

MARE ISLAND NAVAL SHIPYARD, FIREHOUSE  
Vallejo (Central Fire Station)(Building 99)  
Solano County  
California

HABS No. CA-1543-I

HABS  
CAL,  
48-MARI,  
I-I-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Buildings Survey  
National Park Service  
Western Region  
Department of the Interior  
San Francisco, California 94102

HISTORIC AMERICAN BUILDING SURVEY (HABS)

HABS  
CAL,  
48-MARI,  
1-I-

MARE ISLAND NAVAL SHIPYARD,  
FIREHOUSE (BUILDING 99)(CENTRAL FIRE STATION)

HABS NO. ~~6-1001~~ <sup>0A-1543-I</sup>

Location: Southwest corner of California Avenue and 7th Street  
Mare Island Naval Shipyard  
Vallejo  
Solano County  
California

United States Geological Survey (USGS),  
Mare Island Quadrangle (7.5)

Universal Transverse Mercator Coordinates:  
10.564100 - 4216900

Present Owner: Department of the Navy  
Mare Island Naval Shipyard  
Vallejo, California 94592-5100

Present Use: Central Fire Station. Proposed for abandonment in the third  
quarter of calendar year 1991, and eventual demolition.

Statement of  
Significance: Building 99 was constructed in 1900 on the northeast corner  
of California Avenue and Central Street, was moved in 1916  
to its present location to allow extension of ship Building  
Ways No. 1 for construction of the battleship USS CALIFORNIA.  
This structure was the first building constructed on Mare  
Island utilizing steel frame construction and was also one  
of the first buildings constructed by Commander R. C.  
Hollyday, Civil Engineering Corps, United States Navy, after  
the earthquake of 1898, as part of the general reconstruction  
of the Yard. Its brick arch forms make reference to earlier  
masonry construction of a classical revival style. It is  
considered a contributing element of the Mare Island Naval  
Shipyard National Historic Landmark.

Prepared by: Mr. S. R. Black  
Title: Architect/General Engineer  
Affiliation: Mare Island Naval Shipyard, Public Works Department/Engineering  
Division/Facilities Planning Branch (Code 442)

PART I - HISTORICAL INFORMATION:

A. Physical History:

1. Date of Erection: Building 99, known also as the Central Fire Station, was originally constructed circa 1900 on the northeast corner of California Avenue (formerly Dock Street) and Central Street (formerly Ferry Street), facing to the south (date based on record drawings dates). It remained at this location until 1916 when it was moved in its entirety to its present location, approximately 110 feet south of the southwest corner of 7th Street and California Avenue, or approximately 150 feet north and across the street from its original site of erection. Relocation was by means of large timbers and rollers which allowed the building to be moved north by lines and winches. Horses were used to rotate the building to face east towards California Avenue and the Napa River (Mare Island Strait).

2. Architect: The design of Building 99 is attributed to Commander Carmichael Hollyday (1859 - 1936) who was appointed to the position of Mare Island Navy Yard Civil Engineer (current day Public Works Officer position) from May 1897 to August 1901. During his tenure, the earthquake of March 30, 1898 afforded opportunity for the display of his exceptional abilities. Many of the Yard shops and storehouses were badly damaged, all officers' quarters had to be condemned for use, and Yard operations were virtually suspended. He essentially rebuilt the Yard in what was considered record-breaking time. Commander Hollyday prepared designs, cost estimates, and requests for funds, eventually securing special Congressional appropriations. Work was started immediately and by January 1900 the Yard was rebuilt, including Building 99. This record performance for handling such an extensive emergency was the deciding factor in his later selection as Chief of Bureau of Yards and Docks in March 1907 at the rank of Rear Admiral. Commander Hollyday's subsequent administration was marked by improvements in Bureau procedure, work management, and supervision. In 1912, with his tour of duty completed, he was assigned Public Works Officer of the Norfolk and New York Shipyards until his retirement in 1923.

3. Original and Subsequent Owners: Building 99 was constructed through a Congressional appropriation on Federal property under the cognizance of the Department of the Navy at Mare Island Naval Shipyard. The Shipyard is recorded (7-12-78) as U.S. Government property with the Office of the Solano County Recorder, Fairfield, California, as Parcel No. 67-010-030 in Book 56594 of these records. The title and ownership of this building has rested with the Department of the Navy since it was originally constructed in 1900.

4. Building, Contractor, Suppliers: Building 99 was constructed by Shipyard Public Works employees, with the columns and trusses being fabricated by the Shipyard. The granite window sills and foundation fascia were reshaped from granite taken from the Shipyard's timber mill which had collapsed in the 1898 earthquake (see notes on original drawing 99-A-1, included as part of the photographic documentation in this report).

5. Original Plans and Construction: Twelve original construction drawings for this structure still exist and photographic reproductions of these drawings are provided as part of this survey. These plans depict the structure as a 2-story, steel-framed, red-brick masonry facility designed for use as a fire house. One additional drawing dated 1916, depicting the relocation of this structure to its present site, also exists and is provided as part of the photographic documentation. The original cost of construction was \$8,096, as recorded on Property Record 200174. No costs are available for the 1916 relocation.

