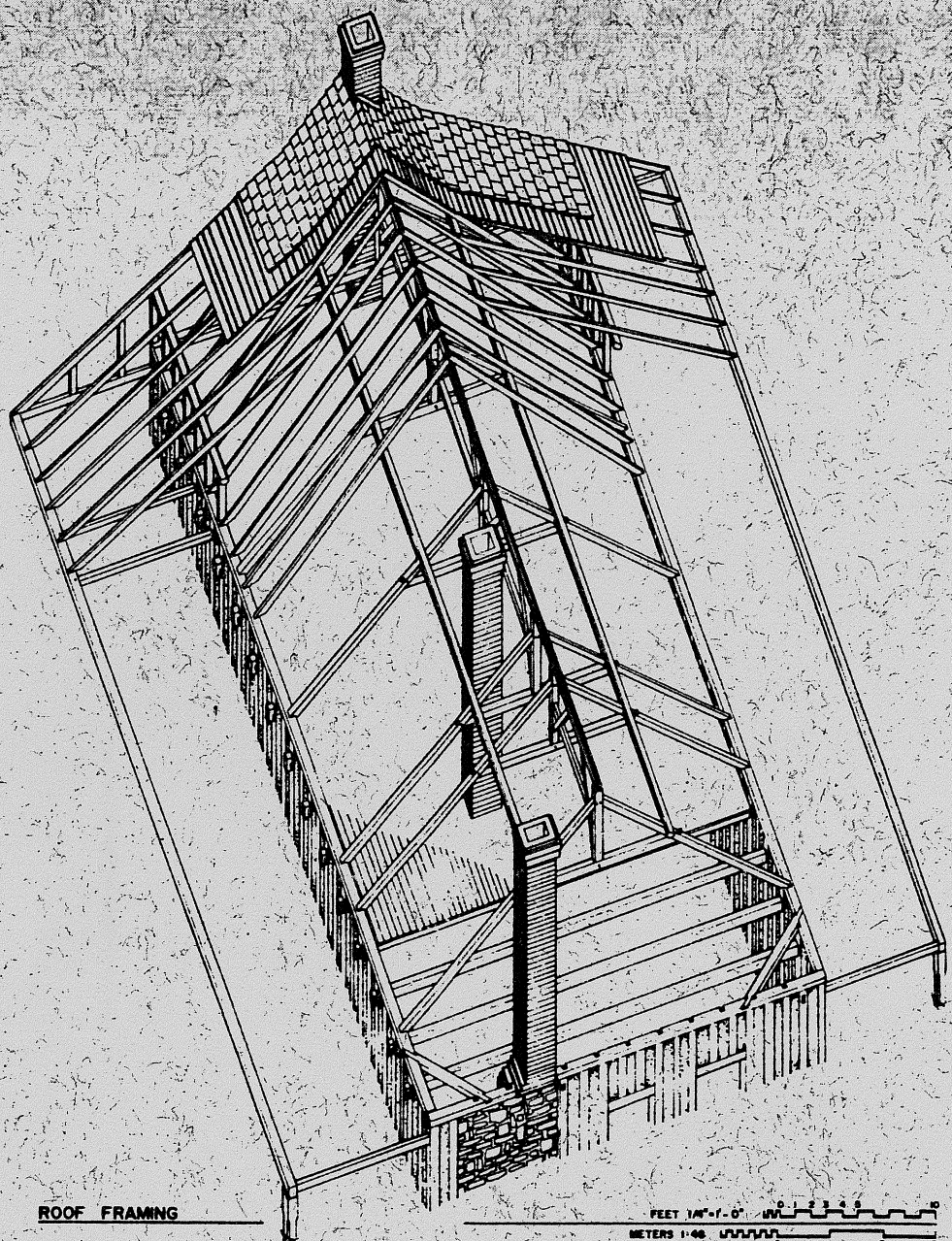
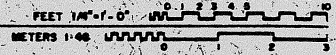


1037

\$2.00



ROOF FRAMING



MANUAL FOR EDITING HABS/HAER DOCUMENTATION

TABLE OF CONTENTS

I.	Summary Checklist of HABS/HAER Archival Requirements	Page 1
II.	Regional Contact	Page 2
III.	Archival Requirements	Page 3
IV.	Assigning HABS and HAER Numbers	Page 4
V.	Written Historical Documentation	Page 5
	A. HABS Short Format	Page 5
	B. HABS Outline and Narrative Format	Page 6
	C. Narrative Report	Page 17
VI.	Photographs	Page 19
	A. Cover Sheet	Page 19
	B. Labeling Photographs	Page 20
	C. Index to Photographs	Page 21
	D. Negatives	Page 25
	E. Photographic Mount Cards	Page 26
	F. Field Records	Page 27
	G. Measured Drawings	Page 27
	H. Photo-Data Sheet	Page 27

I. SUMMARY CHECKLIST OF HABS/HAER ARCHIVAL REQUIREMENTS

A. Cover Sheet: The cover sheet must be prepared using the archival mount card without slits provided by the National Park Service Regional Office. This card must be labeled as described on page 19.

B. Index to Photographs: The Index to Photographs must be typed on bond paper. The photographs should be arranged sequentially, from the most general view to the most detailed and exterior to interior. The words "facade" and "elevation" must not be used. Instead, "rear," "front," or "side" should be used. For a detailed discussion of the specific examples, see pages 20-24.

C. Photographs: Resin-Coated (R-C) paper is not acceptable. Each photograph is labeled on the back. Use a No. 1 (soft) pencil, and write on a hard surface so that the emulsion does not crack. The words "HABS No." or "HAER No." must be included on each photograph. For example: the photograph must be labeled "HABS No. CO-72-1" not "CO-72-1."

D. Negatives: Each negative must be labeled, with the appropriate HABS/HAER number, in the margin on the base (shiny) side of the negative. The negative is placed in the labeled archival sleeve. Type the appropriate HABS/HAER No. in the upper right-hand corner of the negative sleeve. The words "HABS No." or "HAER No." must be included on each negative. For example: the negative must be labeled "HABS No. CO-72-1" not "CO-72-1." For a specific example, see page 25.

E. Data Pages: The data pages must contain a title sheet. Each page of the written historical documentation must be labeled with the project name, HABS/HAER No., and Page No. in the upper right-hand corner of the page. For a specific example, see pages 12-16.

Please be aware that if the HABS/HAER project does not follow the guidelines, it will be returned for further editing.

II. ROCKY MOUNTAIN REGIONAL OFFICE CONTACT

All inquiries concerning photographs, written data, measured drawings, and transmittal requirements should be directed to the following address:

Historic American Buildings Survey/Historic American Engineering Record
National Park Service, Rocky Mountain Regional Office
Division of Cultural Resources
12795 West Alameda Parkway
P.O. Box 25287
Denver, Colorado 80225
(303) 969-2875

III. ARCHIVAL REQUIREMENTS

The function of HABS/HAER is threefold: 1) to document historically significant architectural and engineering sites; 2) to preserve this documentation; and 3) to make it available to scholars, professionals, and the public. The documentation produced by HABS/HAER is a permanent record, often the only remaining record of a site or structure, and comprises one of the largest collections of historic architectural and engineering records in the country. The documentation is stored in the Prints and Photographs Division of the Library of Congress.

There should be no smoking, eating, or drinking near items that are to become part of the collection.

Paper clips should be removed from drawings, photographs, and data pages. Paper clips will rust, tear the paper, or bend photographs in a short period of time. If it is necessary to retain a paper clip, a piece of bond paper should be placed between the clip and the pages. Paper clips should never be placed on photographs.

Pins, staples, rubber bands, or cellophane and plastic covers of all kinds should be removed. Rubber bands contain harmful chemicals and will deteriorate, stick to, and stain documents. Plastics tend to trap excess moisture and fungus next to documents and may adhere to photographic emulsions. Plastics (except archival plastics such as mylar) also contain harmful chemicals.

Paper (including photographic paper) deteriorates for two principal reasons: it is attacked by harmful substances in the environment, and its physical and chemical composition is such that it will deteriorate regardless of how it is stored. Most late-19th and 20th century papers are impermanent because they contain acid. Highly acidic papers include newsprint, yellow carbon copy paper, and black photo album paper; for example, photographs should not be placed next to black construction paper.

Ballpoint ink contains acidic oil which migrates. Ballpoint ink should never be used on photographs or papers. Carbon inks are acceptable. Soft (No. 1) pencil is the best choice for archival use and is permanent in spite of its tendency to smudge.

Sunlight is also very damaging, causing fading and discoloring. Therefore, material should not be left where it will be exposed to sunlight. Ideally, storage areas should be not more than 70 degrees F. and 50 percent relative humidity, with no ultraviolet light (i.e., sunlight or fluorescent light, unless filtered).

IV. ASSIGNING HABS AND HAER NUMBERS

All documentation must be labeled with a HABS or HAER number before being transmitted to the National Park Service Regional Office. HABS or HAER numbers are a means of identifying a site or structure. They also comprise the basis for the cataloging and filing system at the Library of Congress.

It is extremely important that the correct HABS or HAER number appear on all drawings, photographs, negatives, and written data.

All HABS and HAER numbers will be assigned through the National Park Service Regional Coordinator.

Allow 2-3 weeks to have HABS or HAER number assigned.

V. WRITTEN HISTORICAL DOCUMENTATION

Written documentation is an essential part of the program. Records submitted to the Library of Congress are not considered complete unless the written historical component is included. The historical documentation should be prepared to conform to one of three formats, depending on the nature and significance of the site or structure. In general, when the National Park Service stipulates the level of documentation necessary to mitigate an adverse effect on a resource, the kind of format for historical report will be stipulated as well.

When the HABS/HAER outline or narrative format is specified, the histories must be designed, conducted, or supervised by a Historian or Architectural Historian who meets the qualifications specified in 36 CFR Part 61:

History: The minimum professional qualifications in history are a graduate degree in history or closely related field; or a bachelor's degree in history or closely related field plus one of the following:

1. At least 2 years of full-time experience in research, writing, teaching, interpretation, or other demonstrable professional activity with an academic institution, historical organization or agency, museum, or other professional institution; or
2. Substantial contribution through research and publication to the body of scholarly knowledge in the field of history.

