

U.S. NAVAL BASE, PEARL HARBOR, PAINT & OIL STOREHOUSE
(U.S. Naval Base, Pearl Harbor, Naval Shipyard, Facility No. 90)
Avenue D near Seventh Street intersection
Pearl Harbor
Honolulu County
Hawaii

HABS HI-493
HI-493

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HI-493

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

U.S. NAVAL BASE, PEARL HARBOR, PAINT AND OIL STOREHOUSE
(U.S. Naval Base, Pearl Harbor, Naval Shipyard)
(Facility No. 90)

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HISTORIC AMERICAN BUILDINGS SURVEY

U.S. NAVAL BASE, PEARL HARBOR, PAINT AND OIL STOREHOUSE
(U.S. Naval Base, Pearl Harbor, Naval Shipyard)
(Facility No. 90)

HABS No. HI-493

Location:

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

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This building is at UTM coordinates 04.608400.2361430 and is within the boundaries of the Pearl Harbor, Naval Shipyard as defined in the location section of the overview report HI-483.

Significance:

Facility 90 is associated with the expansion of the Navy Yard in the 1920s and 30s. It was used for storage of critical electronic material during WWII. Facility 90 is located within the Pearl Harbor National Historic Landmark.

Description:

Facility 90 is a permanent, two-story concrete structure with a simple rectangular floor plan. The main structure is nine bays long and three bays wide with a loading platform running the entire length of the south side (front façade) of the building. A narrow gauge rail road track extended along Avenue "D" at the base of the loading platform when the building was built. The overall dimension of the building measures 170'-0" x 60'-0". In the longitudinal direction, the seven central bays span 19'-6" and the end bays span 16'-6". In the transverse direction, the center bay spans 22'-0" while the side bays span 19'-0". The loading dock is 9'-0" wide. The entire facility is at a raised height of approximately 3'-0" from the ground with the concrete loading platform stepping down to ground level on the west side of the building. A screened lean-to storage shed addition extends about ¾ of the north side length of the building.

The foundation consists of continuous perimeter footings and reinforced 6'-6" square concrete piers at every column. The first floor is a 6" reinforced concrete slab at elevation 122'-0" and sits on coral fill while the surrounding area has a finished grade of 119'-0" at the front side and 119.6' on the back side. (The Mean Low Water (M.L.W) elevation is designated as 100.0' thus the finished grade was about 19' above the water level.) The second floor slab is 10½"-thick. The columns are in a grid layout and are identical on both the first and second floor. The roof is a flat, 6" thick concrete slab, with 2'-0" overhanging eaves. It is covered with built-up roofing material and copper gutters and downspouts run the perimeter.

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The interior of the first floor is sectioned off with reinforced concrete walls to create four separate storage spaces within the facility that can be accessed from the building's exterior. In the center bay of the facility is an elevator and stair core with a door on either wall which accesses a storage space from one door and a small 10'-0" x12'-6" one-room office space from the other. Off of this office space is a small storage room. On the far southeast corner is another room, one bay square, called an 'acid room'. Door openings were originally located on both the front and back (north and south) elevations of this building. (These have now been altered.) The wall locations of the second floor follow that of the first floor; these however, have large double door openings at the center of each wall.

The entire building is made of cast-in-place reinforced concrete. Concrete technology in 1923 was somewhat crude. The 6"-thick concrete walls were board-formed. In other words, the forms were made of planks, and concrete was poured into the forms; when the forms were removed, the outline of the boards was patterned on the wall surface. Many of the walls of Facility 90 are plastered over somewhat sporadically, probably to hide deformities and the board-formed pattern. The concrete columns appear to have been built in sections, eight half-circle sections in total. It seems that these short sections of half-circle pieces were cast off-site and put together to form a circular column on-site. The interior columns have a splayed cone-like capital. The perimeter columns have a splayed square capital. All columns were then plastered over to hide the inconsistencies. Interestingly, the neck of the columns, where the capital meets the column top, is slightly smaller around than is the column diameter. Also, the columns are not perfectly round in diameter. Above the column capital is a concrete drop panel for displacing the load; these measures 9'-0" square and is 4 1/2"-thick.

Large exterior door openings measuring 8'-0" in width by 7'-6" in height are located on the south and north sides of the building on the first floor. On the south side, these door openings are situated one per bay, except for the bay that has the office space, where there are windows instead. On the north side, four door openings are located more sporadically along its side. The doors are metal clad, double wood sliding fire doors that have a unique pulley system. 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 and a weight and opposite counterbalance (sufficient to close the door) 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.