6. Alterations and Additions: Building 99 was originally constructed in 1900 at the northeast corner of what was then Dock Street and Ferry Street (currently California Avenue and Central Street), at the northwest corner of the ship building ways, to house two horse-drawn fire engines, two horse-drawn hose carts, and to stable six horses. The building was subsequently moved to its current location in 1916 to allow the Shipyard to extend the ship building ways for construction of the Battleship USS CALIFORNIA, which was launched on 11 November 1919 from what is now Ships Building Ways No. 1. The relocation of the building to its present site is slightly east of a large concrete cistern which extends 4 to 6 feet above ground, blocking the west facing doors of the building. One major change was the pouring of a concrete slab floor, which replaced the timber floor used in the original building. Minor alterations have occurred throughout the years, since its relocation, including the installation of electric incandescent fixtures on the first and second floors, with the majority of these lights (14) being placed at the head of the firemen's cots in the sleeping quarters (circa 1925). An 11 ft., 9½ in. wide by 44 ft., 8 in. deep timber garage was added in 1941 consisting of a sloped roof framed between the side walls of Building 65 to the south and Building 99 to the north, including a timber west end wall and an eastern front entrance with double swinging doors entering onto California Street.

The original brick pilaster between the two double door sets on the east front was removed when these door openings were widened to accommodate engine-driven fire vehicles. No record drawings exist for this modification, but it is estimated that this alteration was performed (circa 1940s) in conjunction with other modifications made to support larger engined vehicles. The pilaster still exists on the west side.

There is no record of any other alterations being accomplished in this building until the installation of emergency lights in 1975, breathing air bottle recharging facilities in 1976, and smoke detectors in 1982. Cosmetic improvements were made to restrooms and sleeping areas routinely.

#### B. Historical Context:

Building 99 is listed as a "Category I". Category 1: Directly contributing to the National Landmark and of particularly strong integrity. Building, located within the "Shipyard Historical District" as identified in the National Register of Historic Places Inventory - Nominating Form. Its present site is approximately 150 feet north of its original location. The building was moved in 1916 to allow for expansion of Building Ways #1 extension for construction of the battleship USS CALIFORNIA, the only battleship built on the west coast.

Building 99 is noted as the first steel-frame building on the Shipyard, built in 1900 shortly after the earthquake of 1898. The use of masonry materials for the exterior, along with Roman arches, accentuated columns and cornices, is judged an attempt by the architect to reflect an earlier classic revival style present in other buildings on the Yard.

Original fire fighting vehicles were horse-drawn, as noted on original floor plan drawings. Evidence of the stabling of horses in the building can be found by examination of first floor window framing/mullions which were chewed away by "bored" horses. Fire horses were also used to pull Shipyard pay wagons throughout the Yard. On paydays, a fireman, with an armed Marine Corps escort, would drive the paymaster to the various work gangs for payroll issue. Fire horses were also used for a variety of other uses daily throughout the complex, so they weren't always just tied up in the stable areas of Building 99. According to Ms. Sue Lemmon, Shipyard Historian, these horses, after being unhitched from whatever team they were on, were trained to return to the fire house when the alarm bell rang.

Building 99 has always been occupied and used as the Central Fire Station at Mare Island. Ownership has always been held by the Department of the Navy, Mare Island Naval Shipyard.

Over the years, the combination of vehicles housed in Building 99 has changed from horse-pulled fire engines and hose carts to more modern fire engines, pumpers, and emergency medical/paramedic vehicles.

## PART II - ARCHITECTURAL SURVEY:

A. General Statement: Building 99 is a 2-story, steel-framed, red brick masonry building, topped with a gable roof. The use of semi-circular (Roman) arches in the end walls of the building seems to indicate the architect's desire to maintain ties with the early classical revival masonry construction (1856-1900) found on Mare Island at the time. It is of interest to note that this is the first structure on Mare Island to utilize steel-frame construction, earlier buildings being load-bearing masonry construction or heavy timber/masonry construction.

1. Architectural Character: The Central Fire House merits recording due to its standing as one of the first buildings to be constructed by Commander R. C. Hollyday after the earthquake of 1898. The architectural significance of this structure is strengthened by the fact that it was the first steel-framed building constructed on Mare Island, and that an attempt was made by the architect to maintain a tie between this structure and earlier masonry construction existing on Mare Island at the time by the use of brick arch forms in the exterior walls, reminiscent of a classical revival style.

2. Condition of Fabric: The buildings's overall condition may be summarized as fair to poor. Substantial structural modifications would also be required, resulting in significant changes to the character of the structure, to resist seismic forces should the building be retained for continued use.