Architectural History: The minimum professional qualifications in architectural history are a graduate degree in architectural history, art history, historic preservation, or closely related field with coursework in American architectural history; or a bachelor's degree in architectural history, art history, historic preservation, or closely related field plus one of the following:

1. At least 2 years of full-time experience in research, writing, or teaching in American architectural history or restoration architecture with an academic institution, historical organization or agency, museum, or other professional institution; or
2. Substantial contribution through research and publication to the body of scholarly knowledge in the field of American architectural history.

If there are any questions regarding these qualifications, please contact the HABS/HAER Regional Coordinator at the previously cited address.

A. HABS Short Form

For many architectural resources, the HABS "short form" provides adequate information to supplement the photographic record. However, an agency or contractor should not use this form without consulting first with the National Park Service Rocky Mountain Regional Office. (The "short form" is not used for documenting engineering or industrial sites for HAER.) A copy of the short form follows this page.

United States Department of the Interior
NATIONAL PARK SERVICE
ROCKY MOUNTAIN REGION

HISTORIC AMERICAN BUILDINGS SURVEY

ARCHITECTURAL DATA FORM

STATE	COUNTY	TOWN OR VICINITY
HISTORIC NAME OF STRUCTURE (INCLUDE SOURCE FOR NAME)		HABS NO.
SECONDARY OR COMMON NAMES OF STRUCTURE		
COMPLETE ADDRESS (DESCRIBE LOCATION FOR RURAL SITES)		
DATE OF CONSTRUCTION (INCLUDE SOURCE)	ARCHITECT(S) (INCLUDE SOURCE)	
SIGNIFICANCE (ARCHITECTURAL AND HISTORICAL, INCLUDE ORIGINAL USE OF STRUCTURE)		
STYLE (IF APPROPRIATE)		
MATERIAL OF CONSTRUCTION (INCLUDE STRUCTURAL SYSTEMS)		
SHAPE AND DIMENSIONS OF STRUCTURE (SKETCHED FLOOR PLANS ON SEPARATE PAGES ARE ACCEPTABLE)		
EXTERIOR FEATURES OF NOTE		
INTERIOR FEATURES OF NOTE (DESCRIBE FLOOR PLANS, IF NOT SKETCHED)		
MAJOR ALTERATIONS AND ADDITIONS WITH DATES		
PRESENT CONDITION AND USE		
OTHER INFORMATION AS APPROPRIATE		
SOURCES OF INFORMATION (INCLUDE LISTING ON NATIONAL REGISTER, STATE REGISTERS, ETC.)		
COMPILER, AFFILIATION		DATE

B. HABS Outline and Narrative Formats

In general, historical and descriptive data for HABS projects are prepared in a standard outline format. This helps ensure that all important information is included and makes this information easily accessible to researchers. The format is meant to be flexible, so categories may be omitted or changed if appropriate. If a narrative form is specified by the Regional Office or is preferred by the researcher, the writer should take care to include all of the same information that is contained in the short form.

1. Documentation for Buildings and Structures

Historic Name

The historic name is the name used to identify the structure in the HABS/HAER collection. It should be used consistently as the title for all records. The historic name is defined as the name of the original owner of a house, or the original name or designated use of a public or commercial building. Occasionally, the recognized historic name of a house or estate is not the name of the original owner; for example, "Mount Vernon." If the original owner or use is unknown, the address qualified by a general designation should be used; for example, "107 North George Street (Commercial Building)." Structures are often known by a more recent name. In such case, the later name should be included in parentheses; for example, "Loughran Building (Bassin's Restaurant)." If a later owner was particularly prominent, the name may be hyphenated, as in "Riggs-Riley House." The source for the historic name (usually a deed, building permit, or tax records) must be noted in the historical information.

Location

A precise location is essential to the identification of a structure. Where possible, a numbered street or road address should be given. If the road has a number rather than a name, indicate whether it is a Federal, state, or county road. If a structure does not have a specific address, give the names of the nearest roads and/or geographic features and the distance of the structure from these locations. The city, county, and state are self-explanatory. Rural structures should be identified by the nearest town with a zip code in the same state and county, followed by "vicinity." Areas or districts within a city may be listed before the city name. Independent cities not in a county should be followed by the words "(Independent City)," enclosed in parentheses. The word "County" (or in Louisiana, "Parish") should always follow the county name to avoid confusion with the city name.

Present Use

Indicate both the present use and the intended use for the site, or the projected date of demolition or alteration.

Significance

This is one of the most important sections of the documentation. It should be a concise summation of the architectural (or engineering) and historical importance of the structure. "None" is unacceptable as an entry under the Statement of Significance. The Statement of Significance should be written with sensitivity to the individual merits of the structure within the context of its environment. Significance is based on unique architectural features, design by an important architect, the presence of innovative structural systems, or an important historic event or person associated with the site. Examples of less obvious, but equally important, factors that contribute to the significance of a structure may include an early demonstration of a style for an area, a local architect's interpretation of a national trend, contribution to the integrity of an historic streetscape, illustration of a local style which is rapidly disappearing, or association with a trend or event in local history.

Date of Erection

Be as complete as possible. Mention sources for all dates cited. If found, give dates of plans, building permits, abrupt changes in tax assessments, cornerstone laying ceremonies, completion of dedication dates, existence of a date stone, etc. If the date is unknown, state "unknown." If no exact date can be determined, indicate by the word "circa," and state the source or the reasons for making the estimate (style, circumstantial evidence from tax records, local oral history source, etc).

Original and Subsequent Owners

(Outline and Narrative Formats Only)

This section refers to a complete chain of title for the building. In many cases, it will be a statement of the site's relationship to local history. Uses of the building should be traced, and this should be integrated with the history of ownership and alterations as much as possible. Information on tenants should be included if appropriate. Suggested areas of investigation include: city directories, newspaper indexes, obituary files, personal reminiscences, county histories, tax assessment records, etc.

Historic Events and Persons Associated with Structure

This section is meant to include a general history of the building. In many cases, it will be a statement of the site's relationship to local history. Uses of the building should be traced, and this should be integrated with the history of ownership and alterations as much as possible. Information on tenants should be included if appropriate. Suggested areas of investigation include: city directories, newspaper indexes, obituary files, personal reminiscences, county histories, tax assessment records, etc.

Architect or Engineer

Information should be included stating where the architect, engineer, or firm practiced, and placing the structure in the firm or individual's work.

Architectural Information

All terminology used in this section should be widely understood and defined in Webster's New International Dictionary (Unabridged). This section should focus on information not readily apparent in photographs or drawings, such as materials of construction or complex architectural details.

Exterior and Interior Features of Note (Short Form Only)

This section should include prominent elements that are particularly important to the character of the structure, as well as features that are not readily apparent in photographs. In the case of engineering or industrial structures, this would include extant machinery or structural systems.

Floor Plans

Sketch plans may be substituted for verbal description of floor plans in both formats. Sketch plans should be simple, straightforward, one-line drawings no larger than 8 1/2 by 11 inches in size. They can be freehand or hardline, on a blank sheet or on graph paper. Generally, they are not drawn to scale, although elements should be drawn in correct proportion to one another. Labels, north arrow, overall dimensions, and the date sketched are required.

Bibliography and References

Since HABS/HAER data are a permanent record of the built environment and a research tool, a complete bibliographic section is essential. References should be cited in the outline, narrative, or on the short form, using the style of footnotes specified in Kate Turabian's A Manual for Writers of Term Papers, Theses, and Dissertations. In addition, a full bibliographic addendum sheet will probably be necessary. Consult Turabian's Manual for Writers for format. If a source is not widely available, mention where it may be found. Bibliographic citations which include the name and location of the collection should be listed for all historic views and original drawings. When possible, annotate references by indicating briefly what information was obtained from each.

Project Information

This should include, as appropriate: the Federal agency involved, the name of the project causing the alteration or demolition, the names and affiliations of all who participated in preparing the documentation, and the dates the records were prepared. Include this information in the "Other Information" section of the short form or on a separate sheet.

2. Outline Format

NAME OF STRUCTURE (Secondary Name)

HABS No:

Location:

Present Owner: This heading may be combined to Present Owner and Occupant if they are one and the same. Include address of owner if it is different from address of structure.

Present Use:

Significance:

PART I. HISTORICAL INFORMATION

A. Physical History:

1. Date(s) of erection
2. Architect
3. Original and subsequent owners
4. Builders, contractors, suppliers
5. Original plans and construction
6. Alterations and additions

Double space
between outline
headings, single
space text.

B. Historical Context:

Omit any headings
or part of a
heading that is
not appropriate,
and renumber
other outline
headings as needed.

PART II. ARCHITECTURAL INFORMATION

A. General Statement:

1. Architectural character
2. Condition of fabric

B. Description of Exterior:

1. Overall dimensions
2. Foundations
3. Walls
4. Structural system, framing
5. Porches, stoops, balconies, bulkheads

6. Chimneys
 7. Openings
 - a. Doorways and doors
 - b. Windows and shutters
 8. Roof
 - a. Shape, covering
 - b. Cornice, eaves
 - c. Dormers, cupolas, towers
- C. Description of Interior:
1. Floor plans
 - a. Describe floors
 2. Stairways'
 3. Flooring
 4. Wall and ceiling finishes
 5. Openings
 - a. Doorways and doors
 - b. Windows
 6. Decorative features and trim
 7. Hardware
 8. Mechanical equipment
 - a. Heating, air conditioning, ventilation
 - b. Lighting
 - c. Plumbing
- D. Site:
1. General setting and orientation
 2. Historic landscape design
 3. Outbuildings

PART III. SOURCES OF INFORMATION

- A. Original Architectural Drawings:
- B. Early Views:
- C. Interviews:
- D. Bibliography:
 - 1. Primary and unpublished sources
 - 2. Secondary and published sources
- E. Likely Sources not yet Investigated:
- F. Supplemental Material:

Prepared by: Name
Title
Organization
Date

3. Example of Outline Format

HOLBROOK BUILDING

HABS No. CA-109

Location: 58 Sutter Street
Assessor's Block 289, Lot 4, San Francisco

Present Owner: Moraine Investment

Present Occupant: Vacant

Present Use: Vacant

Statement of
Significance:

The Holbrook Building is a significant early post-fire office building designed by a major San Francisco architectural firm. It is distinguished by the integrity of its facade and contribution to the streetscape.

