

U.S. NAVAL BASE, PEARL HARBOR, AUXILIARY MACHINE &
ELECTRIC SHOP
(U.S. Naval Base, Pearl Harbor, Naval Shipyard, Facility No. 214)
Avenue G near Fifth Street intersection
Pearl Harbor
Honolulu County
Hawaii

HABS HI-499
HI-499

HABS
HI-499

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN BUILDINGS SURVEY
PACIFIC GREAT BASIN SUPPORT OFFICE
National Park Service
U.S. Department of the Interior
1111 Jackson Street
Oakland, CA 94607

HISTORIC AMERICAN BUILDINGS SURVEY

U.S. NAVAL BASE, PEARL HARBOR, AUXILIARY MACHINE AND ELECTRIC SHOP (U.S. Naval Base, Pearl Harbor, Shipyard) (Facility No. 214)

HABS No. HI-499

Location:

Avenue G near Fifth Street intersection
Pearl Harbor Naval Base
City and County of Honolulu, Hawaii

HABS
HI-499
(page 1)

This building falls within the UTM coordinates of the Pearl Harbor Naval Shipyard as defined in the location section of the overview report HABS No. HI-483. This building's UTM coordinates are: Zone 4 607660E 2361180N.

Significance:

Facility 214 is located within the Pearl Harbor National Historic Landmark. It is associated with the expansion of facilities at Pearl Harbor during the World War II period, as part of the Contractors Pacific Naval Airbases (CPNAB) contract. It was also built in response to the need for more essential repair facilities in the Pearl Harbor Area.

Description:

Facility 214 is a permanent one and two story slab on grade, poured-in-place reinforced concrete shop structure. The building is rectangular in plan and is three bays wide (51'-0" central section with two, 30'-0" flanking sections) and nineteen bays long (each bay having a span of 24'-0"). This building has a tripartite roof structure with a higher double-height central section. The central double-height section is open to the roof structure with a ceiling height of 49'-0". The two side bays have two levels with a total height of 38'-0". Its overall dimension is 121'-0" x 457'-0" with a total of 56,419 square feet on the first floor and 30,562 square feet on the second floor. Later renovations converted the six bays at the southwest end of the central section to a three-story space to accommodate calibration rooms and other smaller office-type spaces.

The central roof section was built as a low-pitch ($\frac{1}{2}$ to 12 slope) concrete slab over 1" shiplap sheathing supported by wood and steel trusses. The wood trusses run in the longitudinal (northeast-southwest) direction and the steel trusses run in the shorter transverse (southeast-northwest) direction. These trusses are supported by 2'-0" x 2'-0" concrete columns that sit on concrete footings. The roofs of the flanking sections are poured-in-place concrete shed roofs that are supported by concrete beams. All three roof sections have bituminous built-up roofing and are enclosed with parapet walls.

**U.S. NAVAL BASE, PEARL HARBOR, AUXILIARY MACHINE AND ELECTRIC SHOP
(U.S. Naval Base, Pearl Harbor, Naval Shipyard)
(Facility No. 214)
HABS No. HI-499 (Page 2)**

The floor system does not follow the original drawings. The building was originally designed with a 4"-thick asphalt concrete floor slab, however, it was actually built with wood block flooring. Wood block flooring, or Nicolson pavement, has been noted in other Shipyard buildings, and in one such instance was set atop a concrete base, and had mastic filler between the blocks. It could not be verified if the base beneath this flooring system was also concrete, or if mastic was used. Each individual wood block measures 3½" x 7½" x 6" in size. Wood block is an absorbent material; especially beneficial in areas where oil and other types of lubricant can spill and leak, which may be the reason for its use. Today, only portions of the original floor remain. As the wood started chipping and failing due to age, the blocks were taken up and replaced with concrete. Train tracks run about 50'-0" down the middle of the central bay, and were once used for easy loading and unloading of materials when the rail system was in use. They are no longer in use today.

Fenestration is symmetrical and utilitarian, with multi-light steel clerestory windows along the upper walls of the central section, and along both the first and second levels of the side bays. Although the windows are uniform and simplistic in appearance, the large number and great expanses that they cover create a balanced and pleasing building façade. Most of the windows on the flanking side sections were in-filled with CMU block when the building was renovated in 1970.

The most notable architectural element is the shape of the large front door opening, which is somewhat like a single stepped ziggurat form. The front door repeats the shape of the opening. It is a single sliding door constructed of wood boards placed at a diagonal orientation with a side-hinged flap that can open independently of the rolling door. The side flap is 34" wide and conforms to the outline of the opening up to the first step. Within this flap is a small 26" wide steel wicket door for pedestrian traffic.

Several other elements worthy of note can be found in this building. These elements include the ten bridge cranes located throughout the facility. Two main central cranes (one no longer in use) with a capacity of 60,000lbs span the width of the central bay and two cranes with 6,000lb capacity are located on each level of both side bays. The I-flange J-shaped track supports used for the bridge cranes on the side flanking bays are interesting architectural elements. In addition, two gun mounts that were used to repair the large munitions guns used during World War II are located on the first floor in the central bay. A large freight elevator was installed in 1970 to access the building's three floors. Later in that decade, a large pressure tank was built on the first floor and is still utilized today.