B. Description of Exterior:

1. Overall Dimensions: Building 99 measures 39 ft., 6 in. from the outside face of the corner pilaster of the southern wall to the outside face of the corner pilaster of the northern wall. It measures 44 ft., 8 in. from the outside face of the eastern wall at the pilaster face to the outside face of the western wall at the pilaster face. The structure measures 21 ft., 8 in. from its ground floor to the bottom chord of the roof trusses. The gable roof is constructed at a slope of about 2 to 1 (run to rise) and measures 11 ft., 9 in. from the bottom chord of the roof trusses to its ridge. There is a 4 ft. high cupola, centered at the peak of the roof, which was added between original construction and relocation in 1916 (estimated) as this is the first time it shows up in photographs of the structure. No construction drawings have been found documenting this change.

2. Foundation: The foundation of Building 99 at its present site consists of 4 reinforced concrete piers at 14 ft., 4 in. centers located beneath the 2 curtain side walls (north and south walls) of the structure and 3 each piers 21 ft., 6 in. apart located on the east-west centerline of the structure. These piers, which support the lattice columns, are 3 ft., 3 in. square at their top surface and 4 ft. deep. An unreinforced perimeter concrete foundation wall extends between the piers to provide support for the structure's exterior walls. The cross section of this foundation forms an inverted "T" with a 20 in. wide by 6 in. deep base and 1 ft. wide by 1 ft. high leg which extends flush with the top of the footings. Granite beams 4½ in. wide by 10 in. high are supported by the piers and extend along the base of the brick curtain sidewalls and back wall and between the wide double doors in the front wall. The floor of the structure is a 6 in. unreinforced concrete slab.

3. Walls: The masonry end walls of this structure are 13 in. thick, non-load bearing brick masonry closure units rising from the second floor ceiling in a sloped brick triangulated pediment upon which the roof purlins extend. The side 9 in. thick walls are brick curtain walls, thickened to form pilasters at the corners and two intermediate columns. Masonry courses are laid up in a common bond pattern of bricks sized 2½" x 4" x 8".

The front and back closure walls each incorporate two round arches formed by four courses of brick laid flush with the face of the wall. There is also a curved (half circle) window opening located at the pediment of each end wall at attic level and in the center of the pediment with the arch formed by three courses of brick laid flush with the face of the wall. Window and door framing are inset within each arch.

4. Structural System, Framing: Building 99 has a complete vertical load carrying steel frame consisting of roof purlins, trusses, second floor beams, and columns. The second floor joists are wood spanning between steel beams. At the upper and lower chord of the roof trusses, there is an existing horizontal rod bracing system. The 10 perimeter steel columns are partially embedded in the 9 in. or 13 in. brick walls and surrounded by pilasters at the outside faces. The roof is supported by 16 each, 48 ft., 7 in. long purlins each of which were

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fabricated from two lengths of 5/16 in. thick steel "Z" stock with a timber infill nailer. These purlins, in turn, span over and are riveted to the top chords (8 each chord) of 4 triangular fan trusses fabricated from angle iron riveted to gusset plates at connection points. The roof trusses are anchored (riveted) to 7/16 in. angle iron seats at the top of the 4 steel lattice columns located in each side wall, and the 2 columns located in the center of the end walls. The lattice columns are of single intersecting lacing design and incorporate a single intermediate tie plate at about mid span. They are 22 ft. in length and are fabricated from two 8 in., 13.75 lb./ft. channel sections facing back to back and connect with intersecting lacing on one side and 1/4 in. steel plate on the other using riveted connections. These columns are, in turn, anchored to the foundation using 3/8 in. angle iron connectors riveted to an angled tie plate at the base of the column. The column rests upon a steel bearing plate through which the column to foundation anchor bolts extend. These columns are surrounded by brick pilasters at the side walls. A shorter, 14 ft. lattice column of similar design is located in the center of the building, which is utilized to support two 20 in., 65 lb. I-beams 20 ft., 8 in. in length which span the length of the structure. These beams are connected at the top of the center column using riveted angle web connectors and at the center side wall columns using the same type connection riveted through the column's intermediate tie plate. Twelve inch, 40 lb. I-beams are anchored between and to the side wall columns by angle web connections with the bottom flange of the beams being approximately 12 ft. from the top of the ground floor. The center columns in the front and back walls are connected to the building's corner columns with 15 in. deep, 42 lb. I-beams and to the center column by 20 in. deep, 65 lb. I-beams. All beams are anchored to the columns using riveted angle web connectors. The 20 in. beam acts as an intermediate support for the second deck floor joists and provides lateral support for the structures end walls.

5. Porches, Stoops, Balconies, Bulkheads: There are no porches, stoops, balconies, or bulkheads incorporated in the design of this structure.

6. Chimneys: Building 99 did not incorporate any chimney in its design, although original drawings depict the intent to install a wood stove in the second floor kitchen area. It is unclear as to whether this was ever done. No kitchen exists on the second floor of the building at the time of this report.

