

Okoboji Bridge  
Spanning the strait between East and  
West Okoboji Lakes on U. S. Highway 71  
Town of Okoboji  
Dickinson County  
Iowa

HAER No. IA-40

HAER  
IOWA  
30-OKOB,  
1-

PHOTOGRAPHS

HISTORICAL AND DESCRIPTIVE DATA

REDUCED COPIES OF CONSTRUCTION DRAWINGS

Historic American Engineering Record  
National Park Service  
Department of the Interior  
Denver, Colorado 80225-0287

# Historic American Engineering Record

HAER No. IA-40

HAER  
IOWA  
30-OKOB,  
1-

## Okoboji Bridge

- Location:** Spanning the strait between West Okoboji Lake and East Okoboji Lake on U.S. Highway 71; southeast edge of the town of Okoboji, Dickinson County, Iowa  
UTM: 15.327660.4804660
- USGS Quadrangle:** Okoboji, Iowa (7½ Minute Series, 1970; photorevised, 1982)
- Date of Construction:** 1929
- Designer:** Iowa State Highway Commission, Ames, Iowa
- Contractor:** Wickham Bridge and Pipe Company, Council Bluffs, Iowa
- Present Owner:** Iowa Department of Transportation, Ames, Iowa
- Present Use:** Two-lane highway bridge (scheduled for replacement)
- Significance:** Built in 1929, the Okoboji Bridge is one of only four cantilevered concrete girders known to remain in use on Iowa's highways. Employed where a simpler, less costly steel stringer span would have sufficed, the bridge represents an affinity for concrete construction and an uncharacteristic commitment to aesthetics on the part of the Iowa State Highway Commission. The structure is also noteworthy as the latest in a series of spans over the strait between East and West Okoboji Lakes - the oldest bridged crossing in Dickinson County. The present Okoboji Bridge and its five timber and steel predecessors represent a continuum of bridge construction stretching back more than 130 years, providing insight into the evolution of bridge technology.
- Report Assembled by:** Clayton B. Fraser  
Fraserdesign  
Loveland Colorado

May 1992

*The Historic American Engineering Record (HAER) documentation for the Okoboji Bridge was conducted by Fraserdesign of Loveland, Colorado, under contract with the Iowa Department of Transportation (IDOT). IDOT has proposed replacing the structure (Project No. BR-NBIH(11)--38-00) in 1993, and this recording is intended to mitigate in part the impact by this action. Field recording of the Okoboji Bridge was undertaken in February 1992. Research for the project was conducted at the Dickinson County Auditor's Office and the Storm Lake Public Library, both in Storm Lake, Iowa, and at the Iowa Department of Transportation in Ames, Iowa.*

Iowa's topography embraces three broad geographic regions. Two of these regions - comprising northeastern and southern Iowa - are characterized by hills, valleys and deep river channels; they are called "maturely dissected plains" in geologic terms. The third topographic region encompasses north-central and northwestern Iowa. Known as a "young glacial plain", the terrain here is much flatter, marked by shallower streams and numerous lakes.<sup>1</sup> Northwestern Iowa's high plains region is thus delineated from the more irregular terrain found elsewhere in the state. Formed by the last of the Pleistocene glacial epochs, these lands are naturally well-suited for crop production - with fertile soils and an abundance of lakes and streams. Foremost among the bodies of water is a chain of lakes beginning in what is now northern Dickinson County and extending northward into Minnesota. Spirit Lake and East and West Okoboji Lakes are the chain's three largest bodies of water, interspersed with many smaller lakes. Together, they form a region that is geographically unique within Iowa.

At the beginning of the 19th century, nomadic Sioux tribes ranged over the region, as their ancestors had for generations. This soon changed, however, as Euro-American exploration and subsequent settlement took place during the course of the ensuing decades. The earliest recorded descriptions of the Spirit Lake region may have been made by a French interpreter for Merriwether Lewis and William Clark, during their famous 1804-1806 expedition following the Louisiana Purchase.<sup>2</sup> In ensuing years, fur trappers likely frequented the region; eventually in April 1838 a government survey was undertaken.<sup>3</sup>