Window openings are located on some bays of the first floor, north side exterior walls, but most of the fenestration is located on the

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second floor, where all sides of the building have steel framed windows and louvered openings. A typical bay of window openings consists of three steel sash sections. The center section is a pivoting sash two rows high. The side sections have a louvered opening at the top and a row of fixed windows at the bottom. There are also small louvered openings just above the second floor slab to provide ventilation.

A 30'-0"-wide one-story lean-to was constructed along the north side of the building in 1938. This portion of the building is constructed of standard steel columns and diagonal bracing with steel T's spaced at equal intervals between the columns and welded to the steel angles at the base and top of the wall frame. Enclosing the framing on the exterior is galvanized expanded metal mesh. The roof at the lean-to is clad in corrugated metal panels. The eaves overhang 3'-0" and the purlins and rafters are tapered or clipped at the ends. There are sliding screened doors of expanded metal mesh with metal frames.

The facility was converted to an administrative office facility in 1978. At that time, several alterations were made to the building. Several new aluminum frame windows and doors were installed on the four end bays on the eastern half of the front facade, where the original metal clad sliding doors were removed and infilled where necessary. Many windows on the second floor of the west side were infilled with concrete masonry units, and entire new walls were built with gypsum board, hiding the windows from the interior. The original elevator appears to have been replaced with a slightly larger elevator, such that three of the four walls needed to be removed and new concrete masonry unit walls were built to enclose the elevator shaft. Several interior gypsum-board partition walls were built to house office spaces and corridors. Fire-retardant was sprayed onto the ceiling of the second floor. Also, rectangular fluorescent light fixtures and air conditioning ducts were attached to the ceilings throughout.

Historical Context:

Facility 90 was designed and built by the Public Works Department of the 14th Naval District at Naval Station, Pearl Harbor. The original plans, dated 1923 under specification 4911, were reviewed by Bureau of Yards and Docks "J.H." and also were signed by C.E. Gregory, the Chief of Bureau, and Ralph Whitman, the Project Manager.

Facility 90 was built as an extension to the first Paint and Oil Storehouse, Facility 27(HABS HI-449), which is directly adjacent to Facility 90. 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. 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, much larger in size than its counterpart. Further demands for storage

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space came about with another wave of base expansion before and during World War II. As a result, in 1938, the screened lean-to storage shed was added to the north side of Facility 90. At the same a lean-to was added to Facility 27.

During WWII, Facility 90 was used as an Electronics Storage Facility. *"Thousands of tons of material to repair battle damage, radar, radio, and underwater sound material, and thousands of tons of ordnance began coming in. All storage space became so congested that there was no proper storage for much of the material, which was both classified and highly critical. Lean-tos were built on the sides of buildings and material covered with tarpaulins.*

On December 7, 1941, all electronics material was located in Facilities 66, 90, 418, and 449. Gradually, after several moves, material was finally consolidated in Bldg. 167.

There are three outstanding comparisons to reflect the expansion of the Electronics programs at Pearl: (1) amount of square feet of covered storage space as shown above, namely from 2800 sq. ft. to 300,00 sq. ft.; (2) in 1942, an average of 600 boxes per month were received, which increased to 25,000 boxes in the month of July 1945; (3) the final comparison is the money value inventory at the first part of the war of approximately \$200,000, to its present figure of \$35,000,000." (Pearl Harbor Navy Yard, unnumbered report)

The use of Facility 90 changed from a storehouse for paint and oil products to its current use as an Administrative Office in 1978. In order to adapt to its new use, several modifications on both the interior and exterior were implemented.

See HABS No. HI-449 for additional information on Facility 27, the first Paint and Oil Storehouse in Pearl Harbor.

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

Sources:

Contractors Pacific Naval Air Bases

Technical Report and Project History, Contracts NOy-3550 and NOy 4173: On microfilm at Pacific Division Naval Facilities Engineering Command Library. n.d.

National Archives II, Still Photo Collection

Photos in group RG71CA and RG71CB.

NAVFACPAC: Plan Files.

Drawings for Facility 90.

Pearl Harbor Navy Yard

Typescript manuscript with 8 chapters reporting on WWII activities of the Navy Yard's departments. From Robert F. Walden Collection, University of Hawaii Hamilton Library, Hawaii & Pacific Room. n.d.

