350/D-18
San Francisco

Maritime Museum Building

Limited Scope Historic Structure Report

San Francisco Maritime National Historical Park

San Francisco, California

Table of Contents

Appendices

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I. EXECUTIVE SUMMARY

Architectural Resources Group (ARG) was retained by the National Park Service Denver Service Center to produce a limited-scope Historic Structure Report (HSR) for the Sala Burton, or Maritime Museum, Building in the San Francisco Maritime National Historical Park. The HSR contains information on the history and construction of the building and provides recommendations for the restoration of the building's windows, doors, roofing systems, and glass block walls. The historical development of the building as presented in this HSR is drawn from previous studies of the building housed at the archives of the San Francisco Maritime National Historical Park. Much of the information included in the conditions assessment and treatment recommendations for the windows, doors, roofing, and glass block is based on studies previously completed by ARG focusing on the windows, roofing, and exterior envelope of the building. This previous work has been supplemented by recent field work to verify and further investigate conditions and communication with staff at the Maritime Museum Building.

Overlooking Aquatic Park lagoon on the north shore of San Francisco, the Maritime Museum is the centerpiece of the Aquatic Park Historic District and the most significant architectural resource within the San Francisco Maritime National Historical Park. Construction of the building began in 1936 under the direction of the Works Progress Administration (WPA) and was completed in 1939 by the city of San Francisco. The building, known as the Aquatic Park Bathhouse during its inception and construction, was opened to the public as the Aquatic Park Casino. Although never fully used as a bathhouse as originally intended and unused or partially vacant for some years, the building has been a central part San Francisco's architectural heritage throughout its history. Artwork incorporated into the design of the Maritime Museum includes important murals, sculpture, tile mosaics, and terrazzo flooring. The work of these artists makes the Maritime Museum a building of national significance.

Years of exposure to a harsh environment and the deferment of major restoration work to the building's exterior envelope have taken a toll on the structure. The windows and doors are severely deteriorated due to corrosion of the ferrous frames, resulting in water penetration and cracking of glazing. Leaking has been a problem at the roof decks for many years, causing irreparable harm to the murals and other interior finishes. Although new coatings have been applied over the roof decks and the coatings patched over time, leaking continues to occur. The glass block walls on the building are also in very poor condition, with many units cracked and open mortar joints between units allowing water infiltration.

The historical context and analysis of the building's architectural features and materials presented herein provides the basis for the recommendations for the repair of the doors, windows, roof, and glass block systems of the building. The repair recommendations are intended to maintain as much of the original design as possible while improving the waterproofing ability of these features. At the doors and windows these repairs include replacement of the most severely deteriorated stainless steel-clad windows and doors with new completely stainless steel windows and doors to match the configuration and appearance of the original. Replacement of the existing roof deck materials and installation of a new roof system that will correct the existing waterproofing deficiencies is discussed in this report. Replacement of the existing glass block wall system with a new assembly to match the existing is also recommended.

The contents of this Historic Structure Report (HSR) are:

- a concise historic context associated with the building;
- a detailed chronology of building development including alterations made following the building's completion;
- an evaluation of the period of significance, historic integrity, and historic significance of the structure;
- an evaluation of existing door, window, roof, and glass block wall fabric and physical description;
- a list of character-defining features;
- an assessment of the conditions of the doors, windows, roofing systems, and glass block walls;
- recommended and alternate treatments for the repair and restoration of the doors, windows, roofing systems, and glass block walls;
- historical photographs and photographs of existing conditions;
- HABS/HAER drawings showing the original design of the building and existing conditions drawings;
- a window schedule and door schedule summarizing the types and materials of windows and doors at the Maritime Museum Building; and
- previous materials studies including a paint analysis and conservation assessment report.

II. STATEMENT OF SIGNFICANCE

Built between 1936 and 1939 as a public bathhouse on San Francisco's north shoreline, the Maritime Museum Building represents an important part of the architectural and social history of the city and of the nation. The final design of the Maritime Museum Building, carried out for the most part under the direction of the Works Progress Administration, integrates murals, mosaics, and sculpture into the design of the building to create a great work of New Deal era art. From the planning of the building, which involved numerous people and agencies working over several decades, to its construction, which also took several years and was beset by changes in direction along the way, the story of the Maritime Museum Building reads as a twisting chapter in the history of San Francisco.

The national significance of the Maritime Museum lies in its overall design, which incorporates exceptional artwork into a strongly evocative Streamline-Moderne structure. The building is an integrated ensemble of art and architecture with marine motifs and themes. Architecturally, the design of the Maritime Museum uses aerodynamic curves, flat roofs, and glass and metal surfaces to suggest modern modes transportation such as ocean liners. The nautical theme of the architectural design is also found in the interior and exterior artwork integrated into the building. The surrealist and abstract murals, mosaics, and sculptures were designed and executed by WPA-sponsored artists. This artwork is among the most distinctive of the art created under the New Deal in California because of its expressionist nature.[1] The construction of the Maritime Museum involved artisans and craftspeople from many building professions, including mural painters, sculptors, iron workers, masons, and tile setters. Some of these artists were internationally recognized, such as muralist Hilaire Hiler and sculptor Sargent Johnson. Johnson was also one of only two African-American WPA artists working in California. Others who worked on the building were well known local artists and craftspeople, such as sculptor Beniamino Bufano, painter Richard Ayer, and artisan John Glut. For the most part, the work that they created remains intact.

When being planned, the bathhouse was intended to be the focal point of Aquatic Park where the residents of the city could enjoy the calm waters of a protected lagoon and the conveniences of the services housed in the structure. Before its official opening, however, the bathhouse was leased to a private concessionaire who opened the building as the Aquatic Park Casino. Most of the building was open only to the high-paying public, although a portion of the structure was used as a bathhouse. During World War II and for several years after, the military held possession of the building and used it as part of their Pacific Coast air-defense system. For the past fifty years,

the building's primary function has been shared by its use as a maritime museum and a senior center. Current uses include the National Maritime Museum, the San Francisco Senior Center, exhibition workshops, and a darkroom. Despite these changes in use, the Maritime Museum Building is in a relatively unaltered condition and remains a nationally significant artistic and architectural structure. It also has national social significance as one of the first formal senior centers in the United States, and the first west of the Mississippi River.

III. ADMINISTRATIVE DATA

Place Names and Building Designations

The Sala Burton Building is part of Aquatic Park, which lies within the San Francisco Maritime National Historical Park. The Sala Burton Building is commonly referred to as the Maritime Museum Building and is listed as the *Maritime Museum Building* in the National Register form. The building was designated as the Aquatic Park Bathhouse at the time of planning and construction. The National Park Service List of Classified Structures refers to the building as the Aquatic Park Bathhouse. When first opened in 1939, it was called the Aquatic Park Casino. In its history, the building has housed the San Francisco Maritime Museum and been referred to by that name as well. It may also be called the San Francisco Senior Center, which it currently houses.

Designated Cultural Resources

The Maritime Museum and the rest of Aquatic Park were listed on the National Register of Historic Places as a historic district in 1984. The Maritime Museum is considered to be of national significance in the areas of art, architecture, and social history on account of the important artwork incorporated into the design of the building and its use as the first formal senior center in the United States. The site became a national historic landmark in 1987. Aquatic Park is bordered by Van Ness Avenue, Hyde Street, Beach Street, and the San Francisco Bay.

Terminology

Although the Maritime Museum Building includes the subterranean wings to the east and west of the museum building, portions of which are beneath bleachers and lit by skylights, this HSR focuses on the above-ground, four-story central portion of the building, exclusive of these east and west wings. Several exterior windows in the wings are included in the report. The terms "bathhouse" and "Maritime Museum" are used throughout the report to refer to the central structure, with "bathhouse" for the structure as it was used prior to 1951 and "Maritime Museum" used for the building after that date.

Historic Drawings

The drawings of the Maritime Museum relied on for analytical purposes in this HSR were HABS/HAER documentation drawings (CA-2225) which were prepared in 1999 using the original construction drawings prepared by the architect William Moser under contract with the Office of the Board of Park Commissioners of San Francisco and the Works Progress Administration. The existing conditions drawings used in this report were prepared by ARG and the National Park Service using the original construction drawings modified based on field measurements.

IV. HISTORICAL OVERVIEW and BUILDING DEVELOPEMNT

History and Context of Aquatic Park

Prior to 1900, the area of the present-day Aquatic Park was known as Black Point Cove, a natural lagoon east of Black Point, which was also known as Punta Medanos or Point San Jose and is now Fort Mason.[2] For over sixty years beginning in 1797, the site was largely undeveloped although designated for military use. The Spanish constructed an adobe and wood fortification at Punta Medanos in 1797, establishing a larger military reservation which included Black Point Cove. The military nature of the site continued through the Mexican period of California's history and later during the American rule when the military created the Point San Jose Military Reservation in 1851. Because the shores of Black Point Cove site were undeveloped, however, business interests were soon able to claim the land by squatter's rights and use the site for industrial purposes beginning in 1858. The first of these businesses, the Pioneer Woolen Mills, built several structures at the Black Point Cove site, including, at the approximate location of the present Maritime Museum Building, a wooden wall constructed to create a landing in front of a mill building. Another business interest at the site was the San Francisco Water Company, which built a pumping station at Black Point Cove for the transport of fresh water throughout the city. This pumping station remained in use into the 1930s, when the site was acquired by the City and County of San Francisco for the purposes of constructing Aquatic Park.

Even while serving as the location of several industrial operations, the Black Point Cove site was used for recreation. As early as the 1860s, the sheltered cove and sandy beaches attracted swimmers who soon built small bathing structures. One of the largest of these early bathhouses was the "Sea Baths," operated by Joseph Dunkerly, perhaps as early as 1863, at the corner of Beach and Larkin Streets and later known as the Neptune Bath House. Other bathhouses were established in the 1870s and 1880s. However, by the 1890s, the Black Point Cove bathhouses were largely abandoned and out of use, their fate in part due to the construction of indoor, heated bathing structures throughout the city. At the same time that the bathhouse businesses were closing, swimming and rowing clubs were taking hold at Black Point Cove, continuing the recreational use of the site.

Beginning in 1906 and continuing for almost a decade, Black Point Cove was slowly filled in, first with the rubble and debris remains of downtown San Francisco following the 1906 earthquake and fire and later with material excavated for the construction of a nearby railroad tunnel. The tunnel was to connect the Panama Pacific International Exposition site west of Fort Mason with the Belt Line Railroad trestle, completed in 1914, which crossed Black Point Cove. The filling of the

lagoon and the construction of the railroad trestle across the cove provided an immediate impetus for public pressure to preserve the cove and create an Aquatic Park.

Although the movement for Aquatic Park did not take firm hold until the 1910s, the idea of a waterfront park at the Black Point Cove site was introduced some fifty years earlier by landscape architect and planner Frederick Law Olmsted in 1866. In Olmsted's *Preliminary Report in Regard to a Plan of Public Pleasure Grounds for the City of San Francisco* he recommends a group of constructions very similar to what was eventually built:

> Here there should be a suitable landing quay and a plaza, with a close and thick plantation of evergreens on the west side, with banks of shrubs and flowers. The plaza or parade should be open and large enough to be used for a drill ground by a battery of artillery or a regiment of infantry, with some standing room and seats for spectators. It should also contain an elegant pavilion for the accommodation of committees of reception and their guests and a band of music, and should be decorated with flagstaffs, marine trophies, and eventually with monuments to naval heroes, discoverers and explorers. It should not, however, be very large or fitted for extended ceremonies, being considered rather as the sea-gate of the city than the place of entertainment for its guests.[3]

In his 1905 Plan for the development of San Francisco, Daniel Burnham would also propose for the Black Point Cove site a "bay shore park" to "preserve the beauty of the point and to restrain the encroachment of any buildings other than club-houses and those of a semi-public character."[4] Eventually, with mounting public pressure, the Board of Supervisors in 1917 approved the transfer and acquisition of lands at Black Point Cove for the creation of an Aquatic Park.

After resolving to establish an Aquatic Park, the city slowly moved forward with the purchase and acquisition of lands at the site and with planning and architectural designs to create the park. Between 1917 and 1924, shoreline properties at the Aquatic Park site were acquired by the city. In 1920, civil engineer John Punnett prepared a preliminary study of the site that was intended to serve as the basis for the future park. Limited grading of the shoreline around the cove and removal of the trestle across the lagoon had also begun by this time. In 1922, the San Francisco Parks Commission, which had recently been given jurisdiction of the park, appointed the architects Bakewell, Brown and Bauer the task of creating a plan for Aquatic Park. Their plan, approved by the city in 1923, called for the construction of bathhouses as well as other various buildings, approaches, and landscaping. Finding funding for the park and securing the final

necessary land acquisitions would take several years, however, delaying construction at the site until the 1930s. Finally in 1931, work began on the construction of a concrete municipal pier at the northwest corner of the cove. It was not until 1935, when the newly created Works Progress Administration (WPA) approved the city's proposal for the development of Aquatic Park, that other parts of the plan could be implemented. The WPA hired John Punnett to prepare new plans for the site and William A. Mooser III to design the structures within the park. Progress in the construction of the park could finally be seen beginning in 1936, with the money and energy of the project concentrated on the bathhouse.

Development of the Maritime Museum

The construction of the Aquatic Park Bathhouse between 1936 and 1939, beset by changes in design and detailing, proceeded at the same slow pace that the development of the park had followed. Throughout construction, changes were made to the building and its design. One example is the stone sculpture and fountain at the main entrance to the building. Original construction drawings show a limestone sculpture and fountain to be installed at the entrance, with dimensions different than those of the green slate sculpture that was actually built. Another example is the additional construction of a glass block pantry on the third floor when the use of the space was changed from a viewing gallery to a banquet hall. In order to build the pantry, it was necessary to remove a portion of the stainless steel window frame that had already been constructed at the east end of the room. By October of 1936, work on the framing of the first and second floors had begun and by December of that year framing for the third floor had started. (See **Appendix A, Figures 1 and 2**). In October of 1937, the pantry addition was in progress. (See **Appendix A, Figure 3**). By January 1938 the framing and exterior work on the central structure was substantially complete. (See **Appendix A, Figures 4 to 6**). However, the interior work and completion of the wings and landscaping would take another year. Finally in January of 1939, the WPA, frustrated by the slow pace and numerous revisions, turned control of the project over to the city. Another complaint of the WPA administrators, which was shared by the artists working on the Bathhouse murals, mosaics, and sculptures, was the leasing of what was planned to be a public structure to a concessionaire for use as a private restaurant, even prior to its completion. (See **Appendix A, Figures 7 to 9**).

The interior design of the Aquatic Park Bathhouse, as well as several important works on the exterior, were executed by artists working for the Federal Art Project (FAP), a public arts program established under the direction of the WPA. Hilaire Hiler, who was responsible for the overall design of the artwork at the Bathhouse, also created the series of murals in the main lounge and in the ladies' lounge on the west end of the second floor. The murals in the main lounge, painted

primarily in shades of green and red that complement the Tennessee pink marble and Royal Jersey green marble wainscot, portray sea life, a sunken ship, and Polynesian sea gods. (See **Appendix A, Figure 11**). In the ladies' lounge, Hiler demonstrated his interest in color theory by decorating the walls with charts and fields of color. Sargent Johnson designed and supervised the execution of the slate sculpture at the main entrance to the building and the tile mosaic on the north elevation veranda. (See **Appendix A, Figure 10**). He also made the green ceramic lintel above the door from the third floor observation deck into the fourth floor penthouse room. At the north elevation of the Bathhouse, Beniamino Bufano completed two smoothly polished statues of a seal and a toad that sit on either end of the veranda. John Glut designed the chrome and glass light fixtures in the main lounge on the second floor. Richard Ayer, responsible for the decoration of the third floor banquet room, created abstract bas-reliefs in a variety of materials including wood, masonite, metal, and plaster to adorn the walls. Terrazzo floors and painted plaster finishes were also employed throughout the Bathhouse to embellish the interior and create a distinctive work of great architectural and artistic design.

The interior work at the bathhouse was incomplete when the building was officially dedicated and opened for use by Leo and Kenneth Gordon as the Aquatic Park Casino on January 22, 1939. Johnson and Bufano, angered by the private use of a building intended for public enjoyment and built using public funding, refused to complete portions of their artwork, including the tile mosaics at the veranda. Hiler, who had not finished his murals series by January 1939, did not complete this work until 1949. Although the 1938 lease signed between the City of San Francisco and the Gordons for use of the bathhouse as a private concession stipulated that they would not occupy the building until the facilities were complete, their Aquatic Park Casino was in operation on dedication day. The restaurant and bar that the Gordons operated occupied the entire bathhouse building except the shower and dressing room areas.

The bathhouse, intended for public use, would be inaccessible to the general public for almost a decade following its opening. The WPA launched an investigation into the project and the Gordon lease as a result of public complaints about the Aquatic Park Casino and requests from WPA personnel, including the artists who had worked on the bathhouse. Although the Gordons were forced to close their restaurant and bar in late 1940 as a result of the investigation, the waters of the Aquatic Park lagoon were closed to public bathing and swimming at the same time due to health concerns. In 1941, the United States military occupied the Aquatic Park area as part of mobilization procedures for World War II. The site was used by the National Guard for anti-aircraft defenses of the Pacific Coast. Early in the war, the bathhouse was used to house soldiers. Later on, the building became a more specialized military outpost with offices on the

third and fourth floors, a general reception room and mess halls on the second floor, and sleeping quarters and messes on the first floor. Although the military left the bathhouse in 1946, it was not until 1948 that the building and the rest of Aquatic Park were turned over to the city. Before taking back possession of the site, the military repaired damage and undid alterations that they were responsible for, including replacement of one of the historic light fixtures, repair of damaged concrete and wood surfaces, and removal of plywood partitions, furniture, and mess equipment.

The unfortunate situation of the bathhouse building under city control in 1948 was similar to its lot in 1940 when the Aquatic Park Casino was closed: the building was locked and closed to the public and swimming was forbidden in the lagoon. The Park Commission operating the site came up with a temporary solution to open the building to the public during the week, allow sunbathers to use the first floor dressing rooms, use the circular room at the east end of the second floor for adult recreation programs, and make other rooms available for social gatherings and meetings. The use of a portion of the building as an adult recreation center, later expanded and called the San Francisco Senior Center, continues into the present. Still, in the late 1940s, most of the building remained vacant. Then, in 1951, the private non-profit San Francisco Maritime Museum Association established the San Francisco Maritime Museum in a portion of the bathhouse, leasing part of the building from the city Board of Parks and Recreation. The idea to use the building as a museum for the display and instruction of maritime history, arts, and economics had first sprouted prior to the war, when a small exhibit of marine paintings and models was installed. The creation of the San Francisco Maritime Museum, like the construction of the building in which it was to be housed, involved many people working diligently over several years: Karl Kortum was a marine enthusiast who had early on envisioned the building serving as a museum; David Nelson worked with Kortum in the campaign of persuasion directed at the influential of San Francisco business and politics; Scott Newhall pushed for the museum from his position as an editor with the San Francisco *Chronicle*; Alma Spreckels was a major benefactor of the museum; and Edward Clark established a prototype of the museum through his involvement with the Pacific Marine Research Society and organization of a maritime exhibit at the 1939 Golden Gate International Exposition.[5] Pushed by these people and others, the San Francisco Maritime Museum was opened in May of 1951 with the former bathhouse now used to display models, maritime art, and fragments of actual vessels.

The two primary uses of the Maritime Museum Building, as a senior center and a maritime museum, established at the middle of the last century, continue to this day. Other current uses include exhibit workshop production and photography darkroom activities. Although changes were made to the interior spaces of the building to accommodate these uses, the building itself

was neglected for the most part. In 1978, Aquatic Park and the Maritime Museum Building were transferred from the city to the National Park Service as part of the Golden Gate National Recreation Area. Then in 1988, the site became part of the San Francisco Maritime National Historical Park. The legislation that created the San Francisco Maritime National Historical Park also mandated the renaming of the Maritime Museum Building as the Sala Burton Building in honor of the former resident of San Francisco and United States Representative who had died in 1987.[6]

Building Alterations

Although some alterations have been made to the Maritime Museum Building to accommodate the senior center and museum functions of the building, most of these changes were made to the interior with relatively little impact to the main spaces. For the most part, the building retains the same materials and design features that it had when first opened in 1939. As mentioned above, the alterations made to the building during its use for military purposes were mostly repaired or undone before the building was returned to the city.

Beginning in 1955 and continuing for a decade, a series of alterations was undertaken to improve the use of the building for the San Francisco Senior Center. One of the major alterations was to install an elevator between the first and second floors at the east end of the veranda on the north elevation in an area that was originally designed as an interior lobby. The elevator was installed at the location of an existing dumbwaiter and was designed to blend in with the original surrounding interior features. Another change to the building was the remodeling of the former restaurant at the east end of the second floor into a recreation hall and kitchen. This change resulted in the removal of painted wooden wall plaques, repainting of the room, and the replacement of the original exterior door with a new door that provided wheelchair access. Also completed as part of these renovations was the transformation of many of the first floor concession and dressing room areas into offices and classrooms.

To accommodate the artifacts and displays of the Maritime Museum, several alterations have been made to the interior spaces and features of the building. On the second floor, the restroom at the west end of the building was converted to exhibition space in 1999. In addition, original murals have been damaged by the drilling of holes to attach paintings and other museum artifacts. On the third floor, the main gallery space, which was originally a single continuous open space was divided into several spaces by the addition of several partitions with built-in display cases at the eastern end of the room in 1976. These partitions and repainting of the original walls partially damaged and covered some of the bas-relief wall panels and murals. The installation of carpet at

the east end of the third floor gallery damaged and obscured the terrazzo floor, another original interior finish. Other alterations made by the Maritime Museum include the replacement of the original rope stairway banisters with chrome railings, the conversion of the third floor restrooms into offices, the installation of wooden walls and shelving in the glass block pantry for use as a library and later as exhibit space, and the removal of the yardarm attachment of the main flagpole on the fourth floor penthouse roof.

William Mooser

William A. Mooser III, selected as the architect for the structures in Aquatic Park in 1935, was the third generation in a family of architects who had practiced in San Francisco since 1861. His grandfather, William Mooser I (1834-1896) had arrived in San Francisco in 1854 from his native Switzerland. In 1861 he opened his own office. One of his early buildings that still stands is the Pioneer Woolen Mill, dating from 1863 and now incorporated into the Ghirardelli Square complex. The elder Mooser was joined by his son William A. Mooser II (1868-1962), or Mooser, Sr., in 1890. Mooser II had designed other structures near the Pioneer Woolen Mill and Aquatic Park including the D. Ghirardelli and Company Factory and the California Fruit Canners Association Warehouse, now known as the Haslett Warehouse. In 1900 he became the first person to be appointed to the position of City Architect, responsible for the plans and construction of all City construction, in charge of the new Building Bureau and its building inspectors, and responsible for writing the first San Francisco building code. After formal training at the École des Beaux-Arts in Paris and an apprenticeship with MacDonald and Couchot, William A. Mooser III (1893-1969), also known as William Mooser, Jr., joined the family firm. Both Mooser, Jr. and Mooser, Sr. were involved with the building of the Maritime Museum. With the completion of the building, the designs of all three generations of Moosers were present in the Aquatic Park area.[7]

Federal Art Program Artists

The design of the Maritime Museum is complemented and unified by the inclusion of many outstanding works of art executed by five men working for the Federal Art Program of the WPA. The completion of the original art works and the interior design for the building were supervised by artist Hilaire Hiler and carried out by Hiler, Sargent Johnson, Beniamino Bufano, John Glut, Richard Ayer, and under the sponsorship of the Works Progress Administration. At the time, Hiler was an internationally recognized muralist. Prior to returning to the United States and beginning work for the Federal Art Project, Hiler had spent 14 years in Paris where he was a well-connected member of the large group of expatriate artists. He had written several studies on the psychological meaning of colors, a theme that is expressed in his work at the Maritime Museum. Sargent Johnson, who created the carved sculptural assembly at the main entrance to the

building and the tile mosaic at the north elevation veranda, was a sculptor known throughout the country. He was one of only two African-American artists involved with the WPA program in California. Johnson had moved to San Francisco at the age of 18 and studied art at the California School of Fine Arts (CSFA). Prior to 1936, his work, carried out in a variety of media, was influenced by the "New Negro" movement, which advocated the replacement of negative stereotypes of African Americans with a celebration of the essence and beauty of the distinctive black physiognomy. As an artist working with the FAP, his art became more abstract and stylized, and was often larger in scale than his previous work. The work of Bufano, also a sculptor and an instructor of Johnson at the CSFA, has a fluid quality which is expressed in the animal carvings executed for the Maritime Museum veranda. John Glut, an artisan, created the light fixtures for the Maritime Museum. Richard Ayer, who was assigned the decoration of the third floor at the Maritime Museum, had previously assisted with the murals at Coit Tower in San Francisco.

Building Chronology

1917	City of San Francisco begins to acquire land at Black Point Cove, future site of Aquatic Park.
1920	Planning for the proposed Aquatic Park begins under the direction of San Francisco civil engineer John Punnett.
1920	Site development begins with the grading of the cove's shoreline between Van Ness Avenue and Larkin Street.
1922	San Francisco Board of Supervisors places the Aquatic Park site under the jurisdiction of the San Francisco Board of Park Commissioners.
1922	Bakewell, Brown, and Bauer appointed architects for development of Aquatic Park and begin preparation of plans.
1923	Bakewell, Brown, and Bauer submit Aquatic Park plan to park commissioners; plan approved by the park commissioners.
1928	Voters reject bond issue for financing of the Aquatic Park project.
1931	Work begins on the construction of some features of the Aquatic Park plan for which monies had previously been appropriated.

1931 to 1935	Work at Aquatic Park continues in stops and starts with funding provided by the National Recovery Act of 1933, the State Emergency Relief Administration, and private donations.
1935	The Works Progress Administration provides funding for the completion of San Francisco's Aquatic Park. John Punnett selected by the board of supervisors as the architect for the final site plan and San Francisco architect William A. Mooser III selected to design the park's structures including the bathhouse.
1937	Glass block pantry at the east end of the third floor added during construction to service a proposed banquet facility where a public viewing area was originally intended.
1938	The WPA withdraws from the project leaving the City and County of San Francisco to complete construction of the Aquatic Park complex.
1939	Aquatic Park officially dedicated with the bathhouse opened as the Aquatic Park Casino under a private concession.
1940	The concessionaire operating the Aquatic Park Casino is forced to cease operations and the bathhouse is closed.
1941	The Aquatic Park bathhouse is turned over to the military for use as the headquarters for anti-aircraft defense on the Pacific Coast. The bathhouse is used for housing troops and as offices.
1948	Aquatic Park is returned to the city of San Francisco by the military. Part of the bathhouse building is converted for use as an adult recreation center.
1951	The San Francisco Maritime Museum opens in the bathhouse. The adult recreation center is renamed the San Francisco Senior Center.
1955 to1956	Alterations to first floor interior offices for the San Francisco Senior Center.

1957 to 1958	Remodeling of room at east end of second floor for use as recreation room and kitchen and installation of new door on south elevation near east end of second floor for the San Francisco Senior Center.
1964 to 1965	Installation of elevator between first and second floors at northeast corner of building.
1972	Golden Gate National Recreation Area is established with the authority to acquire Aquatic Park, the collection of the San Francisco Maritime Museum Association, and other nearby properties.
1976	Installation of display case partitions and carpeting in third floor gallery space for the Maritime Museum.
1978	The Maritime Museum Building and the rest of Aquatic Park transferred to the Golden Gate National Recreation Area.
1984	The Maritime Museum and associated structures and landscapes listed on the National Register of Historic Places as the Aquatic Park Historic District.
1987	The Aquatic Park Historic District becomes a national historic landmark.
1988	The San Francisco Maritime National Historical Park established to include the Maritime Museum and adjacent park areas and historic vessels. As part of this legislation, the Maritime Museum Building is renamed the Sala Burton Building.

V. PHYSICAL DESCRIPTION

Site

The Maritime Museum Building in San Francisco is situated on the north side of San Francisco on the shore of the Bay. The structure is built into the low hillside between Aquatic Park lagoon and Beach Street and is oriented along an east-west axis parallel to Beach Street. The ground or first floor of the building is accessible from several entrances on the north elevation, while the main entrance on the south elevation opens into the second floor level. At the east and west ends of the central structure are driveways which follow the curved contour of the building and connect the north and south elevations. The driveways also visually separate the central structure from the north-facing bleacher wings on either side of the Maritime Museum.

Construction and Organization

The Maritime Museum is a four-story reinforced concrete building with curvilinear building walls and flat roofs. A prominent feature of the building are the large window openings on all of the elevations and entrances on the north and south elevations. In plan the building is symmetrical. The second, third, and fourth floors of the building are rectangular in plan with the east and west ends terminating in semi-circular walls. The footprint of the third and fourth floors progressively diminishes in size, thus creating space for exterior observation decks at each of these floors. (See **Appendix C, HABS/HAER Drawings** and **Appendix D, Existing Conditions Drawings**).

The main exterior walls of the Maritime Museum are cast-in-place reinforced concrete with a painted stucco finish. Although the thickness of the load-bearing concrete walls varies at different locations of the building, they are approximately eight inches thick in most areas. More massive concrete columns are located roughly 22 feet apart. The roof deck perimeter curbs are constructed of limestone that has been parged with a cement plaster. Metal railings are attached to the curbs at the observation decks.

The interior of the Maritime Museum is characterized by large open spaces with apse-shaped walls that relate to the curving exterior walls. The primary spaces have large window openings that that allow vistas to the exterior. Original artwork and interior finishes are also found in the primary spaces. Stairways and service areas are typically located away from the center of the primary spaces.

Style

The Maritime Museum is the city's preeminent example of the Streamline-Moderne aesthetic that was popular in the United States between 1925 and World War II. The low horizontal emphasis, smooth curvilinear walls, dramatic rounded corners, and flat roofs typical of this style and prominent in the design of the Maritime Museum recall ocean liners and other high-speed modes of transportation of the period. At the Maritime Museum, the effect is enhanced by the tubular steel railings, porthole windows, rope set into interior wall plaster, funnel-shaped roof ventilators, and tall mast-like flagpole.

General Exterior Description

The use of similar features and materials on all of the exterior elevations of the Maritime Museum creates a unified design characterized by smooth curved walls and flat roofs. The monochromatic stucco walls of the building's exterior are punctuated by stainless steel-clad windows on all elevations. Observation decks accessible from the third and fourth floors extend the full size of the floor immediately below. Surrounding the observation decks are stainless steel and aluminum railings. The symmetry of the building is broken only by the glass block wall pantry at the east end of the third floor.

Exterior North Elevation Description

The north side of the building is the only elevation that presents a full view of the building's four floors. (See **Appendix B, Figures 1 and 2**). Large window expanses are a prominent feature at each floor on the north elevation. These windows look out onto the sheltered waters of Aquatic Park lagoon and the San Francisco Bay beyond. There are three entrances to the ground floor from the north elevation, all protected by a long canopy running almost the entire length of the elevation. A veranda on the second floor at the middle of the elevation provides a protected exterior space accessible from the interior by three pairs of doors. The entire wall area of the third and fourth floors on the north elevation is composed of window panels separated only by structural concrete columns. Two pairs of glass doors set within these window panels provide access to the observation deck at the third floor.

Exterior South Elevation Description

The most prominent feature on the south elevation is the main entrance in the center of the façade. (See Appendix B, Figure 3). This entrance to the second floor of the building consists of three pairs of double leaf glass doors with a canopy surrounded by a slate bas-relief sculpture integrally designed with two low fountains that flank the exterior granite steps. The south elevation does not have as many window openings as the other elevations with the windows

concentrated at the east and west ends of each level. On the second floor, three narrow window panels and three porthole windows are situated between the entrance sculpture and the east and west ends of the façade. Two funnel-shape vents rise from the third floor observation deck. At the fourth floor, two pairs of doors open from the south elevation onto the observation deck.

