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NAVY UNACCOMPANIED PERSONNEL HOUSING DURING THE COLD WAR (1946-1989)

SITE REPORT: NAVAL AIR STATION, NORTH ISLAND, CALIFORNIA AND NAVAL AMPHIBIOUS BASE, CORONADO, CALIFORNIA

PREPARED FOR:

NAVAL FACILITIES ENGINEERING COMMAND
WASHINGTON NAVY YARD, DC 20374-5065

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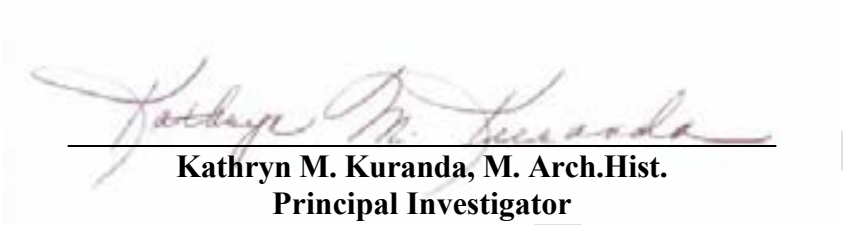
Draft



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1.0 EXECUTIVE SUMMARY

1.1 Introduction

The Department of the Navy has prepared this study to meet the compliance requirement associated with the *Program Comment for Cold War Era Unaccompanied Personnel Housing (1946 – 1974)*, issued by the Advisory Council on Historic Preservation 18 August 2006. A programmatic treatment for the properties was developed in compliance with Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended, to take into consideration the effects of future management activities upon this class of Navy resources constructed between 1946 and 1989 that may be historic.

Under 36 CFR 800.14(e) of the Advisory Council on Historic Preservation's regulations, the Navy sought to develop an efficient approach to NHPA requirements that is consistent with the Navy's need to provide adequate housing for unaccompanied personnel. The programmatic treatment includes the preparation of a nationwide historic supplemental context on unaccompanied personnel housing (UPH) constructed or modified during the Cold War Era (1946 – 1989) and site visits to four Cold War era installations with representative samples of UPH. The context serves as an appendix to the Army's *Unaccompanied Personnel Housing (UPH) During the Cold War (1946 – 1989)*. Currently, the Navy manages 1,530 UPH facilities constructed between 1946 and 1989 (U.S. Navy Real Property Inventory 2007).

The current project provides documentation of a Naval installation that began operations in 1917 and continued operations throughout the Cold War Era, Naval Air Station North Island (NASNI) (Plate 1) and Naval Amphibious Base Coronado (Plate 2). This study examines the creation of the installations and provides representative samples of UPH and ancillary structures constructed and/or modified during the Cold War Era. R. Christopher Goodwin & Associates Inc. completed the current project on behalf of Headquarters, Naval Facilities Engineering Command (NAVFAC), through the United States Army Medical Research Acquisition Activity (USAMRAA).

1.2 Background

The need for unaccompanied personnel housing historically has fluctuated with the size of the military. Prior to World War II, the Navy constructed few facilities to house personnel ashore. General Navy policy in the early decades of the twentieth century followed that established years earlier; personnel lived on the vessel while at sea, and found other housing

when ashore. Efforts to retain personnel and improve conditions prompted revisions to that policy that included the construction of many new shore facilities for unaccompanied personnel housing.

The larger troop strength following World War II in comparison to previous peacetime levels created a demand for the construction of unaccompanied personnel housing. Construction limits and military policy to raise standards of living for military personnel affected UPH design. Following World War II, President Truman maintained that a unified Defense Department and military services of equal importance insured the security of the United States. Under the 1947 National Security Act, the Army, Navy, and newly independent Air Force became equal arms of the Department of Defense.

Much of the policy guiding the construction of unaccompanied personnel housing was applied universally to all branches of the military. Congressional actions established maximum cost per person and allocated square footage based on personnel rank. Many of the improvements to UPH were prompted by requests from one branch of the military to increase cost per man, for example, that were later applied throughout the Department of Defense. Installation specific exemptions were granted. In areas with high construction costs, Congress could increase the cost ceiling. Similar waivers were granted to installations in hot climates where air conditioning was considered a necessity, and more amenities and larger rooms were incorporated in buildings designed to house elite or specially trained units. Due to the common factors impacting design and construction of all Department of Defense unaccompanied personnel housing, much data related to Congressional actions is referenced to the earlier UPH study conducted for Army installations (Kuranda et. al.:2003).

2.0 OBJECTIVES AND METHODOLOGY

2.1 Objectives

Currently, the Navy manages 1,530 UPH facilities constructed between 1946 and 1989 (U.S. Navy Real Property Inventory 2007). These resources managed by the Navy are approaching or have passed the 50-year threshold generally accepted for National Register of Historic Places eligibility. To take into account the effects of management activities on UPH, the Navy requested a Program Comment, which is a programmatic compliance alternative under the Advisory Council on Historic Preservation's regulations 36 CFR 800.14. The programmatic treatment includes the preparation of a nationwide historic context on UPH facilities constructed or modified during the Cold War Era (1946-1989) and site visits to four Cold War era installations with representative examples of UPH.

2.2 Project Description and Methodology

The Navy places UPH primarily into seven categories related to housing for officers, enlisted personnel, dining facilities, various support categories, and emergency housing (See Table 1). This study examines the Navy UPH constructed during the Cold War Era at Naval Air Station North Island and Naval Amphibious Base Coronado. This illustrated study is the result of an integrated program of archival research, site investigations, data analysis, and report preparation undertaken in 2007 and 2008. Primary source materials were located at the National Archives and Records Administration, College Park, Maryland; Naval Facilities Engineering Command, Port Hueneme, California; and in the files of Naval Air Station North Island and Naval Amphibious Base Coronado.

Table 1. Types of Unaccompanied Personnel Housing in the Current Navy Real Property Inventory

Category Code	Description
Enlisted Personnel	
72111	Bachelor Enlisted Quarters E1/E4
72112	Bachelor Enlisted Quarters E5/E6 (Marine Corps E5 Only)
72113	Bachelor Enlisted Quarters E7 through E9 (Marine Corps E6 through E9)
72124	Bachelor Enlisted Quarters—Marine E1/E4
72125	Bachelor Enlisted Quarters—Marine E5
72126	Bachelor Enlisted Quarters—Marine E6/E9

Category Code	Description
72130	Civilian Barracks GS 01 through 06
72131	Civilian Barracks—Base Operating Support Contractor
72146	Berthing—Naval Home
72121	Bachelor Enlisted Quarters--Transient E1/E4
72122	Bachelor Enlisted Quarters—Transient E5/E6
72133	Bachelor Enlisted Quarters—E7/E9
72153	Transient Personnel Unit Barracks—E7/E9
72114	Class A Student Barracks
72117	Officer Candidate School (OCS)
72118	Naval Academy Preparatory School (NAPS)
72119	Broadened Opportunity for Officer Selection Training (BOOST)
72424	Officer Indoctrination School (OIS)
72115	Recruit-Type Barracks
Mess Facilities	
72145	Dining Facility—Built-in/Attached
72210	Enlisted Dining Facility
72231	Dining Facility—Detached—Civilian Personnel
72241	Dining Facility—Detached—Com. Pers.
72430	Commissioned Officers' Mess—Closed (Built-in/Attached)
Dining Support Facilities	
72250	Cold Storage—Detached from Galley
UPH Support Buildings	
72330	Laundry Detached
72360	Troop—Housing—Other Detached Buildings
72377	Troop—Housing—Storage (Ready Issue/Shop Stores/Misc)
72340	Garages Detached—Bachelor Housing
72350	Wash Rack--Detached
72361	Troop Housing—Other Detached Facilities
Latrine/Shower Facility	
72320	Latrine Detached

Category Code	Description
Officers	
72411	Bachelor Officers' Quarters—Permanent Party—W1/W2 & 01/02
72412	Bachelor Officers' Quarters—Permanent Party—W3/W5 & 03 and Up
72422	Civilian Quarters—GS 07 and Above
72423	Civilian Quarters—Base Operating Support Contractor
72413	Bachelor Officers' Quarters—Transient—W1/W2 & 01/02
72414	Bachelor Officers' Quarters—Transient—W3/W5 & 03 and Up
Emergency UPH	
72510	Troop Housing—Emergency Housing
	Tent Pad

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3.0 HISTORY OF NAVAL AIR STATION NORTH ISLAND AND NAVAL AMPHIBIOUS BASE CORONADO

3.1 Early Aviation on North Island

North Island principally was used as a recreational area prior to 1911. It provided horseback riding areas for guests of the nearby Hotel Del Coronado and also was used as an area for small game hunting. In 1911, Henry Harkness and Glenn Curtiss became interested in using the location, ideal for its isolation and climate, for aviation training. They entered into a three-year contract with Coronado Beach Company at this time. Curtiss immediately began flight lessons free of charge to members of the Navy and Army. His first student, a graduate of the Naval Academy, was Navy submarine officer Lieutenant Theodore G. Ellyson. Lieutenant Ellyson eventually became the first Navy pilot. The first class of the Curtiss Aviation School included two civilians, three army officers, and one navy officer (Pescador and Aldrich 2007:9-11; Sudsbury 1967:4).

Curtiss offered these free lessons to the military in order to encourage the use of aircraft. He soon became a major influence on the military's outlook on aviation. One of his primary missions was to prove that an airplane could land on a ship. He began proving this during testing in 1911, when one of his pilots successfully landed and took off from a wood platform attached to the stern of the battleship USS Pennsylvania (Sudsbury 1967:10-13).

In May 1911, the Navy requested three Curtiss biplanes, an A-1, an A-2, and a B-1. The A-1 was placed in service two months later. Planes for the Navy were transferred to Greenbury Point next to the Naval Academy campus. Soon the Navy realized the need for an Aviation Corps field that could be utilized during the winter months. North Island was chosen, and in January 1912 the necessary materials and planes were relocated. Curtiss continued to operate his aviation school from the southern portion of the island, while the Navy practiced maneuvers in the northeast portion. In May 1912, the Aviation Corps returned to Annapolis (Sudsbury 1967:23-26).

In fall 1912, Curtiss asked the Army if they would be interested in using a portion of North Island for their aviation units. The Army Signal Corps accepted the offer and began locating units in the northeast portion of the island where the Navy previously had trained. By December of the following year, the area was designated the Signal Corps Aviation School (Sudsbury 1967:27).

In 1913, the Curtiss' lease expired and he sold his California based assets. The Army struggled to create a land agreement with the Coronado Beach Company. In the summer of 1914, the 4th Regiment of the Marine Corps organized a camp at North Island. Winter of the same year,

the Marine Corps was moved to San Diego for duties related to the Panama-California Exposition at Balboa Park and their camp was abandoned. The Army continued operations at North Island, constructing hangers and machine shops. December 1915, the commanding officer of the Signal Corps Aviation School was contacted by the Coronado Beach Company. The company expressed its concern over Army presence on the island, stating that their occupancy was granted by Curtiss and not the company. They requested that the Army vacate the island by March 1916 so the island could be subdivided and placed on the market as planned prior to Curtiss' lease (Sudsbury 1967:27-35).

The Army did not abide the Coronado Company's request and instead continued with the construction of temporary buildings to support their aviation school. By April 1917, the Aviation Section of the Signal Corps at North Island included 35 pilots, 1,987 enlisted men, 55 planes, and three training areas. At the beginning of World War I, a board consisting of both Army and Navy personnel assessed locations for an Army/Navy aviation training location. As a result of their determinations, in June 1917 Congress approved an act allowing the government to take ownership of North Island for a permanent aviation training school (Sudsbury 1967:35, 38-39).

Shortly after taking possession of the island, the Army aviation school was named Rockwell Field. Disputes over division of the island for the Army and Navy ensued, with the Army refusing to vacate buildings for use by the Navy. Eventually, the Naval Training Station at Balboa Park welcomed Navy personnel destined for North Island. Space was limited at Balboa Park, and the Navy was unable to acquire planes, which made training impossible. Finally, in January 1918, an agreement was made between the Army and Navy regarding the division of North Island. The Navy began occupying the northeast portion of the island and creating a permanent Naval Air Station. The Army sold some of their temporary buildings to the Navy, allowing them to quickly begin operations (Sudsbury 1967:43, 45).

By June 1918, the Army had entirely left the Navy portion of North Island. Navy personnel stationed at Balboa Park began arriving on the island and the Navy aviation school began training. It was soon realized that with two training schools, the airways of North Island were crowded. In 1918, construction on the Army side of North Island continued, with the creation of a hospital, administration buildings, mess halls, hangers, and machine shops (Sudsbury 1967:47-54).

