

U.S. NAVAL BASE, PEARL HARBOR, PAINT SHOP & RIGGING
LOFT
(U.S. Naval Base, Pearl Harbor, Naval Shipyard, Facility No. 11)
Sixth Street between Avenues E & G
Pearl Harbor
Honolulu County
Hawaii

HABS HI-488

HI-488

HABS

HI-488

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 SHOP & RIGGING LOFT (U.S. Naval Base, Pearl Harbor, Naval Shipyard) (Facility No.11)

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Location: Sixth Street between Avenues E & G
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: 04.607710.2361640.

Significance: Facility 11 is located within the Pearl Harbor National Historic Landmark. It is associated with the early establishment of Shipyard at Pearl Harbor and has a distinctive type and period of construction. It was modified in the 1980s for new mission and training needs. This building is part of a grouping of important historic shop buildings in close proximity to each other, including Facility 3 and former Facilities 4(HABS HI-359) and 2, which all at one time faced onto Sixth Street running parallel to Dry Dock No.1.

Description: Facility 11 is a slab-on-grade, steel-frame building faced with corrugated metal siding. It was constructed as a permanent, two-story building with an intermediate floor between the first and second story on a portion of the building. Originally, this building was designed to have two separate functions, one being a rigging loft and the other a paint shop. The paint shop end had an intermediate floor between the first and second floors at the last end bay. The building footprint is rectangular, measuring approximately 50' x 160', with columns spaced at 20'-0" intervals in the longitudinal direction. The building has a steel truss-supported gabled roof with a clerestory at the ridge area. Typical fenestration consists of multi-light steel windows with wire glass. Facility 11A, a one-story conjoined shed-and gable-roof annex, was built at a later time (date unknown) and was rebuilt at least one time since its original construction.

The dimensions of the original portion of the building are: length 160'-0" (8 bays at 20'-0" on center); width 50'-0" (2 bays at 25'-0" on center) height from grade to ridge 66'-0". The annex addition measures 100'-0" (5 bays at 20'-0" on center) in length by 50'-0" (2 bays at 25'-0" on center) in width.

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The foundation system is a concrete pile/slab foundation. The ground was excavated and leveled approximately 5' below original grade (115.0'), digging 4'-0" below the approximate surface of rock, to an elevation of 110.0'. (The Mean Low Water (M.L.W) elevation is designated as 100.0' thus the original grade was about 15' above the water level.) The floor line is at an elevation of 110.5'. The concrete footings are set three feet below the floor line. Concrete two-tiered footings measuring 4'-6" square and 5'-0" square are spaced 20'-0" on center. The height of the footings is 2'-0" total, with the bottom portion 1'-6" high and the top portion 6" high. The column footings are designed for 5000 lbs. per square foot. Steel columns are bolted with 4, 7/8" bolts 2'-0" long using hexagonal nuts. The central column steel bearing plate size measures 2'-0" x 1'-10" in plan from outside to outside and 1'-3" x 1'-5³/₄" from center of bolt to center of bolt. The steel columns sit in the direct center of the footing. The entire floor area of the first floor is concrete slab.

The structure is similar in construction to a large warehouse or shop building. The roof is covered with corrugated asbestos panels, attached directly to the rafter and purlin grid that is bolted to the top of the steel truss roof framing, exposed at the interior. Fink trusses support the main central roof and clerestory. The trusses are composed of channel girts, Z-girt and angle girts and are connected using riveted construction.

The steel trusses are supported by steel columns and framing. The steel columns are made of several steel sections riveted together, and braced with lattice bars on its elevations. The second story floor system is integrated into the steel column assembly through riveted construction. The second floor, a 6"-thick poured concrete slab with upturned edges, is supported on steel plate girders and beams. The second floor steel beam and girder floor assembly measures 4'-6" in thickness; this includes a 4'-0"-high girder beam. The second floor finish is 22'-0" above the first floor. The intermediate floor (at the Paint Shop side only) is 7'-6" from the finished first floor.

Diagonal cross-bracing between bays (shear bracing) in the longitudinal direction gives lateral stability to the structure. These are located at two bays - the bays before the end bays at each side. Lateral stability is reinforced through flat trusses that run the length of the building, just under the roof trusses at the side walls. At the lower chord of the flat trusses are square-sectioned beams made of four web truss sections riveted together to form a hollow square. See drawing no. 62269, 1/5/1914 on page 12 of this report, "Detail of lower chord bracing". The web truss beam measures a total of 4'-1" in height, with the square-sectioned beam measuring 1'-4" in height. An elevator shaft is located at the southwest corner of the building. This shaft is designed with cross-braced steel wall sections on all sides of the shaft.

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The exterior walls and roofs of the building are faced with corrugated metal panels and multi-light steel window and door assemblies, with a short canopy over the length of the north elevation. There is a 3'-6" high section at the base of the building that runs from the top of the curb to the underside of the windows, around the perimeter of the building except where the doors intersect.

