

MARE ISLAND NAVAL SHIPYARD, FINGER PIERS 22 & 23
Railroad Avenue near Eighteenth Street
Vallejo
Solano County
California

HABS CA-1543-CY
CA-1543-CY

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CA-1543-CY

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN BUILDINGS SURVEY
PACIFIC GREAT BASIN SUPPORT OFFICE
National Park Service
U.S. Department of the Interior
600 Harrison Street
San Francisco, CA 94103

**HISTORIC AMERICAN BUILDINGS SURVEY
MARE ISLAND NAVAL SHIPYARD, FINGER PIERS 22 & 23**

HABS No. CA-1543-CY

- Location:** Located in Shipyard South, east of Railroad Avenue, Mare Island, City of Vallejo, Solano County, California
- U.S.G.S.: Mare Island, 7.5' Topographic Quadrangle, 1959, photorevised 1980
UTM Coordinates: Pier 22 – Zone 10 564922 E, 4215814 N (west end) and 565123 E, 4215903 (east end); Pier 23 – Zone 10 564991 E, 4215730 N (west end) and 565196 E, 4215827 N (east end)
- Present Owner:** 63D United States (U.S.) Army Regional Readiness Command (RRC)
- Present Use:** 63D RRC Military Ship Piers
- Significance:** Finger Piers 22 and 23, completed in 1942, are considered significant for their association with U.S. Naval history and the Mare Island Naval Shipyard (MINSY), the first naval installation on the west coast of the U.S. Portions of the Mare Island Naval Shipyard comprise a National Historic Landmark. The finger piers are outside of the landmark, but within the Mare Island Shipyard Historic District. These structures are contributing elements of the successful base operations at Mare Island. They are representative examples of pier design, construction methods and materials used for the construction of ship berthing area at Mare Island during the World War II (WWII) era, and are two of three identical piers – the Finger Piers – completed in the same year. The addition of new berthing areas in the WWII era, such as the Finger Piers, allowed the naval shipyard to berth and service 100 ships at one time.
- Description:** Finger Piers 22 and 23 are each approximately 60,000-square foot concrete berthing piers of functional design (CA-1543-CY-2 through CA-1543-CY-12). They are located at the Shipyard South area of the island, along with one other identical pier (Finger Pier 21) and extend from the western quay wall into Mare Island Strait. The other buildings and structures in this area were constructed in the early 1940s at the onset of World War II. Although MINSY closed in 1993, the U.S. Navy's Small Boat Unit 11 continued to use the piers until 1997. The U.S. Army Reserve has used the piers since mid-1997.

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Finger Piers 22 and 23 each consist of an 80-foot-wide by 750-foot-long reinforced concrete platform pier that is supported by square reinforced concrete pilings. Each pier's platform is surfaced with crushed rock- or aggregate-laden concrete and has an eastern end that is rounded at the corners. The northwest, southeast and northeast edges of the platform are outlined with concrete curbing, 10 inches wide and eight inches high. Just beyond the curbing, the outsides of the piers are sided with paired lengths of 12-inch-square dimensioned timber bumpers; the outer timbers are set at approximately five-foot, eight-inch lengths between (and attached to) approximately one-foot-diameter wood pilings (CA-1543-CY-2 through CA-1543-CY-8). The eastern end of each pier, especially the rounded corners, is largely protected by groupings of 12-inch-diameter pilings (CA-1543-CY-9, CA-1543-CY-10). There is a metal ladder at the southeast side of each pier, close to the western quay wall, that extends downward into the water.

The northwest and southeast sides of the piers generally each include 18 iron tie-offs, six electrical hook-ups, six water/air/steam connection boxes (CA-1543-CY-13) and five sewage connections. There are two sizes of tie-offs along each side of each pier, generally six large and 12 small tie-offs. (The northeast end of each pier has or used to have at least two tie-offs/anchors as well.) The majority of these elements are set upon eight-inch-high concrete bases. Some of the enclosures for the utility connections appear original (CA-1543-CY-13); however many of the internal components/connections appear to have been replaced over the years. Other original utility connections have been removed and replaced less than 50 years ago. The piping for all utilities extends beneath or along the sides of the platform of the piers; the majority of the pipes are modern additions or replacements of originals.