Historical Context:

A letter written to the Secretary of the Navy from Captain E.D. Almy, USN, on April 29, 1940, concerning the development of the

**U.S. NAVAL BASE, PEARL HARBOR, AUXILIARY MACHINE AND ELECTRIC SHOP
(U.S. Naval Base, Pearl Harbor, Naval Shipyard)
(Facility No. 214)
HABS No. HI-499 (Page 3)**

Fourteenth Naval District, states, "The amalgamation of inside and outside machine shops as now obtains at Pearl Harbor [Shop 31 (Facility 67)] is an ideal arrangement at the small yard. However, the two shops now employ some 535 men and prospective increased employment warrants a study of the early separation of these shops. Experience at larger yards has demonstrated the necessity of separate shops in the interest of more efficient administration and concentration of specialization" (Almy et al. 1940:14). The letter suggests that preparations for the construction of a new separate outside machine shop, Facility 214, had begun in 1940.

This building was originally constructed as an Auxiliary Machine and Electrical Shop for the Fourteenth Naval District, Pearl Harbor. The original drawings dated January 25, 1943, were prepared by the Bureau of Yards and Docks. The construction of this building was completed in the same year.

In 1945, alterations including the installation of test pits for gun mounts, air conditioning, and a new electrical system for the facility were executed. The drawings are entitled Ordnance Shop Bldg. 214, indicating that the building name was modified during World War II.

Later in 1970, the third floor was expanded, the first floor west side bay was enclosed, and the second floor was redesigned with most of the windows on that level being removed and filled with concrete masonry block. An elevator and new stair were built and the entire facility was outfitted with a new mechanical system. A two-story addition holding what was called a "CRF vault" and a "Mechanical Instrument Calibration Facility" on drawings was also constructed on the northwest side of the building. The drawings for this renovation are entitled Electronic Shop and Mechanical Instrument Calibration Facility, indicating that the name of the facility was again changed between 1945 and 1967. In 1979, through MCON (Military Construction) Project P-212, Electric Shop Modernization, the 1970 two-story addition was demolished and replaced with Facility 214A on the northwest side of Facility 214.

With the shift in the type of arms used by the military from a largely mechanical make to a largely electronic make in the past years, the building use has been adjusted as necessary. The current name of the building is an Electrical/Electronics Shop. It is used as the Central Tool Shop 06 for the Pearl Harbor Shipyard.

For an overview of the Naval Shipyard see HABS No. HI-483.

Sources:

The original drawings for this building are on microfilm at NAVFAC PAC Plan Files.

A copy of the 1949 Property Record Card for Facility 214 can be obtained from the Naval Shipyard Facilities Files.

**U.S. NAVAL BASE, PEARL HARBOR, AUXILIARY MACHINE AND ELECTRIC SHOP
(U.S. Naval Base, Pearl Harbor, Naval Shipyard)
(Facility No. 214)
HABS No. HI-499 (Page 4)**

The historic photograph is located at the NAVFAC Archives, Port Hueneme, Kidder-Smith Photos (1945), N188-12, Ordnance Shop.

Almy, E.D. Capt., Cmdr. J.J. Manning, and Lt. Cmdr. Philip Lemler. Memo to the Secretary of the Navy, via the Commandant, Fourteenth Naval District, dated 29 April 1940. In files of National Archives and Records Administration, San Bruno, RG 181, 14th ND District Staff Hdqtrs., General Correspondence [Formerly Classified] 1936-1944, Box 1, Folder 1-1(1) Developments.

Furlong, William R. Memo from the Commandant, 14th Naval District to the Chief of the Bureau of Ships regarding the Navy Yard, Pearl Harbor Extension of Essential Repair Facilities dated January 16, 1942. In National Archives, San Bruno, RG 181, 14th ND, District Staff Hdqtrs., General Correspondence [Formerly Classified] 1936-1944, Box 1, Folder A1-1 (7) Developments.

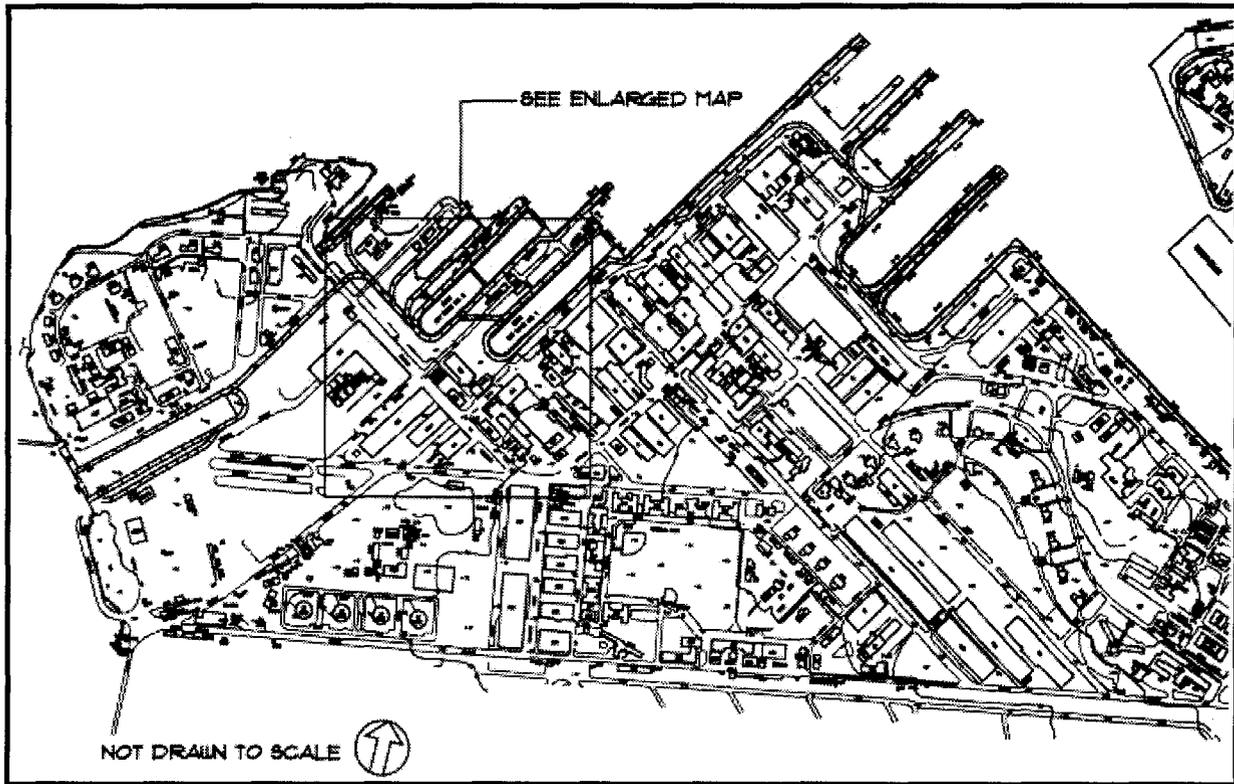
Nakahara, Kenneth. Historic Resources Inventory Form for Bldg. #214, 1980. Prepared by Pearl Harbor Naval Shipyard, Facilities Planning & Programming for State Historic Preservation Office.

