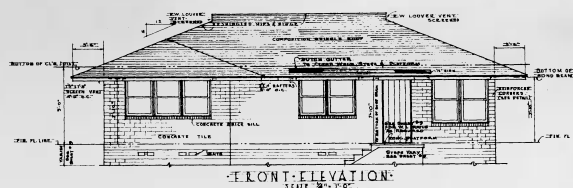
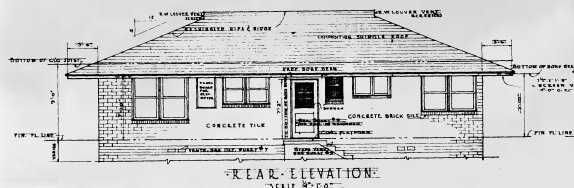


Historic Context Study of Historic Military Family Housing in Hawaii



August 2003

Historic Context Study of Historic Military Family Housing in Hawaii

Prepared for:

**Commander, Pacific Division
Naval Facilities Engineering Command
Pearl Harbor, Hawaii**

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through Pacific Division, Naval Facilities Engineering Command.

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Table of Contents

Chapter 1

Introduction	1-1
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Chapter 2

Overview of Historic Military Housing in Hawaii	2-1
Early U.S. Military History in Hawaii	2-1
Army Housing History	2-2
National Army Housing Development	2-2
Tents and Rough Conditions at Hawaii's Early Army Posts	2-4
Army Housing at Fort Shafter	2-6
Cantonment Areas at Hawaii Army Bases	2-6
Hawaii's Standardized Army Housing	2-6
Grand Planning for Hickam Army Air Field	2-7
World War II Temporary Construction at Army Bases	2-8
Apartment Housing at Army Bases	2-8
Navy Housing History	2-8
Comparison of Navy and Army Housing Issues	2-8
Coal Sheds and Other Early Housing in Hawaii for Marine and Navy Personnel	2-9
Housing Development at Pearl Harbor and Other Navy Installations Between the Wars	2-10

Housing Development at Pearl Harbor and Other Navy Installations During the 1940s	2-10
Installation Exchanges that Affected Historic Housing Ownership After World War II	2-12

Chapter 3

Historic Neighborhoods: Army	3-1
Fort Shafter Neighborhood	3-3
Significance	3-3
Neighborhood History	3-3
Major Landscape Features of Neighborhood	3-7
Palm Circle Housing Designs	3-10
Lieutenant's Quarters Plan (Quarters 3, 4, 6, 7, 11, 12)	3-11
Captain's Quarters Plan (Quarters 8, 9, 10)	3-14
NCO Quarters Plan (Quarters 14, 15, 16, 17)	3-15
Post Commander's Quarters (Quarters 5)	3-16
Hospital Commanding Officer's Quarters (Quarters 18)	3-18
World War II Housing Designs	3-22
Single-Family Houses	3-23
Duplex Buildings	3-25
Designs Similar to Those at Fort Shafter	3-27
Hickam Air Force Base and Wheeler Army Airfield	3-27

<p>Schofield Barracks Neighborhood 3-29</p> <p style="padding-left: 20px;">Significance 3-29</p> <p style="padding-left: 20px;">Neighborhood History 3-29</p> <p style="padding-left: 20px;">Major Landscape Features of Neighborhood 3-34</p> <p style="padding-left: 20px;">Schofield Craftsman Design 3-36</p> <p style="padding-left: 40px;">Craftsman Corner-Entry Plan 3-37</p> <p style="padding-left: 40px;">Craftsman Center-Entry Five-Bedroom Plan 3-38</p> <p style="padding-left: 40px;">Craftsman Center-Entry Six-Bedroom Plan 3-39</p> <p style="padding-left: 40px;">Craftsman Duplex Plan 3-40</p> <p style="padding-left: 40px;">Commanding Officer’s House 3-41</p> <p style="padding-left: 20px;">Designs Similar to Craftsman Houses at Schofield Barracks 3-43</p> <p style="padding-left: 40px;">Fort Kamehameha 3-43</p> <p style="padding-left: 40px;">Luke Field/Ford Island 3-43</p> <p style="padding-left: 40px;">Fort Shafter 3-43</p> <p style="padding-left: 20px;">Schofield Mission Designs 3-44</p> <p style="padding-left: 40px;">Larger Mission-Style Plans 3-44</p> <p style="padding-left: 40px;">Smaller Mission-Style Plan 3-45</p> <p>Wheeler Army Airfield Neighborhood 3-49</p> <p style="padding-left: 20px;">Significance 3-49</p> <p style="padding-left: 20px;">Neighborhood and Base History 3-51</p> <p style="padding-left: 20px;">Major Landscape Features of Neighborhood 3-53</p> <p style="padding-left: 20px;">Wheeler Mission-Style House Designs 3-55</p> <p style="padding-left: 40px;">Non-Commissioned Officers’ Quarters Plan 3-57</p> <p style="padding-left: 40px;">Company and Field Officers’ Quarters Plans 3-58</p> <p style="padding-left: 20px;">World War II Housing Designs 3-61</p> <p style="padding-left: 40px;">NCO Quarters Duplex Plan 3-61</p> <p style="padding-left: 40px;">Company Officers’ Quarters Duplex Plan 3-62</p> <p style="padding-left: 40px;">Field Officers’ Quarters Single-Family House Plan 3-63</p> <p style="padding-left: 40px;">Company Officers’ Apartment Plan 3-64</p>	<p style="padding-left: 20px;">Designs Similar to World War II Housing at Wheeler Army Airfield 3-66</p> <p style="padding-left: 40px;">Fort Shafter 3-66</p> <p style="padding-left: 40px;">Hickam Air Force Base 3-66</p> <p style="padding-left: 40px;">Schofield Barracks 3-66</p> <p>Tripler Army Medical Center Neighborhood 3-67</p> <p style="padding-left: 20px;">Significance 3-67</p> <p style="padding-left: 20px;">Neighborhood History 3-68</p> <p style="padding-left: 20px;">Major Landscape Features of Neighborhood 3-69</p> <p style="padding-left: 20px;">Tripler Eight-Unit Apartment Building Design 3-71</p> <p>Chapter 4</p> <p>Historic Neighborhoods: Air Force 4-1</p> <p>Hickam Air Force Base Neighborhood 4-3</p> <p style="padding-left: 20px;">Significance 4-3</p> <p style="padding-left: 20px;">Neighborhood History 4-3</p> <p style="padding-left: 20px;">Major Landscape Features of Neighborhood 4-9</p> <p style="padding-left: 20px;">Hickam Air Force Base Housing Designs 4-13</p> <p style="padding-left: 40px;">Commanding Officer’s House Plans 4-16</p> <p style="padding-left: 40px;">Officers’ House Plans 4-20</p> <p style="padding-left: 40px;">Non-Commissioned Officers’ House Plans 4-22</p> <p style="padding-left: 40px;">Duplex Plans 4-24</p> <p style="padding-left: 40px;">Officers’ and NCOs’ Apartment Building Plans 4-27</p> <p style="padding-left: 20px;">Designs Similar to Those at Hickam Air Force Base 4-33</p> <p style="padding-left: 40px;">Fort Shafter 4-33</p> <p style="padding-left: 40px;">Wheeler Army Air Field 4-33</p> <p style="padding-left: 40px;">Schofield Barracks 4-33</p>
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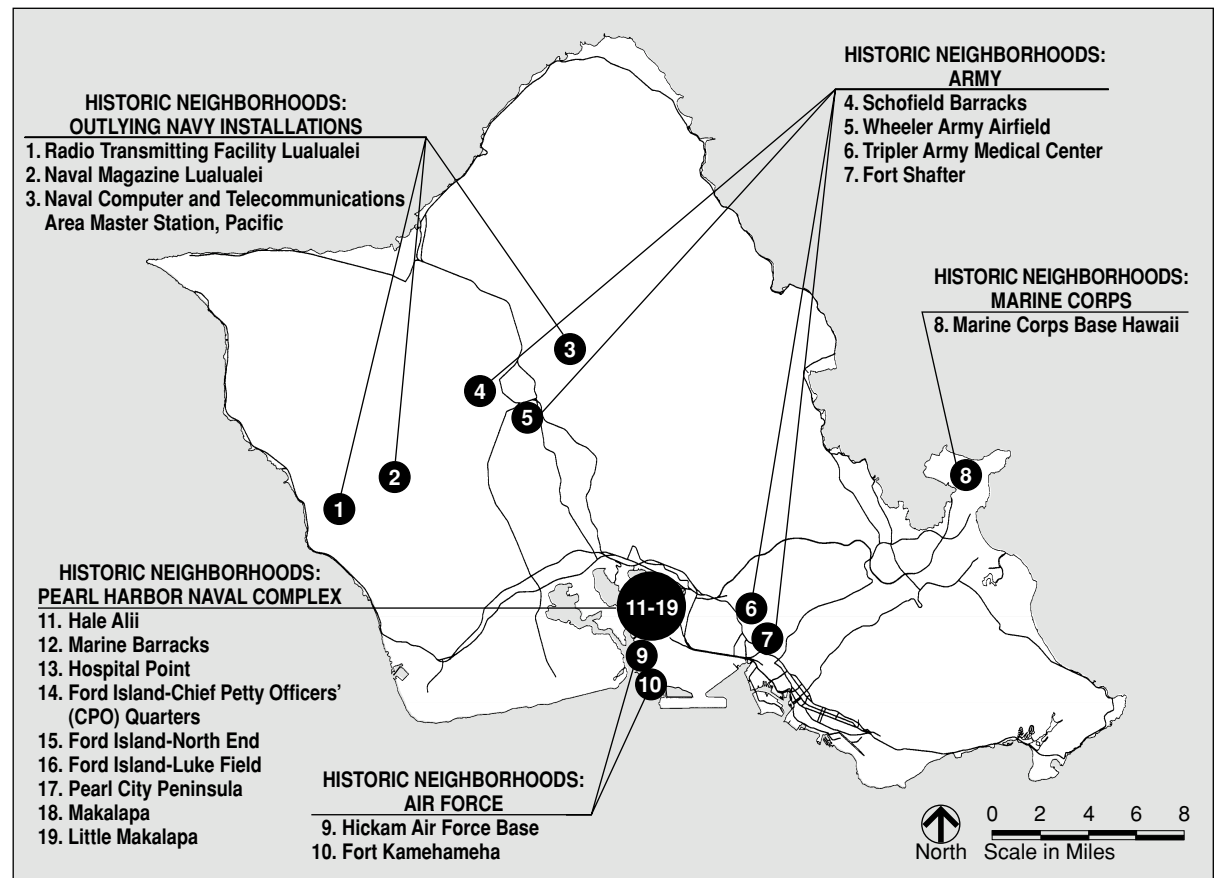
Chapter 1

Introduction

This report on the historic context of Department of Defense historic housing in Hawaii was produced with funding from the Department of Defense Legacy Resource Management Program, through the U.S. Navy, Pacific Division Naval Facilities Engineering Command. A companion manual covers recommended procedures for repair and maintenance of this housing.

All historic housing at Army, Air Force, Navy, and Marine Corps installations in Hawaii are located on the island of Oahu. Historic neighborhoods described in this document were selected by Pacific Division Naval Facilities Engineering Command. These neighborhoods include 928 residential buildings containing many more units, since there are numerous duplex and multi-unit family housing facilities. Landscape features are also addressed, but non-residential buildings (such as carports) have not been included in the report.

A brief overview history of military housing in Hawaii is presented in Chapter 2. Army and Navy housing developments in Hawaii are summarized and contrasted, with some references to national trends in military housing. Air Force and Marine Corps housing was built originally by the Army and



Historic military housing neighborhoods

HISTORIC CONTEXT STUDY
OF HISTORIC MILITARY FAMILY HOUSING IN HAWAII

Navy, respectively. The history of ownership changes between military branches in Hawaii is included in this chapter.

Chapters 3 through 7 are organized first by branch of service, and then by installation or neighborhood. A statement of significance, a history, and a landscape features description are provided for each installation or neighborhood. For each neighborhood, houses are grouped by design. A design may be a unique house or may include several types of houses that have different floor plans but are otherwise similar in materials and details. Exterior and interior character-defining features, as well as detracting elements, are listed for each design group. Floor plan(s) plus photographs, including historic photographs, illustrate each house type.

1-2

DOD Historic Housing Neighborhood	No. of Buildings
Army Installation	
Fort Shafter	34
Schofield Barracks	143
Wheeler Army Airfield	148
Tripler Army Medical Center	2
Air Force Neighborhoods	
Hickam Air Force Base	330
Fort Kamehameha	34
Pearl Harbor Naval Complex	
Hale Alii	13
Marine Barracks	4
Hospital Point and Radio Station	13
Ford Island: Luke Field	15
Ford Island: North End	20
Ford Island: CPO Quarters	6
Makalapa	91
Little Makalapa	15
Pearl City	6
Outlying Navy Installations	
Naval Magazine Lualualei	14
Radio Transmitting Facility Lualualei	10
Naval Computer and Telecommunications Area Master Station, Pacific	3
Marines	
Marine Corps Base Hawaii	27
TOTAL HISTORIC RESIDENTIAL BUILDINGS IN THIS STUDY	928

Chapter 2

Overview of Historic Military Housing in Hawaii

Early U.S. Military History in Hawaii

In the 1840s, the first sugar mill was established in Hawaii, and sugar became increasingly important as the main money crop and export item of the Kingdom of Hawaii. U.S. military and commercial interest in the Hawaiian Islands increased as the Pacific area gained importance in world politics and trade. In early 1873, Major General John M. Schofield visited Oahu to inspect its defensive capabilities. Upon his return to the mainland, he and his subordinate, Lieutenant Colonel Burton S. Alexander, reported to the Secretary of War that Pearl Harbor was the only harbor large and deep enough to serve as a refuge for a fleet of war vessels. They noted that the coral bar at its mouth would require removal before Pearl Harbor could serve this purpose, Schofield and Alexander recommended that the United States obtain a cession of Pearl Harbor. They suggested that this might be deeded free of cost in return for a reciprocity treaty that would allow Hawaiian sugar to enter the U.S. duty free. Apparently, this report made a great impression upon many leaders in Washington, D.C. The idea



*Schematic map of Pearl Harbor in late nineteenth and early twentieth centuries.
Source: Bishop Museum*

of cession of Pearl Harbor was not popular with the Hawaiian legislature, although it was advocated by the kingdom's sugar planters. A reciprocity treaty was concluded in 1875 without any mention of Pearl Harbor as a U.S. Naval installation. (The U.S. Navy had established a coaling station in Honolulu Harbor.) This treaty was to run seven years and could subsequently be terminated by either party with one year's notice. After 1883, American sugar interests frequently petitioned the U.S. Senate to terminate the treaty. Hawaii's sugar planters were eager for a long-term treaty extension.

In the bargaining for a seven-year treaty extension, the U.S. asked for more concessions. The U.S. Senate proposed in 1886 that King Kalakaua grant the U.S. exclusive right to enter Pearl Harbor and to establish and maintain there a coaling and repair station, including improvements to the harbor entrance (Tate 1968: 184). This issue was debated in Hawaii and abroad for over a year, as it was tied to concepts of national sovereignty and international trade. Convinced that this grant would essentially be a lease and not a cession of land and authority, King Kalakaua directed his minister in Washington to ratify renewal of the reciprocity treaty, which was accomplished in November 1887. This extension of the reciprocity treaty of 1875 thus officially recognized that the United States possessed sole rights to Pearl Harbor as a port. After the extension, most of the arable land on Oahu was planted in sugar cane, since the treaty made exports and profits easier to accomplish. However, use of and improvements at Pearl Harbor by the U.S. did not occur until several decades later.

In early 1893, Queen Liliuokalani was overthrown and a Provisional Government established. U.S. troops were landed from a ship that was in port at the time. The extent and effect of their involvement in the revolution is still debated. After a petition for annexation to the United States was withdrawn by President Grover Cleveland, the Republic of Hawaii was established in 1894, with Sanford B. Dole as President. In 1897, with President William McKinley in office, the annexation petition was resubmitted. The Hawaiian Islands were annexed by Congressional joint resolution in July 1898, at the end of the four-month Spanish-American War. The war provided the impetus for expanding the U.S. coaling station in Honolulu Harbor.

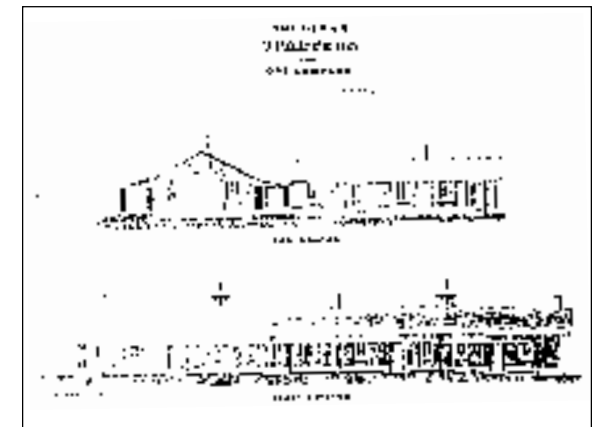
When Theodore Roosevelt became President in 1900, he was determined to upgrade the U.S. military, and the new territory of Hawaii gained attention because of its strategic location. In the early decades of the 20th century the U.S. Navy started developing a major base at Pearl Harbor.

The mission of the Army was to defend Honolulu and Pearl Harbors. Some of the former lands of the kingdom were transferred to the U.S. military for bases, including the two *ahupuaa* (traditional Hawaiian land divisions) now occupied by Fort Shafter and Schofield Barracks. Land was purchased through condemnation proceedings for other early bases, such as Pearl Harbor and Fort Kamehameha.

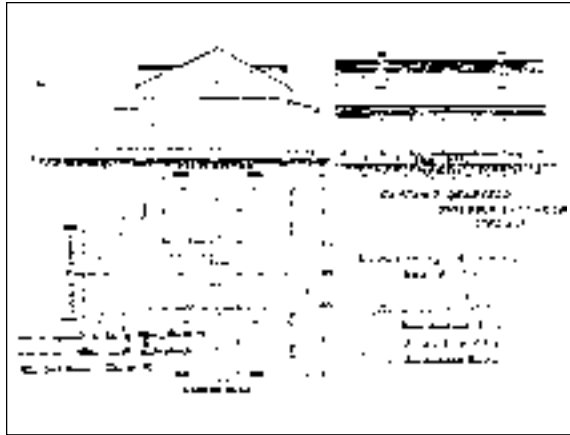
Army Housing History National Army Housing Development

In the early years of the U.S. Army, housing conditions were typically difficult and sparse since funds for quarters and barracks were always limited by Congress. "Housing for families was provided with varying degrees of suitability until minimum standards began to be recognized in the 1860s" (Grashof 1986: 9). The first standard plans for housing officers and non-commissioned officers and their families were developed about 1866.

Strong criticism of Army housing conditions was expressed by Army doctors. This may have spurred Quartermaster General Montgomery Meigs to issue in 1872 a set of standard plans for temporary barracks and quarters in the west. These buildings, constructed at several east coast posts as well, often became quite permanent. Other standardized



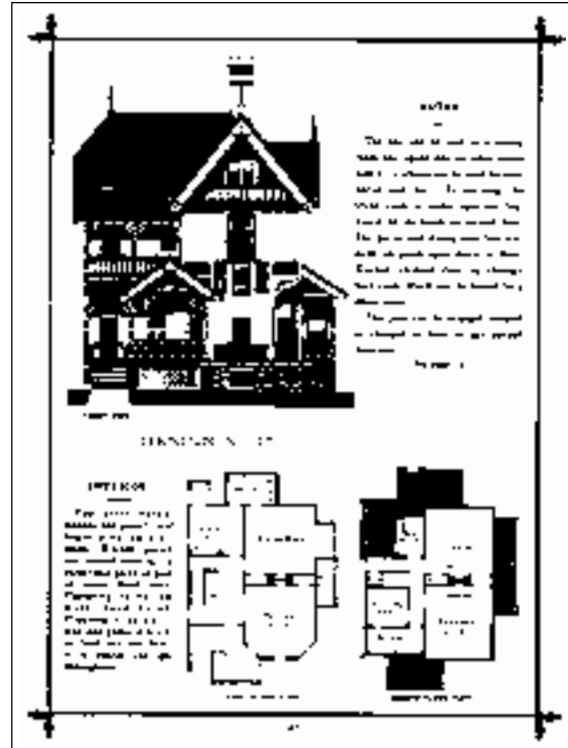
1860 Standard Barracks drawing
Source: *A Study of United States Army Family Housing Standardized Plans (PX-0001-5-0835) Volume 1*



1870 Captain's Quarters Duplex, Ringgold Barracks, Texas
 Source: *A Study of United States Army Family Housing Standardized Plans (PX-0001-5-0835) Volume 1*

plans were developed by regional military departments, but Meigs' plans were the most universal standardized designs at the time. In the civilian sector the idea of standardized housing was popularized by builders' handbooks, style books, pattern books, and mail order catalogs for plans or entire houses (Grashof 1986: 22-23).

Despite attempts to improve housing conditions, the Army continued to be severely criticized for lack of adequate heating, unsanitary conditions, poor ventilation, etc. About 1890, the Army greatly reduced its use of civilian architects and began a serious program of standardized housing and other buildings. The Army was expanding, with a large number of quarters built on both the east coast and out west. Private architectural firms were typically responsible for design of the western posts, but standard Army plans were still often used.



Design from pattern book "Cottage Souvenir No. 2"
 Source: *A Study of United States Army Family Housing Standardized Plans (PX-0001-5-0835) Volume 1*

Because of the Spanish-American War in 1898, the Army more than doubled in size, from about 25,000 troops to over 65,000 (Grashof 1986: 31). In 1905, the Quartermaster office hired an architect and drafting staff to supervise the revision of standard drawings and specifications to improve the appearance of the buildings and to help decrease costs. Reductions in cost were achieved by eliminating wasted space, modifying exterior trim, and utilizing standard material dimensions.

In 1909, Congress set limits to the amount of money that could be spent for each rank: quarters for generals were limited to \$15,000; field officers' quarters were limited to \$12,000; and \$9,000 was the maximum for company officers' quarters. Higher-ranking officers were entitled to either larger rooms or more rooms of the same size.

By the mid-1910s, standard housing plans were widely used in Army posts. However, there was little use of regional styles, with simple changes in materials being the only variation. During the first two decades of the 20th century, Colonial Revival architecture was popular. Commonly used in both Army and Navy construction, this style was often accompanied by Beaux Arts planning concepts.

The construction of military housing was interrupted by WWI, causing a nationwide shortage. In 1926, Congress enacted Public Law 45, which authorized the Secretary of War to dispose of 43 military installations and to use the funds for permanent construction at military posts (Grashof 1986: 43). The act also removed the standing \$20,000 limit on the cost of a single building. This was a ten-year program and by 1933, \$80 million had been spent.

Additional money for the Army was made available through the 1933 National Industrial Recovery Act. Approximately \$61 million was received for 660 projects at 65 posts, including the construction of 1,509 sets of quarters. Works Progress Administration (WPA) and Public Works Administration (PWA) funds provided an additional \$65 million for Army housing, adding another 1,091 sets of quarters (Grashof 1986: 46).

In 1927, Congress raised the cost limits for officers' quarters. Around the same time, Congressmen and Army officials expressed a concern that designs should respond appropriately to the different climatic conditions and architectural styles of the country. There was also a movement to layout the new posts in a less monotonous plan than existing bases; "the main objective was to create 'one great social organization' which would provide healthful conditions and positive social interaction as well as the more practical needs to properly train the troops" (Grashof 1986: 47). Houses were clustered in residential loops, influenced by picturesque, curving streets from "Garden City" concepts of suburban planning. The use of local materials and designs appropriate to local climatic conditions were preferred, but at the same time, the Army wanted an architecture that was national in character, yet reflected the various regions in the United States. Two primary styles, Georgian (or Colonial) and Spanish Mission, were adapted for use throughout the country. Apartment and duplex designs were also developed to save costs. Housing built by the Army between World War I (WWI) and World War II (WWII) represents the largest number of historically significant family housing units in the military inventory (Cullinane & Assoc. 2001: 5).

Tents and Rough Conditions at Hawaii's Early Army Posts

Hawaii's Army posts were typically built in remote, undeveloped areas. Enlisted men and even officers and their families had to live in tents until housing was constructed.

Four days after the annexation of Hawaii into the United States in 1898, the 1st New York Volunteer Infantry Regiment and the 3rd Battalion, 2nd U.S. Volunteer Engineers arrived in Hawaii and set up a temporary camp called Camp McKinley in Kapiolani Park. The following year, Batteries of the 6th Artillery Regiment joined the others at Camp McKinley. Camp McKinley, comprised solely of tent structures, was vacated after permanent Army posts were built.

Fort Kamehameha was established in 1909 as an Army coast artillery post. When the first troops arrived in 1913, some of the batteries had been completed, but Congress had yet to appropriate funds for the cantonment. Post headquarters operated from the western magazine of Battery Hasbrouck, and the troops slept in tents. The commanding officer's wife and the 2nd Lieutenant's wife lived in



Fort Kamehameha Officers' Quarters, c. 1916
Source: U.S. Army Museum of Hawaii

the casement intended for storing the mines for the closing of Pearl Harbor, and then in tents until quarters were built in 1916.

At Schofield, before arrival of the troops, a temporary camp was quickly constructed in 1908 by local laborers quartered at nearby Wahiawa. Lumber was sent up on the railroad, and work was supervised by the construction quartermaster, Capt. Joseph C. Castner. His plans called for tents for the officers and enlisted men, followed by temporary



Tent interior at Fort Kamehameha, c. 1913–1915
Source: U.S. Army Museum of Hawaii



Schofield Barracks, 1910
Source: U.S. Army Museum of Hawaii



Sgt. W.S. Sankey (5th Cavalry), his wife Lettie, and daughter Audrey, 1909
 Source: *Schofield Early Housing, U.S. Army Museum of Hawaii*

barracks, officers' quarters, and then an administration building, mess halls, and other support buildings. Most structures were wood-frame buildings elevated on concrete piers. A month after construction started, 473 officers and men from the 5th



Postcard of 5th Cavalry Officers' Row Quarters at Schofield, c. 1910–1913
 Source: *Schofield Early Housing, U.S. Army Museum of Hawaii*

Cavalry arrived at the new post, soon followed by their families. To the cavalymen and their wives, the post looked like “a raw hick town,” a frontier village deep in red dust and mud (Honolulu Star Bulletin Jan. 30 1937: sec. 3, p. 1). The men slept in traditional Army style tents with beaver boarding (made of compressed wood pulp) around them, while the officers' quarters were not much better. According to one officer's wife, “our houses were of boards, with wide-strips of screening, some tent drops, two small windows in front, one in the bedroom.” The houses were built “rather high off the ground,” with rough, built-in dining and kitchen tables that cracked when the boards shrank (Alvarez 1982: 26). In 1914, Major General William Carter, Department Commander, told the officers at the post that the conditions at Schofield Barracks not only were a great injustice but a rotten wrong, and he would make recommendations to the War Department at once to improve conditions for the troops and for the officers and their families



Schofield Barracks exterior
 Source: *Tropic Lightning Museum*



Schofield Barracks interior
 Source: *Tropic Lightning Museum*

(Addleman n.d.: 13). That same year, officers' quarters and the first permanent barracks buildings were completed.

