

**HISTORICAL REVIEW
CORPS OF ENGINEERS
UNITED STATES ARMY**

VOLUME III

**COVERING OPERATIONS
DURING
WORLD WAR II
PACIFIC OCEAN AREA**

**LIEUTENANT GENERAL
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UNITED STATES ARMY
COMMANDING GENERAL**

CONSTRUCTION ACTIVITIES

AT

WHEELER FIELD

TERRITORY OF HAWAII

Covering the Period 1935 - January 6, 1941

1. General Data

a. Scope

This report covers construction activities at Wheeler Field, Territory of Hawaii, an Air Corps Station, during the period 1935 to January 6, 1941 at which time control of construction on Air Corps projects passed to the U. S. Engineers by Section 102, Public No. 781, 76th Congress approved September 9, 1940.

2. Description of Project

a. Historical Data

(1) The expansion of Wheeler Field had its inception in the report of a board of Officers appointed November 10, 1926 by the Commanding Officer, Hawaiian Department to study the needs of the Department in connection with the Air Corps Five Year Program.

(2) In a report of this Board, dated February 21, 1927, the expansion of Wheeler Field to One Wing Capacity was recommended and an area of land immediately east of old Wheeler Field and contained in the triangle formed by Wahiawa Road, Schofield Road and the existing Wheeler Field Boundary was recommended for this expansion. This area contained four hundred (400) acres.

(3) It was estimated at that time that the cost of preparing the ground, exclusive of the purchase cost would be \$107,450.00.

(4) In the year 1928 House Bill HR 11134 authorized
\$504,000.00 for Barracks
\$300,000.00 for N.C.O. Quarters
\$666,000.00 for Officers' Quarters
to become available July 1, 1929 (F.Y. 1930)

In the following year, September 25, 1929, these funds became available as authorized except that the funds for Barracks was reduced to \$502,000.00.

(5) The final layout plan for Wheeler Field was completed and approved by The Quartermaster General, January 20, 1930.

(6) The comparative merits of the Albrook Field (Panama) type of barracks proposed by the Office of the Quartermaster General for use at Wheeler Field and the "Wheeler Field Type Barracks" developed by the Hawaiian Department were discussed at length during March and April 1930. Preliminary plans for Officers and N.C.O. Quarters were prepared in the office of the Department Quartermaster and were approved by the Adjutant General May 28, 1930. Construction of quarters for Forty-eight (48) Officers including Bachelor Officers Quarters for Sixteen (16) Bachelor Officers and construction of quarters for Thirty-nine (39) N.C.O. was approved July 9, 1930. Final plans were approved September 17, 1930.

(7) The Albrook Field double type Hangar was approved for use at Wheeler Field, July 7, 1930.

(8) July 7, 1931 a contract was awarded for the Construction of Two (2) Sets of Field Officers Quarters, Thirteen (13) Sets of Company Officers Quarters, and Eleven (11) Sets of Non-Commissioned Officers Quarters.

(9) In the year 1932, the Contract mentioned in (8) above and, in addition, five (5) sets of Field Officer Quarters, Thirty-seven (37) Sets of Company Officers Quarters and One (1) Bachelor Officers Quarters for Sixteen (16) Officers were completed.

(10) By the year 1934, there had been completed Hangars and Technical Buildings, Barracks, Quarters and miscellaneous buildings as indicated on the drawing attached to this report.

(11) During the period 1934 - 1939 no new construction was undertaken.

(12) During 1939, the following projects were completed:

- (a) A Refrigeration System for Temporary Cantonment.
- (b) Furnishing and Installing Oil fired Ranges in Temporary Cantonment.
- (c) Excavating, Grading and Levelling Officers and N.C.O. Arcas.

(13) During the year 1940, the following projects were completed:

- (a) Thirty-seven Double N.C.O. Quarters.
- (b) Extension of Water main.

- (c) Extension of Sewer, Electric, Street Lighting and Water lines.
- (d) A Control Tower on the Operations Hangar.
- (e) Construction of the New A.C. Gasoline System.
- (f) Addition to the Paint, Oil and Dope Building.

(14) The following projects, begun in 1940, are scheduled for completion in 1941:

<u>Project</u>	<u>% Complete as of January 6, 1941</u>	<u>Expected Date of Completion</u>
(a) A 600 Man A.C. Barracks	85% Complete	5-2-41
(b) Ten (10) Field Officers Quarters, Twenty-five (25) Company Officers Quarters and Three (3) ten-unit Officers Apartment Buildings.	71% Complete	5-16-41
(c) Emergency Night Lighting System.	18% Complete	6-6-41
(d) Finish Pavement, Sidewalk and Curbs.	10% Complete	5-24-41

b. Topographical Data

(1) Wheeler Field lies on the edge of what is known as the "Schofield Plateau" at an elevation of approximately nine hundred feet (900') above sea level.

(2) The prevailing winds are the Northeast Trades. Rainfall is varied and occasional showers may occur at any time. Heaviest rainfall occurs during winter months.

(3) The area is composed of a soil formed from decomposed volcanic ash, deep red in color and of unknown depth. It compacts readily and has excellent bearing capacity. Excavations do not cave or spall readily, which allows footings to be placed without side forms.

c. Principal Utilities

(1) Sewage

Sewage is collected by laterals and delivered to the Schofield Barracks Sewage Disposal Plant through an outfall line.

(2) Water

Water is obtained from an Army Deep Well pumping plant located adjacent to the Post.

(3) Roads

The Post is adjacent to a principal highway which connects it to Honolulu, approximately twenty-five miles (25) East and with all Island points to the West and Northwest. An alternate route toward the West also connects with Honolulu, Hickam Field and the Pearl Harbor Naval Reservation.

(4) Storm Drainage

Storm Drainage is adequately cared for by surface drainage, which provides a quick run-off.

d. Planning and Personnel

(1) Planning

With exception of Barracks and technical projects as Night Lighting and A.C. Gasoline System Installation, plans and specifications for all projects since 1935 have been prepared in the Office of the Constructing Quartermaster, Hawaiian Department.

(2) Personnel

e. Purchase and Hire Activities

(1) In addition to the work carried out by the Office of the Constructing Quartermaster under contracts, projects by Purchase and Hire amounting to the cost of approximately \$54,000.00 have been performed, including approximately \$20,000.00 by WPA.

(2) Included in this work the amount of \$1,302.34 has been expended on surveys, sub soil exploration, soil tests, etc.

(3) Under the storm drainage work, in the amount of \$6,905.81 is included the laying of a 12" drain adjacent to Wright Avenue, construction of catch basins, necessary grading adjacent to the paved aprons, and the construction of an outfall.

(4) Work on the water system has included the making of the service connections to Officers and N. C. O. Quarters costing \$263.60.

(5) Grading and landscaping work around the quarters and barracks has cost \$10,972.20, while in conjunction with this work coral rock retaining walls constructed in the N.C.O. Area cost \$10,847.59.

