

U.S. NAVAL BASE, PEARL HARBOR, WINCH STATION
(U.S. Naval Base, Pearl Harbor, Naval Station, Facility No. 2)
Near shore in Iriquois Point Housing Area
Pearl Harbor
Honolulu County
Hawaii

HABS HI-409

HI-409

HABS

HI-409

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, WINCH STATION (U.S. Naval Base, Pearl Harbor, Naval Station) (Facility No. 2)

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- Location:** Near shore in Iroquois Point Housing Area
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 4.606680.2358260
- Significance:** Facility No. 2 was built as part of the plan to protect Pearl Harbor from submarine and torpedo attacks after World War II. The structure replaced an earlier winch station which had been part of the harbor entrance protection since 1941. Both the earlier station and this one were built to help open gates in the nets laid across the harbor entrance. This building is associated with post-World War II developments in harbor defense. The building is a contributing element to the Pearl Harbor National Historic Landmark.
- Description:** Facility No. 2 is located on the *makai* (ocean) side of Iroquois Avenue, near its intersection with Dovekie Avenue. It is surrounded by overgrown vegetation, along with several other abandoned structures, in a small parcel of land along the shoreline of the Iroquois Point housing area, on the west side of the Pearl Harbor entrance channel. Originally this area was within the Fort Weaver Military Reservation, which is discussed in the history section of this report.
- Facility No. 2 is a simple rectangular-plan structure with a footprint measuring 18'-6" x 36'-0". The height to the top of the building's gable roof is about 16'. This building has footings and curbs around most of the perimeter, as well as a 6"-thick floor slab, all built of concrete. Some of the floor slab of the original 1941 winch station was reused, and only sections of new concrete floor, plus the new concrete footings and curbs were poured for the 1949 winch station. From a 1948 drawing it appears that the World War II winch machinery and its foundation were reused and the new winch station building erected around it. However, 1952 drawings imply new machinery was installed at that date. The concrete winch base measures approximately 11' x 15' (there is also a small projection from the main rectangular part of the base) and is 7" above the floor slab.
- The structure is a steel-framed building, which has mostly bolted connections. There are two welded trusses supporting the roof framing which are spaced 19'-0" apart but not equally distant from the end walls.

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These trusses are supported by wide-flange columns. One of the braces for the trusses is a 12" wide-flange monorail for a 5-ton hoist, which runs the entire length of the building; this is bolted to the trusses and to the supporting wide-flange columns at the building ends. The two pairs of columns on the end walls are not symmetrically placed and are not similar. Another connector between the trusses is a bottom chord stiffener that spans the 19'-0" between the two trusses in a line parallel with the monorail. However, the end sections of this stiffener run at an angle to meet the second set of supporting columns, which are L-angles. The gable roof has corrugated metal panels and overhangs almost 3' wide with exposed rafters. The siding stops at the underside of the rafters and the spaces between the rafters are covered with metal mesh.

The drawings show that the original siding is flat 11-gage steel sheets attached to the exterior of the steel framing. The west side of the structure has a pair of large metal doors that slide on an overhead track. There is a smaller hinged door centered in the northern one of the pair. These doors are made of the same material as the siding, welded to the T- and L-angles of the door framing. Each sliding door is 8'-8" wide and 9'-7" tall. The hinged door measures 3'-0" x 7'-0".

All the original windows had been removed at some date and the openings covered with corrugated metal panels. The north end has no openings. The west side had two window openings abutting each corner, as did the south end and the east side. In addition the east side had a central double window. The east side also had removable metal panels under the central double opening through which the winch cables ran. Three of the original four such panels are now gone. The design of the original windows is unknown, but drawings indicate they were metal-framed sashes with eight-light upper pivoting sections above four fixed lights.

The interior floor contains the winch machinery and no interior finishes hiding the structural system. The structure and winches remain intact but they have not been used for decades, as discussed in the following section.

Other abandoned structures or remnants of equipment were found in the vicinity of the winch house in 1999. A collapsing toilet building was sited to the west. To the south was a fuel tank platform built of concrete masonry units. Between the winch house and the shore there are remnants of wood rollers between metal side rails. These were connected to the Fairlead platform (see discussion in following history section). There was also an arched splinterproof air raid shelter and a submarine net flotation buoy (or baulk, see following history section) in the kiawe trees to the southeast of the building. This buoy or baulk appears to be built of large timbers (about one-foot square), bolted into a thick raft-like shape.

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Historical Context: Refer to HABS No. HI-60 for an overview of the history of Pearl Harbor and HABS No. HI-411 (Facility 17, Bishop Point) for more information on another area whose function was related to booms, nets and harbor defense. See also HABS No. UM-1-BB for information on anti-submarine nets and flotation buoys at Midway atoll.

A bend in the shoreline near this winch station building is labeled "Hammer Point" on the Navy's 1987 General Development Map for the area (U.S. Navy 1987). However, on earlier maps "Hammer Point" was labeled further north along the shore, above the Army's Fort Weaver pier (U.S. Navy 1946). Hammer Point was near a fishpond called Kapakule or Pakule, which jutted out into the channel (Sterling and Summers 1978: 42-43). This fishpond was destroyed by the early twentieth-century dredging of the channel, but was shown on a 1907 map, which labeled it as a "shark pen" (U.S. Navy 1907). That map shows the whole area around Hammer Point as marshy at that time, but "much of the area was filled in the course of dredging the channel" (Dorrance 1993: 76).

