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

OMB Approval No. 1024-0018

**United States Department of the Interior**
National Park Service

# National Register of Historic Places Continuation Sheet

Section number _____ Page _____

SUPPLEMENTARY LISTING RECORD

**NRIS Reference Number:** 03000522 **Date Listed:** 6/13/03

| Lock and Dam No. 2 | Hennepin | MN |
|---|---|---|
| **Property Name** | **County** | **State** |

**Multiple Name**

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

Beth Boland — 6/26/03

**Signature of the Keeper** **Date of Action**

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**Amended Items in Nomination:**

The correct level of significance is national.

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

NPS Form 10-900
(Oct. 1990)

OMB No. 1024-0018

**United States Department of the Interior**
**National Park Service**

# National Register of Historic Places Registration Form



This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in *How to Complete the National Register of Historic Places Registration Form* (National Register Bulletin 16A). Complete each item by marking "X" in the appropriate box or by entering the information requested. If an 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: Lock and Dam No. 2

other names/site number: Meeker Island Lock and Dam

## 2. Location

street & number: Mississippi River north of Lake Street/Marshall Avenue ☐ not for publication

city or town: Minneapolis and St. Paul ☐ vicinity

state: Minnesota code: MN county: Hennepin,Ramsey code: 053 123 zip code: 55406 55104

## 3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, 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.)

Ian R. Stewart 4/16/03

Signature of certifying official Date

Deputy State Historic Preservation Officer Ian R. Stewart

State or Federal agency and bureau Minnesota Historical Society

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:

☒ entered in the National Register.
☐ See continuation sheet.

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

☐ determined not eligible for the National Register.

☐ removed from the National Register.

☐ other, (explain): _____

Signature of the Keeper: Entered in the National Register

Date of Action: 6·13·03

## 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 include previously listed resources in the count)

| Contributing | Noncontributing | |
|---|---|---|
| | | buildings |
| 1 | | sites |
| 8 | 1 | structure |
| | | objects |
| 9 | 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. Function or Use

**Historic Functions**
(Enter categories from instructions)

Transportation, water related

**Current Functions**
(Enter categories from instructions)

Vacant, not in use

## 7. Description

**Architectural Classification**
(Enter categories from instructions)
N/A

**Materials**
(Enter categories from instructions)
foundation concrete
walls concrete
roof N/A
other bronze bollards, iron fixtures

**Narrative Description**
(Describe the historic and current condition of the property on one or more continuation sheets.)

## 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)

- ☒ **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 a grave.
- ☐ **D** a cemetery.
- ☐ **E** a reconstructed building, object, or structure.
- ☐ **F** a commemorative property.
- ☐ **G** less than 50 years of age or achieved significance within the past 50 years.

### Areas of Significance

(Enter categories from instructions)

Transportation

### Period of Significance

1898-1912

### Significant Dates

1898 Site Preparation

1899 Work on dam and lock begin

1908 Lock master's house completed

### Significant Person

(Complete if Criterion B is marked above)

N/A

### Cultural Affiliation

N/A

### Architect/Builder

U.S. Army Corps of Engineers,

St. Paul District

### Narrative Statement of Significance

(Explain the significance of the property on one or more continuation sheets.)

## 9. Major Bibliographical References

### Bibliography

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

**Previous documentation on file (NPS):**

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

**Primary location of additional data:**

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

Name of repository:

U.S. Army Corps of Engineers,

St. Paul District

## 10. Geographical Data

**Acreage of Property** ca. 17

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

| | Zone | Easting | Northing |
|---|---|---|---|
| 1. | 15 | 483505 | 4978050 |
| 2. | 15 | 483783 | 4977840 |
| 3. | 15 | 483440 | 4976550 |
| 4. | 15 | 483348 | 4977747 |

St. Paul West, Minn.
1967 Revised 1993

☐ See continuation sheet

**Verbal Boundary Description**
(Describe the boundaries of the property on a continuation sheet.)

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

## 11. Form Prepared By


| | | | | | |
|---|---|---|---|---|---|
| name/title | John Anfinson, PhD and Jack Maloney | | | | |
| organization | National Park Service and Desnoyer Park Improve. Assoc. | | | date | 1/6/03 |
| street and number | 111 East Kellogg Blvd. | | | telephone | 651-290-3030 |
| city or town | St. Paul | state | MN | zip code | 55101 |


## Additional Documentation

Submit the following items with the completed form:

**Continuation Sheets**

**Maps**

A **USGS map** (7.5 or 15 minute series) indicating the property's location.
A **Sketch map** for historic districts and properties having large acreage or numerous resources.

**Photographs**

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

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

## Property Owner

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

| | | | | | |
|---|---|---|---|---|---|
| name | | | | | |
| street & number | | | | telephone | |
| city or town | | state | | zip code | |

## Description

This nomination focuses on the remains of Lock and Dam No. 2 (Meeker Island Lock and Dam), which lie in Minneapolis and St. Paul. The primary features are the lock, the bear trap gate piers, a wagon road, a two-stage staircase, the foundations of the lockmaster's house, the dam's central portion, a lock sump well, and a construction building. Throughout the Description and the Statement of Significance, we refer to the property as the Meeker Island Lock and Dam to avoid confusion with the current Lock and Dam No. 2 at Hastings, Minnesota.

### Current Condition

The overall site and individual features retain a considerable degree of integrity. The Meeker Island Lock and Dam ruins lie in a unique setting. They rest in the Mississippi River gorge, the river's only true gorge. The gorge extends from St. Anthony Falls to near the mouth of the Minnesota River, a distance of about 8½ miles. The Meeker Island Lock and Dam ruins sit about 6.3 miles above the Minnesota River's mouth (measured from the downstream end of Pike Island). At the time of construction, the Corps calculated the east side bluff at 85 feet high and the west bluff at 114 feet.[1] During construction, the Army Corps of Engineers cleared most trees from both bluffs above the lock and dam. The project area is again forested. Despite being in the heart of the Twin Cities, the gorge is much like it was at the time the Corps came to the site to build the lock and dam. The railroad bridge immediately upstream is still there, acting as a temporal anchor. All the contributing elements retain their integrity of location, design, setting, materials, workmanship, feeling, and association.

Today, the massive Meeker Island lock structure is mostly intact, and its ability to impart a sense of the property's significance is largely undiminished, although the lock gates were removed and the lock has been partially flooded by the reservoir of Lock and Dam No. 1 downstream. Still, the tops of the lock's two 334-foot long, 5½-foot wide, concrete walls and a line of bronze bollards on each are visible above the water's surface during much of the year. During normal low water levels, the tops of the inner and outer walls are exposed, allowing canoes and small boats to pass through the lock chamber. The up and downstream ends of the riverward lock wall rise 3 feet higher than the main lock wall and are usually out of the water. Some iron machinery is still attached to the lock. The concrete, bronze and iron materials yield a sense of the workmanship and design considerations involved in building the structure (see photographs MHS 014227- 7, 12, 13).

The lockmaster's house has been removed, but the concrete foundation is still in place on the bluff top above the lock. You can stand on it and look down to the lock from the same place the lockmaster would have, conveying the physical relationship between the two structures and the site overall. The foundation's front wall (riverward) and the ends of the two adjoining side walls are visible. The front foundation wall bows out in the middle, and three window openings are formed into the

foundation (see photograph MHS 014227-1). One opening lies on either side of the bowed section and one in the bowed section. The bowed configuration would have not only allowed the lockmaster to look down at the lock, but across to the dam and up and downstream for approaching steamboats through the side windows. The full remains of the house foundation are probably buried by earth and could be excavated to reveal the original building's outline. Although the house had been moved (and is not a contributing element), it is still in the neighborhood, several blocks east of its original location.

The old wagon road that serviced the lock has become an overgrown path, but most of the alignment and relation to the overall site remains the same. The path begins at the bluff top, near the lockmaster's house foundation. It slopes down the bluff, heading downriver. After descending about half-way, it switches back and runs down to the lock. By this route, the wagon road physically connects two key components of the site. The lower portion of the road has been interrupted by caving from the bluff and by fallen trees, but, as called for in the current site restoration plans, it could be easily revealed and partially restored.

While the central portion of the dam was destroyed in 1912, the Corps left the concrete piers for the bear trap gate section in place on the west side. Later aerial photographs clearly show the piers, in a widening of the river. Subsequently, this widening was filled with sand dredged from the river and the piers buried, which has probably preserved them. Although the piers are not currently visible, they could be easily excavated and exposed. With the gate piers revealed, a visitor would be able to look from one side of the river to the other and fully comprehend the relationship of the lock to the dam and thus the full design and setting of the site. A more detailed description of the lock and dam is in the section on original structures.

Except for the top five feet, the submerged, central portion of the dam is probably, largely intact. Historic records indicate that the Corps did nothing more than remove the top five feet. If Lock and Dam No. 1 were ever removed or its reservoir lowered, the dam would become clearly visible and the sense of the whole site immeasurably increased. So, while not visible, it should be considered a contributing element.

Near the upper end of the lock, a large, round, concrete ring–the foundation of the lock sump well–is visible. The ring is 13 feet in diameter; its walls are two feet thick, and it extends some 45 feet below ground level. It is under construction in photograph 6974-A. It also appears on the Meeker Island Lock and Dam lock design drawing and on the construction site map (Sheet 2). This is a key element to the lock's operation, and adds to the sense of the design, materials and workmanship of the site.

The construction buildings are gone, but most of their locations are mapped (Sheet 2), the physical setting where they were is visible, and some foundations are still extant and may be a potential source of archaeological information. The concrete foundation of a large construction building sits upstream a dozen paces from sump well and backs into the bluff. The exact size of the foundation is

difficult to determine, as much of it is buried by rock and sand that has fallen from the bluff above. Resting at a slight angle to the bluff, the building does appear at the upstream end of the lock in Figure 10 and in the above cited photograph. Fully or partially revealing this foundation would add to the site's integrity.

A little further upstream from the building foundation are a set of iron stairs that run in two segments (Sheet 2, Nos. 6 and 7). The first and longer section connected an artesian well at the bottom of the bluff to the boiler house, compressor engine house, and compressed air tanks. These buildings and associated equipment sat on the bench excavated into the bluff about two-thirds of the way up (Sheet 2, Nos. 2-5, 8). The second and shorter section connected this area to the bluff top. An iron pipe, connected to the upper staircase and running along the ground appears to have defined the walkway between the upper and lower staircases. Roots from an old tree have grown around the pipe near the upper staircase and more of the pipe appears to be buried. The bench in the bluff is still well-defined and adds to our understanding of the construction process for building the lock and dam. One can readily tell that the area was excavated into the limestone and sandstone bluff.