Standard gauge railway tracks extend the length of each pier, one track along the northwest side and one along the southeast side (CA-1543-CY-11, CA-1543-CY-12). The marks from a second length of track to each side of the piers are apparent and are now infilled with concrete. The tracks connect with two parallel northwest-southeast aligned railroad tracks that are southwest of the quay wall from which the finger piers extend. At the eastern terminus of each of the pier tracks is a steel component bumper stop (with bolted connections). A northeast-southwest alignment of buildings and structures is centered between the railway tracks on each pier, including an electrical distribution center, sewage pumps and five work stations/observation platforms (with security lighting).

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Centrally set on each pier is an original two-story building (CA-1543-CY-3, CA-1543-CY-7) that houses electrical distribution equipment and measures 16 feet (northeast and southwest sides) by 85-feet (northwest and southeast sides) by approximately 22 feet high. To the southwest of each pier's electrical distribution center (Building 734 on Pier 22 and Building 736 on Pier 23) are two sewage pump areas; both areas are surrounded by metal pipe railings, have chained-off entries to the area and include equipment, such as switch/control boxes manufactured by Calhoun & Poxon Co., Inc. (Los Angeles, CA) and General Electric, large pipes produced in 1975 in Oskaloosa, Iowa, and other pump elements produced by Multiplex Manufacturing Co. (Berwick, PA). These pump areas appear to have been added less than 50 years ago and are presently inactive due to breakage.

There are original work stations/observation platforms (CA-1543-CY-9) on each pier – three northeast of the electrical distribution center and sewage pump areas on both Piers 22 and 23 and two to the southwest on Pier 22 only; the two southwestern stations were removed from Pier 23. Each station has four eight-inch wide-flange steel posts (attached to concrete footings) set at approximately 15-feet on center in a square formation. The posts support an approximately 20-foot-square reinforced concrete platform (with steel framing beneath) at about a 13-foot height. The raised platform is surrounded by a metal pipe railing (with attached floodlights at the corners) and is accessed via a metal ladder at one side of the station. Two sides of each work station include nine metal pipes, each about four and one-half inches in diameter, that extend vertically up from beneath the pier and through the work station platform to a box atop the platform; the box was where larger ships plugged into shore power. Most metal-to-metal connections on each station are riveted.

The southwestern-most work station on Pier 22 has a modern (less than 50-year-old) high-voltage unit (12,000 volts) beneath the raised platform. Pier 23 has the same high voltage unit set in the former location of its southwestern-most work station. These high-voltage units are manufactured by G & W Electric Co., Blue Island, Illinois. The western 90 feet (approximate measurement) of the northwest and southeast sides of both piers include modern chain-link fencing that blocks access to the anchors and utility connections in that section.

As mentioned above, the piers extend from the western reinforced concrete-retained quay wall (CA-1543-CY-8) in the Shipyard South area. This quay wall includes concrete curbing and small iron tie-offs/anchors, similar to those elements on the piers.

Historical Context: Finger Piers 22 and 23 were constructed as part of the Mare Island naval facility located in Vallejo, California. The shipyard was established by the U.S. Navy in 1854 as a ship building and repair facility. MINSY was the first west coast naval installation and was the only such facility in California for many years. Architectural plans and drawings identify draftsmen and contractors by initials only.

Mare Island's built environment is the product of over 100 years of military construction and consists of a blend of buildings and structures that demonstrate many different historical functions, construction technologies and architectural styles. The Fingers Piers, planned in 1941 and ready for service in 1942, extend eastward from the quay wall system within the Shipyard South area of the island.