(6) Sidewalk and road work includes the street and house sidewalks in the N.C.O. Area and asphalt cement service drives and parking spaces in the N.C.O. Area. This work cost \$7,940.37.

(7) The largest single project was the erection of a cantonment including barracks, mess hall and latrines. This work amounted to \$15,527.00.

(8) On various miscellaneous projects including the moving of various utilities which interfered with the gasoline fueling system, the altering of manholes to bring to grade, the installation of door stops and closers on certain doors in the N.C.O. Quarters, etc., the sum of \$257.14 was spent.

3. Financial data (Covering period August 5, 1939 to January 5, 1941, Only)

a. Procurement Authorities:

- (1) QM 3428 P 99 A 0540.035-N
(C. of B., U. & A., No Yr)(Military Posts)
(Sup. Mil. Appn. Act FY 1940)
Allotted 8/5/39 ----- \$500,000.00
Allotted 10/6/39 ----- 500,000.00
Allotted 12/28/39 ----- 688,180.00
Total allotted under QM 3428 -----\$1,688,180.00
- (2) QM 3426 P 99 A 0540.035-N
(C. of B., U. & A., No Yr)(Military Posts)
(Sup. Mil. Appn. Act FY 1940)
for TENT CAMPS - HAWAII
(Total allotted for Hawaii---\$ 82,000.00)
Portion of allotment set up for Wheeler Field--\$15,527.00
- (3) QM 2880 P 99 A 0540.032-N
(C. of B., U. & A., No Yr)
(Mil. Appn. Act FY 1940)
Allotted 8/8/39 ----- \$ 5,000.00
Total allotted under QM 2880 ----- \$ 5,000.00
- (4) AC 563 P 85-3212 A 0705-0
(A.C.A. 1940)
(Mil Appn. Act FY 1940)
Allotted 6/28/40 ----- \$ 4,900.00
Total allotted under AC 563 ----- \$ 4,900.00

TOTAL ALLOTTED FOR WHEELER FIELD ---\$1,713,607.00

(6) Sidewalk and road work includes the street and house sidewalks in the N.C.O. Area and asphalt cement service drives and parking spaces in the N.C.O. Area. This work cost \$7,940.37.

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b. Expenditures

- (1) Calendar Year 1939 (8/5/39 to 12/31/39)
(a) Under QM 3428 ----- \$ 22,023.26
(b) Under QM 3426 ----- 15,527.00
Total expenditures for 1939 -----\$ 37,550.26
- (2) Calendar Year 1940 (1/1/40 to 12/31/40)
(a) Under QM 3428 -----\$1,268,093.47
(b) Under QM 2880 ----- 5,000.00
Total expenditures for 1940 -----\$1,273,093.47
- (3) Calendar Year 1941 (1/1/41 to 1/5/41)
(a) Under QM 3428 ----- \$ 61,237.44
(b) Under AC 563----- 824.28
Total expenditures for 1941 -----\$ 62,061.72
- TOTAL EXPENDED FOR WHEELER FIELD---\$1,372,705.45

c. Breakdown of expenditures

- (1) Contracts and Materials for Contract Work--\$1,327,162.89
(2) Labor and Materials for Purchase and Hire
Work-- 32,866.49
*(3) Overhead Payrolls and Materials----- 12,676.07
Total of expenditure breakdown -----\$1,372,705.45

*NOTE: Due to shortage to Wheeler Field Funds
certain general overhead costs were borne
by other funds available to the COM.

d. The following unexpended balances from Wheeler Field Funds
were transferred to the Corps of Engineers on January 6, 1941:

- (1) Under QM 3428-----\$336,825.83
(2) Under AC 563 ----- 4,075.72
Total Wheeler Field Funds transferred---\$340,901.55

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WHEELER AIR FORCE BASE

I. HISTORY:

Wheeler Field, the second airfield on Oahu, was named on 11 November 1922 in honor of Major Sheldon H. Wheeler who had been commander of Luke Field, Pearl Harbor, from 4 November 1919 until he was killed in an aircraft crash on 12 July 1921. Clearance of land south of Schofield Barracks was begun by a detachment of 20 men on 6 February 1922. Construction of hangars and storage tanks was completed by 30 June 1923.

A number of historical first flights during the 1920s and early 1930s brought Wheeler Field to public attention. The first non-stop Mainland to Hawaii flight from Oakland, California to Wheeler Field was made 28-29 June 1927, by Lieutenants L.J. Martland and A.F. Hegenberger in a Fokker C-2-3 Wright 220. They flew 2,407 miles in 25 hours and 50 minutes and were awarded the Mackey Trophy for 1927 as well as the Distinguished Flying Cross.

On 1 June 1928, Charles Kingsford-Smith of Australia on the first flight from the United States to Australia, landed his tri-motored Fokker monoplane "Southern Cross" at Wheeler Field, where he was greeted by approximately 5,000 spectators. The first solo flight from Hawaii to the Mainland was made by Amelia Earhart in the Lockheed Vega from Wheeler Field to California in 18 hours and 16 minutes flying time on 11 January 1935.

Wheeler Field became a separate permanent military post officially on 31 August 1939, although transition to independent status had been gradual. Units stationed at Wheeler Field by the end of 1939 included the 18th Pursuit Group and 4th and 5th Reconnaissance Squadrons, under the jurisdiction of the 18th Bomber Wing, with Headquarters at Hickam Field.

At the time of the Japanese attack on Hawaii, 7 December 1941, units of the Hawaiian Air Force stationed at Wheeler Field included the 14th Pursuit Wing, 15th Pursuit Group, 18th Air Base Group, 17th Air Base Squadron, and the 24th and 25th Materiel Squadrons. In spite of handicaps, four P-40s and two P-36s took off from Wheeler Field 35 minutes after the initial Japanese attack and flew a total of twenty-five sorties in an hour. Other effective sorties were carried out by pilots of the 47th Pursuit Squadron, a smaller Wheeler detachment training in Haleiwa.

Casualties at Wheeler Field included 37 killed, 6 missing, and 53 wounded. Of a total 231 Hawaiian Air Force aircraft, 153 of which were stationed at Wheeler Field, only 63 tactical aircraft remained usable after the attack, including twenty-seven p-40s.

During the years of World War II and until 1949, Wheeler Field was under the command of the 7th Air Force (previously the Hawaiian Air Force) and successor commands.

During March 1949, roll-up of Wheeler began and on 1 June 1949, upon deactivation of Pacific Air Command (successor to the 7th Air Force), jurisdiction of the Field was transferred to Hq Pacific Division MATS. Actual responsibility for inactivation and establishment of minimum care-taker's status was given to the Commanding Officer of the 1500th Air Transport Wing MATS at Hickam.

Expansion of the Air Force during the Korean Conflict resulted in reactivation of Wheeler Air Force Base. On 24 February 1952, the 1508th Support Squadron was designated and organized at Wheeler, assigned to Hq PACD/MATS and further assigned to the 1500th ATW. Its mission was one of support for activities at Wheeler.