Together, the contributing elements establish a physical context from which to interpret the history of this site. Given the presence of so much historic fabric, the site possess the ability to convey the significance of its historic character. The site and its individual components are directly associated with the construction and operation of the Meeker Island Lock and Dam, the Mississippi River's first lock and dam. Individually and as a whole, the contributing elements possess considerable integrity.

A sewer overflow station, housed in a small concrete structure, rests at the upstream end of the site, at the base of the bluff. This is the non-contributing element.

The Meeker Island Lock site, including the heavily forested bluff above it, is currently under consideration for development as a park. A feasibility study requested by the neighborhood's Desnoyer Park Improvement Association was funded by the Saint Paul City Council in 2000. Development objectives include (1) restoration of the old wagon road as a pedestrian/bicycle trail for improved public access to the river and lock site, (2) improvements to existing access routes, (3) mitigation of bluff erosion and restoration of native plant species, and (4) a picnic overlook above the lock, with displays interpreting its role in the history of navigation on the Mississippi River and the development of Minneapolis and St. Paul.

Original Structures

During the winter of 1894 to 1895, the Corps of Engineers began developing plans for Lock and Dam No. 2. During 1895 they completed much of their work on the plans and negotiated for about 90 percent of the lands and flowage rights. But over the next year some owners refused to sell or, the Corps complained, wanted excessive prices. The Mississippi River Improvement and Manufacturing

Company tried to establish its right under the 1857 territorial charter to build the dam at the Meeker Island site for hydropower "in opposition to the construction of Lock and Dam No. 2 by the Government." These problems delayed the project. In the *Annual Report* for 1897, the Corps said that only 75 percent of flowage rights were in hand. Finally, by the fall of 1898, the Corps had acquired the property needed and had made preparations for beginning construction. The latter included detailed plan with drawings, which they had submitted to the Corps' Board of Engineers for Rivers and Harbors for approval, procuring and beginning to build a "traveling cableway" equipment, and building carpenter and blacksmith shops, engine and boiler houses and the iron staircase. The cableway would become a vital tool in the lock and dam's construction, as the high bluffs on either side prevented easy access. The Corps also built the wagon road down the bluff and sank an artesian well. At last, on April 27, 1899, the Corps began construction on the lock and dam by driving the first pilings for the lock's cofferdam.[2]

Lock and Dam No. 2 had three distinct elements. The lock, with a 13.8 foot lift, lay at the east end, two Reversed Parker bear-trap sluice gates occupied the west end, and a long roll dam stretched in between. The lock measured 80 feet wide by 334 feet long. These were the dimensions of the Des Moines Rapids canal, which the Corps had completed in 1877 and was the only other lock on the Mississippi River (the canal did not have an associated dam). For the upper lock gate, the Corps settled on a Chittenden drum weir that could be lowered to the lock floor. For the lower lock gate, they chose a miter gate that had two doors, each 46 feet long by 24 feet, 2 inches high. The lower gates had emptying valves built into them.

Dam No. 2, the Engineers reported, would, in order, "consist of a concrete abutment, a sluiceway 51 feet wide, a concrete pier 13 feet wide, a sluiceway 51 feet wide, a concrete pier 13 feet wide, and a timber rolled dam 526 feet 4½ inches long. The total of distance from abutment to river wall of lock, measured on crest of dam, will be 661 feet 4 ½ inches." Looking at the roll dam in cross section, the Corps described the dam as follows: it had "a vertical upstream face to within 7 feet of the crest, then slopes 1 on 1 to the crest; the crest is flat and 3 feet wide; the down stream slope is 1 on 2 for a distance of 14 feet, then changes to 1 on 4 for a distance of 38 feet; the apron is to be horizontal, 30 feet wide, and the top 5 feet 3 inches below ordinary low water. The width of the dam at base is 92 feet."[3] The spaces between the two 13-foot wide piers on the west end were filled by Reversed Parker bear-trap sluice gates. The Corps again borrowed from another project for these, taking the design from the sluice gates constructed for the Lake Winnibigoshish Dam, near the Mississippi's headwaters, in 1900.[4]

By the fall of 1901, the Corps had completed much of the lock and began constructing the dam. In 1904, they installed the lower lock gate machinery and began work on the dam's middle section. By March 30, they had removed the coffer dam around the bear-trap gates and allowed the river to flow through. The upper lock gate, the Chittenden drum weir, had sluice gates in it. The Engineers hoped they could open the gates to sluice water through the lock. In 1904, they tested the gates. While the weir worked well as a lock gate, sluicing water through the lock did not. In 1905, the Engineers largely completed Lock and Dam No. 2. That year, however, the river remained high throughout. When the

Engineers tried to run water through the lock again, they tore up the wooden lock floor (see photograph 6990-A). This required rebuilding the floor with a new design. Instead of wooden floor, they established a gravel base and placed large limestone, paving rocks (12 to 15 inches thick) over it (see photograph 6994-A).[5]

The bear-traps gates also failed to work as planned. Sediment built up under the gates, and when the Corps tried to close them, the supporting chains and rods broke. Excessive and unexpected scouring occurred above and below the dam. "Up to the present time," the Engineers reported in the 1906 *Annual Report*, "it has been the practice to pass the loose floating saw logs thru the sluices, the gates being kept open for that purpose." But, the Engineers found, "Experience has demonstrated that the continuous rush of a large volume of water thru the sluices subjects the bed of the river below to excessive scour, requiring extensive and expensive riprapping to prevent undermining the structures." As a result, the Corps decided not to sluice logs through the bear-trap gates anymore. Instead, they would pass the logs over the west end of the dam proper. Due to damage to the dam from logs going over it already, however, the Corps had to armor this part of the wooden dam in steel. Despite the many problems, the Corps finished most of the repairs and remaining work by the fall of 1906. On May 19, 1907, the *Itura* became the first vessel to pass through the new structure, and Lock and Dam No. 2 became the first lock and dam completed on the Mississippi River. By July of 1908, the Corps had completed the lockmaster's house in the bluff near the lock.[6] About 2.5 miles downstream, the Corps had nearly completed the lock for Lock and Dam No. 1, Meeker's counterpart, with a lift of 13.3 feet.

The new structure would last only 5 years. Between 1894, when Congress authorized Lock and Dam No. 2, and 1907, when the Corps completed it, hydroelectric power came of age in America. Combined with a national interest in conservation, the awakening to hydroelectric power led residents and business interests in the Twin Cities to question why the Corps was building two low dams. Laying aside their longstanding feud, residents of St. Paul and Minneapolis began working together to convince the Corps and Congress to reevaluate the project, calling for one high dam. To capture the most power and cause the least damage from flooding, the Corps decided that the high dam would have to be at the site of Lock and Dam No. 1. After a number of studies and continual lobbying from Twin Cities citizens, Congress authorized the high dam in the 1910 Rivers and Harbors Act. As a result, the Corps had to abandon the Meeker Island Lock and Dam and make sure it would not impede navigation. So in 1912 they blasted off the dam's top 5 feet, removed the lock gates, and walked away.

Endnotes

1..*Annual Report, 1899*, p. 2181.

2..*Annual Report, 1895*, p. 2120; *Annual Report, 1896*, quote, p. 1784; *Annual Report, 1897*, pp. 2068-69; *Annual Report, 1898*, p. 1810; *Annual Report 1899*, pp. 2177-79.

3..*Annual Report, 1904*, p. 2231; *Annual Report, 1902*, pp. 1667-69, quotes pp. 1668 and 1669.

4..*Annual Report, 1894,* p. 1682; *Annual Report, 1903*, p. 1526; for more detail on the Winnibigoshish Dam see *Annual Report, 1901*, p. 3214.

5..*Annual Report, 1902,* pp. 1666-69, 1670-71; *Annual Report, 1904*, pp. 2230, 2232; *Annual Report, 1905*, pp. 1664, 1666; *Annual Report, 1906*, p. 1434.

6..*Annual Report*, 1906, p. 1435; *Annual Report*, 1907, p. 1578; *Annual Report*, 1908, p. 1650.

## Statement of Significance

Introduction

The ruins of Lock and Dam No. 2 or the Meeker Island Lock and Dam site are significant at the national level under National Register criterion A, as they are associated with events that have made a significant contribution to the broad patterns of our history. They are specifically significant in the area of transportation history between 1898 and 1912. But the site's story is also entwined with the national conservation movement and the evolution of hydroelectric power in America. The site falls under the Minnesota statewide historic context for Urban Centers (1870-1940). In important ways, the story of the Meeker Island Lock and Dam site is a tale of two cities – Minneapolis and St. Paul – and their evolution as independent and competing urban centers.

Throughout this section and the Significance Statement, we will refer to the Lock and Dam No. 2 as the Meeker Island Lock and Dam. We do this because the existing Lock and Dam No. 2 is at Hastings, Minnesota. Most people know this as Lock and Dam No. 2 and know nothing of its predecessor.

Transportation History

The Meeker Island Lock and Dam site represents the first in a series of 30 locks and dams that the Corps of Engineers has built to make the upper Mississippi River navigable. While often seen as simply a rivalry between Minneapolis and St. Paul over being the head of navigation, the reason for locks and dams above St. Paul also had to do with making Minneapolis and the Midwest more competitive regionally, nationally and internationally. Minneapolis especially wanted to compete more effectively against Chicago, which was the major regional rail hub and could ship on the Great Lakes. Minneapolis navigation boosters knew that a viable water route would keep rail costs down, making their city more competitive. Without the political and economic power of Minneapolis and St. Paul at the head of the navigation system, the series of navigation improvements the federal government has authorized and funded since before the Civil War would most likely not have occurred.

The cause of the Meeker Island Lock and Dam's demise is about the evolution of hydroelectric power in the United States, which is also a national story. Also, the site is integrally tied to the history of Lock and Dam No. 1, which the Minnesota State Historic Preservation Office and the St. Paul District, Corps of Engineers have agreed to consider eligible for the National Register.

"Now as to the duplication of locks and dams; two instead of one. Connected with this matter is a secret history, upon which I proceed as discreetly as may be to cast a little light. There is the city of St. Paul, and there is the city of Minneapolis. For physical reasons, a single lock and dam must lie entirely within the limits of Minneapolis, or entirely within the limits of St. Paul.... Enough said. There are two locks."[1] This was Major Francis Shunk's explanation to Minneapolis Mayor J. C. Haynes when

the mayor asked why Congress had authorized two locks and dams where one would have worked. The two locks and dams were the Meeker Island Lock and Dam and Lock and Dam No. 1.