In response to growing tensions in Europe, the U.S. Congress, in 1938, decided to expand the size of the American fleet by 20 percent. This expansion escalated at the end of 1941 with the entry of the U.S. into WWII. There was a massive expansion of aircraft and shipbuilding industries at Mare Island during WWII. A fundamental redesign of the Shipyard South area resulted at the brink of the U.S. entry into WWII, including the addition of the Finger Piers. The Finger Piers (Piers 21, 22 and 23) were integrated into the area's quay wall system and were fully completed and ready for service in 1942.

“The completion of the finger piers in 1942 marked fundamental redesigning of the Shipyard South area and the culmination of the reclamation of the tule lands started almost 100 years prior. Integrated into the quay wall system, the three 750 foot piers added 7340 feet of berthing space for fitting out ships. In practical terms this meant that by the end of WWII, Mare Island had the capability of berthing and working on 100 ships at one time” (JRP Historical Consulting with PAR Environmental Services, Inc. 1996: Section 7, page 45).

Other buildings and structures were also constructed to support the bustling activity in the berthing areas, including those in Shipyard South, and the adjacent ammunition depot. Construction of new vessels, including submarines, mainly took place in Shipyard South during this period. The shipbuilding facilities that were added to this area of the island reflected the progressive skill and speed with which WWII naval vessels were being produced.

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The surviving buildings and structures from the WWII era represent an important collection of buildings and other facilities, “arranged in a manner that enables an understanding of how the base functioned at that time” (JRP Historical Consulting with PAR Environmental Services, Inc. 1996: Section 8, page 53). The three finger piers within the Shipyard South area of the island were outfitted with identical equipment and facilities, including an electrical distribution center, work stations, ship tie downs, and utility connections. Although modifications have been made over the years to the Finger Piers, such as Piers 22 and 23, the majority of changes were to update utility equipment. The historic layout and use, as well as the exteriors of the original buildings and structures, have essentially remained unchanged. These are the only representations of WWII era pier design in the Shipyard South area of Mare Island.

After MINSY closed in 1993, the City of Vallejo was granted use of everything on the island; however, the U.S. Navy was allowed to continue to using the piers for its Small Boat Unit 11. Pier 22 North was leased by the City of Vallejo to a scrapping company that was dismantling the moth ball fleet in the Carquinez Strait from 1995 to 1996. When the U.S. Army Reserve began the process of acquiring the Piers 22 and 23 in 1997, the scrapping company moved to Piers 20 and 21, north of Pier 22. The piers are used by U.S. Army Reserve personnel to facilitate their training missions for their 481st Training Company (heavy boat). On July 12, 2002, ownership of Finger Piers 22 and 23 was transferred from the U.S. Navy to the U.S. Army Reserve.

In early 1998, the U.S. Army Reserve installed shore power connections to provide electricity to their ships when docked at Pier 23. In the same year the local power company, Island Energy, re-energized an existing transformer in Building 736 on Pier 23 to provide the shore power. In 2000, improved security lighting was added to Pier 23 and a step down transformer was installed in Building 736 to energize lighting located on the work stations/observation platforms. Sodium vapor bulbs were replaced with new metal halide bulbs in each of the existing lights.

Pier 22 is used by the U.S. Army Reserve for docking its military ships that do not require shore power due to the lack of operational shore power and pier lighting on this pier.

Sources:

A. Architectural Drawings

U.S. Department of the Navy. *Navy Yard, Mare Island, California – Finger Piers & Building Ways No. 3, Structural Details, Foundation for 125/250 V. MG. Set (Y & D Drawing No. 282862)* 1941a. On file, U.S. Army Reserve, Vallejo, CA.

U.S. Department of the Navy. *Navy Yard, Mare Island, California – Finger Piers & Building Ways #3, Substations Piers 21-22-23, Electrical Work (Y & D Drawing No. 282880)* 1941b. On file, U.S. Army Reserve, Vallejo, CA.

