
CAMP FOSTER
OKINAWA CITY
Buckner Bay
CAMP KINSER
MCAS (H) FUTENMA
NAHA CITY
NAHA INT'L AIRPORT
North Pacific Ocean
LOCATION MAP
CAMP S. D. BUTLER
Okinawa
0 5 10 MI.
0 5 10 15 KM

FIGURE 1-1

b. Existing Site Characteristics. Site characteristics at each of the major camps to be developed are described below:

(1) Camp Foster. This complex, located along the southwestern coastline between Okinawa City and Kadena Air Base to the north and Ginowan City to the south, is situated on a coastal plain and on rolling, hilly terrain. The coastal flatlands are substantially developed, utilized for supply, maintenance, operations, recreation and troop housing functions. Development of the uplands is limited to scattered level areas and areas where gentle terrain slopes occur. Ravines, gullies and areas where steep slopes occur are generally left intact. Upland development consists mainly of personnel support and family housing facilities.

(2) Camp Kuwae. Camp Kuwae, located just north of and contiguous to Camp Foster, is situated mainly on a coastal plain with hilly terrain occurring only along the eastern boundary. The flatlands are substantially developed, with NAVREGMEDCEN Okinawa and permanent troop and family housing quarters occupying the southern half and predominantly temporary maintenance and support buildings occupying the northern half.

(3) Camp Courtney. Camp Courtney, located on the eastern coastline in Central Okinawa, is situated on a bluff overlooking Kin Bay. The terrain is relatively flat to rolling with a few scattered knolls. Less than 50 percent of the developable area is presently occupied with buildings. These level areas, however, have been cleared, grassed and kept as beautiful open areas for troop training and outdoor recreation.

(4) Camp Hansen. Camp Hansen is located in Northeast-central Okinawa, 27 kilometers of Camp Foster. This camp contains 12,706 acres, 470 acres of which is developed and used for administration, troop housing, maintenance and personnel support. The 470 acres consists mainly of flat to slightly rolling terrain. The remaining real estate at Camp Hansen, devoted entirely to training, is very hilly and remains mostly undeveloped.

(5) Camp Schwab/Henoko Ammunition Storage Area. This complex is located in North-central Okinawa along the shoreline overlooking Oura Bay and the Pacific Ocean. The developed area is confined to the shoreline and contains facilities for troop housing, maintenance, administration, personnel support and ammunition storage magazines. Terrain is predominantly hilly, although a moderately level area occurs at the easternmost end of the camp. The Camp Schwab Training Area, located on the lower slopes of Mount Kushi, is very hilly and is relatively free of facility development.

(6) Northern Training Area. This training area, located on Northern Okinawa, contains predominantly hilly terrain and is devoted mainly to troop training. The area is relatively free of facility development except for a small base camp area used for operations, administration and minimal troop support facilities. Buildings at the base camp are largely quonset huts.

(7) Camp Kinser. This complex is located on the southwestern coastline of Okinawa adjacent to the most populated municipalities (Naha City, Urasoe and Ginowan) on the island. Terrain includes a relatively level coastal plain and a plateau with elevations running from the water's edge to about 28 meters.

The area is predominantly occupied by permanent facilities used for warehousing, maintenance, troop housing, operations and personnel support facilities.

c. Operational Requirements

(1) Present Operations. The mission of MCB Camp Butler is to provide training facilities, limited logistics support and limited administrative support for FMFPAC (FWD) units located at MCB Camp Butler, MCAS (H) Futenma and at Camp Fuji, Japan.

(2) Projected Changes. There are no operational changes projected for MCB Camp Butler.

d. Other Naval/Federal Installations in the Area. Other installations on the island of Okinawa include MCAS (H) Futenma, FLEACT Okinawa/NAF Kadena and U.S. Naval Security Group Activity, Hanza (NAVSECGRUACT Hanza)--all covered by separate Master Plans. The Air Force conducts operations at Kadena Air Base and operates all military family housing on the island. The USAGO operates Naha Port, Camp Kinser, and other miscellaneous areas.

2. Relationship of Proposed Action to Land Use Plans, Policies and Controls for the Affected Area

a. Federal. There is no specific approved Federal land use plan for MCB Camp Butler, other than the land use policies recommended by this Master Plan. The Plan will become the Federal land use plan when approved by CMC.

b. GOJ and Local. In general, the GOJ and local government land use policies do not designate specific land uses for military controlled real estate. One exception is the GOJ's plan to retain the mountainous region on Northern Okinawa in its natural state for potable and industrial water development. This Master Plan recognizes such need and recommends that only compatible uses such as troop training be permitted in the area. All development proposed by this Plan is compatible with adjacent nonmilitary land uses.

c. Clean Air Acts and Federal Water Pollution Control Acts Amendments of 1972. These acts have been taken into consideration in the preparation of this Plan. The proposals of this Master Plan are compatible with these laws and regulations.

3. Probable Impacts of the Plan on the Environment

a. National and International Environment. The Plan will have an impact on the international environment as the installation is located on Okinawa.

b. Primary Impacts

(1) Social. The eventual return of real estate to the local population of portions of Camp Courtney and other miscellaneous areas will enhance the civil/military relationship.

(2) Economic. The economy will improve slightly when U.S. dollars are provided for some new facilities.

(3) Water. The overall water consumption is not likely to increase. The reduction of the number of camps may lead to a reduction of water usage.

(4) Sewage. Increase in sewage discharge from the camps is not anticipated. Sewage treatment projects for the treatment plants at Camps Schwab/Henoko, Hansen and Courtney have been submitted to GOJ for funding.

(5) Solid Waste. Overall increase in solid waste generation is expected to be minimal.

(6) Energy. With further improvements and expansion of existing facilities, there will be an increase in the consumption of electrical power. However, the activity has implemented energy conservation measures to minimize total consumption.

(7) Transportation. In general, the impact on transportation should be minimal; however, the acquisition of Camp Kinser in 1977 has caused an increase in traffic on Highway 58 between Camp Kinser and Camp Foster. Release of Camp Onna Point and consolidation of the units with another camp will reduce traffic on public highways.