Much of the exterior is faced with multi-light steel window assemblies with central pivoted sections for ventilation, typical of the era in which it was built. There are only a few variations of window assemblies in this building. The first floor end section windows are different depending on the side (the Rigging Loft half or the Paint Shop half) of the building. The Rigging Loft end elevation has windows that measure 8'-10" wide (2 sections) and 12'-4" high. The Paint Shop side has two rows of short windows, intersected by a band of steel siding where the intermediate floor line runs. The first band of windows is 3'-9³/₄" in height and the second band is 3'-11" in height. The window widths are the same as the Rigging Loft side. On the long elevations, the large windows are intersected by steel columns at each bay so that the windows span a distance of 17'-7 ³/₈" (four window sections) and are 12'-4" in height. The window height differs depending on the building side. The Paint Shop side has two rows of short windows, intersected by a band of steel siding where the intermediate floor line runs, again, the first band is 3'-9³/₄" in height and the second band is 3'-11" in height. The Rigging Loft side which does not have an intermediate floor has windows that are approximately 12'-4" in height and extend up to 15'-10" off the finished floor. The second floor end section windows are similar on both elevations; they measure 8'-10" wide (2 sections) and 9'-7¹/₂"; four windows per each end elevation. The second floor side elevation windows are similar to the first floor ones. They are intersected by steel columns at each bay so that the windows span a distance of 17'-7 ³/₈" (four window sections) and are 9'-7¹/₂" in height. (See drawing no. 62268 1/5/1914 on page 11 and drawing no. 7058724, 7/24/1984 on page 21 of this report)

One pair of 16'-0" tall sliding metal exterior doors with multi-light glazing similar in design to the windows assemblies is located on the west elevation off of Sixth Street (originally called First Street). A pair of double-swinging doors is located at the third bay in from the ends on the north and south elevations, for a total of four pairs.

The interior floor plans of the original design were open, with few dividing walls or partitions on the first floor. There was a single L-shaped flight of stairs that wrapped around an elevator on the southwest corner of the building. This elevator was part of the original structure when it was built in 1918 and has since been upgraded periodically. A major renovation of the elevator was done in 1934 when a new and larger platform, new guides, and new machinery

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were installed. The men's bathrooms and lockers were located on the intermediate (second) floor.

Originally, the train tracks ran down the center of the building, for easy loading and unloading of materials. Historic documents show the train running through the length of the building but the train is no longer in use and it is not known when the tracks were taken up. A bridge crane spanning the width of the center bay of the building was also built.

There have been several additions and alterations made to this building over its 87-year life. The following is a list of the known alterations in consecutive order:

1917- Office and Washroom addition with locker room mezzanine floor above, measuring 20'-0" x 29'-0". Located against the plaster wall separating the Paint Shop and the Riggers Loft section.

1932- New mezzanine area (25'-0" x 40'-0").

1933- New freight elevator installed at original location.

1938- One-story lean-to addition on east end elevation. Corrugated metal roofing, 6" x 6" wood posts, 2" x 6" bracing.

1942- New exterior exit stairs built on the north side elevation. Existing steel sash was removed and a new exit door was installed. Wood construction.

1944- Men's toilet and locker room on intermediate floor remodeled to allow for women's toilet and locker room. The intermediate floor slab was extended to span five bay lengths. Concrete stairs built at entrance to locker rooms.

1953- Major repairs and alterations to Facility 11. Use changed to house administration spaces on at least part of the building. Repairs and replacement of exterior walls, including new corrugated asbestos siding and the replacement of some windows. New windows were specified to fit within the existing openings and new multi-light steel windows replaced older (rusting?) windows. Drawings show intermediate floor (now called the First Floor) as being elevated from 7'-6" to 11'-2" from finished floor, spanning the whole floor area. When this change was made is unknown. The 1'-6" gap between the horizontal roofing truss member and the underside of the roofing material was originally left open for ventilation. However, this gap was covered by new corrugated asbestos in this repair work.

1984- Major renovations/ demolitions done to Facilities 11 and 11A. Most interior walls on the first floor were removed and the entire interior redesigned with new walls. Some alterations done to second floor. Third floor was not in the contract. All walls on the first and second floors furred with corrugated metal siding on the exterior so that windows cannot be seen from the exterior. The steel multi-light central window directly under the clerestory roof was replaced with

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metal louvered vents. Facility 11A was demolished, except for its concrete slab. Then it was rebuilt and enlarged so that the one-story structure abuts the south wall of Facility 11.

Historical Context:

The initial appropriation for shops at Pearl Harbor, "including a smithery [sic] and foundry," was only \$107,000 (Landauer and Landauer 1999: 174). In 1908, a much larger appropriation of \$700,000 was provided for machine shops, storehouses and development of the Yard. Construction on the initial facilities at the Navy Yard started by 1913. The Shipyard at Pearl Harbor had been intended from the beginning only for repair of ships, not for construction of new ships. The U.S. Naval Station, Pearl Harbor Public Works Department, designed it. The construction company is unknown.

Almost all the buildings from the initial era of the Navy Yard were still extant at the end of the 20th century. These include the Administration building (Fac. 1, HABS HI-407), the boiler and shipfitters' shop (Fac. 4, HABS HI-359), the forge shop (Fac. 5, HABS HI-484), the foundry (Fac. 6, HABS HI-485), the woodworking shop (Fac. 7, HABS HI-486), the original power plant (Fac. 8, HABS HI-446), the storehouse (Fac. 9, HABS HI-487), the paint shop (Fac. 11, HABS HI-488), the boat shop (Fac. 12, HABS HI-447), the steel storage building (Fac. 13, HABS HI-462), the pattern shop (Fac. 14, HABS HI-463), the lumber storage building (Fac. 15, HABS HI-464), and the ice plant (Fac. 18). Most of these facilities faced onto the streets originally named First and Second Street, later renumbered as Sixth and Seventh Streets, which parallel Dry Dock #1. (Yoklavich 2000: 1, 2)

Facility 11 was originally designed and built in 1914 as a Paint Shop and Rigging Loft. It appears that it was used as such at least until the bombing of Pearl Harbor in 1941 and on into 1944. It was mentioned in a report that was submitted to the Commandant on December 15, 1941. According to the drawings for the extension of the intermediate floor done in 1944, the use was still the same. Facility 11 had sustained minor damages to roofs, window frames and windows caused by concussion, bomb fragments, and machine gun bullets. The *USS Pennsylvania*, *Cassin*, and *Downes* were in Dry Dock No. 1 at the time of the attack and Facility 11 was near these ships that were bombed. The ships as well as Dry Dock No. 1 and adjacent facilities were damaged. Near the front of Facility 11 was a bomb strike that damaged the pavement and crane track.

