

U.S. NAVAL BASE, PEARL HARBOR, BOMBPROOF
COMMUNICATION CENTER
(U.S. Naval Base, Pearl Harbor, Naval Station Ford Island)
(U.S. Naval Base, Pearl Harbor, Operations and Message Center)
(Facility No. 208)
Hornet Avenue at Liscome Bay Street
Pearl Harbor
Honolulu County
Hawaii

HABS HI-422
HI-422

HABS
HI-422

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

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Location: Hornet Avenue at Liscome Bay Street
Ford Island
Pearl Harbor Naval Base
City and County of Honolulu, Hawaii

U.S.G.S. Pearl Harbor Quadrangle, Hawaii, 1999
7.5 Minute Series (Topographic) (Scale – 1:24,000)
Universal Transverse Mercator Coordinates 4.607720.2362160

Significance: Facility No. 208 was built as a Bombproof Communication Center (also called an Operations and Message Center on some drawings) in direct response to the attack of Pearl Harbor December 7, 1941. It is a distinctive type of reinforced concrete construction, built for the specific purpose of ensuring that military communications could continue even during an attack. It is associated with a specific period in American history, when the threat of attack was high. It is a contributing element to the Pearl Harbor National Historic Landmark.

Description: Facility No. 208 is located in the southeastern portion of the island. It is in the same block as a large enlisted personnel barracks (Facility No. 55) and a bombproof personnel shelter (Facility No. S99). The World War II Naval Air Station headquarters building (Facility No. 77) is across Hornet Avenue, and two buildings (Facility Nos. 42 and 75), which have had a multitude of uses over the years, are across Liscome Bay Street. There is a strip of grass along the sidewalk on the southwest side of the building.

Facility No. 208 is a two-story, reinforced-concrete structure of bombproof construction, which is evident in the 6'-0" thick flat concrete roof and the 4'-0" thick concrete walls. There are two one-story sections of the building, which project from the rectangular footprint of the two-story core. The building's overall length and width, including those projections, are 87'-8" x 41'-0", respectively. The footprint of the two-story core of the building measures about 69' x 29'. The building's height is approximately 28'. The building is surrounded by a protective concrete apron, 3'-0" thick, for bomb deflection. This apron extends out 20'-0" from each side of the building, but only 15'-0" at the southeast end, and 19'-0" at the northwest end. The eaves overhang the walls by about 5'. The one-story transformer vault addition on the southwest wall measures 29'-6" x 12'-0". It abuts the one-story entrance corridor on the northwest end, which measures 29'-0" by approximately 10'. Together, these two one-story

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elements wrap around the west corner and form an L-shaped landing or balcony. The one-story entrance section on the southeast end measures about 22' x 9'.

The first floor of the structure has no windows. There are two openings to the L-shaped entry corridors, and there are two louvered openings on the northwest and the southeast ends of the transformer vault addition. The steel louvers in those approximately 3' square openings were designed to be splinterproof (that is, they could protect the openings from flying shrapnel or debris). There is also a line of small round openings, near the first-floor ceiling level, on each long side of the building for antenna wiring lead-ins.

The openings for windows and doors on the second floor typically measure about 5' wide by 8' tall, running from floor to ceiling. The southwest side of the structure has six evenly spaced openings, five windows and one door. The northeast side has three similarly spaced windows near the east corner. The rest of the wall on the northeast side has no openings. The northwest end has one door opening onto the roof of the one-story projection. The southeast end has two second-story openings onto the roof of the smaller projection at that end. One of those openings is about 7' wide. The windows now are paired casements with bronze anodized aluminum frames above a fixed bottom panel of aluminum.

An exterior metal stair on the southwest side of the building provides the main access to the second floor. There are pipe railings around the roofs of the one-story sections, creating a large balcony wrapping around the west corner and a smaller one on the southeast end. Modern caged ladders provide direct access to the large balcony in the west corner and to the roof. Access to the small balcony on the southeast end is only through a door from the second floor. Historic photos show a simpler steel ladder originally ran from this smaller balcony to the roof (National Archives II 1943 and Kidder-Smith Photo Collection 1945).

Like the balconies, the edge of the roof is ringed with a metal pipe railing. In 1999, when most of the photographs for this report were taken, there was a large satellite dish on the roof of the building. It had replaced earlier antennae on the building sometime after 1967 (Ford Island Dad's Club 1983: [72]). There was also a small crane in the south corner of the roof. A steel truss with a triangular section still spans from the roof of Facility No. 208 to a support abutting Facility No. 42, over Liscome Bay Street. The function of this structure and the reason for connecting the buildings are not known.

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At ground level on the southwest side, there is a chain-link fence enclosure with a container-like structure. It does not abut Facility No. 208, but is connected by wiring to the building or to the satellite on the roof. Other modern exterior elements include floodlights and other lighting fixtures, as well as pipe conduits to them and to small electrical or similar boxes. On the underside of the roof overhang, above the one-story section that wraps around the west corner of the building, there are about ten small I-beams attached, but their function is not known.