The general area on the west side of the Pearl Harbor channel is called Iroquois Point, reportedly named after one of the earliest Navy ships stationed in Hawaii, the USS *Iroquois*, "which was known to moor near the western entryway to Pearl Harbor" (*Center Relay* 1999). There were two USS *Iroquois* ships that the point could have been named after. The first was a steam-powered war ship launched by the Navy in 1859. After Civil War service, it had a few long periods of inactivity, but was recommissioned several times and served in the Pacific, including Hawaii. It was transferred to the Marine Hospital Service in Honolulu in June 1899 and its name was not changed until 1904. The second ship named USS *Iroquois* was built as a commercial tug (named *Fearless*) in San Francisco in 1892, and purchased by the Navy in 1898 in expectation of the Spanish-American war. In January 1899 that ship arrived in Honolulu and spent the next eleven years in Hawaiian waters "as a station tug, mail boat, and even surveying ship" (Naval Historical Center 2005). Confusion between these ships is understandable, as they were both in Hawaii at the turn of the twentieth century.

The land on the west side of the Pearl Harbor entrance channel had been designated as a military reservation before 1907 (U.S. Navy 1907). However, it was not until 1921 that this area began to be developed by the U.S. Army; it was named Fort Weaver in March 1922 (Dorrance 1993: 76). The most up-to-date 16-inch (diameter) guns were installed in Battery Williston, and smaller gun batteries and supporting facilities were constructed as well. About 1941 the Navy started using a small piece of land along the Fort Weaver shoreline for the harbor entrance net winch house and ancillary structures.

The United States War and Navy Departments developed anti-torpedo and anti-submarine nets during World War I, based on British research.

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A young Army officer described the rapid improvisation that was required to protect the entrance to the Chesapeake Bay in 1917. The entire wire rope inventories of the John A. Roebling Co. and other nearby available stocks were purchased. For flotation buoys, gasoline drums were first considered but the quantity needed could not be obtained, so beer kegs were used instead. Shortly thereafter, the War Department approved the installation of anti-submarine nets in most U.S. harbors, as well as in Panama. The British Admiralty provided two complete sets of drawings of their nets, and the U.S. War and Navy Departments each "undertook to design its own nets" (Gardner 2005: sec. 20, 2).

Anti-torpedo nets could be at harbor entrances or around individual ships. Such nets generally did not descend all the way to the floor of the harbor and were of lighter material than the anti-submarine nets.

There were two types of anti-submarine nets. The largest and strongest were laid to prevent a submerged submarine . . . from entering a port. The indicator anti-submarine net was lighter. Intended only to alert harbor defense forces that a submerged submarine was entering a harbor; the net triggered an alarm if displaced. . . . These nets, however, were subject to false alerts due to waves, tides, and currents. All submarine nets descended to the floor of the harbor, with the exception of the area of the gate net (Bogart 1999: 36).

From the WWI experience the Navy had learned that "large quantities of wire, flotation buoys, mooring chains and anchors are required for net installations. Therefore, net defenses cannot be improvised overnight and must be installed and operating at major bases before the outbreak of hostilities" (Mintzer 1944: 1367). An anti-torpedo, not anti-submarine, net was in place at the entrance to Pearl Harbor, about two months prior to the attack of December 7, 1941 (Historical Section, Fourteenth Naval District [1945]: 800). Together with a constant patrol of the net lines, these were the first steps for harbor defense. In October 1941 Admiral Claude C. Bloch, Commandant of the 14th Naval District, had requested from the Chief of Naval Operations several small fast vessels with listening gear and depth charges, as well as patrol planes, for anti-submarine purposes; but supplies could not meet all requests (U.S. Congress, Joint Committee 1972: Part 39, 301). The Admiral described the 1941 net system:

The net was backed up in the shallow water areas by underwater obstacles. Where the water became deep enough to permit a torpedo to run, the net began. It was anchored on the shore side with heavy buoys. The net was made in interlocking rings, so that every ring interlocked with three or four. It was held afloat by large buoys on the surface known as baulks. They were merely small wooden rafts. On top of these rafts were powerful

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steel prongs projected to seaward [as anti-motorboat defenses]. At the gate end, on the shore side, there was a gate vessel, which was a steel vessel. . . which had some generators and powerful winches to handle lines. The other shore end was anchored in exactly the same way I have described the first one, except there was no gate vessel, but there was a hinge on the gate which held in place the large buoys. There were lines which ran from the gate vessel to the opposite side of the net through blocks and came back to the entrance of the gate (U.S. Congress, Joint Committee 1972: Part 32, 310).

