

**National Register of Historic Places
Registration Form: Seattle Yacht
Club – Main Station**

United States Department of the Interior
National Park Service

KI 736

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 Seattle Yacht Club - Main Station
Other names/site number _____

2. Location

street & number 1807 Hamlin Street not for publication
city or town Seattle vicinity
State Washington code WA county King code 033 zip code 98112

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1986, as amended, I hereby certify that this 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 meets does not meet the National Register criteria. I recommend that this property be considered significant nationally statewide locally. (See continuation sheet for additional comments.)

[Signature] 3-23-06
Signature of certifying official/Title Date

WASHINGTON STATE HISTORIC PRESERVATION OFFICE
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 certifying official/Title Date

State or Federal agency and bureau

4. National Park Service Certification

I, hereby, certify that this property is:

<input type="checkbox"/> entered in the National Register. <input type="checkbox"/> See continuation sheet	Signature of the Keeper	Date of Action
<input type="checkbox"/> determined eligible for the National Register. <input type="checkbox"/> See continuation sheet	_____	_____
<input type="checkbox"/> determined not eligible for the National Register.	_____	_____
<input type="checkbox"/> removed from the National Register.	_____	_____
<input type="checkbox"/> other (explain:)	_____	_____

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

(Do not incl. previously listed resources in the count.)

Contributing	Non-Contributing	
1		buildings
		sites
		structures
		objects
1		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

None

6. Functions or Use

Historic Functions

(Enter categories from instructions)

Social: Clubhouse

Current Functions

(Enter categories from instructions)

Social: Clubhouse

7. Description

Architectural Classification

(Enter categories from instructions)

LATE 19TH AND 20TH CENTURY

REVIVALS: Colonial Revival

Materials

(Enter categories from instructions)

foundation Concrete

walls Wood

roof Asphalt

other

Narrative Description

(Describe the historic and current condition of the property.)

SEE CONTINUATION SHEET

8. Statement of Significance

Applicable National Register Criteria

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

- X 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.)

Property is:

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

Areas of Significance

(Enter categories from instructions)

Social

Period of Significance

1920 - 1946

Significant Dates

1920

Significant Person

(Complete if Criterion B is marked above)

Cultural Affiliation

Architect/Builder

Graham, John Senior (Architect)

Sylhaasen & Sandhal (Builder)

Graham, John Junior (Architect)

Narrative Statement of Significance

(Explain the significance of the property.) SEE CONTINUATION SHEET

9. Major Bibliographical References

Bibliography

(Cite the books, articles, and other sources used in preparing this form.) SEE CONTINUATION SHEET

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 Engineering Record#

Primary location of additional data:

- State Historic Preservation Office
Other State agency
Federal agency
Local government
University
Other

Name of repository:

10. Geographical DataAcreeage of Property 1.24 acres**UTM References**

(Place additional UTM References on a continuation sheet.)

1	<u>10</u> Zone	<u>5</u> <u>51</u> <u>912</u> Easting	<u>52</u> <u>77</u> <u>110</u> Northing	3	<u> </u> Zone	<u> </u> <u> </u> <u> </u> Easting	<u> </u> <u> </u> <u> </u> Northing
2	<u> </u> Zone	<u> </u> <u> </u> <u> </u> Easting	<u> </u> <u> </u> <u> </u> Northing	4	<u> </u> Zone	<u> </u> <u> </u> <u> </u> Easting	<u> </u> <u> </u> <u> </u> Northing

Verbal Boundary Description

(Describe the boundaries of the property.)

See continuation sheet.

Boundary Justification

(Explain why the boundaries were selected.)

See continuation sheet.

11. Form Prepared By

name/title	<u>Ellen Mirro, intern; Larry Johnson, Principal</u>		
organization	<u>The Johnson Partnership</u>	date	<u>October 2005</u>
street & number	<u>1212 NE 65th St</u>	telephone	<u>(206) 523-1618</u>
city or town	<u>Seattle</u>	state	<u>WA</u> zip code <u>98115</u>

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.

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

name	<u>The Seattle Yacht Club c/o John Decker, Decker Architects</u>		
street & number	<u>3500 First Ave NW</u>	telephone	<u>(206) 633-5297</u>
city or town	<u>Seattle</u>	state	<u>WA</u> zip code <u>98107</u>

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet -

SEATTLE YACHT CLUB - MAIN STATION
KING COUNTY, WASHINGTON

Section number 7 Page 1 of 7

NARRATIVE DESCRIPTION:

Location

The Seattle Yacht Club Main Station is located at 1807 East Hamlin Street within the Montlake Neighborhood and partially fronting on Portage Bay in Seattle, Washington. The Club is prominently located on a broad point on Portage Bay and can be viewed from a number of transportation corridors and public viewing points that lie to the south and west of the property.

Neighborhood Character

The immediate neighborhood includes residential single-family structures, the majority built between the early 1920s and World War II. The U.S. Northwest Fisheries Research Center is located southeast of the site. The western portion of Montlake has two streets, Shelby and Hamlin, which lead from Montlake Boulevard to West Montlake Park. These streets contain mature street trees and a variety of single-family residences of either one or two stories. Most of the single-story structures are of Craftsman bungalow style and many of the two-story structures are of various revival styles popular in the mid-1920s. The U.S. Northwest Fisheries Research Center sits well back from Hamlin Street and consists of three buildings, a three-story brick masonry Art Deco style building and two newer contemporary structures from the 1960s.

Site

The Seattle Yacht Club site is a truncated rectangular lot measuring approximately 140' wide in the east-west direction by 60'-5" deep in the north-south direction. The site abuts Shelby Avenue North on the north, an unnamed alley on the east, and Washington State Department of Natural Resources land or lakefront on the south and west. The site slopes gently down approximately 10' from the north to the south. A circular drive serving the building's main entrance is located north of the building, a parking lot is located to the east, additional parking and lockers lie to the south, and marina floats and lawn extend from the western edge of the property line. The site is landscaped minimally on the northern, eastern, and western sides, while the southern side is paved from the property line to the façade.

Adjacent to the site are floats and covered moorage, which in their current configuration date from 1963, although a fire in 2001 destroyed about 10 percent of the structures, which were subsequently re-built. The moorage has historically been an integral part of the Seattle Yacht Club services available to its members, and the Seattle Yacht Club has leased the adjacent land from the Department of Natural Resources (DNR) following the relocation of the Main Station to Portage Bay in 1920, for the express purpose of providing the safe, convenient moorage to its members, and also for moorage for the Club-owned boats.

Also adjacent to the site, but not part of the nomination, are two items owned by the Seattle Yacht Club, a "yardarm" and a "historic anchor." They are located on Seattle Parks property. The Seattle Yacht Club has, at various times in the past, considered itself to own the property on which the yardarm and anchor

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet -

SEATTLE YACHT CLUB - MAIN STATION
KING COUNTY, WASHINGTON

Section number 7 Page 2 of 7

stand, but in the mid 1970s Seattle Parks made ownership clear, but gave the Yacht Club a maintenance agreement for that area on which their objects lie.

The yardarm is called a signal mast on the 1931 drawings by John Graham, Senior. It is 86 feet high and has a 32-foot wide yard crossing at a 45-foot elevation. It looks like a yacht mast, but is anchored to the ground with a concrete footing at the base of the mast and tied down by guy wires at three points. The main purpose of this yardarm is to carry the Seattle Yacht Club Burgee and other maritime signal flags.

Captain Stewart of the Alaska Steamship Company's *Tanana* brought the "historic anchor" to the Seattle Yacht Club in 1967. The *Tanana's* crew had brought up the anchor after their own anchor became fouled on it while anchored in 30 feet of water at the confluence of the Kvichak and Naknek rivers in Alaska. The provenance of the anchor is not known, but Captain Stewart remarked that it might have belonged to the *Charles Moody*, which had burned and sank in that vicinity. The anchor is thought to have been lost between 1885 and 1920. The anchor now sits between the yardarm and the Main Station Clubhouse on Seattle Parks Property.

Seattle Yacht Club: Building Structure & Exterior Features

The building in form is a two-story T-shaped wooden-framed structure composed of intersecting clipped gambrel-roofed wings with an original 1920 northern secondary wing, a tower, a colonnade, and a newer, 1967, two-story flat-roof service wing addition. The building presently measures overall approximately 92'-9" wide in the east-west direction by 108'-11" deep in the north-south direction. Both gambrel roofs have an 8 1/2-in-12 upper pitch and a 24-in-12 lower pitch. The original, 1920, 1 1/2 story secondary wing juts approximately 9'-4" northward from the face of building's northeastern corner, intersecting the east-west main gambrel roof. A one-story extension of the same width projects approximately 20'-10" further north in line with its higher section. Both sections have clipped gable roofs with 10-in-12 roofs. The octagonal tower is nestled into the crook created by the north wing and the main building and is approximately 14'-0" wide at its base, tapering to 12'-0" at its upper floor. The 1920 one-story classical colonnade projects approximately 15'-4" from the building's north face. The colonnade projects approximately 14'-6" from the building's western face and extends along the north face of the main building until it broadens slightly where it intersects with and wraps around the tower before meeting the north wing on its eastern end, creating a formal building entry. The newer, 1967, two-story addition joins the original flat-roofed section located at the building's southeastern corner and wraps around the building's southwestern corner projecting from the building's original southern face, also the face of the southern gambrel end, approximately 11'-6", and approximately 14'-6", aligning with the westernmost face of the colonnade to the north.

The height of the tower from the main floor line, near grade at the north main entry, is approximately 43'-3" to the top of the roof peak. The main east-west gambrel roof measures approximately 33'-4" from the main floor to the ridge, and the maximum height of the intersecting north-south gambrel is approximately 40'-6" above the lower floor line, which lies approximately at grade along the south building face. The main floor is approximately 12'-0" above the lower floor, and the second floor is approximately 12'-0" above the main floor. The ceiling height of the second floor is approximately 9'-0".

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet –

SEATTLE YACHT CLUB – MAIN STATION
KING COUNTY, WASHINGTON

Section number 7 Page 3 of 7

The building's exterior walls are covered entirely with white painted cedar shingles with an exposure of 5". All trim is also painted white. All sloped roofs are presently covered with asphalt/fiberglass composition shingles. All flat roofs, balconies, and decks are covered with bitumen "torch-down" membranes. All sloped roofs have metal gutters and down spouts.

The building's main entrance is located near the midpoint of the northern façade. The tapered octagonal tower designed to resemble a lighthouse dominates this façade. There is a glazed wooden paneled door located on the north face of the tower at the second floor level that provides access to a deck located above the colonnade. There are eight small six-light wooden-sash windows with brick mould trim located on various faces of the tower that provide light to the interior stair. An octagonal faux lens house surmounts the tower. The house has rectangular plate glass windows and a wooden guardrail with three horizontal rails. A small projecting cornice provides a transition to the peaked copper roof. A decorative weathervane is mounted at the roof peak. A recent shallow hipped roof addition is located on the western side of the tower. The addition extends up from the deck above the colonnade approximately midway up the tower and extends southward where it intersects with the northern face of the building and with the gambrel roof. This small addition accommodates an elevator that provides accessibility to the second floor.

The colonnade consists of a series of paired round Tuscan columns supporting a simple architrave, although square columns are placed in the corners to create clusters of columns, with two round and one square. These clusters occur at the two corners of the western projection, and at the western end on the western side of the entry. The eastern side of the entry has a cluster of four columns, two round and two square, that allow a slight offset providing near symmetry to the entry. Attached square columns are also used where the colonnade meets the building. The clusters create five bays across the colonnade. The colonnade has a ceiling of tongue-and-groove beaded ceiling. It has a flat-roof that is used as a deck or balcony with a guard railing composed of light framing with staggered horizontal rails. A light wood-framed exit stair leading down from the upper deck is located at the westernmost end of the colonnade. The colonnade is enclosed on its eastern end with a large wood-sash window and a pair of glazed entry doors with an arched transom window to create a projecting entry vestibule that accommodates the accessibility elevator. A fabric awning supported on metal posts presently provides weather shelter for the entry.

The north exterior wall beneath the colonnade has a pair of glazed doors that are on axis to the fireplace within the interior room and the center colonnade bay. The doors each have 12 lights and the pair is topped with a 12-light transom window. A large double-hung wood-sash 12-over-one window is located to the west of the French door set, centered on the colonnade next to the westernmost bay. There is a large shed dormer located on the western end of the main gable and centered between the tower and the western gable end. The dormer roof is the same slope as the upper gambrel pitch. The northern exterior wall of the dormer is in-line with the building's northern wall and has three equally spaced openings; the easternmost and center are filled with pairs of six-over-one wood-sash windows and the westernmost is filled with a pair of glazed and paneled wood doors. The lower exterior wall of the north wing has a tripartite window composed of 12-over-one wood-sash double-hung windows. The window has a raised architrave head casing featuring a centrally placed pediment. A small rectangular

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet –

SEATTLE YACHT CLUB – MAIN STATION
KING COUNTY, WASHINGTON

Section number 7 Page 4 of 7

gable end vent is located above the window.

The eastern façade reveals the end of the main gambrel, side of the southern large gambrel, the end of the flat-roofed south addition, and the sides of the northern wing. The main gambrel end has three floors of window or door openings. The upper most floor, or second floor, has five symmetrically placed windows, the two outermost are narrower one-over-one wood-sash double-hung windows and the three innermost are larger one-over-one wood-sash double-hung windows. The central window has a head trim composed of a broken pediment and central urn ornament. A small square gable end vent is located in the attic wall above the central window. The main floor has five windows; the northernmost four are placed directly under the northernmost four of the floor above. Within this cluster, the northernmost two are eight-over-one wood-sash double-hung windows, and the two southernmost are taller, with the southernmost of the pair a 12-over-one wood-sash double-hung window. The northernmost window is the same size, but presently has a vent located in its upper sash. The southernmost window, an eight-over-one wood-sash double-hung window, is located within an interior service stairway and has its sill at the main floor level. This window has a gable fabric awning mounted to the wall immediately above it. The lower floor, or lower floor level, has a paneled glazed service door on the southernmost side located slightly below grade and directly below the southern stairway window. A pair of eight-light hopper windows is located directly north of this door.

The original, 1920, flat-roofed corner section and the southern addition are in plane on the eastern façade, creating a flat monolithic two-story block at its southern end. There is a pair of one-over-one wood-sash double-hung windows on the northern side of the main floor level, a glazed store-door on the southernmost end of the lower floor level, and three plate-glass casement windows irregularly spaced to the north of the door. The lower floor door has a gable fabric awning mounted to the wall immediately above it. The flat roof above this section is used for mechanical equipment and venting from the kitchen/service areas below. The flat-roofed section has a guardrail consisting of wood uprights and wood rails with intermediate glazing. Three conjoined shed dormers, each with a different pitch, are located at the southeastern corner of the intersection of the gambrel roofs.

The façade of the northern wing also is in plane with the main gambrel's eastern end. The higher roof section houses the building's main stairway and has a centrally located eight-over-one wood-sash double-hung window immediately below the roof eave line, with its midpoint near second floor level. A paneled and glazed entry door is located immediately below this window accessing the mid-level landing between the lower floor and main floor levels. This doorway has a fabric gabled entry canopy extending eastward and supported on metal poles. The lower roofed northern section of the wing has three equally spaced window openings on the main floor level—the southernmost houses an eight-over-one wood-sash double-hung window, and the northernmost are a pair of 12-over-one wood-sash double-hung windows. The lower level has a pair of four-over-one (horizontally in-line) wood-sash double-hung windows located on the southern portion of this section of the façade.

The south façade consists of a two-story flat-roofed, 1967, addition placed in front of the large southern gambrel end. The central section of this addition, corresponding to the width of the gambrel roof end, projects slightly from the remaining façade and features a centrally placed recessed entry porch that provides access to the main circulation hallway of the lower floor level. Above the porch opening is an

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet –

SEATTLE YACHT CLUB – MAIN STATION
KING COUNTY, WASHINGTON

Section number 7 Page 5 of 7

architrave with a central flat arch. A sconce is located at the center of the arch and two additional sconces flank the porch opening. The porch has two symmetrically placed square columns on the face of the façade. The space between the columns is open while the two flanking openings are filled with wood screen lattice of ornate fretwork. A rectangular sign is mounted on the face of the wall above the arch. The easternmost section of the façade is blank with the exception of a grilled vent below the overhanging roof cornice. The main floor of the westernmost section of the façade has a row of large rectangular plate-glass windows along its entire width, which provide views from the second floor dining room. A fabric awning is mounted above these windows. The lower floor level portion of this section has three symmetrically placed one-over-one double-hung wood-sash windows. The flat roof of the addition has a wood and glass guardrail that continues around from the eastern façade. The gambrel face has a row of seven equally spaced plate-glass windows along its face. A fabric awning is mounted above these windows and a half-round gable end vent is centrally located within the attic portion of the gambrel face. A brick chimney extends above the roof on the western side of the main gambrel. Another taller stucco faced chimney or vent extends above the eastern side of the main gambrel. Roof mounted mechanical equipment is prominently visible on the eastern flat-roofed section.

The western façade retains the original, 1920, end of the north colonnade and the face of the main gambrel end on its northern half and the flat roofed two-story addition on its southern half. The 1967 addition wraps around the southwestern corner and continues with large rectangular plate-glass windows allowing views from the main floor dining room. The fabric awning also continues around the corner above these plate-glass windows. The roof of the addition serves as a deck for the second floor dining room and has the same wood and glass guardrail as the eastern and southern façades. A shed dormer has been added to the western gambrel roof to provide additional floor space for the second floor dining room as well as additional access to the deck. The deck surface has been covered with wooden deck pallets. The lower floor level of the addition has three equally spaced one-over-one double-hung wood-sash windows. The main east-west gambrel end retains a central large horizontal plate-glass window on the second floor, but is presently flanked by identically sized plate-glass windows. A fabric awning is mounted above these three windows. A square roof vent is centrally located in the attic area of the gambrel end. The main floor of this section has a central large plate-glass window equal in size to the windows above. This window is flanked by two large 12-over-one wood-sash double-hung windows. The northern colonnade has been described in detail in the description of the north façade. The lower floor level has a central pair of glazed doors providing egress from the lower floor meeting room (former Billiard Room). Two pairs of rectangular plate-glass windows flank the door opening. A small shed roof dormer has been added to the western roof slope of the northern wing.

Seattle Yacht Club: Building Plan & Interior Features

The main floor has its primary formal entry located on the north. The irregularly-shaped vestibule, dating from 1989, has an elevator to the right of a large opening slightly to the left that leads to the main, 1920, north-south corridor and the main stairway branching off to the left, or east, leading up to the second floor and down to the lower floor level. The club's service areas are located to the left, or east, of the main corridor, with the kitchen located in the southeastern corner of the building. The club's original,

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet -

SEATTLE YACHT CLUB - MAIN STATION
KING COUNTY, WASHINGTON

Section number 7 Page 6 of 7

1920, "Social Hall" is located to the right, or west, of the corridor and the dining room is reached by way of the a secondary corridor that branches to the right, leading to the dining room, or to the left, leading directly into the kitchen. All walls have painted 8" base trim and a simple architrave with an ogee ceiling molding. All floors within the main circulation area and public rooms are carpeted.

The Dining Room is a contemporary, 1967, space contained within the southwestern addition and features large rectangular plate-glass windows overlooking the club's moorage to the southwest. Window trim is simple stained hardwood. A central faceted chandelier with a simple box coffer and cove lighting provides focus to the room. Recessed ceiling-mounted fixtures provide additional lighting.

To the right, or west, of the main corridor is the club's original, 1920, "Social Hall." This room is approximately 44' wide and 34' deep. The room is divided into three bays by coffered beams running north-south across the room's ceiling. (Note: the coffering covers 8" x14" steel beams that are supported by roof trusses at their mid-span.) The coffering and the room's continuous architrave have a frieze of flabelliform ornamentation. The room focuses on a projecting fireplace on the south. The fireplace has as a simple Colonial revival chimneybreast. A pair of upright brass sconces is mounted above the fireplace. Recessed lights within the ceiling provide additional room lighting. Four folding doors located to the right of the fireplace provide access to the Dining Room.

The main stairway, dating from 1920, is located to the east of the main corridor and has painted colonial balusters and newels. The newels are topped by round brass finials. The main stairway leads up to an upper floor landing that provides access to restrooms on the right, the tower vestibule straight ahead (west), and to a meeting room on the left (south). The octagonal vestibule is contained within the walls and open to the interior of the tower. A steep stair to the right (north), leads up to the top of the tower, the 1989 elevator is located directly ahead (west) and the upper dining room and a 1920s conference room (Commodore's Room) is accessed by way of doorways on the left (south). The "L"-shaped Dining Room includes both the club's original, 1920, "Card & Reading Room" and additional space, now the bar, on the south that was adapted from an original, 1920, storeroom and bedroom. The original fireplace of the "Card & Reading Room" remains, although a contemporary chimney surround has been installed. The upper southwestern deck created by the southwestern 1967 addition is accessed through pairs of glazed doors from the southwestern corner of the original "Card & Reading Room" and from the bar area on the west. Simple contemporary chandeliers supplemented by recessed ceiling-mounted fixtures provide lighting in the room. All public rooms on the second floor are carpeted.

The main stairway also leads to the lower floor corridor that quickly doglegs to the left, running north-south the entire length of the building, and ending at the southern lower floor entrance. Service areas are generally located to the left (east) of the corridor, the original, 1920, "Billiard Room" is located on the right (west) of the corridor, and the club's administrative offices are located in the southwestern corner of the building dating from 1967. All public rooms and administrative offices are carpeted.

The former "Billiard Room" is located beneath the club's original "Social Hall" and has the same overall dimensions as that room. The ceiling has simple coffers supported by a pair of square columns with simple upper brackets. The original projecting brick masonry fireplace has been painted. A pair of glazed exterior doors located on the room's western wall, provide egress. Recessed ceiling-mounted

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet -

SEATTLE YACHT CLUB - MAIN STATION
KING COUNTY, WASHINGTON

Section number 7 Page 7 of 7

fluorescent fixtures provide lighting for the room.

Documented Building Alterations and Existing Condition

Date	Architect	Description
1946	Ralf E. Decker, AIA	Increase size of western windows, interior alterations to the entry and powder room. (permit # 376145)
1957	unknown	Remove second floor bearing partition. (permit # 454395)
1967	John Graham and Company Architects	Southwestern Addition adding a new main floor dining room on the southwestern corner of the building and expanding the kitchen into the existing dining room. Also included modification to the upper floor areas to create an additional dining space, deck, and meeting room. Locker rooms were also removed from the lower floor and other lower floor areas were reconfigured. (permit # 500428)
1981	Brewer Westberg Architects	Modifications to the main floor "Social Room." (permit # 596317)
1989-90	George W. Heideman, AIA	Accessibility improvements including the addition of an elevator and the creation of an entry vestibule. (permit # 648158)
1990	unknown	Alterations to lower floor restrooms (permit # 651105)

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet –

SEATTLE YACHT CLUB – MAIN STATION
KING COUNTY, WASHINGTON

Section number 8

Page 1 of 9

STATEMENT OF SIGNIFICANCE:

The Seattle Yacht Club - Main Station is eligible for the National Register of Historic Places under criterion "A" for its association to the broad patterns of social history in the city of Seattle. As an exclusive club in Seattle, members have been prominent community figures. Not only have many members made significant contributions to history outside of the Yacht Club, the Seattle Yacht Club, itself, has made a significant impact on Seattle's cultural events. The significant contributions include boating and yachting, sponsoring races, training young sailors, and providing a place for both professional and amateur boaters and boat builders in Seattle to congregate. Boating was the most important form of transportation in the Puget Sound region for the early settlers and native peoples as well. The Main Station Clubhouse is a physical manifestation of the height of the yachting social scene in Seattle in 1920. The period of significance begins in 1920 with the completion of the building and ends in 1946, the date when a variety of alterations to the building begin to occur and membership is at an all time low due to WWII.

Seattle Yacht Club

The Seattle Yacht Club was organized in 1892, when the existing yachting groups in Seattle combined in order to participate in a proposed Northwest International Yachting Association.¹ Even at this early date, yachting was a popular pastime and boating would remain an important method of transportation on Puget Sound. The club's first clubhouse was a boathouse located in West Seattle near Duwamish Head.² The location was too exposed to winds and was too affected by wakes from passing steamers for many members. The location lead to an almost immediate split of the organization, with members of smaller vessels forming the Elliott Bay Yacht Club and returning the boat house to the Brighton pier in 1894. The remaining members moved to a two-story Queen Anne style structure with a faux lighthouse attached to its northern side.³ However, the building was soon abandoned, probably due to continuing moorage problems, the continuation of the financial downturn of 1893, and the lack of membership to sustain it.⁴

In 1909, Seattle architect John Graham Sr. was commissioned to design the new clubhouse for the Elliott Bay Yacht Club. Graham designed a two-story Craftsman style building (see attached images) to be built on pilings off-shore of a 200-foot strip of waterfront at the foot of what is now Charles Street, more southeast of the Duwamish Head on the inside harbor in West Seattle.⁵ With a new clubhouse completed, later that year the Seattle Yacht Club and the Elliott Bay Yacht Club recombined their organizations for a second time.⁶ This created a stronger and more vital club.

¹ James R. Warren, *The Centennial History of the Seattle Yacht Club—1882-1992* (Redmond, WA: Liang Communications, 1992), p.17.

² *Ibid.*, p.18.

³ *Ibid.*, pp. 25 & 26.

⁴ *Ibid.*, p. 19.

⁵ *Ibid.*, p. 43.

⁶ *Ibid.*, p. 48.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet –

SEATTLE YACHT CLUB – MAIN STATION
KING COUNTY, WASHINGTON

Section number 8 Page 2 of 9

The Seattle Yacht Club along with other Puget Sound yacht clubs, began to conduct local sailing competitions and started competing against boats of the newly formed Royal Vancouver club starting in 1906.⁷ In 1909, a dispute concerning methods of measurements and which set of rules should be used for the Ted Geary-designed *Spirit II* ended racing with Canadian clubs. The feud lasted three years until in 1912, Sir Thomas Lipton, an English Baronet and yachtsman, while visiting Seattle proposed a new perpetual international challenge cup between American and British Columbian clubs. Subsequently, the first Northwest Lipton cup race occurred in 1914, with the legendary *Sir Tom*, designed by Ted Geary, winning over the Vancouver Yacht Club's *Turenga*.⁸

By 1913, the Seattle Yacht Club had grown to 371 members and had a fleet of 88 yachts.⁹ That same year property for the club's first outstation, located on Manzanita Bay on the north side of Bainbridge Island, was purchased. Architect John Graham Sr. also drew the plans for the clubhouse there as well, but the project was never built.¹⁰

The Yacht Club used the clubhouse in West Seattle until 1918, when, when with the advent of World War I, the U.S. government bought it. They utilized the facility for training U.S. merchant marines.¹¹ Eventually the West Seattle clubhouse was moved to Lake Union where it still stands today. The Seattle Yacht Club operated without a clubhouse for two years, conducting business in the boardroom of the Dexter Horton Bank. During this time membership fell to 70 active members.¹²

In 1919, the current Montlake site was acquired under the direction of Commodore Norval H. Latimer, then president of the Dexter Horton Bank.¹³ The creation of the ship canal in 1917 made the site on Portage Bay more accessible to the open waters of the sound and provided an ideal location for a new clubhouse. Vessels passing from Lake Union into Lake Washington and vice versa had to pass directly by the new site. The location offered many boating opportunities for its members on the two lakes. Former club commodore John Graham Sr. was once again commissioned to design the new clubhouse. He designed the building in a Colonial-Revival building with an attached faux lighthouse.¹⁴ The initial design shows a north-south running gambrel with the tower to the north. This design was later changed to

⁷ Ibid., pp. 36-39.

⁸ Ibid., pp. 64-66.

⁹ Ibid., p. 59.

¹⁰ Ibid., p. 63.

¹¹ Ibid., pp. 71-74. After the war the Seattle Rod and Gun Club purchased the clubhouse. The Queen City Yacht Club bought the building in 1926, and removed it by barge to the eastern shore of Lake Union at the foot of Fairview Avenue North. The Queen City Yacht Club moved to its existing location across Portage Bay from the Seattle Yacht Club in 1938. The building is extant and, although altered, remains at its Lake Union location.

¹² Ibid., p. 74.

¹³ Ibid., p. 74; and Pratt, p. 13.

¹⁴ Pratt, pp. 13-16.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet –

SEATTLE YACHT CLUB – MAIN STATION
KING COUNTY, WASHINGTON

Section number 8 Page 3 of 9

the present T-shaped gambrel configuration. The local building firm of Sylliaasen & Sandahl was hired as the general contractor.¹⁵ The mechanical sub-contractor was Fritz Hellenthal, The electrical sub-contractor was Meacham & Babcock.¹⁶

The club's fleet was moved to the site during the month of May 1919, and on May 1, 1920, the yacht club formally dedicated its new clubhouse.¹⁷ The club's membership limit was increased above the original 350, and the initiation fee was reduced in half to \$25 dollars to encourage new members. By the end of the year the club had over 400 members.¹⁸

"Opening Day" ceremonies featuring a boat parade through the Montlake Cut which became an annual event after, with the first 30 yachts participating in the first year, 1920.¹⁹ Also in 1920, the Pacific International Yachting Association was formed re-establishing international yacht racing, suspended in the Northwest because of World I.²⁰ Throughout the 1920s, lavish entertainment at the club was regular and many members commissioned large yachts for pleasure cruises.

The Main Station Clubhouse houses all of the administration offices of the Seattle Yacht Club, it also serves and continues to serve, as a main gathering place for the members, their committees and activities. Privileges of membership include the use of the Main Station Clubhouse facilities and moorage, reciprocal privileges with other yacht clubs, the use of ten Seattle Yacht Club outstations, and guest privileges.

During the Depression the club lost many members, and many of the moorages became vacant.²¹ There were still events and races, but greater emphasis was placed on the smaller boats, catboats, and flatties. Events at the club became less lavish. By 1931 the building was beginning to show signs of wear. That year the board decided to renovate the yacht club but was unable to raise the necessary funds.²²

In the 1940s, the yacht club attempted to rebuild membership. During the war years club members offered their yachts for patrol duty to the Coast Guard, and some owners served as reserve officers. In total, over 60 club boats were either loaned or sold to the government.²³ Openings Day ceremonies were greatly reduced during the war years with fewer boats participating. Eventually Club membership

¹⁵ Pratt, p. 16.

¹⁶ Ibid., p. 16.

¹⁷ Warren, p. 78.

¹⁸ Ibid., p. 79.

¹⁹ Ibid., p. 78.

²⁰ Ibid., p. 79.

²¹ Ibid., p. 107.

²² Ibid., p. 109.

²³ Ibid., pp. 148-151.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet –

SEATTLE YACHT CLUB – MAIN STATION
KING COUNTY, WASHINGTON

Section number 8 Page 4 of 9

increased after the war, with membership reaching 752 in 1949.²⁴ The main station clubhouse received some alterations in 1946, including larger windows on the western façade and a redecorated lobby and powder room.²⁵

In the 1950s, the yacht club formed a women's group, added women's names to the roster, and incorporated more family events.²⁶ Over 500 vessels participated in Opening Day celebrations in 1950, 700 boats in 1951, and 1,143 in 1956. According to Commodore Phil Smith in 1952, "The yacht club had its highest club spirit in years, the physical plant and club facilities are the finest on the west coast and moorage was safe and adequate (for the number of boats)."²⁷ In 1955, the Seattle Yacht Club renewed its corporate charter for an unlimited number of years.²⁸ Commodore T. Dayton Davies said in 1958, "The financial condition of the club remains in an exceedingly sound and healthy condition."²⁹

In 1961, opening day races were restricted by both I-90 and Evergreen Point Bridge (SR520) construction.³⁰ Membership of the club however was still growing and moorage spaces was becoming tight. The clubhouse was reaching its 60-year mark. As a result in 1967, covered moorage was added and modernization of the main station clubhouse, including an addition to the southern end of the building, was completed.³¹ The design of these alterations was prepared by John Graham & Company, then headed by John Graham Jr., son of the original architect.

In 1966, one of the Canadian Dunsmuir Islands, commonly named Ovens Island, was acquired as an outstation.³² Property for an outstation on Henry Island in the San Juan Islands was acquired the next year, and the club made a 2,500-square-foot addition to the Port Madison outstation in 1967.³³ In 1968, a clubhouse was constructed for the Henry Island outstation, and additional upgrades to the main station moorage facilities were completed.³⁴ Club membership became restricted to 1,500 in 1970.³⁵ Seattle Yacht Club became free of debt and claimed assets above one million dollars.³⁶

²⁴ Ibid., p. 168.

²⁵ Ibid., p. 161.

²⁶ Ibid., pp. 174 & 175.

²⁷ Ibid., p. 185.

²⁸ Ibid., 189.

²⁹ Ibid., pp. 200 & 201.

³⁰ Ibid., p. 215.

³¹ Ibid., p. 222.

³² Ibid., p. 232.

³³ Ibid., pp. 226 & 227.

³⁴ Ibid., pp. 235 & 240.

³⁵ Ibid., p. 227.

³⁶ Ibid., pp. 232 & 233.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet --

SEATTLE YACHT CLUB -- MAIN STATION
KING COUNTY, WASHINGTON

Section number 8 Page 5 of 9

Two years later in 1972, club membership reached 1,500, the proscribed limit.³⁷ The Gig Harbor outstation land was purchased and Eagle Harbor moorage space was acquired for a new outstation in 1977.³⁸ That same year land was purchased at Moss Point for another outstation, but the land was sold a few years later.³⁹ During the 1970s, the club's Junior Program produced some of the best sailors on the coast, evidenced by the fact that two members, who were also on the University of Washington sailing team, were named All-American in 1977.⁴⁰ In 1978, the Port Ludlow outstation land was purchased.⁴¹

In 1982, the Garden Bay outstation was purchased in Pender Harbor, Canada.⁴² In 1985, Eagle Harbor outstation slips, which had been leased since 1978, were purchased.⁴³ In 1987, an agreement was reached between the club and the East Gig Harbor Improvement Association for the club to build a pier and a float there.⁴⁴ The Seattle Yacht Club outstations provide moorage and facilities for the members while on recreational boating excursions. Sometimes outstations are used for organized events or boat races.

The Seattle Yacht Club also continues to sponsors the annual Opening Day ceremonies in May through the Montlake Cut and also the annual Special Peoples Cruise for the developmentally disabled every winter. Competitive sailing continues as a major focus for the club as it sponsors the Tri-Island Sailboat Series, the oldest sailboat series on Puget Sound, every year. Currently, the Seattle Yacht Club has nine outstations and four other clubhouses besides the main station on Portage Bay.⁴⁵ The club, as of October 2005, has 1,247 Active members, 463 Active Intermediates (ages 21-40) members, 329 Life members, and 158 Junior (ages 16-20) members.⁴⁶

Yacht Club Development and Buildings in North America

Early yacht clubs in the United States met in improvised quarters on members' vessels, rented rooms, or in makeshift sheds or boathouses near moorage. Among the earliest known yacht clubs is the the New York Yacht Club which was established in 1844. By 1846 the club was meeting in a small building designed by architect Andrew Jackson Davis.⁴⁷ This Gothic Revival cottage was probably the first

³⁷ Ibid., p. 260.

³⁸ Ibid., p. 272.

³⁹ Ibid., pp. 278 & 79.

⁴⁰ Ibid., pp. 280 & 281.

⁴¹ Ibid., p. 281.

⁴² Ibid., p. 304.

⁴³ Ibid., pp. 283 & 312.

⁴⁴ Ibid., pp. 334 & 335

⁴⁵ Ibid., p. 79.

⁴⁶ Bramstet, John, Membership Director, Seattle Yacht Club, telephone interview, October 26, 2005.

⁴⁷ Michael Levitt, "About the New York Yacht Club," <http://nyyc.org/index.cfm?relatedlink=History&content=dcms&option=dcms&rltest=1>, accessed October 14, 2005.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet –

SEATTLE YACHT CLUB – MAIN STATION
KING COUNTY, WASHINGTON

Section number 8 Page 6 of 9

dedicated yacht club building in the United States. Other American yacht clubs were subsequently formed in the latter half of the nineteenth century on the East Coast, including the Portland Yacht Club in Maine, 1869; the Rhode Island Yacht Club, 1875; the Florida Yacht Club, 1878; the Hull Yacht Club, near Boston, Massachusetts, 1880; the Corinthian Yacht Club in Marblehead, Massachusetts, 1885; the Indian Harbor Yacht Club in Greenwich, Connecticut, 1889; and on the West Coast the San Francisco Yacht Club, 1869; the Santa Barbara Yacht Club, 1872; the San Francisco's Corinthian Yacht Club, 1886; the San Diego Yacht Club in 1886; and the Seattle Yacht Club in 1892.

Yacht club clubhouses tended to be makeshift affairs throughout the turn of the nineteenth century with a few notable exceptions. In 1882, the Hull Yacht Club near Boston built a four-story Shingle style clubhouse on Boston Harbor, enticing new members with three bowling alleys, a billiard room, a dining room, and two reception rooms.⁴⁸ The building, after being sold to private investors for speculation as a hotel, was deemed a fire hazard and dismantled in the mid-1930's. In 1898, the Corinthian Yacht Club in Marblehead, Massachusetts, built a major Colonial-Revival clubhouse that, although altered, remains in use today.⁴⁹ In 1901, the New York Yacht Club erected a grand Beaux-Arts building on West 44th Street in Manhattan designed by architects Whitney Warren and Charles D. Wetmore.⁵⁰ In 1911, the Corinthian Yacht Club of San Francisco erected a flat-roofed Colonial-Revival clubhouse in Tiburon, the oldest extant clubhouse on the West Coast.⁵¹

The general prosperity of the early 1920s, and an increase in the popularity of yachting, led several clubs to build new more substantial structures. Many focused on the idea of using a light station as a basis for a design motif. Seattle architect John Graham Sr. Colonial-Revival building complete with a faux lighthouse for the Seattle Yacht Club in 1920 may have been the first.⁵² The San Diego Yacht club also built a lighthouse-inspired clubhouse at Coronado in 1923, later barging it across the bay to Shelter Island.⁵³ The Santa Barbara Yacht Club built a Colonial-Revival clubhouse, also with a faux lighthouse, designed by yachtsman and local architect Winsor Soule, on Stern's Wharf in 1926.⁵⁴ This fascination with lighthouses was later brought to its logical conclusion when the St. Francis Yacht Club in San Francisco purchased a 1905 lighthouse and relocated it on Tinsley Island on the Sacramento Delta in the 1970s as an outstation.⁵⁵

⁴⁸ Hull Yacht Club, "A Brief History of The Hull Yacht Club," http://www.hullyc.org/club_history.shtml, accessed October 14, 2005.

⁴⁹ Corinthian Yacht Club, "Corinthian Yacht Club History," <http://corinthianyc.org/history62.html>, accessed October 14, 2005.

⁵⁰ Levitt.

⁵¹ Corinthian Yacht Club of San Francisco, "About the Corinthian Yacht Club," <http://wwwcyc.org/about.html>, accessed October 14, 2005.

⁵² Daniel L. Pratt, "The Creation of the New Seattle Yacht Club," *Pacific Motor Boat*, July 1920, pp. 13-16.

⁵³ San Diego Yacht Club, "SDYC History," <http://www.sdy.org/about/history.htm>, accessed October 14, 2005.

⁵⁴ Santa Barbara Yacht Club, "Club History from 1872 to Present," <http://www.abyc.org/history.html>, accessed October 14, 2005.

⁵⁵ St. Francis Yacht Club, "About the Club," <http://www.stfyc.com/default.aspx?p=DynamicModule&PageId=202050&b=1&sl=1&vnf=&ssid=100&dpageid=201727&bhpcp=1>, accessed October 14, 2005.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet -

SEATTLE YACHT CLUB - MAIN STATION
KING COUNTY, WASHINGTON

Section number 8 Page 7 of 9

As the yacht clubs turned to other social activities to attract new membership, post-Depression clubhouses began to resemble waterside restaurants rather than mainly providing meeting rooms and locker rooms. Older facilities were enlarged and modified to accept additional social events.

John Graham Sr. (1873-1955)

John Graham Jr. (1908-1991)

Seattle architect John Graham Sr. was born in Liverpool and acquired his professional skills in England through apprenticeship. He moved to Seattle in 1901, practicing architecture mainly in Seattle until 1940.⁵⁶ An early project was the reconstruction of the Trinity Episcopal Church (1902-03) after the original 1891 church had been destroyed by fire. He was briefly associated with Alfred Bodley in 1904, before joining with architect David Myers in 1905, in a partnership that lasted until 1910.⁵⁷ This partnership produced designs for three apartment buildings, the Kenny Presbyterian Home, and at least two large eclectic houses. Graham and Myers also designed several of the pavilions for the 1909 Alaska Yukon Exhibition, and designed the first clubhouse for the Elliott Bay Yacht Club (later the Seattle Yacht Club) that same year.⁵⁸

In 1910, John Graham Sr. became a sole practitioner and began designing buildings of major significance in Seattle.⁵⁹ His first major commission was for the Joshua Green Building (1913), one of the first major buildings in the expansion of the business district north from Pioneer Square. This building incorporated the steel frame and terra cotta cladding. That same year Graham designed an assembly plant for the Ford Motor Company (1913, now Shurguard Storage) in Seattle. That led Graham to open an office in Detroit, Michigan where he supervised several other Ford assembly plants built around the United States between 1914 and 1918.⁶⁰

Graham's design of the Fredrick and Nelson Department Store (1916-19) was the first of several finely detailed terra-cotta-clad commercial buildings in Seattle, the Dexter Horton Building (1921-24) being another example.⁶¹ His Bank of California Building (1923-24), also clad with light colored terra cotta, demonstrates superb classical detailing on the interior.⁶²

⁵⁶ Grant Hildebrand, "John Graham, Sr.," in *Shaping Seattle Architecture: A Historical Guide to Architects*, ed. Jeffrey Karl Ochsner (Seattle, WA: University of Washington Press, 1994), p. 90.

⁵⁷ Ibid.

⁵⁸ Ibid., pp. 90 & 92; Warren, p. 43

⁵⁹ Hildebrand, p. 90.

⁶⁰ Ibid., p. 90.

⁶¹ Ibid., p. 90 & 93.

⁶² Ibid., p. 91 & 92.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet –

SEATTLE YACHT CLUB – MAIN STATION
KING COUNTY, WASHINGTON

Section number 8 Page 8 of 9

Graham also excelled in the development of the Art Deco style; the Bon Marché Building (1927-29, now Macy's), the Roosevelt Hotel (1928-29), and the Exchange Building (1929-31) all demonstrate mastery in detail and development of Art Deco motifs.⁶³ Graham also collaborated with Bebb & Gould on the design of the U.S. Marine Hospital Campus (1931-34, now Pacific Medical Center, altered), considered one of the finest examples of the style in the Northwest.⁶⁴ Despite embracing the new Moderne style, Graham could also fall back on his eclectic roots to please the University of Washington Board of Regents. Graham designed four major Collegiate Gothic buildings on the campus, beginning with the Physics Hall (1927-28, altered, now Mary Gates Hall).⁶⁵

Between 1936 and 1942, while associated with engineer William Painter, Graham also operated from an office at Rockefeller Center in New York City.⁶⁶ His son John Graham Jr. joined the firm New York office in the 1937, specializing in department store design.⁶⁷ Over the next few years Graham began transfer the practice to his son, retiring from active practice in 1946.⁶⁸ After his father's retirement, John Graham Jr. returned to Seattle and completely took over his father's firm, John Graham & Company. John Graham Jr. would lead the company until his death in 1991, the firm becoming one of the premier commercial architectural firms in the United States.⁶⁹ Notable projects include: the Northgate Shopping Center (1946-50, altered) in Seattle, the Ala Moana Center (1960, altered) in Honolulu, The Space Needle (1960-62, with Victor Steinbrueck, altered) in Seattle, the Wells Fargo Building (1960-66, now 44 Montgomery Street Building) in San Francisco, and the Bank of California Building (1971-74, now Key Bank).⁷⁰ John Graham & Company also designed the south addition to the Seattle Yacht Club, Main Station between 1962 and 1963.⁷¹

John Graham Sr. was an enthusiastic yachtsman, a competitive sailor in his early years, and an active member of the Seattle Yacht Club, serving as commodore for the club in 1913 and 1929.⁷² Graham designed the club's second clubhouse in 1909, the outstation clubhouse at Port Madison, and the main station clubhouse in 1920.⁷³ Graham owned several boats and yachts during his life, including the Ted

⁶³ Ibid., p. 92.

⁶⁴ Ibid., p. 92.

⁶⁵ Ibid., p.94.

⁶⁶ Ibid., p. 92.

⁶⁷ Ibid., p. 92.

⁶⁸ Ibid., p. 92. This transfer may have been somewhat acrimonious. See Norman C. Blanchard and Stephen Wilen, *Knee-Deep in Shavings: Memories of Early Yachting and Boatbuilding on the West Coast* (Victoria, B.C., Canada: Horsdal & Schubart, 1999), p. 52.

⁶⁹ Meredith L. Clausen, "John Graham, Jr.," in *Shaping Seattle Architecture: A Historical Guide to Architects*, ed. Jeffrey Karl Ochsner (Seattle, WA: University of Washington Press, 1994), p. 259.

⁷⁰ Ibid., p. 260.

⁷¹ The firm is identified on the plan set "Additions and Alterations to Seattle Yacht Club" dated 1963.

⁷² Warren, p. 95.

⁷³ Ibid., p. 48 & 63.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet –

SEATTLE YACHT CLUB – MAIN STATION
KING COUNTY, WASHINGTON

Section number 8 Page 9 of 9

Geary-designed 45' yawl *Ortuna*, the 40' auxiliary schooner *Sovereign*, and the 65' Geary-designed motor yacht *Mary*.⁷⁴ Graham also commissioned the 96' Geary-designed *Blue Peter* in 1928, but lost her during the Depression.⁷⁵ *Blue Peter* is presently based in Seattle and is considered one of the premier classic yachts in the Northwest. Graham's last yacht was the Anchor Jensen-built 65' motor yacht *Pelagic*.⁷⁶

Norval H. Latimer (1863-1923)

As commodore of the Seattle Yacht Club between 1917 and 1919, Norval H. Latimer spearheading the purchase of the Montlake property of the Yacht Club's main station and oversaw the construction of the Yacht Club's main station clubhouse.⁷⁷ He also organized and administered the financing of the new clubhouse, and is generally credited along with John Graham Senior as the two men responsible for the construction of the Seattle Yacht Club's Main Station Clubhouse.⁷⁸

Originally born in Berwick, Illinois, Norval H. Latimer moved to Seattle where he gained employment with the Dexter Horton Company in 1882.⁷⁹ He became manager of the Dexter Horton Bank in 1889, and was elected president and became one of the directors of the newly reorganized Dexter Horton National Bank in 1910.⁸⁰ Latimer was considered one of the foremost bankers in the state, serving as president of the Washington State Bankers Association.⁸¹ He also served as president of the Snoqualmie Power Company and the Diamond Ice Company.⁸² Latimer was active in the Artic Club, the Rainier Club, the Seattle Athletic Club, and the Tacoma Club.⁸³

⁷⁴ Blanchard, pp. 48-55.

⁷⁵ Ibid., p. 49.

⁷⁶ Ibid., p. 52.

⁷⁷ Warren, p. 57; Pratt, p. 13.

⁷⁸ Ibid., p.14

⁷⁹ Clarence B. Bagley, "Norval Hastings Latimer," in *History of King County, Washington, vol.2* (Chicago: S. J. Clarke, 1929), p. 882.

⁸⁰ Ibid., p. 882.

⁸¹ Ibid., p. 882.

⁸² Ibid., p. 882.

⁸³ Ibid., p. 882.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet -

SEATTLE YACHT CLUB - MAIN STATION
KING COUNTY, WASHINGTON

Section number 9

Page 1 of 2

Bibliography

- Bagley, Clarence B. "Norval Hastings Latimer." In *History of King County, Washington*. vol. 2, pp. 880-884. Chicago-Seattle: S. J. Clarke Publishing Co., 1929.
- Bates, Chandler, Jr. "Why is it called the "Indian Harbor" Yacht Club?" Indian Harbor Yacht Club. <http://www.indianharboryc.com/clubhistory.htm> (accessed October 14, 2005).
- Blanchard, Norman C., and Stephen Wilen. *Knee-Deep in Shavings: Memories of Early Yachting and Boatbuilding on the West Coast*. Victoria, B.C., Canada: Horsdal & Schubart, 1999.
- Clausen, Meredith L. "John Graham, Jr." In *Shaping Seattle Architecture: A Historical Guide to Architects*. Edited by Jeffrey Karl Ochsner, pp. 258-263. Seattle, WA: University of Washington Press, 1994.
- Corinthian Yacht Club. "Corinthian Yacht Club History." <http://corinthianyc.org/history62.html> (accessed October 14, 2005).
- Corinthian Yacht Club of San Francisco. "About the Corinthian Yacht Club." <http://wwwcyc.org/about.html> (accessed October 14, 2005).
- Crowley, Walt. "Lake Washington Ship Canal—A Snapshot History." HistoryLink.org, July 1, 1999. http://www.historylink.org/essays/output.cfm?file_id=1444 (accessed September 21, 2005).
- Hildebrand, Grant. "John Graham, Sr." In *Shaping Seattle Architecture: A Historical Guide to Architects*. Edited by Jeffrey Karl Ochsner, pp. 90-95. Seattle, WA: University of Washington Press, 1994.
- Hull Yacht Club. "A Brief History of The Hull Yacht Club." http://www.hullyc.org/club_history.shtml (accessed October 14, 2005).
- Lange, Greg. "Lake Washington Ship canal construction starts on September 1, 1911." HistoryLink.org, posted January 14, 1999. http://www.historylink.org/essays/output.cfm?file_id=684 (accessed September 21, 2005).
- Levitt, Michael. "About the New York Yacht Club." <http://nyyc.org/index.cfm?relatedlink=History&content=dcms&option=dcms&rltest=1> (accessed October 14, 2005).
- Long, Priscilla. "Montlake log canal first connects Seattle's Union and Portage bays in 1861." History Link.org, posted June 24, 2001. http://www.historylink.org/essays/output.cfm?file_id=3404 (accessed September 21, 2005).
- Long, Priscilla. "Seattle's Montlake Bridge Spanning Montlake Cut opens in June 1925." HistoryLink.org, posted March 25, 2001. http://www.historylink.org/essays/output.cfm?file_id=3133 (accessed September 21, 2005).

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet –

SEATTLE YACHT CLUB – MAIN STATION
KING COUNTY, WASHINGTON

Section number 9 Page 2 of 2

- Long, Priscilla. "Seattle's Washington Park Arboretum is established in 1934." HistoryLink.org, posted August 9, 2001. http://www.historylink.org/essays/output.cfm?file_id=3490 (accessed September 21, 2005).
- McDonald, Lucille. *The Lake Washington Story: A Pictorial Story*. Seattle, WA: Superior, 1979.
- Marblehead Yacht Club. <http://www.marbleheadyc.org/Welcome.html> (accessed October 14, 2005).
- Pratt, Daniel L. "Seattle Yacht Club." *Pacific Motorboat*, January 1920, p. 25.
- Pratt, Daniel L. "The Creation of the New Seattle Yacht Club," *Pacific Motor Boat*, July 1920, pp. 13-16.
- San Diego Yacht Club. "SDYC History." <http://www.sdydc.org/about/history.htm> (accessed October 14, 2005).
- San Francisco Yacht Club. "History." <http://www.sfyc.org/history.htm> (accessed October 14, 2005).
- Santa Barbara Yacht Club. "Club History from 1872 to Present." <http://www.abyc.org/history.html> (accessed October 14, 2005).
- Scully, Vincent J. *The Architecture of the American Summer—The Flowering of the Shingle Style*. New York: Rizzoli Press / Columbia University, The Temple Hoyne Buell Center for the Study of American Architecture, 1989.
- Scully, Vincent J. *The Shingle Style Today, or the Historian's Revenge*. New York; George Brazillier, 1974.
- Scully, Vincent J. *The Shingle Style and the Stick Style: Architectural Theory and Design from Downing to the Origins of Wright*. Revised edition. New Haven, CT: Yale University Press, 1971.
- St. Francis Yacht Club. "About the Club." <http://www.stfyc.com/default.aspx?p=DynamicModule&PageId=202050&b=1&sl=1&vnf=&ssid=100&dpageid=201727&bhcp=1> (accessed October 14, 2005).
- St. Petersburg Yacht Club. "Welcome to the St. Petersburg Yacht Club." <http://www.spyc.org/club/scripts/home/asp> (accessed October 14, 2005).
- Stein, Alan J. "Museum of History and Industry holds its opening day ceremonies on February 15, 1952." HistoryLink.org, posted January 11, 2002. http://www.historylink.org/essays/output.cfm?file_id=3670 (accessed October 12, 2005).
- Walker, Lester. *American Shelter*. Woodstock, NY: Overlook Press, 1996.
- Warren, James R. *The Centennial History of the Seattle Yacht Club -1882-1992*. Redmond, WA: Liang Communications, 1992.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet –

SEATTLE YACHT CLUB – MAIN STATION
KING COUNTY, WASHINGTON

Section number 10 Page 1 of 1

Boundary Description:

The nominated property includes Lots 1 through 7, Block 3, Montlake Park, according to plat thereof, recorded in Volume 18, page 20, in King County, Washington; together with those portions of the vacated alleys in said Block 3 which would attach by operation of law, said alleys having been vacated pursuant to City of Seattle Ordinance Numbers 89765 and 100408, a copy of the latter of which was recorded under Recording Number 7111500308.