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Project Information:

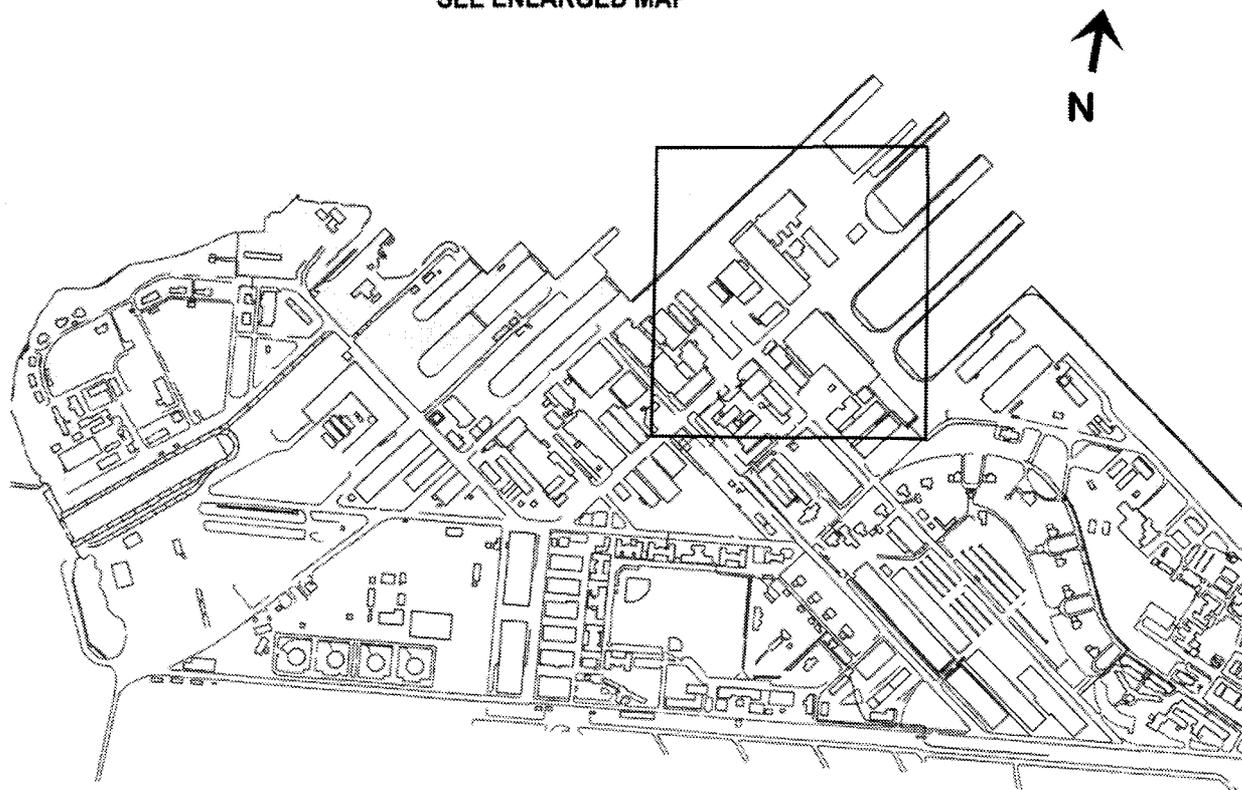
Photo documentation and recordation of this facility by the Navy has been done in anticipation of future alterations or potential demolition of the structure. Photo documentation of historic facilities by the Navy assists in expediting planned undertakings by having the documentation prepared prior to 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 A.I.A., 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 was conducted for this report between July 2001 and December 2001.