Despite the net and the patrol boats, one Japanese midget submarine had been able to slip into Pearl Harbor on the morning of the attack. Although it was destroyed by two US ships, USS *Monaghan* and USS *Curtis*, before it did any damage, there was much consternation over the fact that its entry had not been detected by the net or by the patrol boats. Admiral Husband E. Kimmel testified that "an ordinary submarine would have gone into the net. It would have indicated that it was there" (U.S. Congress, Joint Committee 1972: Part 22, 400). It was not known if that midget submarine had gone under the net. "The deepest part of the channel was 72 feet; the depth of the net was 45 feet. From keel to conning tower the [midget] submarine was about 20 feet" (U.S. Congress, Joint Committee 1972: Part 36, 559). It is also possible that it could have come in through the net's gate while it was open for a U.S. ship to enter or exit. Another of the Japanese midget submarines had been detected following the USS *Antares* which was heading into Pearl Harbor. That midget submarine was sunk outside the net by the USS *Ward*, before 7 am (Outerbridge 1941). Unfortunately the dispatch from this destroyer was at first considered a false alarm, and it was being investigated when the Japanese air attack began. After the attack began the gate in the net was closed "as much as the hurried departure of units of the Fleet permitted" (Williams 1941).

The winch house at Fort Weaver was under the control of the Bishop Point Net Depot. During the December 7, 1941 attack there were no casualties or damage at this duty station, but the personnel assigned there were crossing in a motor whaleboat and subjected to machine gun fire (Williams 1941). A memo from 1943 indicates the Fort Weaver winch station was for gate opening, and that either a Yard net gate tender (YNG-17) or an emergency winch station on the Fort Kamehameha side was for gate closing (Robertson 1943: 5).

A 1942 photo shows two lines of nets in place across Pearl Harbor (National Archives II 1942). Each is open in an opposing V-shaped configuration. The second line of harbor entrance obstruction was added on December 31, 1941, and was a "Light Indicator Net" (Historical Section, Fourteenth Naval District [1945]: 799). The buoys on each line appear to be different shapes and colors in the photo (see xerographic

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copy in this report). The remnant of a wooden flotation buoy, or baulk as Admiral Bloch called it, for the combination anti-motorboat and anti-torpedo net was found in the brush near the winch house. A baulk was defined in 1955 as a "heavy iron-strapped wood-and-metal" construction with "two watertight iron tanks occupy[ing] the interior" (U.S. Naval Academy 1955: 312).

In addition to Pearl Harbor, several other locations in the 14th Naval District had harbor protection nets by May 1943 -- Honolulu Harbor, Hilo Bay, Port Allen (Kauai), Kahului Harbor (Maui), and Midway atoll (Robertson 1943: 7-8; and Historical Section, Fourteenth Naval District [1945]:799). In addition to the channel entrance nets, individual ships or berths had anti-torpedo nets installed around them, as added protection, especially from aircraft-launched torpedoes. The protection afforded by the nets was appreciated by most, but other saw them as a hazard to the navigation and operation of ships, submarines, and seaplanes. As the front lines of the Pacific war progressed further west, and the chances of another attack lessened, the Commander of the Naval Local Defense Forces noted that individual "berth protection in Pearl Harbor may be gradually curtailed, but channel entrance gates must remain intact for the duration of the war" (Ghormley 1944:1). Anti-torpedo nets were removed from the outer island harbors by July 1944 and the light indicator net and station at Pearl Harbor was abolished in March 1944 (Historical Section, Fourteenth Naval District [1945]: 801).

It is not known if the anti-torpedo net at Pearl Harbor was removed or kept in place in the late 1940s. However, in the early 1950s there "was a flurry of Navy interest in mine warfare, harbor defense, [and] submarine nets . . . coincident with the Korean War" (Swartz 2003: 10). Plans were drawn up in 1948 for a new winch station structure at Fort Weaver (Iroquois Point). The new winch house utilized the existing 1941 "winch shed" foundations, but enlarged them. This building, Facility No. 2, is steel-framed rather than the original wood-frame construction; it is listed in the Navy facilities database with a 1949 date. Although the 1948 drawing implies the original winch machinery was retained, a 1952 drawing shows the then-new winches, plus 100-HP diesel engine and motor -- the machinery that remains in the building. A layout plan of the Fort Weaver winch operation system, dated 1952, showed several other structures around the winch house, including a tower, washroom, and "Fairlead Platform," all of which were labeled "existing." As seen in drawings included with this report, a typical Fairlead Platform contains snatch blocks (pulleys) and shackles, with two or three lines of rollers extending from it. Remnants of the rollers were seen at the site. There is one Quarters building shown on the drawing within the Winch Station fence line; since it was not labeled "existing" it may never have been built.

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The 1952 layout plan still labels the site of the winch station as Fort Weaver, but a 1953 map of the area is titled "Ex-Fort Weaver Military Reservation" (U.S. Navy 1953). The Army installation's land was absorbed into the abutting Navy land to the north which was designated Iroquois Point. During the 1940s this area, between the West Loch ammunition depot and Fort Weaver, had contained the Advanced Base Construction Depot (ABCD) Annex, the Advanced Base Reshipment Depot (ABRD), a prisoner of war camp, and the supply plane division (aircraft storage area) for Naval Air Station Barbers Point (U.S. Navy 1946). Within a few years after WWII these functions were disestablished and most of the land was absorbed into the West Loch ammunition depot. Fort Weaver and the southernmost part of the ABRD were transformed into the Iroquois Point housing area about 1960. The area of the salt works from the late nineteenth and early twentieth century became the lagoon at Iroquois Point.

