NPS Form 10-900-a
(8-86)

OMB Approval No. 1024-0018

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Section number _____ Page _____

SUPPLEMENTARY LISTING RECORD

NRIS Reference Number: 00000364 Date Listed: 4/28/2000

Richmond Shipyard Number Three | Contra Costa | CA
Property Name | County | State

N/A
Multiple Name

This property is listed in the National Register of Historic Places in accordance with the attached nomination documentation subject to the following exceptions, exclusions, or amendments, notwithstanding the National Park Service certification included in the nomination documentation.

Signature of the Keeper — Date of Action: 4/28/00

==========

Amended Items in Nomination:

Historic Functions:
Add *Industry-manufacturing facility, industrial storage; Defense-naval facility.*

Current Functions:
Add *Industry-manufacturing facility.*

These revisions were confirmed with the CA SHPO.

DISTRIBUTION:
National Register property file
Nominating Authority (without nomination attachment)

NPS Form 10-900
(Rev. 10-90)

OMB No. 1024-0018

304

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in *How to Complete the National Register of Historic Places Registration Form* (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

historic name Richmond Shipyard Number Three
other names/site number Kaiser Shipyard, Richmond Number Three

2. Location

street & number Point Potrero N/A ☐ not for publication
city or town Richmond N/A ☐ vicinity
state California code CA county Contra Costa code 013 zip code 94804

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1986, as amended, I hereby certify that this XX nomination ☐ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property XX meets ☐ does not meet the National Register Criteria. I recommend that this property be considered significant XX nationally ☐ statewide ☐ locally. (☐ See continuation sheet for additional comments.)

Signature of certifying official/Title Date Feb. 22, 2000

State Historic Preservation Officer

State or Federal agency and bureau

In my opinion, the property ☐ meets ☐ does not meet the National Register criteria. (☐ See continuation sheet for additional comments.)

Signature of commenting or other official/Title Date

State or Federal agency and bureau

4. National Park Service Certification

I, hereby certify that this property is:
☒ entered in the National Register
☐ See continuation sheet.

☐ determined eligible for the National Register
☐ See continuation sheet.

☐ determined not eligible for the National Register

☐ removed from the National Register
other (explain): _____

for Signature of the Keeper

Date of Action 4/28/2000

5. Classification

Ownership of Property
(Check as many boxes as apply)
☐ private
☒ public-local
☐ public-State
☐ public-Federal

Category of Property
(Check only one box)
☐ building(s)
☒ district
☐ site
☐ structure
☐ object

Number of Resources within Property

Contributing	Noncontributing	
6	2	buildings
		sites
5		structures
		objects
11	2	Total

Name of related multiple property listing (Enter "N/A" if property is not part of a multiple property listing.)

N/A

Number of contributing resources previously listed in the National Register

6. Function or Use

Historic Functions
(Enter categories from instructions)
Defense, other: maritime shipbuilding

Current Functions
(Enter categories from instructions)
Industry, other: storage and ship repair facility

7. Description

Architectural Classification
(Enter categories from instructions)
Streamlined Moderne
Industrial Vernacular

Materials
(Enter categories from instructions)
Foundation: concrete
Walls: Concrete, corrugated metal, wood
Roof: metal, concrete
Other:

Narrative Description - SEE CONTINUATION SHEET
(Enter Categories from instructions)

8. Statement of Significance

Applicable National Register Criteria
(Mark "x" in one or more boxes for the criteria qualifying the property for National Registar listing.)

- ☒ **A** Property is associated with events that have made a significant contribution to the broad patterns of our history.
- ☐ **B** Property is associated with the lives of persons significant in our past.
- ☒ **C** Property embodies the distinctive characteristics of a type, period,or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- ☐ **D** Property has yielded, or is likely to yield information important in prehistory or history.

Criteria Considerations
(Mark "X" in all the boxes that apply.)

- ☐ **A** owned by a religious institution or used for religious purposes.
- ☐ **B** removed from its original location.
- ☐ **C** a birthplace or a grave.
- ☐ **D** a cemetery.
- ☐ **E** a reconstructed building, object,or structure.
- ☐ **F** a commemorative property.
- ☐ **G** less than 50 years of age or achieved significance within the past 50 years.

Areas of Significance
(Enter categories from instructions)
Maritime History
Engineering
Military

Period of Significance
1942-1945

Significant Date
N/A

Significant Person
(Complete if Criterion B is marked above)
N/A

Cultural Affiliation
N/A

Architect/Builder
Wortman, Mory, Architect
Larson, Anor, Engineer

Narrative Statement of Significance - SEE CONTINUATION SHEET
(Explain the significance of the property on one or more continuation sheets.)

9. Major Bibliographical References

Bibliography - SEE CONTINUATION SHEET
(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous documentation on file (NPS)
- ☐ preliminary determination of individual listing (36 CFR 67) has been requested.
- ☐ previously listed in the National Register
- ☐ previously determined eligible by the National Register
- ☐ designated a National Historic Landmark
- ☐ recorded by Historic American Buildings Survey # _____
- ☐ recorded by Historic American Engineering Record # _____

Primary Location of Additional Data
- ☐ State Historic Preservation Office
- ☐ Other State agency
- ☐ Federal agency
- ☒ Local government
- ☐ University
- ☐ Other

10. Geographical Data

Acreage of Property 70 acres (Approximate)

UTM References
(Place additional UTM references on a continuation sheet)

	Zone	Easting	Northing
1	10	555420	4196280
2	10	555980	4195840
3	10	555680	4195180
4	10	555540	4195760

___ See continuation sheet.

Verbal Boundary Description - SEE CONTINUATION SHEET
(Describe the boundaries of the property on a continuation sheet.)

Boundary Justification
(Explain why the boundaries were selected on a continuation sheet.)

11. Form Prepared By

name/title Nancy Goldenberg and Jody R. Stock
organization Carey & Co. , date April 12, 1999

street & number 460 Bush telephone (415)773-0773

city or town San Francisco state California zip code 94108

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps

A **USGS map** (7.5 or 15 minute series) indicating the property's location.

A **Sketch map** for historic districts and properties having large acreage or numerous resources.

Photographs

Representative **black and white photographs** of the property.