The Holbrook Building was rated "3" in Splendid Survivors, the survey of historic buildings by the Foundation for San Francisco's Architectural Heritage. This designation implies that the building is eligible for the National Register of Historic Places. It also is rated "3" on a scale of 0-5 for worthwhile buildings in the San Francisco Planning Department's Architectural Quality Survey. The survey notes the quality of its cornice and top story as a contribution to the streetscape. Also recognized is its role as a transition in scale between the neighboring Anglo and London Paris National Bank Building and nearby highrise structures.

PART I. HISTORICAL INFORMATION

Date of Erection: 1912

Architect: MacDonald & Applegarth

Historical Narrative:

The Holbrook Building was constructed in 1912 for Charles H. Holbrook, an early San Francisco business pioneer and financial investor. The architect was one of the most prominent post-fire San Francisco firms, MacDonald & Applegarth. General contractor for the building was Williams Brothers & Henderson. Hicks & Polte served as the electrical contractor.

The Holbrook Building has served a wide variety of tenants. Notable among these have been the offices of the Anglo and London Paris National Bank (The Crocker Anglo Bank) and the Bank of Tokyo.

Much of the building's historical significance is derived from its association with its builder, Charles Holbrook, and the architects, Kenneth MacDonald and George Applegarth.

Biographical Information - Charles Holbrook

The Holbrook Building was built for Charles H. Holbrook (1830-1925), an early San Francisco business pioneer and financial investor. Holbrook was born in New Hampshire and migrated to California where he participated in the 1850 Gold Rush. He joined the firm of J.D. Lord & Co. in Sacramento which manufactured stoves and metal piping. In 1857, he moved to San Francisco as a partner in the firm of Holbrook, Merrill & Stetson (a reorganization of J.D. Lord & Co.). Located at 6th and Townsend, the company produced stoves, piping, plumbing materials, and other non-structural metal work used in rebuilding structures after the 1906 fire. In his later years Holbrook was listed as an investment financier. He also attracted some public notoriety as a long-time survivor of the Gold Rush era.

Biographical Information - George A. Applegarth

George Adrian Applegarth (1877-1972) was born in Oakland, California. His architectural career began with an apprenticeship with his uncle, George Sanders of Wright & Sanders, a San Francisco architectural firm. Encouraged by architect Bernard Maybeck, Applegarth attended the Ecole des Beaux Arts from 1902 to 1906. Returning to San Francisco, he formed a partnership with Kenneth MacDonald, Jr., whom he had known at the Beaux Arts. Lasting for 6 years, this partnership became one of the most important architectural firms in the reconstruction period after the 1906 earthquake and fire. After this time, it appears that Applegarth practiced alone. Nearly all of his commissions were in San Francisco or the Bay area.

Applegarth is known for the range of works which he skillfully executed. Innovative commercial structures such as the Sachs Building (132-140 Geary Street) and the Holbrook Building show his skill at organizing large masonry and glass facades. In contrast, grand residential structures in Pacific Heights and Presidio Heights show his ability to utilize classical forms in a practical manner.

The work for which Applegarth is most noted is the California Palace of the Legion of Honor. Later notable works include the Moraga Town Plan and the Downtown Center Parking Garage (Mason and O'Farrell Streets).

The Eastern Outfitting Company (1019-1021 Market Street) and the Forrest Building (1053 Market Street) are the finest surviving examples of the joint efforts of Applegarth and MacDonald. Most of their work was commercial and included automobile facilities, office buildings, and commercial lofts, few of which remain.

Biographical Information - Kenneth MacDonald, Jr.

Kenneth MacDonald, Jr. (1881-1940) was born in Louisville, Kentucky. He received a degree in Civil Engineering from Vanderbilt University in 1900 and went on to the University of Pennsylvania where he graduated in architecture. He then studied at the Ecole des Beaux Arts under Jean Pascal. Upon returning to the United States he entered the office of Richard Hunt and Sons. MacDonald came to San Francisco in 1906 and entered into practice with George Applegarth. The firm was known as MacDonald & Applegarth, with offices in the Call Building. In addition to his association with Applegarth, he also worked with George Kelham and Maurice Couchet. Early biographical accounts list at least 72 buildings to his credit in San Francisco, with others in Los Angeles and other parts of California.

PART II. ARCHITECTURAL INFORMATION

A. General Information

1. Architectural Merit and Interest: The Holbrook Building is of architectural merit based on the integrity of its facade, particularly its richly ornamented cornice level.
2. Condition of Fabric: Good (to be demolished)
3. Summary Description: The Holbrook Building is a seven-story office building, with a basement and large central lightwell. Its facade is organized by nine regular bays and three horizontal divisions including a street level with mezzanine, a four-story shaft and a one-story cornice level. The street level facade originally had full double-bay glazed storefronts with square corner piers framing the central entranceway. This level has been remodeled into a series of recessed glazed storefronts with square corner piers framing the central entranceway. The single Ionic distyle-in-antis of the entranceway has been removed. The mezzanine level above is articulated by squat pilasters with stylized fluting. It was crowned by an anthemion cornice which was removed in 1975. At the shaft portion of the building, each window of the floor level is separated from the one above by a paneled spandrel with sections and an urn.

In general, the integrity of the Holbrook Building remains intact with the exception of street level remodeling (1948 and later), the removal of the minor mezzanine cornice (1975), and the addition of the fire escape to the east bay of the facade (1960).

B. Detailed Description of Exterior

1. Foundation: Reinforced concrete
2. Wall Construction: The exterior walls are reinforced concrete finished in cement plaster with cast concrete ornament. The interior light court is covered with white glazed ceramic tile.

3. Structural Systems: Reinforced concrete with reinforced concrete walls and floors
4. Porches, Stoops, Etc.: Not applicable
5. Openings, Doorways, and Windows: A central bay entrance is framed by square corner piers. The original glass-paneled entrance doors have been replaced with new doors of glass and aluminum. Windows are double-hung single pane wood sash set in a flat wall plane. On the south elevation, they are paired in each bay and at each floor level. Each pair is surrounded by a classical molding and divided by a colonnette. The cornice level windows at the seventh-story windows are topped by single pane fanlights. Three light courts provide additional interior light. The central light court, measuring 38 by 39 feet, extends from the second floor to the top of the building. Skylights on the second floor roof allow light to penetrate to the second floor. The light courts on the east and west walls are 6 feet deep and 36 feet long. They extend from the basement to the top of the building.
6. Roof - Shape and Covering: The roof is flat with a single mechanical penthouse.

C. Detailed Description of Interior

1. Floor Plans: The entrance lobby is a small square space paneled in marble. Its only decoration is provided by the brass mailbox and the marble stairway with its brass balustrade. The remaining first-floor space on either side of the lobby was used for commercial space. The six office levels have a donut shape plan with the lightwell in the middle surrounded by offices, a central corridor, and offices along the outside wall with exterior windows. The original plan contained 250 separate office spaces ranging in size from approximately 200 to 80 square feet. The original interior floor plan has been modified to varying degrees on each floor but many of the original walls remain. The basement housed mechanical equipment, storage space, and a boiler room with vaults.
2. Stairways: The main stairway at the first floor is of curved white marble with a bronze and oak handrail. The stair is open through the building although above the first floor it is simpler in design with marble treads and risers and cast metal balustrades with posts. Two minor enclosed stairways are located in the rear half of the building.
3. Flooring: Originally the individual office floors were covered with heavy "battleship" linoleum. Today most of the floors have been covered with new asphalt tile or carpeting. All corridor floors are of rectangular marble tile which is in excellent condition.
4. Wall and Ceiling Finishes: The lobby is paneled in Tavernelle marble. Corridor walls on the office levels are wainscoted with California Columbia marble with a smooth plaster finish above. Ceilings in many of the offices and in the lobby have been lowered and covered with acoustical tile.

5. Doorways, Doors, and Windows: A distinctive feature of the lobby is the arched doorway and oak door covered with a brass sheathing in a rosette design. On the office levels many of the heavy oak doors with single pane hammered glass panels still exist. Operable transom windows above the doors and fixed transom level windows along the upper floor hallways provide additional light for the hallways.
6. Interior Trim: Marble pilasters provide decoration in the lobby. On the office floors, oak trim is used in the hallways and individual offices.
7. Hardware: The original entrance doors and elevator grillwork of ornamental bronze at the lobby have been replaced. The bronze mail chute and box and building directory are intact. Each office was fitted with wooden wardrobes and enclosed washbasins supplying both hot and cold water. The individual oak office doors have bronze locks and knobs.
8. Mechanical and Electrical Equipment: The building used steam heat with individually controlled radiators in each room. It has an electric lighting system. Few of the original fixtures remain. In most public spaces the lighting was converted to fluorescent lighting in conjunction with lowering the ceilings. Three manually operated Otis elevators originally served the building, but two were replaced in 1955 with automatic Westinghouse equipment. Four sidewalks to basement service elevators remain.

D. Site and Surroundings

1. Orientation and General Setting: The Holbrook Building faces south on Sutter Street. On the east is the Anglo and London Paris National Bank Building, to the north is the Standard Oil Building. Together, these buildings make up a cluster of distinctive structures in the downtown San Francisco financial district.

PART III. SOURCES OF PROJECT INFORMATION

Plans call for the demolition of the Holbrook Building in Fall 1981. This historical documentation of the Holbrook Building was completed by the firm of Charles Hall Page & Associates, Inc., in September 1981. It is one portion of the historical/architectural recordation of the Holbrook Building prepared for Citicorp that also includes photodocumentation and documentation of existing original drawings. The recordation conforms with the standards of the Historic American Buildings Survey, U.S. Department of the Interior.

Bibliography:

The Architect and Engineer. May 1913; July 1923; January 1938.

The Foundation for San Francisco's Architectural Heritage. Building and Architect files.

San Francisco City Planning Commission. "One Sansome Building Environmental Impact Report," April 1981.