Boundary Justification:

The nominated property encompasses the entire urban tax lot, which is under exclusive ownership of the Seattle Yacht Club and has historically been associated with the main clubhouse building. Other resources historically associated with the Seattle Yacht Club, such as the "Yardarm" and the "Historic Anchor" and slips, are not included within the boundary of the nominated property. The Seattle Yacht Club moorage is on leased property owned by the Department of Natural Resources and the yardarm and anchor are located on property owned by Seattle Parks that is under a maintenance agreement with the Seattle Yacht Club.

HISTORIC FIGURES AMONG MEMBERS OF SEATTLE YACHT CLUB, 1892-2006

N. H. Latimer; Banker, Financier, President of Dexter Horton Bank – one of the first banks in Seattle, 3-term Commodore of SYC. Latimer led the Club through the planning and construction of its present Portage Bay club house (1917-1919).

Col. C. B. Blethen; Yachtsman and Commodore of SYC in 1931. Owner and publisher of *The Seattle Times*. Some of his descendants continue as SYC club members.

Miller Freeman; Life Member, developer, publisher. Freeman was an active promoter of pleasure boating and ocean science. He established the University of Washington campus for Oceanography and Fisheries and published *Pacific Motor Boat* magazine with Daniel Pratt, editor.

Scott Calhoun; One time Seattle City Attorney and first attorney for the Port of Seattle. With Miller Freeman, Calhoun negotiated the agreement with the City for the SYC club house site.

L. E. "Ted" Geary; Arguably the West Coast's best yacht designer and Commodore of SYC in 1930. A renowned naval architect and racing skipper, Geary also designed the first diesel-powered tug boat in North America, the *Chickamauga* (1915).

Robert Moran; Yachtsman, financier, ship builder. Moran was the managing owner of Moran Brothers Shipyard, Seattle, builders of the battleship *Nebraska*. He also built the schooner *San Wan*, and the retreat (now resort) at Rosario, Orcas Island, Washington.

Capt. James Griffiths; 3-term Commodore of SYC, sea captain, importer, financier and ship builder. Capt. Griffiths ran his ship yard at Winslow on Bainbridge Island (formerly Hall Bros.) and owned a number of the finest motor yachts. He arranged the first regular shipments of silk from the Orient with NYK Lines.

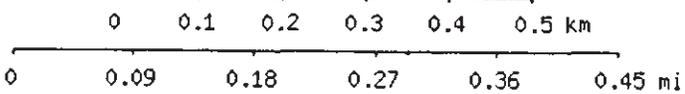
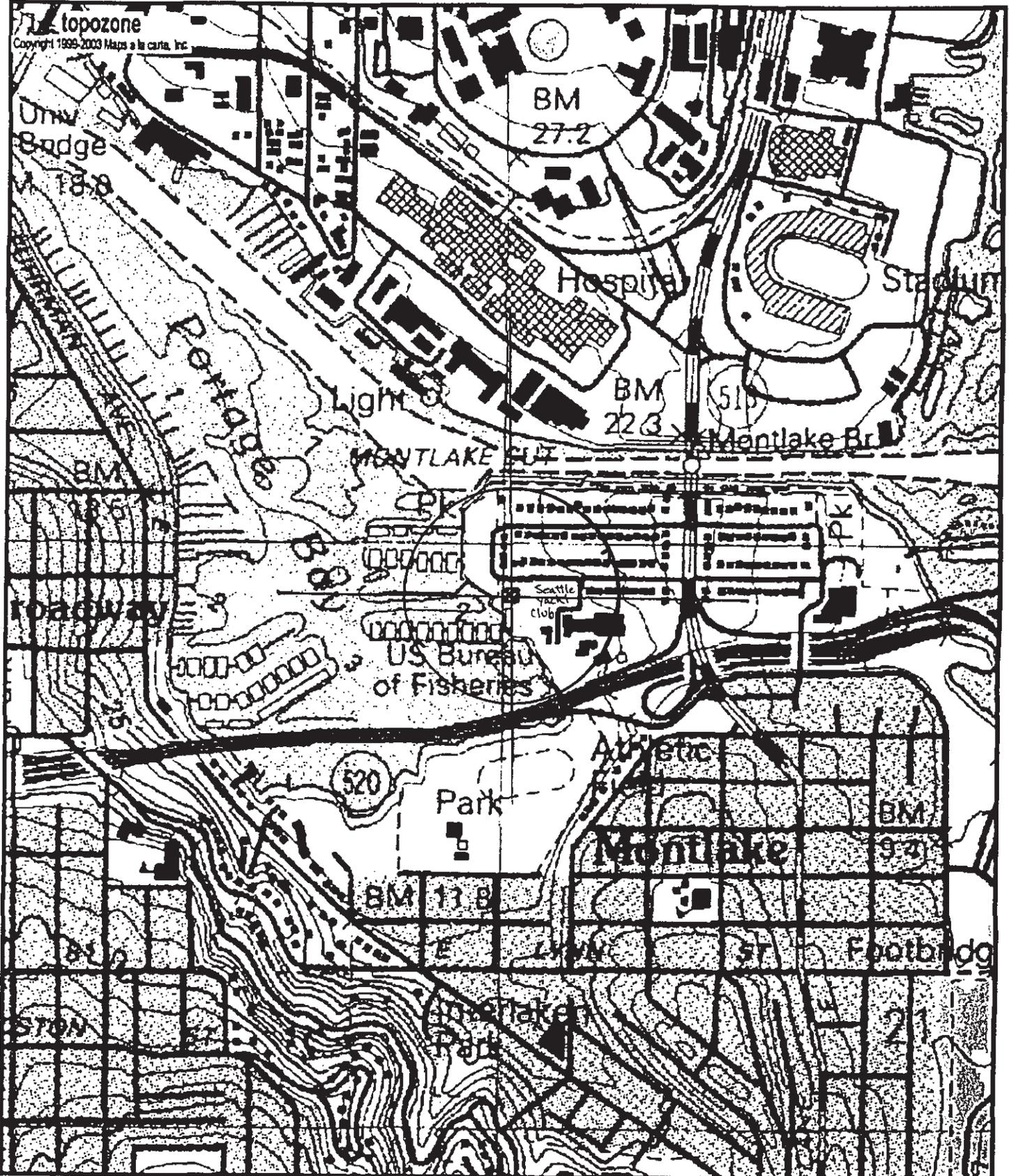
Henry Kotkins; Manufacturer, Seattle Port Commissioner and yachtsman. Kotkins owned and skippered the famous yawl *Diamond Head* for over forty years and founded Skyway Luggage.

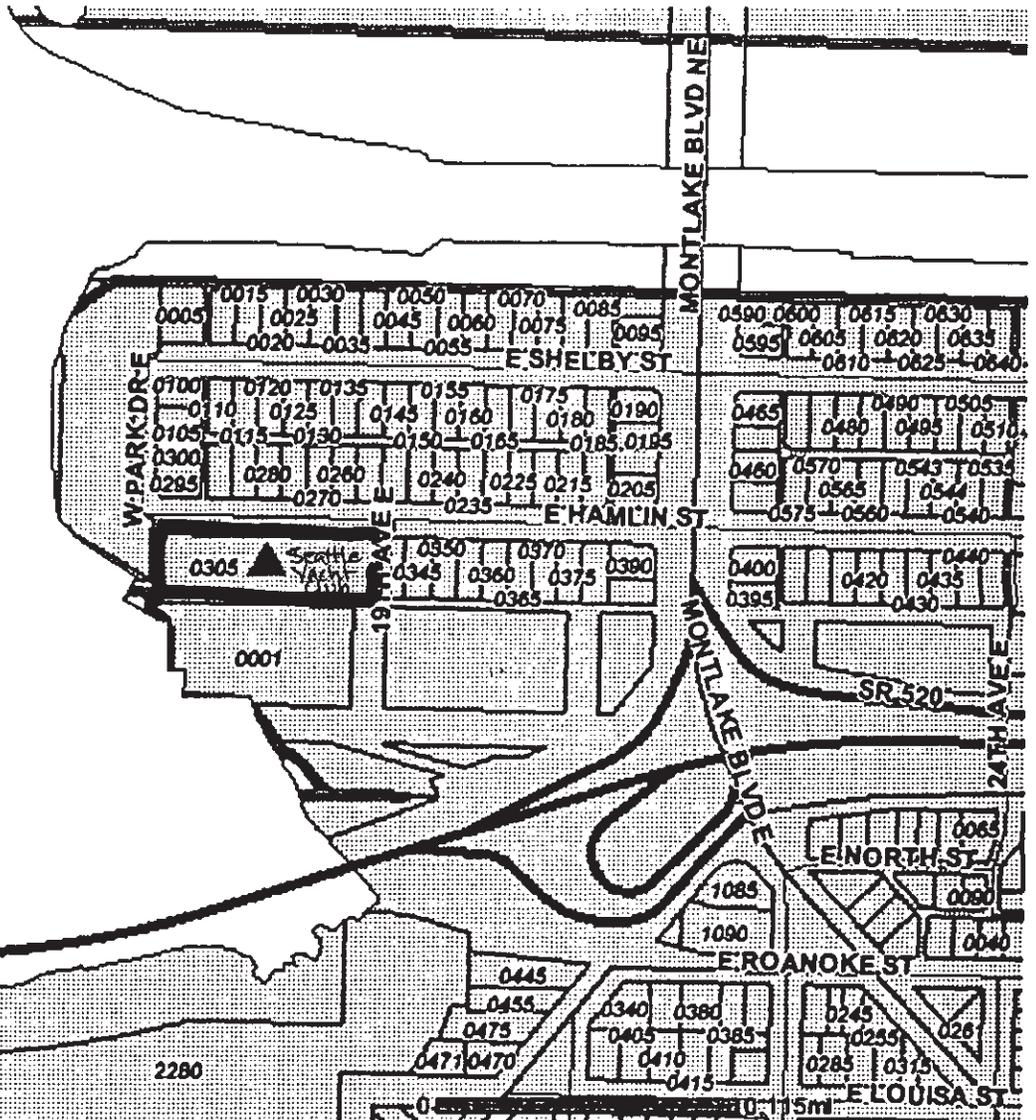
John Graham, Sr.; Architect, yachtsman and 2-term Commodore of SYC. He designed numerous Seattle landmarks including *The Bon Marche* (now, *Macy's*), the Dexter Horton Building and the present Portage Bay club house for SYC (1918-1919).

Stanley Sayers; Auto dealer and race boat innovator. Sayers' then-revolutionary unlimited hydroplane *Slo-Mo-Shun IV* brought the Unlimited Hydroplane Gold Cup to Seattle in 1950.

Bill & Carl Buchan; Father and son sailboat racers, they both won Gold Medals in their respective classes in the 1984 Olympic Games at Los Angeles. Bill has also won the Star Class World Championship twice, Carl once.

topozone
Copyright 1999-2003 Maps & la carta, Inc.





0000

Lake Union

0425

SR 520

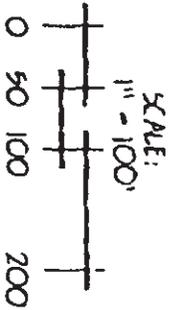


(C) 2005 King County

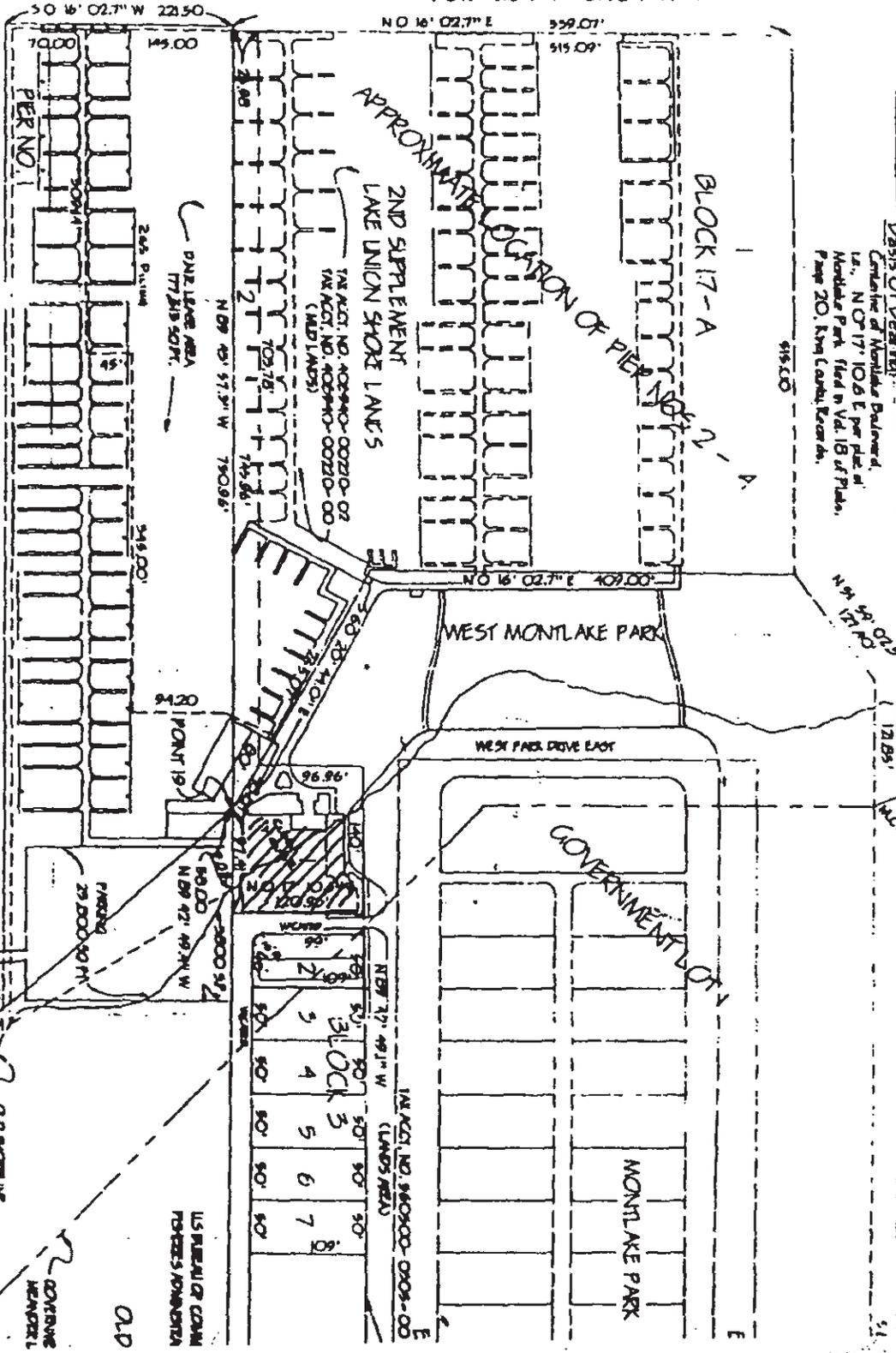
2280

0 0.0625 0.125 Miles

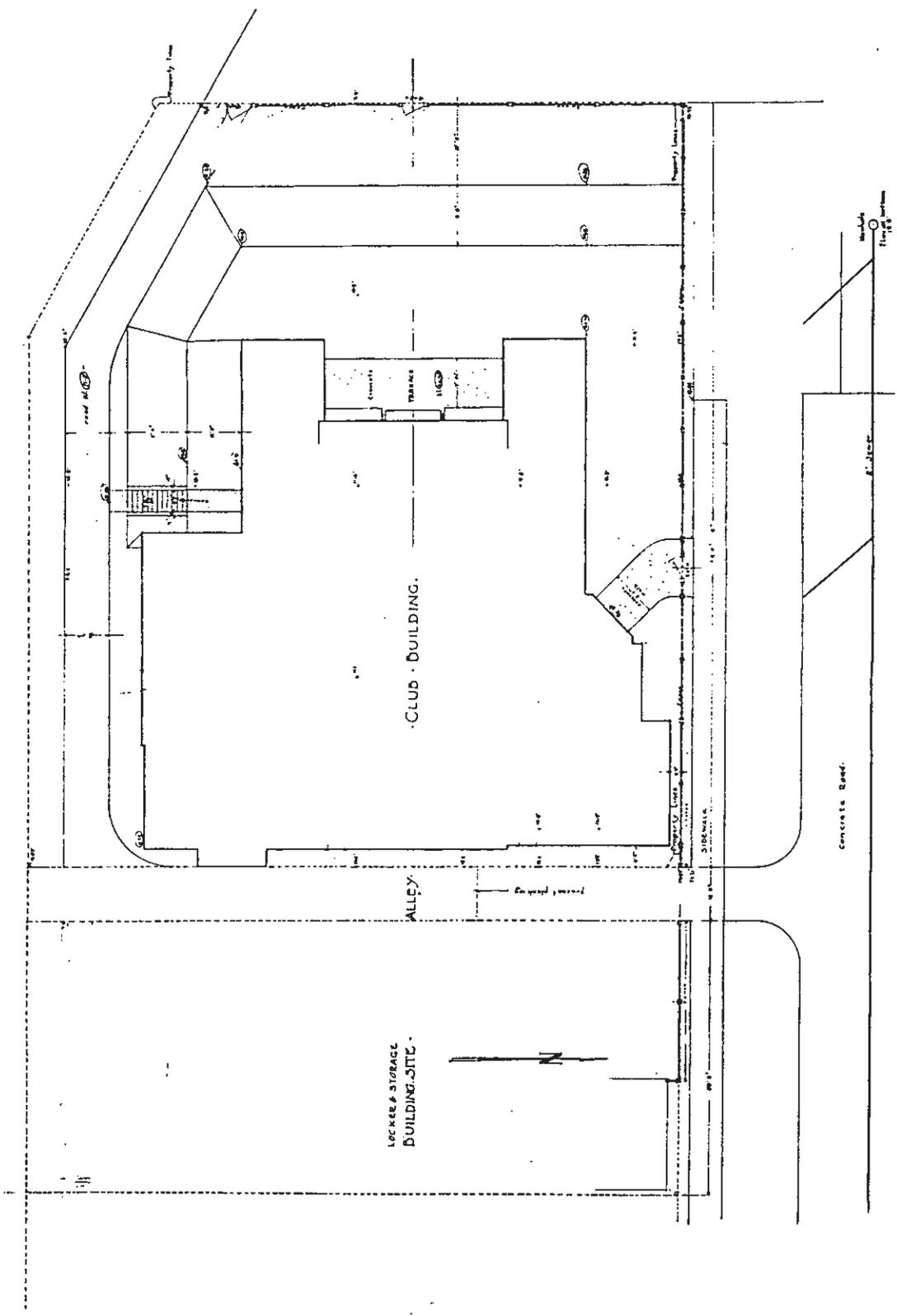
PORTAGE BAY LAKE UNION



Basis of Bearings:
Continuation of Montlake Boulevard,
i.e., N 0° 17' 10.6" E per plat of
Montlake Park filed in Vol. 18 of Plats,
Page 20, King County, Wash.

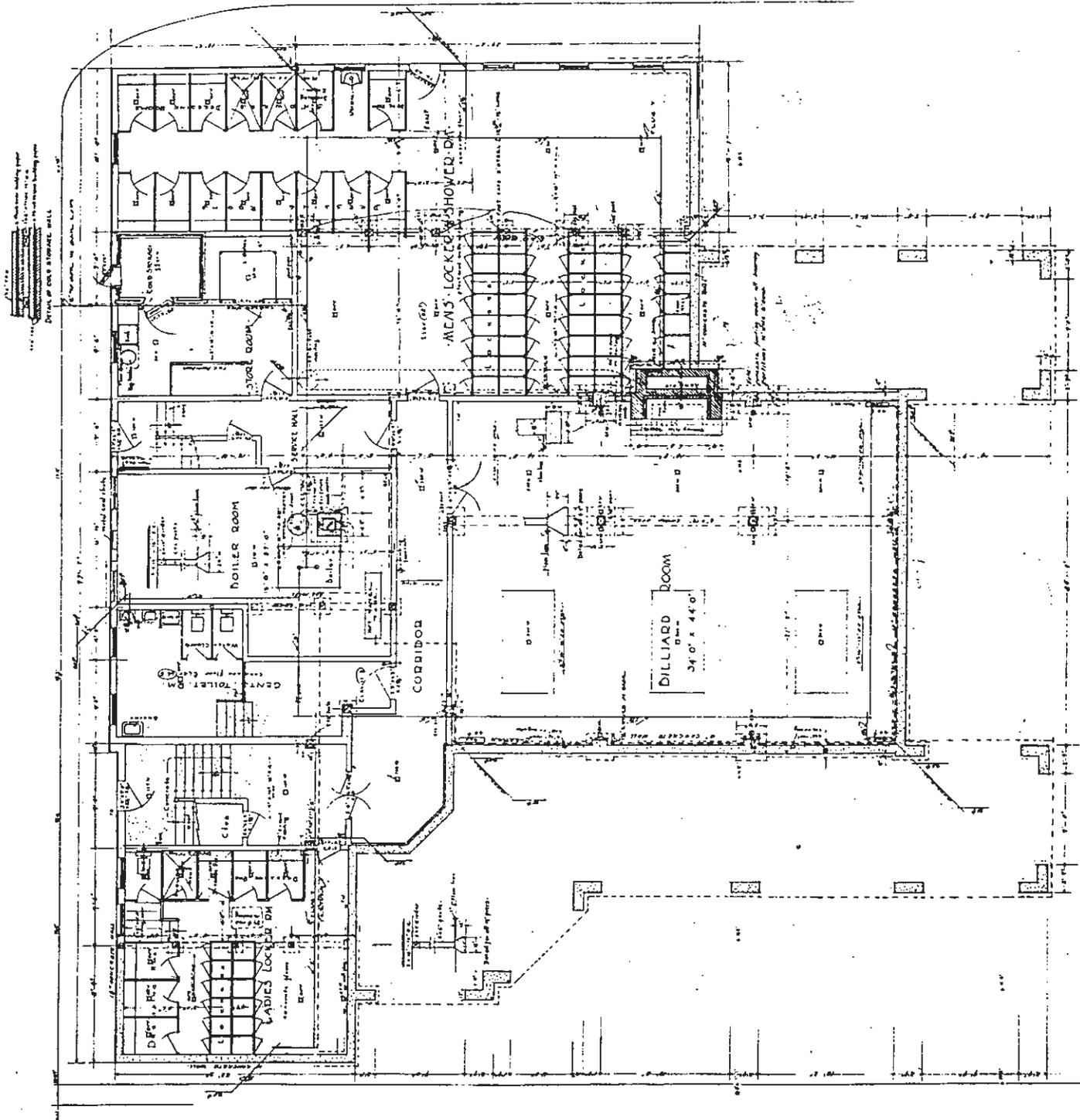


NE

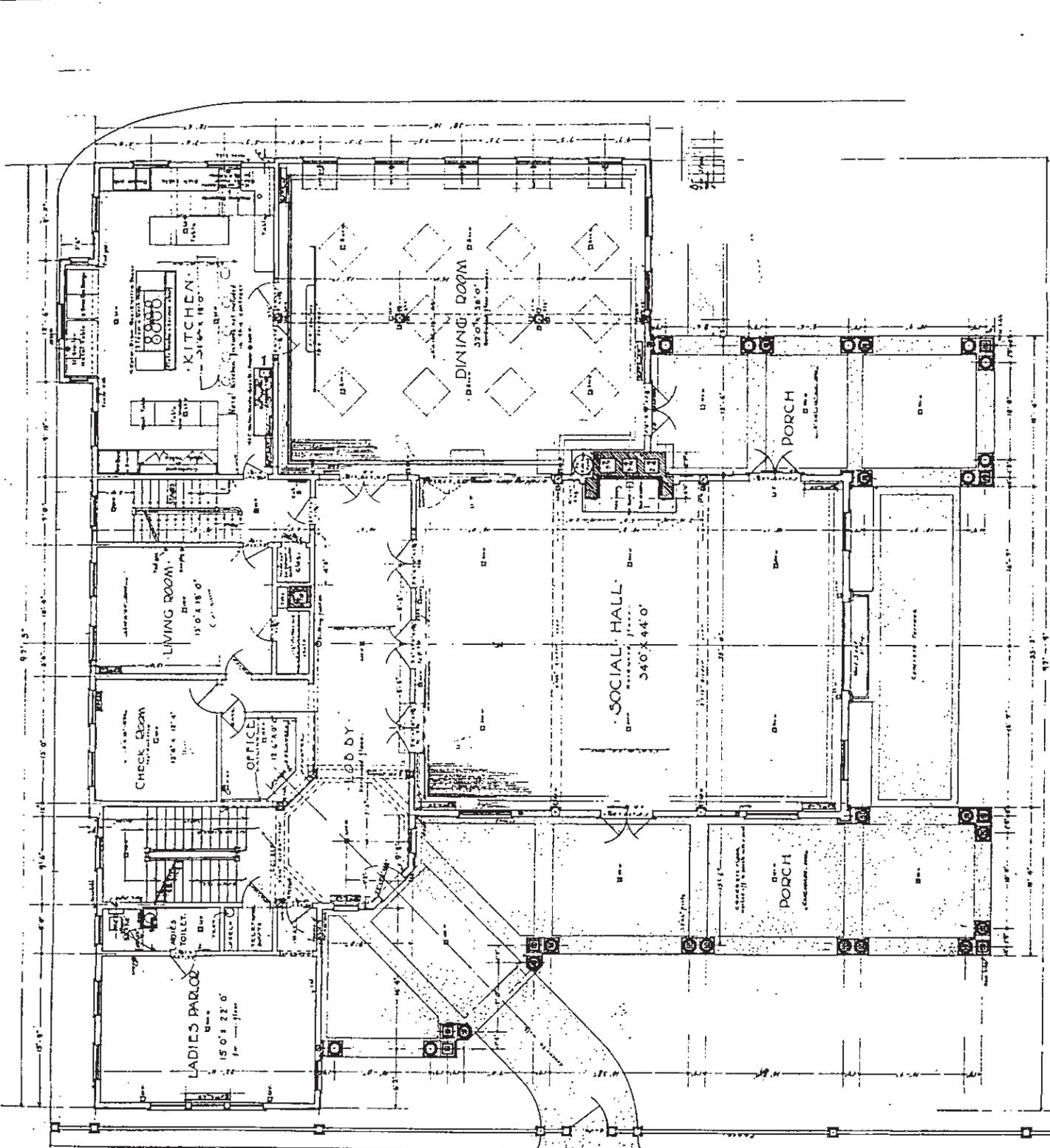


PLOT PLAN	
OWNER	CLUB BUILDING
DESIGNED BY	WALTON
DATE	1914
SCALE	1" = 10'
PROJECT	SEATTLE YACHT CLUB
LOCATION	1500 1st Ave. S.E.
DATE	1914

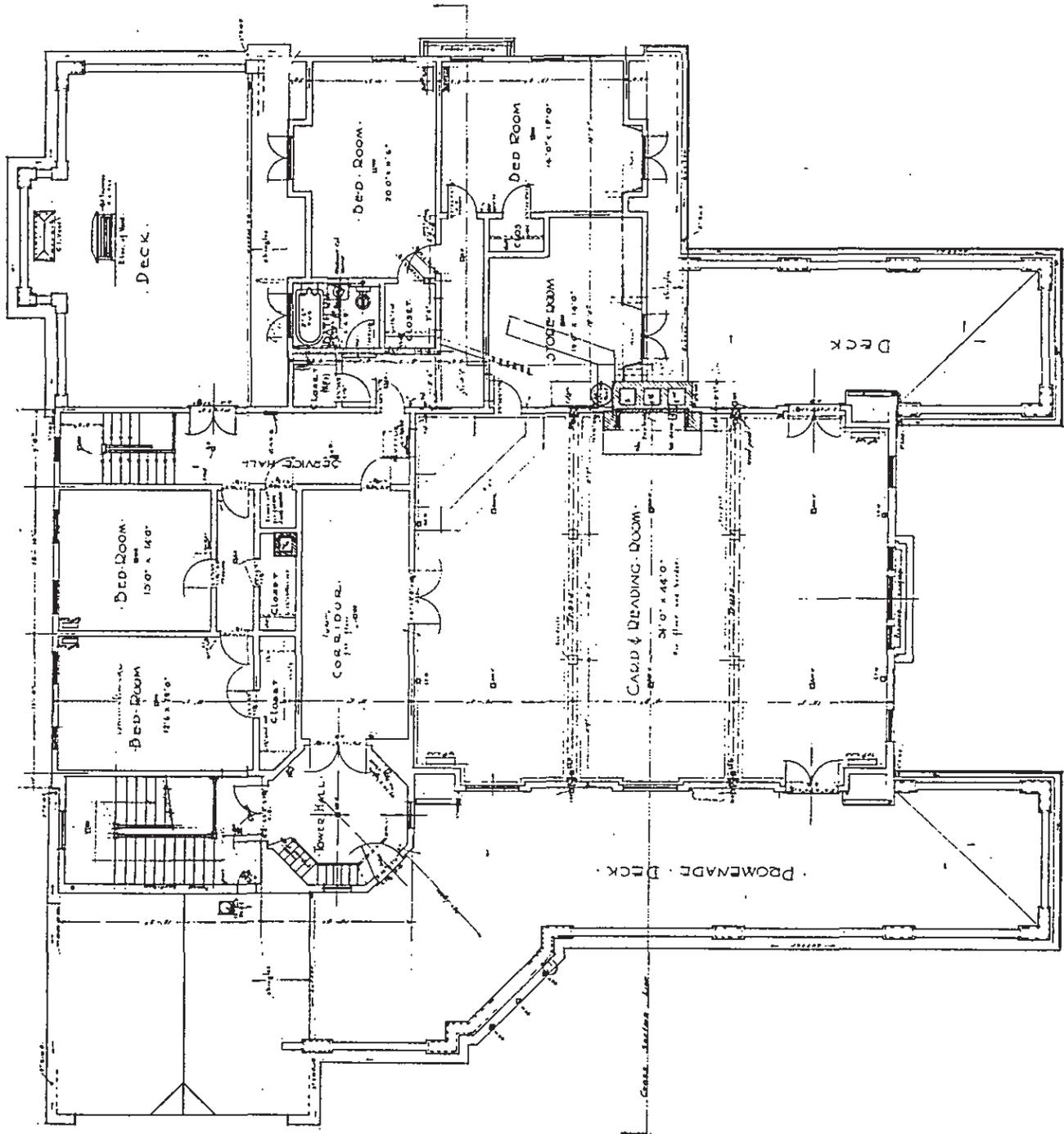
Notes: 1. Show lines from Plans
 2. Show lines from Plans
 3. Show lines from Plans



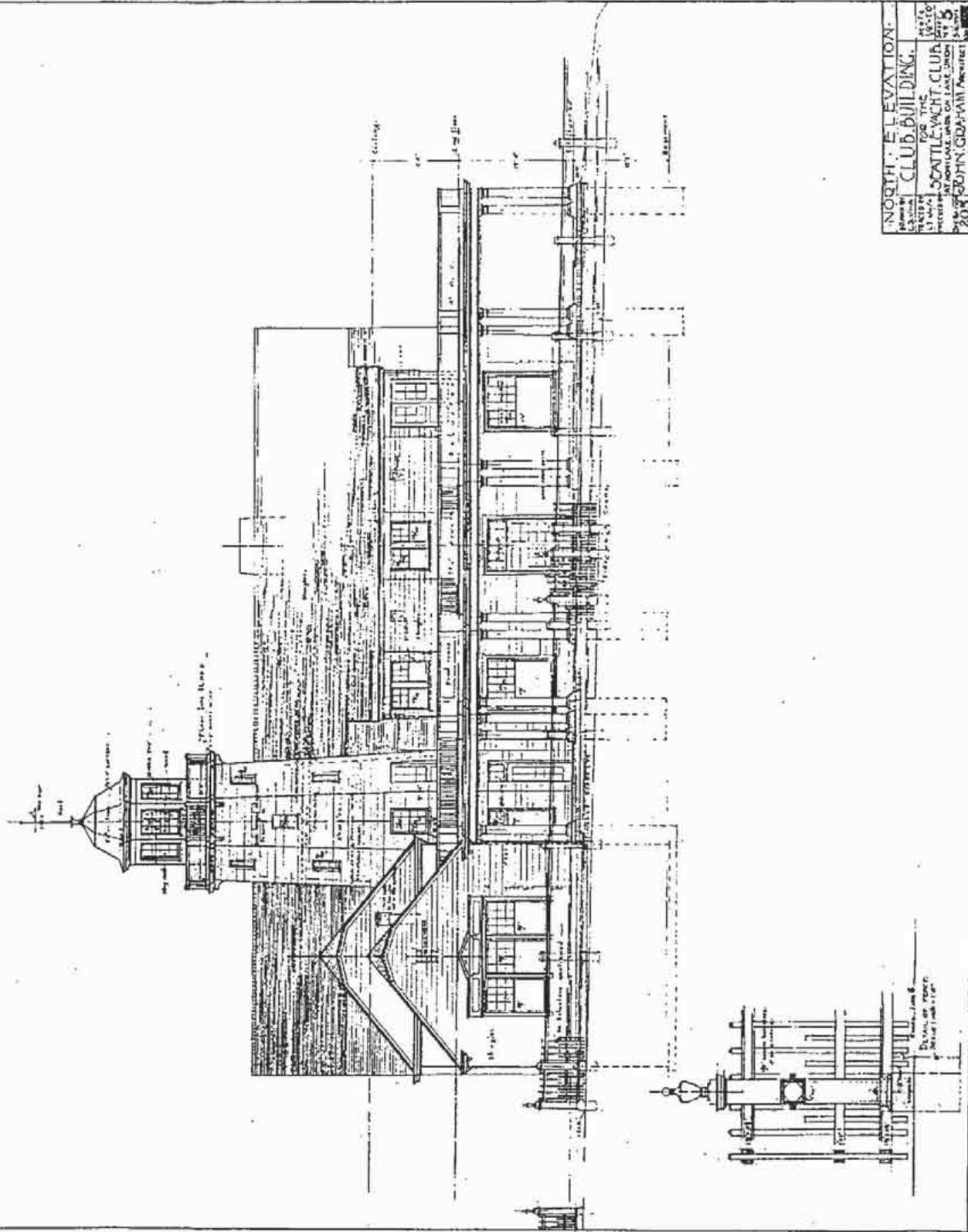
BASEMENT PLAN
CLUB BUILDING
 300 THE
SEATTLE YACHT CLUB
 17 MONTGOMERY PARK DR. LAKE UNION AS 2
 ARCHT. JOHN C. DAHAN



2ND FLOOR PLAN
 CLUB BUILDING
 FOR THE
 SAULTYACHT CLUB
 200' x 100'
 ST. MICHAEL'S PARK ON LAKE UNO
 PORT JEFFERSON, COAHUILA

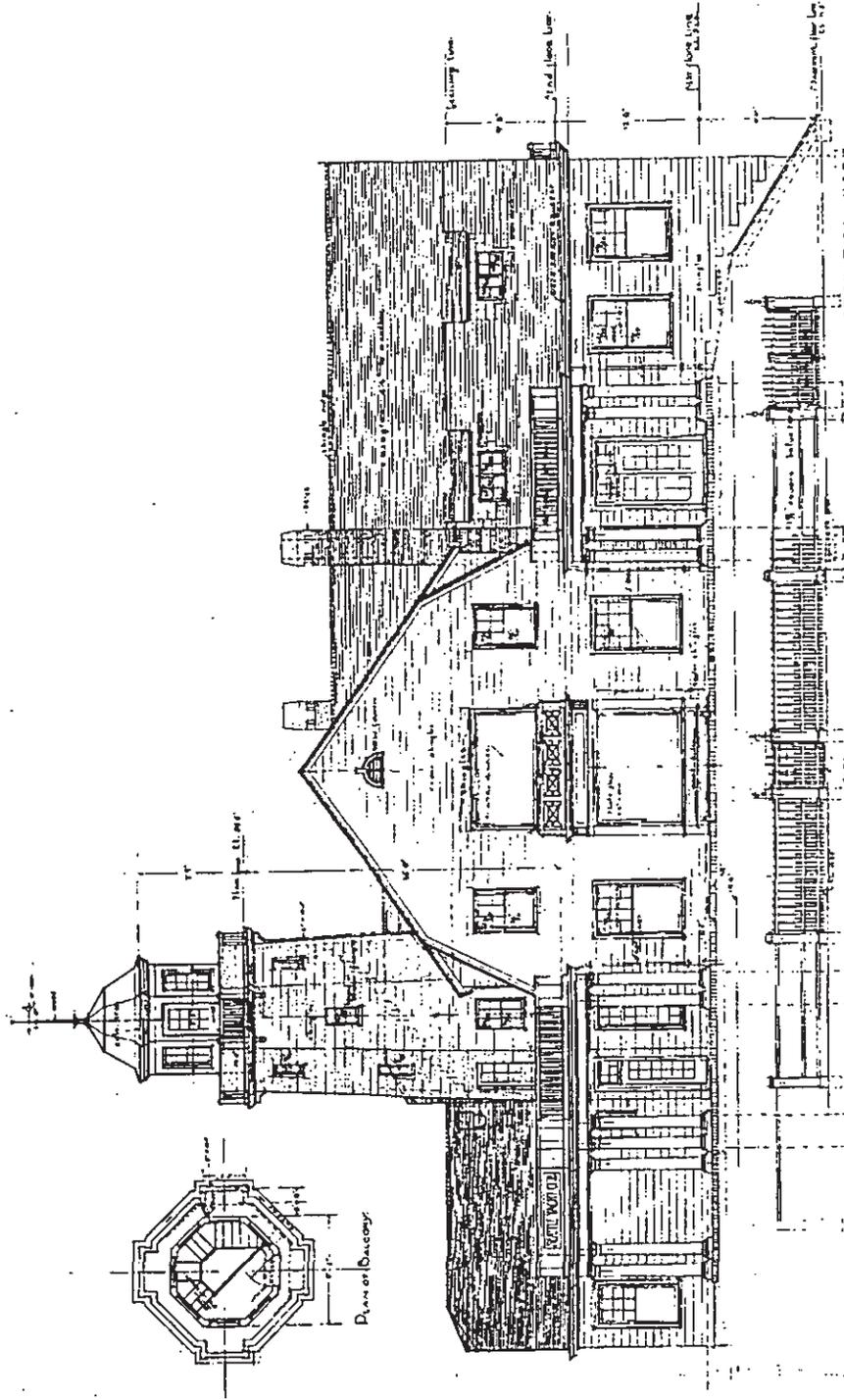


SECOND FLOOR PLAN	
ARCHITECT	CLUB BUILDING
ENGINEER	STATE EXHIBIT CLUB
DATE	APR 1915
PROJECT	AT MONTICELLO, VA.
NO.	4



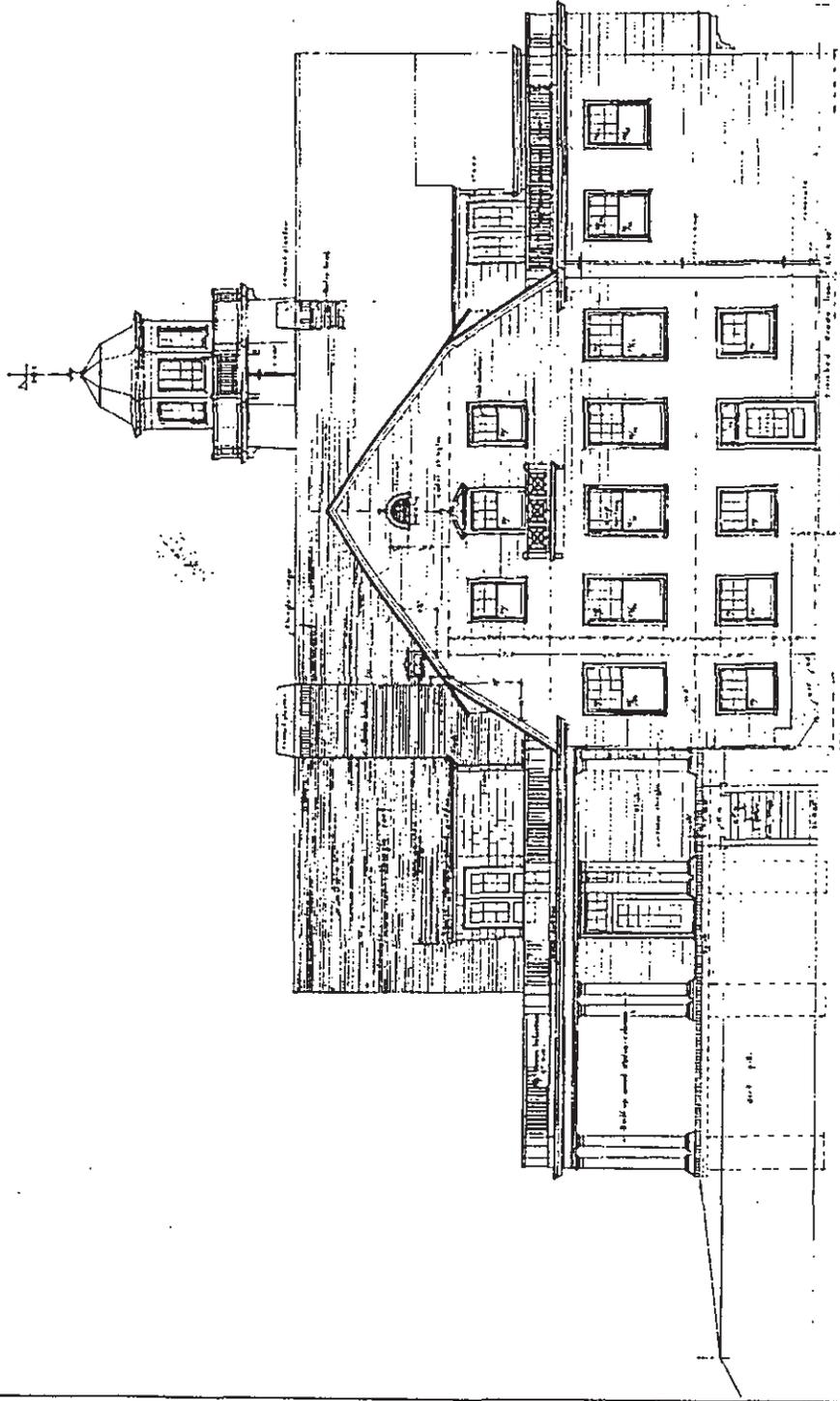
NORTH ELEVATION
FOR THE
CLUB BUILDING
SEATTLE YACHT CLUB
ARCHITECT
JOHN G. WILSON
205

Scale
1/4" = 1'-0"

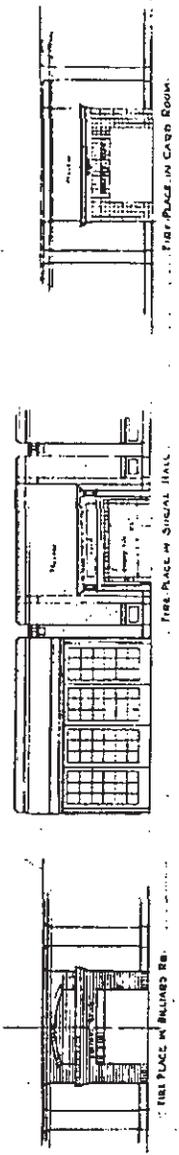
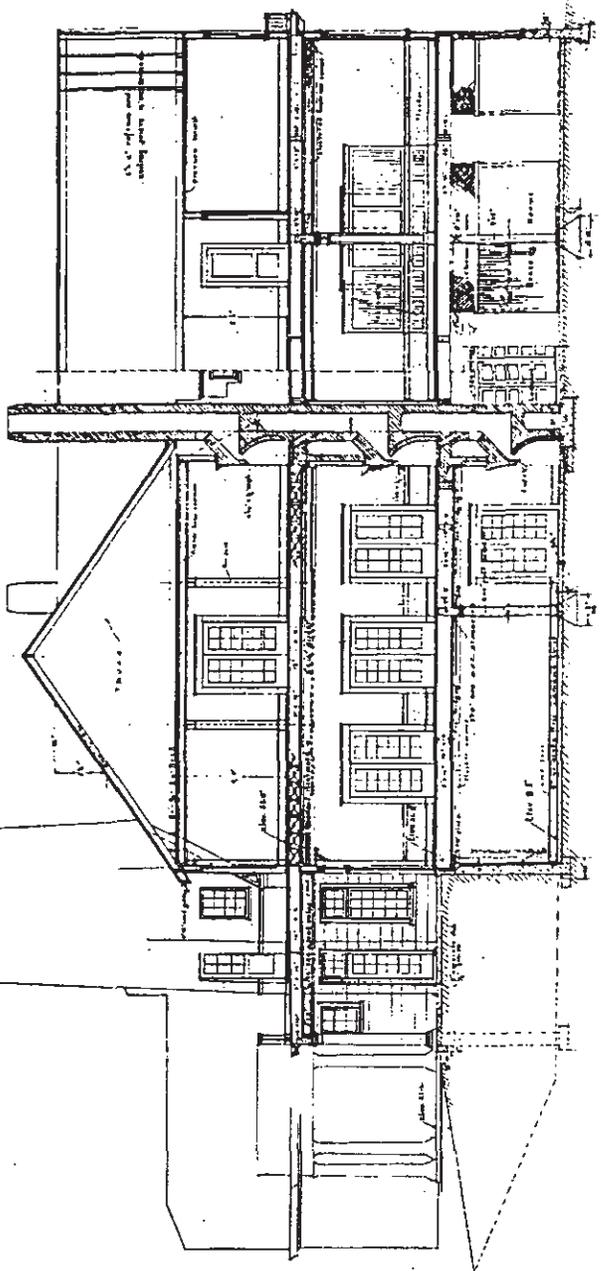
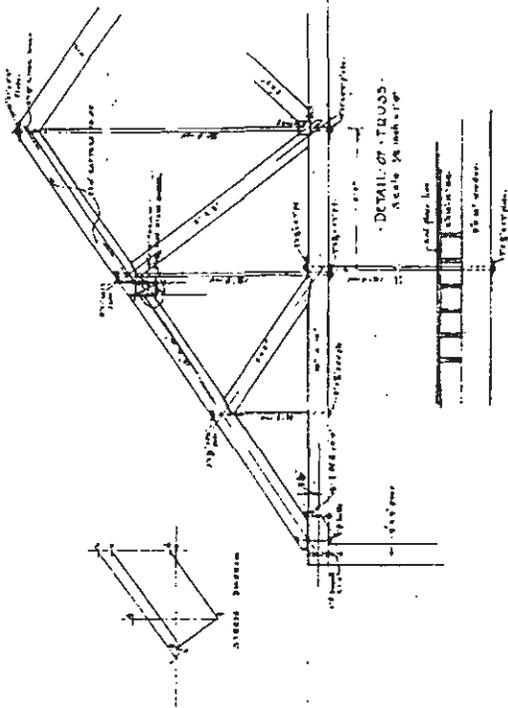


WEST ELEVATION

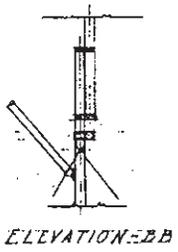
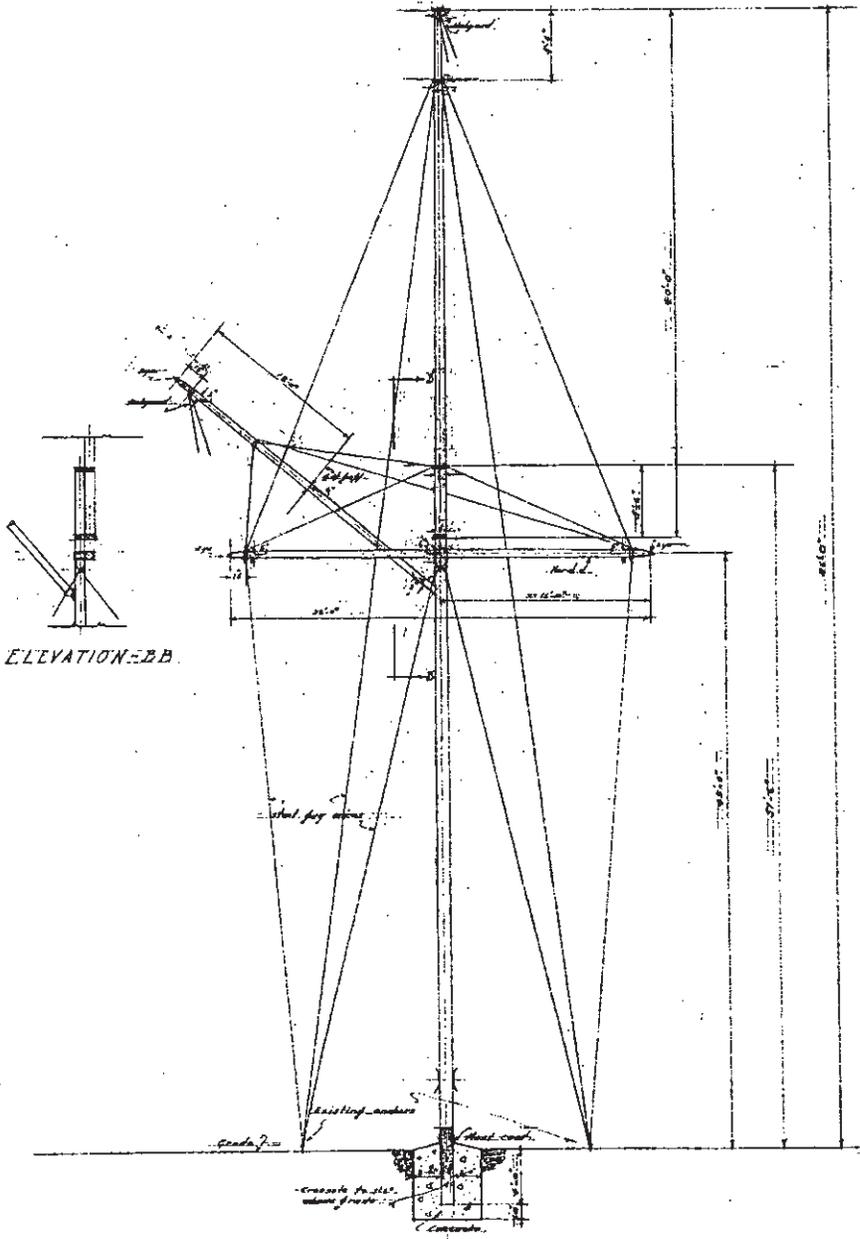
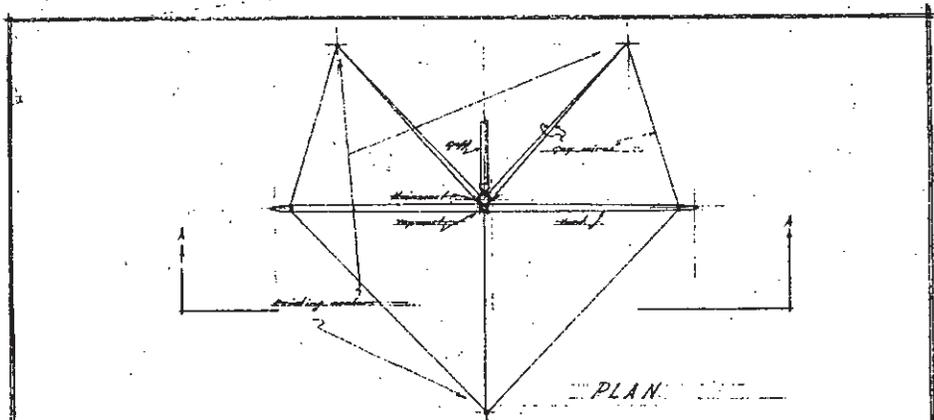
WEST ELEVATION
 CLUB BUILDING
 THE SEATTLE YACHT CLUB
 205 BORN CRAWFORD



SCOUTS RECREATION
CLUB BUILDING
1922
SEATTLE YACHT CLUB
ARCHITECT JOHN CHAZHAR
SCALE 1/4" = 1'-0"



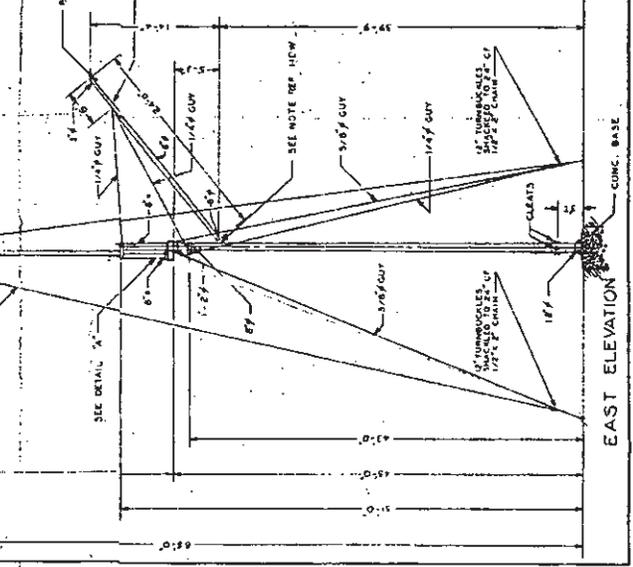
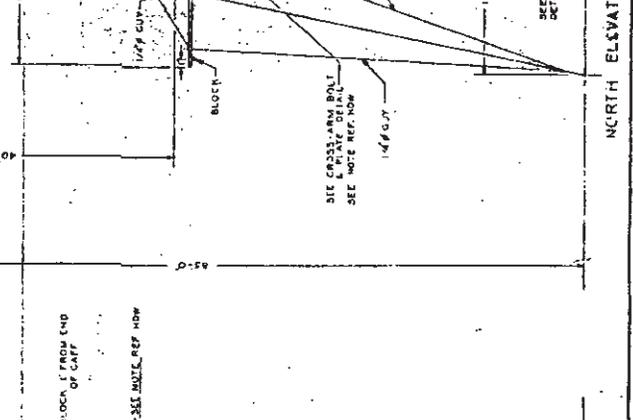
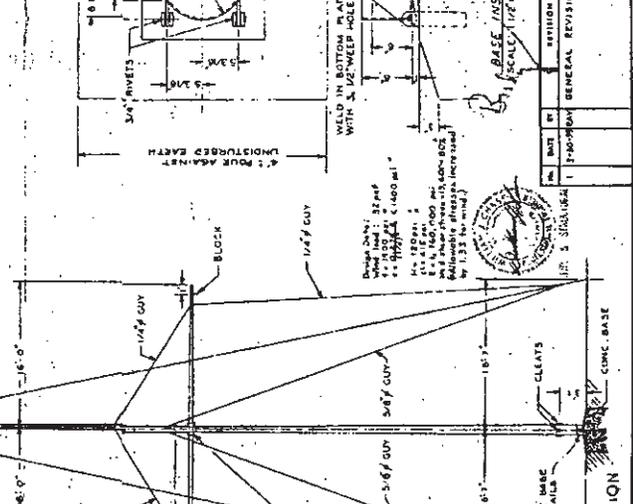
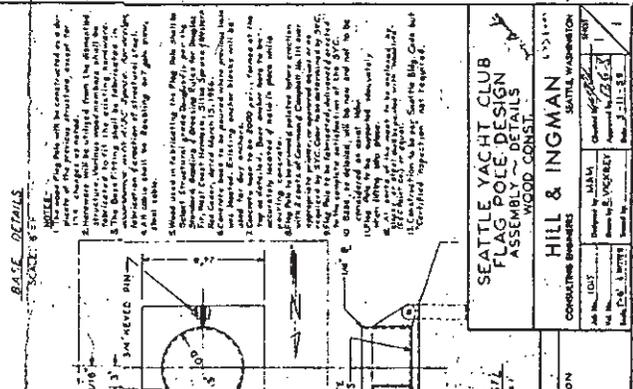
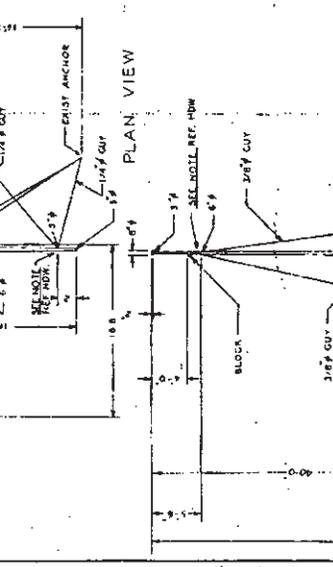
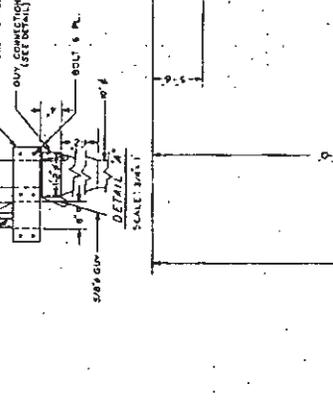
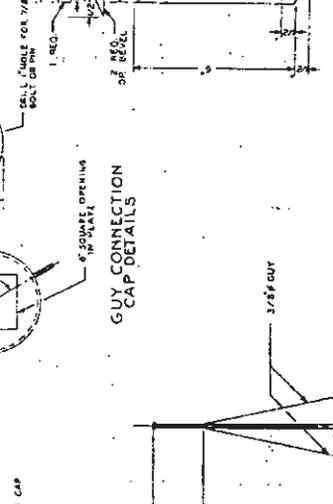
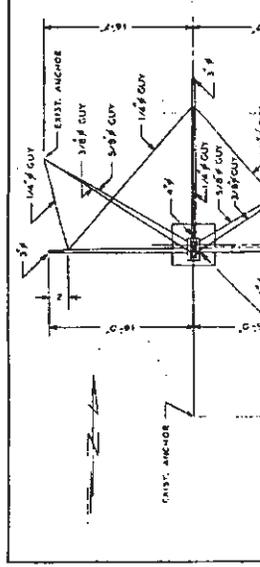
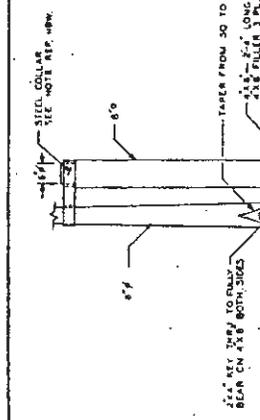
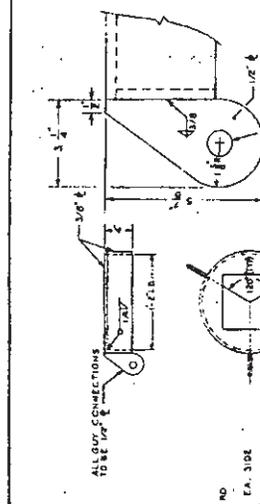
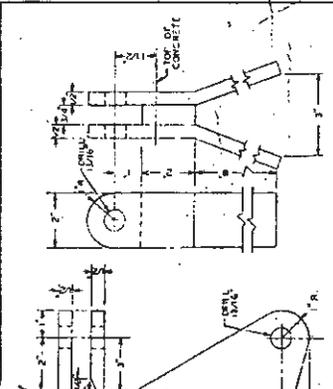
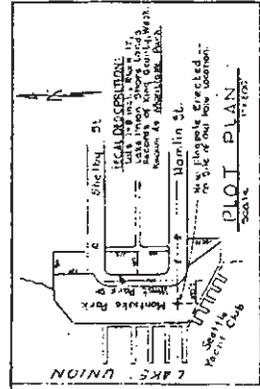
CROSS SECTION	
CLUB BUILDING	
ARCHT. BY	STATHOS ARCHT. CO.
ENGINEER	JOHN W. BROWN
NO. 9	203 BOYNGRAPH BLDG.