Conditions at Bellows Field began similarly, even though it was developed much later than other Army posts in Hawaii. Prior to expansion of the facilities during WWII, the commanding officer lived in a small stone building, the only permanent structure on the installation. The other assigned personnel lived in tents set on wood frames. There were two rows of about 30 tents, facing each other

2-5



Tents at Bellows Field, 1940
 Source: “7 December 1941, *The Air Force Story*” book

and set about 100 feet apart. A wood building served as both the mess hall and dayroom. When new troops were sent to the post in 1941, they hated their new duty station. The tents were old and rotten, so equipment and personal belongings sometimes suffered considerable damage during heavy rainfall. Hordes of mosquitoes that bred in cane field ditches around the camp made life miserable (Arakaki 1991: 53). Temporary wood structures built in 1941 were a welcome relief.

Army Housing at Fort Shafter

Conditions for arriving personnel were not always so difficult. Fort Shafter had a typical Army post layout, with enlisted men's barracks, administration, and officers' quarters surrounding the parade ground at Palm Circle. Construction of the first phase was completed in 1907, and the second phase in 1909. Troops moved to the post upon completion of the buildings. Designed in the Colonial Revival style, the buildings were typical of military construction during that period. The building forms are similar to other standardized plans used by the Quartermaster between 1901 and 1908, but modifications were made, particularly more ventilation, to adapt them to Hawaii's climate.

Cantonment Areas at Hawaii Army Bases

Cantonment areas, or temporary billets, at many of the Army bases were of wood construction. Facilities usually included barracks for enlisted men, housing for officers and sometimes NCOs, and support facilities. Due to their temporary nature, most of these buildings have since been demolished.



NCO Quarters, tents and stables at Fort Shafter, c. 1916
Source: U.S. Army Museum of Hawaii



Fort Shafter Cantonment, 1916
Source: U.S. Army Museum of Hawaii

Two cantonments were constructed at Fort Shafter. A regimental post cantonment was built for arriving infantry troops in 1914 just east of Palm Circle. It included troop barracks, officer and NCO houses, and support facilities. Prior to WWII, a temporary cantonment, "Casual Camp," was built in the upper triangle area between Macomb Road and 7th Street (Meeken 1974: 16). All of these cantonment buildings have been demolished. Fort Kamehameha also had a large cantonment, including barracks, housing, and many support buildings, nearly all of which has been demolished.

Hawaii's Standardized Army Housing

The second standard housing design used by the Army in Hawaii, and the most common, is the Craftsman Bungalow style. Constructed at four



Craftsman-design house at Schofield
Source: Mason Architects, Inc.

Army installations in the 1910s and 1920s, the one-story houses were designed in the Honolulu Office of the Constructing Quartermaster. Examples of this Craftsman design are found only in Hawaii. The floor plan has several variations, but all are U-shaped layouts that originally had screened lanai and hallways, pitched roofs, single-wall board-and-batten walls, double-hung wood windows, and Craftsman-style detailing. Variations include minor changes in the plan layout, inclusion of a fireplace in the designs for Schofield and Fort Shafter (but not at Fort Kamehameha or most Luke Field houses), and gable roofs on Luke Field duplex units.

All of the officers' housing at Schofield built between 1919 and 1928 were Craftsman design, but several single-family and duplex floor plans were used. Similar houses were constructed in 1923 for officers at the Hawaii Ordnance Depot, now part of Fort Shafter; these four houses have since been demolished. Craftsman houses were constructed at Fort Kamehameha in 1916, and at Luke Field on Ford Island in 1922.

Mission-style houses, reflecting the popular architectural style of the period, were built at Schofield Barracks and Wheeler Field in 1932. The houses were originally built with flat roofs, typical

for the Mission style but not practical for the rainy Hawaii climate. To help accommodate the environment, hipped roofs were soon put on the houses, providing a much better barrier against heat and rain.

All of the 1932 Mission-style houses in Hawaii were one-story bungalows. Two-story houses were thought to be slightly more expensive because roof areas were larger. However, the Army considered "the bungalow well suited for southern and tropical climates" (Grashof 1986: 52). The majority of historic Army housing in Hawaii is one-story, but the earliest houses and some of the WWII houses are two stories.

Standard plans were also used just prior to and during WWII for one- and two-story single-family houses and single-story duplexes at Fort Shafter, Wheeler, Hickam, and Schofield Barracks. These units, built for both officers and NCOs, were constructed of concrete block with wood-framed hipped roof. The units at Schofield have been demolished, but all others remain and are relatively unaltered.

Grand Planning for Hickam Army Air Field

As was the trend in U.S. Army base planning at the time, Hickam Field was laid out according to city planning methods. The base layout, architecture, and landscaping were integrated, using the classical form of major and minor axes to organize the areas and to separate housing, administration, and technical aviation functions. This planning approach was far advanced relative to previous military base designs. One- and two-story houses at Hickam were designed in a Hawaiian-tropical style, often with some Art Deco detailing. Varying sizes and embellishments



2-8

Hickam Army Air Field, July 1941

Source: National Archives Still Photo Collection, RG 71 CA, Box 171

reflected the ranked military society. The Art Deco style, popular in the United States in the 1920s and 1930s, is well expressed in other buildings on the base with geometric and avian ornamentation.

World War II Temporary Construction at Army Bases

During WWII and the massive military build-up, large numbers of troops passed through Hawaii on their way to or from the Pacific war front. Facilities had to be provided in a very short time period. Temporary wood barracks sprung up in open areas on nearly every Army installation, and many men were housed in tents. Although standard plans were used for one- and two-story barracks, some modifications

were applied to make the structures more appropriate for the warm climate. Temporary single-family houses were also constructed. Nearly all of the WWII temporary construction has been demolished, following a national documentation process completed by the Army.

Apartment Housing at Army Bases

The Army first built apartment housing units in Hawaii during the early 1940s at Hickam and Wheeler Fields. After WWII, other apartment buildings were erected at Tripler Army Medical Center. More like row houses than apartments, each abutting two-story unit has individual exterior entries, unlike typical apartments that are usually one floor

and share common entries. The early 1940s apartment buildings are U-shaped, while the late 1940s ones at Tripler have a linear plan. This is probably due to the hilly Tripler site. Both apartment designs have minimal ornamentation.

Navy Housing History Comparison of Navy and Army Housing Issues

In the early decades of the 20th century, the U.S. Navy had a smaller housing requirement than the Army. There were fewer Navy personnel and most of lived aboard ships. Because the Navy built fewer houses, it seemed to rely less on standardized plans. This was the case with historic Navy housing in Hawaii. Drawings for housing at shore installations appear to have been specifically developed for each housing area, whether drawn by civilian architects or staff in the Navy's Bureau of Yards and Docks or in the installation's Public Works office.



Warrant Officers' Quarters, U.S. Naval Station, (Honolulu) Hawaii, 1902

Source: National Archives Still Photo Collection, RG 71 CA, Box 155 D



Permanent and tent housing at Naval Hospital, and Radio Station Pearl Harbor, Oahu, Hawaii, June 1921
 Source: U.S. Army, Bishop Museum

Like the Army, the Navy faced difficulties in obtaining funds for housing. The greatest problem was providing enough housing when personnel strengths suddenly increased, as in times of war or when new installations are being developed.

Coal Sheds and Other Early Housing in Hawaii for Marine and Navy Personnel

After Hawaii became a territory of the United States, the first Naval Station in the islands was established in 1899 at Honolulu Harbor, as there were no facilities and no navigable channel at Pearl

Harbor. Housing was built on the waterfront near downtown Honolulu. The first permanent Marine garrison arrived in Hawaii in 1904 and lived for four years in an empty coal shed at the Honolulu Naval Station. From 1908 until about 1913, they lived in tents at nearby Camp Very (named in honor of Captain Samuel W. Very, Commandant of the Naval Station) “a site which was later known as Fort Armstrong” (Marine Barracks n.d. a: 2).

By 1914, the earliest permanent housing had been built at Pearl Harbor, including the first eight houses for top Navy officers at Hale Alii and a large

barracks plus three houses and a duplex for officers at the Marine area. In the following seven years, four more houses were erected at Hale Alii and about ten other officers’ quarters were built for the Naval Hospital and Radio Station at Pearl Harbor. Most of the lower-level personnel for these two activities were housed in nearby tents until additional housing was built in the 1920s.

At the Submarine Base at Quarry Point, barracks were constructed for enlisted men (1929) and then for officers (1934). Housing conditions were spartan in these early decades. Twenty-four temporary wooden buildings, left over from WWI service in France, arrived at Quarry Point in January 1920. Some of these may have served as housing but photos show that tents were also being used. There was another temporary solution to the housing shortage at Submarine Base. In 1923, a decommissioned submarine tender, the USS *Chicago* (later renamed *Alton*), was converted to a barracks ship and a causeway constructed to its location in Quarry Loch.

2-9



Barracks ship moored at Quarry Loch for Submarine Base housing, February 1930
 Source: USS Bowfin Museum

Housing Development at Pearl Harbor and Other Navy Installations Between the Wars

The particulars of each neighborhood's development are given in Chapters 5 and 6. This section briefly summarizes the common themes in Navy housing history between World Wars I and II. As was noted in the Army section, almost all houses of these decades were one-story bungalows. Two-story historic housing at Navy installations on Oahu dates from either the early base period or the early 1940s. One notable exception is the 1921 house for the Commanding Officer of Naval Hospital (Facility 303), which was modeled after the 1914 Quarters A (Facility 1000) at Hale Alii.

2-10

The Craftsman-style bungalows built in Navy neighborhoods during the 1920s are similar to Army housing of the same period and style. Hospital Point's six waterfront quarters, the three 1923 houses at the north end of Ford Island, and the Chief Petty



Chief Petty Officer Housing on Ford Island, 1924
Source: National Archives Still Photo Collection, RG 71 CA, Box 152A

Officers' Quarters on Ford Island all have hip roofs, board-and-batten siding, and wood-frame windows, as do the more numerous houses built by the Army in the same period at Schofield Barracks and Luke Field. The Navy houses have a slightly more simplified Craftsman style than the Army ones.



Housing at the North End of Ford Island, 1939
Source: National Archives Still Photo Collection, RG 71 CA, Box 152A

In the 1930s, the only Navy housing built at Pearl Harbor was at the north end of Ford Island. These sixteen 1936 houses are similar to the earlier Craftsman houses but, unlike those, are built on concrete slab foundations and have L-shaped plans. The most unusual feature of this neighborhood is that the Commanding Officer's Quarters was built on top of the abandoned 1918 Battery Adair.

Other housing was built at three outlying Navy installations at West Loch and in Lualualei valley.

The three 1932 West Loch houses, now demolished, were the same as those built at Naval Magazine Lualualei. About 1932, 14 houses were erected at the Naval Magazine, and in 1938, 11 quarters were built (10 remain) at the Radio Station (now called Radio Transmitting Facility) in that valley. National Industrial Recovery Act funding was used for the radio station (Coletta 1985: 448). The Lualualei houses, unlike earlier Navy housing in Hawaii, were built with walls of concrete masonry units (CMU) instead of wood. Although the Army houses of the 1930s were also built with CMU walls, the Army and Navy housing styles of the period are quite different.

Housing Development at Pearl Harbor and Other Navy Installations During the 1940s

In the late 1930s and early 1940s, Oahu's military and civilian populations increased substantially. There was a great housing shortage, especially for enlisted men, and the Navy requested funding for land and construction for more housing. A committee report by the House of Representative in 1939 noted:

A number of enlisted men with their families are now required to live in Honolulu, at a distance of from 10 to 12 miles from the navy yard, in unsanitary, dilapidated and unhealthy surroundings. There is no possibility that private enterprise will provide suitable housing at prices which enlisted men can afford to pay (Honolulu Star Bulletin, April 4, 1939: 1).

A large amount of housing was built at all Navy installations in Hawaii in the early 1940s. Most of this was built by Contractors Pacific Naval Air Bases (CPNAB), under several large contracts that included numerous buildings and bases for the Navy on several islands in the Pacific. The housing constructed by this consortium of construction companies had a total capacity of over 20,000 inhabitants. Much of the housing that was started or planned before the December 7, 1941, attack remains. The neighborhoods built for the Navy in the early 1940s include those at the radio installation near Wahiawa, at (then) Naval Air Station (NAS) Kaneohe, at NAS Barbers Point, and several

at Pearl Harbor (Makalapa, Little Makalapa, Naval Housing Areas 1 [Hale Moku], II, and III, and Red Hill). Naval Housing Areas II and III were demolished three or more decades ago.

All of the houses in the Wahiawa, Makalapa, Little Makalapa, and Naval Housing Areas I and II neighborhoods were designed by the firm of C.W. Dickey, one of Hawaii's most noted architects. A consistency of design details is found among Dickey's housing, although there is quite a variation in floor plans and materials used. The Naval Housing Areas I and II were the only ones to include four-plex and six-plex buildings. These linear buildings were somewhat similar in concept to the

apartment buildings constructed by the Army in the early 1940s, especially when they were placed in courtyard arrangements.



*Courtyard created by three buildings in Naval Housing Area I (Hale Moku), with two-story duplexes (Facilities 176 and 178) flanking a four-plex (Facility 177)
Source: David Franzen Photography*



*Naval Housing Area (NHA) III (for civilians) in foreground, with NHA I and II in triangle beyond, July 1941
Source: National Archives Still Photo Collection, RG 71 CA, Box 171B (aerials)*

Despite the massive construction program, there was still much competition for the available housing.

As of March 1944, it is estimated that approximately 25,000 persons are practically homeless, and an equal number inadequately housed in “tenements that rival Gotham’s Hell’s Kitchen” (Contractors Pacific Naval Air Bases n.d.: A-929).

The Shipyard commander was especially anxious to get more housing assigned to his civilian workers, since they were having difficulty retaining workers who could not bring their families to Hawaii due to the housing shortage (Furlong 1942). The Shipyard wanted the ward buildings at Hospital Point converted to bachelor officer and enlisted quarters to free up the houses in Naval Housing Area I for civilian workers.

At Pearl City Peninsula some civilian homes were used by the Navy for housing during WWII, and the entire peninsula was acquired following the war. The area that had been leased by Pan American Airways was taken over by the Naval Air Transport Service. This included at least 14 small beach homes (CPNAB n.d.: A-845); nearby houses were used by other Navy activities.

Problems encountered during the Navy's rapid and massive housing development. One Navy housing area, described only as "adjacent to the Pearl Harbor Navy Yard" (probably Naval Housing Area II, since it was demolished about 1970), was found to be infested with termites in mid-1941 only months after completion of the project. The specifications apparently were prepared hastily and did not call for treated lumber or for ground treatment (Honolulu Star Bulletin July 12, 1941: 1). Another difficulty faced by housing projects was a regulation restricting use of critical materials, such as concrete, to the most important buildings. As it worked out, for housing under construction or design, the use of supplies that had already been ordered was allowed in the interest of speed.

Most of the housing built by the Navy in 1944 and 1945 were temporary structures—barracks or hutments for unaccompanied personnel—which have since been removed. Much of this was built by Navy Construction Battalions (CBs or Seabees), unlike the early 1940s housing that was mostly built by CPNAB. The cantonment at Aiea (present Aloha Stadium site) built by CPNAB consisted of 117 single-story barracks with "minimum frame construction" (U.S. Navy, Bureau of Yard and Docks 1947: 136).

The temporary housing was not suitable for reuse after the war, when families rejoined Navy personnel. The Quonset huts, temporary wooden structures, and tents were not designed for long life and had received hard use during the war years. Housing was built with the most available and inexpensive materials, especially during the last years of the war. Thousands of men were housed in tents, but by 1944, a memo called for the substitution of wood-frame structures or Quonset huts, due to a shortage of canvas (Towers 1944). On Oahu, temporary housing was erected at existing Navy installations, such as Naval Ammunition Depots Lualualei and West Loch, NAS Barbers Point, and Marine Corps Air Station Ewa as well as at new installations



Naval Housing Area II in foreground, built in 1941, with Quonset huts for WAVES Barracks beyond, built in 1944. Source: National Archives Still Photo Collection, 80-G-276 836

developed late in the war, such as Waipio Peninsula, Iroquois Point Annex, and much of the area near the airport, north of Kamehameha Highway.

Installation Exchanges that Affected Historic Housing Ownership After World War II

This chapter has focused on Army and Navy housing history because the housing at current Air Force and Marine Corps installations was originally built for the Army or Navy, respectively. After WWII, several military bases changed ownership, and in 1947, the U.S. Air Force—previously a branch of the Army—became a separate service.

Hickam and Wheeler Fields became Hickam and Wheeler Air Force Bases when the Air Force was separated from the Army. However, in 1991 the Air Force and Army worked out a real estate exchange. Fort Kamehameha, which had always been an Army post, was obtained by the Air Force in exchange for Wheeler Air Force Base, which was named Wheeler Army Airfield.

Ownership of Mokapu Peninsula had been shared by the Navy and Army during WWII. The Army's Fort Hase was vacated soon after the war. In 1949, Naval Air Station Kaneohe Bay was decommissioned, and the Navy moved most equipment and personnel to NAS Barbers Point. The Marine Corps obtained ownership of the entire peninsula in 1952. They kept the permanent buildings erected by the Navy, including the housing. Most of the Army's buildings at Fort Hase, largely temporary construction, have been demolished.

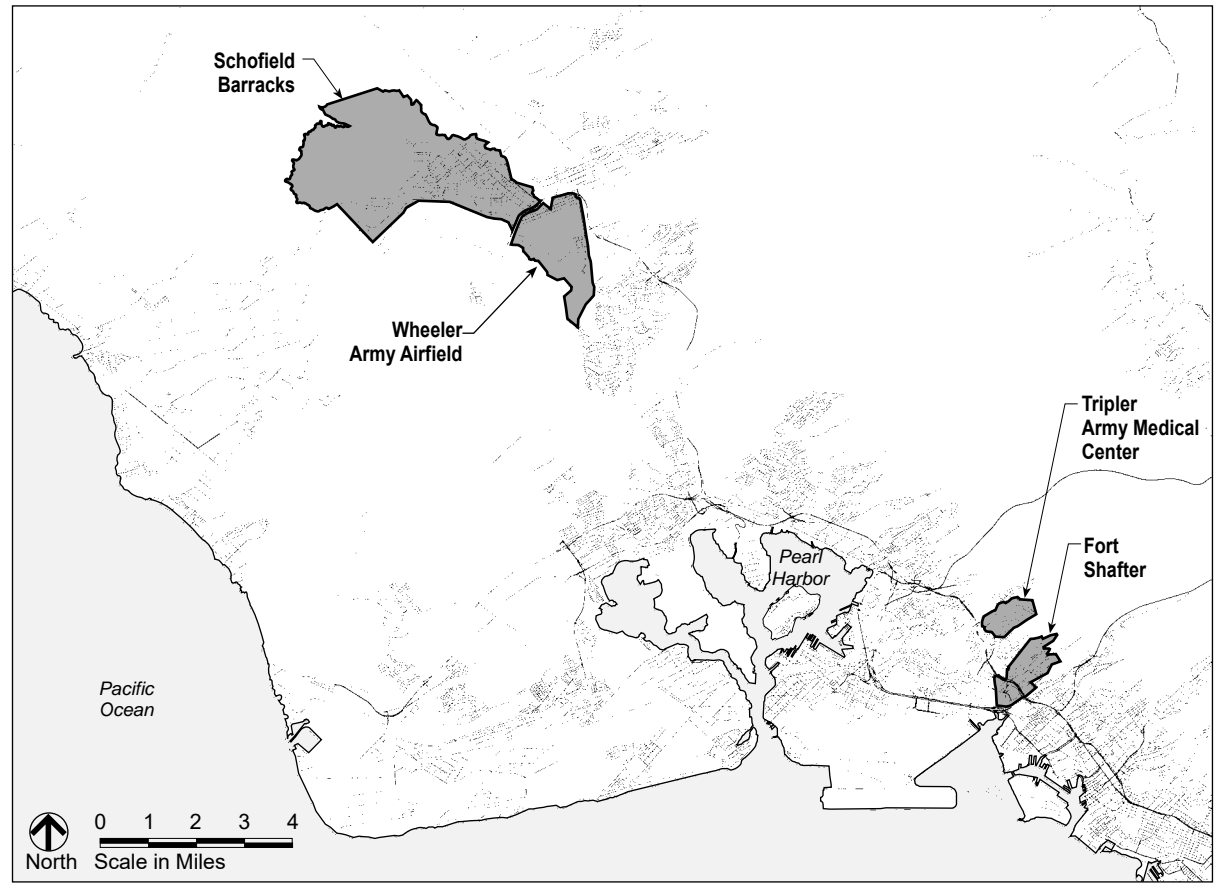
Chapter 3

Historic Neighborhoods: Army

There are currently four Army installations on Oahu with historic housing. These military posts were developed in different periods and for varying purposes, and the differences are reflected in the variety of housing.

Historically, the principal mission of the United States Army in Hawaii was the defense of the naval base at Pearl Harbor. The early Army bases were developed in strategic locations to protect the harbor from land or sea attack, while later bases and structures were oriented to air defense. The first Hawaii Army post, Fort Shafter, was established in 1907 on the south-central coast of Oahu to defend Pearl Harbor from land troops approaching from the east. Officers' housing, along with enlisted men's barracks, dining, and latrine facilities around the Palm Circle parade ground was built in the Colonial Revival style. Additional housing in a much simpler style was built at Fort Shafter just prior to WWII.

The site for Schofield Barracks, the base for Oahu's mobile defense troops, was selected because of its strategic location in the central valley of Oahu, north of Pearl Harbor. Permanent construction began in 1913. Craftsman-style Officers' housing was



Map of Army installations

built between 1918 and 1929 to accompany Enlisted Men's barracks. Mission-style officer and NCO houses built in 1932 at Schofield were of the same design as those being built concurrently at the adjacent Wheeler Field. Additional houses, duplexes, and apartment buildings of a much simpler style were built just prior to WWII.

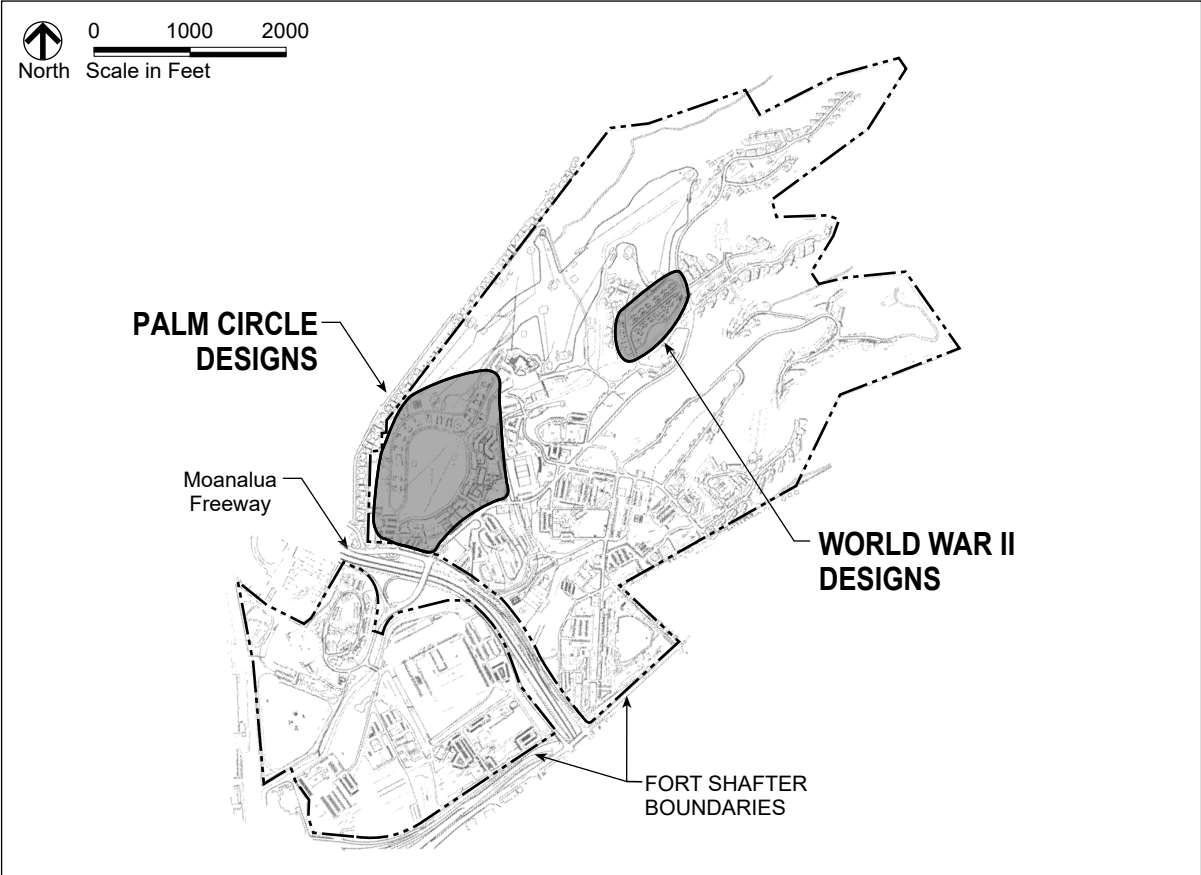
The original Tripler General Hospital was located at Fort Shafter and replaced by the current facility in 1948. Two apartment-style buildings for hospital staff were constructed on the hillside behind the hospital in 1951.

Fort Shafter Neighborhood Significance

Fort Shafter is significant as Hawaii’s first U.S. military post and as U.S. Army headquarters in Hawaii. The post was established just after Hawaii became a territory of the United States in 1900. In 1921, Fort Shafter became the headquarters of the Hawaiian Department, and since then it has served as the Senior Army Headquarters in Hawaii.

The Palm Circle neighborhood was constructed between 1907 and 1924 as officers’ housing at Fort Shafter. Sited around the Palm Circle parade ground, this housing area is one of the oldest and most intact grouping of military buildings in Hawaii. The officers’ housing is on one side of the somewhat-circular parade ground, and the original barracks, dining hall, and latrine structures are on the opposite side. The original buildings, nearly all of which remain, are of this same architectural style, even the latrine structures. The buildings have a refined style, reserved but moderately decorative, befitting a headquarters and signifying the importance of its residents. The buildings are complemented by stately rows of royal palms which were planted around the parade ground just after the first buildings were completed in 1909.

