

U.S. NAVAL BASE, PEARL HARBOR, TEMPORARY
STOREHOUSES - 1943 TYPE
(Fleet and Industrial Supply Center)
(General Depot Warehouses)
(Facility No. 404, 405 & 406)
Between Neches and Neosho Avenues, at Utah Street
Pearl Harbor
Honolulu County
Hawaii

HABS HI-430
HI-430

HABS
HI-30

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN BUILDINGS SURVEY
PACIFIC WEST REGIONAL OFFICE
National Park Service
U.S. Department of the Interior
1111 Jackson Street, Suite 700
Oakland, CA 94607

HISTORIC AMERICAN BUILDINGS SURVEY

U.S. NAVAL BASE, PEARL HARBOR, TEMPORARY STOREHOUSES – 1943 TYPE (U.S. Naval Base, Pearl Harbor, Fleet and Industrial Supply Center) (U.S. Naval Base, Pearl Harbor, General Depot Warehouses) (Facility Nos. 404, 405, and 406)

HABS No. HI-430

- Location:** Between Neches and Neosho Avenues, at Utah Street
Fleet and Industrial Supply Center Warehouse 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
- Facility No. 404 4.609820.2362630
Facility No. 405 4.609800.2362630
Facility No. 406 4.609860.2362740
- Significance:** Facility Nos. 404, 405, and 406 are associated with the World War II build-up of facilities at Pearl Harbor by Contractors Pacific Naval Air Bases. These warehouses are some of the additional storage facilities built on the fill land that created Kuahua Peninsula. They played an essential role in meeting expanded storage needs for the base and in supplying the advance lines of the Pacific Fleet during World War II. These wooden storehouses embody the characteristics of a distinctive type and period of construction. They have great integrity of design, location, setting, materials, workmanship, feeling and association. These structures remain an integral part of the early group of Naval Supply Depot buildings. Facility Nos. 404, 405 and 406 are contributing elements to the Pearl Harbor National Historic Landmark.
- Description:** Facility Nos. 404, 405 and 406 are located in a section of the base that was originally fishponds (Loko Muliwai / Kunana) or part of the East Loch waters. Kuahua Island became Kuahua Peninsula in the early 1940s by filling these fishponds and nearby shallow shore areas. These warehouses are in a grouping that includes one large concrete shop building (Facility No. 482) and three other wood-frame storehouses of similar design (Facility Nos. 489, 491, and 490). These facilities are mostly surrounded by asphalt or concrete paving, with some patches of grass planted between the buildings and the roads or driveways. The entire west side of Facility No. 405 has been paved to provide parking spaces, and the east sides of Facility Nos. 404 and 406 have also been paved, to allow for a bike path along Neches Avenue.
- These three storehouses are large one-story structures. Facility No. 404 is the largest with a footprint measuring 352'-0" x 120'-0", and a height of approximately 25'. Facility Nos. 405 and 406 have the same width and height but their length is 320'-0". All three structures have pile

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foundations, with a separate footing under each column. The inner rows of columns are supported by three piles under each footing, while the perimeter columns have two piles per footing. The outer columns are also connected by an 8"-wide perimeter foundation curb of concrete. The curb is continuous except at the door openings.

The storehouses have wood structural frames with an exposed wood truss system. The trusses are nearly flat, with almost parallel top and bottom chords. The 12" x 12" timber columns are spaced 16'-0" on center along the length of the sides, 32'-0" apart down the two rows of interior columns, and 40'-0" on center across the width. Facility No. 404 has 22 bays along its length and three bays across its width. Facility Nos. 405 and 406 have 20 bays along their lengths and three bays across their widths. The buildings have board and batten siding, with 1x12 boards and 1x3 battens. A sloping 2" x 4" is installed as a water table, at a height of approximately 16', because that was the standard length of available lumber.