The one-story sections originally just had openings at the exterior, [had no doors in the exterior openings,] since entrance doors were inside, at the end of L-shaped corridors. The corridor at the southeast end remains open, although bolts by the sides of the opening suggest a door may have been mounted here at some date. Flush metal hollow double doors are now installed in the opening at the northwest end. Several of the original interior blast-proof metal doors remain; they are ¼"-thick steel plate and measure 3'-0" x 7'-0". For the ones installed in wider openings, steel bulkheads fill up the remaining width. They are secured with a specialized protective clamp called a Jamison Wedgetight Door Fastener. The doors have strap hinges, U-shaped handles, and welded bracing on the interior faces. The door to the transformer vault has two 4"-diameter pressure-relief valves installed close to floor level. The original doors at the southeast end of the building have rectangular metal coverings flaring out near their middles. This door detail is not shown on the original drawings and the function is not known. The current interior layout is not described here, since the original interior arrangements and the renovations to it are discussed in the following history section.

Historical Context: Bombproof designs for various types of buildings had been developed by the Navy's Bureau of Yards & Docks (BY&D) previous to the attack on Pearl Harbor in December, 1941, and many drawings were dated 1941, but such structures were not built until after the attack. Contractors Pacific Naval Air Bases (n.d.: A-592) built numerous bombproof structures at Pearl Harbor and other Naval installations in the Pacific in 1942. This building and a similar Operations and Message Center in the Shipyard area (Facility No. 178, see HABS No. HI-454) are the only Pearl Harbor examples of this type of bombproof design. See HABS No. HI-391 for an overview of bombproof construction at Pearl Harbor, and HABS No. HI-390 for a report on splinterproof construction, which provided a lower level of protection. HABS Nos. HI-328, HI-329, and HI-395 document similar bombproof buildings on Ford Island built as personnel shelters. For a history of Ford Island, up to World War II, see HABS No. HI-382.

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Facility No. 208 was built across Hornet Avenue from the Naval Air Station Headquarters (Facility No. 77) as a secure message center and as an emergency operations center during an attack. Historic photos show that this communication center was painted with a camouflage pattern throughout World War II. A 1943 photo shows there were sand-bagged gun positions on the roof, but two antenna replaced these sometime during the war, as indicated by 1945 photos (National Archives II 1943 and Kidder-Smith Photo Collection 1945). The exact years when the antennae were built and when they were replaced with a large satellite dish are not known. A 1967 photo shows the antennae were still on the roof at that date (Ford Island Dad's Club [1983]: 72). The satellite dish was removed around the year 2000, but the concrete and metal mounts remain in place.

While other bombproof buildings had room for transformer equipment at the end of one entry corridor, this building was narrower and did not provide space for a transformer in the original design. So in March 1942, probably while construction of the building was underway, a drawing (no. V-N28-108) was prepared for an addition at the west corner to house a transformer. The only 1940s floor plan found for this building was for this transformer vault addition, and the drawing does not provide many details of the original main part of the first floor layout; it just notes that the main section was to "remain unchanged." The drawing shows walls in the east corner that suggest that it had an airlock, decontamination chamber, shower, and dressing room like other bombproof buildings did. See HABS No. HI-395 for a discussion of how these rooms protected against gas attacks. No walls are indicated in the remainder of the first-floor space, but it probably had the same layout as the Operations and Message Center in the Shipyard (Facility No. 178), since the buildings had the same function. The first floor of Facility No. 178 had three large rooms, labeled Office, Communications Room, and Machine Room, plus a small Code Room, Toilet, and Vestibule. A 1943 photo of Facility No. 208's interior, presumably the communications room, shows some radio and other equipment then in use (National Archives II). A 1944 drawing (no. V-N26-310) of the northwest end of the first floor shows the footprints of the transformer vault and machine room equipment. The latter consisted of a condenser, compressor, and emergency gas-engine generator. Drawings prepared in 1978 for renovations to this building show that sometime after 1944 a fuel tank and generator had been installed in the corridor at the northwest end. Those were removed during the 1978 renovations, along with the equipment in the machine room. The latter room became an administrative office, as did the original communications room, with new suspended ceilings of acoustical tiles in both rooms. No changes were made to the southeast end of the interior at that time, but there were indications of previous remodelings having taken place, such as the vinyl flooring tiles and beveled walls in the airlock.

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No original drawing of the second-floor plan for this Ford Island building was found, but the layout of Facility No. 178's upper floor is just one big room labeled "office," except for a walled-off corner with a large water tank. This is the same as the "existing" second-floor layout on a 1978 drawing (no. 7019825) of Facility No. 208's second floor. In the renovation of the building, which occurred around 1978, the water tank was removed and several offices and a toilet room built on the second floor. The large window in the toilet room was blocked up. All other windows and doors were also replaced at this time. The main entry door to the second floor was relocated to the second opening on the southwest side, so a larger landing and extended railing was required.

In the Cold War period the Commander, Oceanographic Systems Pacific (COSP) was the command then in charge of the Navy's Integrated Undersea Surveillance System, which tracked enemy submarines. Sound detection of enemy submarines was used during World War II, but new developments in the decade after the war made long-range detection feasible. The "low-frequency passive detection system was called SOSUS, for SOund SUrveillance System" (Commander, Underseas Surveillance 2005). From 1980 until 1994 there was a Naval Ocean Processing Facility (NOPF) on Ford Island, with staff in Facility Nos. 77, 208, and 75. Related uses under COSP were in Facility No. S99.

NOPF received and processed submarine tracking data from Pacific Sound Surveillance System (SOSUS) stations. The SOSUS stations, Midway, Guam, Barbers Point, and other Pacific sites, each had ocean floor hydrophones linked by cable to shore stations. Each submarine has its own sound signature from the engine, cooling system, propeller, sonar signals, and even the sound of water flowing around the hull. These sound signatures were used to keep track of Soviet submarines. The NOPF organized the data and relayed it to the fleet, and to the P-3 Orion sub killer patrols. In wartime the SOSUS could be used to show evasion routes through or around enemy submarine forces (Denfeld 2000: E-7).