(8) Aesthetic. MCB Camp Butler will be enhanced and accentuated visually and aesthetically by new buildings, renovation of facilities and elimination of old, deteriorated buildings. Further improvements will be implemented throughout each camp, with landscaping, maintaining green belt areas and well planned overall site planning.

(9) Flora and Fauna. Impact on flora and fauna will be minimal as new facility development is proposed only within the limits of developed areas. A portion of the Northern Training Area will remain intact to avoid interfering with the habitat of the Noguchi-Gera woodpecker, a culturally protected bird.

(10) Construction. Temporary noise, dust, erosion and transportation impacts are expected.

(11) Historical Sites. There are no known impact on historical sites. Rugged terrain and dense jungle growth at some of the camps may conceal sites having historical significance. Therefore, any development at these camps will be given special attention to the identification and preservation of these sites.

4. Alternatives to the Plan

a. Proposed Development. Implementation of the Master Plan offers the advantage of minimizing the environmental impact at the activity. Because the facilities are existing and already in use, they imply that any significant environmental degradation has largely taken place, and nature is in the process of adapting and repairing any damage.

b. No Action. If no changes are made at camps planned for retention, the activity would be limited to its present state of development requiring the continued use of many substandard facilities. This would severely hinder the activity in the performance of its assigned mission and would cause a deterioration of personnel morale.

c. Alternative Locations. Alternative activity sites on military controlled lands on Okinawa were evaluated and discarded because of the following reasons:

(1) Each existing site is substantially developed and fully utilized.

(2) Existing land uses are generally compatible with off-station land uses.

(3) Relocation to other sites considered infeasible due to fiscal restraints.

d. Staged Implementation. This alternative is similar to the first alternative because the planned projects recommended by this Plan will normally be implemented individually. The needs of the activity and the availability of funds will determine the date of implementation.

5. Probable Adverse Environmental Effects Which Cannot be Avoided Should the Master Plan be Implemented

No major adverse environmental effects are foreseen upon implementation of this Master Plan.

6. Relationship between Local Short-term Use of Environment and the Maintenance and Enhancement of Long-term Productivity

All construction recommended by this Plan is considered to be compatible with the long-term productivity of the land involved. All facilities proposed are to improve existing operational functions. Planning proposals included consideration that would minimize disruption of the environment during construction.

7. Irreversible and Irretrievable Commitments of Resources Which Would be Involved in the Proposed Master Plan Should It be Implemented

No specific examples of irretrievable commitments of resources can be attributed directly to the Plan since the Plan accepts the fixed facility requirements of the activity. In this context, all facilities of the Plan will be built somewhere and the sitings, as suggested, will contribute to the efficient operation of the total complex but will not really have much impact on the commitment of resources for construction.

8. Considerations That Offset the Adverse Environmental Effects

The adoption and implementation of this Master Plan will result in more effective operations, conservation of resources, preservation of the environment and enhancement of amenities, all of which will insure the readiness of the military forces to maintain peace. These benefits more than offset the minor adverse environmental impacts generated by the Plan.

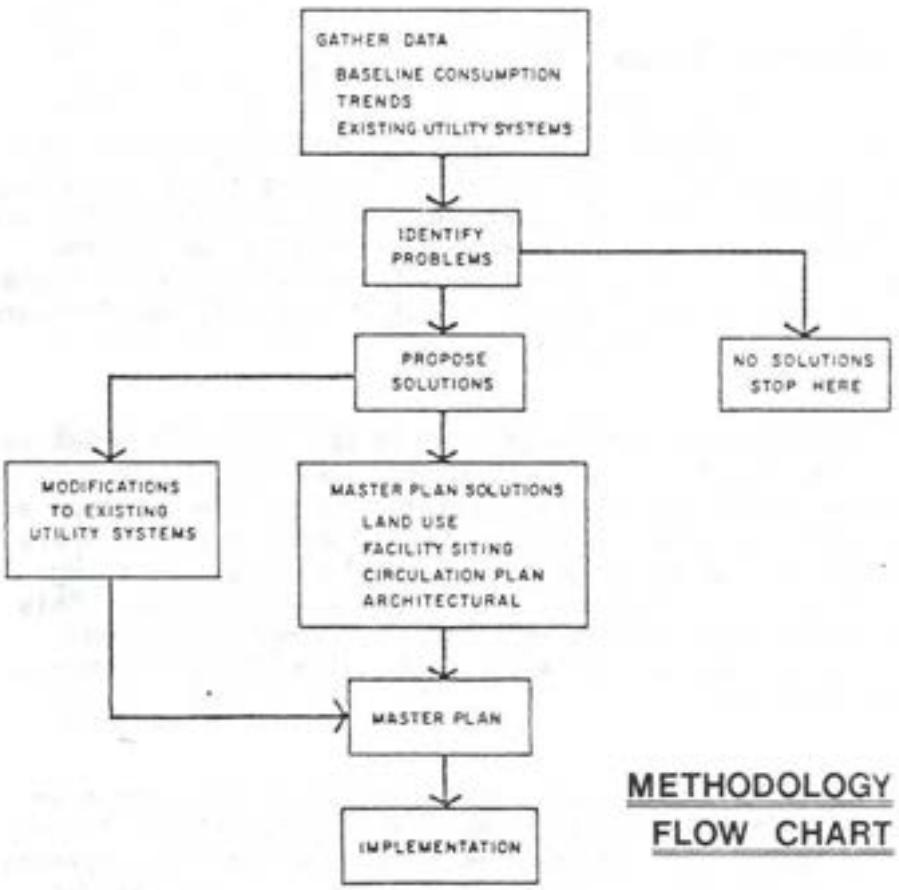
J. ENERGY CONSERVATION PLAN (ECP)

1. Objective

The purpose of the ECP is to examine areas where energy conservation techniques can be most effectively applied and to review energy conservation-related proposals contained in the Master Plan.

2. Methodology

Energy conservation is one of the objectives of the Master Plan and, as such, is an integral part of the master planning methodology. Specific energy-related steps in the master planning process are identified in the ECP methodology flow chart (see Figure J-1).