The incised sculpture at the south elevation entrance consists of two large slate panel assemblies that are equally divided by the raised main entrance. They are part of a larger, integral composition that includes low fountains at the base of the sculpture assemblies and a projecting canopy. Each side of the sculptural assembly is 14 feet high and extends approximately 17 feet on either side of the entrance. They are decorated with incised, low-relief designs of marine and maritime subjects. The assemblies rise to meet a shallow canopy that is also clad with carved slate panels. The soffit of the canopy has 12 inch square translucent green glass lights set in an aluminum framework. The low exterior walls and copings of the fountain are clad with uncarved slate. The shallow fountain pools have mosaic tile bottoms and terrazzo base panels. These fountains are currently unused.

Exterior West and East Elevations

A significant portion of both the west and east elevation exterior walls of the central structure of the Maritime Museum is comprised of stainless steel-clad window wall panels. (See **Appendix B, Figures 1, 2, and 4**). The first floor of each elevation, parged with stucco and painted white, is partially built into the hillside. At the first floor on the west elevation there is a small steel frame window near the north end. There is a glass block pantry on the third floor of the east elevation. This feature was not part of the original design but was added during the original construction at the demand of the first tenant of the building.

General Interior Description

The interior of the building is characterized by large open spaces and open vistas to the exterior. Each floor has at least one large primary space. These primary spaces incorporate the curved east and west ends of the building and window wall systems that open the interior spaces to the exterior. Original interior finishes comprised of decorative murals, tile mosaics, bas-relief carvings, painted plaster, wood and stone paneling, and terrazzo floors add to the richness of the interior.

Interior First Floor Description

The first floor of the central structure, accessible from the north elevation, has been altered to accommodate its current function of senior center and park offices. The original walls defining a

grand concession area in the center of the floor plan and the concession areas on the south wall have been removed leaving a central lounge area flanked by offices and classrooms. The steamship flags and charts painted by Hilaire Hiler are also no longer visible, having been covered by subsequent repainting campaigns or removed during the alterations. Some of the decorative relief work and paintings are now in the collection of the San Francisco Maritime National Historical Park (SFMNHP). Stairs leading to the second floor veranda are located at the east and west ends of the large lounge area.

Interior Second Floor Description

The second floor of the Maritime Museum has four primary spaces: second floor museum (originally the main lounge), steamship room (women's lounge), bay view room (restaurant), and veranda (open porch). The second floor museum on the south side of the building, accessible from the exterior through three pairs of side-by-side doors, takes up most of the central portion of the floor. Hiler's mural series depicting the undersea world are located on the south, east and west walls of the museum room. The steamship room occupies the west apse end of the floor and the bay view room lies at the east apse end. The semi-exterior veranda is on the north side of the building and is connected to the museum room by three pairs of double doors. Restrooms, offices, and other secondary spaces fill in the spaces between the museum room and the veranda and the circular rooms at the ends of the building. Interior stairs at the northwest and northeast corners of the museum room lead to the third floor. The veranda on the north elevation is accessible through three double doors leading from the main museum room and from the circular rooms at either end of the second floor. Tile mosaics created by Sargent Johnson and light fixtures manufactured by John Glut adorn the walls and ceiling of the veranda.

Interior Third Floor Description

Originally, the third floor interior plan consisted of one large gallery space with toilet rooms, stairs down to the second floor, stairs up to the fourth floor all positioned along the south wall, and a glass block pantry at the east end of the floor Display partitions installed in 1976 divided the east half of the main gallery into smaller spaces and later partitions installed in the pantry also divided this space. The third floor still retains its open feeling, with large windows on the north wall overlooking the Aquatic Park lagoon. Many of the decorative relief elements are still extant on the walls, although most have been overpainted white. Some of the relief carvings have been removed and are in the SFMHP collection. The pantry at the east end of the third floor was later used as library and is now used to display exhibits. Access to the third floor observation deck is provided through two pairs of doors on the north wall and a pair of doors on the curved west wall.

Interior Fourth Floor Description

The fourth floor plan is taken up by a single open space that was originally intended to be used as a radio room. The walls of the fourth floor penthouse are made up almost entirely of stainless steel-clad doors and windows. An opening on the south side of the room leads to a stair that connects the fourth floor room to the third floor. Around the opening of the stairs are a green ceramic tiles made by Sargent Johnson. The ceiling has a semi-abstract pattern, largely intact, and the original light fixtures are also in place. Doors on the south wall on either side of the stairs open out onto the fourth floor observation deck.

VI. EVALUATION OF INTEGRITY

Evaluation of Integrity

The *National Register of Historic Places Bulletin 15* standards and criteria were used to evaluate the integrity of the Maritime Museum Building.[8] *Bulletin 15* defines integrity as the ability of a property to convey its significance. Integrity is the authenticity of a historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance. Integrity involves several aspects including location, design, setting, materials, workmanship, feeling, and association. To retain historic integrity, a property will always possess several, and usually most, of the aspects.

Location

Location is the place where the historic property was constructed or the place where the historic event occurred. The Maritime Museum sits in its original footprint and has not been moved.

Design

Design is the combination of elements that create the form, plan, space, structure, and style of a property. Strictly speaking, the design of the Maritime Museum remains unchanged and reflects the architect's original intention for the building. The Maritime Museum's construction technique and materials are typical of its era. The Streamline-Moderne vocabulary of its design represents a style popular for building types such as recreational structures during the period of its construction.

Setting

Setting is the physical environment of a historic property, constituting topographic features, vegetation, manmade features, and relationships between buildings or open space. The Maritime Museum Building was designed as part of a larger park setting and strongly relates to these surrounding features. Surviving nearby contemporary structures were built in the same architectural style and thus have a complementary relationship with the building. The Maritime Museum Building retains its intended position with access from the city street on one side of the building and from the shoreline of the cove that the building overlooks on the other.

Materials and Workmanship

Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property. Workmanship is the physical evidence of the crafts of a particular culture, people, or artisan during any given period in history or pre-history. Excellent workmanship at the Maritime Museum is expressed in the numerous murals, sculptures, mosaics, and other artworks in both the interior and exterior of the structure. Although the materials of the building and artwork have suffered from some deterioration, the integrity of the materials of the Maritime Museum is highly intact for the most part.

Feeling

Feeling is a property's expression of the aesthetic or historic sense of a particular period of time. The evocative style of the Maritime Museum, meant to recall ocean liners of the modern age, strongly conveys the building's period of construction and its use. The spacious interior spaces and expanses of glass window and door wall systems also recall the aesthetic feeling of the period.

Association

Association is the direct link between an important historic event or person and a historic property. The Maritime Museum Building is not associated with a specific event, but it is closely tied to several important artists who contributed to its design. Chief among these artists are Hilaire Hiler, who was known internationally for his art work and theoretical writings, and Sargent Johnson and Beniamino Bufano who were prominent local artists with national reputations. These artists were part of the Federal Art Project (FAP), a public arts program under the direction of the Works Progress Administration (WPA). These were significant programs in the nation's history that produced a number of spectacular buildings with important works of decorative art, including the Maritime Museum Building. The building also has a strong association with several aspects of life in San Francisco, including recreation, education, military history, and social movements.

Character

The character of a historic building may be defined by the form and detailing of both exterior and interior materials and features. Identification of character-defining features is the first step in working toward ascertaining a structure's original essence, leading then to retention and preservation of the specific elements. The integrity of the materials at the Maritime Museum is high due to the presence of a large amount intact original historic fabric. The following lists

summarize significant building elements and attempts to define elements that contribute to the character of the Maritime Museum.

Character-Defining Exterior Features

- low, horizontal emphasis, curvilinear walls and flat roofs typical of the Streamline-Moderne style
- four-story concrete structure
- a balanced, symmetrically composed façade
- monochromatic stucco exterior wall surfaces
- large expanses of stainless steel-clad steel frame windows
- regular rhythm of window openings and muntins which emphasizes the linearity of the building's style
- carved slate sculpture, canopy, and low two-tier fountain at the main entrance
- open veranda on the north elevation
- accessible observation decks on the roof decks with herringbone paver pattern at decks still visible
- size, shape, and pattern of roof deck pavers, which is repeated on the interior in first floor spaces
- glass block pantry on the east elevation
- porthole windows on south elevation
- nautical ornament and design features

Character-Defining Interior Features

- significant murals, mosaics, sculpture, lights, and other artwork incorporated into design
- large open spaces
- wide vistas through large windows on all elevations
- interior stainless steel and painted steel window muntins

VII. ASSESSMENT OF CONDITIONS

Conditions Introduction

Between World War II and the transfer of Aquatic Park to the National Park Service in 1978, the Maritime Museum Building was operated by the City of San Francisco, which provided mechanical and janitorial services for the entire building. It is evident that the city's maintenance program for the structure was quite lax; reports of deterioration such as water leaks and peeling paint were mentioned in this period by the local press. Since 1978, the National Park Service has made a concerted effort to maintain the building, and its condition has greatly improved. Significant waterproofing problems do remain, however. Water entering the window framing systems has corroded the steel frames, resulting in cracking of glazing lights and displacement of the stainless steel cladding. The stainless steel doors, especially those on the third and fourth floors, are in similar condition. The urethane roof membrane, applied over the original tiled observation decks, began to develop cuts, splits and other defects soon after its application and has also been a source of water infiltration. These conditions have resulted in damage to the interior finishes such as painted plaster and murals. Water penetrating the building at window openings has disfigured the significant second floor mural by Hilaire Hiler and leaking through the roof decks has stained the painted plaster ceilings of several spaces. The glass block walls, specifically the mortar used between the units and the seal between the two halves of the blocks, have also deteriorated, resulting in water infiltration.

Window Systems

Description

There are three basic types of window systems used in the construction of the Maritime Museum: stainless steel-clad window wall systems, unclad galvanized steel windows, and wood windows. The fixed stainless steel-clad steel windows, used on the second, third, and fourth floors, are the most prevalent. The un-clad steel frame windows are found in the office and storage areas of the first floor and the wood bifold, transom, and sidelight windows are located in the first floor entry area on the north elevation. (See **Appendix E, Window Schedule**)

Most of the stainless steel-clad windows are large window wall systems consisting of fixed sash with clear glass. (See **Appendix B, Figure 5**). Some of the window wall systems have a single operable sash. A prominent feature on the south elevation are the six round porthole windows. (See **Appendix B, Figure 6**). These windows have a single clear-glass hopper sash in the center surrounded by four smaller obscure glass lights. Also on the south elevation are three vertical

bands of windows. (See **Appendix B, Figure 7**). These windows, having five panes of obscure wire glass each, sit on either side of the carved slate sculpture at the main entrance.

There is evidence, from historical accounts, that the windows of the Maritime Museum were built in place utilizing the WPA's on-site foundry and blacksmithing shop.[9] The steel window frames, made up of steel angles, plates, and channels, were attached directly into the reinforced concrete openings with each seam welded and ground smooth to form a uniform frame for the glazing. After the openings were glazed with ¼" glass, the window frames and the vertical and horizontal mullions were clad with 20 gauge stainless steel sheets, which were secured to the steel frame with the use of screws. All horizontal and vertical seams of the stainless steel cladding were welded, ground smooth, and polished to give a uniform appearance and better waterproofing detail. Construction of the window wall units was completed with the addition of stainless steel glazing stops installed on the exterior side of the glass and also secured to the steel frame with screws.

Unclad steel windows are located at the first floor, north elevation, and on the second and third floors, south elevation, of the central structure as well as in both the east and west wings. The unclad steel first floor windows are one-over-one or one-over-one-over-one hopper windows with some fixed sash. (See **Appendix B, Figure 8**). The other steel windows are small hopper windows. (See **Appendix B, Figure 9**). These windows have two panes of obscure glass each and are generally located near the middle of the north and south elevations.

At the former concession areas on the first floor of the north elevation are five sets of wood bifold windows. (See **Appendix B, Figure 10**). These windows have eight lights each. There are also wood transom and sidelight windows at the first floor doors.

Conditions

The deterioration of the stainless steel-clad windows is widespread across all facades but is most severe on the north elevation. There are several symptoms of the deterioration. The most obvious exterior condition is warping and displacement of the stainless steel glazing stops. (See **Appendix B, Figure 11**). There are also many panes of broken glass throughout the stainless steel-clad window wall system. The cracking of the window glass and displacement of the stainless steel cladding is caused by the expansion of the underlying steel frames. Deterioration of the steel window frame is indicated by the amount of oxidation stains on nearly all of the horizontal stainless steel cladding members of the building.

The deterioration observed at the window walls systems is due to deterioration and failure of the original glazing detail. When originally glazed, each pane of glass was set in caulk within the glazing pocket. The stainless steel cladding was then installed to cover the exposed steel framing members with the edge of the cladding stopping just short of the glass. The glazing detail was completed by the installation of the stainless steel stops secured to the steel window frame. The stops were also set in caulk. This is a typical glazing detail for the period of the building's construction and it worked well until the original caulk dried out over the years, shrinking and cracking creating voids for the intrusion of moisture. Over time, the intrusion of water has caused widespread deterioration of the underlying steel frames in nearly all of the window wall units. Moisture coming through the openings created by the failed caulk was trapped in the system, especially at the horizontal mullions, causing the steel frame to oxidize and expand, cracking the glass lights, warping the glazing stops, causing rust stains on adjacent materials, and damaging interior finishes. (See **Appendix B, Figure 12**).

In general, the unprotected windows on the north elevation are in worse condition than those on the other elevations. A greater amount of displacement of the stainless steel cladding, cracking of the window glass, and deterioration of glazing sealant is visible on the north elevation. The windows at the veranda, however, are in good condition. These windows are set back from the building envelope and are thus better protected from environmental conditions.

The unclad steel windows are in poor condition. Some of these windows do not close properly and there is deterioration of the surrounding wall surfaces indicative of corrosion of the steel window elements. The steel windows are all painted, with the glass painted or replaced in some cases.

The wood windows are in good condition and do not represent a waterproofing deficiency. There is some splitting of wood and loss of material at the sash and frames, but little other deterioration. The wood windows are all painted.

Conclusions:

- Stainless steel-clad steel windows are not weathertight.
- Cracked glazing lights, gaps in sealant, and displacement of glazing stops allow moisture and wind infiltration at stainless steel-clad windows.
- Conditions of windows is more deteriorated at unprotected areas on north elevation.
- Unclad steel windows are in poor condition and do not function properly.
- Wood windows are all painted and are in good condition.
- Deterioration of the ferrous window frames will continue even if the existing window assemblies are maintained.

Doors

Description

All of the exterior doors of the Maritime Museum Building are original with the exception of the second floor door at the southeast corner of the building. The original door at this location was removed and the current door installed to provide handicapped access to the San Francisco Senior Center.[10] All of the original doors on the second, third, and fourth floors have stainless steel frames with glass panels. (See **Appendix B, Figures 13 and 14**). Similar to the clad windows, the jambs, heads, and astragals of the original doors are constructed of steel channels and angles with stainless steel cladding. The door pushes are shaped like partial ship's wheels and are brass plated. The replacement door at the southeast corner of the building is a stainless steel door designed to blend in with the original doors. (See **Appendix B, Figure 15**). The doors on the first floor at the north elevation entrances are mostly paired sets of wood doors with glass panels. (See **Appendix B, Figure 16**). There is also one painted metal door at the first floor, north elevation. (See **Appendix E, Door Schedule**)

Conditions

The stainless steel-clad doors, especially those on the third and fourth floors, have similar conditions of deterioration as the stainless steel-clad windows including displacement of the cladding, cracking of the glass panels, and corrosion of the steel armature. This has resulted in decreased ease of opening and closing of these doors and waterproofing problems. The doors on the second floor, both at the main entrance on the south elevation and at the veranda are in better condition.

The wood doors and single metal door on the first floor are in good condition. Again similar to the windows, there is minor loss of material at the wood doors and corrosion of the painted metal, but these doors remain operable and provide a watertight envelope.

Conclusions:

- Stainless steel doors on third and fourth floors in worst condition, with displacement of stainless steel and sticking of doors.
- Stainless steel doors on second floor and wood doors and metal door on first floor in good condition.
- Deterioration of the stainless steel-clad doors will continue even if the existing assemblies are maintained.

Roofing Systems

Description

The flat roofs of the Maritime Museum Building are a character-defining feature of the structure. (See **Appendix B, Figure 17**). The roofs are accessible from the third and fourth floors and serve as observation decks similar to outdoor decks on an ocean liner. The original roof decking materials remain in place and consist of a built-up bituminous membrane applied over the reinforced concrete slab, followed by wire mesh and a 1-1/2 inch to 2 inch thick mortar bed into which 7 inch by 15 inch fired clay tiles were set in an oblique herringbone pattern. (See **Appendix B, Figure 18**). In some areas of both the third and fourth floor roof decks, National Park Service investigations carried out in 2001 also identified a 1-1/2 inch thick sand base in between the membrane and mortar bed. The tile roof deck is currently covered by a urethane waterproofing membrane that was applied in 1982 by the National Park Service in an attempt to stop water penetration and reapplied in subsequent years as water penetration problems were identified. The most recent major roof repair was undertaken in 1995 or 1996. At the deck perimeters, copper flashing is installed between the membrane and the mortar bed. The flashing is turned up within the parapet wall. A tile paver is set vertically at the curb to cover this flashing at the third floor roof and portions of the fourth floor roof perimeter. This tile, like the rest of the original tile, is covered with a urethane coating that is carried over the horizontal portion of the roof curb.

The roof of the third floor glass block pantry is similar to the roofs of the third and fourth floor observation decks. It consists of a flat concrete deck with clay tile pavers set in mortar. A gutter runs around the perimeter of the roof, leading to two downspouts located at the flat walls of the pantry closest to the main section of the third floor.

The roof deck at the fourth floor penthouse is similar to the other deck roofs except that it does not appear to have ever had clay tile pavers. The existing roof consists of a urethane coating over an original concrete topping. The fourth floor penthouse roof is sloped to three drains, two of which are at the low point of the roof. A large flagpole is mounted to the roof deck and four smaller flagpoles are situated on the curb of the roof.

The second floor veranda on the north elevation also has a tile deck. This deck consists of rectangular mosaic colored tiles. Other roof systems at the Maritime Museum include the copper roofs at the canopies over the entrances on the north and south elevations. The first floor canopy on the north elevation is a long, narrow soldered flat lock seam copper roof. There are six drains in this canopy. The south elevation canopy, over the main entrance to the building, has a

combination of metal standing seam and soldered flat lock seam roof with one drain in the center of the roof.

Conditions

Water infiltration into the building through the flat roof decks has been a problem for many years. This moisture infiltration has led to water damage at interior ceiling and wall plaster at the second and third floors. During the period in which the city operated the structure, a membrane was applied over the original tile roof deck. This membrane was removed, involving sandblasting of the roof tile, and a new urethane waterproofing coating was applied by the National Park Service in 1982. The urethane coating quickly developed problems with adhesion and bubbling due to its application over tiles that were not thoroughly dry. Cuts, splits, and other defects in the coating were repaired in 1992. Despite these repairs and continued patching of the roof deck coatings, the observation deck roofs continue to allow water penetration into the building. (See **Appendix B, Figure 19**).

Cracks through the roof tiles and in mortar joints between tiles were noted at areas of loose or detached urethane coating. In addition, light colored water stains were observed at hairline cracks and anchors in the unfinished underside of the concrete roof slab. It appears that the waterproofing failure at the roof decks is associated with the general cracking of the clay tiles which allow water into the deck assembly, from where it is able to infiltrate the building through hairline cracks and other spaces in the concrete deck. This problem is exacerbated by the ponding of water on the relatively flat roof decks. The observation deck roofs have less than a 1/16" per foot slope to drain. Water staining and other damage observed on the interior may also be due to broken drain leaders and plumbing pipes.[11] There is currently no means to drain water once it gets underneath the tile pavers and passes to the underlying membrane. In addition, the overflow scuppers from the roof decks are blocked and undersized.[12] No evidence of water penetration was noted at the perimeter curbs and flashing.

The other roof systems at the veranda on the north elevation and the copper roofs on the canopies over the north and south elevation entrances are in relatively good condition with no significant damage. The drains and leaders from the first floor canopy on the north elevation are in good condition but the downspouts from the collector boxes leak at the lower bends and discharge directly onto the sidewalk.[13] Although there is peeling paint on the north canopy, this condition is cosmetic and does not affect the waterproofing function of the canopy roof. The seams of the south elevation copper canopy roof have been caulked in the past to address

leaking at the canopy. In addition to the open seams, the copper cap flashing along the front edge of the canopy is loose.

Conclusions:

- Water penetration at observation deck roofs due to infiltration of water into deck assembly through failing membrane and cracked tiles and mortar joints.
- Existing roof deck coatings are inadequate to provide waterproofing protection.
- Observation deck roofs have less than 1/16" per foot slope to drain; standing water observed on roof decks.
- Drain and plumbing pipes may be damaged.
- Overflow scuppers are blocked and inadequate
- Roof curbs and flashing appear to be in good condition.
- Roof systems at north elevation veranda and entrance canopies in good condition overall.
- Downspouts from first floor north elevation canopy are inadequate.
- Open seams and loose copper cap flashing noted at south elevation canopy roof.

Glass Block Wall System

Description

The glass block pantry on the east end of the third floor was not part of the original design of the Maritime Museum but was added after construction of the structure had already begun at the demand of the first tenant of the building. It consists of a steel framework supporting a flat roof with a curved wall of glass block. There are several openings in the glass block wall to accommodate a window, vents, and air conditioner unit. (See **Appendix B, Figures 20 and 22**). The interior of the glass block wall is covered by exhibition panels and is not visible.

Conditions

The glass block wall system is in poor condition. (See **Appendix B, Figure 21**). A significant number of blocks are cracked, and the mortar between the blocks is generally deteriorated. Further, many blocks have become partially filled with water; some are over half full. This is not a unique condition for blocks of this age. Glass block was, and still is, manufactured in two halves that are fused together. Typically, the fused seal breaks down and allows water into the block. As the pantry is in an exposed location and the block mortar joints are generally open, it is not surprising that wind driven rain has been able to penetrate into the glass block wall system. The National Park Service has drilled small weep holes at the bottom of some glass block wall units. Even after this remedial repair, water continues to collect in the blocks as the weeps become blocked. In addition to the waterproofing deficiencies noted above, there is a slight but discernible bow in the wall on the northeast side of the pantry.

Conclusions:

- Cracking of glass blocks and deterioration of mortar has allowed water infiltration.
- General deterioration of fused seam between two halves of glass block units.
- Weeps drilled for drainage of water from glass blocks provide temporary solution.
- Bow in glass block wall on northeast side of pantry.

VIII. TREATMENT RECOMMENDATIONS

Treatments Introduction

The information presented in this section provides recommendations for the repair and restoration of the windows, doors, roof systems, and glass block walls of the Maritime Museum. These building systems have deteriorated to the point where they have lost their waterproofing integrity. The recommendations presented below are designed to preserve the historic character of the windows, doors, roofs, and glass block walls while restoring their waterproofing function. For each building system, a recommended treatment is given along with alternative treatments.

Building System Treatments

Windows

Recommended Repair: Replacement of Selected Stainless Steel-Clad Second, Third, and Fourth Floor Windows and Restoration of Selected Stainless Steel-Clad Second Floor Windows; Replacement of Steel Windows; and Restoration of Wood Windows

The recommended repair of the stainless steel-clad windows is to remove the entire window wall system (steel frame, glass, stainless steel cladding, etc.) and replace each window with a new system comprised totally of stainless steel members. The exterior detailing of this system would be identical to the original so that the new windows would look like the original windows. However, the steel elements of the original windows would be replaced by stainless steel making them resistant to corrosion. New low E, laminated glass having similar visual properties as the original glass should be used at all of the replaced window wall systems. The advantages of this system are its durability and guaranteeability. The major disadvantage of the replacement approach is the loss of all historic window fabric.

The windows protected by the veranda on the north elevation are in good condition and do not require replacement. These windows should be cleaned and missing components replaced with stainless steel components to match the existing pieces. The windows should be reglazed with new laminated glass.

Replacement of the steel windows at the north elevation of the first floor, south elevation of the second and third floors, and east and west wings is included in this repair alternative. New steel windows fabricated to match the operation, configuration, and dimensions of the existing windows should be installed. The frames and sash of these windows should be painted.

Restoration rather than replacement is recommended for the wood windows as part of the window repair program. All of the coatings should be removed by scraping, sanding, and other mechanical means, splitting and losses filled, and the sash and frames repainted.

Alternative Repair: Partial Replacement of Stainless Steel-Clad Windows and Restoration of Steel and Wood Windows

Another repair approach to the treatment of the stainless steel-clad windows is the removal of the existing stainless steel cladding, treatment and restoration of the underlying steel frame, and installation of new stainless steel cladding. The steel frame would be sandblasted to bare metal to remove built-up corrosion, repaired as necessary, and painted with rust-inhibitive coatings. The new cladding can be fabricated to incorporate flashing below and behind the glass, thus improving the waterproofing of the window system. The original glass would be re-used as much as possible, with an ultraviolet barrier film installed on all window glass.

The steel and wood windows would be restored as part of this repair alternative. The steel frames, sash, and other components should be sandblasted to bare steel, holes, voids, and missing sections repaired, and new coatings applied. At the wood windows, all of the coatings should be removed by scraping, sanding, and other mechanical means, splitting and losses filled, and the sash and frames repainted.

Alternative Repair: Restoration of All Windows

The third alternative for the repair of the stainless steel-clad windows involves the careful disassembly of each component of the window wall, treatment and restoration of the underlying steel frame, and reassembly of the unit using the removed historic materials in their original locations. The steel frame would be sandblasted to bare steel to remove built-up corrosion, repaired as necessary, and painted with rust-inhibitive coatings. In order to keep moisture away from the steel window frame members, a new stainless steel flashing angle is recommended under and behind the glass. The advantage of this approach is the retention of the maximum amount of historic fabric. The disadvantages are the cost of such labor-intensive restoration work and the future potential for deterioration of the existing steel frame despite the installation of additional flashing. The steel and wood windows would be restored by removing all existing coatings, repairing areas of deterioration, and repainting each window unit.

Doors

Recommended Repair: Replacement of Third and Fourth Floor Doors and Restoration of First and Second Floor Doors

The recommended repair for the Maritime Museum Building doors includes both restoration and replacement. At all of the paired doors on the first and second floor and at the single leaf metal door on the first floor, north elevation, cleaning and refurbishing of the stainless steel, galvanized steel, and wood door leafs and brass hardware is recommended. The existing glass should be retained in place where sound and replaced to match the original at cracked panes. At the single door on the second floor, east elevation, and the third and fourth floor doors, replacement is recommended. The jamb, head, and astragal sections should be replicated using stainless steel to match the existing profiles and dimensions. New laminated glass selected to match the opacity and color of the original glass should be used. New flashing at the door thresholds is also recommended.

Alternative Repair: Partial Replacement and Restoration

An alternate approach to the repair of the doors is to remove the existing stainless steel cladding, treat the underlying steel components, and install the new stainless steel cladding at the paired doors on the third and fourth floors. This approach would improve existing waterproofing deficiencies at the doors and help to delay future displacement of the cladding. However, without eliminating the potential for corrosion of the steel elements, problems at the doors may reoccur. The other stainless steel-clad doors and the other metal and wood doors would be restored in place.

Alternative Repair Number 3: Cleaning and Restoration of Doors

The third repair alternative for the doors at the Maritime Museum Building includes cleaning and refurbishing of the existing stainless steel doors without removal of the stainless steel cladding and restoration of the wood and steel doors. The hardware would be removed and refurbished, new glazing sealant and an ultraviolet barrier film installed, and the stainless steel cladding polished. Although the overall condition of the doors is not as deteriorated as that of the windows, the doors are nonetheless a potential deficiency in the exterior envelope's waterproofing function. The steel door elements will continue to deteriorate if not treated, causing further displacement of the stainless steel cladding.

Roofing Systems

Recommended Repair: Replacement

At the flat roofs of the third and fourth floor observation decks and the fourth floor penthouse roof deck, removal of the existing roofing materials down to the concrete roof slab and installation of a new roof deck system is recommended. The recommended roof deck system is similar to the design of the original roofing system and consists of clay tiles set in a mortar bed over a new waterproofing membrane installed on the cleaned and repaired concrete slab. The deck should be modified to form a minimum 1/16" per foot slope to drain by using lightweight concrete fill, tapered insulation, or insulating concrete.[14] The walking surface should also be sloped to the deck drains. The new waterproofing membrane should be run up the parapet walls and pipe penetrations. The same roof system used on the third and fourth floor observation deck roofs should be used at the third floor pantry and fourth floor penthouse roofs with the exception that no pavers are recommended at the fourth floor penthouse roof.

Several alternatives for replacement of the original membrane have been considered. These alternatives fall roughly into three general classes of materials: built-up roofs, single plies, and modified bitumen.[15] Built-up roofing systems consist of fully adhered assemblies of multiple reinforcing plies that are embedded in layers of hot asphalt or coal tar. The primary advantage of built-up roofs is their built-in redundancy. Single ply membranes are single layers of synthetic materials that often contain a reinforcement layer. Single ply systems are either thermosetting, requiring that they be glued together, or thermoplastic, meaning that they can be stretched when heated and will return to their original dimension when cooled. These membranes can be fully adhered or mechanically fastened. They can also be used in conjunction with other roofing materials such as urethane coatings. Modified bitumen roofing systems are similar to built-up roofs in that they are installed in two or more plies with mopping asphalt, cold adhesives, or torch welding, but are thought of as a single ply sheet because they are made from prefabricated rolls. Thus, these materials have the redundancy protection of built-up roofs and allow controlled installation similar to single play membranes. Modified bitumen systems are often reinforced with fiberglass or polyester. To insure the best results with any of these systems, it is necessary to remove the existing membrane and clean and patch the reinforced concrete slab.

New pavers matching the color, texture, and size of the original tile should be installed in a mortar bed on top of the new waterproofing membrane. The pavers are a character-defining feature of the roof decks and provide additional protection to the waterproofing system used at the roof decks. Restoration of the observation deck roofs, in which the urethane coating would be removed and the existing tiles repaired, is unfortunately not a viable option. The fired vitreous

surface of the original tiles has been removed by sandblasting, revealing a porous surface which is not an acceptable deck surface. In addition, many of the original tiles are cracked and no longer watertight. The existing flashing at the perimeter curbs should be replaced with new copper flashing. Also recommended is the application of a protective elastomeric coating to the top surface of the curbs.

As part of the roofing work, the drains should be replaced with new dual deck drains that allow drainage from all parts of the new deck waterproofing system. Some drains may need to be relocated to provide better surface drainage. New overflow scuppers should be installed at all drains, as required by code, to supplement the existing undersized scuppers and the existing scuppers unblocked and modified to allow water drainage from the roof deck. The downspouts should be repaired or in some cases replaced. Some equipment pads should be raised to provide better protection from water penetration. Roof penetrations should also be modified to achieve proper clearance above the roof deck. The drain and sewer pipes inside the building should be inspected to determine if they are damaged.

Replacement of the existing copper roof at the south elevation canopy with a new copper roof is recommended. The standing seam portion of the roof should be replaced with a flat lock soldered seam copper roof that is integral with the existing flat lock seam roof used in the flat area. This would provide a permanent repair that would maintain the historic character of the canopy. The cap flashing and other copper elements should be replaced as part of this scheme.

Alternative Repair: Partial Replacement

A second approach to the repair of the roof decks is partial replacement, involving the complete replacement of the top waterproofing membrane with no work on the existing underlying tile pavers or concrete deck. This would be similar to the work that was carried out in 1982, with removal of the existing roof coatings and application of a new fluid-applied coating such as urethane to the prepared clay tile surface. Since the existing cracks and voids in the concrete deck and clay tile pavers would not be repaired and the inadequate drainage slope of the roof decks not addressed, this treatment would potentially lead to the same problems currently affecting the roof decks once the initial waterproofing membrane fails.