By the end of World War I, the air services for the Army totaled 195,024, and the Navy totaled over 37,000. Approximately 1,800 Navy personnel were at North Island directly following the end of World War I; the number was decreased to approximately 275 within days. In 1919, the commanding officer of the Navy training school proposed that the Navy obtain the

entire island, and begin a Lighter-Than-Air mission. A dirigible hanger was constructed in April, and North Island was notified that the lighter-than-air craft, the C-6, was being shipped in August (Sudsbury 1967:55, 63).

In 1919, the Navy began hiring male and female civilians at the station. The same year, construction of permanent buildings began; F-troop was constructed at this time. The building campaign was halted, however, following the war due to a lack of funds (Sudsbury 1967:63, 67).

Throughout 1920, Navy operations at North Island centered on the C-6. The lighter-than-air craft had been stored for months, resulting in material damage. After numerous repairs, the C-6 made several area flights, fascinating the locals and testing its abilities. Within a month, however, the dirigible needed additional repairs. At this point, another dirigible, the B-18, was assembled and successfully tested. It eventually became the first dirigible of the Pacific Fleet (Sudsbury 1967:69).

During the 1920s, the Army and Navy continued to have disputes about the ownership of North Island. The Army argued that they staked claim in the isl and first, and the Navy argued that the island was the best fit for them due to the ability to accommodate planes as well as ships. Litigations also continued between the government and the Coronado Beach Company. Finally, 22 May 1922, the deed was finalized and the US government paid the company $6,098,333.33 (Sudsbury 1967:82-83).

In 1921, North Island ceased operations as a base for dirigibles. They removed equipment but did maintain a mooring mast. During the same year, the Navy constructed a pier for aircraft with a catapult to simulate landing and taking off from a ship. They also created a landing platform with the size and shape of a carrier for training. Also in 1921, the Navy removed the previous Army and Curtiss dock along the northeast portion of the island and constructed Pier J (Sudsbury 1967:407).

During the 1920s, two pilots successfully made the first coast to coast non-stop flight. The flight from New York to San Diego landed in Rockwell Field. The two pilots were each awarded a Distinguished Flying Cross and a McKay Trophy. Other accomplishments at North Island during the 1920s included the first successful launching of a plane from a ship after dark, and the first nighttime plane to ship landing (Sudsbury 1967:95; Hinds 1986:44).

Six additional permanent buildings planned for the Navy's 1919 construction program were finally constructed beginning in 1923. The Spanish Revival style buildings included bachelor officer quarters, administration building, enlisted personnel quarters, and chief petty officer quarters. Building I was part of this construction (Sudsbury 1967:408).

Marine Observation Squadron One was stationed at North Island beginning in the summer of 1924. The squadron included eight officers, 102 enlisted men, and eight airplanes. During the same year, the Navy Station Flight Department was restructured and made a squadron. The squadron was assigned to work with the Torpedo Training School located in San Diego. They provided planes to aid in recovery using radio communication (Sudsbury 1967:99).

In 1924 the USS Langley, which was the first US Navy aircraft carrier, arrived at North Island. The ship was a coal hauling vessel that was converted into a carrier; due to its appearance, it was nicknamed the "Covered Wagon." Her flight deck was 520 feet in length and 65 feet in width and she could accommodate 10 officers, 31 petty officers, and 229 enlisted men (Sudsbury 1967:104).

In 1926, the US Naval Academy began including aviation as part of their curriculum. North Island was chosen as one of the locations where lessons were provided for students. Only 13 students arrived at North Island for the first instruction period. Many of the students saw aviation as a limited naval career option and opted out of instruction after the first lessons were given (Sudsbury 1967:116).

During the late 1920s, the Battle Fleet grew tremendously, with new planes and two new aircraft carriers, the Lexington and the Saratoga. The Lexington and the Saratoga were much larger than the Langley; they were 888 feet in length and could accommodate 2,000 men and more than 72 aircraft. Overcrowding continued to be an issue at North Island. Annual cruises by the fleet as well as squadron maneuvers for the Marines were alternated to avoid congestion, and the Army was asked to limit flights in and out during peak periods of Navy operation (Sudsbury 1967:127-128).

When the bulk of aviators were away from North Island on cruises, the Navy took advantage of the opportunity to make improvements throughout the facility. Runways were improved and additional buildings, including hangers, were constructed (Sudsbury 1967:137).

In May 1929, a joint board involving both the Army and the Navy began discussions regarding the co-occupancy of North Island. The Secretary of the Navy approved a plan to establish another location for the Army aviation program. The Secretary of War, however, did not approve of the plan due to perceived financial issues. Later, over 2,000 acres were donated to the Army in California for the establishment of a new facility, but it would be a decade before the Army completely evacuated Rockwell Field (Sudsbury 1967:142, 143, 409).

Beginning in 1930, the Navy began attempts to gain ownership of the surrounding submerged areas around the island. Eventually the government was given control of the areas and portions of tidelands and submerged areas were filled. By 1930, the Battle Fleet had 18

squadrons on the island, necessitating room for 224 airplanes. In addition, the Marine Aircraft Squadrons used around 20 planes and the Air Station maintained an additional 20 for general aviation training. With gunnery training, general aviation training, and carrier training, each of the planes at North Island averaged three flights per day (Sudsbury 1967:144, 145).

In addition to a shortage of areas to land, park, and take off, the airplane repair shops at the facility were overcrowded. The debate of turning Rockwell Field over to the Navy continued through the 1930s. In a 1932 hearing the Chief of Staff of the Army, General Douglas MacArthur, disagreed that the island airspace was congested and stated that "the Army has adopted, therefore, the definite policy of the retention of this field as it is a component part of our defense system" (Sudsbury 1967:150).

Although the Navy endeavored to stall Army plans for construction at Rockwell Field, a building campaign began at the field in 1933. Construction plans included officers' housing, roads, public works enhancements, and a 2,200 foot circular pad for take off and landing. The circular shape allowed take off and landings from any direction. The Army, planning to relocate their overhaul area to another location, decided to put a main operating area at Rockwell. It would include the introduction of nearly 100 additional airplanes to the island (Sudsbury 1967:175).

After much debate, an Executive Order swapping Army and Navy property eventually resulted in the Navy having sole control of the entirety of North Island. On October 25, 1935, a ceremony was held in honor of the exchange. The Navy's acreage went from 567 acres to 1,340 acres as a result of the acquisition; however, complete evacuation of the Army did not happen until 1939 (Sudsbury 1967:191,194, 409).

The facilities at Rockwell Field included 130 buildings, nearly half of which were fairly new and permanent. Fortunately, the Navy benefited from the 1933 Rockwell construction project that they earlier had fought against. The buildings from that period turned over to the Navy included officers' quarters, bachelor officers' quarters as well as other permanent buildings. The Navy quickly began rearranging the island, with some buildings moved or demolished. They also added fill, which increased the island's size by 500 acres (Sudsbury 1967:194-195)

3.2 World War II Activities at North Island and Creation of the Naval Amphibious Base

By 1939, the Naval Air Station at North Island had 50 officers, 998 enlisted men, and 1,107 civilians. The mission of the station at this time was "to maintain and operate a base for Naval and Marine Corps aircraft units providing facilities in the way of housing, messing, berthing, operation, supply, overhaul, repair and manufacture" (Sudsbury 1967:218). A 1941

aerial of North Island illustrates the station prior to its growth during World War II (Plate 3). The majority of buildings lined the east and north edges of the site.

As a result of World War II, overhauling operations at North Island quickened. Shifts increased at the facility, and workers scrambled to gather and transport airplane spare parts to Hawaii. Windows of the buildings used during the night shifts were darkened with black curtains and the station prepared for firefighting in anticipation of bomb raids. Buildings that were considered essential to the facility were sandbagged, and some were camouflaged. Additional civilians were hired to handle the increased workload. The majority lacked experience in mechanics much less airplane mechanics and had to be trained before performing tasks. With routine blackouts, employees struggled to travel to the station for work (Sudsbury 1967:220, 235, 238-239).

During the war, 102 additional carriers were completed and put in active duty. Eleven were lost during the war, including the Lexington, which was a very familiar carrier to North Island. Assignments at the Naval Air Station during World War II included emergency airplane repairs, airplane overhauls, fuel tank improvements, and production of tail hooks for planes that traveled to and from carriers (Sudsbury 1967:240-241).

New types of planes introduced during World War II strained the small runways and airplane pads at the Naval Air Station. By 1942, North Island was accommodating Army B-17 and B-24 aircraft. The following year, two concrete runways were constructed on the island, both measuring 6,000 feet in length and 300 feet in width (Sudsbury 1967:243).

Another mission during World War II involved a Japanese Zeke aircraft. The plane was found crashed in the Aleutians and was transported to North Island. Once there it was assessed in order to learn more about the types of planes owned by the enemy. The plane engine and propeller were similar to American made planes, making it easier to disassemble, repair and test. The plane eventually was test flown over San Diego then sent to Anacostia for additional testing (Sudsbury 1967:244).

With all of the overhauling and repair, the amount of airplane scrap metal grew at North Island during World War II. Eventually, in 1942, a furnace was constructed to melt the metal into ingots that were sold. During the same year, 14 additional buildings were constructed at North Island (Sudsbury 1967:246).

During 1943, several units unrelated to aviation were added to North Island. These included chefs and bakers. Additional aviation units were also introduced. By January 1943, the Naval Air Station had 753 airplanes, and 96 seaplanes. Summer of the same year, rocket training was taking place on the island. Other new elements introduced during World War II were the

Women Accepted for Volunteer Emergency Service (WAVES) and female nurses. The WAVES, or Women's Reserve, were established in 1942 in order to perform duties that allowed military men to go overseas. Originally the program was planned to include 1,000 officers and 10,000 enlisted, but by 1943, there were 6,459 commissioned WAVES and 40,391 enlisted WAVES. As a result of their arrival, North Island had to provide separate housing for females (Sudsbury 1967:247-251; King 2001[1944]:30).

In the summer of 1943, an Amphibious Training Base was authorized by the Secretary of the Navy and was created southeast of North Island along the Silver Strand southeast of downtown Coronado. Fill from the bay was used to create an area of land to accommodate the new base. Initially, the base was established to provide training for landing craft personnel. Three years after its creation, it was renamed Naval Amphibious Base and its mission became maintaining and supporting amphibious units (GlobalSecurity.org 2008a:n.p).

In order to provide additional acreage for construction at the North Island Station, the waterway between North Island and Coronado was dredged beginning in 1943. More acreage was provided when the Coronado Golf Course was acquired by the Navy. Soon a barracks complex was constructed, along with mess halls and recreation halls. In 1944, rental properties were constructed in Coronado to help relieve some of the overcrowding. In addition, the Hotel Del Coronado allowed the Navy to lease a portion of the hotel for housing (Sudsbury 1967:252).

At the end of World War II, the Navy had a total of 41,000 aircraft. The Assembly and Repair Department at North Island had completed 22,577 airplanes and overhauled 3,043 by the end of the war. New construction and dredging at the facility during the war cost $70,066,388.00, and North Island had grown from 1,157 acres to 2,179 acres. Although the war was over, the amount of planes and surplus parts overwhelmed North Island. Civilians at the station, which numbered 9,612 on VJ-Day, began dwindling in number. The work week was shortened, and shifts were abolished. The number of enlisted personnel dropped as well. On VJ-Day, North Island had 13,000 enlisted men and women; by the end of 1945, there were only 8,949 (Shrader 1995:13;Sudsbury 1967:258, 260).

3.3 The Cold War Era

Following the end of the war, the station underwent a massive inventory process in order to account for all materials. Other work during this time included the preservation of planes for future use. The job entailed the storage of 400 planes considered excess. The wings of each plane were folded, and they were literally placed in large cans. By the summer of 1948, North Island had 8,896 civilian employees (Sudsbury 1967:264-265).

In 1948, North Island received a North American FJ-1, the fastest carrier jet in the world. The 600-mile-per-hour jet was tested on the carrier Boxer. The next jet to arrive at North Island was the TO-1 "Shooting Star." It served as a training jet. New planes meant new repair techniques for the overhaul section of North Island. Buildings had to be modernized and new ones were constructed. The first overhauled jet was successfully flown in April 1950 (Sudsbury 1967:265-266; 270).

The facility had to layoff civilian workers due to lack of funding in 1950. Following the beginning of the Korean Conflict, however, additional civilian employees were sought and 2,147 people were hired. Canned aircraft at North Island immediately were readied for travel to Korea, and squadrons were activated. North Island also worked with the Air Force to transport planes overseas. Numerous carriers traveled to and from North Island in 1951; they brought with them massive amounts of materiel to be repaired and overhauled (Sudsbury 1967:268, 270, 272-273, 275).