On 1 April 1955, when the 1500th ABW (MATS) was redesignated the 6486th Air Base Wing and assigned to the 7th Air Force, Pacific Air Force, Far East Air Forces. The 1508th Support Squadron was redesignated the 6487th Support Squadron. Upon return of Hq Far East Air Forces on 1 July 1957, and concurrent deactivation of the 7th Air Force, the Commander of the 6487th Support Squadron was designated Commander of Wheeler Air Force Base. The squadron remained assigned to the 6486th Air Base Wing (PACAF Base Command). Its mission continued to be one of support for units stationed at Wheeler AFB.

On December 1, 1959, the Wheeler Commander and 6487th Support Squadron assumed limited operational and maintenance responsibility for Dillingham Air Force Base. By the end of 1959, tenant units at Wheeler AFB, in addition to the 326th Air Division and other PACAF units, included Hq Air Materiel Force Pacific Area (AMFPA); a number of MATS components such as Det 3, 1st Weather Wing and Hq and Det 1, Pacific Airways and Air Communications Service (ACCS); Det 1, 8th Air Rescue Group; and Office of the Field Representative, 6930th Security Wing. With approximately 300 Army and 500 Navy personnel, the base had a population of 2,480.

On January 9, 1961, the 6487th Support Squadron was redesignated 6487th Air Base Squadron. The 1962 PACAF Rifle Match was held at Wheeler May 19-26. Hq Pacific Ground Electronic Engineering Installations Agency (PACGEEIA) arrived from Fuchu Air Station, Japan, in July 1962.

The Wheeler Riding Academy opened on March 31, 1963 at the site of the WWII Army Motor Pool. A revised cross-servicing agreement with the Army 25th Aviation Company stipulated three meals a day instead of two for 110 Army personnel at Wheeler.

By the end of December 1964, there was a total base population of 2,480 plus dependents. This figure included 571 Army Aviation Maintenance personnel and 578 Kunia Navy Fleet Control Center personnel. Approximately 220 Hawaii Air National Guard (HANG) members also required base support when the 169th AC&W Squadron was transferred from Koko Head to Wheeler in July 1955 to operate the joint FAA/HANG facility at Mt Kaala AFS. By the end of December 1966, the base population had reached a total of 2,505 assigned personnel.

In May 1971, the 22nd Tactical Air Support Squadron (22 TASS) was assigned to Wheeler from South Vietnam to replace the 604th Direct Air Support Squadron (604 DASS). The 22 TASS was phased-in without personnel and equipment; thus, absorbing the personnel and facilities previously assigned to the 604 DASS.

In August 1971, three Cessna O-2As arrived at Hickam Air Force Base via Lockheed C-5A Galaxy. On August 12, the three O-2As departed Hickam AFB, landing at Wheeler AFB. The arrival of these aircraft marked the return of operational flying at Wheeler AFB for the first time since 1949.

With the deactivation of the 6487th Air Base Squadron (ABS) parent unit, the

6486th Air Base Wing at Hickam AFB on November 1, 1971, came the deactivation of the 6487th ABS. Concurrently with the activation of the parent, 15th Air Base Wing (15 ABW) at Hickam AFB on this same date, came the activation of the 15th Air Base Squadron (15 ABS) at Wheeler AFB. The 15 ABS assumed the duties and mission of the deactivated 6487th ABS. Today, by agreement with the U.S. Army, administration and maintenance of Wheeler AFB is performed by 15 ABS at Wheeler AFB. Although operational use is now by the Army, Wheeler AFB is the home for Pacific Communications Area, and units supported by the base include the 326th Air Division (Hawaii Air Defense Division), 22nd Tactical Air Support Squadron, and ancillary units of Pacific Air Forces.

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II. ORGANIZATION:

Today, Wheeler AFB is home for approximately 30 associate units. The biggest change over the last 10 years has been the build-up of the Army. Aviation units at Wheeler AFB have resulted in a functional change from a small, limited use fixed-wing airfield to a moderate size rotary-wing air base. No mission changes are programmed in the immediate future. Under a joint service agreement, the Army operates the flight line for its helicopters and light, fixed-wing aircraft. Flying is also performed by the 22nd TASS and the Wheeler Aero Club. There are about 4,900 Army, Air Force, Navy and Marine personnel at Wheeler AFB, of which approximately 1,500 are Air Force military and civilians. About 1,500 family members reside at Wheeler AFB in 750 units of family housing, 250 of which are Navy housing. Munitions storage and the Waikikalaua POL Storage Area occupy the southern portion of the base.

ASSIGNED ORGANIZATIONS

15TH AIR BASE SQUADRON: The mission of the 15th Air Base Squadron, the host unit, is to command, operate and maintain Wheeler AFB and satellite Air Force installations as directed; and to provide administrative, logistical, and munitions services and support to PACAF and other tenant units according to existing directives or agreements. The 15th Air Base Squadron is assigned to the 15th Air Base Wing.

WHEELER MEDICAL FACILITIES: Since the City and County of Honolulu comprise the major urban area in the central Pacific, it follows that the largest and best equipped medical center readily available to the Air Force military population is situated on Oahu. The USAF Clinic, Wheeler AFB, is a Class B dispensary and is used primarily to provide out-patient medical services. Cases requiring more professional attention are referred to Tripler Army Hospital where extensive medical services are available. Although the USAF Clinic at Wheeler AFB provides excellent medical services in a modern facility, there are no future plans for expansion of the existing plant or services.

22 TASS: This organization provides the Air Force component commander of a properly designated joint force with combat operationally ready elements of the Tactical Air Control System to satisfy ground forces operational requirements. This is accomplished by the utilization of 26 OV-10A aircraft.

326 AIR DIVISION: The 326 AD conducts aerospace defense operations in defense of land areas within the Pacific Islands Air Defense Region; assists the Commander, Joint Task Force 119, when activated, in defense of Hawaii; conducts tactical air operations and exercises; and maintains mobility

commitment to support 22 TASS wartime tasking.

WHEELER NETWORK CONTROL CENTER (WSMC): The Wheeler Network Control Center (WNCC) on Wheeler AFB, Oahu, Hawaii is part of the Western Space and Missile Center (WSMC) and the Air Force Western Test Range (WTR). It functions as the focal point of the WSMC Downrange Data Transfer System and as an immediate switching hub for the USAF Worldwide Communications System providing the Pacific area hub to the WTR and ETR.

25TH INFANTRY DIVISION: Wheeler serves as the center of operations for all aviation components assigned to the 25th Infantry Division, involving combat readiness, training, extensive aviator proficiency training, headquarters liaison flights, and VIP support. It includes the 25th Combat Aviation Battalion, USASCH, Hawaii Army National Guard, 45th Support Group, Wheeler Army Aviation Activity, USA Field Station Kunia (NAVSECGRUACT) Kunia is a tenant of U.S. Army Field Station Kunia).