Project Information:

Photo documentation and recordation of this facility by the Navy has been done in anticipation of future alterations or potential demolition of the structure. Photo documentation of historic facilities by the Navy assists in expediting planned undertakings by having the documentation prepared prior to taking actions. Also, photo documentation assists the Navy in gaining more information about its historic facilities to assist in making proactive management decisions. This project is being supervised by Jeffrey Dodge, Historical Architect, NAVFAC Hawaii. The photographic documentation was undertaken by David Franzen, photographer. Lorraine M. Palumbo, Ph.D., Architectural Historian, of Mason Architects, Inc. prepared the written documentation. The field work and research for this report was conducted between the dates of July 2001 and December 2001.

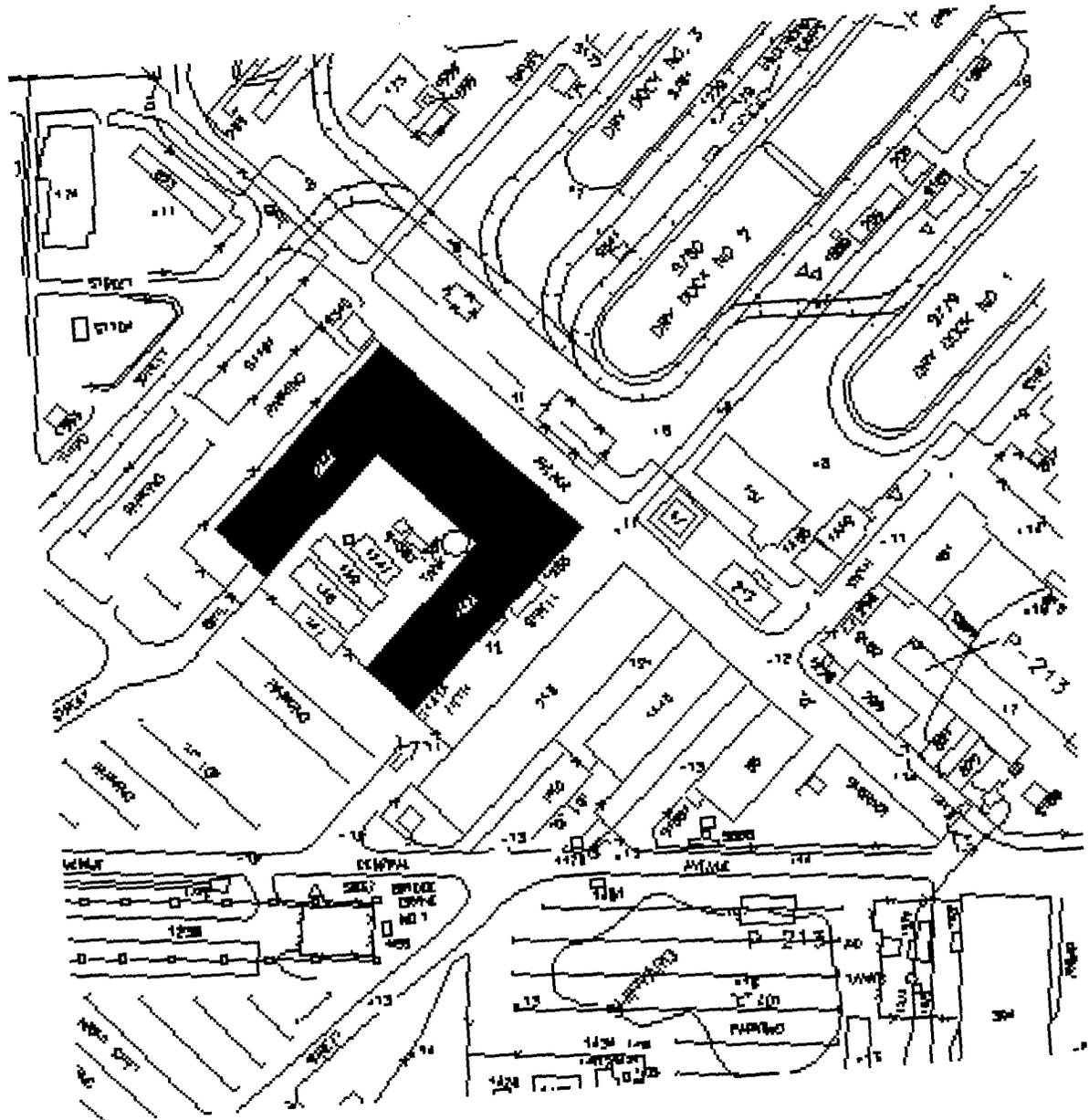
U.S. NAVAL BASE, PEARL HARBOR, AUXILIARY MACHINE AND ELECTRIC SHOP
(U.S. Naval Base, Pearl Harbor, Naval Shipyard)
(Facility No. 214)
HABS No. HI-499 (Page 5)