Additional items
(Check with the SHPO or FPO for any additional items)

Property Owner

(Complete this item at the request of the SHPO or FPO.)

name Surplus Property Authority of the City of Richmond, c/o Port Department

street & number P.O. Box 4046 telephone (510) 215-4600

city or town Richmond state CA zip code 94804

NPS Form 10-900-a OMB No. 1024-0018
(8-86)

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 7 Page 1

Summary

Shipyard Number Three occupies the tip of Potrero Point in Richmond, California. San Francisco Bay bounds this flat, asphalt-paved, roughly 140 acre site on three sides. Originally part of an 880 acre complex of four Kaiser Shipyards, Shipyard Number Three is now the only substantially intact shipyard in an area still primarily devoted to maritime industry. Rail line fragments criss-cross the asphalt pavement, vestiges of the electric railway that once hauled personnel and materials to the various buildings and, ultimately, to the basins for assembly. Predominant building materials include concrete, steel and wood; larger buildings are clad with corrugated metal or concrete, while smaller support buildings are wood-sided. The buildings, while functional and industrial, were nevertheless designed with a decided International Style flair.

Shipyard Three itself, despite some changes, is substantially intact. The five Basins and the remaining original buildings, particularly the dramatic General Warehouse, are sufficiently intact in both substance and context to still convey the spirit of the historic shipyard. In addition to the five Basins and associated platforms, surviving buildings include the General Warehouse, the Sheetmetal Shop, the Machine Shop, the Forge Shop, the Cafeteria and the First Aid Station. Original buildings that do not survive include the Pipe shop, Craft Houses, Electric Shop, Fittings Warehouse, Plate Shop, Boiler Assembly, Training Center, Personnel Building and Administration Building. The steel yard area has since been converted to land fill. Two metal-clad buildings post-date the period of significance.

Original Layout

When ground was broken for Shipyard Number Three in January, 1942, Potrero Point was a mountain covering the area now occupied by the basins, assembly platforms, and other buildings and structures erected to build ships for the United States. Approximately 2,200,000 cubic yards of rock and earth were moved during construction. Most of this earth was used as fill material for the lagoon to the west, forming acres of storage area, and for the parking areas on the east side of the yard.[1]

The original layout was L shaped, with rail and automobile access from the south (figure 1). A ferry slip along the east side of the yard, at Richmond Inner Harbor, provided further access. The parking area filled in the triangle of land west of the ferry slip. Five basins extended into the bay from the southwest edge of the point. The four major administrative and personnel-related

NPS Form 10-900-a OMB No. 1024-0018
(8-86)

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 7 Page 2

buildings stood in a north-south oriented row at the northern end of the site, along the electric railway line. These included a Cafeteria, Training Center, Personnel Building and Administration Building. Smaller personnel/administration buildings, among them the Matron's Building, Yard Office Annex and First Aid Station, were located in an area north of the Machine Shop and east of the Plate Shop. Further south were six substantial assembly buildings, including a Sheetmetal Shop, General Warehouse, Machine Shop, Pipe Shop, Electric Shop, and Fittings Warehouse. Three small Craft Houses stood along the channel-edge of the yard, at the Fitting Out Dock. West of this assembly area were the Basins, and to their north were the Assembly Platforms and Craneways. To the north of these, stood the Plate Shop, and west of that, the Boiler Assembly Building and steel yard. A ship repair area stood at the property's southwest edge. This area included two finger piers, a Ship Repair Facilities Building, two Craft Building & Substation Panels.

As was the case at the other shipyards, the 208,800 square foot Plate Shop was the Shipyard's largest building, "with an assembly bay as long as two football fields.[2]" Completed in October of 1942 at a total cost of $929,709.00, it provided facilities for the cutting, shaping and laying out of steel plates from wooden templates.[3] Period photographs show this building to have been similar in character to the still-extant Machine shop. Like that building, its steel frame was clad with corrugated iron. Horizontal steel sash ribbon windows accentuated the building's massing, with vertical ribbon windows marking the building entry. Demolished in the mid-1980s, its footprint is still visible on the tarmac.

A prominent feature of this and the other Richmond Shipyards were the whirly cranes. These could dangle 50 tons or more from their 100 foot booms. These cranes stood on the Craneways, with four serving each Basin.[4] None of these cranes survives at Shipyard Number Three, but at least three still stand at the site of Shipyard Number One, northeast of Shipyard Number Three.

According to site plans from 1944, there were a total of 32 buildings during the property's period of significance. Buildings that disappeared between 1944 and 1947 include the Check Station and Guard House, Yard Office Building, Maintenance Building and Fire Station, Switch House, Acetylene Building, Oxygen Building, Fitters Office Building, Compressor Building, Maintenance Garage, Yard Garage, Scrap Reclamation Building, Yard Office Annex, Women's Locker Building, Brick and Insulation Storage Building, Personnel Training Center, Matron's Building, Shore Power Building, Oil House, Ship Repair Facilities Building, and Craft Building

NPS Form 10-900-a OMB No. 1024-0018
(8-86)

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 7 Page 3

& Substation Panel.

1947 plans show only thirteen of the original 32 buildings. Buildings that disappeared between 1947 and 1974 include three Craft Houses, the Electric Shop, Boiler Assembly, Administration Building, Personnel Building, and Training Center. The Fittings Warehouse and Pipe Shop were demolished between 1974 and 1981.[5]

The Shipbuilding Process

Shipyard Three was laid out and constructed for permanence and ease of mass production. The level basins - as opposed to the slanted ways of the other yards, eased hull erection. The generous assembly areas, and the alignment and spacing of the buildings, all contributed to speed production.

The C4 ships built in Yard Three were designed by George G. Sharp of New York, a prominent naval architecture firm.[6] Sub-assembly drawings were prepared in the prefabrication engineering department, and then converted to wooden templates in the Mold Loft, a part of the Plate Shop. In the Plate Shop, these templates were drawn onto steel plate with soapstone, and then cut using a variety of large cutting machines.

Once cut, the pieces were brought to the assembly areas, which in Shipyard Three were between the Plate Shop and the Basins, for prefabrication. Instead of a narrow single plate, the first keel unit to be placed in the Basins was nearly the width of the ship and 45 feet long.

Propulsion machinery, as well as the propellers themselves, were assembled, cleaned and polished in the Machine Shop. The Boiler was assembled in the Boiler Assembly Building. Piping, mechanical and electrical equipment were installed to a great extent while the ship was still in the Basin.

In contrast to prior shipbuilding methods, ships leaving the Basins and Ways of the Richmond Shipyards were 85% complete, appearing to be finished products, before launching. After launching, the ship was taken to the outfitting berths for the final electrical connections, sheet metal work, furnishings and artillery installation.