Most of the exterior large sliding doors in these three buildings are wood-framed, covered with corrugated metal panels, and measure 15'-8" in both height and width. They hang from overhead tracks and are mounted on the exterior. A few of the sliding doors have been replaced with roll-up doors mounted on the interior. All three storehouses have one door opening on each end (north and south). Facility No. 404 has four large door openings evenly spaced on its east and west sides. Facility Nos. 405 and 406 have three large door openings along their sides. Most of the large door openings also have interior-mounted security doors or gates. A 1943 drawing shows interior sliding doors with wire mesh attached to a wood frame, and several of this type remain. Various replacements have been installed, including double chain-link gates and metal-framed security doors. These interior doors or gates allow for air-flow through the building, while providing access control. Originally there was only one standard-size (about 3' x 7') hinged door in each storehouse; each was on the west side and led into the office space. Other doors have been added, and most of the original ones have been replaced with modern flush types, made of plywood or metal. One two-panel door is on the west side of Facility No. 405, near the northwest corner. The top of this door has a plywood sheet over it, and the floor level is about 2' above grade at this point, with no stair to the door; so it is not currently in use.

Some original double-hung, wood-sash, one-over-one light windows remain in these three storehouses. In the original design for Facility No. 405 and 406, the office space had one pair of windows on the north side of the office door, and the two toilet rooms each had a single window to the south of this door. The office and toilet rooms in those storehouses were located near the middle of their west sides, between the middle and the southernmost sliding doors. The window pattern for Facility No. 404

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was similar, except that the office was located in the northwest corner of that storehouse, so it had an additional pair of windows on the north end, in its original design. At some date before 1962 windows of the same type as the original ones were added at the southwest corner of Facility No. 404 – three paired windows on the south end, plus a triplet and a quadruplet window on the west side. In Facility No. 405 sliding windows were added in the northwest corner. An additional window was installed and jalousies have replaced the original double-hung windows and office door in Facility No. 406. In addition to the windows, rectangular louvered vents have been installed in the upper walls, spaced every two bays across the east and west sides of the buildings.

Facility Nos. 404, 405, and 406 have low-slope gable roofs covered in multi-ply built-up roofing. The eaves overhang the side walls by 4'-6' but by a smaller dimension on the end walls. Paired boards extend from the upper chords of the roof trusses to support the eaves. The ends of the boards are clipped. Skylight domes were installed in the roofs of the storehouses in 1983. Each is about 7' square, and so two roof purlins typically run under the domes, giving the appearance of a multi-light skylight. Generally, along the outer bays, one dome is placed in every second bay. However, there are no skylights in the six bays at the southwest corner of Facility No. 404. One dome is located in each of the central bays, but placement alternates between either side of the ridge line.

Some elements of the fire protection system are on the exterior of these storehouses, such as the risers and metal enclosures over the valves and electrical switches. Various other electrical boxes and conduits also have been installed on the exterior of these warehouses. There are several types of exterior light fixtures mounted on the storehouses. There are older-style ones projecting from some corners and a few sides of Facility Nos. 404 and 406. Facility No. 405 has a similar fixture over its south-end door, but it also has three cobra-head portions of street-lights attached to the west wall. All three storehouses typically have a modern rectangular light fixture over their large sliding doors, if there is not one of the other types nearby.

The interiors of the storehouses expose the structure and typically have no finishes. The trusses and perimeter columns of Douglas fir are usually unpainted, but many of the central columns are painted. There is about 18' clearance between the bottom of the trusses and the floors. The floors of these warehouses are asphaltic concrete, except the office and toilet rooms have floors of reinforced concrete. The interior of each storehouse is mostly a large space interrupted only by the timber columns. Facility No. 405 does have a chain link fence across its width, dividing its open area. Each storehouse originally had an office and two toilet rooms. The paired windows described above denote the locations of the office rooms, while the single windows indicate the toilet rooms. As

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noted in the paragraph about windows, Facility No. 404 had its office and toilet rooms in the northwest corner, while Facility Nos. 405 and 406 originally had their office and toilet rooms positioned near the center of their west sides. The most recent (1987) storehouse drawings indicate that only the toilet rooms remain in Facility Nos. 404 and 405, but not their original offices. An office created with modern modular partitions has been installed in the southwest corner of Facility No. 404. An expanded office has been constructed and toilet room partitions rebuilt in Facility No. 406. Shelving and stored materials create aisles within the buildings. The interior lighting includes mostly rectangular fluorescent fixtures and a few standard dome industrial light fixtures.

Historical Context: See the report on warehouses (HABS No. HI-388) for an overview history of the establishment and evolution of the Naval Supply Depot at Pearl Harbor Naval Base. Also, see the reports on the similar storehouses in this area, Facility Nos. 489, 490 and 491 (HABS No. HI-435), on the Merry Point Dry Provisions Storehouses, Facility Nos. 146, 147, and 148 (HABS No. HI-414), and on the concrete Dry Provisions Storehouse, Facility No. 479 (HABS No. HI-434).