The repairs to the drains, scuppers, penetrations, and sewer pipes recommended above should also be undertaken as part of the alternate repair approach. This includes the replacement of the drains, installation of new overflow scuppers and clearing of the existing scuppers, modification of

the roof penetrations to allow sufficient clearance above the roof deck, and inspection of the interior drainage and sewer pipes to determine their condition.

Replacing the copper roof at the canopy over the main entrance on the south elevation with a modified bitumen membrane is recommended as part of this alternate approach. This type of roof would eliminate the problem of open seams between the copper elements. However, a membrane roof would not last as long as a new copper roof.

Alternative Repair: Continued Maintenance

Another repair approach is continued maintenance of the existing roof membrane, as has been done historically. The existing urethane coatings on the observation deck and penthouse roofs would continue to be patched as necessary by the National Park Service maintenance staff. This will help in preventing water from entering the building and damaging interior finishes. The maintenance staff should also keep roof drains and scuppers clear, and make periodic inspections of the roofs. This option is not a permanent solution to the problem, and it is quite likely that leaks will continue to develop in the decks.

Maintenance at the canopy roofs involves examination of the seams and re-soldering or caulking of the open seams. Sealant should be installed at the junction between the flashing and the masonry panels at the south elevation canopy.

Glass Block Walls

Recommended Repair: Replication

Because there is significant damage to the glass wall units, as well as bowing that suggests structural problems, it is recommended that the wall be disassembled and rebuilt using new glass block units matching the color, texture, pattern, and size of the original units. Repairs to the concealed steel framework may be necessary depending on the conditions exposed during the repair work. A photograph taken during construction of the pantry shows that the roof is supported independently of the walls, and that the blocks were laid-up after the roof had been constructed. It may therefore be possible to remove the existing block and rebuild the wall without significantly affecting the roof. Additional waterproofing details at the concrete curb and roof of the wall and joint reinforcing in the new glass block mortar joints should be incorporated into the new glass block wall. As the pantry was an afterthought, and may not have been built to the same standards as the rest of the structure, it is recommended that the overall design of the pantry be examined by an engineer.

Although it would be preferable to re-use the original blocks from a preservation viewpoint, this approach is not advocated due to the possibility of re-using damaged blocks and the likely difficulty in perfectly matching the original glass blocks. There is a strong likelihood that those existing blocks which currently appear to be in good condition may have the same or similar defects which have allowed water to infiltrate obviously deteriorated units. Thus, should the wall be rebuilt with some original materials, it is quite possible that the water infiltration of blocks would reoccur. There is also the problem of mixing original blocks with replacements. Although it may be quite possible to find a match to the size of the block, because of changes in manufacturing techniques, the color and texture of the original and replacement units will not be a perfect match. A noticeable visual disruption would result if original and new blocks were used side-by-side in the rebuilt wall. Representative samples of original blocks of various condition should be cataloged and accessioned into the collection of the National Maritime Museum.

Alternative Treatment: Restoration

A second alternative for repair of the glass block walls is restoration involving removal and replacement of the existing mortar and damaged glass block units. The new mortar would provide an improved waterproofing barrier for the glass block assembly; paths of water entry at cracked or spalled glass blocks would also be eliminated. If feasible, the rear faces of the removed glass blocks can be turned around and the blocks reused. As the damaged blocks are being removed they should be inspected for potential reuse. If it is not possible to reuse the blocks, new replacement blocks should be installed. The new units should be selected to match the color, texture, pattern, and size of the original units, although a perfect match may not be possible. This repair option does not address the units that may appear sound but are in fact no longer watertight.

Alternative Treatment: Temporary Stabilization

Another option for the treatment for the glass block wall system is the temporary stabilization of the wall by the removal of the existing deteriorated mortar and the installation of new mortar at the unit joints to prevent further penetration of water into the wall. As this is a temporary treatment, a sealant, which would be easier to apply than the mortar, could be used in the joints in conjunction with a bond breaker. If sealant is used, it should be one that can easily be removed from glass surfaces in the future. This treatment does not address the potential structural problem indicated by the bowing in the northeast side of the glass block wall.

IX. REQUIREMENTS FOR TREATMENT

Requirements for Treatment

This section discusses and analyzes the applicable laws, regulations, and functional requirements governing repair work at the Maritime Museum Building. Preservation standards, codified in the *Secretary of the Interior's Standards* and *State Historical Building Code* are included in this discussion. Issues of energy conservation and abatement of hazardous material, as they relate to the repair of the windows, doors, roofing, and glass block described above are also included in this section. A code analysis of the accessibility and structural deficiencies of the Maritime Museum was not performed as part of this Historic Structure Report.

Secretary of the Interior's Standards

As the Maritime Museum Building is listed as a contributing structure to a National Historic Landmark district, the guidelines and recommendations contained in this report are based on *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings (The Standards).*

The Standards provide general information for stewards of historic resources to determine appropriate treatments. They are intentionally broad in scope to apply to a wide range of circumstances, and are designed to enhance the understanding of basic preservation principles. *The Standards* are neither technical nor prescriptive, but are intended to promote responsible preservation practices that ensure continued protection of historic resources. There are four basic standards: preservation, rehabilitation, restoration, and reconstruction. For the purposes of the Maritime Museum Building the restoration standards are applicable.

Restoration is defined as the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period. The limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a restoration project.[16]

Building Codes

Although adherence to local codes is not required for federal properties, recognition of local codes is typically included as part of NPS cultural resources policy. The San Francisco Building Code incorporates, with changes, the California Building Code and the State Historical Building Code. As the Maritime Museum Building is a designated historic structure, utilization of the *State Historical Building Code* (SHBC) will ensure that future projects have minimal impact on the historical resource. The SHBC allows the use of alternative materials and methods of construction for: "repairs, alterations, and additions necessary for the preservation, restoration, rehabilitation, moving or continued use of a historical building." The prevailing code, the *Uniform Building Code* (UBC), was established for use in new construction where compliance was relatively easy. When applied to historic buildings, use of the UBC may damage or remove historic features because of the rigid "prescriptive" nature of the code. The SHBC is a "performance" based code, requiring the same level of safety, but permitting the applicant to identify different options to achieve safety. This results in much less historic material being removed and in many instances, a considerable reduction in construction cost.

Energy Conservation

The use of laminated low-emmissivity (low E) glass is recommended at the doors and windows where glass is being replaced. Low E glass, has a coating that reduces heat gain and glare like traditional glazing coatings as well as enhancing heating and cooling seasonal performance. Laminated (or double-glazed) low E glass significantly reduces the penetration of ultraviolet light through the window and door openings, providing additional protection for the important interior finishes and artwork of the Maritime Museum.

Abatement of Hazardous Materials

Testing at the third floor roof deck has confirmed the presence of chrysolite asbestos in the existing roof membrane.[17] Removal of this material must be performed by a certified abatement crew. Given the age of the material systems used at the Maritime Museum Building, it is also likely that lead and asbestos-containing materials are present at the windows, doors, and glass block elements. The paint coatings on the steel and wood windows as well as the primer coatings on the steel armature of the stainless steel-clad windows are likely to contain lead. Asbestos may be present in the sealant used at the windows, doors, and glass block and in the stucco coatings around the window and door openings. These materials should be tested prior to beginning any work at the designated areas.

X. RECOMMENDATIONS FOR FURTHER RESEARCH

Recommendations for Further Research

This limited scope Historic Structure Report focuses on the windows, doors, roofing systems, and glass block assembly at the Maritime Museum Building. These elements have, in the life of the building, proven to be ongoing sources of water infiltration. Other conditions exist which may also present waterproofing problems and should therefore be addressed. Cracks in the stucco finish are visible at several areas on the building façade. These cracks should be investigated and repaired. Deterioration of the original materials and resulting waterproofing deficiencies at the east and west wings of the building, outside of the scope of this report, should also be investigated.

The waterproofing deficiencies at the windows, doors, and roofs affect the interior artwork. In some cases, the art is exposed and in good condition. In other cases, such as areas of the second floor mural at the south elevation window reveals, the work has been damaged by water intrusion. In other areas, such as the terrazzo floor and murals and bas-relief panels in the third floor gallery, the art has been covered or painted over and only traces remain visible. All of this artwork is of great significance to the building. A comprehensive conservation study is recommended to document the artwork, investigate the existing conditions, and develop treatment recommendations.

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XII. ENDNOTES

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[1] Stephen A. Haller, "From the Outside In: Art and Architecture in the Bathhouse," *California History*, Fall 1995, 283.

[2] The information included in the "Historical Overview and Building Development" section of this HSR is drawn largely from information provided in James P. Delgado, *Historic Structures Report. Historical Data Section. Pioneers, Politics, Progress and Planning: The Story of San Francisco's Aquatic Park* (San Francisco: Golden Gate National Recreation Area, 1981).

[3] Frederick Law Olmsted et al., Preliminary Report In Regard to a Plan of Public Pleasure Grounds for the City of San Francisco. (New York: William C. Bryant & Company for Olmsted, Vaux & Company, 1866) 22, as cited in James P. Delgado, *Historic Structures Report. Historical Data Section. Pioneers, Politics, Progress and Planning: The Story of San Francisco's Aquatic Park* (San Francisco: Golden Gate National Recreation Area, 1981) 49.

[4] Daniel H. Burnham, *Report on a Plan for San Francisco...Presented to the Mayor and Board of Supervisors by the Association for the Improvement and Adornment of San Francisco.* (San Francisco: Sunset Press, 1905) 146, as cited in James P. Delgado, *Historic Structures Report. Historical Data Section. Pioneers, Politics, Progress and Planning: The Story of San Francisco's Aquatic Park* (San Francisco: Golden Gate National Recreation Area, 1981) 51.

[5] Steven E. Levingston, *Historic Ships of San Francisco* (San Francisco: Chronicle Books, 1984) 19-41.

[6] United States House of Representatives, *United States Code Title 16, Subchapter LIX-L*, (Washington, DC: Office of the Law Revision Counsel, 2001).

[7] James P. Delgado, "A Dream of 7 Decades: San Francisco's Aquatic Park," *California History*, Fall 1995, 280.

[8] United States Department of the Interior. National Register of Historic Places. *National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation.* Revised 1995.

[9] Notes from an interview with William A. Mooser, Sr., taken by Karl Kortum, San Francisco Maritime Museum, n.d., as cited in James P. Delgado, *Historic Structures Report. Historical Data Section. Pioneers, Politics, Progress and Planning: The Story of San Francisco's Aquatic Park* (San Francisco: Golden Gate National Recreation Area, 1981) 67.

[10] James P. Delgado, National Register of Historic Places Inventory-Nomination Form, 1983.

[11] Communication with Ken Russell, Chief of Maintenance, San Francisco Maritime National Historical Park, January 3, 2002.

[12] Pete Tomka, "Maritime Museum Building Roofing and Waterproofing Conditions Assessment," December 1, 2001.

[13] Pete Tomka, "Maritime Museum Building Roofing and Waterproofing Conditions Assessment," December 1, 2001.

[14] Pete Tomka, "Maritime Museum Building Roofing and Waterproofing Conditions Assessment," December 1, 2001.

[15] René M. Dupuis, "Choosing a Low Slope Roof System," in *The Roofing Handbook for Historic Buildings* (Washington, D.C.: Historic Preservation Education Foundation, 1999) IV-45-46.

[16] Kay D. Weeks and Anne E. Grimmer, The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings (Washington, D.C.: United States Department of the Interior, 1995) 117.

[17] Pete Tomka, "Maritime Museum Building Roofing and Waterproofing Conditions Assessment," December 1, 2001.

Appendix A: Historic Photographs in Chronological Order

The following photographs, in chronological order, show the Maritime Museum Building during its construction and early history. Many of these photographs were taken by the Works Progress Administration to document the construction of the building.

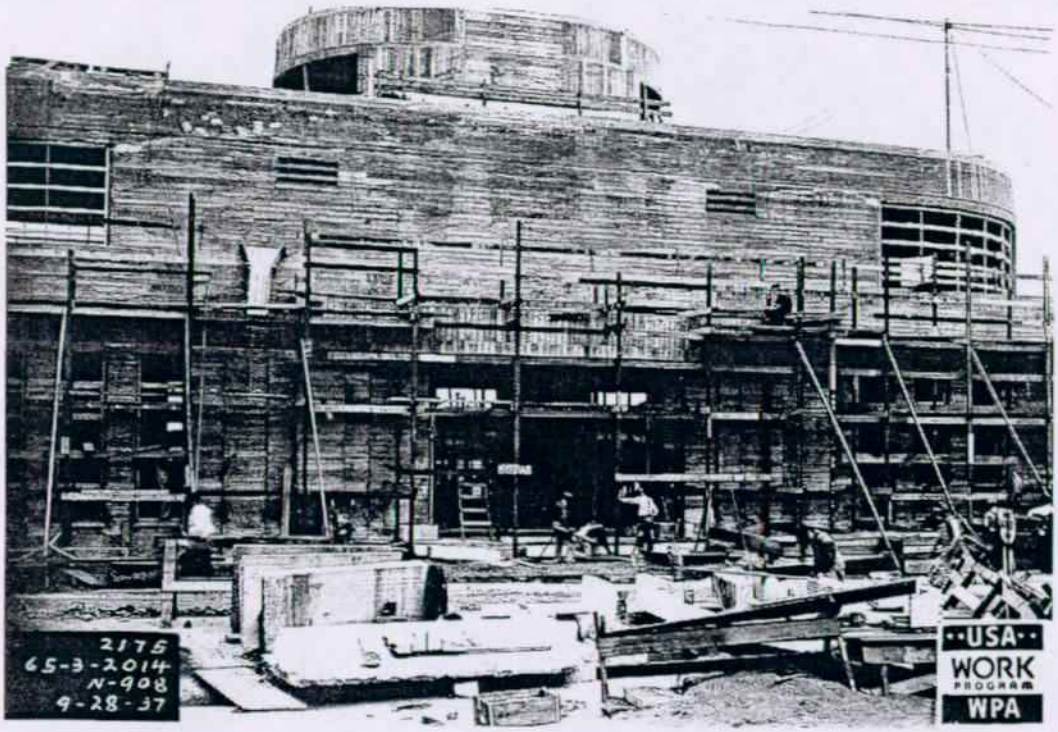


Figure 1. View of the second, third, and fourth floors, south elevation under construction in a WPA photograph dated September 28, 1937. The steel frames and sash of the third floor windows are in place. Photograph number A12.38292u courtesy of the National Maritime Museum, San Francisco.

Figure 2. View of the second, third, and fourth floors, east elevation under construction in a WPA photograph dated September 28, 1937. The large openings for the windows on the east elevation are visible in this image.

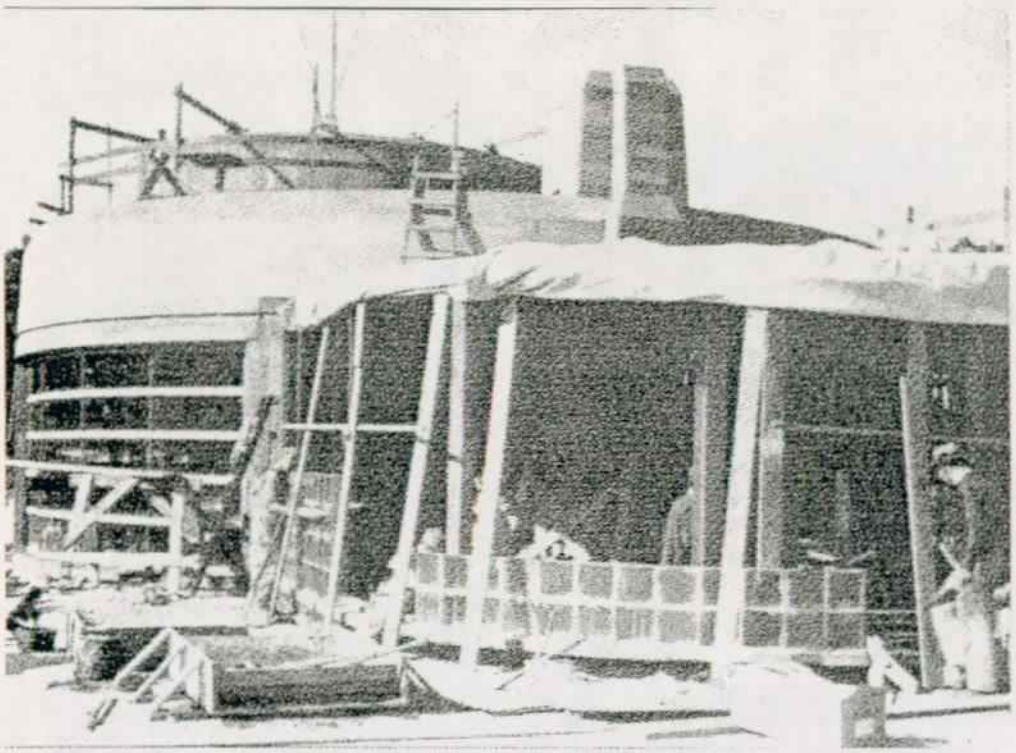


Figure 3. Image of the glass block pantry at the east end of the third floor being built. The pantry was not in the original design for the building and was added during construction. The photograph is undated.

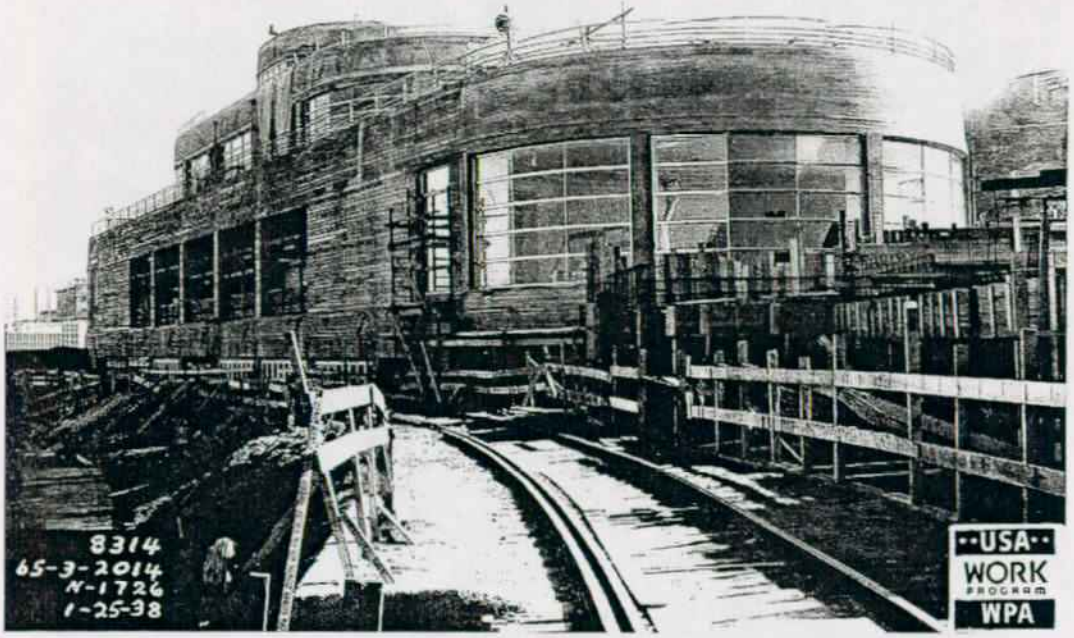


Figure 4. View of the second, third, and fourth floors, west and north elevations under construction in a WPA photograph dated January 25, 1938. The stainless steel-clad windows on the upper floors have been installed. Photograph number A12.38396u courtesy of the National Maritime Museum, San Francisco.

Figure 5. View looking southeast at the Maritime Museum Building under construction on the shoreline of Aquatic Park in a WPA photograph dated March 8, 1938. The exterior stucco and paint finishes have been applied to the fourth floor penthouse. The concrete of the lower floors has not yet been treated. Photograph number A12.35506u courtesy of the National Maritime Museum, San Francisco.

Figure 6. View of the north and east elevations of the Maritime Museum Building in a WPA photograph dated October 10, 1938. The building exterior is nearly finished. The glass block pantry visible at the east end of the third floor was added during construction. Work is still in progress at the carved slate sculpture at the main entrance. Unnumbered photograph courtesy of the San Francisco Public Library.

Figure 7. View across the cove of Aquatic Park looking at the north elevation of the completed Maritime Museum Building. The tile mosaics at the second floor can be seen through the veranda wall openings. The photograph is undated.

Figure 8. View across the cove of Aquatic Park looking at the north and east elevations of the completed Maritime Museum Building. The photograph is undated.

(Top) Aquatic Park Club House, San Francisco, Cal
Architect—William Mooser, San Francisco, California.

Figure 9. View of the south and west elevations of the completed Maritime Museum Building. The photograph is undated. Unnumbered photograph courtesy of the National Maritime Museum, San Francisco.

Figure 10. View of a tile mosaic panel at the second floor veranda of the Maritime Museum Building. The WPA photograph is undated.

Figure 11. View of a section of the mural in the main gallery space on the second floor of the Maritime Museum Building. The photograph is undated.

Appendix B: Photographs of Existing Conditions

The following photographs illustrate typical conditions at the Maritime Museum Building, emphasizing the windows, doors, roof systems, and glass block pantry wall. These photographs were taken by Architectural Resources Group on January 3, 2002.

Figure 1. View of the north and east elevations of the Maritime Museum Building.

Figure 2. View of the north and west elevations of the Maritime Museum Building.

Figure 3. South elevation showing carved slate sculpture at the main entrance, funnel-shaped ventilators, and various window configurations.

Figure 4. View of the south and east elevations showing large window openings at the apse-shaped ends of the building. The top of the glass block pantry is visible on the large observation deck.

Figure 5. Stainless steel-clad windows on the north elevation of the third floor. Note the displaced condition of the stainless steel and cracked window lights.

Figure 6. Stainless steel-clad porthole window on the south elevation. The six porthole windows each have a hopper window with clear glass and four lights of obscure glass.

Figure 7. Vertical band of stainless steel-clad windows on the south elevation adjacent to the main entrance. These windows all have obscure glass.

Figure 8. Painted galvanized steel window on the north elevation at the first floor.

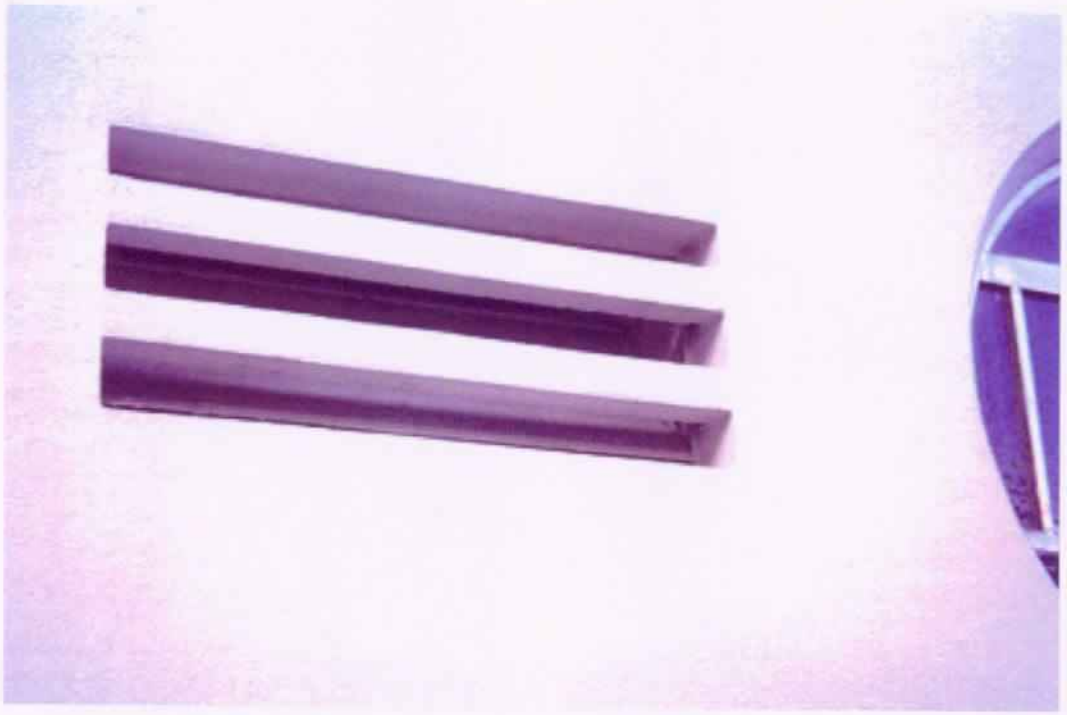


Figure 9. Painted galvanized steel window behind slat opening in exterior wall at the second floor, south elevation.

Figure 10. Series of wood bifold windows on the first floor, north elevation, at the former concession area. These windows are in good condition and require only minor repair.

Figure 11. Horizontal mullion at stainless steel-clad first floor windows. Deterioration of the sealant, visible here at the left side of the mullion, allows water to enter the window system, corroding the steel armature and displacing the cladding.

Figure 12. Second floor mural at the return of a window opening showing damage to the mural due to water intrusion at the window.

Figure 13. Stainless steel doors and transom windows at the main entrance to the Maritime Museum. These doors and windows and the original ship wheel hardware are in good condition.

Figure 14. Stainless steel doors at the fourth floor penthouse from the interior. These doors, exposed to severe weather conditions, are in poor condition.

Figure 15. Replacement door at the southeast corner of the building. This door was added in the late 1950s at an existing window wall system.

Figure 16. Set of double wood doors at the first floor, north elevation. These doors are in good condition.

Figure 17. Third floor observation deck roof. Water tends to pond on the flat roofs after heavy rain.

Figure 18. Waterproofing coatings have been applied over the original roof deck. These coatings are showing signs of deterioration and are continuously repaired. The pattern of the original fired clay tile roof pavers is visible underneath the waterproofing membrane.

Figure 19. Water staining on the ceiling of the east recreation room on the second floor. This staining is indicative of water leaks through the building's roof decks.

Figure 20. The north side of the glass block pantry at the east end of the third floor.

Figure 21. Glass block units in the third floor pantry. Mortar deterioration, cracking of the units, and collecting of water inside the blocks are common.

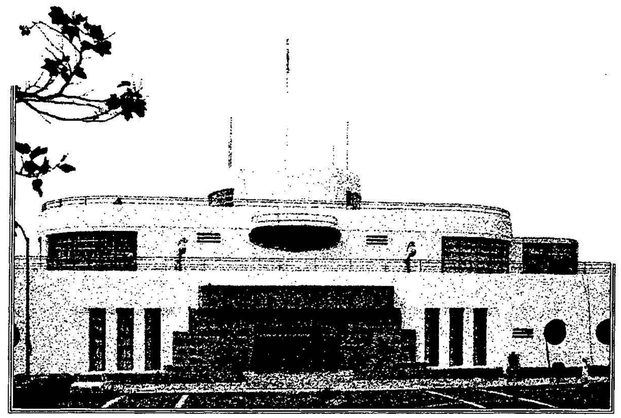
Figure 22. The south wall of the third floor glass block pantry.

Appendix C: HABS/HAER Drawings

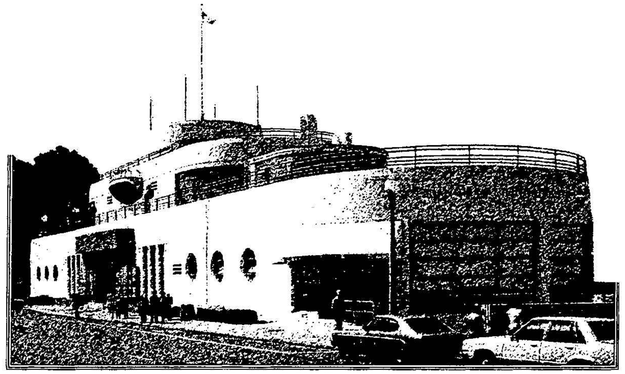
In 1999 the Historic American Buildings Survey prepared digital drawings of the Maritime Museum Building as part of a project to record the structure. The HABS program is administered by the Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) of the National Park Service, United States Department of the Interior. The Maritime Museum Recording Project was cosponsored by HAER under the general direction of E. Blaine Cliver, Chief; Eric DeLony, Chief of HAER; and the San Francisco Maritime National Historical Park, William Thomas, Superintendent. Field work and measured drawings for the project were completed by HAER Project Leader Todd A. Croteau and HAER Project Architect Dana Lockett with the assistance of Jairo Umana.

The HABS/HAER drawings are based on the original set of design drawings prepared by William Mooser under the direction of the San Francisco Board of Park Commissioners and the Works Progress Administration. They do not show "as built" conditions to reflect changes made to the building during construction or "existing conditions" to reflect alterations made following the building's completion in 1939. The HABS/HAER drawings are included in this Historic Structure Report to provide information on the intended design of the Maritime Museum Building. These drawings are not printed to scale.

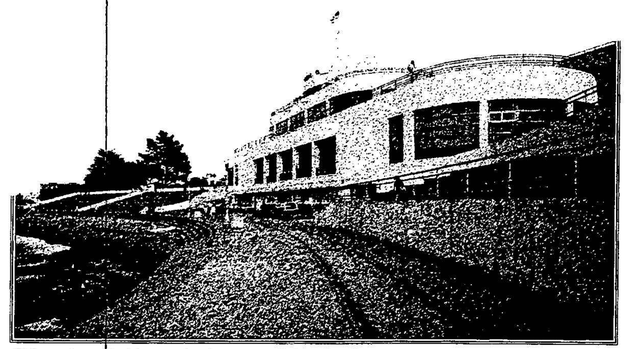
AQUATIC PARK BATHHOUSE
(MARITIME MUSEUM)
~ 1939 ~



Front elevation of bathhouse.



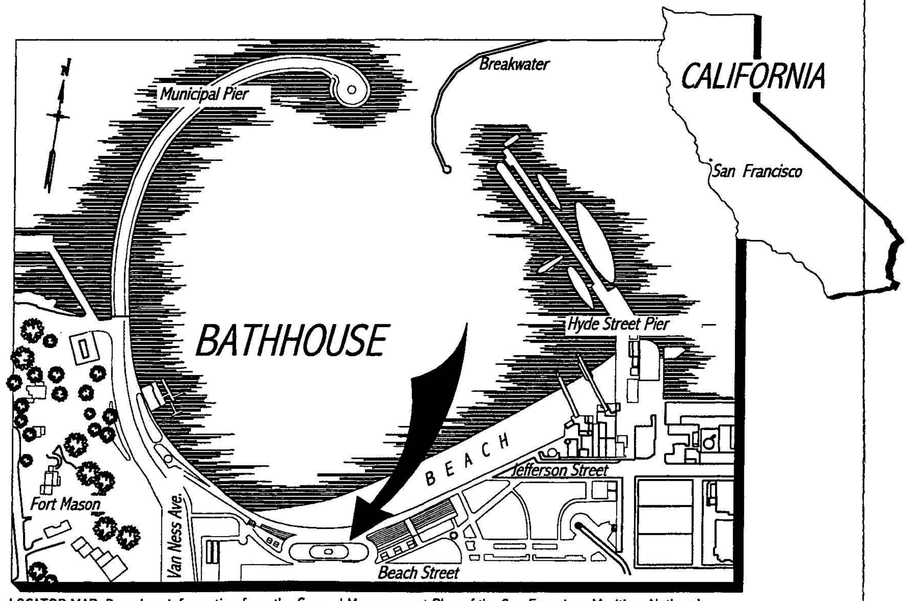
Oblique view of bathhouse showing front and side elevations.
Images are based on photographs by Jet Lowe, Sept. 1981



Oblique view of bathhouse showing rear and side elevations.