Especially notable for Shipyard Three was the prefabrication of the C4 hotel unit - the largest

NPS Form 10-900-a OMB No. 1024-0018
(8-86)

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 7 Page 4

prefab section in all the shipyards. When rigged with its special strong back, its 212 tons were a sizeable load even for four whirly cranes. This unit was the equivalent of a four story steel building. Among its four decks were a bridge, officers quarters, galleys, pantries, radar and radio rooms and pilot house, considered the ship's nerve center.[7]

CONTRIBUTING BUILDINGS

Machine Shop

Completed September, 1942, this building provided facilities for the tooling and machining of parts for use in ship construction.[8] Rectangular in plan, the building measures 100 feet by 350 feet. Its area, including mezzanines, is 49,750 square feet. Built at grade on a concrete foundation, the central portion of the building, providing crane access, is four-stories high with a flat metal roof, flanked on the east and west by two-story wings running the entire length. Two varieties of corrugated metal clad the structure, punctuated by steel sash windows. Typical features include steel sash windows, rolling metal doors, metal roof access ladders and attached metal ventilation pipes.

The symmetrical south elevation is the primary building facade. Three continuous fenestration columns emphasize the verticality of the high central mass, with two narrower window columns flanking the wider central column. Below these windows, a projecting metal canopy shields a rolling metal door. Contrasting with the high central mass, continuous horizontal window bands articulate the two-story side wings.

The north elevation is similar but with less detail. Three rolling metal doors provide access. Above these doors, a change in material occurs, probably concealing the opening where the trestles supporting the crane girders previously extended.

The east and west elevations are similar to each other, except that the east elevation features a four-bay wide, one-bay deep, one-story high projection. Four horizontal bands of steel sash windows emphasize the building's length. These run in continuous bands at the upper levels, while at the wings, vertical mullions divide the horizontal windows into bays. The west elevation has two rolling metal doors, one larger than the other; three single metal doors, two with glazing panels; and one door with an intact transom at the north end. Louvers ventilate several windows at the lower level. Outward-angled windows replace one window grouping at the south end.

NPS Form 10-900-a OMB No. 1024-0018
(8-86)

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 7 Page 5

The unfinished interior is primarily an open space. Square piers separate the four-story core from the two story wings, which are open at the east and enclosed for office use on the west side. Original equipment included a lathe capable of turning sections of steel fifty feet in length.[9]

This building is remarkably intact, although it is somewhat deteriorated. Deterioration includes corrosion of ferrous metal elements, and broken windows. In addition, some windows are painted or boarded over with plywood. The most substantial change is the removal of the crane rails which extended out of the north end of the building, and the subsequent infill of the north elevation. It is unknown when this change took place.

General Warehouse

This streamline moderne structure, called "a monument to modern design"[10] when it was constructed, appears to be the architectural embodiment of a radio. "Among the most important buildings,"[11] it was constructed in an unprecedented 120 days beginning in February of 1942.[12] At four-stories and measuring 140 feet by 260 feet (covering almost a city block), it is the tallest building in the yard; while its concrete construction and lack of windows also make it the most massive. Streamlining the rectangular mass are the rounded corners and horizontal banding; while breaking through the mass are the encircling raised concrete loading dock with cantilevered concrete awning, and the projecting telescoping planes centered on the east and west elevations. Porthole windows and an all-over grid of ventilation holes punch and lighten the heavy mass.

The east elevation is the primary building facade. The striated horizontal banding above the awning is broken by two projecting central planes, which step back to meet the main building mass. Four engaged half-columns on the loading dock support a projecting concrete awning. The right-angled corners and unrelieved surfaces of the central vertical plane contrasts with the rounded corners and studied textures of the remainder of the building. Two porthole windows penetrate the striated horizontal banding below the awning, while the words "GENERAL WAREHOUSE," in sans serif block lettering at the edge of the awning, further emphasize the building entry. The central slab steps back to a narrow intermediate plane. Five porthole windows and rounded corners relieve this transitional, smooth-textured expanse. Three continuous, horizontal, striated bands alternating with smooth bands begin at the projecting plane intersection and wrap to the centers of the north and south elevations. The vent hole grid also begins here, superimposed at the tops and bottoms of the horizontal striations.

NPS Form 10-900-a OMB No. 1024-0018
(8-86)

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 7 Page 6

Horizontal steel sash windows fenestrate the awning level, with horizontal louvered openings at the loading dock. One of the five large openings for cargo access, located at the center of the building, has a metal vertical lift-and-drop-bisecting door that appears to be original. To either side stand double metal entrance doors with transoms.

The west elevation is similar to the east, with a telescoping central projection. However, as a secondary facade, the detailing is simplified: neither vertical striations nor porthole windows relieve the facade. Windows appear below the awning: steel sash, with some replacement units. Of the five large cargo openings, two are infilled with plywood, two have rolling metal doors and one, located at the center, has a metal vertical lift-and-drop bisecting door similar to that on the east elevation, flanked by double metal entrance doors. The glazing of both sets of doors and the transoms above are boarded with plywood.

At the north and south elevations, horizontal striated bands wrap from the east elevation, stopping at the elevation's center. Other than the all-over grid of ventilation holes, a central rolling metal door is the only opening. The loading dock stops at either side of this door, and is reached by concrete stairs and a concrete ramp, larger on the north than the south elevation.

Interior surfaces are concrete, including the floors, walls and ceilings. The main level of the structure is open, with a grid of square concrete columns.

Alterations to the building are minor, limited to the boarding over of selected glazing elements at the lower level. Again, the ddates of these minor modifications are not known.

Sheet Metal Shop - Riggers Loft - Paint Shop

This multi-purpose building, completed August 1942, provided facilities for the riggers, painters, and sheet metal trades. The paint shop occupied the building's northwest corner, the riggers loft the northeast corner, and the sheet metal shop the building's southern portion.

Rectangular in plan with a re-entrant northeast corner, the one-story sheet metal shop encompasses 27,000 square feet. Built at grade on a concrete foundation, the building has two different exterior finishes: cement plaster at the northwest corner (cladding the paint shop), and corrugated metal at the remainder of the building. Windows, penetrating the lower half of the building mass only, are steel sash with a central operable panel. The upper half of the building

NPS Form 10-900-a OMB No. 1024-0018
(8-86)

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 7 Page 7

features unrelieved wall surfaces. Typical elements include rolling metal doors, metal roof access ladders, metal trim above and below windows and at the roof line, single metal doors with four-lite glazed panels and metal ventilation pipes. Several of the steel sash windowpanes are broken, painted or boarded with plywood. At the interior are exposed wood flat trusses supported by square wooden columns. The floor is concrete and the ceiling is finished with wood boards.

Like the Machine Shop, this building suffers from corrosion of its corrugated iron cladding and steel windows, and some broken windows. Alterations are minor, and include an elevated, shed-roofed plywood box at the east elevation, and replacement doors at the south elevation.