Facility Nos. 404, 405, and 406 were built in 1943 to satisfy the demand for large quantities of supplies to be stockpiled for the Pacific Fleet and for the advance bases in the Pacific during World War II. Since demand could not be accurately predicted, the Naval Supply Depot at Pearl Harbor had to be ready to accommodate sudden large requests from the forward lines of battle. These three buildings were part of the plan to develop new areas of Pearl Harbor for storehouses. Kuahua Island became Kuahua Peninsula, using spoils from dredging operations in Pearl Harbor and rock from the Red Hill tank excavations. This created more level land on the base for large warehouses, at a convenient location for transferring supplies to or from ships, trains, and trucks. Most of the construction work at Pearl Harbor in the early 1940s, including these storehouses, the land filling and harbor dredging, as well as the Red Hill fuel facilities, was done by the consortium of builders known as Contractors, Pacific Naval Air Bases (CPNAB).

These 1943 buildings are called "Temporary Storehouses" on their drawings. As early as 1940, the Bureau of Yards and Docks realized that "wartime construction could not be of a permanent nature" (Reinhold 1954: VII-34). Temporary buildings were accepted as a necessary solution to the Navy's need for inexpensive and quickly erected facilities, that also minimized use of critical materials for other war needs, such as steel and copper. Temporary construction was expedient because it "conserved three of the most precious resources of the war: time, money, and building materials" (R. Christopher Goodwin 1997: 39). Still, the notes on a drawing (no. M-N6-343) for these storehouses require "all workmanship to be of the highest quality."

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All the 1943 drawings for these buildings, prepared by the Fourteenth Naval District Public Works Office, are stamped with the statement that they were "approved & certified to comply with all material & design requirements of District Order 29-43 dated January 1, 1943 for war-time construction." The project manager had to sign and date this statement. The completion report by CPNAB notes that "Government regulations as to quality, grade, weights, and restricted uses of materials were changing continually" (Contractors, Pacific Naval Air Bases n.d.: 69). They note that the government allowed them to substitute cheaper or more readily available materials to effect cost and/or time savings.

Given that situation of frequent changes during construction, not all the details shown on the 1943 drawings were built as shown. For instance, the fixtures, such as the porcelain sinks and urinals, in some of the toilet rooms look as if they could date to the original construction. However, the detail drawings (no. M-N6-347) show simple metal-lined wood construction for these fixtures. A detail for fixed blackout hoods of plywood to cover the top portion of office windows is drawn on the same sheet. Guard frames for the large interior gates are shown on a July 1943 drawing (no. M-N6-354). These elements, blackout hoods and guard frames, were not noted in field visits, and may never have been built, since blackout regulations were modified in the summer of 1943 (Mamiya Medical Heritage Center 2001).

These three storehouses were erected very quickly; the drawings are dated April 8, 1943 and by June 7, 1943 a historic photo (National Archives II 1943) shows that Facility No. 405 was mostly completed, the framing was up for Facility No. 406, and the foundation work on Facility No. 404 was underway. Another photo shows that all three of these buildings were completed by July 12, 1943 (Naval Facilities Engineering Command Archives 1943). Few alterations were made to the buildings during World War II. They were used for provisions storage, according to a September 1945 list (Naval Supply Center 1945). A two-level spice storage room was added to the southwest corner of Facility No. 405 in July 1943. It occupied one bay and measured about 16' x 40'. The room was not enclosed by solid walls, but by 1" x 4" lath nailed to 2" x 6" studs and girts. Because of the Japanese occupation of the spice-producing countries a shortage of spices was anticipated, and rationing was established. Ration requirements were determined by past issue records and reduced by one half. Records showed that this ration allowance was sufficient for the messes concerned. An adequate source of nearly all spices was available throughout the war (Naval Supply Depot 1945: [2]). These three storehouses and Facility No. 489 were known as "Issue Buildings" for dry stores during WWII (Naval Supply Depot 1945: [4]).