METHODOLOGY FLOW CHART

FIGURE J-1

3. Current Status

MCB Camp Butler consists of eight major camps scattered throughout the island of Okinawa. The camps include Foster, Kuwae, Courtney, McTureous, Hansen, Schwab/Henoko and Onna Point. MCB Camp Butler also includes the Northern Training Area located in Northeast Okinawa and other miscellaneous installations. MCB Camp Butler has over 37,000 hectares of land and contains about 3,400 buildings, with over 15 million square feet of floor area.

The major types of energy used at MCB Camp Butler are electrical and mechanical power. The major source of energy, electricity, is provided by the OEPC. Fuel oils and gasoline are provided by U.S. military forces. The ultimate source of all energy used in the region is fossil fuels.

4. Problem Areas

There are three major problems at the MCB Camp Butler complex, in terms of energy use at the present time, resulting in increased electrical power and gasoline consumption. The first problem is a major barracks rehabilitation and new construction program planned at all the major camps. These new/improved facilities will be larger and will require more energy for their operation.

The second energy problem at the MCB Camp Butler complex is troop distribution. At the present time, because of lack of adequate facilities in their assigned areas, many troops are separated from their command location and are housed where space is available. Often, this results in troops being located up to 7 kilometers from their assigned area. This troop dispersion results in extensive commuting between camps, requiring an increased consumption of fuel by Marine Corps vehicles.

The third problem of energy conservation is the long distance between unit location and training location. Transporting troops and equipment between base camp and training site increase fuel consumption. The most severe case of this is the Marine Corps units located at Camp Kinser, who

must travel 34 kilometers to Camp Hansen for small arms training, and over 90 kilometers to the Northern Training Area for individual and unit training.

Other problems are basically maintenance type, involving leaking steam lines, old buildings with inadequate insulation resulting in heat loss and gains which ultimately result in higher fuel use, and inefficient use of the existing energy system.

5. Total Energy Systems

The overall Master Plan attempts to consolidate individual areas of the complex through proposed location of troops and facilities in areas based on their need and the needs of each individual area. It also provides land use patterns which are compatible with adjacent land uses and are within the limits of the existing energy system. Each individual area of the complex has its own energy system. Since the nature of the Marine Corps organization and its specialized training make complete centralization impractical, the Master Plan attempts to improve the operation of these individual areas by centralizing the services and personnel support functions as much as possible. The Master Plan seeks to confine new construction within developed areas and to construct higher density, multi-story structures.

6. Land Use Planning and Facility Development

Although all land use planning, facility siting and infrastructure development recommendations contained in the Plan have underlying long-range energy conservation benefits, construction projects required to implement the Plan may adversely affect energy conservation in the near-term. Master Plan recommendations that have particularly attractive long-range energy conservation impacts include:

a. Facility construction proposed by the Plan will replace old, inefficient structures with energy-efficient buildings.

b. Facility consolidations proposed by the Plan will enable larger, more energy-efficient utilities to be incorporated in the construction. The consolidations will also reduce vehicle circulation requirements.

c. The comprehensive personnel and community support proposal will encourage walking and bicycling in lieu of automobiles which will reduce the consumption of automobile fuels.

7. Energy Plan Summary

The overall energy requirements of the base will increase, as will that of the surrounding region. Fuel and power companies, fully aware of this trend, have planned for it; so, basically, all energy requirements will be met. Therefore, the thrust of the Master Plan, in terms of energy conservation, is to limit the increase in demand to only that which is necessary. The Plan seeks to do this in two ways. First, it will improve use of existing facilities and operations by improving traffic circulation patterns, eliminating unnecessary or substandard facilities, consolidating congruent operations, and centralizing common facilities when possible. The second method will be effective planning of new facilities. This is done by planning for efficient land use, recognizing limits of existing energy systems (and, when possible, staying within these), siting new facilities in the best location with respect to circulation patterns, land use and existing utility lines, incorporating solar systems where feasible, as well as orientation, centralization of new common facilities, and encouragement of pedestrian circulation wherever possible. Although these planning goals will not completely prevent the increase in energy requirements, they will control it and keep it within reasonable and acceptable limits. At the same time, these goals will improve efficiency of existing energy systems.

K. ADDITIONAL RECOMMENDED STUDIES

1. A landscape plan and a traffic study recommended in the draft version of this Master Plan have been completed.

2. The ongoing plan by the GOJ to extend the Naha Port area up to the Camp Kinser shoreline should be monitored (see Figure K-1). If this area could be used by U.S. ships and a direct access from Camp Kinser used, then both routine and mount-out operations would benefit. If dedicated ship berthing could be obtained, then the U.S. Army-operated port at Naha could be returned to GOJ.