Forge Shop

This 5,400 square foot rectangular-plan structure stands behind the machine shop. It was used to provide facilities for forging ship's parts and tools. The single-story, flat-roofed corrugated metal-clad structure sits on a concrete foundation. It featured a continuous band of steel sash windows on three sides, with the west wall almost completely open. Rolling metal doors occur on the north, south and east elevations. Additional features include metal roof access ladders on the north and south facades, single metal doors on the south and east elevations, and a row of attached brackets on the west.

The most substantial alteration to this building is the infill of the once open west elevation. It is not known when this alteration occurred.

Basins

Five concrete Basins, or dry docks, extend south into the bay, with a lock-and-pump system enabling the Basins to be emptied and flooded. Surrounding each Basin is a multi-level platform, with grade, intermediate, and basin bottom levels. The only above-grade features are metal pipe railings and yellow-painted electrical boxes.

Stairs descend at each platform, and then continue to the currently flooded basin bottom. The intermediate level--one flight below grade—consists of a series of small rooms and walkways that ring the basins. These spaces originally housed shops, offices and first aid stations, "for the convenience of the working crews and to save valuable man hours of working time."[13] Concrete columns and pipe railings frame and protect openings between the walkways and the basins. The rooms, which typically run between the walkways at the center of the platform, feature concrete

NPS Form 10-900-a OMB No. 1024-0018
(8-86)

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

or cement plaster finishes and wood-trimmed doors and windows. These areas, despite (or even because of) peeling paint, provide an excellent, even haunting, evocation of the former shipyard.

These basins are intact except for the extension of Basin 2 in the mid-1980s.

Cafeteria (Pasha Group Building)

This one-story wood-framed building, completed September 1943, stands near the entry gate. While modified, the structure retains many original features. These include horizontal wood siding, continuous horizontal window bands, and a rounded corner approaching the building entry. Modifications include alterations to windows on the south elevation, loss of the word "CAFETERIA" in block letters that originally stood above the east-facing canopy,

First Aid Station (1308 Canal)

The single-story, flat-roofed, 4,500 square foot wood frame building is square in plan, with a projecting lobby mass and awning at its north side. Horizontal wood siding clads the building: narrow between the horizontal ribbon casement windows, and wider above. The north, east and west elevations feature continuous bands of casement windows and sheltered entries with projecting awnings supported by circular metal columns. A 24' long by 14' wide garage extends from the south elevation.

NON-CONTRIBUTING BUILDINGS

Two c. 1970 steel frame buildings stand north of the dry basins. Both are rectangular in plan, built at grade on concrete foundations, and feature corrugated metal siding and pitched roofs. The central interior spaces are full height, with wood-framed mezzanine spaces at the north and south ends. The building to the west has metal slider windows, rolling metal doors, single solid metal doors, metal doors with glazing panels and a lower shed addition attached at the south end. The building to the east has a variety of windows including horizontal six-lite fixed windows with wide wood trim, metal sliders, single solid metal doors and tall, double metal sliding doors on the north and west elevations. A small metal door is inset into the larger door on the north elevation featuring a metal sign above reading "port operations." A lower shed addition wraps around the northeast corner of the building.

NPS Form 10-900-a OMB No. 1024-0018
(8-86)

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 7 Page 9

ENDNOTES

1. "Richmond Shipyard Number Three." (Richmond: Kaiser Co., Inc., 1943), 13.

2. "Richmond Shipyard Number Three." (Richmond: Kaiser Co., Inc., 1943), 13.

3. "Plate Shop - Yard Three," Kaiser Company Inc., 1944. Drawings and Fact Sheets.

4. "Richmond Shipyard Number Three." (Richmond: Kaiser Co., Inc., 1943), 13.

5. Peter M. Banks and Robert I. Orlins, *Investigation of Cultural Resources Within the Richmond Harbor Redevelopment Project 11-A, Richmond, Contra Costa County, California*, March 1981, page 6.67.

6. Don Hardison, interview, 6/2/99.

7. *Birth of Victory.* The Permanente Metals Corporation, Kaiser company Inc., Kaiser Cargo Inc., and Richmond California.(Video, undated, c. 1945).

8. "Machine Shop - Yard Three," Kaiser Company Inc., 1944. Drawings and Fact Sheets.

9. "Richmond Shipyard Number Three." (Richmond: Kaiser Co., Inc., 1943), 13.

10. *Birth of Victory.*

11. "Richmond Shipyard Number Three." (Richmond: Kaiser Co., Inc., 1943), 13.

12. "Richmond Shipyard Number Three." (Richmond: Kaiser Co., Inc., 1943), 13.

13. "Richmond Shipyard Number Three." (Richmond: Kaiser Co., Inc., 1943), 13.

NPS Form 10-900-a OMB No. 1024-0018
(8-86)

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 8 Page 1

Summary Paragraph

Richmond Shipyard Number Three is eligible for the National Register of Historic Places under criterion A for its association with the massive maritime shipyard and ship building campaigns of World War II. Just prior to and during the war, private shipyards were converted for military production on both coasts, and vast new shipyards were constructed—primarily on the West Coast. Capitalizing on the desperate need for more ships, Henry J. Kaiser built shipyards in Portland, Oregon, Vancouver, Washington and Richmond, California. By war's end, the Kaiser group had become the largest producer of ships in the nation, and the Bay Area had the greatest concentration of ship construction in the world. Richmond Number Three was one of four Kaiser yards built in Richmond and was constructed in 1942. It is the only Kaiser yard still largely extant.

Richmond Number Three is also eligible for the Register under criterion C, as a representative of significant advances made in the design and engineering of shipyards and the shipbuilding process during World War II. In keeping with the cross-industry trend to make manufacturing more efficient, Kaiser's new yards were larger in size than older yards to allow for pre-assembly of sub-units, thereby dramatically speeding production. Richmond Number Three was the most spacious of the Kaiser yards, a pattern followed in the construction of new shipyards nationwide. The new Kaiser yards were also designed for the straight flow of materials for more efficiency. Similarly, to increase production, worker's tasks were specialized and the time-consuming task of riveting was replaced by welding.

STATEMENT OF SIGNIFICANCE

Criterion A: Maritime Shipbuilding during World War II

On the eve of the United States's involvement in World War II, U.S. government officials realized the complete inadequacy of the U.S. maritime fleet and of the country's ship-building capacity. In the years between the two world wars, the merchant marine had built only two dry cargo freighters, and in 1936, only ten shipyards in the country were capable of building ocean-going vessels of four hundred feet or longer.[1] This posed a serious problem if the United States became involved in the conflict; all troops and supplies would have to be transported to foreign theaters of war by ship. In order to address this issue, on June 29, 1936, Congress passed the Merchant Marine Act, creating the United States Maritime Commission. Their task was to expand the fleet of ships, a challenge that required the conversion of old shipyards and

NPS Form 10-900-a OMB No. 1024-0018
(8-86)

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 8 Page 2

construction of enormous new yards.