The officers’ houses constructed in 1943 are located on the east side of the base, just south of the golf course. These houses were built as defense housing from standard plans used at other Army installations on Oahu. Set along tree-lined winding streets, the houses are relatively unaltered and appear much as they did when first completed. They serve as



Fort Shafter vicinity

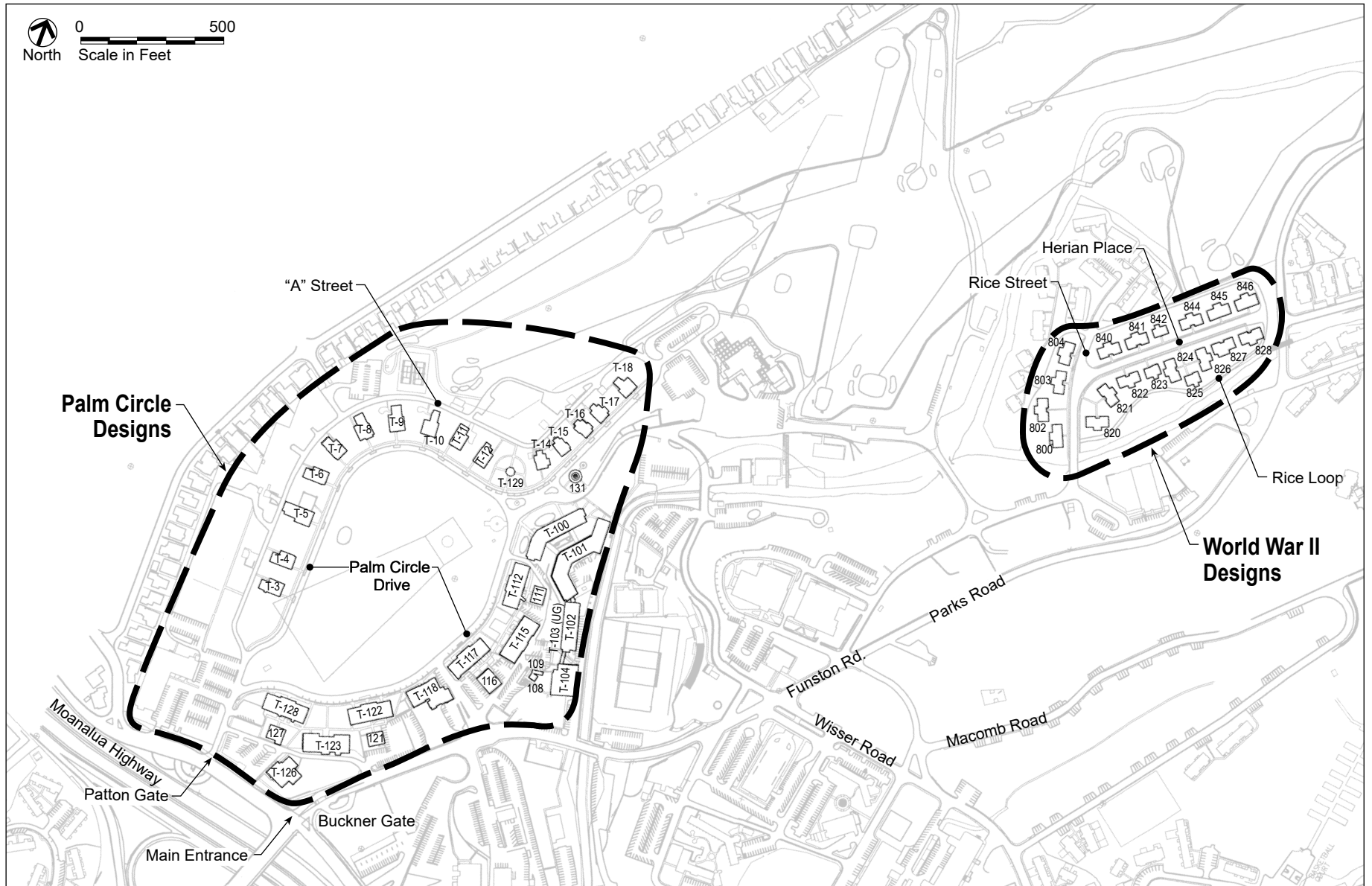
excellent examples of the WWII-era Army Officers’ housing designs.

Neighborhood History

Most of the structures around Palm Circle were built between 1905 and 1909, all using the same architectural style. The original construction included 14 houses, an administrative building

(formerly T-14, now demolished), four barracks buildings, four latrine buildings, two mess halls (now T-115 and T-123), a post exchange building (now T-118), and a guard house (now T-126). Except for the administration building and the post exchange building, all of the buildings directly on the parade ground circle were originally used for

HISTORIC CONTEXT STUDY
OF HISTORIC MILITARY FAMILY HOUSING IN HAWAII



3-4

Palm Circle and World War II neighborhoods at Fort Shafter

housing, with the officers' houses on the northwest side and the enlisted men's barracks on the southeast side. The supporting buildings for the barracks, including the two mess halls and four lavatories, were located behind the barracks buildings. The northeast and southwest sections of the circle were undeveloped.

Construction occurred in two phases, the first phase including all but four of the present quarters (5, 15, 17, 18) and buildings 119 (the pool, now demolished), 121, 122, 123, 127, and 128. Bids ranging from \$2000,000 to \$300,000 opened on June 12, 1905; the contract was awarded to Burrell Construction Company of New York. Captain E. H. Humphrey, QMC, was the Construction Quartermaster. The houses were specially designed by the Quartermaster Corps for Hawaii and are marked by a special number in the index of standard drawings. The building forms are similar to other standardized plans used by the Quartermaster between 1901 and 1908, but modifications (particularly to increase ventilation) were made to adapt them to Hawaii's climate.

Construction on the first phase began in August 1905 and would have been completed by October 1906, except for material shortages caused primarily by reconstruction following the 1906 San Francisco earthquake. Construction at Fort Shafter was completed on April 15, 1907, and the post was occupied in June. The second construction phase began in 1908 and was completed on August 30, 1909. Quarters 8, 9, and 10 were built as Captains' quarters, Quarters 3, 4, 7, 11, and 12 as Lieutenants' quarters, and Quarters 14, 15, 16, and 17 as NCO



Palm Circle at Fort Shafter, August 1909
Source: L. E. Edgeworth, Bishop Museum

Quarters. Building 13 (at that time numbered 14, now demolished) served as Post Headquarters.

Fort Shafter's Post Hospital was established in 1907, and was located south of Palm Circle, across King Street. The original hospital buildings were completed between 1907 and 1909. The remainder

of the main hospital facility was substantially completed by 1919. The buildings included an administration building, mess hall, kitchen, wards, clinic, dormitory, and quarters for nurses and hospital stewards. The hospital was enlarged during WWII to add 15 ward buildings, four officers or nurses quarters

3-6



Palm Circle in June 1934 showing original Tripler General Hospital
Source: U.S. Army Museum of Hawaii Photo #2798

buildings, four 50-men barracks buildings, one mess building, a receiving and evacuation building, and a water heating plant. The current Tripler Army Medical Center was occupied in 1948 and the Fort Shafter hospital buildings were demolished during construction of the H-1 freeway in 1958–1960. The former Fort Shafter hospital site is now occupied by housing, which was constructed in 1962.

Quarters 18 was built later than the other houses, and the loop of A Street and Palm Drive was extended to include this unit. Completed in June 1924, it was originally intended to serve as the Field Officers' Quarters, but was instead used by the commanding officer of the hospital. The barracks buildings T-112, T-117, T-122, and T-128 were converted to administrative spaces to accommodate the

Headquarters, Hawaiian Department in 1921. The main entrance to the post at this time was F Street, and was changed to E Street (now Funston Road) when the H-1 freeway was built.

The gradual construction began of the golf course began sometime after the arrival of the Hawaiian Department and was completed in 1936. An auxiliary flying field was operated on a portion of the golf course behind the officers' club (building 710). Formally designated Putnam Field on August 19, 1933, it served the Headquarters, although no improvements were made beyond a grass strip.

In anticipation of the role that the Territory of Hawaii was to play in the Pacific during WWII, new administrative buildings were planned at Fort Shafter. The present Headquarters buildings (T-100, T-101, and T-102) were constructed in the unbelievable time of 49 days, with completion on June 27, 1944. This complex of buildings, known as the "Pineapple Pentagon," was the nerve center of Army logistical planning for the battles in the Pacific theater during the closing years of WWII. After WWII, Building T-100 was officially named Richardson Hall in honor of the general. Additional administrative buildings were constructed at Palm Circle during WWII. These include T-21, T-27, and T-28, constructed behind Quarters T-14, the first two of which were later converted to family quarters, and all of which are now demolished. Buildings T-104 and T-105 were completed in 1944 as the Civilian Cafeteria and Post Exchange.

Other new buildings were constructed at Fort Shafter in the buildup prior to and during WWII,

although the base did not see the immense expansion that occurred on other Hawaii Army bases. In addition to officers' housing constructed just south of the golf course, underground bomb-proof structures and anti-aircraft sites were constructed.

After World War II no regiment was stationed at Fort Shafter. The Ordnance and Signal Depots were oriented to the support of Schofield Barracks.

A major reorganization in 1974 resulted in the elimination of the theater-level Army headquarters (U.S. Army Pacific) and the relocation of the Hawaiian-level Army Headquarters (U.S. Army Support Command Hawaii) from Schofield Barracks to Fort Shafter. The houses have continued to serve in the same capacity, as residences for the officers of Fort Shafter and their families.



Palm Circle neighborhood landscape
Source: Belt Collins

Major Landscape Features of Neighborhood

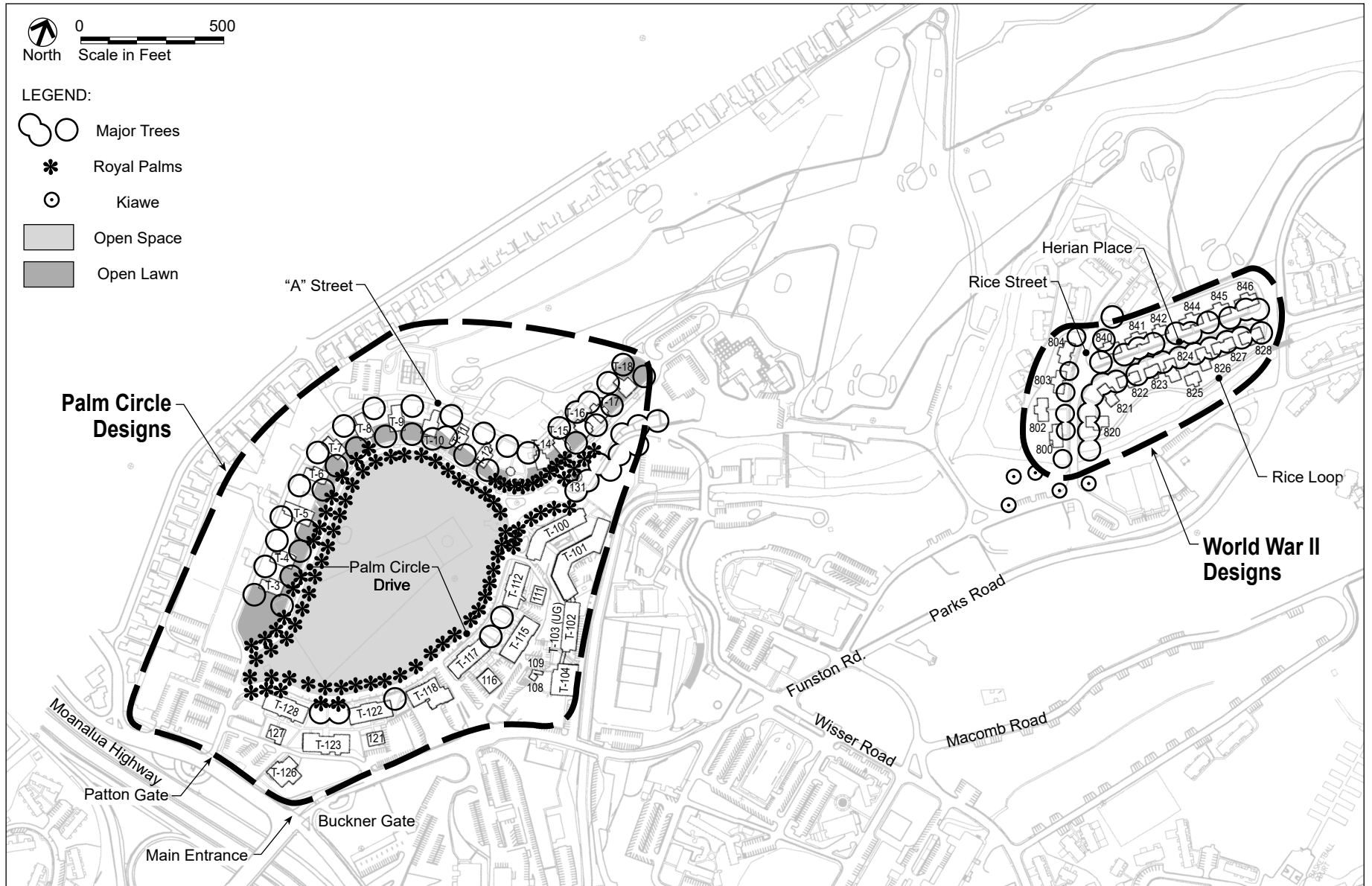
The Palm Circle neighborhood's layout is along one side of Palm Circle Drive, which encompasses the parade ground. The original barracks and other support structures (now administrative offices) were located on the opposite side of the parade ground. The Officers' Quarters are located on the northwest side of the Palm Circle Drive, which serves as the formal public entry to the neighborhood. Street "A" runs along the rear of the neighborhood and acts as the private utilitarian access.

The key landscape feature of the neighborhood is the royal palm lined parade ground from which the neighborhood gets its name. These palms were planted between 1909 and 1911 at the insistence of Colonel Alfred Booth. Toward the north end of the parade ground is the post's flagpole. Directly across



Fort Shafter, 1963
Source: Bishop Museum

HISTORIC CONTEXT STUDY
OF HISTORIC MILITARY FAMILY HOUSING IN HAWAII



3-8

Landscape at Palm Circle and World War II neighborhoods

the street and between quarters T-12 and T-14 is a formal garden area with a gazebo structure as the focal point.

Each of the Officers' Quarters is set back from the road creating a larger front yard space. This also adds to the formal entry to each of the units. Large canopy monkeypods are located in the front yards between the dwellings. Typical of other prominent Officers' Quarter's neighborhoods, the foundation plantings in the front and side yards are more formal in nature, while the back yards are less formal. All of the plant materials have a tropical plant palette.

The parade ground open space with its majestic royal palms is the focal point of the neighborhood. From the parade ground, there are views back toward the Koolau Mountain Range. At the north end of Palm Circle Drive from the Officers' Quarters, there are views back toward the Fort Shafter Golf Course. A tennis court facility is centrally located within the neighborhood along Street "A."

Major Trees/Palms

- Monkeypod
- Royal palm
- Norfolk Island pine

Other Trees

- African tulip
- Shower tree
- Formosan koa

The WWII housing designs are part of the Rice Manor neighborhood, the second historic neighborhood at Fort Shafter. These quarters are arranged linearly and are oriented onto Rice Street and Herian

Place. A rear service loop exists mainly for refuse collection. There are no garage structures within the rear yards of these units; all vehicles are parked along both sides of the street and create a cluttered street scene.

The unifying landscape elements throughout this neighborhood are the large monkeypod front yard trees. The foundation plantings around each of the dwellings are rather informal. All of the shrub planting is tropical in character; the front and back yards are grassed.

Some of the quarters on the northwest side of this neighborhood have a view back toward the golf course. The northeast quarters have a view back

towards the Koolau Mountain Range. There is no notable open space associated with this neighborhood.

Major Trees

- Monkeypod
- Kiawe

Other Trees

- African tulip
- Banyan
- Plumeria
- Brassia
- Norfolk Island pine
- Coconut



World War II neighborhood landscape
Source: Belt Collins



3-10

Palm Circle houses
Source: Mason Architects, Inc.

Palm Circle Housing Designs

Palm Circle is an excellent example of officers' housing constructed as part an early compact military post, consisting of enlisted men's barracks, support facilities, officers' housing, and the parade ground. The exceptional landscaping and picturesque palm tree encircled parade ground greatly enhance this neighborhood. The Palm Circle housing area has 15 houses, all built in the same architectural style. Three designs are utilized for several units: Quarters 3, 4, 6, 7, 11, and 12 were built as Lieutenant's quarters; 8, 9, and 10 as Captain's quarters; and 14, 15, 16, and 17 as NCO quarters. Quarters 5 and 18 have unique plans; Quarters 5 as the Post Commander's quarters, and Quarters 18 served as the house for the commanding officer of the hospital. Despite the span of construction years, the houses are of the same architectural style, with very few differences in detail, and have the same character-defining features.

The Palm Circle houses are all two-story structures with a wood framing system set on a masonry pier foundation. The foundation structure is wood with scored concrete piers along the exterior wall. Concrete steps with wood railings lead to the main entry. Some houses retain either the front or rear original stair railings, or both railings, which are similar to the interior stair railings with dense vertical balusters. The wood roof structures are hipped.

The building exteriors have horizontal wood siding and wood windows that are mostly double-hung or casement types. The double-hung windows typically have decorative tails protruding from the

Facility #	Facility or Design Name	Date
3, 4, 6, 7, 11, 12	Lieutenant's Quarters	1907
8, 9, 10	Captain's Quarters	1907/1909
15, 16, 17	NCO Quarters	1909
5	Post Commander's Quarters	1905
18	Hospital Commanding Officer's Quarters	1924

bottom of the upper sash. The windows have simple wood casings on the exterior, and operable windows have wood-framed screens. The houses feature enclosed lanai (porches) on the front, back, and often side of the structures. Sometime before 1934, the front and side lanai were typically enclosed with windows, with vertical wood tongue-and-groove below, although the original screen enclosures remain in a few locations. Quarters 3 through 12 have round columns at the now-enclosed front, side, and rear lanai, while Quarters 14 through 18 have square columns.

On the first floor, the Quarters typically have a front foyer and main stair, living room, dining room, and a study. The back portion of the first floor contains the kitchen and usually the pantry and servant's quarters. The front and back portions of the first floor originally were separated by the back stair, which was enclosed with screens. The walls at the back stairs have exterior siding. The back stair area is now always enclosed with windows and used as part of the interior of the house. Bedrooms and bathrooms are on the second floor.

French doors once existed at the openings between the now enclosed front and side lanai and the interior rooms on the first floor. Some of these doors remain, but others have been removed. Most houses still retain the original doorbells at the original front door. Doorbell-type buzzers at the lanai and other locations in the house were once used to call the servants.

The foyers, hallways, living rooms, studies/libraries, dining rooms, and bedrooms of Palm Circle homes all have plaster walls with a wood baseboard

and wood picture rail, and a simple wood casing at the cased openings, doors, and windows. The pantries in most homes and some of the kitchens have tongue-and-groove or canec wall and ceiling finish. They still retain some or all of the original built-in cabinets, some with original hardware. Original or early light fixtures remain in some residences..

The basements have concrete floors and walls and small double-hung wood windows. A few of

the basements still retain the historic shower and toilet enclosures. All residences, except at Quarters 6, have unfinished attic spaces.

Lieutenant's Quarters Plan (Quarters 3, 4, 6, 7, 11, 12)

The Lieutenant's Quarters plan has a foyer, living room, dining room, and pantry in the front portion of the first floor. The main stair case is located



*Front view of Quarters 3 (Lieutenant's Quarters), Palm Circle neighborhood
Source: Mason Architects, Inc.*



3-12

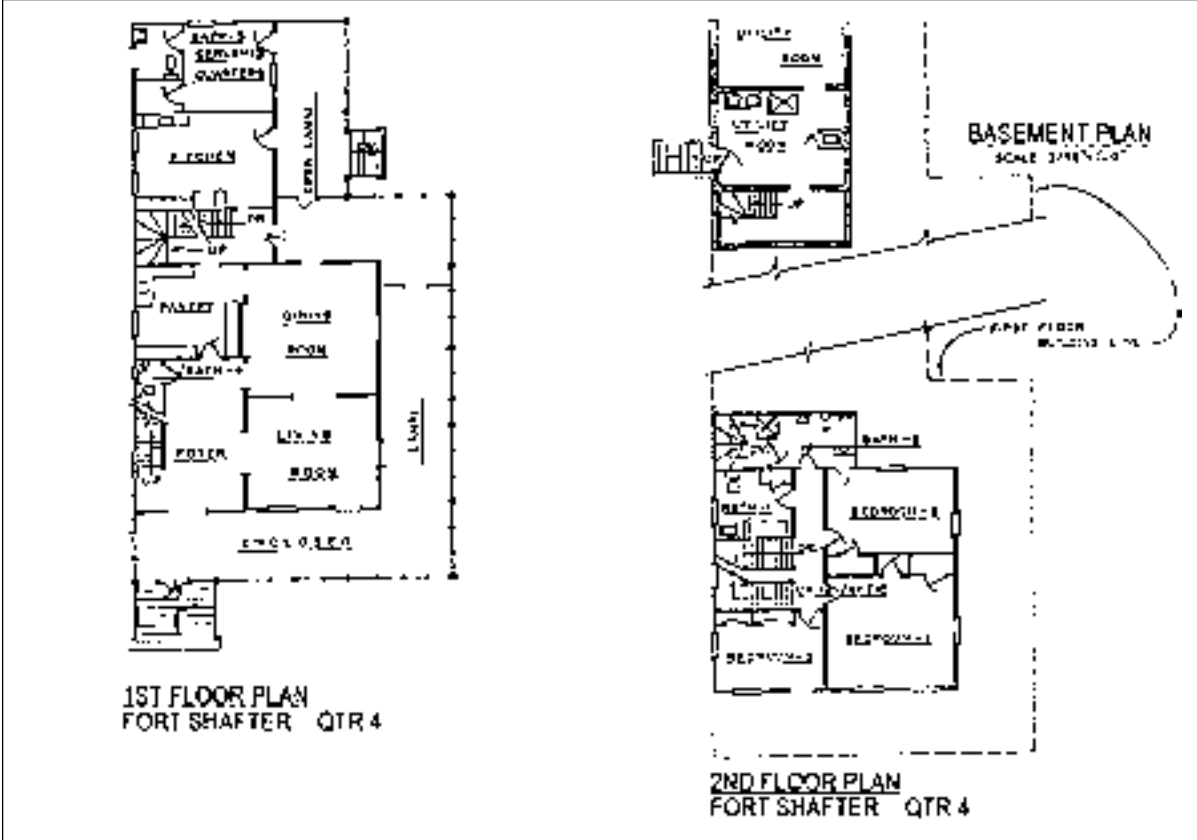
*Front view of Quarters 4 (Lieutenant's Quarters), Palm Circle neighborhood
Source: Mason Architects, Inc.*

*Quarters 7 cabinets
Source: Mason Architects, Inc.*

in the foyer, and a small bathroom is tucked below the stair. A lanai (now enclosed) wraps around the front, right side, and back of this part of the house and ends at the back stair, which links the main floor to the basement and the second floor. Beyond the back stair is the kitchen, which opens onto the back lanai. The former servant's quarters and bath is beyond the back lanai.

The second level above the front part of the house has a central hallway leading to three bedrooms and a bathroom. A second bathroom, at the top of the back stairway, can also be accessed from the central hall. The front stair leads up to the attic. The basement has two utility rooms, and also has a doorway and stairs leading to the outside. This design's lanai have round columns.

Typically these units have a pass-through window between the pantry and dining room. Some units have a built-in cabinet at the dining room side of the pass-through, which has glass doors above and drawers and wood doors below.



Main Stair at Quarters 4, Lieutenant's Quarters
Source: Mason Architects, Inc.

Quarters 4 floor plans

Captain's Quarters Plan (Quarters 8, 9, 10)

The Captain's Quarters plan has a central entry hallway and living room, study, dining room, and main stair (with small bath below) in the front portion of the house. A lanai (now enclosed) wraps around the front, right and back of this part of the house. The back stair is at the end of the central hallway. Beyond the back stair is the pantry, kitchen, and former servant's quarters. The back lanai also leads to the kitchen and former servant's quarters.

The second floor has four bedrooms. One bathroom is accessed from the central hallway, while another is accessed from the two front bedrooms. The front stair leads up to the attic. The basement is divided into two utility rooms; the back room has a door and stair to the exterior.

3-14



*Front view of Quarters 10, Captain's Quarters
Source: Mason Architects, Inc.*



*Front stair and door to bathroom underneath, Quarters 9
Source: Mason Architects, Inc.*



*Enclosed side lanai, Quarters 9
Source: Mason Architects, Inc.*

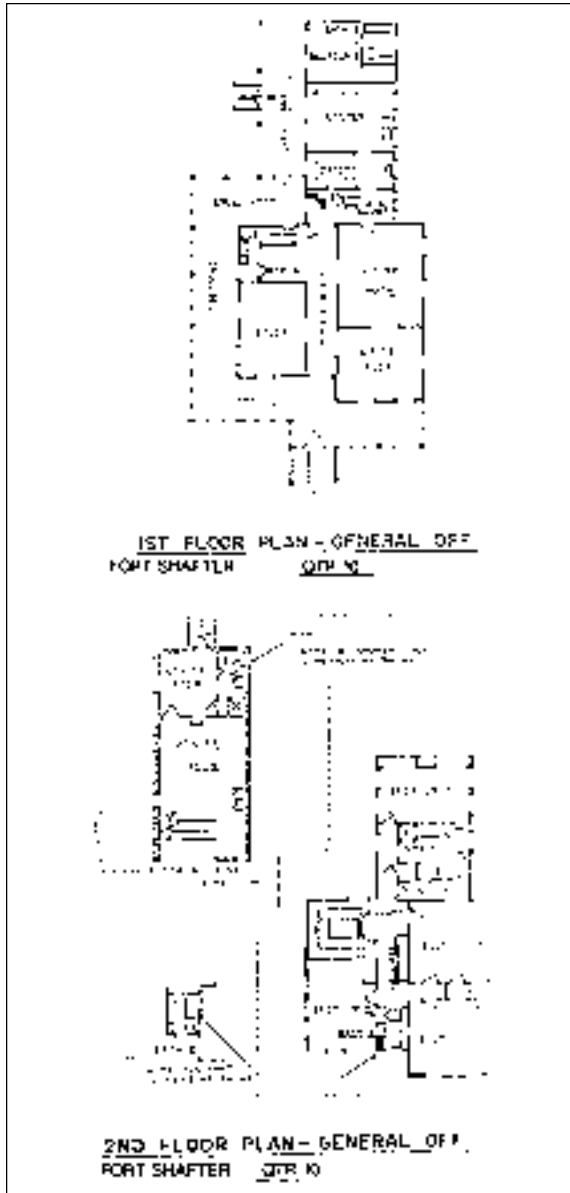


*Historic double doors to back stair, Quarters 8
Source: Mason Architects, Inc.*

**NCO Quarters Plan
(Quarters 14, 15, 16, 17)**

The NCO Quarters front entry leads into a hall with the front stair. The living room is on the right and the dining room beyond. The lanai, now enclosed, runs on all four sides of the front portion of the house. The lanai has been partitioned in all

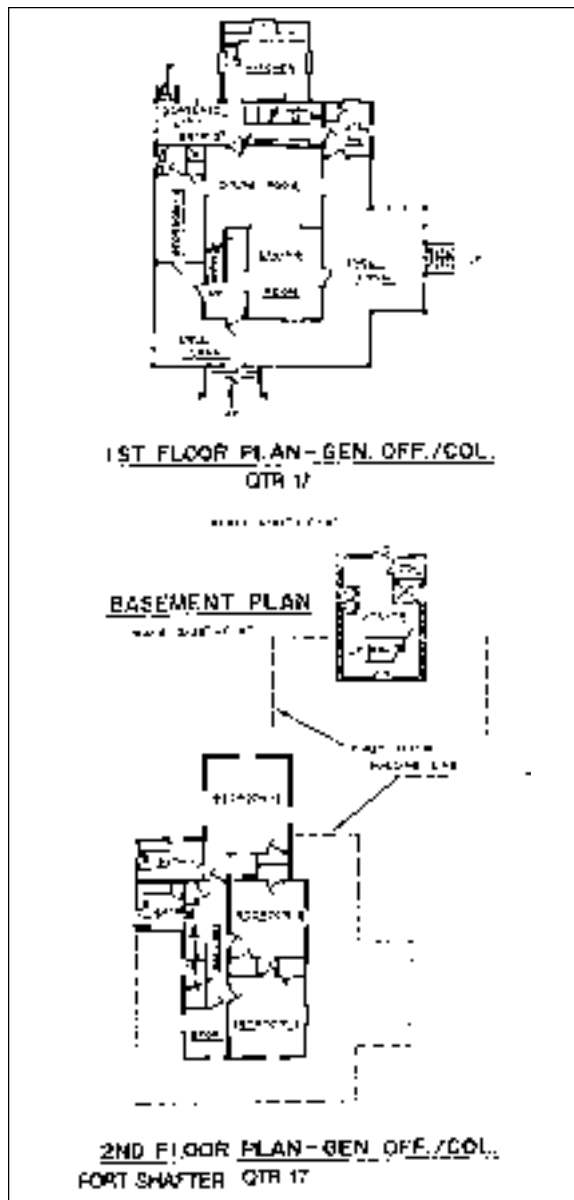
four quarters to create a small bedroom on the left side, a bathroom, and a utility room. The secondary stair leading to the basement is at the back, and the kitchen is located at the back of the house. The second floor, accessed only by the front stair, features three bedrooms, a storage room, and two bathrooms.