Note - Woodwork - to have 3 coats white paint.

SIGNAL MAST
SEATTLE YACHT CLUB
SEATTLE, WASHINGTON





SEATTLE YACHT CLUB
FLAG POLE DESIGN
ASSEMBLY DETAILS
WOOD CONST.

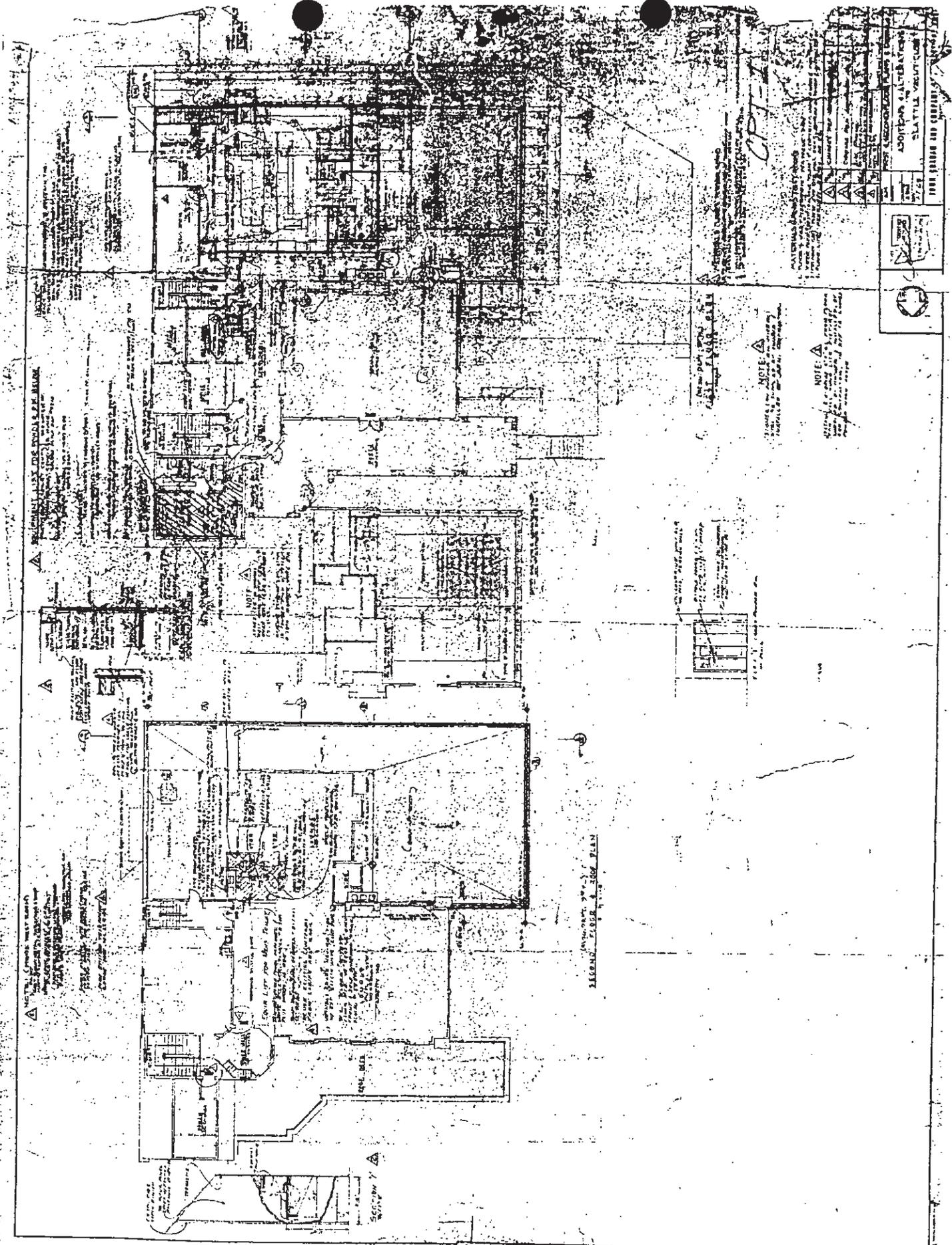
HILL & INGMAN
CONSULTING ENGINEERS
SEATTLE, WASHINGTON

DATE: JULY 1958
DRAWN BY: J. H. HILL
CHECKED BY: J. H. HILL
APPROVED BY: J. H. HILL

NOTES:
1. The flag pole shall be constructed of aluminum alloy pipe, 4" diameter, 1/2" wall thickness, except for the 1/2" diameter section at the base.
2. The flag pole shall be galvanized to protect the existing aluminum.
3. The flag pole shall be galvanized to protect the existing aluminum.
4. The flag pole shall be galvanized to protect the existing aluminum.
5. The flag pole shall be galvanized to protect the existing aluminum.
6. The flag pole shall be galvanized to protect the existing aluminum.
7. The flag pole shall be galvanized to protect the existing aluminum.
8. The flag pole shall be galvanized to protect the existing aluminum.
9. The flag pole shall be galvanized to protect the existing aluminum.
10. The flag pole shall be galvanized to protect the existing aluminum.

REVISIONS

NO.	DATE	BY	REVISION
1	7-15-58	J.H.H.	GENERAL REVISION



PLUMBING AND MECHANICAL WORK
 TO BE INSTALLED IN ACCORDANCE WITH THE
 REQUIREMENTS OF THE CITY OF SEATTLE
 AND THE STATE OF WASHINGTON.

NOTE: Δ
 ALL WORK TO BE DONE IN ACCORDANCE WITH THE
 REQUIREMENTS OF THE CITY OF SEATTLE
 AND THE STATE OF WASHINGTON.

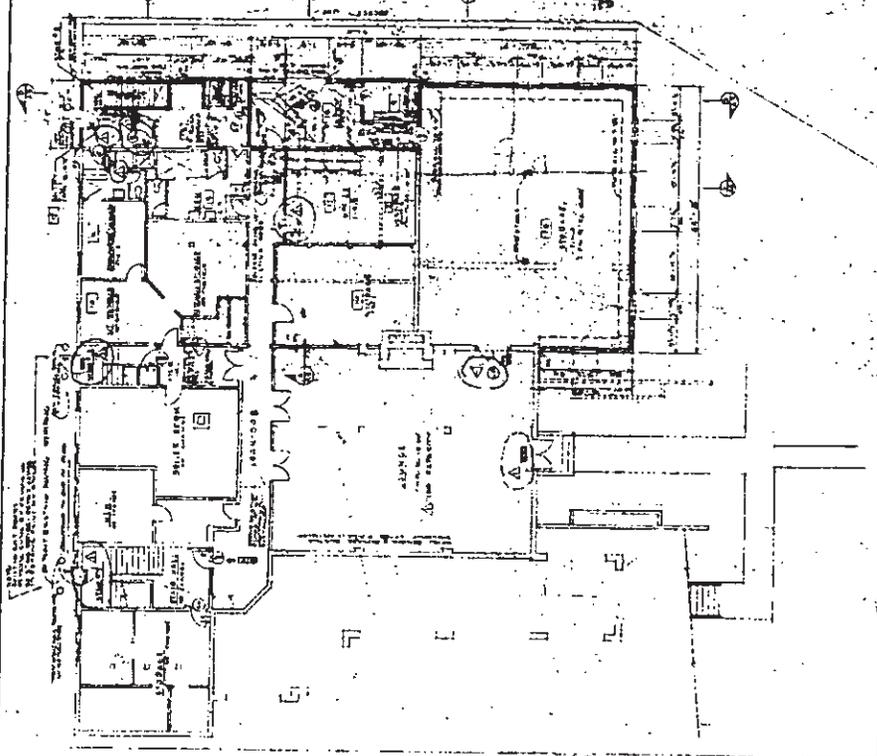
NOT TO SCALE
 SEE PLAN FOR
 DIMENSIONS

NO.	REVISION	DATE	BY	CHKD.
1	ADDITIONAL ALTERATIONS			
2	STAIRS REVISIONS			
3				
4				
5				

1000 THIRD AVENUE
 SEATTLE, WASHINGTON

SECOND FLOOR PLAN

SEATTLE YACHT CLUB



BASEMENT FLOOR PLAN

GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE BUILDING CODES AND SPECIFICATIONS.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPLICABLE AGENCIES.

3. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL EXISTING UTILITIES AND STRUCTURES AT ALL TIMES.

4. ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE ARCHITECT.

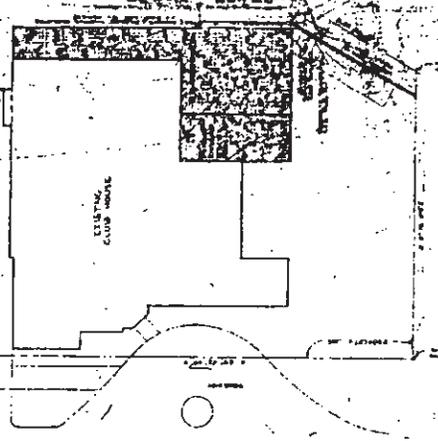
FINISH SCHEDULE

SCHEDULE OF FINISHES AND MATERIALS

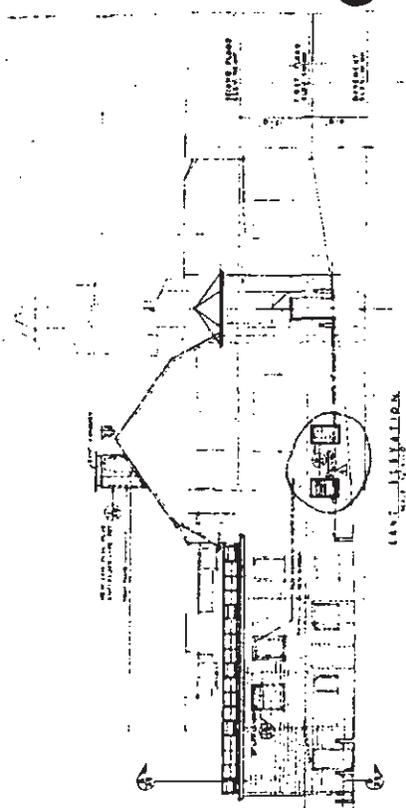
NO.	DESCRIPTION	FINISH	MATERIAL
1	CEILING	Acoustic Tile	1/2" x 12" x 24" Acoustic Tile
2	FLOOR	Polished Concrete	4" Concrete Slab
3	WALLS	Paint	White Enamel Paint
4	DOORS	Wood	1 1/2" x 6" x 8" Pine
5	WINDOWS	Wood	1 1/2" x 6" x 8" Pine
6	STAIRS	Wood	1 1/2" x 6" x 8" Pine
7	ROOF	Asphalt/Flt	Asphalt/Flt

INDEX TO DRAWINGS

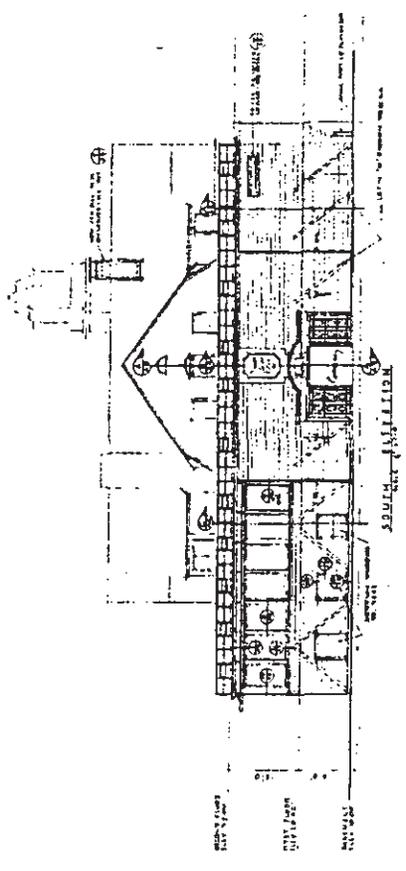
SHEET NO.	TITLE
A-1	PLAT PLAN, BASINMENT FLOOR
A-2	FIRST FLOOR
A-3	ELEVATIONS - EXTERIOR
A-4	WALL SECTIONS - EXTERIOR
A-5	DETAILS
A-6	PRELIMINARY PLANS & DETAILS
A-7	BASINMENT, KITCHEN & PLAT PLANS
A-8	PLAT PLAN, BASINMENT, KITCHEN & PLAT PLANS
A-9	INDEX TO DRAWINGS



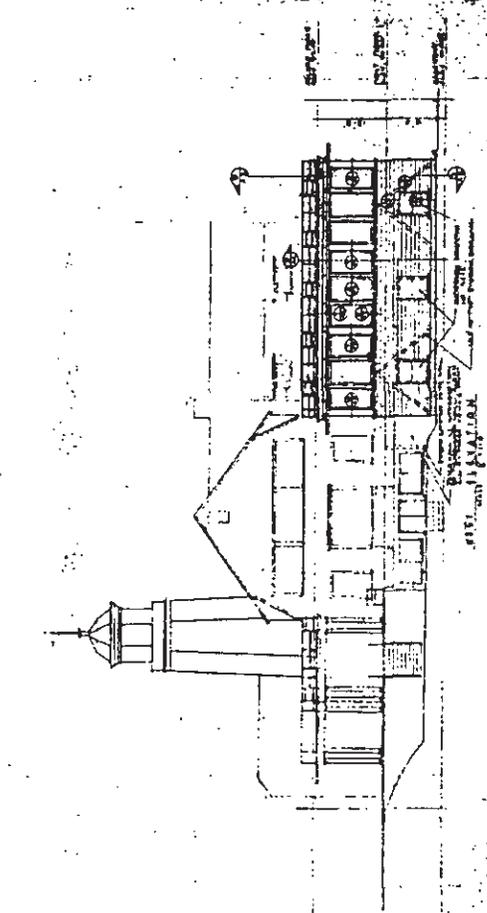
PLAT PLAN



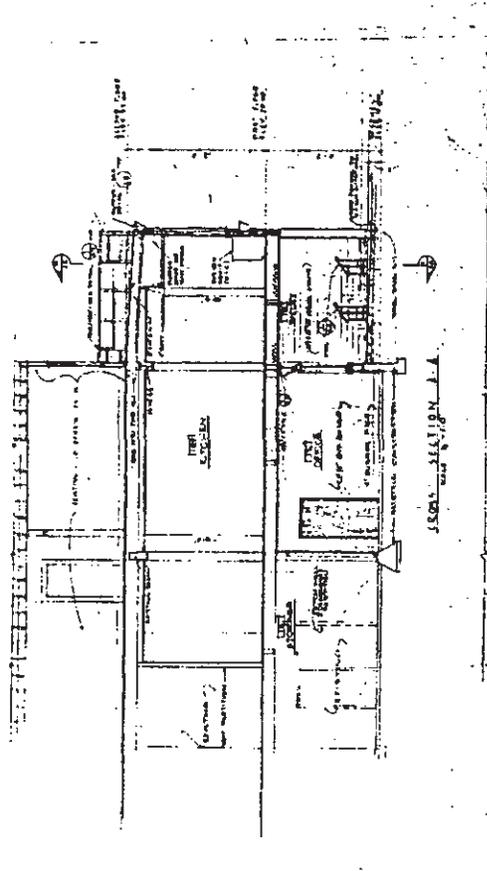
SECTION THROUGH TOWER



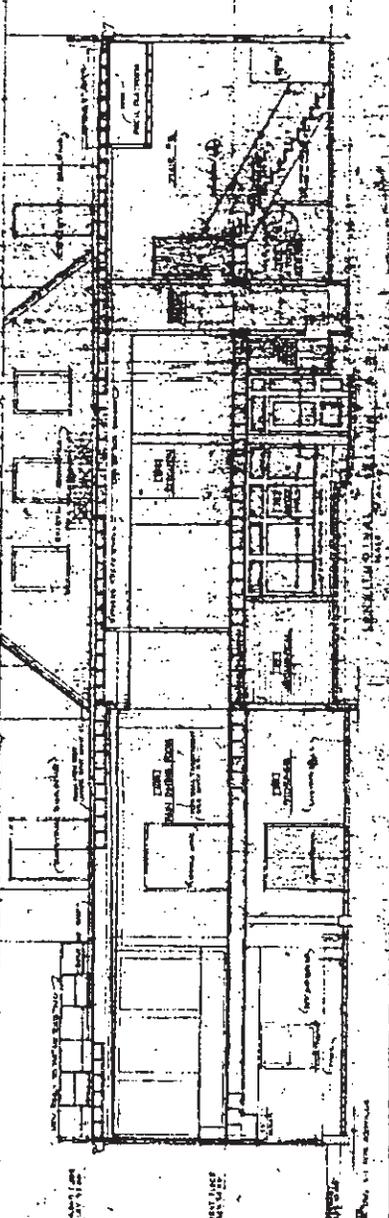
SECTION THROUGH PORCH



SECTION THROUGH TOWER

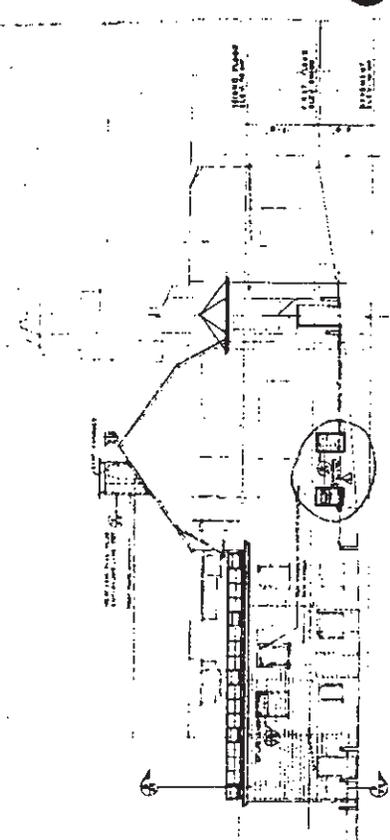


SECTION THROUGH TOWER

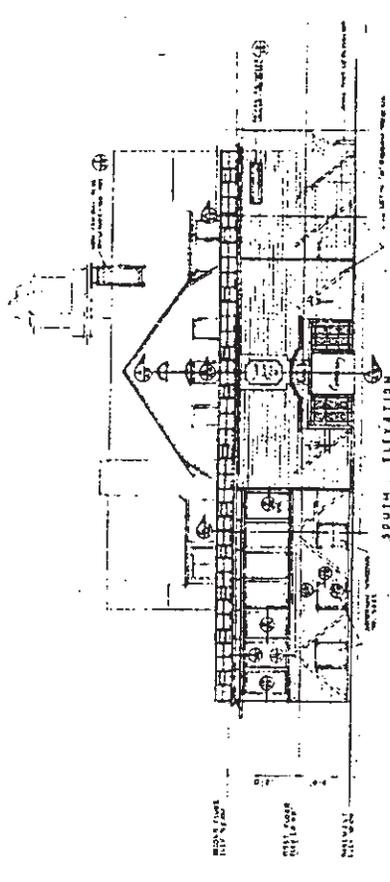


SECTION THROUGH BUILDING

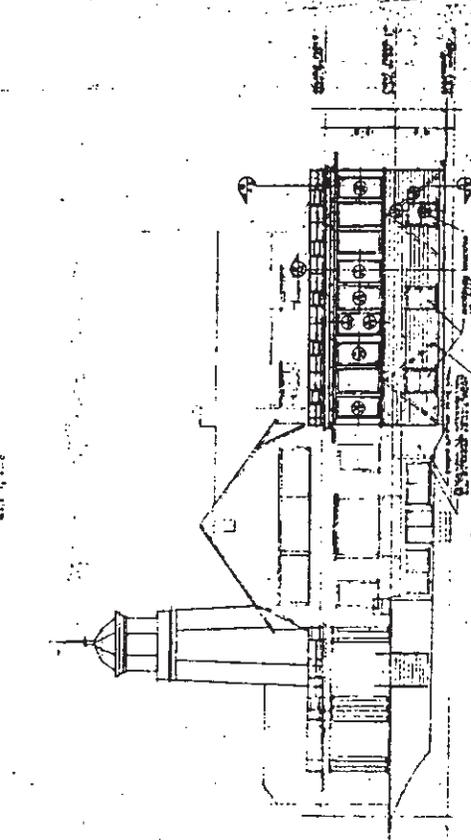
NO.	DESCRIPTION
1	...
2	...
3	...
4	...
5	...
6	...
7	...
8	...
9	...
10	...



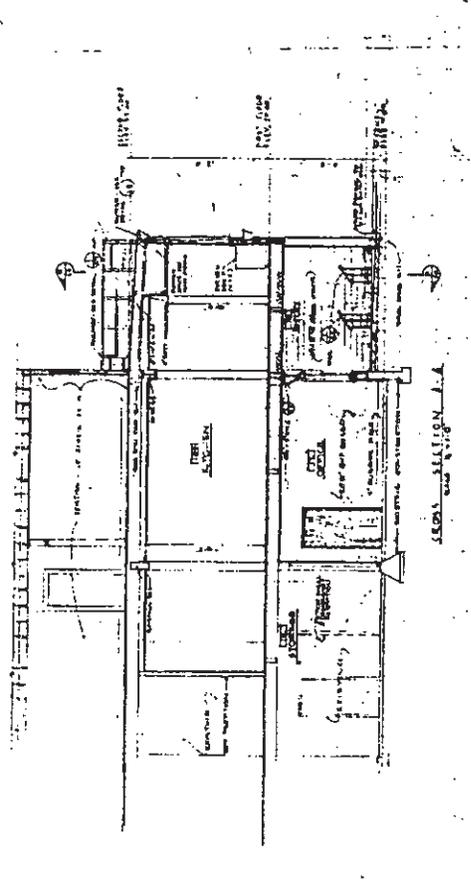
SECTION THROUGH TOWER



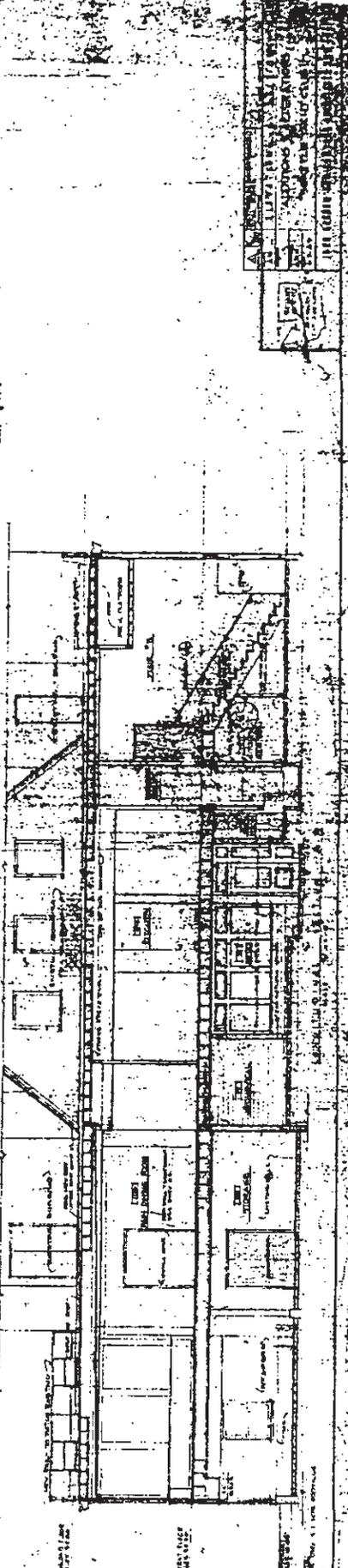
SECTION THROUGH TOWER



SECTION THROUGH TOWER

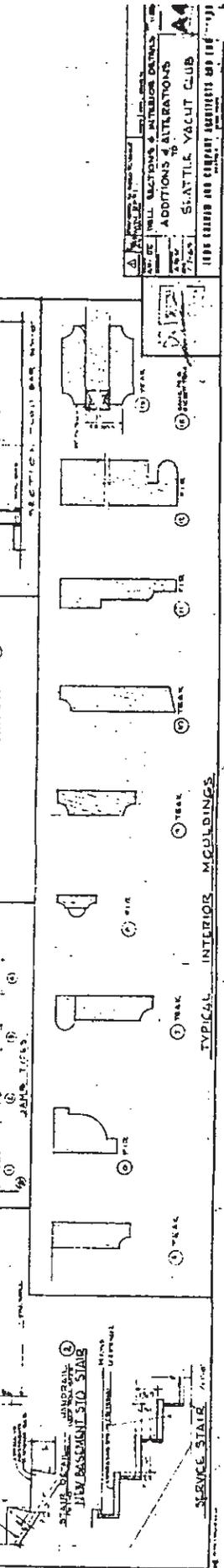
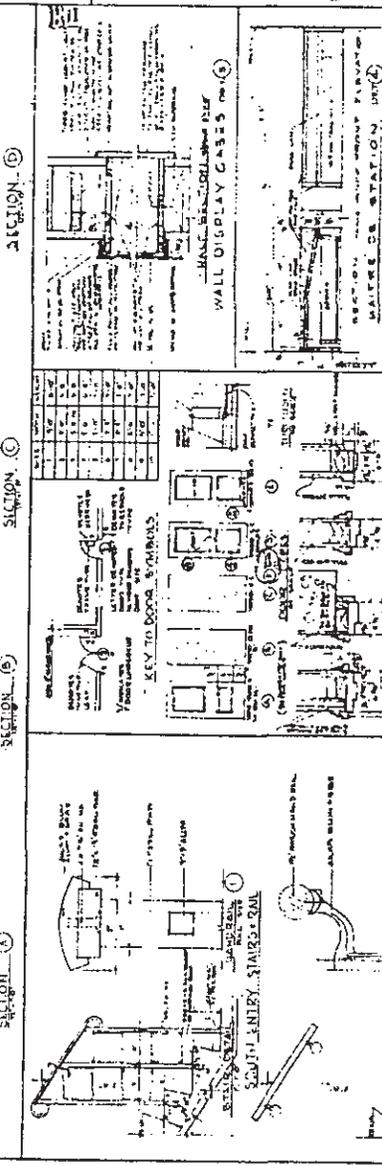
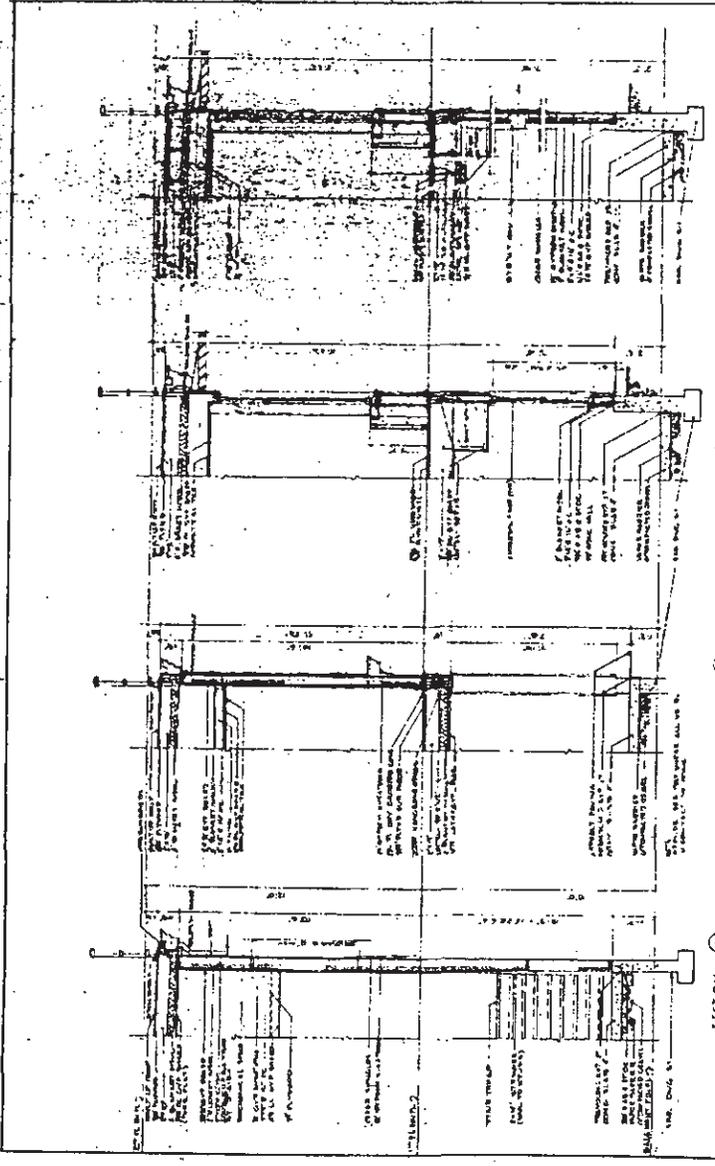
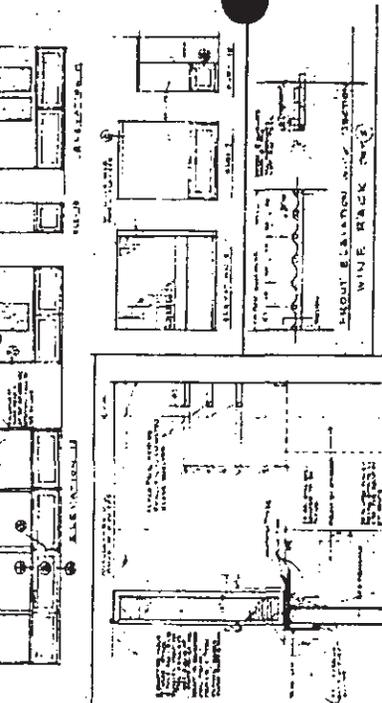
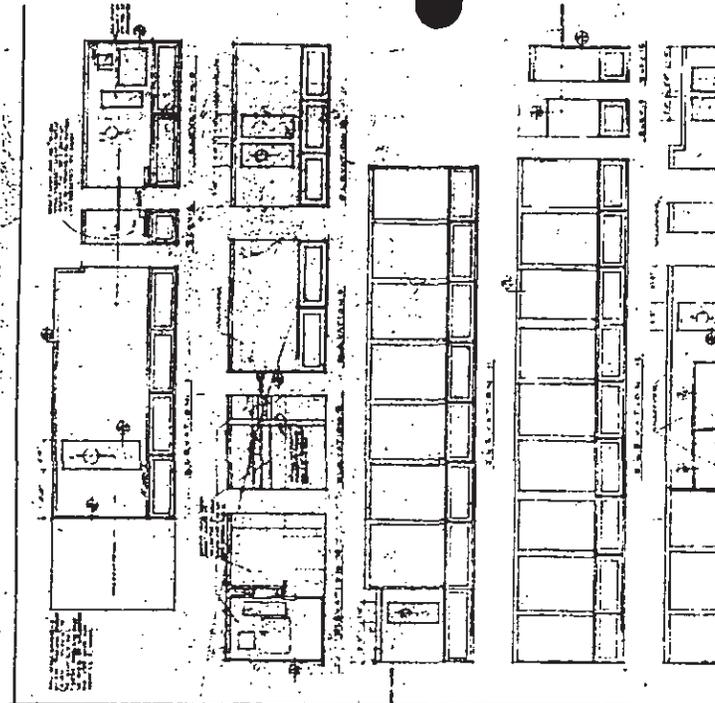


SECTION THROUGH TOWER

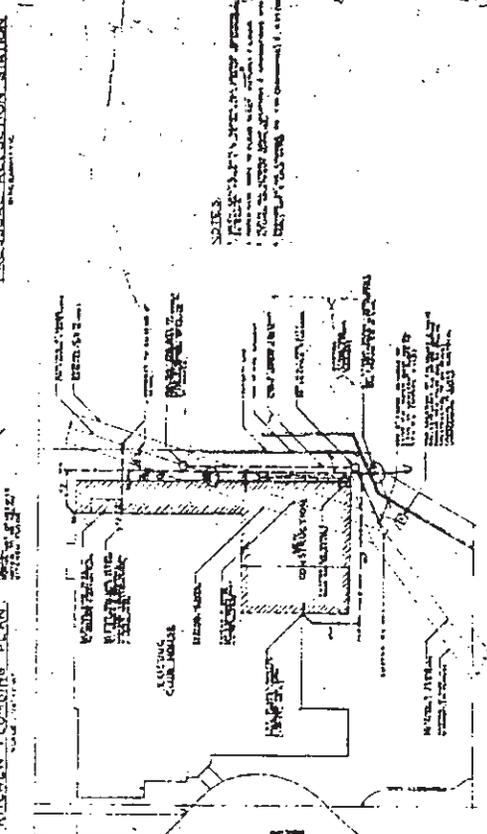
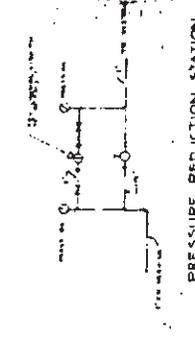


ALL DIMENSIONS IN FEET AND INCHES
 UNLESS OTHERWISE SPECIFIED
 IN CASE OF DISCREPANCY BETWEEN
 DIMENSIONS AND NOTES THE NOTES SHALL
 GOVERN

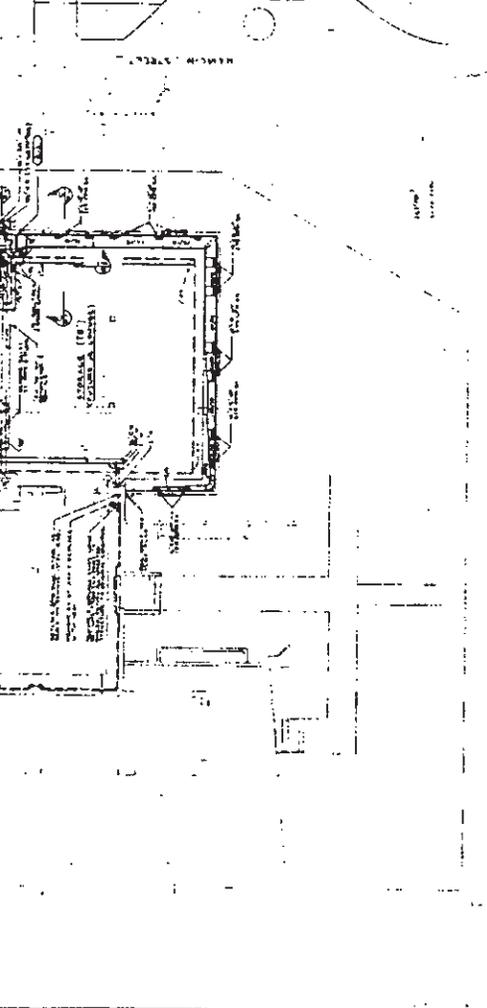
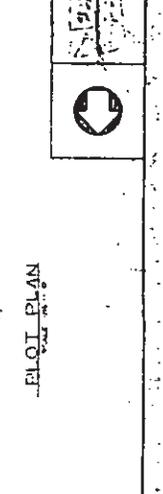
100 1000 100 1000 100 1000 100 1000
 ADDITIONS TO ALTERATIONS
 SEATTLE YACHT CLUB
 100 1000 100 1000 100 1000 100 1000



KITCHEN EQUIPMENT SCHEDULE		REMARKS
NO.	DESCRIPTION	
101	STOVE	
102	SINK	
103	CUPBOARD	
104	REF.	
105	WASHER	
106	DRYER	
107	STOVE	
108	SINK	
109	CUPBOARD	
110	REF.	
111	WASHER	
112	DRYER	
113	STOVE	
114	SINK	
115	CUPBOARD	
116	REF.	
117	WASHER	
118	DRYER	
119	STOVE	
120	SINK	
121	CUPBOARD	
122	REF.	
123	WASHER	
124	DRYER	
125	STOVE	
126	SINK	
127	CUPBOARD	
128	REF.	
129	WASHER	
130	DRYER	
131	STOVE	
132	SINK	
133	CUPBOARD	
134	REF.	
135	WASHER	
136	DRYER	
137	STOVE	
138	SINK	
139	CUPBOARD	
140	REF.	
141	WASHER	
142	DRYER	
143	STOVE	
144	SINK	
145	CUPBOARD	
146	REF.	
147	WASHER	
148	DRYER	
149	STOVE	
150	SINK	
151	CUPBOARD	
152	REF.	
153	WASHER	
154	DRYER	
155	STOVE	
156	SINK	
157	CUPBOARD	
158	REF.	
159	WASHER	
160	DRYER	



NO.	DESCRIPTION	REMARKS
1	BASEMENT EQUIPMENT	
2	ADDITIONAL ALTERNATIONS	
3	9 SATTLE YACHT CLUB	
4	100 SATTLE YACHT CLUB	

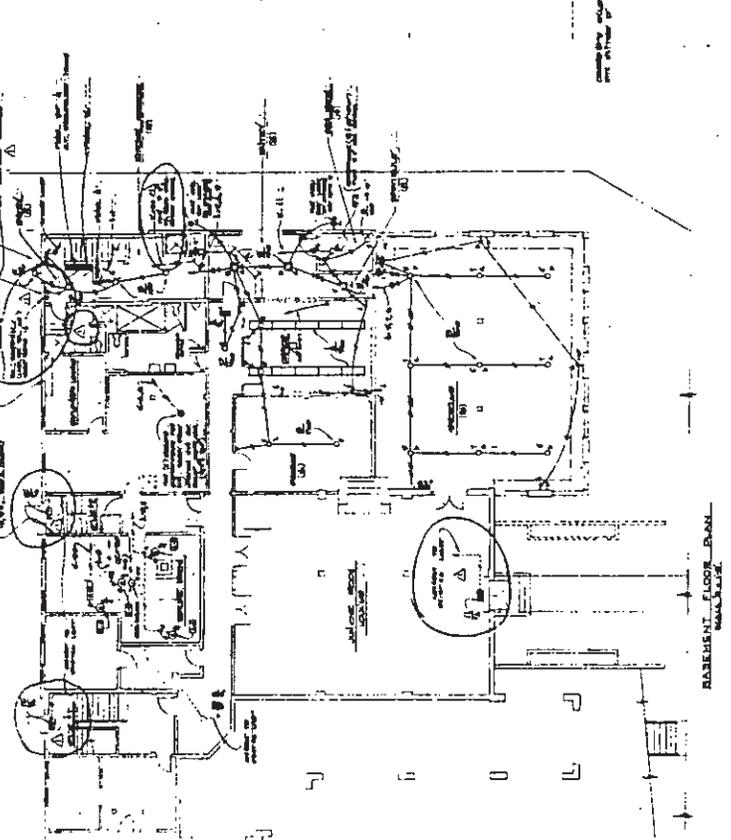
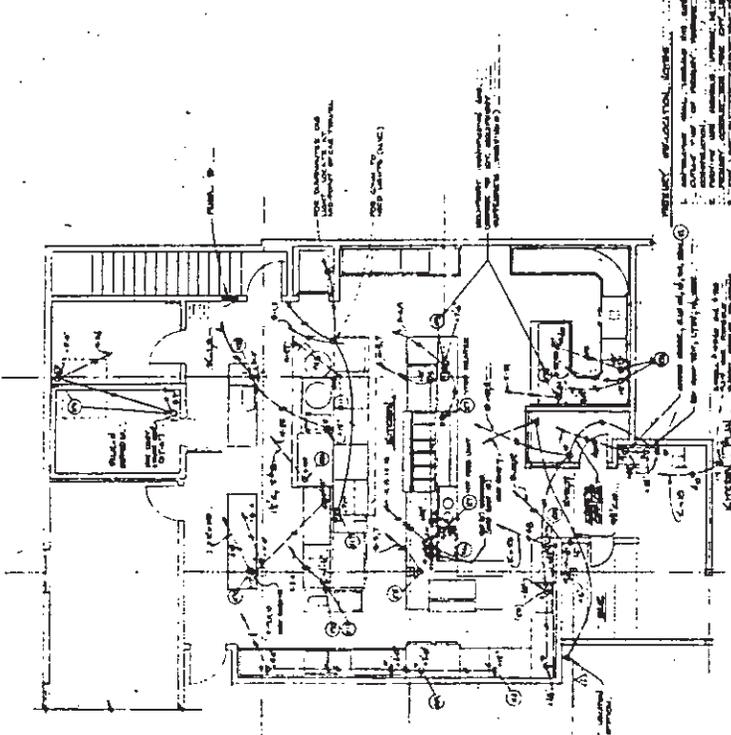
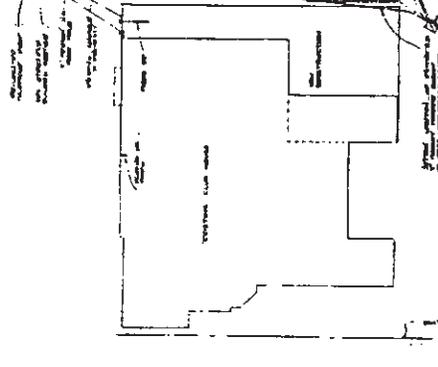
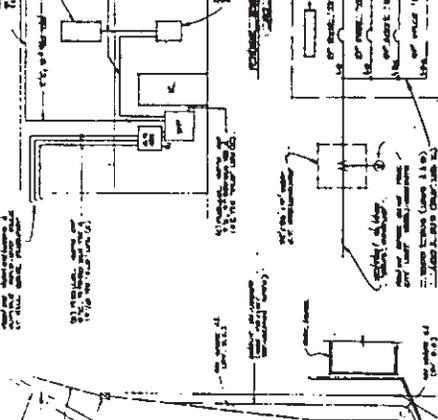
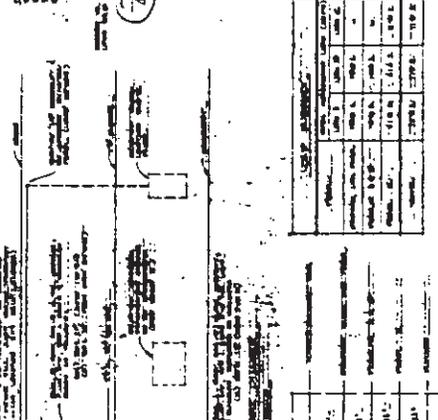


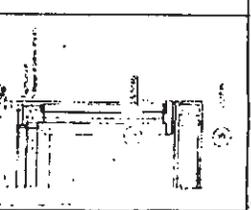
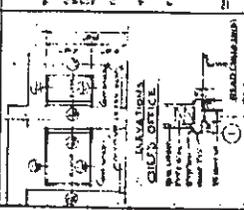
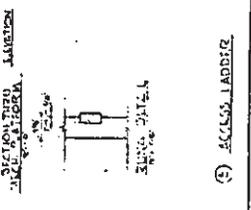
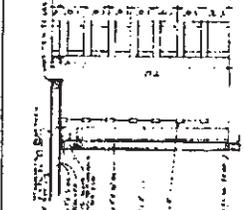
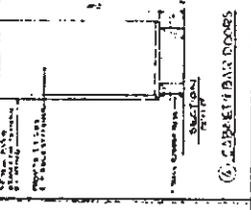
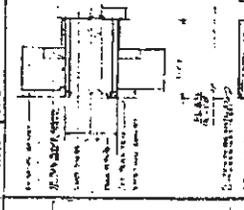
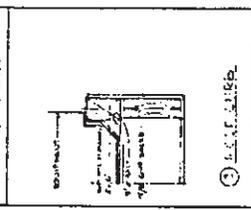
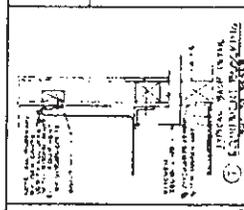
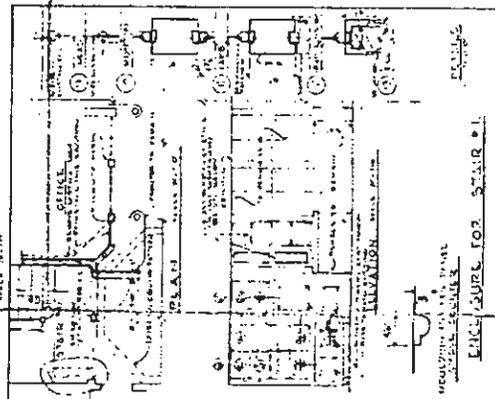
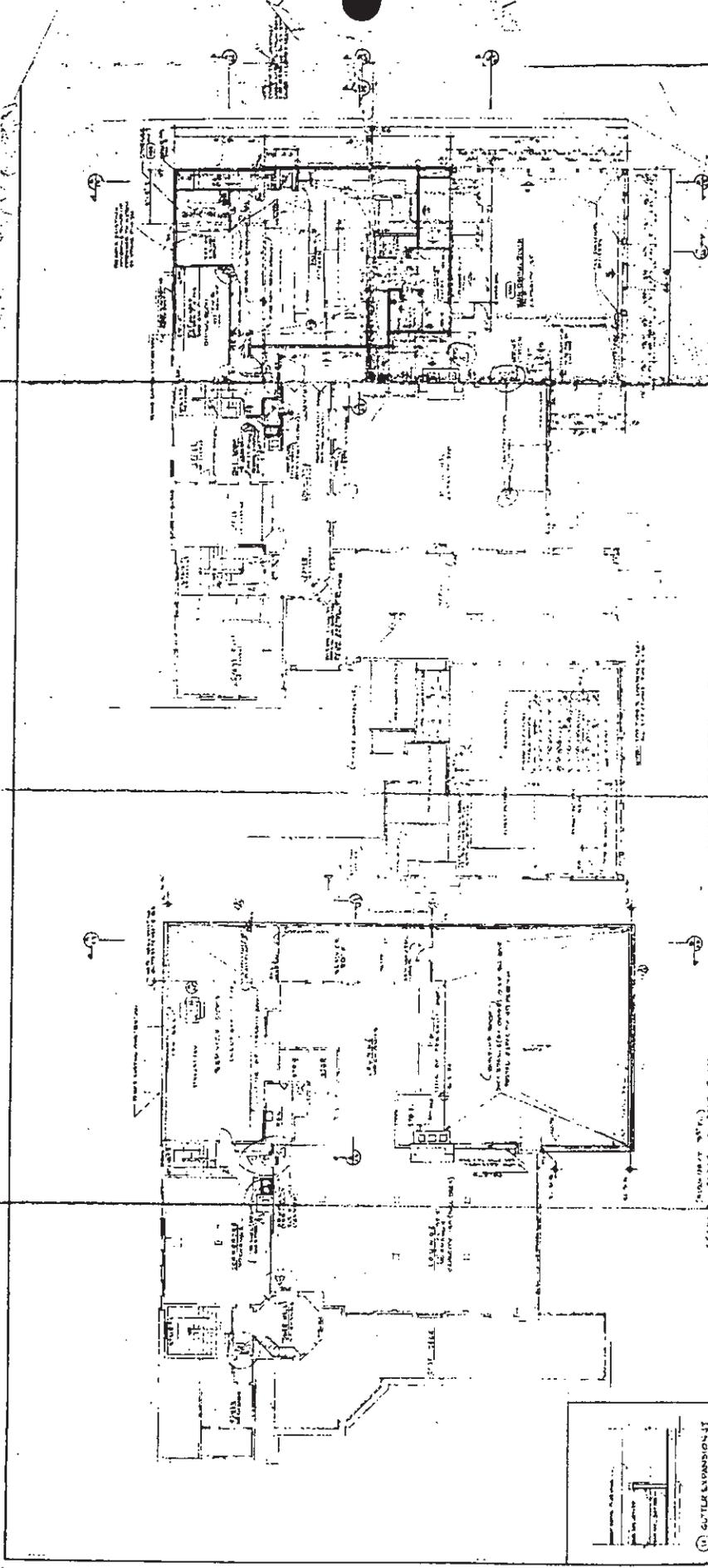
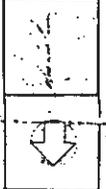
SECTION A-A	STREET WALL
SECTION B-B	STREET WALL
SECTION C-C	STREET WALL



1
 2
 3
 4
 5
 6
 7
 8
 9
 10
 11
 12
 13
 14
 15
 16
 17
 18
 19
 20
 21
 22
 23
 24
 25
 26
 27
 28
 29
 30
 31
 32
 33
 34
 35
 36
 37
 38
 39
 40
 41
 42
 43
 44
 45
 46
 47
 48
 49
 50
 51
 52
 53
 54
 55
 56
 57
 58
 59
 60
 61
 62
 63
 64
 65
 66
 67
 68
 69
 70
 71
 72
 73
 74
 75
 76
 77
 78
 79
 80
 81
 82
 83
 84
 85
 86
 87
 88
 89
 90
 91
 92
 93
 94
 95
 96
 97
 98
 99
 100

NO.	DESCRIPTION	QTY.	UNIT	PRICE	TOTAL
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100





DINING ROOM REFLECTED CEILING PLAN

SECTION 1 - ELEVATIONS

SECTION 1 - ELEVATIONS

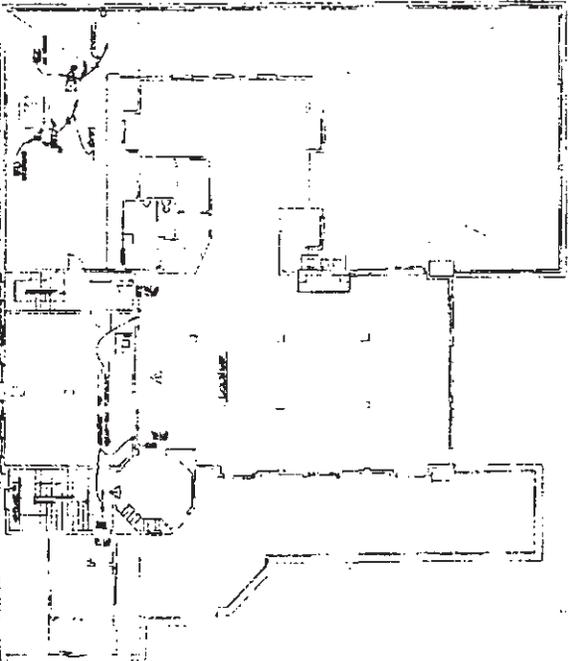
ELEVATIONS FOR STAIR #1

ELEVATIONS

ELEVATIONS

ELEVATIONS

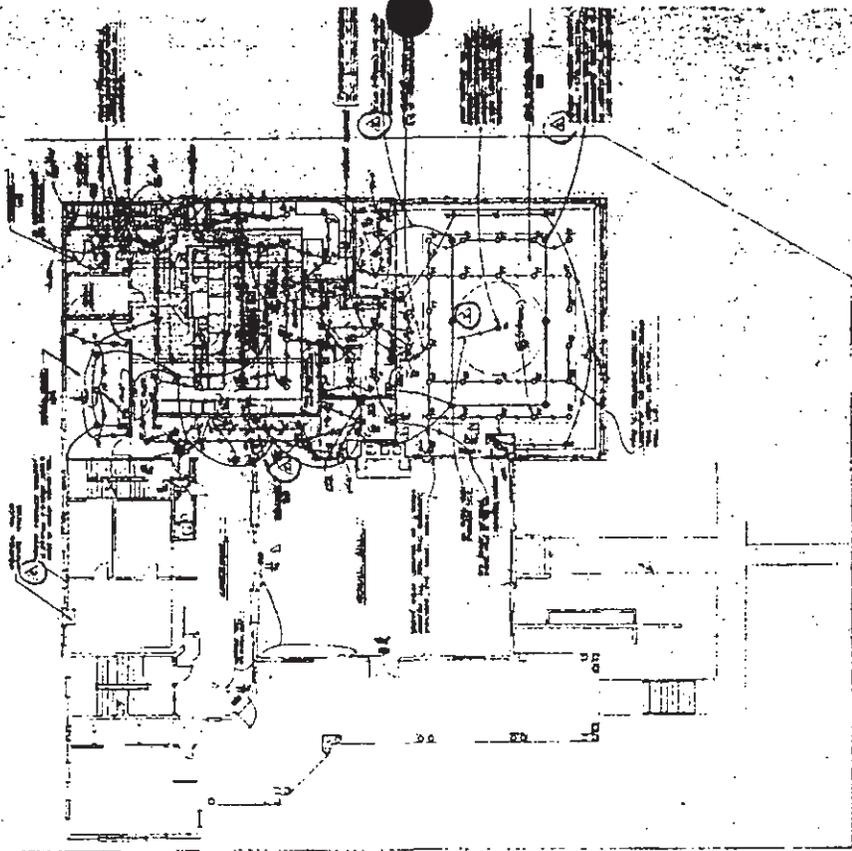
ELEVATIONS



SECOND FLOOR PLAN
1941-1942

Utility schedule

No.	Description	Quantity	Unit	Notes
1	Water supply	100	ft.	
2	Water supply	100	ft.	
3	Water supply	100	ft.	
4	Water supply	100	ft.	
5	Water supply	100	ft.	
6	Water supply	100	ft.	
7	Water supply	100	ft.	
8	Water supply	100	ft.	
9	Water supply	100	ft.	
10	Water supply	100	ft.	
11	Water supply	100	ft.	
12	Water supply	100	ft.	
13	Water supply	100	ft.	
14	Water supply	100	ft.	
15	Water supply	100	ft.	
16	Water supply	100	ft.	
17	Water supply	100	ft.	
18	Water supply	100	ft.	
19	Water supply	100	ft.	
20	Water supply	100	ft.	
21	Water supply	100	ft.	
22	Water supply	100	ft.	
23	Water supply	100	ft.	
24	Water supply	100	ft.	
25	Water supply	100	ft.	
26	Water supply	100	ft.	
27	Water supply	100	ft.	
28	Water supply	100	ft.	
29	Water supply	100	ft.	
30	Water supply	100	ft.	
31	Water supply	100	ft.	
32	Water supply	100	ft.	
33	Water supply	100	ft.	
34	Water supply	100	ft.	
35	Water supply	100	ft.	
36	Water supply	100	ft.	
37	Water supply	100	ft.	
38	Water supply	100	ft.	
39	Water supply	100	ft.	
40	Water supply	100	ft.	
41	Water supply	100	ft.	
42	Water supply	100	ft.	
43	Water supply	100	ft.	
44	Water supply	100	ft.	
45	Water supply	100	ft.	
46	Water supply	100	ft.	
47	Water supply	100	ft.	
48	Water supply	100	ft.	
49	Water supply	100	ft.	
50	Water supply	100	ft.	