The Commission redirected existing government facilities to ship construction and contracted with private companies to build shipyards and ships. On the East and Gulf Coasts, where available land for new yards was scarce, existing port facilities were converted to shipyards, and a few new yards were constructed. On the West Coast, facilities were also converted. In addition, because the western seaboard offered expanses of underdeveloped shoreline, proximity to the Transcontinental Railroad, and a surplus of workers, massive new shipyards were built in or around Los Angeles, San Francisco, Portland, and Seattle. These sites had the added advantage of proximity to the Pacific theater. With the conversions of existing facilities and the construction of new yards, the Bay Area became the nation's number one shipbuilding center with, by the end of the war, nearly $5 billion in contracts from the Navy and the Maritime Commission.[2] The most important new development within the Bay Area was the complex of Kaiser shipyards in Richmond.[3]

The largest of the private shipbuilding companies during the war was ironically headed by a man who had never built a ship. Prior to 1940, Henry J. Kaiser's company constructed large earthworks such as dams, freeways, and bridges. Confident of his abilities to organize immense projects and a vast labor force, the government awarded Kaiser, in partnership with Todd Shipyards, contracts to construct Liberty ships. By 1945, Kaiser companies had built more ships than any other group and owned shipyards in Portland, Oregon, Vancouver, Washington and Richmond, California.[4]

Kaiser's first shipbuilding project was the construction of sixty ships for the British government. Half were to be constructed at the Todd-Bath Iron Shipbuilding Corporation at South Portland, Maine and the other half at a new shipyard to be built on the mud-flats of Richmond, California. The contract was signed on December 9, 1940, and construction of Richmond Shipyard Number One was begun one month later in January, 1941. Just four months later in April, 1941, the construction of a second shipyard in Richmond was approved by the Maritime Commission. In January of 1942 the Maritime Commission hired Kaiser Company to build an additional shipyard in Richmond, Richmond Number Three, which would build the huge C-4 troop transport ships. Finally, in June of 1942 construction on Richmond Number Four, an annex to Number Three, was begun.

NPS Form 10-900-a OMB No. 1024-0018
(8-86)

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 8 Page 3

The affiliation of Todd Shipyards Corporation and Kaiser Corporation was dissolved in February of 1942. The Kaiser group then controlled the three new Pacific Coast construction yards: Oregon Shipbuilding Corporation in Portland, Todd-California Shipbuilding Corporation in Richmond, California and Richmond Shipbuilding Corporation in Richmond (some yards like Richmond Number Three were *owned* by the Maritime Commission and *managed* by Kaiser Company).[5] At the peak of production Kaiser Company yards employed over 197,000 workers.[6]

At Kaiser Company's new shipyards in Richmond and Portland, workers constructed 1,383 merchant ships and 107 warships--25.73 percent of the total U.S. Maritime Commission shipbuilding program from 1941-1945, for a total cost of $4,019, 256,462.[7] The yard's speed of construction was equally as impressive as their vast scale. The Liberty ship S.S. Robert E. Peary was built in the Richmond yards in four days and fifteen hours–a world record that still remains today.[8]

The yards in Richmond produced over half of the total ships Kaiser company built - a total of 747 ships in four years. Of the 747, 519 were Liberty ships constructed in Yards One and Two - 23% of the total Liberty Ship production for the nation. Yards One and Two also produced 142 Victory Ships. Yard Four constructed 15 LST landing ships, 12 frigates and 24 coastal cargo carriers. Yard Three produced 35 C4 troop transport ships. These were massive floating hostelries designed to carry 4,300 persons, needing sleeping accommodations and 13,000 meals daily. In size and capacity they were the equivelent of the period's five largest San Francisco hotels combined.[9]

These ships delivered massive amounts of supplies, weapons, and troops to battlefields, greatly contributing to the Allied forces's eventual defeat of Germany and its allies. According to one source:

> Richmond-built ships participated in every major sea campaign of the war, in every ocean. Richmond shipyards were producing more ships, and they were doing it faster and better than had ever been done at any time in the history of the world.[10]

Kaiser Company was able to accomplish this feat by re-designing the layout of the new shipyards and implementing advances in assembly.

NPS Form 10-900-a OMB No. 1024-0018
(8-86)

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 8 Page 4

Post-War Decline of Shipbuilding

By 1945, the need for new ships decreased and workers were laid off. In contrast to the peak of more than 90,000 workers in 1943, by the middle of 1945 the number of employees in the yards was reduced to 45,000.[11] The need for shipyards was in a similar decline. In 1944 there were 113 yards capable of building large ships like Liberty ships and troop transports.[12] In the spring of 1944, the Navy announced that only four of these yards had been reconverted to handle repair work: Wilmington, North Carolina, Alameda, California, Richmond No. 3, and the Vancouver Yard near Portland. All other yards owned by the Maritime Commission were for sale, but only a few were purchased for even twelve percent of what the yards had cost to build.[13]

No longer needed for ship construction, throughout the nation many of the yards were reconverted to their pre-war uses. Communities with new yards, like Richmond, sought tenants, but most had little luck finding enough industries in need of the enormous buildings and ways the closed shipyards offered in abundance. As a result, many of the shipyard buildings were demolished, the ways in-filled, and the remaining structures rented to non-shipbuilding concerns. This is indeed what happened to the Vancouver Washington and Swan Island, Oregon Kaiser shipyards. Of other San Francisco Bay Area non-Kaiser shipyards, little is left of Bechtel's Marinship in Sausalito. The Bethlehem Yard in San Francisco (also known as Union Iron Works) survives largely intact, but this yard differs from Richmond in that it dates back to the 1880s.[14]

The fate of the Kaiser's Richmond yards was in keeping with this pattern. Sometime in the late sixties or early seventies, the plate shop of Kaiser Shipyard Number One was demolished, and by the early eighties, the seven ways of that shipyard had been filled, several of the buildings relocated, and many of the structures completely removed. The western two-thirds of the yard was used by the Parr-Richmond Terminal Company for their warehouses and tank yards, and the assembly yard was leased by the Pacific Vegetable Oil Corporation. The eastern portion of the filled ways had been left undeveloped.[15]

The post-W.W.II history of Richmond Shipyard Number Two is similar. Its ways have

NPS Form 10-900-a OMB No. 1024-0018
(8-86)