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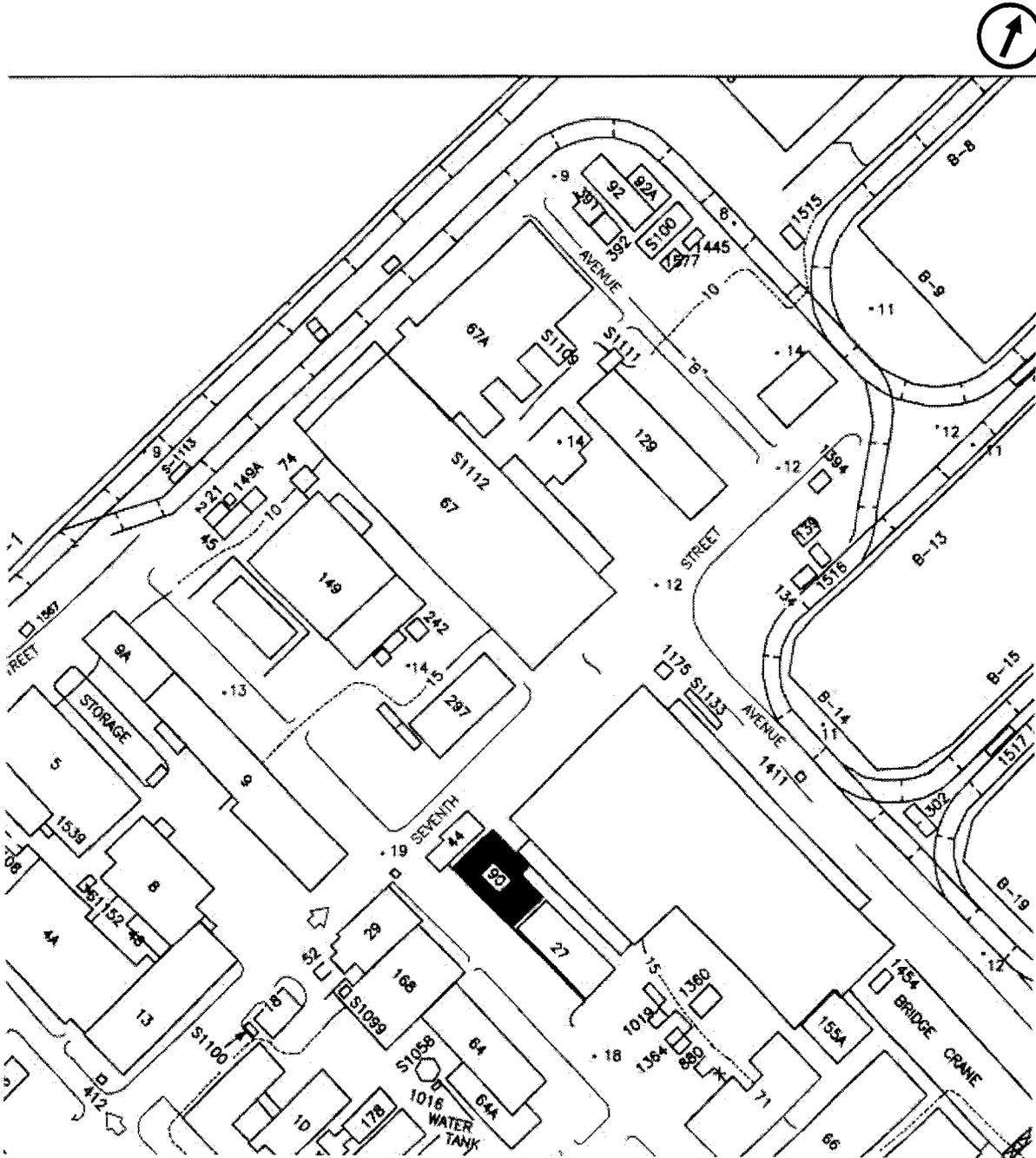
Shipyard Map