Jefferson Street Bridge
Spanning East Branch of Wears Creek
South of U.S. Highway 50/63
City of Jefferson
Cole County
Missouri

HAER No. MO-30

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Rocky Mountain Regional Office
Department of the Interior
P.O. Box 25287
Denver, Colorado 80225

C. Narrative Report

For engineering and industrial sites, the Historic American Engineering Record requires that a historical narrative be submitted with the graphic documentation to ensure that future researchers will be able to identify with certainty the name, location, and technological nature of resources within the HABS/HAER collection. The length and scope of historical reports will vary considerably depending on the significance of the site and the resources available. The expertise required by the person preparing the report will also vary from site to site. While most projects can be documented in a report of three to seven pages by someone with only general knowledge of the subject area, a site of great significance will require that expertise of a specialist with considerable knowledge of the subject and may require a much longer report, perhaps 100 pages or more.

Although the content and length of reports will vary, certain basic facts should always be covered:

1. Name (common and historic if both are known)
2. Location
3. Description of structures or ruins on the site
4. Dates of construction, alterations, additions
5. Engineers and/or architects, if known
6. Important events in the development of the site
7. Historical significance of the site to the State or region, or if appropriate, national significance

More detailed information should be included according to the specific requirements of each site. A factory, for example, would also require:

1. An explanation of the industrial process
2. A description of any machinery (including function, date of fabrication, and manufacturer, if known)
3. A description of the power source and power transmission system

Or, for example, a bridge would require:

1. Number and length of spans
2. General dimensions of the structure
3. General design elements (for example, truss type and style of connections)
4. Materials used in various parts of the structure

5. Role of the bridge in the local or regional transportation system

The manuscript should be double-spaced on one side only of 8 1/2-by-11-inch, white bond paper. It must be typewritten and should have 1-inch margins. Relevant illustrative materials should be keyed directly to the text whenever possible. For example, if you are discussing the arrangement of textile machinery on the second floor of a mill, use the following type of notation:

"(see photos 9 through 11, and drawing on sheet 2 of 5)"

A bibliography of works cited should follow the notes and be double-spaced. However, if the report contains good footnotes that refer to all sources used, a bibliography is not required.

The title page includes the following information in the format shown:

Location:

Date of Construction, Alterations:

Present Owner:

Present Use:

Significance:

Historian and Date:

The sample report should be used to gain a general idea of the format and style of a report and should not be considered as either maximum or minimum as far as length, content, depth of research, etc.

HISTORIC AMERICAN ENGINEERING RECORD
BROADWAY BRIDGE (Twentieth Avenue North Bridge)

I. INTRODUCTION

Location: Spanning the Mississippi River at Broadway Street,
Minneapolis, Minnesota

Ouad: Minneapolis South

UTM: A 15/4982640/478420
B 15/4982660/478200

Date of Construction: 1887-1888 (Modified in 1914 and 1950-1951)

Present Owner: Hennepin County
Hennepin County Government Center
Minneapolis, Minnesota

Present Use: Vehicular and pedestrian bridge to be replaced by a
new vehicular and pedestrian bridge. Projected date
of removal is spring 1985. One of the four spans is
to be retained and serve as a vehicular and pedestrian
bridge at a site located approximately one mile down
river.

Significance: The Broadway Bridge was a four-span, wrought iron and
steel, high through Pratt truss and was one of two
known remaining decorative truss bridges in Minnesota.
The bridge was fabricated by the King Iron and Bridge
Company of Cleveland, Ohio.

Historian: Bill Jensen, Van Doren-Hazard-Stallings, December 1984

II. HISTORY

A. NEED FOR THE BRIDGE

"Whenever a few men get together in a doggery and decide they want a bridge, they get it" (Col. W.S. King, Minneapolis businessman; Minneapolis Journal, 31 January 1887).

Between the years 1880 and 1895, a period regarded by some as the "Boom Era" or "Golden Age" of Minneapolis, the city's population more than quadrupled reaching 192,833.[1] The initial development of Minneapolis occurred along the Mississippi River at Saint Anthony Falls which supplied the water power needs of the early lumber industry. By the mid-1880s, expansion of the grain milling industry near the falls caused the northward migration of the lumber companies along the low river banks. In 1882, the bridging of the Mississippi River at Plymouth Avenue, which lay 1/2 mile north of the falls, stimulated commercial activity (especially sawmills and lumber yards) in the area and created demand for a new bridge at Twentieth Avenue North, 1/2 mile upstream from the Plymouth Bridge.[2] The Twentieth Avenue North Bridge represented a middle stage of the "Boom Era"; this era, by 1895, generated the construction of seven traffic bridges and six railroad bridges.[3]

The first petition to the Minneapolis City Council for a bridge at Twentieth Avenue North was presented by citizens from North and Northeast Minneapolis on 3 September 1884.[4] By October of 1886, the city council was faced with requests for bridges spanning the Mississippi at Twentieth Avenue North, Franklin Avenue, Lake Street, and Sixth Avenue South. At this time, four highway bridges crossed the Mississippi in Minneapolis; these were the suspension bridge at Hennepin Avenue, the Plymouth Bridge, the Tenth Avenue South Bridge and the Washington Avenue Bridge.[5] The suspension bridge at Hennepin Avenue was in the process of being replaced by a steel arch bridge on which construction had recently begun. In November 1886, editorials in the

Minneapolis Tribune and the Minneapolis Journal (two of the city's daily newspapers) took note of the rising public pressure; leading the Tribune to state on 28 November that "There must be [a bridge] at Twentieth Avenue North or in that neighborhood. The judicious building of bridges increases the prosperity of the city, adds to the taxable wealth by its effects upon property, and amounts simply to an excellent public investment."

In December of 1886, the Minneapolis City Council instructed City Engineer, Andrew Rinker, to prepare an estimate of materials and costs for a pedestrian and vehicular iron truss bridge to be located at Twentieth Avenue North. His estimate, including costs for substruction (substructure) and superstructure, was submitted 14 December 1886 to the Committee on Roads and Bridges (Appendix A). After a discussion of the cost difference between 36, 38, and 40-foot roadway widths (a 38-foot roadway would increase the cost about \$8,000 and a 40-foot roadway about \$10,000), the committee recommended that the city council approve the 36-foot wide bridge with the 36-foot wide roadway.

On 15 December, the Tribune noted "The two extremes of the city [represented by Twentieth Avenue and Franklin Avenue] demanded bridges" and that while North Minneapolis would look out for its own interests, the bridge at Franklin Avenue could be threatened by a demand for a bridge located at Sixth Avenue South near the milling district in the center of the city.

After endorsing the committee's recommendation on the 16th, the city council directed the Committee on Legislation to prepare a bill for passage by the State Legislature authorizing the issue of \$100,000 in municipal bonds for bridge construction. The City of Minneapolis was limited to 5 percent indebtedness, and bond issues were authorized by the Legislature.

Andrew Rinker, in the 1 January 1887 Tribune, stated "In 1887, chances are that a very large amount of bridging will be done in addition to the

steel arch. There are at least three important bridge projects which will take shape during the present month; Sixth Avenue South, Twentieth Avenue North and Franklin Avenue."

Construction of the Franklin Avenue Bridge and Twentieth Avenue North Bridge was also approved, and a bill authorizing bonds for both structures was sent to the legislature in early January where it was quickly approved and signed by the governor. The Tribune wrote on the 14th that "This will settle the bridge question for one Legislature at least." It did not settle the question for the city council and for opponents of the bridges.

Three bridges were to have bonds issued at the same time for a total of \$390,000. These were Twentieth Avenue North (\$100,000), Franklin Avenue (\$110,000), and steel arch (\$180,000).

The city council authorized Rinker to advertise for bids on the substructure of the Twentieth Avenue Bridge and for the superstructure of the steel arch on 13 January. On 18 January, opponents of the Twentieth Avenue and Franklin Avenue bridges, led by Col. W.S. King and the Board of Trade (a group of prominent Minneapolis businessmen who were urging the construction of a bridge at Sixth Avenue), began what appeared to be an action to delay the two bridges by requesting that the Tenth Avenue Bridge be repaired before any new bridges were built.[6] Mayor Albert Ames lent his support to the group at least indirectly by saying "There was no question but what the bridges were important and would add much to the city"; but he felt that the laying of watermains and their assessment was more important.[7] The stated concern of the mayor and the Board of Trade was that the proposed projects by city departments would not stay within the 5 percent limit of indebtedness.

In spite of the growing controversy, the city council authorized the proposals for municipal bonds and on 21 January awarded the contract for the substructure of the Twentieth Avenue Bridge. The Board of Trade's primary effect seemed to have been arousal of the city council and the

citizens of North and South Minneapolis against the board. On 25 January, the Tribune took the middle ground in stating that "The city's financial situation is goodif [it is] necessary to curtail, don't build but one bridge this year besides the steel arch." The disputes about the bridges brought a letter to the Tribune that provided a description of the need for and the locale of the Twentieth Avenue North Bridge.

To the Editor of the Tribune,

Is there a bridge needed at Twentieth Avenue North? Col. King says "No"; the Board of Trade says "No." The city council before which the matter has been for two years says "Yes," with but one dissenting vote. If the gentlemen who oppose it knew the situation so thoroughly as do the residents of that section and the aldermen, I think they too would vote "Yes" with them. From Plymouth or Thirteenth Avenue North, the river bank is now pretty well lined with mills to Thirty-sixth Avenue North, or 24 blocks. This is nearly two miles. The largest sawmill in the state, and one of the largest in the Northwest, is now going in above the proposed bridge. Back of the manufactories lies in Highland Park, Forest Heights, Woodland and Fairmont Parks, Silver Lake and in other additions a large and rapidly growing population. On the east side of the river lies one as large if not larger, while numerous manufactories line the banks. The new bridge will form a direct highway between the two populous sections of the city and develop an important suburban business center along the whole length of the avenue. Not only this, but it will afford all the sawmills an opportunity to pile their lumber on the east side, which they will be compelled to do for want of room, owing to the rapid growth of the third ward. Again, it will furnish an outlet for the extensive stone quarries on the east side, and relieve to a large extent the Plymouth Avenue and suspension bridges from this travel. It will give the county trade a nearer and more direct route into the city and what is of more importance, afford Mr. Lowry an opportunity to connect his street car system and the North, East, and West side—a matter, which I understand he stands ready to do

as soon as the bridge is completed. It may be a matter of surprise to Col. W.S. King to learn that a three inch white oak plank is worn out in 18 months and has to be replaced on the Plymouth Avenue Bridge. I prophesy travel nearly as great over the Twentieth Avenue North Bridge when completed. With the Franklin Avenue Bridge I have nothing to do, but I imagine that ten persons will use the bridge on Twentieth Avenue North to where one will use it on Franklin Avenue South.