DET 7, 1ST WEATHER WING: Perform forecasting and observing functions, which includes the weather station at Wheeler AFB, Bradshaw AAF, and Barking Sand PMFR.

199TH WEATHER FLIGHT: The mission of this unit is to assume, upon mobilization, the forecasting and observing functions performed by Det 7, 1st WW.

169TH AIRCRAFT CONTROL AND WARNING SQUADRON: As a subordinate unit of the 154th Composite Group, provide a trained unit to be available for active duty in the Air Force in time of war or national emergency, or when national security is required. Operate and maintain an Air Defense Direction Center.

DEFENSE COMMUNICATIONS AGENCY: Exercise operational direction and management control of the Defense Communications System within the assigned geographical area, to support USCINPAC in the execution of its assigned mission, and to meet telecommunications requirements of DOD.

HQ PAC TECH OP AREA (AFTAC): Operate and maintain the US Atomic Energy Detection System (AEDS), using scientific means to obtain and evaluate technical data on the nuclear energy activities of foreign powers.

OL-B, 1957TH COMMUNICATIONS GROUP: Responsible for the supervision, management and overall accomplishment of the operations and maintenance functions of assigned work centers at Wheeler AFB, Mt Kaala, HF RX Site at NAVSCAMEASTPAC, 326 AD Communications Terminal and the COMMANDO ESCORT HF Station at Punamano. Also provide administrative support.

6010TH AREOSPACE DEFENSE FLIGHT: Conduct aerospace defense operations in defense of land areas within the Pacific Islands Air Defense Region; assist the Commander, Joint Task Force 119, when activated, in defense of Hawaii; conduct tactical air operations and exercises; and maintain mobility commitment to support 22 TASS wartime tasking.

1843RD ENGINEERING INSTALLATION GROUP: Responsible for the engineering, installation, relocation and removal of fixed ground communication and electronic facilities in support of the Air Force and other DOD activities throughout the Pacific area. Projects include engineering of message centers,

air traffic control facilities, ground-air-ground radio, microwave, weather and satellite communications systems.

6924TH ELECTRONIC SECURITY SQUADRON: The offices of the Commander, the Orderly Room and Budget provide administrative support to the 6924th ESS.

OTHER TENANT ORGANIZATIONS include:

1957th Communications Group
Hickam-Wheeler Aero Club
Hawaii Army National Guard
Naval Security Group Activity Kunia
U.S. Army Field Station Kunia
25th Combat Aviation Battalion
USASCH Directorate of Facilities Engineering
Wheeler Army Aviation Activity
Central Oahu Community Federal Credit Union

III. LANDS

A. SIZE AND ACQUISITIONS: Wheeler AFB, the second primary Air Force installation in Hawaii, consists of approximately 1,431 acres of land on the central saddle of Oahu at an elevation of 825 feet above sea level. The base is surrounded on three sides by pineapple fields, and adjoins the Army's Schofield Barracks and the city of Wahiawa to the north. Since the establishment of the installation in 1922, the U.S. Government has invested in excess of 24 million dollars in buildings, pavements and other improvements. Acquisition of the major portion of this installation, 1,206 acres, was initiated by a letter from the Acting Secretary of War to the President, dated 20 June 1899 and approved 20 July 1899, entitled Reservation of Lands: Hawaiian Islands, and subsequently modified by Presidential Executive Order No. 2800, dated 4 February 1918. These documents established Schofield Barracks Military Reservation and subsequently reassigned a portion as Wheeler Field by War Department General Order No. 4, dated 5 August 1939. Additionally, 159 acres were acquired by Territorial Executive Order No. 1301, dated 14 December 1948, and 1,514 acres were acquired by Governor's Executive Order No. 1612, dated 9 February 1954. In the boundary relocation affecting Schofield Barracks and Wheeler Air Force Base, the Air Force acquired the 38-acre parcel of land by Memorandum, dated 9 March 1956, from the Secretary of the Army to the Secretary of the Air Force.

Land Acquisitions and Costs:

<u>Interest</u>	<u>Acres</u>	<u>Cost to Govt</u>
Ceded Land	1,369.06	\$ 0
Permit General Use	18.93	0
Easement	.69	1.00
Fee	.24	1.00
Total	1,388.92	\$ 2.00

By memorandum of agreement between CINCPACAF and CINCUSARPAC with respect to utilization of the airfield area at Wheeler AFB, dated 24 September 1973, about 716 acres, including airfield and support facilities were to be for

joint use by U.S. Army elements, Hawaii Air National Guard and the Air Force and support facilities. The following minor rights of way for utility and access are outgranted to the Army:

- (1) Permit, HONDE-30, dated 19 May 1958
Sewer Line R/W serving Army's Capehart Housing
- (2) Permit, HONEA-183, dated 16 August 1956
Power Line R/W serving East Range
- (3) Memo, dated 9 March 1956
Utility and Road R/W for Sewage Disposal Plant
- (4) Permit, DA-94-626-ENG-54
Waterline R/W serving East Range

Additionally, the Hawaiian Telephone Company has been granted a five-year easement for UG cable and manholes by Contract NO. DA-94-626-ENG-106.

B. USAGE:

General: Wheeler AFB, located in Central Oahu, is beautifully maintained due largely to the pride of the people on the base and a concerned Base Commander. The base is organized with most of the administrative buildings, barracks, shops, hangars, housing and service buildings at the north end. The central portion of the base is utilized for runways and flight lines. Immediately south of the airfield pavements is the ammunition storage area. The east portion contains recreational areas and family housing units bounded by Kamehameha Highway. The small arms weapons training area lies south of the base along the flight line. A large amount of acreage is used by the Army in support of their airfield operation at Wheeler.

There are two entrances to Wheeler. The main gate is located at the northeast end of the base interconnecting Wheeler's Santos Dumont Avenue with Kamehameha Highway. This gate is in operation 24 hours daily. The Kunia Gate, or back gate, is located at the northwestern end of the base and connects Wheeler's Wright Avenue with Kunia Road. This gate is in daily operation but only during the hours of 0530 to 2030.

By memorandum from the Office of the Assistant Secretary of Defense, dated 17 October 1980, the Army and Air Force were directed to review operations at Wheeler AFB, and activities not required to be at this base be relocated to other available on-island facilities. This action was to maximize the use of Wheeler AFB for aviation operation control to the Army. Currently, 705 acres are permitted to the Army for the development and operation of its aviation requirement at Wheeler AFB.