Its use had changed by 1951 when it was no longer being called the Paint Shop and Rigging Loft on the repair construction drawings, although the end elevation drawing was still called the 'Paint Shop End Elevation'. It was referred to only as Building 11. In photos taken in 1984, the sign on Facility 11A, a small one-story wooden structure

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adjacent to Facility 11, says "Paint shop" indicating that the paint shop had moved to this smaller section of the facility.

The architecture firm that did the 1953 repair and replacement of exterior walls and interior modifications was Rothwell and Lester, Architects and Engineers. This was a local firm that was located in Honolulu, at 821 Alakea Street.

Major renovations were done again in 1984, when the building use was further modified for administrative spaces. The current name of the building is RADCON/ Code 365 which refers to its use as a facility for training personnel on safety procedures then working around nuclear equipment. The upper floors have been used by various groups such as equipment testing and preventative maintenance groups. The present use of the space is administrative office space. However, many of the spaces are not being used or are used for storage.

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

Sources:

The original drawings for this building are on microfilm at NAVFAC PAC Plan Files.

Landauer, Lyndall and Donald Landauer

1999 *Pearl: The History of the United States Navy in Pearl Harbor*. Institute for Marine Information: Lake Tahoe, CA.

Public Works Officer (Yard)

1941 Letter from Public Works Officer (Yard) to the Commandant via the Manager, dated December 15, 1941. Subject: Report of Air Raid by Japanese on December 7, 1941.

Yoklavich, Ann

2000 U.S. Naval Base, Pearl Harbor, Shipyard Overview Report. Historic American Buildings Survey documentation for facilities at Shipyard, U.S. Naval Base Pearl Harbor. Submitted to and accepted by the National Park Service as HABS No. HI- 483. Prepared by Mason Architect and Franzen Photography, for the U.S. Navy, Pacific Division Naval Facilities Engineering Command.

Project Information:

Photo documentation and recordation of this facility by the Navy has been done in response to ongoing renovations 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,

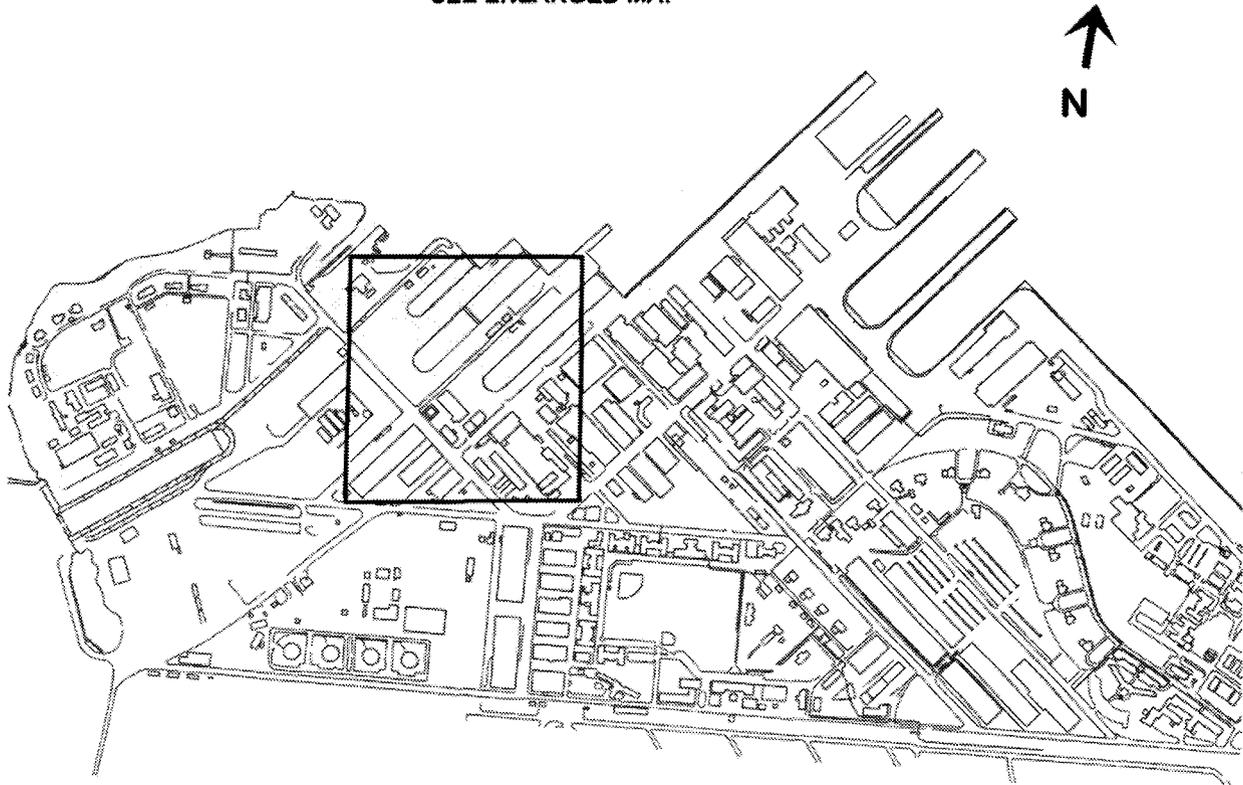
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photographer. Lorraine M. Palumbo, Ph.D., Architectural Historian, of Mason Architects, Inc. prepared the written documentation. The field work and research for this report was conducted between the dates of July 2001 and December 2001.