Initial Euro-American settlement of the Spirit Lake region occurred in the late 1850s. In 1856 a party of intrepid (or, in retrospect, foolhardy) pioneers left the frontier outpost at Fort Dodge and traveled northwestward to the banks of West Okoboji Lake. Joined by others, the group of perhaps forty colonists settled in for the winter of 1856-57. Most did not survive until spring, however. They were all but wiped out by a band of Wahpeton Sioux led by the exiled chieftain Inkpaduta. More than thirty settlers were killed in the affair, known as the Spirit Lake Massacre.<sup>4</sup>

Although tragic for those involved, the incident did little to deter other pioneers from the region. Further settlement began just months after the massacre, with the arrival of new immigrants in the spring and summer of 1857. By the end of the year, Dickinson County had been partitioned from Woodbury County. In February 1858 a post office was established at Spirit Lake, followed the next year by another at Okoboji. The county's first courthouse was built at Spirit Lake in 1859-60.<sup>5</sup>

**E**arly immigrants were motivated by agricultural opportunity, but they were equally attracted by the area's abundance of lakes. The settlers admired the lakes for their scenic beauty and also recognized their recreational and financial potential.<sup>6</sup> After the Civil War, the Spirit Lake region gradually developed as a popular summer resort. As the area's reputation grew, more people visited, especially after the arrival of the Chicago, Milwaukee and Saint Paul Railroad in 1882. From hunting and fishing, to sailing and sightseeing, the lakes region offered varied recreational opportunities. Pleasure boating, in particular, became a favorite pastime, attracting large numbers of visitors to the area. By the early 1880s the *Alpha*, the *Queen*, the *Hiawatha*, the *Iowa* and several other steamboats ferried sightseers around the lakes.<sup>7</sup> Many smaller private boats also sailed the waters during the warm summer months. To accommodate the tourists, guest cottages were built along the lakeshores, and there was a concomitant growth in the principal towns of Okoboji, Spirit Lake and Arnolds Park.

The increases in visitation and settlement triggered the need for a reliable network of roads. Pioneers and teamsters drove to and from Fort Dodge and Sioux City, the region's principal supply points, over poorly kept roads often clogged with mud or snow. The first county roads included a route extending westward from Spirit Lake toward Sioux City, one running south from Spirit Lake to Gar Outlet and one starting at Spirit Lake and running east between East Okoboji and Spirit Lakes, then south and west to Gar Outlet.<sup>8</sup>

Establishing the latter two routes involved bridging the county's two most strategic crossings: the straits between East and West Okoboji Lakes and between East Okoboji and Spirit Lakes. Prior to construction of bridges, travelers were faced either with fording the crossings or with journeying several miles around the lakes. In December 1859 Dickinson County hired local contractors to build the county's first bridges at these points. As described in the minutes of the county board of supervisors, the contracts called for "one [bridge] across Lake Okoboji at the narrows east of Spirit Lake and one across the straits which connect East and West Okoboji lakes." The supervisors described the proposed timber pile structures:

Such bridges to be sixteen feet wide with undersills and bents, the middle span to be thirty feet long and the other spans not more than sixteen feet long, double braced below, and single braced above with a good substantial railing, said bridge to be planked with two-inch oak plank and built in a substantial and workmanlike manner.<sup>9</sup>

Predictably short-lived, the two wooden structures were rebuilt in 1874-75.<sup>10</sup> By this time, local sentiment was growing that steamboats should be able to navigate between the lakes. Draw bridges were proposed at both locations to permit boats to pass beneath. L.W. Waugh, a county supervisor, subsequently erected such a bridge between East and West Okoboji Lakes. A pulley system with a block-and-tackle affixed to a derrick was built to raise and lower the structure, but it proved too cumbersome. With great difficulty, the bridge was raised only once or twice in this fashion before it was lowered permanently.

Pressure for inter-lake navigation continued to intensify, however. In 1882 the Spirit Lake and Okoboji Navigation Company formally requested that the bridges be opened. The following year the Burlington and CM&StP railroads and steam and sailboat owners also agitated for movable bridges. Under threat of litigation, the county supervisors finally agreed in June 1883 to rebuild the bridges, "if deemed by them advisable provided there is sufficient encouragement [i.e., money] from the parties interested."<sup>11</sup> Sufficiently encouraged, the county rebuilt the bridges that summer under the direction of Supervisor I.S. Foster,<sup>12</sup> but the brouhaha that ensued threatened to unseat the board. In September the *Spirit Lake Beacon* reported on "the drawbridge swindle." "It is like the harp of a thousand strings," the newspaper stated, "and is played upon to suit the audience." The *Beacon* continued in its defense of the board:

In the townships remote from the lake, the drawbridges are denounced as useless expenditures of the peoples' money and favored by Mr. Foster... The old bridges, as it is well known, were intended to be drawbridges, but were so constructed that they could not be raised or swung. For several years past boatmen and others interested in navigation repeatedly demanded that the bridges be opened, and threatened suit against the county... The old bridges would have had to be replaced soon, as many of the timbers were in advanced stage of decay, the tenons having rotted so as to render them unsafe.<sup>13</sup>

Opponents of the bridges tried to use the supposedly fraudulent construction as an election issue against Foster. Eventually, the controversy subsided, Foster retained his position, and with the navigation problem solved, the two bridges carried wagon and foot traffic. After little more than a decade, they, too, began showing signs of decay. In June 1897 the county supervisors appointed a committee to oversee erection of new swing spans at both the Spirit Lake and Okoboji locations. After some delay, the supervisors proceeded with the construction late that year. Completed early in 1898, the new swing bridges featured stone masonry piers in place of the earlier timber pile bents. Otherwise, they were little changed from their predecessors.<sup>14</sup>

A decade later, the Okoboji swing bridge once again had deteriorated to the point of replacement. This time, finally, the board of supervisors opted for a more permanent solution. On June 15, 1909, the board contracted with the Clinton Bridge and Iron Works of Clinton, Iowa, to fabricate and erect a new steel bridge. Completed that year for \$1550.00, the new swing span consisted of an 80-foot pivot truss with a six-foot-wide sidewalk, resting on concrete and masonry abutments.<sup>15</sup> The bridge and the adjacent county road were later incorporated into a U.S. highway and placed under the aegis of the Iowa State Highway Commission (ISHC). Both would carry heavy traffic over the next twenty years.

**T**he 1909 version of the Okoboji Bridge was far stronger than any of the earlier versions, but eventually it, too, proved vulnerable to the increased traffic that traversed it. The State Highway Commission began planning a replacement structure early in 1928. That March the Iowa legislature approved a \$100 million highway bill, funded by a massive bond issue. That fall contracts were let for a number of road and bridge construction projects throughout the state. Included among these were improvements to U.S. Highway 71, from the Missouri state line near Braddyville, to the Minnesota state line northeast of Spirit Lake. In Dickinson County this project also entailed replacement of the Okoboji Bridge with a new, wider, concrete structure. For this replacement bridge, Highway Commission engineers designed a fixed-span, reinforced concrete structure, featuring a single cantilevered deck girder span.

The choice to use a rather esoteric structural type at this crossing was for the Highway Commission a logical extension of its design policies. ISHC had first developed the design for simply supported concrete girder bridges - designated Standard Series *H* - among its first standardized bridge plans in 1914.<sup>16</sup> Three years later the Highway Commission designed its first cantilevered deck girder for a three-span structure over the Boyer River at Woodbine. A description of the Woodbine Bridge in the *Iowa State Highway Commission Service Bulletin* indicates that the cantilevered design was chosen not only for its utility but for its aesthetics as well.<sup>17</sup> The Woodbine Bridge was followed by a handful of other cantilevered girders in the 1910s and 1920s, including spans at Correctionville in Woodbury County, at Goldfield in Wright County, at Herrold in Polk County and at Nevada in Story County. In its 1917 annual report, ISHC deemed the cantilevered deck girder design "particularly well adapted for use on deep drainage ditches and streams subject to widening."<sup>18</sup> A cantilevered span could carry more weight than a simply supported girder of the same length. Alternately, a cantilevered girder could span a greater distance, while carrying the same weight as a shorter, simply-supported girder. Moreover, the arched profile of ISHC's cantilevered girders was considered more architecturally accomplished than the straight spandrel of simply supported girders. Though smaller in scale than the earlier cantilevered spans, the Okoboji Bridge resembled its predecessors in both design and detailing.

As delineated by ISHC (*see Figures 1-3*), the Okoboji Bridge features a 40-foot cantilevered span, anchored by two 12-foot arms. Its concrete abutments are founded on timber piles and include massive, rounded fenders, designed to protect the superstructure from passing boats. The bridge's five ribbed girders are formed monolithically with the deck and are arched at the haunches on both ends, as they curve into the anchor arms. With a uniform width of  $1\frac{1}{2}$  feet, the ribs range in depth from eight feet at the haunch to three feet at the crown, including the 9-inch deck thickness. This differential creates a five-foot rise from the top of each abutment to the underside of the girders at the bridge center, proportioned in an approximately elliptical profile. Reinforcing bars are tied continuously between the main span and the anchor arms on each end, forming the cantilever.