The aviation world changed drastically during the 1950s, with the development of guided missiles and nuclear weapons, as well as major advancements in airplane speed. North Island was assigned the duty of overhauling guided missiles in 1954. The same year, base loading was introduced. In the past, stations such as North Island were responsible for maintenance on a number of different types of planes that were brought by carrier. The new base loading technique, however, assigned specific types to various stations. North Island was given the responsibility to maintain aircraft related to antisubmarine warfare, airborne early warning, patrol, and utility (Sudsbury 1967:282-283).

Naval Amphibious Base Coronado was modernized beginning in the 1950s. Many of the temporary buildings constructed during its creation were replaced with permanent ones. Personnel housing was completed during this time, and a mess hall was constructed.

During the 1950s and 1960s, aircraft carriers were considerably modernized. Steam catapults, tactical air navigation systems and pilot landing aid televisions were introduced. A major change was also made on the actual deck of the ship. Angled decks were added to allow for concurrent landing and take-off of aircraft (GlobalSecurity.org 2008a:n.p.; Sudsbury 1967:286).

In the summer of 1956, a heavy attack wing to control the three newly established Pacific heavy attack squadrons was established at North Island. The same year, fueling responsibilities were taken from the individual squadrons and assigned to civilian workers. Other changes in the late 1950s included the introduction of a nuclear warfare school. Instruction was slated to include

loading and launching. The previously constructed 6,000 foot runway at North Island was extended to 8,000 and taxiways also were added at this time (Sudsbury 1967:289-292).

In 1959, the three-level aircraft maintenance program was introduced at North Island. The first level of maintenance was completed by operating squadrons in the field. The second level of maintenance was completed by maintenance departments at the station and included some elements of overhauling. The third level of maintenance was completed by the overhaul and repair department at the station (Sudsbury 1967:293).

By 1960, North Island had 2,000 military personnel and 7,000 civilian workers. In 1961, a supercarrier docking area was completed at the station. The supercarrier Kitty Hawk, then the largest ship in the Navy, arrived at North Island within the same year. The following year another supercarrier, the Constellation, arrived at the dock. The ships were identical, with the ability to accommodate 4,500 personnel (Sudsbury 1967:300, 302).

In August 1963, North Island was declared the "Birthplace of Naval Aviation" by the House Armed Services Committee. Beginning in early 1965, ships and military personnel departed North Island for Vietnam. Work increased as aircraft parts were overhauled, repaired, and readied for shipping. In addition, planes were returning from combat and required rehabilitation. A new method of "cocooning" aircraft was implemented during this time. Layers of liquid plastic were applied to the planes; once dried, the liquid turned into a protective wrap. The coating protected the planes from corrosion during transportation on an open carrier deck. This technique was used at North Island during the Vietnam War, on Army, Navy, and Marine aircraft (GlobalSecurity.org 2008b:n.p.; Sudsbury 1967:311-312).

During the Vietnam War North Island technicians, including civilians, were transported overseas for overhaul work and repair. A maintenance area for workers was established in the Philippines, and at Danang Air Base in Vietnam. Personnel remaining at the station were kept busy and were faced with stream lining operations to save money and to efficiently provide parts and readied aircraft. In 1965, the Naval Air Station was awarded a Presidential Citation for their efforts to save money (Sudsbury 1967:312, 315, 320).

During the mid-1960s, an assessment of housing at the station took place. It was decided that the "open bay" barracks provided to enlisted bachelors was inappropriate. Partitions were eventually added to create rooms in some of the quarters (JRP Historical Consulting Services 2000:23).

By the end of 1966, the station had 9,379 employees; 7,355 of them were employed within the Overhaul and Repair Department. Military personnel at the station totaled 1,740. The department completed 700 planes, 1,000 engines for jets, and 75,000 parts for aircraft. The same

year, tragedy struck one of the carrie rs based in North Island. The Orisk any had nea rly completed her mission in the Tonkin G ulf when a fire broke out and quickly spread through the ship. Fort y-four m en were killed as a result. The ship returned to North Island in the fall (Sudsbury 1967:324-325).

North Island had 603 buildings by 1967. Civilian em ployees num bered 9 ,500 and military personnel num bered 1,700. Based at the station wer e five carrier antisubmarine air groups, an aircraft ferry squadron, a carrier air borne early warning squa dron, patrol squadrons, and a fleet com posite squadron. Departm ents included air operations, aircraft maintenance, overhaul an d repair, co mmunications, weapons, s upply, co mptroller, adm inistration, data processing, public works, industrial relations, security, and m edical (Sudsbury 1967: 331, 341-355, 364-377).

During the l ate 1960s, t hrough the beginning of the 1970s, new Bachelo r Enlisted Quarters were constructed at North Island. New construction followed the earlier review an d recommendation for "increased privac y and livability." Two c omplexes included four towers with a central one-stor y building were com pleted at the Naval Air Station. The y featured a combination of two and four man rooms with a shared sitting room and bathroom. Another larger sitting area or lounge was provided for each co mplex within the centrall y located one-story building. In addition, existing quarter s were re painted and m odernized. Quarters were also constructed a t the Naval Amphibious Base, in cluding dorm itory co mplexes with 1+1 and 2+0 units (JPR Historical Consulting Services 2000:25-26).

During the late 1960s, the Overhaul and Repair Department at North Island was replaced by a tenant, Naval Air Rework Facility. The fac ility continued t o perform the same tasks as the previous dep artment, and hired addit ional work ers. By 1967, there were 9,750 civilian employees working at the facility (JPR Historical Consulting Services 2000:26).

After the Vietnam War cam e to a clo se in 1973, t he num ber of m ilitary pe rsonnel at North Island dropped. Fu nding also was lowered and workers looked for way s to work more efficiently. Lack of funding continued through 1978 when Congress removed 5.7 million dollars from North Island's budget. The following year Congress allocated approxi mately 8.2 million dollars for the station's budget in reaction to ac tivities during the Cold War (JPR Historical Consulting Services 2000:27).

During the 1980s, additional unaccompanied pers onnel housing was constructed at North Island and at the Amphibious Base. The buildings were much larger than their predecessors.

3.4 Present-Day

Today, North Island has 23 squadrons and numerous tenants. It is the only aircraft landing field in the Navy that includes piers for its carriers. Currently North Island has more than 230 airplanes. It is still home to carriers, including the nuclear powered USS Reagan. The facility continues to repair, overhaul, and maintain a variety of planes. The Naval Air Rework Facility, once the Overhaul and Repair Department, now functions under the name Naval Aviation Depot North Island. The depot employs approximately 3,900 workers, making it one of the most significant employers in the San Diego area (GlobalSecurity.org 2008b:n.p.). The Naval Amphibious Base continues to provide training and support for amphibious units. The base is home to the US Navy SEALs; the Naval Surface Force of the U. S. Pacific Fleet; and the Naval Special Warfare Command. The population of the base fluctuates depending on the number of transients and students (GlobalSecurity.org 2008a:n.p.).

4.0 UNACCOMPANIED PERSONNEL HOUSING

4.1 Introduction

With the passage of the National Security Act, Army, Navy, and Air Force budgets were consolidated under the Department of Defense (DOD) and controlled by the Secretary of Defense. Defense allocations for each branch of the military were prioritized and a committee formed for this process. Created in 1949, the Carpenter Committee, first headed by Donald F. Carpenter, former Chairman of the Munitions Board, assumed the duty of ranking the construction needs of each service. Additional duties were assigned to each branch of the military with the Army Director of Logistics responsible for housing needs within the continental United States; the Assistant Naval Chief of Logistics responsible for operational aspects of the military budget such as hangars, piers, or runways; and, the Air Force Chief of Material responsible for all construction needs. The actions of the Carpenter Committee led to the request of a defense construction budget of $630 million in 1950 (U.S. Congress, Senate 1949:12). In addition to centralizing the budget process, the inter-service process produced a common approach to planning and design.

The Navy and Air Force continued to request funding for numerous construction projects at installations nationwide. The need for long-range planning within all military services was also encouraged by civilian experts. As the Secretary of Defense, Frank Pace, stated:

> It was a somewhat painful process because very frequently the need for the facility was apparent, but we had to determine whether it was needed at this moment or whether half of it was needed now and the other half could be deferred to another year so as to spread the load of financing over a longer period of time. We sought to apply ordinary business principles. And these outside experts startled me by saying that we could save a considerable amount of money if we did design and engineering work further back in the process – and that a little money spent earlier on that phase would be saved a good many times over (U.S. Congress, House 1951:939).

To complement long-range planning efforts, and help control costs of design and engineering, the military developed standardized plans for many facilities, including unaccompanied personnel housing. These facilities were suitable for most installations with minor changes for site-specific conditions. Plans developed for UPH included both bachelor officers' quarter (BOQs) as well as barracks and dormitories. This effort began in the early 1950s and continued throughout the Cold War.

4.2 Design Process

Standards for Cold War era unaccompanied personnel housing were first issued under Directive No. 4270.4. This directive established standards for permanent UPH construction at all Army, Navy, and Air Force installations. Item IV of Directive No. 427.4 included guidance for the arrangement and size of living spaces:

> Except as herein authorized, sleeping facilities will be provided in squad rooms. Partial partitions may be utilized together with lockers to provide cubicles for greater privacy within the squad rooms. Toilet facilities (outlined in Sec. VI), including lavatories, will be grouped for optimum economy. Dormitory-type rooms may be provided under the following conditions:
>
> A. For top four grades of enlisted personnel.
>
> B. At service schools where advanced training requires substantial out-of-classroom study.
>
> C. Where the designated primary mission as determined by the Secretary of the Service in question, necessitates shift-type, or around-the-clock, operations (Mickel 1954:38,310).

The directive also set the gross barracks floor area per enlisted male should not exceed an average of 125 square feet (Mickel 1954:310). This gross area, however, included common spaces such as toilets and break rooms; the actual sleeping space per enlisted male was closer to 65 square feet.

The centralization of planning within the Department of Defense encouraged standardization in UPH designs and eliminated installation-specific designs. The adoption of long-range planning, construction priorities, and the development of standardized plans was vitally important with the newly-developed competitive system for military construction. Plans for installations and individual facilities began to reflect the competitive nature of funding priorities with strictly utilitarian designs and configurations. The process was described in the following way:

> In March of 1954 the Department of Defense issued basic guidance to the Army concerning the type of projects to be included [in the budget]. In addition, the Department of Defense established a general order of precedence for the various types of projects.
>
> At the installation level, projects were carefully developed in accordance with a master plan established to insure maximum efficiency in our construction program over a period of years. This master plan closely conforms to currently

> accepted industrial site planning practices, adapted to the military's particular need.
>
> In each case we asked ourselves, "Does this project fulfill an absolute need in the most efficient way?" The answer was either "Yes," or the project was eliminated or drastically revised. Furthermore, the whole program was later reviewed in the Office of the Secretary of Defense and in the Bureau of the Budget to insure that it was fully in line with the programs of the other services (U. S. Congress, House 1955:3607).

4.3 Unaccompanied Personnel Housing for Enlisted Personnel

With the FY 1950 Military Construction program, Congress established a construction ceiling of $1,700 per person for barracks construction, but by the mid-1950s lower than expected re-enlistment rates raised concerns among military commanders. Dissatisfaction over housing conditions for enlisted personnel was considered a major factor in this drop, and threatened the viability of maintaining an effective military force. To counteract this effect, quality-of-life factors were integrated into housing design. During 1955 and 1956, military leaders began developing new plans for barracks design while remaining cognizant of the Congressional mandates on cost. Important features included increased privacy by removing large common sleeping areas, brick exteriors, acoustical tile ceilings in day rooms and lounges, built-in closets, plaster walls, mechanical ventilation, and the use of vinyl or terrazzo flooring in lobbies (U.S. Congress, House 1957:64).

One method of accomplishing these improvements while working within existing cost limitations was to apply the statutory allocation of space to only those areas housing personnel. Areas once included in the gross square-footage calculations, such as mess halls, administration, and supply areas were removed from the architectural planning. Initially, this division was accomplished by physically separating non-housing elements from the barracks, and new standard plans were developed in the late 1950s to reflect the paradigm (Marshall 1974:343; U.S. Congress, House 1973:612).