NUMBER OF BUILDINGS: 346 Structures

COST OF IMPROVEMENTS: \$23,985,736

LAND, FEE OWNED: 0.24 AC

LAND, CEDED: 1,369.06 AC

LAND, R-O-W & RESTRICTIVE EASEMENTS: 0.69 AC

LAND, LICENSE, PERMIT: 18.93 AC

NUMBER OF FAMILY HOUSING: 742 Units

AIRFIELD PAVEMENT: 568,078 SY

MILES OF PAVED ROAD: 14 Miles

ADMINISTRATIVE SPACE: 178,475 SF

SHOP SPACE: 183,728 SF

WAREHOUSE SPACE: 6,500 SF

DORM: 91,818 SF

HOUSING/DORMITORY AREAS - Of approximately 134 acres, 130 acres are identified for family housing. Two dormitories for permanent party airmen, a portion of one building for visiting airmen, and 742 family housing units comprise the housing facilities on base. The family housing units are in good condition, and the bachelor housing facilities are permanent structures. *Bachelor OFFICER Housing Dormitories*
ENLISTED

RECREATIONAL AREAS - Approximately 301 acres are included in this category. Facilities consist of 17 athletic fields; horse stables and riding area comprise 170 acres.

The area shaded in green on the Land Use Map is programmed for use by the Wheeler Saddle Club. This site is required for the Club's horse paddock being displaced by construction of the Army's aviation support facility. The paddocks are currently under construction.

The area shaded in yellow on the Land Use Map is required for the Saddle Club's use. This area is planned to be utilized for horseback riding. Also, this area serves as a buffer zone for the Navy's Camp Stover housing complex, munitions storage area and the Air Force Waikakalaua AVFUEL storage site located on the southern tip of this parcel. These recreational acres are extensively used by active duty personnel of all services and their dependents.

SAFETY/CLEAR ZONE AREAS - The total areas for explosive safety on Wheeler are approximately 294 acres. The AICUZ Clear Zone Area for Wheeler AFB is off the ends of Runway 6/24. Kunia Road intersects on the west side and Kamehameha Highway intersects on the east end. In accordance with AFR 86-14, Airfield and Heliport Planning Criteria for a Class B Runway, this is a 3,000-foot by 3,000-foot area and must be free of any fixed or movable obstacles. Due to the fact that both AICUZ Clear Zones for Runway 6/24 are intersected by public transportation roadways and public property beyond the base boundary, we cannot maintain Air Force criteria for APZ I and APZ II. Explosive storage and handling area on Wheeler is designated with an Inhabited Building Distance (IBD) arc around the area. This area has been sited and approved by HQ USAF/LEEV in accordance with AFR 127-100, Explosives Safety Standards. The area is sited according to net explosive weight and classification of explosives. There are no future plans to expand the explosives storage faci-

ilities, except to maintain the existing as is.

TRAINING AREAS - The Small Arms/Pistol Range lies to the south of the base and consists of approximately 19 acres. It is classed as a multi-purpose range, meeting all requirements for firing both small arms and pistols at a maximum range of 100 yards. The range is utilized five days per week for the training of approximately 2,747 individuals each year including Air Force, CINCPAC, Customs, CAP, HANG and Internal Revenue personnel.

UNDEVELOPED SPACE - This area is located within the QD Zone and is unsuitable for development.

ADMINISTRATIVE AND TROOP SUPPORT AREAS - The areas in this category are located throughout the base and consist of such facilities as the NCO Club, Officer's Club, Base Exchange, Commissary, Bank, Schools and Command Administrative areas.

IV. GEOLOGY/HYDROLOGY

A. Geology:

1. Physiographic Setting:

a. Wheeler Air Force Base is located on gently sloping land just south of the drainage divide of central Oahu. Streams to which surface runoff flows eventually discharge into Pearl Harbor. The maximum north-south and east-west dimensions of the base are 1.35 miles and 2.15 miles, respectively, and the total area is 2.24 square miles. The maximum elevation of 865 feet lies at the northern boundary and is virtually coincident with the drainage divide. The minimum elevation of about 550 feet, lying in a stream channel in the most southerly corner of the base, is somewhat over 300 feet lower than the maximum elevation. Most of the base, however, falls between 760 and 865 feet, a total relief of only 105 feet over 1 mile.

b. Two principal streams flow through portions of the base. Waikele Stream, whose course is within a few hundred feet of the southern boundary and nearly parallel to it, is the chief drainage way. Waikakalaua Stream flows for about 2,000 feet through the south-eastern corner of the base but drains only a small fraction of it. Neither stream is perennial and their valleys are relatively shallow, having bank relief of less than 100 feet. About 5,000 feet of Waikele Stream has been channelized while the remaining approximately 7,000 feet follows the original course.

c. The fairly level natural surface of the major portion of the base has been transformed by construction of runways and ancillary paved areas, service structures and housing. Except for partial channelization of Waikele Stream, the environmental of the gulches on the south side of the base is probably similar to what it was 60 years ago when the installation was established. At that time most of the vegetation was already exotic, consisting of trees such as guava, koa haole, eucalyptus and silver oak, and shrubs and grasses including lantana, Hilo grass and panicum. The urbanized portion of the base has been landscaped.

2. Soils: All soils on Wheeler AFB were derived from alteration of the Koolau Volcanic Series, most of them as the end product in an in-situ column

of weathered residuum overlying parent rock. Texturally, they are silty clay loams having available water capacity of 12 to 15 percent. The true soil layer is eight to ten inches thick and the subsoil up to 50 inches thick. They are composed of kaolinitic clay mixed with oxides and hydroxides that are almost exclusively ferric and aluminum. They are deficient in silica and the bases are slightly to moderately acidic. They drain well but do not erode easily. Their base exchange capacity is low and their ability to act as a buffer against the movement of contaminants is poor.

3. Subsoil Structures: Central Oahu was formed by lava flows that travelled westward from the rift zone of the Koolau volcano. These lavas accumulated on the slopes of an earlier volcano (Waianae) as thin layers of basalt having a total thickness of more than 1,000 feet in the Wheeler Air Force Base area. They are relatively flat-lying and consist of the characteristic Hawaiian volcanic association of aa, clinker and pahoehoe in random succession.

The basalts underlying Wheeler AFB are part Koolau Volcanic Series, the most widespread lithology of Oahu. The Koolau series is the basement formation of the east central and eastern portions of the island. Later volcanic activity generated new lava flows and produced ash falls in southeastern Oahu, but none were closer than ten miles to Wheeler AFB. Beneath the Koolau lavas in west central Oahu, including the air base, lie older Waianae volcanic rocks, but they are too deep to be affected by activities at ground level.

A peculiarity of the Wheeler-Schofield-Wahiawa region is the existence of a stable water table at 280 feet higher than the one draining to Pearl Harbor. This water table expresses the occurrence of a very large and important groundwater resource in central Oahu. The cause of this phenomenon has not been established, but among reasons postulated are a rift zone striking from either the Waianae or Koolau mountains, and highly weathered, which in Hawaii equates with permeable, ridges extending from the Waianae range.

The top of the Koolau basalt section at Wheeler AFB has weathered to a deep residuum on the order of 150 feet thick, the upper ten feet consisting of soil and subsoil. Except for thin and scanty alluvial deposits in the Waikale and Waikakalaua stream beds, all of the soil-saprolite column formed in place on original basalt. Soil is defined as the surface layer of residuum that was further altered by chemical and biological processes; it is usually less than two feet thick. The remainder of the weathered section is termed saprolite, defined as parent rock disintegrated in place by chemical processes of leaching, hydration and precipitation.