The NOPF function at Ford Island was decommissioned in October 1994 (Commander, Underseas Surveillance 2005). Facility No. 208 has recently been used for offices of the Logistics Task Force Pacific.

Sources:

The drawings for this building are on microfiche cards at the Plan Files of the Naval Facilities Engineering Command, Pacific. The only 1940s drawings are nos. V-N28-107 through V-N28-109 and V-N26-310. There is also an undated drawing by CPNAB that must have been done about 1942 (no. 2687). The 1978 renovation drawings for Naval Oceanic Processing Facility (NOPF) are a large set of 142 sheets, starting with the index (no. 7019729). The drawings specifically for Facility No. 208 are

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nos. 7019768, 7019825, and 7019857, and some of the detail and schedule drawings in the set also apply to this building. A drawing by Oahu Plumbing and Sheet Metal, Ltd (no. 134545) was also prepared as part of the NOPF project.

Commander, Underseas Surveillance

2005 Web pages discussing Naval Ocean Processing Facility (NOPF) Ford Island and Origins of Sound Surveillance System (SOSUS), at <http://www.cus.navy.mil>, accessed December 15, 2005.

Contractors Pacific Naval Air Bases

n.d. *Technical Report and Project History, Contracts NOy-3550 and NOy-4173*, on microfiche at library of Naval Facilities Engineering Command, Pacific.

Denfeld, Colt

2000 Appendix E: Cold War Study, in *Pearl Harbor Naval Complex, Cultural Resources Management Plan*, Prepared for Commander, Pacific Division, Naval Facilities Engineering Command. Pearl Harbor, Hawaii.

Ford Island Dad's Club

[1983] *Ford Island – Past and Present: A picture story of the United States Navy on Ford Island from 1923 up the present day*. Produced by author: Pearl Harbor, Hawaii.

Kidder-Smith Photo Collection

1945 Historic photos nos. N202-2 and N202-7 in Naval Facilities Engineering Command Archives, Port Hueneme, California.

National Archives II

1943 Historic photos of Message Center dated March 10, 1943 in RG71CB, Still Photo Section, College Park, Maryland.

Project Information: Commander Navy Region (COMNAVREG) Hawaii has embarked on a program of documentation of historic properties within its area of responsibility, with the goal of recording historic information about each property and establishing its context of significance. This information will assist COMNAVREG Hawaii in the appropriate management of these properties, be it routine repair and maintenance for continuing use, rehabilitation for continuing use / adaptive reuse, or demolition. At this time, specific action that may affect this facility has not been determined. This report was prepared under a Historic Preservation Services contract (N62742-97-D-3502) awarded to AMEC Earth and Environmental, the prime contractor, by the U.S. Navy, Naval Facilities Engineering Command. The contract was funded through the Cultural Resources

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Program of COMNAVREG Hawaii. The photographic documentation was undertaken by David Franzen, of Franzen Photography. Location maps were made by Nestor Beltran of NAB Graphics. Between 1999 and 2001, the field work was done and the draft of this report was written by Dot Dye, AMEC Earth & Environmental, Inc. The report was rewritten in 2005 by Mason Architects, Inc.