Front view of Quarters 16, NCO Quarters
Source: Mason Architects, Inc.

Quarters 10 floor plans

3-16



NCO Quarters floor plans



Interior of side lanai, Quarters 15
Source: Mason Architects, Inc.



Front stair and French doors, Quarters 15
Source: Mason Architects, Inc.

Post Commander's Quarters (Quarters 5)

The Post Commander's Quarters is the largest of the Palm Circle houses. It has continuously served as the quarters for the Commanding Officer of the post, the Hawaiian Department, or the senior commander at the base. This house has a patio area on the north side. A lava rock wall serves as a foundation wall for a small extension of the house and encloses the exterior patio. This feature was built in 1932 while the house was occupied by General B. H. Wells, Commanding General of the Hawaiian Department.

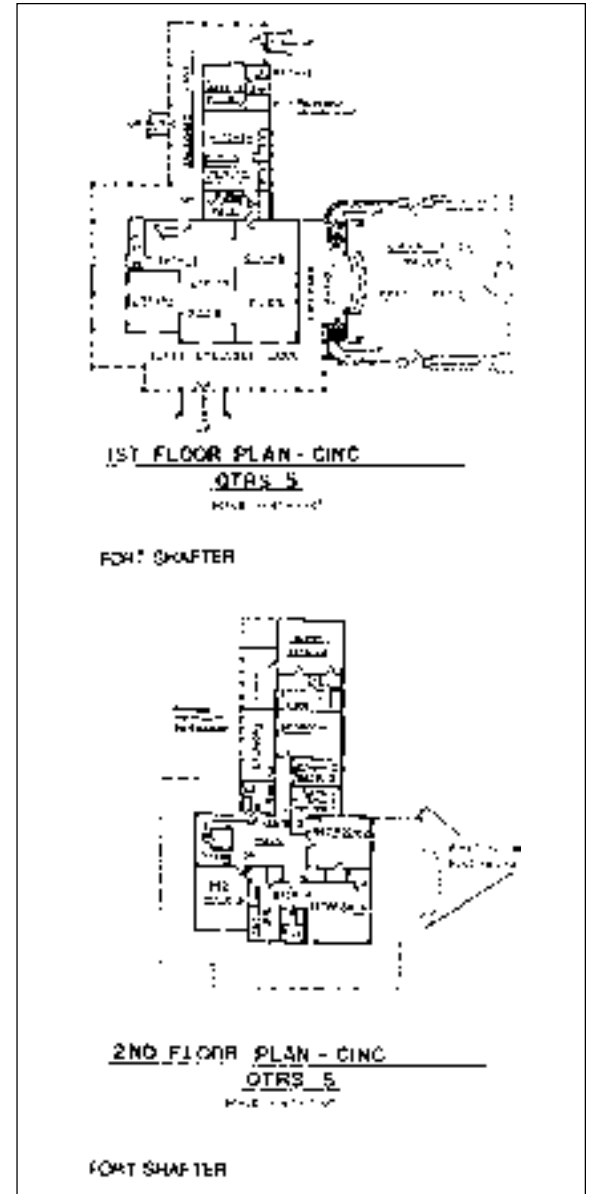


Quarters 5 (Post Commander's Quarters), c. 1920



Lava rock wall enclosure at outdoor patio, Quarters 5
 Source: Mason Architects, Inc.

The front portion of the first floor contains the living room, library, a large dining room, and the main stair with a small bathroom underneath. The back portion of the residence has the back stair, pantry, kitchen, and former servant's quarters with a bathroom. The lanai (now enclosed) runs around almost the entire perimeter of the first floor. The second floor features five bedrooms, four bathrooms, and a now-enclosed wrap-around lanai.



Quarters 5 floor plans



Front view of Quarters 5 (Post Commander's Quarters)
 Source: Mason Architects, Inc.



Dining room, Quarters 5
Source: Mason Architects, Inc.



Front view of Quarters 18 (Hospital Commanding Officer's Quarters)
Source: Mason Architects, Inc.

3-18



Enclosed front lanai, Quarters 5
Source: Mason Architects, Inc.

Hospital Commanding Officer's Quarters (Quarters 18)

This residence, at the end of the housing row along Palm Circle, was the last constructed in the group of officers' quarters. It was completed in 1924. The architectural drawings state that it was intended for use by a field officer, but was apparently occupied upon completion by the commanding officer of Tripler Hospital (at that time located at Fort Shafter). The house was originally outside of the loop at the end of Palm Circle Drive and "A" Street, but the loop was eventually extended to include it.

There are several differences between this residence and the other Palm Circle houses. Quarters 18 has lava rock rather than concrete foundation piers and stair cheekwalls and it does not have decorative rafters or a basement. The chimney is constructed of unpainted brick rather than concrete. It also has wood paneling and canec wall finish in the main rooms on the first floor rather than plastered walls, and has a single stair instead of two. Despite these differences, the house still blends with the architectural character of the neighborhood.

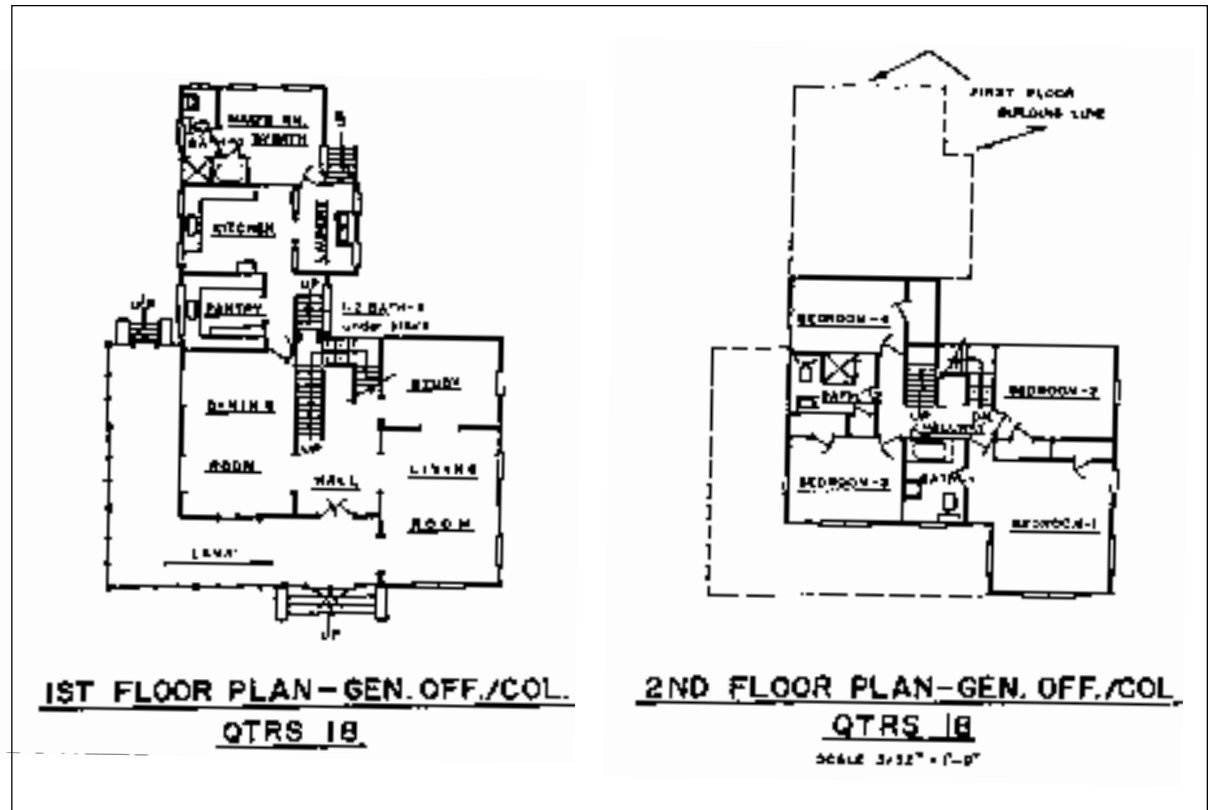
The first floor has a central entry leading to the stair, living room, study, dining room, pantry, kitchen, and former servant's quarters. The back lanai is utilized as a laundry room. The second floor has four bedrooms and two bathrooms.



Front hall and stair, Quarters 18
Source: Mason Architects, Inc.



Built-in cabinets at dining room, Quarters 18
Source: Mason Architects, Inc.



Quarters 18 floor plans

CHARACTER-DEFINING FEATURES OF PALM CIRCLE HOUSING

Exterior Features:

- Horizontal wood siding.
- Hipped roof with wood structure.
- Decorative rafter ends.
- Exposed eaves with no fascia or soffit.
- Vents at eaves with windows and screens or screens only.
- Round or square lanai columns.
- Historic double-hung, casement, or fixed wood windows.
- Concrete entry stairs at lanai.
- Historic wood handrails and railings.
- Historic wood panel doors with glazing and screen doors.



Original railing at rear lanai stairs
Source: Mason Architects, Inc.



Historic light fixture
Source: Mason Architects, Inc.

- Door transoms and sidelights.
- Chimneys.
- Monitor roof vents.
- Screened enclosures at lanai.
- Historic metal downspouts.
- Old house number above front door.

Enclosed Lanai Features:

- Round or square columns and top and bottom details.
- Wood floors.
- Historic double-hung, casement, or fixed wood windows.
- Original doors dividing lanai area.
- Historic doorbells.
- Servants' buzzers.
- Exposed roof framing.

Interior features:

- Plaster, canec, or tongue-and-groove walls and ceilings.
- Picture rails.
- Stairs and railings.
- Historic French doors.
- Wood panel doors and historic hardware.
- Door and window casing and transoms.
- Transoms and transom hardware.
- Historic light fixtures and wiring.
- Historic wood and glass cabinets and drawers.
- Historic cabinet hardware.
- Concrete chimney.
- Historic toilet and shower enclosures.
- Historic floor and shower tiles.
- Servant buzzers.



Decorative rafters
Source: Mason Architects, Inc.



*Original cabinets at kitchen and pantry
Source: Mason Architects, Inc.*



*Historic metal-lined shower, Quarters 7
Source: Mason Architects, Inc.*



*Historic wall sconce, Quarters 17
Source: Mason Architects, Inc.*

ELEMENTS THAT DETRACT FROM HISTORIC CHARACTER

- Asphalt roof shingles (replaced original wood ones).
- Window A/C units.
- Over-painting of woodwork.
- Jalousie and non-historic fixed windows.
- Modern doors.
- Modern door hardware on historic doors.
- Wood awnings over windows at exterior.
- Metal valances above windows and doors at interior.
- Removed historic doors and windows.
- Non-historic flooring such as sheet vinyl or carpet.
- Skylights.
- Painted posts and handrails.
- Modern style light fixtures.
- Modern style cabinets and fixtures in kitchen and baths.
- Modern cabinet hardware on historic cabinets.

World War II Housing Designs

These houses were completed by 1943, although some may have been finished as early as 1941. Constructed as defense housing, they have the same design as others constructed about the same time at other Army installations on Oahu. There are three single-family homes and 16 buildings with duplex units.

The houses have concrete brick walls and wood frame hipped roofs with asphalt shingle roofing, with a small louvered gablet vent. The foundation has a concrete block perimeter wall and concrete footings

supporting a wood joist floor structure. Each covered entry porch has a wood column with decorative scoring at the top.

The interior walls have a simple wood base and ceiling molding. Original interior doors are single-panel wood doors. The original wood front door has a vertical groove pattern. The original windows are wood, one-over-one, double-hung windows with wood-framed screens.

Other than a small storage enclosure addition at the back and modernized kitchen and bathroom facilities, the buildings appear basically unaltered.

3-22

Facility #	Facility or Design Name	Date
823, 825, 842	Single-Family Houses	1943
800, 802-804, 820-822, 824, 826-828, 840, 841, 844-846	Duplex Buildings	1943

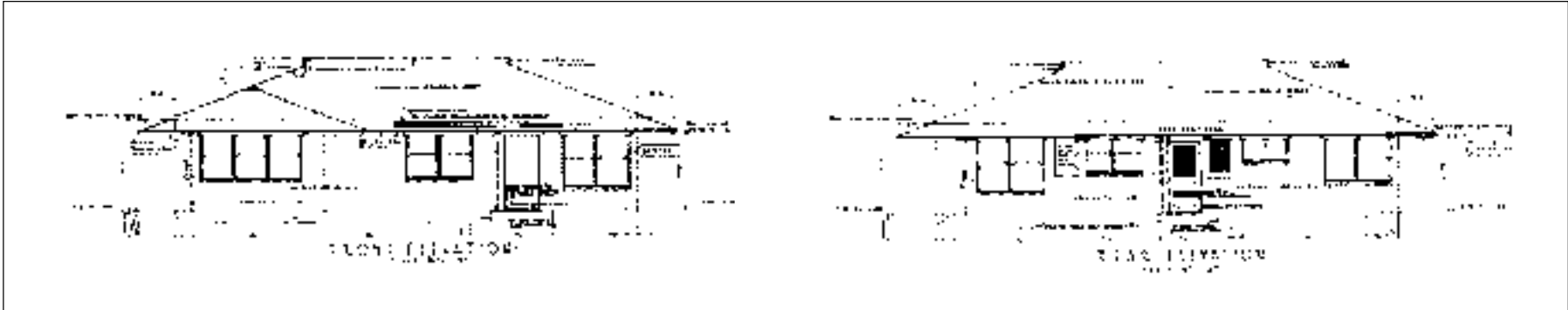
Single-Family Houses

The three single-family houses are one-story, three-bedroom structures. The front entry leads to a living room that occupies one end of the house. A central hallway from the living room leads to the kitchen, three bedrooms, and a single bathroom.



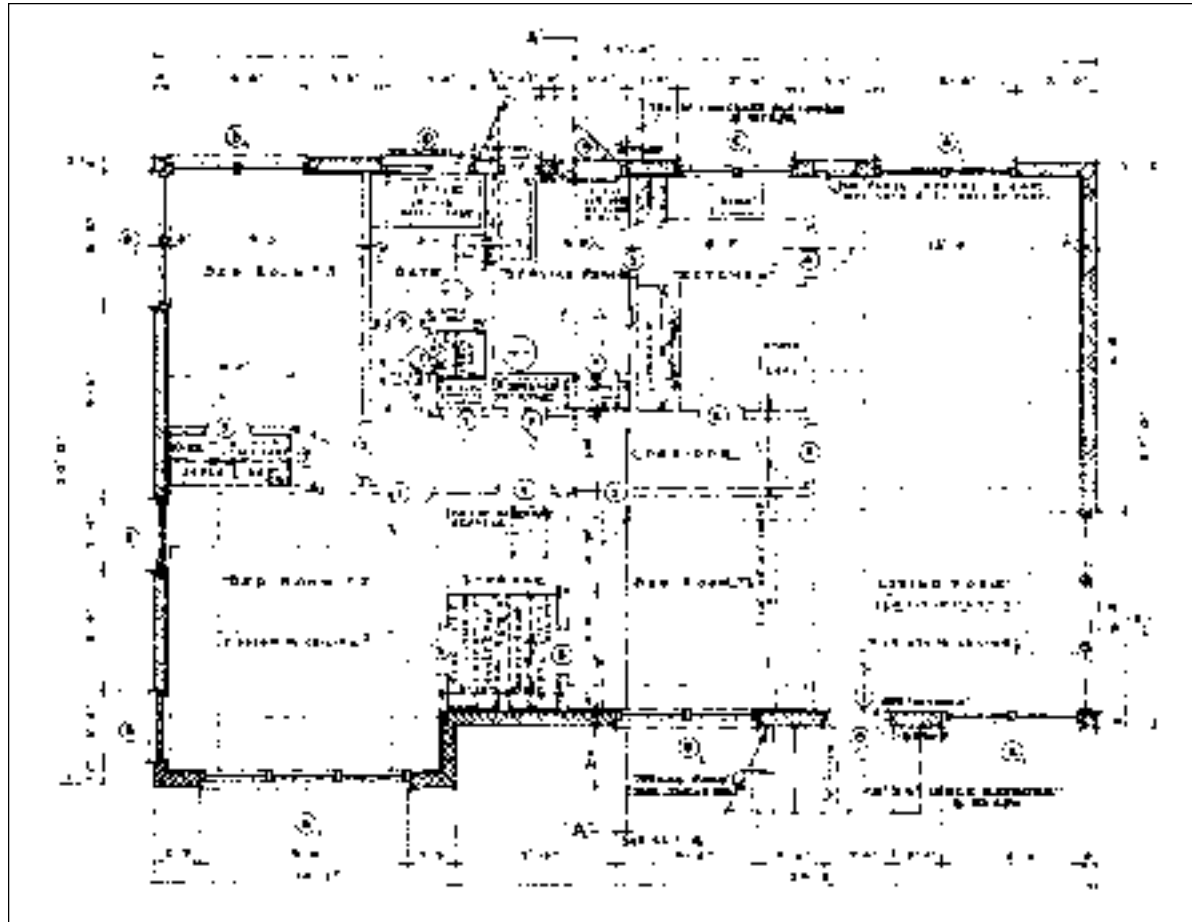
Front view, World War II single-family house
Source: Mason Architects, Inc.

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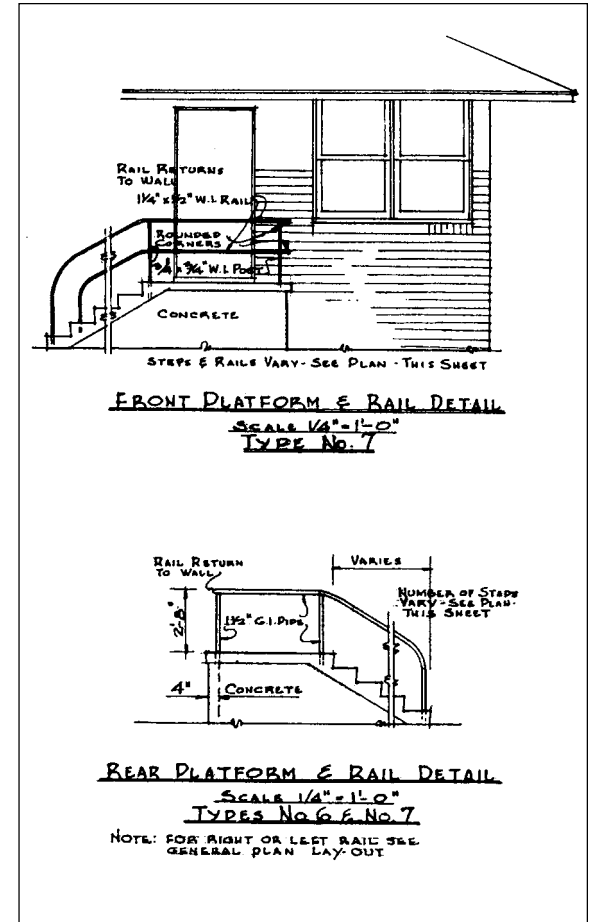


World War II single-family house original elevations

HISTORIC CONTEXT STUDY
OF HISTORIC MILITARY FAMILY HOUSING IN HAWAII



World War II single-family house original floor plan



Railing detail from World War II single-family house design

3-24

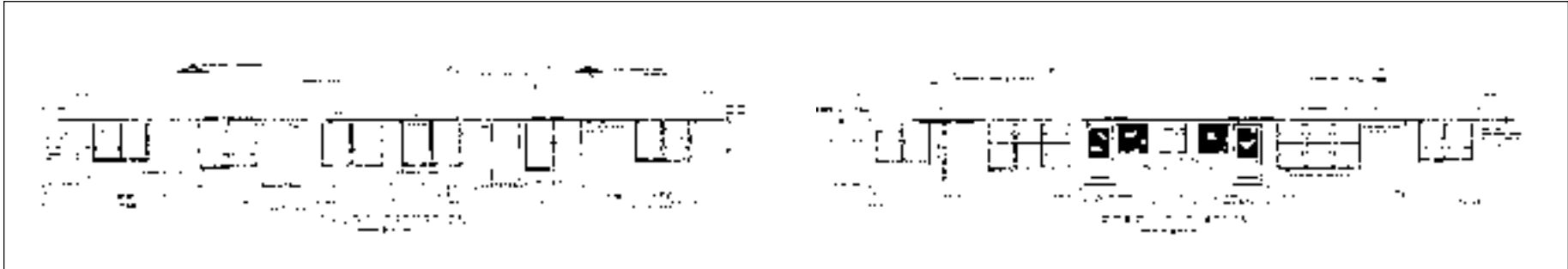
Duplex Buildings

The duplex buildings have two basically mirrored units. Each unit enters into the centrally located living room, which extends from the front of the unit to the back. The two bedrooms and bathroom are located at the building ends, and the kitchen, storage room, and service porch are located at the middle of the building.



Front view, World War II duplex building
Source: Mason Architects, Inc.

3-25



World War II duplex building elevations

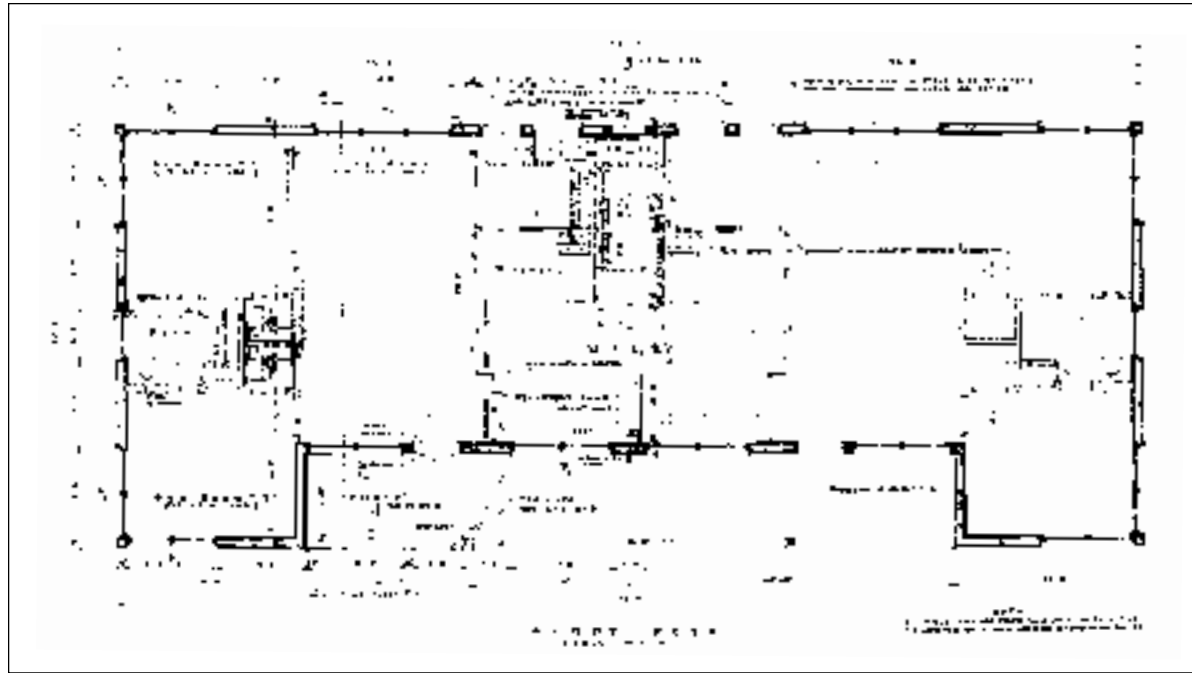
CHARACTER-DEFINING FEATURES OF WORLD WAR II HOUSING

Exterior Features:

- Concrete block exterior walls.
- Wood framed roof structure with open eaves.
- Shingle roofing.
- Small open porch entry.
- Wood post with horizontal grooves at porch.
- Original metal railings at front and rear entry.
- Vertically-grooved wood front door.
- Wood screen door with horizontal decorative trim.
- Wood double-hung windows.
- Wood-framed window screens.
- Angled concrete brick window sill.



World War II duplex building entry lanai
Source: Mason Architects, Inc.



World War II duplex building floor plan

Interior Features:

- Wood baseboard.
- Wood ceiling molding.
- Original built-in cabinets.
- Wood panel interior doors.
- Plaster wall finish.
- Original “insulation board” ceilings.
- Wood flooring.

ELEMENTS THAT DETRACT FROM HISTORIC CHARACTER

- Storage rooms constructed at back.
- Jalousie windows.
- Modern kitchen and bathroom finishes.
- Flush wood interior doors.