SEE ENLARGED MAP



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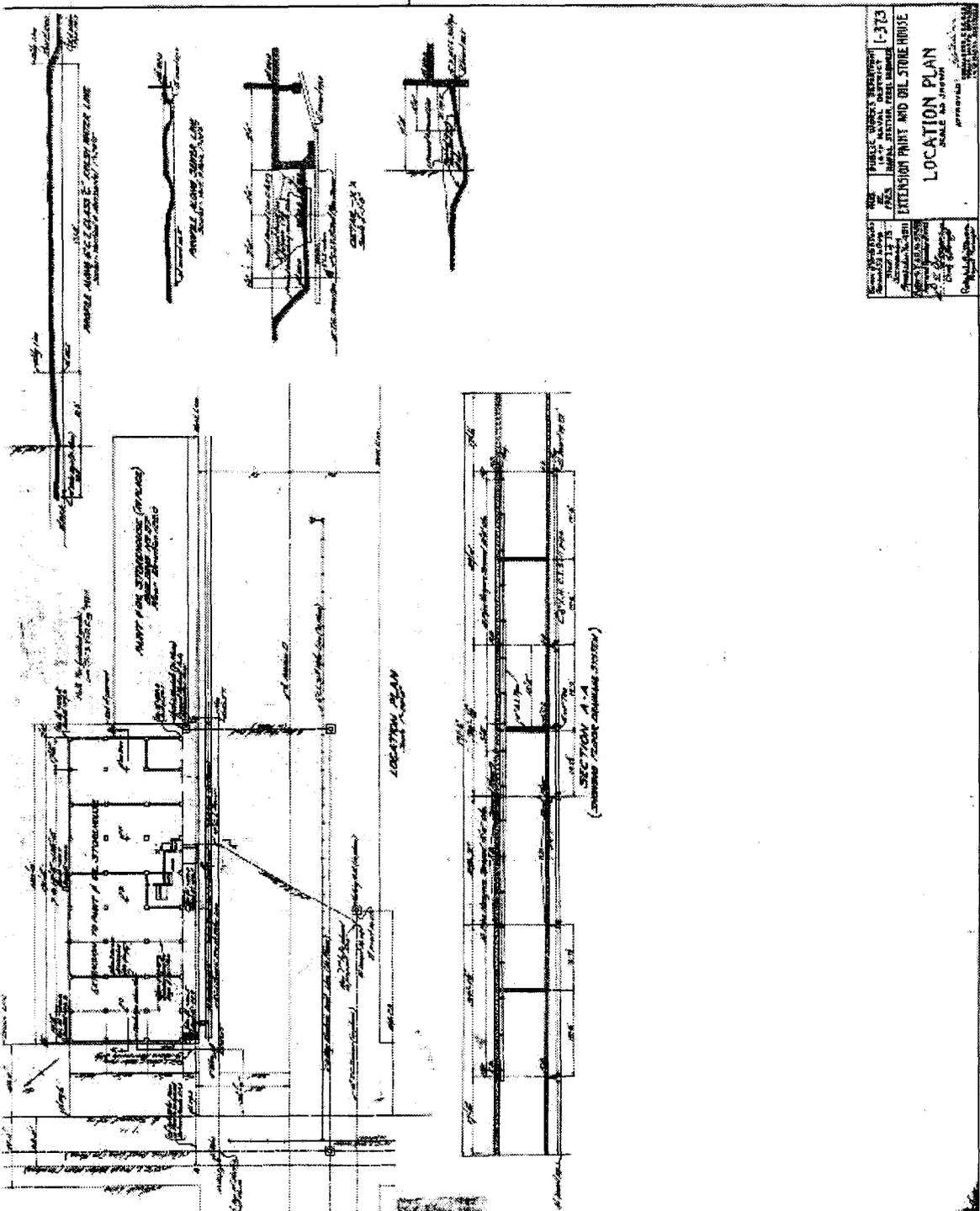
Enlarged Area Map (reduced, not to scale)



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Facility 90, Location Plan (Drawing No. 99808, dated 8/22/1923) (reduced, not to scale)