The superstructure bears on a fixed bearing shoe on top of one abutment and on a rolling bearing shoe at the opposite abutment. Slightly crowned for drainage, the concrete deck incorporates a 24-foot wide roadway, flanked by two 5-foot sidewalks. Also built of concrete, the guardrails featured slotted cutouts - a standard design of the Highway Commission. Unlike its lightweight, movable predecessors, the latest version of the Okoboji Bridge was massive. The structure consumed an estimated 440 cubic yards of concrete (188 cubic yards in the superstructure, 252 cubic yards in the substructure), 54,200 pounds of reinforcing steel (34,420 - superstructure, 19,980 -substructure), 200 pounds of structural steel, and 156 linear feet of timber piling.<sup>19</sup>

On September 25, 1928, the Highway Commission awarded a contract to the Wickham Bridge and Pipe Company of Council Bluffs, Iowa, to build the new Okoboji Bridge for \$14,300.00.<sup>20</sup> Construction began later that year with the demolition of the old bridge and continued into the next spring. As the bridge was nearing completion in April, ISHC contracted with Scothern and Albrecht from nearby Early, Iowa, to build the earth-fill approaches for \$5257.00. The contractors moved in between six and seven thousand cubic yards of dirt, facing it with some four hundred cubic yards of rip-rapping. When finished, the earth work replaced a long timber-pile approach that had been part of the earlier structure.<sup>21</sup>

Work on the Okoboji Bridge was finished in the summer of 1929. When completed, the new structure stood nine feet above the lakes' previous high water mark and five feet higher than the previous bridge. This meant that all but the tallest excursion boats could pass under the bridge without difficulty. Located adjacent to the town of Okoboji, the stylized concrete structure has fit well within its resort setting. Wood docks have been built at both ends of the bridge; a wood stairway has been built from the dock to the top of the bridge on the south end. A small concrete box culvert, just north of the bridge, was built as an outlet for a small drainage. It is now used as a pedestrian walkway beneath the highway.

