

U.S. NAVAL BASE, PEARL HARBOR, PAINT & OIL STOREHOUSE
(U.S. Naval Base, Pearl Harbor, Naval Shipyard, Facility No. 27)
Avenue D near Seventh Street intersection
Pearl Harbor
Honolulu County
Hawaii

HABS HI-449

HI-449

HABS
HI-449

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, PAINT AND OIL STOREHOUSE
(U.S. Naval Base, Pearl Harbor, Naval Shipyard)
(Facility No. 27)

HABS
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Location: Avenue D near Seventh Street Intersection
Pearl Harbor Naval Base
City and County of Honolulu, Hawaii

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: 04.608160.2361780.

Significance: Facility 27 is a contributing resource to the Pearl Harbor National Historic Landmark. Built as the paint and oil storehouse during World War I, Facility 27 is significant for its association with the early naval base history at Pearl Harbor. The structure utilized new technology to make the facility secure and fire resistant. Its expansion in 1940 was a direct result of the demand for increased storage space during World War II. Facility 27 is grouped with adjacent two-story Facility 90, the second storehouse for this purpose in the Shipyard. These uniquely constructed facilities are the only facilities of this type in the Shipyard and are of high integrity. Since its construction in 1919, Facility 27 has been continuously utilized as a storage facility for hazardous materials for the Navy.

Description: Facility 27 is a permanent, one-story poured-in-place concrete structure with a simple rectangular floor plan. The main structure is eight bays long and two bays wide with a screened lean-to storage shed addition that extends the full length of the north side of the building. Each bay is 20' x 20'-6" with the end bays (east and west) being perfect squares of 20'-6" x 20'-6". The overall dimension of the building including the lean-to then measures 161' x 66'. The foundation consists of a 6" reinforced concrete slab on reinforced concrete piers. The entire facility is at a raised height of approximately 3' from the ground with a concrete loading dock platform on the south side of the building that slopes down to ground level on the east side of the building, and is adjacent to the narrow gauge rail tracks. The ramp allows for easier access to the facility when trucks and forklifts are storing or removing chemical materials from the site.

The roof is a flat, 4-½" thick poured in place concrete slab using board forms with 3' overhanging eaves. It is covered with built-up roofing material and supported by existing concrete transverse and

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longitudinal roof beams. Interior reinforced columns are situated approximately every 20', carrying the load of the roof and the sustaining ceiling beams below it. The columns sit on footings that hold up the 6" reinforced concrete slab foundation. The interior is sectioned off with reinforced concrete walls located every 2 bays to create four separate storage spaces within the facility that can only be accessed from the building's exterior. This structure is a poured-in-place concrete structure and impressions from the board forms are visible on the walls and ceiling surfaces.

There is a symmetrical pattern of metal covered, wood sliding fire doors at the south wall of the building. Situated one per bay, each of these doors operates on their own metal sliding door track and hangar, with door rollers and straps at the top of the door and metal door guides at the base. Every door has a fusible link, a weight, and an opposite counterbalance (sufficient to close the door automatically) at the east and west side of the door and door opening. These weights suspend from a continuous 1/4" metal chain that passes over a 5" pulley sheave (approximately 6'-6" AFF) located at both the east and west end of the door and its opening. This same door type was installed in 1940 on the north side of the building at the second storage area (fourth bay) from the west end of the building, creating an entrance between the original structure and the added lean-to storage shed. The only added difference to this door was the installation of a pair of 3'-4" x 6'-9" metal covered sliding fire doors on the interior. These doors operate on an overhead metal sliding door track that is attached with metal track clips to a 3" x 3" x 3/8" angle that is bolted into the concrete wall. Each door also has three sets of sliding door rollers and straps and a fusible link. The same weights and pulley system as previously mentioned apply here as well.