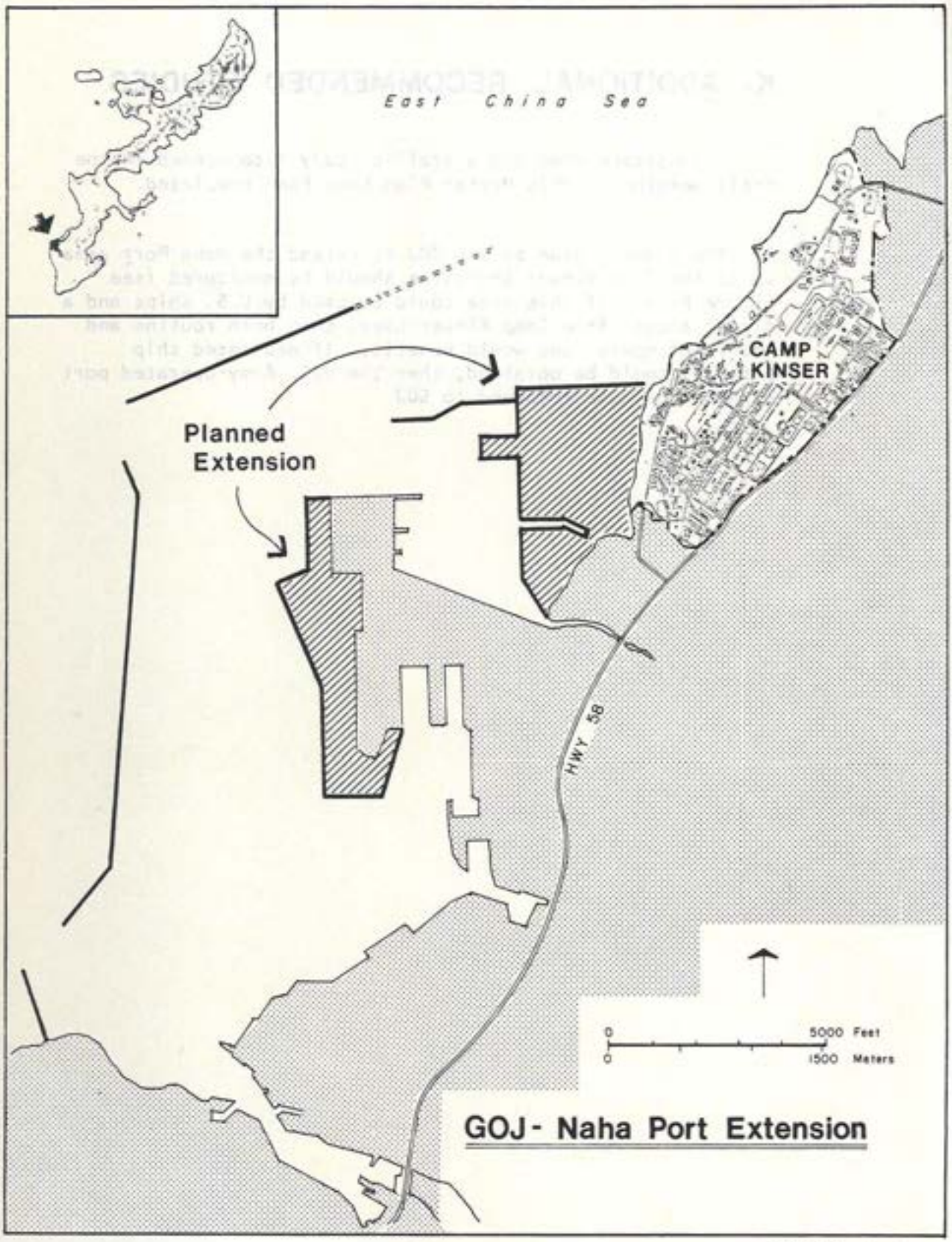
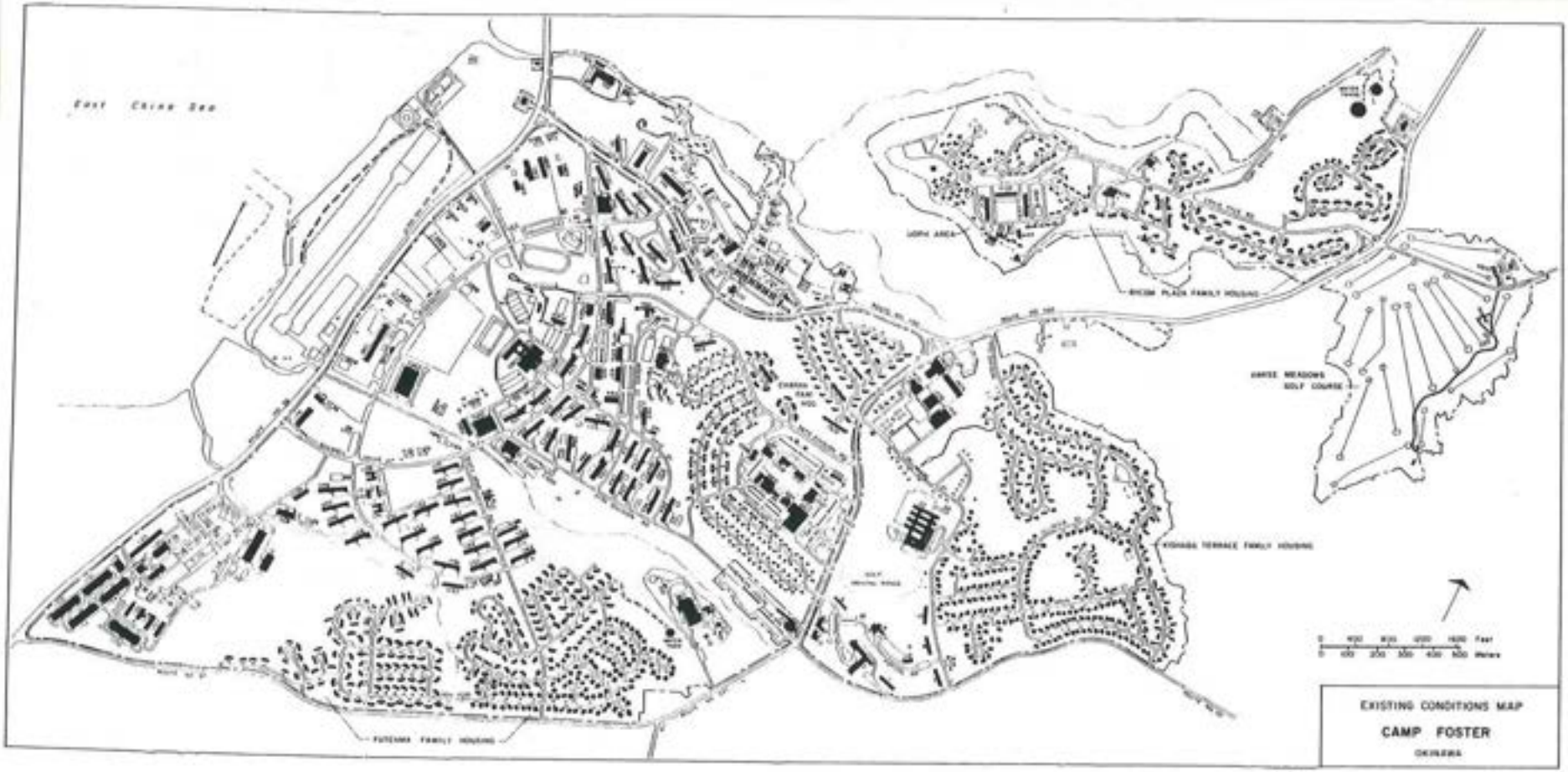