While the Meeker Island Lock and Dam ruins are significant nationally, they embody important local stories. The site tells about the origins of navigation improvements in the Twin Cities and about the intercity rivalry between Minneapolis and St. Paul over being the head of navigation on the Mississippi River and over access to the river's hydropower potential. This rivalry and how it influenced the Corps' decision to recommend two locks and dams is the secret history referred to by Major Shunk.[2]

Local forces were important but only in combination with greater national forces. These national forces provided the impetus necessary to destroy a new lock and dam and significantly rebuild another. The rivalry between St. Paul and Minneapolis and between different economic factions within the two cities most importantly delayed the project until national forces wove their way into it. We must examine the interplay between the local and national forces to explain the fate of the Meeker Island site and to understand its full significance as a historic site.

*Local History - The Rivalry*

Their ties to the Mississippi River led Minneapolis and St. Paul along separate and successful paths. By the 1850s, St. Paul had become the Mississippi's head of navigation and a busy port city. Minneapolis had begun growing into a saw and flour milling power. From 1880 to 1930, Minneapolis would be the nation's leading flour milling center. Each city jealously guarded its tie to the river and tried to capture its neighbor's source of affluence.

Paddling upstream from St. Louis, Missouri, to St. Paul in 1823, the *Virginia* became the first steamboat to navigate the upper Mississippi River. Steamboat traffic grew slowly over the next two decades. In 1841, St. Paul recorded 44 steamboat arrivals and 95 in 1849. During the 1850s, traffic boomed. In 1857 and 1858, St. Paul counted over 1,000 steamboats arrivals each year.[3] As rapidly as steamboat traffic increased, it could not keep pace with demand. In 1854, the *Minnesota Pioneer*, a St. Paul newspaper, reported that passengers and freight overflowed from every steamboat that arrived and that "the present tonnage on the river is by no means sufficient to handle one-half the business of the trade."[4] While two steamboats often left St. Paul each day, they could not carry merchandise away as quickly as merchants and farmers deposited it. Each steamboat that docked created new business and a greater backlog, as more immigrants disembarked to establish farms and businesses.[5]

Few steamboats traveled above St. Paul to Minneapolis. From above the St. Anthony Falls in Minneapolis to downtown St. Paul, the river fell more than 110 feet. This steep slope, combined with a narrow gorge and limestone boulders left by the retreat of St. Anthony Falls, made this reach too treacherous. While the falls turned back steamboats daring enough to venture that far, they gave Minneapolis the preeminent hydropower source in the central United States.[6]

As St. Paul matured into a leading port city, Minneapolis grew into the nation's greatest milling center. Soldiers from Fort Snelling built a grist and sawmill at the falls in 1823, but significant development did not begin until after 1848. By the 1850s as many as 16 sawmills crowded the falls. During the 1860s and 1870s, flour mills replaced sawmills, and by 1880 Minneapolis had become the nation's leading milling center.[7]

Minneapolis civic and commercial boosters wanted more than milling, however. They yearned to make their city the head of navigation on the Mississippi, with cheap access to the nation and the world. As early as 1850, they had tried to convince shippers that steamboats could reach the falls. They offered the steamer *Lamartine* $200 to journey from St. Paul to the cataract to prove their point. They also raised funds during the 1850s to remove boulders and other obstacles.[8] Despite the increase in shipping on the Mississippi, Chicago began dominating the region's economy before the Civil War. And immediately following the Civil War, railroads spread throughout the region and began monopolizing the region's shipping. As a result, Minneapolis, St. Paul, St. Louis and other river cities began organizing campaigns to make the river more navigable.

Recognizing the river's challenges, navigation boosters in Minneapolis began discussing a lock and dam for the river above St. Paul by 1852. Over the next five years, the city's newspapers, civic leaders and the Territorial Legislature called for locks and dams to carry the booming steamboat trade to Minneapolis. In 1855, the *St. Anthony Express* proposed building two locks and dams: one near Meeker Island and the other at the falls. In 1858, when Minnesota became a state, the new legislature sent a memorial to Congress requesting that the federal government improve the river for navigation above St. Paul.[9]

While dangerous for navigation, the river's rapid descent and narrow gorge between the Twin Cities made hydropower development ideal. Recognizing this potential, Bradley B. Meeker and Dorilus Morrison formed the Mississippi River Improvement and Manufacturing Company in 1857, with a group of Minneapolis businessmen. Playing on the desire of Minneapolis navigation boosters, they proposed building a lock and dam between the two cities to aid navigation and to secure the hydropower for themselves.[10] Meeker, a territorial judge and local entrepreneur, and Morrison, a St. Anthony Falls sawmill operator, lobbied for and obtained permission from the Minnesota Territorial legislature to build their lock and dam near Meeker Island. Gone now, Meeker Island lay some three and one-half miles below the falls, in Minneapolis. Portending the coming conflict with Minneapolis, St. Paul citizens criticized the project, as it would steal from them their valuable position as the head of navigation. But the economic Panic of 1857 and the Civil War stalled the Mississippi River Improvement and Manufacturing Company's plans, postponing the project and the conflict.[11]

Resolving the political problems raised by placing locks and dams between the cities would prove more complex than the engineering solution. Proponents and antagonists divided along city lines and by economic interest. Millers at St. Anthony Falls generally opposed the project, as it would create

a competing waterpower below them. Yet, one of the project's key proponents–Morrison–came from their ranks. Shippers and civic boosters in Minneapolis wanted locks and dams to make their city the head of navigation to secure the lower shipping rates and prestige that accompanied it. Lumbermen wanted the river left open to float logs to booms above St Paul. In St. Paul, some business and civic boosters believed that a dam would deliver hydropower to their city, allowing it to develop milling and manufacturing as Minneapolis had so successfully done. Other St. Paul business and civic boosters feared a lock and dam would steal the city's place as the head of navigation. With formidable supporters arrayed for and against the project–supporters who believed that the conditions that had determined their success were at stake–the proposal to build locks and dams would become mired in intense intercity and intra-city rivalries.[12]

Holding to their dream through the depression and the war, Meeker and Morrison beseeched Congress for a land grant to fund their project in 1865. Focusing on navigation, the Minnesota legislature, in 1866, memorialized Congress to authorize navigation improvements above St. Paul and requested the land grant on behalf of Meeker's company. Acknowledging the obvious local appearance of its request, the state touted the project's interregional benefits. The best market for the Midwest's corn, flour, pork, and beef, it claimed, was the South. And the Midwest needed the South's cotton, rice, sugar, and molasses. Whatever products the Midwest came to manufacture, like woolen and cotton fabrics, would find their chief market in the South and Southwest. The Mississippi River, the state insisted, provided the natural link. Echoing the beliefs of their counterparts downstream, Minneapolis boosters pointed to the divine purpose of their project. "Direct communication," they pleaded, "is both natural and necessary, and the all-beneficent Creator has graciously anticipated the wants and necessities of unborn millions in having given us exactly such a continuous means of supply and exchange from the Falls of St. Anthony to the Gulf of Mexico." The petition even cited editorials from the St. Paul papers stressing the importance of Minneapolis to the region's economy.

Finally, and recognizing the emerging power of railroads, the state asserted that the river "is now and ever will be and remain the great regulator and moderator of fares and freights among the rival carriers of the commerce of the west." Referring to the Civil War, the state implored Congress to "recollect with what haste and facility the various railroad lines combined to increase the cost of travel, and double, and in some instances triple and quadruple, the cost of transporting the produce of the west during the late non-intercourse measures in the Lower Mississippi." Finally, by the flow of goods north and south, the river would more quickly heal the wounds of the recent conflict and bind the country together again.[13]

Navigation boosters in Minneapolis failed, however, to convince Congress of the importance of their project. Congress rejected Meeker's request and the Minnesota Legislature's petition for a land grant in support of a lock and dam in 1866. It did, however, authorize the Corps of Engineers to survey the reach between Fort Snelling and St. Anthony Falls, along with its general survey of the upper Mississippi River, to determine how to make it more navigable.

To undertake these and other surveys, the Corps established a district office in St. Paul, making the federal government an important player in efforts to improve the upper river for navigation all the way to Minneapolis. Civil War Hero, Brevet Major General Gouverneur K. Warren became the first St. Paul District commander and engaged Franklin Cook, a former employee of the Minneapolis Mill Company, to undertake the survey of the river between St. Anthony Falls and Ft. Snelling. Cadwallader C. Washburn and his brother William D., the Minneapolis Mill Company's owners and two of the city's most powerful and prominent millers, adamantly opposed locks and dams. As Cook had worked for the Washburns, Meeker expected a negative report. Cook completed his survey between 1866 and 1867 and, to Meeker's surprise, recommended that a lock and dam be constructed at Meeker Island, with a 13-foot lift. Warren endorsed Cook's plan and requested $235,665 for the project. Cook's report and lobbying by Minnesota Representative Ignatius Donnelly and Senator Alexander Ramsey convinced Congress to give the State of Minnesota a 200,000 acre land grant to finance it.[14]

On June 7, 1868, the *Minneapolis Daily Tribune* claimed that the Meeker Island Lock and Dam would "transfer the commercial prestige of this upper country from St. Paul to the "'Magnet.'"[15] St. Paul industrial boosters also claimed victory. A day earlier, the *St. Paul Daily Dispatch* had declared that the dam had given St. Paul "a water power equal to St. Anthony," and would provide enough power "to make St. Paul one of the largest manufacturing cities on the continent."[16] Through a deal between Meeker and a number of St. Paul businessmen, St. Paulites had gained control of Meeker's company and would get the waterpower created by the dam.[17]

On March 6, 1869, the State decided to award the land grant to the Mississippi River Improvement and Manufacturing Company. Meeker and Morrison, however, failed to get the project underway, and in 1873, Congress lost patience with the Mississippi River Improvement and Manufacturing Company and appropriated $25,000 for the Corps to undertake the project.[18] But Congress required the State to return the land grant before the Corps could begin work. Eager to start the project, Major Francis Farquhar, the new head of the Corps' St. Paul office, reported that he had initiated a survey of the river and of the dam site. Over the next year, he began developing plans, determining that the Engineers could build one lock and dam with a 17-foot lift. Further work on the project, he declared, had to wait until the Engineers could take borings, which they could not do until the State returned the grant. As the State did not return it, the Corps could only wait. Disagreement over the grant and haggling over land for the project, including the purchase of Meeker Island, further delayed the project.[19]

Congress finally ended the land grant impasse in 1885 by withdrawing the $25,000 appropriation for the project and authorizing another survey of the river between St. Paul and St. Anthony Falls. Based on this survey, the St. Paul District recommended two locks and dams to bring steamboats to the Washington Avenue bridge, 2.2 miles above Meeker Island, and a third to extend commerce to the 10th Avenue Bridge, just below the falls. Congress did not act upon the report, and the lock and dam project remained mired.[20]