"North Side"[8]

At the February 4 city council meeting, the protests of the Board of Trade were ignored in a manner that offended the Tribune editorial writers. The result was that both the Tribune and the board endorsed the bridge at Twentieth Avenue while questioning the financial advisability of the one at Franklin Avenue. With one problem solved, the city council created another by instructing the city engineer to survey and make plans for the extension of Broadway Street from Main Street to Thirteenth Avenue Northeast, the eastern terminus of the bridge, "in order to have something definite for objections." The objections were not long in arriving. By the middle of March, the city council had abandoned the extension of Broadway after protests from the landowners in the area. The extension was fought frequently during the next three decades.

The financial problems which opponents of the bridges feared were at least partly realized by mid-summer of 1887. The Tribune reported on 30 July that the city council had discussed how to pull through the present financial stress caused by the "extravagant issuances of bonds for bridges" and the "foolish waste of money in day labor and eight hour sentimentalism." Even though these problems were to affect the financing of the Franklin Avenue Bridge, they apparently had no affect on the construction of the Twentieth Avenue North Bridge.

B. CONSTRUCTION CHRONOLOGY

A notice to contractors for bids for construction of the substructure of the Twentieth Avenue North Bridge was published in the 9 January 1887 edition of the Minneapolis Tribune. Four proposals were received on 21 January, and the contract was awarded to Arthur McMullen. McMullen, submitter of the lowest bid, proposed to furnish Mankato stone for \$10.50 a yard, granite masonry for \$24.50 a yard, and to do the excavating for \$1.50 a cubic yard.[9] The bids were based on plans and specifications provided by the city engineer.

The notice to contractors requesting bids for the superstructure was issued on 15 February 1887, and bids were to be based on specifications supplied by the city engineer. Twelve bidders submitted proposals on 8 March. None of the bids was within \$14,000 of Rinker's \$85,000 estimate.[10] The bids were rejected, and the project was subsequently rebid on 17 March. The 11 companies submitting bids for the superstructure included several well known bridge builders: the Shiffler Bridge Company, Pittsburgh, Pennsylvania; the Wrought Iron Bridge Company, Canton, Ohio; and the King Iron Bridge and Manufacturing Company, Cleveland, Ohio. A list of companies and their proposals appears in Appendix B. Because of the differences in styles and prices between the proposals, they were referred to Andrew Rinker for his recommendation. The Morse Bridge Company was the low bidder and on 25 March, an article in the Minneapolis Journal reported that "If their contract was in accordance with the specifications, they will probably be the successful competitors; though it is hinted that a Minneapolis man has a good chance to get the contract." Instead, on 25 March, the contract for supervision and construction was awarded to the King Iron Bridge and Manufacturing Company of Cleveland, Ohio.

Work on the piers must have begun soon after the award of the substructure contract. The Tribune noted on 15 March "Work on the Twentieth Avenue North Bridge is progressing rapidly. Pier No. 1 is almost finished, and there are two courses of masonry in Pier No. 2.

Masonry has begun on Pier No. 3, and the foundation is almost laid for the east abutment." During the winter, the Mississippi was frozen over, and the builders apparently utilized this to ease construction. Reports in the Minneapolis newspapers indicate that the ice was still firm and unbroken in mid-April.

On 15 May 1887, the Tribune observed "The masonry work on the steel arch and the Twentieth Avenue North bridges will be completed soon." The approval of the working plans of the Twentieth Avenue North Bridge was noted by the Tribune on the 4th of June.

Responding to a possible delay in the delivery of iron and steel for the bridge, the Tribune, in a 3 August editorial titled "The Iron and Steel Industries," said that even though "contracts for the superstructure of the three [bridges] were let a long time ago; none of the contracts for the steel and iron will be filled for many weeks from the date fixed by contract for delivery." This delay was blamed on a high demand for iron and steel in the United States. Nevertheless, the same paper was to report on the 19th of August that "The iron for the Twentieth Avenue North Bridge which by terms of the contract is to be delivered before September 15th is according to the advice from Cleveland, almost ready for shipment" and on the 9th of September, that "The Minneapolis inspecting engineer at Pittsburgh reports that 16 cars of material for the Twentieth Avenue North Bridge will soon arrive in Minneapolis." The inspecting engineer was probably G.W. Ferris who was in Pittsburgh to inspect steel for the steel arch bridge.[11]

The date of arrival of the iron in Minneapolis and the beginning of construction of the trusses was not found in the extant copies of the Tribune and Journal. After the iron arrived, the trusses were assembled from prefabricated parts and then put in place. The Tribune wrote on 15 November "The second span of the Twentieth Avenue North Bridge was swung yesterday morning. The other two spans will be put in by the middle of next month." Also noted on the 19th was that material for the bridge, including 1,577,000 pounds of iron, had arrived and that the structure

was fast approaching completion. That the last span would be swung on the 26th of November was duly mentioned by the paper. November also saw the publication of the notice to contractors for proposals for paving the bridge with cedar blocks based on specifications provided by the city engineer.

The paving contract for the bridge was awarded to G.E. Whittier who was the lowest bidder of the seven firms submitting proposals on 1 December. He proposed to construct the roadway of cedar blocks over Douglas fir planks supported by stringers and floor beams with pine planking at \$.88 per square yard.[12] The grading of the approaches was carried out by the City of Minneapolis.[13]

The Tribune reported that the iron in the Twentieth Avenue North Bridge would all be in place on the 23rd of December. On 4 January 1888, the Tribune stated that the bridge was finished with the exception of the paving which would be done in a few days. This assessment was confirmed by the Minneapolis Chronicle (a weekly newspaper published in North Minneapolis) in an article published on 7 January. The Chronicle concluded that the west end of the bridge would require 10 to 12 feet of fill and that the cold weather was slowing the work. The Chronicle went on to say that "The lack of a bridge is not felt very perceptibly...as good crossing is afforded by the ice." On 21 January, the Chronicle said that the filling of the approaches was progressing rapidly in spite of the difficulties of moving frozen earth at temperatures of "40 to 50 degrees below zero."

An opening date for the Twentieth Avenue North Bridge has not been found. On 15 February 1888, the Tribune observed that while the approaches to the bridge were not quite completed, they were far enough advanced so that the bridge was open to travel. The Chronicle, on 31 March, reported "There is a good deal of travel over the new bridge at Twentieth Avenue North."

C. LOCATION AND THE SUBSEQUENT NAME CHANGE

When completed, the Twentieth Avenue North Bridge spanned the Mississippi River connecting Twentieth Avenue North on the west bank with Thirteenth Avenue Northeast on the east bank (BB-Drawing 1). As mentioned above, the immediate vicinity of the bridge contained a number of activities relating to the lumber industry. An 1892 atlas showed the locations of planing mills, sawmills, iron works, and a boiler works almost all of which were located on the west side of the river. The east bank of the river, south of the bridge, was called out as a wharf. The atlas also indicated the extensive system of railroad tracks which were located within 1/4 mile of the west end of the bridge.[14]

The date of resolution of the controversy surrounding the extension of Broadway from Main Street to the east end of the bridge was not determined. Maps located in the Annual Report of the City Engineer showed Broadway as not extended in 1919 and as extended in 1920. The name of Twentieth Avenue North was changed to West Broadway which prompted the redesignation of the the bridge from the Twentieth Avenue North Bridge to the Broadway Bridge. The Broadway Bridge was the designation employed by the owner, Hennepin County.

III THE BRIDGE

A. DESCRIPTION

The piers and abutments were constructed of Mankato limestone and had granite blocks located under the bearing points of the trusses. Icebreaker edges were constructed as part of the upriver side of the piers. These edges were faced with granite and were sharply pointed to facilitate the movement of ice floes past the piers.

The Broadway Bridge consisted of four high through Pratt trusses, 196 feet 10 inches long from centerline of bearing to centerline of bearing, with horizontal top chords, seven panels, and inclined end post/batter

braces. The total length of the bridge was 805 feet. Pin connections were used to connect the major structural members, a system that generally simplified and speeded erection. The bridge contained wrought iron and steel. Laboratory testing found the vertical members of the trusses to be of wrought iron, and it is believed that the cross beams supporting the roadway were of steel. Truss height from the centerline of the lower chord to the centerline of the upper chord was 37 feet 6 inches. The roadway was 36 feet in width with 6-foot wide sidewalks on each side. Channels, cover plates, and lacing bars were riveted together to fashion the inclined end post/batter braces, the upper chords, and the built-up vertical members. The lower chords, diagonals, and hip verticals were double rectangular eye bars, die forged. An intersecting system of channels and rectangular bars provided a diagonally braced frame for sway bracing and portals connecting the upper chords of the trusses and for the longitudinal bracing connecting the sway braces midway between the trusses (BB-Drawing 2).

Sidewalk railings were made from channels and rectangular bars organized in a pattern that recalled the diagonals and verticals of the sway bracing and portals. A modified fleur-de-lis scrollwork was located above the entrance portals at the east and west ends of the span, and each truss was fitted with lantern-like finials at the end points of the upper chords. Plaques were located over the entrance portals and bore the following inscription:

1887
Built By
King Iron Bridge Company
Cleveland, Ohio
Andrew Rinker, City Engineer

The Pratt truss design utilized for the Broadway Bridge was of a type commonly used for bridges built during the 1880's. Notable for its use of ornament, the bridge was "one of only two known remaining decorated truss bridges in Minnesota and the only decorated truss bridge in the

metropolitan area." [15] The early 1888 completion date of the Broadway Bridge preceded, by several months, the completion of the bridge at Hennepin Avenue and made it the oldest remaining highway bridge in Minneapolis. Construction of the Broadway Bridge may have been a factor in the location and growth of the Grain Belt Brewery complex (no-longer operating). Deemed eligible for nomination to the National Register of Historic Places, the brewery was located approximately 1/4 mile east of the bridge and contains some buildings of an era and ornamentation style similar to the Broadway Bridge. The above factors helped determine that the Broadway Bridge was eligible for nomination to the National Register of Historic Places.