FIRST FLOOR PLAN
1941-1942

No.	Description	Quantity	Unit	Notes
1	Water supply	100	ft.	
2	Water supply	100	ft.	
3	Water supply	100	ft.	
4	Water supply	100	ft.	
5	Water supply	100	ft.	
6	Water supply	100	ft.	
7	Water supply	100	ft.	
8	Water supply	100	ft.	
9	Water supply	100	ft.	
10	Water supply	100	ft.	
11	Water supply	100	ft.	
12	Water supply	100	ft.	
13	Water supply	100	ft.	
14	Water supply	100	ft.	
15	Water supply	100	ft.	
16	Water supply	100	ft.	
17	Water supply	100	ft.	
18	Water supply	100	ft.	
19	Water supply	100	ft.	
20	Water supply	100	ft.	
21	Water supply	100	ft.	
22	Water supply	100	ft.	
23	Water supply	100	ft.	
24	Water supply	100	ft.	
25	Water supply	100	ft.	
26	Water supply	100	ft.	
27	Water supply	100	ft.	
28	Water supply	100	ft.	
29	Water supply	100	ft.	
30	Water supply	100	ft.	
31	Water supply	100	ft.	
32	Water supply	100	ft.	
33	Water supply	100	ft.	
34	Water supply	100	ft.	
35	Water supply	100	ft.	
36	Water supply	100	ft.	
37	Water supply	100	ft.	
38	Water supply	100	ft.	
39	Water supply	100	ft.	
40	Water supply	100	ft.	
41	Water supply	100	ft.	
42	Water supply	100	ft.	
43	Water supply	100	ft.	
44	Water supply	100	ft.	
45	Water supply	100	ft.	
46	Water supply	100	ft.	
47	Water supply	100	ft.	
48	Water supply	100	ft.	
49	Water supply	100	ft.	
50	Water supply	100	ft.	



THIS DRAWING AND ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED DATE 08-14-2013 BY 60322 UCBAW/SJS

GENERAL NOTES
 STRUCTURAL DESIGN IN ACCORDANCE WITH THE
 CITY OF SEATTLE BUILDING CODE.

DESIGN LIVE LOADS:
 100 PSF
 150 PSF
 100 PSF
 100 PSF

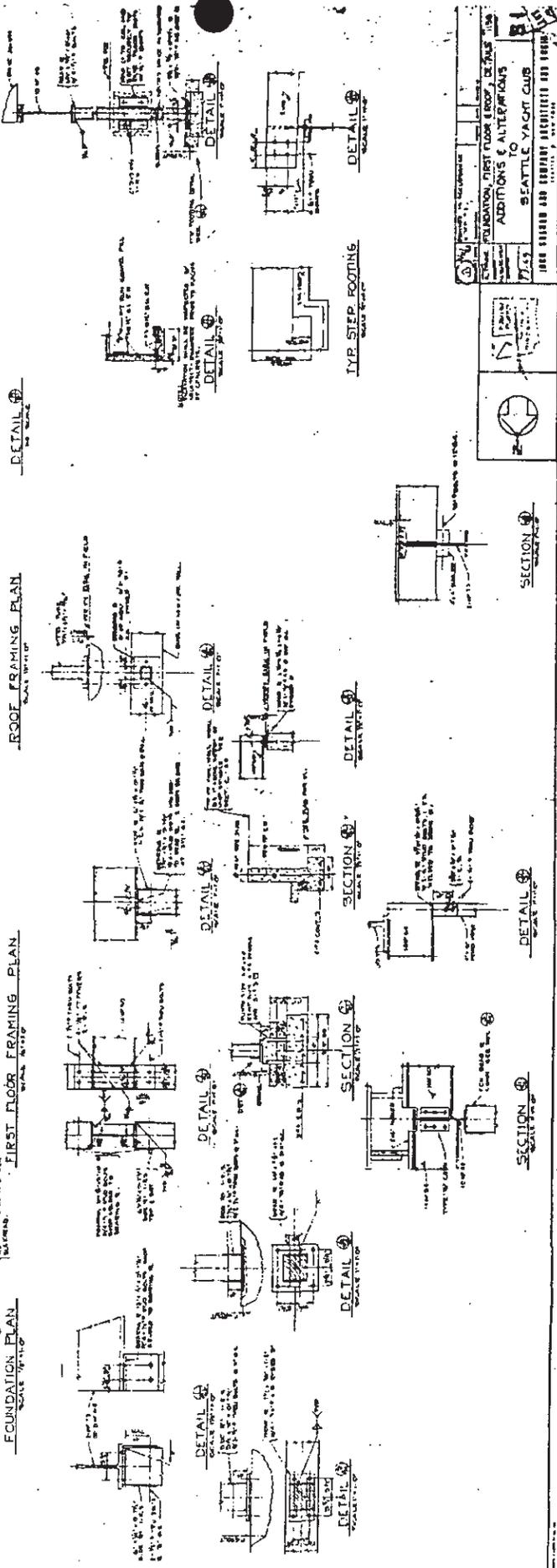
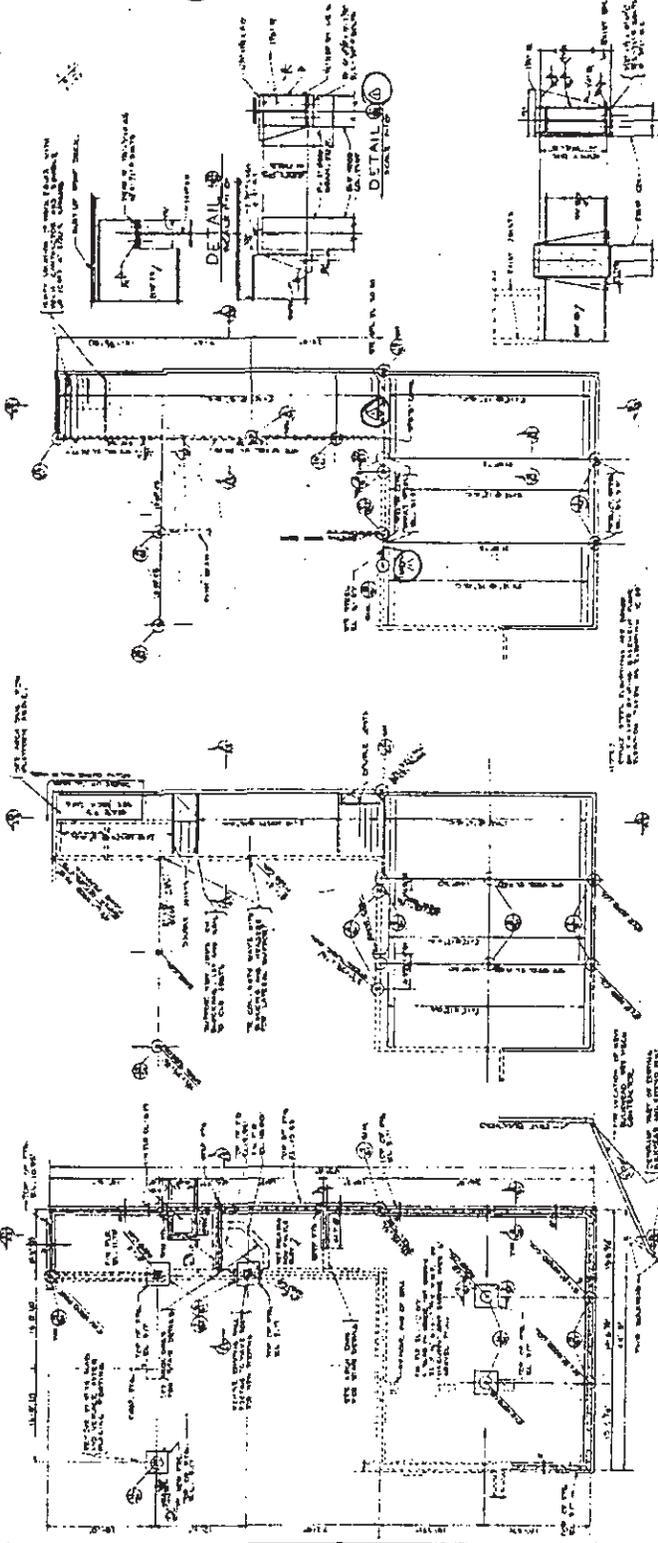
CONCRETE:
 ALL CONCRETE SHALL BE 3000 PSI
 ALL CONCRETE SHALL BE 4000 PSI
 ALL CONCRETE SHALL BE 5000 PSI

STEEL:
 ALL STEEL SHALL BE A36
 ALL STEEL SHALL BE A572 GR 50

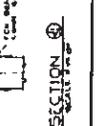
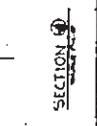
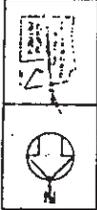
WOOD:
 ALL WOOD SHALL BE SYP
 ALL WOOD SHALL BE DRY

SOIL BEARING:
 ALL SOIL BEARING SHALL BE 2000 PSF

MISCELLANEOUS:
 ALL CONNECTIONS SHALL BE WELDED
 ALL CONNECTIONS SHALL BE BOLTED



NO.	DESCRIPTION
1	FOUNDATION, FIRST FLOOR FRAMING, DETAILS
2	ADDITIONS & ALTERATIONS
3	SEATTLE YACHT CLUB
4	1000 SECOND AND UNIVERSITY AVENUE



SECTION 1
 SECTION 2
 SECTION 3
 SECTION 4
 SECTION 5
 SECTION 6
 SECTION 7
 SECTION 8
 SECTION 9
 SECTION 10
 DETAIL 1
 DETAIL 2
 DETAIL 3
 DETAIL 4
 DETAIL 5
 DETAIL 6
 DETAIL 7
 DETAIL 8
 DETAIL 9
 DETAIL 10

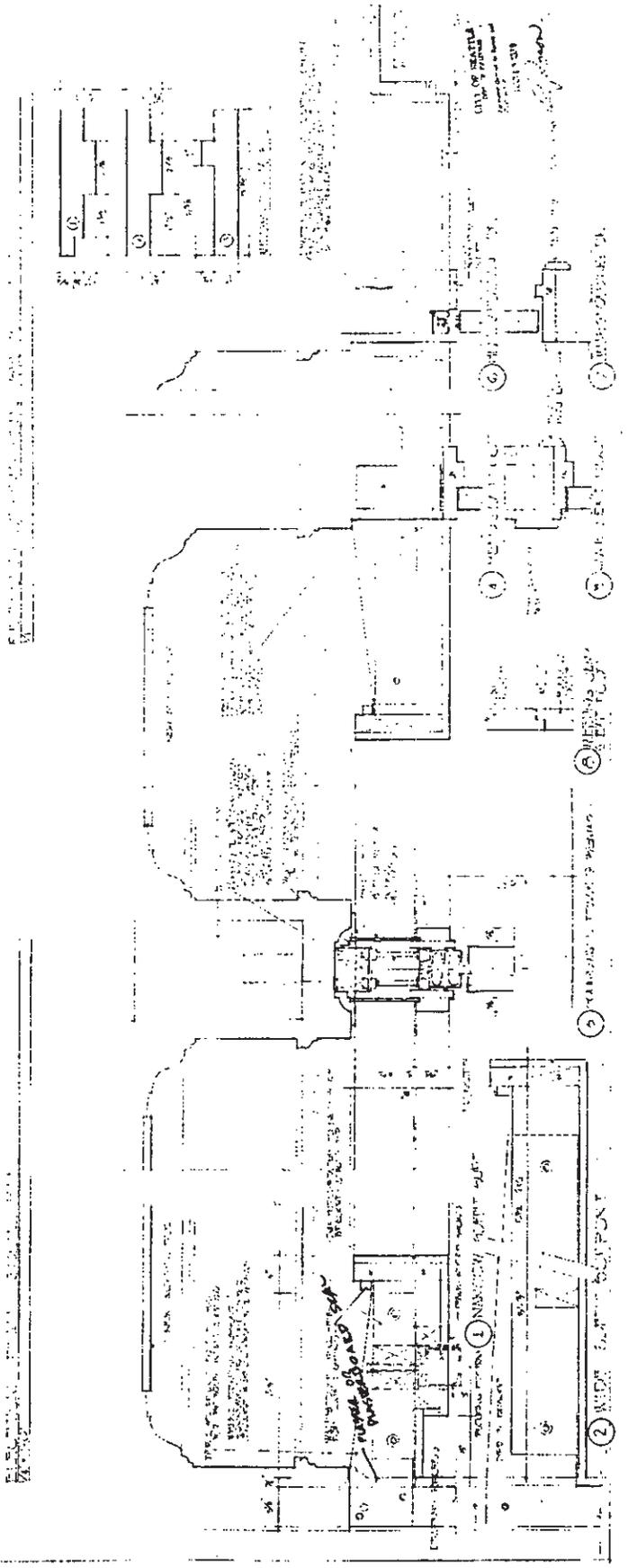
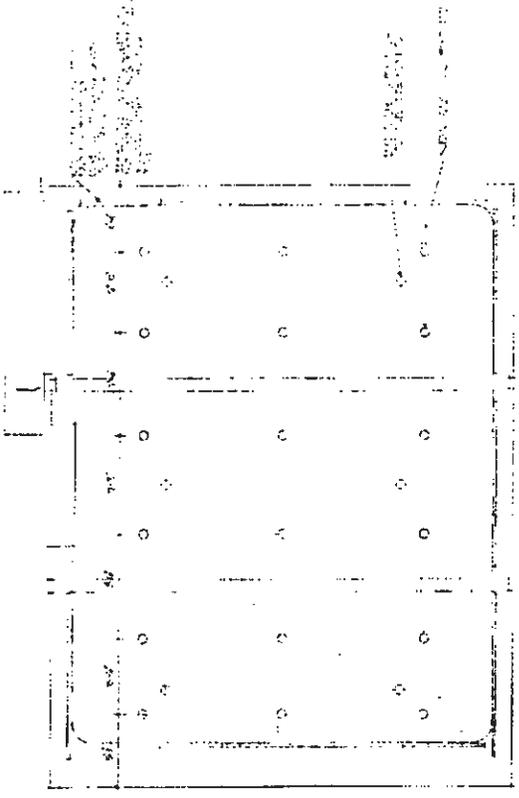
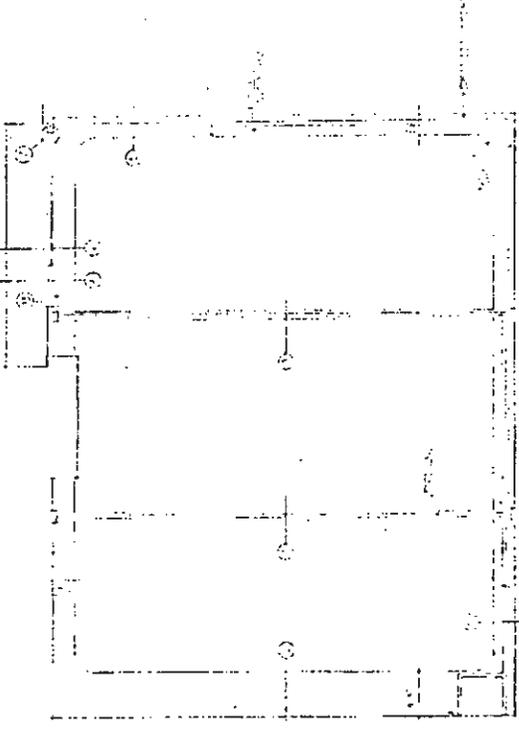
7P23



STATE OF CALIFORNIA
COUNTY OF LOS ANGELES

RECEIVED
CITY OF LOS ANGELES
PLANNING DEPARTMENT

2



CITY OF LOS ANGELES
PLANNING DEPARTMENT
100 N. GARDEN ST.
LOS ANGELES, CALIF. 90012

1. MAIN ENTRANCE

2. MAIN FLOOR

3. RECEPTION

4. OFFICE

5. STORAGE

6. RESTROOM

7. MEET. ROOM

Photographs

- 1) The Seattle Yacht Club Main Station
King County, Washington
Ellen Mirro
8/25/05
IMG_2590.JPG
Seattle Yacht Club Main Station, viewing southeast at main entry

- 2) The Seattle Yacht Club Main Station
King County, Washington
Ellen Mirro
8/25/05
IMG_2580.JPG
Seattle Yacht Club Main Station, viewing south at north facade

- 3) The Seattle Yacht Club Main Station
King County, Washington
Larry Johnson
9/19/05
IMG_0916.JPG
Seattle Yacht Club Main Station, detail of tower viewing south

- 4) The Seattle Yacht Club Main Station
King County, Washington
Ellen Mirro
8/25/05
IMG_2583.JPG
Seattle Yacht Club Main Station, viewing west at east facade

- 5) The Seattle Yacht Club Main Station
King County, Washington
Ellen Mirro
8/25/05
IMG_2584.JPG
Seattle Yacht Club Main Station, viewing north at south facade

- 6) The Seattle Yacht Club Main Station
King County, Washington
Larry Johnson
9/19/05
IMG_0904.JPG
Seattle Yacht Club Main Station, viewing east at west facade

- 7) The Seattle Yacht Club Main Station
King County, Washington
Larry Johnson
9/19/05
IMG_0890.JPG
Seattle Yacht Club Main Station, lower floor, former "Billiard Room,"
viewing southwest

- 8) The Seattle Yacht Club Main Station
King County, Washington
Larry Johnson
9/19/05
IMG_0862.JPG
Seattle Yacht Club Main Station, main floor entry, viewing southeast

- 9) The Seattle Yacht Club Main Station
King County, Washington
Larry Johnson
9/19/05
IMG_0875.JPG
Seattle Yacht Club Main Station, main floor hall, viewing north

- 10) The Seattle Yacht Club Main Station
King County, Washington
Larry Johnson
9/19/05
IMG_0869.JPG
Seattle Yacht Club Main Station, main floor dining room, viewing
southwest

- 11) The Seattle Yacht Club Main Station
King County, Washington
Larry Johnson
9/19/05
IMG_0855.JPG
Seattle Yacht Club Main Station, upper floor tower stair, viewing north

- 12) The Seattle Yacht Club Main Station
King County, Washington
Larry Johnson
9/19/05
IMG_0844.JPG
Seattle Yacht Club Main Station, upper floor dining room/lounge, viewing
southwest

13)The Seattle Yacht Club Main Station Yardarm
King County, Washington
Ellen Mirro
11/17/05
IMG_4101.JPG
Seattle Yacht Club Main Station Yardarm, viewing south from West
Montlake Park

14)The Seattle Yacht Club Main Station Historic Anchor
King County, Washington
Ellen Mirro
11/17/05
IMG_4104.JPG
Seattle Yacht Club Main Station Historic Anchor, viewing west

Historic photos of the property

15) The Seattle Yacht Club, West Seattle
King County Washington
Unknown photographer, property of Puget Sound Maritime Historical
Society, Joe Williamson Collection
7/3/1909
negative #1741-94
Seattle Yacht Club West Seattle, viewing southeast across Elliott Bay

16) The Seattle Yacht Club, West Seattle
King County Washington
Unknown photographer, property of Puget Sound Maritime Historical
Society, Hudson Collection
No date
negative #879-59
Seattle Yacht Club West Seattle, viewing northwest

17) The Seattle Yacht Club Main Station
King County Washington
Staff Photographer, Seattle Post-Intelligencer, property of Museum of
History and Industry, Seattle Post-Intelligencer Collection
Circa 1925
image #PI21580
Seattle Yacht Club Main Station, viewing east

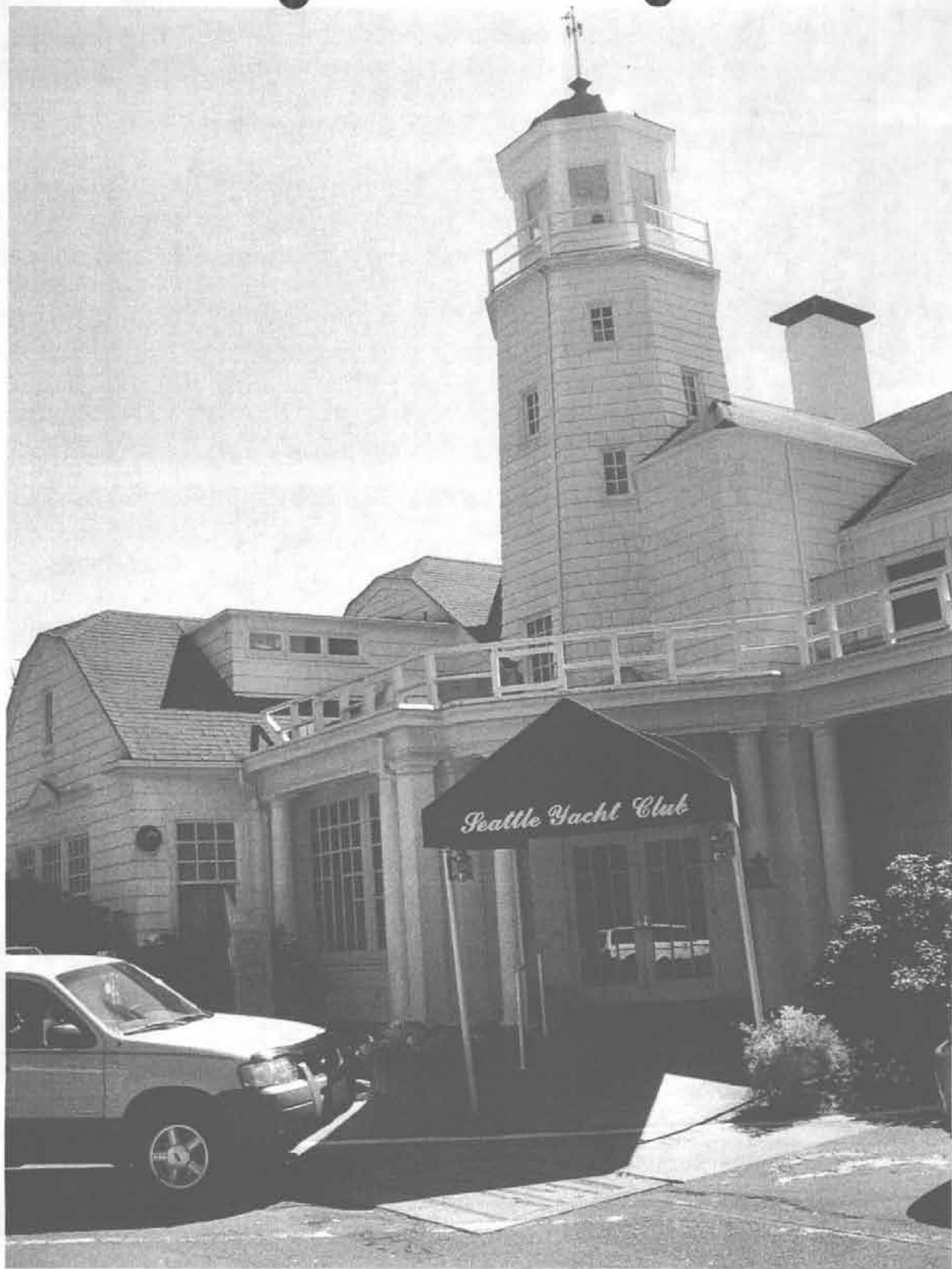
- 18) The Seattle Yacht Club Main Station
King County Washington
Unknown photographer, property of Museum of History and Industry,
Pemco, Webster and Stevens Collection
Circa 1920
image #1983.10.1944
Seattle Yacht Club Main Station, viewing southeast

- 19) The Seattle Yacht Club Main Station
King County Washington
Tax Assessors Photograph, property of Puget Sound Regional Archives
Circa 1938
Folio #1794, parcel number 5605000305
Seattle Yacht Club Main Station, viewing southeast

- 20) The Seattle Yacht Club Main Station and surrounding
King County Washington
Staff Photographer, Seattle Post-Intelligencer, property of Museum of
History and Industry, Seattle Post-Intelligencer Collection
No date
Image # PI-21583
Seattle Yacht Club Main Station, Portage Bay moorage, West Montlake
Park, and houses, aerial viewing southwest

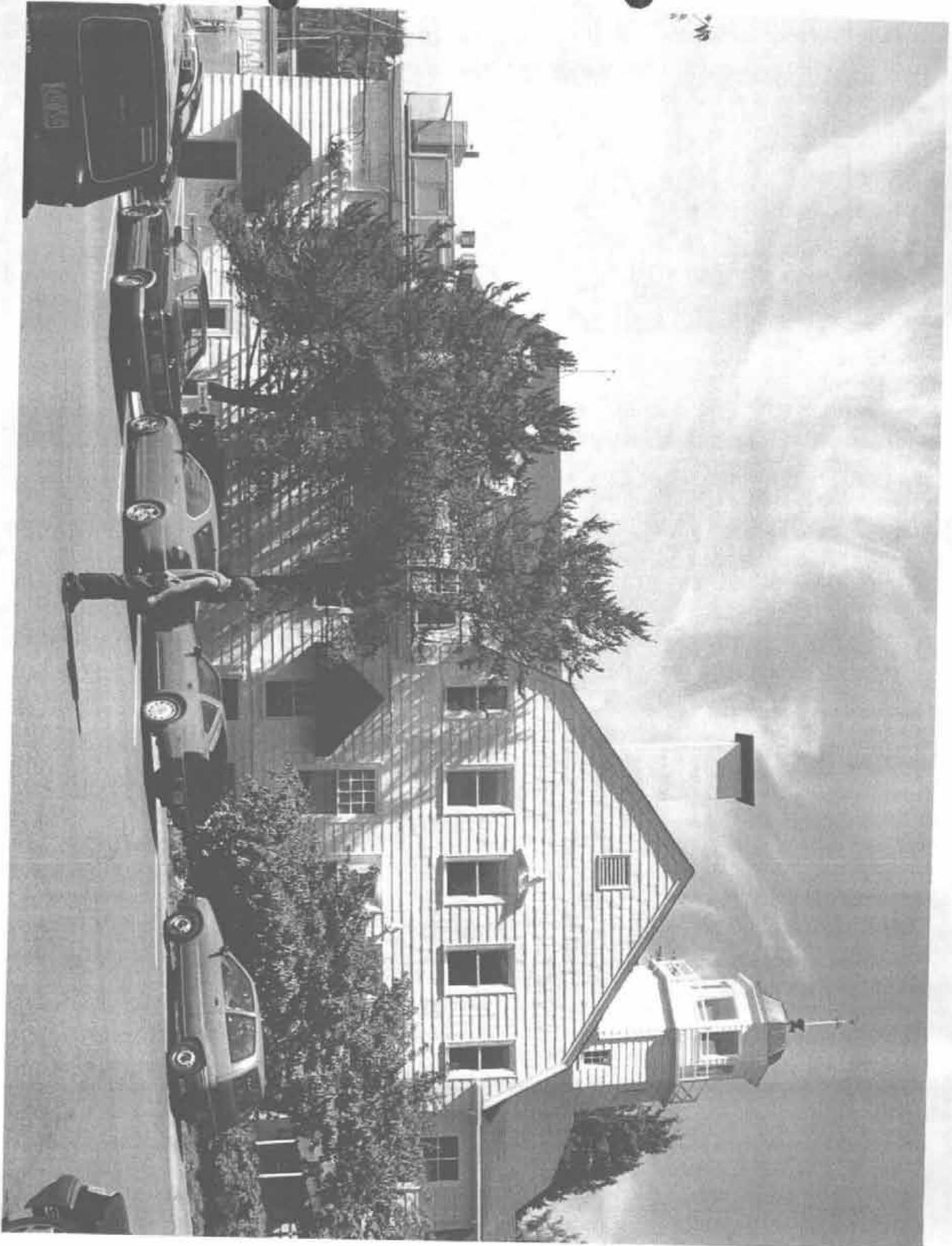
Attachments

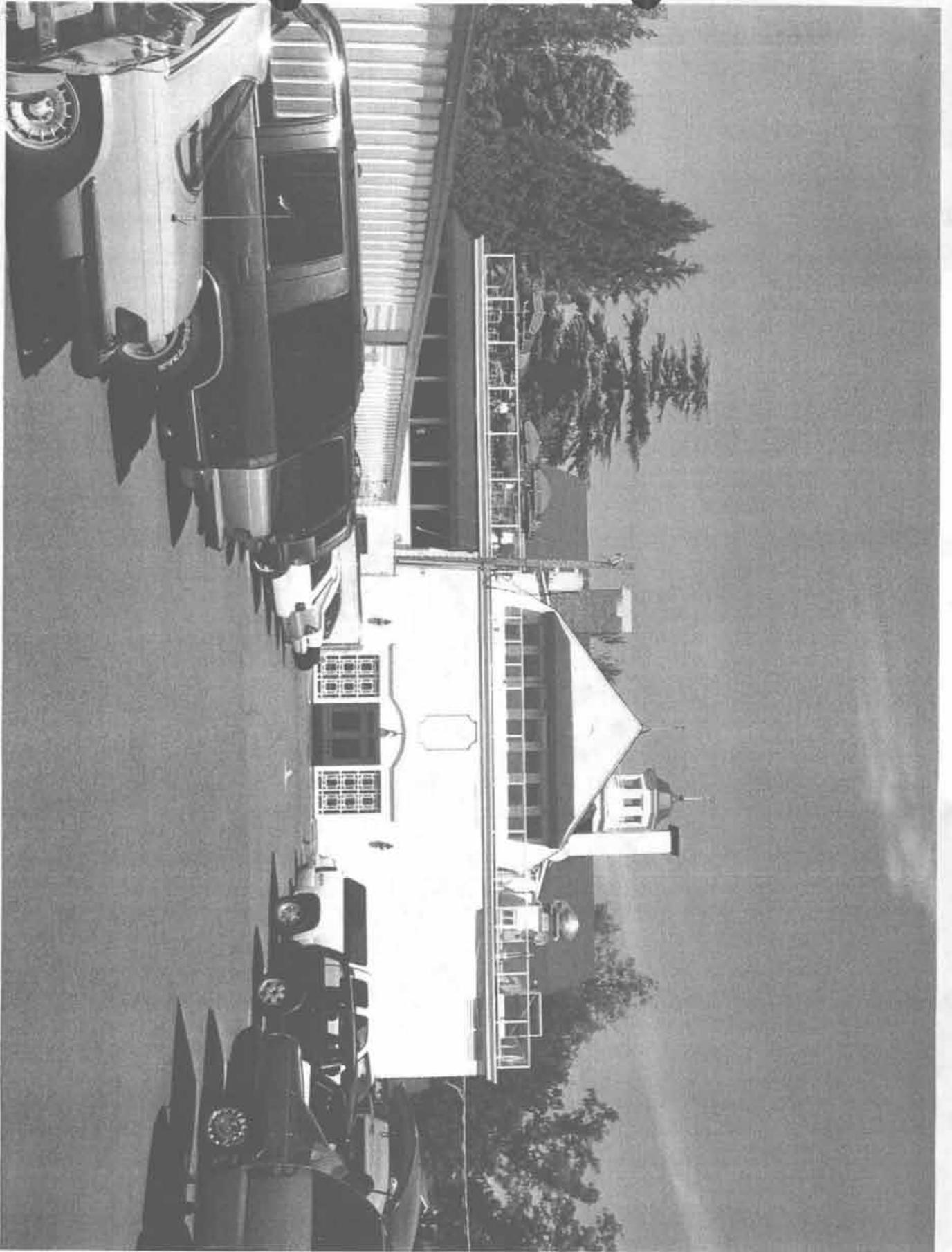
Plans: John Graham Senior, Architect 6/29/1919
Plans: John Graham Senior, Architect 5/1/31
Plans: John Graham and Company, Architects 1/7/1963
Plans: Brewer Westberg, Architects 3/13/1979
Plans: George W. Heideman, Architect 3/15/1989