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 8 Page 5

been in-filled, and many of its buildings demolished (a large number were razed in the late seventies). The remainder of the structures were used for purposes such as the handling and storage of shipping containers for companies like Matson Terminals, Inc., manufacturers such as Butler Manufacturing Company and the Flint Kote Company, or other purposes such as the San Pablo Avenue Sportsman Club.[16] Less information is available about Richmond Number Four, but like Yards One and Two, its ways were in-filled, and many of its buildings demolished.[17]

After the closure of Shipyards One, Two and Four, Richmond was left with a large population (most migrants stayed in the area) and little employment. Postwar efforts to find replacement industries for the yards met with little success and eventually most of their buildings were demolished and *all* of their ways filled. Finally in August of 1946, Yard Three was declared surplus by the War Assets Administration and closed as a government yard. However, probably because of its more permanent construction and dry basins, Richmond Number Three was the only Richmond yard to survive as a shipyard--by 1959, the yard had been sold to the Williamette Iron and Steel Company for ship repair and storage.[18]

Criterion C: Advances in Shipyard Design and Ship Construction

Nationwide, in the early twentieth century, production lines and processes were streamlined to speed assembly and make manufacturing more productive.[19] The efficiency movement affected industries as diverse as automobile assembly lines and the layout of farms. In keeping with this trend, the new shipyards built during the 1940s were dramatically different than their earlier counterparts. Speed was especially stressed during the war because of the need for new ships to replace the dilapidated fleet and those destroyed by German U-boats.[20]

In older yards ships were constructed by riveting plate-by-plate from the keel upward in a confined area. The new Kaiser shipyards built during World War II were laid out with large amounts of space between the machine shops and ways to allow for the construction of sub-assemblies like entire deckhouses or forepeaks, a process Kaiser "adapted from previous dam-building ventures for the federal government."[21] The prefabricated sections were then lifted into place by cranes--some able to lift nearly 200 tons between two of them.[22]

Also in an effort to speed production, Admiral Vickery, head of the Maritime Commission,

NPS Form 10-900-a OMB No. 1024-0018
(8-86)

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 8 Page 6

recommended that the new yards be designed for straight flow (no loop backs in traffic) of parts from the flat beds of trains through the assembly line to completed vessels.[23] The Kaiser Company designed the new yards according to this principle and even improved on it by designing the yards to be straight-line flow (no turns in the production line). Three of the East Coast's yards built after Pearl Harbor were patterned after the Kaiser yards on the West Coast. In fact, before designing his new yard Mr. Rheem, owner of a New England shipyard, visited the Kaiser yards.[24]

Kaiser led the way in the redesign of shipyards. Richmond Yards Numbers One and Two were built with more space for sub-assemblies than yards before them. Finding that the spread-out layout decreased construction time, Yard Three was built with still more space for subassembly productions than One and Two. The new layout of the Kaiser Yards and construction techniques employed there represented a remarkable engineering advance. Subsequent yards were patterned after these--more space for prefabrication and welding rather than riveting became the standard.

Unlike the three other Richmond yards, Number Three was planned as a permanent shipyard and extra care was given to its design for this reason. Instead of inclined ways, Number Three was built with dry basins which simplified the construction and launching of ships. Ships were built on a level surface. When launch time came, the dry-docks were flooded, and the ship floated away rather than sliding down an incline into the water. This new feature embodied, "new principles" of design intended to accelerate ship construction.[25] The buildings of Shipyard Number Three--the General Stores Warehouse, Plate Shop, and Machine Shop--were built of more enduring material (principally concrete and steel) with substantial foundations. Richmond Number Three was at first plagued by material shortages but eventually became one of the most efficient yards in the country.[26] Although Richmond Shipyard Number Three was more permanent than the other yards, its purpose was the same as the other shipyards: "To build good ships in as short a time as possible."[27]

None of the other Richmond Shipyards featured a building as substantial as the massive concrete General Warehouse. While the other yards featured some steel buildings, most of the buildings were wood. Of the three buildings which today survive at the other yards, two are wood frame.

NPS Form 10-900-a OMB No. 1024-0018
(8-86)

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 8 Page 7

Changes in assembly methods instituted in the Kaiser yards sped production. Instead of using the traditional time-consuming technique of riveting the steel plates together, in Kaiser yards workers learned to connect the plates by welding. Welding allowed one worker in one day to do the same amount of ship-plate joining that had previously taken a team of three riveters two days.[28] Richmond Number Three was one of less than a half-dozen yards which fully adopted the new welding recommendations suggested by Commission representatives.[29]

In addition, workers tasks were broken down into smaller components so each employee had less to learn. This change was important because it allowed companies to hire unskilled workers (ninety percent of Kaiser employees had no prior shipbuilding experience) and to train them much faster.[30] The result was not beneficial for everyone: "For the worker, prefabrication meant increased specialization and de-skilling of basic trades.[31] Despite this complaint, job simplification enabled a large unskilled work force, achieving limited training, to produce desperately needed ships in great numbers at unprecedented speed.

These changes in production methods can still be seen at Richmond Number Three. The most important components of the yard design - the basins - still survive, intact except for the extension of one basin. The footprint of the Plate Shop is still clearly visible as well. Although two small buildings now incroach upon the Assembly Area, which lay between the Plate Shop and Basins, the vast area allotted for welding and sub-assembling can still be appreciated. Rail lines, which brought materials to various destinations at the yard, also survive in part. Finally, the line of shop buildings east of the basins illustrates the spacing allotted between buildings.

Richmond Number Three is one of the very few World War II-era shipyards to survive with its basins, buildings and layout intact. It is the only surviving Kaiser shipyard in the Bay Area. As such, it is an important and rare representative of the massive World War II maritime shipbuilding campaign and advances in shipyard design and the shipbuilding process made during this period.

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1. *Western Shipbuilders in World War II: A Detailed Review of Wartime Activities of Leading Maritime and Navy Contractors*. (Oakland, CA: Shipbuilding Review Publishing Association, 1945), 5-7.

NPS Form 10-900-a OMB No. 1024-0018
(8-86)

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

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3. Johnson, 32.

4. Frederic C. Lane, *Ships for Victory: A History of Shipbuilding under the U.S. Maritime Commission in World War II.* (Baltimore: Johns Hopkins Press, 1951), 808.

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10. "Hitler Knew About Richmond." *The Mirror.* 42:6 (July 1998).

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12. Graduate School of Business Administration, Harvard University, *The Use and Disposition of Ships and Shipyards at the End of World War II.* (The United States Navy Department and The United States Maritime Commission, 1945).