Three drawings from 1952 show that a flour-sifting room and a flour-bagging room had been built in the southwest corner of Facility No. 404

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sometime prior to that date, when a platform in the flour-sifting room was altered. The partitions that created these rooms and the platforms were removed sometime before 1987. It is not known when the windows in this corner of the building were added. The windows are the same one-over-one light double-hung type as in the original office and toilet rooms. In the 1963 and 1966 Navy facility listings, this building is noted as both a general and electronic warehouse (U.S. Navy 1963: 3704 and 1966: 4962). Other than those listings, no specifics on the kinds of items stored in these three facilities after World War II were found; they are listed simply as storehouses or general warehouses.

The major work done in 1952 on Facility No. 404 involved leveling the height of the roof trusses, which differed by as much as two feet. Differential settlement over the decade since construction had occurred, since the notes on one of the 1952 drawings (no. 551151) required "sinkages in the floors between columns to be filled in." The entire floor of Facility No. 404 was repaved at this time with asphaltic concrete.

In 1962, Facility No. 404 was re-roofed with four-ply built-up roofing. Historic photos in Pearl Harbor binders at the State Historic Preservation Division show that sometime before 1983 the louvered vents in the upper side walls were added to all the buildings and that a covered loading dock was added to the north end of Facility No. 406 (date of removal before 1997); however, no drawings documenting these alterations were found. In 1983, skylights were added to the roofs of all three storehouses. A sprinkler system was added to each storehouse in 1987.

Sources:

The 1943 drawings for these storehouses are on microfiche cards at the Plan Files of the Naval Facilities Engineering Command, Pacific under 14th N.D. numbers M-N6-340 through M-N6-348, M-N6-354 through M-N6-356. The renovation drawings are filed under Y&D numbers 551151-551153, 987239, 7029178, and include most of the set of drawings between nos. 7075446 and 7075461.

Contractors, Pacific Naval Air Bases

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

Mamiya Medical Heritage Center

2001 Medicine World War II Hawaii, "Blackout" section. Accessed July 28, 2006, at <http://hml.org/mmhc/exhibits/ww2hml/war.html>.

National Archives II

1943 Photo of Temporary Storehouses [Facility Nos. 404 – 406] and Torpedo Overhaul & Storage Building [Facility No. 482] dated

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June 7, 1943 in RG71CB, Still Photo Section, College Park, Maryland.

Naval Facilities Engineering Command Archives

1943 Photo showing completed Temporary Storehouses [Facility Nos. 404 – 406] dated July 12, 1943 in Box TI8/27, Port Hueneme, California.

Naval Supply Depot

1945 World War II Administrative History of the Naval Supply Depot, Vol. III / Pearl Harbor, T.H. Provisions Group section of unpaginated typescript in Significant Supply Department Records, 1942-1945, Box 2; Records of the Supply Officer, Fourteenth Naval District, RG 181; National Archives and Records Administration, San Bruno, California.

R. Christopher Goodwin and Associates, Inc.

1997 *Historic Context for Department of Defense Facilities World War II Permanent Construction*. Prepared for the U.S. Army Corps of Engineers, Baltimore District. Accessed June 8, 2004 at www.aec.army.mil/usaec/cultural/ww2_pc.doc.

Reinhold, R.W.

1954 *The Organization of the Bureau of Yards and Docks, An Annotated Historical Summary of its Development. Volume II – From 1940 to 1954*. Bureau of Yards and Docks, Department of the Navy: Washington, D.C. Available at Washington Navy Yard Library.

U.S. Navy

1963 *Detailed Inventory of Naval Shore Facilities -- Real Property Data*. NAVDOCKS P-164, Volume IV, District 14. In archives of Naval Facilities Engineering Command at Port Hueneme, California.

1966 *Detailed Inventory of Naval Shore Facilities -- Real Property Data*. NAVDOCKS P-164, District 14. In library of Naval Facilities Engineering Command, Pacific at Pearl Harbor, Hawaii.

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 type 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

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time, specific actions that may affect these facilities have 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 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 2006 by Mason Architects, Inc.