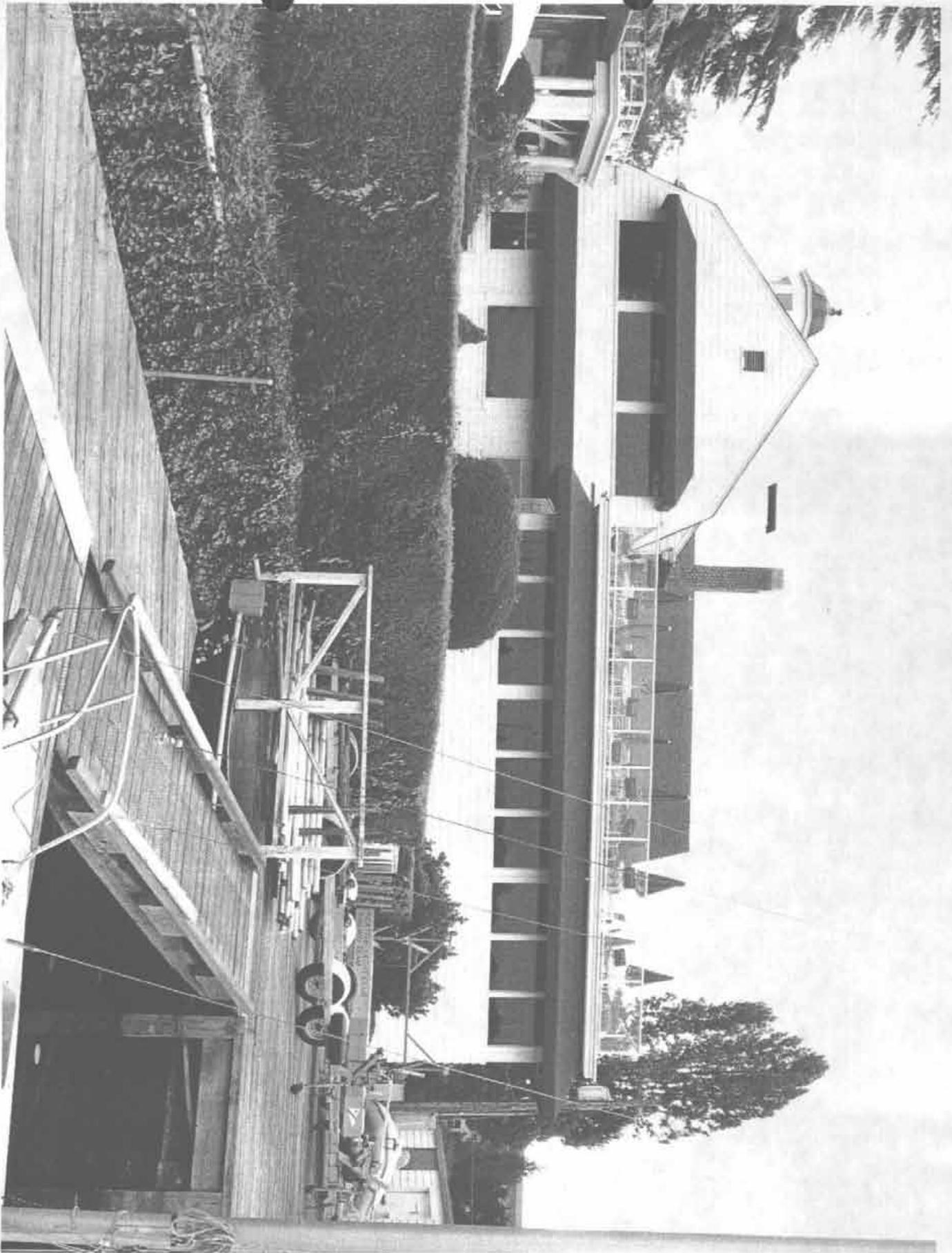




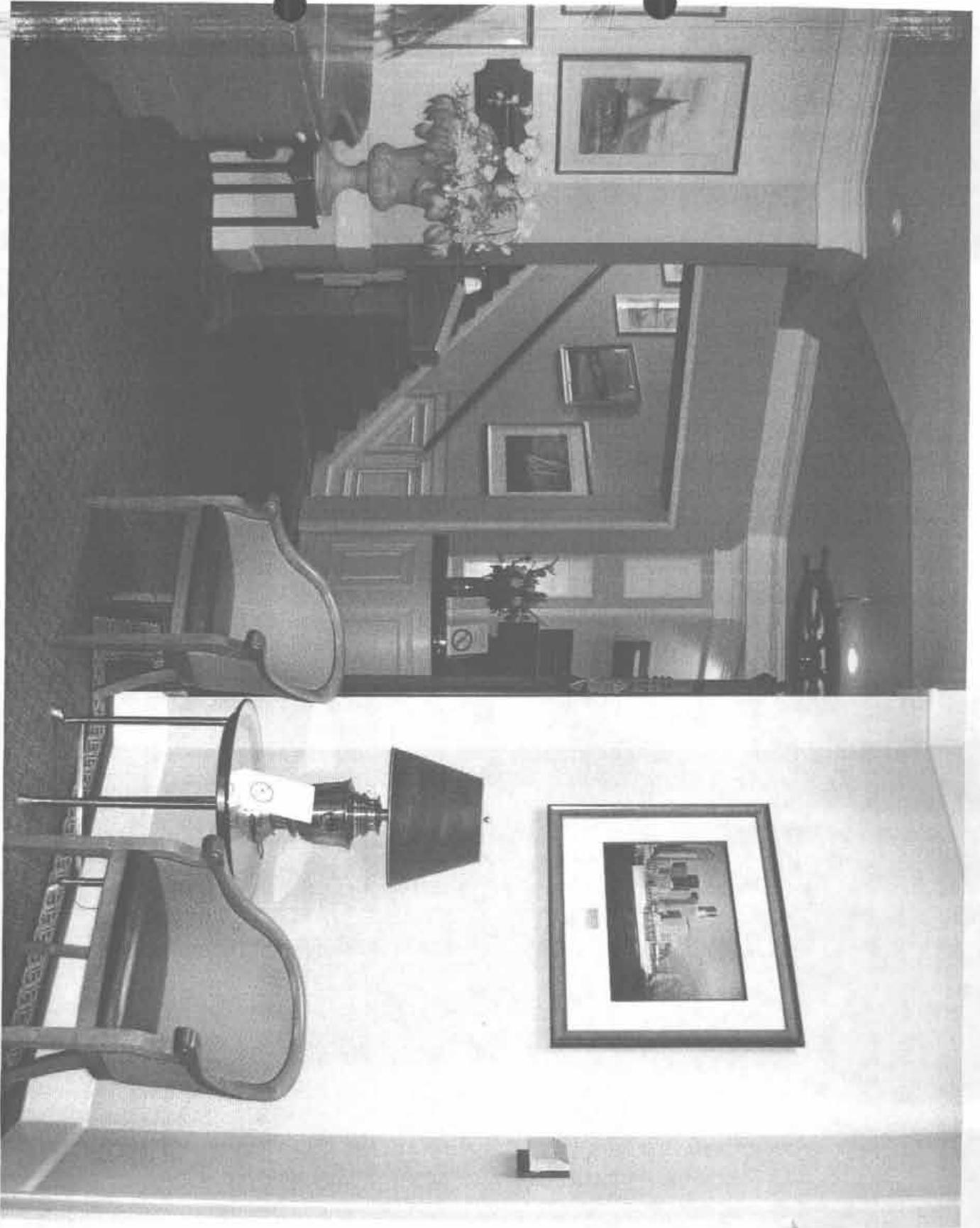






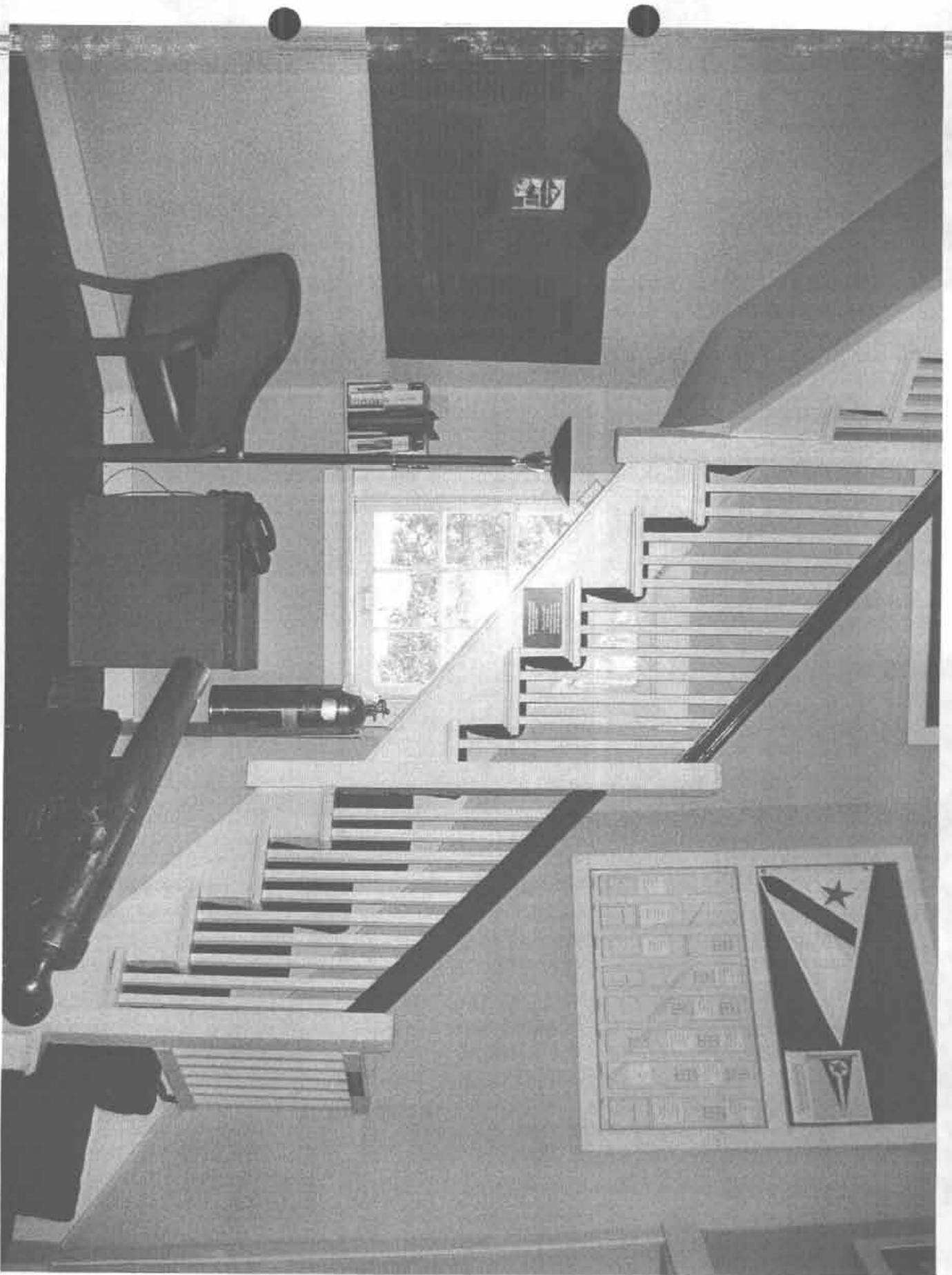






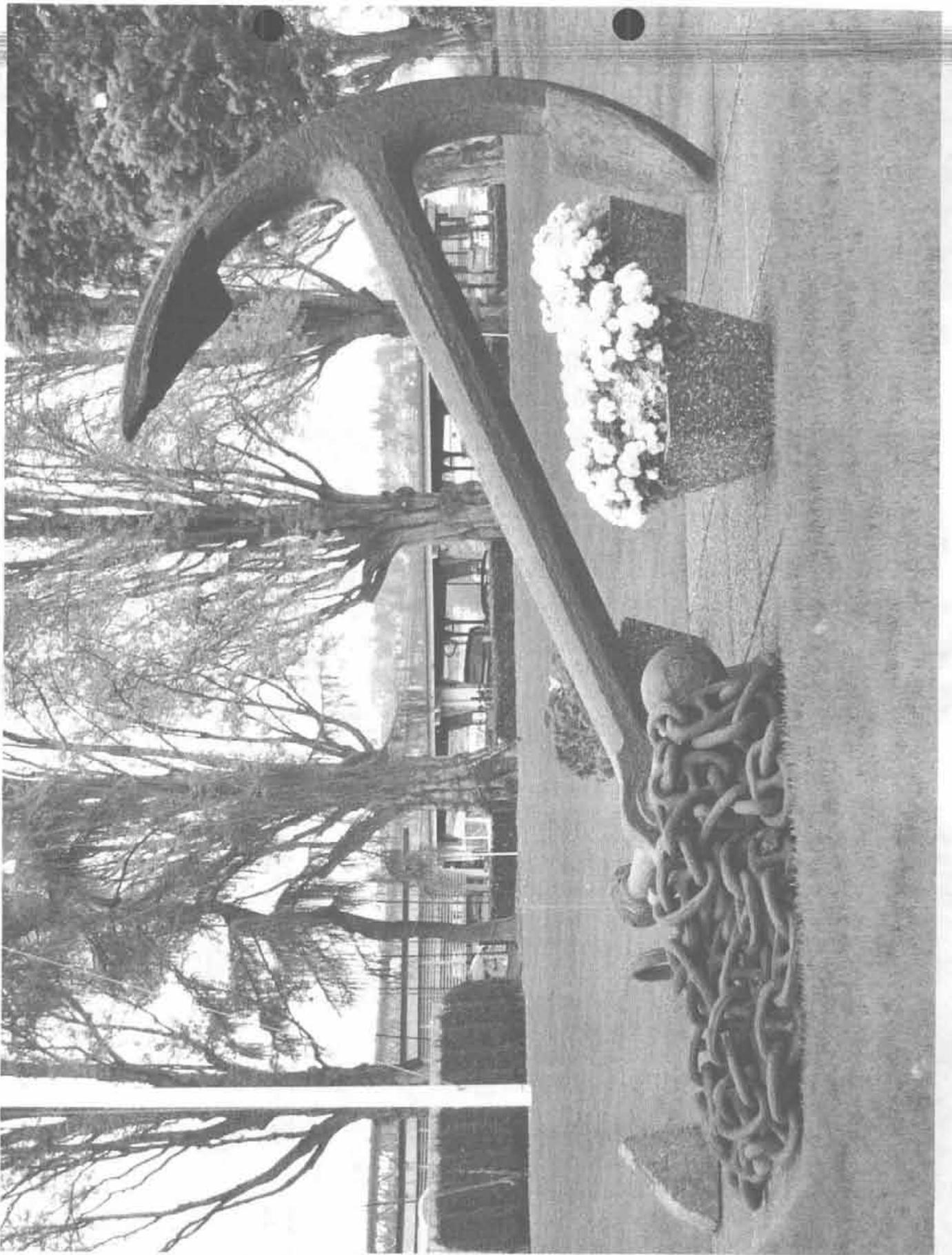


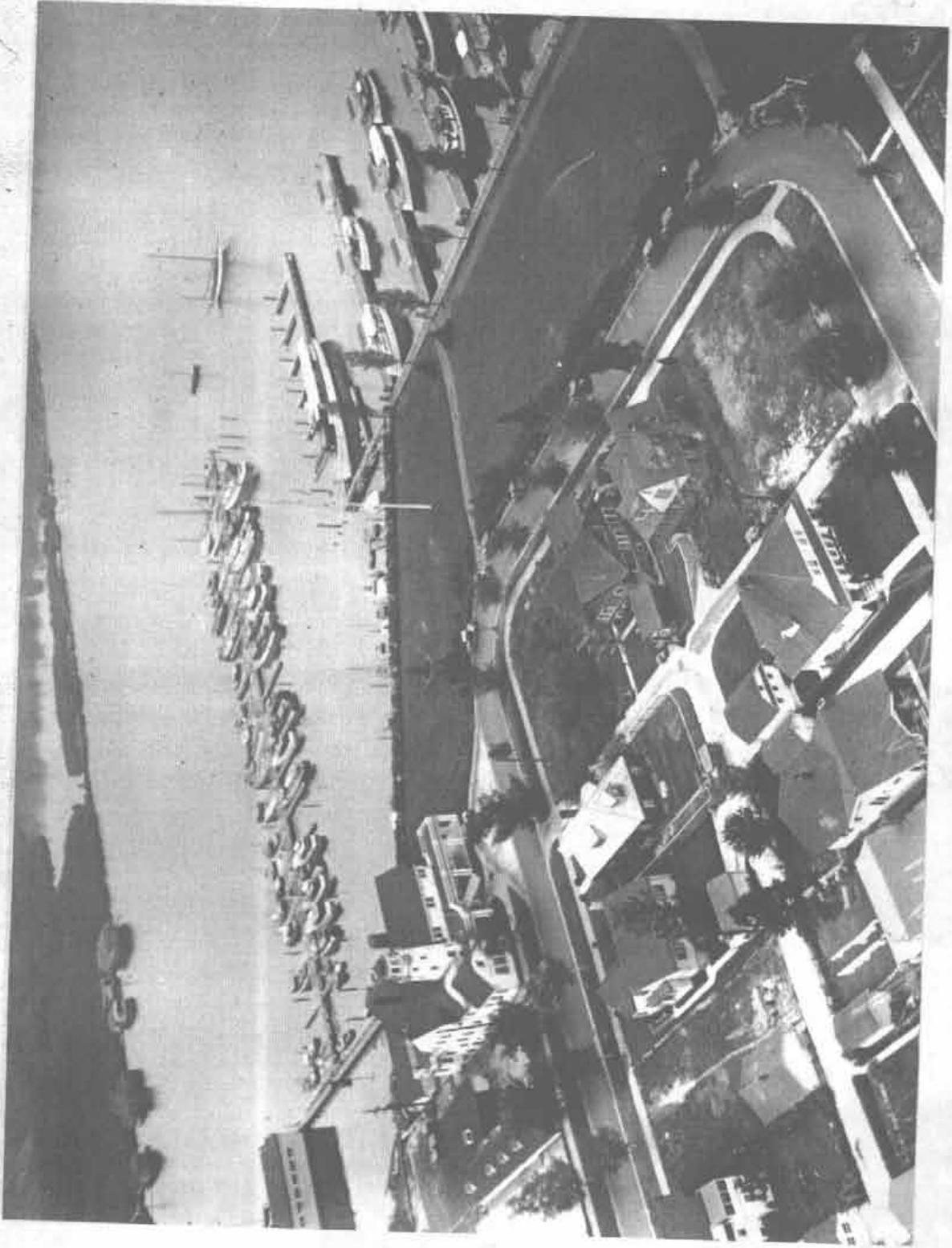




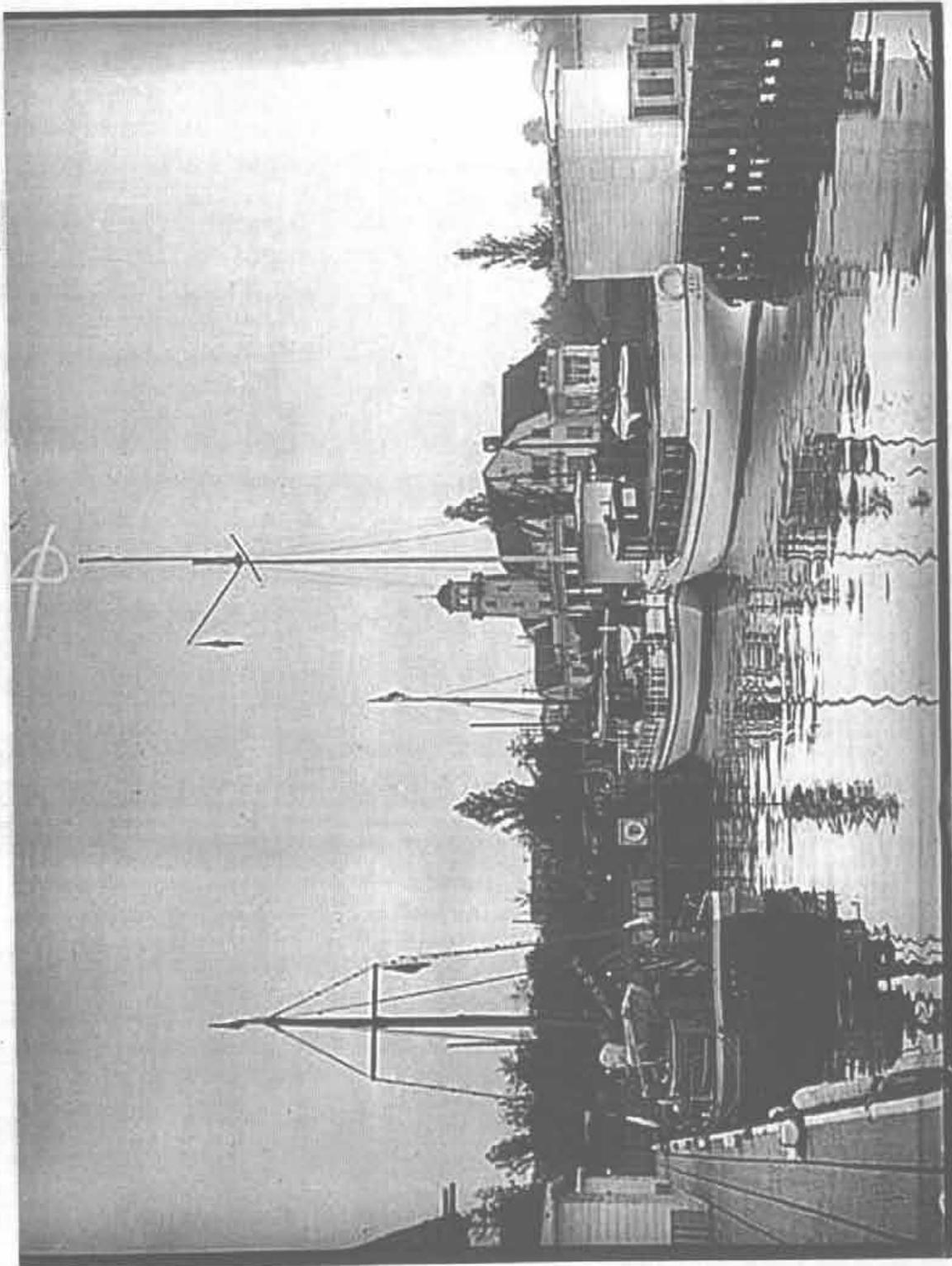


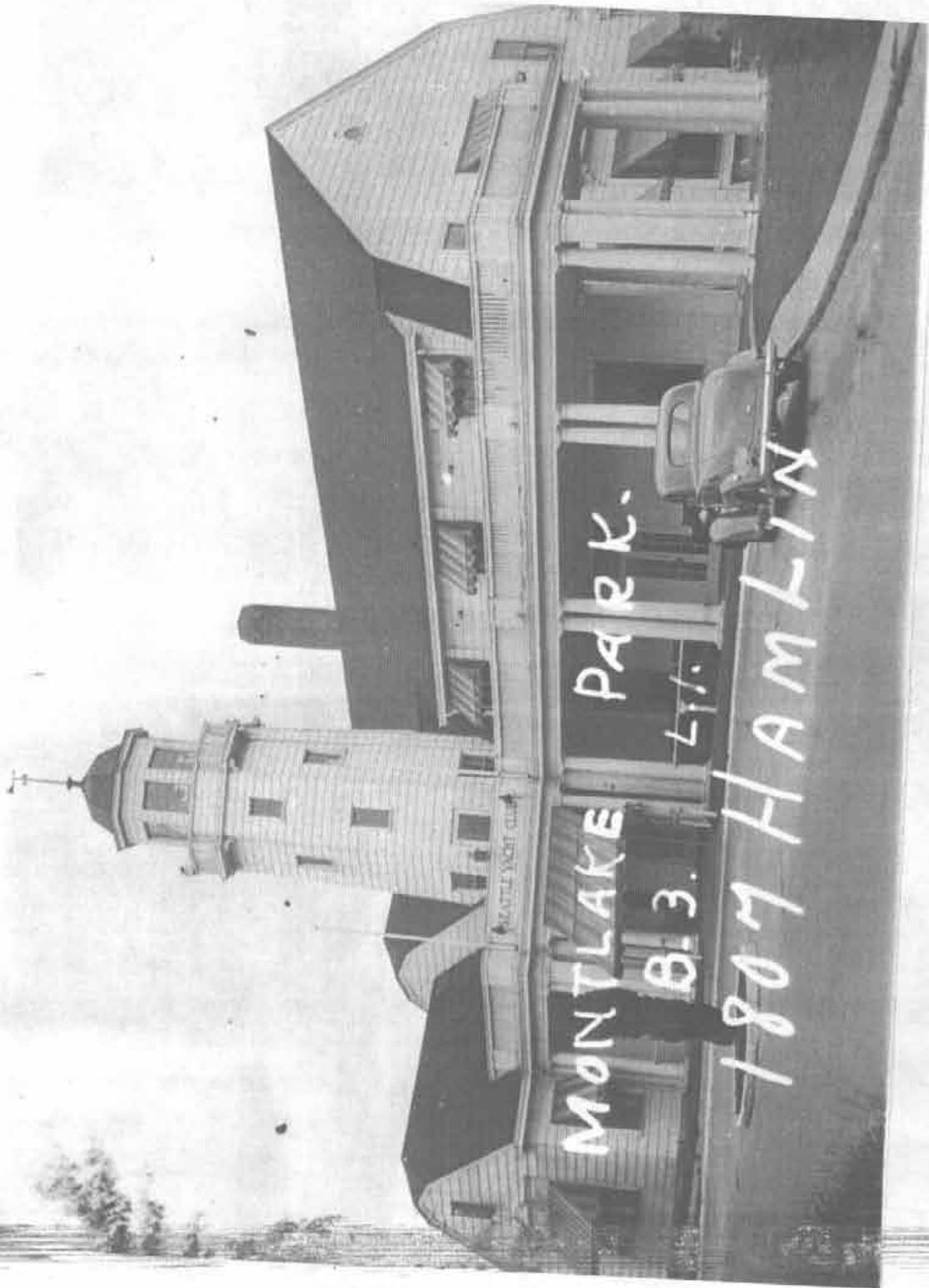












MONTLAKE

PARK.

B. 3.

L. 11.

1807 HAMLIN

**National Register of Historic Places
Inventory Nomination Form:
Chittenden (Hiram M.) Locks and
Related Features of the Lake
Washington Ship Canal**

25N 3E 2, 10, 11, 13
25N 4E 16, 17, 18, 19, 20, 21

FOR NPS USE ONLY
RECEIVED
DATE ENTERED DT 114

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

SEE INSTRUCTIONS IN HOW TO COMPLETE NATIONAL REGISTER FORMS
TYPE ALL ENTRIES -- COMPLETE APPLICABLE SECTIONS

1 NAME

HISTORIC Chittenden (Hiram M.) Locks and Related Features of the Lake Washington Ship Canal

AND/OR COMMON

2 LOCATION

STREET & NUMBER

CITY, TOWN

Seattle

--- NOT FOR PUBLICATION

CONGRESSIONAL DISTRICT

--- VICINITY OF

1st - Hon. Joel Pritchard

STATE

Washington

CODE
53

COUNTY
King

CODE
033

3 CLASSIFICATION

CATEGORY

- DISTRICT
- BUILDING(S)
- STRUCTURE
- SITE
- OBJECT

OWNERSHIP

- PUBLIC
- PRIVATE
- BOTH

PUBLIC ACQUISITION

- IN PROCESS
- BEING CONSIDERED

STATUS

- OCCUPIED
 - UNOCCUPIED
 - WORK IN PROGRESS
- ### ACCESSIBLE
- YES: RESTRICTED
 - YES: UNRESTRICTED
 - NO

PRESENT USE

- AGRICULTURE
- COMMERCIAL
- EDUCATIONAL
- ENTERTAINMENT
- GOVERNMENT
- INDUSTRIAL
- MILITARY
- MUSEUM
- PARK
- PRIVATE RESIDENCE
- RELIGIOUS
- SCIENTIFIC
- TRANSPORTATION
- OTHER: Recreation

4 OWNER OF PROPERTY

NAME

U. S. Army Corps of Engineers, Seattle District

Montlake Cut not owned by Corps but held in perpetual lease from State.

STREET & NUMBER

North Pacific Division
4725 East Marginal Way South

CITY, TOWN

Seattle

--- VICINITY OF

STATE

Washington 98134

5 LOCATION OF LEGAL DESCRIPTION

COURTHOUSE, REGISTRY OF DEEDS, ETC.

Real Estate Division, Seattle District, U. S. Army Corps of Engineers

STREET & NUMBER

4725 East Marginal Way South

CITY, TOWN

Seattle

STATE

Washington 98134

6 REPRESENTATION IN EXISTING SURVEYS

TITLE

Inventory authorized by Executive Order 11593
"Protection and Enhancement of the Cultural Environment"

DATE

April 4, 1972

FEDERAL STATE COUNTY LOCAL

DEPOSITORY FOR SURVEY RECORDS

Department of the Army, Office of the Chief of Engineers

CITY, TOWN

Washington

STATE

D.C. 20314

7 DESCRIPTION

CONDITION		CHECK ONE	CHECK ONE
<input type="checkbox"/> EXCELLENT	<input type="checkbox"/> DETERIORATED	<input type="checkbox"/> UNALTERED	<input checked="" type="checkbox"/> ORIGINAL SITE
<input checked="" type="checkbox"/> GOOD	<input type="checkbox"/> RUINS	<input checked="" type="checkbox"/> ALTERED	<input type="checkbox"/> MOVED DATE _____
<input type="checkbox"/> FAIR	<input type="checkbox"/> UNEXPOSED		

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

SUMMARY STATEMENT

By making a continuous waterway of man-made channels and inland bodies extending nearly eight miles between Puget Sound and Lake Washington, the Lake Washington Ship Canal opened up a vast fresh-water harbor to ocean-going vessels and thus complemented Seattle's deep-water port facilities in Elliott Bay. The project was conceived and planned over a period of years in cooperation with private enterprise and local government and was completed under auspices of the U. S. Army Corps of Engineers and dedicated in 1917. Its primary components are a fixed dam and double locks and a 17-acre reservation at Salmon Bay in the Ballard District; a channel slightly more than a mile long known as the Fremont Cut, which connects the Salmon Bay Waterway to Lake Union; and a half-mile long channel known as the Montlake Cut, which in turn joins Lake Union to Lake Washington. These engineering features have been little altered since their completion sixty years ago, except for repairs and a normal amount of upgrading, and they have remained under the jurisdiction of the Department of the Army. At the locks site, now officially designated the Hiram M. Chittenden Locks, approximately half of the structures supporting the operation of the locks have been added since the 1940s. However, the initial complex of ten or twelve concrete accessory buildings is intact. Moreover, for the most part, the Corps of Engineers Master Plan for the project provides for the preservation and enhancement of historical elements.

LEGAL DESCRIPTION

The Hiram M. Chittenden Locks of the Lake Washington Ship Canal are located in SE $\frac{1}{4}$ Sec. 10, T.25N., R.3E. and in SW $\frac{1}{4}$ Sec. 11, T.25N., R.3E., of the Willamette Meridian. The engineering feature straddles the Salmon Bay Waterway, and the accompanying government reservation is sited amidst the Ballard Tide Lands on the north shore and the Seattle Tide Lands on the south shore.

The Fremont Cut of the Lake Washington Ship Canal is located in NW $\frac{1}{4}$, NE $\frac{1}{4}$ and SE $\frac{1}{4}$ Sec. 13, T.25N., R.3E., and in SW $\frac{1}{4}$ Sec. 18, T.25N., R.4E., of the Willamette Meridian. The engineering feature traverses the Ross Addition and Denny and Hoyt's Addition to the Plat of Seattle.

The Montlake Cut of the Lake Washington Ship Canal is located in S $\frac{1}{2}$ Sec. 16, T.25N., R.4E., of the Willamette Meridian. The engineering feature is bordered by the University of Washington tract on the north shore and, on the south shore, by the Montlake Park Addition to the Plat of Seattle.

GENERAL CHARACTERISTICS OF THE SITE

The locks and dam are situated athwart the foot of Salmon Bay, originally a tidal inlet, which gives into Shilshole Bay north of Magnolia Head in Puget Sound. To the south of the headland, in Elliott Bay, lies Seattle's principal harbor. Oriented northwest to southeast, the locks and dam span the narrowest section of the Salmon Bay Waterway, where it is some 400 feet across, approximately a mile and a half east of the entrance to Shilshole Bay. When these features raised and stabilized its water level, Salmon Bay ultimately became a freshwater body and the harbor of a sizable fishing fleet. As is pointed out in the Lake Washington Ship Canal Master Plan, lands adjoining the eight-mile waterway between Puget Sound and Lake Washington have been developed for commercial,

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

FOR NPS USE ONLY

RECEIVED

DATE ENTERED

CONTINUATION SHEET

ITEM NUMBER 7 PAGE 2

industrial, residential, park and other public purposes, but shoreline use of the canal is predominantly related to the maritime industry. As a consequence, boat ramps and marinas; piers, docks and wharves; marine repair shops and shipbuilding yards are typical developments in the near vicinity of the three separate parcels proposed for nomination. The first parcel of 49 acres embraces the locks and their guide piers, the spillway dam and fish ladder, and grounds owned in fee simple by the U. S. Army Corps of Engineers. The second and third parcels of 38.5 and 20 acres, respectively, are limited to the Corps' fee-owned holdings along the Fremont and Montlake Cuts.

The preponderance of the 17-acre reservation which accompanies the locks lies on the north shore of the waterway, where maintenance and administrative facilities are arranged on a modified grid perpendicular to the waterway. The westerly portion of the reservation rises to an elevation of 45 feet, and sited atop this plateau is the Lock-keeper's House, which currently serves as the residence of the District Engineer. In front of the house, a terraced embankment of dredge spoils falls off toward water grade in 5-foot intervals. A paved concourse parallel with the waterway extends the length of the lawn-covered plateau, and at its westerly end is a viewing platform or overlook with solid concrete railing. This secondary concourse is linked to a private gateway in the northwest corner of the reservation by curvilinear road segments which encompass the residential knoll. In this informally landscaped westerly section of about seven acres is a luxuriant array of mature ornamental and specimen trees, shrubs and bedding plants introduced by grounds-keeper Carl S. English and others in the 1930s and 1940s.

The high ground of the reservation slopes off gradually on the east to level terrain about 20 feet in elevation. Here the maintenance campus is laid out along the main concourse, which is essentially on axis with the spillway dam. Included in this more-or-less formal complex of classically-styled concrete structures designed by the eminent local firm of Bebb and Gould are the administration building, which is the focal point, the machine shop, office and shop building, and mechanics shop. Each of these is clustered around a courtyard which opens onto the locks. Other initial structures, the gas and oil building, carpenter and blacksmith shops and transformer house, are sited to the north in the direction of the east gateway which serves as the visitors' entrance. In the 1940s a number of new structures, some of them temporary in nature, were added on the north and on the less public easterly margin of the maintenance core. Among the newer structures are the boathouse, greenhouse, steel shop, and two large metal-clad warehouses, one of which currently serves as a district garage. An employees' parking lot was developed inside the east entrance and was well screened by plantings. The Master Plan calls for its removal eventually. The grounds are lighted by electroliers on tapered and chamfered concrete standards. However, the original single globe fixtures have been replaced with modern lamps. Public parking is provided outside reservation boundaries along Burlington Northern Railway right-of-way. Reservation boundaries which are not contiguous with the waterway are lined with security fencing.

Little over an acre of the reservation is located at the far end of the spillway dam, on the south shore of the waterway, where a rehabilitated fish ladder and new underwater

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

FOR NPS USE ONLY

RECEIVED

DATE ENTERED

CONTINUATION SHEET

ITEM NUMBER 7 PAGE 3

fish viewing room were completed a year ago. Adjoining the westerly end of this segment of the reservation is city-owned land which is being developed for day-use park purposes. In turn, Commodore Park will be linked by trails to the city's Discovery Park, which occupies portions of the Fort Lawton Military Reservation on Magnolia Bluff.

Lake Union is a comparatively small body covering an area of nearly one and a half square miles. Further to the interior, Lake Washington, on the other hand, has an area of 39 square miles and depths that exceed 200 feet. The Fremont Cut, like the Salmon Bay Waterway which it connects to Lake Union, also is angled to the southeast. It follows, generally, the course of an old stream bed between the Fremont District on the north shore and the base of Queen Anne Hill on the south. Taking its name from the former district, the channel is 5800 feet in length and 100 feet wide, although the Corps of Engineers' fee-owned right-of-way is 300 feet wide. The authorized depth of the channel is 30 feet. Concrete revetments on either side of the channel are here and there bolstered by rip-rap. The low banks are lined with single rows of Lombardy poplars which have been aptly described as "colonnades" because they are nearly uninterrupted from the Northern Pacific Railway Bridge on the westerly end to the Fremont Drawbridge on the east. Subsidiary landscaping of an informal nature was undertaken along the banks as a beautification project by the Seattle Garden Club in the 1950s.

The Montlake Cut follows a compass-oriented easterly course of 2500 feet through a narrow neck of land between Lake Union's Portage Bay and Union Bay in Lake Washington. The channel takes its name from the residential district on the south shore. The Montlake District is connected to the University of Washington campus on the north shore via the Montlake Drawbridge, which crosses the canal at right angles near the center. The channel width is 100 feet, although the right-of-way controlled by the Corps of Engineers is typically 325 feet wide. It is dredged to an authorized depth of 30 feet. The tops of the concrete revetments are used as waterside walks, and there are trails also about midway up either steep embankment rising to a height of about 65 feet. On the south shore a recreational trail was recently improved and developed by the Corps of Engineers in cooperation with the Seattle Garden Club. It extends from West Montlake Park on the extreme west end of the channel to Horace McCurdy Park on the east end, and it continues through and beyond the marches of Foster Island to Washington Park.

HIRAM M. CHITTENDEN LOCKS

Construction of the locks and dam was carried out within the protection of two independent coffer dams. The locks were constructed without piles on a bed of hard clay. Concrete work, generally held to have been of exceptionally durable quality, was composed of one part Portland cement, three parts sand, and six parts gravel. The concrete was mixed, lowered into the forms by bottom dump buckets, spread in layers and spaded, but no tamping was required. Particular care was taken to protect the concrete from the action of salt water during the curing process. Detailed descriptions of construction and operating methods are given in W. J. Barden and A. W. Sargent's 1926 paper published by the American Society of Civil Engineers, which is listed among the bibliographical references.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

FOR NPS USE ONLY

RECEIVED

DATE ENTERED

CONTINUATION SHEET

ITEM NUMBER 7 PAGE 4

The following general description is quoted from Lake Washington Ship Canal Master Plan, Design Memorandum 5 (Seattle: Seattle District, U. S. Army Corps of Engineers, April 1976), Section 2, page 7, and Section 4, page 1.

The locks provide a navigation passage between the freshwater portion of the project, at a mean elevation of 21 feet above sea level, and Shilshole Bay, the level of which is determined by tidal action. Depending on the tide, the lift provided by the locks varies from 6 to 20 feet. The structure incorporates two locks, the larger of which is 825 feet long between the upper and lower miter gates, and is 80 feet in width. This lock can be divided into two smaller chambers by an intermediate miter gate. Ocean-going vessels, up to 30 foot draft, can be accommodated through this lock. A salt-water barrier, hinge-mounted to the floor of the lock, is air-operated via manual push-button controls located in the central control tower. The barrier is manually left in a raised position to reduce the intrusion of saltwater into Salmon Bay but is lowered to permit passage of deep-draft vessels. Saltwater which passes into Salmon Bay but is lowered to permit passage of deep-draft vessels. Saltwater which passes into Salmon Bay during lockage settles into a saltwater basin immediately upstream of the large lock. A saltwater drain conduit returns the saltwater by gravity to Shilshole Bay. The saltwater drain conduit inlet is at the bottom of the saltwater settling basin. Flow through the conduit is controlled by an electrically-operated sluice gate at the fishladder.

The small lock, adjacent to and south of the large lock, has a chamber 150 feet long by 30 feet wide, and is used by smaller vessels with drafts up to 16 feet. Floating mooring bitts on both the south and north walls limit the usable width to 28 feet.

The dam which forms the barrier between the small lock wall and the south shore is 235 feet long and has six 32 foot wide spillway openings in which steel radial gates are installed. The three spillway gates located near the south shore are raised and lowered by an electrically-operated, movable hoist, while the three spillway gates located near the locks are equipped with individual electrically-operated gate hoists. Maximum discharge capacity of the spillway at full gate opening is approximately 16,000 c.f.s. (Note: The three south gates are scheduled for automation, and the hoist house will have to be removed.)

A rehabilitated fish ladder on the south shore, complete with a fish viewing room, was recently opened to the public . . . The original fish ladder at the locks was constructed in 1917 . . . It has been undergoing rehabilitation since 1973, at which time the underwater fish viewing room, pedestrian ramps and rest room facilities were planned.

ACCESSORY STRUCTURES

1. Lockkeeper's House (1913). First permanent building completed on the reservation. Two sheets of drawings for the building among project records stored on the site are dated December 1912. Not prepared by local architect Carl F. Gould as once supposed, the plans evidently were the concept of C. A. D. Young, "Jun. Engineer". A simple, rectangular construction with stuccoed hollow tile walls. Originally measured 26 x 35 feet. Two

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

FOR NPS USE ONLY

RECEIVED

DATE ENTERED

CONTINUATION SHEET

ITEM NUMBER 7 PAGE 5

stories with shingled gable roof and overhanging eaves with exposed rafters. Certain details apparently derived from the Craftsman Bungalow, cross-axial frontal gable; shed-roofed rear dormer. Brick end chimneys with corbelled caps. Porches have hipped roofs with shaped outriggers. Regular fenestration. Single and coupled double-hung sash windows with nine lights over one.

In 1966 the interior was remodeled; partitioning was revised and one of the fireplaces was removed. Externally, the upgrading was discreet. Among the results: new roof cover of composition shingles, conversion of front ground story windows to bay windows within original openings, addition of a bedroom and carport to the rear pantry and stoop. In 1967 the house was dedicated as the official residence of the Seattle District Engineer and renamed in honor of Colonel James B. Cavanaugh, U. S. Army Corps of Engineers District Engineer during the construction of the Lake Washington Ship Canal 1911-1917. The Master Plan calls for no further changes except possible additional buffer planting to increase privacy.

2. Administration Building (1914-1915). The solitary initial multi-purpose public building on the reservation and the focal point, it called for extraordinary design effort. Ten sheets of plans and elevations dated 1914 and prepared by Carl F. Gould of the eminent local firm of Bebb and Gould are among project records stored on the site. Rectangular plan measuring 47 x 67 feet. Reinforced concrete construction. Two stories and basement. Tile-clad hipped roof with central deck. Second Renaissance Revival Style. Basement contains the pumping plant for unwatering or emptying the locks for annual repairs and the original electrical distribution panel, which is intact but functionally superseded. Ground story has cross-axial corridors with central lobby space and principal offices in each corner. Lobby is open to second story gallery. Oval ceiling light of textures and colored glass. Terrazzo floor with geometric trim of Alaska and verde antique marble. Centered in lobby floor is a brass plaque in the form of the battlemented structure which serves as the logogram of the U. S. Army Corps of Engineers. Further federal iconography is found in the lobby entablature, which is decorated with shields, and in the wrought iron gallery railing, where cast iron American eagle emblems are centered in each section. Interior walls and ceilings, including coved cornices, are plaster-finished. Woodwork, including door and window trim, baseboards, pilasters, ogee wall panel moldings, and Ionic stave columns flanking the main entry vestibule, is varnished oak. Second story storerooms open onto the central gallery.

Each exterior elevation has tripartite organization. Walls are topped with a decorative concrete parapet. Second story windows are covered with cast-iron grilles. Ground story arcuated windows and central pedimented doorways are in panels of concrete set off from the major wall surface by special texturing with a bush hammer. The main entry on the southwest, or waterway face is recessed behind a two-story portal arch and surrounded by plate glass fronted by cast iron grilles. Surmounting either bulkhead of the concrete steps of this entrance are light globes mounted on fluted concrete drums with dolphin-supported bronze fittings. These are noteworthy because they are the only external lighting fixtures on the reservation which have remained wholly intact.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

FOR NPS USE ONLY

RECEIVED

DATE ENTERED

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

CONTINUATION SHEET

ITEM NUMBER 7 PAGE 6

The building has been only superficially altered, mostly on the interior. The Master Plan calls for some restoration and upgrading, including the replacement of window sash to match the original, cleaning and sealing masonry, and refinishing woodwork as required. While primary visitor-information functions will be shifted elsewhere, the building's basement pumping plant will be open to the public as an exhibit area. A basement stairway access from the exterior and additional interior lighting are among the few improvements planned.

3. Operating Houses, Nos. 1, 2, 3, and 4 (1914). Nos. 1 through 3 are on the north lock wall. No. 4 is situated on the middle lock wall. Single-story structures of reinforced concrete measuring 14 x 21 feet. Rectilinear domed roofs. Wrap-around corner window bays with transom grilles. Original purpose was to control locks. Functionally superseded by central Control Tower but still operable. Master Plan calls for retention and reconditioning.

4. Mechanics Shop (1914). Single story structure of reinforced concrete measuring 18 x 56 feet. Built up roof. Base mold, entablature and other details in the classical tradition conform to the simple utilitarian style of the original group of accessory buildings. Current use: storage and locker room.

5. Transformer House (1914). Single story structure of reinforced concrete measuring 25 x 33 feet. Built up roof. Contains transformers and emergency generator. The only one of the original accessory buildings to have a compass orientation rather than conforming to the grid perpendicular to the waterway. Openings of the west facade are outlined with continuous plain moldings under segmental arch heads. Entablature, belt molds and base in the classical tradition conform to the simple utilitarian style of the original group of accessory buildings. Pedimented hood over central doorway. Master Plan calls for minor restoration and cleaning.

6. Office and Shop Building (1916). Warehouse of the original group of accessory buildings. Reinforced concrete construction measuring 36 x 80 feet. Two stories. Built up roof. Details in classical tradition conform with established pattern. Later single story paint shop additions on north end doubled the building's length. Aluminum window sash has been substituted for original and is to be replaced.

7. Machine Shop (1916). Reinforced concrete construction measuring 30 x 85 feet. Two stories. Built up roof. Entablature, belt molds and base in classical tradition conform to the simple utilitarian style of the original group of accessory buildings. Aluminum window sash has been substituted for original and is to be replaced.

8. Gas and Oil Building (1916). Single story structure of reinforced concrete measuring 14 x 22 feet. Built up roof. Contains 600 and 315-gallon gasoline tanks. Exterior details in classical tradition conform to the simple utilitarian style of the original group of accessory buildings.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

FOR NPS USE ONLY

RECEIVED

DATE ENTERED

CONTINUATION SHEET

ITEM NUMBER 7 PAGE 7

9. Carpenter and Blacksmith Shops (1921). Reinforced concrete construction measuring 31 x 91 feet. Two stories. Built up roof. Entablature, belt molds and base in classical tradition conform to the pattern established by the original accessory buildings. This building appears to have replaced temporary frame structures on the site. Master Plan calls for interior renovation as a visitors' interpretive center, and nearly all improvements will be confined to the interior. However, the exterior will be cleaned and sealed and doors and window sash will be replaced along original lines.
10. Emergency Dam Hoist House (1922). Single story structure of reinforced concrete measuring 20 x 20 feet exclusive of bayed south elevation. Built up roof. Contains emergency dam hoists and saltwater barrier air compressor. Entablature and base in classical tradition conform to pattern established by the original group of accessory buildings. Minor restoration or reconditioning is planned.
11. Steel Shop (1941). Metal-clad steel frame construction measuring 40 x 102 feet. Built-up roof. Used for steel fabrication, locker room.
12. Warehouse No. 2 (1941). Metal-clad steel frame construction measuring 50 x 160 feet. Built-up roof. Used as storage and office space.
13. District Garage (1941). Metal-clad steel frame construction measuring 50 x 160 feet with 20 x 25 foot washrack addition on SE corner. Built up roof. District garage and maintenance shops.
14. Public Comfort Station (1947). Single story reinforced concrete construction measuring 14 x 58 feet. Master Plan proposes that built up roof be developed as viewing deck. Situated west of Administration Building overlooking locks.
15. Boathouse (1949). Wood frame construction measuring 55 x 79 feet. Exterior stuccoed and painted grey to achieve certain compatibility with neighboring structures of concrete. Houses steam-powered sternwheeler snagboat W. T. Preston and other vessels under Corps jurisdiction used in snagging and dredging operations.
16. Greenhouse (1949). Single story wood frame construction with double-pitched roof measuring 15 x 15 feet. Adjoining 15 x 34 foot glass panel structure.
17. Gatehouse (1949). Single story 7 x 7 foot wood frame structure at visitors' entrance. Master Plan calls for eventual removal and replacement with a new guard office to be coordinated with a re-designed entry way.
18. Open Storage Shed (1940s?). 25 x 125 feet. Adjacent to east boundary. Not highly visible. Compass orientation nonconforming with majority of maintenance complex.
19. Quonset Hut (1949). 36 x 60 feet. Located in NE corner of maintenance area. Not highly visible. Compass orientation nonconforming with majority of maintenance complex.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

FOR NPS USE ONLY

RECEIVED

DATE ENTERED

CONTINUATION SHEET

ITEM NUMBER

7

PAGE

8

Master Plan calls for removal to allow development of less visible parking area.

20. Control Tower (1969). On middle lock wall. 19 x 24 feet. Base, or ground story of reinforced concrete. Overhanging, glass-enclosed steel-frame observation story. Purpose is to centralize control of locks. Master Plan calls for retention as primary communications and navigation control structure. However, extensive modifications are contemplated to make its angular lines visually conformable with the early concrete buildings.

8 SIGNIFICANCE

PERIOD	AREAS OF SIGNIFICANCE -- CHECK AND JUSTIFY BELOW			
<input type="checkbox"/> PREHISTORIC	<input type="checkbox"/> ARCHEOLOGY-PREHISTORIC	<input type="checkbox"/> COMMUNITY PLANNING	<input checked="" type="checkbox"/> LANDSCAPE ARCHITECTURE	<input type="checkbox"/> RELIGION
<input type="checkbox"/> 1400-1499	<input type="checkbox"/> ARCHEOLOGY-HISTORIC	<input type="checkbox"/> CONSERVATION	<input type="checkbox"/> LAW	<input type="checkbox"/> SCIENCE
<input type="checkbox"/> 1500-1599	<input type="checkbox"/> AGRICULTURE	<input type="checkbox"/> ECONOMICS	<input type="checkbox"/> LITERATURE	<input type="checkbox"/> SCULPTURE
<input type="checkbox"/> 1600-1699	<input checked="" type="checkbox"/> ARCHITECTURE	<input type="checkbox"/> EDUCATION	<input checked="" type="checkbox"/> MILITARY	<input type="checkbox"/> SOCIAL/HUMANITARIAN
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> ART	<input checked="" type="checkbox"/> ENGINEERING	<input type="checkbox"/> MUSIC	<input type="checkbox"/> THEATER
<input type="checkbox"/> 1800-1899	<input checked="" type="checkbox"/> COMMERCE	<input type="checkbox"/> EXPLORATION/SETTLEMENT	<input type="checkbox"/> PHILOSOPHY	<input checked="" type="checkbox"/> TRANSPORTATION
<input checked="" type="checkbox"/> 1900-	<input type="checkbox"/> COMMUNICATIONS	<input type="checkbox"/> INDUSTRY	<input checked="" type="checkbox"/> POLITICS/GOVERNMENT	<input type="checkbox"/> OTHER (SPECIFY)
		<input type="checkbox"/> INVENTION		

SPECIFIC DATES 1906-1917

BUILDER/ARCHITECT District Engineers: Hiram M. Chittenden (planning and promotion) and James B. Cavanaugh (supervisor of construction). A. W. Sargent was Assistant Engineer in Charge of Construction during the construction phase 1911-1917.

STATEMENT OF SIGNIFICANCE

SUMMARY STATEMENT

The Lake Washington Ship Canal is significant to Seattle, the state and the nation as a major engineering achievement completed under government auspices which added more than 90 miles to the city's waterfrontage accessible to ocean-going vessels. Following decades of visionary planning and failed attempts along such lines, the project realized by the U. S. Army Corps of Engineers in 1917 connected Puget Sound with a series of inland bodies free from tidal fluctuations and destructive marine life. The resulting fresh-water harbor extending over some 25,000 acres combines with Seattle's saltwater harbor in Elliott Bay to provide navigational facilities rated among the finest of any port in the country.

The workable plan for the canal and locks was delineated and promoted by Major Hiram M. Chittenden, Seattle District Engineer 1906-1908. Both the project endorsed by the Department of the Army and various alternative schemes were embraced by the business community with an enthusiasm which epitomized the booster spirit of Seattle in the early years of the century. That ocean-going freighters and barges could be permitted to load and unload near industrial sites developing on the shores of Lake Union and Lake Washington was felt to enhance the city's growing image as the transportation center of the Puget Sound region and a break-of-bulk point for domestic, coastal and international trade. The project was executed under the supervision of Colonel James B. Cavanaugh, District Engineer 1911-1917, and Arthur W. Sargent, Assistant Engineer in charge of construction. Among local figures closely associated with the project were Charles Herbert Bebb and Carl F. Gould, partners in a leading architectural firm which laid out the maintenance campus on the government reservation at the locks.

With its fixed dam and double locks and right-of-way stretching nearly eight miles, the Lake Washington Ship Canal for many years was generally regarded second in scope only to the multiple locks and 50-mile-long canal completed across the Isthmus of Panama by the U. S. government 1904-1914. While the size of Seattle's locks has since been superseded in the continental United States (on the Ohio and Mississippi River, for example), few, if any, of the later locks are believed to handle more vessels in a given year. The facilities officially designated the Hiram M. Chittenden Locks in 1956 are operated on a 24-hour daily basis. While naval and commercial craft, fishing boats and log rafts play a significant role in locks usage, pleasure craft, which have proliferated since the Post War years, now make up the bulk of traffic.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

FOR NPS USE ONLY

RECEIVED

DATE ENTERED

CONTINUATION SHEET

ITEM NUMBER 8 PAGE 2

BACKGROUND OF THE PROJECT

As is repeatedly pointed out, the notion of a navigable waterway joining Puget Sound to Lake Union and Lake Washington is nearly as old as settlement in the area. Seattle pioneer Thomas Mercer is credited with the first documented public expression on the subject. In 1854, during a Fourth of July picnic, he cited the advantages of such a canal and, referring to the union of lakes and bays, he proposed names ultimately associated with the inland bodies.

The concept first received federal recognition in 1867 when a Board of Engineers for the Pacific Coast, headed by Lieutenant Colonel Barton S. Alexander, was charged with recommending a site for a naval station in Puget Sound waters. One location under consideration was the freshwater basin of Lake Washington, access to which would require the construction of a ship canal. From that point forward sporadic attempts were made by local citizens to gain the support of the Department of the Army and Congress for construction of the canal. Private improvement companies were formed, founded and dissolved. Meanwhile, the selection of a route - whether northerly via Salmon Bay and Lake Union, or to the south via the mouth of the Duwamish River - remained controversial.

In 1890 Congress made its first appropriation for the proposed commercial waterway in Seattle, and a survey was authorized to locate the most feasible route. The government survey report, dated December 15, 1891, considered five possibilities, of which the present general route beginning at Shilshole Bay was preferred as having the best alignment and potential for being the least costly. The City of Seattle and King County proceeded to acquire right-of-way while further investigations and reports on appropriate routings were made.

The involvement of the U. S. Army Corps of Engineers in the project on a lasting basis is marked from the beginning of Major Hiram Chittenden's term as District Engineer. In 1906 Congress authorized the construction by private capital of a canal with a single timber lock at Salmon Bay proposed by local citizen James A. Moore. In a report on the Moore proposal dated December 1906, Chittenden itemized the government's interest in the matter. In essence, the government would be concerned with the commercial promise of a navigable waterway and would benefit indirectly from the lowering of the waters of Lake Washington. The latter would facilitate flood control and drainage of swamp lands. In his report Chittenden also recommended significant changes in the nature and placement of the lock, advocating a double lock of more permanent masonry construction. If located at the narrows near the outlet of Salmon Bay, it would raise Salmon Bay out of tidal influence and lower Lake Washington waters to the level of the intervening body, Lake Union. Chittenden provided arguments which reversed the Army's prior negative findings on the feasibility of the project. The absence of tidal action would simplify cargo loading and unloading on the inland waters; Lake Union would offer a placid winter refuge for the fishing fleet, and fresh water would cleanse destructive teredos and barnacles from the hulls of ocean-going vessels without the expense of dry-docking. Thus, the notion that the federal government would assume primary responsibility for the undertaking was firmly implanted.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

FOR NPS USE ONLY

RECEIVED

DATE ENTERED

CONTINUATION SHEET

ITEM NUMBER 8 PAGE 3

The existing project was based on the detailed annual report on the proposed Lake Washington Canal filed by Chittenden in December 1907. Because the government-endorsed northerly route was attacked by Ballard lumber mill operators who did not wish to relinquish their tideland sites and by partisans of the southerly route through newly filled and platted tidelands along the Duwamish estuary, the canal routing controversy dragged on for several years. The stalemate was eventually broken, but not before Chittenden's forced retirement due to disability early in 1910. Reginald H. Thompson, the City Engineer who master-minded Seattle's grandest public improvement schemes, and the Chamber of Commerce were important advocates of Chittenden's initial recommendations. The cause was finally won in June 1910, when Congress appropriated \$2,275,000 for construction according to specifications in the District Engineer's annual report of 1907.

Construction was commenced under the direction of a successor, Colonel James B. Cavanaugh, in September 1911. Ground was broken for the locks on November 10 of that year. In February 1913 the first concrete was deposited in the forms. The gates of the completed locks were closed July 12, 1916, and the filling of Salmon Bay began. Lake Washington was lowered to the level of Lake Union by October of that year. The Fremont Cut was opened between Salmon Bay and Lake Union in the same month. On May 8, 1917 the Montlake Cut between Lakes Union and Washington was opened in the near vicinity of the abandoned portage excavated by the Lake Washington Improvement Association. The entire project was dedicated with due ceremony on July 4, 1917, during which time the 184 foot Roosevelt, the flagship of Commodore Robert E. Perry's Arctic Expedition of 1907, led a parade of traffic through the locks.

At the time of the dedication the cost of the project was reported to have reached a total of \$5,000,000. In addition to right-of-way acquisition costs, the City of Seattle bore the expense of building new bridges, sewer and water tunnels and regrading streets where necessary. The major costs were divided between the State of Washington and King County, for acquisition of right-of-way and excavation and construction upstream from the locks, and the federal government, which constructed the locks and accessory works.

HIRAM M. CHITTENDEN - CHAMPION OF THE LAKE WASHINGTON SHIP CANAL

Hiram M. Chittenden (1858-1917), a native of New York, was graduated from West Point with high honors as a second lieutenant of engineers in 1884. Thereafter he completed a three year course in the Engineer School of Application, was made a first lieutenant, and was ordered to Omaha as engineer officer of the Department of the Platte. Thus embarked upon a lifetime career as an army engineer, he would soon gain recognition as a conservationist and historian. Chittenden first achieved national acclaim in 1897 for a massive report advocating federal construction of irrigation dams which is said to have become the basis of the Newland Act of 1902. After serving in the Spanish-American War he was returned to Yellowstone Park, where he took charge of completing the road system he earlier had helped lay out. In 1904 he was promoted to the rank of major, and soon after was appointed to the federal commission to locate the boundaries of Yosemite Park. Chittenden was an early advocate of the concept of multiple-purpose

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

FOR NPS USE ONLY

RECEIVED

DATE ENTERED

CONTINUATION SHEET

ITEM NUMBER 8 PAGE 4

resource use which is widely applied today. Among his substantial publication credits are The Yellowstone National Park (1895), The History of Early Steamboat Navigation on the Missouri River (1903), The Life, Letters and Travels of Father Pierre Jean de Smet (1905), and, his monumental work, The American Fur Trade of the Far West (1902).

Among the projects which Chittenden directed during his active period as Seattle District Engineer, 1906-1908, next in importance to the Lake Washington Ship Canal was planning and construction of 14 miles of the 25 mile tourist road from the western boundary of Mount Rainier National Park to Camp of the Clouds. From his predecessor he inherited the on-going task of constructing fire control towers for the coastal artillery batteries at Forts Flagler, Casey and Worden which comprised the defenses for Seattle and its harbor in Elliott Bay.

Throughout his later years Chittenden suffered from a debilitating paralysis (locomotor ataxia), but his astonishing capacity for work seldom flagged. By the middle of 1908, however, his condition had worsened to such an extent that he was forced to withdraw from normal duty. At the urging of several of his associates in the Ship Canal project, including City Engineer Reginald Thompson, Secretary of the Interior Richard Ballinger, a former Seattle Mayor, and others interceded on his behalf and succeeded in securing Chittenden's promotion to the rank of brigadier-general prior to his disability retirement on February 10, 1910. Despite his frail health, Chittenden continued to write (War or Peace, Flood Control, and a revised and expanded edition of his guidebook to Yellowstone National Park) and to take part in public life as president of the Seattle Port Commission, 1911-1915.

A NOTE ON THE ARCHITECTURAL FIRM OF BEBB AND GOULD

Charles Herbert Bebb (1856-1942) and Carl F. Gould (1873-1939) were leaders of the architectural community in Seattle. Their selection to lay out and design the complex of concrete accessory buildings on the government reservation at the ship canal locks was fitting. The ten or more initial buildings on the site have a range of refinement along classical lines, but they are solid and straightforward in a manner appropriate to their function and setting along the massive lock walls.

Bebb, a native of England, was educated at Kings College, London, and the University of Lausanne, Switzerland, where he studied engineering. He emigrated to the United States in 1880 and was first employed as a construction engineer by the Illinois Terra Cotta Company of Chicago. From 1885 to 1890 he served as supervisor of construction for the eminent architectural firm of Adler and Sullivan. Bebb was the first Washington architect to be elected a Fellow of the American Institute of Architects. He helped organize the Washington State Chapter of the AIA in 1894 and served several terms as its president. From 1911 to 1935 Bebb served as Consulting Architect for the State Capitol Group in Olympia. In 1915, a year or two after he and Gould commenced a long and fruitful partnership, the firm was given charge of the University of Washington Campus Plan. Gould helped found the University of Washington's School of Architecture and was first chairman of the department.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

FOR NPS USE ONLY

RECEIVED

DATE ENTERED

CONTINUATION SHEET

ITEM NUMBER 8 PAGE 5

Gould, a native of New York City, was graduated from the Harvard School of Architecture in 1898 and thereafter spent four years (1899-1903) at the Ecole des Beaux Arts in Paris. On his return to the United States he was employed by the eminent New York architects McKim, Mead and White. Later, he became a member of the New York firm of Carpenter, Clair and Gould. He arrived in Seattle around the time of the Alaska-Yukon-Pacific Exposition of 1909, or shortly before. Gould too became active in the affairs of the Washington State Chapter of the AIA. Among other noted works by Bebb and Gould in Seattle are the Modernistic Seattle Art Museum (1932), the annex of the Rainier Club (1929), the U. S. Marine and Virginia Mason Hospitals, and the Olympic Hotel, designed in cooperation with the George B. Post Company of New York.

9 MAJOR BIBLIOGRAPHICAL REFERENCES

- Interview, February 9, 1977: Jim Newman, Environmental Planner, Seattle District, U. S. Army Corps of Engineers.
Interview, February 22, 1977: Robert Frey, Real Estate Division, Seattle District, U. S. Army Corps of Engineers.
Lake Washington Ship Canal Master Plan, Design Memorandum 5 (Seattle: Seattle District, U. S. Army Corps of Engineers, April 1976). Includes summary history, early view and

(continued on attached sheet)

10 GEOGRAPHICAL DATA

ACREAGE OF NOMINATED PROPERTY Locks, 49.09; Fremont Cut, 38.5; Montlake Cut, 20.3.
UTM REFERENCES Total acreage of three parcels: 107.89.

A	ZONE	EASTING	NORTHING	B	ZONE	EASTING	NORTHING
C	ZONE	EASTING	NORTHING	D	ZONE	EASTING	NORTHING

VERBAL BOUNDARY DESCRIPTION

See attached sheet

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

STATE	CODE	COUNTY	CODE

11 FORM PREPARED BY

NAME / TITLE

Elisabeth Walton Potter, Historic Preservation Specialist

ORGANIZATION

Office of Archaeology and Historic Preservation

DATE

March 1977

STREET & NUMBER

111 West 21st Avenue

TELEPHONE

(206) 753-4117

CITY OR TOWN

Olympia

STATE

Washington 98504

12 STATE HISTORIC PRESERVATION OFFICER CERTIFICATION

THE EVALUATED SIGNIFICANCE OF THIS PROPERTY WITHIN THE STATE IS:

NATIONAL

STATE

LOCAL

As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service.

STATE HISTORIC PRESERVATION OFFICER SIGNATURE

TITLE

DATE

FOR NPS USE ONLY

I HEREBY CERTIFY THAT THIS PROPERTY IS INCLUDED IN THE NATIONAL REGISTER

DATE

DIRECTOR, OFFICE OF ARCHEOLOGY AND HISTORIC PRESERVATION
ATTEST:

DATE

KEEPER OF THE NATIONAL REGISTER

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

FOR NPS USE ONLY

RECEIVED

DATE ENTERED

CONTINUATION SHEET

ITEM NUMBER 9 PAGE 2

- plot plans of the project. For the most part, proposed developments are designed to preserve and promote public appreciation of the historical features.
- Larson, Suzanne B., "Dig the Ditch!" The History of the Lake Washington Ship Canal (Boulder, Colorado: Western Interstate Commission for Higher Education, 1975). Useful distillation of secondary sources, including annual reports of the Chief of Engineers, pertinent Congressional documents, special reports, monographs, and articles. Includes selective bibliography and identifies pertinent material in local repositories.
- Lake Washington Ship Canal and Hiram M. Chittenden Locks (Seattle: Seattle District, U. S. Army Corps of Engineers, July 1974). Interpretive brochure.
- Carl S. English, Jr. Gardens at the Hiram M. Chittenden Locks, Lake Washington Ship Canal (Seattle: Seattle District, U. S. Army Corps of Engineers, December 1974). Interpretive brochure.
- The Lake Washington Ship Canal Fish Ladder (Seattle: Seattle District, U.S. Army Corps of Engineers, 1976). Interpretive brochure.
- Barden, W. J., and A. W. Sargent, "The Lake Washington Ship Canal, Washington." Presented at the meeting of the Waterways Division in Seattle July 15, 1926. Published as paper No. 1679 in Transactions of the American Society of Civil Engineers. Also found in American Society of Civil Engineers Proceedings, Vol. 53, No. 2 (August 1927), 1227-1255. Detailed description of project features and methods of construction.
- Lake Washington Ship Canal (Seattle: Seattle District, U.S. Army Corps of Engineers, 1939.) Illustrated typescript updating history and description of design and construction features. Format based upon Barden and Sargent's report.
- Purvis, Neil H., "History of the Lake Washington Canal," Washington Historical Quarterly, Vol. 25, No. 2 (April 1934), 114-127; Vol. 25, No. 3 (July 1934), 210-213.
- Dodds, Gordob N., Hiram Chittenden: His Public Career (Lexington, Kentucky: The University Press of Kentucky, 1973). Especially Chapter 6, pages 128-154, pertaining to Chittenden's span as Seattle District Engineer 1906-1910 and the planning of the project.
- Chittenden, Gen. H. M., U.S. Army, Retired, The Lake Washington Canal: What it Will Mean to the People (Seattle: Chamber of Commerce, ca. 1914). 4 pages. Written during his term as president of the Port Commission of Seattle, this is a synthesis of arguments in favor of the project which Chittenden earlier developed as the Army Corps of Engineers' Seattle District Engineer. Published as a promotional leaflet by the Chamber of Commerce, the canal's most ardent supporter in the private sector.
- Johnson, Allen, and Dumas Malone, eds., Dictionary of American Biography (New York: Charles Scribner's Sons, 1958), Vol. 2, C177-178. Note on Hiram Martin Chittenden.
- Illustrated souvenir invitation to the formal observance of the opening of the Lake Washington Canal, July 4, 1917. Data prepared and printed by the Publicity Bureau, Seattle Chamber of Commerce and Commercial Club.
- McDonald, Lucile, "Now the Name is 'Hiram M. Chittenden Locks': Change Honors Designer of Marine Landmark at Ballard," Seattle Sunday Times Magazine Section (Sept. 16, 1956), 2.
- Rumley, Larry, "The Ballard Locks: How they Work", Seattle Sunday Times Magazine Section (April 25, 1965), 10-11.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

FOR NPS USE ONLY

RECEIVED

DATE ENTERED

CONTINUATION SHEET

ITEM NUMBER 10 PAGE 2

VERBAL BOUNDARY DESCRIPTION

Hiram M. Chittenden Locks

Beginning at a point on the SW corner Lot 1, Block 13 of Ballard Tide Lands; thence southeasterly along the southerly lot lines of Lots 1 through 5 of said Block 13 to the SE corner of Lot 5 of said Block; thence north to the southerly boundary of the Great Northern Railway* right-of-way; thence northeasterly along said railway right-of-way boundary to a point approximately 7 feet east of the projection north of the east lot line of Lot 2, Block 11, Ballard Tide Lands; thence north 17.5 feet to the southerly boundary of the Great Northern Railway right-of-way; thence northeasterly along said railway right-of-way boundary to the projection north of the east lot line of Lot 4, Block 11, Ballard Tide Lands; thence south along said projected line to the SE corner of Lot 4; thence east in a perpendicular direction along the U.S. Pierhead Line 1050 feet to the projection south of the west boundary of 26th Avenue N.W.; thence south across the Salmon Bay Waterway 750 feet to the State Harbor Line; thence west along the State Harbor Line and northwesterly along the north lot lines of Lots 1 through 4 of Block 7, Seattle Tide Lands to a point approximately 45 feet west of the projection north of the east boundary of 31st Avenue West; thence southwesterly in a line perpendicular to the Waterway 100 feet; thence northwesterly in a line parallel with the Waterway 535.88 feet; thence north approximately 105 feet to the U.S. Pierhead Line; thence northwesterly along said Pierhead Line to the projection south of the east boundary of 34th Avenue N.W.; thence north along said projected line approximately 350 feet across the Salmon Bay Waterway to the point of beginning.