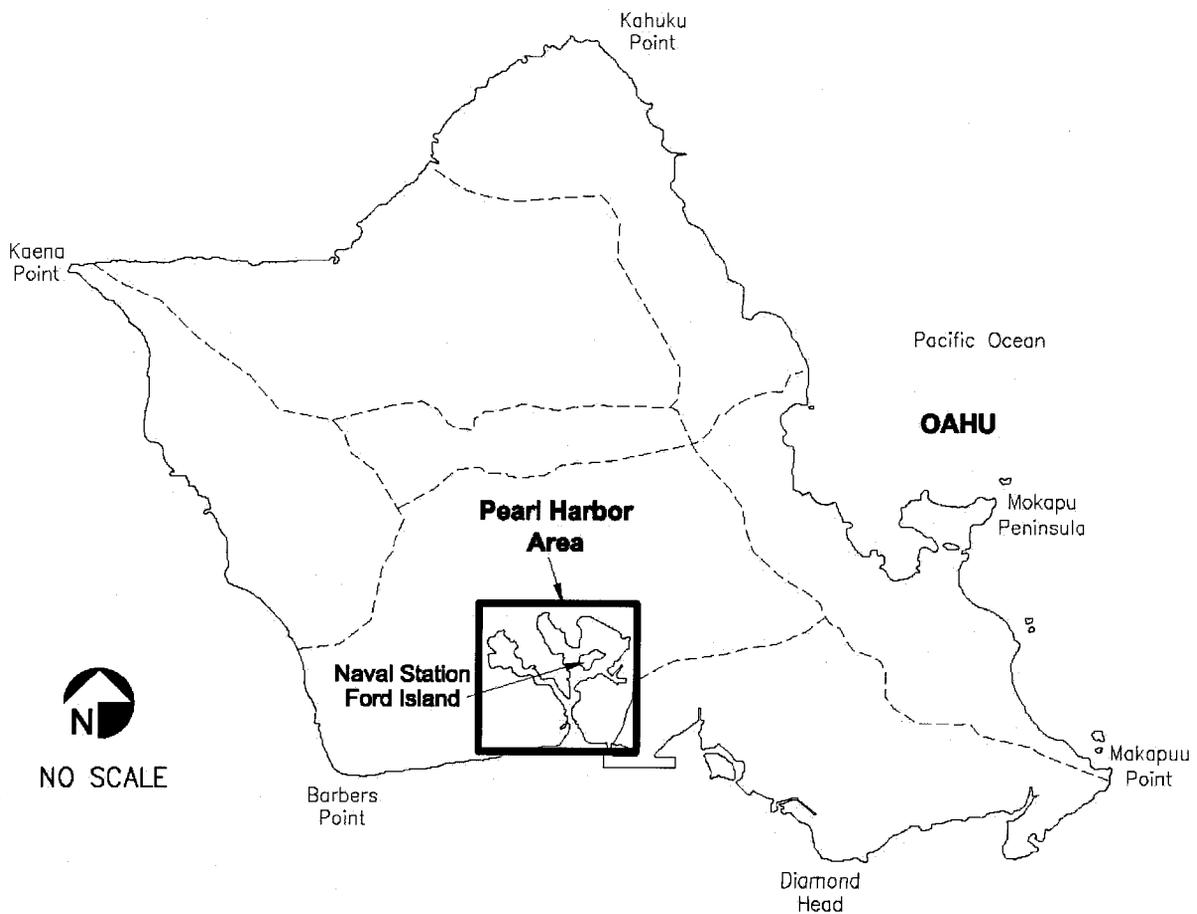
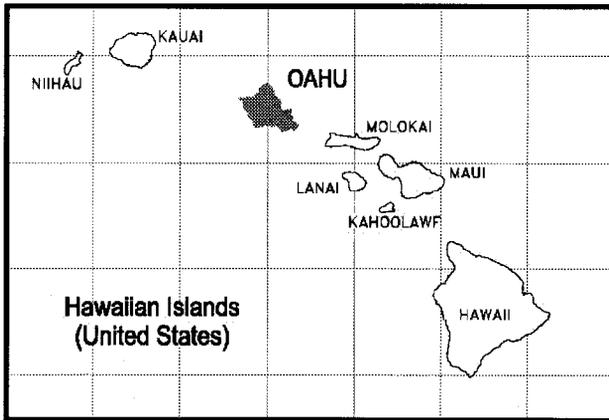
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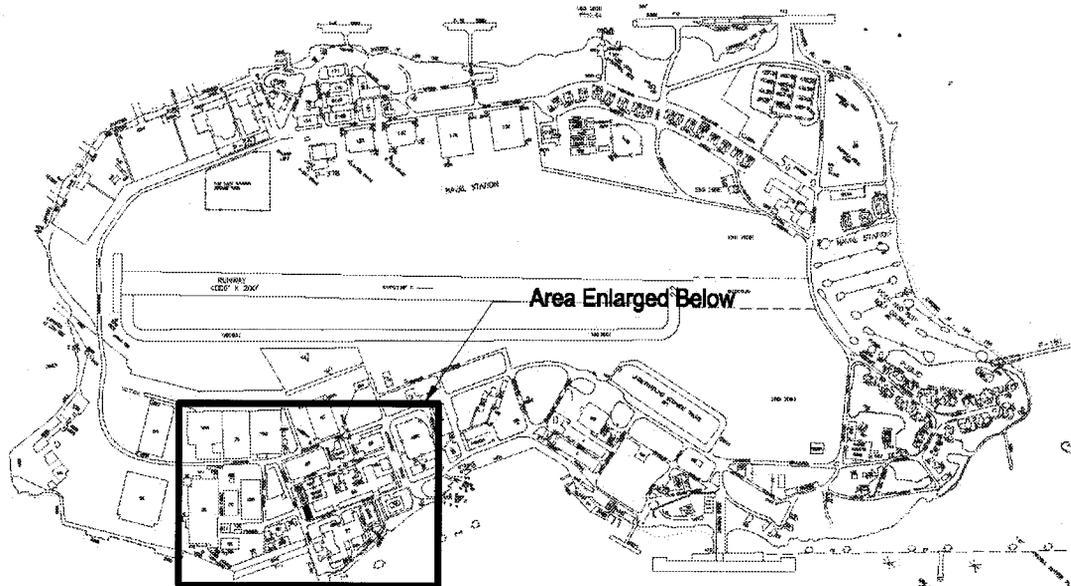
AMEC Earth & Environmental, Inc.
3375 Koapaka Street, Suite F251
Honolulu, HI 96819