Signaling a possible break, the Chief of Engineers, on February 15, 1893, directed Major Alexander Mackenzie, the Rock Island District Engineer who had taken over the whole upper river in 1888, "to prepare new and exact estimates for locks and dams for this portion of the river . . . ." Mackenzie made the surveys, including borings, during the low-water season of 1893 and concluded that the Corps would have to build two locks and dams to bring navigation to the old steamboat landing below the Washington Avenue bridge. Lock and Dam No. 1 would have to be placed above Minnehaha Creek and have a lift of 13.3 feet. Lock and Dam No. 2 (Meeker Island Lock and Dam) could then be located about 2.9 miles upstream, below Meeker Island, and would have a lift of 13.8 feet. Mackenzie added that the Corps would have to build a third lock and dam with a 10.1 foot lift to bring navigation to St. Anthony Falls and a fourth lock to bring navigation above it. He estimated that Lock and Dam No. 1 would cost $568,222 and that Lock and Dam No. 2 would cost $598,235.[21]

Accepting Mackenzie's arguments and under continual pressure by navigation proponents in Minneapolis, Congress authorized the "Five-Foot Project in Aid of Navigation," in the River and Harbor Act of August 18, 1894. In this act, Congress directed the Corps to extend navigation to the Washington Avenue bridge by constructing Lock and Dam No. 2, the Meeker Island project.[22] While it did not mention Lock and Dam No. 1, Congress called for improving the river from near the mouth of the Minnesota River to the Washington Avenue bridge, indicating that another lock and dam would be built below Meeker Island. Following through on the 1894 act, Congress provided for the construction of Lock and Dam No. 1 in the River and Harbor Act of March 3, 1899. By the fall of 1906 the Engineers had completed most of the Meeker Island Lock and Dam, and on May 19, 1907, the *Itura* became the first steamboat to pass through a lock and dam on the Mississippi River. At Lock and Dam No. 1, the Engineers had begun constructing the lock. St. Paul suffered a double setback: Minneapolis claimed title to the head of navigation, but the low dam prevented the capitol city from securing hydropower. Few, if any, spectators watching the *Itura* paddle through Lock 2, however, imagined that the new facility would be destroyed within five years.[23]

*National Waterway Development*

As Corps of Engineers began building the locks and dams, national events began weaving their way into the project and would soon determine the fate of the Meeker Island Lock and Dam. America's perception of waterway development changed during the first two decades of the 20th century. Before 1900, few Presidents had promoted federal spending on waterway projects, and none had done so ardently. By the early 1900s, however, key government officials, including President Theodore Roosevelt, supported a strong federal role in water resource development. Waterway supporters represented two basic groups. The first wanted to develop America's waterways to the fullest extent to support transportation. The second, the conservationists, called for using waterways for multiple purposes: hydropower, flood control and recreation, as well as navigation. Supporters of the latter group would soon question the Meeker Island project.[24]

Building on national enthusiasm for multiple resource waterway development, key natural resource leaders in President Theodore Roosevelt's administration advocated a new policy of

conservation. By conservation, they meant the carefully planned, most efficient use of the country's resources. For waterways, this meant building projects that would capture their hydroelectric potential, prevent flooding, provide recreation and irrigation, and aid navigation.[25] In their focus on efficient use, conservationists shared the vision of Progressive Era reformers who sought to make all aspects of business and government more efficient. Tied to this broader movement, "the conservation movement . . . became a national fad. Widely publicized, commonly accepted, the concept of conserving natural resources at last entered the mainstream of American thought."[26]

Citizens of Minneapolis and St. Paul, reflecting this national interest in conservation and multiple-purpose planning, recognized that they had missed a tremendous opportunity by not capturing the full drop of the river through the gorge below St. Anthony Falls. But they did not change their minds simply because it had become the fad to conserve natural resources. Between 1894, when Congress authorized Lock and Dam No. 2, and 1906, when it would authorize the first reevaluation of the project, hydroelectric power came of age in America. Long distance electric power transmission became feasible about the turn of the century. At the beginning of 1890s, most Americans viewed hydropower as a curiosity, but the opening of the Niagara Falls hydropower plant in 1894 changed this.[27]

Residents of the Twin Cities had observed the transition firsthand. In 1882, the Minnesota Brush Electric Company opened the first hydroelectric power station in the United States at St. Anthony Falls. Although it had a limited generating capacity and few customers ready to employ its power, it heralded the coming of hydroelectricity. Between 1894 and 1895, the Minneapolis General Electric Company built its Main Street Station at St. Anthony, and in 1897, the Pillsbury-Washburn Company completed the Lower St. Anthony Falls dam and hydroelectric plant, providing power to the Minneapolis Street Railway Company. These projects and successful long distance power transmission demonstrated the practicality and value of hydroelectricity. Combined with the national interest in conservation, this awakening to hydroelectric power led residents and business interests in the Twin Cities to question the Meeker Island project. Laying aside their longstanding feud, they began working together to convince the Corps and Congress to reevaluate the project.[28]

*Hydropower Power Possibilities*

Reflecting the new national sentiment toward water resource development, local interest in revising the lock and dam project to serve both navigation and hydroelectric power development began growing before the Corps completed the Meeker Island Lock and Dam. Boosters lobbied hard enough that in the Rivers and Harbors Act of June 25, 1906, Congress created a commission or board to reexamine the project. The commissioners held a preliminary meeting in the capitol city on March 28, 1907, to study data in the St. Paul District office and visit the locks and dams. They did not meet again until September 26, when they completed their report and forwarded it to Alexander Mackenzie, now a brigadier general and the Chief of Engineers.[29]

Disappointing hydroelectric power boosters, the commissioners determined that the low head, or short fall, at Locks and Dams 1 and 2 would not permit the economic development of hydroelectric power (which, supposedly, is exactly what the millers at St. Anthony had figured).[30] Someday, the commissioners speculated, higher energy costs and demand from the Twin Cities' growing population would make the power gained from low-head dams more valuable. Then, the hydropower capacity of the two sites would be worth capturing. Twenty to 25 years in the future, they suggested, the cities could even consider building a single high dam downstream of Lock and Dam No. 1.[31] The board's report reassured Minneapolis that it would remain the head of navigation and that St. Paul would not get hydropower.

Interest in developing water power at the locks and dams did not fade with the commission's report. The river's steep slope and narrow gorge, and the fact that the site lay within the major metropolis on the upper Mississippi River, made it the ideal undeveloped hydroelectric site on the river. And, just before the commission's first meeting, Congress had changed a major premise that the commissioners had not considered: it had authorized the 6-foot channel for the whole upper Mississippi River.

As Locks and Dams 1 and 2 had been designed for a 5-foot channel, and because Congress had authorized the 6-foot channel project, the Engineers had to reassess the design of each. Whatever they decided, the project's cost would increase. Now, the expense of starting over could be compared to the cost of modifying the structures, and as the dams would have to be one-foot higher, their hydropower potential would increase. Due to these changes and continued public pressure for a high dam, Congress, in the Rivers and Harbors Act of March 3, 1909, authorized the Corps to reexamine the projects' hydropower potential. In the spring of 1909, pending the outcome of this study, the Corps suspended work on Lock and Dam No. 1. As of June 30, the Corps had spent $1,149,453 on the two locks and dams.[32]

To undertake the new study, the Corps appointed a board of engineers that included Majors Charles S. Riche, Francis R. Shunk and Charles Bromwell. The board considered two issues. First, they examined whether the Corps could easily and cheaply adapt the 5-foot project to the 6-foot project. Second, they reevaluated the hydropower capacity of the river between Minneapolis and St. Paul. The board considered the navigation issue first and quickly concluded that, with minor changes, the existing project would provide an adequate 6-foot channel.[33]

Developing hydroelectric power raised more difficult concerns. The board concurred with the first study that the low dams could not generate power economically (even with the additional foot of height created by the 6-foot channel project). Only a high dam would make hydroelectric power economical, a high dam built at the Lock and Dam No. 1 site. By replacing Dam No. 1 with a 30-foot high dam, the Engineers estimated that they could generate 15,000 horsepower.[34]

To construct the new dam, the board considered two options. First, the Corps could build the dam alone, and second it could build it in partnership with a private or municipal party. Recognizing the merits of a high dam, the board noted that a single lock and dam would save operating and maintenance costs, would require only one lockage, and in providing a 9-foot depth would not have to be modified under future navigation projects. They also recognized that the Corps could use the rent gained from the hydropower of a high dam to construct and operate the new facility, and the federal government would have an endless surplus of power. But, holding to standard Corps policy, the board determined that the Corps could not build a high dam alone, if the reason for building it was only to capture the hydropower. After extolling the advantages of a high dam to Minneapolis Mayor Haynes, Major Shunk explained that "Now comes the difficulty. The United States has no business to meddle with water-power, and must confine its attention strictly to features affecting navigation. . . ."[35] If the Engineers built the project alone, they would have to justify it for navigation. Had the Corps not completed Lock and Dam No. 2 already, the board declared, it could have recommended one lock and dam to be built by the government. But, as the board had already determined that the two low dams would secure the depth needed for navigation, it concluded that some other party would have to pay the extra cost of building a high dam.[36]

On the morning of June 9, 1909, the board held a public hearing in St. Paul to determine who would be willing to support and finance the dam. Representatives from St. Paul and Minneapolis attended and strongly favored the change. To their surprise, the State of Minnesota also showed interest in the project. To their dismay, private companies appeared and backed the high dam. Interest by private companies frightened the cities and became a key issue at the meeting.[37]

After evaluating its options, the board dismissed working with a private company. It based this decision on the reaction of Minneapolis and St. Paul to private development. The board believed it "abundantly evident" that the two cities, which owned much of the land above the dam site, would not relinquish it to a private company. Proposing to work with a private company, the board concluded, "would be equivalent to recommending against a high dam . . . ."[38] The two cities would rather see the power go to waste, the board reported, than let a private firm develop it.[39]

Having eliminated construction by the federal government alone or in concert with a private company, the board elected to work with the Twin Cities to build the new high dam. In a dramatic turnabout, Minneapolis and St. Paul agreed to split the cost of building the new structure and to share the hydropower. Minneapolis even agreed to advance St. Paul's share. Based on this overwhelming interest, the board recommended that Congress modify the navigation project to raise Dam No. 1 to 30 feet.[40]

W. L. Marshall, the new Chief of Engineers, endorsed the board's recommendations but made an important change. Contrary to the standard Corps position, he urged Congress to fund the entire project. The "construction of such a lock and dam by the Government is feasible, practicable, and legal under existing conditions," he asserted.[41] Sharing the costs with a nonfederal partner, he warned, had proven

"conducive to friction and misunderstanding, and often attended serious complications . . . ." If the government paid the full cost, he argued, then it could keep complete control of the waterpower.[42]