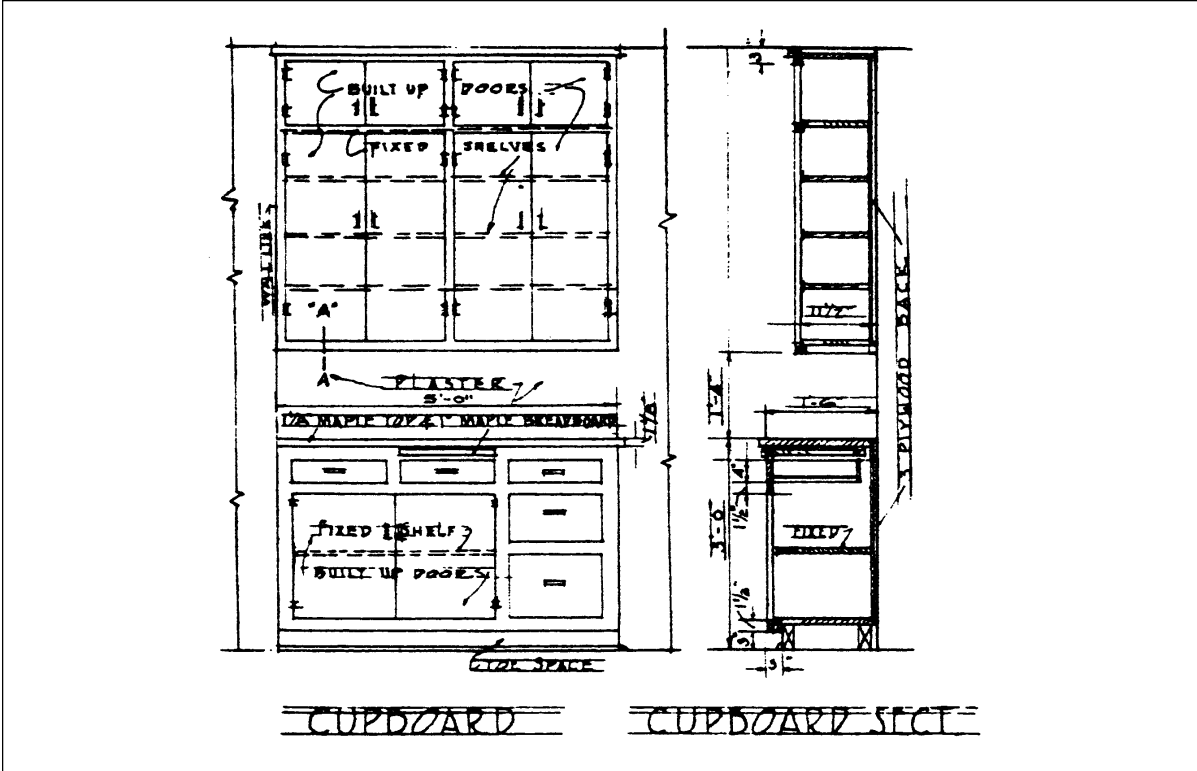
Designs Similar to Those at Fort Shafter

In the period just prior to, during, and immediately following WWII, several housing designs were used at multiple Army bases around Oahu. These included single-family, duplex, and apartment-style houses.

Hickam Air Force Base and Wheeler Army Airfield

The duplex structures built at Fort Shafter have the same design as the NCO duplex type 6 at Hickam Air Force Base and Wheeler’s NCO duplex quarters. The single-family house design at Fort Shafter is the same as Hickam’s NCO house plan 7. The Fort Shafter buildings appear to have been built using the same drawings as those used at Hickam, with minor modifications, as the Fort Shafter drawings also have “Type No. 6” and “Type No. 7” in the title block.

3-27



World War II duplex building cupboard details

HISTORIC CONTEXT STUDY
OF HISTORIC MILITARY FAMILY HOUSING IN HAWAII

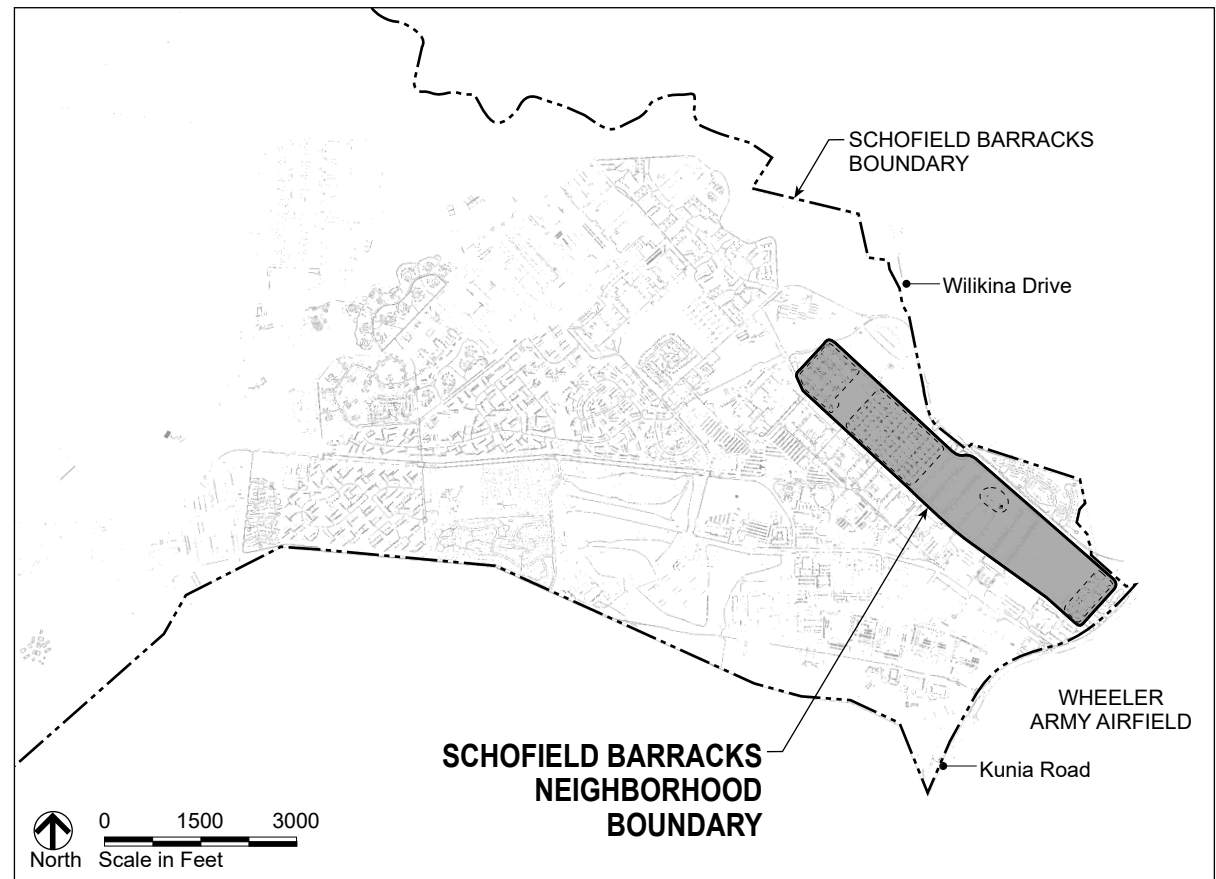
Schofield Barracks Neighborhood Significance

The Schofield Barracks neighborhood housing designs show a conscious response to popular and regional architectural styles, and to the tropical environment of the site. From 1890 until 1917, the Army's Quartermaster General had produced and used standardized plans throughout the mainland United States. The Army's standard houses until 1917 were generally two-story structures. These houses demonstrate an early acceptance by the Army of one-story houses, at least for posts in warm climates.

The Schofield neighborhoods also represent the typical military planning styles of the period. During the 1920s and 1930s, houses were typically clustered in residential loops on picturesque, curving streets drawn from "Garden City" concepts of suburban planning. The General's Loop and the housing areas originally located by Quads B and C reflect these concepts, set in residential loops with large front yard along tree-lined streets. The Canby and Leilehua Road area houses are organized in a grid pattern rather than the residential loop, but also have the spacious yards and substantial landscaping.

Neighborhood History

Historically, the principal mission of the United States Army in Hawaii was the defense of the naval base at Pearl Harbor. The perceived threat of Japan during the Russo-Japanese War instigated the buildup of naval forces in the Pacific and thus spurred an increase in Army personnel. After the



Schofield Barracks vicinity

establishment of Naval Base Pearl Harbor in 1901, a board was convened to investigate other appropriate sites for military defenses. The U.S. Army established Fort Shafter in 1907 to defend Pearl Harbor from the north. In 1908, the site for Schofield Barracks was selected as the base for Oahu's mobile

defense troops because of its strategic central location on the Leilehua Plain between the Waianae Mountain Range and the Koolau Mountain Range. Construction of temporary buildings began in December 1906 under the supervision of Captain Joseph C. Castner, the construction quartermaster.



Schofield Barracks, 1929
Source: U.S. Army Museum of Hawaii

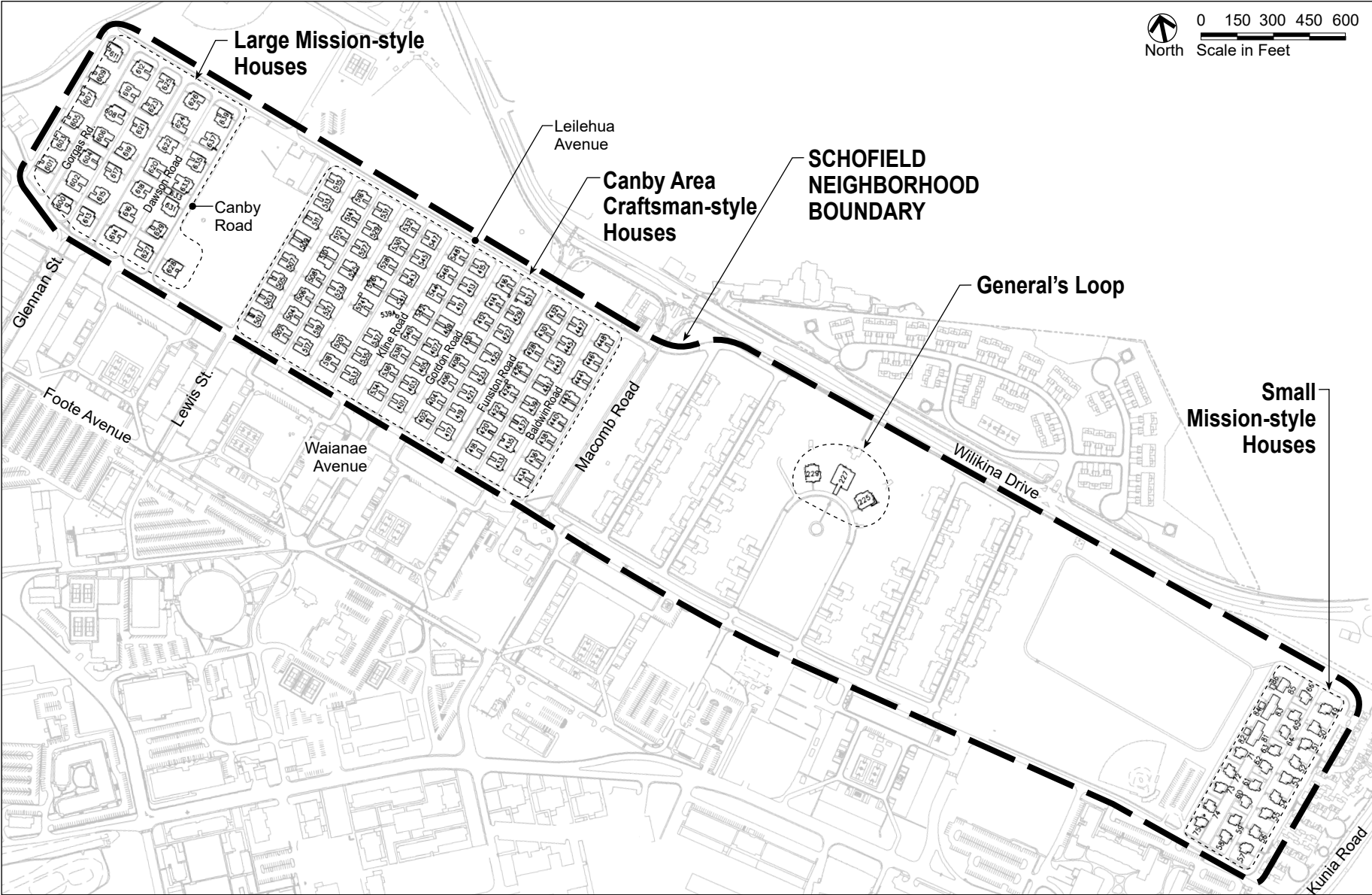
The first plans for the permanent post were prepared in 1912 by General Macomb. The layout reflects the linear base design, with the barracks and administration buildings along a central line, the housing areas on one side, and the technical buildings along the other side. The permanent buildings

were to be organized into seven contiguous sections, each one shaped in a rectangle headed by a loop. The rectangles were to contain barracks in quadrangular formation with the Officers' Quarters lining the loops; the main sewer and water lines ran down the center for economy.

Construction of the permanent post buildings began in 1913. Among the first completed in 1914 were the first two large masonry barracks buildings in what became known as Quad B. Each quad consists of three barracks buildings and one administration building, flanking the four sides of a central courtyard. Other buildings from this early period include the post library, the remaining buildings in Quad B and Quad C, which were completed in 1915 and 1916. Also constructed at this time were two loops of two-story Officers' Quarters, sited above Quads B and C. These were demolished after WWII.

In 1916, Schofield's construction quartermaster developed a plan for the remainder of the base. The post developed rapidly in the following years; plans were made, and in some cases, construction began on the remainder of the cavalry barracks, two more infantry quads, a new hospital, NCO quarters, and the post stockade. Construction was delayed during WWI when all of Schofield's tenants were called to war.

In the interim between WWI and WWII, the 1916 construction plan was carried out. The three Craftsman-style houses along General Loop were completed in 1918. Quads D and E were finished in 1920 and 1921. In 1920, expansion of the railroad and the initial phase of Quartermaster warehouses were started. The Officers' Quarters adjacent to Quads D and E were constructed between 1919 and 1922. Design of these U-shaped, Craftsman-style houses, which were also constructed at other Army bases in Hawaii, such as Fort Kamehameha, Fort Shafter, and Ford Island, were



3-31

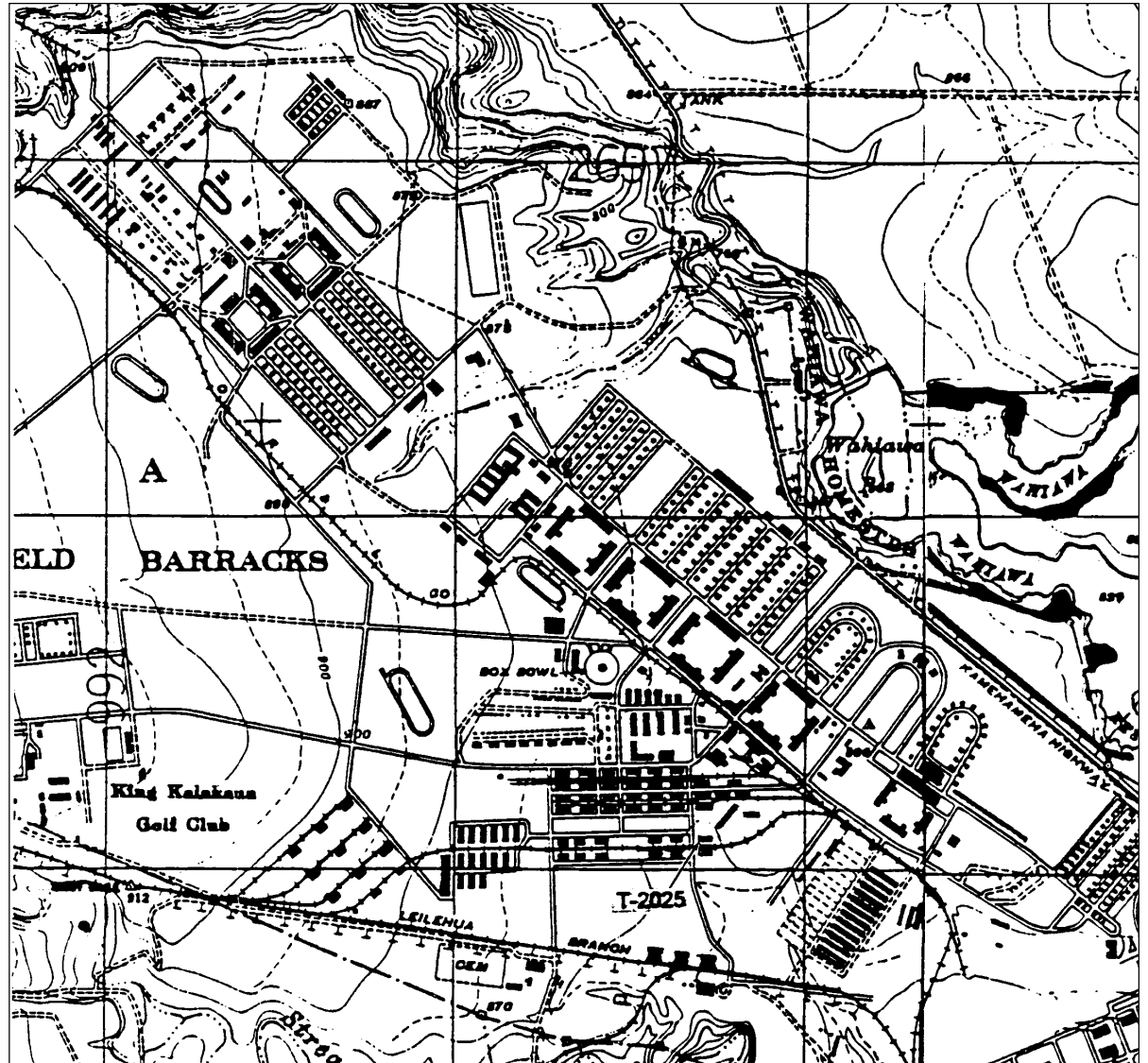
Schofield Barracks neighborhood

well adapted to Hawaii's climate. The first artillery barracks were completed in 1919 (Quad I), and the second in 1923 (Quad J). These quads also had the adjacent Officers' Quarters housing area, which has since been demolished. Other buildings constructed during this period included a permanent post stockade, new post chapel, post exchange, NCO Housing, fire station, outdoor boxing bowl and other recreational buildings, hospital, ordnance magazine area, and the remaining Quartermaster warehouses. The historic core of the base was essentially in place by the mid-1930s.

Following World War I, the Army increased the strength of the Hawaiian Department and formed a combat division at Schofield Barracks. The Hawaiian Division, formed in 1921 with its base at Schofield, was at that time the only complete division in the Army. The establishment of this large division and increased tensions in the Pacific explain the continual construction at Schofield during the 1920s and 1930s.

The last group of Officers' Quarters at Schofield, completed in 1932, was built to accompany Quad F. These Mission-style houses are similar to those constructed at Wheeler Field. The houses were built for officers and NCOs of the 11th Medical Regiment and the 19th Infantry.

Rising tensions in the Pacific in the late 1930s resulted in increased defense mobilization throughout the islands and reorganization of the Hawaiian Division in 1941, forming the 24th and 25th (later named "Tropic Lightning") Divisions. Schofield became the Army's largest single garrison and, in 1939,



Schofield Barracks layout, 1928

Source: Schofield Barracks Cultural Resource Management Plan [Ogden Environmental and Energy Services Co., Inc. (April 1995) "Draft Final Historic Preservation Measures FY 1995–2006 Whole Barracks Renewal Program at Various U.S. Army Installations and the FY95/96 New Infantry Brigade Complex, Schofield Barracks, Oahu, HI"]



Schofield Barracks, c. 1938, with the Waianae Mountain Range in the distance
 Source: Tropic Lightning Museum

was the second largest city in the Territory of Hawaii with a population of 20,000. Schofield Barracks' population grew in the two years before the war, attaining a total pre-war strength of 43,177 troops.

In the early morning of December 7, 1941, Japanese pilots flew from six aircraft carriers toward Oahu. The first wave of 183 planes struck its targets at 7:55 a.m. Schofield's 25th Division had the

distinction of being the first Army unit to receive hostile fire in the invasion, and shot down two Japanese planes. The post received some damage, mostly consisting of bullet holes in buildings, and many men received injuries from shrapnel and machine gun fire. Adjacent Wheeler Field, location of the Army Air Corps fighter planes, received severe damage to planes and hangars and had many casualties.

The Hawaiian Department's commander and his naval counterpart were relieved of duty following the attack on Pearl Harbor and other sites. They were replaced by a unified command under Admiral Chester Nimitz, Commander-in-Chief, Pacific (CINCPAC), and the Hawaiian Department ceased to exist. The primary mission of the 24th and 25th Divisions, supported by troops from the West Coast of the United States, became the defense of Oahu. As WWII progressed, Schofield Barracks became the major training, staging, and supply center for the war in the Pacific.

Various training camps were run at Schofield during WWII, including the Ranger Combat Training School, where men were trained for combat in the Pacific. Following the war, Schofield's population shrank to 5,000 troops. The population at the installation remained low until the outbreak of the Korean War. Schofield Barracks played an important role in the Korean War and the Vietnam conflict by providing basic training for many raw recruits due to be sent to Asia. These years saw a dramatic increase in military housing construction, as well as schools, chapels, and other support facilities. Today, Schofield Barracks remains the largest permanent installation of the U.S. Army outside the continental United States.

Major Landscape Features of Neighborhood

The linear layout of the Schofield Barracks neighborhoods follows that of Fort Shafter's Palm Circle neighborhood, with the houses situated around a significant open space. The Commanding Officer's Quarters are at the top of the loop with houses on both sides. General's Loop is the formal entry to these quarters. Similar to Palm Circle, General's Loop has a uniform tree planting along the road's edge, but instead of royal palms, General's Loop has Norfolk Island pines. Norfolk Island pines are also found along Waianae Avenue, which fronts General's Loop.

3-34 Waianae Avenue, the major arterial for all of the Schofield neighborhoods, has trees fronting the different neighborhoods which help to unify them. For instance, Norfolk Island pines along Waianae Avenue fronting the Commanding Officer's Quarters are seen throughout the General's Loop area. Monkeypod trees front the quarters of lower ranking officers.

A lush tropical plan palette surrounds each of the Officer's Quarters. Because of its close proximity to Wilikina Drive, the rear of this neighborhood is heavily screened with large monkeypod, banyan, and mango trees. The landform along the fence in this area is bermed to help reduce the noise of road traffic.

Housing density is quite low compared with other areas. The open space around the quarters are nicely landscaped with large canopy trees such as monkeypods, earpods, and banyans. The higher-density areas have little open space around the units.



Landscape at Schofield Barracks
Source: Belt Collins

The more notable open spaces around Schofield include the General's Loop area with its Norfolk Island pines; the Watts/Ralstom Field area with its ironwood, monkeypod, jacaranda, and eucalyptus trees; Canby Field neighborhood with its monkeypods and royal palms; and Gimlet Field neighborhood with its row of earpods.

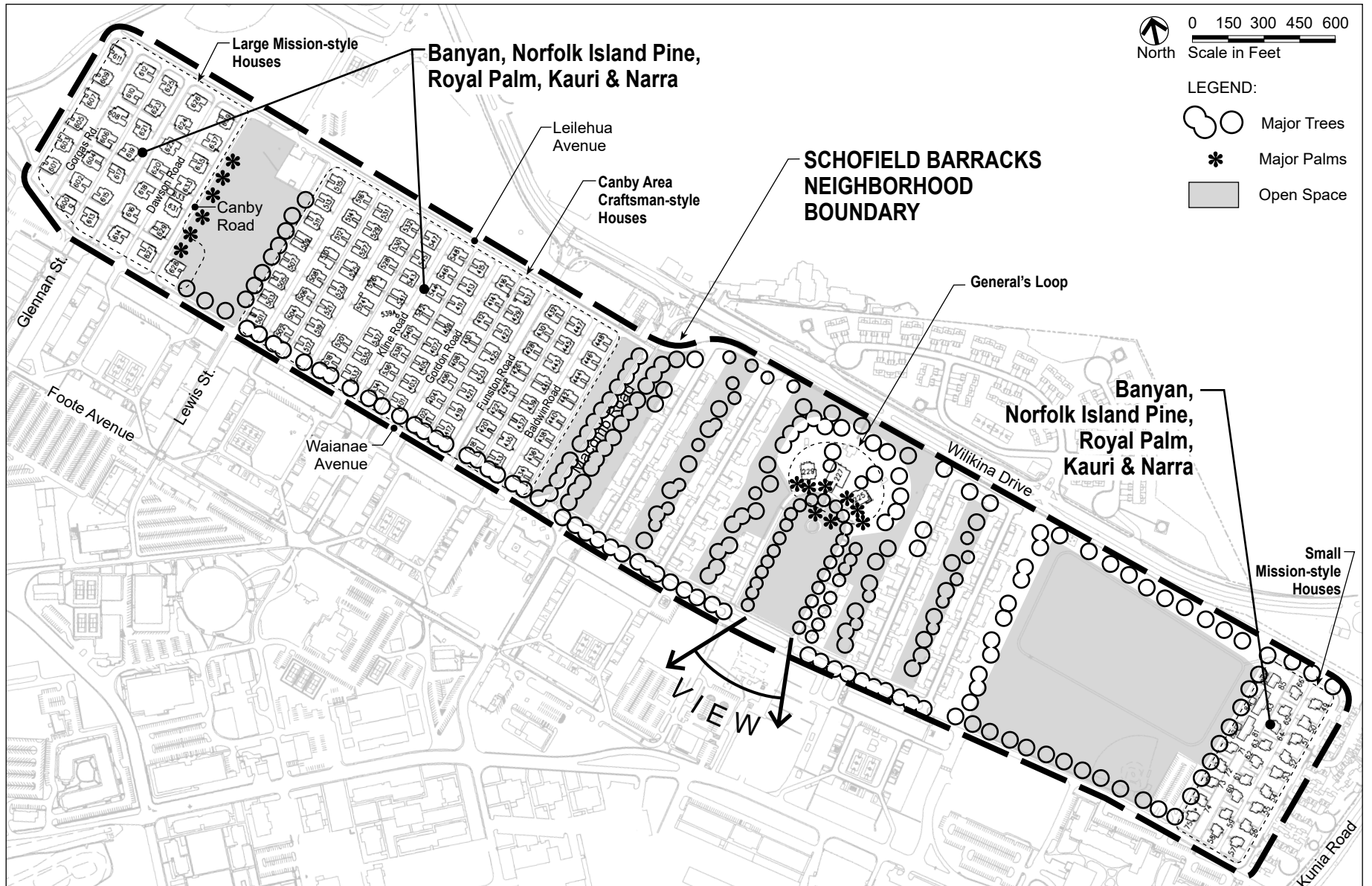
Major Trees/Palms:

- Monkeypod
- Banyan
- Earpod

- Norfolk Island pine
- Kauri
- Royal palm
- Ironwood

Other Trees:

- Mango
- African tulip
- Plumeria
- Brassia



3-35

Landscape at Schofield Barracks

Schofield Craftsman Design

The Schofield Barracks historic housing areas are good examples of residential communities developed to serve a military unit, with single men in a barracks complex and the officers in an adjacent housing group. The houses in the neighborhood can be categorized in two main design groups—Craftsman and Mission. They reflect the popular architectural styles of the period as well as regional influences.