7. Openings:

a. Doorways and Doors: The front and rear (east and west) elevations are penetrated by two openings each which originally held double wood-frame swinging doors. At the building's original site, this combination of doors allowed for pieces of fire fighting equipment to exit the building all at once. Once relocated, the west elevation doors became unusable due to the elevated water cistern located directly west of the site. Interior construction of two small offices on the first floor across the west wall has closed off these openings although the doors are still in place. Originally, the door openings on the east elevation were smaller due to the large masonry pilaster on the centerline of the building and supporting the two arches. Enlargement was made

(circa 1940's) by removal of the pilaster to accommodate larger fire engines as they came into service.

Currently, two metal sectional roll-up doors fill the openings on the east elevation (California Avenue facade). These doors were installed circa 1982.

b. Windows and Shutters: A semi-circular window is framed into each arch, centered at the second floor level over each door opening. Framing is inset into the Roman arch formed by the red brick masonry. Operable sashes are rectangular, 6-light over 6-light double hung windows with fixed sections on either side on the east elevation. Brick in-fill is used on each side of the operable sash on the west elevation. The sill is of red brick on the east. A single semi-circular window with fixed glazing is located in the east and west wall pediments on the building centerline.

Wood frame, double-hung windows are located on the centerlines of each column bay at the first and second floors. This is common for both north and south elevations.

First floor windows are 6'-0" high by 4'-0" wide (nominal).  
Second floor windows are 4'-8" high by 4'-0" wide (nominal).

All have granite block sills. As other granite block used in this building came from the old timber mill demolished in the 1898 earthquake, it is assumed that granite used in the windows is from the same source.

#### 8. Roof:

a. Shape, Covering: The roof of Building 99 is a gable roof covered with standing seamed metal over wood sheathing. Roof support structure is discussed elsewhere in this report.

b. Cornice, Eaves: Roof extension and eaves are open construction. Galvanized metal gutters and downspouts are in place.

c. Dormers, Cupolas, Towers: A small cupola is located on the ridge on the transverse centerline of the building. It is constructed of wood with metal roof covering. Its function is undocumented and can only be assumed (fire watch or alarm bell). It was added to the building prior to 1916.

#### C. Description of Interior:

1. Floor Plans: Building 99 is 2-story, with an unfinished (unused) attic area. The first floor is essentially a large open bay area used to park two fire/emergency response vehicles. Two small offices are located at the west end against the exterior wall. A vehicle parking shed is located between Building 99 and Building 65 to the south (discussed elsewhere). The second floor

(full) is subdivided into firemens' sleeping rooms, storage and shower/restroom facilities. Interior construction is common wood frame, covered with gypsum wallboard.

2. Stairways: A single circular (spiral) metal (cast iron) staircase is located in the southeast corner of the building and is the only means of accessing the second floor. This staircase is part of the original construction. In addition, a single fireman's pole is in the northeast corner providing quick response/emergency access from the second floor to the first floor. The original construction had 2 fireman's poles located adjacent to the north and south walls on the transverse centerline of the building. These were removed prior to 1925, based upon record drawing details, and it is surmised that one of the removed poles was installed in the northeast corner.

3. Flooring: The first floor is a concrete slab. The second floor covering is carpet over wood decking. The restroom area is floored in vinyl composition tile.

4. Wall and Ceiling Finishes: First and second floor perimeter walls are painted exposed masonry with exposed lattice columns inset flush in the wall line. Interior walls are wood frame construction with gypsum wallboard over. The first floor ceiling is furred plaster. The second floor ceiling is furred acoustic tile panels.

5. Openings:

a. Doorways and Doors: Exterior door openings and doors have been elsewhere described. Interior doors are typically of wood, with framed openings, with wood trim. Doors are common wood doors suitable for interior use. None are considered notable.

b. Windows: Window openings and glazing have been elsewhere described. Interior details of these windows are not notable.

6. Decorative Features and Trim: One large feature exists in the dispatch room which originally was mounted on the center column of the engine room. This is a large brass display board of gages which monitor service line pressures of the various water and steam distribution system on the Complex. When this was moved into the dispatch office is undocumented.

7. Hardware: No hardware of significance is in evidence.

8. Mechanical Equipment:

a. Heating, Air Conditioning, Ventilation: No mechanical heating, air conditioning, or ventilation systems are present within this building. Comfort heating of the first and second floor is by fan-coil steam heaters. Original source of heat was from floor mounted steam radiators.

b. Lighting: Original lighting was provided by surface mounted incandescent bulbs. In 1925, individual 25 watt incandescent lamps on pendants with on-off pull chains were provided over each bunk in the dormitory area. Replacement of incandescent fixtures with fluorescent fixtures occurred in 1957. Record-drawings of this period do not show the dormitory lights; it is assumed that they were removed between 1925 and 1957.

c. Plumbing: Original construction included a second floor restroom area consisting of a bathing room with tub and vanity and toilet room with water closet, urinal, and lavatory. It is a fairly safe assumption that all fixtures were of a type common to the period. A complete renovation of the restroom area was accomplished circa 1980. A photographic copy of this drawing is provided.