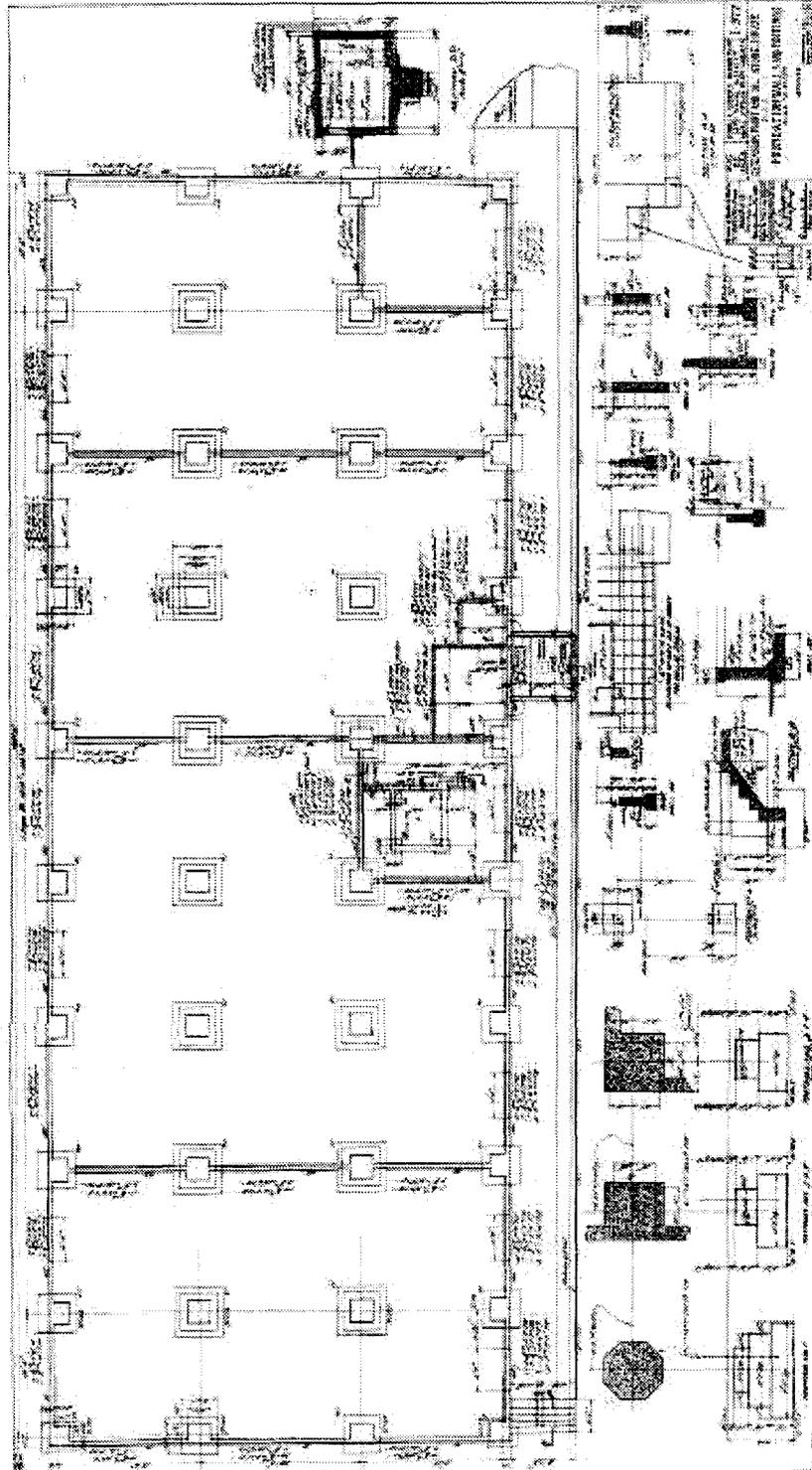
SEE RECORD DRAWINGS

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Facility 90, Foundation Plan (Drawing No. 99812, dated 8/22/1923) (reduced, not to scale)