Quads and houses at Schofield Barracks
Source: U.S. Army Museum of Hawaii Photo #6471

The Craftsman-style houses at Schofield Barracks represent an early recognition by the Army of the need for regional variations. Designed in the Honolulu Office of the Constructing Quartermaster, the designs show a conscious response to the regional architectural style and to the tropical environment of the site. These houses combine some of the refined Craftsman-style details with the single-wall, board-and-batten construction typical in

Facility #	Facility or Design Name	Date
225, 229, 401-408, 411-424, 427-440, 443-448, 501-508, 511-521, 523, 524, 527-538, 540, 543-548	Craftsman Corner Entry Plan (CNP Type I)	1919-1922
410, 425, 426, 441, 442, 510, 525, 526, 541, 542	Craftsman Center Entry Six-Bedroom Plan (Type L)	1919-1922
409	Craftsman Duplex Plan (Type K)	1928
509	Craftsman Center Entry Five-Bedroom Plan (Type M)	1928
227	Commanding Officer's Quarters Pan	1918
600-627, 629, 631, 633, 635, 637, 639	Mission Large Plan	1932
49-54, 56-66, 71-75	Mission Small Plan	1932

Hawaii's plantation housing. The pitched roofs, U-shaped plan around an open courtyard, and large screened areas show how Army housing design were adapted to tropical living by integration of the interior and exterior spaces. The screened lanai and hallway areas created a continuous indoor and outdoor circulation and also provided excellent cross-ventilation throughout the house.

Examples of these adapted Craftsman designs, found only in Hawaii, were built at several Army installations, including Schofield Barracks, Fort Shafter, Luke Field (at Ford Island), and Fort Kamehameha.



Craftsman-style Houses, 1923
Source: U.S. Army Museum of Hawaii

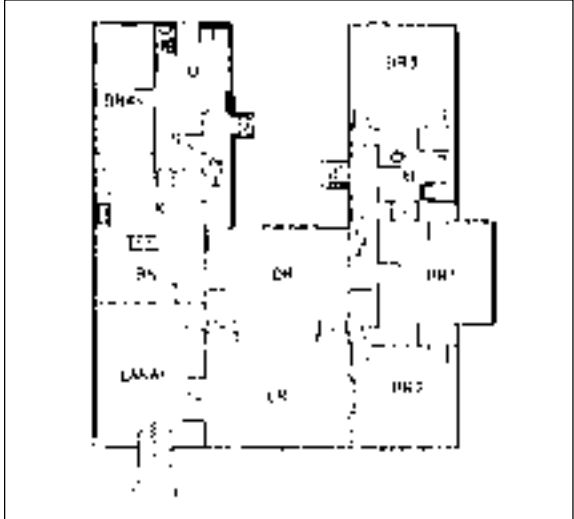
The Schofield Canby Craftsman housing area has 93 single-family houses and one duplex that were constructed over a period of nine years, between 1919 and 1928. The three houses at General's Loop were built in 1918. Although several different floor plans were used, the houses utilize the same construction materials and details.

Craftsman Corner-Entry Plan

The corner entry plan is the most commonly used of all the Craftsman-style house designs. There are 82 houses with this plan in the Canby neighborhood, and both of the houses at General's Loop are of this type. The plan is often mirrored so that the entrance may be on the left or right side of the front elevation. The main entry is into a lanai,



3-37



Craftsman corner-entry floor plan

*Schofield Craftsman Corner-Entry plan
Source: Mason Architects, Inc.*

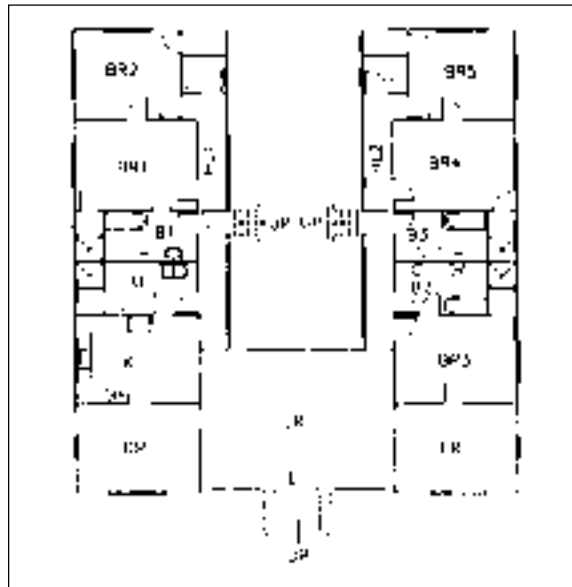
originally screened but now typically enclosed with
jalousies or other windows. The living room and din-
ing room are in the middle of the house. One wing
consists of the kitchen, pantry, servant's and utility
areas, while the other wing contains the three bed-

rooms. Quarters 229 at General's Loop varies from
this standard design only in that the entry was moved
to the center of the front elevation, and the dining
room was moved to the previous location of the cor-
ner entry lanai, creating an expansive living room.

Craftsman Center-Entry Five-Bedroom Plan

One house in the Canby neighborhood of Schofield Barracks has this plan. The central entry leads directly into the living room. The dining room, kitchen, utility room (probably a former pantry), a bathroom, and two bedrooms from the former servant's quarters are located in one wing. The current family room, three bedrooms, and two bathrooms are located in the opposite wing. It appears that this building was originally a Bachelor Officers' Quarters building modified to create a single-family house. It was constructed in 1928, at the same time as Quarters 409, now a duplex unit but

3-38



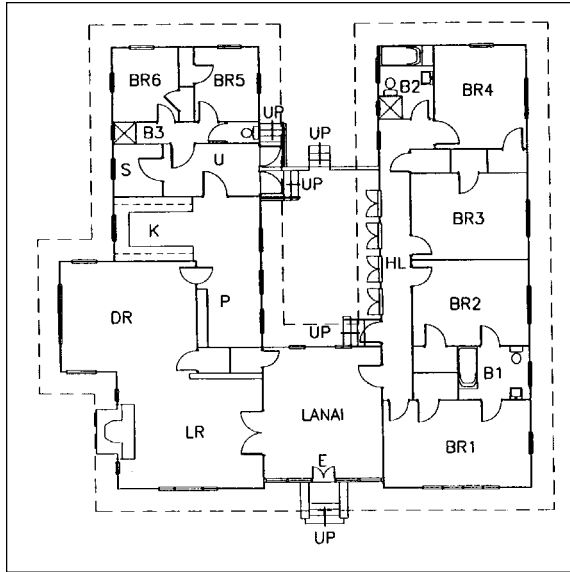
Craftsman center-entry five-bedroom floor plan



Facility 509 (Craftsman center-entry five-bedroom plan)
Source: Mason Architects, Inc.

originally Bachelor Officers' Quarters. The symmetrical room layout of this house corresponds with that of the Bachelor Officers' Quarters, which had four two-room suites, each with an adjacent bathroom, and a shared living room space at the central

entry. To convert this to single-family quarters, two of the suite rooms were changed into a kitchen and dining room, one suite room was changed to a family room, and one of the bathrooms was converted into a laundry room.



Craftsman center-entry six-bedroom floor plan



Craftsman Center-entry six bedroom plan
 Source: Mason Architects, Inc.

3-39

Craftsman Center-Entry Six-Bedroom Plan

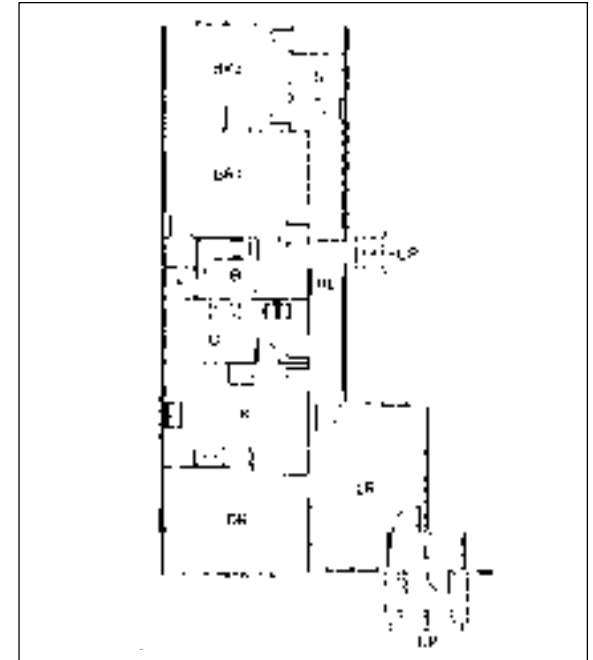
There are 10 houses with the center-entry plan at Schofield Barracks, all in the Canby neighborhood. The front entrance leads into a central lanai, which is screened on the front side and has windows facing the central back courtyard. One side

wing of the house contains the living room, dining room, pantry, kitchen, servant's quarters with two bedrooms, and utility spaces. The living room has a fireplace at the side exterior wall, and the dining room protrudes seven feet from the side of the house.

Four bedrooms and two bathrooms are in the opposite wing. The bedrooms are accessed by a hallway along the courtyard that was originally screened. The central courtyards of some of these houses have been enclosed.



3-40



Craftsman duplex floor plan

Facility 409 (Craftsman duplex plan)

Source: Mason Architects, Inc.

Craftsman Duplex Plan

Schofield Barracks has one building of this type located in the Canby neighborhood. The front central entry leads into a small foyer, which has a door leading into the living room of each unit. From the living room one can access the dining room, which

was originally a bedroom, or a hallway that leads along the central courtyard. This hallway accesses the kitchen, a utility room that was originally a bathroom, two bedrooms, a bathroom, and storage space. The two duplex units are mirror images around the

central courtyard. This building, originally a Bachelor Officers' Quarter, has been modified to create a duplex by dividing the central common living room space and creating an alcove entry with separate entry doors into the two living rooms. One bathroom was converted into a utility room, and two of the rooms on each side became a kitchen and a dining room.

Commanding Officer's House

The area now known as “General’s Loop” was originally designated to house artillery units. When the artillery role was enlarged, their barracks were moved and the generals’ quarters were built. Quarters 227, designated for the senior officer, was first occupied by Brig. Gen. John W. Heard in 1918. This unit is very similar in layout to the six-bedroom central entry design, except that the entry lanai and central courtyard are wider, the dining room does not protrude out from the side of the building, and the pantry is located directly adjacent to the kitchen. Also, the second bathroom in the bedroom wing is located between two bedrooms rather than being accessed from the hallway. The rooms at the back of the wing beyond the kitchen have been slightly modified from their original layout.

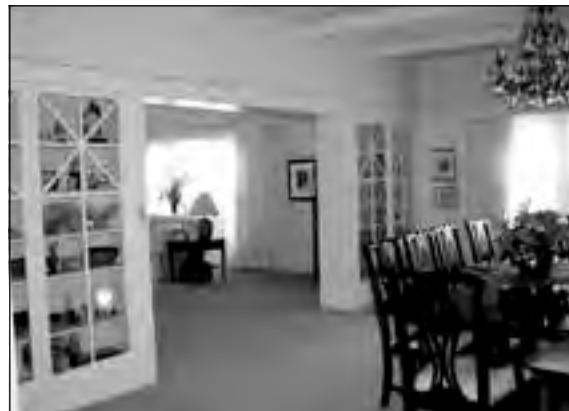


Quarters 227, Commanding Officer's House
 Source: Mason Architects, Inc.

3-41



Quarters 227, Commanding Officer's House, Schofield, c. 1931



Dining room with built-in cabinets, Commanding Officer's House
 Source: Mason Architects, Inc.



Living room, Commanding Officer's House
 Source: Mason Architects, Inc.

CHARACTER-DEFINING FEATURES OF CRAFTSMAN DESIGNS

Exterior Features:

- Wood-framed hipped roof.
- Stone or concrete chimneys.
- Exposed rafter ends (no fascia board).
- Lava-rock front wall foundation with small arched openings.
- Lava rock piers and cheekwalls at steps.
- Board-and-batten single-wall construction (12-inch wide vertical boards with wide battens on the exterior).
- Pilasters with pendate or lattice detail.
- Bracket-supported roof extension with paired notched rafters over main entry.
- Wooden or concrete entry stairs with cheekwalls, typically lava rock with a concrete coping.



Concrete front entry steps and cheekwalls
Source: Mason Architects, Inc.



Double-hung windows at Craftsman houses
Source: Mason Architects, Inc.

- Double-hung windows.
- Diamond-patterned wood muntins or leaded glass in the living and dining room windows.
- Screens at entry lanai or in the hallways along the interior courtyard.

Interior Features:

- Wood floors.
- Fireplaces.
- Board-and-batten interior wall and ceiling finish.
- Cased beams at living and dining room ceilings.
- Wall paneling at living and dining rooms.
- Ceiling moldings and baseboards.
- Picture moldings.

- Plate rail with ornate brackets at dining room.
- China closets with star-patterned muntins at dining rooms.
- Original French doors between the lanai and living room.
- Five-panel and single-panel wood interior doors.
- Historic wood shelves or built-in cabinets in pantries.



Typical interior details in Craftsman-style units
Source: David Franzen Photography



Plate rail at dining room
Source: Mason Architects, Inc.

Designs Similar to Craftsman Houses at Schofield Barracks

Fort Kamehameha

The Craftsman-style houses at Fort Kamehameha were completed 1916. There are two house plan types. The 30 buildings of the smaller house plan type are the same as the Schofield corner-entry design. The four larger houses, H-shaped in plan, have a central recessed main entry, four bedrooms, and two servants' rooms with a separate bath. These are the same as the Schofield Commanding Officers' house design (Quarters 227) at Schofield Barracks. These houses differ from the Schofield houses in that they do not have fireplaces.

Luke Field/Ford Island

The Craftsman houses at Ford Island were built in 1922 from plans supplied by the U.S. Army Quartermaster Corps to accommodate the Army Air Corps officers stationed at Luke Field on Ford Island. In 1939, the Army moved its Air Corps to nearby Hickam Field, now known as Hickam Air Force Base, and the Navy acquired these Craftsman-style houses.

The four Craftsman house designs at Ford Island include two duplex designs. Eight of the 15 houses are the same plan as the Schofield corner-entry design. Two houses are a center-entry design that is slightly different than the Schofield and Fort Kamehameha designs. Of the five duplex structures, four are of one design and one has a unique design. All five are different than the Schofield duplex design, but despite the design differences, the materials and architectural details are the same.

Fort Shafter

The Hawaii Ordnance Depot was completed in 1917 on the south side of what was at that time Fort Shafter. The Depot was a separate entity until 1955, when it became part of Fort Shafter. Four Craftsman-style houses were constructed in 1917 to accommodate officers of the Ordnance Depot. The houses were built from two of the standard designs used at the other Oahu Army installations. They appear to have been the same as the Schofield center-entry five-bedroom design and the center-entry six-bedroom design. These houses were demolished in 1999.

ELEMENTS THAT DETRACT FROM HISTORIC CHARACTER

- Asphalt roof shingles (replaced original wood shingles).
- Jalousie and fixed windows.
- Window A/C units.
- Flush and modern-style doors.
- Modern hardware on doors and cabinets.
- Vinyl flooring or carpet.
- Over painting of woodwork.
- Painting of glass around star muntins on doors or cabinets.
- Modern kitchens and bathrooms.

Schofield Mission Designs

All of the Schofield Mission-style houses were constructed in 1932, at the same time as Wheeler Field (now Wheeler Army Air Field), where all of the buildings were designed in this style. Larger floor plans were used in the Canby neighborhood and a

smaller plan in the housing area between Leilehua and Dickman Roads, at the southeast end of Waianae Avenue. The Canby Mission-style housing area has 34 houses, constructed in rows adjacent to Canby Field, above Quad F. There are 22 houses in the area adjacent to Leilehua Road.

The houses are constructed of concrete blocks covered with stucco. Originally constructed with flat roofs, hipped roofs were later added to deal with the local climate.

Larger Mission-Style Plans

The larger Mission-style plans are U-shaped, with either three or four bedrooms and an additional bedroom added onto the end of one wing. Each house has an entry lanai, living room, dining room, three or four bedrooms, three bathrooms, kitchen, former maid's quarters, pantry and store-rooms. Houses at Wheeler Field with the same plans were designed by Captain George W. Armitage, QMC, who was also in charge of construction at Schofield Barracks from 1911 until WWI. It is likely that these same plans were used for the Schofield houses.

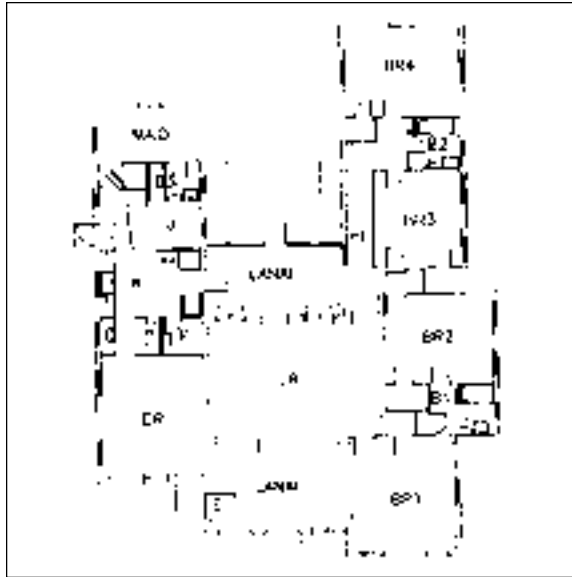
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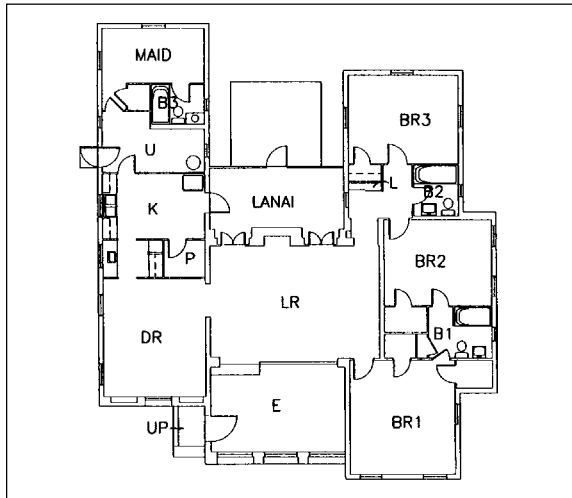
Larger Mission-style House entry
Source: Mason Architects, Inc.



Larger Mission-style House
Source: Mason Architects, Inc.



Large Mission-style House, four-bedroom floor plan



Large Mission-style House, three-bedroom floor plan



Smaller Mission-style House
 Source: Mason Architects, Inc.

Smaller Mission-Style Plan

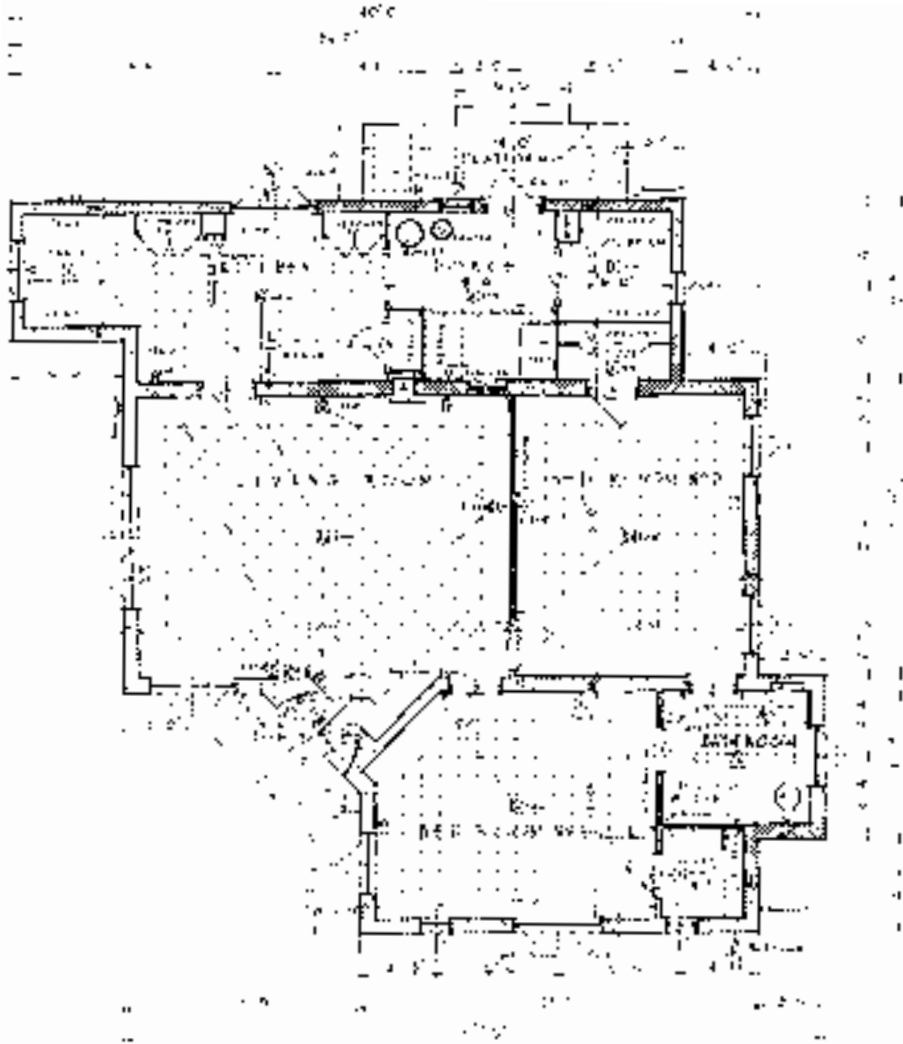
There are 22 of the smaller Mission-style homes at Schofield Barracks. These are laid out in pairs, facing each other. The front entry to each house, a diagonal inset at one front corner, leads into the living room. From the living room, the two bedrooms and kitchen are accessed. The bathroom

is located between and is accessed by the two bedrooms. The bedroom along the street side of the house has two precast decorative concrete grills. The kitchen has a breakfast nook built-in with table and two bench seats. Beyond the kitchen is the service area with laundry and storeroom.

CHARACTER-DEFINING FEATURES OF MISSION DESIGNS

Exterior Features:

- Wood-framed hipped roof.
- Open soffit.
- Shingle roofing.
- Louvered roof vent.
- Concrete block walls with rough plaster finish.
- Decorative concrete designs above main entry door or at front wall.
- Small sloped roof with clay tile over main entry.
- Battered wall at main entry at large Mission-style houses.
- Angled wall at main entry at smaller Mission-style houses.
- Historic wood entry door with vertical scoring.
- Historic French-style door at kitchen entry.
- Historic screen doors.
- Deep-set windows.
- Steel lanai doors.
- Arched doorways.
- Historic door and window hardware.



3-46

Smaller Mission-style House original floor plan

Interior Features:

- Acid-stained concrete floors.
- Wrought iron metal railings at entry lanai.
- Fireplaces with copper hood.
- Historic built-in cabinetry.
- Historic light fixtures.
- Historic bathroom tiles, cabinets, and fixtures.
- Plaster wall and ceiling finish.
- Wood baseboards and ceiling moldings.
- Wood panel doors.
- Historic door and window hardware.

ELEMENTS THAT DETRACT FROM HISTORIC CHARACTER

- Jalousie and fixed windows.
- Window A/C units.
- Flush and modern-style doors.
- Modern hardware at historic doors and cabinets.
- Vinyl flooring or carpet.
- Over painting of woodwork.
- Modern kitchens and bathrooms.