13. Lane, *117.*

14. Hunt, Jerry, Property Manager for Cascade General. Interview by Jody R. Stock, May 10, 1999.

15. Peter M. Banks and Robert I. Orlin, *Investigation of Cultural Resources within the Richmond Harbor Redevelopment Project 11-.* (California Archaeological Consultants, Inc., 1981), 6.50-6.51.

16. Ibid., 6.59-6.60.

17. Ibid., 6.68.

NPS Form 10-900-a OMB No. 1024-0018
(8-86)

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

18. Ibid., 6.65.

19. Kimberly L. Kane, "Historic Context for the World War II Ordnance Departments Government-Owned Contractor-operated (GOCO) Industrial Facilities, 1939-1945." (Plano, TX: U.S. Army Corps of Engineers, Fort Worth District, 1995), 230.

20. Because of unusual geography, nearly all of the ships built on the Gulf were adapted by their builders and hence do not reflect design typical of WWII shipyards. (Lane, 223).

21. Johnson, 62.

22. Heiner, 121.

23. Lane, 220.

24. Ibid., 223.

[17] "Wet Basins for New Shipyard." *Martinez, California Gazette*, 23, January 1942.

26. Ibid., 125.

27. "Richmond Shipyard Number Three." (Richmond: Kaiser Co., Inc, 1943), 13.

28. Charles T. Lucey, Smashing the Axis: The Inside Story of American Industry at War." *New York World Telegram*, 1 December 1942.

29. Lane, 563.

30. *Western Shipbuilders in World War II*, 9.

31. Johnson, 62.

NPS Form 10-900-a OMB No. 1024-0018
(8-86)

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 9 Page 1

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National Park Service

National Register of Historic Places
Continuation Sheet

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NPS Form 10-900-a OMB No. 1024-0018
(8-86)

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 9 Page 3

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National Register of Historic Places
Continuation Sheet

Section 9 Page 4

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NPS Form 10-900-a OMB No. 1024-0018
(8-86)

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 10 **Page 1**

Boundary Description

Real property situate in the City of Richmond, County of Contra Costa, State of California, described as follows:

A portion of Sections 23, 24, 25 and 26, Township 1 North, Range 5 West, Mount Diablo Meridian, more particularly described as follows:

Beginning at the most northern corner of the parcel of land shown on the Amended Record of Survey filed December 12, 1966, Book 46, L.S.M., pages 4 and 5, Contra Costa County Records, said corner being the intersection of the courses "N 38° 47' 18" W - 52.13' and S 88° 53' 17" E - 482.52'" as shown on Sheet 1 of said Amended Map; thence along the boundary as shown on said map the five (5) following courses: S 88° 53' 17" E - 482.52 feet; South 30° 12' 47" East, 140.06 feet; along the arc of a tangent circle to the left having a radius of 1765.00 feet, through a central angle of 9° 06' 00", an arc distance of 280.33 feet; tangent to said curve, south 39° 18' 47" East, 1318.30 feet and North 80° 36' 12" East, 292.15' to the US Bulkhead & Pierhead Line.

Follow the US Bulkhead & Pierhead Line as follows: South 9° 14" East, *approximately* 1900.00 feet; thence *approximately* South 27° 25' 12" West, *approximately* 150.00 feet; thence South 80° 40' 46" West, *approximately* 1160.00 feet to include the Basins. Continue South 9° 19' 14" East, *approximately* 2000.00 feet, thence North 46° 11' 51" East, *approximately* 510.00 feet; North 34° 56' 00" West, 1528.48 feet; and North 38° 47' 18" West, 52.13 feet to point of beginning.