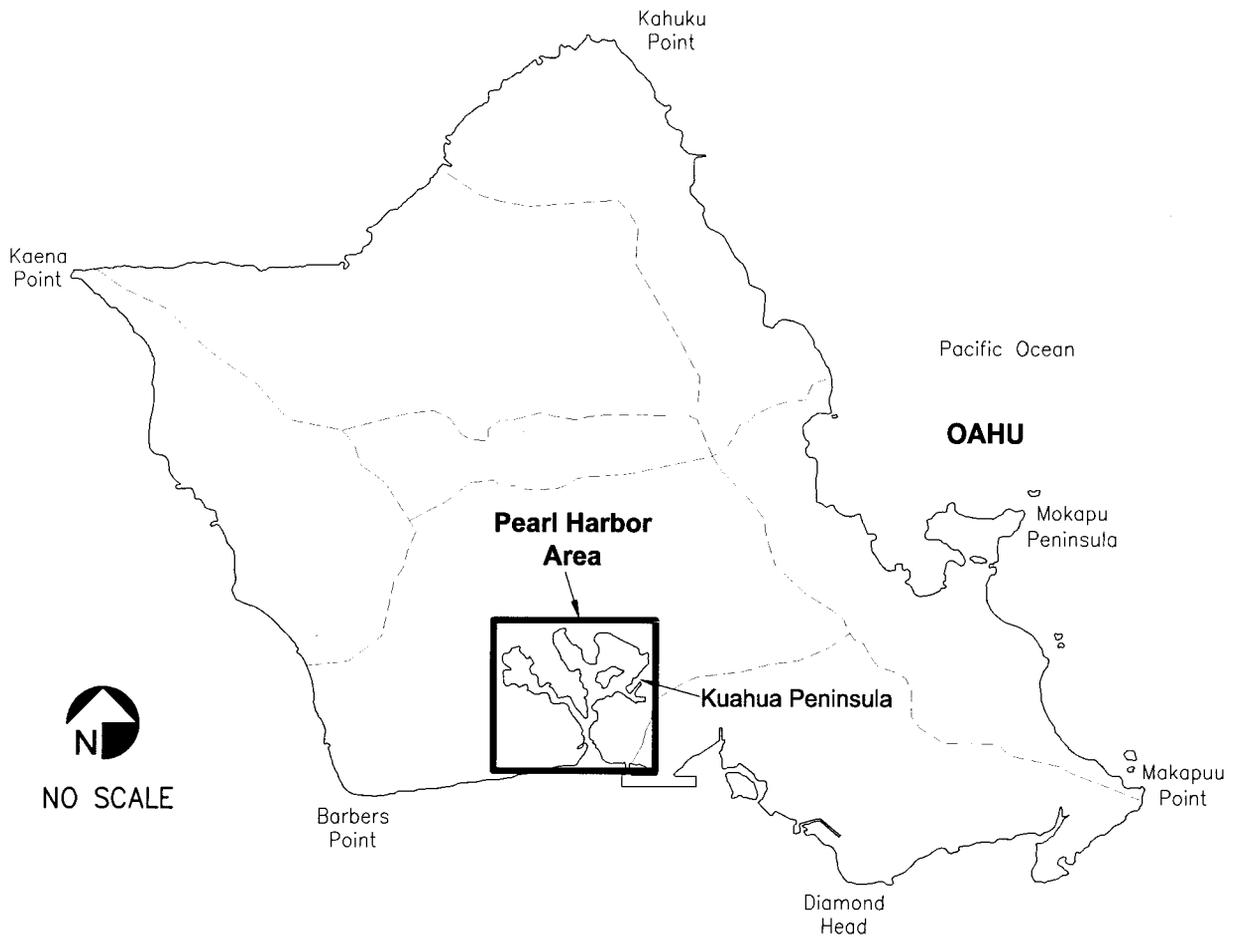
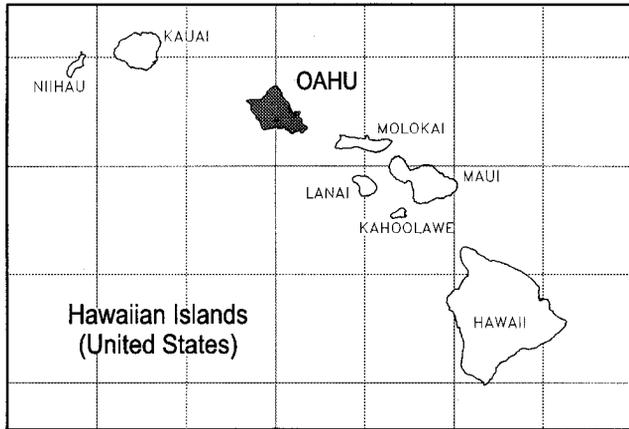
Prepared by:

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119 Merchant St., Suite 501
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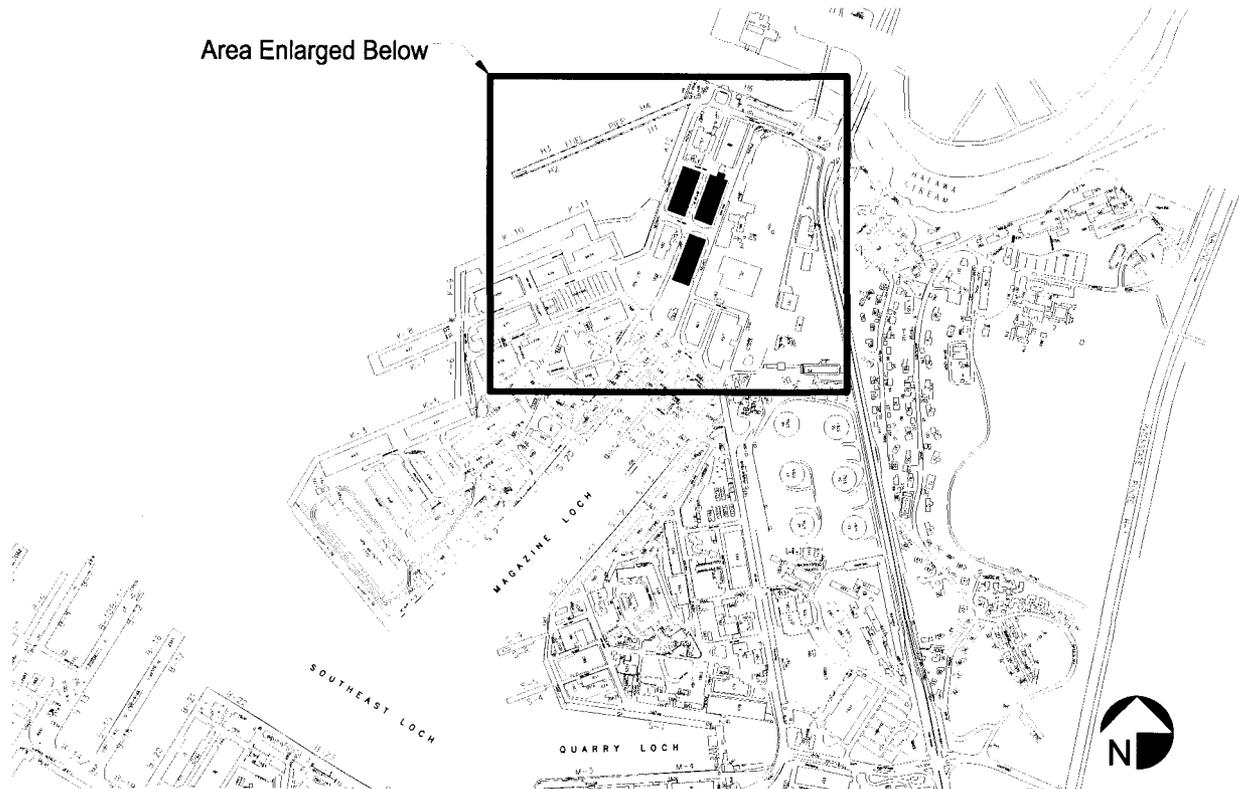
AMEC Earth and Environmental, Inc.
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Honolulu, HI 96818