Each structural bay has three windows along the north wall and two along the south wall that flank each side of the sliding metal entry door. The typical window sash is approximately 18" below the roof slab, and measures 5'-2" x 1'-6-1/2" with five lights per sash. The end openings in each sash are filled with wire mesh and the three central lights are a steel framed pivot window glazed with obscure 1/4" wire glass. The end bays of the building have 6 windows along their respective east and west exterior walls each with five fixed lights of obscure wire glass. Affixed to the interior of each window on the north and south wall of Facility 27 is a 1/4" thick steel plate slightly larger in size than the window sash. The top of the plate is welded to three 8" wrought steel, extra heavy T-hinges that are bolted into expansion shields that have been inserted into the underside of the concrete beam above. A metal pad eye is welded to the base of the steel plate. In the closed position the steel plate is parallel to the window sash and at its maximum point it can be opened like an awning window to a 90° angle. A flexible metal wire is looped through metal screw eyes that are inserted into expansion shields. These are vertically aligned on the underside of the concrete beam and on top of

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the concrete wall between the steel plate and window sash. The wire goes through an eye in the concrete wall and extends (at an angle) through a third screw eye installed on the underside of the roof slab. It is then tied-off at a metal pad eye that is welded to the base of the steel plate, securing its 90° position.

The 25'-0" wide lean-to was constructed along the north side of the building around 1940. The floor height and floor material are the same as that of the original facility thus creating a smooth transition between the two attached units. This portion of the building is constructed of standard steel columns and diagonal bracing with 2" x 2" x 1/4" steel T's spaced at equal intervals between the columns and welded to the 2" x 2" x 1/4" steel angles at the base and top of the wall frame. Enclosing the framing on the exterior is 1-1/2" No.9 galvanized expanded metal mesh. The roof at the lean-to is similar to that of the 1919 section of Facility 27 but in this case the steel is not encased in concrete. Fifteen-inch steel I-beam rafters and 8" steel channel purlins compose the roof structure, which is supported by the building's framing members. The roof top, constructed of 2" tongue-and-groove wood decking with built-up roofing, is secured to the steel purlins with 2" x 4" wood nailing strips that span the length of the building. The eaves overhang 3' and the purlins and rafters are tapered or clipped at the ends. There are sliding screened doors of expanded metal mesh with metal frames along the perimeter of the lean-to. Once operable, these doors have since been welded shut. The east end bay of the lean-to has been enclosed with 2" x 4" wood studs and screened walls of expanded metal mesh. Access into this space is via a screened double door entry centered on the west wall that opens into the main portion of the lean-to.

A separate 20' x 20'-6" alcohol storage room was planned for the northwest corner of the third storage area (from the west end) of Facility 27. In more recent years the entry door and one wall of the room were removed. Today all that remains is a wall framed with steel T's and angles and sheathed with corrugated metal panels that divides the space within the storage area. With the exception of this wall, the interior of Facility 27 remains simplistic and highly utilitarian by design. Rectangular fluorescent light fixtures are suspended from the ceiling and are uniform throughout the facility.

Historical Context:

Facility 27 was constructed in 1919 during the early part of the base development of Pearl Harbor to function as a large paint and oil storehouse. Drawings were produced by U.S. Naval Station – Pearl Harbor, T.H. The facility was positioned on elevated land near the shoreline prior to filling. In the years following the completion of this facility the base was continuing to evolve and expand. In 1925 when the demands for additional paint and oil storage space exceeded the capacity of Facility 27, the abutting Facility 90 was erected on the west side of 27 to serve as an additional paint and oil storehouse,

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much larger in size than its earlier counterpart. Further demands for storage space came about with another wave of base expansion before and during World War II. As a result, in 1940 the screened lean-to storage shed was added to the north side of Facility 27.

This building is grouped with the abutting Facility 90 and adjacent Facility 155 depicting, in stepped sizes, the evolution of base utilitarian storage facilities at Pearl Harbor. Facility 27 has changed from a storehouse for paint and oil products to its current use as a storage facility for hazardous chemicals requiring well ventilated space. With the exception of the 1940 addition, its floor plan has generally remained unaltered over the years and it stands as one of the most intact facilities within the Shipyard.

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

Sources:

The original drawings for this building are on digitally scanned images or microfilm at Pacific Division, Naval Facilities Engineering Command (NAVPAC EFD Pacific) Plan Files. Historic photos for Building 27 can be found at the National Archives II Photo Collection, Number RG71CA, Box 165, Folder "Paint and Oil Storehouse".