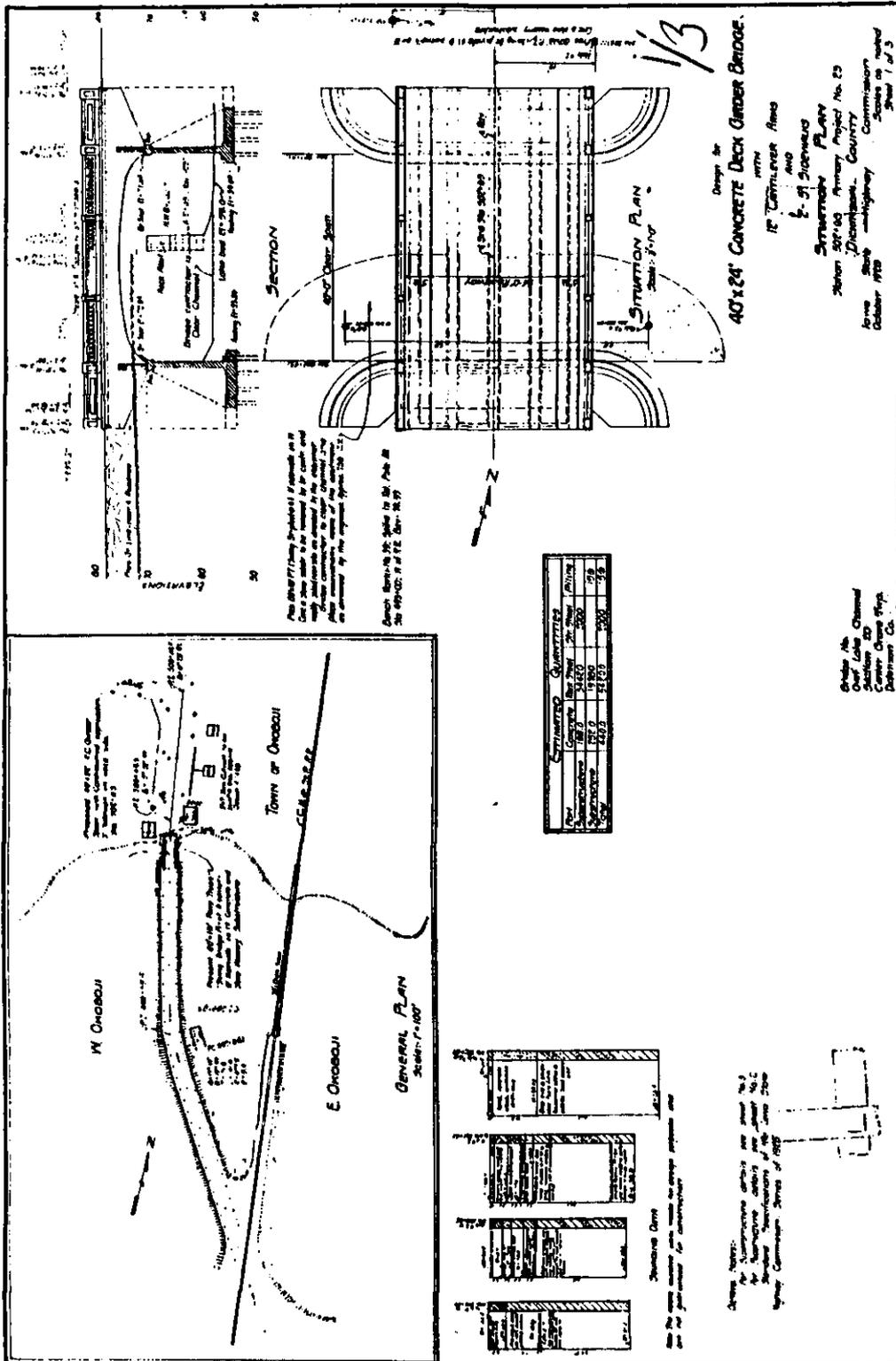


Figure 1. Construction Drawing for Okoboji Bridge, Iowa State Highway Commission, October 1928.