9. Original Furnishings: None available.

D. Site:

1. General Siting and Orientation: Building 99 is located on California Avenue facing generally in an easterly direction. North, as used in descriptions in this report, is considered "project north" and is in the direction of California Avenue towards the site of adjacent Building 99A. The front elevation faces east onto California Avenue and towards Building 117 across the street. Building 117 is a two-story production/work facility, erected in 1982, or more current steel frame/prefinished metal sheathed construction. Approximately 650 feet east of Building 99 is the Berth 10 quay wall and the Napa River (Mare Island Strait). The entire site is within the security regulated Controlled Industrial Area of the Shipyard. Other than for adjacent structures, the area around Building 99 is flat and covered by asphalt paving. Site sketches are attached which show original siting as well as the relocation site adjacent to related Building 99A.

2. Historic Landscape Design: The areas adjacent to the site are typical of a built-up industrial complex and totally paved without landscaping.

3. Outbuildings: One outbuilding is associated with Building 99 - Building 99A, which is to the immediate north of Building 99. Building 99A is part of the Central Fire Station Complex and separate HABS documents have been prepared for this building (see HABS No. CA-2295).

PART III - SOURCES OF INFORMATION:

A. Architectural Drawings: The photographic documentation includes photocopies of record drawings for Building 99. Earliest drawings are dated May 1899. Other drawings of various dates are included showing relocation and subsequent modifications. All drawings are in the possession of the Public Works Department's Plan Files at Mare Island Naval Shipyard.

B. Historic Views: The photographic documentation includes historic views of this building. Original negatives are in the possession of the Shipyard Historian (Ms. Sue Lemmon, Code 100H).

C. Interviews: Other than a brief session with Ms. Sue Lemmon, Shipyard Historian, on June 15, 1990, no other interviews were conducted or deemed necessary.

D. Bibliography:

1. Primary and Unpublished Sources: None.

2. Secondary and Published Sources:

- a. "Historical Facts of Mare Island Fire Department - Mare Island Naval Shipyard" (November 1970).
- b. "Historical Survey - Mare Island Naval Shipyard" (1986); prepared by Mighetto and Youngmeister, Architects and Planners, with Kenneth Cardwell, Historical Consultant.
- c. "Sidewheelers to Nuclear Power, A Pictorial Essay Covering 123 Years at the Mare Island Naval Shipyard" (1977); Sue Lemmon and E. D. Wichels; published by Leeward Publications, Inc.; Library of Congress Catalog No. 77-90050.
- d. "A Long Line of Ships, Mare Island's Century of Naval Activity in California" (1954); Arnold A. Lott, LCDR, USN (Retired); published by the George Banta Publishing Company.

NOTE: All of the above sources are currently retained in the Public Works Engineering Division, Mare Island Naval Shipyard.

E. Likely Sources Not Yet Investigated: None recommended.

F. Supplemental Material: None included.

PART IV - PROJECT INFORMATION:

Building 99 is scheduled for demolition upon availability of funding. Operations as a fire station will be terminated once Military Construction Project P-250 is completed and occupied, estimated to occur in the third quarter of 1991.

This survey and documentation has been prepared to comply with mitigative requirements established by a Memorandum of Understanding between the United States Navy, the California State Historic Preservation Officer, and the Advisory Council on Historic Preservation executed in 1989.