Date of Final Report: December 2005

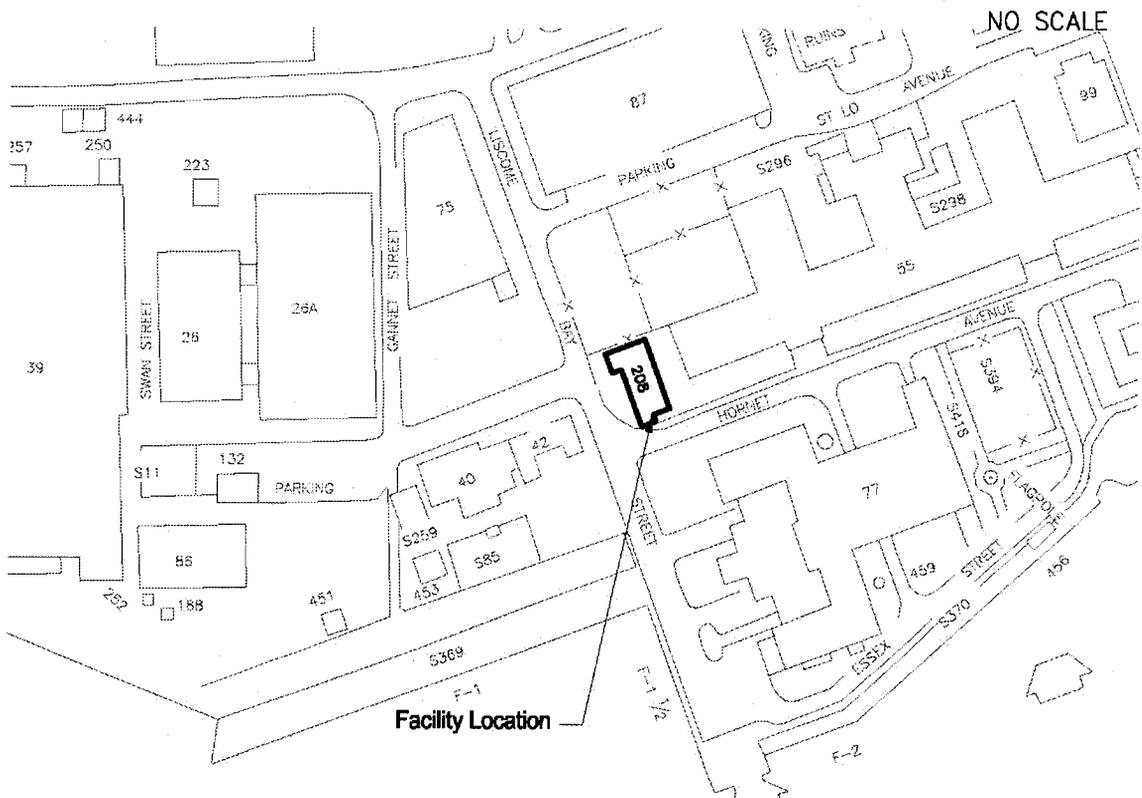
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Vicinity Map