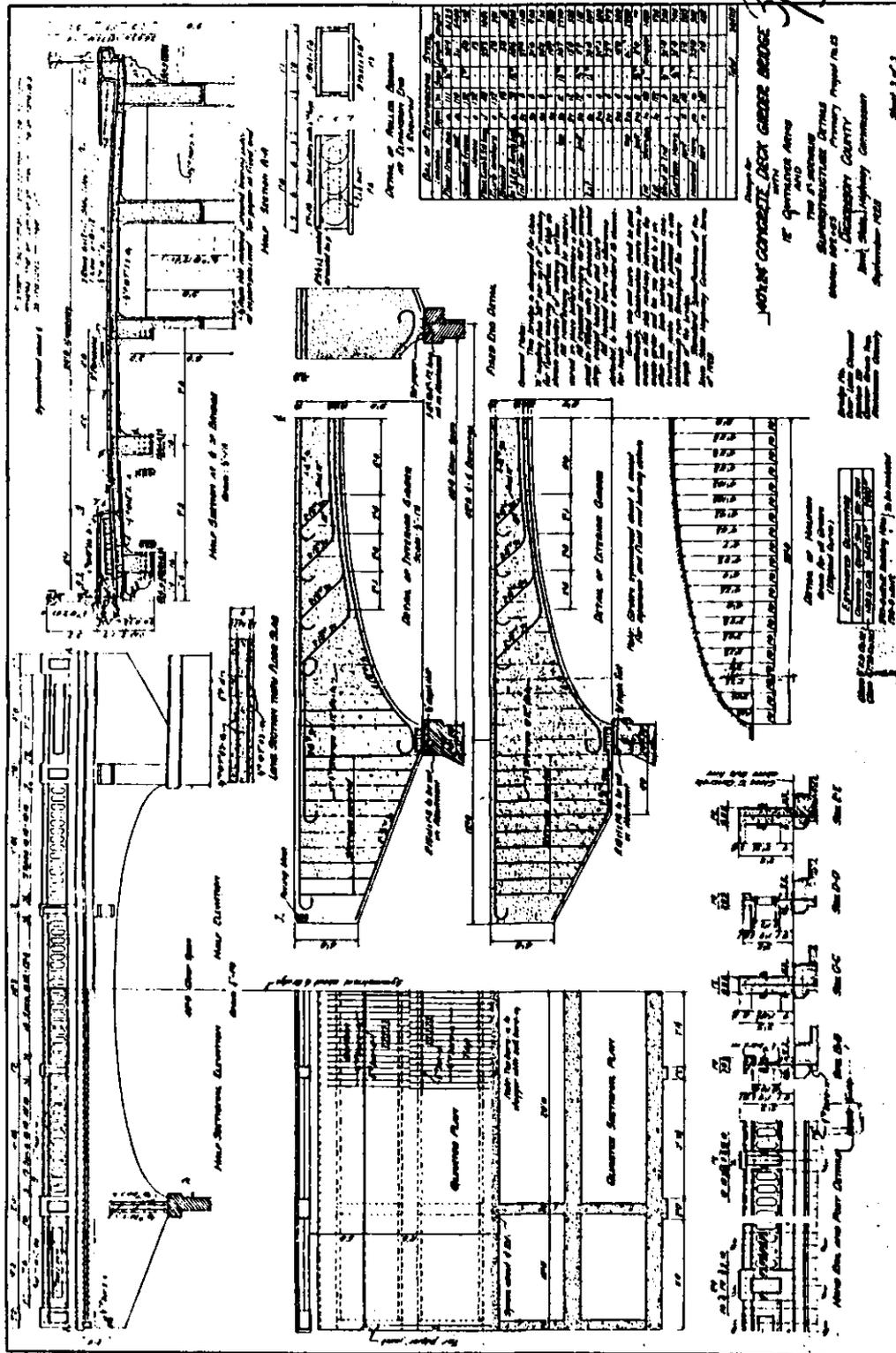


Figure 3. Construction Drawing for Okoboji Bridge, Iowa State Highway Commission, September 1928.

The decision to build a cantilevered concrete bridge at Okoboji was evidently made both for engineering and aesthetic reasons. A concrete structure was clearly more durable than a steel truss. And a cantilevered design could withstand greater loads than a simply-supported girder while providing greater clearance at midspan for boats passing beneath. But regard for aesthetics was also a factor in the choice of a cantilevered deck girder design. From a strictly utilitarian standpoint, a simply supported steel stringer span could have been employed at far less cost. The Highway Commission's engineers, though, apparently believed that the arched concrete structure would be more harmonious in this resort setting. Like the Woodbine, Correctionville, Goldfield, Herrold and Nevada structures, the Okoboji Bridge gracefully blended aesthetics with functionality. It was, however, to be one of the last cantilevered concrete girders built in Iowa. By the early 1930s, both cantilevered and simply supported deck girders had lost favor among Iowa's engineers. With span lengths approaching 100 feet, steel stringer bridges were easier to erect, were far less costly and easier to widen at a later date. As a result, cantilevered concrete deck girders enjoyed a rather limited application. Today, only the Goldfield (1921), Herrold (1921), Okoboji (1929) and Spirit Lake (1939) bridges remain in use in the state.

The Okoboji Bridge is thus significant as an instructional sidebar in the development of bridge engineering in the state. One of Dickinson County's earliest crossings, it clearly encouraged settlement and contributed to the region's socioeconomic development. As the sixth bridge to span the isthmus between East and West Okoboji Lakes, the present structure represents a continuum of bridge construction stretching back more than 130 years. During this time, the Okoboji bridge site has witnessed a remarkable progression of bridge construction. From its first rudimentary timber span in 1860, through timber and steel lift and swing spans, to this uncommon concrete structural type in 1929, the Okoboji Bridge illustrates more than seven decades of technological evolution.

## Endnotes

---

<sup>1</sup>For a concise overview of Iowa's geologic past, see Leland L. Sage, *A History of Iowa*, (Ames: Iowa State University Press, 1974), pp. 4-7.

<sup>2</sup>This account of the region's early exploration evidently first appeared in R.A. Fulton's book titled *The Red Men of Iowa*, published in 1881. Where Fulton obtained his information is unknown, but his account is noted in most subsequent county histories. As reported by Hattie P. Elston in *White Men Follow After* (Iowa City: Athens Press, 1946), p. 53, Fulton wrote:

Lewis and Clark's French interpreter described other localities in the country of the Sioux nation now known to be within the boundaries of Iowa, with sufficient accuracy to warrant he had some knowledge of the geography of [Dickinson] County... He described the Little Sioux as having its source within nine miles of the Des Moines, as passing through a large lake nearly sixty miles in circumference, and divided into two parts which approach each other very closely, as being irregular in its width and having many islands, and being known by the name of Lac d'Esprit or Spirit Lake. This Lake is in the country of the Sioux, from the earliest knowledge of the white men the chief seat of one of the Sioux tribes, we now know by the names of Spirit Lake and Lake Okoboji.