Other 1952 drawings show a Fairlead Platform was built on structures in the waters on the Fort Kamehameha side of the Pearl Harbor channel, along with a winch building (which included living quarters, transformer room, and office space) on its own large platform. In the 1950s drawings were also prepared for Honolulu Harbor net defenses, between Fort Armstrong and Sand Island. However, it is not clear whether these were ever built.

Facility No. 2 and related types of harbor defense systems were abandoned by the late 1970s, due to advancements in anti-submarine warfare (ASW) and to the Navy's emphasis on forward projection (Swartz 2003: 11). A new type of defense based on a SOund SUrveillance System (SOSUS) was developed in the 1950s. This was a "network of seabed listening arrays deployed by the Navy to listen for submarines in the deep" (Cote 2003: 17). By 1958 such arrays were installed along the Pacific Coast and off Hawaii (Cote 2003: 25). Other components of the ocean surveillance system also came into use including satellites and high frequency direction finding nets, details of which are still classified (Cote 2003: 26).

Sources:

The drawings for this building are on microfilm at the Plan Files of the Naval Facilities Engineering Command, Pacific, interspersed with drawings for related harbor control facilities. The most useful drawings are those numbered 462845, 462851, 462852, 550794, 550820, and 550833; portions of these are reproduced in this report. Helpful maps by the U.S. Navy are listed below.

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.

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Center Relay

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Ghormley, R.L.

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- 1942 Historic photo of submarine nets across the harbor (# 80-G-451147, dated July 12, 1942) in Still Photo section of National Archives II, College Park, MD (also available at the U.S. Army Museum, Hawaii).

Naval Historical Center

- 2005 *Iroquois I and II* entries in web version of *Dictionary of American Naval Fighting Ships*, at www.history.navy.mil/danfs/i3/iroquois-ii.htm, accessed July 20, 2005.

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Outerbridge, W.W. [Lieutenant]

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- 1946 14th Naval District-Pearl Harbor, T.H., Iroquois Point, Pearl Harbor, Oahu, T.H., Showing Conditions on June 30, 1946. Map OA-N1-1512, from 14th Naval District map books at Naval Facilities Engineering Command Archives in Port Hueneme, California.

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- 1953 Ex-Fort Weaver Military Reservation, Puuloa, Oahu, T.H., from National Archives II, Map Collection, RG 71, 1409-3-9.
- 1987 U.S. Naval Facilities, Pearl Harbor, Hawaii, Iroquois Point/ Puuloa, General Development Map. Drawing no. 7461673, in Plan Files of Naval Facilities Engineering Command, Pacific.

Williams, S.S. [Lt. j.g.]

- 1941 Memo dated December 15, 1941 from Officer in Charge, Net & Boom Defenses to the Commandant, 14th Naval District, Subject: Report on Air Raid Attack by Japanese. In set of reports provided by Jeffrey Dodge, Naval Facilities Engineering Command, Hawaii.

Project Information: This building no longer appears on the Navy database and it is assumed to have been demolished sometime after 1999. 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 Program of Commander, Navy Region 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.