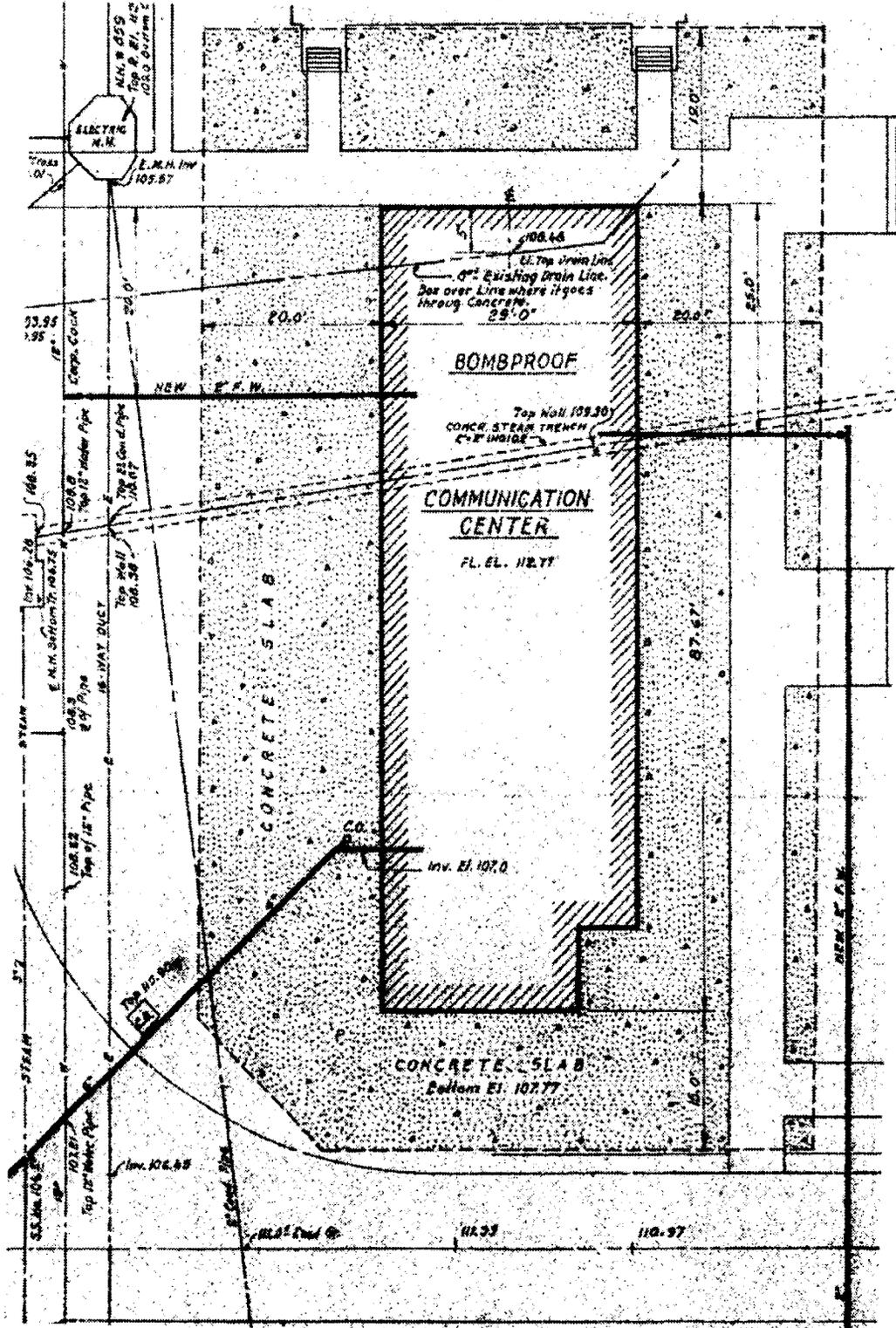


Facility Location

Site Map

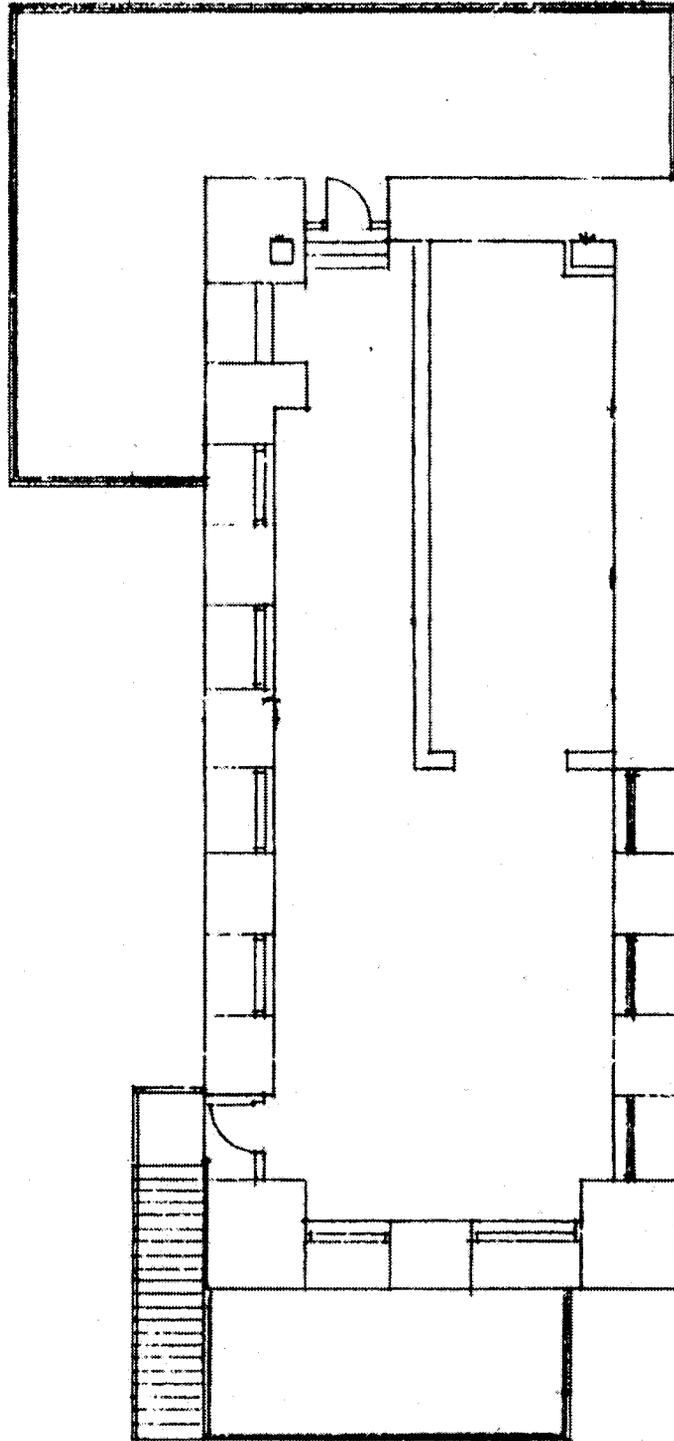
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Portion of Drawing No. V-N28-107, dated February 16, 1942 (before transformer addition)