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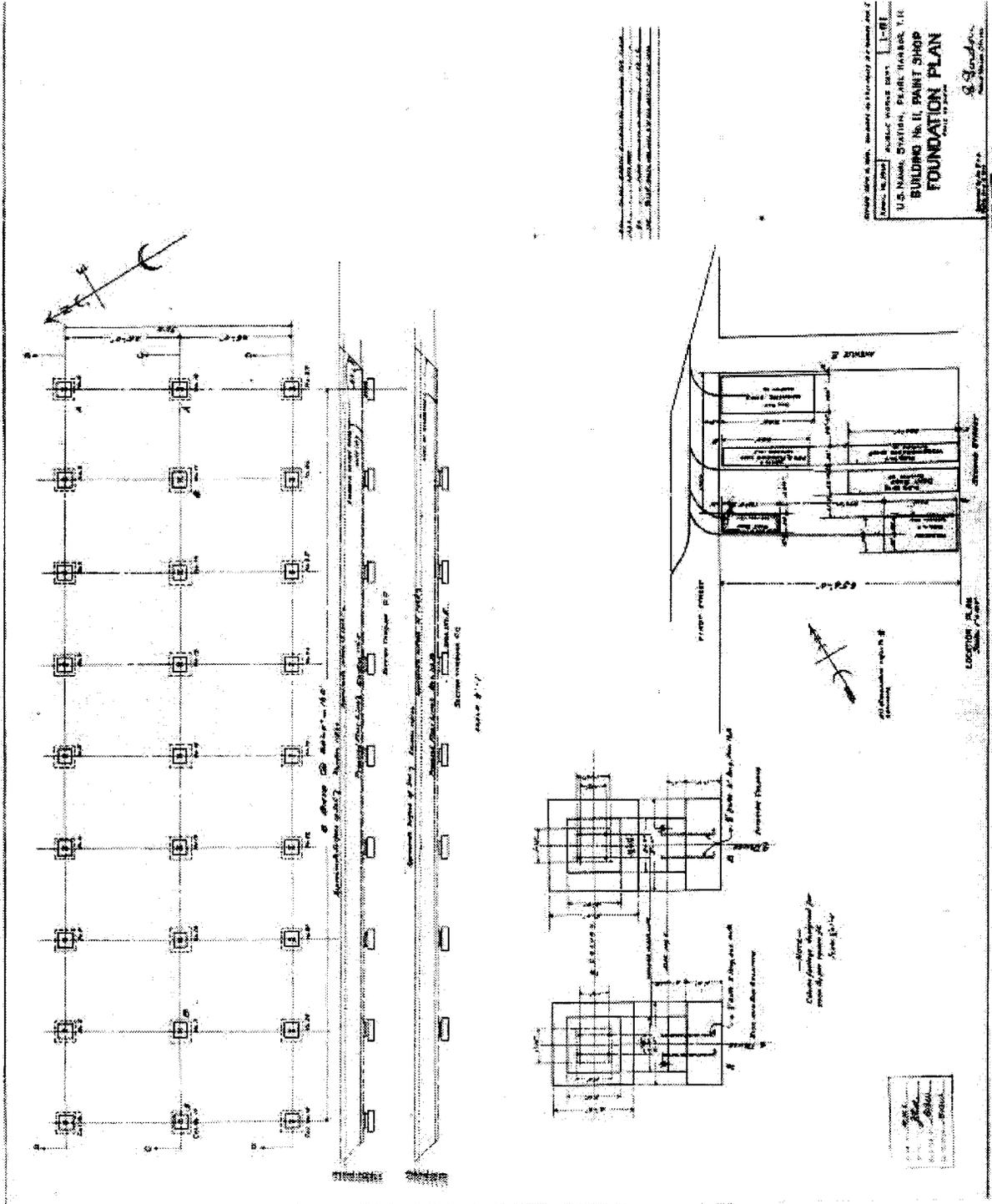
Shipyard Map