*Burlington Northern Railway current owner

Fremont Cut Parcel

Beginning at a point on the northerly State Harbor Line of the Lake Washington Ship Canal approximately 25 feet southeast of the Northern Pacific Railway Bridge right-of-way (which point is the SW corner of Lot 8, Block 1, Seattle Tidelands); thence southeasterly along said State Harbor Line 5540 feet to a point approximately 280 feet southeasterly of the Fremont Bridge right-of-way; thence southwesterly 300 feet across the canal to a point on the southerly State Harbor Line which is approximately 105 feet southeasterly of the Fremont Bridge right-of-way; thence northwesterly along said State Harbor Line 5810 feet to a point 7.98 feet southeasterly of the NE corner of Lot 12, Block 13, Ross Addition; thence southeasterly in a line parallel with the northerly lot line of said Lot 12 approximately 200 feet; thence northeasterly 266.59 feet to the point of beginning.

Montlake Cut Parcel

Beginning at the SE corner of Block 18-A of the 2nd Supplement, Lake Union Shore Lands; thence south to a point 48.56 feet south of the north U.S. Bulkhead and Pierhead

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

FOR NPS USE ONLY

RECEIVED

DATE ENTERED

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

CONTINUATION SHEET

ITEM NUMBER 10 PAGE 3

Line of the Lake Washington Ship Canal; thence in a southeasterly direction 552.73 feet to a point 151.76 feet south of said U.S. Bulkhead and Pierhead Line; thence east along a line parallel with said U.S. Bulkhead and Pierhead Line 2069.44 feet; thence in a southwesterly direction approximately 485 feet across the canal to a point on the south boundary line of Section 16, T.25N., R.4E., W.M., approximately 240 feet east of the quarter corner of Section 16; thence west along said Section boundary line 2229.76 feet; thence in a northwesterly direction approximately 510 feet across the canal to a point on the north U.S. Bulkhead and Pierhead Line approximately 55 feet west of the point of beginning; thence east along said U.S. Bulkhead and Pierhead Line to the point of beginning.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
PROPERTY MAP FORM**

FOR NPS USE ONLY	
RECEIVED	RECEIVED
	MAR 14 1977
DATE ENTERED	ARCHAEOLOGY AND HISTORIC PLACES DIVISION

SEE INSTRUCTIONS IN HOW TO COMPLETE NATIONAL REGISTER FORMS
TYPE ALL ENTRIES -- ENCLOSE WITH MAP

1 NAME

HISTORIC Chittenden (Hiram M.) Locks and Related Features of the Lake Washington
Ship Canal

AND/OR COMMON

2 LOCATION

CITY, TOWN Seattle VICINITY OF COUNTY King STATE Washington

3 MAP REFERENCE

SOURCE Kroll Map Company Atlas of Seattle. Pages 10E and 11W (Locks); 21W, 21E and
22W (Fremont Cut); 24W and 24E (Montlake Cut).
SCALE 1 inch = 200 feet DATE undated

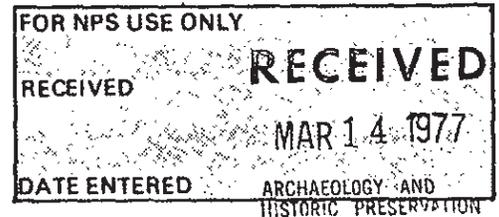
4 REQUIREMENTS

TO BE INCLUDED ON ALL MAPS

1. PROPERTY BOUNDARIES
2. NORTH ARROW
3. UTM REFERENCES

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
PROPERTY PHOTOGRAPH FORM



SEE INSTRUCTIONS IN HOW TO COMPLETE NATIONAL REGISTER FORMS
TYPE ALL ENTRIES -- ENCLOSE WITH PHOTOGRAPH

1 NAME

HISTORIC Chittenden (Hiram M.) Locks and Related Features of the Lake Washington
Ship Canal

AND/OR COMMON

2 LOCATION

CITY, TOWN Seattle VICINITY OF COUNTY King STATE Washington

3 PHOTO REFERENCE

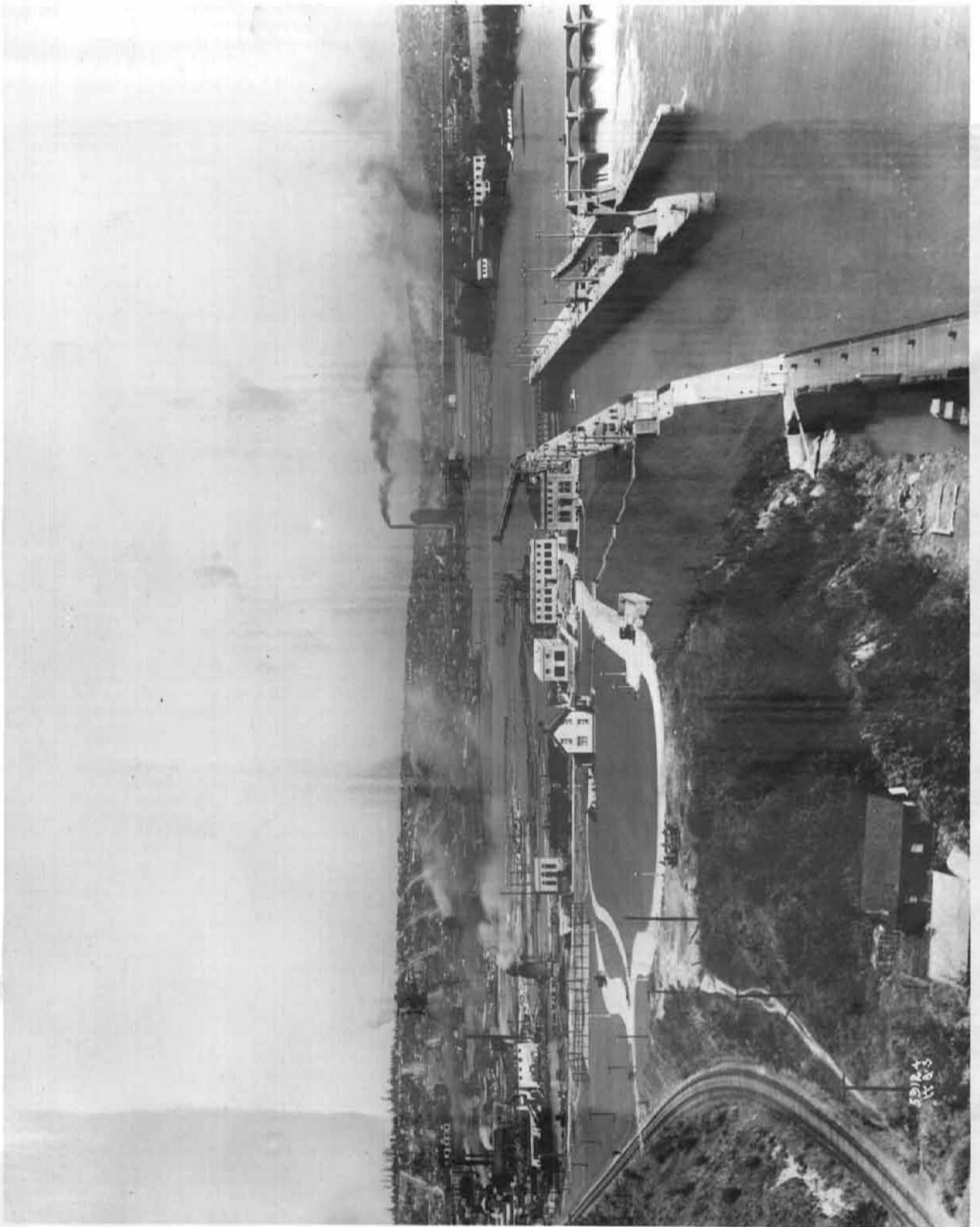
PHOTO CREDIT Elisabeth Walton Potter DATE OF PHOTO February 1977

NEGATIVE FILED AT Washington State Office of Archaeology and Historic Preservation
P.O. Box 1128, Olympia, WA 98504

4 IDENTIFICATION

DESCRIBE VIEW, DIRECTION, ETC. IF DISTRICT. GIVE BUILDING NAME & STREET PHOTO NO. 2 thru 10

- 2 of 13 Salmon Bay Waterway. Looking northwest from south bank past City of Seattle's Commodore Park development toward Shilshole Bay and Puget Sound.
- 3 of 13 Hiram M. Chittenden Locks. Looking southeast at large lock. Control Tower (1969) on right.
- 4 of 13 Hiram M. Chittenden Locks. Looking north from lock wall at Administration Building (1914) and Operating House No. 2 (1914). Machine Shop (1916) is in the distance.
- 5 of 13 Hiram M. Chittenden Locks. Administration Building (1914), northeast and northwest elevations.
- 6 of 13 Hiram M. Chittenden Locks. Left to right: Administration Building (1914), Control Tower (1969), Spillway Dam and Housing for Spillway Gate Hoisting Machine, and Fish Ladder ramp (1976).
- 7 of 13 Hiram M. Chittenden Locks. Looking southeast at Operating House No. 1 (1914), Emergency Dam Hoist House and Emergency Dam Storage (1922).
- 8 of 13 Hiram M. Chittenden Locks. Transformer House (1914), west face. District Garage (1941) in background. Steel Shop (1941) on right.
- 9 of 13 Hiram M. Chittenden Locks. Carpenter and Blacksmith Shops (1921), southeast corner view.
- 10 of 13 Hiram M. Chittenden Locks. Locks Superintendent's Residence (1913), southwest view.



50124
1583

LAKE WASHINGTON SHIP CANAL, SEATTLE
KING COUNTY, WASHINGTON

HIRSH M. CHITTANDAN LOCKS
LOOKING EAST TOWARD SALMON BAY, BALLARD BRIDGE,
AND CANAL TO LAKE UNION BEYOND.

M.(?) AND S. PHOTO NO. 59124 CIRCA. 1919-1920

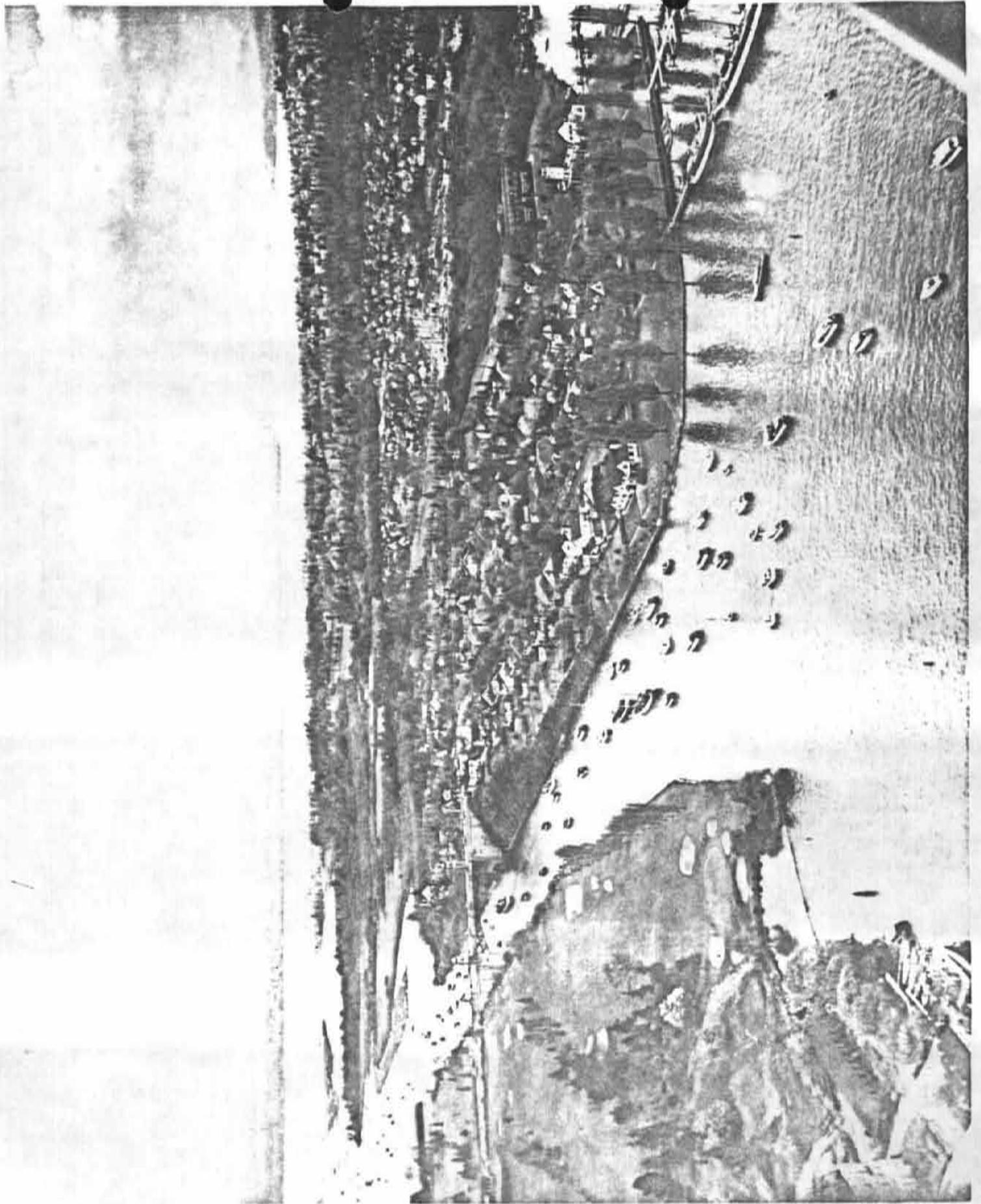
LEFT TO RIGHT IN LOCKS COMPLEX:

TRANSFORMER STATION, TAMMONEY SHOP BUILDINGS,

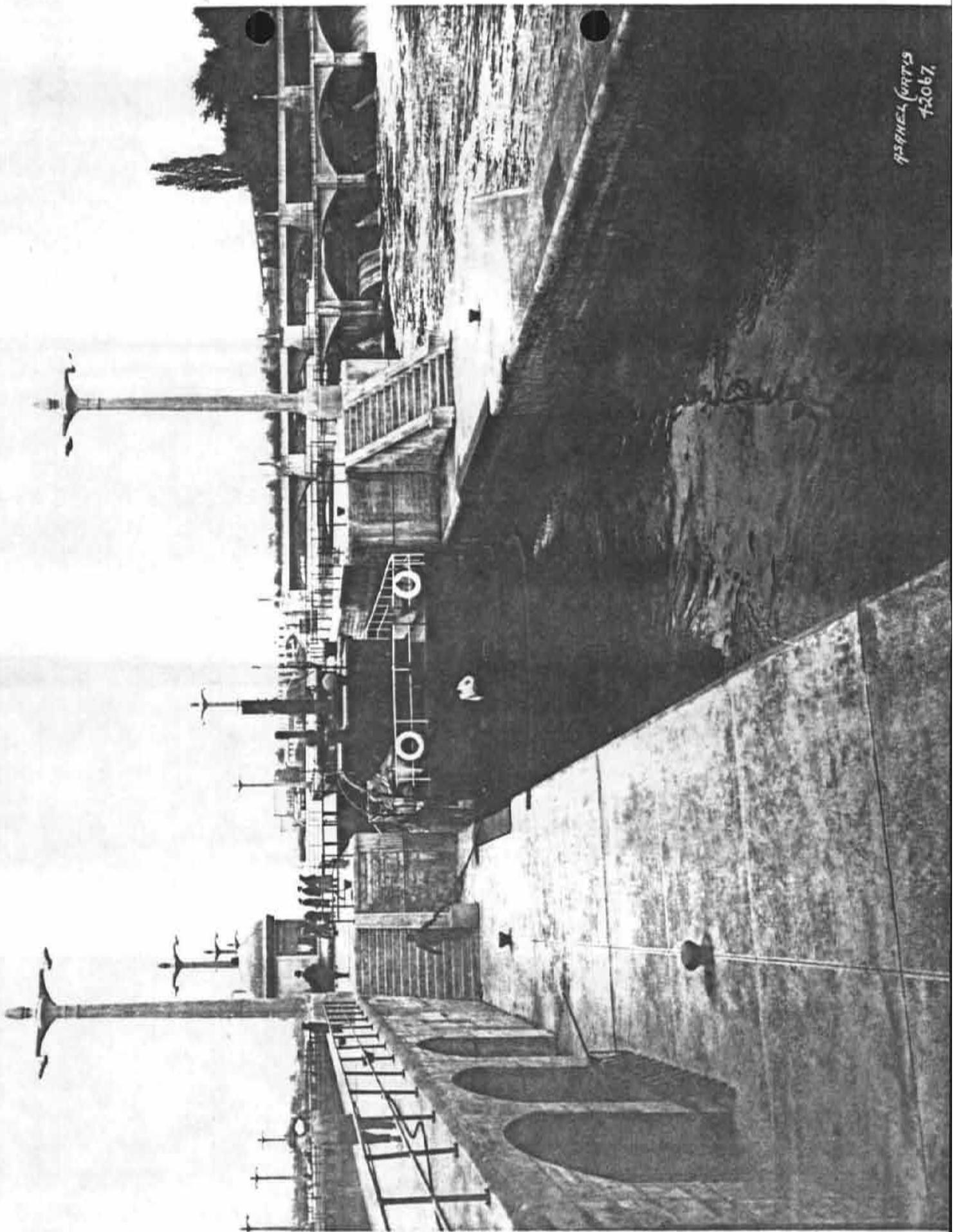
LOCKS SUPERINTENDANT'S RESIDENCE, MACHINE SHOP,
OFFICE AND SHOP BUILDING, ADMINISTRATION BUILDING,

LARGE AND SMALL LOCKS, SPILLWAY DAM.

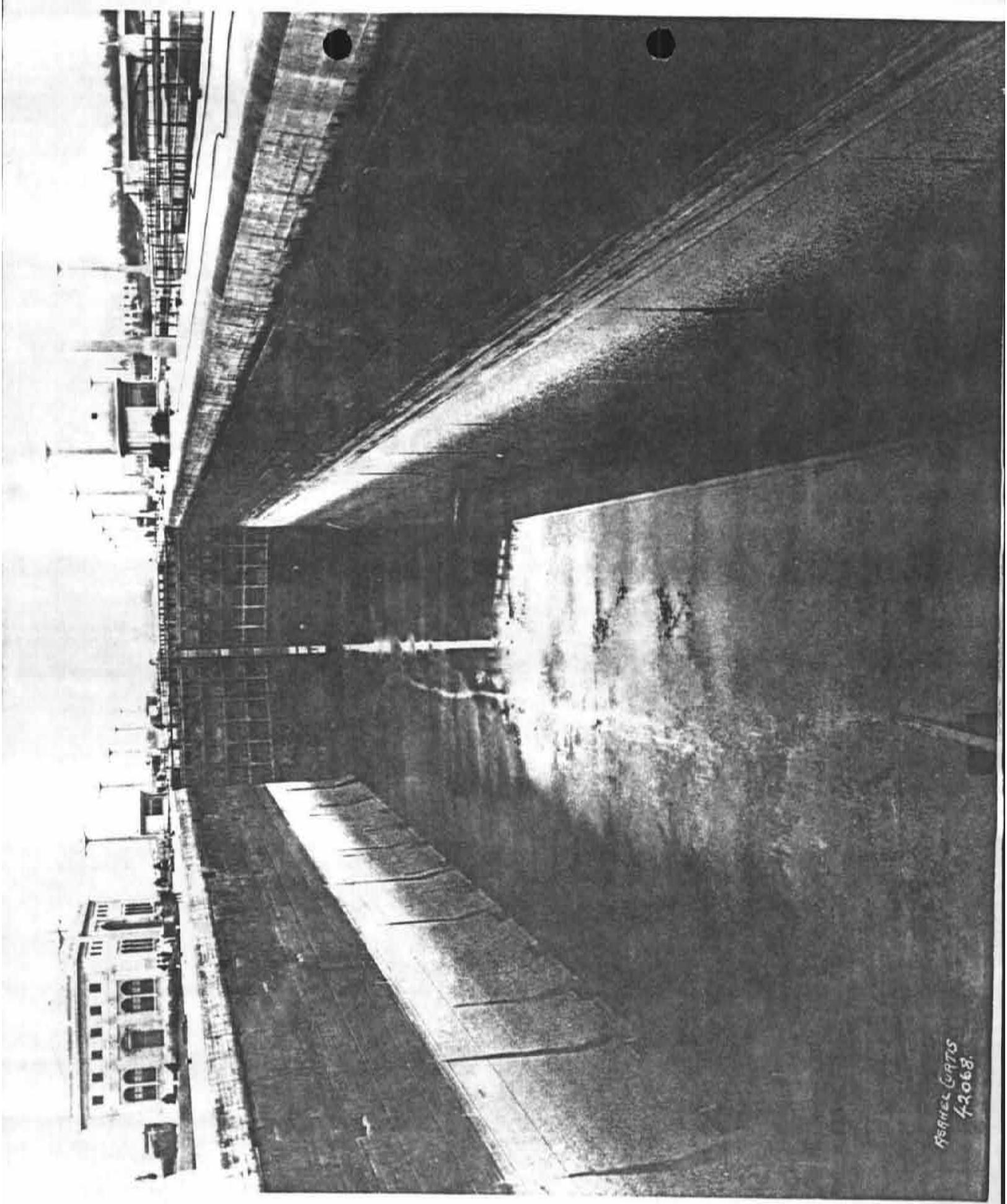
COPIED 2-77 FROM ORIGINAL IN SPECIAL COLLECTIONS
OF THE UNIVERSITY OF WASHINGTON LIBRARY



75962 (INTS)
42067



UW LIBRARY - SPECIAL COLLECTIONS - STANDARD OIL BOAT "PICO" ANTRAIING
SMALL LOCK JULY 16, 1921 - A. CURTIS
NAG. 42067

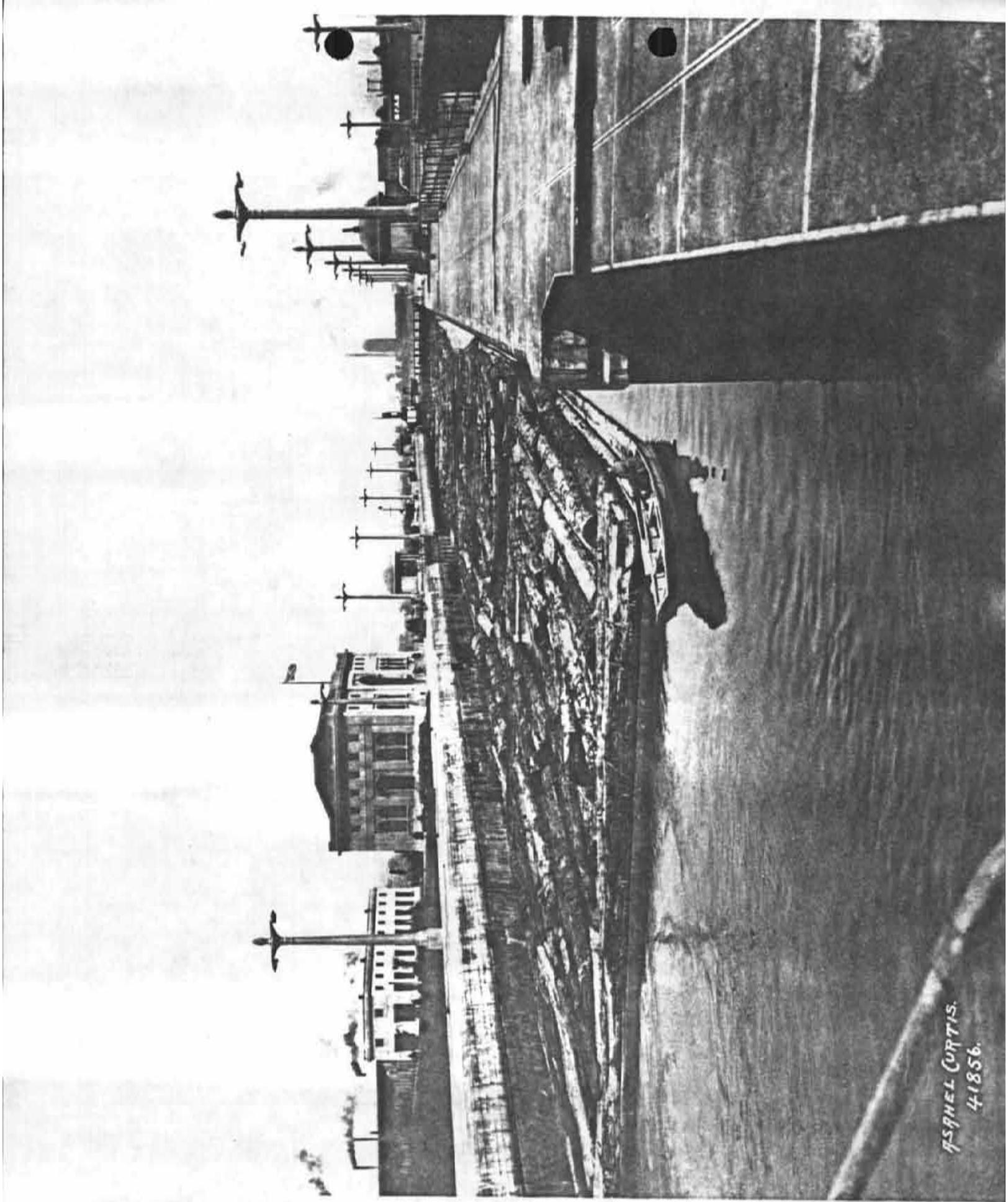


ASBIES GARTS
42068.

UW LIBRARY - SPECIAL COLLECTIONS -

LARGE LOCK, EMPTY, VIEWED FROM
CENTER OF WEST GATE.

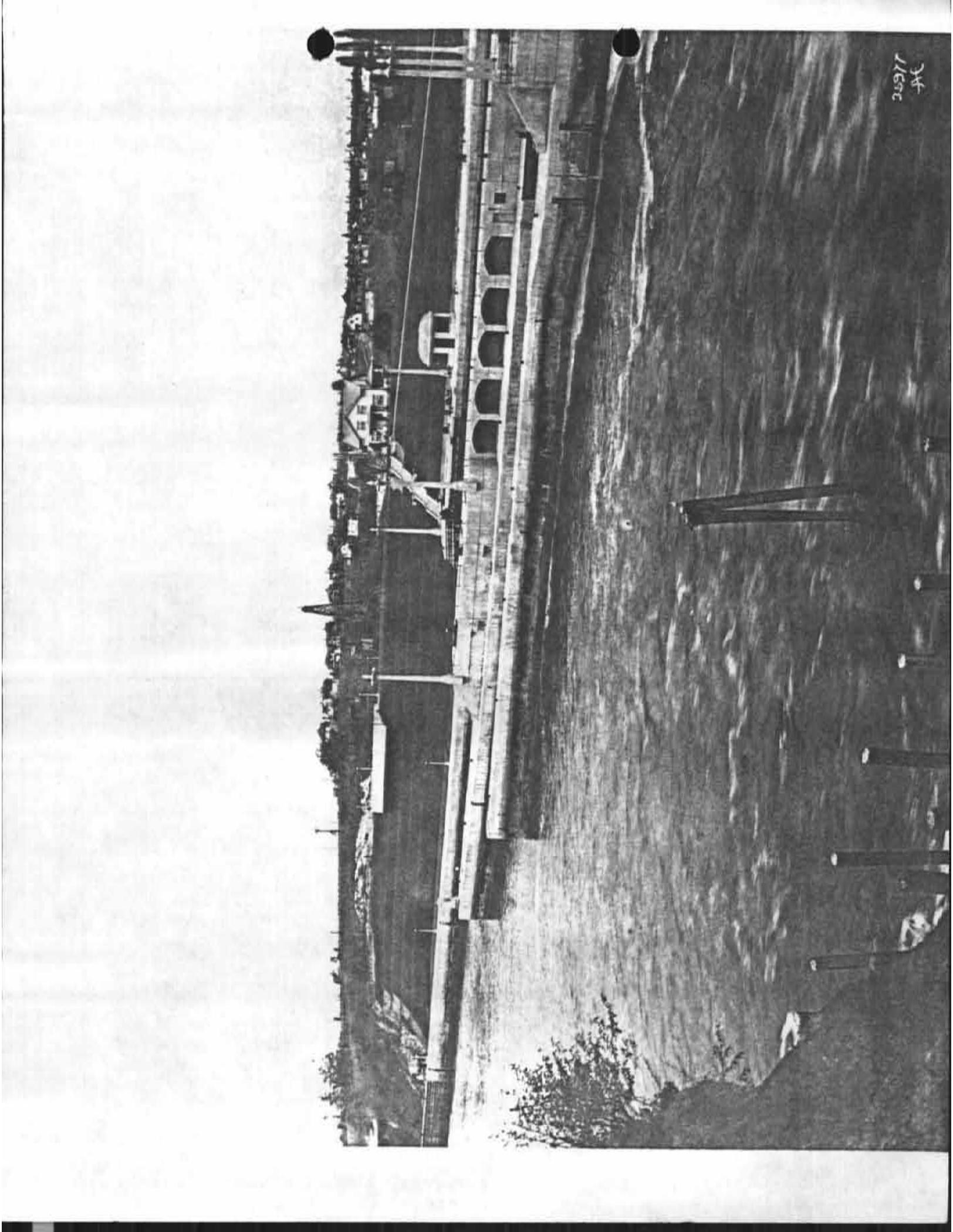
ASAPAL CURTIS NEG. NO. 42068



759HEL CURTIS.
41856.

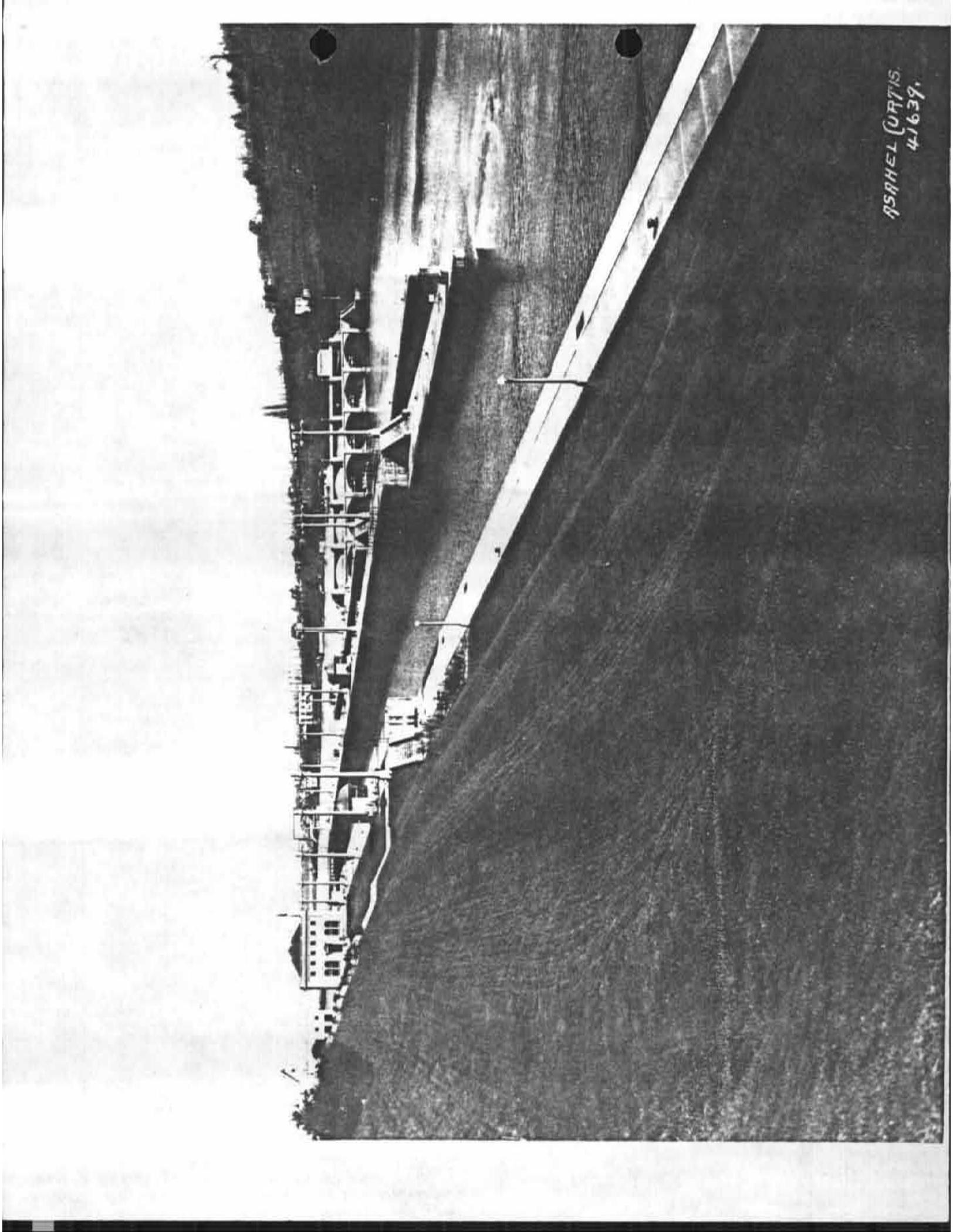
UW LIBRARY - SPECIAL COLLECTIONS - CANAL LOCKS WITH CEDAR LOG BOOM
ASAHAL CURTIS NEG. NO. 41856

24977
JK



UW LIBRARY . SPECIAL COLLECTIONS - CANAL LOCKS AND SUPERINTENDANT'S
RESIDENCE - A. CURTIS NEG. NO. 55977

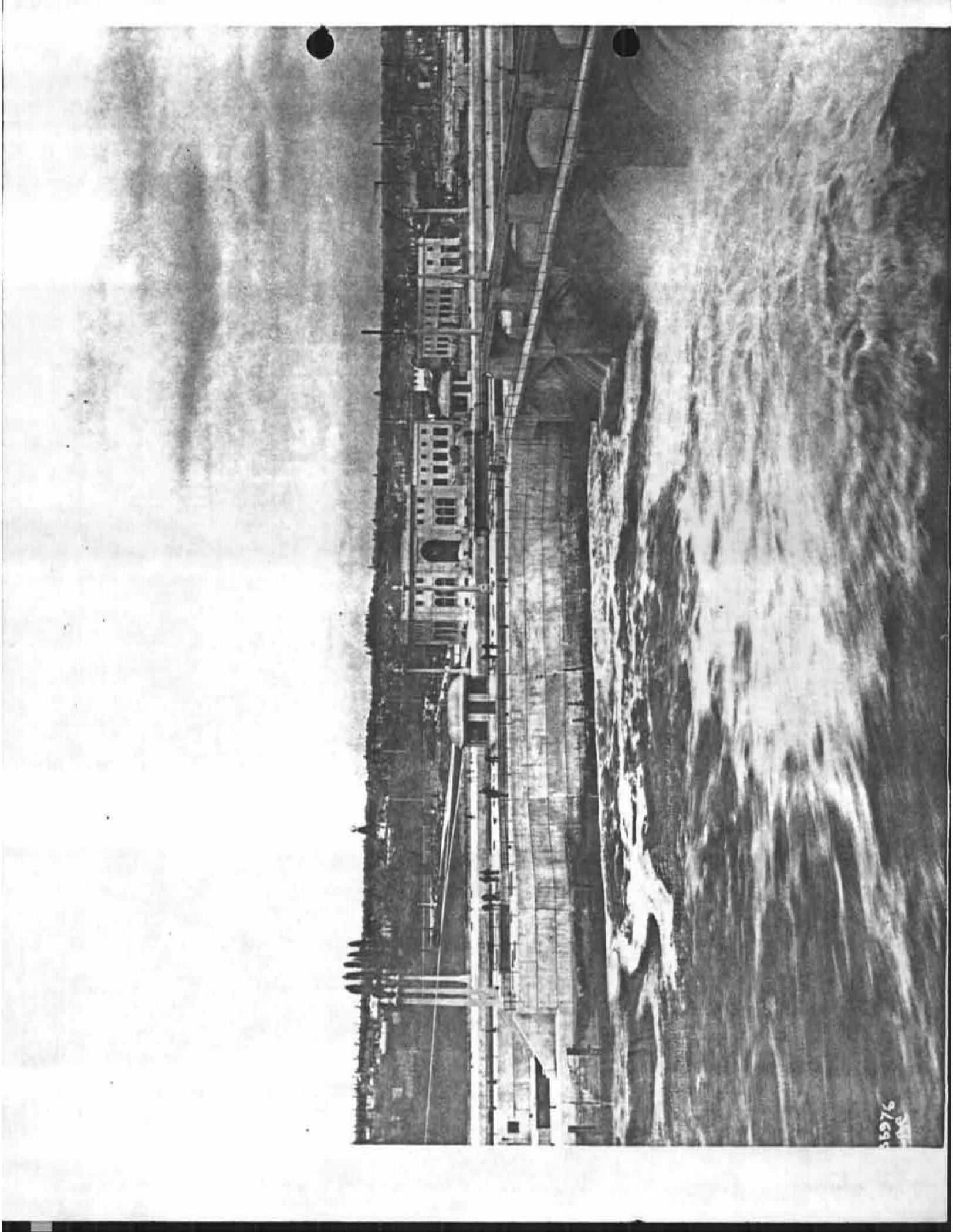
ISAHEL CURTIS.
41639.



UW LIBRARY. SPECIAL COLLECTIONS -

LAKA WASHINGTON
SHIP CANAL LOCKS
LOOKING EAST FROM
NORTH BANK

ASAHU CURTIS
NEG. NO. 41439



15976
1956

UW LIBRARY - SPECIAL COLLECTIONS - CANAL LOCKS AND ADMINISTRATION
BUILDING - ASHLEY CURTS NEG. NO. 35976

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM

FOR NPS USE ONLY

RECEIVED

RECEIVED

DATE ENTERED

MAR 14 1977

ARCHAEOLOGY AND
HISTORIC PRESERVATION

CONTINUATION SHEET

ITEM NUMBER 9 PAGE

plot plans of the project. For the most part, proposed developments are designed to preserve and promote public appreciation of the historical features.

Larson, Suzanne B., "Dig the Ditch!" The History of the Lake Washington Ship Canal (Boulder, Colorado: Western Interstate Commission for Higher Education, 1975). Useful distillation of secondary sources, including annual reports of the Chief of Engineers, pertinent Congressional documents, special reports, monographs, and articles. Includes selective bibliography and identifies pertinent material in local repositories.

Lake Washington Ship Canal and Hiram M. Chittenden Locks (Seattle: Seattle District, U.S. Army Corps of Engineers, July 1974). Interpretive brochure.

Carl S. English, Jr. Gardens at the Hiram M. Chittenden Locks, Lake Washington Ship Canal (Seattle: Seattle District, U.S. Army Corps of Engineers, December 1974). Interpretive brochure.

The Lake Washington Ship Canal Fish Ladder (Seattle: Seattle District, U.S. Army Corps of Engineers, 1976). Interpretive brochure.

Barden, W. J., and A. W. Sargent, "The Lake Washington Ship Canal, Washington." Presented at the meeting of the Waterways Division in Seattle July 15, 1926. Published as paper No. 1679 in Transactions of the American Society of Civil Engineers. Also found in American Society of Civil Engineers Proceedings, Vol. 53, No. 2 (August 1927), 1227-1255. Detailed description of project features and methods of construction.

Lake Washington Ship Canal (Seattle: Seattle District, U.S. Army Corps of Engineers, 1939). Illustrated typescript updating history and description of design and construction features. Format based upon Barden and Sargent's report.

Purvis, Neil H., "History of the Lake Washington Canal," Washington Historical Quarterly, Vol. 25, No. 2 (April 1934), 114-127; Vol. 25, No. 3 (July 1934), 210-213.

Dodds, Gordon B., Hiram Chittenden: His Public Career (Lexington, Kentucky: The University Press of Kentucky, 1973). Especially Chapter 6, pages 128-154, pertaining to Chittenden's span as Seattle District Engineer 1906-1910 and the planning of the project.

Chittenden, Gen. H. M., U.S. Army, Retired, The Lake Washington Canal: What it Will Mean to the People (Seattle: Chamber of Commerce, ca. 1914). 4 pages. Written during his term as president of the Port Commission of Seattle, this is a synthesis of arguments in favor of the project which Chittenden earlier developed as the Army Corps of Engineers' Seattle District Engineer. Published as a promotional leaflet by the Chamber of Commerce, the canal's most ardent supporter in the private sector.

Johnson, Allen, and Dumas Malone, eds., Dictionary of American Biography (New York: Charles Scribner's Sons, 1958), Vol. 2, C177-178. Note on Hiram Martin Chittenden.

Illustrated souvenir invitation to the formal observance of the opening of the Lake Washington Canal, July 4, 1917. Data prepared and printed by the Publicity Bureau, Seattle Chamber of Commerce and Commercial Club.

McDonald, Lucile, "Now the Name is 'Hiram M. Chittenden Locks:' Change Honors Designer of Marine Landmark at Ballard," Seattle Sunday Times Magazine Section (Sept. 16, 1956), 2.

Rumley, Larry, "The Ballard Locks: How They Work," Seattle Sunday Times Magazine Section (April 25, 1965), 10-11.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
PROPERTY PHOTOGRAPH FORM

FOR NPS USE ONLY

RECEIVED

DATE ENTERED

SEE INSTRUCTIONS IN *HOW TO COMPLETE NATIONAL REGISTER FORMS*
TYPE ALL ENTRIES -- ENCLOSE WITH PHOTOGRAPH

1 NAME

HISTORIC Chittenden (Hiram M.) Locks and Related Features of the Lake Washington
Ship Canal

AND/OR COMMON

2 LOCATION

CITY, TOWN Seattle VICINITY OF COUNTY King STATE Washington

3 PHOTO REFERENCE

PHOTO CREDIT M(?) & S No. 59124 DATE OF PHOTO circa 1919-1920
Copied February 1977 from original in collections of the University of
Washington Library
NEGATIVE FILED AT University of Washington Library, Special Collections, Seattle, WA 98105

4 IDENTIFICATION

DESCRIBE VIEW, DIRECTION, ETC. IF DISTRICT. GIVE BUILDING NAME & STREET

PHOTO NO. 1 of 13

Lake Washington Ship Canal and Hiram M. Chittenden Locks. Looking east toward Salmon Bay Waterway, Ballard Bridge and canal to Lake Union beyond. Left to right in government locks reservation: Transformer House (1914), temporary carpenter and blacksmith shops, Residence of the Locks Superintendent (1913), Machine Shop (1916), Office and Shop Building (1916), Administration Building (1914), large lock, small lock, and spillway dam.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
PROPERTY PHOTOGRAPH FORM

FOR NPS USE ONLY	RECEIVED
RECEIVED	MAR 14 1977
DATE ENTERED	ARCHAEOLOGY AND HISTORIC PRESERVATION

SEE INSTRUCTIONS IN HOW TO COMPLETE NATIONAL REGISTER FORMS
TYPE ALL ENTRIES -- ENCLOSE WITH PHOTOGRAPH

1 NAME

HISTORIC

Chittenden (Hiram M.) Locks and Related Features of the Lake Washington
Ship Canal

AND/OR COMMON

2 LOCATION

CITY, TOWN

Seattle

--- VICINITY OF

COUNTY

King

STATE

Washington

3 PHOTO REFERENCE

PHOTO CREDIT Elisabeth Walton Potter

DATE OF PHOTO February 1977

NEGATIVE FILED AT

Washington State Office of Archaeology and Historic Preservation
P.O. Box 1128, Olympia, WA 98504

4 IDENTIFICATION

DESCRIBE VIEW, DIRECTION, ETC. IF DISTRICT, GIVE BUILDING NAME & STREET

PHOTO NO 11 thru 13

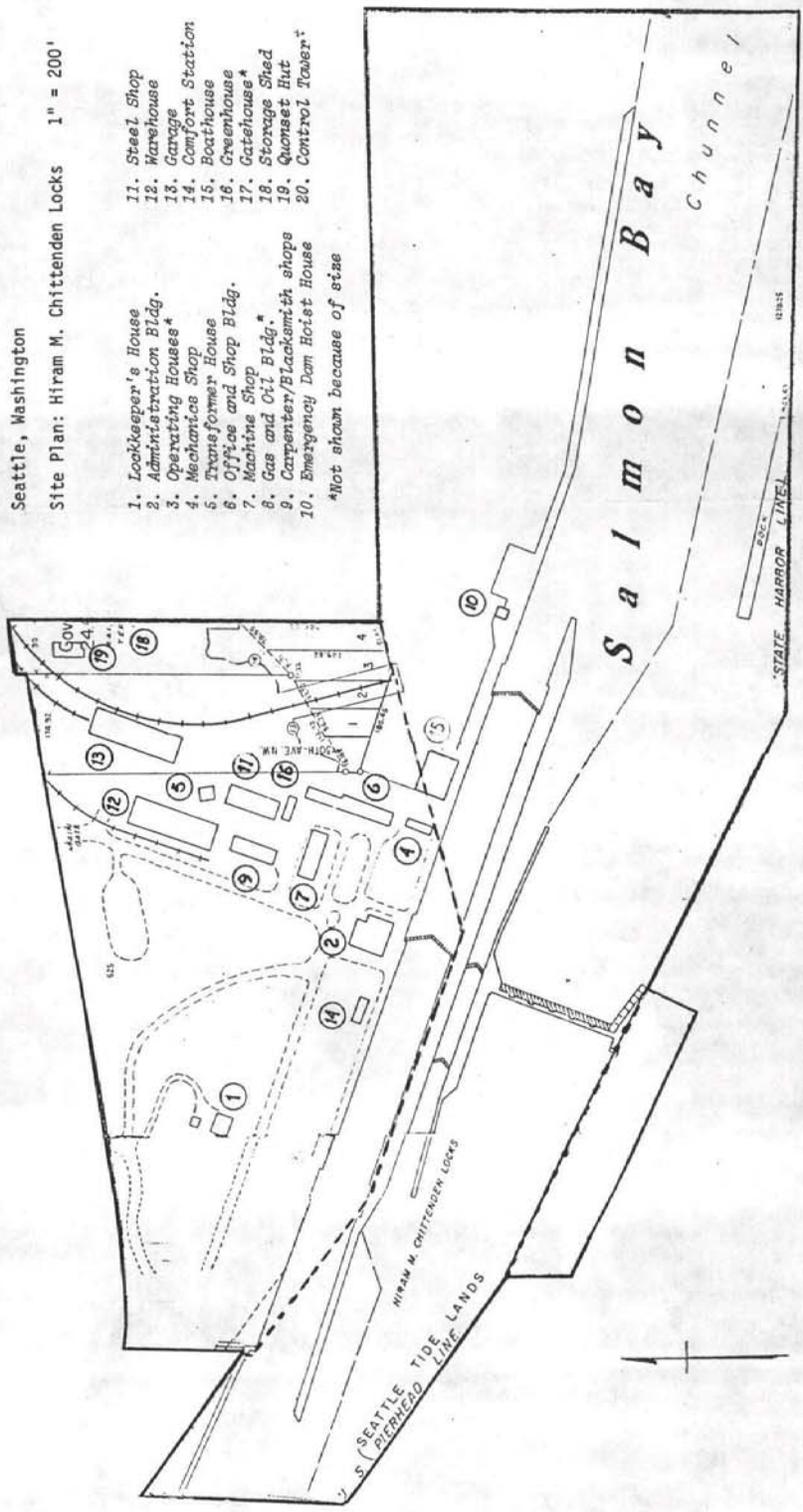
- 11 of 13 Lake Washington Ship Canal. General view of Fremont Cut, looking northwest from the Fremont Bridge.
- 12 of 13 Lake Washington Ship Canal. General view of Montlake Cut, looking east from south bank of canal toward Montlake Bridge and Union Bay beyond.
- 13 of 13 Lake Washington Ship Canal. Montlake Cut, looking west from south bank of canal at Montlake Bridge with draw spans open for sailboat.