B. MODIFICATIONS

Two known major alterations were made to the bridge since its completion. Each alteration adapted to a different mode of transportation, and each attempted to improve vehicular travel. In 1914, the extension of streetcar transportation in Minneapolis caused tracks to be provided across the bridge. In order to carry the increased loads introduced by streetcars and automobiles, floor beams were strengthened by adding cover plates and additional stringers were placed under the streetcar tracks (BB-Drawing 3).

In 1950, the City of Minneapolis significantly altered the appearance of the river bridge. A desire for navigation on this section of the Mississippi necessitated the raising of the trusses and the removal, because of increased grades, of the streetcar tracks. The west abutment remained at its original elevation while the east span rested on a steel frame forming a new abutment at the raised east approach. The raised bridge was supported by a beam at the west pier and transverse trusses at the other two piers. Supporting beams and trusses rested on the original piers and on new supplementary concrete piers constructed at each end of the existing piers. New stringers were added under the outer portions of the roadway, and the bridge deck was replaced by an open grate steel deck

to reduce the dead load of the bridge (BB-Drawings 4 and 5). The raising of the east approach ended access to the bridge from Thirteenth Avenue Northeast.

C. OWNERSHIP AND FUTURE

The Broadway Bridge was owned and maintained by the City of Minneapolis until 7 February 1950. At that time, the bridge was designated as part of State-Aid Road 6 and ownership passed to Hennepin County. On 19 November 1957, the designation of State-Aid Road 6 was changed to County State-Aid Highway 66 (CSAH 66). Through an agreement with Hennepin County, the City of Minneapolis has continued to perform bridge maintenance.[16]

study of the Broadway Bridge revealed limitations regarding its ability to safely handle the projected traffic volumes and loads. Severe deterioration of the truss members, stringers, floor beams and connections was found to have occurred.[17] Because of the magnitude and scale of renovation necessary, it was determined to replace the bridge with a new four-lane pedestrian and vehicular structure.

The aesthetic and technical significance of the Broadway Bridge resulted in the preservation of one span and the bridge's ornamental features. This span was relocated within the Saint Anthony Falls Historic District and carries Merriam Street across the back channel of the Mississippi River from Nicollet Island to the east bank contributing its features to the district whose growth had brought its creation.

IV. BIOGRAPHICAL MATERIAL

A. Frederick Wilhelm Cappelen (1858-1921)

Frederick Cappelen served as assistant city engineer for the City of Minneapolis during the construction of the Broadway Bridge. He was born on 21 October 1857, in Drammen, Norway, and was educated at the Technical

and Mining School in Oerebro, Sweden, and at the Royal Polytechnicum in Dresden, Germany. Cappelen came to the United States in 1880 and worked for the Northern Pacific Railway until 1886.[18]

Andrew Rinker named Cappelen his assistant city engineer in 1886, a position he retained up to his appointment as city engineer in 1892. During his time with Rinker, Cappelen was referred to in the Minneapolis newspapers as being the bridge engineer and references were made to his designs for a number of railroad bridges in the city. An article in the "Minnesota Techno-Log" (Vol. VII, February 1927) credited him with the design of the steel arch bridge at Hennepin Avenue that was contemporary to the Broadway Bridge. He was also mentioned as inspecting the Tenth Avenue South Bridge. When the above is taken into consideration and combined with Rinker's other obligations, it can be suggested that the bridge engineering and preparation of estimates for the Broadway Bridge may have been, at least in part, Cappelen's responsibility. Frederick Cappelen's later term as city engineer (1912-1921) produced some renowned concrete arch bridges. His last bridge, completed in 1923, was the Franklin Avenue (Cappelen Memorial) Bridge which had a then record 400-foot concrete arch center span.

B. KING IRON BRIDGE AND MANUFACTURING COMPANY

The King Iron Bridge and Manufacturing was located in Cleveland, Ohio. King was a leading manufacturer of metal truss bridges and claimed to have the largest highway bridge works in the United States.[19] Construction of the Broadway Bridge fit the then common pattern of a bridge company acting as designer, fabricator, and builder.

King actively pursued bridge projects in the Minneapolis area during the 1880s. The company had submitted an unsuccessful bid for the construction of the superstructure of the steel arch bridge in 1887. During the summer of 1887, they were awarded the contract for the superstructure of the Franklin Avenue Bridge.

C. ANDREW RINKER (1849-19?)

"It is often a thankless task to be servant of the public. If you do a good thing or save money you never hear of it, but if you make a slip or spend a few dollars over an estimate you are set upon by a host of people who are too ignorant of the subject matter to find fault justly" (Andrew Rinker, City Engineer of Minneapolis; Minneapolis Journal, 6 January 1887).

"The city engineer is a very very careful and conservative man" (E.M. Johnson, Minneapolis Alderman; Minneapolis Tribune, 16 October 1886).

Andrew Rinker, the City Engineer of Minneapolis during the construction of the Broadway Bridge, was born on 15 April 1849 in Philadelphia, Pennsylvania. After graduating from high school, he entered the Ninth District Survey Office in Philadelphia. He was a draftsman in the Registry Bureau until June 1871 when he became assistant city engineer of Minneapolis. Rinker held that post until 1875 when he formed a partnership with George W. Cooley which lasted one year. In 1876, Rinker was in business for himself and in 1877, he was appointed city engineer. In 1893, he left office and formed the firm of Rinker and Hoff. He accepted the position of engineer, secretary, and treasurer of the Great Falls Water Power and Town Site Company in 1896 and served to October of 1902. Rinker's last term as City Engineer of Minneapolis commenced in January 1903 and ended in 1912.[20] After this time, he was listed as a consulting engineer by Minneapolis city directories.

A glimpse at some of Andrew Rinker's activities during the 1886 to 1888 period of the Broadway Bridge project offers an insight into the problems and responsibilities of a city engineer in an expanding city of the late 1880s. In addition to the bridges mentioned above, Rinker was directing the construction of a large sewer tunnel, numerous street projects, and a variety of projects to improve the water supply of Minneapolis. He also managed to become embroiled in several controversies questioning some of his decisions and his engineering ability. His term as city engineer

ended in April 1887, and the city council had to decide on his reappointment.

That Rinker did not select the low bidder to construct the superstructure of the Broadway Bridge was not unusual. A letter to the Journal on 8 October 1886, in reference to the steel arch bridge, criticized the city engineer for not properly advertising for bids for the construction of the center pier. The writer asked "Have Coolidge and Company a corner on pneumatic casings or is our city engineer so deficient of ability to construct a cofferdam for the center pier of the steel arch bridge. How long will the city agree to pay for the city engineer's experimenting?" Rinker responded to later criticism of the center piers' construction through an article appearing in the 15 January Tribune. The construction of the superstructure of the steel arch bridge did not go to the lowest bidder but was given to Horace E. Horton of Rochester, Minnesota, under the condition that the shop work be done by the Keystone Bridge Company of Pittsburgh. The contract was awarded after Rinker made a lengthy presentation to the city council on the differences between the plans submitted.

In March of 1887, the election of new aldermen changed the city council from a Republican to a Democratic majority. A 9 March editorial in the Tribune titled "The Unseemly Scramble" observed that "Even the city engineer, who is a pronounced Democrat, but who has committed the offense of being so industrious, faithful, and generally competent as to have retained for a long time the confidence and support of Republican councils is threatened." Rinker came before the council to deny an article in the Journal to the effect that he had favored certain companies to the disadvantage of the city. The other applicant for the position of city engineer was Frederick Cappelen, Rinker's assistant. Rinker was reappointed after several recommendations from various aldermen.

In June of 1887, Rinker weathered charges brought before the council that accused him of using unburnt brick in the city's sewers, hiring

incompetent assistants, and violating city ordinances. That Andrew Rinker served as city engineer for over 25 years is a tribute to his political acumen.

V. FOOTNOTES

1. Kane, Lucile M. and Ominsky, Alan, Twin Cities: A Pictorial History of Saint Paul and Minneapolis, p. 81.
2. Atwater, Isaac, ed., History of the City of Minneapolis, Vol. 1, p. 352.
3. Ibid., p. 354.
4. City of Minneapolis, City Council Proceedings, 3 September 1884.
5. Minneapolis Tribune, 1 January 1887.
6. Minneapolis Journal, 19 January 1887.
7. Tribune, 21 January 1887.
8. Ibid., 4 February 1887.
9. Ibid., 22 January 1887.
10. Ibid., 8 March 1887.
Journal, 8 March 1887.
11. Tribune, 24 September 1887.
12. Ibid., 1 November 1887.
13. City Council Proceedings, 1 December 1887.
14. Foote, C.M., Atlas of the City of Minneapolis, Plates 7 and 22.

15. Minnesota Historical Society, 28 September 1981: letter to Van Doren Hazard Stallings.
16. City Council Proceedings, 7 February 1950.
17. Van Doren Hazard Stallings, Preliminary Case Report and Section 4(f) Statement, pp. 9-12.
18. Marquis, Albert Nelson, ed., The Book of Minnesotans, pp. 76-77.
19. Simmons, David A., "The King Iron Bridge and Manufacturing Company," Society for Industrial Engineering 8 (1979), p. 6.
20. Hudson, Horace B., ed., A Half Century of Minneapolis, p. 506;
Neill, Edward D., History of Hennepin County, p. 619.

VI. BIBLIOGRAPHY

A. BOOKS

Anfinson, Scott F., Archaeological Potentials on the West Side of the Central Minneapolis Waterfront, St. Paul, Minnesota; Historical Society, 1984.

Atwater, Isaac, ed., History of the City of Minneapolis, Vol. 1, New York and Chicago; Munsell Publishing Co., 1895.

Berman, James, ed., Saint Anthony Falls Rediscovered, Minneapolis; Minneapolis Redevelopment Coordination Board, 1980.

Borchert, John R.; Gebhard, David; Lanegram, David; and Martin, Judith A., Legacy of Minneapolis, Preservation Amid Change, Bloomington, Minnesota; Voyageur, 1983.

Condit, Carl W., American Building, Chicago; University of Chicago Press, 1968.

Foote, C.M., Atlas of the City of Minneapolis, Philadelphia; F. Bourquin, 1892.