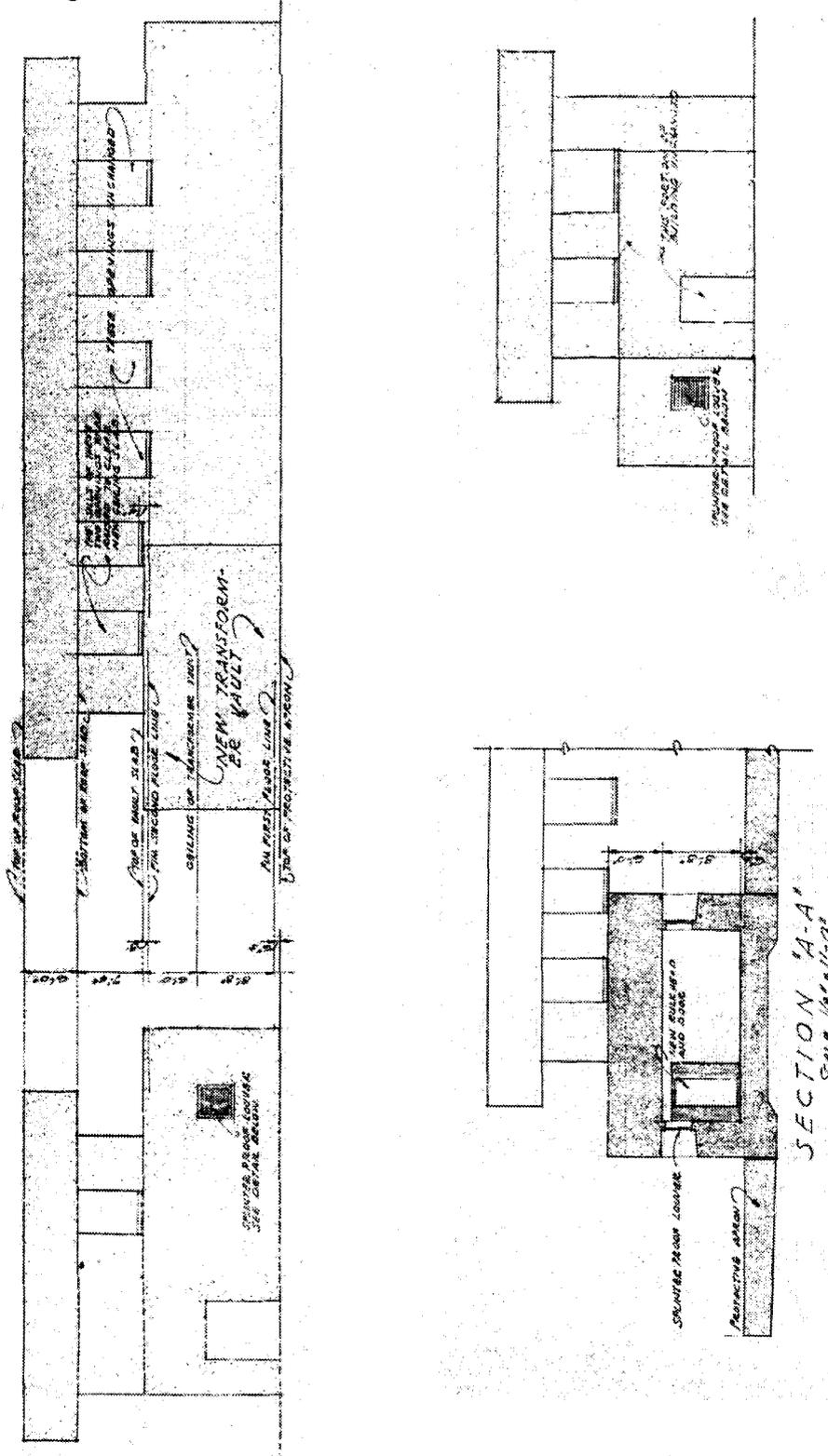
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Portion of Drawing No. 7019857, dated Jan. 3, 1978 (second-floor plan before renovation)



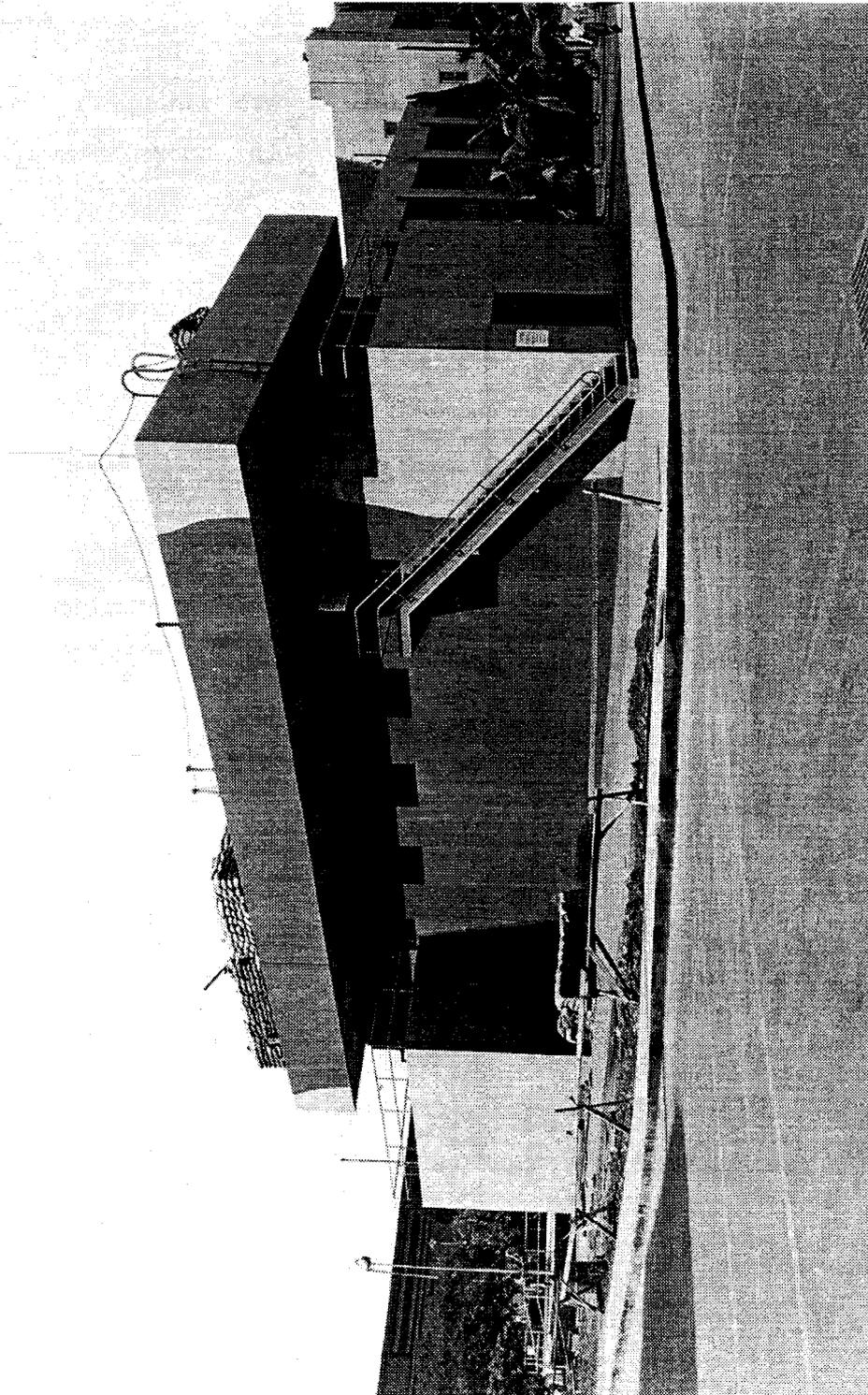
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Portion of Drawing No. V-N28-108, dated March 19, 1942 (elevations and section)