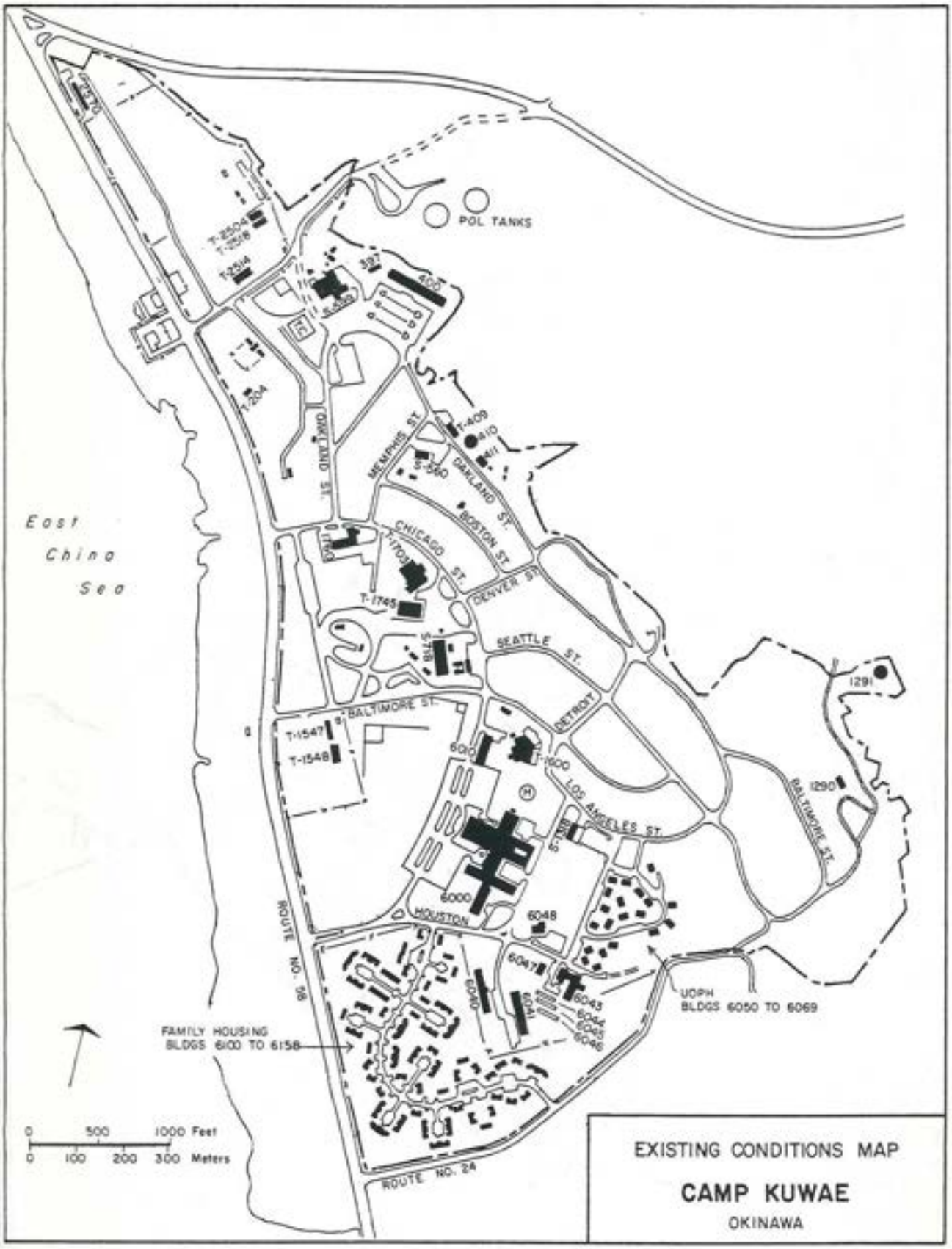