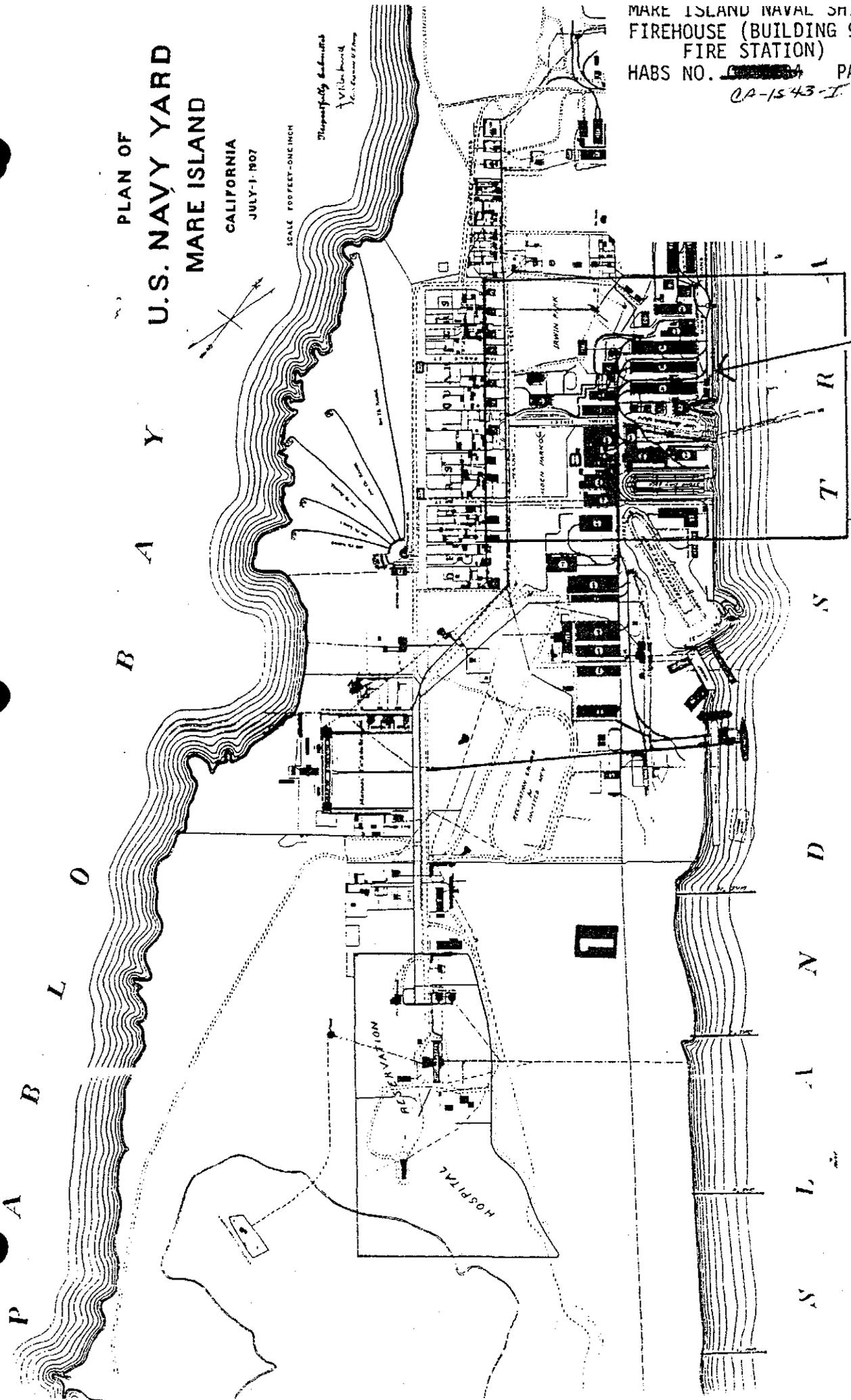
PLAN OF  
U.S. NAVY YARD  
MARE ISLAND

CALIFORNIA  
JULY-1, 1907

SCALE: 100 FEET = ONE INCH

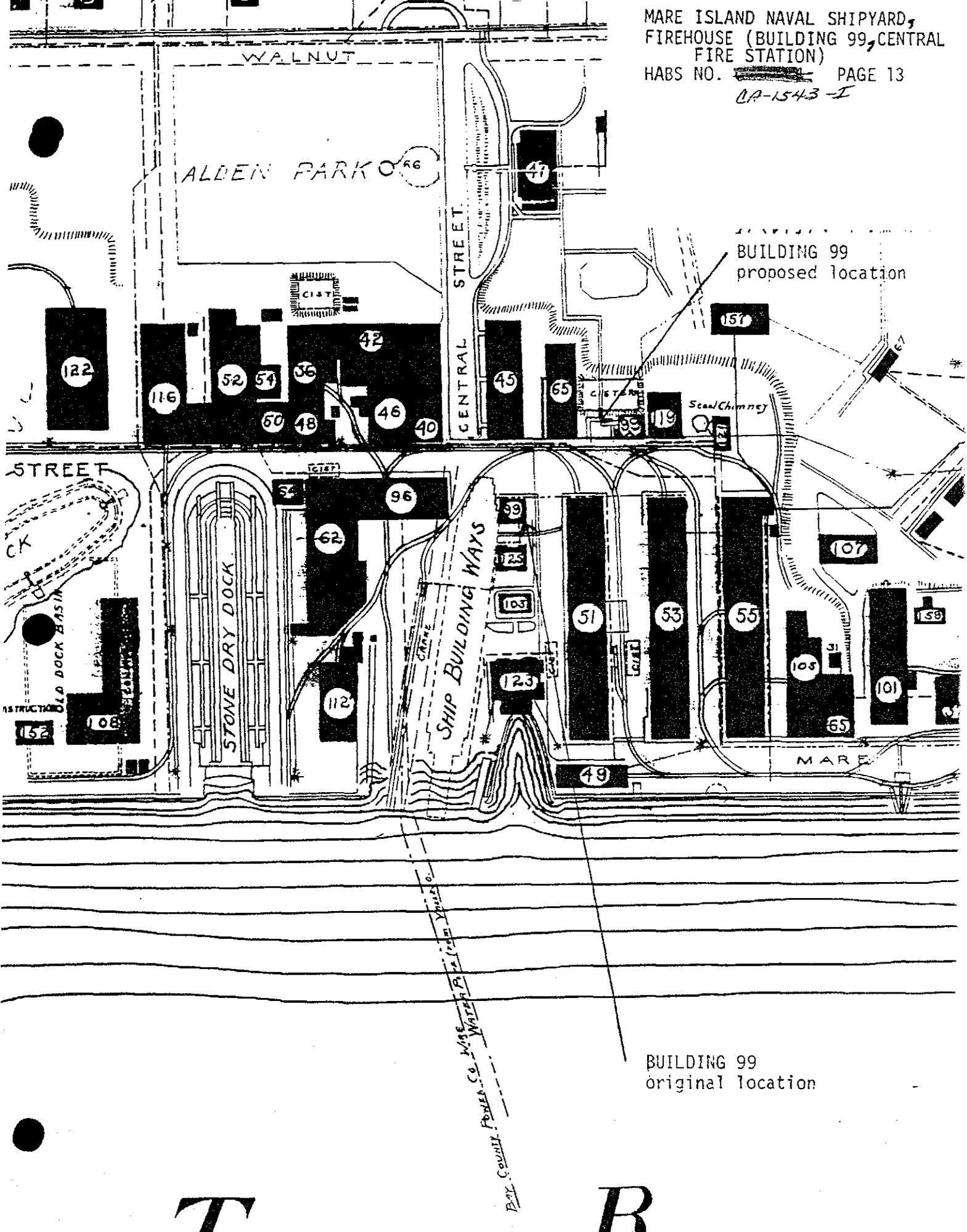
*Thoroughly Examined  
✓ V.L. Smith  
✓ C. E. Brown*