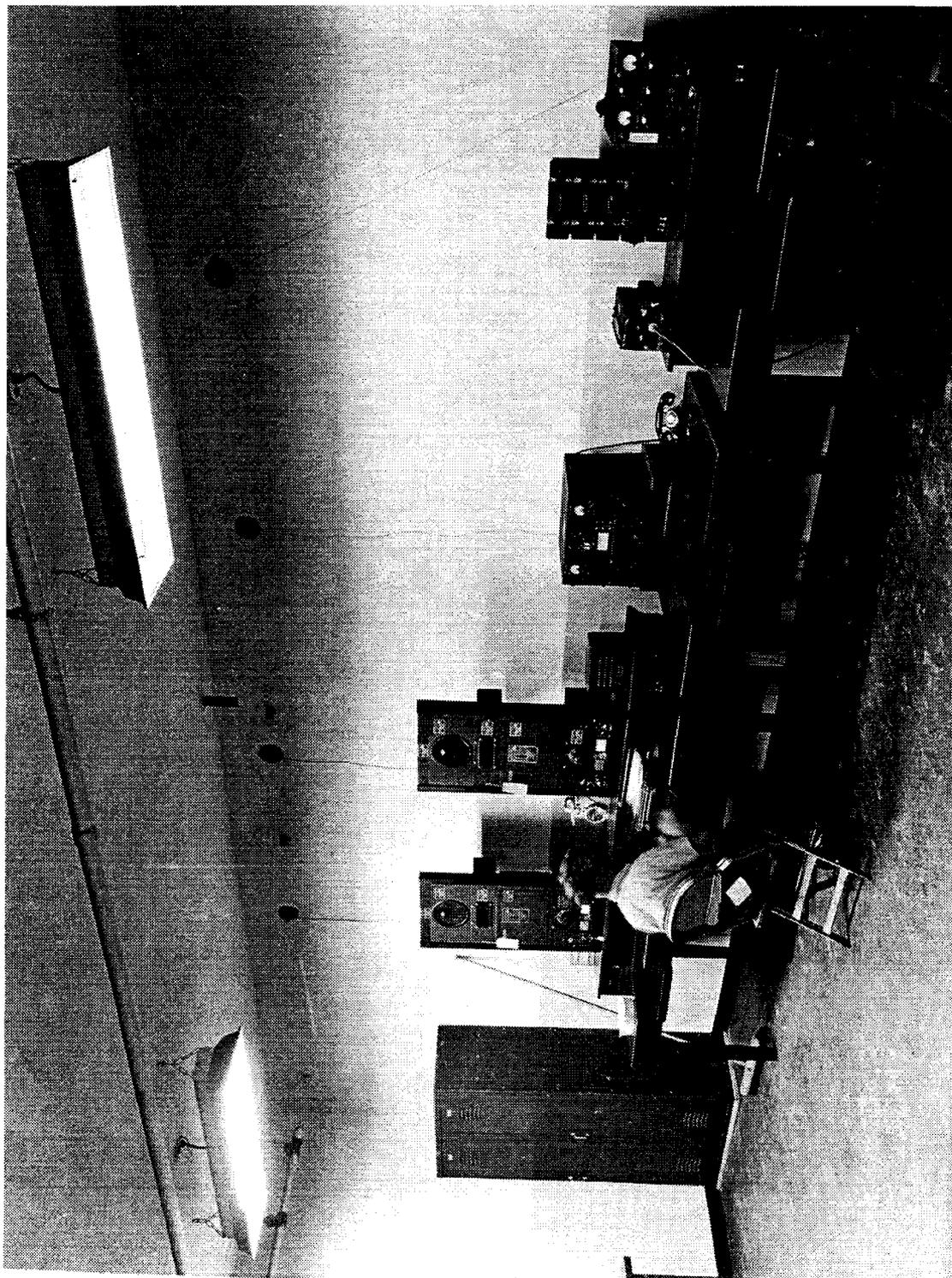
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Camouflaged building with sandbagged gun positions, dated 10 March 1943
(Source: National Archives II, in RG71CB, PH no. 318419)



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Interior of building, dated 10 March 1943
(Source: National Archives II, in RG71CB, PH no. 318424)



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Camouflaged building with antenna, dated 1945

(Source: NAVFAC Archives, Port Hueneme, Kidder-Smith Photo Collection, no. N202-2)