The following plans were consulted, but documented minor revisions to specific aspects of this facility. They were not reproduced for this effort because they provided limited information regarding the overall design or plan of the building.

U.S. Department of the Navy. *Mare Island Naval Shipyard, Vallejo, Calif. – Repair to Finger Piers 21, 22 & 23, Saltwater Pipe Plan and Details (NAVFAC Drawing No. 6081446)* 1977a. On file, U.S. Army Reserve, Vallejo, CA.

U.S. Department of the Navy. *Mare Island Naval Shipyard, Vallejo, Calif. – Repair to Finger Piers 21, 22 & 23, Fire Alarm System Plan and Details (NAVFAC Drawing No. 6081447)* 1977. On file, U.S. Army Reserve, Vallejo, CA.

U.S. Department of the Navy. *Mare Island Naval Shipyard, Vallejo, Calif. – Replacement of Compressed Air Lines, Finger Piers 21-23 and Berths 20 and 24, Mare Island, Cal., Piers 22, 23 & 24 (NAVFAC Drawing No. 6145058)* 1981. On file, U.S. Army Reserve, Vallejo, CA.

U.S. Department of the Navy. *Mare Island Naval Shipyard, Vallejo, Calif. – Replacement of Compressed Air Lines, Finger Piers 21-23 and Berths 20 and 24, Mare Island, Cal., Piers 22-24/Existing Conditions & Removal Plan (NAVFAC Drawing No. 6145144)* 1981. On file, U.S. Army Reserve, Vallejo, CA.

B. Historic Maps and Views:

No historic views or aerial photographs of these structures were located for this effort..

C. Interviews

Volk, J. S. Personal communication between Tracy Bakic, PAR Environmental Services, Inc. and J. Stephen Volk (Environmental Scientist [Adecco TAD], 63D U.S. Army Regional Readiness Command CST Environmental Division), Concord, CA, 2002.

D. Bibliography

JRP Historical Consulting Services with PAR Environmental Services, Inc. *National Register of Historic Places Registration Form for Mare Island Historic District, Vallejo, California*, 1996. On file, State of California Office of Historic Preservation, Sacramento and U.S. Department of the Interior, National Park Service, Washington, D.C..

Kinane, A. (Mare Island Naval Shipyard). California Department of Parks and Recreation Primary Record forms for Finger Piers, Piers 21, 22, 23, Mare Island Naval Shipyard, Mare Island, California, 1994. On file, State of California Office of Historic Preservation, Sacramento.

PAR Environmental Services, Inc. *Integrated Cultural Resource Management Plan for Army Lands at Mare Island National Historic Landmark, Vallejo, Solano County, California*, 2002. On file, State of California Office of Historic Preservation, Sacramento.

Project Information: After the September 11 terrorist attack, new standards were implemented for federal facilities. Building setbacks from roads and parking areas have been greatly increased. The Department of Defense's Antiterrorism Standards for Buildings, 4-010-01 8 October 2003 Distances per United Facilities Criteria require minimum setbacks that are greater than the existing setbacks. While these structures are included in the MOA, at this time they will not be affected by the project. This undertaking has been approved in accordance with a Memorandum of Agreement between the California State Historic Preservation Officer and the U.S. Army Reserve, pursuant to 36 CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act (16 U.S.C. 470f).