Shipyard Map



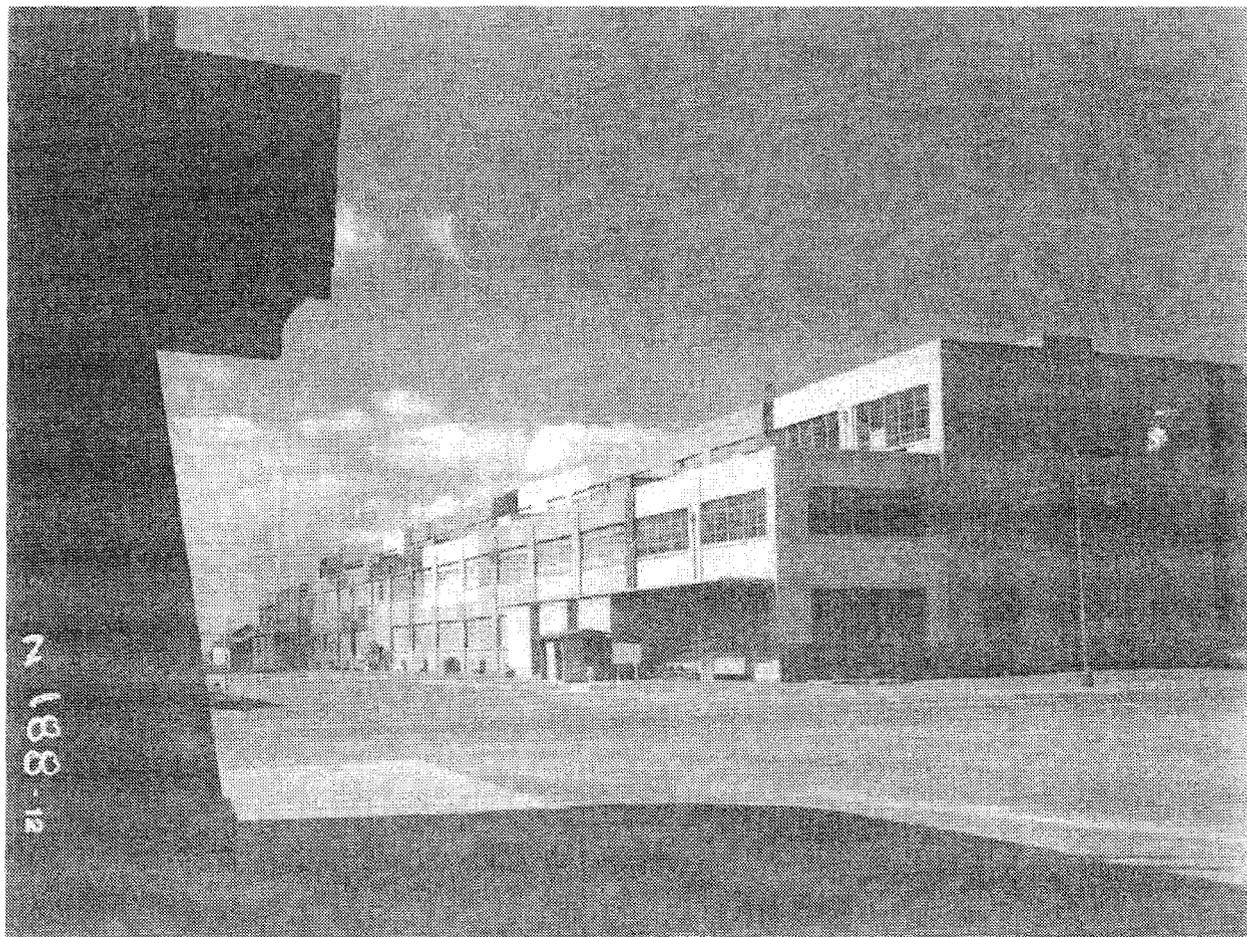
U.S. NAVAL BASE, PEARL HARBOR, AUXILIARY MACHINE AND ELECTRIC SHOP
(U.S. Naval Base, Pearl Harbor, Naval Shipyard)
(Facility No. 214)
HABS No. HI-499 (Page 6)

Enlarged Area Map (reduced, not to scale)