Information on new construction and facility improvements at Pearl Harbor during World War II was obtained from an untitled typescript report from the Contractors Pacific Naval Air Bases (CPNAB) files.

HABS/HAER Documents

var. dates For those resources on the Navy database at the time the CRMP (Contract No. NB62742-93-D-0502) was prepared, the HABS/HAER numbers assigned have been included in the electronic database as an additional field, as noted in Appendices: Pearl Harbor Naval Complex Cultural Resources Management Plan, 1998, p. A-6.

Pearl Harbor Naval Shipyard

1992 Historic Preservation Documentation Program, photocopied document dated 15DEC92 including Appendix B Historic Inventory.

Nakahara, Kenneth

1980 Historic Resources Inventory Form dated September 30, 1980. In files of the State Historic Preservation Division, Pearl Harbor Inventory forms binder.

Project Information:

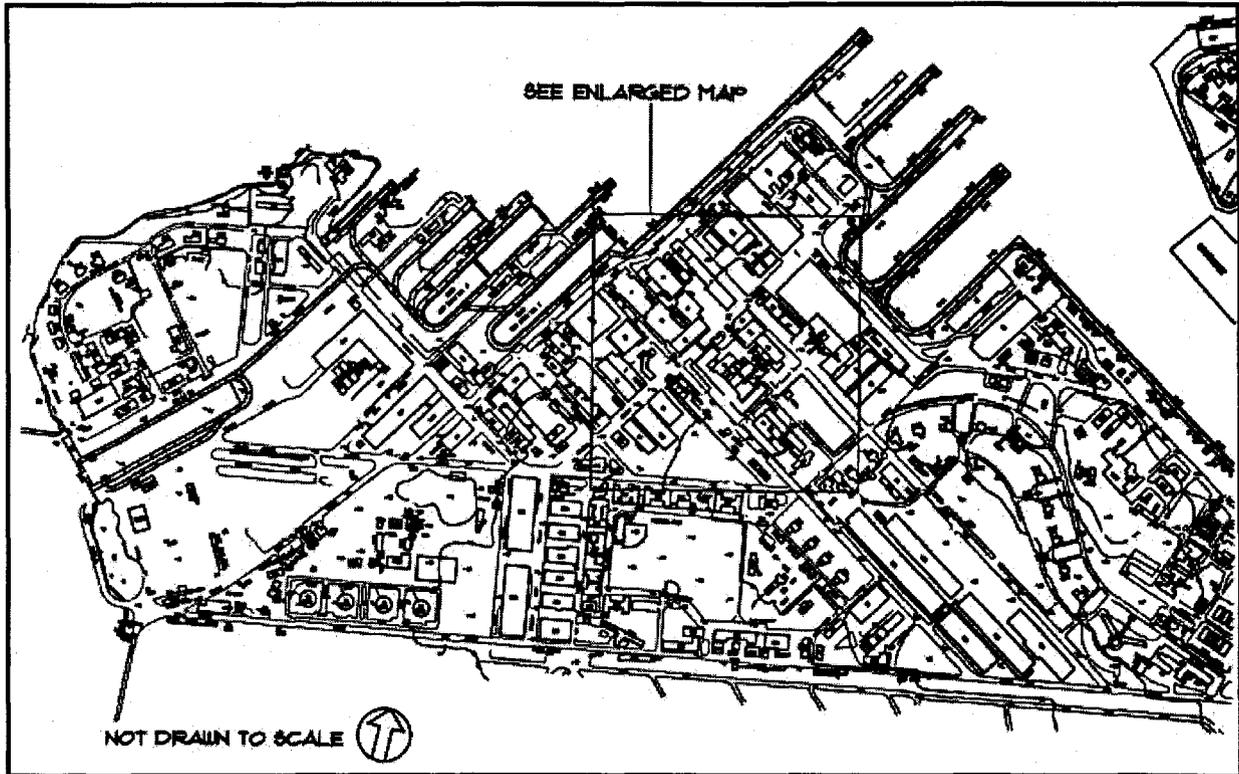
Photo documentation and recordation of this facility by the Navy has been done in anticipation of potential demolition of the structure. Photo documentation of historic facilities by the Navy assists in expediting planned undertakings by having the documentation prepared prior to taking actions. Also, photo documentation assists

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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 A.I.A., Historic Preservation Specialist at the Pacific Division, Naval Facilities Engineering Command (NAVPAC EFD Pacific). The photographic documentation was undertaken by David Franzen, photographer. Joanmarie N. Orlowski, 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.