In the central Oahu plateau the nearly flat lava formations are deeply weathered to depths of more than 100 feet. Resistant boulders occur in the weathered column, but generally a vertical section starts with a foot or so of raw, several feet or more of red-brown clayey subsoil followed by 100 feet or more of varicolored (gray, red, yellow, purple, brown) saprolitized rock having a texture that looks like the parent formation. Below the saprolite the rock is unaltered and retains the original characteristics of freshly solidified lava flows. It is these unaltered lava successions that constitute the prime aquifers in Hawaii.

B. HYDROLOGY:

Surface Water: Of the 1,432 acres of Wheeler AFB, 1,400 acres drain to Waikele Stream and only 32 acres to Waikakalaua. These streams join just outside the base boundary to continue as Waikele Stream to Pearl Harbor. The segment of Waikele originates on the eastern slopes of the Waianae Range south of Kolekole Pass and carries drainage from 6.35 square miles where it enters the base. Average rainfall in the drainage basin is about 50 inches per year. The gulch in which the channel meanders is shallow and contains natural flow only during and for short periods after substantial rain showers.

Waikakalaua is one of the major forks of Waikele originating in the Koolau Range. Drainage from 7.14 square miles is collected in it where it crosses the Wheeler AFB boundary along Kamehameha Highway. Although its headwaters reach to the crest of the Koolaus, where maximum average rainfall is approximately 250 inches and over its drainage basin where the average annual rainfall is more than 100 inches, Waikakalaua, like Waikele, is non-perennial and often carries no running water.

The nearest large surface of water body to Wheeler AFB is the Wahiawa Reservoir, the mid-section of which lies within 1,000 feet of the northern boundary of the base. Drainage of the reservoir, however, is northward while all Wheeler AFB surface drainage moves south to Pearl Harbor. The reservoir dams the flow of approximately 300 acres and a maximum volume of about three billion gallons. It receives treated sewage effluent from Wahiawa but otherwise has chemical characteristics similar to those of the streams.

Groundwater: The subsurface below Wheeler AFB consists of Koolau basalt to a depth of 1,000 feet and more, below which the older Wainae lavas form the deeper basement. Contact between the two volcanoes has not been positively identified. From the perspective of groundwater occurrence, movement and development, only the thick column of Koolau basalt and its weathered surface needs to be considered.

Three distinct aquifers occur within the limits of Wheeler AFB, two of the aquifers in unaltered Koolau basalt and the other a shallow perched aquifer in saprolite of the weathered one. The deepest aquifer is the northerly part of Pearl Harbor Basal Aquifer, the most highly exploited groundwater resource in the state. This aquifer is "basal", that is, it consists of a lens of fresh water floating directly on sea water. The water table elevation above sea level is approximately 26 feet at Wheeler AFB, about 775 feet below ground surface. The aquifer is unconfined, and therefore any subsurface contamination escaping capture or breakdown would eventually settle on the free water table.

Adjacent to the Pearl Harbor Basal Aquifer but separated from it by an apparently sharp boundary, the nature of which is still unclear, is an aquifer in Koolau basalt called the Wahiawa High Level Aquifer (or Schofield High Level Aquifer) whose principal water table fluctuates between elevations of 270 and 280 feet above mean sea level. This high water table descends in stepwise fashion to elevations less than 200 feet where an abrupt margin exists between the two aquifers. Most of the urbanized portion of Wheeler AFB lies above the high level aquifer while the undeveloped portion of the base is above the basal aquifer. Although the aquifers are hydraulically distinct, the lower one receives much of its recharge by leakage from the

higher one. It is probable that all subsurface leakage below Wheeler AFB moves southward to the Pearl Harbor aquifer.

The third aquifer in the region is composed of saprolite, a poorly permeable material that retards the flow of moisture. This perched aquifer is constituted of the weathered section of the Koolau basalt from depths below the surface of about 30 feet to its contact with unaltered rock at 100 to 150 feet. Little attention had been given to the aquifer until 1980 when it was accidentally discovered during an investigation of groundwater contamination at Kunia Camp several miles down gradient of Wheeler AFB. The aquifer is regional but not necessarily continuous; it is probably saturated in favorable topographic locations marked by gentle sloping surfaces where the weathered residuum is not easily removed by erosion.

The perched aquifer is not exploitable as a water supply, but it is very important in subsurface movement of water above both the Wahiawa high level aquifer and the Pearl Harbor Basal Aquifer.

The Pearl Harbor Basal Aquifer underlies the southern portion of Wheeler AFB. Pumpage from this aquifer underlies the southern most of the irrigation water for agriculture in southern Oahu and the major share of domestic water for the region extending from Makua on the Waianae coast to the eastern tip of Honolulu. It is being exploited to the limit of its sustainable yield.

The aquifer is highly permeable and carries an immense volume of excellent quality water. It is recharged by rainfall, leakage from the Wahiawa high level aquifer, and by irrigation water, some of which is transmitted from windward Oahu through tunnels and ditches to central Oahu's sugcs. Between one third and about one half the irrigation water seeps below the root zone. Leakage from the high level aquifer is unknown but substantial.

The nearest basal aquifer well to Wheeler AFB is at Kunia, one and a half miles away (State No. 2703-1; Old No. 330-5). This well is used only for irrigation. The Board of Water Supply pumps water for Mililani from wells about one and a half miles east of Wheeler AFB, but the wells are not down the groundwater gradient from the base. A well (State No. 2701-01; Old No. 250-1) was drilled near the southeast corner of the base in 1945 but was abandoned at that time or shortly thereafter. No record exists of its use or disposition.

In 1936, the U.S. Army, while constructing a 30 degree inclined shaft designated to penetrate to the deep basal aquifer, encountered a stable water table 284 feet above sea level. Discovery of this hitherto unknown aquifer added enormous increment to the water resources of Oahu. The initial drilling took place within a few hundred feet of the northeast boundary of Wheeler AFB across Kamehameha Highway.

Water is withdrawn from the high level aquifer to supply the community of Wahiawa and all of Schofield Barracks and Wheeler AFB. On the Waialua side of the drainage divide three wells are used for irrigation. Several wells were drilled in the small Naval Reservation between Kunia Camp and Wheeler AFB in the late 1950s. The Navy discontinued using them some time ago, but one has been converted into a domestic source for Kunia Camp pending completion of a new Del Monte well in the same area.

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The water level fluctuates between elevation 270 and 280 feet but has not permanently declined during almost five decades of exploitation. There is no doubt that much more exploitation of this aquifer will occur in the future.

V. Climate:

Located in central Oahu in the lee of the Koolau mountains and windward of the Waianae mountains, Wheeler AFB has a moderate tropical climate in which the temperature infrequently exceeds 85 degrees Fahrenheit and a temperature of less than 55 degrees Fahrenheit is unusual. The average annual temperature is about 71.5 degrees F, but in the coolest months (January and February) it is 68 degrees F and in the warmest month (August) 75 degrees F. The averages are about 3 degrees Fahrenheit cooler than at sea level.