Marshall bolstered his position with other arguments. Even though the Engineers had completed Lock and Dam No. 2 and had finished much of Lock No. 1, he speculated that Congress might authorize a deeper project in the near future. The high dam would easily accommodate a project of seven, eight or nine feet. While the new structure would cost $230,000 or more to build, he contended that the hydroelectric power generated at the new dam would pay this cost and supply power to other federal offices in the Twin Cities. Once the Engineers had built the power station, the government, he proposed, could run it or lease it to a private company or municipality.[43]

Although the board's report did not show it, at least one of its members agreed with the Chief of Engineers. Major Shunk believed that Congress should authorize the Corps to build a high dam for navigation and to capture the river's hydropower. In a move that historian Raymond Merritt calls uncharacteristic for a Corps representative, Shunk tried to convince businessmen in the Twin Cities to support the project. Like other high dam proponents, Shunk argued that it would be easier to operate, save time, and could pay for itself. He hoped that if the Twin Cities demonstrated enough demand for the project Congress would authorize and fund it. To Shunk, Merritt asserts, "the whole issue was not a legal concern, but a moral matter."[44] In a February 17, 1909, letter to Mayor Haynes, Shunk complained that "There is something wrong about partial measures and technically restricted vision."[45] Officially, however, Shunk supported the position that the federal government only had the authority to regulate navigation and not to build or regulate hydroelectric power dams or plants.[46]

On January 31, 1910, the board submitted its report to the Chief of Engineers. Following Marshall's recommendations, Congress called for a high dam in the 1910 River and Harbor Act, "Provided, That in the making of leases for water power a reasonable compensation shall be secured to the United States . . . ."[47] Thus, the St. Paul District began modifying Lock and Dam No. 1 with federal funding. To ensure safe navigation above the new lock and dam, the Engineers demolished the top five feet of Dam No. 2, in 1912. Lock and Dam No. 1 opened in 1917.

Commercial Use

While Minneapolis had hoped to become the shipping transfer point from the region to the nation and the world through the Mississippi, little commerce used the Meeker Island Lock. The Corps and Minneapolis had counted on the 4½-foot and then the 6-foot channel projects, channel constriction projects that relied on wing dams and closing dams, to make the rest of the upper Mississippi River navigable. Minneapolis had fought for these projects as well. But, the river below the Meeker Island Lock and Dam was simply too shallow too often. Even had the Corps completed Lock and Dam No. 1 as a low dam, as intended, the remainder of the gorge rendered navigation difficult and commerce was abandoning the rest of the river. When the Corps completed Lock and Dam No. 1 in 1917, no through traffic moved on the upper Mississippi. No boats steamed from Minneapolis or St. Paul to St. Louis; all

traffic was local, moving less than 15 miles between ports. Most of this traffic was rock, sand, gravel and brush used to build wing and closing dams. Not until the Corps completed the new Lock and Dam 2 at Hastings, in 1930, and then Locks and Dams 3 through 26 between 1933 and 1940, would navigation grow on the upper river.

During the late nineteenth and early twentieth centuries, timber shipping dominated the commerce of the upper Mississippi River. By the turn of the century, timber shipped out of Wisconsin's tributaries had fallen behind timber moved down the Mississippi River to Minneapolis and St. Paul. Timber logs were the principal commerce on the river between Minneapolis and St. Paul when the Corps finished the Meeker Island Lock and Dam. Although fading, lumber mills in St. Paul and below received logs from northern Minnesota via the Mississippi. Lumber companies floated their logs downstream, over St. Anthony Falls, and then formed them into rafts above St. Paul. In 1898, the Corps reported that the floating of loose logs was the only commerce. The reason, they stated, was that "No other kind has been possible on account of the swift current and numerous rocks and bowlders [sic]." In their 1904 report, the Corps put some numbers on the extent of shipping. The drifting of loose logs totaled 136,000,000 board feet or about 476,000 tons. The estimated value equaled $1,360,000. In 1907, the year after the *Itura* steamed through the new lock, the drifting of loose logs was still the only significant commerce, but it had been falling steadily. That year, the Corps reported that the drifting of logs yielded 72,000,000 board feet or about 300,000 tons. Like the volume, the value had fallen, equaling about $900,000.

The lock and dam did serve another user. Beginning with the 1906 *Annual Report,* the Corps announced that the excursion business about totaled $15,000 worth of business, and steam and naphtha pleasure boats "much used" this section of the river. These figures remained the same for the 1907 and 1908 reports. In the 1908 report, the Corps stated it had locked through 11 rafting and/or excursion boats.[48]

Engineering

As the first lock and dam on the Mississippi River, the Meeker Island Lock and Dam were an important engineering accomplishment. Although the engineering design of the lock and dam were not new, the engineers had to meet a special set of circumstances represented by the site and the river's commerce. Several factors influenced the dam design. First, William de la Barre, the genius behind the development of water power for the Pillsbury-Washburn Company, warned that no dam below the company's hydroelectric power plant at lower St. Anthony Falls could adversely affect the company's operation. So the elevation of the reservoir created by Dam No. 2 became a significant issue. Second, the Corps reported that the Mississippi's flow varied from under 2,000 cubic feet per second to over 55,000. And third, the Engineers stated, "Immense quantities of logs are run loose in the river, and the structure adopted must permit their passage."[49] So the bear trap gate sections and the construction of the main dam portion had to account of passing logs. While the lock and dam are not significant for their

engineering aspects, understanding those aspects allows for a better understanding of the overall site and its design.

Summary

The Meeker Island Lock and Dam is nationally significant because the lock and dam system on the upper Mississippi River today descended from it. Begun in 1898, the Meeker Island Lock and Dam was the first and only lock and dam on the Mississippi River from 1907 to 1912. It is also associated with the conservation movement and the evolution of hydroelectric power in America, for both underlay its demise. The story or context is also a local one, one about the urban development of Minneapolis and St. Paul. The Meeker Island Lock and Dam was born of the desire by Minneapolis to connect itself to the nation and the world through the Mississippi River and of the fear that St. Paul might gain a competing hydropower source. Ironically, the lock and dam died from a cooperative effort between the two cities, although the national conservation movement played a central role in instilling the attitude of cooperation and the reason to push for its demise.

The Meeker Island Lock and Dam site is of national significance under Criterion A in the area of Transportation for its association with events that have contributed to the board patterns of American history and falls under the Urban Centers (1870-1940) statewide historic context developed by the Minnesota State Historic Preservation Office. Although its era of significance is only 14 years, from the beginning of its construction in 1898 to its abandonment in 1912, the Meeker Island Lock and Dam site has the integrity and history to convey important local, regional and national stories.

This statement is largely based on John O. Anfinson's "The Secret History of the Mississippi's Earliest Lock and Dams," published in *Minnesota History* (Summer 1995: 254-67.)

## Endnotes

1 Major Francis R. Shunk to Minneapolis Mayor J. C. Haynes, February 17, 1909. St. Paul District records, St. Paul, Minnesota.

2 Lucile M. Kane, "Rivalry for a River, the Twin Cities and the Mississippi," *Minnesota History* 37:8 (December 1961):309-23; Lucile M. Kane, *The Falls of St. Anthony: The Waterfall that Built Minneapolis* (St. Paul: Minnesota Historical Society Press, 1987; originally published as *The Waterfall that Built a City: The Falls of St. Anthony in Minneapolis*, 1966), 92-97; Raymond Merritt *Creativity, Conflict and Controversy: A History of the St. Paul District, U.S. Army Corps of Engineers* (Washington: U.S. Government Printing Office, 1979), 140, contends that "Nowhere can the rivalry between Minneapolis and St. Paul be better illustrated than in the controversy over the proposal to build a lock and dam about two miles below the Washington Avenue Bridge at Meeker Island." The Corps of Engineers completed the current Lock and Dam No. 2 at Hastings, Minnesota, in 1930.

3 Mildred Hartsough, *From Canoe to Steel Barge* (Minneapolis: University of Minnesota Press, 1934), 57, 100-103; Frank Haigh Dixon, *A Traffic History of the Mississippi River System* (Washington: Government Printing Office: 1909), 20.

4 Hartsough, *Canoe*, 103.

5 Hartsough, *Canoe*, 101-102.

6 Shortly after the glaciers withdrew from southern Minnesota some 10,000 years ago, St. Anthony Falls stretched across the river valley near downtown St. Paul. A thick limestone mantle formed the river bed. Just below this mantle lay a soft sandstone layer. As water and ice eroded the sandstone out from underneath the limestone at the edge of the falls, the limestone broke off in large slabs, and the falls receded.

7 Kane, *St. Anthony*, 99. By 1880, St. Anthony's 27 mills produced over two million barrels of flour annually. In 1882, the nation's first hydroelectric plant, furnishing lighting for the Minneapolis business district, began operating at the falls, marking another phase in hydropower development; see Kane, "Rivalry," 309.

8 Kane, "Rivalry," 310-11.

9 Kane, "Rivalry," 310-12.

10 Kane, "Rivalry," 311.

11 Merritt, *Creativity,* 140; Kane, *St. Anthony*, 92-93; Kane, "Rivalry," 311-12; Kane adds that during these years Meeker had sought to get the required completion date extended. This also caused some delay.

12 Kane, "Rivalry," 309-23; Merritt, *Creativity*, 140.

13 Ibid., p. 47.

14 U.S. Army, Corps of Engineers, *Annual Reports of the Chief of Engineers*, 1867 (Washington, D.C.: Government Printing Office, 1866-1915), 259, 262, hereafter *Annual Report*; River and Harbor Act of June 23, 1866, *Laws of the United States Relating to the Improvement of Rivers and Harbors*, v. 1, House of Representatives, H. Doc. No. 1491, 62d Cong., 3d sess., (Washington: Government Printing Office, 1913), 155-56; H. Exec. Doc. 58, 30, 50-52. In his next report to the Chief of Engineers, Warren stated that new surveys showed that the Corps would have to build a second lock and dam, locating it near the mouth of Minnehaha Creek, about one-half mile below Lock and Dam No. 1; see U.S. Congress, House, "Survey of the Upper Mississippi River," Exec. Doc. 247, 40th Cong., 2d sess., 9.

15 Kane, "Rivalry," 312-315, quote from 315; Kane, *St. Anthony*, 94.

16 Kane, "Rivalry," 316.

17 Kane, "Rivalry," 316. The St. Paul businessmen included William E. McNair, Eugene M. Wilson, William S. King, Edward Murphy, and Isaac Atwater. Meeker, Kane says, retained some shares of the company for himself as did his friends.

18 Kane, "Rivalry," 322, suggests that the federal government recognized its obligation for improving navigation in 1873 by authorizing $25,000 for the project. Merritt, *Creativity*, 141, says that "When it appeared that the Mississippi River Improvement and Manufacturing Company would not be able to resolve its internal conflicts, Congress decided to give the project over to the Corps of Engineers." Neither author discusses who pushed Congress to authorize the project.