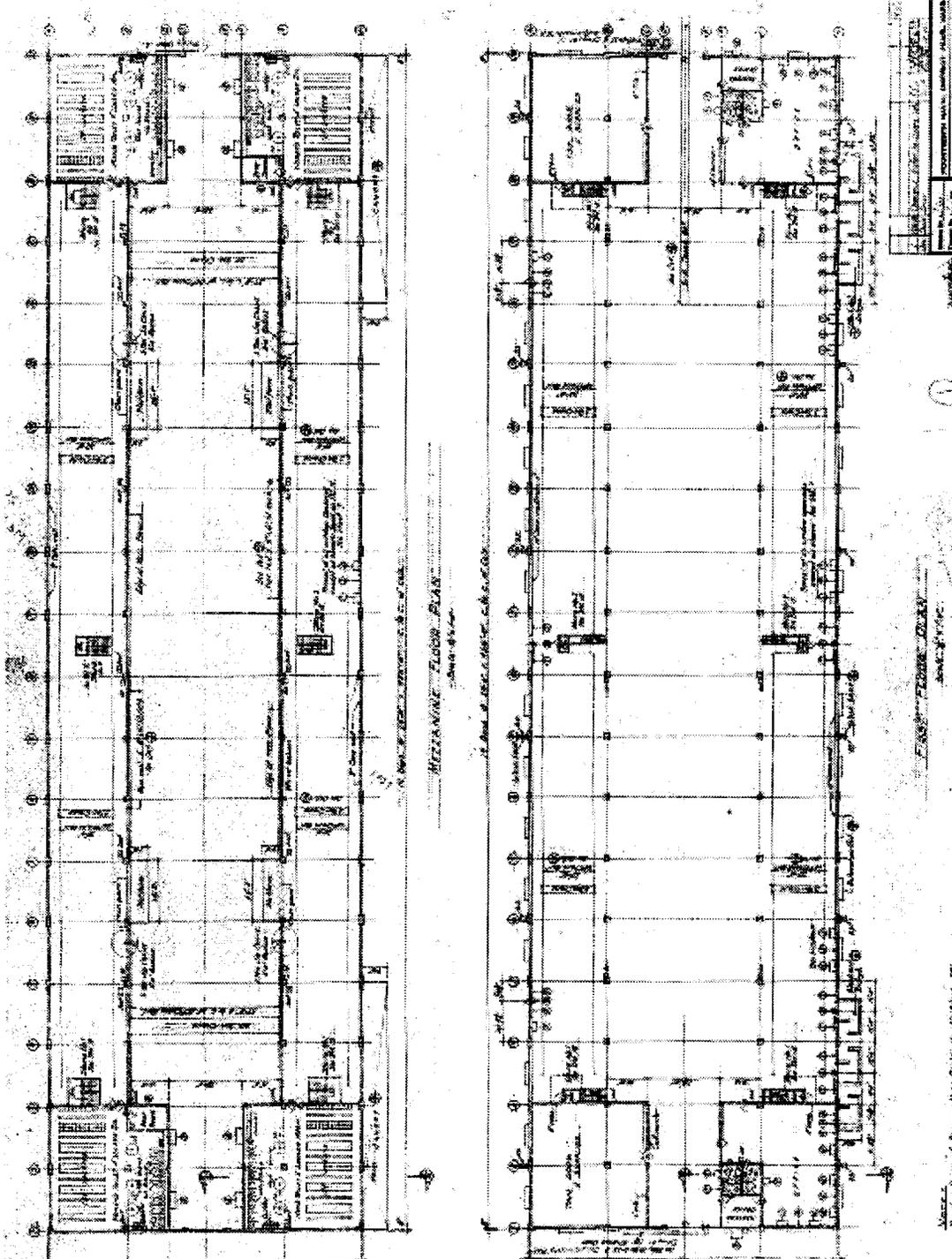
**U.S. NAVAL BASE, PEARL HARBOR, AUXILIARY MACHINE AND ELECTRIC SHOP
(U.S. Naval Base, Pearl Harbor, Naval Shipyard)
(Facility No. 214)
HABS No. HI-499 (Page 7)**

Facility 214, Front View of Ordnance Shop (Dated 1945)