Hudson, Horace B. ed., A Half Century of Minneapolis, Minneapolis; The Hudson Publishing Company, 1908.

Kane, Lucile M. and Ominsky, Alan, Twin Cities: A Pictorial History of Saint Paul and Minneapolis, St. Paul, Minnesota; Historical Society Press, 1983.

Marquis, Albert Nelson, ed., The Book of Minnesotans, Chicago; A.A. Marquis Company, 1907.

Minneapolis, City of, Annual Reports of the Various City Officers of the City of Minneapolis, located in the Minneapolis Public Library.

Minneapolis, City of, City Council Proceedings, located in the Minneapolis Public Library.

Neill, Edward D., History of Hennepin County, Minneapolis; North Star Publishing Company, 1881.

Plowden, David, Bridges: The Spans of North America, New York; The Viking Press, Inc., 1974.

Van Doren Hazard Stallings, Preliminary Case Report and Section 4 (f) Statement, in the possession of the Hennepin County Department of Transportation.

B. PERIODICALS

Minneapolis Board of Education, "Bridges of Minneapolis and the State of Minnesota," Social Studies Bulletin No. 56 (1942).

Rodgers Hydraulic, Inc., "How Two Bridges Were Raised Twenty Feet,"
Bulletin No. 327.

Simmons, David A., "The King Iron Bridge and Manufacturing Company,"
Society for Industrial Engineering 8 (1979), p. 6.

C. NEWSPAPERS

1. HISTORY

a. Construction

Minneapolis Chronical, 7 January 1888.
_____, 21 " "
_____, 31 March "

Minneapolis Journal, 4 December 1886.
_____, 18 " "
_____, 8 March 1887.
_____, 25 " "
_____, 26 " "

Minneapolis Tribune, 4 December 1886.
_____, 11 " "
_____, 15 " "
_____, 18 " "
_____, 1 January 1887.
_____, 8 " "
_____, 9 " "
_____, 14 " "
_____, 15 " "
_____, 21 " "
_____, 22 " "
_____, 25 " "
_____, 15 February "

Minneapolis Tribune, 16 February 1887.
_____, 17 " "
_____, 8 March "
_____, 15 " "
_____, 18 " "
_____, 25 " "
_____, 26 " "
_____, 7 April "
_____, 15 May "
_____, 4 June "
_____, 3 August "
_____, 19 " "
_____, 9 October "
_____, 15 November "
_____, 19 " "
_____, 26 " "
_____, 30 " "
_____, 1 December "
_____, 22 " "
_____, 2 January 1888.
_____, 4 " "
_____, 16 " "
_____, 19 " "
_____, 26 " "
_____, 15 February "

b. Need

Minneapolis Chronical, 21 April 1888.

Minneapolis Journal, 23 November 1886.
_____, 8 December "
_____, 11 " "
_____, 17 " "
_____, 25 " "

Minneapolis Journal,	6	January	1887.
_____ ,	19	"	"
_____ ,	31	"	"
_____ ,	2	February	"
_____ ,	3	"	"
_____ ,	5	"	"
_____ ,	21	March	"
_____ ,	12	April	"
_____ ,	13	"	"
_____ ,	15	"	"

Minneapolis Tribune,	16	October	1886.
_____ ,	28	November	"
_____ ,	2	December	"
_____ ,	31	"	"
_____ ,	25	January	1887.
_____ ,	1	February	"
_____ ,	2	"	"
_____ ,	4	"	"
_____ ,	5	"	"
_____ ,	7	"	"
_____ ,	8	"	"
_____ ,	10	"	"
_____ ,	9	April	"
_____ ,	10	"	"
_____ ,	13	"	"
_____ ,	27	"	"
_____ ,	6	May	"
_____ ,	22	"	"
_____ ,	3	June	"
_____ ,	4	"	"
_____ ,	30	July	"
_____ ,	2	September	"
_____ ,	13	October	"
_____ ,	16	"	"

Minneapolis Tribune, 27 November 1887.
_____, 9 December "
_____, 25 January 1888.
_____, 3 February "

c. Location

Minneapolis Chronicle, 24 January 1888.

Minneapolis Tribune, 1 April 1887.
_____, 11 " "
_____, 25 August "
_____, 27 " "
_____, 9 November "
_____, 3 December "

2. OTHER BRIDGES

Minneapolis Journal, 20 November 1886.
_____, 25 " "
_____, 13 December "
_____, 15 " "
_____, 3 January 1887.
_____, 20 " "
_____, 10 February "
_____, 28 March "
_____, 21 April "

Minneapolis Tribune, 6 November 1886.
_____, 12 December "
_____, 5 January 1887.
_____, 8 " "
_____, 22 " "
_____, 5 March "
_____, 29 " "

Minneapolis Tribune,	21	April	1887.
_____ ,	2	June	"
_____ ,	17	"	"
_____ ,	30	"	"
_____ ,	8	July	"
_____ ,	17	September	"
_____ ,	24	"	"
_____ ,	6	December	"

3. Modifications

Minneapolis Journal, "City to Strengthen Bridge," 12 March 1914.

Minneapolis Star, "New Broadway Bridge to Have 'Grated' Deck," 6 June 1950.

_____ , "Broadway Bridge Progress," 6 February 1951.

_____ , "Broadway Span Open Friday," 8 July 1951.

Minneapolis Tribune, "Workmen Start Job of Elevating Broadway Bridge," 4 April 1950.

_____ , "Up in the Air," 22 November 1950.

_____ , "Broadway Bridge Grilled," 2 March 1951.

_____ , "Broadway Bridge Will Open Friday After 16-Month Shutdown," 15 July 1951.

VI. PHOTOGRAPHS

For complete guidelines, refer to HABS/HAER standards for documentary photography: Photographic Specifications for HABS/HAER. The following refers primarily to processing finished photographs for transmittal to the Library of Congress.

Negatives which are marked "nitrate film" rather than "safety film," or films that appear yellow, deteriorated, have a strong odor, or feel sticky, should be removed from the collection. Nitrate film combusts spontaneously, burns furiously, and exudes fumes damaging to paper, other film, and people. All nitrate negatives should be duplicated onto safety film.

A negative and print on fiber-based archival paper are required for each photograph sent to the Library of Congress. Resin-coated (R-C) paper is not acceptable.

A. Cover Sheet

A cover sheet is made for the complete Photo-Data set. Use an archival mount card without slits, and label as shown below:

1. In the upper left corner type the name of the structure and any secondary names, address (or vicinity), city or town, county, and state, each on a separate line.

Abraham Pike House (Grand Rapids Art Museum)
230 Fulton Street East
Grand Rapids
Kent County
Michigan

2. Place the HABS/HAER number for the structure in the upper right corner.
3. In the center of the cover sheet, type what kinds of information are included in the complete set. This includes photographs and written historical and descriptive data. Use all capital letters. Any or all of these may be used as appropriate.

Examples of cover sheets, indexes to photographs, negatives, prints, and photographic mount cards prepared for transmittal follow.

B. Labeling Photographs

Each photograph is labeled on the back. Use a No. 1 (soft) pencil only and write on a hard surface so that the emulsion does not crack. On the back of each photograph, write the HABS/HAER number for the structure, with the sequential number, in the upper right-hand corner. The print will be stamped with the HABS/HAER rubber stamp in the Regional Office.

Place each negative and one print (if there are two) in an acid-free archival sleeve. The full HABS/HAER number should be typed in the upper right-hand corner (see attached example).

One print is mounted on an archival photographic mount card with slits. The information shown below is typed in the upper right corner when the holes are on the left margin. In all capital letters, type either:

HISTORIC AMERICAN ENGINEERING RECORD or HISTORIC AMERICAN BUILDINGS SURVEY
SEE INDEX TO PHOTOGRAPHS FOR CAPTIONS

HABS No. or HAER No.

(See attached example)

HISTORIC AMERICAN ENGINEERING RECORD
SEE INDEX TO PHOTOGRAPHS FOR CAPTIONS

HAER No. MO-30-2



C. Index to Photographs

1. Index to Photographs for Individual Properties

All mounted photographs and written data are compiled into a Photo-Data set. Photographs should be arranged in a logical consistent manner. The preferred arrangement is as follows:

a. Exterior Views

1. General
2. Front
3. Right Side
4. Rear
5. Left Side
6. Details

b. Interior Views

1. First Floor
 - (a) Rooms in order of importance or in a logical sequence.
 - (b) Details following appropriate rooms
2. Second Floor (and above, as applicable)

c. Photocopies

1. Exterior Views
2. Interior Views
3. Architectural Drawings

Occasionally, a different arrangement makes more sense, in which case the preparer should use his/her discretion. It may be useful to key photographs to a site or building plan.

Each view is then assigned a sequential number starting with 1 and continuing until all photographs and photocopies have been numbered. This number is used to identify each different view. It is always written with the HABS/HAER survey number for the site, such as "HABS No. CA-101-1, HABS No. CA-101-2," etc. This number is typed on the archival sleeve for the negative and print. It is also written in acetate ink (using a Rapidograph or similar pen) in the margin of each negative on the base (shiny) side.

An identification sheet should be prepared for the photographs and labeled "Index to Photographs." There is one index for each structure or site. It identifies the structure and all available HABS/HAER documentation for it, and it lists captions for the photographs. The format is illustrated in the following example of a large project. Smaller projects follow the same format, omitting what is not applicable.

Note: On the Index to Photographs, "facade" and "elevation" should not be used. Instead rear, front, or side should be used.