19 *Annual Report, 1873*, 411; *Annual Report, 1874*, 287; Merritt, *Creativity*, 141.

20 *Annual Report, 1915*, 1887; *Annual Report, 1887*, 1663; *Annual Report, 1888*, 1536-39. In 1888, Rock Island District assumed jurisdiction of this reach of the river.

21 *Annual Report, 1894*, 1682-83; U.S. Congress, Senate, "Construction of Locks and Dams in the Mississippi River," 53d Cong., 2d sess., Exec. Doc. No. 109, 7-8.

22 River and Harbor Act of August 18, 1894, *Laws of the United States*, v. 2, H. Doc. No. 1491, (1940), 704. Kane, *St. Anthony*, 175, says "Deprived of the navigation facilities they coveted, persuasive Minneapolitans continued to urge the federal government to act. United States army engineers responded in 1894 by announcing plans for two locks and dams . . . ." This misplaces the authority for authorizing the project with the Corps instead of Congress and makes the Corps a proactive proponent of the project, which she does not demonstrate they were. Granted, Mackenzie repeatedly called for locks and dams. Kane jumps to the construction of Lock and Dam No. 2, without discussing who made the final push for the project.

23 *Annual Report, 1908*, 530, 1649-50; *Annual Report, 1907*, 1578-1579.

24 These conservationists generally ignored fish and wildlife conservation. Gifford Pinchot–national forester under Roosevelt and key architect of the government's conservation crusade–and other leaders of the movement saw little economic value in managing resources for fish and wildlife or in preserving places for their aesthetic value. Samuel P. Hays, *Conservation and the Gospel of Efficiency: The Progressive Conservation Movement, 1890-1920* (Cambridge, Massachusetts: Harvard University Press, 1959); Rebecca Conard, "The Conservation Movement in Iowa, 1857-1942," National Register of Historic Places Multiple Property Documentation Form, Iowa State Historic Preservation Office (1991), E-2-6; W. J. McGee, "The Conservation of Natural Resources," *Proceedings of the Mississippi Valley Historical Association for the Year 1909-1910*, 3 (Cedar Rapids, Iowa, 1911), 361-379; Gifford Pinchot, *The Fight for Conservation* (1967); Carolyn Merchant, ed., *Major Problems in Environmental History*, (Lexington, Massachusetts, 1993), Chaps. 9-11; Kendrick A. Clements, "Herbert Hoover and Conservation," *American Historical Review* 89 (February 1984):85-86.

25 Swain, *Federal Conservation Policy*, 3, 6-7; Hays, *Conservation*, 100-101.

26 Swain, *Federal Conservation Policy*, 3. As an example of multiple-purpose planning, Hays, *Conservation*, 100-01, fittingly uses this example: "Engineering works which tapped a river for one use alone might rule out other uses which could yield even greater benefits. A low dam for navigation, for example, might prevent construction of a higher dam at the same site that would produce hydroelectric power as well."

27 Philip V. Scarpino, *Great River: An Environmental History of the Upper Mississippi, 1890-1950* (Columbia: University of Missouri Press, 1985), 22.

28 Kane, *St. Anthony Falls*, 134, 151, 154. Why the Twin Cities changed their position on the project deserves much more research. Who initially called for a reassessment of the project for its hydroelectric power potential and why?

29 U.S. Congress, House, *Use of Surplus Water Flowing over Government Dam in Mississippi River between St. Paul and Minneapolis, Minn.*, 60th Cong., 1st sess., Doc. No. 218, pp. 2, 6. Mackenzie, after serving as the Rock Island District Engineer from 1879 to 1895, became the Chief of Engineers on January 23, 1904. The commissioners were Major W. V. Judson from the Corps of Engineers, J. E. Woodwell from the Treasury Department, and Major Amos W. Kimball from the Quartermaster Corps.

30 H. Doc. 218, 3. While the head at this site varied from 10.2 feet at low-water to 4.0 feet at high stages, the high stages lasted longer than usual, due to the Minnesota River, which entered the Mississippi about two miles downstream and backed water up to Lock and Dam No. 1.

31 H. Doc. 218, 4-6.

32Merritt, *Creativity*, 142. Merritt argues that Minneapolis and St. Paul officials haggled over the placement of Lock and Dam No. 1 and that high water hampered its start. "Business interests in Minneapolis and St. Paul," he contends, "used the delay to press for a larger dam that would generate electrical power." He does not say who these interests were. *Laws of the United States*, v. 2, 1343; *Annual Report, 1909*, 561.

33 U.S. Congress, House, *Mississippi River, St. Paul to Minneapolis, Minn.*, 61st Cong., 2d sess., H. Doc. 741, 5. The board proposed using flashboards–wooden boards attached to the dam's surface–to raise the height of Dam No. 2 to provide for a 6-foot channel. At Lock and Dam No. 1, they proposed raising the height of the dam by one-foot and adding an auxiliary lock below Lock and Dam No. 1 for extreme low-water situations. The Board of Engineers for Rivers and Harbors concurred with the first recommendation but disagreed with the second. Rather than building another lock, it suggested that the Corps lower the already completed floor by the necessary depth; see 5, 14.

34 H. Doc. 741, 5-6. Placing the dam further upstream would have required a lower dam because of the new Pillsbury-Washburn hydroelectric station and dam at Lower St. Anthony Falls. Building it further downstream would have flooded the Minnehaha Creek gorge, which, the board noted, was "one of the natural attractions of the city of Minneapolis."

35 Shunk to Haynes, February 17, 1909.

36 Shunk to Haynes, February 17, 1909.

37 *Minneapolis Tribune*, June 9, 1909, p. 1; H. Doc. 741, 5. Representatives from the University of Minnesota had met a party from St. Paul and Minneapolis at Lock and Dam No. 1 the day before. At this encounter, the two cities learned of the University's interest in the hydroelectric power of high dam.

38 H. Doc. 741, 7.

39 H. Doc. 741, 8. In contrast to this position by the board, the *Minneapolis Tribune*, June 10, 1909, 4, reported that those present at the June 9 public meeting voted to go on record as favoring the building of the high dam, whether accomplished by the State, the cities or a private interest.

40 H. Doc. 741, 8-9, 12-13. The board eliminated the State of Minnesota from consideration because it believed that the State's constitution was not likely to be amended to allow it to engage in such a project. The Minneapolis resolution included hydropower for the University of Minnesota.

41 H. Doc. 741, 3.

42 H. Doc. 741, 3-4. Hays, *Conservation*, 114, presents information that would explain Marshall's decision. Hays relates that when some members of the Inland Waterways Commission suggested that private parties pay the cost of the hydropower portion of a navigation dam, "the Corps of Engineers and many in Congress objected that this would give rise to conflicts in operation and administration . . . ." As a result, Hays says, the commission decided that the Federal government would pay the construction costs and lease the power. The question at Lock and Dam No. 1 was not simply whether the government would pay all or part of the cost to make hydroelectric power possible. That fact that the Engineers had completed much of the authorized navigation project put the Corps in the position of redoing the project specifically to accommodate hydropower development. See Hays, 109 and 215, for General Mackenzie's position on this issue.

43 H. Doc. 741, 3.

44 Merritt, *Creativity*, 144; Merritt, 145, adds that while Shunk recognized that the Corps of Engineers had no authority to develop hydropower, he believed that this "was just a case of legislative oversight . . . ." Given the debate over the government's role in hydroelectric power development, which I discuss below, it was not simply a matter of legislative oversight but of national disagreement over federal hydropower development.

45 Shunk to Haynes, February 17, 1909.

46 Merritt, *Creativity*, 144-45.

47 River and Harbor Act, June 25, 1910, *Laws of the United States*, v. 2, 1419-20; *Annual Report, 1910*, 1799-1800.

48 *Annual Report, 1898*, p. 1811; *Annual Report, 1904*, P. 421; *Annual Report, 1908*, pp. 531, 1651; *Annual Report 1906*, p. 1436; *Annual Report 1907*, p. 1581.

49.*Annual Report, 1899*, pp. 2179-2180; quote p. 2180. On de la Barre's warning, see Kane, *St. Anthony*, 153-54.

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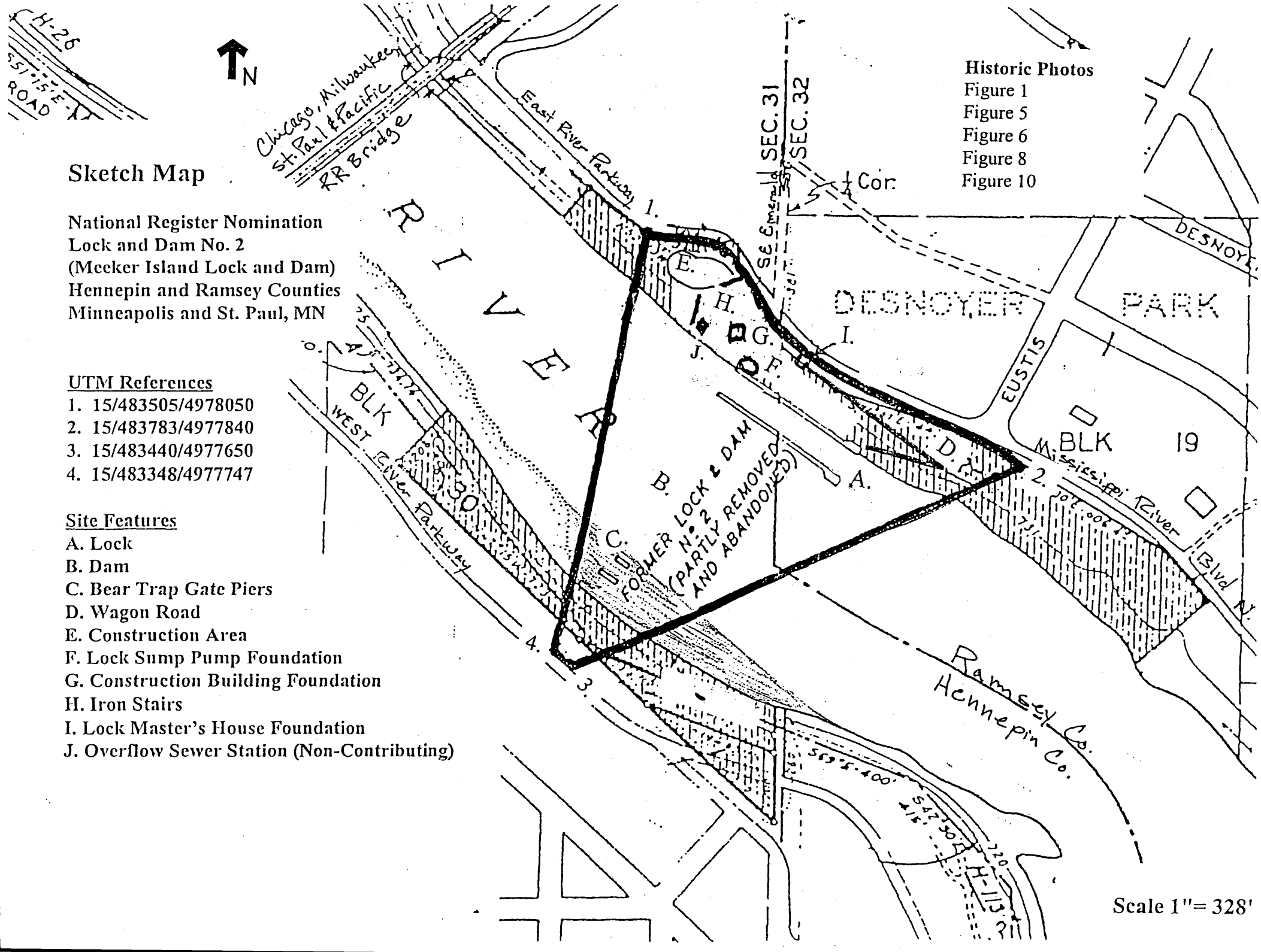
## Verbal Boundary Description