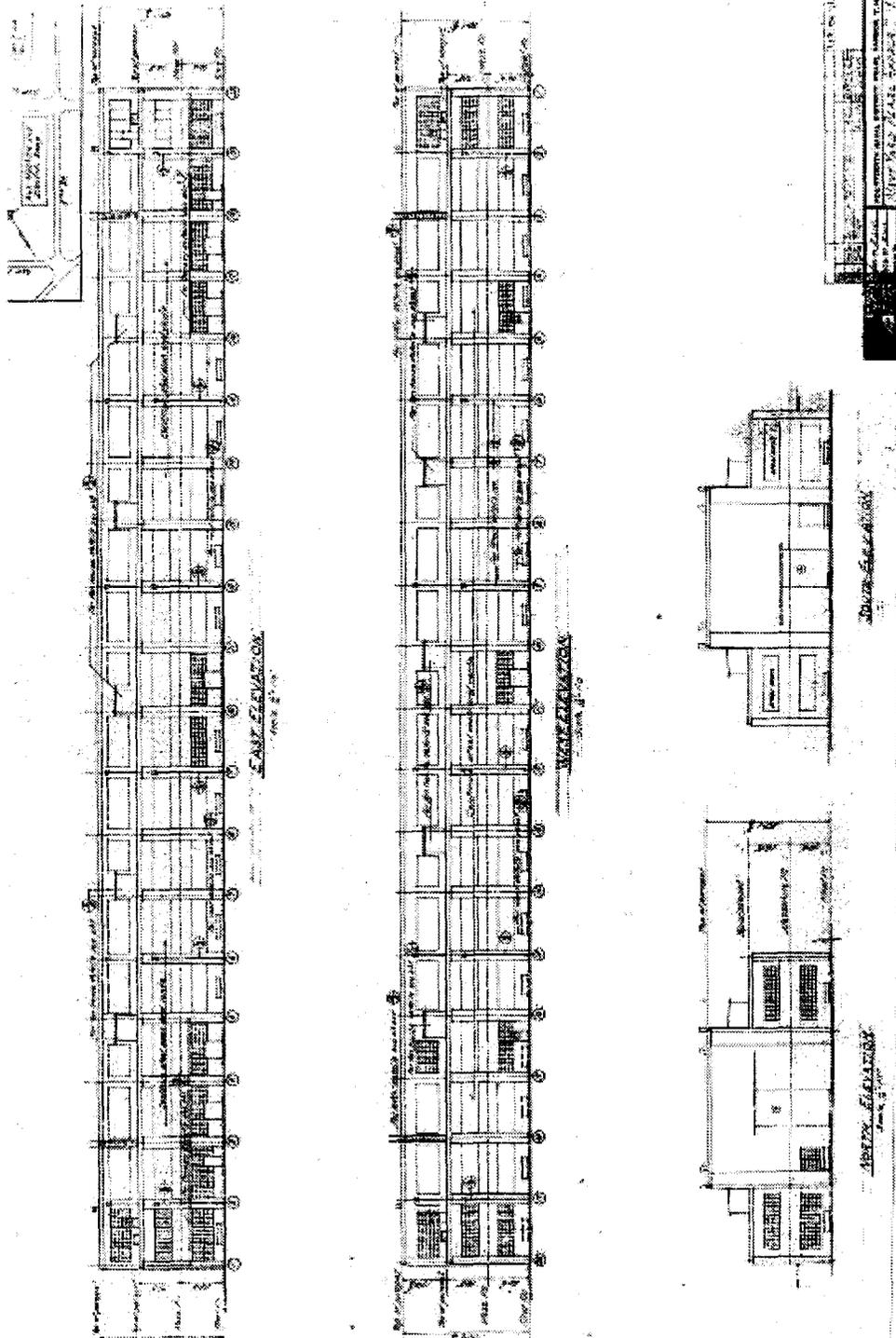
U.S. NAVAL BASE, PEARL HARBOR, AUXILIARY MACHINE AND ELECTRIC SHOP
(U.S. Naval Base, Pearl Harbor, Naval Shipyard)
(Facility No. 214)
HABS No. HI-499 (Page 8)

Original Construction Drawing, First and Mezzanine Floor Plans
(Drawing No. I-N-587, dated 1/25/1943) (reduced, not to scale)



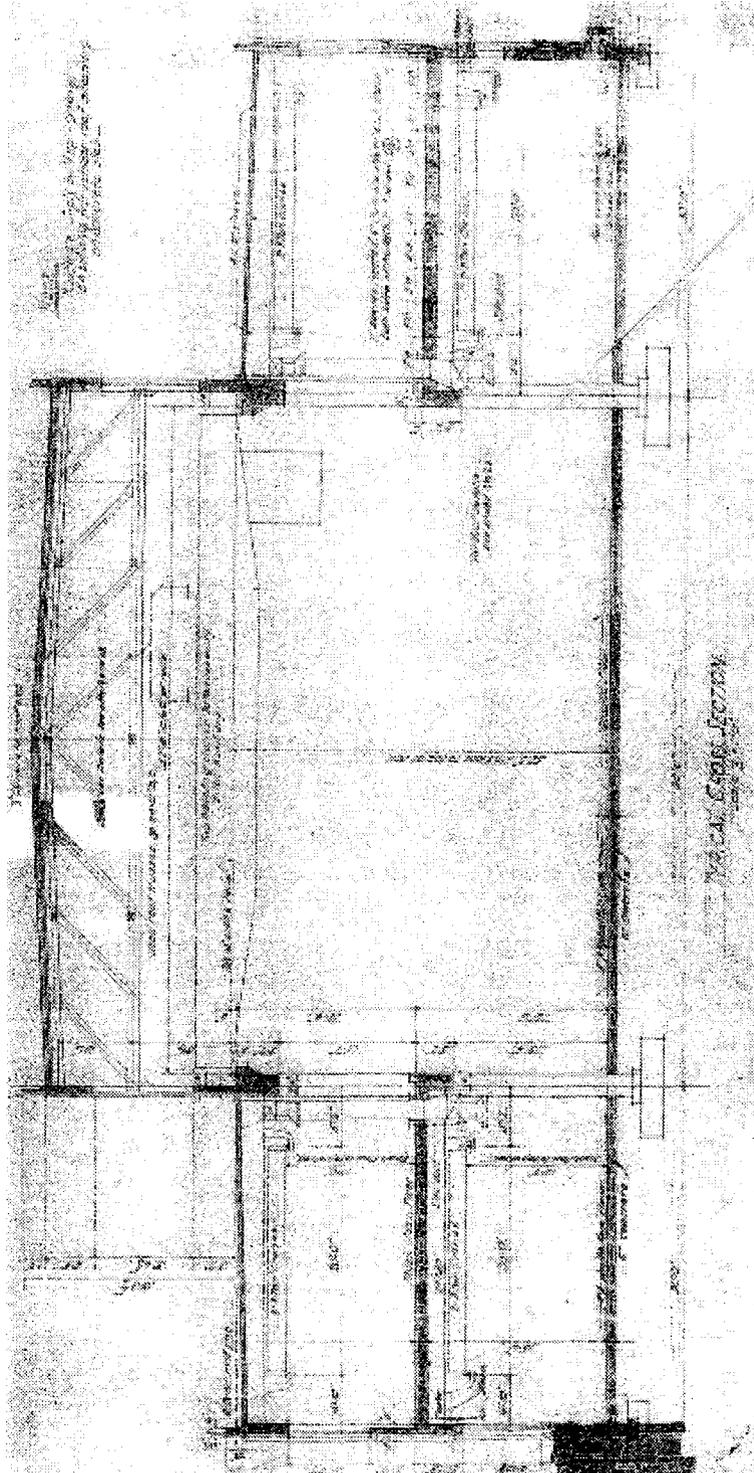
U.S. NAVAL BASE, PEARL HARBOR, AUXILIARY MACHINE AND ELECTRIC SHOP
(U.S. Naval Base, Pearl Harbor, Naval Shipyard)
(Facility No. 214)
HABS No. HI-499 (Page 9)