*Steel doors at lanai of larger Mission-style house
Source: Mason Architects, Inc.*



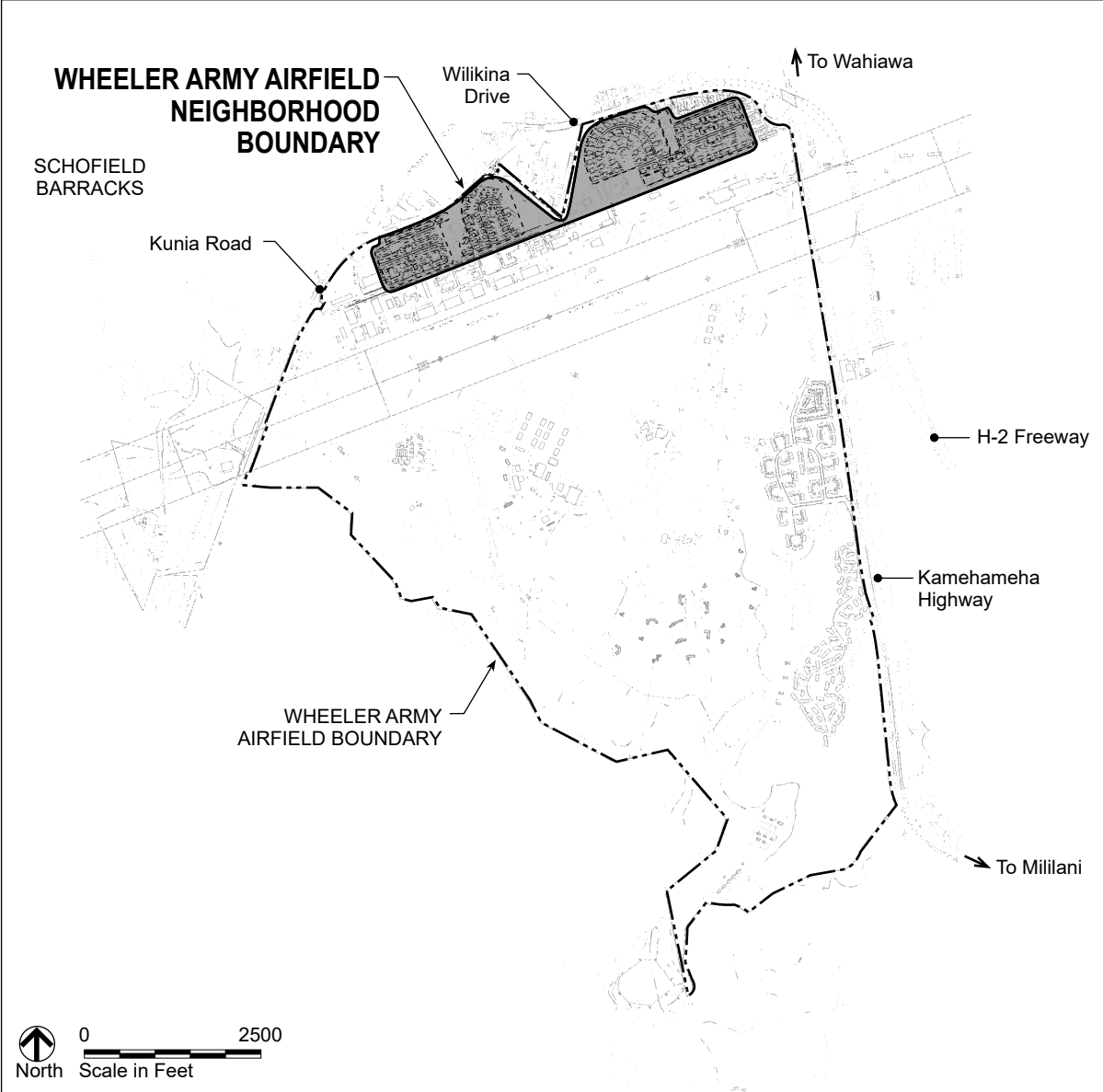
*Larger Mission-style House living room
Source: Mason Architects, Inc.*

HISTORIC CONTEXT STUDY
OF HISTORIC MILITARY FAMILY HOUSING IN HAWAII

Wheeler Army Airfield Neighborhood Significance

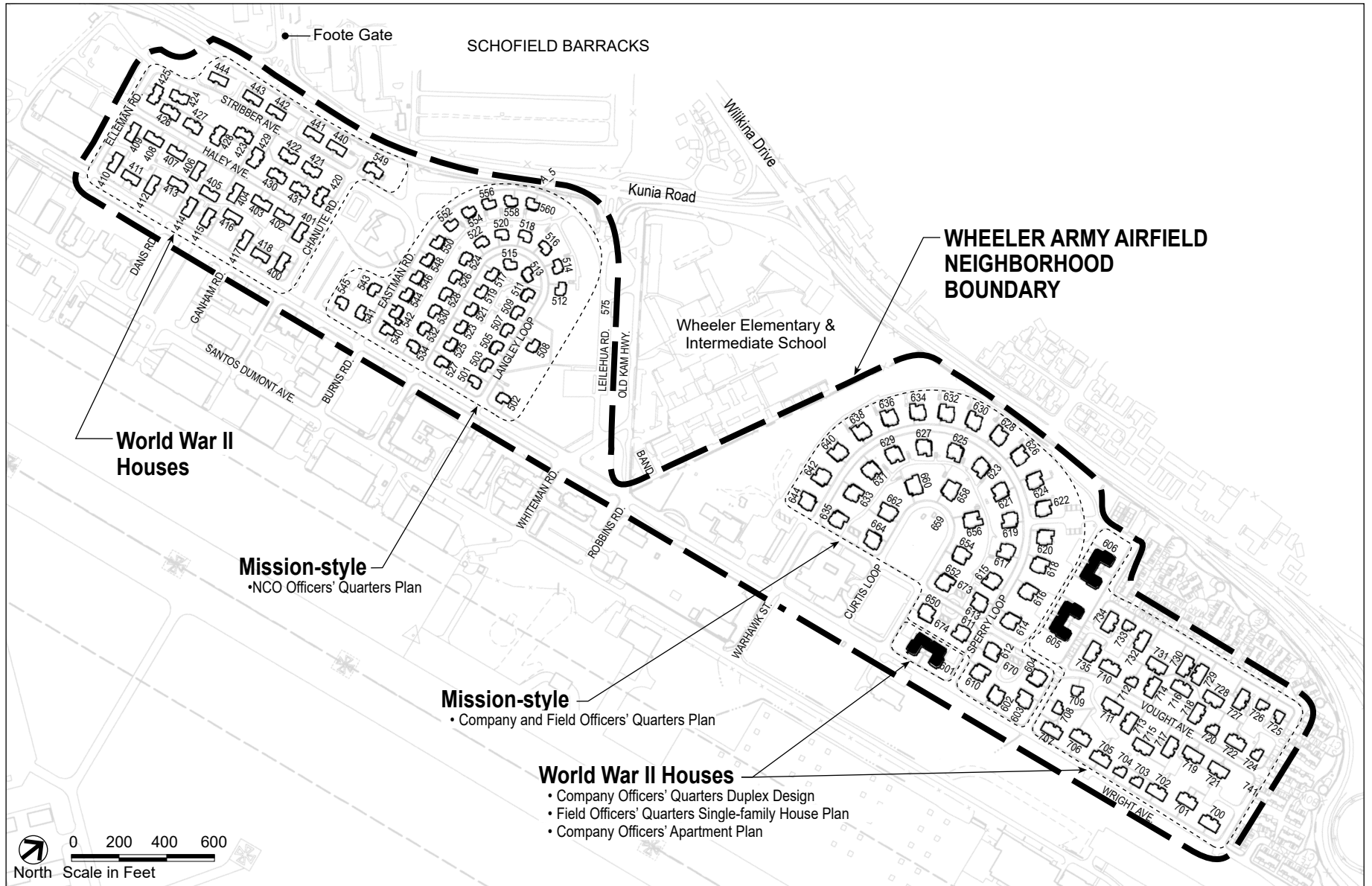
Wheeler is an excellent example of Army Air Corps base planning. It was built in several major phases: initial base construction in 1932–33, pre-WWII construction, and WWII construction. The layout reflects the linear base design, with all of the original buildings grouped on one side of the field, typical of early air bases. These different phases are apparent in building locations and styles. The initial base construction buildings are all done in the Mission style, pre-WWII housing construction reflects a simpler style, and WWII construction is mostly temporary wood buildings or concrete munitions storage buildings. Buildings of similar function are bunched together. The hangars line the airfield with maintenance and shop buildings nearby, administration buildings are clustered together, and houses are grouped in residential areas. The base is relatively intact, with minor alterations to the buildings as a whole and relatively few structures built after WWII.

The housing designs show a conscious response to popular regional architectural styles and to the tropical environment. From 1890 until 1917, the Army’s Quartermaster General had produced and used standardized plans throughout the mainland United States. The Army’s standard houses up until 1917 were generally two-story structures. The historic Wheeler houses demonstrate an early acceptance by the Army of one-story houses, at least for posts in warm climates.



Wheeler Army Airfield

HISTORIC CONTEXT STUDY
OF HISTORIC MILITARY FAMILY HOUSING IN HAWAII



3-50

Wheeler Army Airfield neighborhood

The Wheeler neighborhoods also represent the military planning styles of the period. During the 1920s and 1930s, houses were typically clustered in residential loops on picturesque curving streets drawn from “Garden City” concepts of suburban planning. Both of the 1932 housing areas, which reflect these concepts, are in the Mission style with standardized plans, and they are set in residential loops with large front yards along tree-lined streets. Housing areas built in the 1940s are also organized in residential areas but have a grid pattern rather than the residential loop and show the military’s departure from suburban planning styles and Mission-style aesthetics. All of the housing areas have spacious yards and substantial landscaping.

Neighborhood and Base History

Wheeler Field was first constructed to support land-based planes used by the Army at Schofield Barracks. It was officially established on November 11, 1922, and the name was changed from the Hawaiian Divisional Air Service Flying Field to Wheeler Field in honor of Major Sheldon H. Wheeler. Major Wheeler was commander of Luke Field (at Ford Island) from November 4, 1919, until he was killed in an aircraft crash on July 12, 1921. Canvas hangars were quickly constructed at Wheeler Field, and more permanent hangars and storage tanks were completed by June 30, 1923.

During the 1920s and 1930s, Wheeler was the principal Army Air Corps field in Hawaii. A number of historic first flights during this time brought Wheeler Field to public attention, including the first non-stop mainland-to-Hawaii flight on



*Wheeler Field in 1933. Note location of 1923 hangars at right and Schofield Barracks at left.
Source: Hickam Air Force Base History Office, Photo #45*

June 28–29, 1927, by Lieutenants L. J. Maitland and A. F. Hegenberger; and the first flight from the United States to Australia on June 1, 1928, by Charles Kingsford-Smith. On August 17, 1927, approximately 30,000 people gathered at Wheeler

Field to watch the finish of the Dole Derby, the first big air derby across the Pacific. The first solo flight from Hawaii to the Mainland was made on June 1, 1935, by Amelia Earhart Putnam in a Lockheed Vega, flying from Wheeler Field to California.

In 1932 and 1933, 42 units of officers' quarters, 42 units of NCO quarters, a grass landing strip, hangars, technical buildings, four barracks buildings, a fire station, a headquarters building, a parachute building, a photography laboratory building, a radio building, storage buildings, and two Bachelors Quarters buildings were constructed at Wheeler. Most of these structures, almost all of which are still extant, were built in the Mission style, a style frequently used in military construction during this period. The houses were built along residential loops, also common in military planning at this time.

Wheeler Field officially became a separate permanent military post on August 31, 1939. In 1940 and 1941, construction boomed again, with 37 duplex NCO quarters, a control tower, a 600-man barracks building, 36 officers' quarters, and three 10-unit officers' apartment buildings completed. During the summer of 1941, army troops constructed 85 aircraft revetments at Wheeler.

In the early morning of December 7, 1941, Japanese pilots flew from six aircraft carriers toward the island. The first wave of 183 Japanese planes struck its targets at 7:55 a.m. At Wheeler Field, 25 dive bombers aimed at the hangars, dropping approximately 35 bombs. They hit and set fire to Hangars 1 (Facility 110) and 3 (Facility 113) and two storehouses. One bomb struck the barracks occupied by the 6th Pursuit Squadron, inflicting a large number of casualties. The same planes returned to strafe the flight line. In the lull between attacks, six U.S. planes took off from Wheeler. They attacked



Wheeler Mission-style NCO Quarters, c. 1935
Source: Hawaii State Archives

Japanese planes over southeastern Oahu, claiming to have knocked down two of the enemy but losing one of their own. The second wave of 167 Japanese

planes struck Oahu beginning at 8:40 a.m. Again they strafed the field but caused little additional damage. When the attack was over, 83 aircraft at

Wheeler Field had been destroyed, and casualties included 37 men killed, 6 missing, and 53 wounded. Of a total of 231 Hawaiian Army Air Corps aircraft, 153 stationed at Wheeler, only 63 tactical aircraft remained usable after the attack.

Wheeler Field recovered quickly from the attack and played an important role during WWII. In 1944, the Seventh Air Service Command was established at Wheeler. This command provided service and supply for the B-29 bombers in the Marianas, which began their massive raids against Japan that fall.

In 1948, the United States Air Force was created out of Army Air Force units, and on July 1, 1948, Wheeler Field Military Reservation became part of the Air Force. On June 1, 1949, the Pacific Air Command was deactivated and Wheeler was placed in a caretaker status. This status was maintained until 1952, when expansion by the Air Force during the Korean War resulted in the reactivation of Wheeler Air Force Base. The U.S. Army and Air Force continued to share the use of Wheeler, with the Army maintaining helicopters at the field. In 1991, Wheeler was transferred back to Army control and renamed Wheeler Army Airfield.

Major Landscape Features of Neighborhood

The Wheeler Army Airfield layout is a good example of typical airfield design of the 1920s and 30s. Along the linear airfield are air operations structures, and adjacent to those structures are residential and other support facilities. There are two distinct residential layouts present at Wheeler. The first



Landscape at the Wheeler Army Airfield neighborhood
Source: Belt Collins

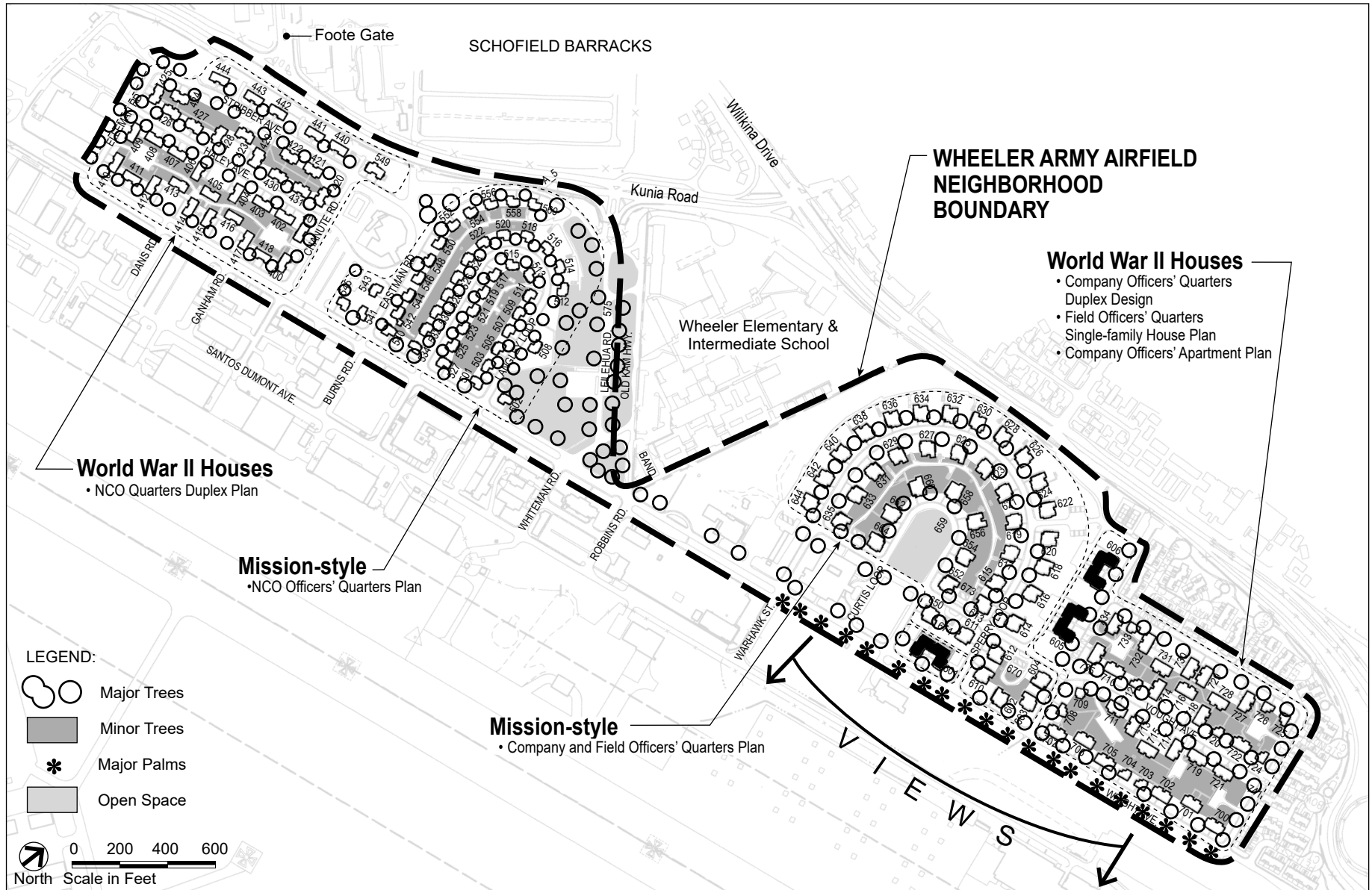
layout represents a “Garden City” planning concept with residential blocks along loop roads, which run along a main axis road.

The second layout follows some of the “Garden City” principles, but the residential blocks are on a grid axis. However, the homes are not on a grid. Some of the homes on the blocks are arranged

so that they create little courtyards along the block. This helps to break up the block and adds to the “Garden City” concept.

All of the streets are tree-lined and homes are set back from the road, creating a larger front yard space. The street trees help to unify the neighborhood. The most notable types of trees are monkeypod,

HISTORIC CONTEXT STUDY
OF HISTORIC MILITARY FAMILY HOUSING IN HAWAII



3-54

Landscape at Wheeler Army Airfield neighborhood

kamani, jacaranda, banyan, Norfolk Island pine, and tabebuia. Around the dwellings, the foundation plantings, many of a topical palette, help to create a pleasant character for the neighborhoods.

There is no notable open space within the neighborhood other than the center of the loops. Open space exists in the area around the old Kamehameha Highway, which bisects the neighborhoods, and between the neighborhood and the runway. From this latter vantage point, there are clear views of the Waianae Mountain Range.

Major Trees/Palms

- Monkeypod
- Banyan
- Norfolk Island pine
- Date palm
- Silk oak
- Swamp mahogany

Other Trees/Palms

- Kamani
- Royal palm
- Plumeria
- Brassia
- Tabebuia
- Jacaranda

Wheeler Mission-Style House Designs

All of the Wheeler Mission-style houses were constructed in 1932. They were designed by Captain George W. Armitage, QMC, who was also in charge of construction at Schofield Barracks from 1911 until WWI. Captain Armitage had been rec-

ommended to the Army by the architecture firm of McKim, Mead & White. The Wheeler neighborhoods reflect the popular architectural style of the period. They also reflect the regional styles and show how a standardized plan can be modified to adapt to a particular climate. The houses were originally



Buildings 501–560, NCO Quarters at Wheeler Field, May 1935
 Source: Hickam Air Force Base History Office, Photo #26

built with flat roofs, typical for the Mission style but not practical for the Hawaii climate. Sometime before 1949, hipped roofs were added, providing a much better barrier against the Hawaii heat and rain. The original steel-sash windows were replaced with jalousie windows, which provide excellent ventilation while keeping out rainwater, although they alter the character of the houses.

There are two different floor plans, a smaller plan for NCO Quarters and a larger plan for Officers' Quarters. The houses are constructed of concrete blocks with a rough stucco finish and a decorative design in the concrete wall above the front entry door. The original interior floor finish is acid stained concrete in brown and green tones. The houses were originally constructed with flat roofs; hipped roofs were later added to deal with the local climate. In all of the houses the original metal casement windows have been replaced with jalousie windows, although some of the steel doors remain. The houses appear relatively unaltered, other than minor interior modernizations.

3-56

Facility #	Facility or Design Name	Date
501-528, 530, 532, 534, 540-546, 548, 550, 552, 554, 556, 558, 560	Non-Commissioned Officers' Quarters Plan —Mission Style	1932
602-604, 607-636, 638, 640, 642, 644, 650, 652, 654, 656, 658, 660, 662, 664	Company and Field Officers' Quarters Plan —Mission Style	1932



NCO Mission-style Houses street
Source: Mason Architects, Inc.



Company and Field Officers' Mission-style Houses street
Source: Mason Architects, Inc.

Non-Commissioned Officers' Quarters Plan

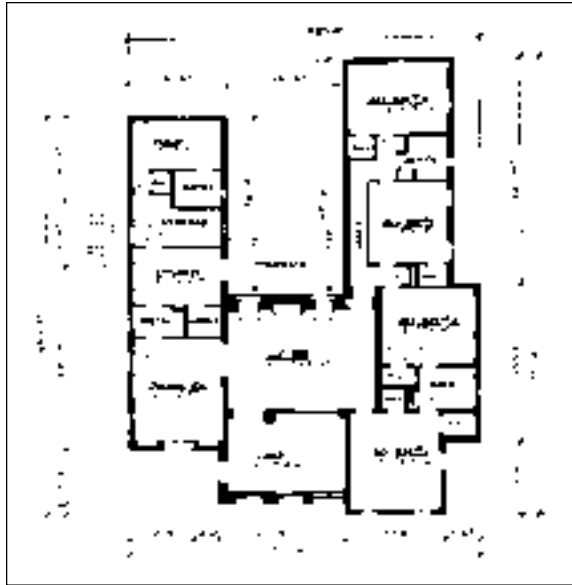
There are 42 houses of the NCO Quarters plan. The plan is a jagged L-shape; the front door leads to an entry lanai. To one side is the living room with a fireplace. The living room directly accesses two bedrooms and the kitchen with a breakfast nook (now a dining area). The laundry and store room are located off the kitchen, and the bathroom is located between the two bedrooms. There is a decorative concrete screen over the front entryway with a scallop-shaped design.



NCO Quarters floor plan

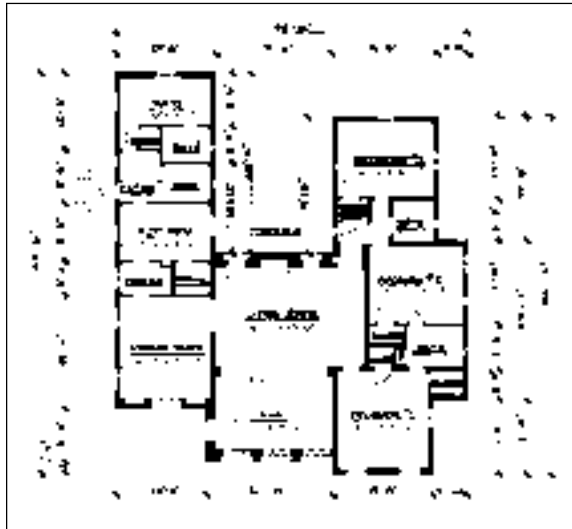


NCO Mission-style House
Source: Mason Architects, Inc.



3-58

Field Officers' Mission-style floor plan



Company Officers' Mission-style floor plan



Company and Field Officers' Mission-style House
Source: Mason Architects, Inc.

Company and Field Officers' Quarters Plans

These concrete block houses have U-shaped plans. The front entry leads into an entry lanai and living room with fireplace. One wing off the central living room contains the dining room, kitchen, pantry, storage rooms, and maid's quarters with a bathroom. The other wing has the bedrooms and bathrooms. The Company Officers' Quarters and Field Officers' Quarters are the same, except that

Company Officers' plan has three bedrooms, and the Field Officers' plan has four. The fourth bedroom is simply added on the end of the bedroom wing, and the bathroom is located between the third and fourth bedroom rather than the second and third bedrooms. The decorative pattern over the front door has a circle and triangular shapes within the half circle of the arched door frame. The courtyard lanai between the wings were enclosed around 1957.

CHARACTER-DEFINING FEATURES OF MISSION DESIGNS

Exterior

- Wood-framed hipped roof over original flat roof.
- Open soffit.
- Shingle roofing.
- Louvered roof vents.
- Concrete block walls with rough plaster finish.



Entry at Mission-style NCO Housing
 Source: Mason Architects, Inc.



Entry at Mission-style Officers' Housing
 Source: Mason Architects, Inc.

- Decorative concrete designs above main entry door.
- Historic wood entry door with vertical scoring.
- Historic French-style wood door at kitchen entry.
- Historic screen doors.



Arched doorway and historic-style door to kitchen, Mission-style House
 Source: Mason Architects, Inc.

- Deep-set windows.
- Steel lanai doors.
- Arched doorways.
- Historic door and window hardware.

Interior

- Acid-stained concrete floors.
- Wrought iron metal railings at entry lanai.
- Fireplaces with copper hood and brick trim.
- Historic built-in cabinetry.
- Historic light fixtures.
- Historic bathroom tiles, cabinets, and fixtures.
- Plaster wall and ceiling finish.
- Wood baseboards and ceiling moldings.
- Wood panel doors.
- Historic door and window hardware.



Acid-stained concrete floor and historic wood doors, Mission-style House

Source: Mason Architects, Inc.



Fireplace with copper hood and brick trim

Source: Mason Architects, Inc.

ELEMENTS THAT DETRACT FROM HISTORIC CHARACTER

- Jalousie and fixed windows.
- Window A/C units.
- Flush and modern style doors.
- Modern hardware on historic doors and cabinets.
- Vinyl flooring or carpet.
- Overpainting of woodwork.
- Modern kitchens and bathrooms.
- Enclosure of back lanai area.

World War II Housing Designs

These single-family and duplex houses were constructed 1940, while the three apartment buildings were built in 1943. The houses were constructed as defense housing; houses of this same design were constructed about the same time at other Army installations on Oahu.

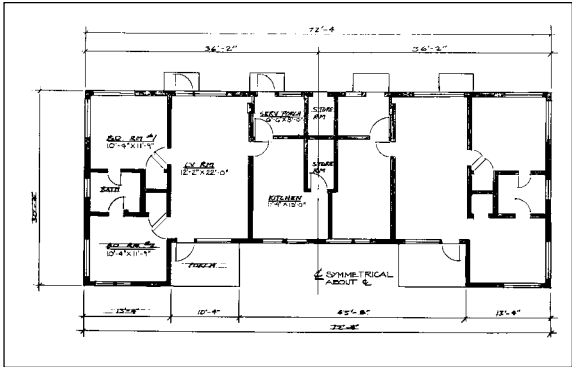
The structures have concrete brick exterior walls and wood frame hipped roofs with asphalt shingle roofing and small louvered gablet vents. The foundations are concrete slab. The interior walls have acid-stained concrete floors and a simple wood base and ceiling molding. Two-story units have wood flooring on the stairs and at the second floor. Original interior doors are single-panel wood doors. The original wood front door has a vertical groove pattern. The original windows are wood double-hung windows with wood-framed screens. The buildings appear basically unaltered, other than a small storage enclosure addition at the back, and the modernization of kitchen and bathroom facilities.

NCO Quarters Duplex Plan

Built in 1940 of concrete blocks, the duplex residences are in a grid plan residential area near the Kamehameha Gate side of the base. The buildings have screened lanai entries at the middle of the front elevation. The front door leads into the living room, which has a fireplace. Two bedrooms and a bathroom are located on the outer side of the living room, and the kitchen, service porch, and storage rooms are located at the middle of the building. Shed-form enclosed porch additions with large screen openings have been added on the rear of each building.

Facility #	Facility or Design Name	Date
400-431, 440-444, 700-702	NCO Quarters Duplex Plan	1940
705-710, 711, 713-719, 721, 722, 727-732, 734, 735	Company Officers' Quarters Duplex Design	1940
703, 704, 708, 709, 712, 720, 724-726, 733	Field Officers' Quarters Single-Family House Plan	1940
601, 605, 606	Company Officers' Apartment Plan	1943

Sliding doors lead from the living room out to this back lanai. The two duplex unit plans are very similar, but in this plan the front entry leads straight into the living room rather than entering into the side of the living room. Also in the NCO plan the bedrooms are entered directly from the living room, while the Company Officers' Quarters plans have a hallway accessing the bedrooms. The fireplace in this plan is located in the back corner of the living room, and originally the kitchen had a built-in breakfast nook.



NCO Quarters Duplex floor plan

Company Officers' Quarters Duplex Plan

This duplex plan is nearly identical to the NCO Quarters plan, except that the main entry leads from the front lanai into the side of the living room. Also this plan has a hallway that accesses the two bedrooms and the bathroom, while at the NCO Quarters plan the bedrooms are accessed directly from the living room, and the bathroom is located between and accessed through the two bedrooms. The fireplace is located in the interior wall rather than in the back corner. In these units, there is a built in shelf/partial height wall separating the dining area from the living room.