SEE ENLARGED MAP



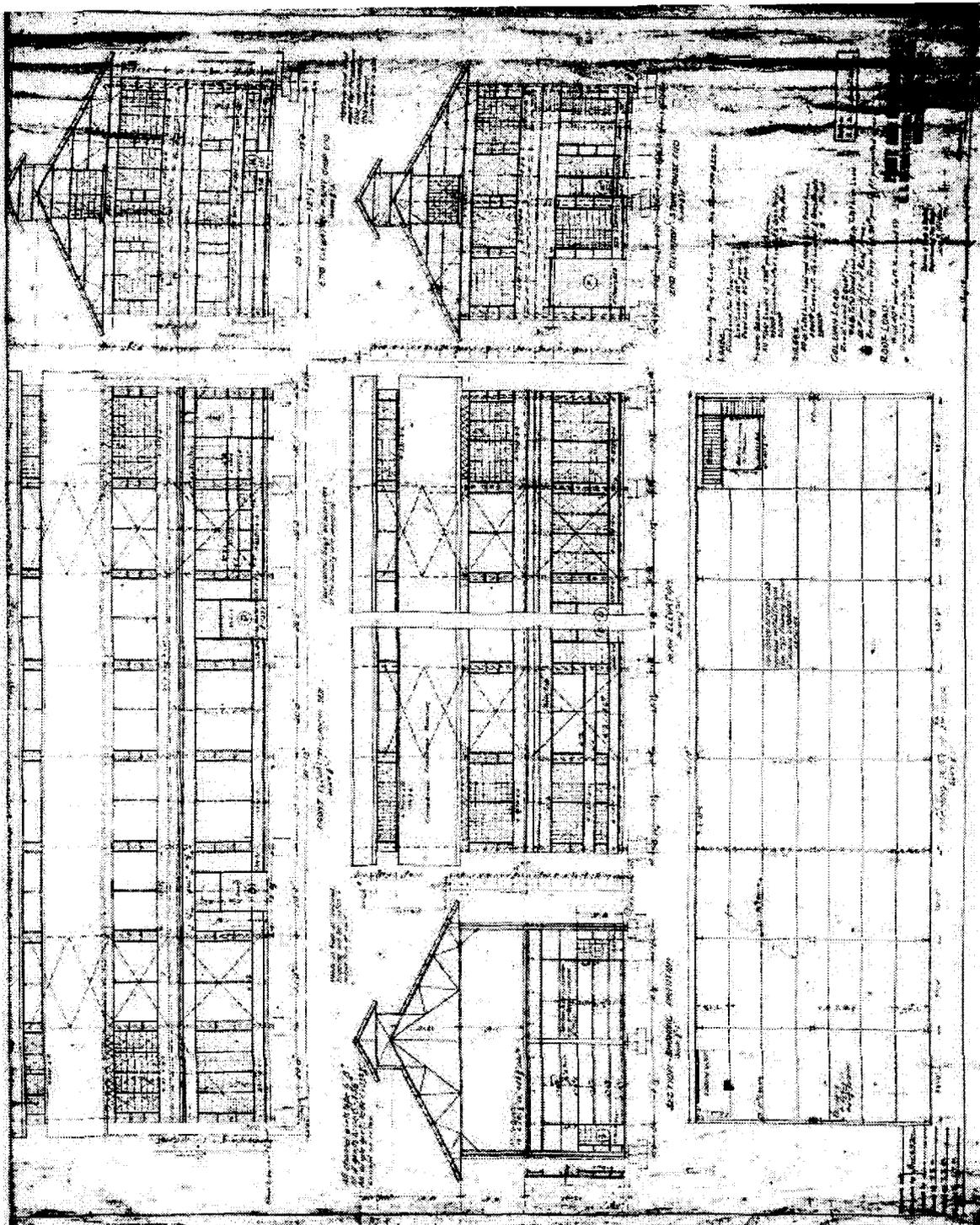
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Original Construction Drawings, Foundation Plan
 (Drawing No. I-61, dated 4/16/1914) (reduced, not to scale)



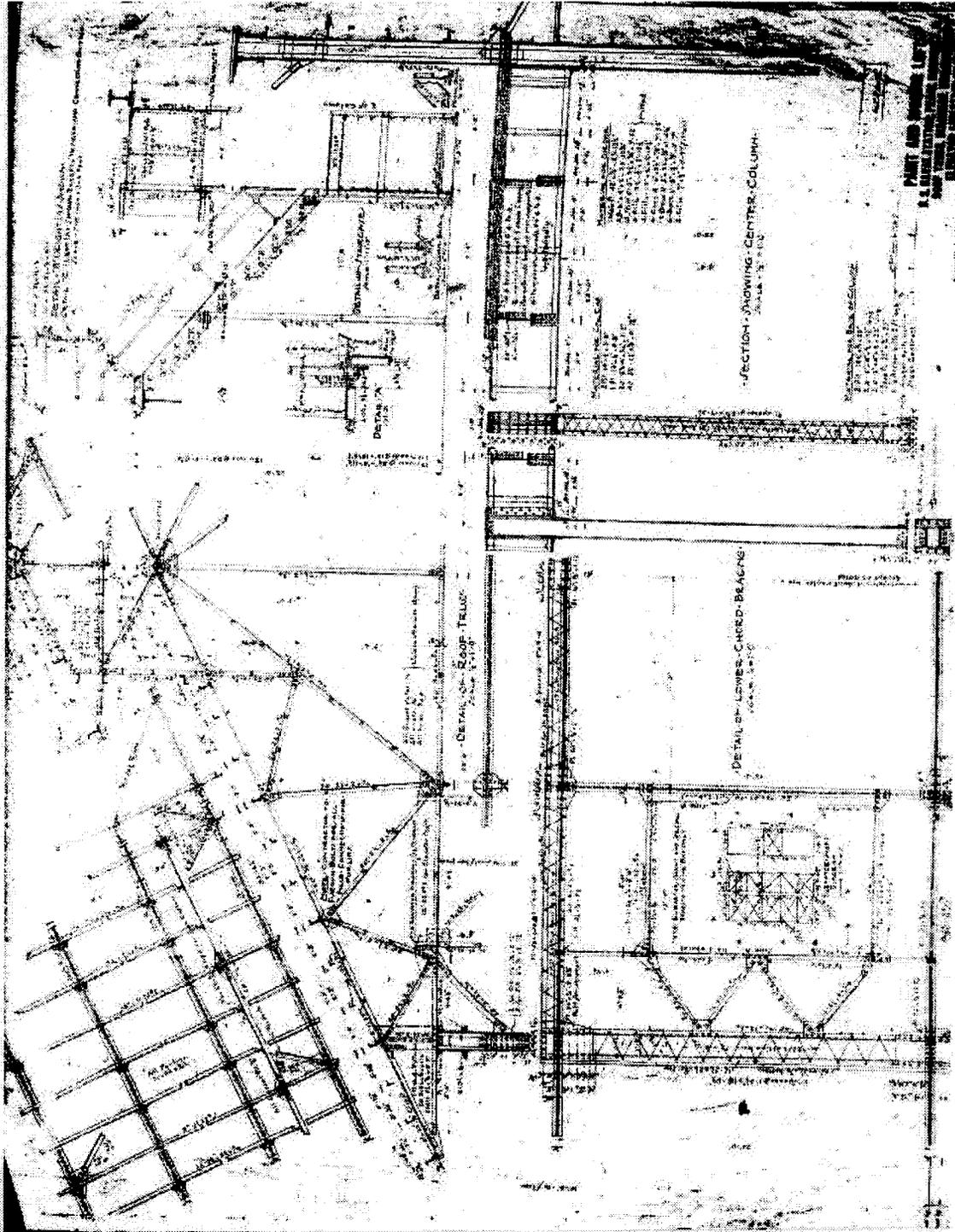
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Original Construction Drawings, Floor Plans and Elevations,
(Drawing No. 62268, dated 1/5/1914) (reduced, not to scale)