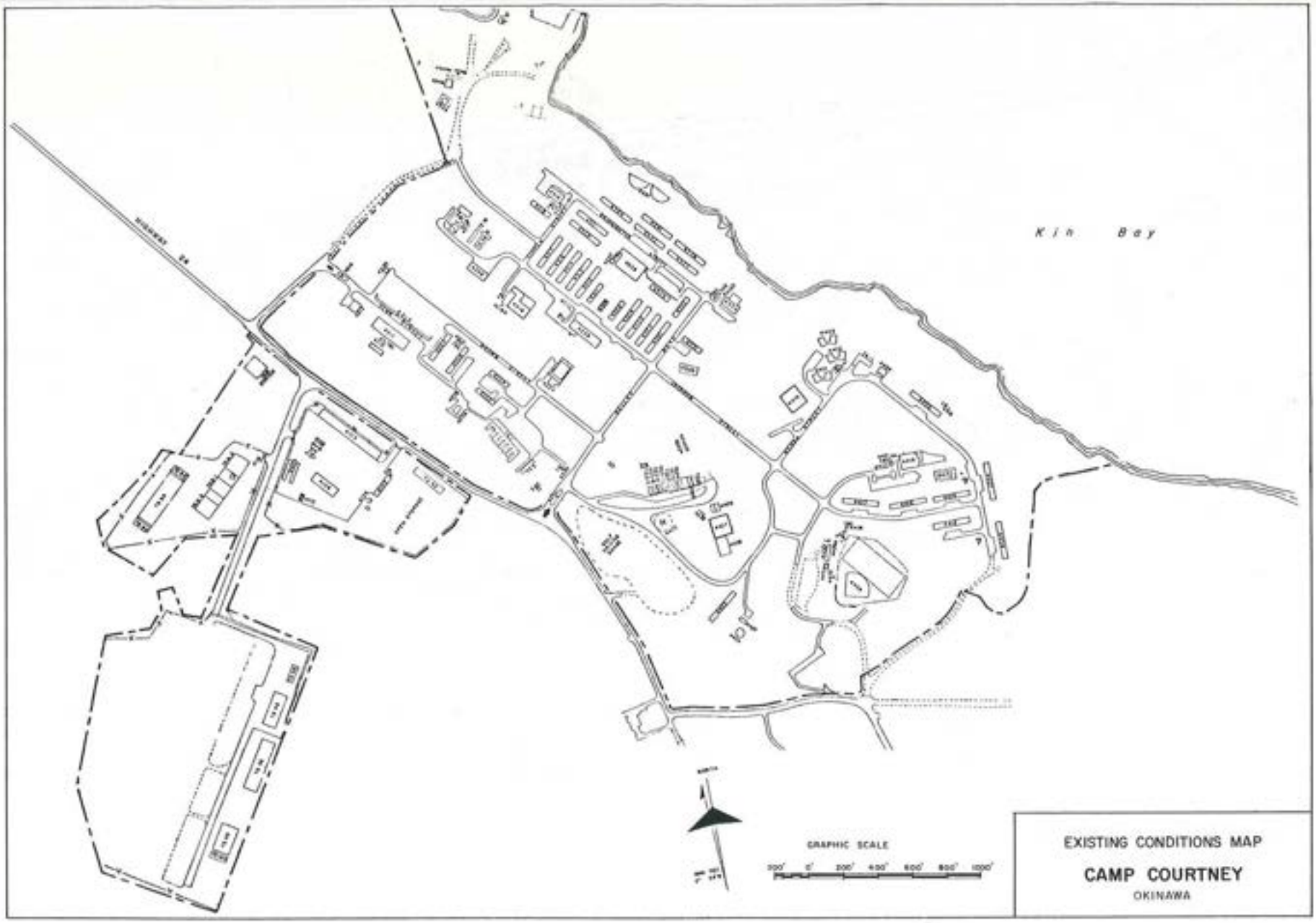
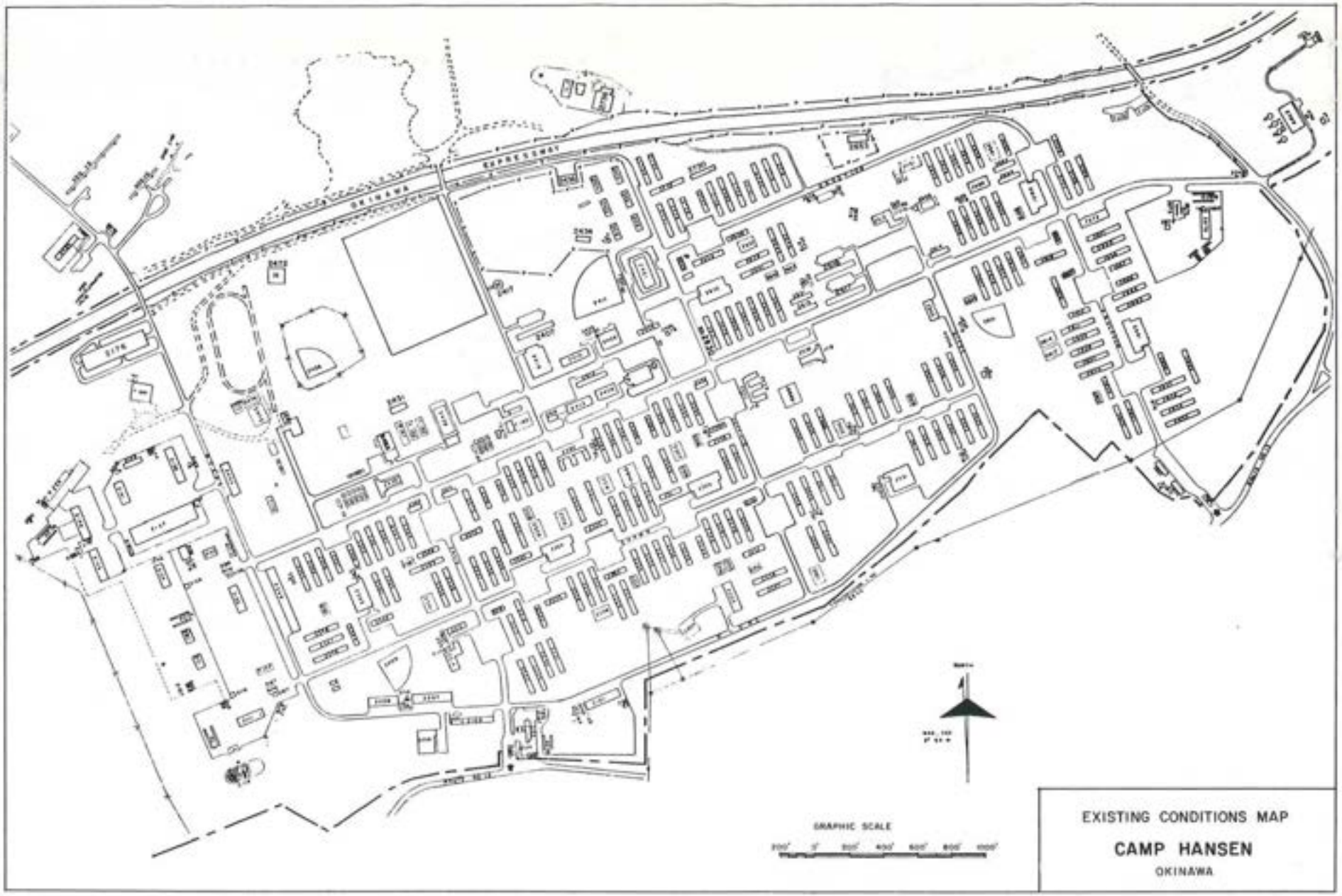