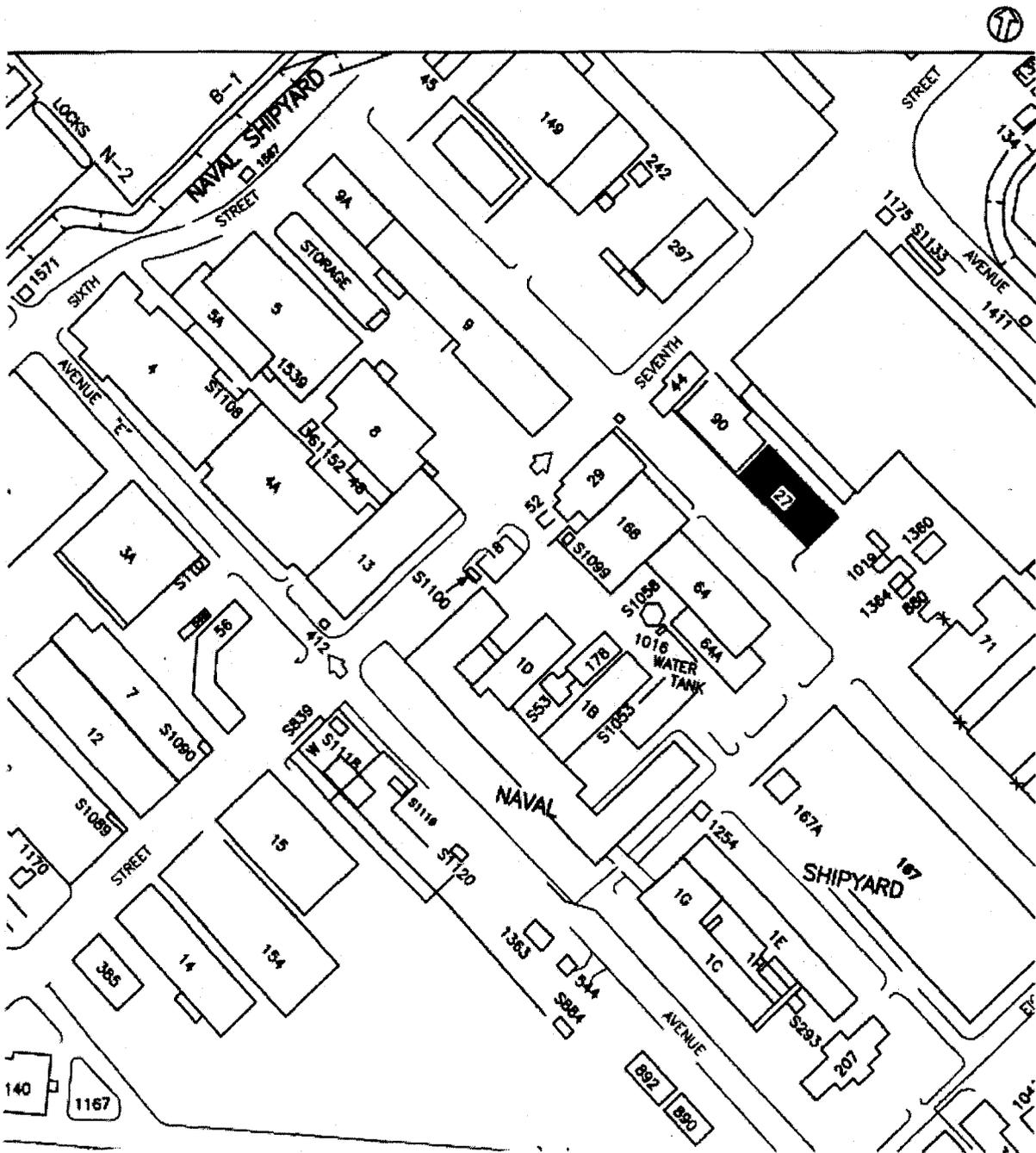
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Shipyard Map