The riverward curb on the west side of East River Parkway forms the eastern site boundary. This boundary curves with the road. The upstream end begins 400 feet north of the intersection of East River Parkway and Southeast Emerald Street (UTM Point 1). The downstream end is 250 feet south of the intersection of East River Parkway and Eustis Avenue (UTM Point 2). From the upstream end of the east side, the northern site boundary runs southwest down the bluff and across the river to the opposite bluff top directly north of the intersection of E. 28th St. and 43rd Ave. S. (UTM Point 4). From downstream end of the east side, the southern site boundary runs southwest down the bluff and across the river to the opposite bluff top northeast of the intersection of 44th Ave. S. and West River Parkway (UTM Point 3). The riverward curb on the east side of West River Parkway forms the western site boundary. This boundary also curves with the road. The USGS 7.5' map is St. Paul West (1993).

## Boundary Justification

These boundaries are based on the original site boundaries and work area, as shown on Figure 2. The full, former U.S. Corps of Engineers property boundaries are not used, because there is little likelihood for contributing elements to exist outside the boundary defined here. This, in part, explains the wider boundary on the east versus the west side. The shape and size of the boundary is also based on preserving the integrity of the setting. The up and downstream ends of the boundary on each side encompass the key contributing elements and areas with potential archeological resources related to the project.




## Sketch Map

National Register Nomination
Lock and Dam No. 2
(Meeker Island Lock and Dam)
Hennepin and Ramsey Counties
Minneapolis and St. Paul, MN

**Historic Photos**
Figure 1
Figure 5
Figure 6
Figure 8
Figure 10

UTM References
1. 15/483505/4978050
2. 15/483783/4977840
3. 15/483440/4977650
4. 15/483348/4977747

Site Features
A. Lock
B. Dam
C. Bear Trap Gate Piers
D. Wagon Road
E. Construction Area
F. Lock Sump Pump Foundation
G. Construction Building Foundation
H. Iron Stairs
I. Lock Master's House Foundation
J. Overflow Sewer Station (Non-Contributing)

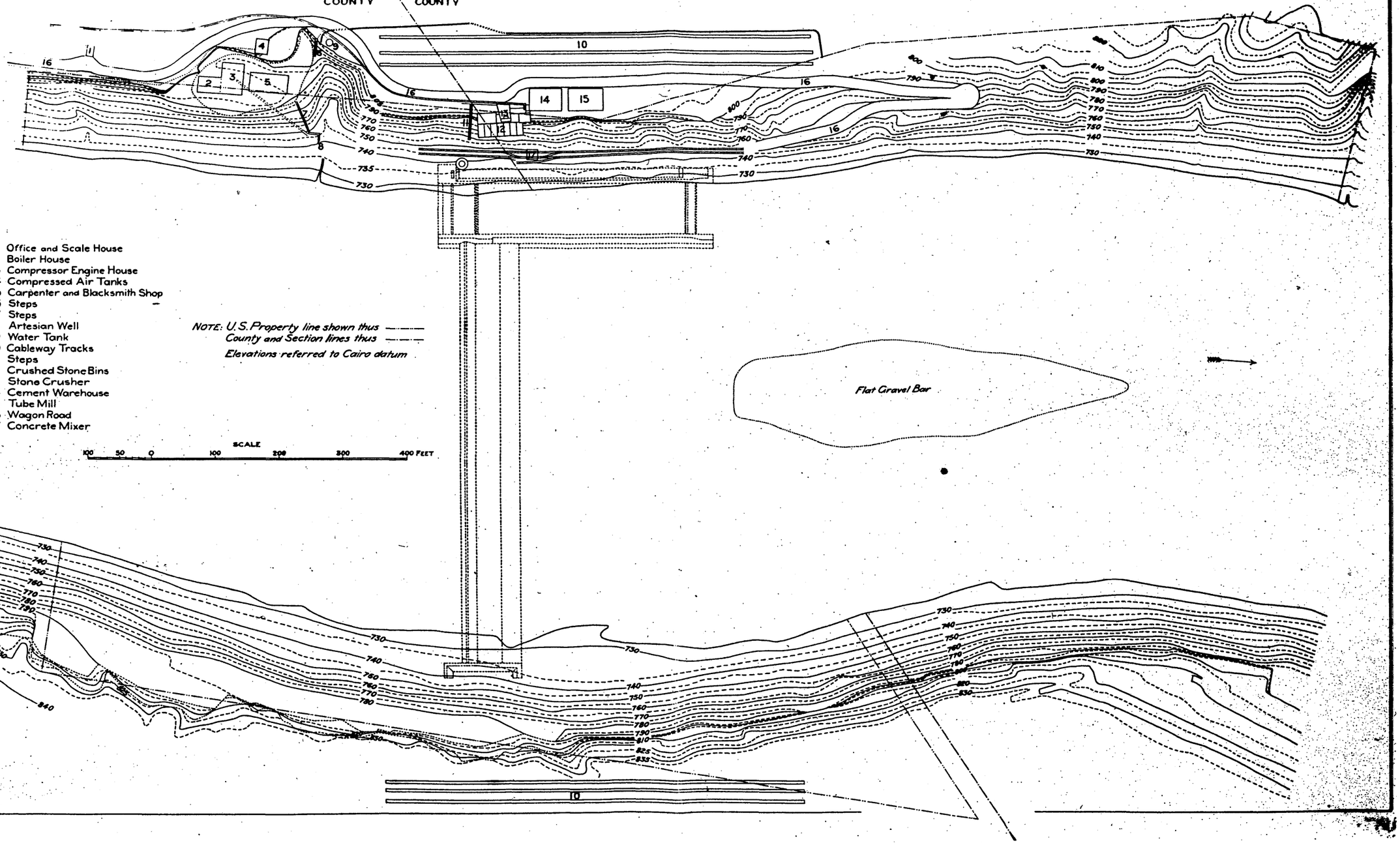
Scale 1"= 328'

MISSISSIPPI RIVER BETWEEN MINNEAPOLIS AND ST. PAUL, MINN. LOCK AND DAM No. 2. SHEET 2.