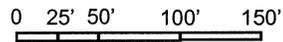
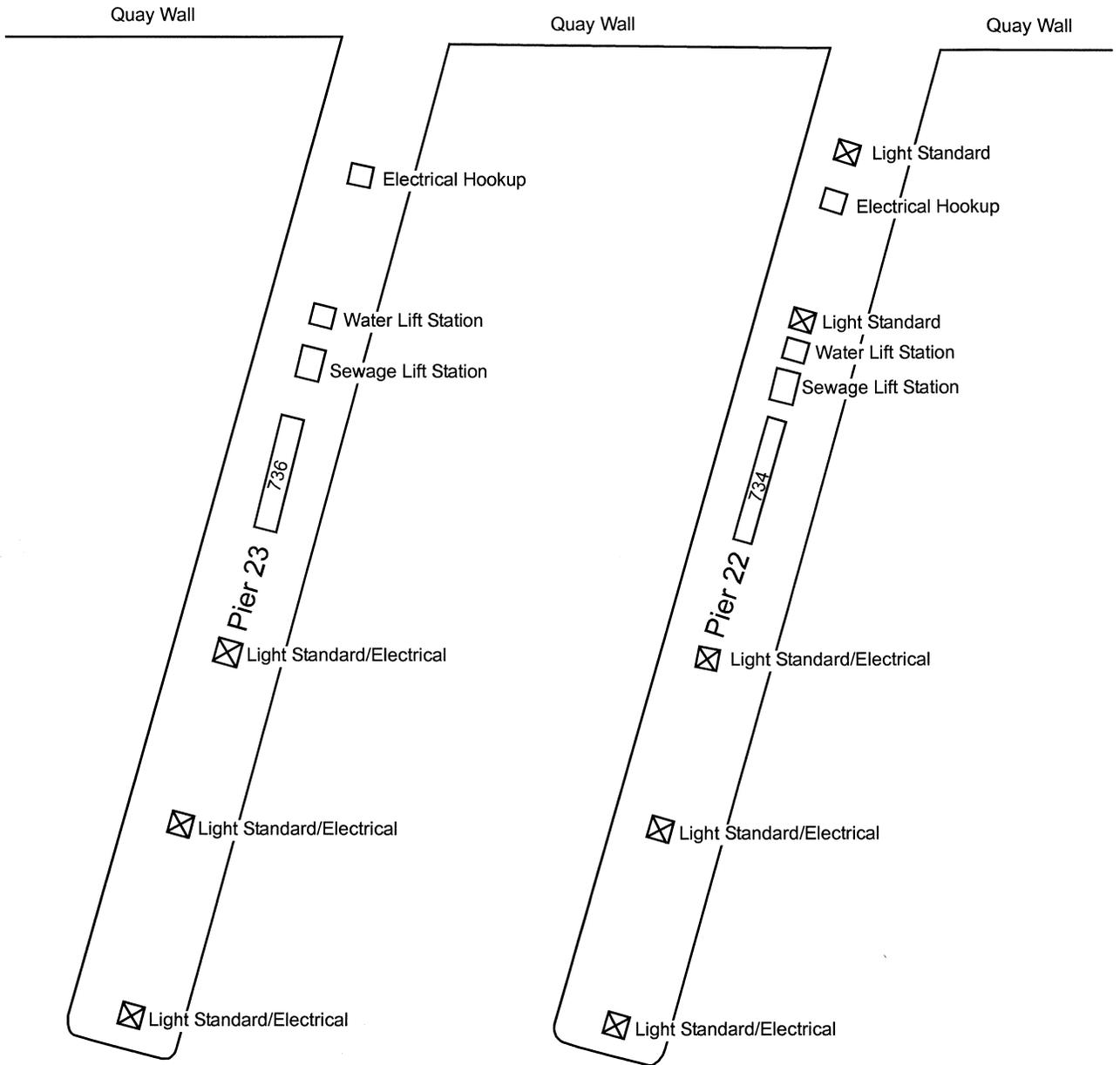
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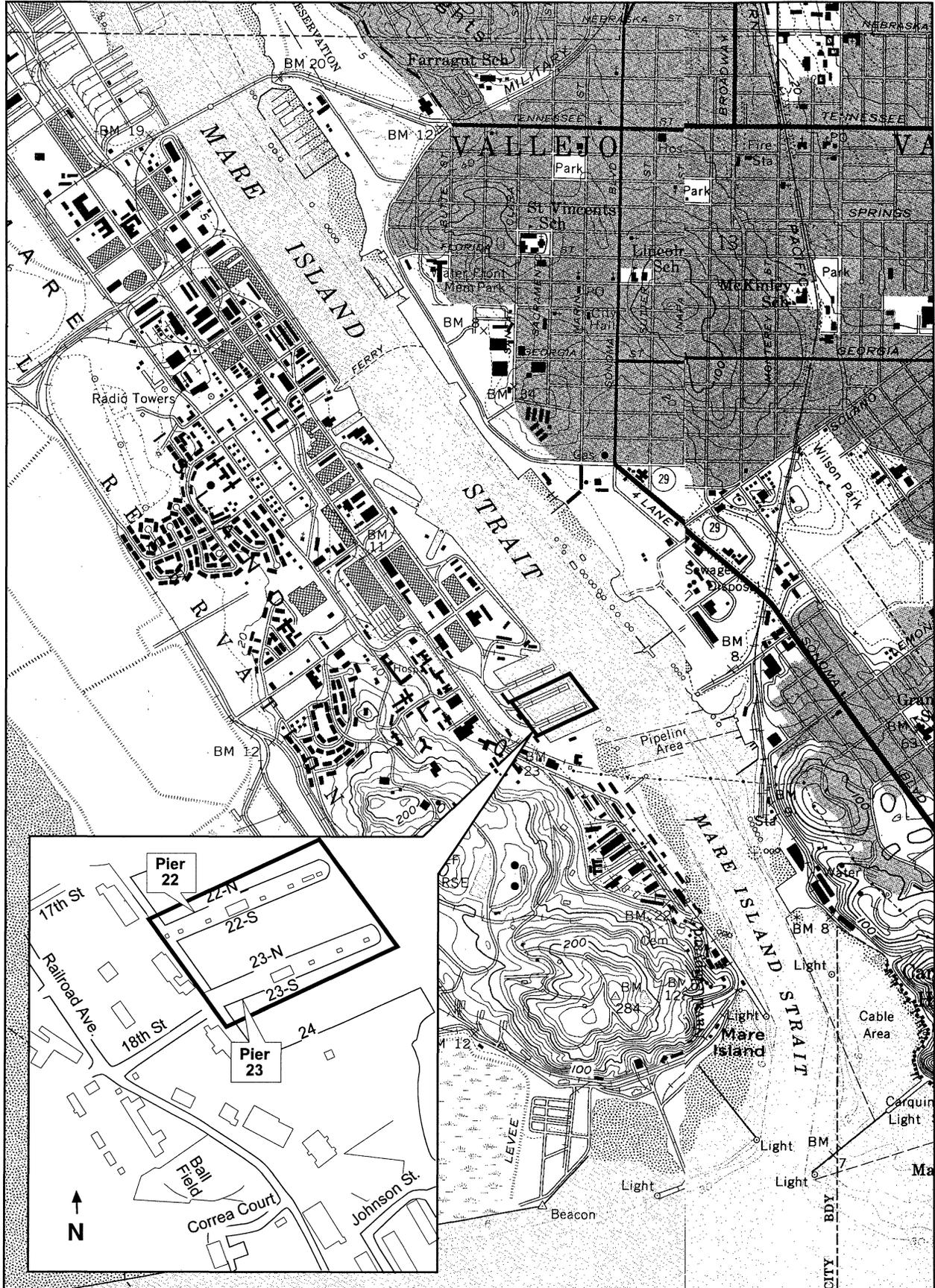
Prepared By: This report was prepared by Tracy Bakic, cultural resources specialist with PAR Environmental Services, Inc., Sacramento, California. Photography and the associated photographic index were prepared by Dave Devries, Mesa Technical, Berkeley, California.

Submitted By: 63D U.S. Army Regional Readiness Command Headquarters, 4235 Yorktown Avenue, Los Alamitos, CA 90720-5002

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Location Map and Site Plan (Inset) of Mare Island Naval Shipyard Pier 22 and Pier 23
(USGS: Benicia and Mare Island, CA 7.5' Topographic Quadrangle, Both 1959, Photorevised 1980)