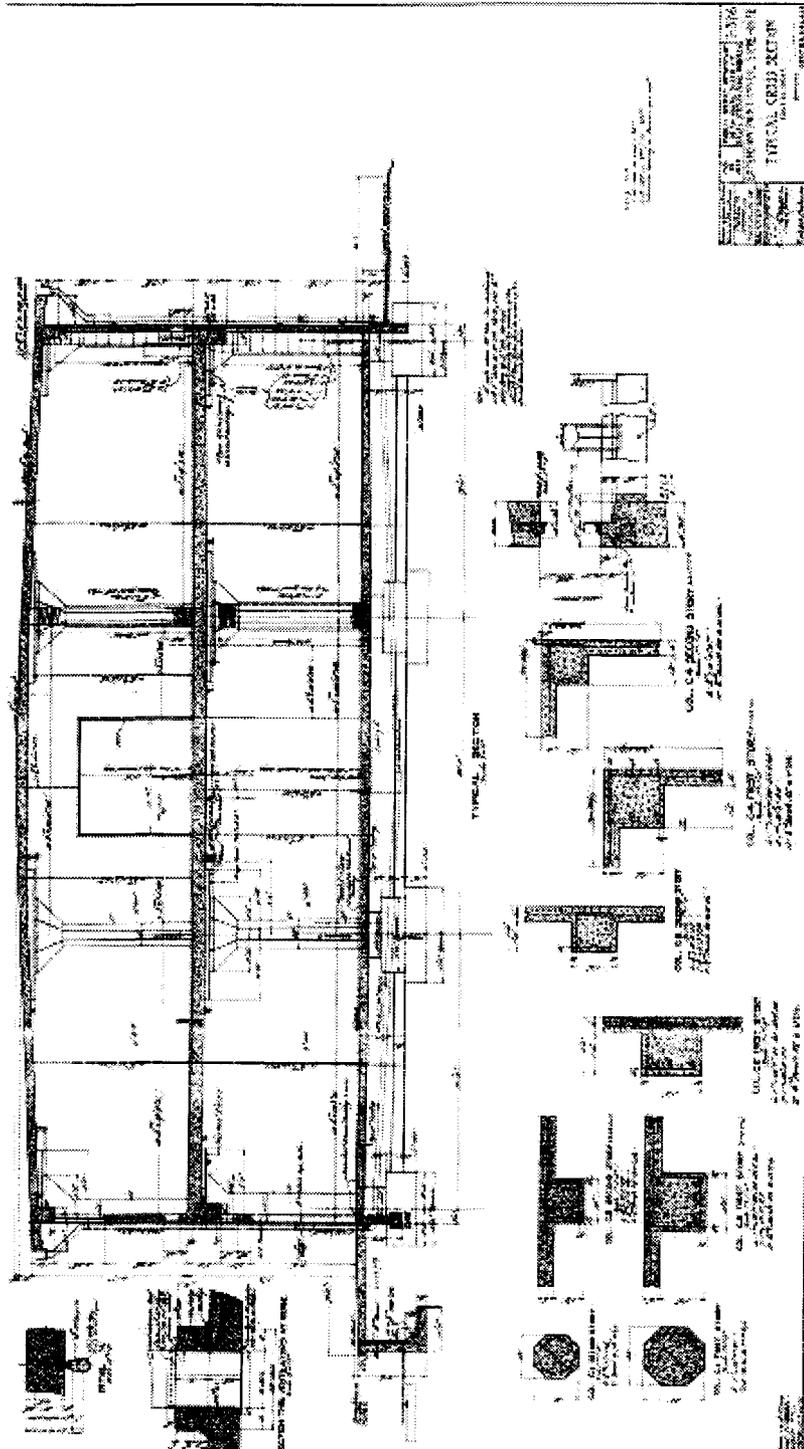


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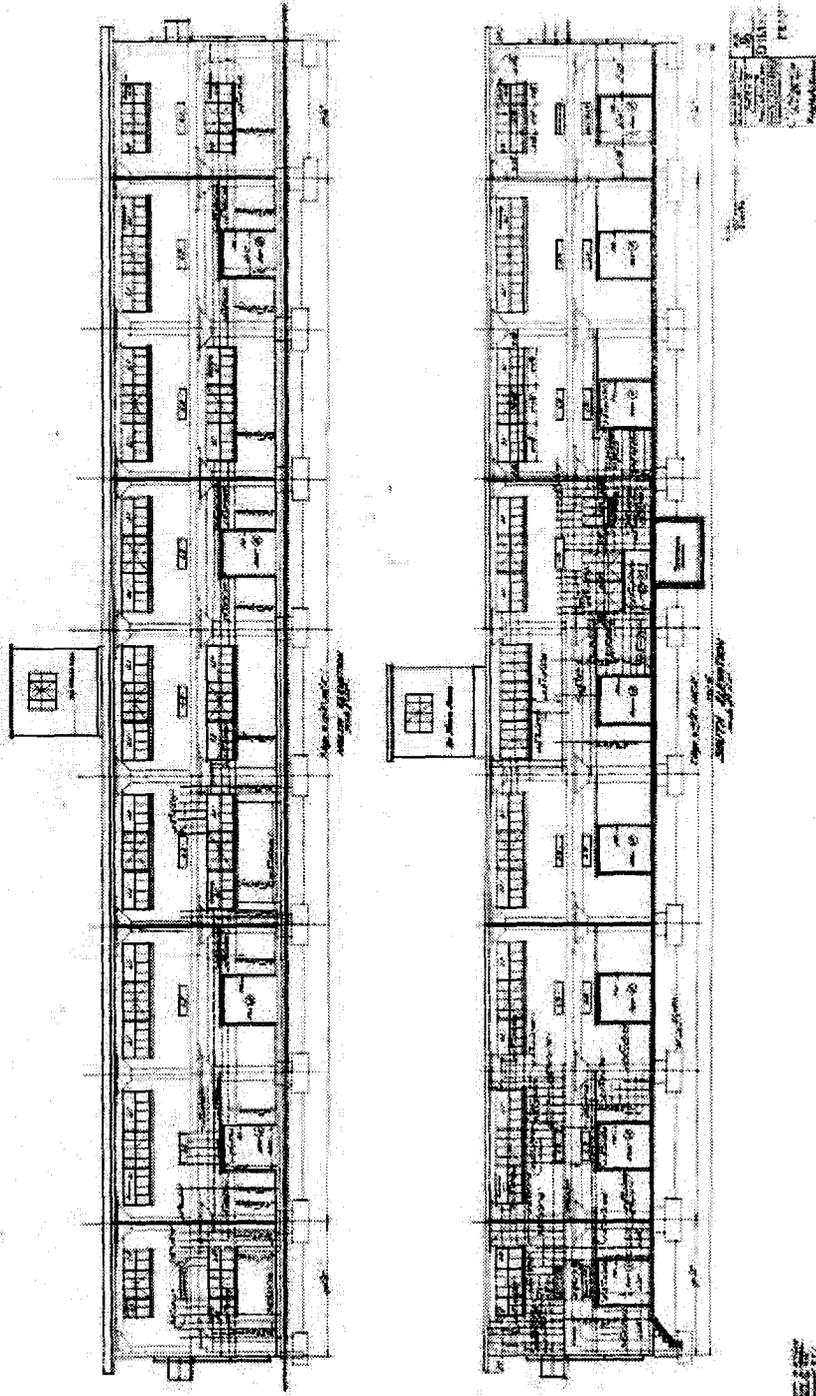
Facility 90, Typical Cross Section (Drawing No. 99811, dated 8/22/1923) (reduced, not to scale)