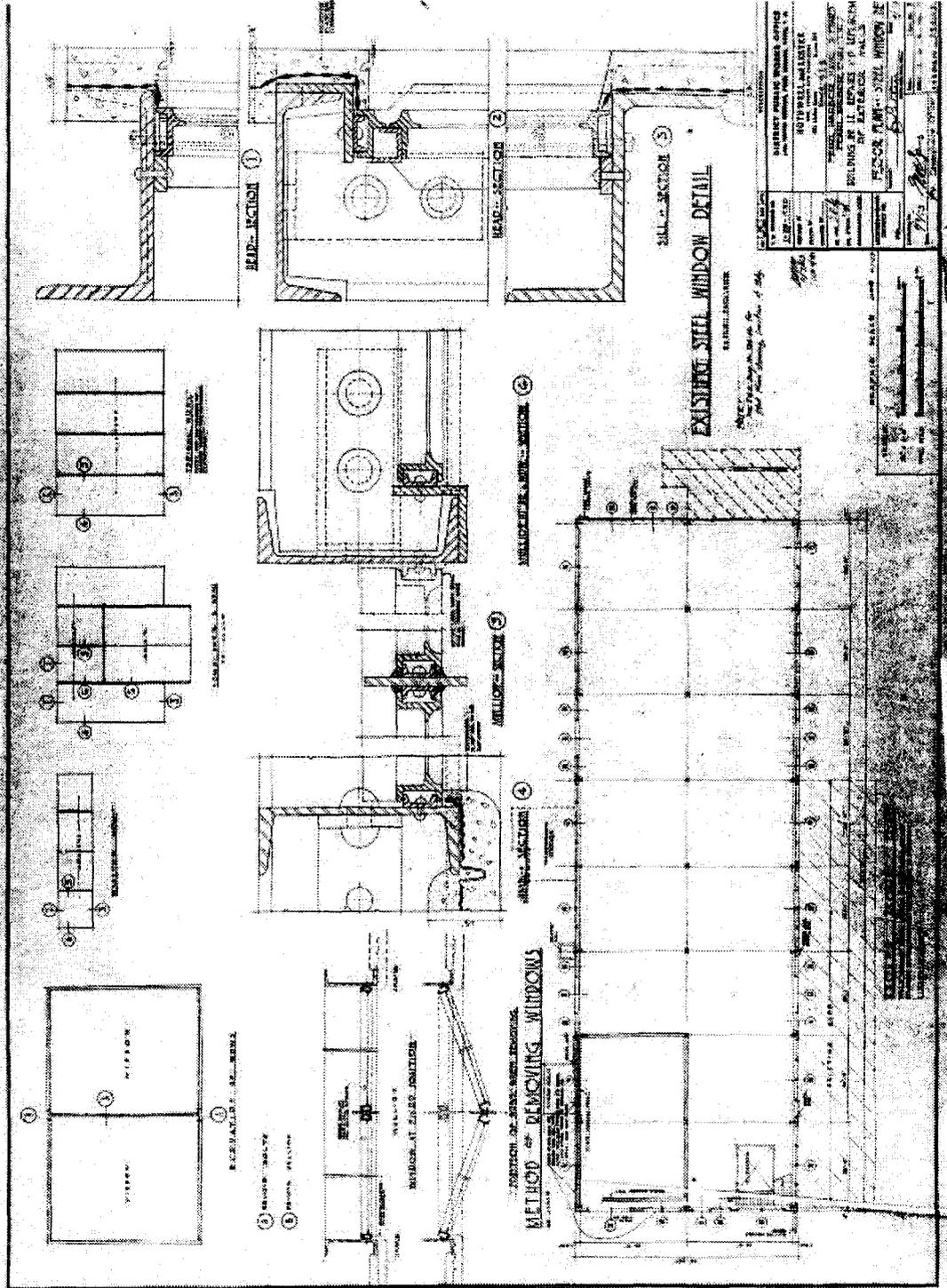
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Original Construction Drawings, Cross-section of Structure, including roof truss detail
(Drawing No. 62269, dated 1/5/1914) (reduced, not to scale)