Hiram M. Chittenden Locks and Related Features
of the Lake Washington Ship Canal

Seattle, Washington

Site Plan: Hiram M. Chittenden Locks 1" = 200'

- | | |
|-------------------------------|---------------------|
| 1. Lookkeeper's House | 11. Steel Shop |
| 2. Administration Bldg. | 12. Warehouse |
| 3. Operating Houses* | 13. Garage |
| 4. Mechanics Shop | 14. Comfort Station |
| 5. Transformer House | 15. Boat House |
| 6. Office and Shop Bldg. | 16. Greenhouse |
| 7. Machine Shop | 17. Gatehouse* |
| 8. Gas and Oil Bldg.* | 18. Storage Shed |
| 9. Carpenter/Blacksmith shops | 19. Quonset Hut |
| 10. Emergency Dam Hoist House | 20. Control Tower* |
- *Not shown because of size



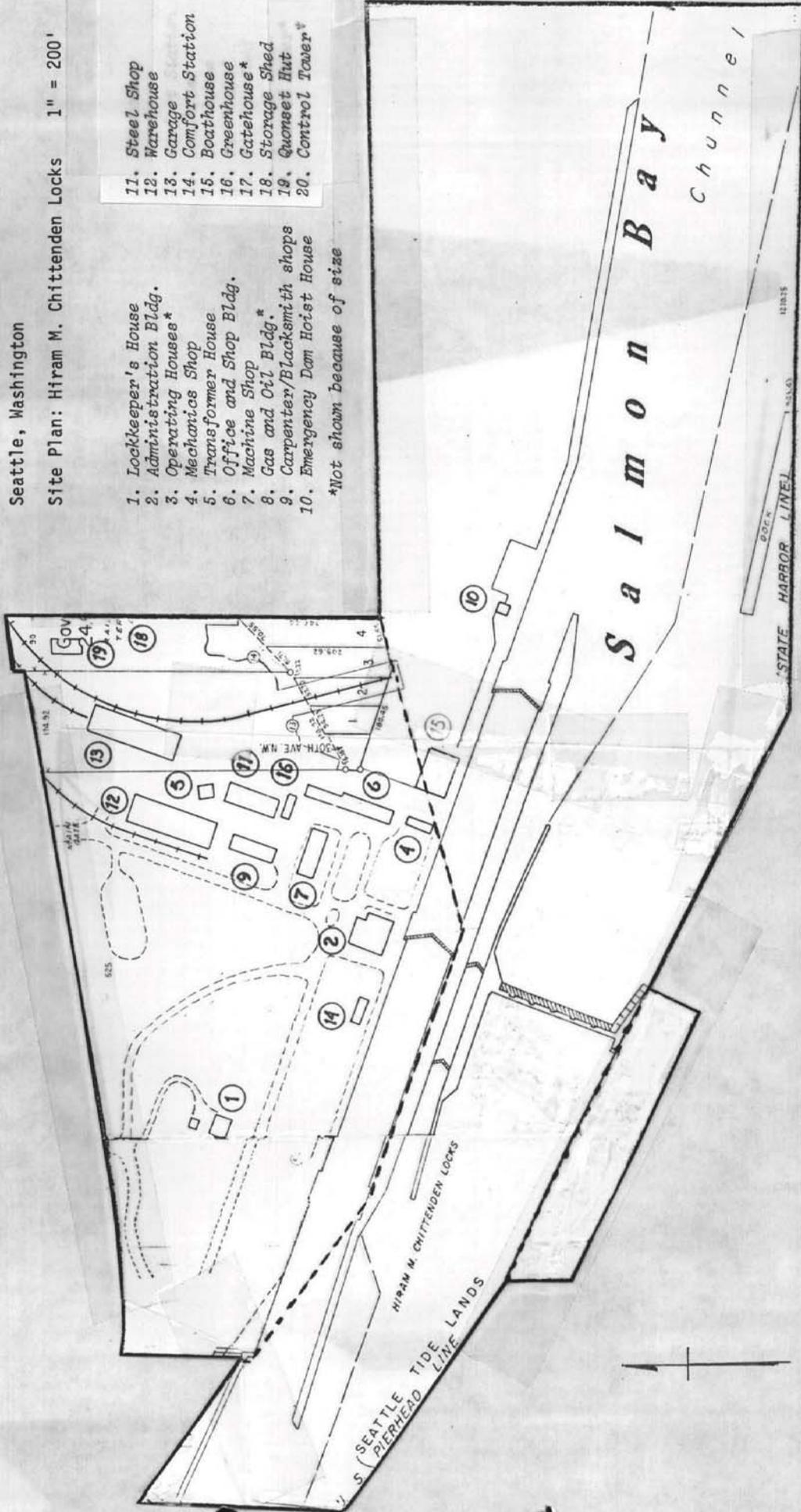
Hiram M. Chittenden Locks and Related Features
of the Lake Washington Ship Canal

Seattle, Washington

Site Plan: Hiram M. Chittenden Locks 1" = 200'

- | | |
|-------------------------------|---------------------|
| 1. Lockkeeper's House | 11. Steel Shop |
| 2. Administration Bldg. | 12. Warehouse |
| 3. Operating Houses* | 13. Garage |
| 4. Mechanics Shop | 14. Comfort Station |
| 5. Transformer House | 15. Boathouse |
| 6. Office and Shop Bldg. | 16. Greenhouse |
| 7. Machine Shop | 17. Gatehouse* |
| 8. Gas and Oil Bldg.* | 18. Storage Shed |
| 9. Carpenter/Blacksmith shops | 19. Quonset Hut |
| 10. Emergency Dam Hotel House | 20. Control Tower* |

*Not shown because of size



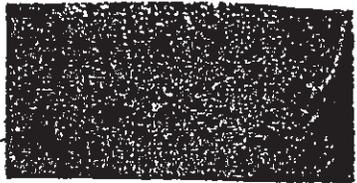
**National Register of Historic Places
Inventory Nomination Form: Historic
Bridges and Tunnels**

- **Montlake Bridge**
- **Arboretum Aqueduct**

United States Department of the Interior
Heritage Conservation and Recreation Service

**National Register of Historic Places
Inventory—Nomination Form**

See instructions in *How to Complete National Register Forms*
Type all entries—complete applicable sections



1. Name

historic Historic Bridges and Tunnels in Washington State

and/or common

2. Location

street & number see individual inventory forms not for publication

city, town _____ vicinity of _____ congressional district _____

state _____ code _____ county _____ code _____

3. Classification

Category	Ownership	Status	Present Use	
<input type="checkbox"/> district	<input type="checkbox"/> public	<input type="checkbox"/> occupied	<input type="checkbox"/> agriculture	<input type="checkbox"/> museum
<input type="checkbox"/> building(s)	<input type="checkbox"/> private	<input type="checkbox"/> unoccupied	<input type="checkbox"/> commercial	<input type="checkbox"/> park
<input checked="" type="checkbox"/> structure	<input checked="" type="checkbox"/> both	<input type="checkbox"/> work in progress	<input type="checkbox"/> educational	<input type="checkbox"/> private residence
<input type="checkbox"/> site	Public Acquisition	Accessible	<input type="checkbox"/> entertainment	<input type="checkbox"/> religious
<input type="checkbox"/> object	<input type="checkbox"/> in process	<input type="checkbox"/> yes: restricted	<input type="checkbox"/> government	<input type="checkbox"/> scientific
<input checked="" type="checkbox"/> thematic	<input type="checkbox"/> being considered	<input type="checkbox"/> yes: unrestricted	<input type="checkbox"/> industrial	<input checked="" type="checkbox"/> transportation
<input type="checkbox"/> group		<input type="checkbox"/> no	<input type="checkbox"/> military	<input type="checkbox"/> other:

4. Owner of Property

name Multiple Ownership

street & number

city, town _____ vicinity of _____ state _____

5. Location of Legal Description

courthouse, registry of deeds, etc. State Department of Transportation;

street & number county courthouses;

city, town _____ state _____

6. Representation in Existing Surveys

title Historic Bridge Survey has this property been determined eligible? yes no

date January 1979 - April 1980 federal state county local

depository for survey records State Office of Archaeology and Historic Preservation

city, town 111 West 21st Avenue, Olympia state Washington 98504

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

FOR NPS USE ONLY
RECEIVED
DATE ENTERED

CONTINUATION SHEET

ITEM NUMBER 6 PAGE 2

Bridges Already Listed in the National Register of Historic Places:

- Baker River Bridge
- Cascade Tunnels: Stevens Pass Historic District
- Devil's Corner
- Grays River Covered Bridge
- Jack Knife Bridge
- Lower Custer Way Crossing: Tumwater Historic District
- Monroe Street Bridge
- Rock Island Railroad Bridge
- Waitsburg Bridge: Waitsburg Historic District

Bridges Determined Eligible for Listing in the National Register of Historic Places:

- Lacey V. Murrow Bridge
- Pasco-Kennewick Bridge
- Prosser Steel Bridge
- Washington Street Bridge
- Orient Bridge
- "F" Street Bridge
- West Monitor Bridge

7. Description

Condition		Check one	Check one
<input type="checkbox"/> excellent	<input type="checkbox"/> deteriorated	<input type="checkbox"/> unaltered	<input type="checkbox"/> original site
<input type="checkbox"/> good	<input type="checkbox"/> ruins	<input type="checkbox"/> altered	<input type="checkbox"/> moved date _____
<input type="checkbox"/> fair	<input type="checkbox"/> unexposed		

Describe the present and original (if known) physical appearance

The legacy of existing bridges throughout the State of Washington is one of diverse structural types - as diverse as the vast and varied terrain that they were built to traverse. The primary intent of this nomination is to outline the legacy set forward by these extant structures, and to place them within the context of bridge engineering history, or within the context of their role in the social, economic, and industrial development of the locality, state, region, or nation.

The nomination is the result of a systematic inventory of historic bridges throughout the State, conducted by the State Office of Archaeology and Historic Preservation (SOAHP) in cooperation with the Washington State Department of Transportation (WSDOT) and the Historic American Engineering Record (HAER) of the Department of the Interior. The inventory, which was authorized by the Surface Transportation Act of 1978 (Public Law 95-599), was funded by the WSDOT. As a result, emphasis was placed on the recording of highway bridges. However, railroad bridges and other privately-owned bridges also were inventoried.

Before the information retrieval process could begin, it was necessary to establish bottom-line criteria for the selection of historic bridges. In consultation with HAER, the SOAHP decided that all existing bridges built during or prior to 1940 would be considered for inclusion in the HAER inventory. Although this cut-off date includes bridges less than the National Register's age guideline of 50 years, it was believed that it was essential to give the WSDOT leeway to facilitate future long-range planning decisions. In addition, Washington State's context of history is much more recent than that of other areas in the United States, and it is important that the boundaries of the historic bridge inventory reflect that context. These same boundaries were used to select the bridges eligible for listing in the National Register. Because it was not possible to photograph every culvert in the State, and there are only a few rare examples of bridges less than 50 feet in length that possess engineering or historical significance, it was decided that in almost all instances only bridges greater than 50 feet in length would be included in the inventory.

In conducting the historic bridge inventory (which provided the information base for the nomination) the SOAHP attempted to evaluate all bridges built during or prior to 1940, and greater than 50 feet in length, and to place each of them in one of the following three categories:

Category I. The first category of bridges includes those bridges eligible for listing in the National Register of Historic Places. It must be emphasized that Category I bridges were not selected until the inventory was completed. The bridges were evaluated according to the general criteria stated in 36 C.F.R. Part 60.6. More specifically, those bridges included in the nomination are bridges that:

1. are significant in the history of bridge engineering, in the history of bridge design principles, and in the development of bridge construction techniques;
2. are significant in the social, economic, and industrial development of the locality, state, region, or nation;
3. are significant examples of bridges designed or built by renowned engineers;

**United States Department of the Interior
Heritage Conservation and Recreation Service**

**National Register of Historic Places
Inventory—Nomination Form**

For HCRS use only
received
date entered

Continuation sheet

Item number 7

Page 2

4. are significant examples of structural designs associated with the efforts of historic individuals or groups;
5. are significant examples of an early bridge engineering effort commonly used throughout the State of Washington for a specific purpose or reason;
6. are significant early examples, or significant representative examples, of a specific bridge type;
7. are rare examples of a specific bridge type within the state;
8. possess architectural or artistic significance.

Category II includes those properties which are of historical and engineering interest, are worthy of recording through photographic and written documentation, but are not eligible for inclusion in the National Register of Historic Places. It includes the following bridge types which were constructed during or prior to 1940, and are greater than 50 feet in length: trussed bridges; arches; moveable bridges; suspension bridges; aqueducts; cantilever bridges; tunnels; steel and cast and wrought iron girders; steel viaducts. Concrete and timber slabs, beams, girders, viaducts, or trestles are included in Category II only when they are of unusual length or height; when they are socially and economically significant to the locality, state, or region; when they are particularly early examples of the bridge type; when they possess architectural or artistic significance; or when innovative design principles or building techniques have been used in bridge construction.

Category III consists of all other bridges that were constructed during or before 1940 and are greater than fifty feet in length, but are not of such quality as to be included in either Category I or II. Category III includes all concrete and timber slabs, beams, girders, viaducts, and trestles unless they are particularly early examples of the bridge type, or are of unusual length or height, or are socially and economically significant to the locality, state, region, or nation, or demonstrate the use of innovative design principles or construction techniques, or possess architectural or artistic significance.

An Historic American Engineering Record inventory card was prepared for all properties identified under Category I and II. A brief form outlining basic structural information was used to record Category III bridges. Although the individual Category III bridges are not significant enough to warrant substantial documentation, they have furnished valuable statistics on when and where builders, contractors, and fabricators worked which provided insights into bridge construction history throughout the State, and helped to formulate the context in which Category I and II bridges were built.

The examination of the WSDOT computer print-out list was the first step in the lengthy information gathering process. The list provided basic structural data on all state, county, and city-owned highway bridges that were built during or prior to 1940, and were greater than 20 feet in length. By Federal standards, any structure less than 20 feet long is not considered a bridge. Although it had been decided that the historic bridge inventory would include bridges greater than 50 feet in length, the computer print-out provided enough information to determine which bridges less than 50 feet in length had potential engineering significance, and should be included in the inventory.

**United States Department of the Interior
Heritage Conservation and Recreation Service**

**National Register of Historic Places
Inventory—Nomination Form**

For HCRS use only

received

date entered

Continuation sheet

Item number 7

Page 3

The inventory and evaluation process was conducted on a county-by-county basis. After the raw structural data was attained, the state, county, and local highway commission files were tapped for information regarding the names of bridge builders, contractors, fabricators, and designers. The files provided recent photographs, occasionally old construction photographs, original contractual agreements, plans and drawings, and more extensive structural and design information on the bridges listed on the computer print-out sheet. This information formed the basis for determining whether the bridge would fall into Category II or III. When the inventory was completed, Category I bridges were selected from those bridges listed in Category II.

In addition to researching the state, county, and local highway commission files, bridge lists were acquired from the Burlington Northern Railroad, Inc., the Chicago, St. Paul, Milwaukee, and Pacific Railroad, and the Union Pacific Railroad. Information also was gathered on Forest Service bridges, as well as privately-owned bridges, including abandoned logging structures. However, the information gathering process for the privately-owned bridges was arbitrary, and by no means comprehensive. Because the majority of the railroad bridge records are lodged in the midwest, and there are no records remaining for many of the other privately-owned bridges, it was often necessary to rely heavily on contemporary articles about the bridges, rather than on original blueprints.

Contemporary newspaper articles, engineering journals, and bridge engineering books provided valuable source material. The national journals, Engineering News-Record and Railway Age Gazette, and the regional magazine, Western Construction News, were systematically examined for articles on the construction of bridges in Washington.

After the inventory cards were completed, and the highway commission files were integrated with the literature source material, statistical information was compiled to define the statewide context for the individual bridges. Approximately 1400 bridges were inventoried, 218 of which are railroad bridges. Ninety-five bridges have been included in the nomination, and about 500 have been listed on the HAER Inventory. Of the 1400 bridges, roughly seven percent were constructed before 1910, and approximately 20 percent were built before 1920. There are only five bridges on the inventory that were constructed before 1900.

When the 95 bridges included in the nomination are discussed individually, they will be compared to other bridges within the State of a similar type. However, the following tables provide a general overview and a statewide context, by relating the bridge types included in the nomination to all bridges surveyed:

United States Department of the Interior
Heritage Conservation and Recreation Service

National Register of Historic Places
Inventory—Nomination Form

For HCRS use only

received

date entered

Continuation sheet

Item number

7

Page 4

RAILROAD BRIDGES: BREAKDOWN OF TYPES

TYPE	100 CONCRETE		200 CONTINUOUS CONCRETE		300 STEEL		400 CONTINUOUS STEEL		500 PRESTRESSED CONCRETE		600 PRESTRESSED CONTINUOUS CONCRETE		700 TIMBER	
	@	&	@	&	@	&	@	&	@	&	@	&	@	&
020	13													
-01	1													
-02	2		1		9								6	1
-03			1		35		1							
-04			2											
-05														
-06														
-07					1									
-08														
-09					8	3							2	2
-10					80	4							5	3
-11	3	3			2	2								
-12	1													
-13														
-14														
-15					1	1								
-16					2	1								
-17					10	4								
-18	30	3												
-19														
-20					7	2								

@ Surveyed
& Listed in National Register

Total number of railroad bridges surveyed: 218
Total number of railroad bridges recommended for listing in the National Register: 29
(includes those already listed, and those determined eligible)

United States Department of the Interior
Heritage Conservation and Recreation Service

National Register of Historic Places
Inventory—Nomination Form

For HCRS use only
received
date entered

Continuation sheet

Item number 7

Page 5

HIGHWAY BRIDGES: BREAKDOWN OF TYPES

TYPE	100 CONCRETE		200 CONTINUOUS CONCRETE		300 STEEL		400 CONTINUOUS STEEL		500 PRESTRESSED CONCRETE		600 PRESTRESSED CONTINUOUS CONCRETE		700 TIMBER	
	@	&	@	&	@	&	@	&	@	&	@	&	@	&
020	21	1												
-01	33		24						1				2	
-02	48		8		52		5		3				186	
-03	7		9	1	28		6						2	
-04	83	1	87				1		2		1		1	
-05	8				4						1			
-06	5	1	3	1	2									
-07	1	1							2				18	
-08													1	1
-09	1		2		14	3	3							
-10	1	1	1	1	233	9	1	1					20	4
-11	111	8	14	1	3	3	2	2						
-12	8	5	2		1									
-13					1	1	1	1					10	1
-14														
-15					9	2								
-16					9	7								
-17					4	1	2							
-18	13												1	
-19	5												1	
-20	15		2		10				1				17	

@ Surveyed
& Listed in National Register

Total number of highway bridges surveyed: 1173
Total number of highway bridges recommended for listing in the National Register: 58
(includes those already listed, and those determined eligible)

United States Department of the Interior
Heritage Conservation and Recreation Service

**National Register of Historic Places
Inventory—Nomination Form**

For HCRS use only
received
date entered

Continuation sheet

Item number

7

Page

6

KEY TO BRIDGE TYPES

FIRST DIGIT

- 1 Concrete
- 2 Concrete Continuous
- 3 Steel
- 4 Steel continuous
- 5 Prestress concrete
- 6 Prestress concrete continuous
- 7 Timber
- 8 Masonry
- 9 Aluminum, wrought iron
or cast iron
- 0 Other

SECOND AND THIRD DIGITS

- 01 Slab
- 02 Stringer/Multi-beam or girder
- 03 Girder and Floorbeam system
- 04 Tee beam
- 05 Box beam or girders - multiple
- 06 Box beam or girders - single or spread
- 07 Frame
- 08 Orthotropic
- 09 Truss-deck
- 10 Truss-through
- 11 Arch-deck
- 12 Arch-through
- 13 Suspension
- 14 Stayed girder
- 15 Movable-lift
- 16 Movable-bascule
- 17 Movable-swing
- 18 Tunnel
- 19 Culvert
- 20 Other or Combination

8. Significance

Period	Areas of Significance—Check and justify below			
<input type="checkbox"/> prehistoric	<input type="checkbox"/> archeology-prehistoric	<input type="checkbox"/> community planning	<input type="checkbox"/> landscape architecture	<input type="checkbox"/> religion
<input type="checkbox"/> 1400-1499	<input type="checkbox"/> archeology-historic	<input type="checkbox"/> conservation	<input type="checkbox"/> law	<input type="checkbox"/> science
<input type="checkbox"/> 1500-1599	<input type="checkbox"/> agriculture	<input type="checkbox"/> economics	<input type="checkbox"/> literature	<input type="checkbox"/> sculpture
<input type="checkbox"/> 1600-1699	<input type="checkbox"/> architecture	<input type="checkbox"/> education	<input type="checkbox"/> military	<input type="checkbox"/> social/
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> art	<input type="checkbox"/> engineering	<input type="checkbox"/> music	<input type="checkbox"/> humanitarian
<input type="checkbox"/> 1800-1899	<input type="checkbox"/> commerce	<input type="checkbox"/> exploration/settlement	<input type="checkbox"/> philosophy	<input type="checkbox"/> theater
<input type="checkbox"/> 1900-	<input type="checkbox"/> communications	<input type="checkbox"/> industry	<input type="checkbox"/> politics/government	<input type="checkbox"/> transportation
		<input type="checkbox"/> invention		<input type="checkbox"/> other (specify)

Specific dates

Builder/Architect

Statement of Significance (in one paragraph)

PREFACE: EXPLANATION OF METHODOLOGY

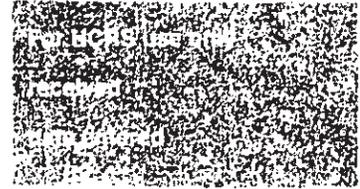
The existing historic bridges and tunnels throughout Washington transmit a legacy that is multifaceted. The structural systems of the individual bridges poignantly reveal the evolution of bridge design and technology from both a national and regional perspective. In addition, each individual structure cannot be isolated from the transportation system of which it is an integral part. The significance of the bridges and tunnels has been interpreted within this dual context.

Early bridge construction within the state is tightly linked to the development of the railroads within the State. There are seventeen bridges and tunnels in the nomination that have been a significant part of the State's early railroad development, and were discussed within this context. Four structures were treated from the perspective of their association with the early highway bridge construction over the Columbia River. And five structures were discussed in terms of their role in logging and mining transportation systems. Most of the twenty-six bridges and tunnels that were evaluated primarily in terms of the transportation systems of which they were a significant part, also were discussed in terms of their structural significance.

The nomination does include a number of structures that are less than fifty years old. As was stated earlier, the nomination mirrors the criteria set by the initial inventory. There is only one structure that was constructed after 1940, the cut-off date set by the inventory. This is a 250 foot log cable-stayed girder bridge, and is one of the first of its type to be constructed within the United States. Its parts are composed of untreated logs which are extremely susceptible to the ravages of time. Consequently, it is essential that this unusual structure is acknowledged and documented without delay.

**United States Department of the Interior
Heritage Conservation and Recreation Service**

**National Register of Historic Places
Inventory—Nomination Form**



Continuation sheet

Item number 3

Page i

TABLE OF CONTENTS

I. BRIDGES THAT REFLECT RAILROAD DEVELOPMENT IN WASHINGTON STATE

A. Northern Pacific Railroad
 Pasco-Kennewick Railroad Bridge 1
 Stampede Pass Tunnel. 2

B. Great Northern Railroad
 Rock Island Railroad Bridge 3
 Cascade Tunnel 1911-1913. 4
 Cascade Tunnel 1925-29. 5
 Penstock Bridge 6

C. Spokane, Portland, and Seattle Railway
 Klickitat River Bridge. 7
 Box Canyon Viaduct. 8
 Cow Creek Viaduct 9
 Vancouver-Hayden Island Bridge 10

D. Oregon Trunk Railway
 Celilo Bridge 11

E. Union Pacific Railroad
 Joso Viaduct 12

F. Milwaukee Railroad
 Beverly Railroad Bridge 13

II. BRIDGES THAT REFLECT EARLY HIGHWAY DEVELOPMENT IN WASHINGTON STATE

Wenatchee/Columbia River Bridge 14
 Vancouver-Portland Interstate Bridge. 15
 Pasco-Kennewick Bridge. 16
 Longview Bridge 17

III. SPECIALIZED STRUCTURES: MINING AND LOGGING BRIDGES

Little Sheep Creek/Red Mountain Railroad Bridge 18
 Winslow Railroad Bridge 19
 Vance Creek Bridge. 20
 High Steel Bridge 21
 Chow Chow Bridge. 22

IV. REPRESENTATION OF BRIDGE TYPES

A. Trestles: Timber
 Wilburton Trestle 23

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

FOR NPS USE ONLY
RECEIVED
DATE ENTERED

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

CONTINUATION SHEET

ITEM NUMBER 8 PAGE ii

B. Trusses:

1. Timber

Dungeness River Railroad Bridge	24
McClure Bridge	25
North 4th and Dock Street Bridge	26

2. Covered

Grays River Covered Bridge	27
Manning-Rye Covered Bridge	28
Doty Bridge	29
Weyerhaeuser/Pe Ell Bridge	30

3. Steel

Spokane River Bridge	31
Wishkah River Bridge	32
F Street/Palouse Bridge	33
West Monitor Bridge	34
Curlew Bridge	35
Orient Bridge	36
Prosser Steel Bridge	37
Middle Fork Nooksack River	38
White River Bridge	39
Idaho and Washington Northern Railroad Bridge	40
Elwha River Bridge	41

4. Cantilever

Snake River/Lyons Ferry Bridge	42
George Washington Memorial/Aurora Avenue Bridge	43
Grand Coulee Bridge	44
Deception Pass Bridge	45

C. Moveable Bridges:

1. Swing

Puyallup Waterway Crossing	47
--------------------------------------	----

2. Bascule

Salmon Bay Great Northern Railroad Bridge	48
Jack Knife Bridge	49
University Bridge	50
Ballard Bridge	51
Fremont Bridge	52
Montlake Bridge	53
Hoquiam River Bridge	54
14th Avenue South Bridge	55

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

FOR NPS USE ONLY
RECEIVED
DATE ENTERED

CONTINUATION SHEET

ITEM NUMBER 8 PAGE iv

F. Suspension Bridges

Devil's Corner	87
Yale Bridge	88
Tacoma Narrows Bridge	89

9. Major Bibliographical References

Condit, Carl W., American Building Art, 2 Vols., New York: Oxford University Press, 1961.
 Tyrrell, Henry Grattan, History of Bridge Engineering, Chicago: H.J. Tyrrell, 1911.
 Waddell, J.A.L., Bridge Engineering, 2 Vols., New York: John Wiley and Sons, 1916.
 Refer to individual inventory forms for additional references.

10. Geographical Data

Acreage of nominated property _____ refer to individual inventory forms.

Quadrangle name _____

Quadrangle scale _____

UMT References

A
 Zone Easting Northing

B
 Zone Easting Northing

C

D

E

F

G

H

Verbal boundary description and justification

List all states and counties for properties overlapping state or county boundaries

state	code	county	code
state	code	county	code

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

HISTORIC BRIDGES AND TUNNELS
IN WASHINGTON STATE

Lisa Soderberg
Washington State Office of
Archaeology and Historic
Preservation
Olympia, Washington
November, 1980

I. BRIDGES THAT REFLECT RAILROAD DEVELOPMENT IN WASHINGTON STATE

The construction of the earliest bridges and tunnels of major proportions within the State is associated with the construction of the transcontinental railroads. It was in 1864 that the Northern Pacific Railroad was chartered by Congress to build a mainline from Lake Superior to Puget Sound. However, it was not until 1883 that the Northern Pacific established a route between Duluth and Puget Sound by means of connecting its line to the existing Oregon Railroad and Navigation Company line along the south bank of the Columbia River. The two systems were linked by two car ferries: a car ferry across the Snake River which connected with a short railway spur that ran to Wallula, and a car ferry across the Columbia River between Portland and Kalama which connected with the Northern Pacific line that ran between Kalama and its terminus at Tacoma. This circuitous route to Puget Sound was feasible only because of daring financial manipulations made by the northwest railroad magnate, Henry Villard. Although the railroads retained their individual corporate identities, Henry Villard obtained control of both systems. However, in January of 1884 Villard's empire collapsed, and the two railroads reverted to separate control.¹

Once again cut off from Puget Sound, the Northern Pacific immediately began work on a route across the mountains. The Pasco-Kennewick Bridge (1), the first bridge to be built across the Columbia River, was constructed as a temporary structure in 1888 as part of the Northern Pacific's effort to redirect its route across the mountains. By 1887, a treacherous, temporary switchback was in service over the mountains through Stampede Pass. The completion of the two mile tunnel (2) in May, 1888 initiated the first adequate and direct through railroad service to Puget Sound.

Five years after the completion of the Northern Pacific route, the Great Northern Railroad, under the direction of James J. Hill, was operating a transcontinental line from Minneapolis to Seattle. In 1893, a complex system of switchbacks across the Cascades at Stevens Pass was opened to service, and a large steel truss (3) was erected across the Columbia. The completion of the

¹D.W. Meinig, The Great Columbia Plain, (Seattle, 1968), p. 268.

Cascade Tunnel (4,5) in 1900, confirmed that the historic focus of the whole northern portion of the interior of the state, which had been oriented down the Columbia River to Portland had finally been diverted to Puget Sound.² And it was the Great Northern Railroad that provided Seattle with the vital rail connections that were instrumental in turning the new focus on Puget Sound, specifically towards Seattle.

The last transcontinental line to be built across Washington to Puget Sound was the Chicago, Milwaukee, and St. Paul Railroad's route to the coast through the interior of the state (13). The line was completed in 1909, more than 15 years after the beginning of transcontinental railroad construction through Washington.

The Milwaukee Railroad was the first railroad to electrify a substantial portion of its line. The Beverly Bridge carries vestiges of the superstructure used to support the copper cables. The advantages of railroad electrification were particularly apparent in the increased load capacity of the freight trains. Railroad electrification also alleviated the dangerous conditions within the long mountain pass tunnels. The Penstock Bridge (5) played an integral role in the water transportation system that powered the Great Northern trains through one of the early Cascade Tunnels.

Competition and power plays between the major railroad companies plagued and profoundly influenced railroad and bridge construction throughout the state. In 1900, James J. Hill surreptitiously purchased the rights of way for a new trunk line between Spokane and Portland on the north bank of the Columbia River in the hopes of obtaining a direct outlet to Portland for the rapidly growing traffic of Spokane and the southern portion of the interior. It was a venture to be shared by the Great Northern and the Northern Pacific. However, it directly competed with the Oregon Railroad and Navigation Company (OR&N) on the south bank of the river, which had been subsumed by the Union Pacific Railroad under the direction of Edward H. Harriman. Harriman valiantly attempted to thwart the construction of the Spokane, Portland, and Seattle Railway (SP&S) by using a variety of ploys. While the court battles raged, "construction crews fought with fists, rocks, pickhandles, and dynamite." The last court encounter ended in victory for

²Ibid., p. 270.

Hill in 1906.³

The line from Spokane to Portland was finally completed and in operation by 1909. "As a transportation route it represents the highest result of the railroad builder's art," reported an engineer before a meeting of the Pacific-Northwest Society of Civil Engineers in 1925.⁴ Because the Great Northern and Northern Pacific desired a high capacity railroad with low operating costs, they did not make use of the existing Northern Pacific line between Spokane and Pasco. Instead, they constructed a new low grade roadbed with a minimum of curves. Their aim was "to make the roadbed of the most permanent character."⁵ The bridges on the line certainly reflect this aim. Permanent steel viaducts or earth fills were built initially, rather than temporary timber structures. From Spokane, the line makes its only west-bound ascent of 375 feet. It follows Cow Creek through Adams County. "At the junction of Cow Creek and the Palouse River, the Portland and Seattle encounters the most expensive stretch of railroad construction, except that in Devil's Canyon, ever known in Washington. The valley is crooked and entered frequently by steep, narrow gulches; the road is built across a succession of 'hog backs' and gulches. Eighty-foot cuts are followed by 90-foot fills in alternation; short tunnels are frequent; high steel trestles are necessary in many places."⁶ Of the steel trestles built in this area the Cow Creek Viaduct (9) is the longest and the highest. The line passes through the Washtucna Coulee and follows the east bank of the Snake River through Devil's Canyon. Here the treacherous terrain is traversed by four enormous steel viaducts, the highest of which is the Box Canyon Viaduct at 250 feet (8). The route makes use of the Northern Pacific tracks at only one point: the Columbia River crossing between Pasco-Kennewick (1). It follows the north bank of the Columbia across an early reinforced concrete arch (7) at Lyle, and eventually reaches Vancouver crossing the Columbia River to Portland by means of a large steel pinconnected swing bridge (10).

³Charles and Dorothy Wood, Spokane, Portland, and Seattle Railway, (Seattle, 1974), p. 23.

⁴"Cascade Tunnel Route," extracts from a paper read before the Pacific-Northwest Society of Civil Engineers, Seattle, Washington, October 1925.

⁵W.P. Hardesty, "The Construction of the Portland and Seattle Railway," Engineering News, Vol. 59, No.7, p. 161.

⁶Railroad Gazette, 27 September 1907.

Because of the success of the Spokane, Portland, and Seattle Railway, the Oregon-Washington Railroad and Navigation Company (O-WRN) moved quickly to upgrade its line between Portland and Spokane. The largest structure on the O-WRN's new low grade line was the 3,920 foot Joso Viaduct (12) over the Snake River at Lyons Ferry. The completion of the new Union Pacific line was yet another example of the continuing competition between the Hill and Harriman interests to dominate and control the major railroad routes of the Northwest.

In 1912, the Oregon Trunk Railway, a subsidiary of the Spokane, Portland, and Seattle Railway, was completed, representing one of the first steps in the entry of the Hill lines into Oregon, a territory which previously had been associated exclusively with the Harriman lines. In his virtual autonomy over the railroads in Oregon and California, Harriman had effectively controlled the major railroad links to tidewater. However, Hill's entrance into Oregon made his dream of stretching the Great Northern empire from Spokane to San Francisco plausible. Although the Great Northern did not reach the Pacific coast of California until 1931, long after Hill's death, the completion of the Oregon Trunk Railway represented a significant step towards the fulfillment of Hill's dream. The Celilo Bridge (13), the largest of ten steel bridges built on the Oregon Trunk Line, was a major link in connecting the SP&S to Union Pacific Territory.

The legacy of extant structures associated with railroad development within the state span a vast, varied, and often treacherous topography, and stand as a fitting testimony to the grand schemes and boundless ingenuity of the early railroad magnates in their efforts to dominate the major routes of the Northwest.

II. BRIDGES THAT REFLECT EARLY HIGHWAY DEVELOPMENT

In 1911, the Washington State Highway Commissioner proclaimed that: "A system of State roads is today the livest [sic] issue before the people of Washington or any other state. We are living in a transition period and changes come rapidly. Evolution in transportation methods affects road construction in no less a degree than a deepening of waterways, and the construction of easier grades and easier curves on the trunk railways."¹ With the proliferation of the automobile, the engineer was confronted with a new and complex range of urgent structural demands. As the Washington State Highway Commissioner observed, the foremost demand was the rapid construction of highways, of which the building of adequate highway bridges was an integral part. The heavy load capacities required by railroad traffic had previously shaped the development of bridge design. Automobile traffic, however, exerted different demands and design requirements on the bridge construction engineer which eventually shifted existing patterns and changed the direction of American bridge building. Although there are examples of concrete structures, the railroad bridge has been almost exclusively built in steel, and is characterized by the heavy riveted steel truss. The lower highway loadings enabled the engineer to use a range of bridge types and materials which resulted in a vast number of concrete structures on the highways. However, the dominance of the steel truss did not diminish on the roadways. And steel remained the most suitable material for extremely long spans over navigable waterways.² It is interesting to note that the design of the earliest highway structures of major proportions in Washington were based on a technology that originated in railroad bridge construction of the 19th century.

The first highway bridge to be constructed across the Columbia River was a pinconnected steel cantilever truss at Wenatchee (14). It was built in 1908 to transport automobiles and water to east Wenatchee in order to develop the land for the expanding apple industry. Like most of these large,

¹W.J. Roberts, "System of Roads: Routes, Mileage and Costs," Pacific Builder and Engineer, 18 November 1911, p. 337.

²Carl Condit, American Building Art, 2 Vols., (New York, 1961), 2: 5-6.

early highway structures, the Wenatchee Bridge was privately financed, though subsequently purchased by the State Highway Department in 1909.

In 1916, construction began on a bridge between Vancouver and Portland (15). This enormous structure which consists of a series of simple trusses was financed by Clark and Multnomah Counties. In 1929, Washington and Oregon purchased the bridge from the counties.

A highway bridge was built across the Columbia between Pasco and Kennewick (16) in 1922. It was the first of five steel structures, and the first of four cantilever trusses to be constructed across the Columbia River during the 1920's, marking the beginning of a proliferation of major bridge construction in this new transportation era. The State Highway Department purchased the bridge from its private owners in 1931.

Though the construction of the Longview Bridge (17) was entrenched in controversy, its completion represented another effort to bridge the Columbia River with highway structures. It formed an important connecting link in the Pacific Highway extending from Vancouver, B.C. to Tia Juana, Mexico. The Longview Bridge was the last privately-financed bridge to be constructed across the Columbia River, and represented a turning point in the financing of bridge construction in the State. Soon after this time, the State purchased all privately-owned toll bridges. The construction of bridges throughout the State became increasingly dependent upon, and influenced by state and federal aid programs.

III. SPECIALIZED STRUCTURES: LOGGING AND MINING BRIDGES

The State's abundant resources have always been unattainable and useless without a transportation network to retrieve the minerals and vast supplies of timber, and a means of depositing them at a location where they can be processed for public consumption. The structures that are a part of these transportation systems embody an important segment of bridge construction history within the State.

These grand transportation schemes often involved the construction of large structures in remote, inaccessible territory. The earliest bridge associated with the development of logging and mining interests remaining within the State, is a timber deck Howe truss (18) over the Little Sheep Creek in Stevens County. It was constructed in 1896 as part of the Red Mountain Railroad which ran between Northport and Rossland. The railroad was conceived and financed by D.C. Corbin to link the untapped Canadian mineral deposits in the Kootenay district to the smelters in the United States. At Newport, the Red Mountain spur line connected to another one of D.C. Corbin's railroads, the Spokane Falls and Northern mainline. Through D.C. Corbin's initiative, the mining of the Kootenay district brought great, though momentary wealth to Spokane during the late nineteenth century.

The earliest extant bridge associated with the logging industry is the Winslow Railroad Bridge (19). It is a timber deck Howe truss which was constructed in 1916-17 by the Winslow Lumber Manufacturing Company as part of a 25 mile track system used to transport logs to the company's mill in Orin. As the logging industry developed, there became a growing separation between the logging and milling businesses. However, the Winslow Railroad, like most of the earliest logging railroads, was built by operators of the lumber mill who needed a dependable supply of logs.

Two enormous steel arches (20,21) rising almost 400 feet above wooded gorges were constructed by the Simpson Logging Company in 1929. They were built during a time when high costs were bringing an end to the era of logging railroads. By the 1930's, the West's most accessible timber had been logged,

and the initial investment of construction and equipment costs for even the shortest railroad lines was becoming prohibitive.¹ It was only the largest corporations, such as the Simpson Logging Company, that would find that the unit cost of hauling logs by rail was cheaper than that by truck. The Vance Creek Bridge remains in use as a railroad bridge, while the High Steel Bridge was converted for use by vehicular traffic approximately 20 years ago. The awesome permanence of the steel structure over Vance Creek belies its seemingly anachronistic function, and reflects a changing era in the use of logging railroads. During the late 19th and early 20th centuries, the logging railroad bridges were usually timber structures. Although the mainline of the logging railroads were in service for a number of years, the structures on the spur lines, which often included extremely long and high timber trestles, were temporary, and were abandoned or reused at different locations as soon as the specific area was logged. However, as construction costs increased, enormous structures like the Vance Creek and High Steel Bridges were only economically feasible if they could be used over a long period of time. As a case in point, after a period of more than fifty years, both the Vance Creek Bridge and the High Steel Bridge remain in use. The alterations which have been made to the High Steel Bridge reflect the inevitable changes in the transportation of timber -- the gradual disappearance of the logging railroads and their replacement by trucks.

The magnificent raw power of the 250 foot log cable-stayed girder bridge (22) spanning the Quinault River is undeniable. It was designed and constructed by the Aloha Logging Company's Superintendent in 1952 to support the weight of a loaded logging truck, as part of the road system built to retrieve the company's timber from the dense forests of the Olympic Peninsula. The Chow Chow Bridge, which was constructed from a 12 foot scale model, was designed by a man who had unusual constructive ability, but who had no formal engineering background. Although the existing timber structures associated with logging and mining industries within the State span a period of almost sixty years, the bridge builders shared a common trait; they shared an intuitive constructive ability. The logging superintendent's spirit and inventive genius can be compared to the American bridge builders of the 18th and early 19th centuries who were

¹Kramer Adams, Logging Railroads of the West, (Seattle, 1961), p. 54.

"practical men...who depended upon their own resources and natural instinct, experimenting with models and profiting by previous failures, but who had no accurate knowledge of the strains produced on the various members of a structure by the exterior forces."² Practice always preceded the science; consequently structural systems were invented long before the theory was developed. The Chow Chow Bridge is indeed an example of a structural system that was used to solve a problem before the formal theory was developed. It is one of the first examples of a cable-stayed girder bridge within the United States. Although there are numerous European applications of the cable-stayed design, the bridge type has not been used in the United States until very recently, because it is a statically indeterminate system, and has been difficult to analyze with any reasonable degree of accuracy.

²C. Schneider, "Evolution of Bridge Building," Engineering News-Record, 22 June 1905, p. 649.

IV. REPRESENTATION OF BRIDGE TYPES: TRESTLES

There still remains within Washington a sparse sampling of structures that are representative of bridge types which once predominated the landscape. The timber trestle which has evolved as a distinctly American structure, characterized railroad construction in Washington during the late 19th and early 20th centuries. The 984 foot Wilberton Trestle (23) which rises to a height of 98 feet above Mercer Slough, demonstrates the magnitude of the length and height of the early timber trestles that once traversed the varied and seemingly formidable topography of Washington. It is a rare surviving example within the State of a bridge type that once dominated transcontinental railroad construction. During this period, when the railroad's primary objective was to cross the continent rapidly, steel construction became a luxury, both in time of construction, and in initial expense. Timber, however, was abundant throughout western Washington, and was free for the taking.

After the transcontinental route was completed, the looming timber structures were often replaced by solid earth fills or permanent steel viaducts. The steel viaduct which was also a distinctly American structure associated with railroad construction, is best represented in the two long steel Spokane, Portland and Seattle Railroad viaducts over Cow Creek (9) and Box Canyon (8), and in the Union Pacific Joso Viaduct. (12).

IV. REPRESENTATION OF BRIDGE TYPES: TRUSSES

As exemplified in the table of bridge types, the truss is clearly the most common bridge form constructed in Washington between 1880 and 1940 for both railroad and highway structures. Because Washington was settled long after the major experimentation with truss types had occurred, there is not a vast representation of truss forms.

The earliest truss form represented is the timber Howe truss which was patented in 1840. The Little Sheep Creek Railroad Bridge (18) constructed in 1896 and the Winslow Railroad Bridge (19) constructed in 1916-17 are the oldest extant examples within the State of this once common truss type. Timber continued to be used for the construction of railroad bridges throughout Washington during the first quarter of the century due to the abundance of the resource, and its initial economic advantages. The use of treated timber also extended the life of these structures. There is one Milwaukee Railroad standard timber Howe through truss remaining within the State (24). Although it was constructed in 1930, it replaced an identical structure built in the teens.

There are two examples of timber trusses within the State that are of the Pratt configuration (25,26). In the Howe truss, the vertical members resist the load in tension, while the diagonal members resist the load in compression. The tensile strength of steel or iron coincides with the function of the vertical members, and the compressive qualities of wood coincide with the function of the diagonal members. However, in the Pratt truss, the function of the vertical and diagonal members is reversed; consequently the vertical components are timber, and the diagonal components are steel. Although the Pratt truss was patented in 1844, the Howe truss design continued to be the most common form in timber construction. It was not until the introduction of all steel and iron trusses that the Pratt truss design prevailed.

These untreated timber structures had a life span of approximately 10 to 15 years. In an effort to extend the life of the bridges, the timber components were protected by constructing housing around them. There are four covered bridges remaining within the State. The oldest is a highway structure, a two span Howe truss constructed across Grays River (27) in 1905. In 1918 a covered timber Howe truss (28) was constructed across the Palouse River

outside of Colfax as part of the Spokane and Inland Empire Railroad, an expansive interurban electric railroad line scheme that extended from the Palouse to Spokane. Because it was necessary to provide for the connection between the locomotive and the overhead electric lines, the top of the bridge was left uncovered. Over the Chehalis River at Doty stands the last standard Milwaukee Road covered bridge (29). At one time several of these stark, utilitarian structures, constructed by company forces, spanned the waterways of Washington. A short-spanned timber Howe pony truss covered with corrugated metal (30) was constructed across the Chehalis River in 1934.

The seemingly endless source of timber throughout much of Washington, providing a cheap building material, may account for the fact that a number of timber highway trusses continued to be built throughout the 1930's. Because most of the early bridge construction in Washington occurred long after the technology of iron or steel truss construction had been developed, the timber and steel truss existed within the State simultaneously. The predominance of timber construction over that of steel or iron was not a matter of technology, but rather one of economy and accessibility. However, the iron or steel truss provided a strength, durability, and resistance to fire that the timber truss would never be able to attain.

There is a limited representation within Washington of the early steel truss forms which consisted of complex systems of triangulation. These early truss forms are demonstrated in the lattice or triple-intersection Warren truss over the Spokane River (31) and the double-intersection Warren truss over the Wishkah River (38). The double-intersection Pratt truss (1) over the Columbia River is similar to the lattice truss, and was a common truss form in railroad construction in the late nineteenth century. These three bridges share this multiple system of triangulation which was claimed to create an "unavoidable ambiguity in stress distribution."¹ These complex truss forms have been replaced almost exclusively by two other nineteenth century designs: the simple system of verticals and diagonals of the Pratt truss and the straightforward single system of triangles of the Warren truss. It is interesting to note that in contrast to the east coast, there are very few examples within Washington

¹J.A.L. Waddell, Bridge Engineering, 2 Vols., (New York, 1916), 1: 476.

Washington of trusses with a multiple system of triangulation which in itself may shed light on the evolution of the truss form. Even during the early years of bridge construction within the State, the superiority of the Warren and Pratt configuration had been confirmed.

During the early twentieth century, the Pratt truss was claimed to be the most commonly used bridge type in America for spans under 250 feet. The two earliest and least altered examples of this truss type remaining within Washington are the F Street Bridge in Palouse (33) and the West Monitor Bridge (34). Both of these are pinconnected structures which preceded the more rigid riveted truss. With the improvement of riveting techniques, and the development of the pneumatic riveter during the early twentieth century, the pinconnected truss soon became a rarity.

During the mid-nineteenth century, the Parker truss was developed. In contrast to the uniform depth of the parallel chords of the basic Pratt truss, the polygonal top chord of the Parker truss which reaches its greatest height at the center panels, reflects the increase in bending moment that occurs from the ends of the truss to the center. The use of the arched top chord increased the rigidity of the structure, and enabled the construction of longer spans. The earliest, least altered examples of the Parker truss within the State are the Curlew Bridge (35), the Orient Bridge (36), and the Prosser Steel Bridge (37).

In an effort to construct longer spans, the Pratt truss configuration was adapted and modified by sub-dividing the panels with additional subtrusses and subties. The development of the Petit truss during the 1870's represented a major advance in strengthening the standard Pratt truss form. The Middle Fork Nooksack River Bridge (38) is the longest pinconnected modified Petit highway truss within the State, while the White River Bridge (39) constructed in 1908, is the oldest pinconnected modified Baltimore Petit structure.

In 1913, Clallam County constructed a two-span deck truss over the Elwha River (41). Its Warren truss configuration was patented in 1848, and is composed of diagonals which are placed alternately in tension and compression. The Elwha River Bridge is the oldest Warren truss in the State constructed for highway use. Like the Pratt truss, this single system of triangles continues to be used by engineers in modern steel trusses.

The largest truss bridges are cantilever structures which consist of a combination of anchor spans, cantilevers, and suspended spans. The oldest cantilever truss within the State is a pinconnected structure constructed across the Columbia River in 1908 (13). The Pasco-Kennewick Bridge (16), the Lyons Ferry Bridge (42), and the Longview Bridge (17) all represent cantilever construction that occurred during the 1920's. The George Washington Memorial Bridge (43), the Grand Coulee Bridge (44), and the Deception Pass Bridge (45) were built during the 30's and reflect a departure in form from the cantilever structures built in Washington during the previous decade. They reflect the refinement and progressive simplification of the cantilever truss form in the twentieth century.² The George Washington Memorial Bridge and the Deception Pass Bridge demonstrate the final merging of a functional and aesthetic form in the cantilever truss.

²Carl Condit, American Building Art, 2 Vols., (New York, 1961), 2: 104.

IV. REPRESENTATION OF BRIDGE TYPES: MOVEABLE BRIDGES

A very specific bridge technology evolved from the necessity of spanning navigable waterways. The earliest moveable bridges within the State are swing bridges, and are essentially steel trusses which rotate around a center pier. The Spokane, Portland, and Seattle Railway Bridge (10) which spans the Columbia River is the oldest swing bridge remaining within the State. Its 462 foot pinconnected draw span was long for its day, and was even acknowledged by the bridge engineer, Henry G. Tyrrell, in his book, History of Bridge Engineering. The Puyallup Waterway Crossing (47) is an example of a pinconnected swing span which was once frequently visible on the navigable waterways of the late nineteenth and early twentieth centuries.

In his authoritative volume on Bridge Engineering, J.A.L. Waddell remarks that in 1916, the swing bridge remained the most common type of moveable bridge. However, it was during this period that many of the early swing bridges spanning the waterways were being replaced by bascule structures. The bascule bridge, whose prototype is the medieval drawbridge, derives its name from the French word meaning balance. The bascule span is opened and closed much more rapidly than the swing bridge by means of a counterweight system. The absence of a central pivot pier in the bascule bridge was a great asset. The timber structure extending from the pier which served to protect the draw span was a dangerous obstruction in narrow channels, and often usurped valuable dock space. The advantages of the bascule structure over that of its predecessor were numerous, and particularly apparent in the populated, congested cities where both roadway and waterway traffic were heavy.³

Methods of refining and improving the counterweight system in the bascule spans absorbed the energies of many bridge engineers during the late nineteenth and early twentieth centuries. The earliest examples of bascule bridge design within Washington are of the trunnion type. The Salmon Bay Great Northern Railroad Bridge (48) constructed in 1913 is an early example of the Strauss heel trunnion single leaf bascule bridge. The single leaf bascule was preferred for railroad traffic due to its greater rigidity. The heel trunnion, single leaf bascule bridge was patented by

³J.A.L. Waddell, Bridge Engineering, 2 Vols., (New York, 1916) 1: 664, 700-702.

J.B. Strauss of the Strauss Bascule Bridge Company of Chicago in 1911, and consists of an overhead counterweight which is pivoted on a fixed trunnion by a parallelogram of linkages. The structure's center of gravity does not move either vertically or horizontally as the bridge opens and closes. Consequently, this design enabled the construction of simple economical foundations. The heel trunnion design was a modification of, and eventually superseded earlier Strauss designs. In 1914, a single leaf Strauss heel trunnion bascule bridge (49) was constructed across the Ebey Slough in Everett. It was the first of its type to be used within the State as a highway structure.

The construction of several moveable spans was incorporated into the design of Seattle's Lake Washington Ship Canal. Between 1915 and 1919 three double-leaf trunnion bascule bridges of the transverse cross-girder type were constructed to span the new waterway (50-52). These bridges, which are the earliest examples within the State of a double-leaf bascule bridge, were designed by the City of Seattle, and followed a general design developed by the Chicago Department of Public Works in 1898. In 1924-25 a fourth double-leaf trunnion bascule bridge (53) was constructed across the canal on foundations that had been constructed when the ship canal was first built. A unique feature of the Montlake Avenue Bridge was that the trunnions were supported on a cantilever projection extending from the pier which eliminated the need for the transverse cross-girder used in the earlier canal bridges. In contrast to the three earlier bascule bridges constructed over the canal, ornate towers loom over the piers of the Montlake Avenue Bridge, evoking an aura of monumental dignity.

The Hoquiam River Bridge (54) was designed by the Strauss Bascule Bridge Company of Chicago, and was constructed in 1928. It is a patented Strauss trunnion double-leaf bascule bridge.

The 14th Avenue South Bridge (55) which was constructed across the Duwamish River in Seattle in 1931 is the only Scherzer rolling lift bascule bridge within the State. The bridge type was developed by William Scherzer in 1895. In this type, the leaf rotates on a quadrant which rolls along horizontal track girders. In contrast to the fixed position of axis rotation of the trunnion bascule, the axis of rotation of the Scherzer Bridge has a "motion of translation longitudinally with the structure."

Consequently, the Scherzer Bridge generally provides a greater clear opening for any total length of span than that provided by the fixed trunnion type. However, because the rolling action constantly changed the location of the center of pressure of the load on the abutment, solid rock foundations were necessary.

J.A.L. Waddell's synthesis of the significance of the bascule bridge is apt. He states that all bascule bridges are "inherently ugly, and for all but comparatively short spans are uneconomic in comparison to the vertical lift; but they are scientific and they represent, probably, the best and most profound thought that has ever been devoted to bridge engineering."⁴

The vertical lift bridge developed simultaneously with the bascule bridge. The earliest vertical lift highway structure remaining within the State is the City Waterway Bridge (56) which was constructed by the renowned early twentieth century bridge engineering firm of Waddell and Harrington. The Vancouver-Portland Interstate Bridge (15), designed in 1916 by the newly formed firm of Harrington, Howard, and Ash is another early example of a vertical lift bridge.

In 1914, the Northern Pacific constructed a Strauss direct vertical lift bridge over Steilacoom Creek (57). The design, which replaced the usual counterweight cables, chains, sheaves, and winding drums of the vertical lift bridge with a system of counterbalanced levers and rack and pinion gearing, was patented by J.B. Strauss of Chicago, and was put on the market by the Strauss Bascule Bridge Company in 1912. The Steilacoom Creek Bridge was one of the first of this design to be constructed. The Strauss direct lift bridge possesses many of the design elements of the Strauss heel trunnion bridge. Like the Strauss bascule, the lifting mechanism of the direct lift bridge consists of a parallel link counterweight which moved on fixed trunnions, or pivot points. The stark steel form is blatant in its bold adherence to its functional purpose. Although the design of the Steilacoom Creek Bridge was limited to short spanned structures, it is significant in its demonstration of the evolution and experimentation of bridge design during the early twentieth century, in its demonstration of the way in which the concepts of bascule bridge design were merged with the design concepts of the vertical lift bridge.

⁴J.A.L. Waddell, Bridge Engineering, 2 Vols., (New York, 1916), 1: 713-14.

In 1916, J.A.L. Waddell accurately interpreted the importance of the vertical lift bridge in relation to other moveable structures. He wrote that the type had come to stay, and that it would continue to be used more and more as time went on, "for not only is it inexpensive in first cost comparatively speaking, but it is also simple, rigid, easy to operate, and economical of power. It has met with considerable opposition up to the present time, mainly from the owners of bascule patents; but it has overcome that opposition most satisfactorily and unequivocally, consequently the future of the type may be counted upon as assured."⁵

The design of the Lake Washington Floating Bridge (58) which includes an unusual moveable span was unprecedented within the United States. Because piers could not be constructed in the 150 to 200 foot depths of Lake Washington, under which lies almost 100 feet of soft mud, it was not possible to bridge the 7800 foot crossing with a more conventional long span structure. A bridge of pontoon construction eliminated the problem of pier construction. The 6561 foot deck is anchored to a series of floating reinforced concrete boxes which lie only a few feet beneath the surface of the lake. A total of 64 cables secure the floating structure transversely and horizontally to anchors on the lake bottom. The required 200 foot channel is provided by the horizontal movement of a portion of the floating deck into a recess in an adjacent fixed pontoon.

⁵Ibid., p. 746.

IV. REPRESENTATION OF BRIDGE TYPES: ARCHES

During the early twentieth century the steel arch was not extensively used in the United States in comparison to other bridge forms. In his book, Bridge Engineering, J.A.L. Waddell explains the reason for the paucity of arches in the United States. "Arches are employed very generally in Europe on account of their superior appearance as compared with simple truss bridges, and because of the powerful influence of the old masonry arch upon the minds of European bridge designers, regardless of the consideration of economy. American engineers, on the other hand, have been indifferent to the question of aesthetics, and have preferred simple spans to arches mainly for reasons of simplicity and economy, but sometimes on account of their rigidity."⁶

The Twelfth Avenue West Bridge on Dearborn Avenue (60) was constructed by the City of Seattle in 1911 and is the oldest extant steel arch within the State. Of the earliest steel arches within the State, it is the only example of a spandrel-braced arch. There are two examples within the State of a three-hinged lattice arch, one built over Ravenna Park (61) in 1912-13 by the City of Seattle, and one built over the Carbon River (62) in 1921 by the State and Pierce County. The three-hinged arch, with a hinge at the crown and at the two abutments, was widely used by American engineers. Although it is the least rigid of all arch structures, there is no ambiguity of stress distribution, and the method of stress calculation is relatively simple. A solid-rib two-hinged parabolic steel arch dramatically spans a steep wooded ravine on North Queen Anne Hill (63). This attenuated striking steel form was designed by the Seattle Engineering Department in 1935. It is the only one of its type within the State that was constructed before 1940. The Canoe Pass Bridge (46) constructed in 1935, and the two high steel arches erected by the Simpson Logging Company (20, 21) in 1929 are more recent examples of the spandrel-braced arch.