Housing areas constructed in the 1960s included not only barracks, but all the buildings necessary to support troop housing. Chapels, dispensaries, mess halls, and clubs were integrated into the overall plan, and housing areas were generally independent of the main post. This comprehensive approach to the design and construction of housing areas did have budgetary implications, however. Rather than request an appropriation only for housing, the military was forced to request additional funding for all ancillary buildings; generally, Congress approved this at the same time as the barracks.

The per person cost ceiling was raised by Congress in 1968 to $2,300, and again in 1971 to $3,200 (Marshall 1974: 344). These were based largely on inflation, and the quality of life improvements desired by the Department of Defense were not fully implemented.

The Military Selective Service Act of 1967 was suspended in 1973 and for the first time since prior to World War II, the military returned to an all-volunteer force. To make a military career attractive to young people and encourage re-enlistment of enlisted personnel, initiatives such as increased pay, better housing, modern hospitals, and quality food service were created (U.S. Congress, House 1971:20). This prompted a nationwide construction program emphasizing the objectives of personnel satisfaction, effectiveness, and retention in the All-Volunteer Military. Methods of accomplishing this were incorporated into the architectural program with increased privacy and improved security (Gribble 1974:2).

Some of the architectural solutions were as simple as the installation of partitions into existing barracks, or as large as full-scale modernization, including new heating and air-conditioning systems, painting, new furniture, and bathroom upgrades. Some plans called for the complete reconfiguration of the building with new internal circulation systems and the elimination of open squad rooms with the construction of two or four person rooms (Gribble 1974:2; U.S. Congress, House 1971:296-302). Beginning in 1971, enlisted personnel in grades E-2 through E-4 were afforded 90 square feet each, with the maximum for higher grades set at 145 square feet; trainees remained at 72 square feet. (U.S. Congress, House 1971:90-91).

While the modernization of existing buildings accounted for a major investment in improving the living conditions of enlisted personnel, new plans were developed that incorporated even greater privacy. Many of the changes in plans were prompted by a questionnaire that solicited opinions from enlisted personnel. The Assistant Secretary of Defense told Congress that the building designs were:

> … coordinated with Surgeon General, for example, with the desires, as we know them, through questionnaires, and through surveillance and evaluation of reports, that the occupants do, indeed, prefer some privacy, naturally. I guess the ultimate would be one man per room, but that is unlikely. We just couldn't afford it. So the design that is popular now within the three services is a design that permits three men per room with a shared bath (U.S. Congress, House 1971:98).

In 1977, President Ford froze major military construction budgets, and prompted a long-range assessment of unaccompanied personnel housing needs at Department of Defense installations (*Air Force Times* [AF Times] 31 January 1977:4). It was later reported by the General Accounting Office, that the cost of barracks construction could be reduced by up to $1

million if standard plans were adopted by all three military services. The Department of Defense responded to this report by stating that the needs of each service were different and required some flexibility in design to serve specialized requirements (AF Times 27 March 1978:10). One argument made by the Army was that it preferred to house entire companies in the same building as it promoted a more unified and cohesive unit; however, this proved true in rare circumstances as the General Accounting Office reported that only 38 percent of a typical Army unit were assigned to UPH by unit affiliation; married personnel, bachelor officers, senior non-commissioned officers, and most female personnel lived in separate quarters or off base (AF Times 27 March 1978:10).

In 1980, the existing UPH program was criticized by the House Appropriations Committee that found "there needs to be a more carefully controlled central process for assuring that unaccompanied personnel are housed in modern housing that meets both health and safety standards." The Department of Defense was directed to investigate conditions in UPH and develop a plan for long-term improvement of living conditions (AF Times 14 July 1980:18). This led to the Army Housing Committee undertaking a study of barracks in 1981. The need to control access, locate company administration and supply in close proximity to the barracks, provide four-person rooms, and simplify barracks design were among the recommendations made by the committee (McCormick 1986:498). In 1982, Congress directed that a single, uniform design for barracks be completed in 1983. Any construction within the armed services completed during and after Fiscal Year 1984 was to follow the new design (AF Times 18 October 1982:3).

The barracks design that resulted from the Congressional directive was issued by the Secretary of Defense in 1983 and became the standard for the armed services. Referred to as the "2+2" plan for enlisted personnel, it provided increased privacy by arranging the rooms in suites of two. Each room housed two persons and had private closets with a shared bath. Some designs allowed for a shared kitchenette located in an entry hall. The approach to standardization of this plan varied among the services. The Army approach allowed for design discretion related to operational needs and site conditions. The basis of design guidance relied on graphic and narrative data with general layouts, space allocations, and functional relationships. The basic modules described by design guidelines could be arranged in multiple configurations dependent upon number of troops, and mission requirements (McCormick 1986:498). The Navy took a similar approach, choosing not to issue building plans, but instead to offer general guidance that could be modified to particular need. In areas with lower construction costs, this could include provisions for additional common areas, kitchenettes, and lounges.

4.4 Bachelor Officers' Quarters (BOQs)

Although the construction ceiling cost for BOQs established in 1956 was over four times the amount for enlisted personnel, $7,000, it was viewed as inadequate to retain personnel (Shoemaker 1966:5). Norman Paul, Assistant Secretary of Defense for Manpower, asked Pentagon construction officials to review standards for officers' housing:

> We are mindful of the detrimental morale and adverse psychological effect (inadequate) dwellings … have, particularly on younger officers. We are for a steady and comprehensive program of new and desirable construction within intelligent limits of our resources, but not losing sight of the fact that we are really saving very little when we lose highly qualified and expensively trained personnel through failure to spend adequately on suitable housing for their use (AF Times 30 October 1963:3).

Paul's vision for officers' housing included a private bath for each room, and if costs allowed, a kitchen (AF Times 30 October 1963:3). Despite a 35 percent rise in construction costs between 1956 and 1963, the cost limitation on bachelor housing was not raised to $10,000 per officer until 1966; a further increase to $11,000 in 1970 accounted only for inflation and provided little additional funding for improved quarters (Shoemaker 1966:5; Horowitz 1970:1). One type that was developed, and built in large numbers during the late 1960s, was commonly referred to as a motel type. This design satisfied many of Secretary Paul's requests, and could be constructed within cost constraints. The type took two forms: an internal corridor and an external balcony. Generally, the character-defining features of these two-story, brick buildings included wide eaves, wrap around balconies in the open plan, and large windows in the corridor variant. Some rooms were arranged with a living room, bedroom, bathroom, and a kitchen, while other units had a combined living room/bedroom and bathroom. Some of these latter rooms also included kitchenettes.

4.5 Transient Housing

Although many installations maintained a small inventory of visiting enlisted and officers' housing, the concept of transient housing did not emerge until the late Cold War era. Army officials disagreed over the construction of guest housing or transient quarters, arguing that they took business from local hotels. These arguments were countered by those in favor of low-cost, temporary housing for families and individuals at installations (Association of the United States Army [AUSA] 1985:5,9). The same basic plans used for bachelor officers' were applied to transient housing, and many guest houses were converted officers' quarters. The first building specifically designed and constructed as transient housing was completed at Ft. Knox in June

1970 (AF Times 3 June 1970:20). This two-story, brick motel featured a center block that was slightly higher in elevation than the flanking wings. A concrete canopy sheltered the central lobby entrance. Central hallways provided access to the rooms. The rooms provided bedroom and bathroom facilities for four family members. Additional support for construction of new transient quarters emerged in the late 1980s. This support was likely a result of the military build-up during the Reagan administration.

4.6 Unaccompanied Personnel Housing Property Types Naval Air Station North Island and Naval Amphibious Base Coronado

4.6.1 Introduction

Various examples of UPH facilities are found at Naval Air Station North Island and Naval Amphibious Base Coronado. The most common room configuration appears to be 1+1. The 1+1 type has two, one-bed, rooms with a shared bath. Some feature a shared kitchen or lounge area. The 2+2 type is also found, with two, two-bed, rooms and a shared bath. The 1+0 configuration is one room with one bed, and a private bath. There also are 2+0 configurations, with one bedroom shared by two people who also share a bath, and 3+0 with three people in one room with a shared bath. One dormitory features a large open room with bunk beds, lockers, and a communal bath.

Building types include 1, 2, 3, and 4 level buildings with interior or exterior corridors, and high-rises. Most feature interior courtyards and centralized communal lounges and laundry facilities. Materials include poured concrete, concrete block, brick, structural tile, and stucco.

During the early 1960s, the Navy completed a review of bachelor personnel housing in order to assess "livability." This review and eventual study of housing was performed because living quarters were seen as an important contributor to morale. As a result of the study, "the Chief of Naval Operations earmarked approximately 25 percent of each year's construction funds for the upgrading of the Navy's bachelor housing inventory" (Department of the Navy Facilities Engineering Command [NAVFAC] 1974:534). New designs were created for barracks, and in 1966 it was proposed that approximately "40,000 enlisted personnel spaces" would be modernized or newly constructed, "at an estimated cost of $57 million" (Marshall 1974:533). At the same time, modernization and new construction also was planned "for nearly 2,000 bachelor office quarters personnel spaces at an estimated $7.5 million." The designs featured "increased privacy and livability" by proposing rooms housing one to four men, rather than the previous barracks with large open areas and numerous occupants (Marshall 1974: 533). This trend is evident at both the Naval Air Station and the Naval Amphibious Base. Several buildings were constructed during this period, and several underwent renovations for improvement and increased

privacy. One example is Building G, which originally featured an open dormitory room (Plate 4). In 1960, renovation plans were created and included the installation of portable room dividers (Plate 5). The dividers were made of asbestos panels, which were sanded and painted. They were 6'-2" in height. Twelve dividers were placed in each room to create 12 individual spaces. Each space consisted of a single or double bunk, a chest of drawers, double lockers, and a writing table, and a chair. Double rooms were 154 square feet, and single rooms were 126 square feet; residents continued to use shared lavatory space. Other buildings that featured open dormitory rooms were renovated in a similar fashion.

4.6.2 Naval Air Station North Island

The oldest personnel housing buildings at North Island include the building designated as "F-troop," which according to the 2007 real property inventory was constructed in 1919 and Building I, which according to the 2007 real property inventory was constructed in 1933 (Table 2) (U.S. Navy Real Property Inventory 2007).

Table 2. UPH Construction at NASNI

	1919	1933	1942	1953	1968	1969	1973	1974	1975	1984	1985	1986	1987	Total
UPH	1	1	1	1	4	4	1		1	2	5	1	1	**23**
Ancillary					1	1		1		1				**4**
Total	**1**	**1**	**1**	**1**	**5**	**5**	**1**	**1**	**1**	**3**	**5**	**1**	**1**	**27**

Both feature Spanish Revival characteristics, with arched arcades, ceramic tile, courtyards, terra cotta roofs, and stucco. "F-troop" is located in the northern part of the Naval Air Station (Plates 6 - 8). It originally had small individual rooms, interior corridors and courtyards (Plate 9), communal baths and was used for bachelor officers' quarters (Plate 10). The building featured one larger room designated "dormitory," another room designated "classification office," and a small reception hall at the main entrance. According to historic plans of the building, the attic was used as a trunk room (Plate 11) and the building had steward rooms and a storage room.

Plans indicate that F-troop was modified around 1957. During this time the interior of the building was painted, new piping was installed, and floors were refinished. New plumbing fixtures also were installed. During this time, the building had one-man rooms offering square footage ranging from 165 square feet to 225 square feet. By this time, quarters for enlisted personnel were not to exceed 125 square feet. The size of the rooms at F-troop indicates that they were used for officers' housing. According to the 1957 plan, the original steward rooms and storage room were converted into a barber shop and snack bar.

By the late 1960s plans were underway to renovate the building to accommodate officer personnel motel quarters. The dormitory and classification office were combined to create a lounge (Plate 12), and communicating doors were introduced between some of the individual quarters. Partitions were constructed in the restrooms, new shower heads were installed, and the building was painted. Later, some of the rooms were converted to suites. Today, the majority of the building holds individual rooms (Plates 13 and 14) with communal baths. The lounge has been divided into two rooms, with one serving as an open lounge and the other serving as a CPO Club (Plate 15). The building has a total capacity of 39 and is used for permanent Geographical Bachelors housing.