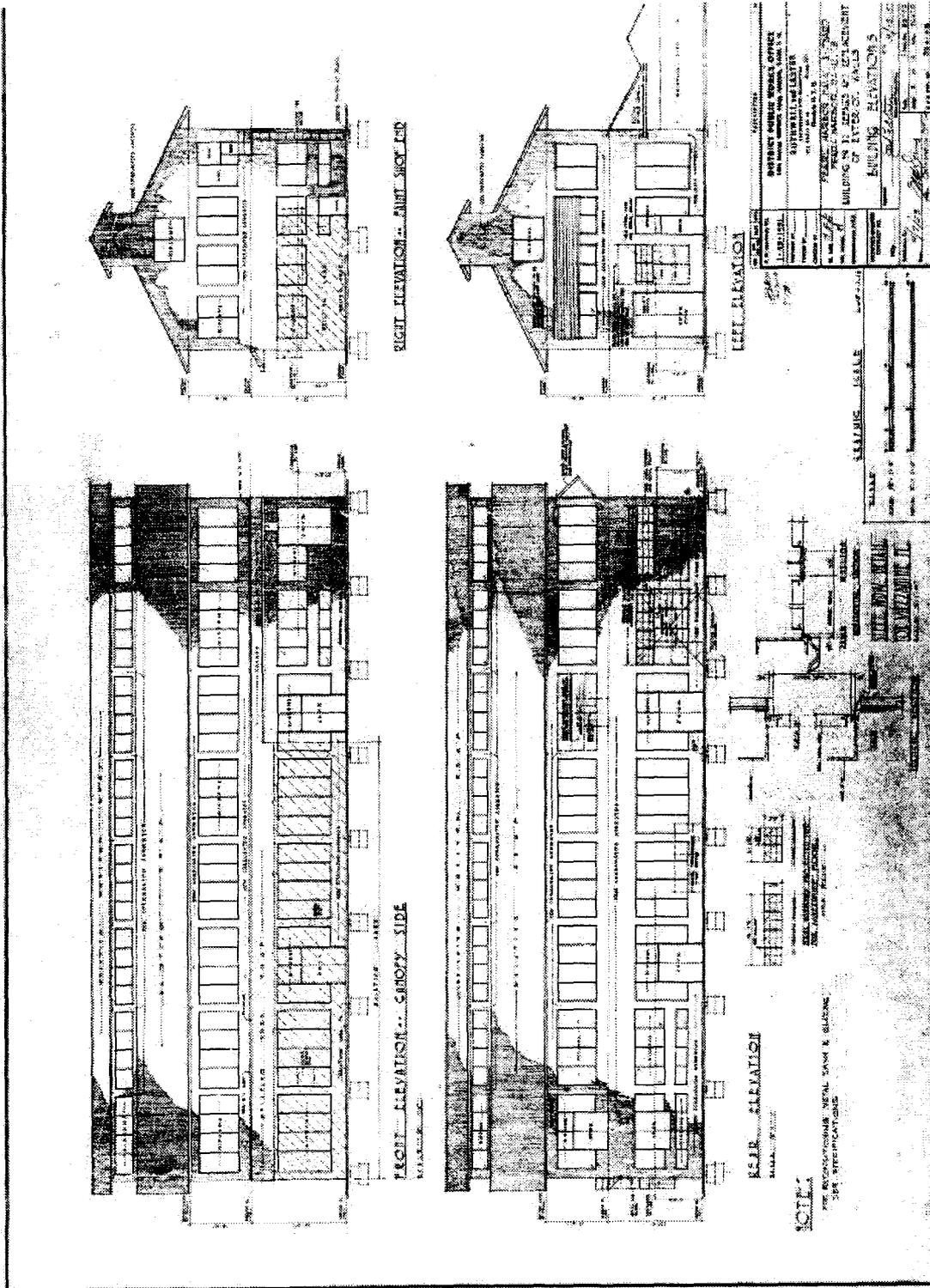
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1953 Building repairs and replacement of exterior walls, Floor plan and details
 (Drawing No. 584142, dated 4/7/1953) (reduced, not to scale)



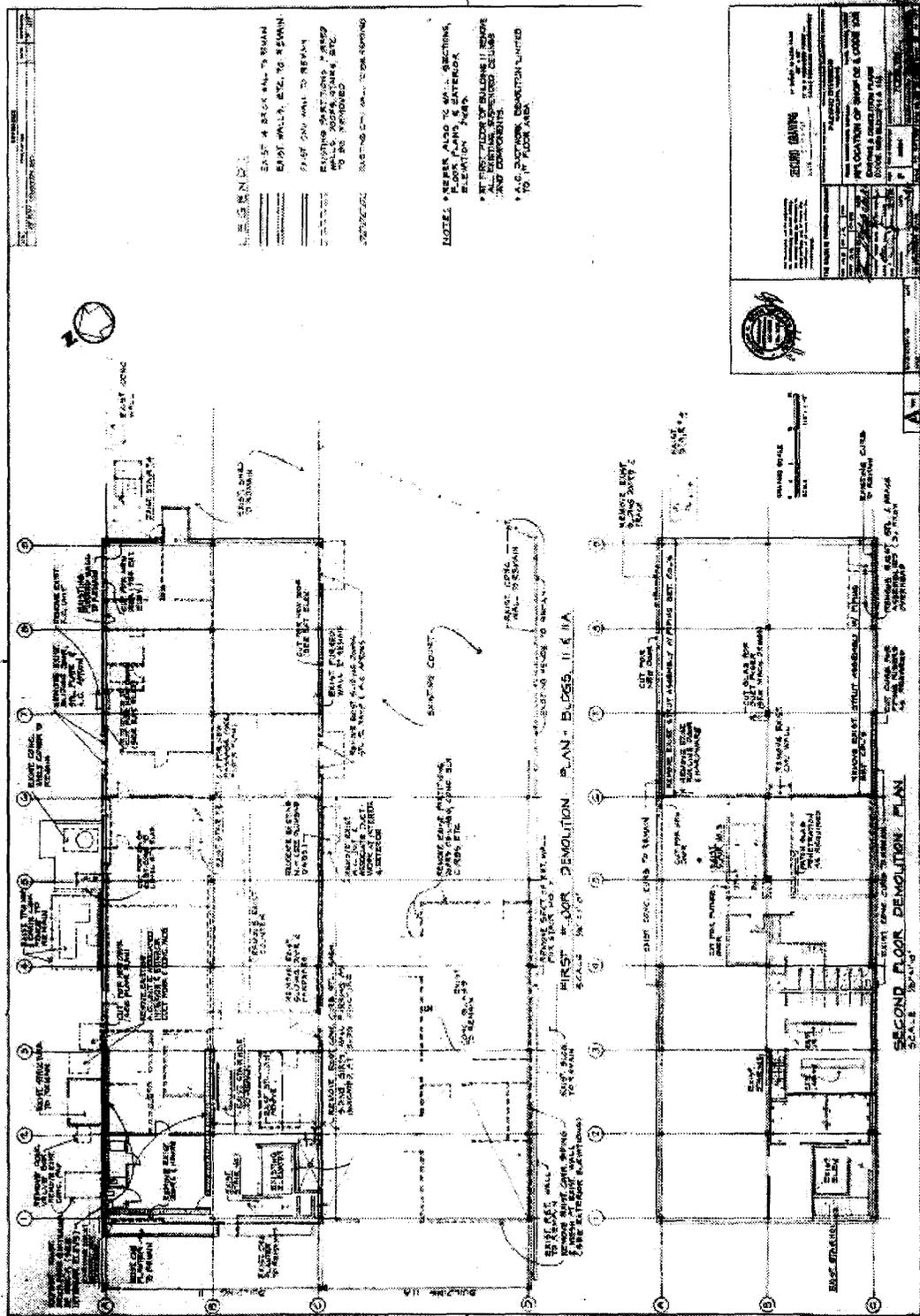
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**1953 Building elevations of repairs and replacement of exterior walls
 (Drawing No. 584143, dated 4/7/1953) (reduced, not to scale)**