Trade wind air flow, during which wind velocity averages 12 knots, prevails for 70 percent of the time. The prevalent condition, most persistent in the late spring to early fall months, normally is sunny and dry, though occasionally orographic showers drift in from the Koolaus. The high pressure cell responsible for trade wind flow weakens in the winter months, and frequently the replacing air masses which originate from tropical storms that move toward Hawaii from the south and southwest, or frontal weather that flows in from the west or northwest. These conditions tend to produce substantial rainfall and sometimes high winds. The unusual trades may also dissipate temporarily when the high pressure cell weakens so that convective cloud conditions, occasionally resulting in heavy showers, may dominate island weather for days at a time.

Rainfall at Wheeler Air Force Base is in the moderate range for a tropical climate. Although a long record of climatological events at the base has not been kept, a standard rain gage at a site in Wahiawa about one mile from the northeast corner of the base is probably indicative of local conditions. For 62 years of the period 1900-1965, average annual rainfall at Wahiawa Station 872 was 49.9 inches, the maximum annual was 79.5 inches, and the minimum annual 20 inches.

The driest months are in summer when trade winds are persistent and rainfall is predominantly orographic and restricted to the mountain ranges. The driest month, June, receives an average of 2.32 inches. The wettest month, March, averages 6.65 inches. The wettest month on record was a February during which 33.34 inches fell; zero monthly rainfall is not uncommon.

Evaporation in the Wheeler AFB region is high, averaging just under 74 inches per year. The persistent trade winds undoubtedly enhance evaporation and evapotranspiration. From April through October, average monthly evaporation exceeds average monthly rainfall.

VI. Area Population and Ethnic Background:

Wheeler AFB and its neighboring communities are part of the Central Oahu District. The 1980 population of Central Oahu was 101,685, or 13 percent of the Oahu population of 762,843.

ETHNICITYMililani-WaipioSchofield-Wahiawa

White	13,392	16,003
Black	1,148	4,795
American Indian, Eskimo and Aleut.	132	193
Asian and Pacific Islander	22,004	12,538
Other	1,516	2,281
TOTAL	38,192	35,810

SOURCE: US Department of Commerce, 1980 Census of Population and Housing, June 1983, Table P-7, pp. 71, 72 and 74.

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VII. Transportation:

Water. Being an island state, Hawaii is heavily dependent on its transportation links to overseas areas. Shipping continues to be the State's lifeline.

Air. The Honolulu International Airport handles most of the airlines' interisland and trans-Pacific passenger traffic. Aside from military facilities, there are no other major airports on Oahu. Wheeler AFB houses the aircraft of the Hickam-Wheeler Aero Club. Club members can avail themselves of the sights and pleasures of all the Hawaiian Islands.

Surface. Taxi service is available from the Honolulu International Airport to Wheeler. Privately owned vehicles, taxis, and city-subsidized buses serve the transportation needs of the base. Public school transportation is provided by the State for a fee to students residing at Wheeler.

Major Highways. The highways servicing Wheeler include the Interstate H-1, H-2, and H-3 Defense Highway System (in varying phases of completion), Nimitz Highway, Kamehameha Highway, Moanalua Road, Likilike Highway, Pali Highway, Kalaniana'ole Highway, Kailua Road, Kaneohe Bay Drive, Kahekili Highway, Farrington Highway, Kaukonahua Road, Wilikina Drive and Kunia Road.

Traffic. Traffic congestion is suffered generally on most of the above major highways during AM and PM peak hours. The main entrance to the base is from Kamehameha Highway at Wright Avenue at Kunia Road. The completion of a major interchange in conjunction with the H-2 Defense Highway has substantially alleviated congestion at the main gate and within the base. Vehicles bringing civilian and military personnel to work number about 600. Travel time to metropolitan Honolulu takes about 30 to 45 minutes on the Interstate Highway.

VIII. Parks and Recreation:

The State offers a wide range of recreational facilities on Oahu. Within a 200-mile radius, there are 272 active parks, 594 recognized surfing sites, and 12.5 miles of safe, sandy accessible beaches. Approximately 10 city parks dot the surrounding landscape of Wheeler. Mililani Golf Course and the Army's Leilehua and Kalakaua Golf Courses are just a short distance away

from the base. Lake Wilson, in Wahiawa State Fresh Water Park, is an excellent fishing ground for fresh water fishing enthusiasts. On the north shore of Oahu, about 15 minutes from Wheeler, are beach sites at Haliewa and Mokuleia, providing camping, swimming, surfing, fishing, snorkeling, scuba diving and sailing. The Youth Center also serves the social and recreational needs of the base. In addition, Wheeler is equipped with an eight-lane bowling alley, gymnasium and swimming pool.

IX. Morale, Welfare and Recreation Activities

There are 17 athletic fields on base. These include 4 soccer fields, 7 baseball fields, 4 outdoor basketball courts, 1 softball field, and 1 football field. The softball and football fields are lighted for night play. All fields are equipped with bleachers. The facilities are used to support the Wheeler Intramural/Varisity Sports also the entire youth sports program.

The gymnasium is an old hangar facility which houses a basketball court, a racketball court, locker and suana room, and a very small weight room. A new gym construction project is slated for FY87. This will eliminate the necessity to refurbish the existing gym on a yearly basis. Personnel at the gym are also responsible for two separate picnic areas located on Wheeler. Each area consists of tables, grills, horseshoe pits, and restroom facilities. These areas are used by approximately 1500 people per month.

The base swimming pool is open all year round to accomodate Wheeler base personnel. Scuba lessons and beginning and advanced swimming lessons are offered.

There are five tennis courts available for use, three of which have lights. Tennis instruction is offered through our youth center.

The MWR Supply Shop offers a large variety of fishing, camping, and sunning equipment. They service not only Air Force but Navy, Marines and Army personnel stationed here on Wheeler and Field Station Kunia.

The Youth Center is a relatively new facility which houses video games, tables (pool) foosball, and other games. The base's youth sports program is extensive and requires gym support for field maintenance.

The Hickam/Wheeler Aero Club is housed in two locations to better serve our customers. For those who want to learn to fly, the club offers lessons and instructions on all aspects of flying to include administrative. The club currently has 7 singles and 1 twin engine aircraft.

The Wheeler Bowling Center is located in a converted aircraft hangar. There are 8 lanes for service, plus video games and a well-equipped snack bar. Plans are currently underway to construct a new center on a better location which should increase its usage. Ground breaking ceremonies are expected to begin in FY86.

The arts and crafts services include the Auto Hobby Shop and Wood Hobby Shop. Lessons are offered in both places for those persons wanting to better their skills. Instructions are also given on the safe usage of all equipment.

Wheeler's Child Care Center complex is located in a pre-World War II building. Plans have been forwarded for the construction of a new complex, slated for FY86, to meet the needs of Wheeler base personnel.