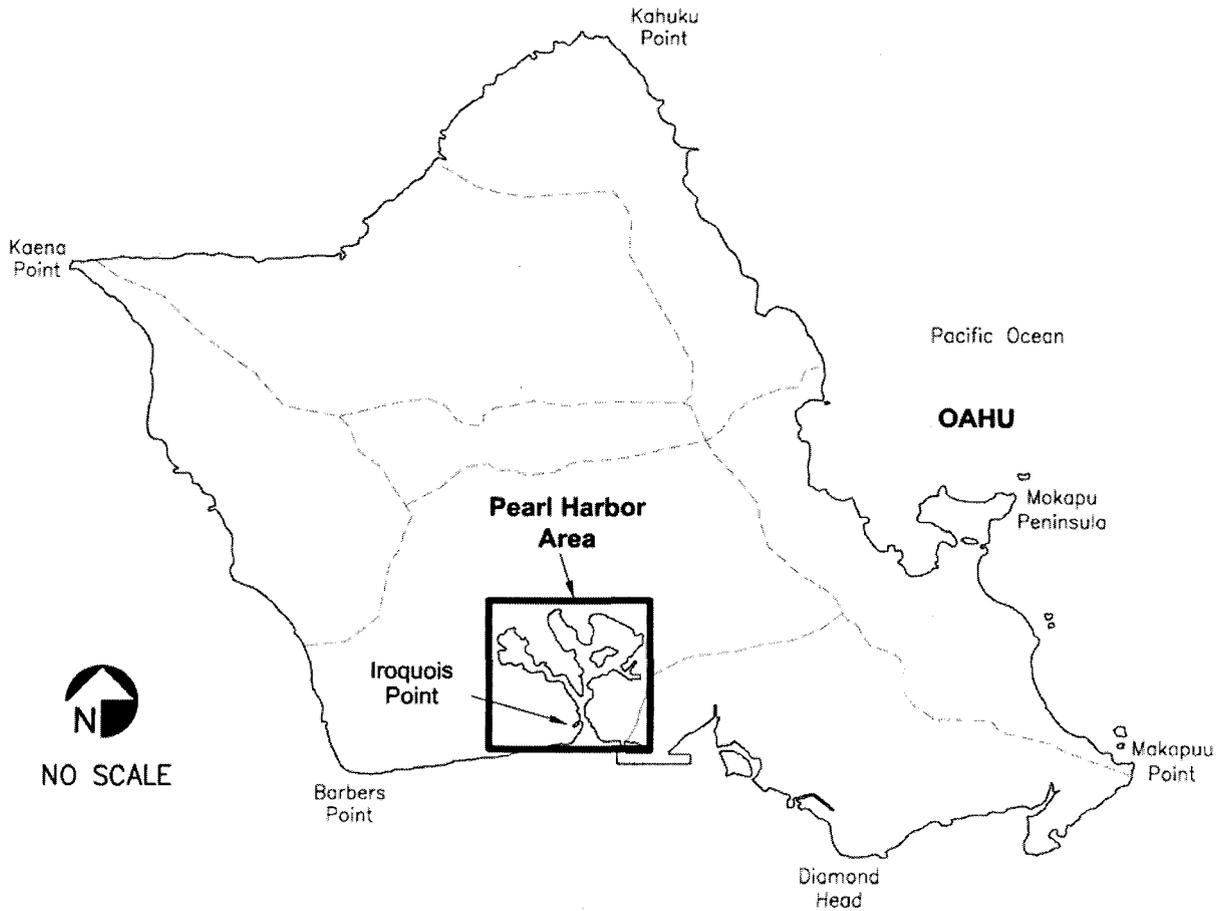
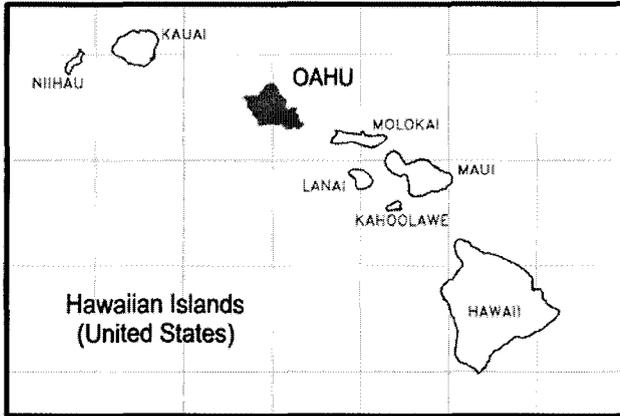
Prepared by:

Mason Architects, Inc.
119 Merchant St., Suite 501
Honolulu, HI 96813

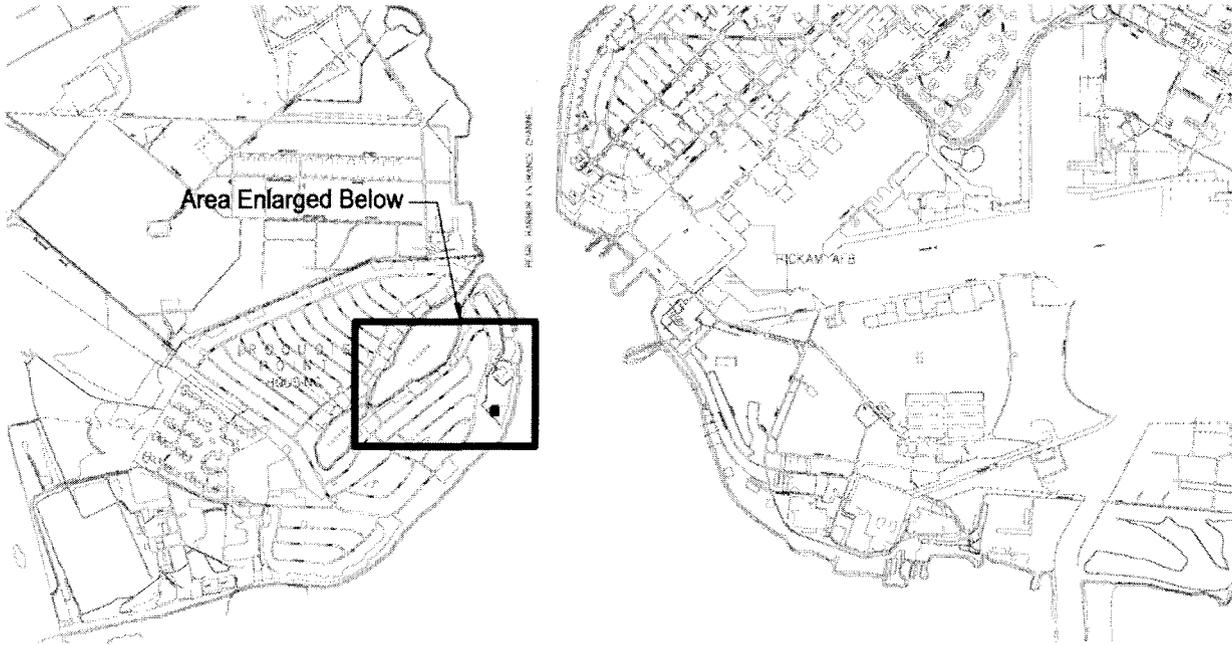
AMEC Earth & Environmental, Inc.
3375 Koapaka Street, Suite F251
Honolulu, HI 96819