<sup>3</sup>Elston, *White Men Follow After*, p. 54.

<sup>4</sup>The Spirit Lake Massacre is thoroughly discussed in virtually all the local and regional histories. For a concise account of the event, see Sage, *A History of Iowa*, pp. 107-08.

<sup>5</sup>*History of Emmet County and Dickinson County, Iowa*, (Chicago: Pioneer Publishing Company, 1917), p. 257.

<sup>6</sup>The area's potential for tourism was recognized by many early settlers. See R.A. Smith, *A History of Dickinson County, Iowa* (Des Moines: Kenyon Printing and Manufacturing Company, 1902). On page 516 Smith writes: "It was early predicted that the lake region would someday become famous as a summer resort. Indeed, that was one of the factors that entered largely into all of the plans and schemes of the early pioneers and explorers."

<sup>7</sup>Elston, p. 46.

<sup>8</sup>*History of Emmet County and Dickinson County Iowa*, p. 356.

<sup>9</sup>Minutes of the Dickinson County Board of Supervisors, 19 December 1859, reprinted in Elston, pp. 37-38. Construction of the two bridges is also discussed by R.A. Smith in *A History of Dickinson County, Iowa*, p. 218:

The one at Spirit Lake, east of town, was three hundred feet long, and the one at Okoboji was two hundred and ten feet long. They were built on bents or trestles, set sixteen feet apart, with a main span over the principal channel thirty feet in the clear. The span was strongly trussed with heavy braces, king-posts and needle beams. The bridge at Spirit Lake was built by the contractors themselves, employing and paying their help by the day. Harvey Abbott, a brother-in-law of Howe and Wheelock, furnished the plans and acted as foreman. The bridge at Okoboji was built by John Loomis, he having contracted for it from Howe and Arthur before the main contract was turned over to Barkman and Prescott.

<sup>10</sup>Dickinson County Board of Supervisors' Minute Book B, page 101 (15 January 1874); see also, Smith, page 219 and Elston, page 38.

<sup>11</sup>"Proceedings of the [Dickinson County] Board of Supervisors," *Spirit Lake Beacon*, 15 June 1883.

<sup>12</sup>The construction of these nearly identical bridges was described in the *Spirit Lake Beacon* on 28 September 1883. Erected by contract labor, they were each built of timber, were 80 feet in length, and had 16-foot roadway widths. Each bridge had a 10-inch by 18-inch center beam, 10-inch by 12-inch needle beams, and 12-inch by 14-inch top and bottom chords. Center bents, 22-feet high, were comprised of two 10-inch by 10-inch posts, and were and braced by 6-inch by 6-inch timbers. Support was provided by timber pile piers. The channel spans pivoted on 15-foot diameter swing stands. When opened, the bridge formed a 30-foot-wide channel through which boats could pass. The *Beacon* reported the costs of the structures as \$1042.50 for the Okoboji Bridge and \$1087.50 for the Spirit Lake Bridge.

<sup>13</sup>"The Drawbridge and the Supervisorship," *Spirit Lake Beacon*, 28 September 1883.

<sup>14</sup>Information on the construction of the 1898 bridges appears in Dickinson County Board of Supervisors' Minute Book D. See entries for 26 January 1891, 18 June 1897, 12 November 1897, and 14 January 1898. See also, Elston, p. 39.

<sup>15</sup>"Board Proceedings," *Spirit Lake Beacon*, 25 June 1909; see also, Elston, p. 39.

<sup>16</sup>*First Annual Report of the Iowa State Highway Commission: 9 April 1913 to 1 December 1914* (Des Moines: State Printer, 1915), pp. 27-28.