San Francisco's Aquatic Park was one of California's largest WPA construction projects. Time Magazine, Feb. 6, 1939 described the project as "one of the most sophisticated WPA building jobs in the U.S." The bathhouse is the most notable structure in the complex and exemplifies the streamlined Moderne style of architecture. Several distinguished artists were responsible for the adornment of the exterior and interior of the bathhouse. While the artwork of the Aquatic Park Complex is notable for its quality, it is also significant due to its surreal and abstract forms not commonly found in WPA projects.

The work of artist Sargent Johnson is incorporated into the entrance and back porch of the bathhouse. Johnson was a nationally recognized sculptor and one of only two Black artists in California who participated in the WPA program. Under the direction of Hilaire Hiler, an internationally recognized muralist, Johnson depicted abstract and stylized forms of sea life and nautical references by incising lines into green slate panels that surround the main entrance of the building and provide contrast against the white concrete of the building's walls. Directly below the slate panels are multilevel fountains lined with colorful tile mosaics. The design for the back porch continues with the use of maritime motifs rendered in multi colored tile mosaics. The public and the critics were overwhelmingly impressed with the artists work when the building was officially opened on January 22, 1939.



LOCATOR MAP: Based on information from the General Management Plan of the San Francisco Maritime National Historical Park

This project is part of the Historic American Buildings Survey (HABS), a long-range program to document historically significant works in the United States. The HABS program is administered by the Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) of the National Park Service, U.S. Department of the Interior. The MARITIME MUSEUM Recording Project was cosponsored by HAER under the general direction of E. Blaine Cliver, Chief; Eric DeLony, Chief of HAER; the San Francisco Maritime National Historical Park, William Thomas, Superintendent. The Field work and measured drawings were prepared under the direction of HAER Project Leader Todd A. Croteau and Dana Lockett, (HAER Architect). The drawings were created using Autocad, Release 14 and Photocad Single/Multi. CAD files are located with the SFMNHP, field notes are located at the Library of Congress.

DRAWN BY: DANA LOCKETT, 1999

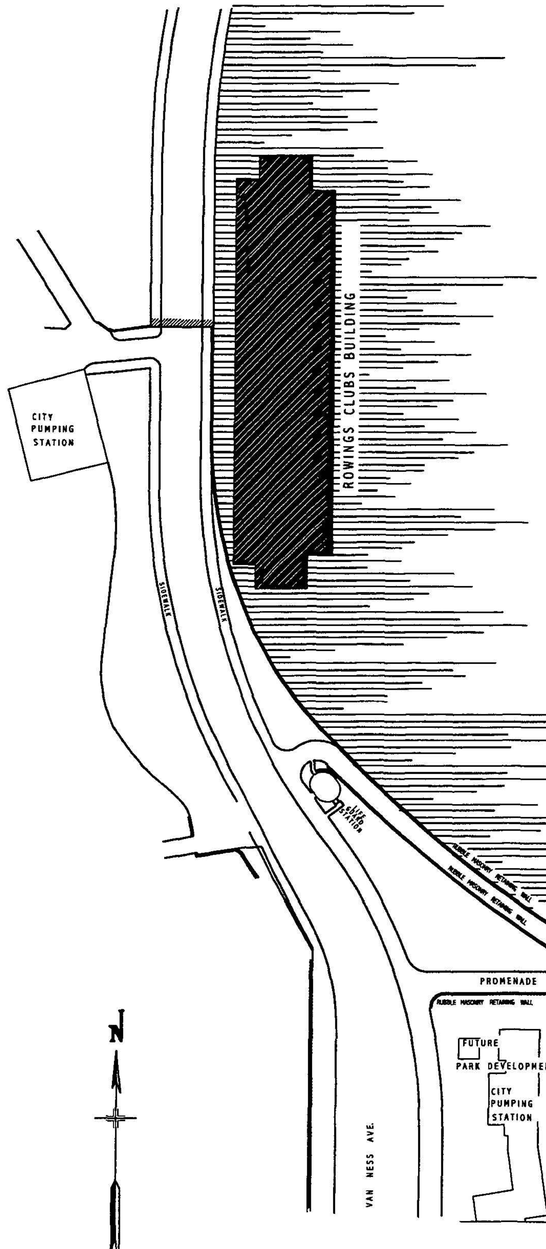
HAER MARITIME PROGRAM
BATHHOUSE RECORDING PROJECT

AQUATIC PARK BATHHOUSE (MARITIME MUSEUM) - 1939
900 BEACH STREET (SAN FRANCISCO MARITIME NATIONAL HISTORICAL PARK)
SAN FRANCISCO CO. UNTY, CALIFORNIA

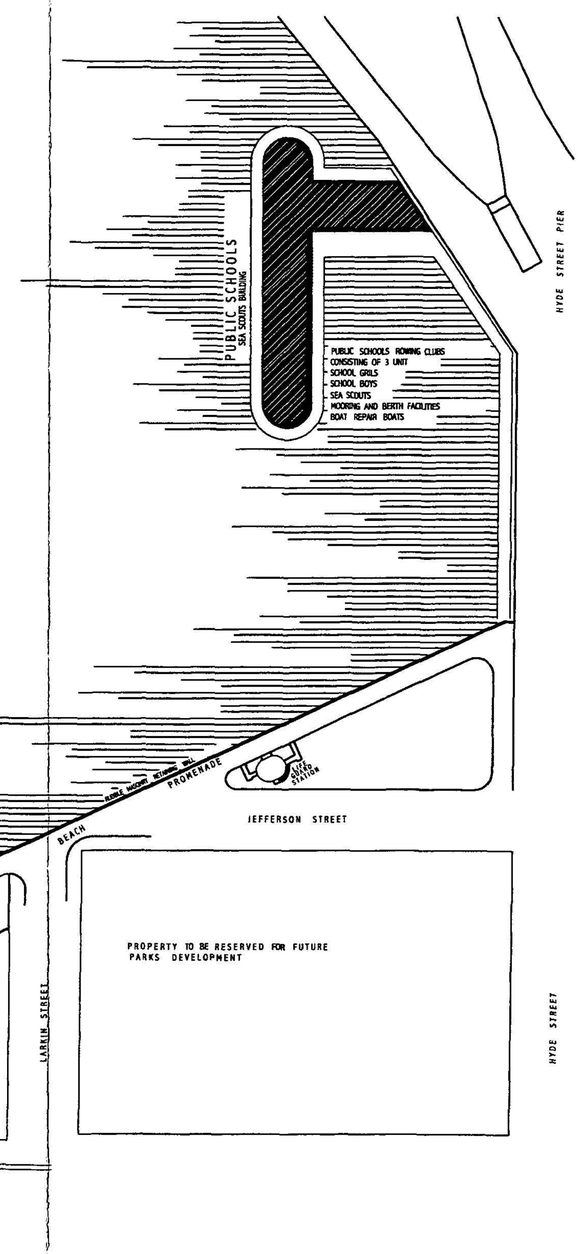
SAN FRANCISCO

HISTORIC AMERICAN BUILDINGS SURVEY
CA - 2225

SHEET 1 - 12



SITE PLAN



NOTES:

1. Drawings were redrawn in autocad, and are based on the original set of design drawings.
2. Drawings do not reflect "as built" conditions as changes were made in construction.

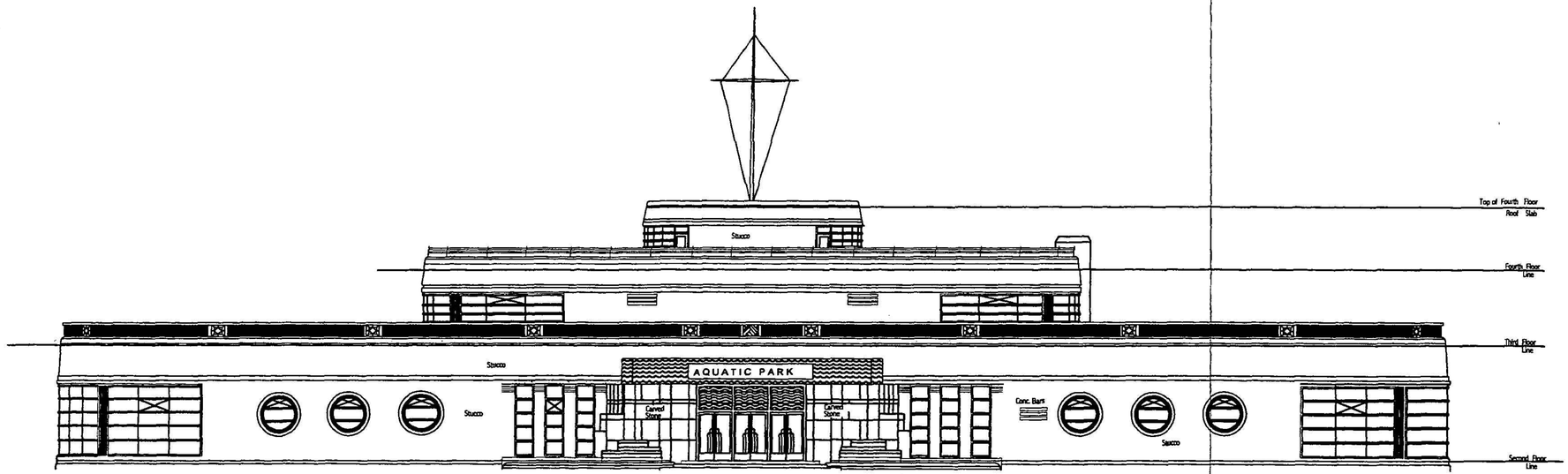
OFFICE OF THE
BOARD OF PARK COMMISSIONERS
SAN FRANCISCO CALIF.
AQUATIC PARK
BATH HOUSE BUILDING
W. P. A. PROJECT No 2173.

DRAWN BY: JAIRO UMANA, 1999

HASER MARITIME PROGRAM
BATHHOUSE RECORDING PROJECT

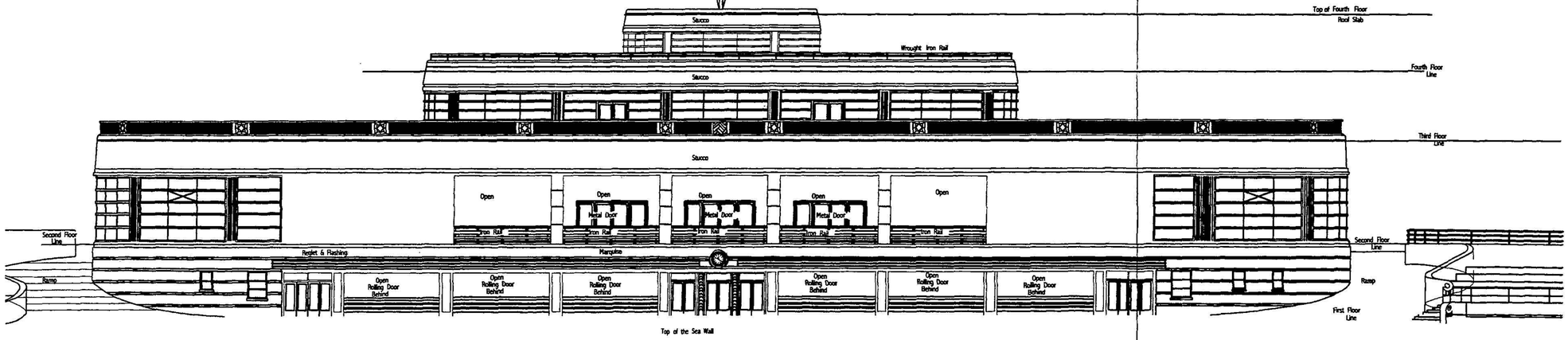
AQUATIC PARK BATHHOUSE (MARITIME MUSEUM) - 1939
900 BEACH STREET (SAN FRANCISCO MARITIME NATIONAL HISTORICAL PARK)
SAN FRANCISCO COUNTY

SAN FRANCISCO | CALIFORNIA | SHEET 2 of 12 | HISTORIC AMERICAN BUILDINGS SURVEY CA-2225



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

INCISED SLATE PANELS
(See sheet 4 of 12)



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

NOTES:

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OFFICE OF THE BOARD OF PARK COMMISSIONERS SAN FRANCISCO CALIF.
AQUATIC PARK
BATH HOUSE BUILDING
W. P. A. PROJECT Nº 2175.

2. Drawings do not reflect "as built" conditions as changes were made in construction.

DRAWN BY: JAIRO LIMANA, 1999

HAER MARITIME PROGRAM
BATHHOUSE RECORDING PROJECT

AQUATIC PARK BATHHOUSE (MARITIME MUSEUM) - 1939
900 BEACH STREET (SAN FRANCISCO MARITIME NATIONAL HISTORICAL PARK)
SAN FRANCISCO COUNTY

SAN FRANCISCO

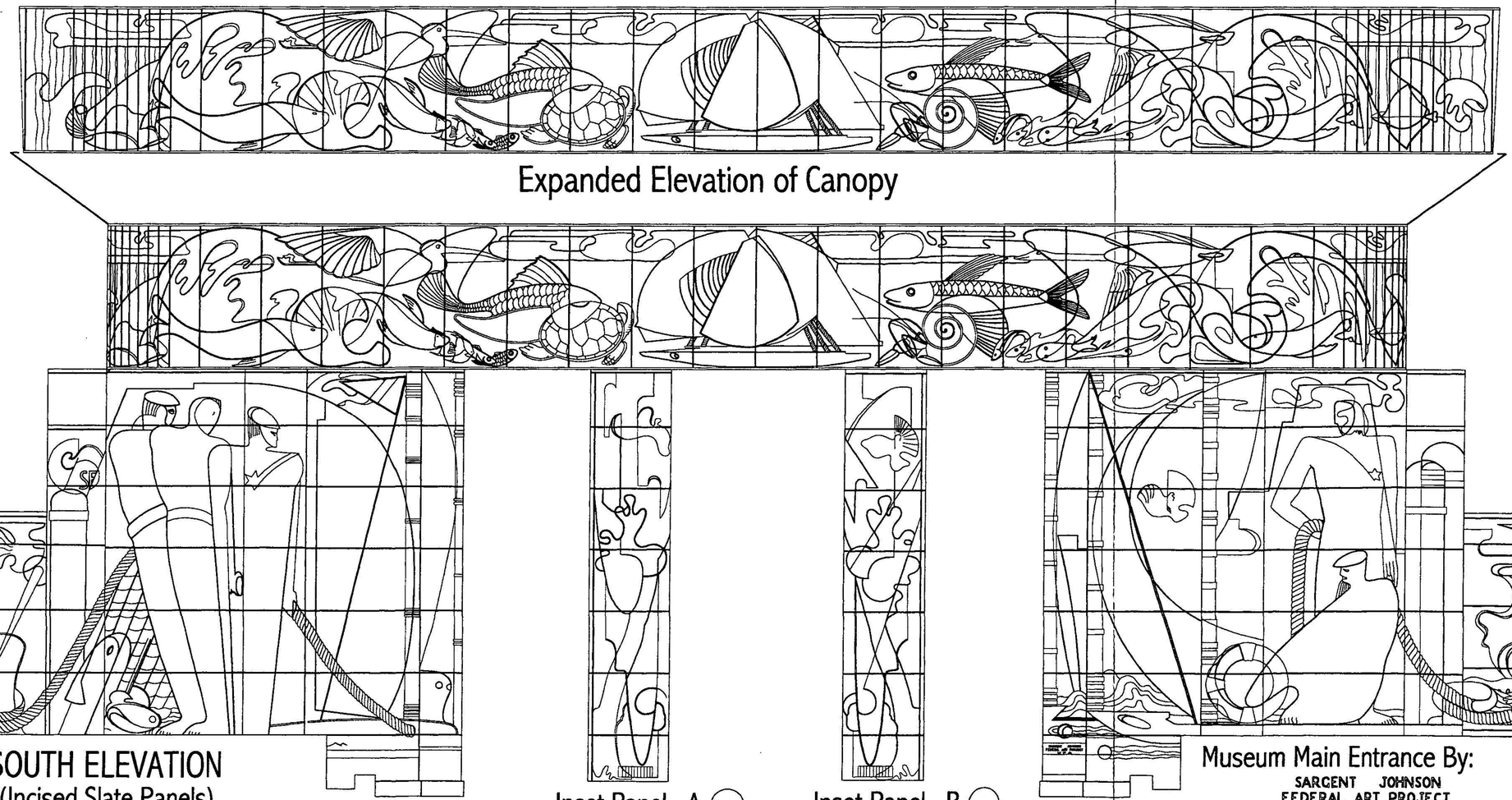
CALIFORNIA

SHEET 3 of 12

HISTORIC AMERICAN BUILDINGS SURVEY
CA - 2225

MARITIME MUSEUM

SAN FRANCISCO MARITIME NATIONAL HISTORICAL PARK



Expanded Elevation of Canopy

SOUTH ELEVATION
(Incised Slate Panels)

0 1 2 3 4 5
FEET 3/4"=1'-0"

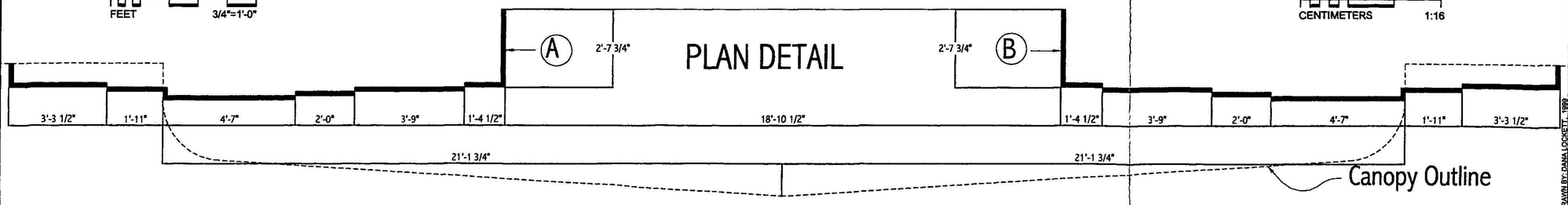
Inset Panel A ◯

Inset Panel B ◯

Museum Main Entrance By:
SARGENT JOHNSON
FEDERAL ART PROJECT
WPA

0 50 100 150
CENTIMETERS 1:16

PLAN DETAIL



HISTORIC AMERICAN BUILDINGS SURVEY
CA-2225

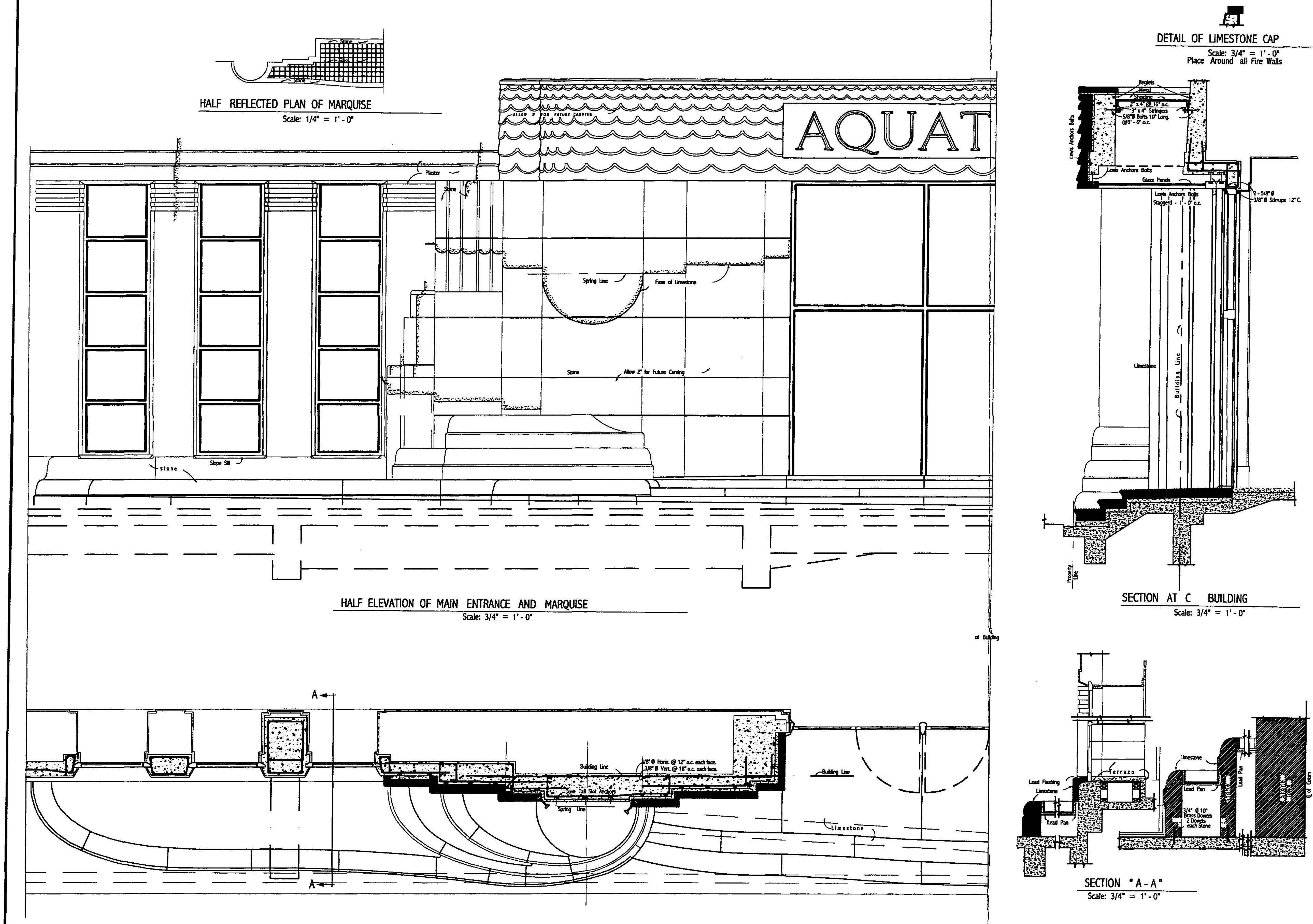
SHEET 4 of 12

CALIFORNIA

ADDENDUM TO: AQUATIC PARK BATHHOUSE (MARITIME MUSEUM) - 1939
900 BEACH STREET (SAN FRANCISCO MARITIME NATIONAL HISTORICAL PARK)
SAN FRANCISCO COUNTY

SAN FRANCISCO

DRAWN BY: DANA LOCKETT - 1993
SHEET MARITIME PROGRAM
BATHHOUSE RECORDING PROJECT



HALF REFLECTED PLAN OF MARQUISE
Scale: 1/4" = 1' - 0"

HALF ELEVATION OF MAIN ENTRANCE AND MARQUISE
Scale: 3/4" = 1' - 0"

HALF PLAN OF MAIN ENTRANCE AND FOUNTAIN
Scale: 3/4" = 1' - 0"

DETAIL OF LIMESTONE CAP
Scale: 3/4" = 1' - 0"
Place Around all Fire Walls

SECTION AT C BUILDING
Scale: 3/4" = 1' - 0"

SECTION "A - A"
Scale: 3/4" = 1' - 0"

NOTES :
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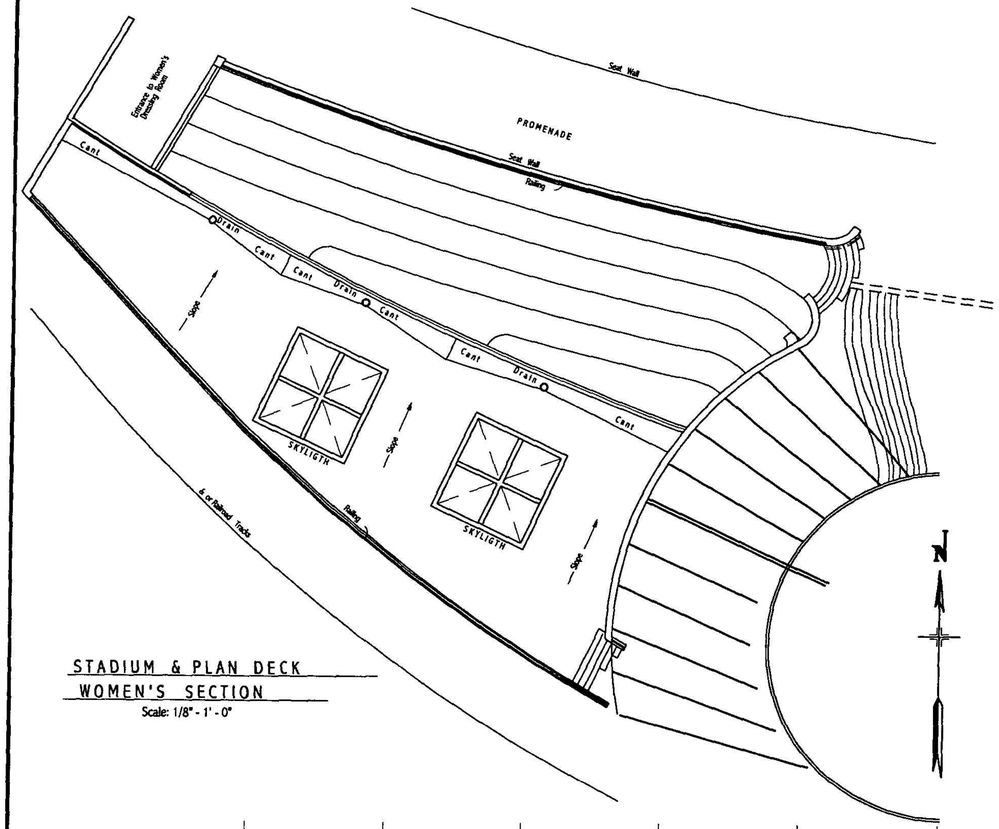
OFFICE OF THE
BOARD of PARK COMMISSIONERS
SAN FRANCISCO CALIF.
AQUATIC PARK
BATH HOUSE BUILDING
W. P. A. PROJECT Nº 2175.

2. Drawings do not reflect "as built" conditions as changes were made in construction.

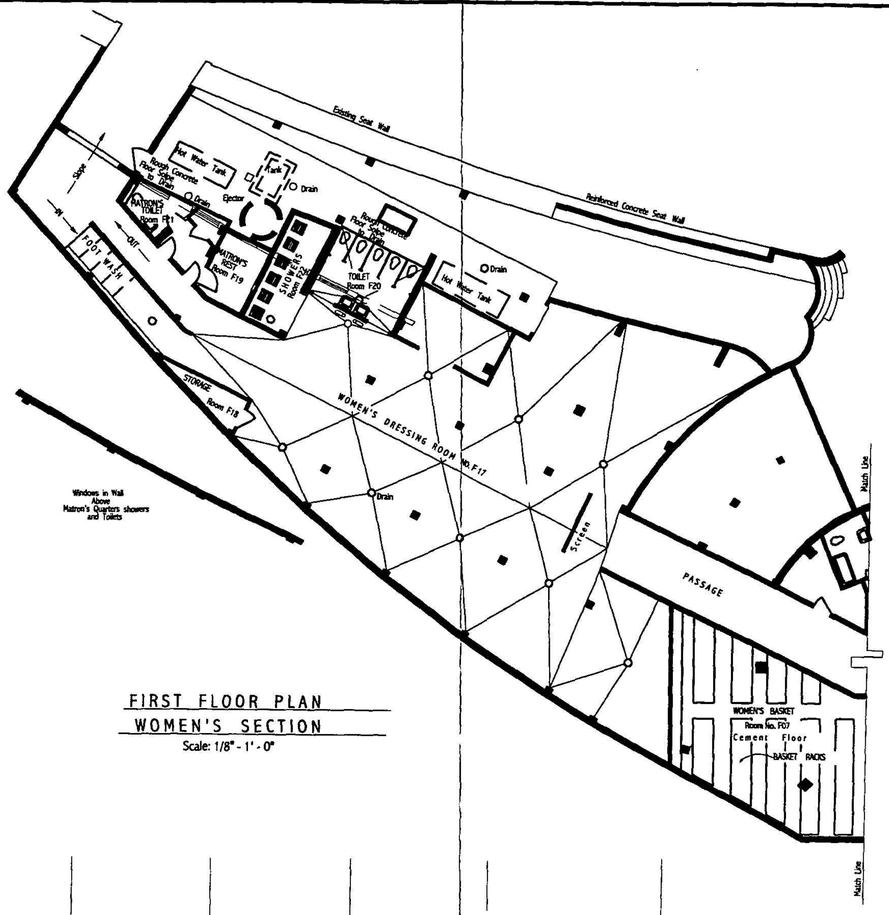
AQUATIC PARK BATHHOUSE (MARITIME MUSEUM) - 1939
900 BEACH STREET (SAN FRANCISCO MARITIME NATIONAL HISTORICAL PARK)
SAN FRANCISCO COUNTY
SAN FRANCISCO
CALIFORNIA

HISTORIC AMERICAN BUILDINGS SURVEY
CA-2225
SHEET 5 of 12

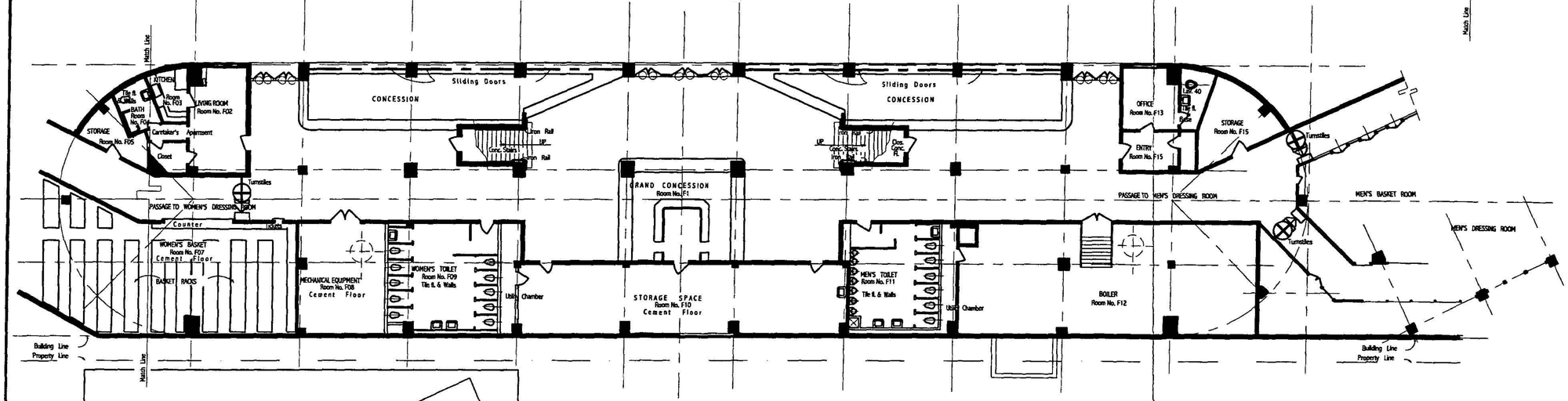
HAER MARITIME PROGRAM
BATHHOUSE RECORDING PARK
DRAWN BY: JARO UMANA, 1999

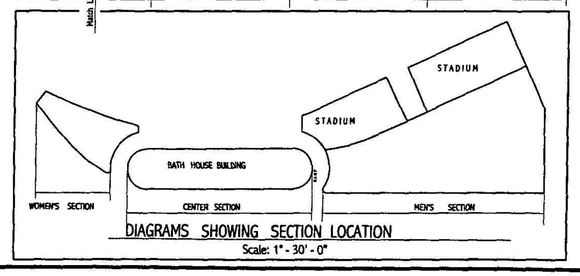


STADIUM & PLAN DECK
WOMEN'S SECTION
Scale: 1/8" - 1' - 0"



FIRST FLOOR PLAN
WOMEN'S SECTION
Scale: 1/8" - 1' - 0"





DIAGRAMS SHOWING SECTION LOCATION
Scale: 1" - 30' - 0"

FIRST FLOOR PLAN
CENTER SECTION
Scale: 1/8" - 1' - 0"

NOTES:

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OFFICE OF THE BOARD OF PARK COMMISSIONERS SAN FRANCISCO CALIF.
AQUATIC PARK
BATH HOUSE BUILDING
W. P. A. PROJECT No. 2175.