MAKE ISLAND NAVAL SHIPTARD,  
FIREHOUSE (BUILDING 99, CENTRAL  
FIRE STATION)  
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SEE  
ENLARGEMENT

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BUILDING 99  
proposed location

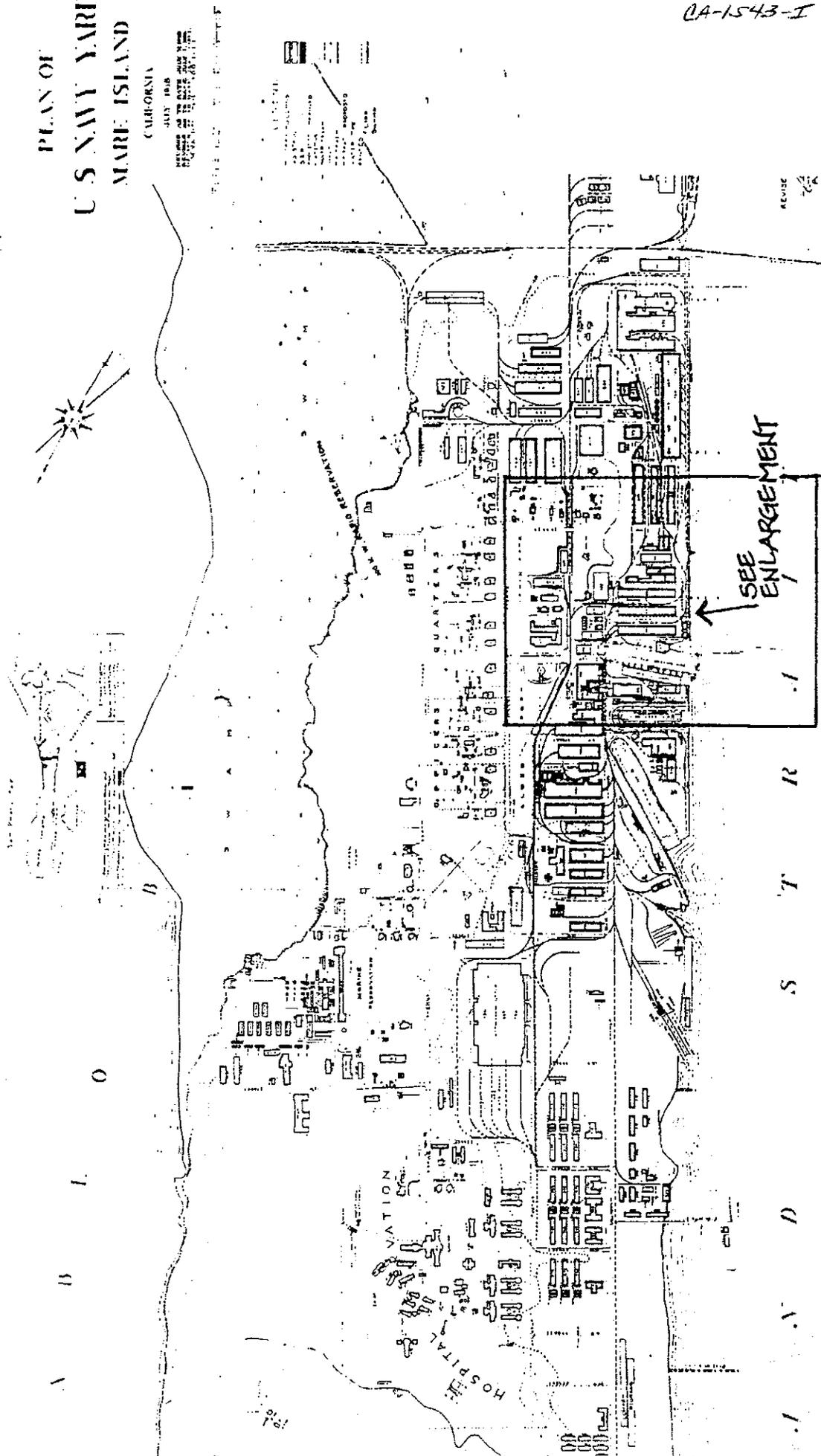
BUILDING 99  
original location

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PLAN OF  
U.S. NAVY YARD  
MARE ISLAND