East China Sea
CAMP KINSER
Planned Extension
HWY 58
0 5000 Feet
0 1500 Meters
GOJ - Naha Port Extension

FIGURE K-1


East China Sea
HIGH AREA
RHODE PLAZA FAMILY HOUSING
HAYES MEADOWS GOLF COURSE
KISHABA TERRACE FAMILY HOUSING
FUTENMA FAMILY HOUSING
EXISTING CONDITIONS MAP
CAMP FOSTER
OKINAWA


POL TANKS
East China Sea
OAKLAND ST.
MEMPHIS ST.
CHICAGO ST.
BOSTON ST.
DENVER ST.
SEATTLE ST.
DETROIT
LOS ANGELES ST.
BALTIMORE ST.
HOUSTON
ROUTE NO. 58
ROUTE NO. 24
FAMILY HOUSING
BLDGS 6100 TO 6158
UOPH
BLDGS 6050 TO 6069
0 500 1000 Feet
0 100 200 300 Meters
EXISTING CONDITIONS MAP
CAMP KUWAE
OKINAWA

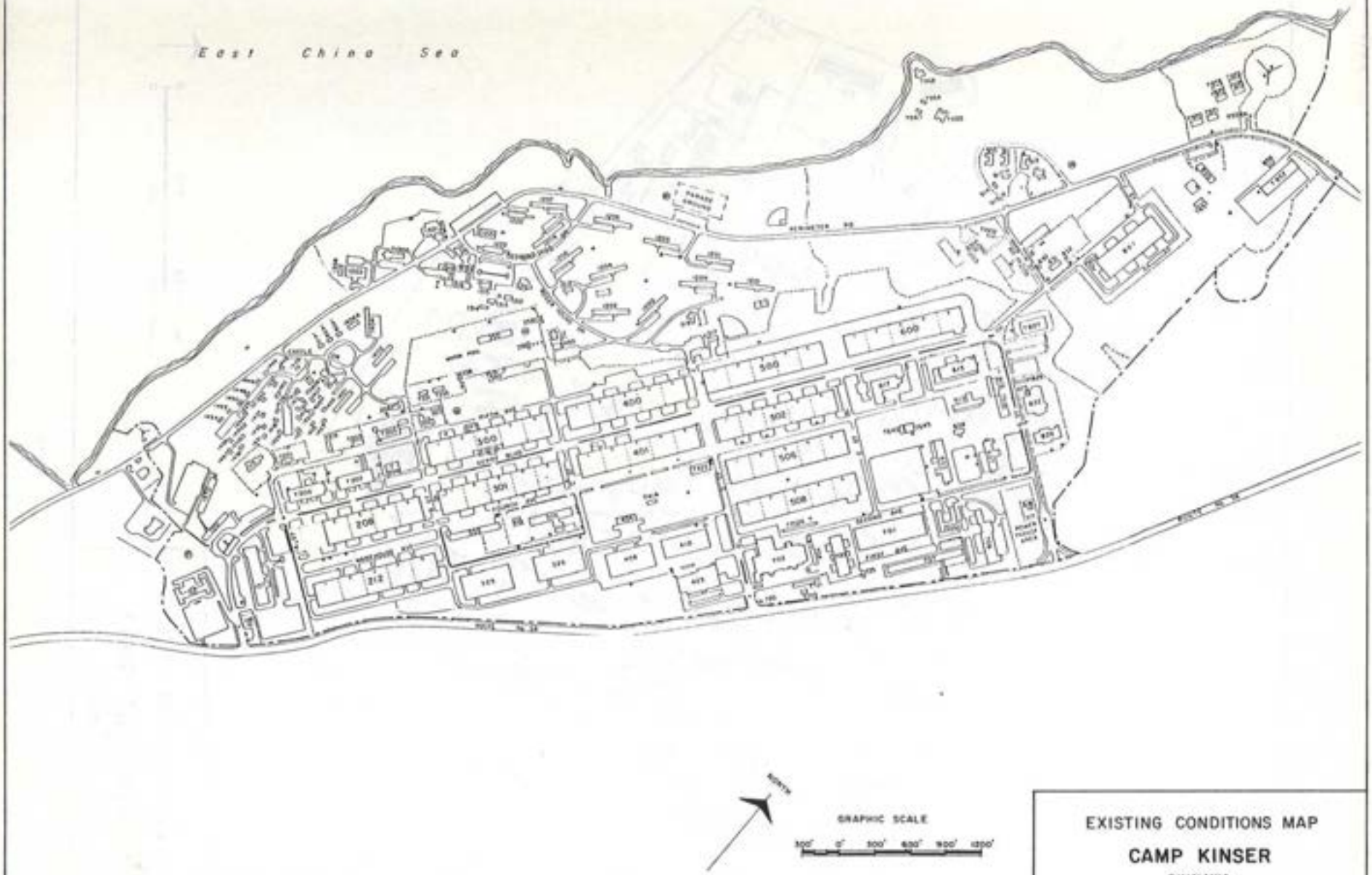

Kin Bay
GRAPHIC SCALE
200' 0' 200' 400' 600' 800' 1000'
EXISTING CONDITIONS MAP
CAMP COURTNEY
OKINAWA



EXISTING CONDITIONS MAP

CAMP HANSEN

OKINAWA



EXISTING CONDITIONS MAP

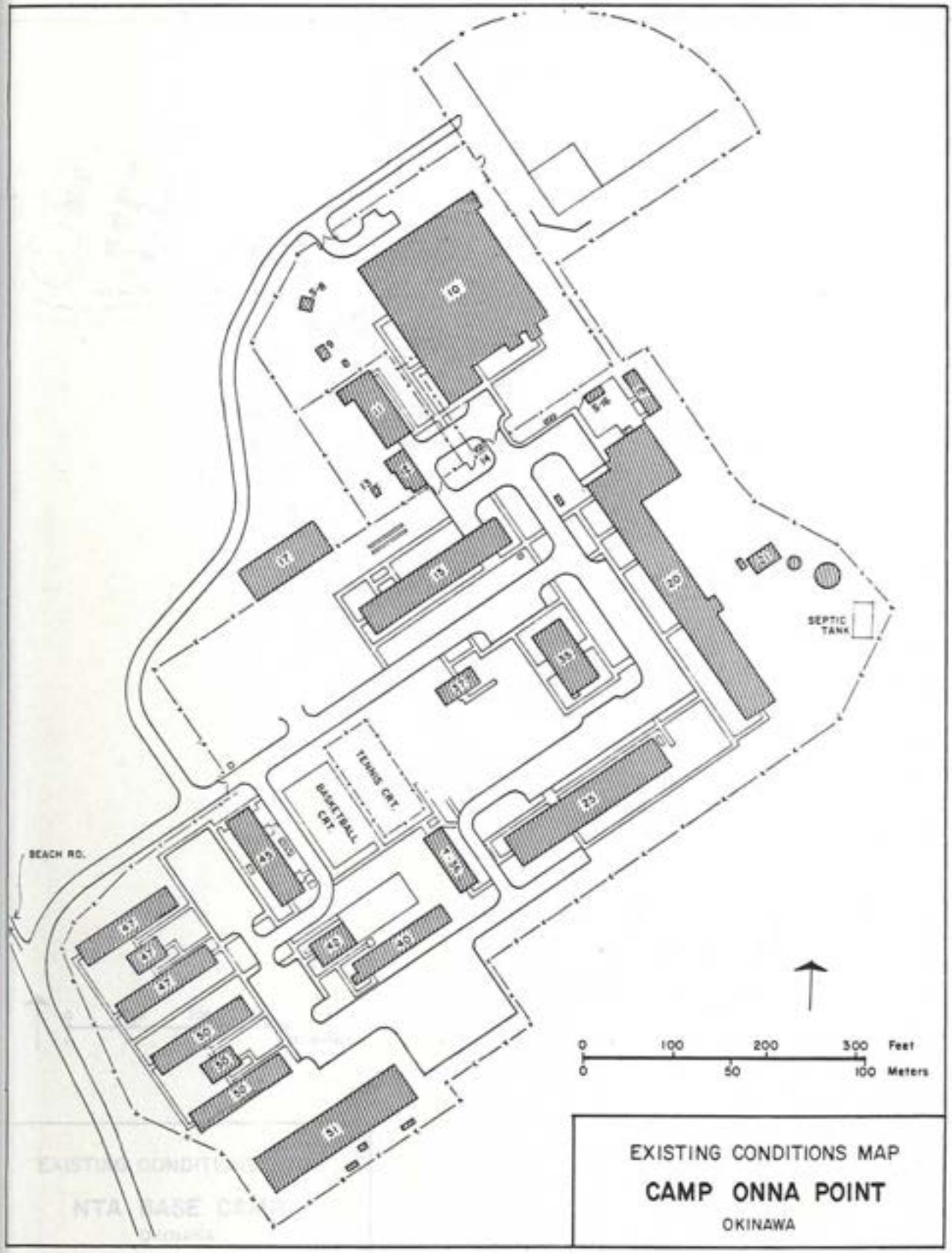
CAMP KINSER

OKINAWA

EXISTING CONDITIONS MAP

CAMP McTUREOUS

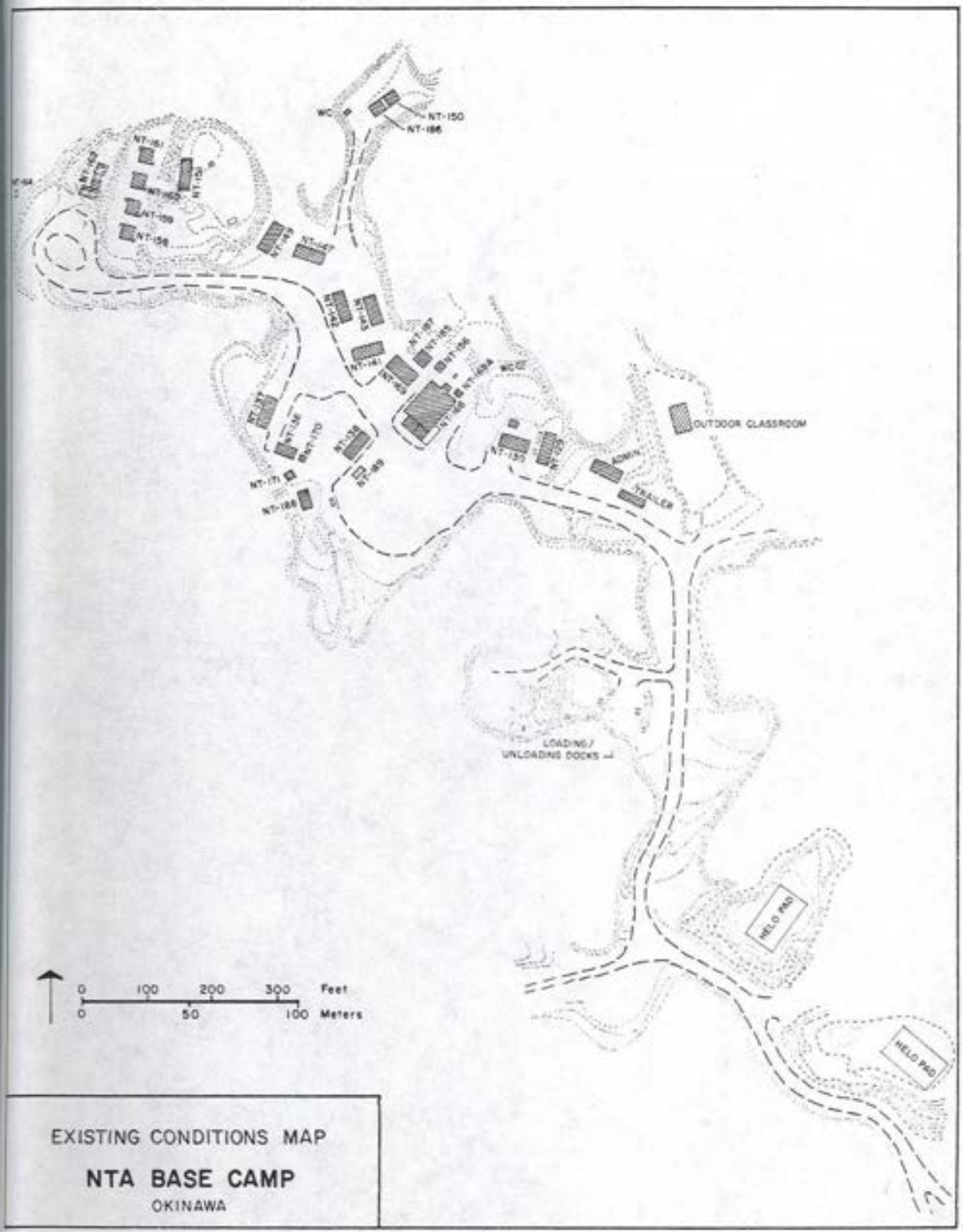
OKINAWA



EXISTING CONDITIONS MAP

CAMP ONNA POINT

OKINAWA



EXISTING CONDITIONS MAP

NTA BASE CAMP

OKINAWA