2. - Drawings do not reflect "as built" conditions as changes were made in construction.

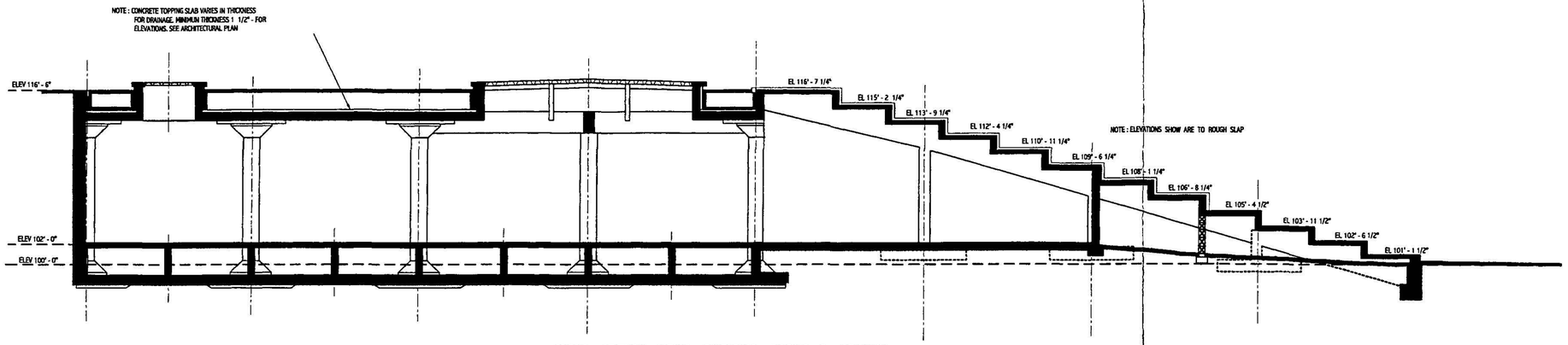
DRAWN BY: JAIRO LIMAÑA, 1999

HAER MARITIME PROGRAM
BATHHOUSE RECORDING PROJECT

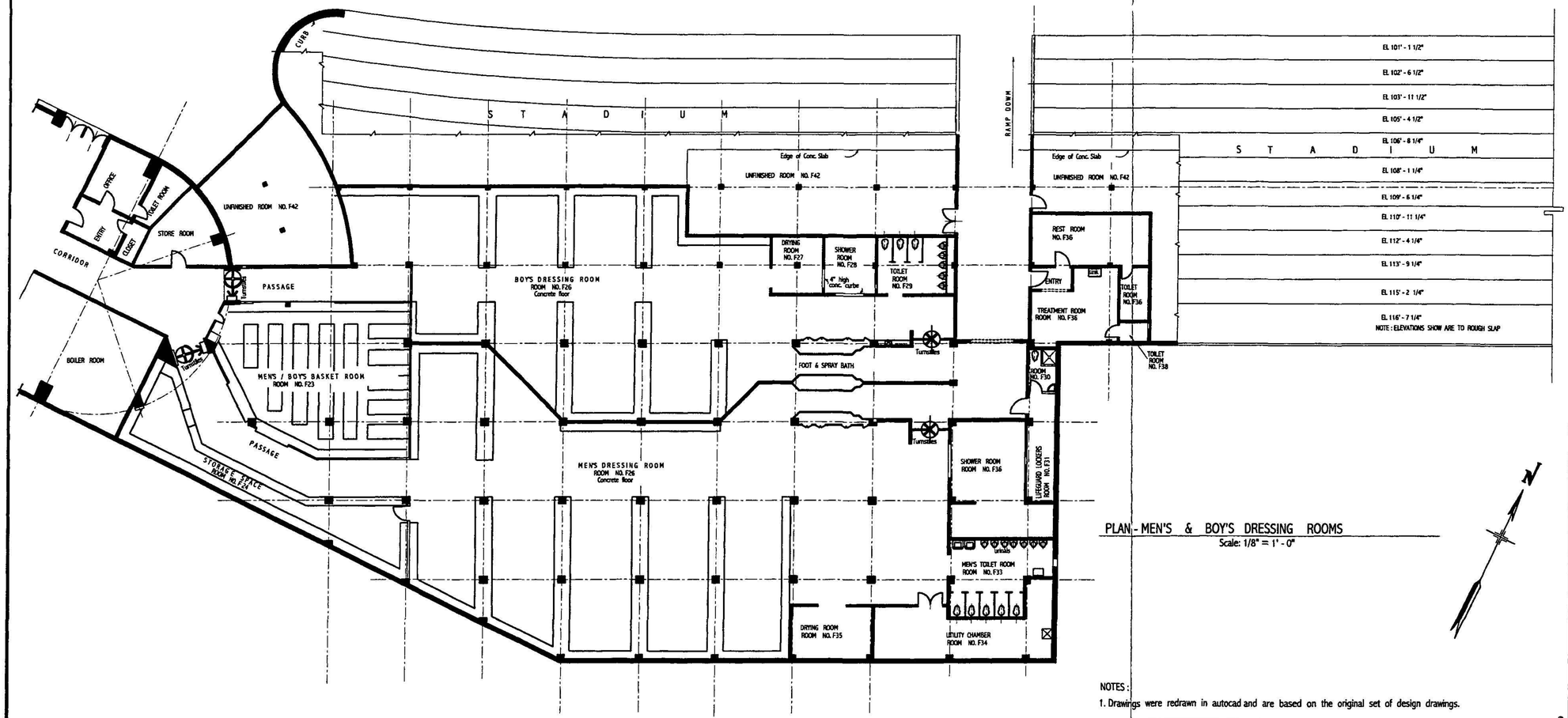
AQUATIC PARK BATHHOUSE (MARITIME MUSEUM) - 1939
900 BEACH STREET (BAY AREA NATIONAL HISTORICAL PARK)
SAN FRANCISCO COUNTY CALIFORNIA

HISTORIC AMERICAN BUILDINGS SURVEY
CA - 2225

sheet 6 - 12



CROSS SECTION - MEN'S DRESSING ROOMS & STADIUM
Scale: 1/4" = 1' - 0"



PLAN - MEN'S & BOY'S DRESSING ROOMS
Scale: 1/8" = 1' - 0"

NOTES :

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OFFICE OF THE BOARD OF PARK COMMISSIONERS SAN FRANCISCO CALIF. AQUATIC PARK BATH HOUSE BUILDING W. P. A. PROJECT No. 2175.

2. Drawings do not reflect "as built" conditions as changes were made in construction.

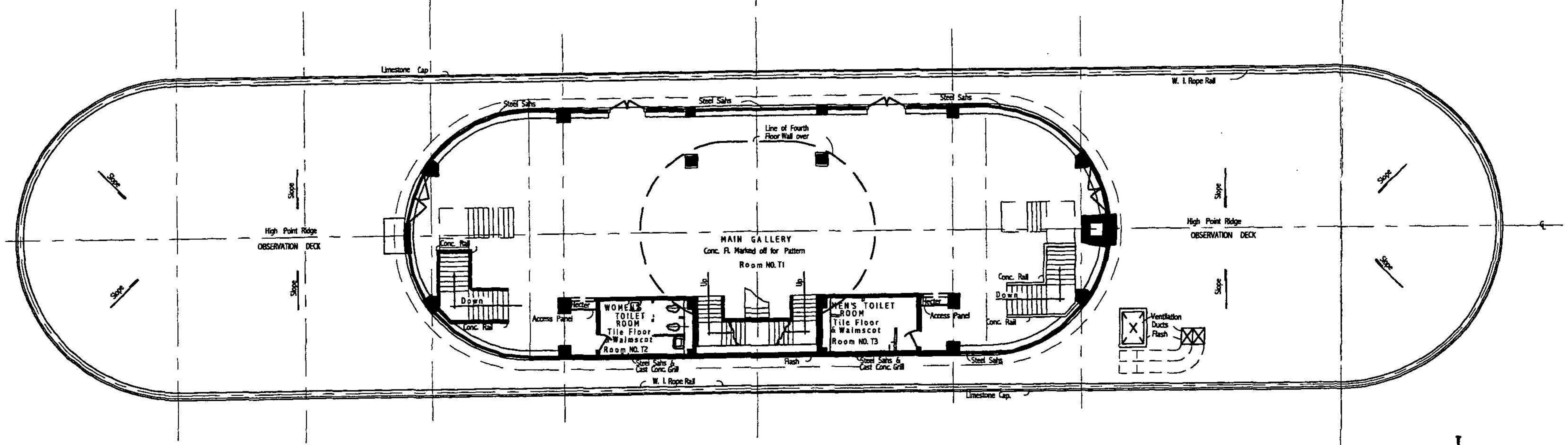
DRAWN BY: JARO UMANA, 1998

HAER MARITIME PROGRAM
BATHHOUSE RECORDING PROJECT

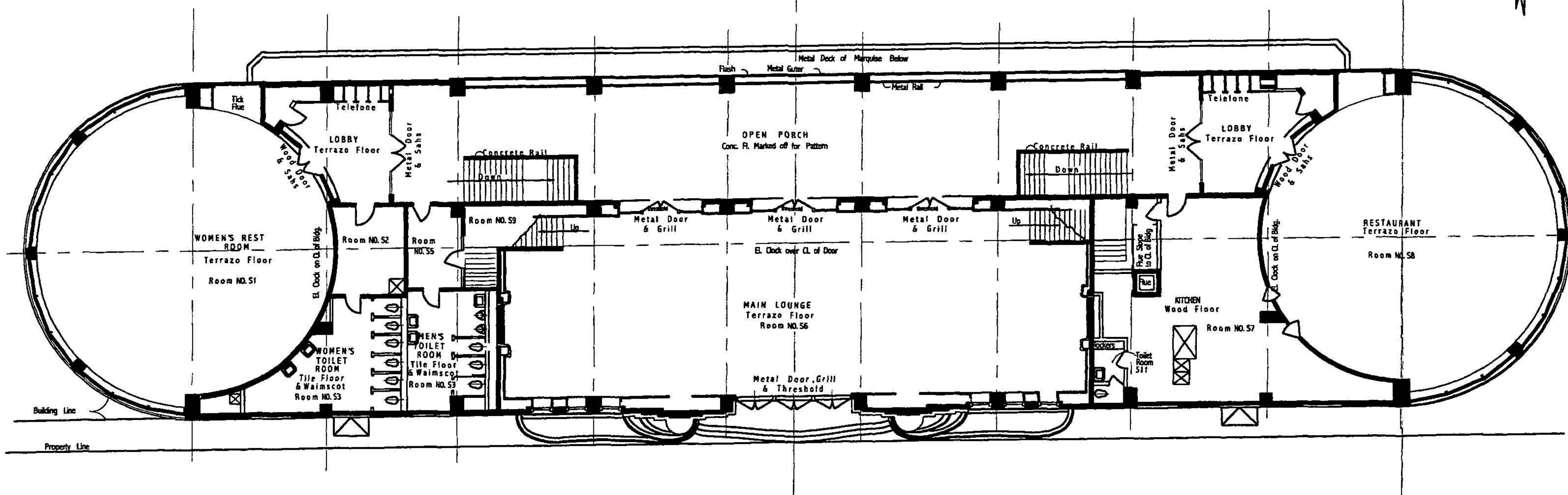
AQUATIC PARK BATHHOUSE (MARITIME MUSEUM) - 1939
900 BEACH STREET (NEAR POLK STREET)
SAN FRANCISCO COUNTY (HISTORICAL PARK)
SAN FRANCISCO
CALIFORNIA

SHEET 7 of 12

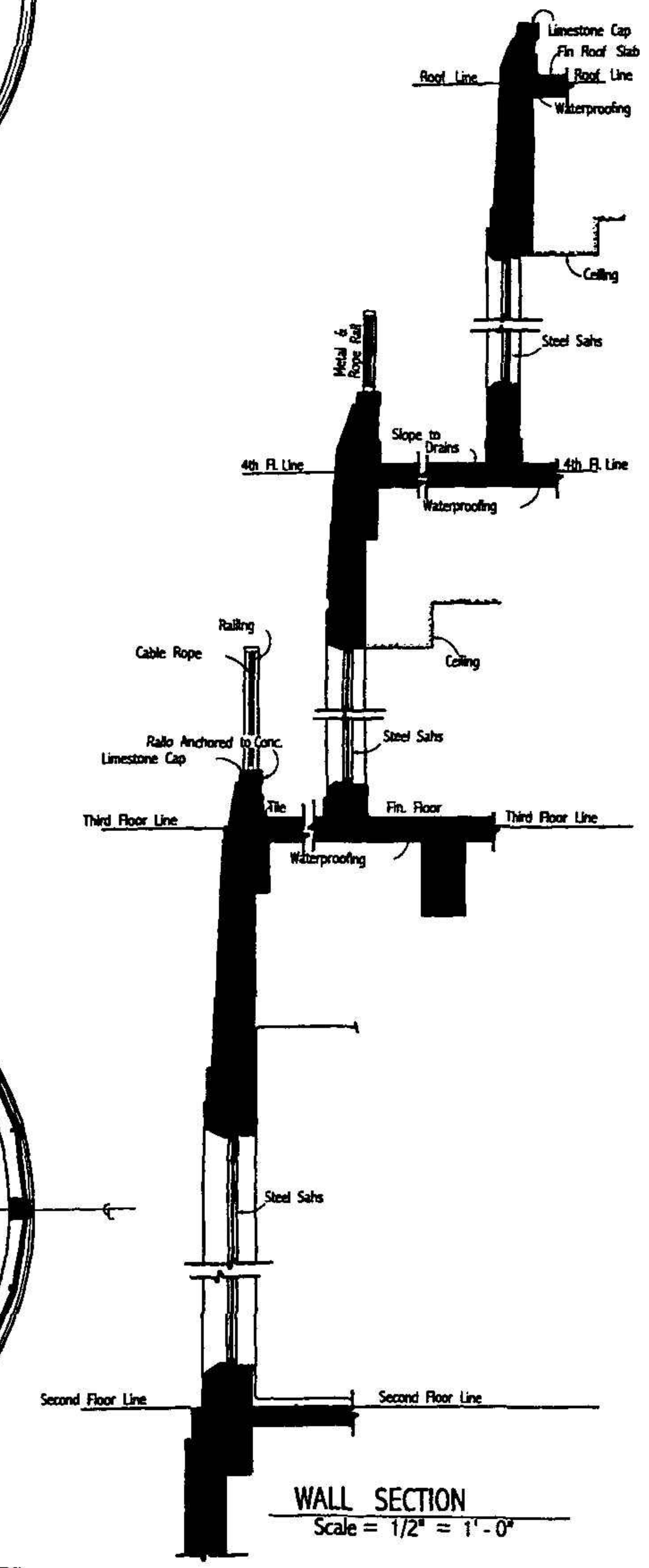
HISTORIC AMERICAN BUILDINGS SURVEY
CA-2225



THIRD FLOOR PLAN
Scale = 1/8" = 1'-0"



SECOND FLOOR PLAN
Scale = 1/8" = 1'-0"



WALL SECTION
Scale = 1/2" = 1'-0"

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OFFICE OF THE
BOARD OF PARK COMMISSIONERS
SAN FRANCISCO CALIF.
AQUATIC PARK
BATH HOUSE BUILDING
W. P. A. PROJECT Nº 2175.

2. Drawings do not reflect "as built" conditions as changes were made in construction.

DRAWN BY: JAIRO UMANA, 1999

HAER MARITIME PROGRAM
BATHHOUSE RECORDING PROJECT

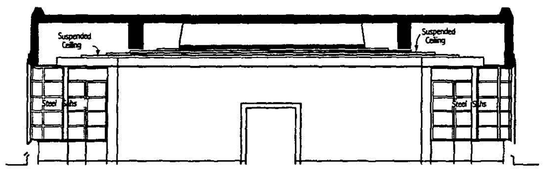
SAN FRANCISCO

AQUATIC PARK BATHHOUSE (MARITIME MUSEUM) - 1939
900 BEACH STREET (SAN FRANCISCO MARITIME NATIONAL HISTORICAL PARK)
SAN FRANCISCO COUNTY

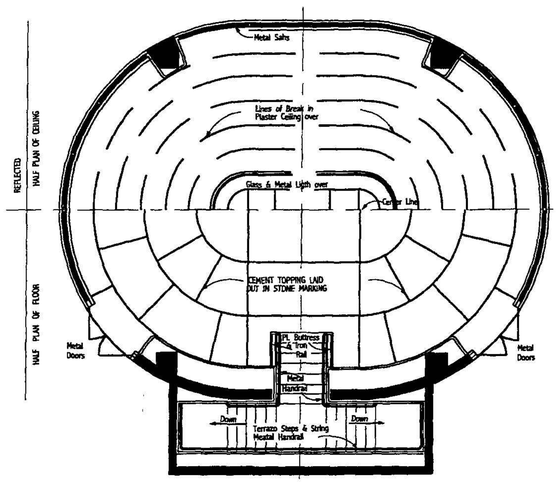
CALIFORNIA

SHEET 8 of 12

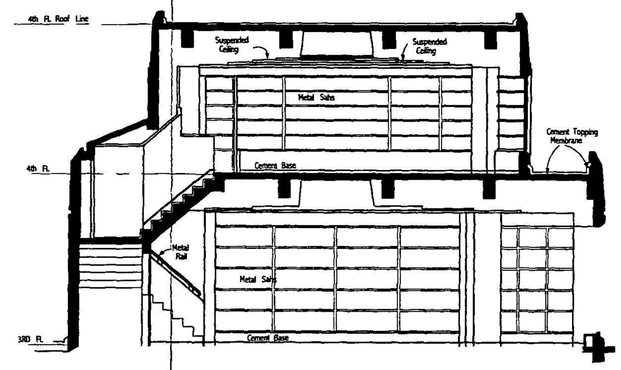
HISTORIC AMERICAN BUILDINGS SURVEY
CA-2225



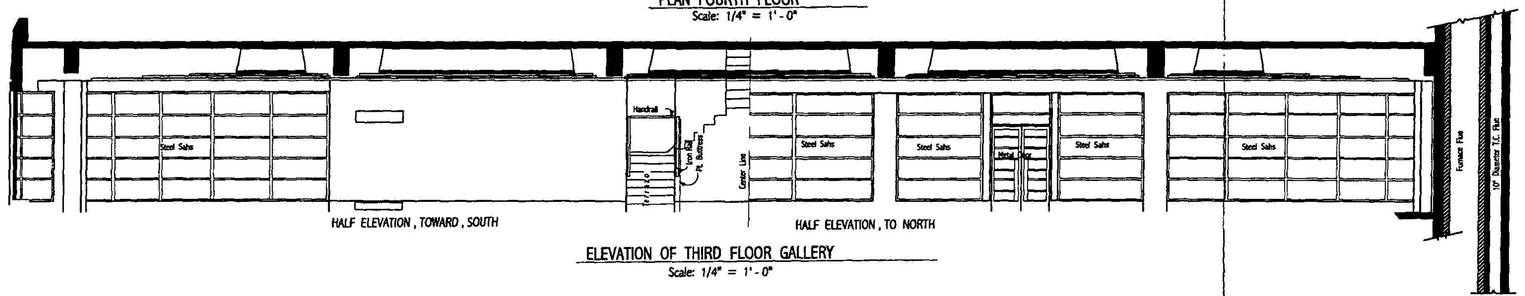
SECTION OF FOURTH FLOOR
Scale: 1/4" = 1'-0"



PLAN FOURTH FLOOR
Scale: 1/4" = 1'-0"



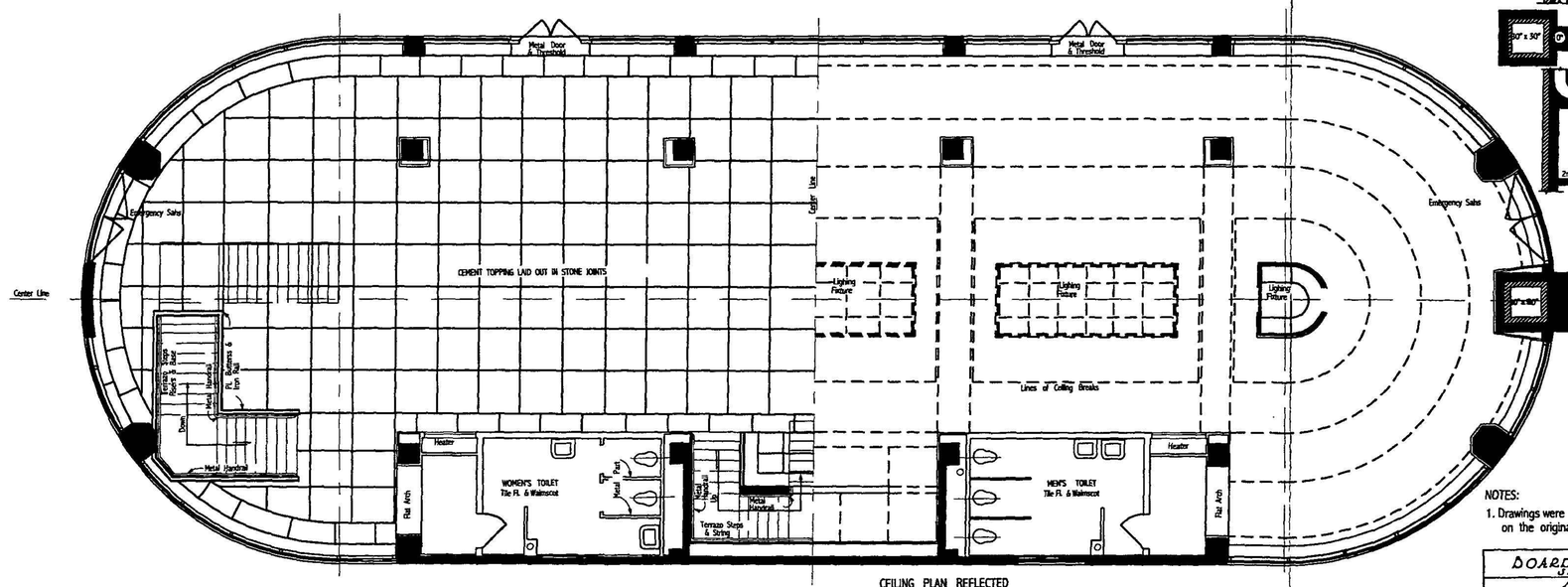
SECTION THROUGH THIRD & FOURTH FLOORS
Scale: 1/4" = 1'-0"



HALF ELEVATION, TOWARD, SOUTH

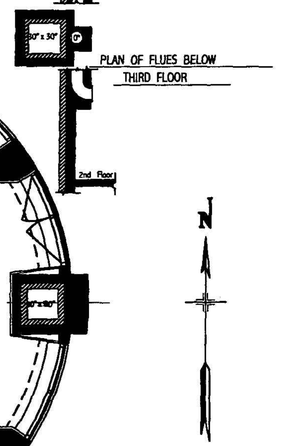
HALF ELEVATION, TO NORTH

ELEVATION OF THIRD FLOOR GALLERY
Scale: 1/4" = 1'-0"



CEILING PLAN REFLECTED

PLAN OF THIRD FLOOR GALLERY
Scale: 1/4" = 1'-0"



NOTES:

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OFFICE OF THE
BOARD OF PARK COMMISSIONERS
SAN FRANCISCO, CALIF.
AQUATIC PARK
BATH HOUSE BUILDING.
W. P. A. PROJECT No. 2175.

2. Drawings do not reflect "as built" conditions as changes were made in construction.

DRAWN BY: JURO UMANA, 1999

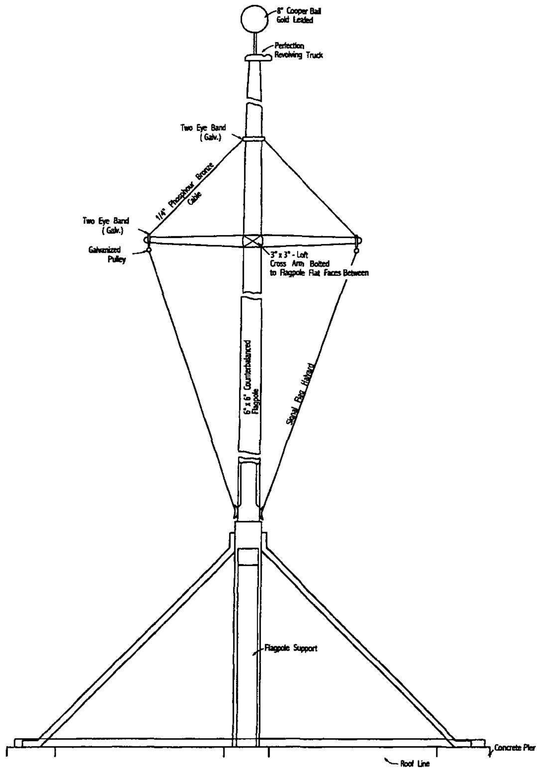
HAER MARITIME PROGRAM
BATHHOUSE RECORDING PROJECT
UNDER AUTHORITY AND PROPERTY OF THE GOVERNMENT

AQUATIC PARK BATHHOUSE (MARITIME MUSEUM) - 1939
900 BEACH STREET (SAN FRANCISCO MARITIME NATIONAL HISTORICAL PARK) - 1939
SAN FRANCISCO COUNTY
CALIFORNIA

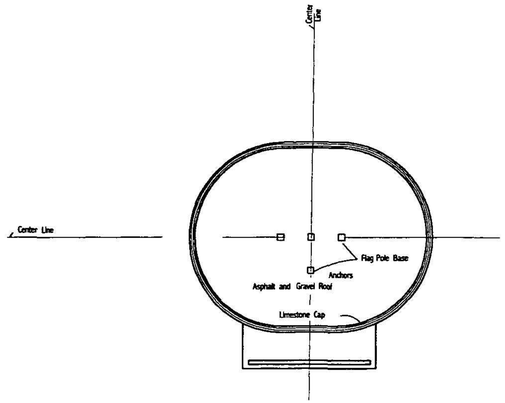
HISTORIC AMERICAN BUILDINGS SURVEY
CA - 2225

sheet 9 of 12

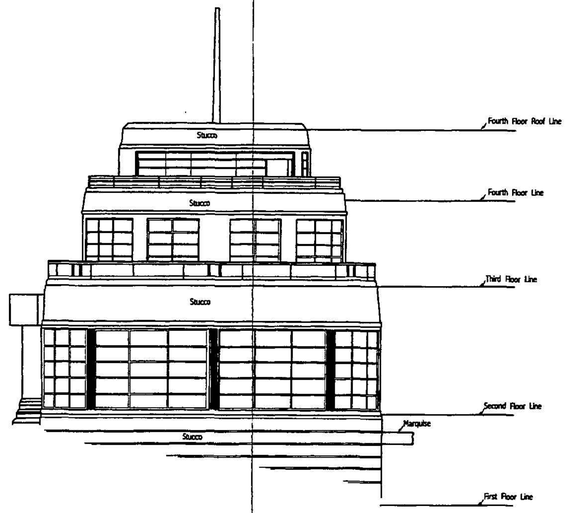
SAN FRANCISCO



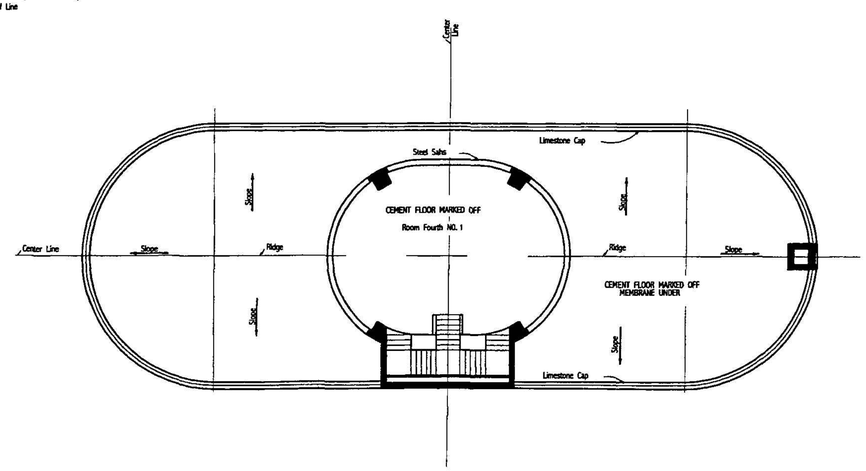
DETAIL OF FLAGPOLE



FOURTH FLOOR PLAN
ROOF PLAN
Scale: 1/8" = 1' - 0"



... END ELEVATION
OTHER SIMILAR
Scale: 1/8" = 1' - 0"



FOURTH FLOOR PLAN
Scale: 1/8" = 1' - 0"

NOTES:

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OFFICE OF THE BOARD OF PARK COMMISSIONERS SAN FRANCISCO CALIF.
AQUATIC PARK
BATH HOUSE BUILDING
W. P. A. - PROJECT No. 2175.