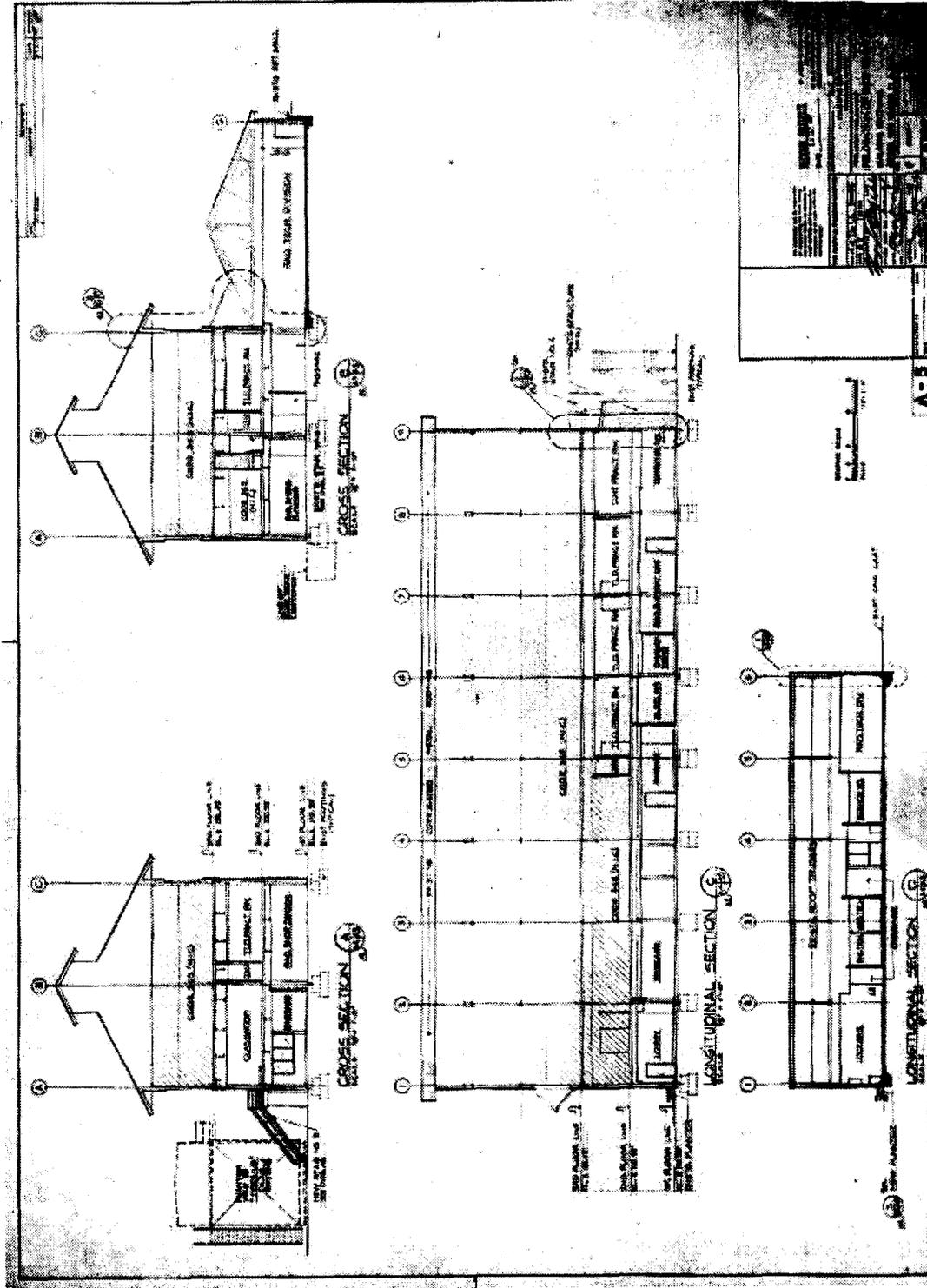
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1984 Renovation/Demolition of Facility 11 and 11A - Demolition plans
 (Drawing No. 7058721, dated 7/24/1984) (reduced, not to scale)



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1984 Renovation/demolition of Facility 11 and 11A - Building sections
 (Drawing No. 7058725, dated 7/24/1984) (reduced, not to scale)



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1984 Renovation/demolition of Facility 11 and 11A - Building elevations
 (Drawing No. 7058724, dated 7/24/1984) (reduced, not to scale)