Original Construction Drawing, Building Elevations
(Drawing No. I-N05-586, dated 1/25/1943) (reduced, not to scale)



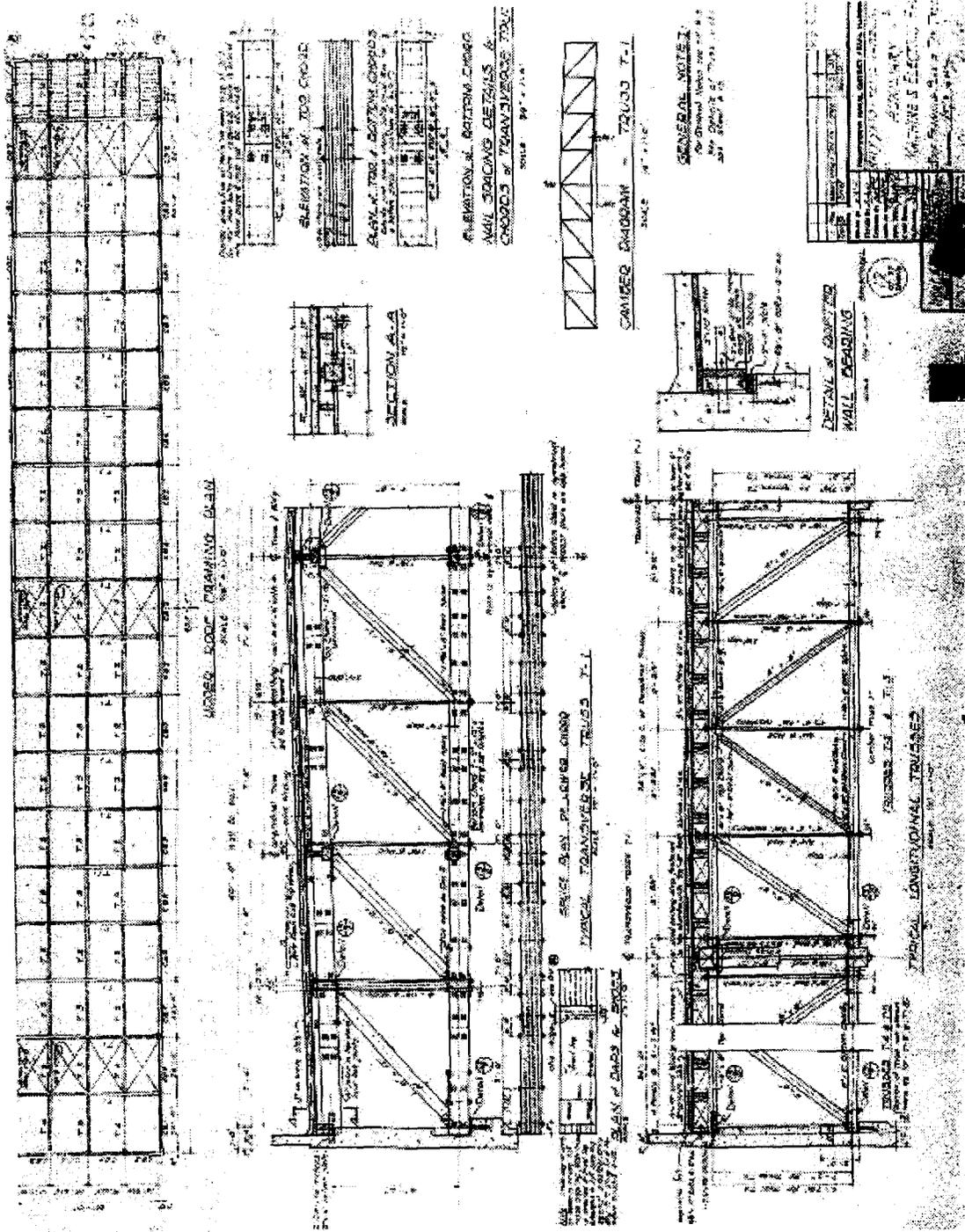
U.S. NAVAL BASE, PEARL HARBOR, AUXILIARY MACHINE AND ELECTRIC SHOP
(U.S. Naval Base, Pearl Harbor, Naval Shipyard)
(Facility No. 214)
HABS No. HI-499 (Page 10)