CALIFORNIA  
JULY 1948  
DESIGNED BY THE ARCHITECTS  
AND ENGINEERS  
OF THE U.S. NAVY



SCALE 1/4"

SEE ENLARGEMENT

U.S. NAVY

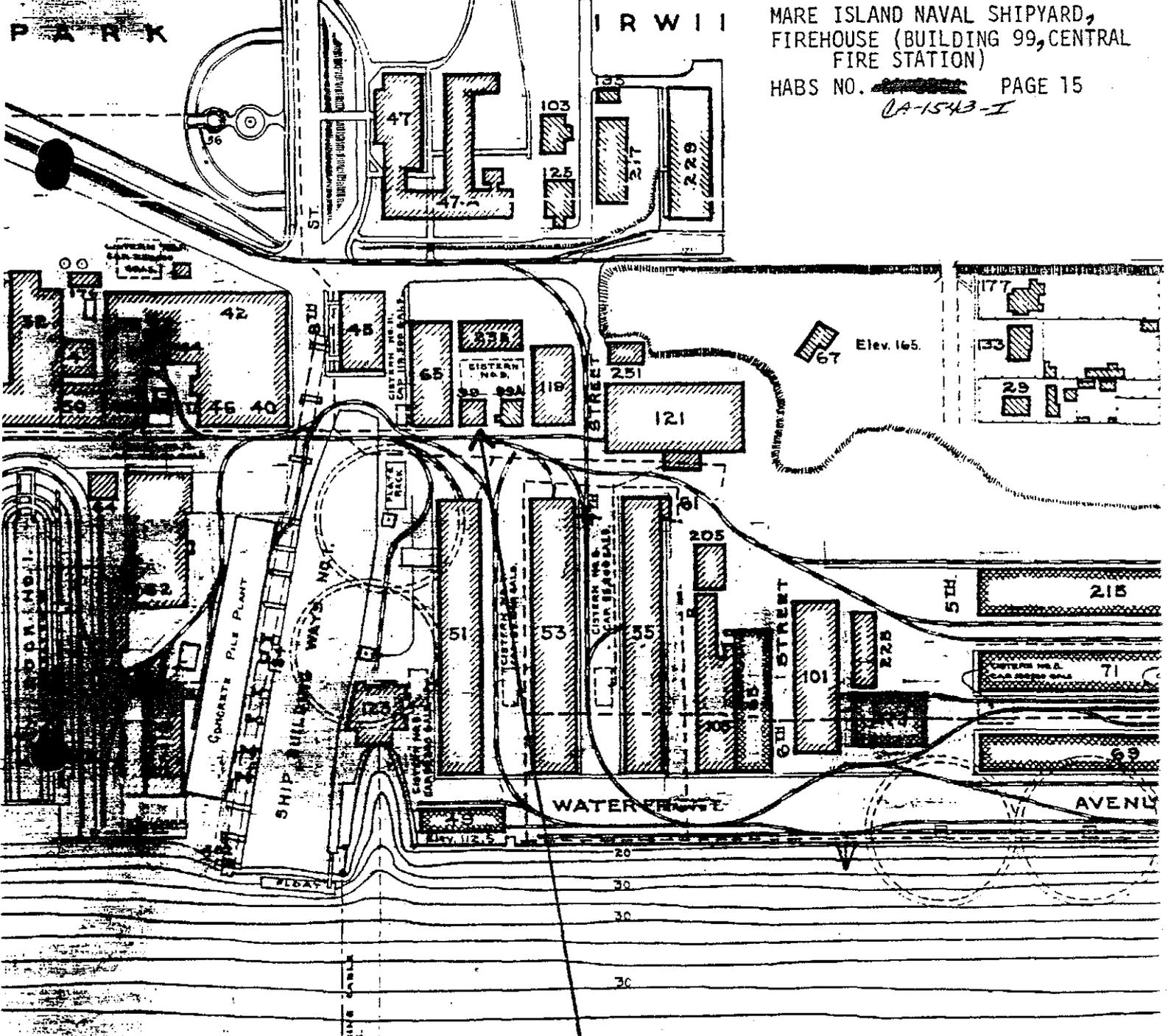
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MARE ISLAND NAVAL SHIPYARD,  
FIREHOUSE (BUILDING 99, CENTRAL  
FIRE STATION)

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BUILDING 99 AFTER RELOCATION

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