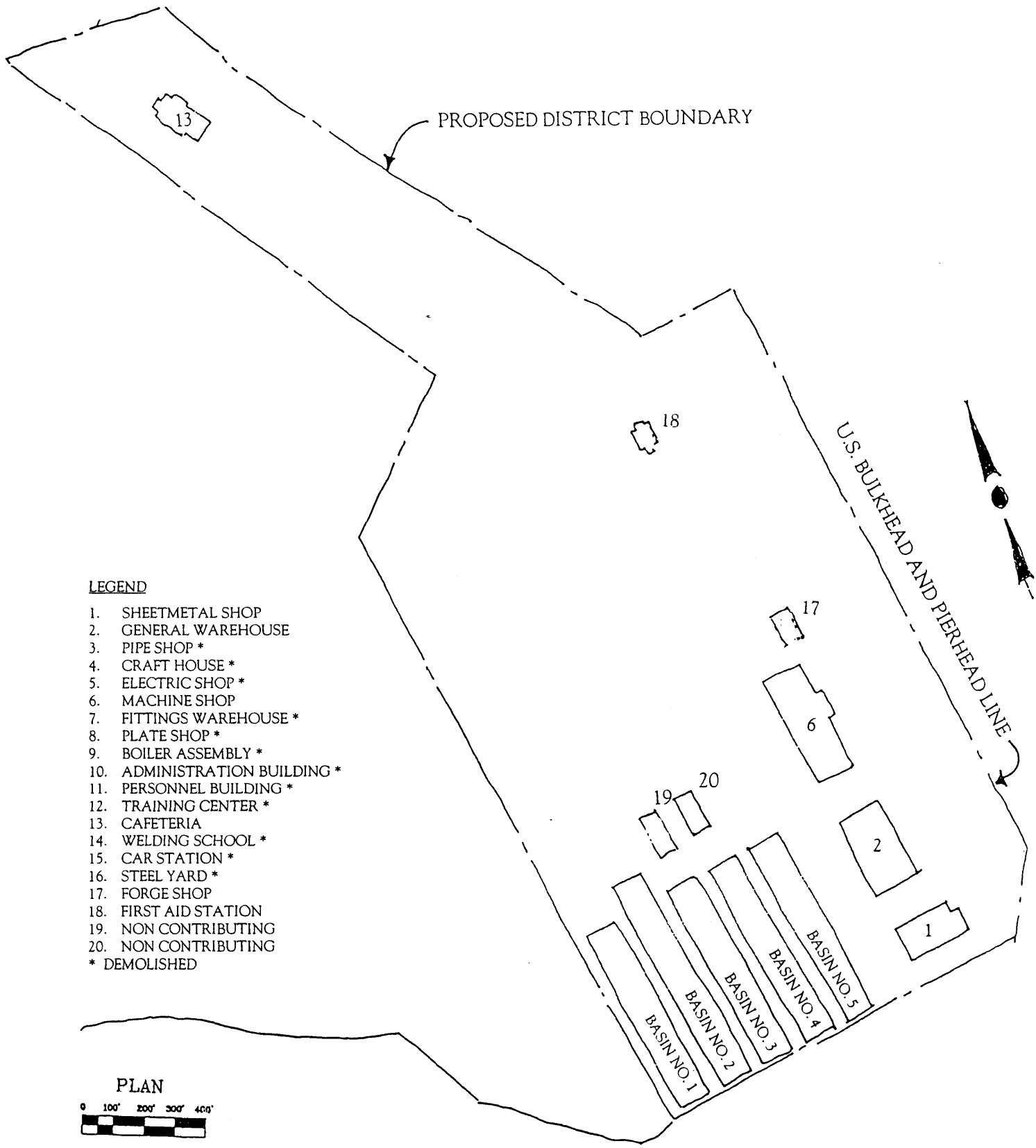
Boundary Justification

This boundary includes all surviving buildings and structures. It follows the historic boundary where structures still survive. The northern boundary is the historic boundary. The northern end of the eastern boundary follows the existing property line, omitting an area of the historic shipyard that contained no structures and that has now been heavily developed by another industrial, non-shipyard user. The remainder of the eastern and southern boundaries follow the U.S. bulkhead and pierhead line, which constitutes the original shipyard boundary. The western boundary cuts off an area of the original shipyard that was originally used as a "steel yard," and that now is used for landfill. The northern portion of the western boundary is the original shipyard boundary.

RICHMOND SHIPYARD NUMBER THREE

1999 SITE PLAN

Contra Costa Co., Calif.



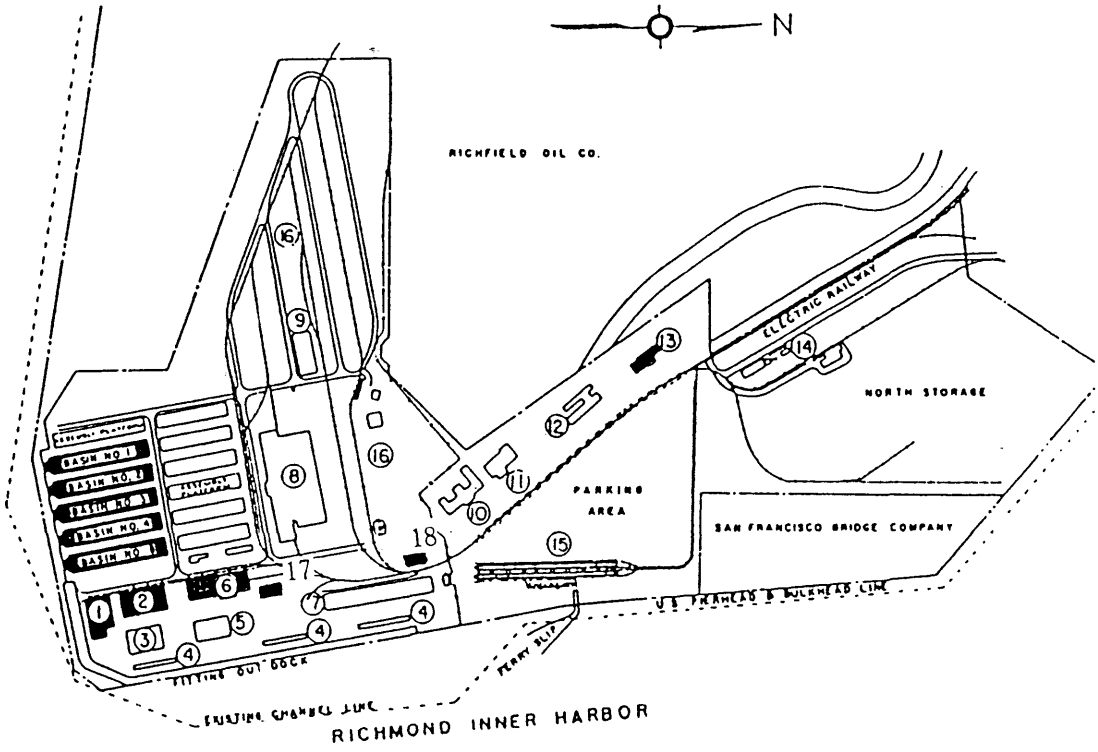
LEGEND

1. SHEETMETAL SHOP
2. GENERAL WAREHOUSE
3. PIPE SHOP *
4. CRAFT HOUSE *
5. ELECTRIC SHOP *
6. MACHINE SHOP
7. FITTINGS WAREHOUSE *
8. PLATE SHOP *
9. BOILER ASSEMBLY *
10. ADMINISTRATION BUILDING *
11. PERSONNEL BUILDING *
12. TRAINING CENTER *
13. CAFETERIA
14. WELDING SCHOOL *
15. CAR STATION *
16. STEEL YARD *
17. FORGE SHOP
18. FIRST AID STATION
19. NON CONTRIBUTING
20. NON CONTRIBUTING

* DEMOLISHED

Contra Costa Co., Calif.

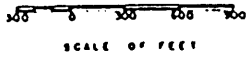
RICHMOND SHIPYARD NUMBER THREE
1947 SITE PLAN
ANNOTATED TO SHOW BUILDINGS EXTENT IN 1999



LEGEND

1. SHEETMETAL SHOP
2. GENERAL WAREHOUSE
3. PIPE SHOP
4. CRAFT HOUSE
5. ELECTRIC SHOP
6. MACHINE SHOP
7. FITTINGS WAREHOUSE
8. PLATE SHOP
9. BOILER ASSEMBLY
10. ADMINISTRATION BUILDING
11. PERSONNEL BUILDING
12. TRAINING CENTER
13. CAFETERIA
14. WELDING SCHOOL
15. CAR STATION
16. STEEL YARD
17. FORGE SHOP
18. FIRST AID STATION

NOTE: DARKENED BUILDINGS EXTENT IN 1999



NPS Form 10-900-a OMB No. 1024-0018
(8-86)

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section_____ Page_____

Photograph List
All photographs illustrate Richmond Shipyard Number Three, Richmond, Contra Cost County, California. Photographed by Nancy Goldenberg, July 1999. Negatives archived at Carey & Co. Inc., 460 Bush Street, San Francisco California.

Photo #1 General Warehouse, east elevation, camera facing west.

Photo #2 General Warehouse, west elevation. Photo taken from basin platform, camera facing east.

Photo #3 Basin platform, lower level, camera facing south.

Photo #4 Basin platform. Camera facing southwest.

Photo #5 Machine Shop. Camera facing northwest.

Photo #6. Forge Shop. Camera facing northwest.

Photo #7 Sheetmetal Shop. Camera facing southwest.

Photo #8 First Aid Station. Camera facing northeast.

Photo #9 Cafeteria. Camera facing northwest.