Original Construction Drawing, Cross Section
(Drawing No. I-N-43, dated 3/18/1943) (reduced, not to scale)



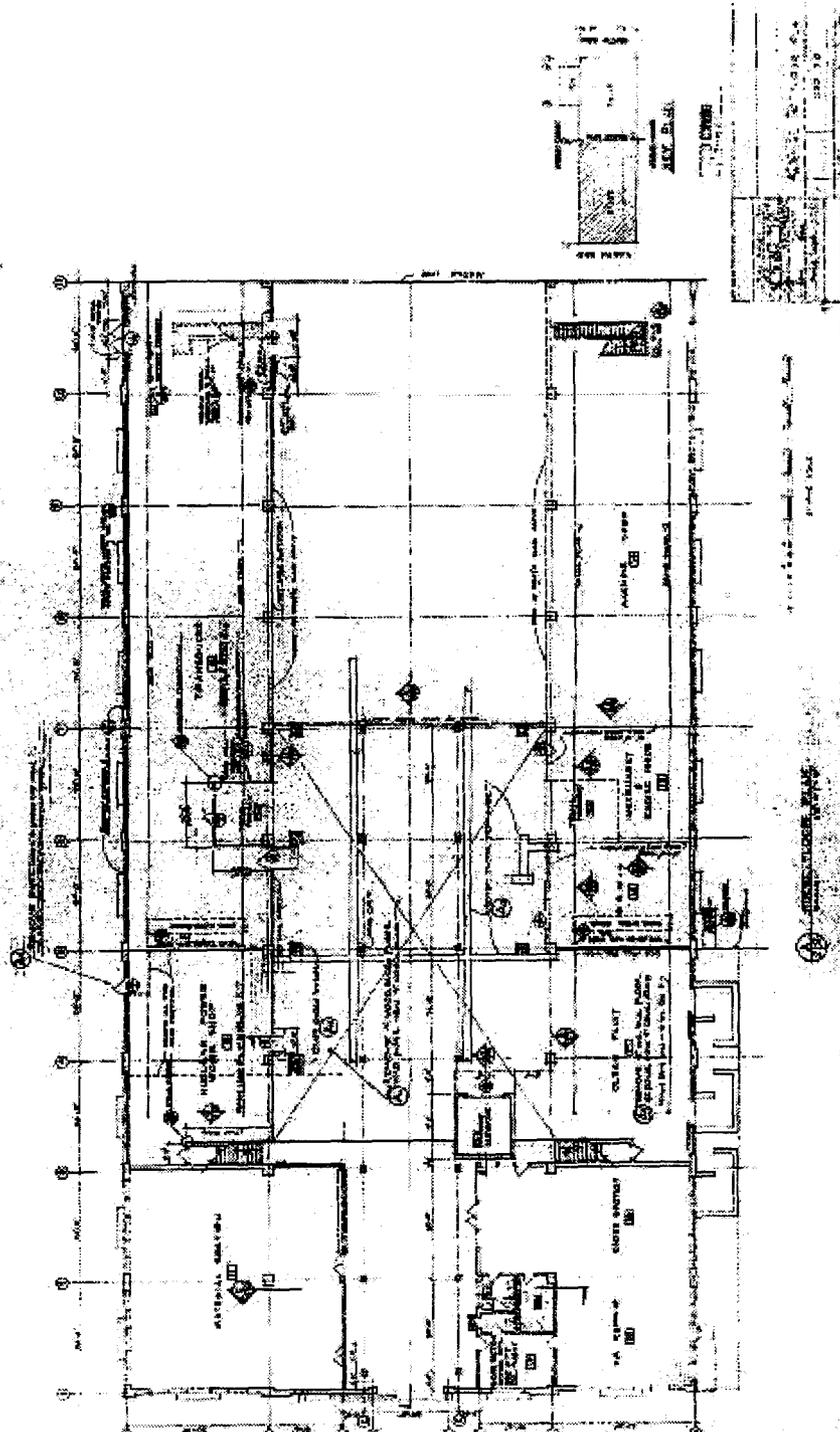
**U.S. NAVAL BASE, PEARL HARBOR, AUXILIARY MACHINE AND ELECTRIC SHOP
 (U.S. Naval Base, Pearl Harbor, Naval Shipyard)
 (Facility No. 214)
 HABS No. HI-499 (Page 11)**

**Original Construction Drawing, Roof Framing Plan and Truss Details
 (Drawing No. I-N-588, dated 10/2/1942) (reduced, not to scale)**



U.S. NAVAL BASE, PEARL HARBOR, AUXILIARY MACHINE AND ELECTRIC SHOP
(U.S. Naval Base, Pearl Harbor, Naval Shipyard)
(Facility No. 214)
HABS No. HI-499 (Page 12)

1970 Renovation Construction Drawing, Partial First Floor Plan
(Drawing No. 1160710, dated 7/17/1969) (reduced, not to scale)



U.S. NAVAL BASE, PEARL HARBOR, AUXILIARY MACHINE AND ELECTRIC SHOP
(U.S. Naval Base, Pearl Harbor, Naval Shipyard)
(Facility No. 214)
HABS No. HI-499 (Page 14)

1970 Renovation Construction Drawing, Section through new three-story space
(Drawing No. 1160717, dated 7/17/1969) (reduced, not to scale)