Building I is located in the southeast portion of the Station. It is a one-story building with an interior courtyard (Plates 16 and 17). According to historic plans of the building, the Public Work's Office handled the design and construction. The building has a shared lounge with exposed ceiling beams, wood paneling, and a fireplace (Plate 18). It originally was u-shaped with a courtyard. In 1937, an extension to the building was approved that made the building square in plan, with an interior courtyard (Plates 19 and 20). According to plans available from construction, the extension held units with four beds (Plate 21). Four-person rooms originally were 360 square feet, allowing 90 square feet for each person. This was larger than the 65 square foot average sleeping space established later in the 1950s. Each room had a chest of drawers, closets, and a table. Today, the original portion of Building I contains suites with sitting rooms and private baths (Plates 22 - 24). The extension to the building holds 1+1 units, with interior corridors (Plates 25 and 26). In 1979, the building was improved as part of a "Congressional Add-on." This work included painting all rooms, and installing "government provided" carpet in all living rooms and bedrooms. An eleven bay parged one-story garage with a terra cotta hip-roof is associated with the building (Plate 27). Building I has a total capacity of 16 and is used for transient VIP suites. The rooms are approximately 482 square feet in size. The extension has a total capacity of 34 and is used for transient personnel. Rooms range in size from 338 to 345 square feet in size.

Quarters constructed during World War II include Building 864, which was constructed in 1942. Building 864, constructed as Bachelor Officers' Quarters, is a complex of four one-story rectangular sections with a central lounge (Plates 28 - 31). The buildings are modest in style and feature open breezeways connecting each section (Plate 32). The buildings originally incorporated interior corridors (Plate 33). The quarters were single units with a shared bath, and a Petty Officers club was created near the central lounge area. The rooms originally were approximately 208 square feet in size. According to available plans of the building, it underwent

renovations in 1968 , at which time the rooms were painted and the interior corridors rem oved. Exterior doors were added to each room, and some of the rooms were combined to enlarge living space. Richa rd John Lareau and Associates of San Diego served as architect s for the project. Lareau also was as sociated with bache lor quart ers a t Naval Air Station I mperial Be ach and at Camp Pendleton. In 1975, the Pett y Officer's Club was renovated. The cocktail area was extended, a new dance floor was installed, a nd n ew light fixt ures were provided. Jalo usie windows were also installed. Currentl y, quarters include suites (Plates 34 and 35) with a sitti ng room, small kitchen, bedroom, and private bath as well as single rooms with only a bedroom and bath. The com plex has exterior entries to each of the indivi dual quarters, and shared laundr y facilities. The building currently is used for tr ansient personnel and has a total capacity of 104. The rooms are 249 square feet in size.

In 1945, WA VES barracks were constructed at NASNI. The buildings no lon ger exist, but historic photos indicate that they were frame and clad in asbestos tiles (Plate 36).

Several quarters were construc ted duri ng the Col d War Era at Naval Air Station North Island. In 1953, Buildi ng 572 was constructed east o f "I Building." It is a three-story bui lding with individual suites that include a small kitc hen area, sitting room , and private bath (Plates 37 and 38). Th e building has interior corridors. It has been modified, has a rectangular footp rint, and is modest in style. The buildin g currentl y is used for transient personnel and has a total capacity of 49. The rooms are approximately 468 square feet in size.

During 1968 and 1969, several UP H faciliti es were construct ed at North Island. Buildings 773, 774, 775, 776, and 777 were constructed as a complex in the eastern portion of the station. The residential buildings are fo ur stori es tall and have sq uare footprints (Buildings 774, 775, 77 6, and 777) (Plates 39 and 40) and a central lounge (Building 77 3) (Plates 41 and 42). Originally constructed with four-person and two- person rooms, the four buildi ngs currently have 1+1 and 2+0 configuratio ns, so me of which incl ude kitchens (Plate 43). A nearly identical complex, also constructed at this tim e (Buildings 778, 779, 780, 781, 782) (Plate 44), is lo cated nearby. Both complexes currently are used for permanent party personnel. The total capacity of both complexes is 260. Buildin gs 774, 776, 779, 780, 781 an d 782 have 135 square foot room s. Building 775 has 249 square foot ro oms. Buil ding 777 has ro oms that range i n size fro m 132 to 135 square feet.

Plans provide more information on the origin al finis hes and spatial lay out for Buildings 778, 779, 780, 781, 7 82 (Plates 45 and 46). The bu ildings are co nstructed of plastered con crete block. Each room originally featured four wa rdrobes, four beds, and a lam inated desk. The rooms had baseboard heating. Four-m an room s in the buildin g were approximately 306 s quare

feet, allowing approximately 76.5 square feet for each person. Some four-person rooms had 288 square feet of space, allowing 72 square feet of space for each person. Another four-man room type was approximately 260 square feet in size allowing 65 square feet for each person. Two man rooms provided 160 square feet, allowing 80 square feet for each person. The square footage of each of these room types exceeded the average 65 square foot sleeping space noted in the 1950s.

During the 1970s, additional UPH facilities were constructed at North Island, near those constructed in 1968 and 1969. Building 783 was constructed in 1973 (Plates 47 and 48) and Building 787 was constructed in 1975 (Plates 49 and 50). The buildings are nearly identical. Plans indicate that Building 787 was designed by the architecture firm Delawie, Macy, and Henderson of San Diego. Both complexes are composed of an irregular grouping of concrete block high-rise buildings with rectangular footprints. These motel-type buildings have exterior corridors and are modest in style. Windows include louvered aluminum sashes as well as casements. The units are arranged as four 2+0 (Plate 51) clustered around a shared sitting room (Plate 52). The buildings both have interior courtyards, with a one-story building that has a lounge, offices, and laundry facilities (Plate 53). Both complexes currently are used for permanent party personnel and have a total capacity of 252. Rooms in both buildings are 255 square feet in size. Also during the 1970s, a mess hall was constructed (Building 794) (Plate 54). The mess hall is located nearby, east of the UPH facilities. This one-story concrete building is considered a support building for the UPH facilities. It has an open seating area with tables, a large kitchen, and several food lines.

Additional UPH facilities also were constructed at North Island during the 1980s. In 1984, Buildings 1500, 1501, and 1502 were constructed west of the 1960s and 1970s UPH facilities. Building 1500 is a one-story building with a lobby, registration desks, and laundry facilities (Plates 55 and 56). Buildings 1501, 1502, and 1505 are clustered around Building 1500 (Plate 57). Buildings 1501 and 1502 are identical on the exterior (Plate 58). They are motel-type three-story concrete buildings. Building 1501 has suites (Plate 59) and 1502 has 2+0 room configurations (Plate 60). The buildings have exterior corridors. Building 1501 and Building 1502 both have a total capacity of 68. Building 1505 is two-stories and also has exterior corridors (Plate 61). It was not completed until 1987; plans indicate that 1505 was designed by Platt Architects, Inc. of San Diego. The units originally were 1+1, but have been converted to two room suites or 1+0 units (Plate 62). Buildings 1501, 1502, and 1505 are all used for transient personnel. Buildings 1501 and 1502 are 252 square feet in size. Building 1505 has 444 square foot rooms.

In 1985 and 1986, Buildings 1521, 1522, 1523, 1524, 1525, and 1526 were constructed. Buildings 1521 and 1522 are four-stories in height (Plates 63 and 64), whereas Buildings 1523 (Plate 65), 1524, 1525, and 1526 are three-stories tall. Each has a rectangular footprint. The buildings have suites, with a sitting room (Plate 66), small kitchen, bedroom, and private bath. All of the buildings are motel-type, with exterior corridors. Recent modifications include the application of rusticated concrete block and new parging. Building 1521 currently has a total capacity of 42; building 1522 has a total capacity of 40. Buildings 1523, 1524, and 1526 have a total capacity of 18 each. Building 1525 has a total capacity of 16. All of the buildings are currently used for transient personnel. Rooms in Buildings 1521, 1523, 1524, 1525, and 1526 are 465 square feet in size. Building 1522 has 269 square foot rooms.

4.6.3 Naval Amphibious Base Coronado

The early buildings of the base were temporary construction. Many of these were demolished during the 1950s to make room for permanent construction. Building 300, considered a support building, was constructed in 1954 (Plate 67) (Table 3). It serves as a mess

Table 3. UPH Construction at NAB Coronado

	1954	1956	1957	1958	1969	1970	1987	1989	Total
UPH		1	1	1	4	3	1	2	13
Ancillary	1				2				3
Total	1	1	1	1	6	3	1	2	16

hall for the surrounding UPH facilities. The one-story building has a hip-roof and a rectangular footprint. It has an open seating area with tables (Plate 68), a large kitchen (Plate 69) and several food lines (Plate 70). Some seating is separated for particular ranks (Plate 71). Food lines are also separated, with one solely dedicated to those on base training in SEAL Basic Underwater Demolition.

Building 302 was constructed in 1956 and has an irregular footprint (Plate 72). The building features one, two, and three-story sections and is modest in style (Plate 73). It has interior corridors. A community lounge and check-in desk are located on the first level (Plates 74 and 75). The building has four open bay dormitory style rooms and communal toilets and showers (Plate 76) (Plate 77). The largest room is 3,658 square feet in size and has a capacity of 624. One room is 1,680 square feet in size and has a capacity of 24. Another is 1,440 square feet and has a capacity to hold 20 beds. Two additional rooms are 803 square feet in size. One has a capacity of 10; the other has the capacity of 40. The building currently has a total capacity of 718 and is used for transient personnel. The following year, Building 303 was constructed directly southwest of 302. The building nearly is identical to Building 302 (Plates 78 and 79). Quarters

in the building include 3+0 units, 2+0 units, and 1+0 units. Building 303 currently has a total capacity of 397.

In 1958, Building 500 was constructed. It is a three-story wire-cut brick building with exterior corridors (Plates 80 and 81). It has a u-shaped footprint, and originally featured 1+1 unit configurations. Today, rooms have been combined to create suites with a sitting area (Plate 82). A lobby area is located on the first floor of the building (Plate 83). Additional construction of UPH took place during the late 1960s and early 1970s. Building 500 currently has a total capacity of 148 and is used for transient personnel.

Building 504 was constructed during the 1960s (Plates 84 and 85). It is a concrete high-rise, with an attached one-story lobby area (Plate 86) with a restaurant. Some of the rooms within the building, on floors 8 and 9, have been converted into suites with sitting room, kitchen, bathroom, and balcony (Plate 87). Other units are 1+0, with a refrigerator. The building has interior corridors and elevators (Plate 88). Common sitting areas are located on each floor near the elevators (Plate 89). The building has a total capacity of 160 and is used for transient personnel, duty rooms, and DV suites.

In 1969, Buildings 320, 321, 322, and 323 were constructed (Plates 90 - 92). They are all l-shaped four-story concrete block buildings with interior corridors grouped into a complex. The architecture firm Hendrick and Mock of San Diego designed the complex. Buildings 320, 321, and 322 have a common lounge and laundry on each floor (Plates 93 and 94). The units are 2+0, with shared bath and refrigerator (Plate 95). Building 323 has two types of units. Some are 1+0 (Plate 96), with private bath and a small kitchen area (Plate 97). Other units are 1+1 with a shared kitchen area and bath, or 2+0 with a shared kitchen (Plate 98). Each floor has communal laundry facilities, and a community kitchen (Plate 99) is located on the first floor. According to available plans, the immediate area around the buildings was extensively landscaped. Curved sidewalks connect the buildings, and landscaping includes flowering trees and bushes (Plate 100). Buildings 320 and 321 currently have a total capacity of 132 and are used for permanent party personnel. Building 323 has a total capacity of 71 and also is used for permanent party personnel. In the center of the complex are buildings 324 and 325. Building 324 is a one-story building with a CPO mess (Plates 101 and 102). Building 325 is a boiler building (Plate 103).

The following year, Buildings 328 and 329 were constructed (Plates 104 and 105). The buildings are identical to one another, and are similar in style to Buildings 320 – 323. Buildings 328 and 329 have a total capacity of 93 and are used for permanent party personnel. Each building has interior corridors (Plate 106), a shared laundry, shared lounges, community kitchens (Plate 107), and communal toilet facilities. The units are 2+2 (Plate 108) and 1+1 with shared

kitchen and laundry (Plates 109 and 110). Also in 1970, an additional UPH facility was constructed for the SEALs, Building 602. The building has a square footprint; it was inaccessible due to security sensitivity. The building has a total capacity of 164 and is used for Basic Underwater Demolition students.

Construction during the 1980s included another UPH facility in the SEAL area. The building has a total capacity of 457 and is used for Basic Underwater Demolition students. Building 505 was constructed in 1989. It is a high-rise, with projecting three sided bay windows (Plates 111 and 112). A common lounge area is provided on each floor (Plate 113). Units are 1+0 with a small kitchen area (Plate 114) and are accessed by interior corridors. The building has a total capacity of 214 and is used for transient personnel as well as senior officers.