2. Drawings do not reflect "as Built" conditions as changes were made in construction.

Top of Cut
Mid Bec. 100.00'

DRAWN BY: JAIRO UMANA, 1999

HAER MARITIME PROGRAM
BATHHOUSE RECORDING PROJECT
UNITED STATES DEPARTMENT OF THE INTERIOR

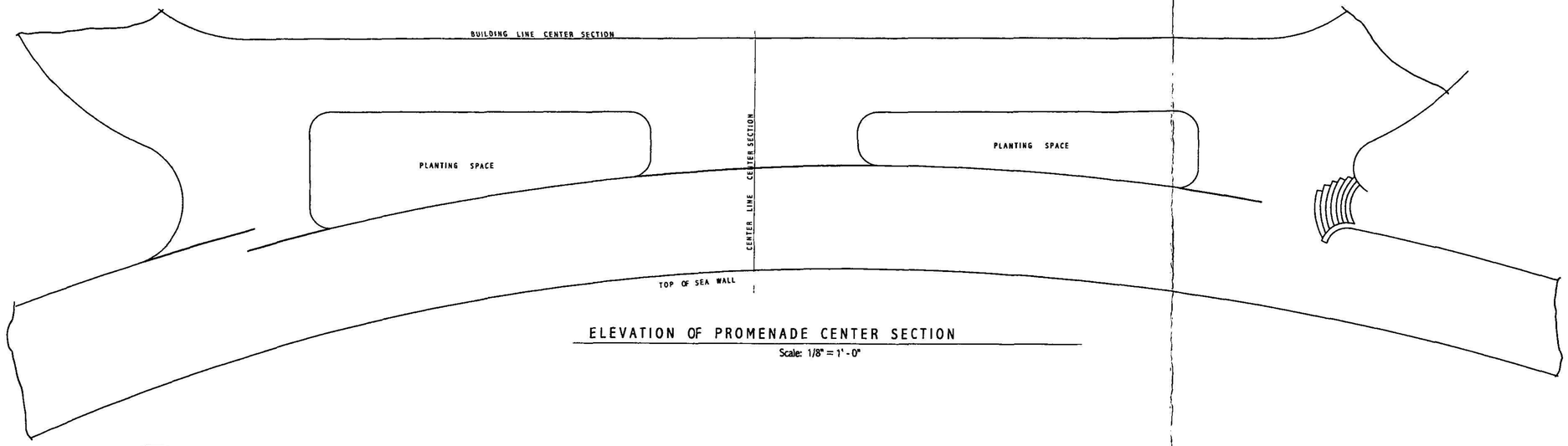
AQUATIC PARK BATHHOUSE (MARITIME MUSEUM) - 1939
900 BEACH STREET (SAN FRANCISCO MARITIME NATIONAL HISTORICAL PARK)
SAN FRANCISCO COUNTY

SAN FRANCISCO

CALIFORNIA

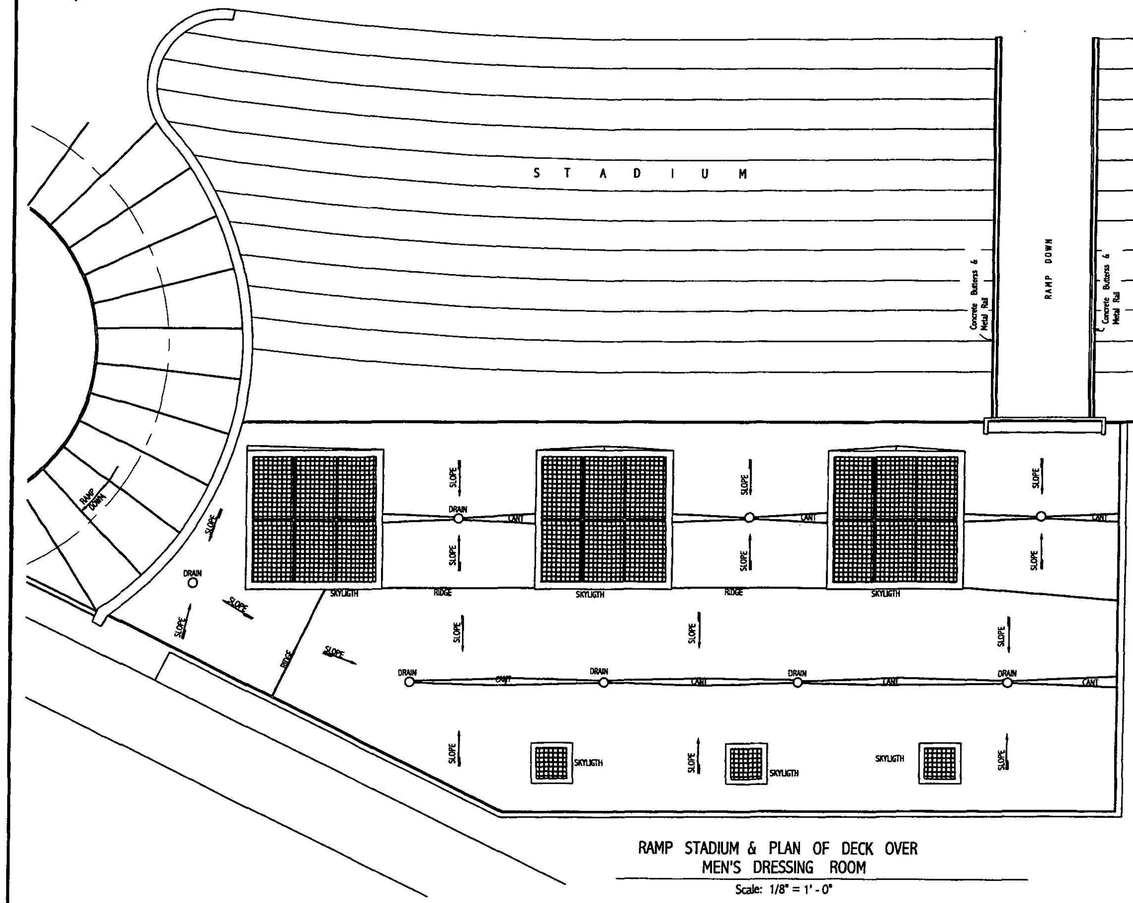
SHEET 10 of 12

HISTORIC AMERICAN BUILDINGS SURVEY
CA - 2225



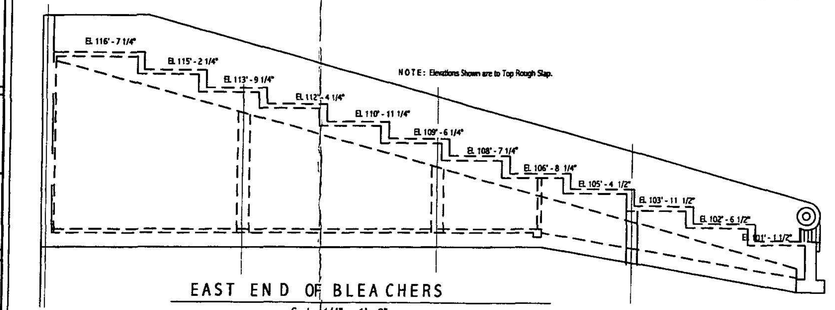
ELEVATION OF PROMENADE CENTER SECTION

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



RAMP STADIUM & PLAN OF DECK OVER MEN'S DRESSING ROOM

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



EAST END OF BLEACHERS

Scale: 1/4" = 1' - 0"

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BOARD OF PARK COMMISSIONERS (277121 SF FNE) SAN FRANCISCO CALIF.
AQUATIC PARK
BATH HOUSE BUILDING
W. P. A. PROJECT N= 2175.

2. Drawings do not reflect "as Built" conditions as changes were made in construction.

DRAWN BY: JARO UMANA, 1999

HAER MARITIME PROGRAM
BATHHOUSE RECORDING PROJECT

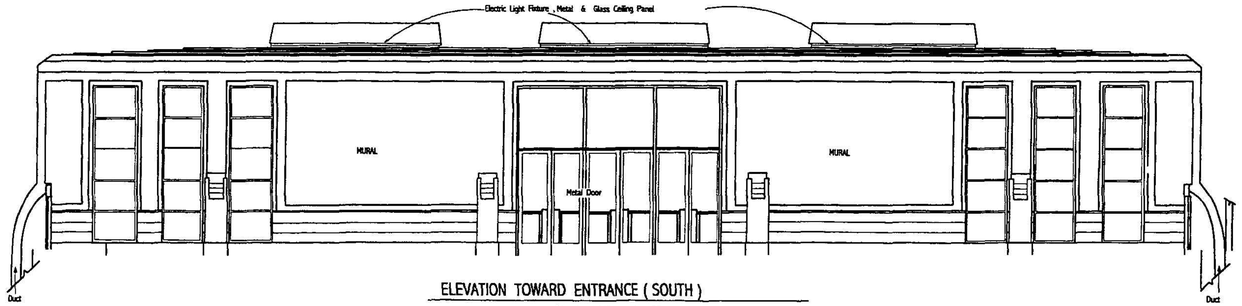
AQUATIC PARK BATHHOUSE (MARITIME MUSEUM) - 1939
MARITIME NATIONAL HISTORICAL PARK)
900 BEACH STREET (SAN FRANCISCO MARITIME NHP)
SAN FRANCISCO COUNTY

SAN FRANCISCO

CALIFORNIA

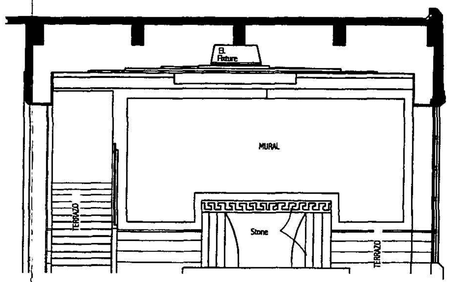
SHEET 11 - 12

HISTORIC AMERICAN BUILDINGS SURVEY
CA - 2225



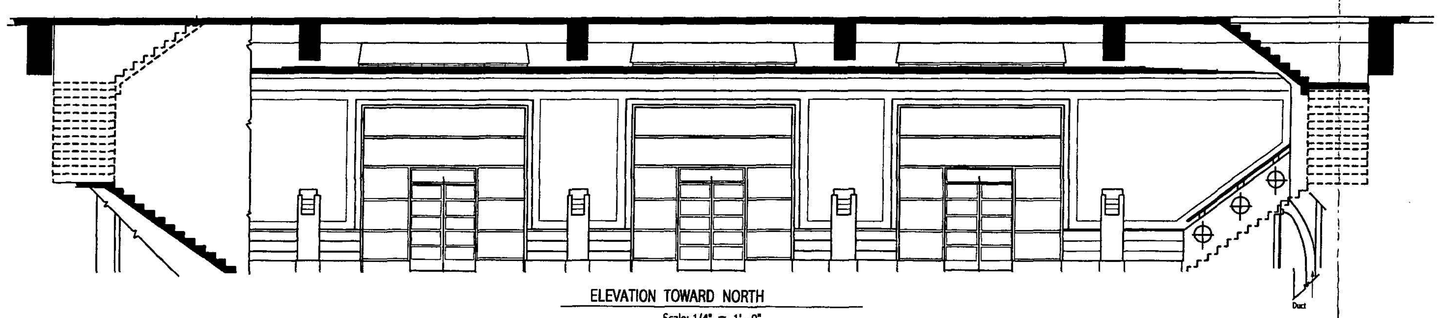
ELEVATION TOWARD ENTRANCE (SOUTH)

Scale: 1/4" = 1' - 0"



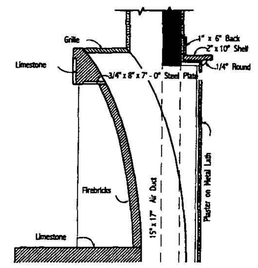
END ELEVATION

Scale: 1/4" = 1' - 0"



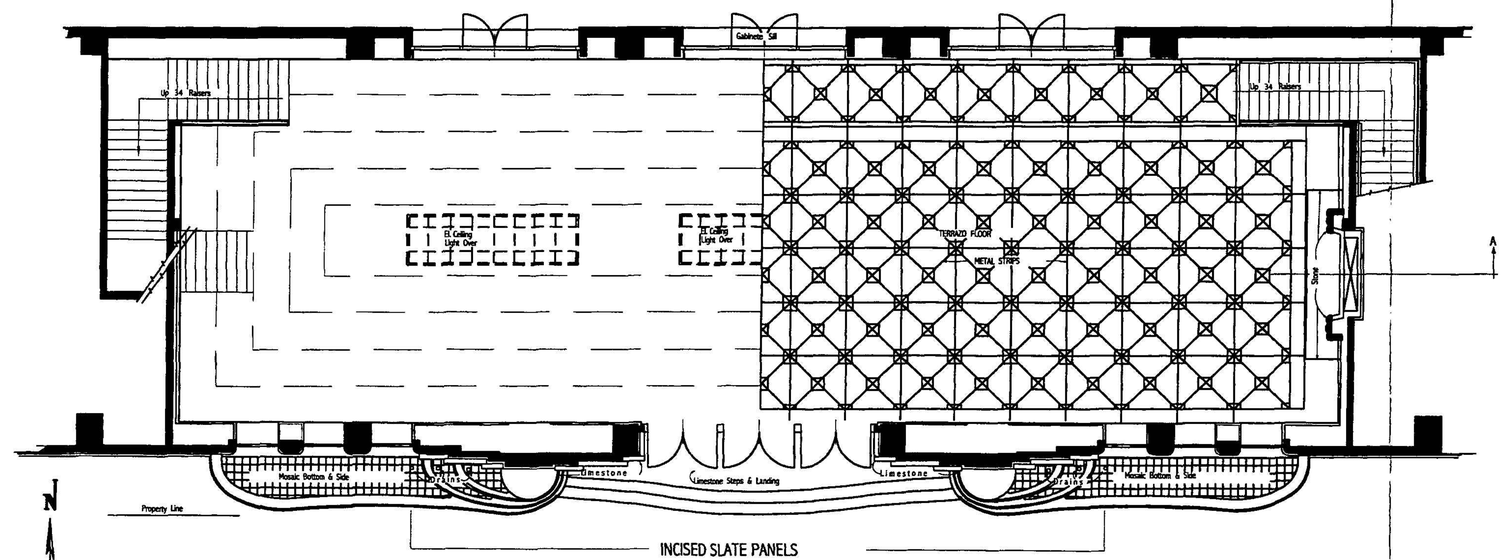
ELEVATION TOWARD NORTH

Scale: 1/4" = 1' - 0"



SECTION

Scale: 3/4" = 1' - 0"

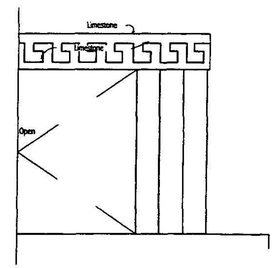


INCISED SLATE PANELS

(See Sheet 4 of 12)

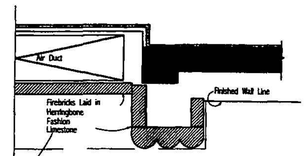
DETAIL PLAN OF MAIN LOUNGE

Scale: 1/4" = 1' - 0"



ELEVATION

Scale: 3/4" = 1' - 0"



PLAN

Scale: 3/4" = 1' - 0"

NOTE :

1. Drawings were redrawn in autocad and are based on the original set of design drawings.

OFFICE OF THE BOARD OF PARK COMMISSIONERS SAN FRANCISCO CALIF.
AQUATIC PARK
BATH HOUSE BUILDING
W. P. A. PROJECT No 2173.

2. Drawings do not reflect " as built " conditions as changes were made in construction.

HISTORIC AMERICAN BUILDINGS SURVEY
CA - 2225

SHEET 12 OF 12

AQUATIC PARK BATHHOUSE (MARITIME MUSEUM) - 1939
900 BEACH STREET (SAN FRANCISCO MARITIME NATIONAL HISTORICAL PARK)
SAN FRANCISCO COUNTY
CALIFORNIA

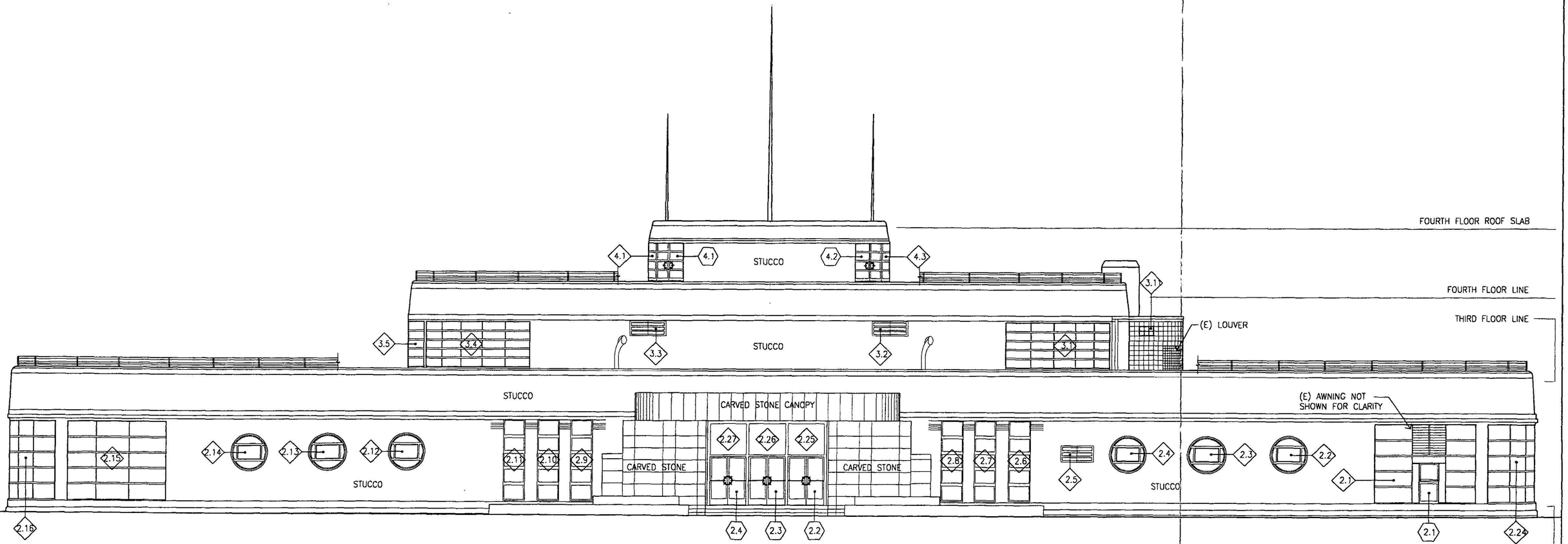
HAER MARITIME PROGRAM
BATHHOUSE RECORDING PROJECT
NATIONAL PARK SERVICE
WESTERN REGIONAL OFFICE
SAN FRANCISCO, CALIFORNIA

SAN FRANCISCO

DRAWN BY: JAIRO UMANA 1999

Appendix D: Existing Conditions Drawings

The following drawings show the existing conditions of the Maritime Museum Building. The exterior elevation drawings were prepared by Architectural Resources Group. Window and door locations are identified on these drawings with a tag that is keyed to the window and door schedules given in Appendix E. The floor and roof plan drawings were prepared by the National Park Service.



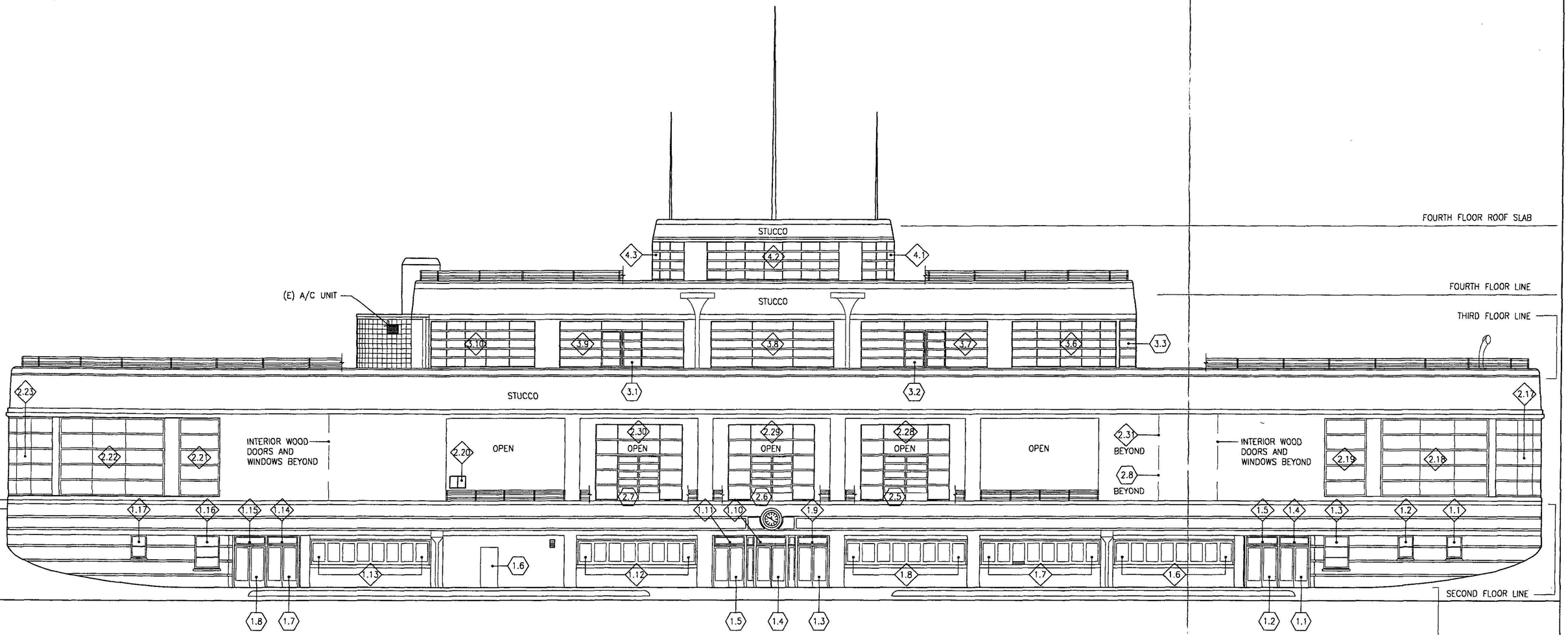
1 SOUTH ELEVATION
SCALE (L) 1/16" = 1'-0"

SCALE (1) 16 8 0 16 32
1/16" = 1'-0"

LIMITED SCOPE HISTORIC STRUCTURE REPORT

DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
CADD: EK	EC-1	EXISTING CONDITIONS SOUTH EXTERIOR ELEVATION	641 41133
TECH. REVIEW:		MARITIME MUSEUM BUILDING SAN FRANCISCO MARITIME NHP	PKG. NO. SAFR 518 — / SHEET 1 OF 8
DATE: 2/28/02			

350/4010 sheet 178



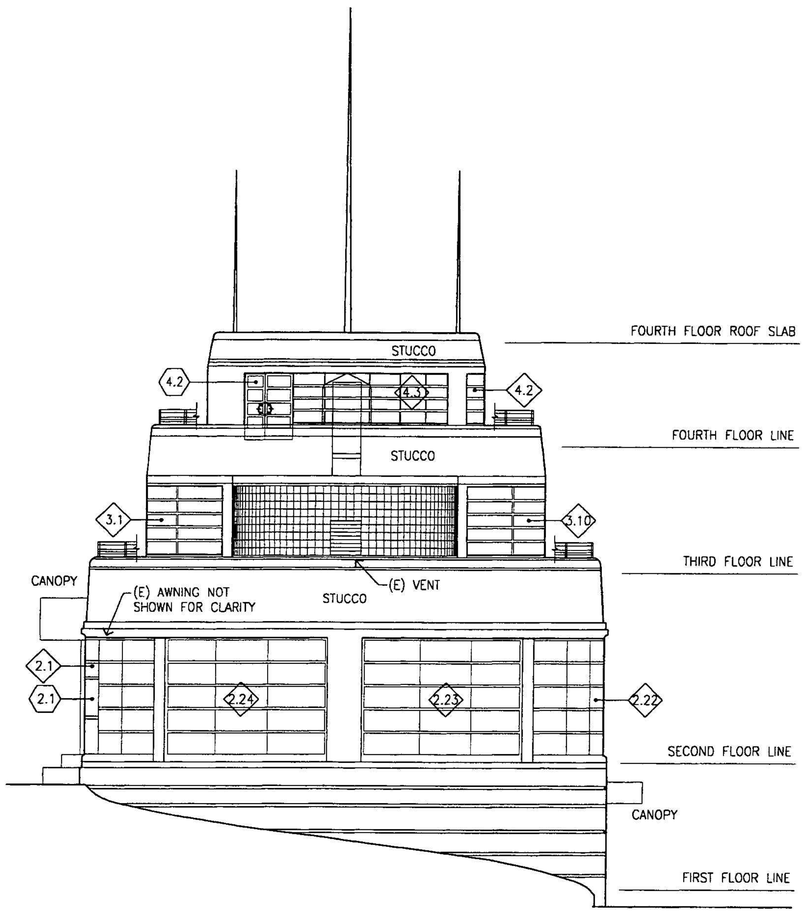
1 NORTH ELEVATION
SCALE (L): 1/16" = 1'-0"

SCALE (1) 16 8 0 16 32
1/16" = 1'-0"

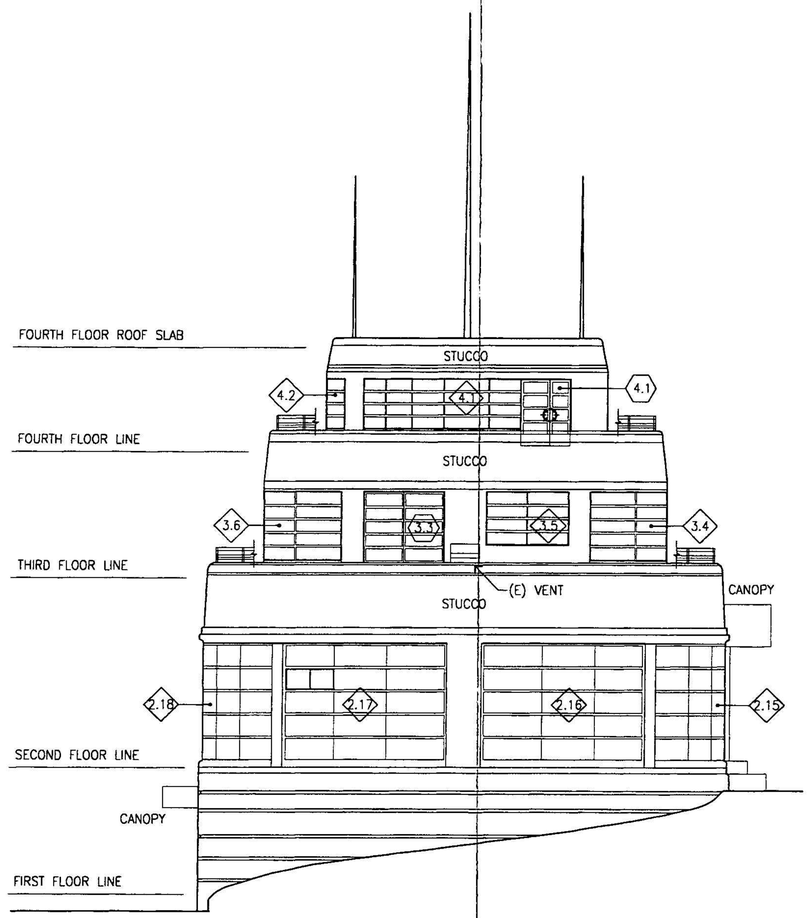
LIMITED SCOPE HISTORIC STRUCTURE REPORT

DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
CADD: EK	EC-2	EXISTING CONDITIONS NORTH EXTERIOR ELEVATION	641 41133
TECH. REVIEW:		MARITIME MUSEUM BUILDING SAN FRANCISCO MARITIME NHP	PKG. NO. SAFR 518 —
DATE: 2/28/02			SHEET 2 OF 8

350/41010 sheet 2 of 8



2 EAST ELEVATION
SCALE Ⓛ: 1/16" = 1'-0"



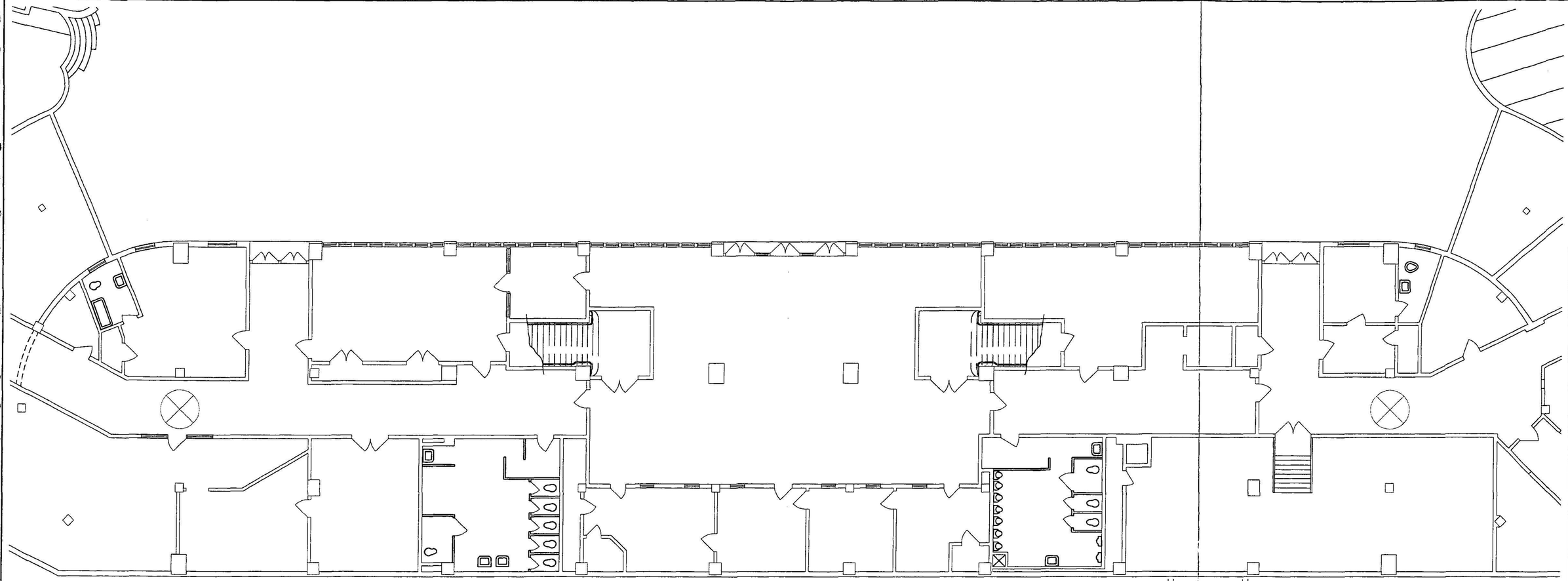
1 WEST ELEVATION
SCALE Ⓛ: 1/16" = 1'-0"

SCALE Ⓛ 16 8 0 16 32
1/16" = 1'-0"

LIMITED SCOPE HISTORIC STRUCTURE REPORT

DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
CADD: EK	EC-3	EXISTING CONDITIONS WEST AND EAST EXTERIOR ELEVATIONS	641 41133
TECH. REVIEW:		MARITIME MUSEUM BUILDING SAN FRANCISCO MARITIME NHP	PKG. NO. SAFR 518 —
DATE: 2/28/02			SHEET 3 OF 8

350/41010 sheet 3 of 8



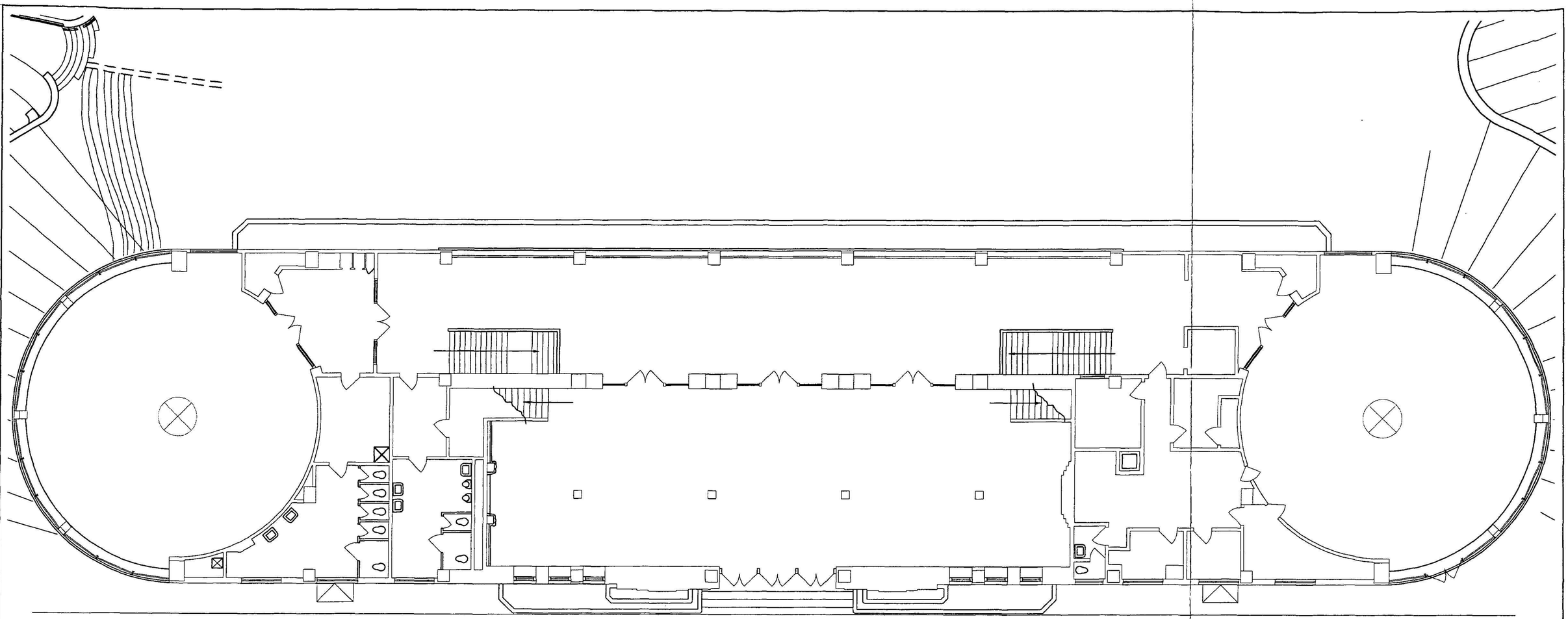
1 FIRST FLOOR PLAN
SCALE Ⓛ: 1/16" = 1'-0"