Date of Final Report: April 2006

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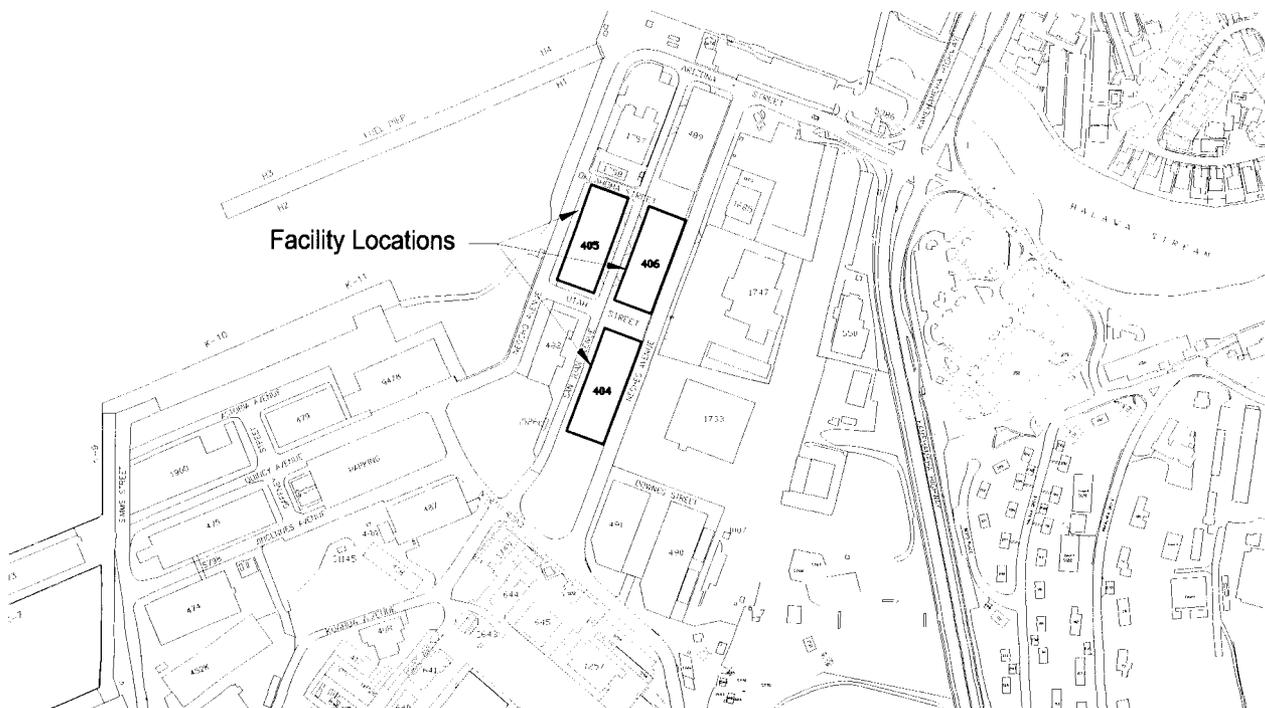


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Vicinity Map

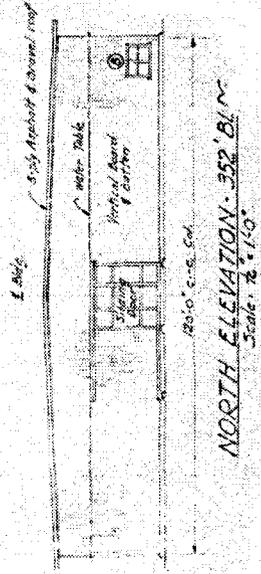
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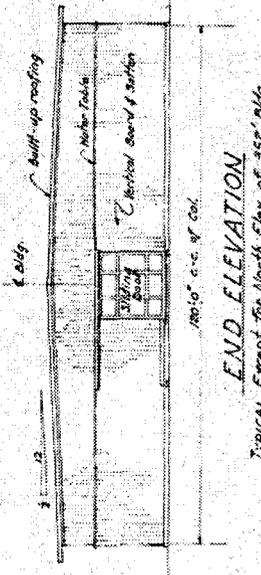
Site Map

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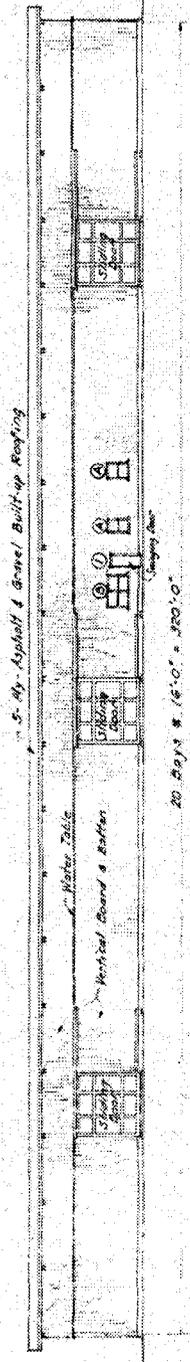
Portion of Drawing No. M-N6-340, dated April 8, 1943 (elevations)



NORTH ELEVATION - 352' BLDG
 Scale: 1/8" = 1'-0"



END ELEVATION
 Typical, Except for North Elev. of 352' Bldg
 Scale: 1/8" = 1'-0"