HENNEPIN COUNTY

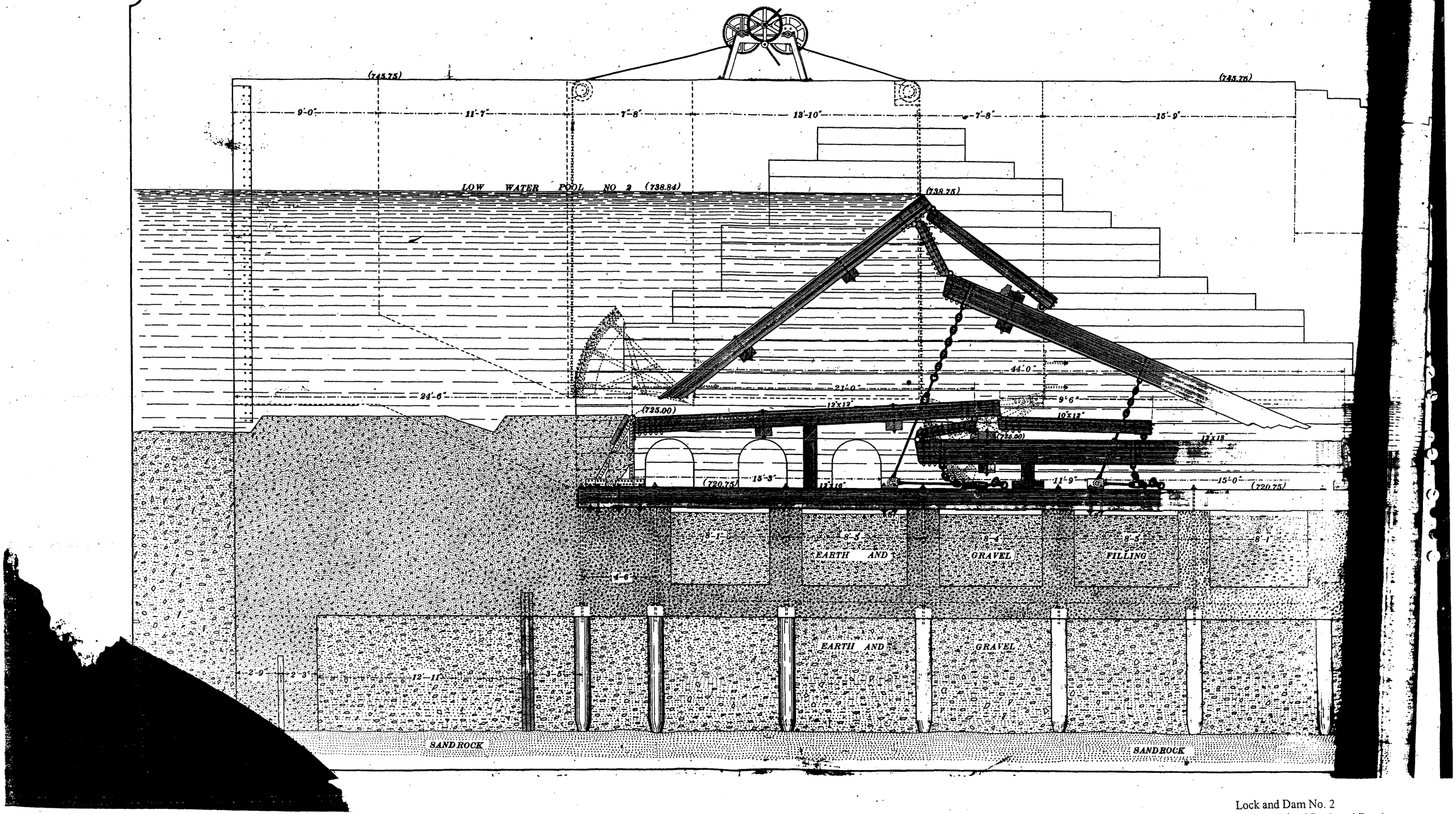
RAMSEY COUNTY

MAP OF SITE

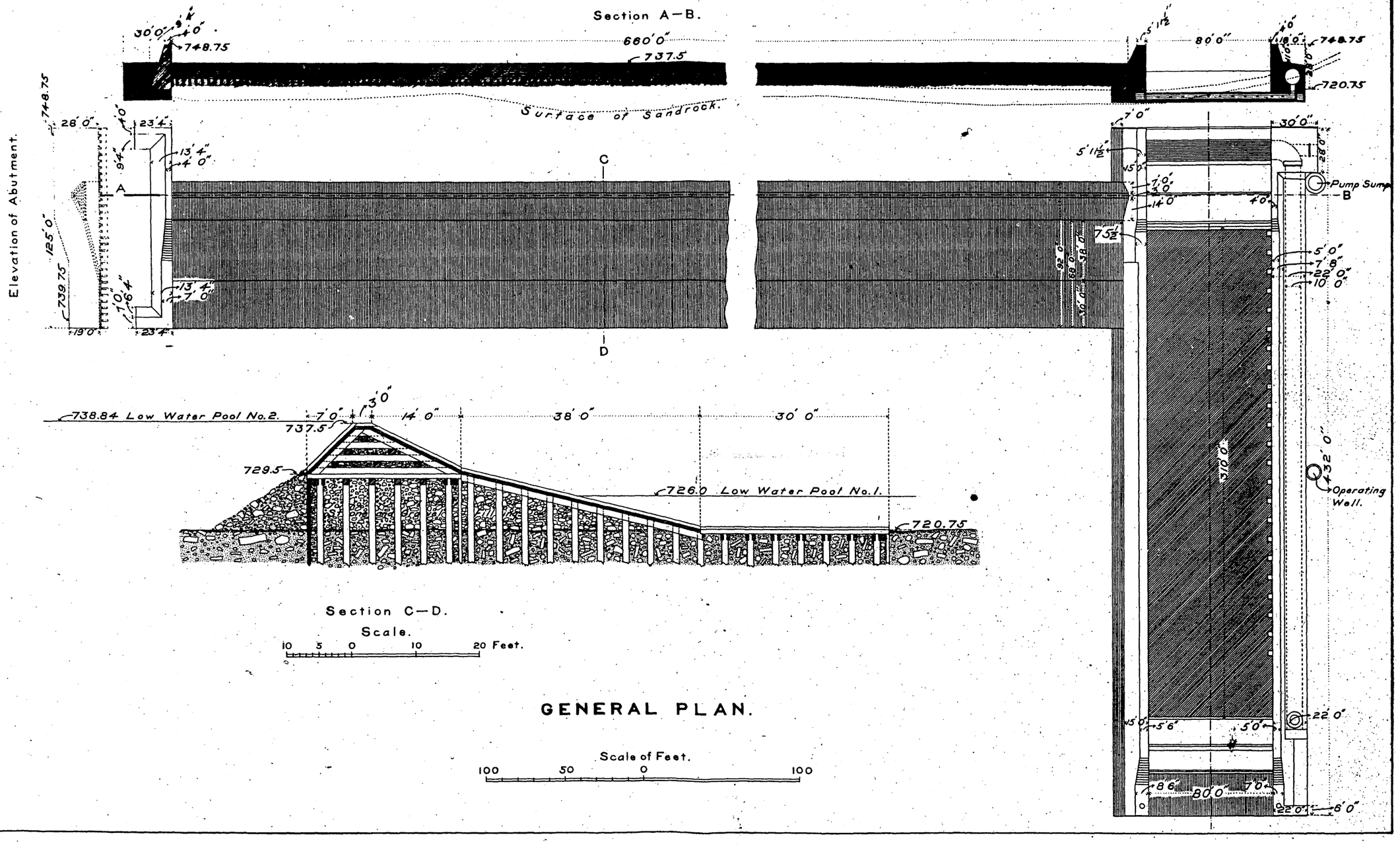



Lock and Dam No. 2
(Meeker Island Lock and Dam)
Hennepin and Ramsey Counties, Minnesota
Lock and Dam No. 2 construction site.
1899

MISSISSIPPI RIVER BETWEEN MINNEAPOLIS AND ST. PAUL. MINN. LOCK AND DAM




Lock and Dam No. 2
(Meeker Island Lock and Dam)
Hennepin and Ramsey Counties, Minnesota
Design drawing, Bear Trap Gate
1900




Lock and Dam No. 2
(Meeker Island Lock and Dam)
Hennepin and Ramsey Counties, Minnesota
Design Drawing, Dam No. 2
1900

# MISSISSIPPI RIVER BETWEEN MINNEAPOLIS AND ST. PAUL, MINN. LOCK AND DAM NO. 2. SHEET 4.

## DETAILED PLAN OF LOCK.

Scale.
10 5 0 10 20 30 40 50 Feet.

Designed in United States Engineer Office, St. Paul, Minn.
1899—1901.
Major F.V.Abbot, Corps of Engineers in Charge 1898—1900.
Major D.W.Lockwood, " " " 1900—1901.
Major R.L.Hoxie, " " " 1901—1902.
Built in 1898—1902.
A.G.Powell, Assistant Engineer.
H.Vennant, Draftsman.

Section A–A.

Section B–B.

Section C–C.

Section D–D.

Section E–E.

Section F–F.

Section G–G.

Section H–H.

Section K–K.

Section L–L.

Section M–M.

Section N–N.

Elevation of Lower end.

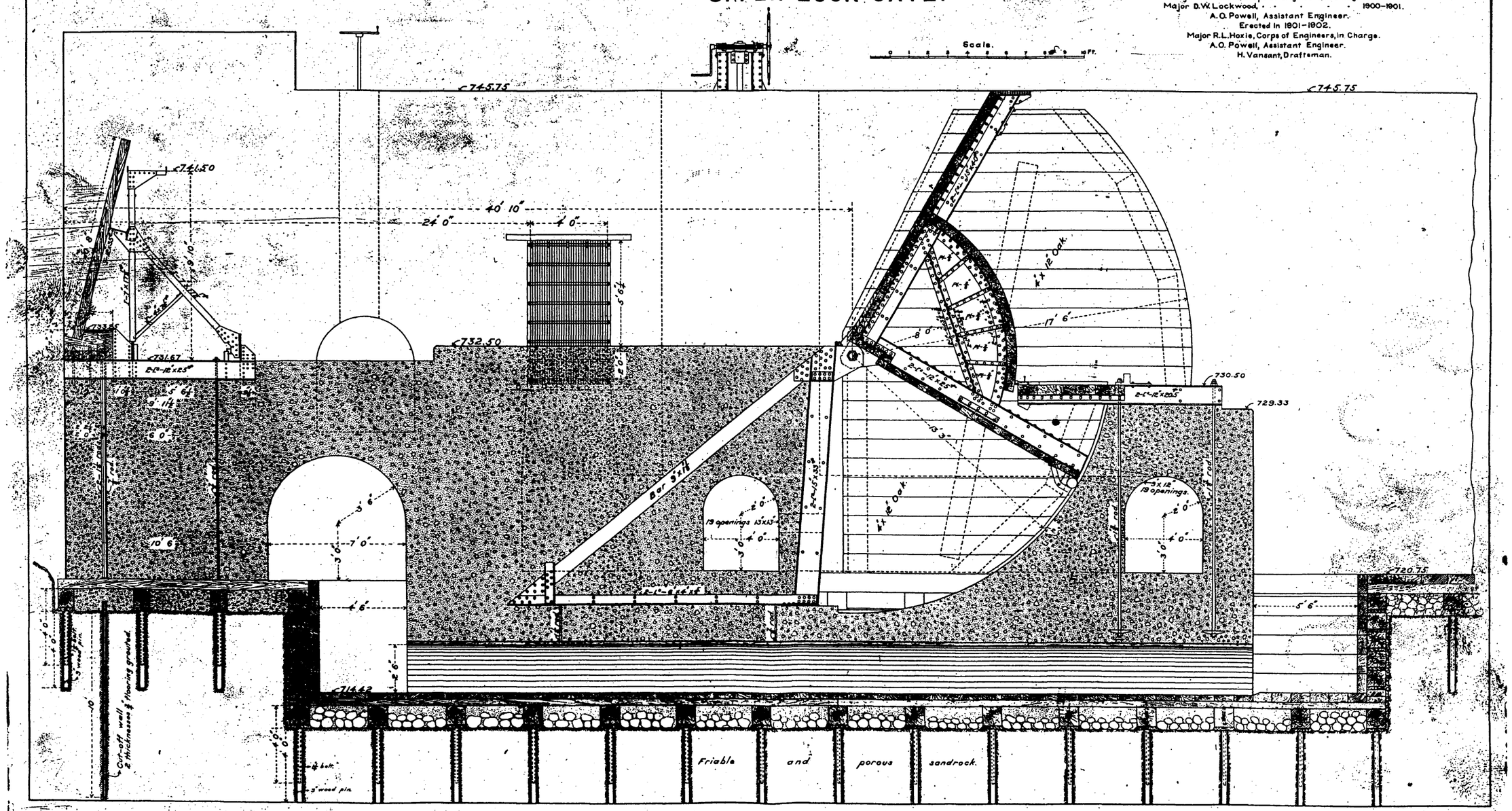
Curved Wall

Lock and Dam No. 2
(Meeker Island Lock and Dam)
Hennepin and Ramsey Counies, Minnesota
Design drawing, Lock No. 2.
1900

MISSISSIPPI RIVER BETWEEN MINNEAPOLIS AND ST. PAUL, MINN. LOCK AND DAM NO. 2. SHEET 5.

# UPPER LOCK GATE.

Designed in United States Engineer Office, St Paul, Minn.
1899–1901.
Major F. V. Abbot, Corps of Engineers, in Charge 1899–1900.
Major D. W. Lockwood, " " " 1900–1901.
A. O. Powell, Assistant Engineer.
Erected in 1901–1902.
Major R. L. Hoxie, Corps of Engineers, in Charge.
A. O. Powell, Assistant Engineer.
H. Vansant, Draftsman.




Lock and Dam No. 2
(Meeker Island Lock and Dam)
Hennepin and Ramsey Counties, Minnesota
Design drawing, upper lock gate,
Chittenden drum weir.
1900