SCALE Ⓛ 16 8 0 16 32
1/16" = 1'-0"

LIMITED SCOPE HISTORIC STRUCTURE REPORT

DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
CADD: RC	EC-4	EXISTING CONDITIONS FIRST FLOOR PLAN	641 41133
TECH. REVIEW:		MARITIME MUSEUM BUILDING SAN FRANCISCO MARITIME NHP	PKG. NO. SAFR 518 —
DATE: 2/28/02			SHEET 4 OF 8

350/41010 sheet 4 of 8



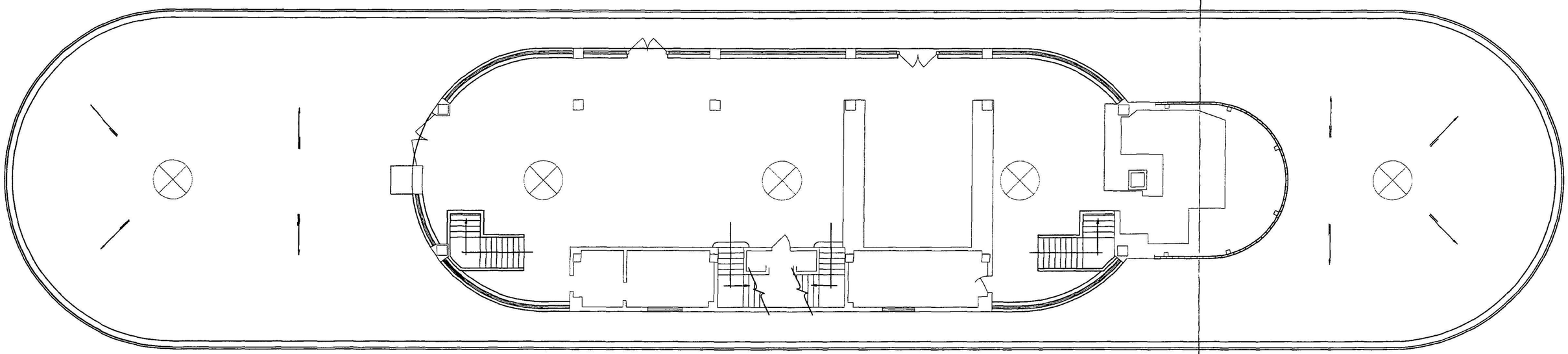
1 SECOND FLOOR PLAN
SCALE (L): 1/16" = 1'-0"

SCALE (L) 16 8 0 16 32
1/16" = 1'-0"

LIMITED SCOPE HISTORIC STRUCTURE REPORT

DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
CADD: RC	EC-5	EXISTING CONDITIONS SECOND FLOOR PLAN	641 41133
TECH. REVIEW:		MARITIME MUSEUM BUILDING SAN FRANCISCO MARITIME NHP	PKG. NO. SAFR 518 —
DATE: 2/28/02			SHEET 5 OF 8

350/41010 sheet 5 of 8



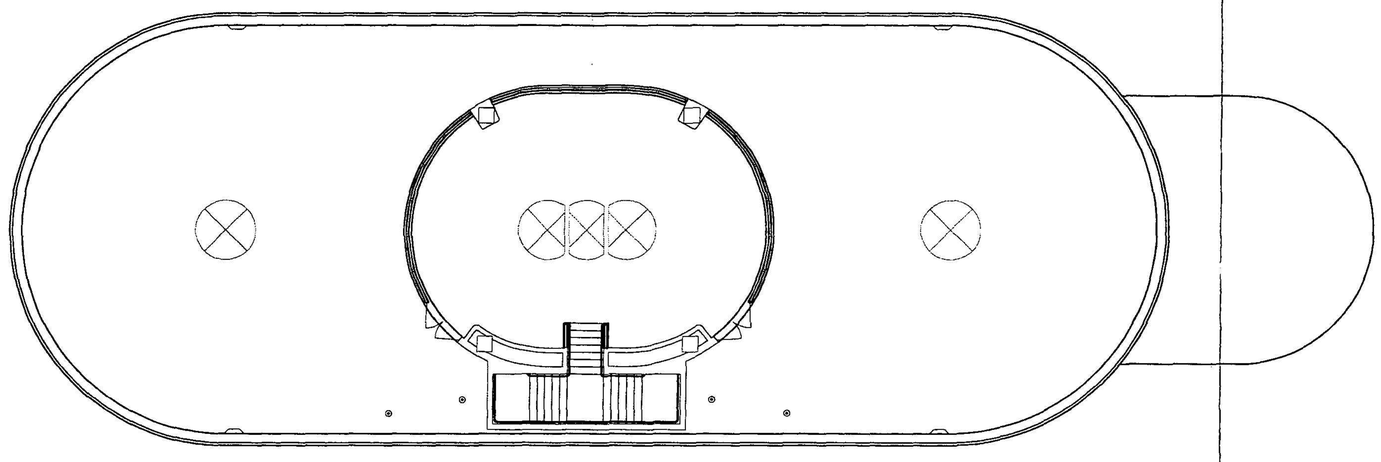
1 THIRD FLOOR PLAN
SCALE Ⓛ: 1/16" = 1'-0"

SCALE Ⓛ 16 8 0 16 32
1/16" = 1'-0"

LIMITED SCOPE HISTORIC STRUCTURE REPORT

DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
CADD: RC	EC-6	EXISTING CONDITIONS THIRD FLOOR PLAN	641 / 41133
TECH. REVIEW:		MARITIME MUSEUM BUILDING SAN FRANCISCO MARITIME NHP	PKG. NO. SAFR 518 –
DATE: 2/28/02			SHEET 6 OF 8

350/41010 sheet 6 of 8



1 FOURTH FLOOR PLAN
SCALE Ⓛ: 1/16" = 1'-0"

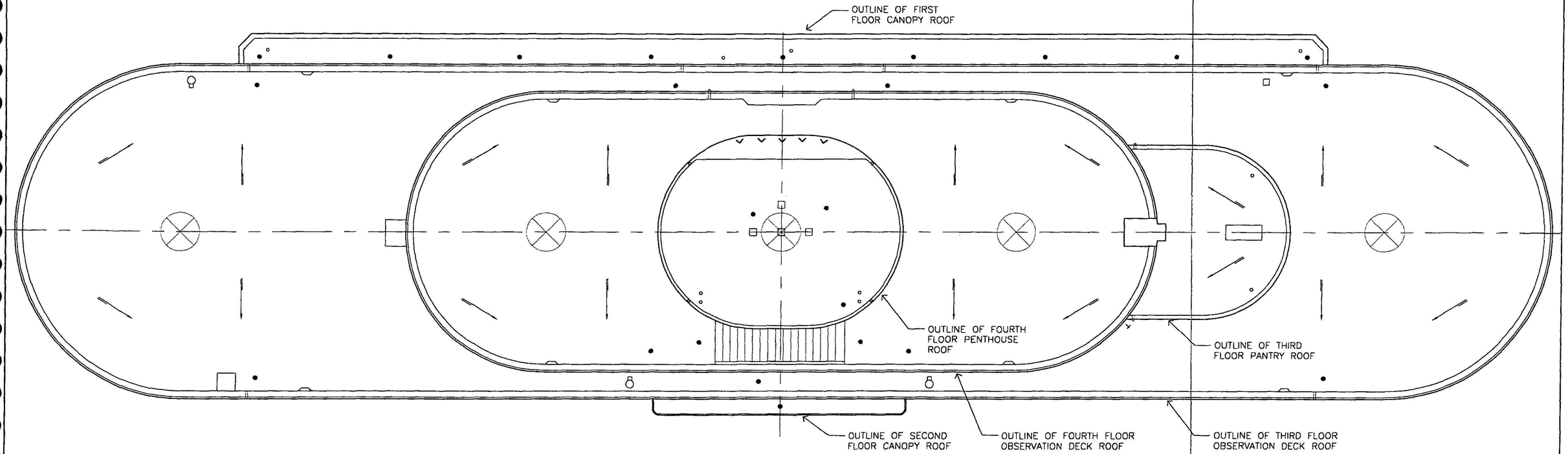
SCALE Ⓛ 16 8 0 16 32
1/16" = 1'-0"

LIMITED SCOPE HISTORIC STRUCTURE REPORT

DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
CADD: RC	EC-7	EXISTING CONDITIONS FOURTH FLOOR PLAN	641 41133
TECH. REVIEW:		MARITIME MUSEUM BUILDING SAN FRANCISCO MARITIME NHP	PKG. NO. SAFR 518 —
DATE: 2/28/02			SHEET 7 OF 8

350/41010 sheet 7 of 8

- (E) ROOF DRAIN
- (E) PLUMBING VENT
- (E) DECORATIVE VENT FEATURE
- (E) HOSE BIBB
- (E) SPOT LIGHT BASE
- (E) SCUPPER
- SLOPE OF ROOF



1 ROOF PLAN
SCALE (L): 1/16" = 1'-0"

SCALE (L) 16 8 0 16 32
1/16" = 1'-0"

LIMITED SCOPE HISTORIC STRUCTURE REPORT

DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
CADD: RC/EK	EC-8	EXISTING CONDITIONS ROOF PLAN	641 41133
TECH. REVIEW:		MARITIME MUSEUM BUILDING SAN FRANCISCO MARITIME NHP	PKG. NO. SAFR 518 —
DATE: 2/28/02			SHEET 8 OF 8

350/41010 sheet 8 of 8

Appendix E: Window and Door Schedules

The following window and door schedules provide information on the configuration, materials, and features for each window and door on the exterior envelope of the Maritime Museum Building. The identification numbers for each window and door are given on the existing conditions drawings in Appendix D.

WINDOW SCHEDULE

Window Number	Bldg. Elev.	Window Type	Window Material	Window Finish	Frame Material	Frame Finish	Glazing	Remarks
First Floor								
1.1	North	Fixed	Steel	Painted	Steel	Painted	2 Lights	Frame, sash, and glass painted
1.2	North	Fixed	Steel	Painted	Steel	Painted	2 Lights	Frame, sash, and glass painted
1.3	North	Fixed/Hopper	Steel	Painted	Steel	Painted	3 Lights	Frame and sash painted
1.4	North	Fixed	Wood	Painted	Wood	Painted	1 Light	Transom above door
1.5	North	Fixed	Wood	Painted	Wood	Painted	1 Light	Transom above door
1.6	North	Bifold	Wood	Painted	Wood	Painted	8 Lights	Four pairs of bifold windows
1.7	North	Bifold	Wood	Painted	Wood	Painted	8 Lights	Four pairs of bifold windows
1.8	North	Bifold	Wood	Painted	Wood	Painted	8 Lights	Four pairs of bifold windows
1.9	North	Fixed	Wood	Painted	Wood	Painted	1 Light	Transom above door
1.10	North	Fixed/Awning	Wood	Painted	Wood	Painted	5 Lights	Sidelights and transom above door
1.11	North	Fixed	Wood	Painted	Wood	Painted	1 Light	Transom above door
1.12	North	Bifold	Wood	Painted	Wood	Painted	8 Lights	Four pairs of bifold windows
1.13	North	Bifold	Wood	Painted	Wood	Painted	8 Lights	Four pairs of bifold windows
1.14	North	Fixed	Wood	Painted	Wood	Painted	1 Light	Transom above door
1.15	North	Fixed	Wood	Painted	Wood	Painted	1 Light	Transom above door
1.16	North	Fixed/Hopper	Steel	Painted	Steel	Painted	3 Lights	Frame and sash painted
1.17	North	Fixed/Hopper	Steel	Painted	Steel	Painted	2 Lights	Frame and sash painted
1.18	North	Fixed/Awning	Aluminum	Painted	Aluminum	Painted	2 Lights	East-facing wall of east wing; duct installed at top light
1.19	North	Fixed/Hopper	Aluminum	Painted	Aluminum	Painted	2 Lights	East-facing wall of east wing
1.20	North	Fixed/Hopper	Steel	Painted	Steel	Painted	3 Lights	West-facing wall of east wing
1.21	North	Fixed/Hopper	Steel	Painted	Steel	Painted	3 Lights	West-facing wall of east wing
1.22	North	Fixed/Hopper	Steel	Painted	Steel	Painted	2 Lights	West-facing wall of east wing
1.23	North	Hopper	Steel	Painted	Steel	Painted	3 Lights	North-facing wall of west wing
1.24	North	Hopper	Steel	Painted	Steel	Painted	3 Lights	North-facing wall of west wing
1.25	North	Hopper	Steel	Painted	Steel	Painted	3 Lights	North-facing wall of west wing
1.26	North	Hopper	Steel	Painted	Steel	Painted	3 Lights	North-facing wall of west wing
1.27	North	Hopper	Steel	Painted	Steel	Painted	3 Lights	North-facing wall of west wing
Second Floor								
2.1	South	Fixed/Awning	Stainless Stl	Polished	Stainless Stl	Polished	15 Lights	Includes sidelight and transom at door
2.2	South	Fixed/Hopper	Stainless Stl	Polished	Stainless Stl	Polished	5 Lights	Rectangular hopper sash operable
2.3	South	Fixed/Hopper	Stainless Stl	Polished	Stainless Stl	Polished	5 Lights	Rectangular hopper sash operable
2.4	South	Fixed/Hopper	Stainless Stl	Polished	Stainless Stl	Polished	5 Lights	Rectangular hopper sash operable
2.5	South	Hopper	Steel	Painted	Steel	Painted	2 Lights	Steel sash hopper behind wall
2.6	South	Fixed	Stainless Stl	Polished	Stainless Stl	Polished	5 Lights	Obscured wire glass
2.7	South	Fixed	Stainless Stl	Polished	Stainless Stl	Polished	5 Lights	Obscured wire glass
2.8	South	Fixed	Stainless Stl	Polished	Stainless Stl	Polished	5 Lights	Obscured wire glass
2.9	South	Fixed	Stainless Stl	Polished	Stainless Stl	Polished	5 Lights	Obscured wire glass
2.10	South	Fixed	Stainless Stl	Polished	Stainless Stl	Polished	5 Lights	Obscured wire glass
2.11	South	Fixed	Stainless Stl	Polished	Stainless Stl	Polished	5 Lights	Obscured wire glass
2.12	South	Fixed/Hopper	Stainless Stl	Polished	Stainless Stl	Polished	5 Lights	Rectangular hopper sash operable
2.13	South	Fixed/Hopper	Stainless Stl	Polished	Stainless Stl	Polished	5 Lights	Rectangular hopper sash operable
2.14	South	Fixed/Hopper	Stainless Stl	Polished	Stainless Stl	Polished	5 Lights	Rectangular hopper sash operable
2.15	South	Fixed/Hopper	Stainless Stl	Polished	Stainless Stl	Polished	15 Lights	One operable sash

Window Number	Bldg. Elev.	Window Type	Window Material	Window Finish	Frame Material	Frame Finish	Glazing	Remarks
2.16	West	Fixed/Hopper	Stainless Stl	Polished	Stainless Stl	Polished	15 Lights	One operable sash
2.17	West	Fixed	Stainless Stl	Polished	Stainless Stl	Polished	16 Lights	One original sash replaced with double sash
2.18	North	Fixed	Stainless Stl	Polished	Stainless Stl	Polished	15 Lights	
2.19	North	Fixed	Stainless Stl	Polished	Stainless Stl	Polished	5 Lights	
2.20	North	Sliding	Aluminum	Brushed	Aluminum	Brushed	2 Lights	Non-original window
2.21	North	Fixed	Stainless Stl	Polished	Stainless Stl	Polished	5 Lights	
2.22	North	Fixed	Stainless Stl	Polished	Stainless Stl	Polished	15 Lights	
2.23	East	Fixed	Stainless Stl	Polished	Stainless Stl	Polished	15 Lights	
2.24	East	Fixed	Stainless Stl	Polished	Stainless Stl	Polished	15 Lights	
2.25	South	Fixed	Stainless Stl	Polished	Stainless Stl	Polished	1 Light	Transom above door at main entrance
2.26	South	Fixed	Stainless Stl	Polished	Stainless Stl	Polished	1 Light	Transom above door at main entrance
2.27	South	Fixed	Stainless Stl	Polished	Stainless Stl	Polished	1 Light	Transom above door at main entrance
2.28	North	Fixed	Stainless Stl	Polished	Stainless Stl	Polished	12 Lights	Windows at veranda door
2.29	North	Fixed	Stainless Stl	Polished	Stainless Stl	Polished	12 Lights	Windows at veranda door
2.30	North	Fixed	Stainless Stl	Polished	Stainless Stl	Polished	12 Lights	Windows at veranda door
2.31	North	Fixed	Stainless Stl	Polished	Stainless Stl	Polished	12 Lights	Windows at veranda door
Third Floor								
3.1	South	Fixed	Stainless Stl	Polished	Stainless Stl	Polished	25 Lights	
3.2	South	Hopper	Steel	Painted	Steel	Painted	2 Lights	Steel sash hopper behind wall
3.3	South	Hopper	Steel	Painted	Steel	Painted	2 Lights	Steel sash hopper behind wall
3.4	South	Fixed	Stainless Stl	Polished	Stainless Stl	Polished	25 Lights	
3.5	West	Fixed	Stainless Stl	Polished	Stainless Stl	Polished	8 Lights	
3.6	North	Fixed/Awning	Stainless Stl	Polished	Stainless Stl	Polished	25 Lights	One operable sash
3.7	North	Fixed	Stainless Stl	Polished	Stainless Stl	Polished	11 Lights	
3.8	North	Fixed	Stainless Stl	Polished	Stainless Stl	Polished	15 Lights	
3.9	North	Fixed	Stainless Stl	Polished	Stainless Stl	Polished	11 Lights	
3.10	North	Fixed/Awning	Stainless Stl	Polished	Stainless Stl	Polished	25 Lights	One operable sash
3.11	South	Awning	Steel	Painted	Steel	Painted	6 Lights	Steel sash hopper window at glass block wall
Fourth Floor								
4.1	West	Fixed/Hopper	Stainless Stl	Polished	Stainless Stl	Polished	24 Lights	One operable sash
4.2	North	Fixed/Hopper	Stainless Stl	Polished	Stainless Stl	Polished	28 Lights	One operable sash
4.3	East	Fixed/Hopper	Stainless Stl	Polished	Stainless Stl	Polished	24 Lights	One operable sash

DOOR SCHEDULE

Door Number	Bldg. Elev.	Door Type	Door Material	Door Finish	Frame Material	Frame Finish	Glazing	Remarks
First Floor								
1.1	North	Double Door	Wood	Painted	Wood	Painted	4 Lights	Paired doors at former concession area
1.2	North	Double Door	Wood	Painted	Wood	Painted	4 Lights	Paired doors at former concession area
1.3	North	Double Door	Wood	Painted	Wood	Painted	4 Lights	Paired doors at former concession area
1.4	North	Double Door	Wood	Painted	Wood	Painted	4 Lights	Paired doors at former concession area
1.5	North	Double Door	Wood	Painted	Wood	Painted	4 Lights	Paired doors at former concession area
1.6	North	Single Door	Galv. Steel	Painted	Steel	Painted	0 Lights	Non-original door
1.7	North	Double Door	Wood	Painted	Wood	Painted	4 Lights	Paired doors at former concession area
1.8	North	Double Door	Wood	Painted	Wood	Painted	4 Lights	Paired doors at former concession area
Second Floor								
2.1	South	Single Door	Aluminum	Brushed	Aluminum	Brushed	2 Lights	Non-original door
2.2	South	Double Door	Stainless Stl	Polished	Stainless Stl	Polished	2 Lights	Paired doors at main entrance
2.3	South	Double Door	Stainless Stl	Polished	Stainless Stl	Polished	2 Lights	Paired doors at main entrance
2.4	South	Double Door	Stainless Stl	Polished	Stainless Stl	Polished	2 Lights	Paired doors at main entrance
2.5	North	Double Door	Stainless Stl	Polished	Stainless Stl	Polished	10 Lights	Paired doors at veranda
2.6	North	Double Door	Stainless Stl	Polished	Stainless Stl	Polished	10 Lights	Paired doors at veranda
2.7	North	Double Door	Stainless Stl	Polished	Stainless Stl	Polished	10 Lights	Paired doors at veranda
2.8	North	Double Door	Stainless Stl	Polished	Stainless Stl	Polished	10 Lights	Paired doors at veranda
Third Floor								
3.1	North	Double Door	Stainless Stl	Polished	Stainless Stl	Polished	8 Lights	Paired doors at third floor observation deck
3.2	North	Double Door	Stainless Stl	Polished	Stainless Stl	Polished	8 Lights	Paired doors at third floor observation deck
3.3	West	Double Door	Stainless Stl	Polished	Stainless Stl	Polished	8 Lights	Paired doors at third floor observation deck; not in use
Fourth Floor								
4.1	West	Double Door	Stainless Stl	Polished	Stainless Stl	Polished	8 Lights	Paired doors at fourth floor observation deck
4.2	East	Double Door	Stainless Stl	Polished	Stainless Stl	Polished	8 Lights	Paired doors at fourth floor observation deck

Appendix F: Murals Conservation Survey and Treatment Reports

The following reports prepared by Anne Rosenthal document the conditions and describe recommended treatments for the interior murals in the Maritime Museum Building. These reports were not undertaken as part of the present research for this limited scope historic structure report. The reports, written in 1986 and 1988, are included here because of the importance of the murals to the overall design of the building and because the condition of the murals is related in part to the waterproofing deficiencies of the windows.

ANNE ROSENTHAL
FINE ART CONSERVATION

Box 384 San Rafael, California 94901

415-457-1549

CONSERVATION SURVEY OF MURALS:
NATIONAL MARITIME MUSEUM, AQUATIC PARK, SAN FRANCISCO

February 7, 1986

#336
murals

CONSERVATION SURVEY OF MURALS:
NATIONAL MARITIME MUSEUM, AQUATIC PARK, SAN FRANCISCO

February 7, 1986

by Anne Rosenthal, Conservator
Box 384
San Rafael, CA 94901

FIRST FLOOR: paintings by HILARE HILER, Subject: Undersea Life

Size: approximately 1600 square feet. Room size: 96.5 feet x 29 feet.

Location: all wall surfaces above 57" marble wainscoting.

Medium: oil with possible additions of resin or wax on fabric.

EXAMINATION:

Support:

The paintings were executed on a very fine fabric which is attached to the wall with a glue/paste adhesive. The fabric is much like a fine gauze, having very little body and an exceedingly open weave. The fabric, though very fine, is given bulk by the priming.

Priming:

The priming is a white layer which is oil-like in appearance and does not contain white lead. The fabric and priming may have been comercially prepared, the type commonly used as a wall covering to even the irregularities and cracking of plaster wall construction. In many areas it is difficult to locate the joins of the fabric.

Paint Film:

The paint film is oil-like in behavior and appearance. Colors were applied to the canvas after the canvas was installed onto the wall. Photographic documentation is available which shows the artist and assistants working on the murals from elevated platforms.

Colors were laid onto the canvas directly, sometimes in large units of solid color. There are some translucent passages, however, which were created by thin glaze-like application of paints. Some of the fish were treated in this way by applying thin paints over metal leaf. Examination of the surface of the

painting in specular light reveals that some parts of the design are glossier than others, indicating some differences in the richness of various color mixes.

Surface Coatings:

The presence of a varnish was not conclusively determined. There may be a coating judging from some streaks found on the surface which do not correspond to design areas, but such a coating would be thin and not greatly discolored. Solvent tests reveal that a substantial amount of surface grime is present. When this grime is removed, the paint film becomes sensitive to organic solvents which would dissolve most natural resin or shellac varnishes.

A newspaper article (Chronicle, August 21, 1949) refers to the artist's assertion that the paintings needed "a new coat of varnish".

CONDITION:

Water Damage:

There are several obvious signs of deterioration/damage to the murals. The first, and most critical, is the water damage located around the windows on the south side of the room.

Water infiltration into the walls and ceiling around the southern exposure windows has deteriorated the plaster beneath the paintings. The finish coat of plaster (approximately 2/16 - 3/16" in thickness) has been pulverized by the action of precipitated salts. The plaster has literally exploded (has increased in volume) and remains as a powdery mass in the effected areas. Some parts of the surface of the mural are bulging due to the bulk of powdered plaster beneath. The action of water has also caused failure of the paste adhesive and the canvas is separated from the wall in a number of areas.

Canvas hangs loose from the wall in long vertical bands or in triangular ("dog eared") shapes. Some of this loose canvas is rolled back on itself, exposing the back side; much of the canvas in this condition is badly distorted, torn, and extremely brittle. The canvas edges are shredded and have many losses due to the action of the curtains and curtain cords which entangle parts of the detached mural. The paint film on the detached canvas is also extremely brittle, cracked and cupped. Areas of flaking paint are scattered near the water damage. The total surface area effected is approximately 32 square feet. Every window bay except one on the south side of the room is involved.

Several other separations of the canvas from the wall exist in long horizontal bands (approximately 7.5 feet long) near the top center portion of the paintings on both the east and west walls. There has obviously been some internal, structural problem in the building (inherent in both symmetrically designed

walls) which permits either water leakage or compression of the building in these areas. Since access to the area was not possible for the purpose of this examination, the extent of damage is not fully known, but it is believed possible to rectify the disfigurement of the mural after corrections are made to halt the cause of the damage.

Desiccation of Paint Film:

Another noteworthy phenomenon is the extent of deterioration of the paint film near the windows on both north and south walls. On the panels most exposed to the action of light, the paint has experienced a kind of "rapid ageing", resulting in desiccation, embrittlement, fading and deterioration of the binder. The paint film is marked by a kind of blanched appearance overall, and there are noticeable cracks generally over the surface. The paint is more friable here than in other locations.

Mechanical Damages:

Besides water and light damage near the windows, the most significant alteration in the paintings is the mechanical damage in scattered locations over the surface. Much of this damage relates to wear and tear associated with the function of the room as a museum exhibit space. A number of tears, punctures and holes exist in the murals as vestiges of old installations, possibly for plaquards or signs, or for actual mounting of artifacts. On the northeast portion of the north wall, for example, there are long graphite grid lines and holes which obviously relate to an old installation. Countless areas of scuffing, abrasion with accompanying paint loss, hand prints and shallow gouges appear over much of the surface. Near the ceiling are many scratches, hand prints and paint losses which probably occured at the various times the lights were changed, or curtains installed. Added together, the amount of mechanical damage is significant.

Surprisingly, there is little graffiti on the paintings (only one area noted) nor signs of malicious mischief. Damage near floor level and around stairways appears to be accidental, and not unexpected given the accessibility of the paintings. Since there has been no program of special care or remedial treatment of the paintings for a period of 49 years, the present condition near floor level is relatively good. Damage is not so much the result of the normal traffic of human beings through the building, as it is the result of careless custodial care, and the installment and movement of very large scale exhibit material into and out of the building.

Surface Dirt:

The paintings are disfigured by the accumulation of a substantial amount of surface grime which has significantly altered the color relationships in the paintings. Many of the

wall surfaces are literally fuzzy with webbs of airborne dirt which can be seen at an oblique angle. While some of this accumulation can be dusted away, a film of soot is well incorporated into the paint layer. Near floor level the paint film is generally speckled with grime tenaciously embedded into the interstices of the paint film. The tenacity of this layer may have been aided by earlier cleaning or dusting attempts which further "set" the dirt. Vigorous, repeated cleaning of the top edge of the marble wainscoting has caused rubbing of the lower edges of the paintings, resulting in paint loss and streaking.

Several cleaning tests reveal the splendid potential for removing the dirt film to recover brilliant colors beneath. The degree of improvement in the paintings surpassed the examiner's expectation.

Other Surface Irregularities:

Other surface imperfections include interlayer cleavage of the paint film in small scattered locations. The paint film is otherwise generally secure. Drips of old ceiling paint are present on the paintings in several locations. A few old retouchings are also present, which do not match in color or surface sheen. Some other foreign matter is also spattered onto the paintings.

RECOMMENDED TREATMENT:

The most necessary treatment is that to rectify problems of deteriorated canvas and damaged paint in the vacinity of the windows along the south wall. The longer the canvas hangs freely in a distorted state, the more difficult it will be to rectify the damage. At present, the canvas is extremely vulnerable to repeated episodes of damage whenever the curtain cords are operated, or when normal maintanence procedures of cleaning window and floor surfaces are undertaken. Loose canvas is also a temptation to museum visitors, whose curiosity or thoughtlessness can rusult in further handling and damage of the loose canvas.

Treatment of the paintings can only proceed in conjunction with remedial treatment of the plaster and the primary cause of water leakage. Further recommendations by a preservation architect or engineer are needed to decide the best course of action regarding the building.

Portions of the salty, powdered plaster will have to be replaced. In order to gain access to problem areas, this may require some temporary further detachment of the mural from the wall.

As a protective measure, facing the mural with a tissue, cloth or other suitable material prior to making wall repairs may be necessary. The distorted canvas and paint must then be flattened (probably with local applications of moisture and/or

heat) and reattached to the wall with a suitable adhesive. Infusion of adhesives through the fabric may be needed to confirm the attachment of loose paint to the canvas. Losses in the canvas must then be compensated with fabric inserts or with a filling material, suitably textured, to permit inpainting of missing elements.

Some experimentation with adhesives and procedures may be necessary to arrive at the most practical and visually cohesive result in treatment. The circumstances effecting these damaged areas are unusually harsh (southern exposure to sun and rain) and the lighting conditions (ie. raking light) are the most revealing of damage. This will present an unusual challenge to the conservator.

Other separations of the canvas from the walls (on east and west walls) can probably be reattached with hypodermic injection of adhesives, followed by light pressure. This treatment is speculative, and presumes that no unusual circumstances exist in the areas. Prior to this treatment, as with the project of conservation of these murals in general, treatment should proceed only after all necessary and possible repair to the building has been made to arrest water leakage. Evidence of leakage, which is presumably from sources near the roof, can be seen in plentitude in the west stairway, not far from the water damage on the west wall. An engineering report which can identify the source of the problem is needed.

Mechanical damages to the paintings will require repair of the canvas, filling and inpainting. Holes drilled into the walls should be plugged.

Cleaning the paintings with appropriate agents will do a great deal to improve the appearance of the paintings. Applying a protective surface coating may be advisable, particularly in some areas where surface blemishes or blanching may be improved.

Long term preservation efforts may best be served by a comprehensive ongoing program of building maintenance and periodic conservation inspection, providing remedial work as needed. Ultraviolet screens or filters over windows are advised to attenuate problems attributed to intense heat and light radiations. Problems normally encountered in public buildings must be considered in preparing a systematic program for the preservation of the paintings.

LADIES LOUNGE MURAL: by CHARLES NUNNEMAKER, Subject: Beach Scene

EXAMINATION:

The mural is located in the rectangular ante-room to the ladies lavatory, which may have been furnished at one time with a sofa or chairs. The painting begins at a height of approximately 7 1/2 feet, and continues to the ceiling height of 14 feet. The paint film is oil-like, painted directly onto the plaster walls.

The paint film was applied smoothly in most areas, and there is almost no impasto except on the lower register where lively brushwork produces a pebbly texture (to resemble sand). The mural is executed in muted ochre colors.