5.0 Summary

Naval Air Station North Island and Naval Amphibious Base Coronado both have a variety of UPH facilities. Earlier construction, such as F-troop and Building I, feature decorative embellishments not reflected in later construction. Buildings constructed during the Cold War were modest in style, with a much more modern streamlined appearance. UPH facilities constructed during the Cold War also were larger than their predecessors and had the appearance of a motel or a high-rise apartment building.

The interiors of UPH facilities constructed during the Cold War also reflect a change in theory. This change included the division of rooms, introduced in the 1960s. Open style dormitory rooms were partitioned, and in some cases small rooms that once slept four were combined to create 1+0 and 2+0 suites. Communal kitchens and lounges were also more prevalent during the Cold War, improving the livability of personnel. UPH facilities at Naval Air Station North Island and Naval Amphibious Base Coronado reflect the changes in policies related to the arrangement and living space provided by the Navy. Both installations continue to provide housing to enlisted officers, transient officers, geographic bachelors, and visiting officers.

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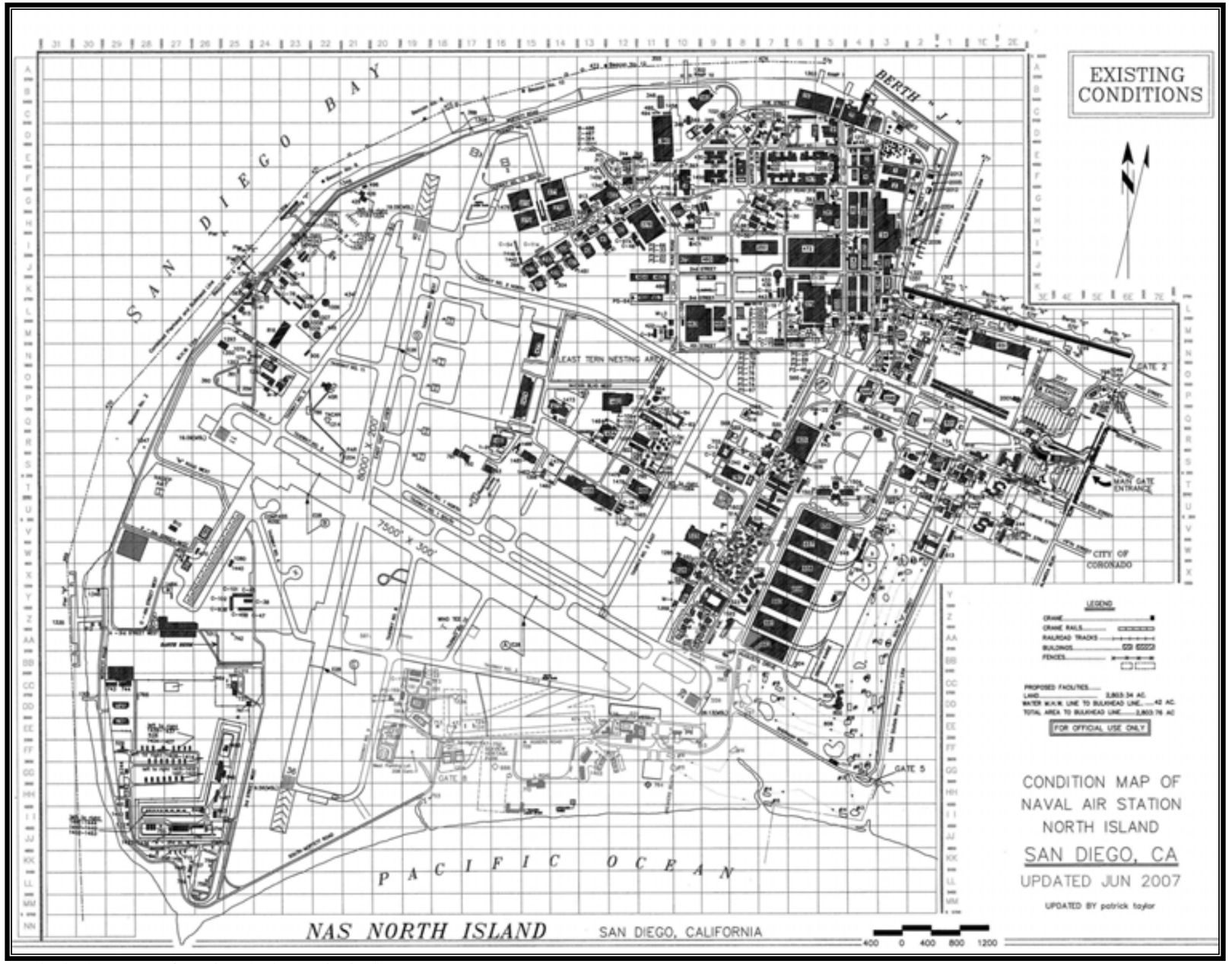

Plate 1. 2007 Map of Naval Air Station North Island (Courtesy of Naval Air Station North Island)

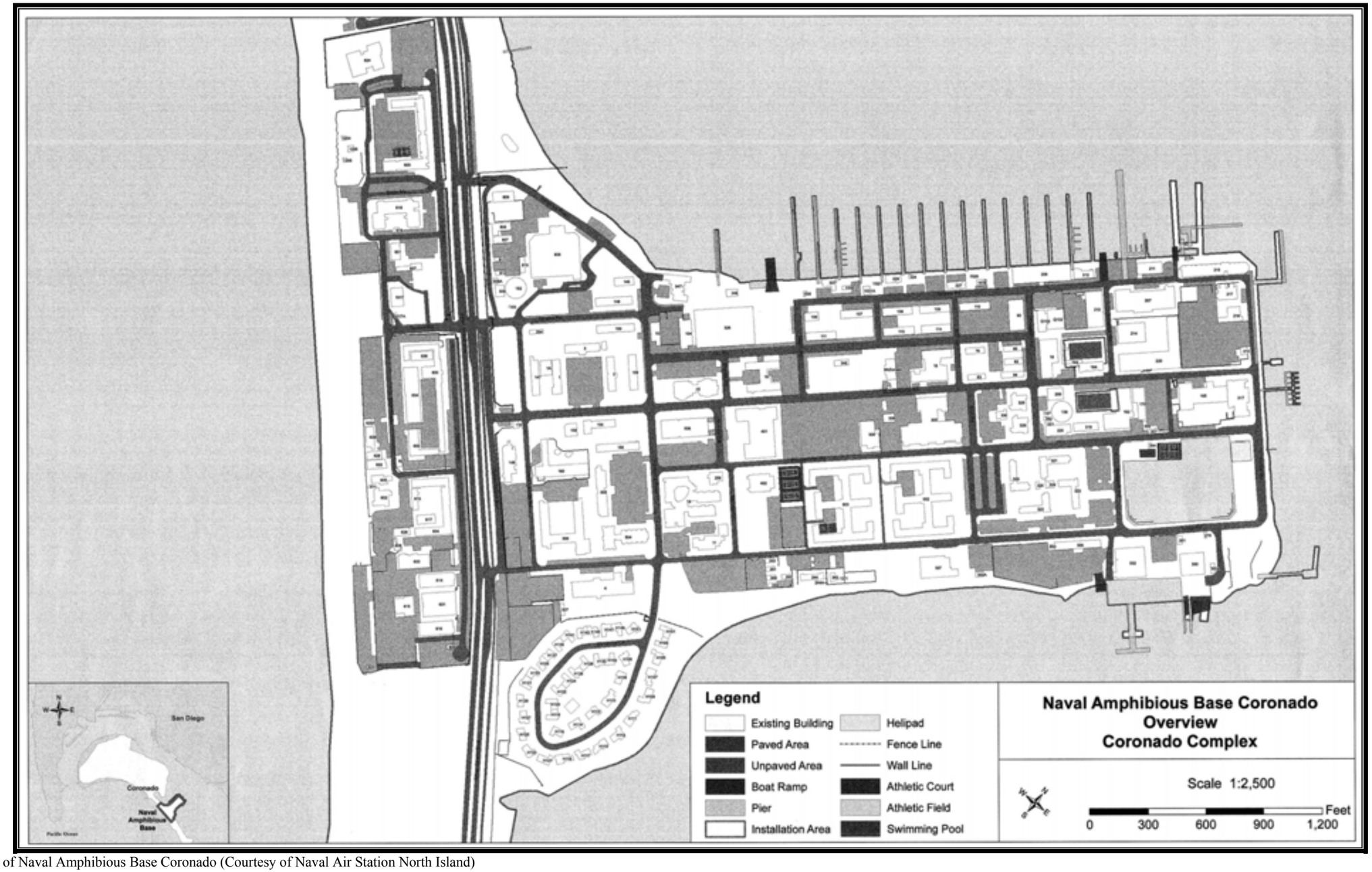

Plate 2. Map of Naval Amphibious Base Coronado (Courtesy of Naval Air Station North Island)

Plate 3. 1941 Aerial Map, Naval Air Station North Island (Courtesy of NAVFAC Archives)

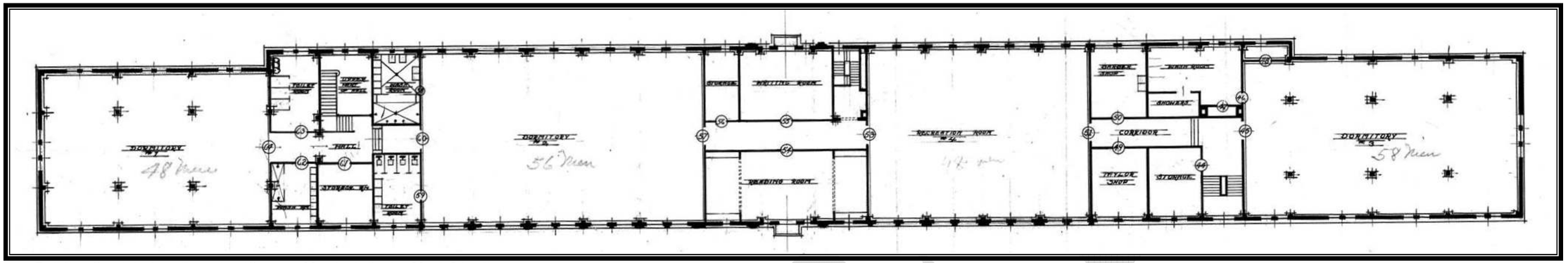

Plate 4. Building G, original configuration (Courtesy Naval Air Station North Island)

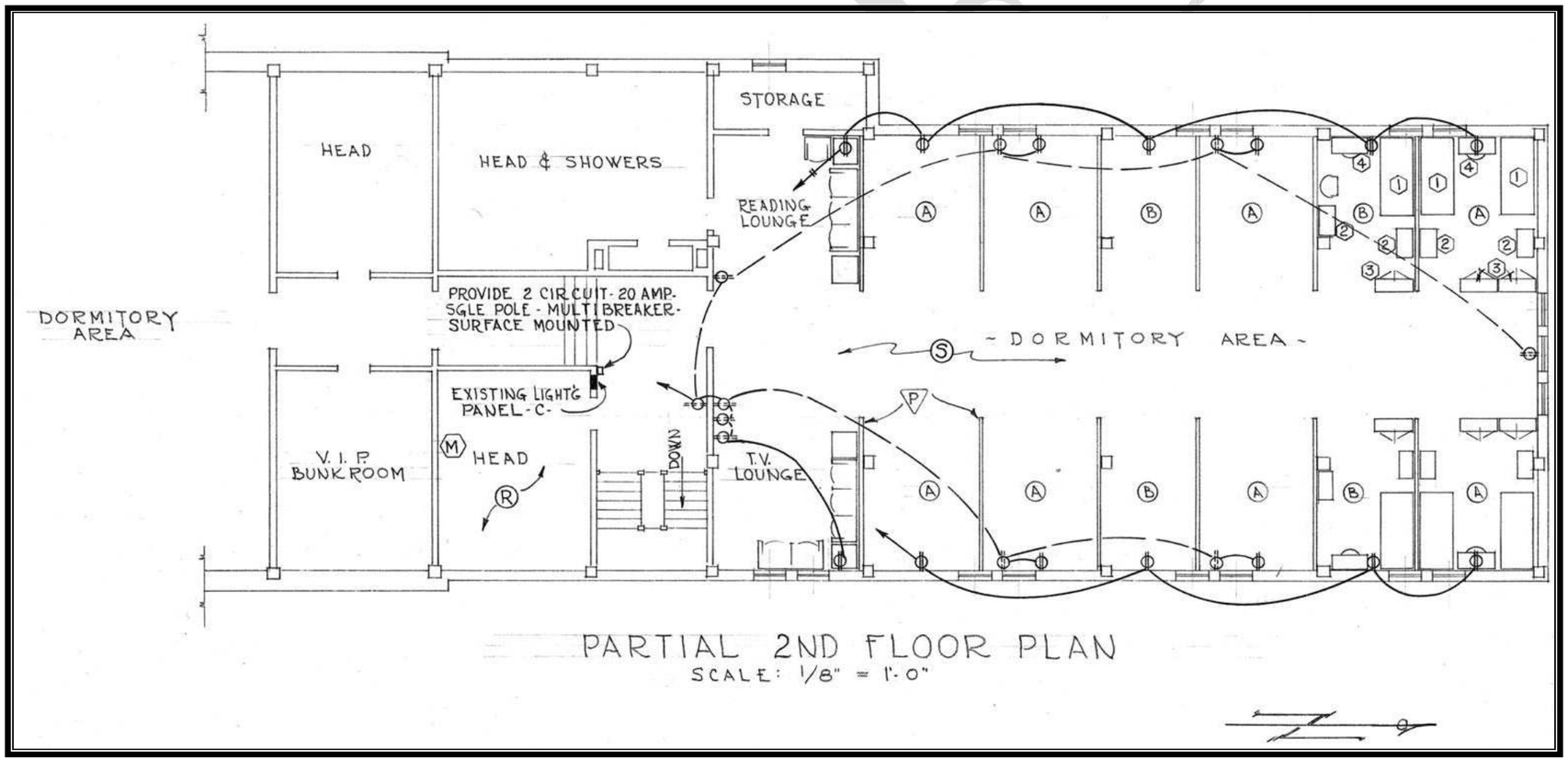

Plate 5. Building G, 1960 renovations (Courtesy Naval Air Station North Island)