The Wheeler Saddle Club is currently being partially relocated to accomodate construction of new hangars and helipads. It houses paddocks, horse show arena and a jump course. All areas are well cared for, and we are updating the existing building; i.e., restrooms, bleachers, jumps and judges' stand. The base also has horse trails for recreational riding. Thirty-three horses are privately owned and cared for. Competitive horse shows and other equestrian events enhance overall participation in the Club. In 1983 there were 12 different horse shows, and, 12,012 people attended these events.

The Wheeler Library is also housed in a pre-World War II building, and plans have been forwarded for construction of a new one, slated for FY88. The library is also housed in a pre-World War II building, and plans have been forwarded for construction of a new one, slated for FY88. The library offers a maximum number of programs for all ages and participation is excellent.

X. Communications, NAVAIDS, and Associated Equipment

Communications: The telephone system for Wheeler AFB is supplied and maintained by the Hawaiian Telephone Company under an Oahu-wide joint military contract. The telephone service is provided through the US Army at Schofield Barracks and is monitored by the 1957 Communications Group from Hickam AFB. All message traffic is supplied by the US Army through their communications center at Schofield Barracks.

NAVAIDS: Aircraft approaching Wheeler AFB may be assisted by the high altitude low frequency nondirectional beacon (NDB) that is installed on the field. Standard instrument approaches are usually made direct to Honolulu VOR, Honolulu International Airport and from there to Wheeler AFB. Other VOR or TACAN NAVAIDS to Wheeler do not exist.

Associated Equipment: A weather station is located in the Army Flight Operations building on the southwest end of the runway. Equipment housed in the weather station consists of a wind recorder, barograph, aneroid barometer, mercurial barometer, ^{LOW WATER} ~~electronic~~ ^{FW Filter} teletype transmitters and receivers, and a Dex 3000 Telefax receiver. A ceilometer and wind instrument transmitter are located near the runways. Mobility weather forecasting equipment is available.

XI. Utilities

Water:

Source. Water for Wheeler Air Force Base is supplied by the U.S. Army and the City and County of Honolulu Board of Water Supply. Both sources of supply are economical and dependable due to the reliability of the basal wells. The well site for the U.S. Army is located adjacent to the Wheeler AFB main entrance. Water from this well is stored in two-2 million gallon and two-1 million gallon reservoirs at Schofield Barracks. The two-2 million gallon reservoirs service the upper half of Schofield Barracks and Wheeler AFB is directly fed from the wells. The City and County of Honolulu has well sites scattered throughout the island of Oahu.

water.

Treatment. Water pressures are approximately 60 psi static and 40 psi residual. Treatment of water consists of chlorination and fluoridation. Average consumption of water is 14,000 gallons per day, 8,000 gallons per day being supplied by the Army and the remaining 6,000 gallons per day supplied by the City.

← Sewage. Collection System: Wheeler AFB sanitary sewage system consists entirely of gravity lines, the only exception being the line serving the Globe Com building (Bldg No. 1004). The lines consist of vitrified clay cast iron, asbestos cement and concrete pipe.

Treatment. Sewage from Wheeler AFB is treated at a U.S. Army sewage treatment plant located within Wheeler AFB. This plant is the activated sludge type and provides secondary treatment. Construction of the plant was completed in 1974. This plant also treats sewage from the U.S. Army's Schofield Barracks and the U.S. Army's Kunia Facility. The flow from Wheeler AFB into this treatment plant is approximately 6,000,000 gallons per month.

SOLID WASTES
← Electrical. Source of Power: Wheeler AFB is presently fed from the Army electric system in Schofield Barracks through 2/0, 3-conductor lead covered cables. Within Schofield, three separate circuits are connected to allow any one of the three circuits to feed the Wheeler feeder. The voltage is 7.2 KV, 3-phase, 3-wire, ungrounded neutral. The Wheeler switching equipment are fused oil switches.

Demand. Due to the Army's expansion of aircraft activity in Wheeler, demand is expected to increase. The peak demand is 2.2 MVA. The alternate 2/0 feeder will be connected in parallel to double the infeed capacity.

Street Lights. The street lights in the original construction of Wheeler AFB uses a 4000 volt series circuit with incandescent lights. Street lights in the newer housing areas are 120 volt multiple type with mercury vapor lighting.

Standby Generators. Facilities requiring emergency power are provided standby generators:

<u>Facility</u>	<u>Model or Manufacturer</u>	<u>KW</u>
Bldg 101	MB 17	60
Bldg 106	MB 17	60
Bldg 107	MB 17	60
Bldg 200	MB 18	30
Bldg 202	MB 18	30
Bldg 204	MB 16 (2 ea)	100 KW
Bldg 300	EMU 10	

Liquid Fuel System

AVGAS: Wheeler has one 50,000 gallon underground AVGAS tank with a 300 gpm pump and truckfill stand.

MOGAS: MOGAS is stored in a 5,000 gallon underground tank. The dispensing unit has a 25 gpm pump.

Diesel: There are two 10,000 gallon underground bulk storage tanks for diesel. The operating storage tank is a 500 gallon underground tank with a 25 gpm dispenser. Trucks are used to transfer diesel from the bulk storage to the operating tank.

Heating: General. Heating is provided by individual building water heater or heating plant generating hot water and/or steam required by the base facility. Partial space heating is provided in 284 MFH units.

Types of Equipment: The types of installed heating equipment are domestic electric water heaters. Domestic electrical water heaters are most numerous and are generally installed in administrative buildings and MFH. Oil fired hot water and steam boilers are installed in dispensaries, clubs, barracks, hangars and apartment type MFH. Electric unit heaters are installed in MFH. 468 MFH units have domestic electric water heaters. Each of three apartment type buildings with 8 units (24 total units) have a control oil fired boiler. Of the 284 units with partial space heating, electric unit heater is provided in living and bath rooms of 250 units, living and dining rooms of 18 units and living room of 6 units.

Solid Waste: Solid waste is disposed of by contract administered by the U.S. Army. Solid waste is hauled off-base and disposed of in a sanitary landfill at Barber's Point. In general, the types of solid waste generated on base are the combustible wastes. Combustible wastes are composed of paper, yard trimmings, rags, wood, food, plastics, etc. And non-combustible wastes are composed of metals, glass, dirt, minerals, etc. The volume of solid wastes generated annually is approximately 63,000 cubic yards (loose).

Storm Drainage: General.

The storm drainage system consists of a network of pipes, inlets, and culverts that is designed for a ten-year storm run-off in the housing area and two-year storm run-off in the airfield area. The main storm drain trunk line runs down the center of the base from east to west. The line empties into the Waikale Stream located at the western end of the base. The stream flows around the western perimeter of the base and collects the run-off from portion of the airfield and outlying areas of the base.

Area Drainage: The administrative and industrial area of the base is relatively flat with a range of elevation from 840 to 855 feet. The base slopes toward the southerly direction.