Date of Final Report: July 2005

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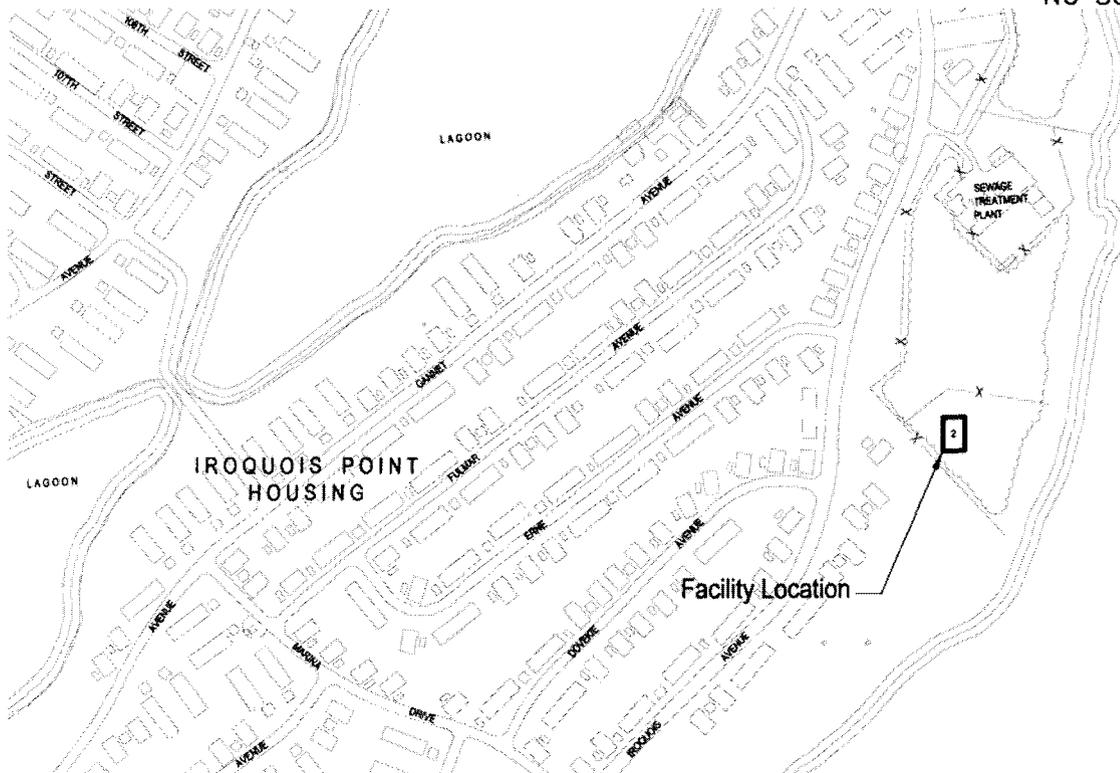
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Vicinity Map



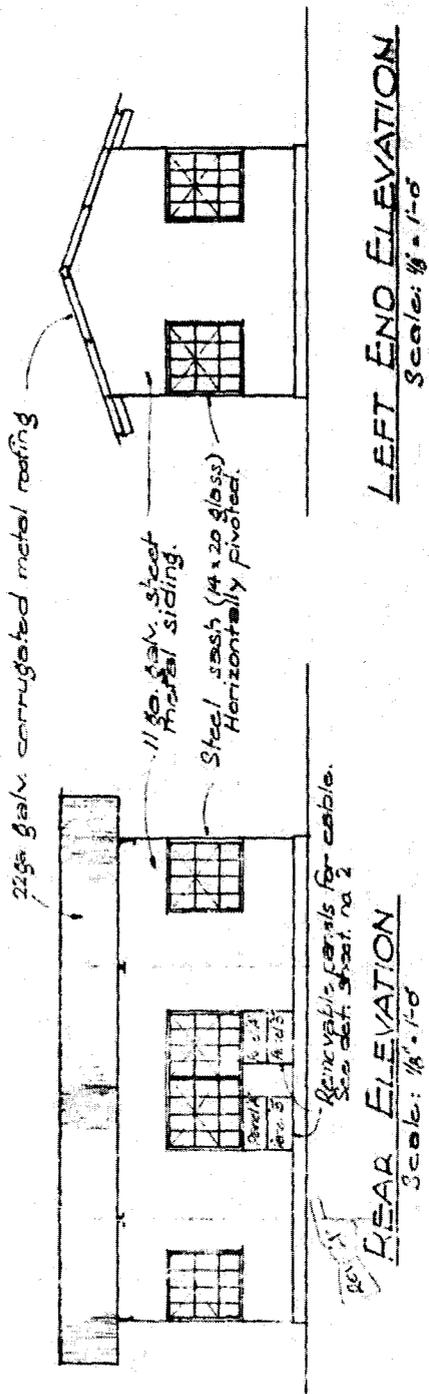
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Site Map