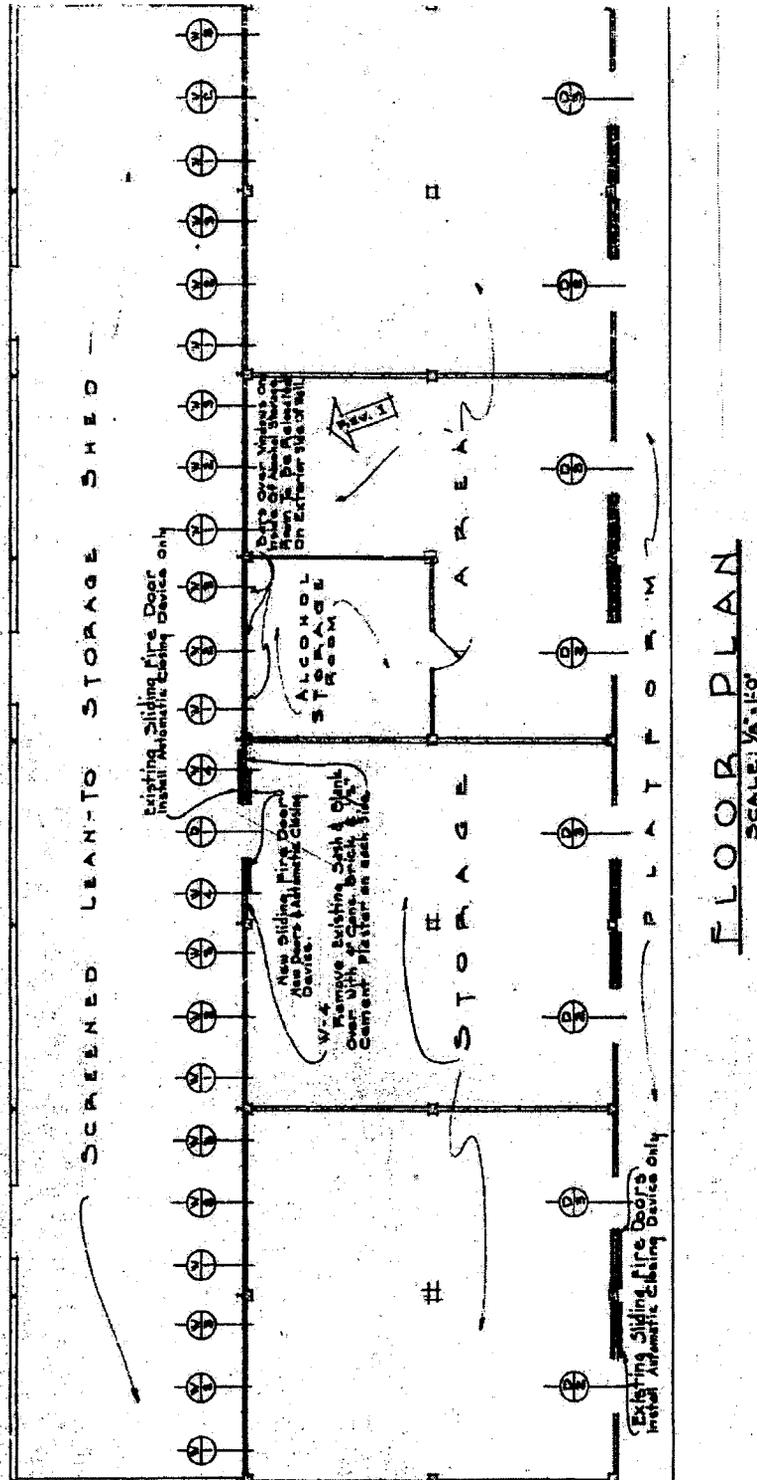
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Enlarged Area Map (reduced, not to scale)



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Floor Plan with Fire Door Installation (portion of Drawing No. 459342, dated 5/3/1948)
 (reduced, not to scale)



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Elevations of North Lean-to (Drawing No. 143818, dated 9/27/1940) (reduced, not to scale)