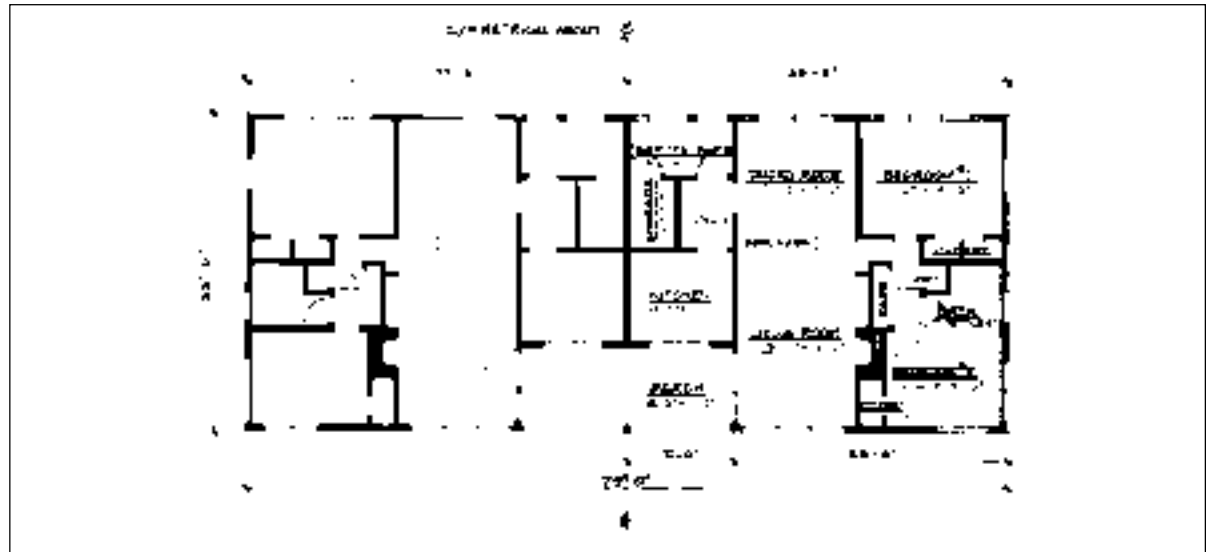


World War II Company Officers' Quarters Duplex
Source: Mason Architects, Inc.

3-62



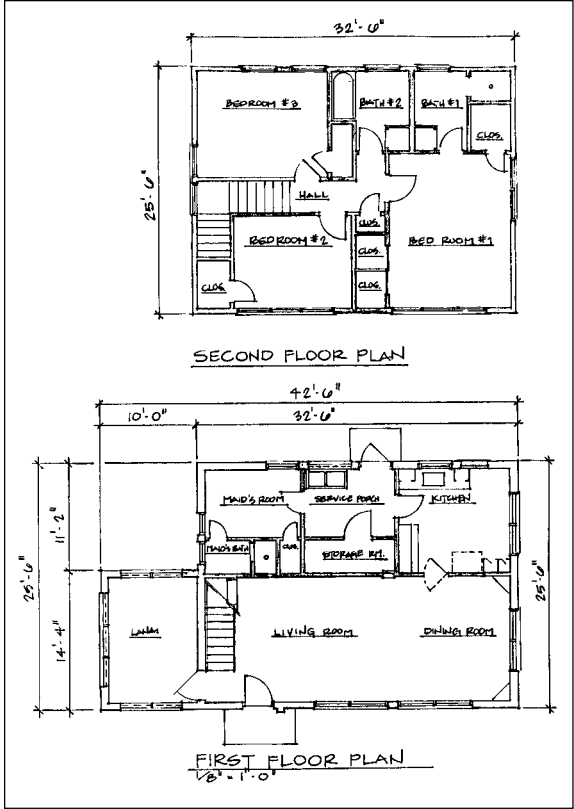
World War II Company Officers' Quarters Duplex living room
Source: Mason Architects, Inc.



Company Officers' Quarters Duplex floor plan

**Field Officers' Quarters
Single-Family House Plan**

These single-family, two-story dwellings are intermixed with the Company Officers' duplex housing. The buildings have hipped roofs at both the two-story and one story portions of the building; the lower roof extends to cover the front entry. The front entry leads into a large front room, which



Field Officers' Quarters Single-family house floor plans



*Field Officers Quarters Single-family House
Source: Mason Architects, Inc.*

contains the living room, dining room, and the stair to the second floor. A lanai is located to the side beyond the stair. Beyond the dining room are the kitchen, service porch, storage, and former maid's

quarters with a bathroom. The second floor has three bedrooms and two bathrooms. A small shed-roofed storage room has been added at the rear of each building.



3-64

View of World War II Company Officers' Apartment
Source: Mason Architects, Inc.

World War II Company Officers' Apartment entry
Source: Mason Architects, Inc.

Company Officers' Apartment Plan

Constructed in 1943, these apartment buildings at Wheeler Army Airfield are identical to several at Hickam Air Force Base, which were built three years earlier. These two-story apartment buildings have U-shaped plans. The apartment entries are located on the first floor in the center courtyard

under a covered walkway. The walkway awning roof has doubled wood columns. The exterior wall has decorative concrete grill vents at the second floor, which ventilate a storage room. Originally each unit had a living room, kitchen, and dining area on the first floor, and the four smaller center units had one upstairs bedroom and a bathroom, while the larger

units at the building wings had two bedrooms and one bathroom. The four center units have been modified to combine two units into one with one of the kitchens has been removed and each unit now having two bedrooms upstairs. One-story lanai additions with a shed form were added at the outer three sides around 1964.



World War II Company Officers' Apartment living room and stairway
 Source: Mason Architects, Inc.



World War II Company Officers' Apartment second floor hall
 Source: Mason Architects, Inc.



World War II unit, acid-stained concrete floor
 Source: Mason Architects, Inc.

CHARACTER-DEFINING FEATURES OF WORLD WAR II DESIGNS

Exterior

- Wood-framed hipped roof.
- Open soffit.
- Shingle roofing.
- Louvered gablet roof vents.
- Concrete block walls.
- Historic wood entry door with vertical scoring.
- Historic wood and glass exterior doors.
- Historic screen doors.
- Historic door and window hardware.
- Vent openings at exterior walls (apartment units).

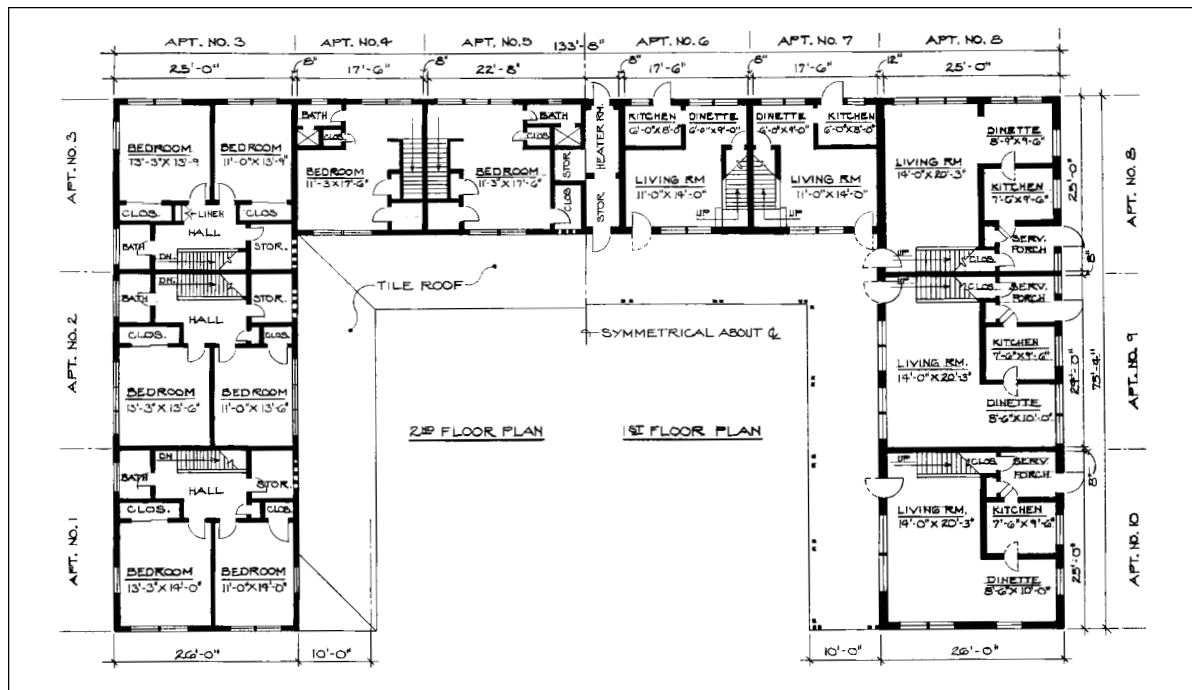
Interior

- Acid-stained concrete floors.
- Wood flooring at second floors.
- Fireplaces.
- Historic built-in cabinetry and shelves.
- Historic light fixtures.
- Historic bathroom tiles, cabinets, and fixtures.



World War II unit, historic light fixture at ceiling
 Source: Mason Architects, Inc.

- Plaster wall and ceiling finish.
- Wood baseboards and ceiling moldings.
- Historic wood panel doors.
- Historic door and window hardware.



World War II Company Officers' Apartment floor plan

ELEMENTS THAT DETRACT FROM HISTORIC CHARACTER

- Jalousie and fixed windows.
- Window A/C units.
- Flush and modern style doors.
- Modern hardware at historic doors and cabinets.
- Vinyl flooring or carpet.
- Overpainting of woodwork.
- Modern kitchens and bathrooms.
- Addition of back enclosed lanai area.

Designs Similar to World War II Housing at Wheeler Army Airfield

In the period just prior to, during, and immediately following WWII, several housing designs were used at multiple Army bases around Oahu. These included single-family, duplex, and apartment style houses.

Fort Shafter

Duplex and single-family units were constructed at Fort Shafter between 1941 and 1943. These are three structures of the single-family plan and 16 buildings with duplex units. The duplex

structures utilize the same design as Wheeler's NCO Duplex Quarters.

Hickam Air Force Base

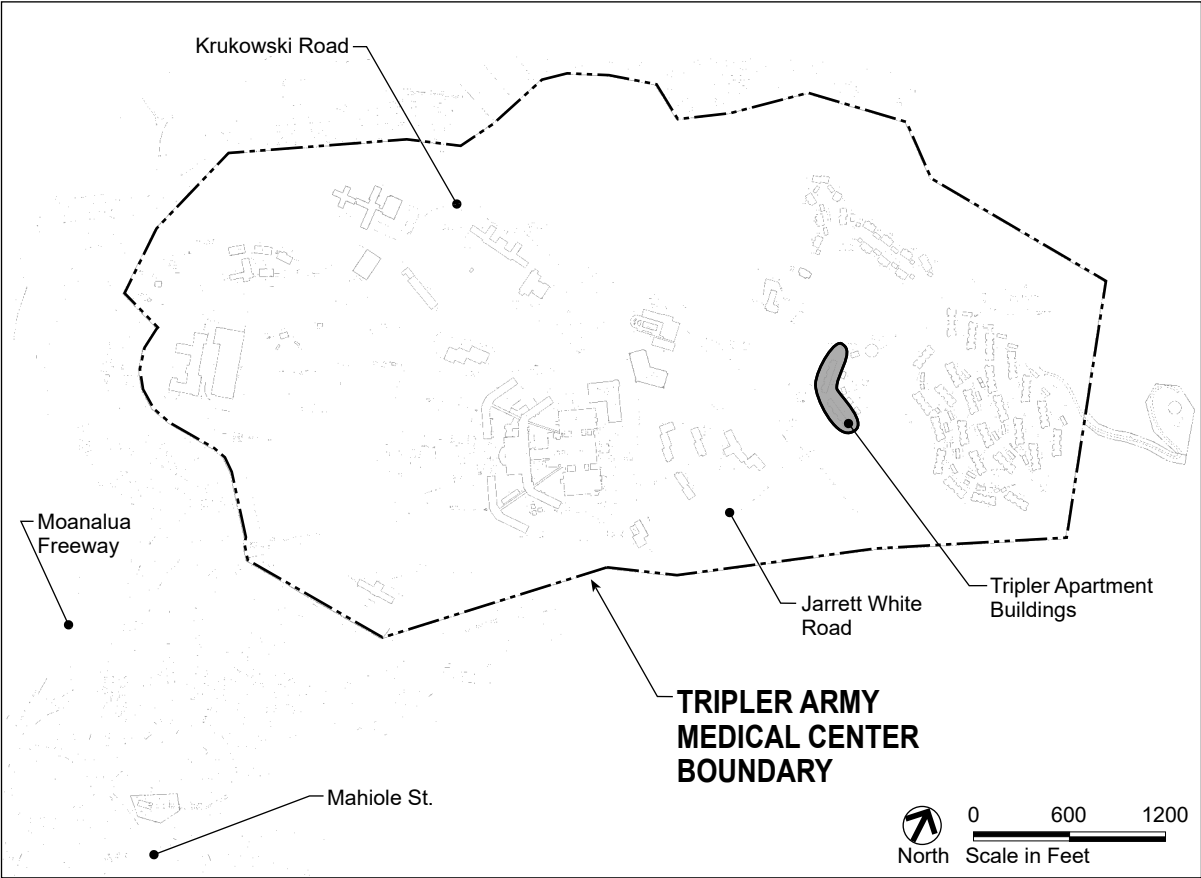
Houses of the WWII style built at Hickam were completed in 1941. The NCO Quarters duplexes constructed at Wheeler are the same as Hickam's NCO duplex plan 6, which was also used at Fort Shafter. The Wheeler Company Officers' duplex is the same as Hickam's Officers' duplex plan O. The single-family house constructed at Wheeler in 1940 is the same as Hickam's Officers' Quarters house plan M. The three apartment buildings constructed at Wheeler are identical to Hickam's Officers' apartment buildings.

Schofield Barracks

Nineteen buildings were constructed at Schofield Barracks in 1948. These units were built at the west side of the base on two concentric horse-shoe-shaped loops around a central open green. There were four building plans used, two single-family plans and two duplex plans. It appears from photographs that the two duplex plans are the same as those constructed during WWII at Wheeler, Fort Shafter, and Hickam. The single-family houses appear to be a different plan than those used at the other Army bases. These buildings have been demolished.

Tripler Army Medical Center Neighborhood Significance

Completed in 1948, Tripler Hospital was the largest Army medical facility of its time and incorporated numerous architectural and structural innovations. Among the more noteworthy of these were structurally isolated units for protection against earthquakes, vertical rather than horizontal movement of interior traffic, and the first pneumatic tube system installed in an Army hospital. The hospital, designed by the architecture firm of York and Sawyer as a group of open pavilions to take advantage of natural light and ventilation, steps down the slope to maximize the spectacular views. Due to its size, design, prominent location, and eye-catching pink color, this structure is an Oahu landmark. Even with the major additions and interior alterations completed in the late 1980s, Tripler's architectural innovations and important role in military history establish it as a historically significant site. The two 1951 apartment structures are part of the Tripler complex, providing housing for hospital employees. They reflect the needed buildup of hospital staff during the Korean conflict of the 1950s. The buildings blend with the layout and style of the hospital complex and remain relatively unaltered.



Tripler Army Medical Center vicinity

3-67



Tripler Army Medical Center

Neighborhood History

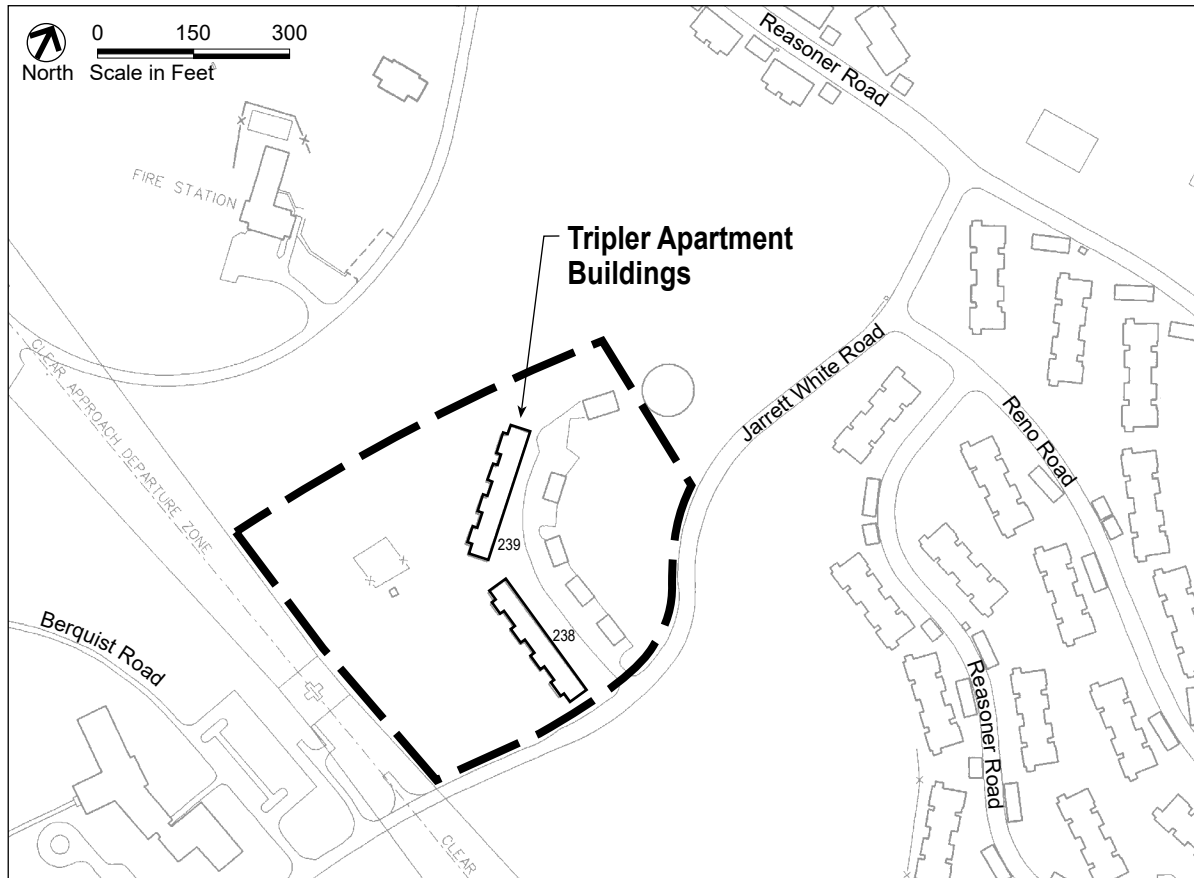
The first Tripler Hospital was constructed at Fort Shafter. Completed between 1907 and 1909, the original grouping of hospital buildings consisted of an administrative office, mess hall, wards, and an operating room. The hospital was designated Base

Hospital on June 20, 1912, and Tripler General Hospital on June 26, 1920, in honor of B.G. Charles Stuart Tripler (1806–1866), Medical Director of the Army of the Potomac during the Civil War and author of the Manual of the Medical Officer of the United States Army.

The remainder of the main hospital facility was substantially completed by 1919. During WWII, 1,800–1,900 patients from all branches of the armed forces were cared for daily. The first casualties were victims of the Japanese attack on Pearl Harbor and other Oahu installations. Casualties later came by airplane and hospital ship from the Solomons, Marianas, Philippines, and other Pacific battle-grounds of the war. Over the years, the hospital was expanded through the addition of one-story barracks-type buildings. The Fort Shafter hospital buildings were demolished during construction of the H-1 freeway in 1958–1960.

Plans for the new Tripler were drawn in 1942. Construction of wings A through E on Moanalua Ridge began in 1944, but construction was continually delayed. The buildings were finally completed in 1948 at a cost of \$41 million. At this time, Tripler was the tallest structure in the Pacific, encompassing 1.6 million square feet. In 1949, the hospital was expanded with the addition of a gymnasium, swimming pool, theater, and patients' recreation building.

During the 1950s, more than 60,000 Korean conflict air evacuees received medical care at Tripler. Almost all of the wounded servicemen evacuated from the battle zone stopped in Hawaii between flights. Battle casualties, often numbering in the hundreds, passed through Tripler's wards daily. In 1953, the first U.S. prisoners of war were air evacuated from Korea to Tripler, returning home after months, and sometimes years, of Communist internment.



Tripler Army Medical Center neighborhood

Housing facilities at Tripler were also expanded during this time, with two eight-unit apartment-style family quarters constructed on the hillside above the hospital in 1951. Tripler's post housing facilities were increased more than 10-fold in 1957,

with the addition of 164 new units under the Capehart Military Housing Act.

In 1961, Tripler U.S. Army Hospital became known as U.S. Army Tripler General Hospital, and in 1964, the name was changed again to Tripler

Army Medical Center. In 1973, Vietnam prisoners of war arrived at Tripler for treatment and care. In 1992, the construction contract began for Hawaii's first Veterans Administration Medical Center co-located at Tripler. The Spark Matsunaga Department of Veterans Affairs Medical Center is now located in the E Wing. Today Tripler continues as one of the most prominent hospitals in the Pacific, serving all branches of the U.S. military.

Major Landscape Features of Neighborhood

Tripler Hospital's historic neighborhood consists of two two-story apartment buildings located just above the hospital. This neighborhood is situated on a grassy slope near the hospital's helipad. The two buildings are located just off of Jarrett White Road, which is the main access to the hospital. Each of the buildings has a number of covered carports located along the neighborhood's driveway, which serves as both the ingress and egress for the neighborhood.

There is no notable uniform foundation planting around the buildings. The individual occupants have modified their yards to suit their own tastes. The small number of large trees around the buildings include banyan, brassiaia, mango, and a few coconuts.

Because of the neighborhood's proximity to the helipad, the area fronting the apartments is an open grass field. The area above the apartments is also an open grass hill. The perimeter of the neighborhood opposite the ingress and egress is a sloped area falling away from the apartments with mostly

haole koa scrub brush. This natural vegetated area is similar to the area along Jarrett White Road. Due to the helipad's location, the neighborhood has a 180-degree unobstructed view of Honolulu from Diamond Head to the Ewa plain.

Major Trees/Palms

- Banyan
- Norfolk Island pine
- Mango
- Coconut

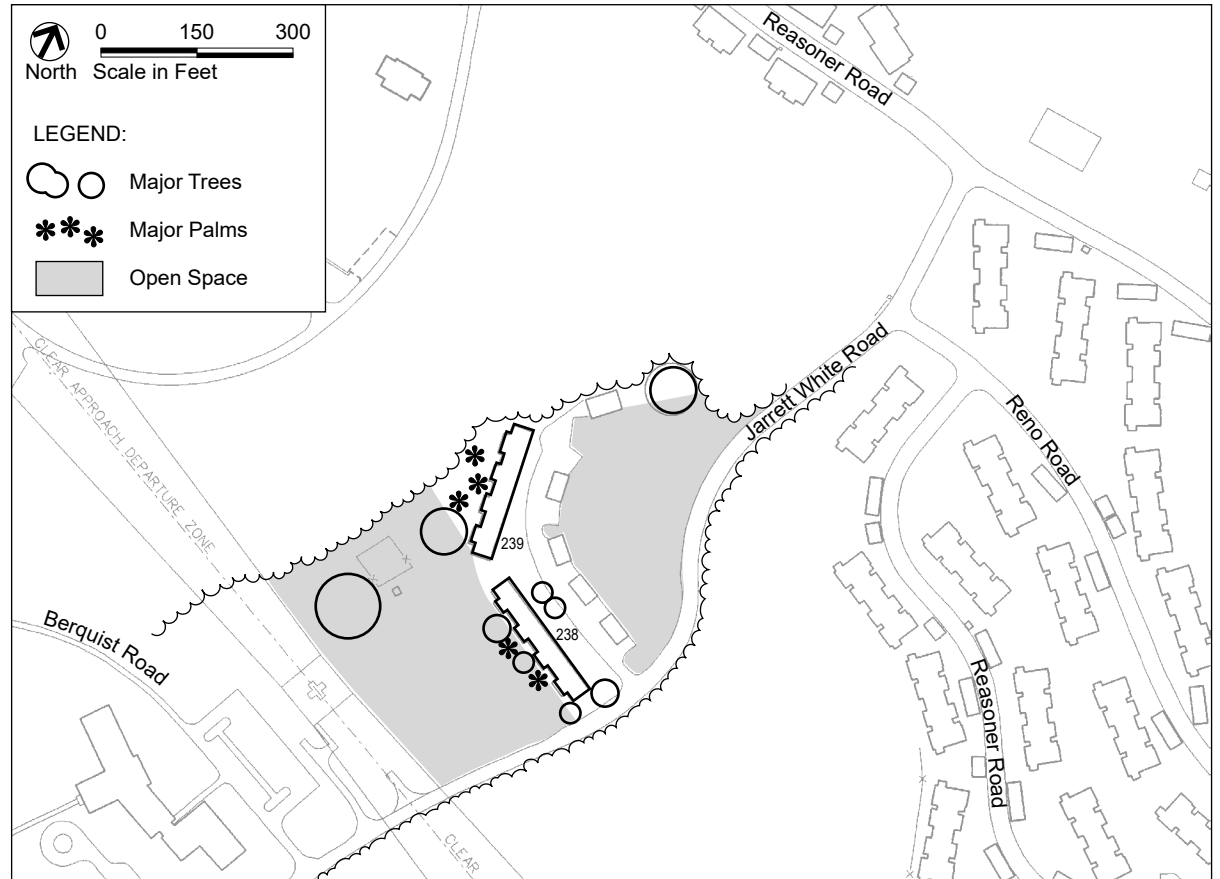
Other Trees

- Plumeria
- Brassia
- African tulip

3-70



Entry/egress into Tripler Army Medical Center neighborhood
Source: Belt Collins



Landscape at Tripler Army Medical Center

Tripler Eight-Unit Apartment Building Design

These two buildings were constructed as family housing in 1951. They are located on a grassy sloped site north of the hospital. The two-story buildings are characterized by International-style simplicity and unadorned lines. One building (Facility 238) is constructed on a level foundation, while the other building (Facility 239) is staggered in four sections.

The two buildings have concrete slab foundations and stuccoed concrete block exterior walls. A flat concrete roof extends over the first floor windows. A similar roof was originally planned for the top of the building but was changed to a hipped roof with ceramic tile roofing, which blends with the architecture of other buildings in the complex. All of the original wood awning windows have been replaced with jalousies, although some of the original wood entry doors remain.

The interior walls are wood framed. The original interior doors are wood two-panel and remain in nearly all locations. Other interior details are simple. The kitchen and bathrooms have been modernized, but the units are otherwise relatively unaltered.

CHARACTER-DEFINING FEATURES

Exterior Features:

- Wood-framed hipped roof.
- Flat roof over entry doors and first floor windows.
- Ceramic tile roofing.
- Concrete block walls with openings at entry.

Facility #	Facility or Design Name	Date
238, 239	Eight-unit Apartment Building	1951



Facility 238
Source: Mason Architects, Inc.



Facility 239
Source: Mason Architects, Inc.



Hipped roof and flat roof over windows
Source: Mason Architects, Inc.



Front entry
Source: Mason Architects, Inc.

- Concrete block sills.
- Flat wall surface with no door or window casings.

Interior Features:

- Wood floors at second floor.
- Two-panel wood doors.
- Original bronze door hardware.
- Wood baseboard.
- Wood ceiling molding.



Entry hall and stair with wood railing
Source: Mason Architects, Inc.

- Historic light fixtures.
 - Wood handrail at stair.
- ELEMENTS THAT DETRACT FROM HISTORIC CHARACTER**
- Jalousie and fixed windows.
 - Lanai shed additions.
 - Electrical and other utility lines on exterior walls.
 - Flush and modern style doors.



Living room
Source: Mason Architects, Inc.



Bedroom with wood flooring and original doors
Source: Mason Architects, Inc.

- Modern hardware on doors and cabinets.
- Vinyl flooring or carpet over wood floors.
- Modern kitchens and bathrooms.
- Modern light fixtures.