HISTORIC AMERICAN BUILDINGS SURVEY

INDEX TO PHOTOGRAPHS

Old City Auditorium
404-424 North Fourth Street
St. Joseph
Buchanan County
Missouri

HABS No. MO-1274

Documentation: 10 exterior photos (1985)
9 interior photos (1985)
2 photographic copies of photographs (ca. 1927)
1 photographic copy of photograph of Architect's
rendering
2 photos of original construction drawings
6 data pages (1985)

Phillip Geller, Photographer, February 1985

MO-1274-1 DISTANT VIEW OF EAST FRONT
MO-1274-2 VIEW TO NORTHWEST
MO-1274-3 SOUTH SIDE, BALCONY AND ENTRANCE
MO-1274-4 VIEW OF EAST FRONT
MO-1274-5 CORNERSTONE, SOUTHEAST CORNER
MO-1274-6 DETAIL OF MAIN ENTRANCE, EAST FRONT
MO-1274-7 EAST FRONT, WINDOW AND ENTRANCE DETAIL
MO-1274-8 SECOND FLOOR WINDOW, EAST FRONT
MO-1274-9 NORTHEAST RAMPWAY WINDOW, EAST FRONT
MO-1274-10 VIEW OF NORTHWEST CORNER
MO-1274-11 NORTH VIEW OF STAGE OPENING
MO-1274-12 NORTH VIEW, STAGE, ARENA FLOOR AND SEATING
MO-1274-13 SOUTH VIEW, ARENA FLOOR AND SEATING
MO-1274-14 EAST VIEW, SEATING OVER MAIN ENTRANCE
MO-1274-15 SEATING, SOUTH SIDE. FIRST BALCONY
MO-1274-16 BOX SEATS, WEST SIDE
MO-1274-17 RAMPS AND RAILINGS, SOUTH WEST RAMPWAY

- MO-1274-18 FIREPLACE IN EAST END OF FORMER BANQUET ROOM
- MO-1274-19 WEST BASEMENT, NORTHEAST VIEW
- MO-1274-20 Photocopy of photograph (original print in possession of Brunner and Brunner, Architect and Engineers, Inc., St. Joseph, Missouri).
Photographer Unknown.
VIEW OF EAST FRONT BEFORE ALTERATIONS
- MO-1274-21 Photographic copy of photograph (ca. 1927, original print in possession of Brunner and Brunner, Architect and Engineers, Inc., St. Joseph, Missouri). VIEW OF SOUTHEAST CORNER
- MO-1274-22 Photographic copy of photograph of the Architect's rendering of the proposed Auditorium Building (1904-05, original print in the possession of Brunner and Brunner, Architect and Engineers, Inc., St. Joseph, MO).
VIEW OF SOUTHEAST CORNER
- MO-1274-23 Photographic copy of the original construction drawing, dated November 10, 1904, from the linens in possession of Brunner and Brunner, Architect and Engineers, Inc., St. Joseph, Missouri.
FOURTH STREET ELEVATION
- MO-1274-24 Photographic copy of the original construction drawing, dated November 10, 1904, from the linens in possession of Brunner and Brunner, Architect and Engineers Inc., St. Joseph, Missouri.
ROBIDOUX STREET ELEVATION (NORTH SIDE) AND FARAON STREET ELEVATION (SOUTH SIDE)

2. Index to Photographs for Districts and Complexes

When dealing with historic districts, one general HABS/HAER number is assigned to the grouping of structures. For example, the Leadville Historic District, consisting of over 100 structures in the town of Leadville, Colorado, could receive HABS No. CO-42.

Individual structures being documented within the district are arranged by historic name of the structure or by their addresses, and then receive upper case letter designations. For example, the three commercial buildings along Harrison Avenue would receive HABS No. CO-42-A, HABS No. CO-42-B, and HABS No. CO-42-C. For each building a separate cover sheet and index to photographs are required.

General photographs, such as streetscapes, are organized under the index to photographs for the overall historic district.

Historic complexes, such as mines or farms, receive one general HABS/HAER number for the complex. Structures within the complex are arranged alphabetically by name, then assigned an upper case letter designation like the historic districts discussed above. Historic complexes require only one cover sheet and one index to photographs for the entire grouping of structures.

3. Assembling the Index to Photographs

Again variations may be appropriate, but the documentation available for the structure should be listed in the following order and format:

1. Drawings: Include number of sheets, date, and type of drawing, such as:

4 sheets (1974, including site plans, plans, elevations,
isometric of framing, details)

2. Photographs: The number and date of HABS/HAER photographs are listed exterior views first, then interior views, such as:

14 exterior photos (1968, 1970)
3 interior photos (1970)

3. Photocopies: All photocopies and their dates are listed. Mention the date of original item, not the date that the photocopy was made. Specify whether the photocopy is of an interior or exterior photograph, a watercolor, an engraving, etc., such as:

1 photocopy of 1914 watercolor
2 photocopies of 1936 exterior photos
6 photocopies of 1889 plans

4. Data Pages: The number and date(s) of the data pages are listed, such as:

8 data pages (1968, 1970)

5. Field Records: If there are any field records for a structure, they are filed together in an envelope as one set of field records for that particular structure or site. They are listed as one set, but the contents are itemized parenthetically, such as:

1 set of field records (including 4 field notebooks,
32 field photos)

The photographer's name and the date of the photographs are listed next, then the sequential number for each particular view with its caption (as shown in the example above).

Note that in assigning captions, no two photographs should be identified in precisely the same way, to avoid confusion when a researcher requests a view. You may, for example, distinguish them by the vantage point from which each shot was taken.

When the one photographer produces all views but at different times, use the following format:

Name, Photographer, Date
VA-966-1 NORTH FRONT

More than one photographer:

VA-966-1 Name, Photographer, Date
CAPTION

If there are numerous photographs, the photographers' names could be listed at the beginning of the index with a list, such as:

Jack Boucher, Photographer, June 1980 (VA-966-2,4,9-13,15)

For photocopies where previous photographers, illustrators, or delineators are unknown this should be noted; otherwise give their names. Identify the source of the original, if known.

Finally, the index is to be typed on bond paper, then photocopied onto archival bond paper. The photocopy work will be done at the Regional Office.

D. Negatives

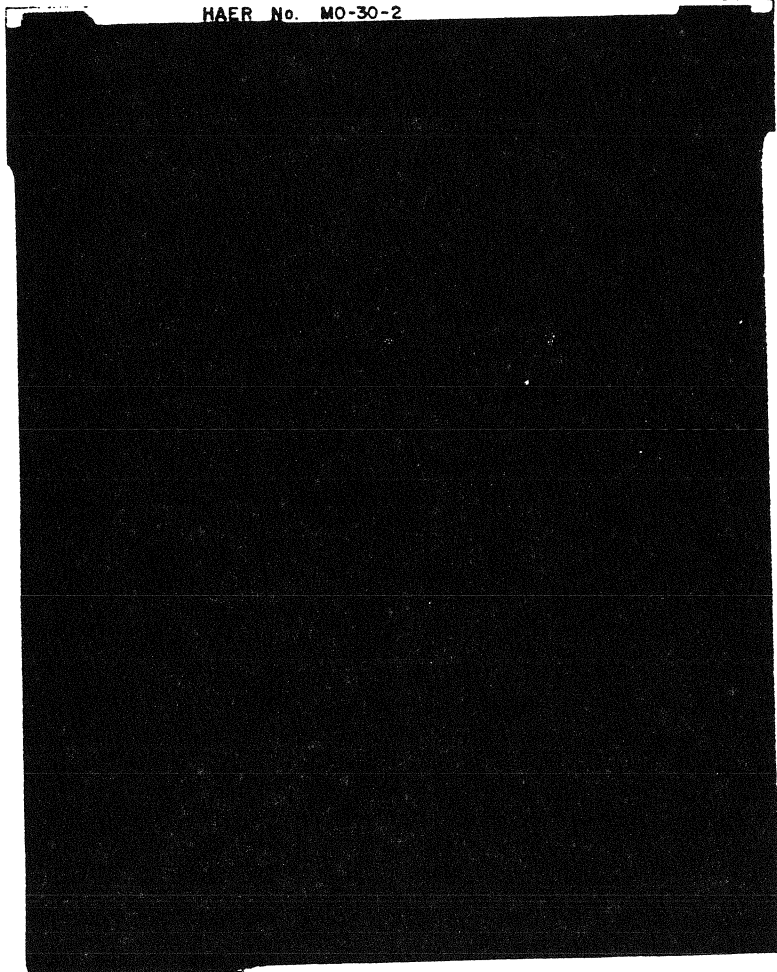
The HABS/HAER number for the structure, with its sequential photograph number, must also be labeled on each negative. Use a Rapidograph pen with acetate ink and print the number in the margin on the base (shiny) side of the negative, not on the emulsion side. The negative is placed in a labeled archival sleeve (available in limited quantities from the Regional Office). Use an acid-free paper archival sleeve and label it for the particular negative using the HABS/HAER number (e.g., HABS No. CA-101-1). Type the number in the upper right corner of the negative sleeve.

Labeling a negative sleeve.

HAER No. MO-30-2

Labeling a negative

HAER No. MO-30-2



E. Photographic Mount Cards

Photographs are mounted on 8 1/2-by-11-inch cards of archival paper (available in limited supply from the Regional Office). These cards have slits in which to insert either 4-by-5 or 5-by-7-inch photographs. If the photograph is 8-by-10 inches, the print is dry-mounted by the Library of Congress. The cards, however, still need to be labeled before submission to the Regional Office.

Each mount card is labeled to identify the photograph. The HABS/HAER number with sequential number, is typed in the upper right corner of the mount card with the three holes on the left margin. For example:

HISTORIC AMERICAN BUILDINGS SURVEY
SEE INDEX TO PHOTOGRAPHS FOR CAPTIONS

HABS No. CA-101-1

F. Field Records

Any field data such as supplemental or non-standard materials, field measurements, etc., are placed in a brown accordion file folder, labeled with the project name and HABS/HAER number.

G. Measured Drawings

HABS/HAER will accept either original drawings on HABS/HAER mylar, full-size direct copies on HABS/HAER mylar, or full-size direct photocopies of drawings on archival vellum. Standard sizes are 24-by-36 and 18-by-24 inches.

H. Photo-Data Set

Photographs and historical report are assembled as follows:

1. Cover sheet on archival photographic mount card without slits (see attached example)
2. Index to photographs (see attached example)
3. Mounted photographs (see attached example)
4. Historical report

The measured drawings and negatives in their negative sleeves are assembled separately.

Finally, the Photo-Data set is photocopied onto archival bond paper. Care should be taken that the copies are as clean and clear as possible.

The entire package of documentation is sent to HABS/HAER at the National Park Service, Rocky Mountain Regional Office, in Denver, Colorado, and eventually to the Library of Congress with a transmittal letter, a form identifying the project and the staff member preparing the record for transmittal, and a chart identifying the record.