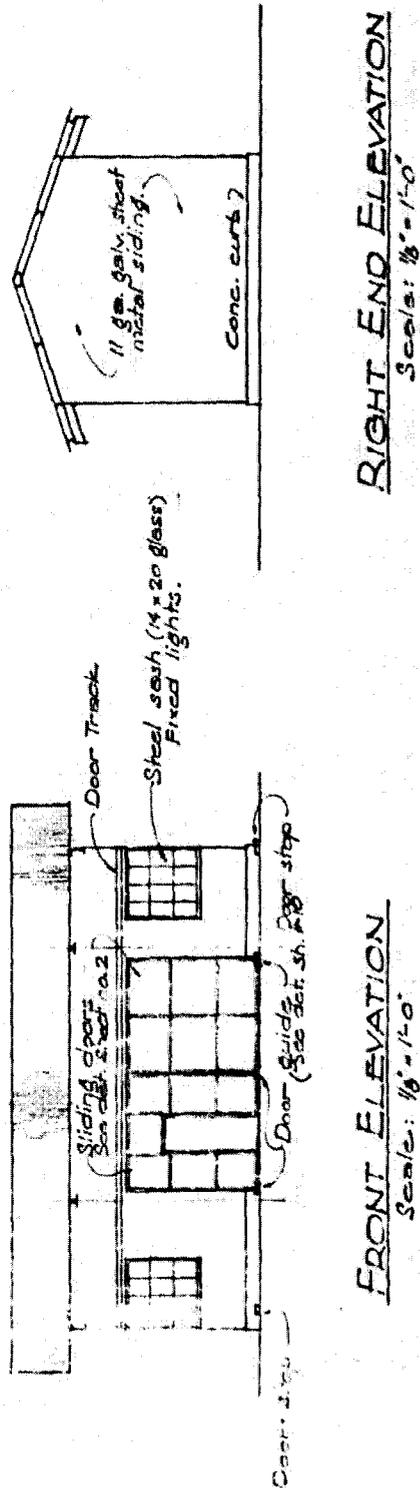
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Portion of Drawing No. 462852, dated June 7, 1948 (elevations)



LEFT END ELEVATION
 Scale: 1/8" = 1'-0"

REAR ELEVATION
 Scale: 1/8" = 1'-0"

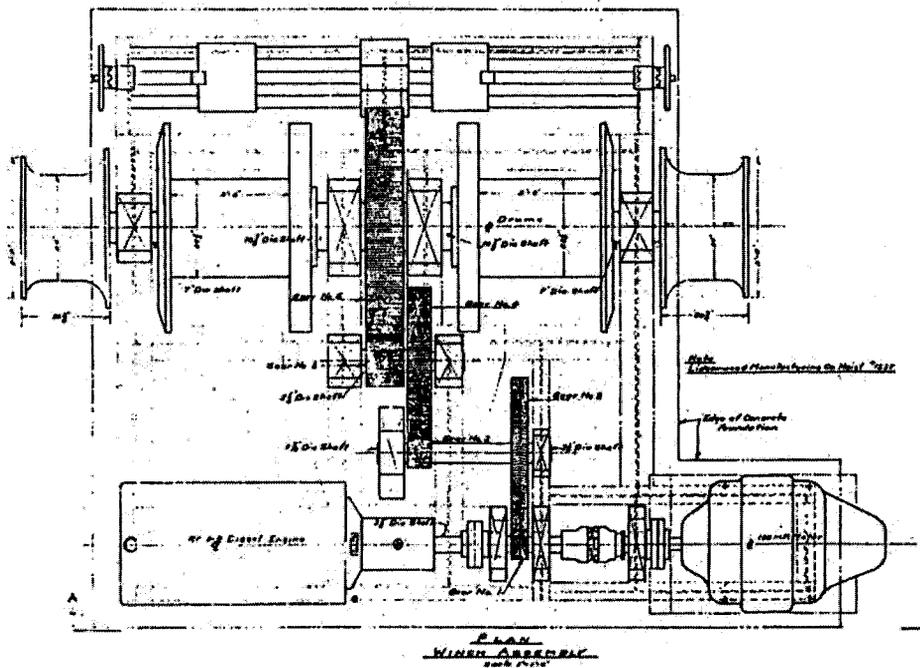
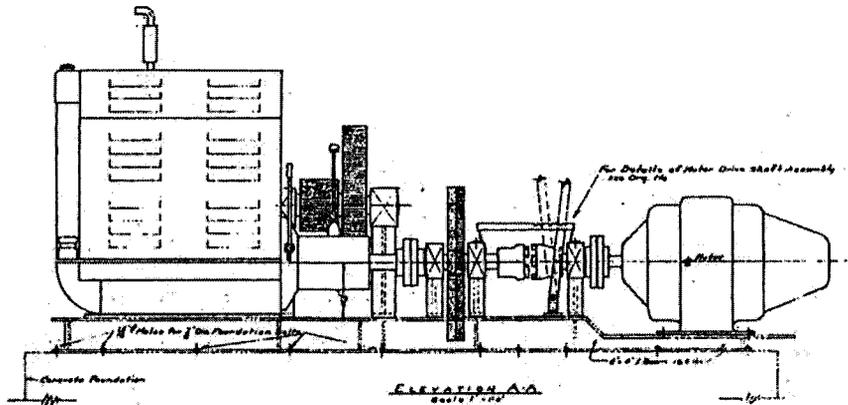