There has been little change in the form of the steel arch since the last decade of the nineteenth century. The essential components of ribs, stiffening trusses, and spandrel posts must always be present, and

⁶J.A.L. Waddell, Bridge Engineering, 2 Vols., (New York, 1916), 1: 617.

have left little scope for variations. The design innovations in the arch bridge were linked to the developments of reinforced concrete.⁷

The earliest extant reinforced concrete arches within the State are the Washington Street Bridge (65) constructed over the Spokane River in 1908, and the Klickitat River Bridge (7) constructed by the Spokane, Portland, and Seattle Railway during the same year. The Arboretum Sewer Trestle (66) which was built in 1910 by the City of Seattle demonstrates how many of the earliest reinforced concrete bridges were park bridges, which were "notable more for their artistic design than for their large proportions."⁸ The solid-barrel arch rings which were used in the Klickitat River Bridge and in the Arboretum Sewer Trestle were predominant in the earliest reinforced concrete arch designs. Often these early structures were constructed as monoliths, and the metal reinforcing acted more as a binding element than as reinforcing. The Washington Street Bridge is an early example of a ribbed arch. The flattened form of the ribs of the Washington Street Bridge reflected future developments in concrete arch design.

When the Monroe Street Bridge (67) was completed in 1911, its monolithic arch was hailed as the largest concrete arch in the United States. The Monroe Street Bridge was similar to the Walnut Lane Bridge of Philadelphia, constructed in 1906-8, which was an important forerunner in the design of long-span fixed arches. The great size of the massive arched ribs of these two structures reveals the limits of unreinforced concrete in long span structures. However, the open spandrels and flattened ribs of the Monroe Street's central arch pointed toward the future in concrete arch design. The Latah Creek Bridge (68) was the second of Spokane's grand monumental concrete arches, and is an early example within the State of a long-span fixed-end reinforced concrete arch.

The commanding monumental form of the Rosalia Bridge (69) constructed by the Milwaukee Railroad in 1915 rivals that of the two Spokane arches. The Rosalia Bridge is the only multiple span concrete arch railroad bridge within the State. Because of the high impact of railroad loads, concrete arches were never widely used in the construction of railroad bridges,

⁷Carl Condit, American Building Art, 2 Vols., (New York, 1961), 2: 128.

⁸Henry Grattan Tyrell, History of Bridge Engineering, (Chicago, 1911), p. 427.

particularly in long span structures.

The Lower Custer Way Crossing (70) is an early example within the State of a Luten arch. The Luten arch was introduced to the United States from Germany in 1900, and was one of the early scientific solutions to bar reinforcing in concrete. Unlike many of the earliest solutions to arch reinforcing which indiscriminately placed steel shapes throughout the concrete, the Luten system pointed to later techniques which distributed the steel primarily in the tension zones. In the Luten system, several bars forming a complete loop were laid transversely through the vault and invert of the arch. These series of loops were also laid throughout the length of the structure at regular intervals. The bars were bent to conform to the semicircular section of the vault, and were placed near the surfaces of maximum tension under live load.⁹

As the reinforcing of concrete became better understood, the rigid concrete and the elastic steel were scientifically designed to function together organically, and it became possible to build lighter, more attenuated forms. The minimal, graceful form of the 34th Street Bridges (74, 75) in Tacoma and the Cowen Park Bridge (73) in Seattle reveal the capabilities of reinforced concrete, and reflect the progressive reduction in the quantity of structural material used in concrete arch design. However, the bold, dynamic innovative concrete forms of the European designers, Maillart and Freyssinet have never been equalled in the United States. "The scarcity of advanced designs in concrete bridges has arisen in part from the necessities of American practice: lower working stresses than are the rule in Europe; much higher traffic loads, both rail and highway; the higher cost of formwork, chiefly because of high labor costs; and in many places, higher wind and snow loads."¹⁰

During the 1920's and 30's five reinforced concrete tied arches were constructed within the State (76-80). In these arches, the deck slab is hung by suspenders from a pair of arch ribs above the roadway. In most arches, massive abutments and foundations are necessary to resist the horizontal thrust exerted by the arch on the skewbacks. However, in the tied arch, the horizontal thrust is resisted by longitudinal ties

⁹Ibid., 2: 197.

¹⁰Ibid., 2: 195-196.

which extend between the hinged springing points. In most of the five tied arches in Washington, the deck slab itself acts as a tie. The double function of the deck slab was an economical solution, and it eliminated the need of massive abutments. Although there are examples of tied arches that were built throughout the 20's and 30's, the tied arch has remained a rare concrete arch form.¹¹

¹¹Ibid., 2: 206.

IV. REPRESENTATION OF BRIDGE TYPES: CONCRETE BEAMS, GIRDERS, AND TRUSSES

The concrete girder has become a predominant feature in the landscape of the American highway. The two earliest examples within the State of concrete girder highway bridges are the North 23rd (81) and the North 21st (82) Street Bridges in Tacoma. Both bridges were designed by Waddell and Harrington. The North 23rd Street Bridge was built in 1909, and is an early example of a concrete rigid frame girder bridge. The concrete beams are massive and overdesigned. The rigid frame was not adopted on any extensive scale, until after World War I. The 21st Street Bridge constructed in 1910 is a continuous concrete rigid frame girder bridge. It was built almost simultaneously with the 950 foot Asylum Avenue Viaduct in Knoxville, which Carl Condit documented in American Building Art, as the first continuous concrete girder bridge to be constructed.¹²

There are three concrete structures within the nomination which are early American applications of the European innovation of concrete hollow-box construction. In cellular construction, the concrete is poured around hollow box forms thus reducing to a minimum the amount of material used. The steel and concrete is placed only at those points where it functions actively under live load. This economical hollow-box form was used extensively throughout Europe, but was not widely used in the United States. The Purdy Bridge, constructed over Henderson Bay in 1936, is one of the few box-girder bridges within the United States, and has the longest single span among concrete-girder forms.¹³ The design features and layout of the bridge were suggested by Homer M. Hadley, and was one of several unique concrete bridge designs of cellular constructions conceived and carried out by Mr. Hadley throughout Washington during his lifetime.

Homer Hadley also designed the McMillan Bridge (87), a reinforced concrete truss of hollow-box construction. At the time that it was built, its 170 foot main span was the longest beam span within the United States. The

¹²Carl W. Condit, American Building Art, (New York, 1961), 2:207.

¹³Ibid., p. 209.

organic strength of concrete that is so frequently revealed through the arch form, is shrouded by the massive breadth and scale of this truss at McMillan. The McMillan Bridge demonstrates the use of concrete for a design that traditionally evolved and conformed to the structural properties of timber and steel.

The Seattle Engineering Department introduced hollow box construction in the design of concrete rigid frame bridges when it built a concrete structure in Schmitz Park (86) in 1935.

There are two concrete beams within the nomination that are included for their architectural merits. The Johnson Bridge (83), is a three-span concrete T-beam. The engineers have used a straightforward, commonplace bridge type, and through the addition and integration of simple, subtle geometric shapes have transformed the structure into one which has an aesthetically compelling visual impact. As the most impressive of several short spanned structures with similar ornamental motifs throughout Walla Walla County, the Johnson Bridge reflects the impact of a single creative engineer on regional bridge design. The Capitol Boulevard Crossing (84) is one of the best examples within the State of the influence of Art Deco and Modernistic Architecture on bridge design. The concrete viaduct exemplifies the way in which decoration was used to transform an ordinary structure into an entrance-way into the Capital City.

IV. REPRESENTATION OF BRIDGE TYPES: SUSPENSION BRIDGES

The thin parabolic cables of the suspension bridge stretching between two towers has an unyielding visual force. "The principle of the suspension bridge is simple," stated the bridge engineer, David B. Steinman. "It consists of three essential parts: the towers, the anchorages, and the cables. The roadway and the stiffening construction have local importance, but both may be wholly or partially destroyed without causing the collapse of the bridge. In all other types of bridge construction, the failure or buckling of a single member will precipitate the collapse of the entire structure. A suspension bridge is the safest type of construction in that any local overloading or structural deficiency will not jeopardize the safety of the whole."¹ However at the beginning of the 20th century the bridge engineering profession did not have this same confidence in the suspension bridge. In 1911, the bridge engineer, Henry Tyrrell wrote that although the suspension bridge is one of the oldest bridge forms, it has not been adopted as rapidly as other bridge types, because of its lack of rigidity and the absence of correct theory for proportioning stiffening trusses.² Mr. Tyrrell's cautiousness is perhaps explained by the fact that he was writing during the era of the railroad. Because of the flexibility of the suspension bridge design, it was not widely used for the heavier railroad loadings. It was the advent of the automobile that initiated the proliferation of the suspension bridge, particularly for long-spanned structures.

The oldest extant suspension bridges within the State are a series of timber suspension bridges crossing deep lateral gorges in the North Cascades at Devil's Corner (87). They were built by miners in the 1890's to provide access to their claims, and stand as a testimony to man's ingenuity and to the dogged persistence of the early miner's in breaching the formidable mountain barrier.

Although there are numerous examples of timber suspension bridges throughout the State, the Yale Bridge (88) is the only example of a short-spanned steel suspension bridge. Steel suspension bridges of moderate length

¹David B. Steinman and Sara Ruth Watson, Bridges and their Builders, (New York, 1941) p. 326.

²Henry Grattan Tyrrell, History of Bridge Engineering (Chicago, 1911), p. 254.

have remained rare because cost factors have prevented them from competing with simple steel trusses, cantilevers, or arches for ordinary highway structures.

The suspension bridge was primarily used for the very longest spans. When the graceful, ribbonlike Tacoma Narrows Bridge (89) was opened to traffic on July 1, 1940, it was the third longest suspension bridge in the world. The design of the Tacoma Narrows Bridge followed the mainline of development in the evolution of the suspension bridge. It represented a culmination of the trend to increase the span length, to reduce the width of the deck and to minimize the depth of the stiffening components, which simplified and distilled the bridge form; it represented the epitome of a move towards a suspension bridge of slender proportions that placed a premium of economy on flexible design.

However, on November 7, 1940 only four months after the opening of the bridge, the design ended in disaster. Gale force winds created torsional oscillations in the bridge that eventually reached catastrophic proportions causing the sinuous main span to break away from the undulating mass and plunge into the water below. The collapse of the bridge initiated a deluge of scientific investigation. Studies revealed that the bridge was destroyed by a combination of factors, factors that were more pronounced in the Tacoma span than in any other modern suspension bridge.

One critical factor was the vertical slenderness and resulting vertical flexibility of the structure which was caused by the construction of high flexible towers and a thin suspended span. Another flaw in the design of the bridge was the use of slender, solid web plate girders to stiffen the deck rather than the use of the complex and conventional truss. The steel truss acts like a sieve to the forces of the wind. However, the wind could not penetrate the solid wall of the girder. Because the span was highly flexible, the cross-section of the solid plate girders in combination with a solid floor was particularly sensitive to aerodynamic forces. The characteristics of this cross-section caused small undulations of the bridge to amplify. There was a tendency for these undulations to change into a twisting motion which would generate harmonic movements of dangerous magnitude. It was these harmonic motions that eventually proved fatal to the bridge.³

³Steinman, op. cit., pp. 353-357.

Other bridge designs did benefit from the mistakes made in the construction of the Tacoma Narrows Bridge. The noted engineer, Ottmar H. Amman, who had designed the recently completed Bronx-Whitestone Bridge in New York with stiffening girders, quickly replaced them with trusses. The knowledge gained from the research following the disaster was valuable to the entire engineering profession in terms of understanding the importance of aerodynamics in suspension bridge design.

V. THE ROLE OF THE BRIDGE ENGINEER

The singular role of the bridge engineer in the development of Washington is undeniable. This role was probably most pronounced in the construction of the grand transportation schemes of the transcontinental railroads. The awesome scale of the land demanded structures of equal proportion. The bridge and tunnel engineers of this era were men who had more than unusual constructive abilities; they were men with vision; they were dreamers, planners, managers, and builders who built on an enormous scale.

These qualities were exemplified in men like Mr. Nelson Bennett who completed the two mile long Stampede tunnel through the "backbone of the Cascade range" under unyielding odds. The immensity of the projects in which these engineers were involved is reflected in the career of John Frank Stevens. Stevens surveyed the Great Northern route over the Cascades which resulted in the construction of the Cascade Tunnel, and then went on to play a major role in the construction of the Panama Canal.

There were a handful of prominent, prolific bridge engineers who devoted their early careers to railroad bridge construction. For example, there was Ralph Modjeski who contributed to the design and construction of several major spans during the 20's and 30's including the San Francisco Bay Bridge. His early years were spent as chief bridge engineer of the Oregon Trunk Railway, and it was he who was responsible for the construction of the Celilo Bridge across the Columbia River in 1911-12.

The impact of the bridge engineer is visible throughout Washington. There are numerous examples of the influence of a single creative engineering talent on a particular region. For example, E.R. Smith's tenure as county engineer during the 20's and 30's has left its impact throughout rural Walla Walla County. Through the addition of simple, softly colored geometric shapes, several short-spanned concrete T-beams were transformed into visually compelling structures.

During the period between 1909 and 1914, two enormous multiple spanned concrete arches were constructed in the city of Spokane. There are few bridges within the State that are monuments of such a grand scale. It was the foresight and perserverance of a few individuals within the city engineering department who were responsible for the construction of these

forceful, concrete forms. An abundant number of concrete arches were built throughout the city of Spokane during this era by the engineering department directly impacting the visual countenance of the city. However, it is the magnitude of the Monroe Street Bridge and the Latah Street Bridge that make them particularly unique. Their rhythmic arch forms are commanding architectural focal points within the city. Morton McCartney, who was a key individual in the construction of the Monroe Street Bridge, supervised the design and construction of the Latah Creek Bridge as City Engineer.

The engineer, Homer Hadley, designed several unique concrete bridges throughout the state of Washington during his lifetime. The Purdy Bridge and the McMillin Bridge were both designed by Mr. Hadley. They are early American applications of the European innovation of concrete hollow-box construction. This economical method of construction was used extensively throughout Europe, but was not widely used in the United States. It was Homer Hadley who originally conceived the design of a floating bridge across Lake Washington. He visualized a floating roadway made up of a series of hollow concrete barges. Mr. Hadley's unusual work reveals the effects of a single innovative engineer on bridge design within the State.

There are other examples of bridge builders within Washington who forged outside of the mainstream of American bridge design practices. The 250 foot log cable-stayed girder bridge that was constructed across the Quinault River by the Logging Superintendent, Frank Milward, in 1952 is a prime example of a bold design that did not conform to American design patterns. It was the tenacious pioneering spirit of Mr. Milward, who constructed one of the first examples of a cable-stayed girder bridge within the United States. A segment of the history of bridge construction within Washington is revealed by the fact that structures were built in the mid-20th century by an individual whose background and methods of building closely paralleled those of 19th century engineers. Pioneering mavericks with little formal education were building innovative structures within the State simultaneously with engineers who used the most contemporary scientific analyses to determine appropriate bridge designs.

The history of bridge construction, and the role of the bridge engineer in the development of Washington is indeed multifaceted. Throughout the State's bridge construction history, there are repeated demonstrations of the resourcefulness and persistence of talented individuals who sought to

direct "the great sources of power in nature for the use and convenience of man."¹ Without question, the bridge engineer's role is a significant one. In some respects, the bridge engineer played an indispensable role in the development of the state. Several of the earliest bridge engineers built structures that were integral parts of vast transportation systems which made Puget Sound and an inscrutable wilderness accessible to large numbers of people, directly impacting the course of settlement patterns within the State. The influence of the bridge engineer is pervasive; the construction of even the shortest spans affect people's lives, easing their ability to move from one location to another. This pervasive influence of the bridge engineer is reflected in the extant historic bridges and tunnels remaining within Washington.

¹Julius Adams, "The Dinner," Proceedings of the American Society of Civil Engineers, I (1874), 175; as quoted from Raymond H. Merritt, Engineering in American Society, Lexington, 1969, p. 3.

**National Register of Historic Places
Inventory Nomination Form: Naval
Military Hangar – University Shell
House (Canoe House/Shell House)**

25N 4E 2,16

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

FOR NPS USE ONLY
RECEIVED
DATE ENTERED
KI 155

NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM

SEE INSTRUCTIONS IN HOW TO COMPLETE NATIONAL REGISTER FORMS
TYPE ALL ENTRIES -- COMPLETE APPLICABLE SECTIONS

1 NAME

HISTORIC

Naval Military Hangar - University Shell House

AND/OR COMMON

Canoe House/Shell House

2 LOCATION

STREET & NUMBER

University of Washington Campus

CITY, TOWN

Seattle

NOT FOR PUBLICATION

CONGRESSIONAL DISTRICT

VICINITY OF

#1 - Honorable Joel M. Pritchard

STATE

Washington

CODE
53

COUNTY
King

CODE
033

3 CLASSIFICATION

CATEGORY

- DISTRICT
- BUILDING(S)
- STRUCTURE
- SITE
- OBJECT

OWNERSHIP

- PUBLIC
- PRIVATE
- BOTH
- PUBLIC ACQUISITION**
- IN PROCESS
- BEING CONSIDERED

STATUS

- OCCUPIED
- UNOCCUPIED
- WORK IN PROGRESS
- ACCESSIBLE**
- YES: RESTRICTED
- YES: UNRESTRICTED
- NO

PRESENT USE

- AGRICULTURE
- MUSEUM
- COMMERCIAL
- PARK
- EDUCATIONAL
- PRIVATE RESIDENCE
- ENTERTAINMENT
- RELIGIOUS
- GOVERNMENT
- SCIENTIFIC
- INDUSTRIAL
- TRANSPORTATION
- MILITARY
- OTHER: Recreation & storage

4 OWNER OF PROPERTY

NAME

U.S. Army Corps of Engineers, Seattle District

STREET & NUMBER

4735 East Marginal Way South

CITY, TOWN

Seattle

STATE

Washington

VICINITY OF

5 LOCATION OF LEGAL DESCRIPTION

COURTHOUSE,
REGISTRY OF DEEDS, ETC.

King County Administrative Building

STREET & NUMBER

Fourth Avenue and James Street

CITY, TOWN

Seattle

STATE

Washington

6 REPRESENTATION IN EXISTING SURVEYS

TITLE

Seattle City Landmark Survey

DATE

1974

FEDERAL STATE COUNTY LOCAL

DEPOSITORY FOR
SURVEY RECORDS

Office of Urban Conservation
Seattle Department of Community Development

CITY, TOWN

Seattle

STATE

Washington

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

FOR NPS USE ONLY

RECEIVED

DATE ENTERED

CONTINUATION SHEET

ITEM NUMBER

PAGE

Naval Military Hangar - University Shell House
Additions and corrections to the nomination forms

Item Number 4

Revise to indicate the following ownership:

The hangar building itself is owned by the University of Washington, Seattle, Washington.

The building is situated approximately half-way overlapping property of the University of Washington and the adjoining property of the U. S. Army Corps of Engineers, Seattle District.

The Corps of Engineers owns the portion of the site bordering on the Lake Washington Ship Canal. This is a strip of land roughly 100' wide running east and west and tapering with the shoreline as the ship canal widens where it joins Lake Washington.

Item Number 7

In the last paragraph the first sentence should read:

Still used as a canoe house and sailboat rental concession and storage area, the Canoe House is owned and maintained by the University of Washington. Under terms of a consent agreement a portion of the building for approximately half its length on the end facing the ship canal occupies neighboring property of the U. S. Army Corps of Engineers.

7 DESCRIPTION

CONDITION		CHECK ONE	CHECK ONE
<input type="checkbox"/> EXCELLENT	<input type="checkbox"/> DETERIORATED	<input type="checkbox"/> UNALTERED	<input checked="" type="checkbox"/> ORIGINAL SITE
<input type="checkbox"/> GOOD	<input type="checkbox"/> RUINS	<input checked="" type="checkbox"/> ALTERED	<input type="checkbox"/> MOVED DATE _____
<input checked="" type="checkbox"/> FAIR	<input type="checkbox"/> UNEXPOSED		

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

The Canoe House was erected during the First World War when the U.S. Navy occupied a portion of the University of Washington campus fronting Lake Union, the ship canal and Lake Washington. Though built to shelter seaplanes as a feature of the Navy's temporary training camp, the structure apparently was not completed until 1918, late enough to have been of little use to the military during the emergency. It is a straightforward, utilitarian structure ideally suited for its intended function, with a maximum clear span and siting on the lakeshore.

The structure is located in the SE 1/4 Section 16, T25N, R4E of the Willamette Meridian. It is situated at water grade on the north bank of the entrance to the ship canal from Lake Washington. It is oriented on its site southeast to northwest, and in its original context its hangar doors opened advantageously onto the water. The immediate setting is green open space, and the location is presently one of the focal points of water-oriented recreational activities at the University. An embankment rises behind the Canoe House to the north and west, and in the background looms the University's football stadium surrounded by several acres of surfaced parking.

The simple rectangular enclosure on concrete slab measures 88 by 120 feet. Large timber trusses (as many as six or seven) span the central space and are supported at the ends by triangular framing units. Longitudinal joists are bolted to the trusses and end wall plates. The trusses are a modified Howe type with crossed chords and top members which are pitched at a low angle, instead of being straight or flat, and which account for the shape of the shallow gambrel roof. This wooden framework is sheathed and covered with shingles. Asphalt shingles make up the roof cover. The long side walls are raked outward from the eaves, and because their characteristics are stabilizing or rigidifying rather than load-bearing, they are little more than cladding openings which are, typically, large double-hung sash windows, in pairs, with nine lights over nine. Some of the original openings have been filled in or modified, and other openings, such as bay windows, have been added. The interior originally was unfinished and generally remains so today. There are grade level doorways in the north and east walls. Across the south end a large triple-section sliding door with window panes in the upper portions is suspended from an overhead track approximately 24 feet in height. The track is extended beyond the face of the structure with outriggers which enable the doors to be drawn clear of the opening.

Improvements date from 1922, when the hangar became headquarters for campus crew racing activities, and 1949, when the space was converted to use for storage and rental of boats. A 20-foot section across the north end was partitioned off and in it a second floor level added. Reached by an outside stair in the center of the end wall, the damp-free "garret" was the work space in which George Pocock built his celebrated laminated racing shells for twenty-seven years. To allow a maximum of natural light into the studio-garret, a long clerestory window was opened up across the face of the end truss. The partitioned section was further subdivided after 1949. Over the several years it was unused prior to 1922, the hangar suffered the lack of adequate drainage. Freshmen crew members were pressed into service to lay drain tile around the base. Gutters on the eaves of the side walls and corner

downspouts completed the rain drain system. Other modifications include the addition of showers and lockers and a storage shed on the north end of the west wall.

Still used as a canoe house and sail-boat rental concession and storage area, the Canoe House is maintained by the University of Washington under terms of a consent agreement with the U.S. Army Corps of Engineers, the property owner of record. Dry rot and fire prevention are two major maintenance problems at present. The structure is not sprinklered. Construction of a new aquatic recreation facility is being planned for a location elsewhere on campus, and a future use for the existing canoe-rental facility is not contemplated.

8 SIGNIFICANCE

PERIOD

AREAS OF SIGNIFICANCE -- CHECK AND JUSTIFY BELOW

<input type="checkbox"/> PREHISTORIC	<input type="checkbox"/> ARCHEOLOGY-PREHISTORIC	<input type="checkbox"/> COMMUNITY PLANNING	<input type="checkbox"/> LANDSCAPE ARCHITECTURE	<input type="checkbox"/> RELIGION
<input type="checkbox"/> 1400-1499	<input type="checkbox"/> ARCHEOLOGY-HISTORIC	<input type="checkbox"/> CONSERVATION	<input type="checkbox"/> LAW	<input type="checkbox"/> SCIENCE
<input type="checkbox"/> 1500-1599	<input type="checkbox"/> AGRICULTURE	<input type="checkbox"/> ECONOMICS	<input type="checkbox"/> LITERATURE	<input type="checkbox"/> SCULPTURE
<input type="checkbox"/> 1600-1699	<input checked="" type="checkbox"/> ARCHITECTURE	<input type="checkbox"/> EDUCATION	<input checked="" type="checkbox"/> MILITARY	<input type="checkbox"/> SOCIAL/HUMANITARIAN
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> ART	<input type="checkbox"/> ENGINEERING	<input type="checkbox"/> MUSIC	<input type="checkbox"/> THEATER
<input type="checkbox"/> 1800-1899	<input type="checkbox"/> COMMERCE	<input type="checkbox"/> EXPLORATION/SETTLEMENT	<input type="checkbox"/> PHILOSOPHY	<input type="checkbox"/> TRANSPORTATION
<input checked="" type="checkbox"/> 1900-	<input type="checkbox"/> COMMUNICATIONS	<input type="checkbox"/> INDUSTRY	<input type="checkbox"/> POLITICS/GOVERNMENT	<input checked="" type="checkbox"/> OTHER (SPECIFY) Aviation Collegiate athletics
		<input type="checkbox"/> INVENTION		

SPECIFIC DATES

1918

BUILDER/ARCHITECT

United States Navy

STATEMENT OF SIGNIFICANCE

Constructed by the U.S. Navy as a seaplane hangar in 1918, the Canoe House is significant to the state as a rare, if not unique example of an architectural type developed in the early years of aviation. Because the airplane hangar was a response to new technology, its efficient form was essentially without historical precedent. No other examples of the hangar type dating from the period of the First World War are known in Washington. (A dirigible hangar at Fort Worden on the Olympic Peninsula dating from ca. 1922-1923 has an iron or steel frame with corrugated metal cladding. The oldest hangar at Paine Field south of Everett is reported to have been constructed in 1942.) Moreover, no other early hangars are known to have survived in the vicinity of Seattle, which has figured prominently in aviation history since the founding of the Boeing Company in 1916.

In 1917 and 1918 portions of the University of Washington campus were taken over for war preparations. Army Training Corps activities were relegated to the upper campus, and the U.S. Naval Training Camp extended along lower ground fronting Lakes Union and Washington and the ship canal connecting the two bodies of water. Among facilities of this cantonment area were officers' quarters, barracks, miscellaneous store rooms, and tents for the rank trainees. One of the largest of the temporary frame structures, apparently a mess hall and PX, had a roof truss profile similar to that of the Navy's seaplane hangar, but its walls were straight rather than raked. The seaplane hangar was a late addition to these facilities. Completed in 1918, it evidently was never used for the pilot training exercises it was intended to shelter. After the War, indications are that the hangar remained essentially empty, except for the unauthorized storage of a private plane, until it was relinquished to the University around 1922, reportedly for the transactional token of \$1.00.

Rowing started on the University campus as early as 1902 and 1904. Speed racing did not become an official sport, however, until 1907, when direction of such activities was assigned to Hiram Conibear. During these early years the Pocock Brothers were brought to campus to fabricate racing shells according to a revolutionary, light-weight design which contributed to the varsity crews' success and subsequent recognition nationwide. Having been interrupted during the emergency, crew racing was resumed under Coach Connibear's successors after the War. George Pocock returned to the campus from a wartime job building seaplane pontoons for the Boeing Airplane Company. All crew activities, including Mr. Pocock's shell-building shop, were housed in the former Naval Military Hangar from 1922 to 1949, when activities were shifted to a new facility designated the Conibear Shell House. During the years they were quartered in

their make-shift facility the University's varsity crews compiled a distinguished record, of which a high point was competing in the World Olympic Games of 1936. During this time also George Pocock was permitted to fill orders for the superior laminated racing shells from Harvard, Columbia, Cornell, Princeton, Syracuse and other universities around the country.

Shortly after the hangar was vacated by varsity crews in 1949, it was converted for use as the University's Canoe House. Presently fulfilling a traditional function on the campus, the Naval Military Hangar is the second or third boat-rental facility operated under University auspices since the turn of the century. The predecessor canoe house, a much re-located building in use for nearly forty years, was torn down in 1950.

9 MAJOR BIBLIOGRAPHICAL REFERENCES

Burandt, Bob J. "Good-Bye to U's Old Canoe House", Seattle Times Magazine, January 1, 1950, 11.

Gates, Charles M. The First Century at the University of Washington, 1861-1961, Seattle: University of Washington Press, 1961. pp. 98-100.

10 GEOGRAPHICAL DATA

ACREAGE OF NOMINATED PROPERTY 1.9 acres (See description)

UTM REFERENCES

A	1,0	5,5,2,6,6,0	5,2,7,7,2,1,0	B			
	ZONE	EASTING	NORTHING		ZONE	EASTING	NORTHING
C				D			

VERBAL BOUNDARY DESCRIPTION

The area proposed for nomination, containing 1.9 acres more or less, is bounded on the south by the natural shoreline of the north bank of the Lake Washington Ship Canal; and on the north by the northernmost boundary of property governed by U.S. Army Corps of Engineers Consent Agreement No. DA (S)45-108-CIVENG-66-2. The west boundary is a line running perpendicularly from said northerly boundary to the end.

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

STATE	CODE	COUNTY	CODE
STATE	CODE	COUNTY	CODE

11 FORM PREPARED BY

NAME / TITLE

Elisabeth Walton Potter, Historic Preservation Specialist

ORGANIZATION

Washington State Parks & Recreation Commission

DATE

May 10, 1975

STREET & NUMBER

P.O. Box 1128

TELEPHONE

(206) 753-4117

CITY OR TOWN

Olympia

STATE

Washington

12 STATE HISTORIC PRESERVATION OFFICER CERTIFICATION

THE EVALUATED SIGNIFICANCE OF THIS PROPERTY WITHIN THE STATE IS:

NATIONAL X

STATE _____

LOCAL _____

As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service.

FEDERAL REPRESENTATIVE SIGNATURE

Charles H. Odegaard

TITLE

Executive Director - Charles H. Odegaard

DATE

FOR NPS USE ONLY

I HEREBY CERTIFY THAT THIS PROPERTY IS INCLUDED IN THE NATIONAL REGISTER

DATE

DIRECTOR, OFFICE OF ARCHEOLOGY AND HISTORIC PRESERVATION

ATTEST

DATE

KEEPER OF THE NATIONAL REGISTER

Interview April 17, 1975: Alvin Ulbrickson, University of Washington Crew Racing Coach, retired. Interview April 22, 1975: George Pocock, Racing Shells, Inc., Seattle, Washington.

Photo Albums, U.S. Naval Training Camp, University of Washington. Collections of the Seattle Museum of History and Industry.

Three Quarters of a Century at Washington. Seattle: University of Washington Alumni Association, 1941, pp. 11-12, 20.

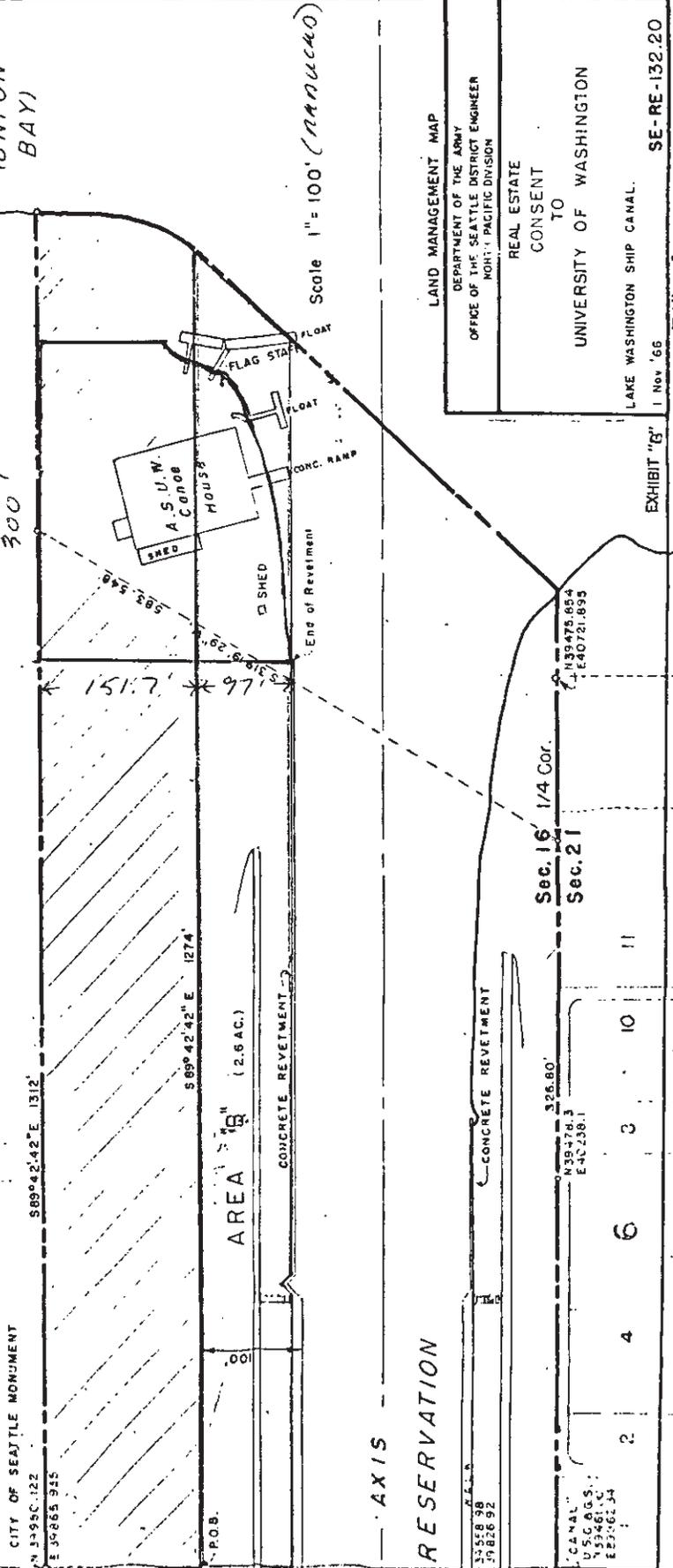
of the ship canal revetment, which is a distance of approximately 248.7 feet. The east boundary is a line running perpendicularly from said northerly boundary to its point of intersection with the natural shoreline, which is a distance of slightly less than 150 feet. The distance between the east and west boundaries is approximately 300 feet.

RECEIVED
MAY 12 1975
ARCHAEOLOGY AND
HISTORIC PRESERVATION

2 9000

WASHINGTON

LAKE WASHINGTON
(UNION BAY)



Scale 1" = 100' (NADUCCO)

RESERVATION
— AXIS

LAND MANAGEMENT MAP
DEPARTMENT OF THE ARMY
OFFICE OF THE SEATTLE DISTRICT ENGINEER
MONT. PACIFIC DIVISION

REAL ESTATE
CONSENT
TO
UNIVERSITY OF WASHINGTON

LAKE WASHINGTON SHIP CANAL.
1 Nov '66

SE-RE-132.20

EXHIBIT "G"

Sec. 16 1/4 Cor.
Sec. 21

326.80'
N39°17'43"
E40°238.1'

326.80'
N39°17'43"
E40°238.1'

2	4	6	3	10	11
---	---	---	---	----	----

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
PROPERTY MAP FORM**

FOR NPS USE ONLY

RECEIVED

DATE ENTERED

SEE INSTRUCTIONS IN *HOW TO COMPLETE NATIONAL REGISTER FORMS*
TYPE ALL ENTRIES -- ENCLOSE WITH MAP

1 NAME

HISTORIC

Naval Military Hangar - University Shell House

AND/OR COMMON

Canoe House/Shell House

2 LOCATION

CITY, TOWN

Seattle

___VICINITY OF

COUNTY

King

STATE

Washington

3 MAP REFERENCE

SOURCE

USGS Seattle North Quadrangle

SCALE

1:24 000

DATE

1949

4 REQUIREMENTS

TO BE INCLUDED ON ALL MAPS

1. PROPERTY BOUNDARIES
2. NORTH ARROW
3. UTM REFERENCES

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
PROPERTY PHOTOGRAPH FORM**

FOR NPS USE ONLY
RECEIVED
DATE ENTERED

SEE INSTRUCTIONS IN *HOW TO COMPLETE NATIONAL REGISTER FORMS*
TYPE ALL ENTRIES ENCLOSE WITH PHOTOGRAPH

1 NAME

HISTORIC

Naval Military Hangar - University Shell House

AND/OR COMMON

Canoe House/Shell House

2 LOCATION

CITY, TOWN

Seattle

____VICINITY OF

COUNTY King

STATE Washington

3 PHOTO REFERENCE

PHOTO CREDIT

Jacob E. Thomas

DATE OF PHOTO

January 1975

NEGATIVE FILED AT

Washington State Parks and Recreation Commission
Olympia, Washington

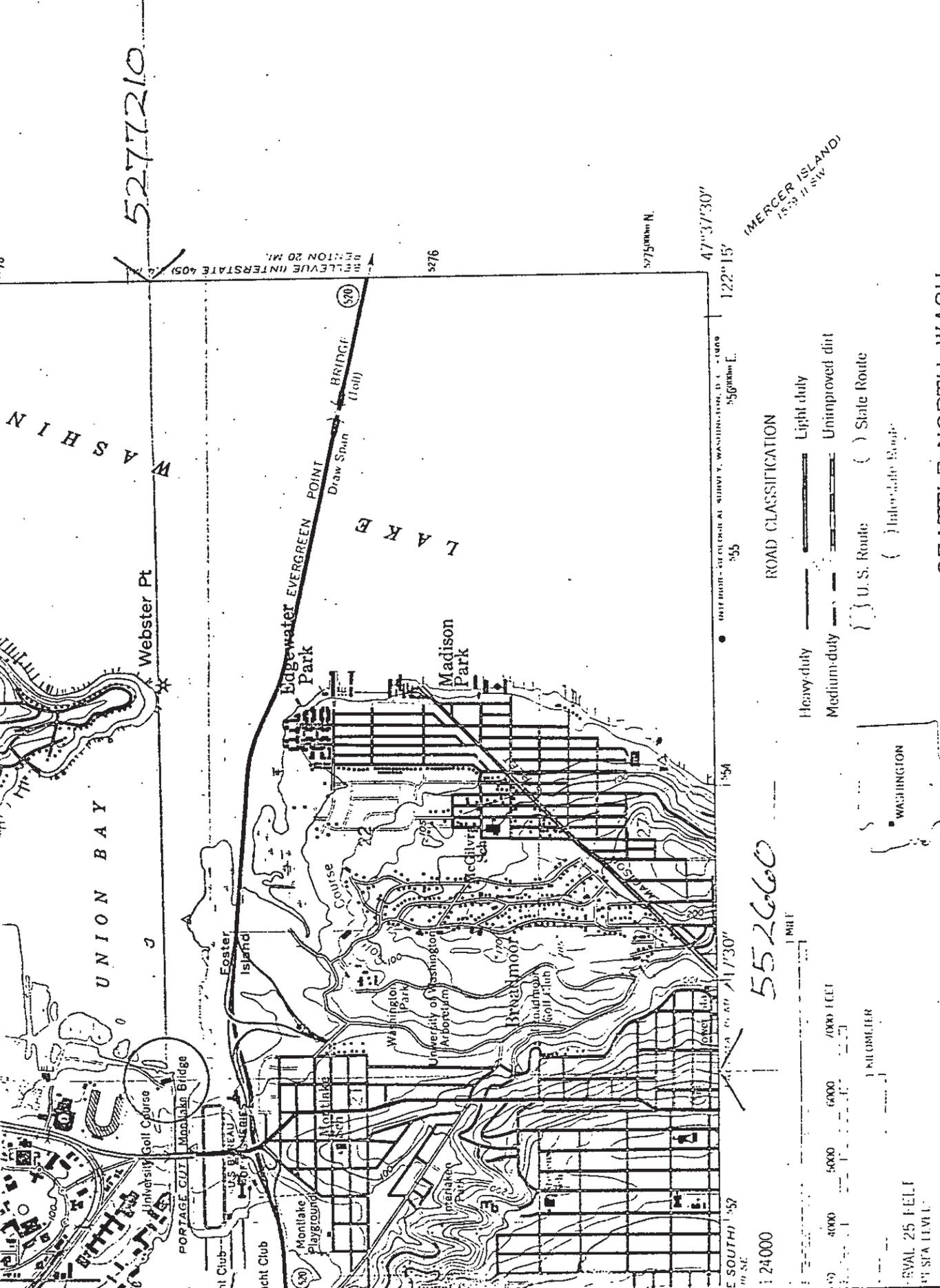
4 IDENTIFICATION

DESCRIBE VIEW, DIRECTION, ETC. IF DISTRICT. GIVE BUILDING NAME & STREET

PHOTO NO.

View from northeast.

5277210



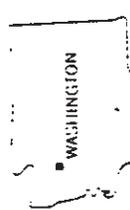
MERCER ISLAND
1533 II SW

ROAD CLASSIFICATION

- Heavy duty
- Medium-duty
- Light duty
- Unimproved dirt
- U.S. Route
- State Route
- Interstate Route

SEATTLE NORTH, WASH.

NE/4 SEATTLE 15' QUADRANGLE
N4737.5-W12215/7.5



QUADRANGLE LOCATION

R. COLORADO 80225, OR WASHINGTON, D. C. 20242

AND SYMBOLS IS AVAILABLE ON REQUEST

1949
Photorevised 1968

AMS 1579 III NE--SERIES V891

Labels are in italics unless otherwise noted.

For details see the purple-camouflaged topographic survey map.

Photograph by E. H. 1968. This material may not hold the copyright.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
PROPERTY PHOTOGRAPH FORM**

FOR NPS USE ONLY

RECEIVED

DATE ENTERED

SEE INSTRUCTIONS IN *HOW TO COMPLETE NATIONAL REGISTER FORMS*
TYPE ALL ENTRIES ENCLOSE WITH PHOTOGRAPH

1 NAME

HISTORIC

Naval Military Hangar - University Shell House

AND/OR COMMON

Canoe House/Shell House

2 LOCATION

CITY, TOWN

Seattle

____VICINITY OF

COUNTY King

STATE Washington

3 PHOTO REFERENCE

PHOTO CREDIT

Jacob E. Thomas

DATE OF PHOTO January 1975

NEGATIVE FILED AT

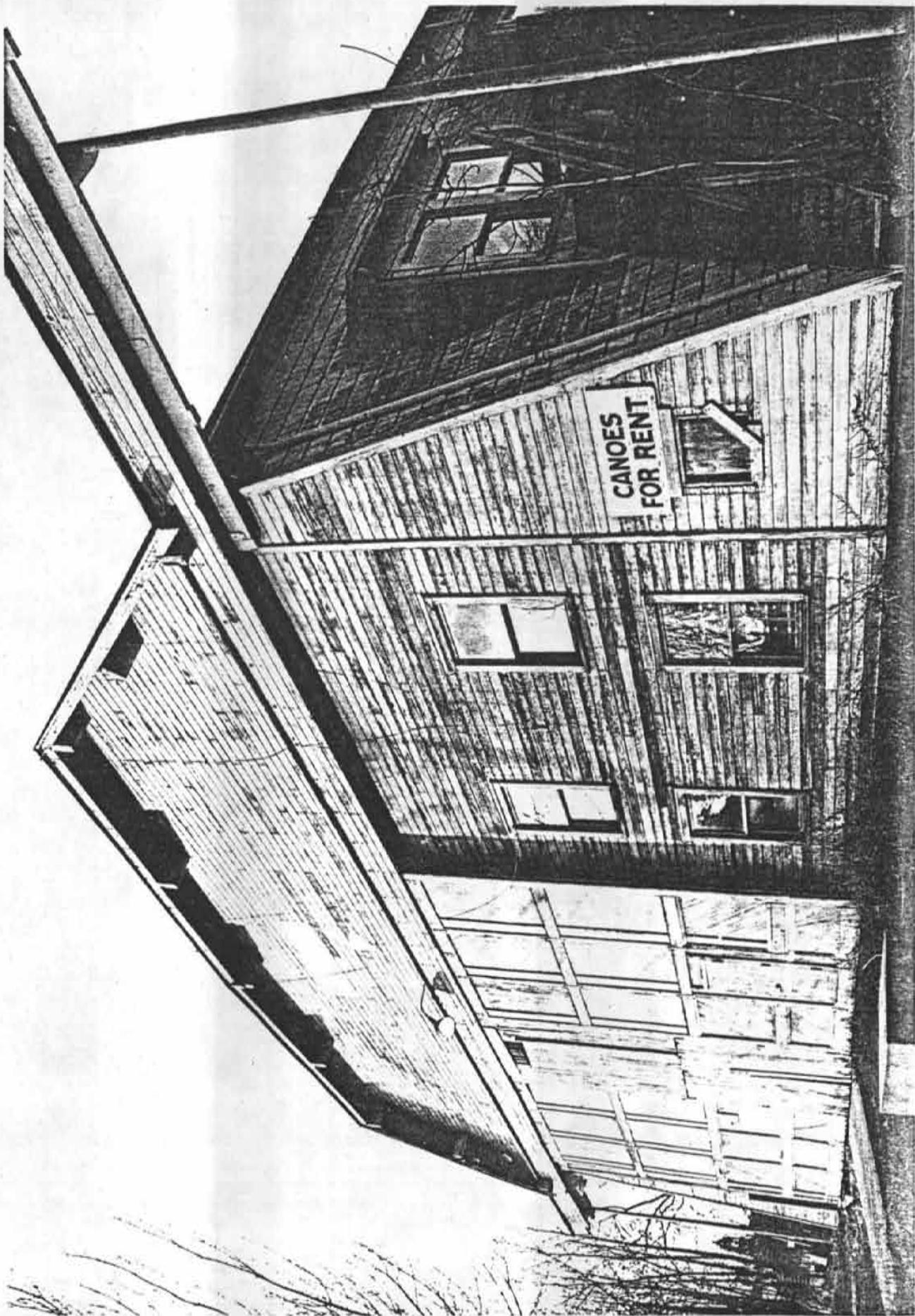
Washington State Parks and Recreation Commission
Olympia, Washington

4 IDENTIFICATION

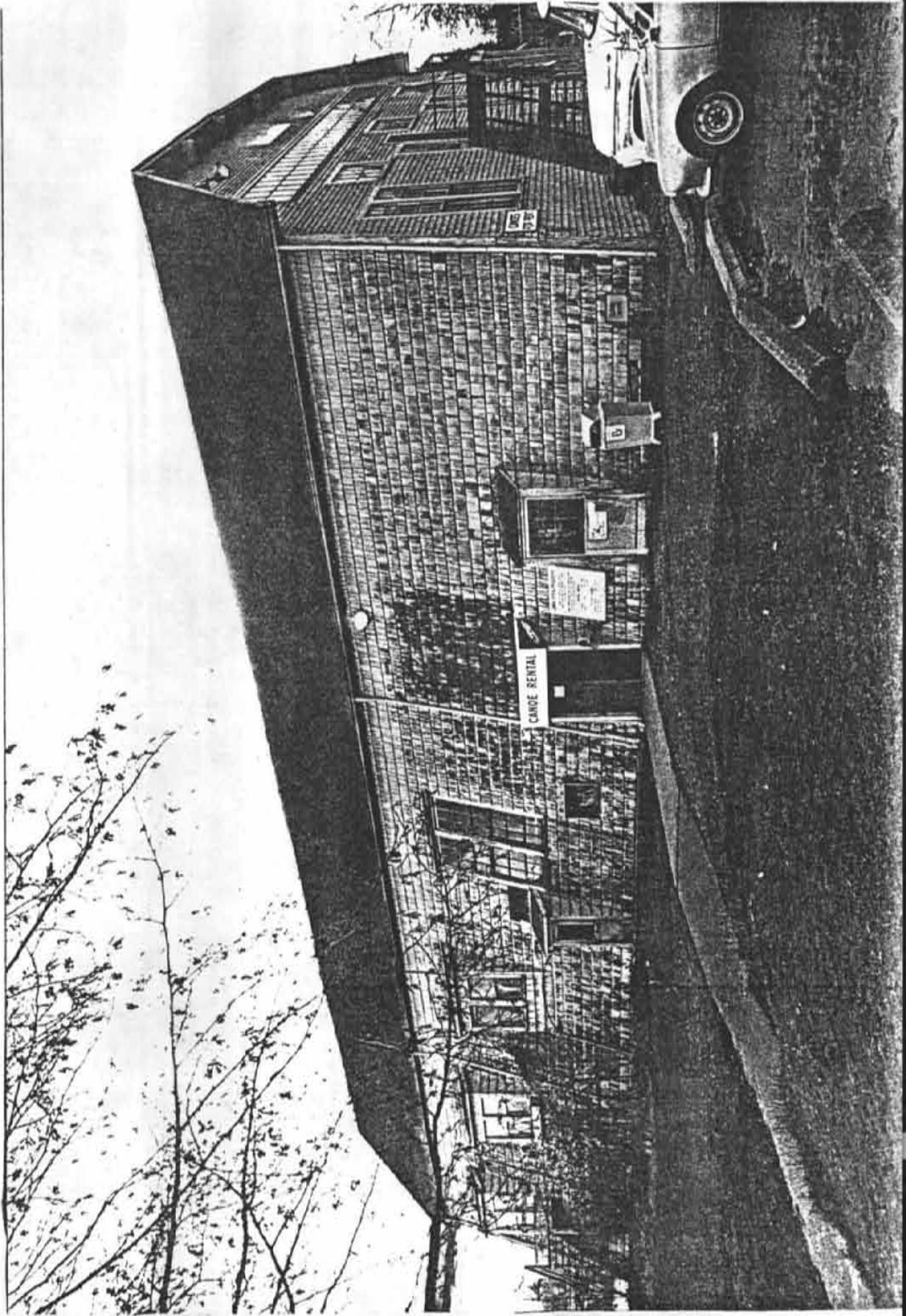
DESCRIBE VIEW, DIRECTION, ETC. IF DISTRICT, GIVE BUILDING NAME & STREET

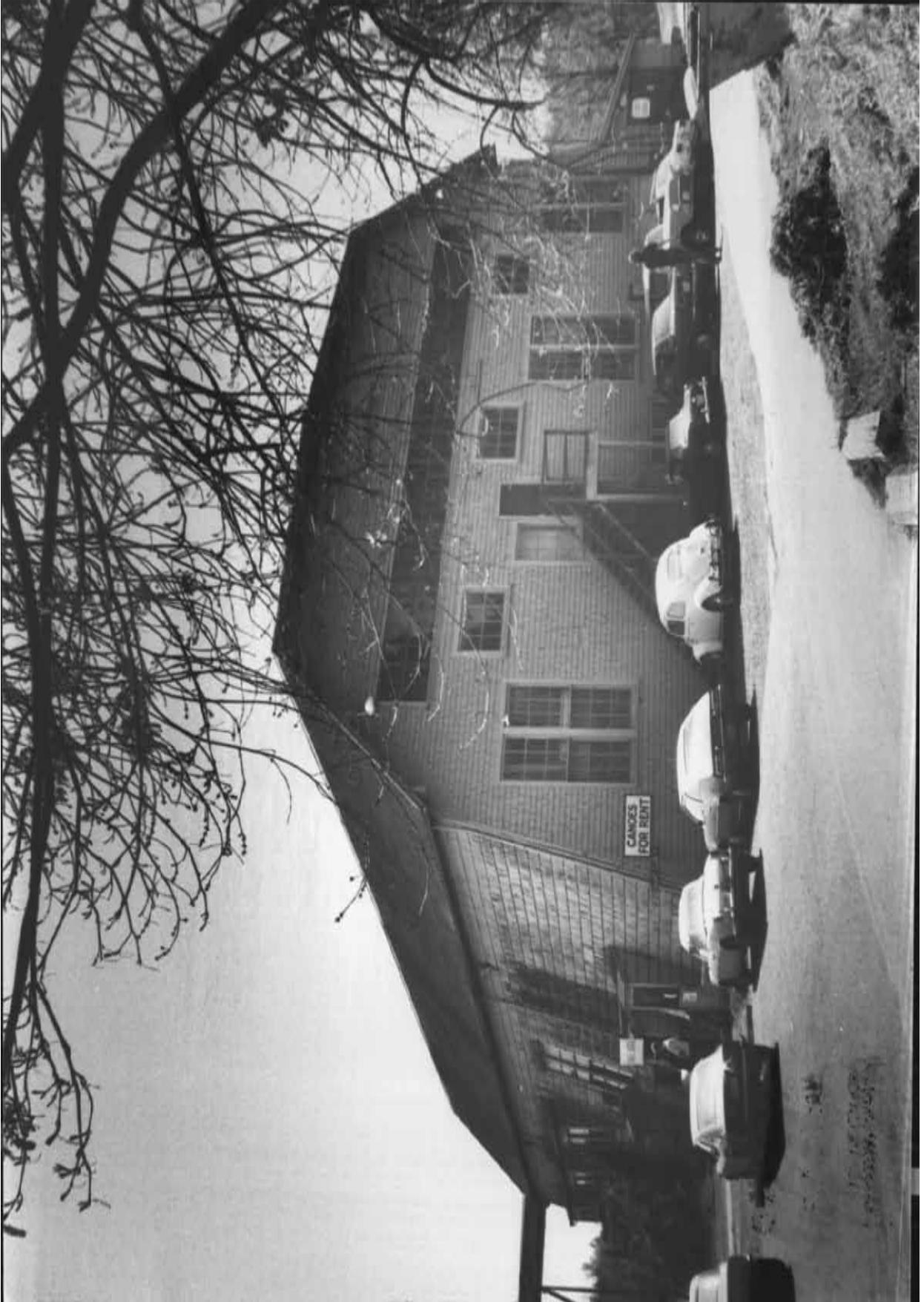
PHOTO NO.

Detail of hangar doors.



CANOE
FOR RENT











U. of W. SHELL HOUSE