Damages to the plaster consist of several cracks which run diagonally into the corners. Several of them are open enough to be seen from floor level, however the plaster is stable and well attached to the substrate. No loose areas were detected by sounding the walls.

Surface dirt is noticeable in oblique light. A discolored and patchy surface coating, possibly shellac, is visible in strong light. This coating appears to have been broken or partially removed by former cleanings. Other foreign accretions, which appear to be pieces of sponge and/or wadded tissue are attached to the wall at various locations.

The painting is signed: C. Nunemaker
Fed Art Project
1939

RECOMMENDED TREATMENT:

The painting is not in urgent need of treatment at this time, however at some future date cleaning may be considered to remove surface dirt and the shellac-like surface coating which is somewhat disfiguring. Solvent tests indicate that the coating is tenacious, can be dissolved in ethanol, however some blanching of the paint film is noted with use of this solvent. The surface coating is not soluble in naptha, or detergent solutions, and is only slightly soluble in acetone. The painting should be checked periodically for stability of the plaster, especially in areas already marked by cracks.

PRISMATARIUM: executed by CHARLES NUNNEMAKER
color theory by Hilare Hiler

Dimensions: circular room, 52 feet in diameter.

Areas Painted: all surfaces above wood wainscoting: walls and ceiling. Walls are painted in shades of grey (like a grey scale), ceiling is painted in various shades and tints of color. Colors on the ceiling radiate out in segments from the central light fixture.

Materials: oil-like paint (possibly pigments and/or dyes) on canvas

EXAMINATION:

Support:

The painted surfaces in this room are actually on canvas, which was applied to the walls and ceiling with a white lead adhesive (microchemical test confirmed). The painted surfaces are very lightly textured from the canvas weave (medium weight canvas), and some undulations in the fabric can be seen on the ceiling in specular light. Loose canvas can be seen on the west wall near the bottom edge around windows, where water seepage has damaged the plaster beneath the painting. The attachment of the canvas is otherwise very strong throughout the room.

Surface Coatings and Deterioration:

The most obvious signs of deterioration in this room are the dark, dull and patchy quality of the colors, and the flaking or crazing of certain color segments.

The mottled effect of the colors is due to several factors. First, the paintings are covered with an uneven dark accumulation of air borne dirt and grime. Secondly, there is a patchy, streaky coating of varnish (possibly shellac), which is shattered in many areas. The degree of deterioration of varnish in each segment of color is different, and may bear some relationship to the color, medium, or chemical nature of the paint below. Likewise the condition of the paint film is variable; some paints are lean, others rich, some are marked by drying cracks, others are not.

Additionally, there has been water leakage in this room along the east wall (where long drip stains are located), and some condensation of moisture resulting in the deposit of droplets of a dark reddish brown (rust-like) color on the ceiling closer to the center of the room. Cleaning tests reveal that the water stains on the east wall and rust-like droplets cannot be easily dissolved, and that further treatment (perhaps mechanical removal or inpainting) may be necessary to correct this damage.

Cleaning Tests and Solubilities:

The dirt film is soluble in a number of detergent solvents. The varnish film will dissolve only with lengthy exposure to organic solvents (chiefly ethanol). The paint film is sensitive in both types of solvents when the varnish film is removed.

Where the varnish is very desiccated and friable, it can be removed simply by rubbing the surface, however there are many places where this cannot be done.

A very interesting phenomenon was observed in a test area of red color near the east wall. The surface dirt was removed from the area, and the varnish film was retained. When rolled with a swab wet with acetone, the color "bled" to produce a more vivid red without changing or altering the varnish coating. This "bleeding" of color may be the activation of a dye within the paint film, and indicates that some alteration of the hue or value of certain colors may change or be changed as a result of cleaning with certain solvents.

This phenomenon, as well as other evidences of deterioration not common to all panels, may indicate the unorthodox use of additives or dyes by the artist to achieve precise colors not otherwise obtainable. Cleaning is a complicated matter in this case, due to the variable condition of the varnish and paint films, and decisions will have to be made with a conservator on the degree of cleaning which is both prudent and possible while maintaining as nearly as one can the proper relationship of hue, value and intensity of one color to another throughout the room (maintaining the philosophical purpose or instructive nature of the paintings).

RECOMMENDED TREATMENT:

The paintings should be cleaned, as possible, of surface dirt and discolored varnish while maintaining the color relationships of the segments as per the two paragraphs above.

Attention should be given to the causes of condensation and of water leakage through the ceiling and around windows, and building repairs should be made prior to repair of the murals in appropriate areas. Around windows the wall work should be accomplished in concert with a conservator, as painted canvas may have to be peeled back to expose areas of damaged plaster. Some protection, such as a facing of tissue or other suitable material, may be necessary to protect the painted canvas during the process of wall repair.

Repairs to the canvas or paint are needed in water damaged areas. Canvas must be reattached to the wall with a suitable adhesive.

Mechanical removal of foreign deposits on the ceiling, or drips on the east wall may be necessary. Inpainting may be required to remedy the disfigurement of stains or any unevenness of color as a result of cleaning. In areas of age cracks or "traction" cracks which are a natural result of the ageing or drying of the original paint film, inpainting should be minimal.

SECOND FLOOR MURALS: by RICHARD AYRE
assistants: Anne Rice O'Hanlon
Gregory Kangooney
Shirley Staschen (Julian, Podesta) Triest

Materials: applied wood on plaster, rope, oil paint

Subjects: various marine subjects and shapes, abstractions of ropes, parts of boats, masts, sea life, etc.

EXAMINATION:

The murals on the second floor can be seen as one enters the second floor from the west stairway; one of the paintings is directly at the top of the landing. Executed in muted white, greys, tans, pinks and blues, these paintings were intended to complement the cut stone flooring and the architectural details of the building. At present only a few examples of the work exist, including the painting at the top of the landing, one behind and adjacent to the west stairway on the west wall, and one on the pillar closest to the west end of the second floor.

These extant examples of mural work are representative of the palette of colors and the type of wood applique used. These paintings bear representative kinds of damage, the most serious being the water/salt damage to the plaster on the painting on the west wall. Some insecurity of the paint film is noted here (interlayer cleavage) and some of the applied wood motifs are missing. Some pins used to secure wood pieces are rusted. In the other extant panels, scratches and abrasions are the most serious damage. Surface soil is light, and the paintings are in relatively good condition.

Overpainted Panels:

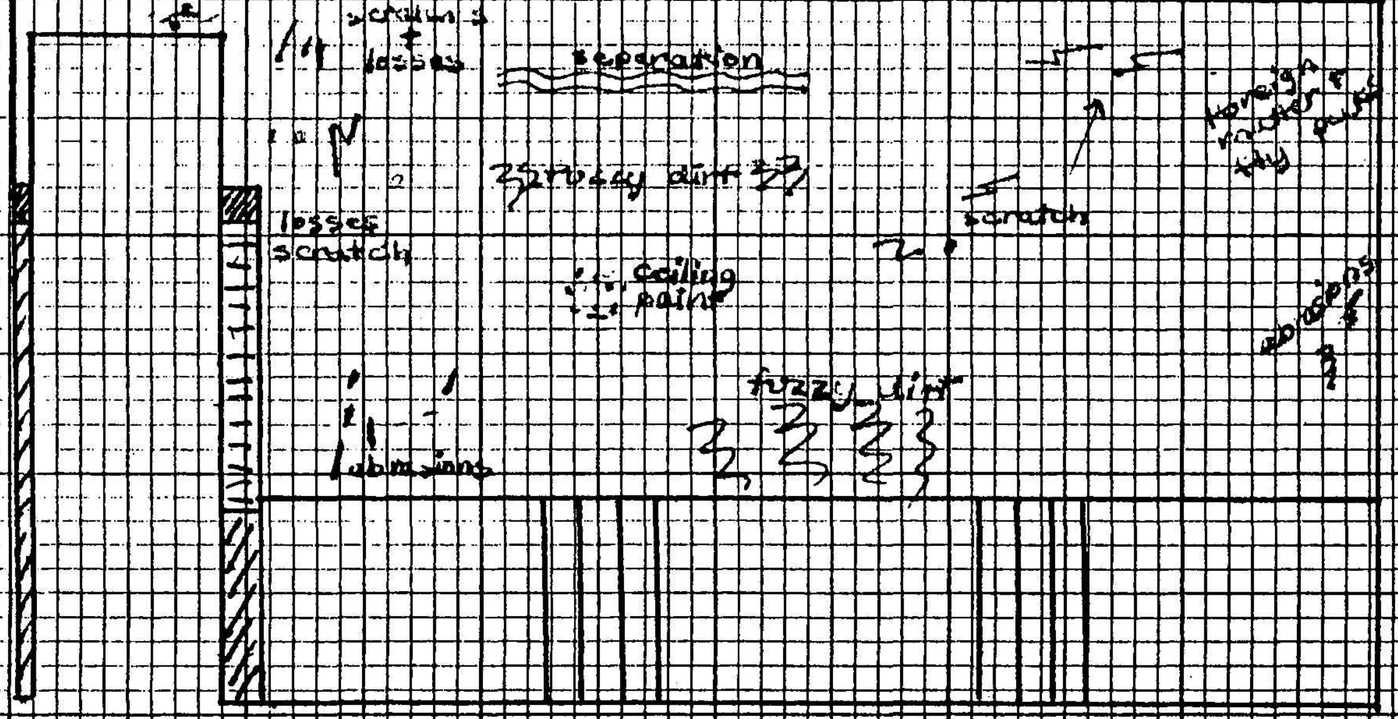
Due to past use of this space for museum exhibitions, white latex paint was used to obliterate (cover over) the decorative murals on the south wall which measure 6'9" by approximately 65 feet. Most applied motifs (rocks, coral, rope, fish, abstract forms) remain in place, although they have been painted over. One missing fish form in question was said to have been taken to museum storage at Fort Mason.

In addition to the white paint on the south wall, one of the four pillars formerly bearing decorative paintings on this floor has also been painted over. Another remains intact, and the remaining two are covered over with false walls which extend out into the room perpendicular to the south wall. Behind the false walls these pillars and paintings may be marked by some holes or abrasions, but the original paints and design are more or less intact.

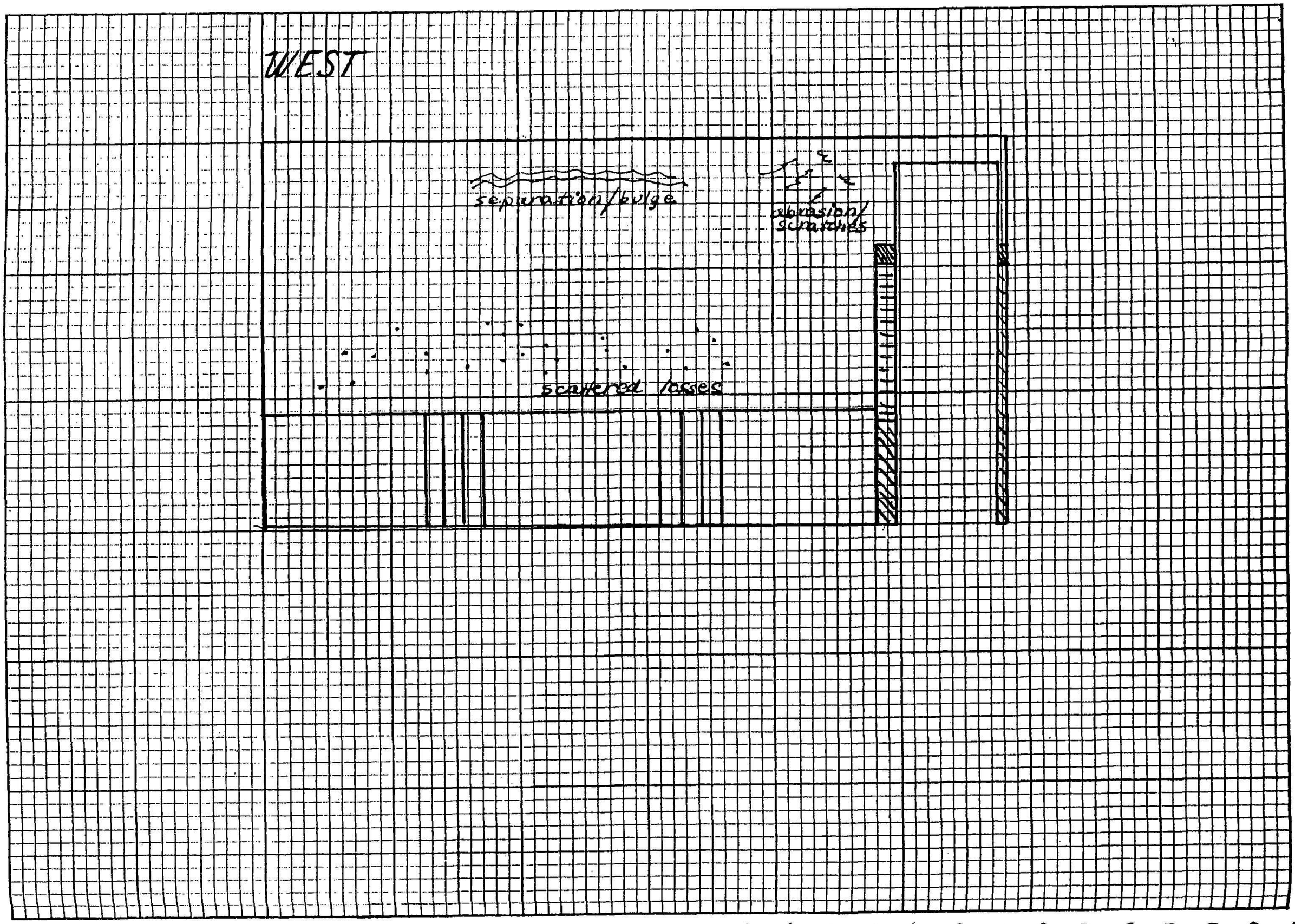
Cleaning Tests:

Cleaning tests were briefly conducted on the white latex paint to determine whether or not it is possible to remove the obscuring film from the original paintings. Active organic solvents are required, yet it is indeed possible to make a separation, as the original paint film appears to be resistant to solvent action.

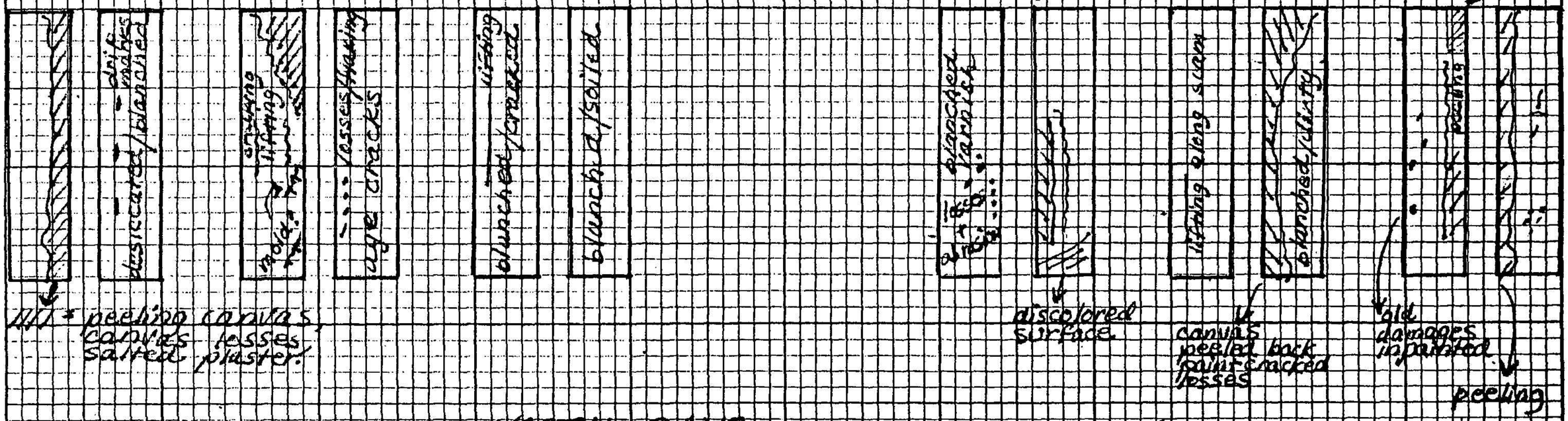
In the event that the decorative elements on this floor are to be returned as nearly as possible to original condition, various options exist for rehabilitating the overpainted murals. Among the options is the possibility of recovering the original paintings by dissolving the white overpaint, or making facsimilis by further investigation of original colors by Munsell color matches to small sample areas of uncovered original surfaces. A compromise of these two approaches may be appropriate. Should the avenues be explored further, the assistance of a conservator should be included to advise in matters of possibilities, time estimates, techniques, skill level of operators, and toxicity of chemical solvents.



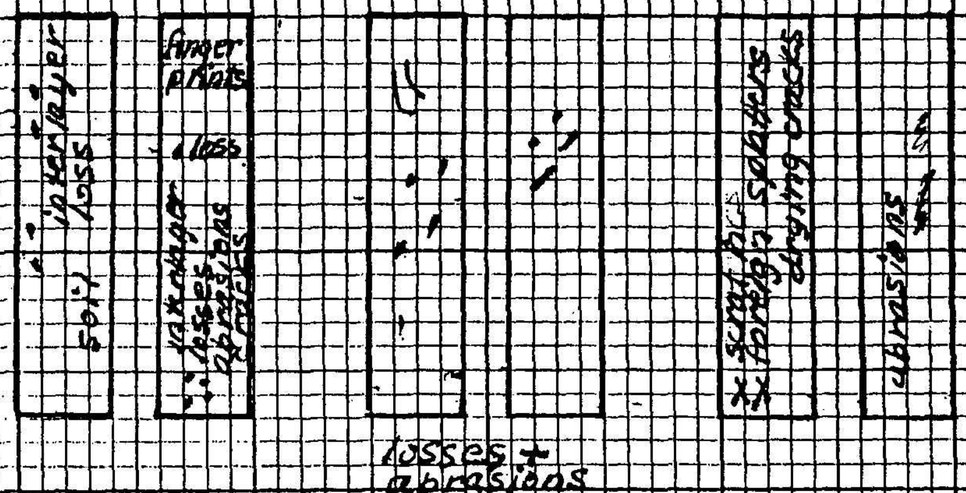
location: Maritime Museum, first floor
artist: Hilaire Hiler
subject: undersea life



SOUTH BAYS



NORTH BAYS



SOUTH

paint drip

paint drip

scratches

lost paint

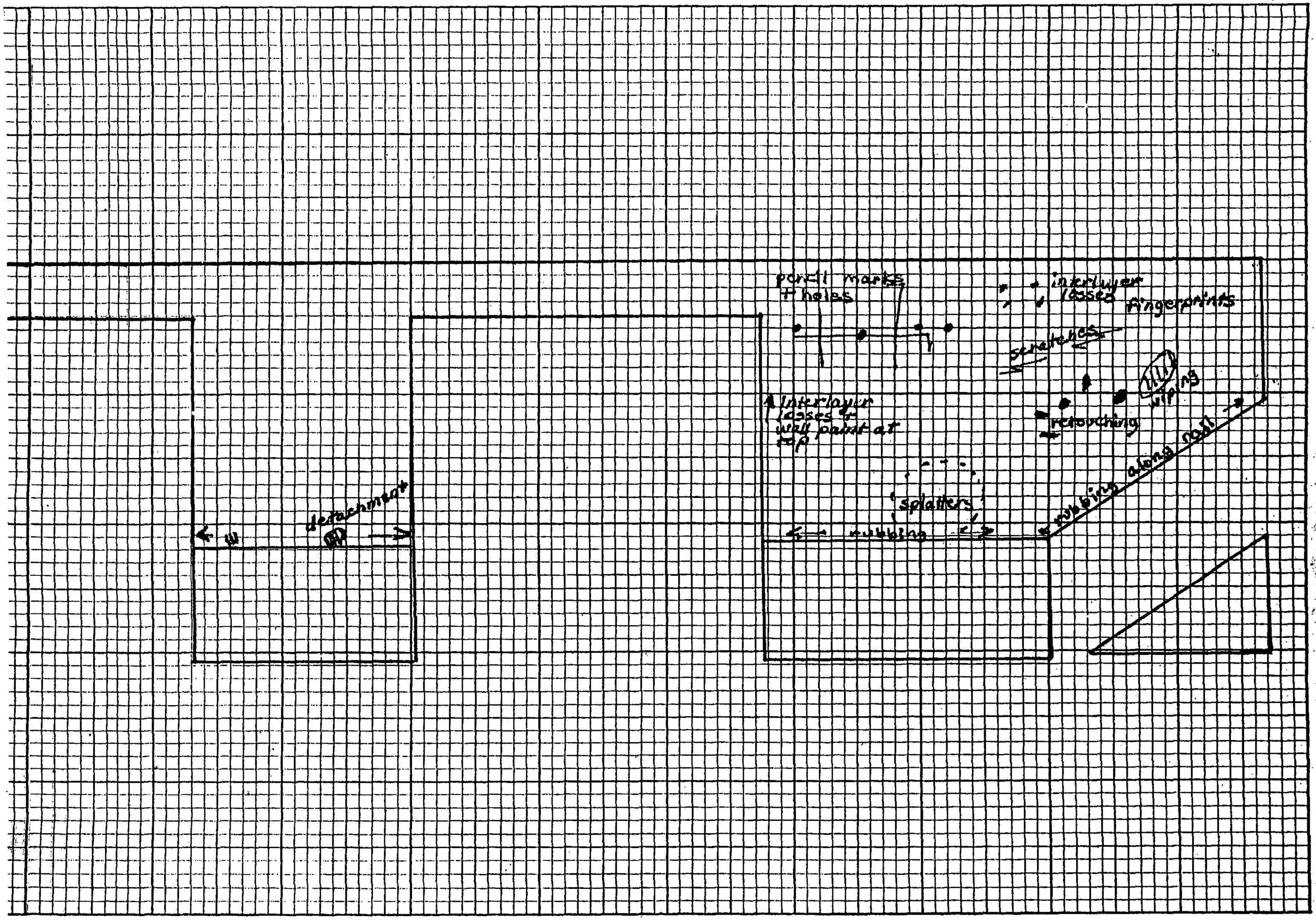
fingerprints / scratching

torn canvas/holes

abrasion

rubbing

KEUFFEL & ESSER CO.



scratches + losses

scratches

holes

hole

NORTH

seam open

abrasions

separations from weld

gouges with old scratching

interlayer peeling

rubbing

abrasions loss of

considerable surface dirt

abrasion

rubbing

abrasions

paint flaked & curled on surface

overpaint

dirt & abrasions

dirt

scratches & abrasions

CONSERVATION SURVEY OF MURALS:
NATIONAL MARITIME MUSEUM, AQUATIC PARK, SAN FRANCISCO
Addendum Report: Overpaint Removal, Second Floor Murals

July 14, 1986

by Anne Rosenthal, Conservator
Box 384
San Rafael, CA 94901

The following report is a further comment on the possibilities of overpaint removal from the surfaces of the second floor murals in the National Maritime Museum, and should be read in conjunction with an earlier comments prepared and dated February 7, 1986.

Mural designs by Richard Ayre: Second Floor

SOLVENT TESTS:

A variety of solvents can be employed for the removal of the latex paint which obscures the paintings on the second floor. The following is a list of solvents tested:

acetone
xylene
ammonia
detergent/astringent

Each of these solvents, with repeated application and friction, can remove the layers of latex paint from the murals. The action is relatively the same: the paint is softened, and must be dissolved somewhat slowly and with repeated rubbing of the surface. Acetone is the preferred solvent in this category due to its greater speed of action.

Dimethylformamide (DMF)

The action of DMF on the overpaint is superior to acetone, as the dissolving action is stronger once the solvent has had several moments to work. The toxicity of this solvent, however, is not desirable, and the paint film beneath the overpaint (the original) is at greater risk of attack by the slow evaporating DMF (a good oil-dissolver). The original paint film is oil based.

"Strypeeze" by Savogran Co. (commercial paint stripper)
contains: methanol, toluene, methylene chloride, acetone.

This commercial paint stripper, and probably others like it which are in paste or semi-paste form, will probably behave in a similar manner. When compared to the action of the other solvents and methods tested, this product is the best. The method of application is superior (paste clinging to the vertical surface). The action of the solvent is superior; this was the only solvent tested which caused the overpaint to swell and separate from the substrate, requiring much less friction to remove the overpaints. While the solvent action is strong, with proper timing there may be less danger to the original paint film, as layers of overpaint can be removed in large chunks by peeling or scraping with a dull instrument, rather than by rubbing the surface repeatedly (which is required with other solvents).

Four square inches of overpaint were removed by the Strypeez in eight minutes, although a much larger section can probably be done in the same amount of time. The semi-paste variety of Strypeez was used, which required repeated application. In approximately eight minutes small wrinkles could be seen in the overpaint. At that time, a small wooden stick was used to dislodge an edge of the film. This created air pockets between the overpaint and the original paint; the air pockets "grew" instantly, and the overpaint could be peeled away. Rinsing the surface with mineral spirits (a fast evaporating aliphatic hydrocarbon solvent would probably work best) would help halt continued action of the paint stripper. The original paint film appeared less disturbed than with other methods tried.

Mechanical Methods of Paint Removal:

Mechanical methods of paint removal, such as use of sandpaper, scalpels or various other scraping devices is not advised. The overpaint layer is not uniformly thick and the tendency is to abrade the surface of the original paint unavoidably. Some damages to the original already exist, but to minimize further damage (scratches, interlayer losses), mechanical means are not helpful, unless used extremely cautiously in combination with solvents which will soften the overpaint prior to scraping.

PROBLEMS AND RECOMMENDATIONS:

Several observations were made with respect to a project to remove the overpaints entirely:

1) On rough surfaces (see the "coral" on the south wall), even distribution of the paint stripper is difficult to obtain. Likewise, overpaints are thickly deposited in crevices, and overpaints are likely to remain trapped in these locations. Repeated application of solvents may cause sensitivity of the original paint, loss or skinning of the original. On textured surfaces progress will be slow, and may require inpainting later in treatment (either to cover residues of overpaint, or to compensate for losses in the original paint film).

2) The method of application of the paint stripper, timing of the solvent action, and removal will require a skillful hand. While the operators may not be conservators, a conservator should organize and supervise the project, and be on hand for most of the treatment. Skill level required would be that of a conservation technician, someone who has the theoretical judgement and dexterity to perform delicate work which carries a risk of damaging artwork.

3) Application of solvents to remove overpaint can cause some difficulty such as producing "lap" lines, where sections of solvent application meet. This may create some checkerboard-like effects on the surface of the original paint. Care must be taken to avoid this phenomenon, however some such irregularities may be unavoidable. Planning and executing the procedure should therefore be with supervision of a conservator. The behavior of the materials in actual practice may be different than those expected as a result of small test sections.

4) Further treatment to clean surfaces, to blend off areas of damage or to compensate for unknown irregularities will require further treatment of the paintings by a conservator, or supervised by a conservator, after overpaint removal for best visual results.

5) Since the solvent recommended for use is toxic to the operators, safety requirements must be fully enforced. Good ventilation must be provided, and safety gear must be worn (ie. respirators with fresh filters provided). Due to the flammability and toxic quality of the material, perhaps doing the work in small sections would be advisable. Depending upon circumstances of timing and funding, the work may be done in small parts over a long period of time, rather than all at once.

6) Removal of overpaints is by far the most desirable course of treatment, rather than making excavations for Muncell matches and repainting with modern paints. The subtle colors and design of the original paintings may never be fully known except through an effort to uncover large surfaces. Some liberties may have to be taken with inpainting, but an effort to uncover as much original material as possible is desirable, as much of the paint should be in satisfactory, if not very good, condition, and should yield significant information on the total design concept of the building.

C.94

INTERIM CONSERVATION TREATMENT

Hilare Hiler Murals
Main Lobby, National Maritime Museum
Aquatic Park, San Francisco

April 1988

By: Anne Rosenthal, Conservator
P.O. Box 384
San Rafael, CA 94901

The subject of this report is a remedial or interim conservation treatment to arrest water damage to the murals in the window bays of the main lobby of the Maritime Museum.

An outline of reasonable expectations and limitations of such a conservation treatment, to be undertaken without repair to the building itself, was submitted by Anne Rosenthal, conservator, to John Maounis, Supervisory Curator, March 11, 1988.

Further complications of conservation treatment (ie. whether or not to remove sections of canvas in the window bays, future treatment) were discussed at a meeting on-site March 30. This meeting was attended by the conservator, Diane Nicholson, Regional Curator, Richard Borges, Historic Preservation Architect, Sara Halaj, Registrar, and John Maounis. The consensus opinion of this group was that a conservative, stopgap treatment to stabilize the condition of the paintings was best, especially since future repair, use and jurisdiction of the building is not altogether clear. My initial proposal contained in the letter dated March 11 to John Maounis was approved.

The treatment was carried out between April 1 - 12, 1988, with the assistance of Karen Sherwood, staff conservation technician.

The following is a description of the treatment:

1. Curtain rods and cords were dismantled from the window bays. (K.S.)

2. Pre-treatment photographs were taken, color slides and color prints. (KS and AR).

3. John Burke (conservator) removed most of the loose plaster and efflorescence from behind the canvas prior to Anne Rosenthal's work, therefore, little of this remained to be done. Some debris located in pockets between the canvas and wall is not easily dislodged, and a slight amount remains. This accounts for some of the distortion of the fabric.

4. In order to administer a consolidant to reattach loose paint, the dog-eared parts of the canvas had to be unrolled. Because of extreme embrittlement, unrolling could only be done safely after humidification of the canvas.

Humidification was accomplished by constructing small humidity chambers with plastic sheeting around each section of distorted canvas. Humid air was introduced into the chamber by an ultrasonic humidifier, until the paint and canvas became pliable enough to unroll without splitting. Many old distortions remain in the canvas despite this treatment.

5. Acryloid B72 (approx. 12%) was brushed onto the painted surface in preparation for facing. Efforts were made to introduce the resin beneath areas of lifted paint, to serve as an adhesive. After drying, loose paint was reattached to the fabric by reactivating the Acryloid B72 through silicone release paper with the heat of a tacking iron.

6. Once the loose and distorted paint was consolidated, and flattened to the degree possible, a facing could be attached to the surface of the painting. A medium weight Japanese tissue was placed over the paint film, and methyl cellulose (ca. 3%) was brushed through the tissue from the front side. The facing was tamped and rubbed in some places to dislodge air bubbles and to help the paper conform to (sometimes severe) planar irregularities.

7. The canvas was temporarily pinned to the wall during drying of the facing to help the canvas remain flat against the wall. There is a great deal of tension and memory of distortion in the fabric, and the pins are not completely effective. The pins should be replaced with a rust resistant substitute as soon as possible.

FUTURE TREATMENT:

The facing is a temporary solution to the problem of preserving flaking paint and islands of torn canvas at the edges of the mural. The facing should be examined several times each year to determine its efficacy.

Future treatment must include more thorough consolidation, repair of tears, compensation of losses, cleaning and a significant effort to remove distortions from the canvas, and to reattach the canvas to the wall.

The behavior of the small damaged portions of the mural at the window bays could not be thoroughly known prior to treatment. The treatment has provided some notion of the behavior of the mural, and some notion of future treatment possibilities.

Indeed it may not be possible to effect repairs both to the building and to the mural without removing sections of the mural. Working with these small sections was extremely difficult on-site. Repair to the plaster wall would be most difficult, if not impossible, with sections of canvas in the way of the workmen. Treatment to flatten and consolidate the paint and canvas would be short of impossible with the canvas remaining attached to the wall, and the treatment being attempted on-site.

Future treatment will require extremely careful planning, and a sterling commitment to rehabilitate the decaying fabric of the building.