RIGHT END ELEVATION
 Scale: 1/8" = 1'-0"

FRONT ELEVATION
 Scale: 1/8" = 1'-0"

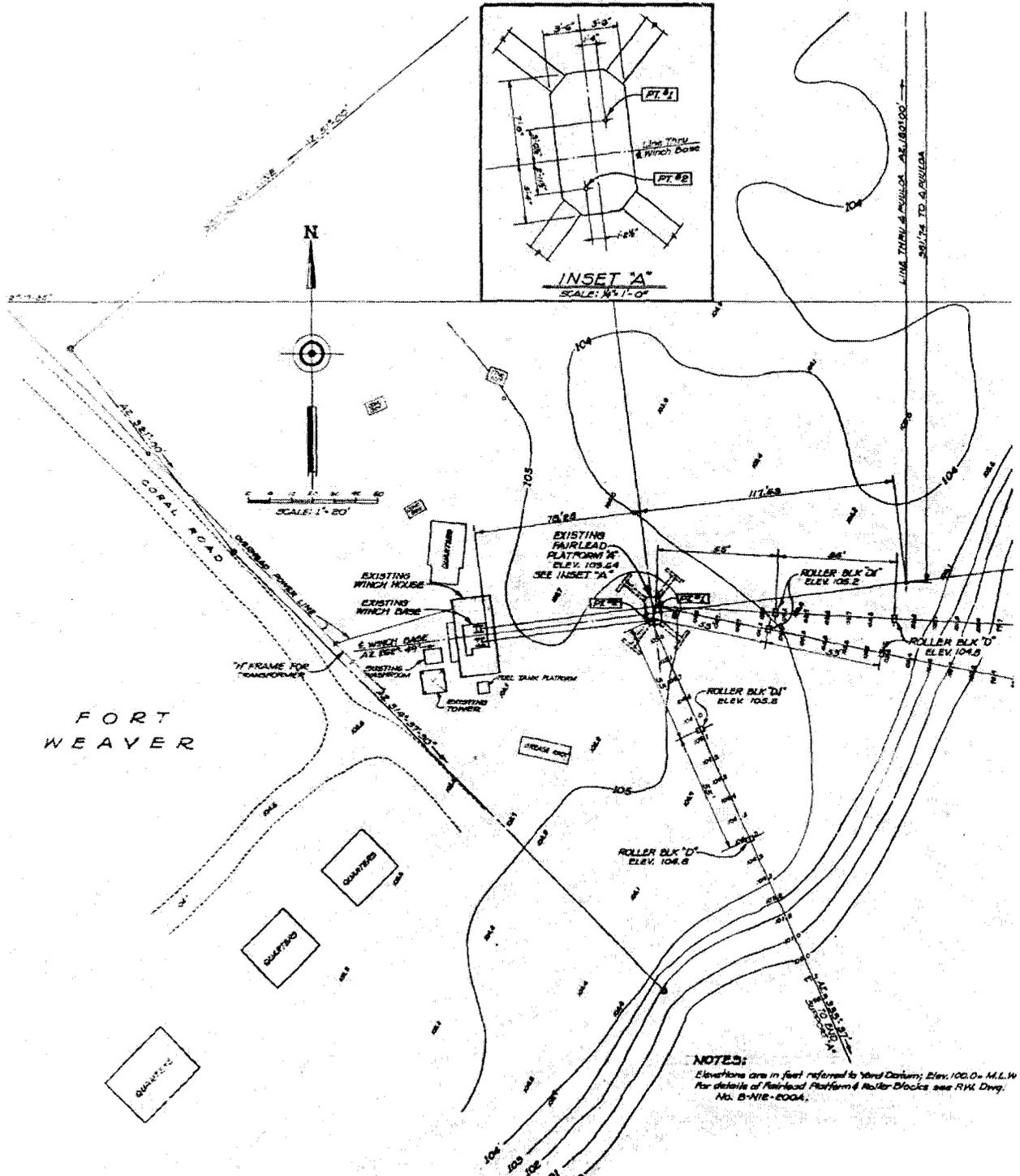
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Portion of Drawing No. 550820, dated February 6, 1952 (winches and engine and motor)



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Portion of Drawing No. 550794, dated February 6, 1952 (winch station layout)



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July 1942 Photo of Harbor Entrance Nets across Pearl Harbor Entrance Channel
(National Archives II, Photo No. 80-G-451147)