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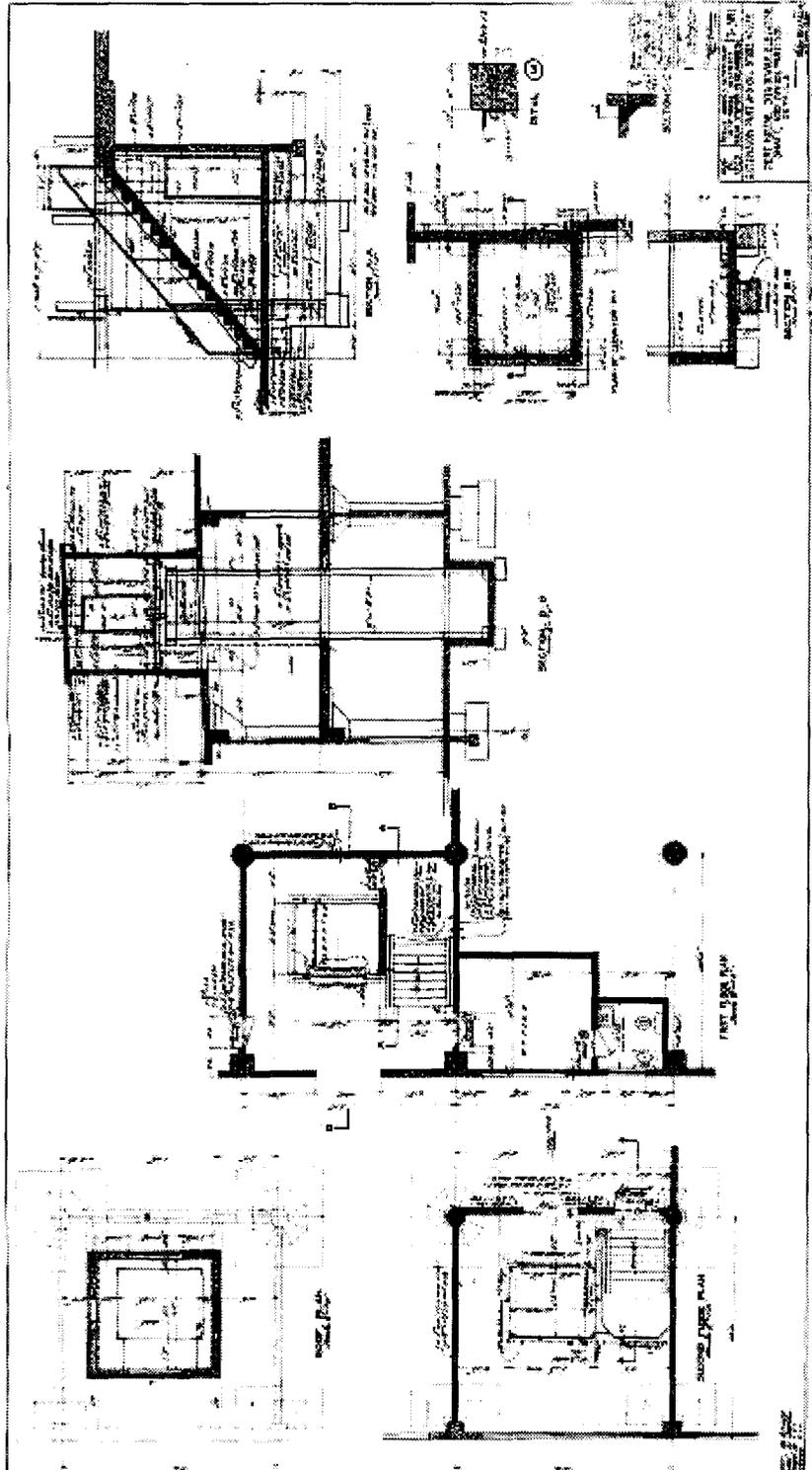
Facility 90, Front and Rear Elevations (Drawing No. 99809, dated 8/22/1923) (reduced, not to scale)



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Facility 90, Penthouse, Stairway, Elevator Shaft (Drawing No. 99816, dated 8/22/1923)
(reduced, not to scale)



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Facility 90, Details of Door and Door Frames (Drawing No. 99817, dated 8/22/1923)
 (reduced, not to scale)