Plate 6. F-Troop Building, east and north elevations (Photo by RCGA, Inc., 2007)

Plate 7. F-Troop Building, main entry (Photo by RCGA, Inc., 2007)

Plate 8. F-Troop Building north elevation (Photo by RCGA, Inc., 2007)

Plate 9. F-Troop Building, interior courtyard (Photo by RCGA, Inc., 2007)

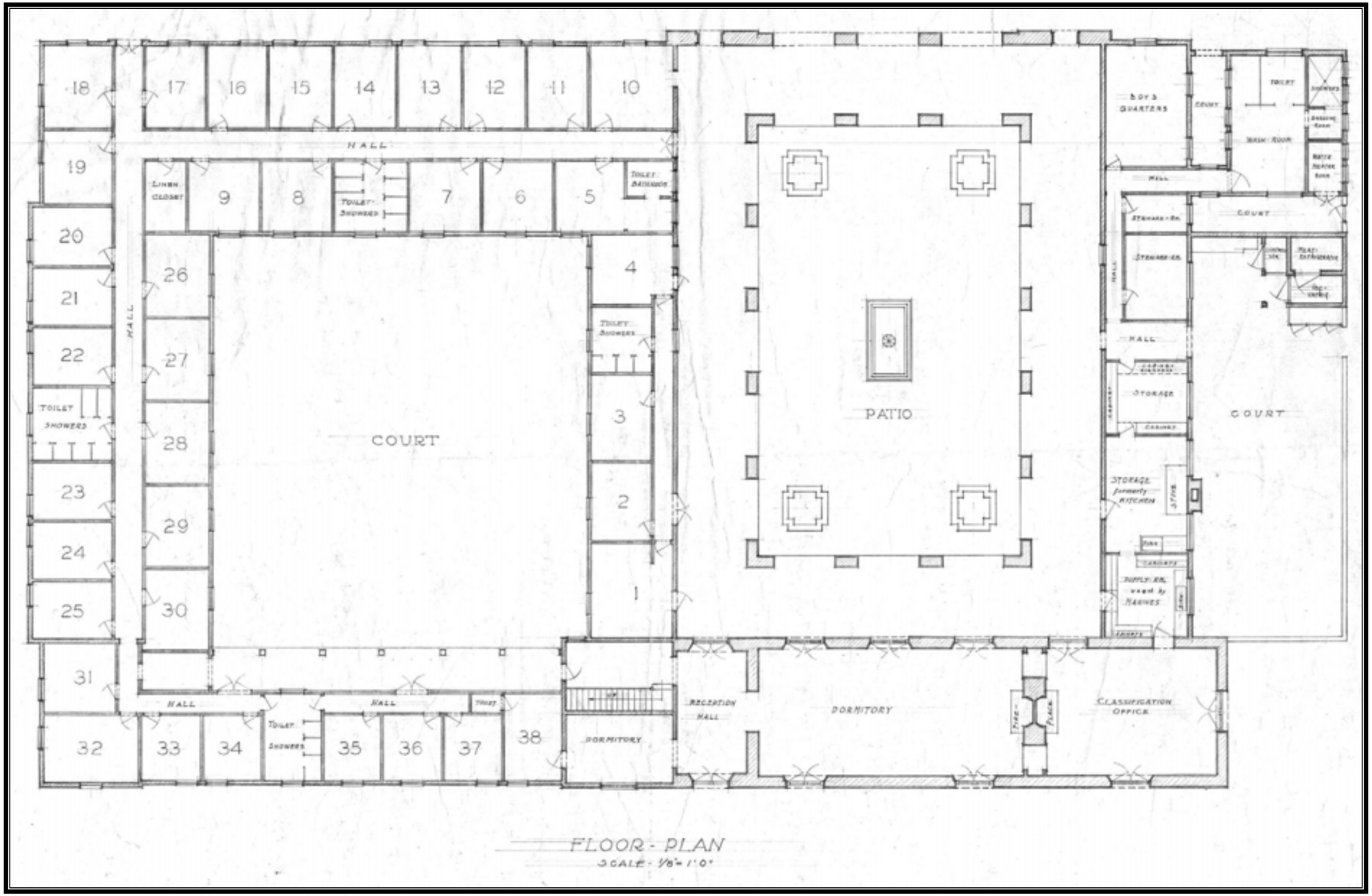

Plate 10. F-troop building, 1943 (Courtesy of Naval Air Station North Island)

Plate 11. F-Troop attic (Photo by RCGA, Inc., 2007)

Plate 12. F-Troop Building, community lounge (Photo by RCGA, Inc., 2007)

Plate 13. F-Troop Building, typical room (Photo by RCGA, Inc., 2007)

Plate 14. F-Troop Building, communal shower/restroom (Photo by RCGA, Inc., 2007)

Plate 15. F-Troop Building, entry to CPO Club (Photo by RCGA, Inc., 2007)

Plate 16. Building I, entry detail (Photo by RCGA, Inc., 2007)

Plate 17. Building I, overview of courtyard (Photo by RCGA, Inc., 2007)

Plate 18. Building I, community lounge (Photo by RCGA, Inc., 2007)

Plate 19. Building I, courtyard of extension (Photo by RCGA, Inc., 2007)

Plate 20. Building I extension, south elevation (Photo by RCGA, Inc., 2007)

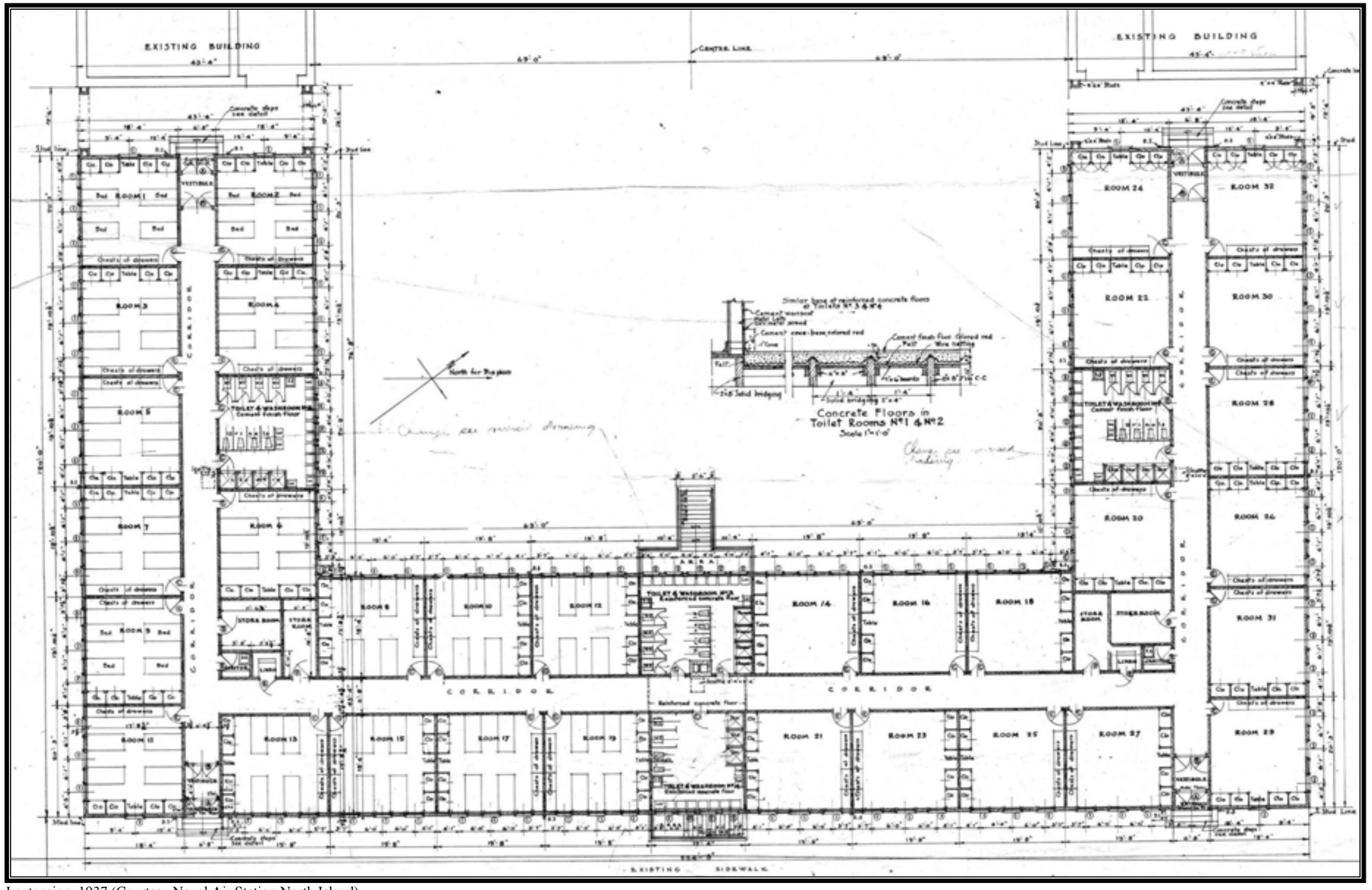

Plate 21. Building I extension, 1937 (Courtesy Naval Air Station North Island)