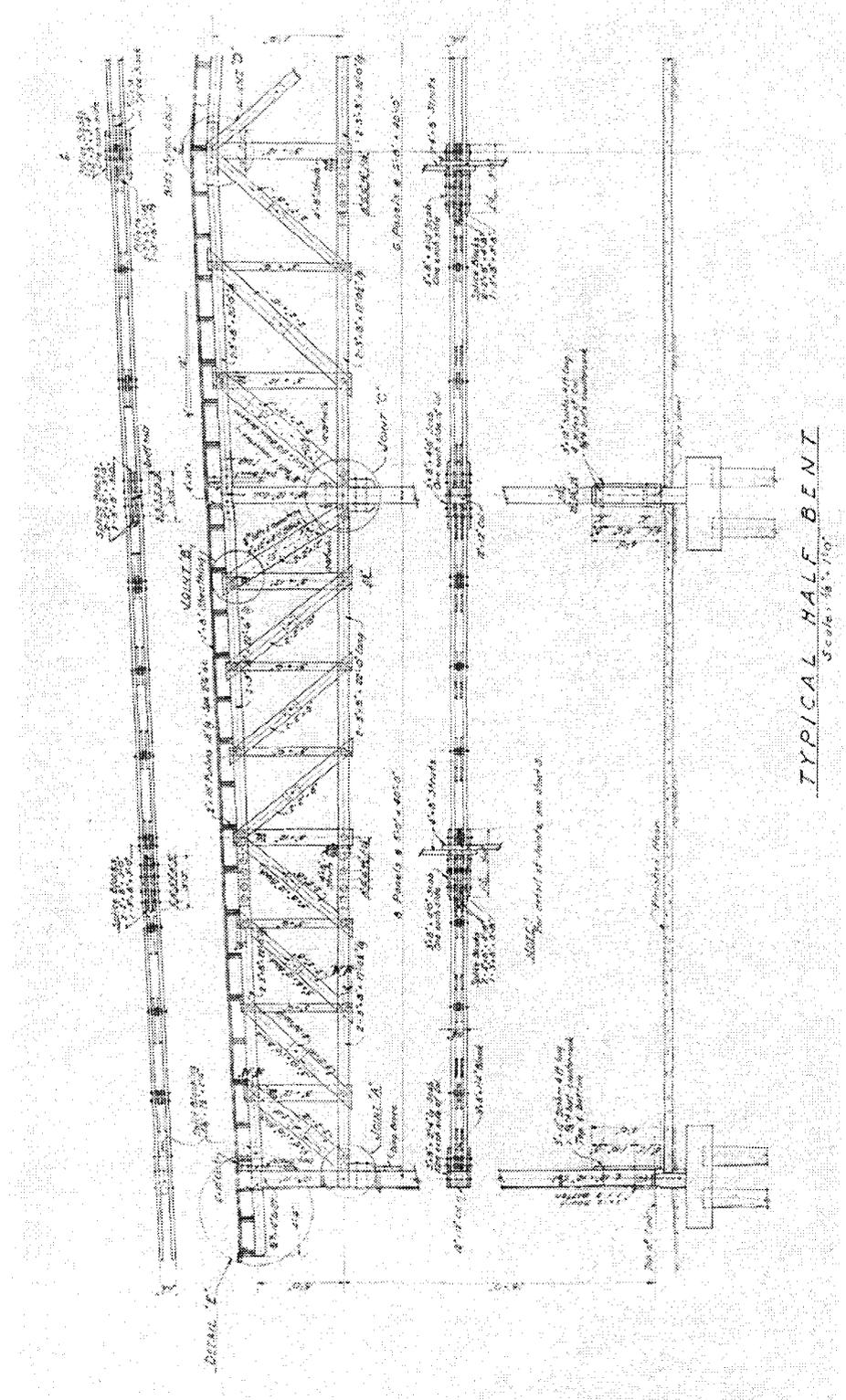
WEST SIDE ELEVATION - 320' BUILDING A+B
 East Elevation Same Except Reversed & Small Door & Windows Omitted
 Scale: 1/8" = 1'-0"



WEST SIDE ELEVATION - 352' BUILDING
 East Elevation Same Except Reversed and Small Door & Windows Omitted
 Scale: 1/8" = 1'-0"

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Portion of Drawing No. M-N6-343, dated April 8, 1943 (typical half bent)



TYPICAL HALF BENT
Scale: 1/8" = 1'-0"