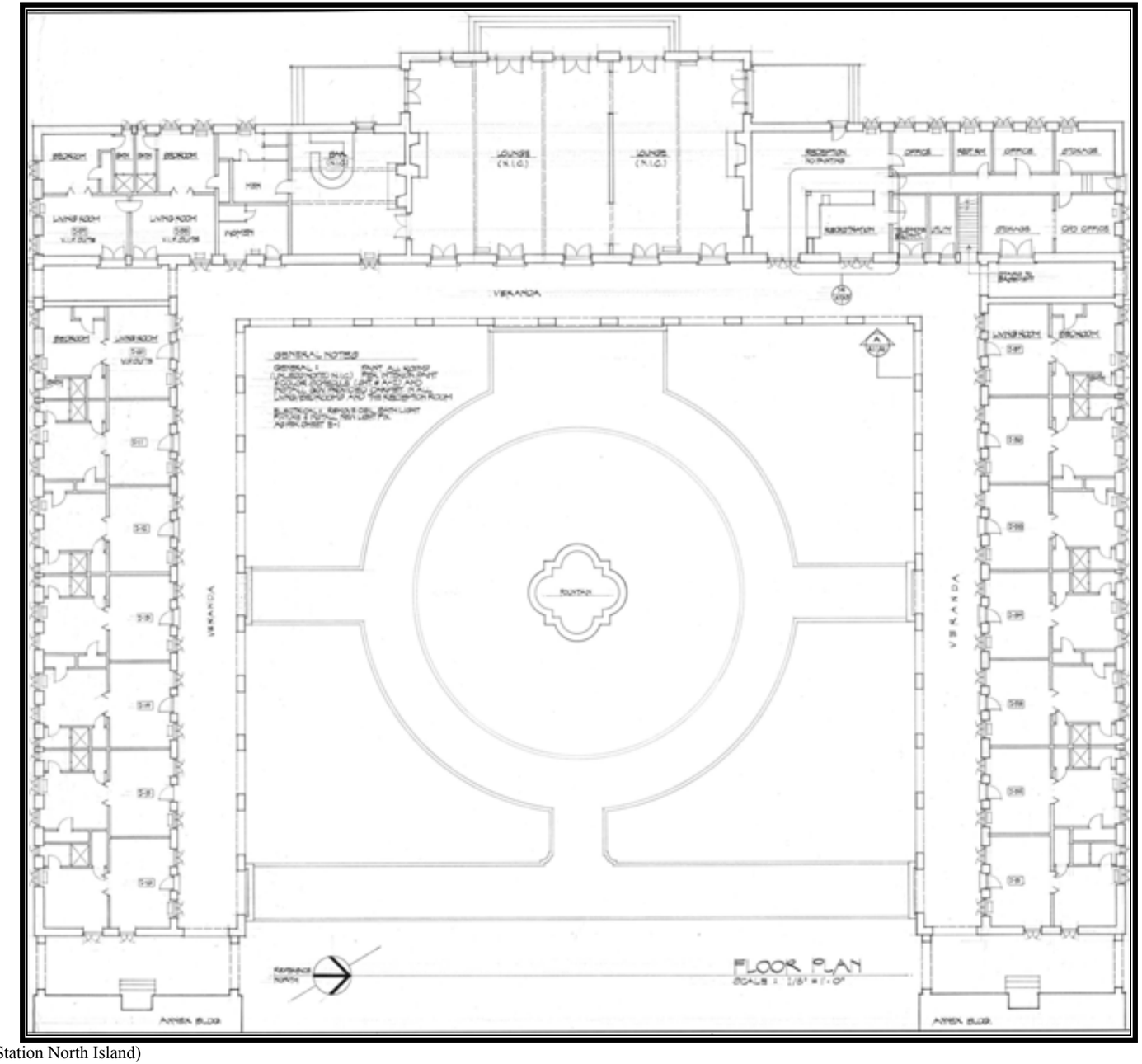

Plate 22. Building I, 1977 (Courtesy of Naval Air Station North Island)

Plate 23. Building I, suite bedroom (Photo by RCGA, Inc., 2007)

Plate 24. Building I, suite living room (Photo by RCGA, Inc., 2007)

Plate 25. Building I extension, 1+1 room (Photo by RCGA, Inc., 2007)

Plate 26. Building I extension, interior corridor (Photo by RCGA, Inc., 2007)

Plate 27. Building I, associated garage (Photo by RCGA, Inc., 2007)

Plate 28. Building 864, overview looking northeast (Photo by RCGA, Inc., 2007)

Plate 29. Building 864, looking east (Photo by RCGA, Inc., 2007)

Plate 30. Building 864, central lounge exterior (Photo by RCGA, Inc., 2007)

Plate 31. Building 864, central lounge interior (Photo by RCGA, Inc., 2007)

Plate 32. Building 864, detail of breezeway (Photo by RCGA, Inc., 2007)

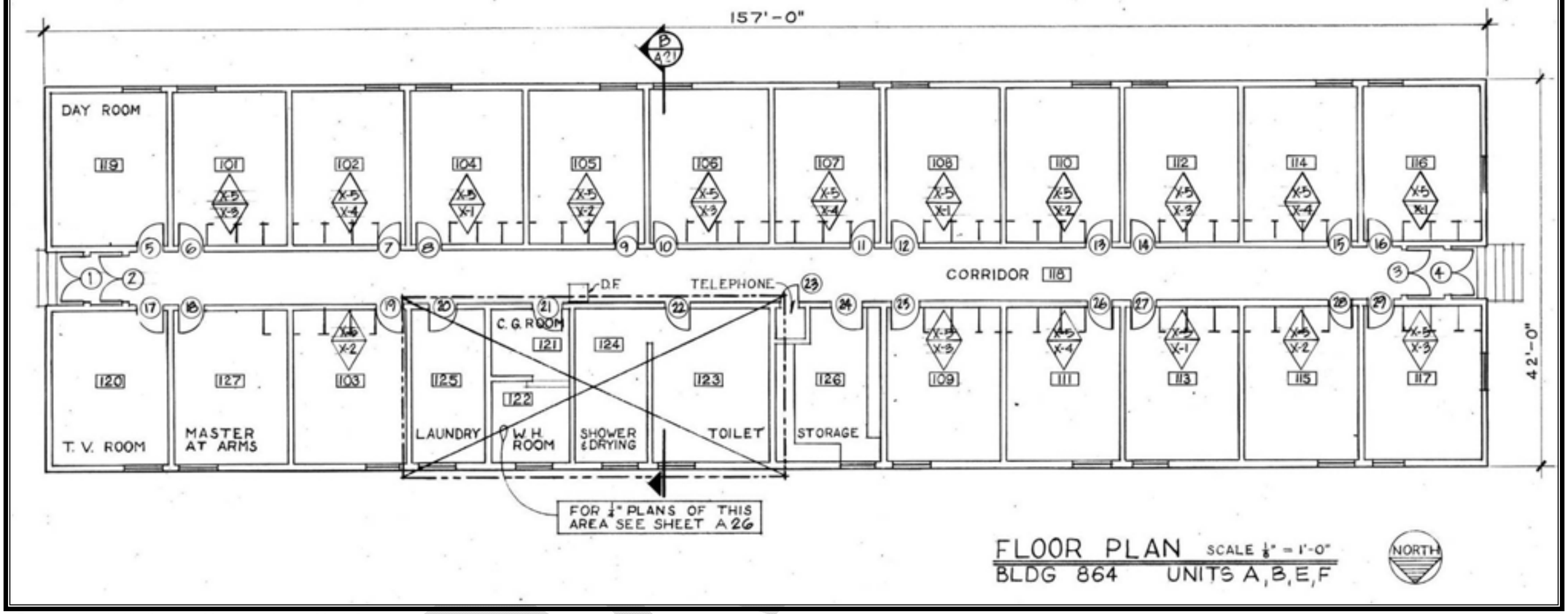

Plate 33. Building 864, 1968 (Courtesy Naval Air Station North Island)

Plate 34. Building 864, typical suite living room (Photo by RCGA, Inc., 2007)

Plate 35. Building 864, typical suite bedroom (Photo by RCGA, Inc., 2007)

Plate 36. EMQ/WAVES Barracks, Naval Air Station North Island, 1945 (Courtesy of NAVFAC Archives)

Plate 37. Building 572, east elevation looking southwest

Plate 38. Building 572, typical suite kitchen (Photo by RCGA, Inc., 2007)

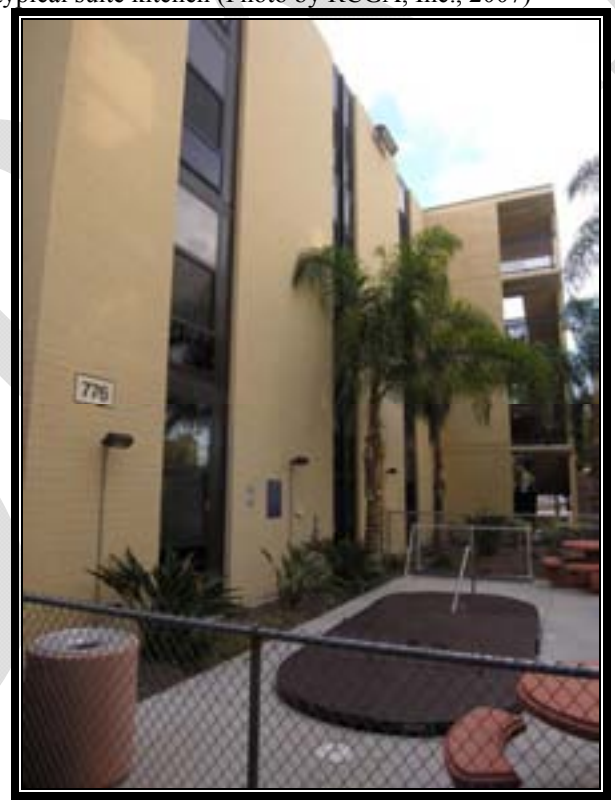

Plate 39. Building 776, east elevation (Photo by RCGA, Inc., 2007)

Plate 40. Building 776, east elevation view west (Photo by RCGA, Inc., 2007)

Plate 41. Building 773, central lounge (Photo by RCGA, Inc., 2007)

Plate 42. Building 773, central lounge, exterior (Photo by RCGA, Inc., 2007)

Plate 43. Building 776, typical kitchen in 1+1 (Photo by RCGA, Inc., 2007)

Plate 44. Building 781, east and south elevations view northwest (Photo by RCGA, Inc., 2007)

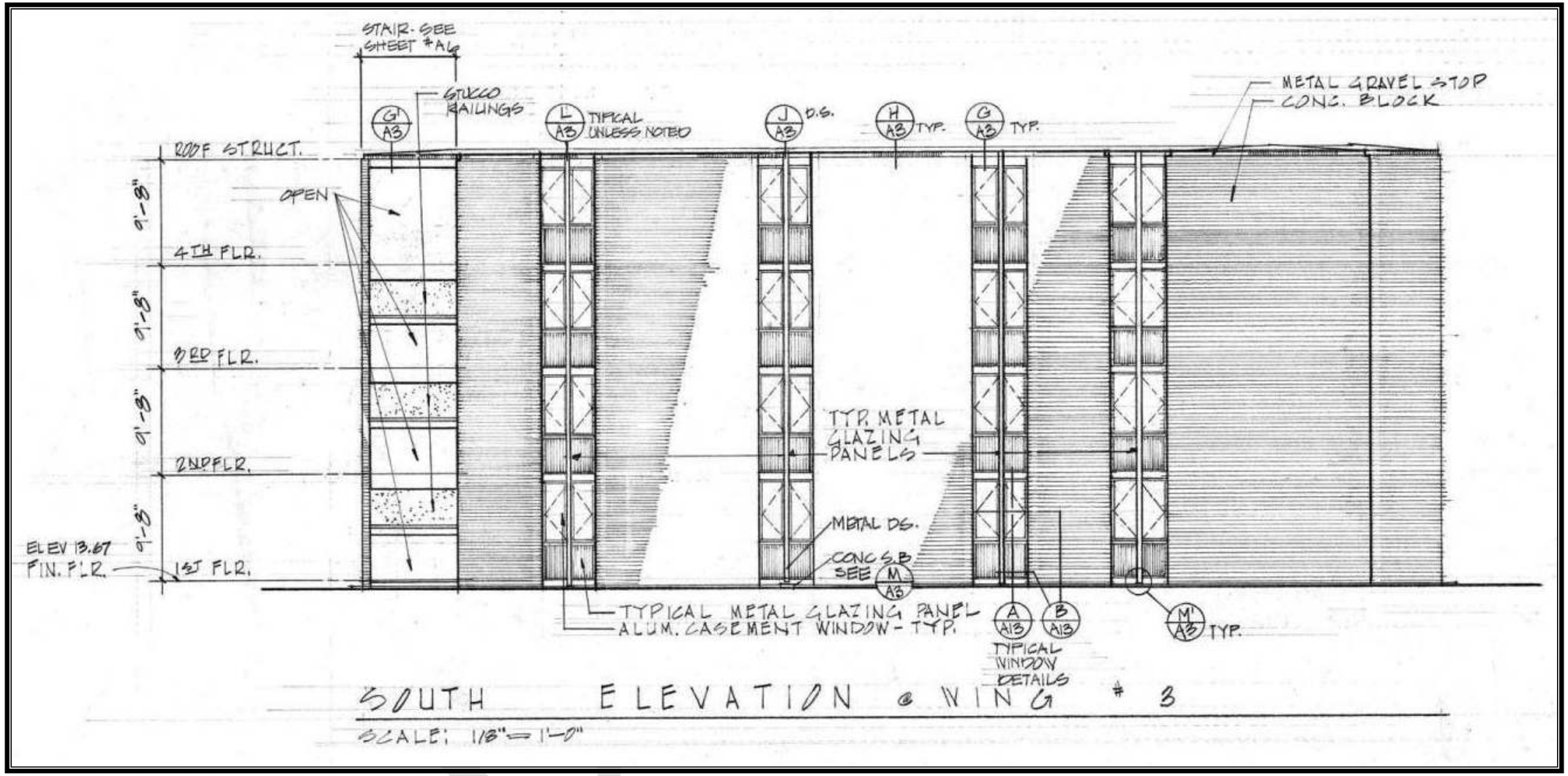

Plate 45. Buildings 778 thru 782, 1967 (Courtesy Naval Air Station North Island)