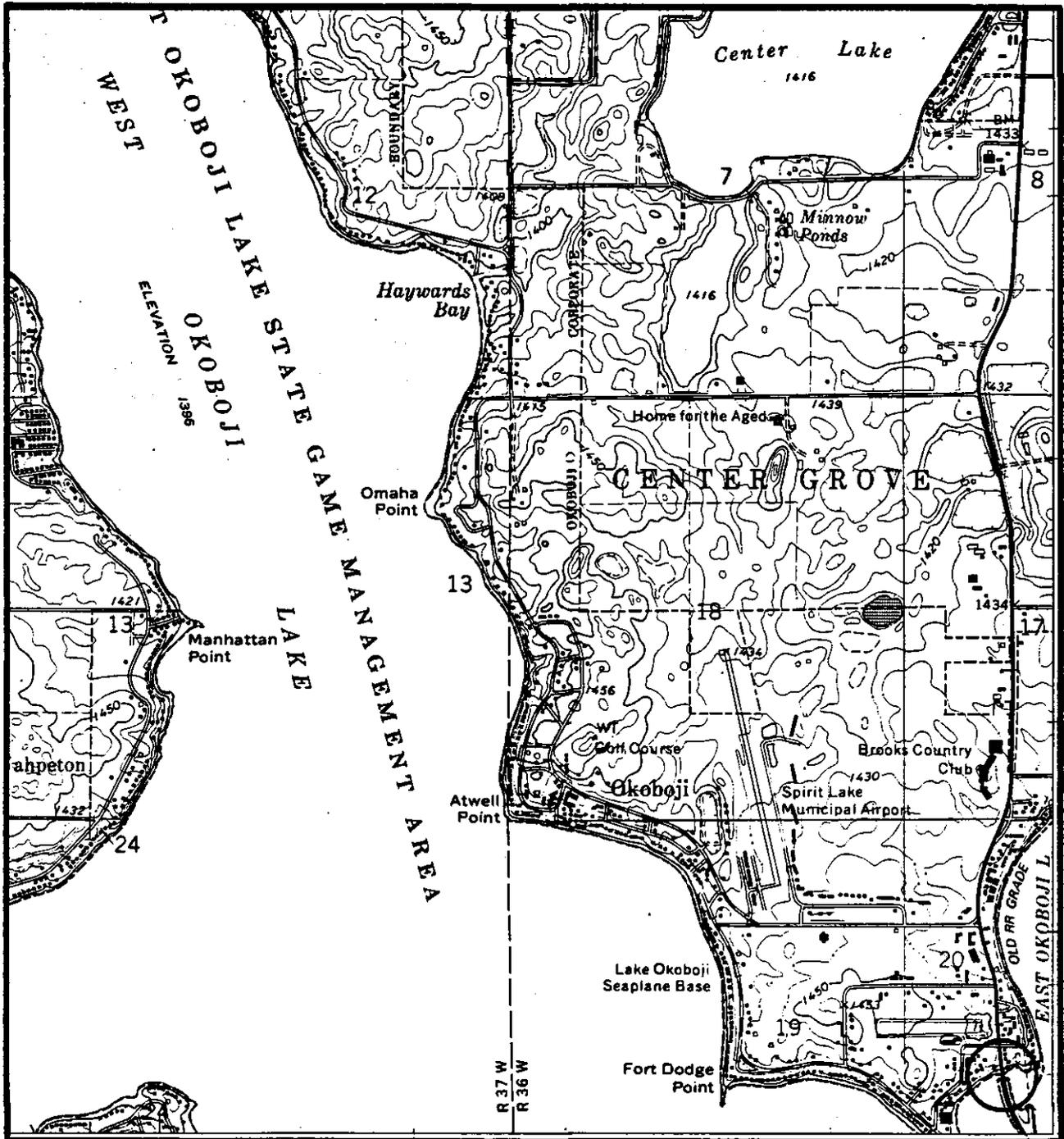
<sup>17</sup>No longer standing, the bridge at Woodbine was built for a cost of \$13,000. See "Cantilever Concrete Bridge over Boyer River at Woodbine, Handsome Structure of 1917," *Iowa State Highway Commission Service Bulletin*, Vol. VI, No. 1, page 1 (January 1918), on file at Iowa Department of Transportation, Ames, Iowa.

<sup>18</sup>*Report of the State Highway Commission, 1917* (Des Moines: State of Iowa, 1917).

<sup>19</sup>This description of the bridge was derived from a field inspection by Clayton Fraser of Fraserdesign on 8 February 1992, and from "Design for 40' by 24' Deck Girder Bridge with 12' Cantilevered Arms and Two 5' Sidewalks," construction drawings prepared by the Iowa State Highway Commission, September-October 1928.

<sup>20</sup>"Weekly Letting Report," *Iowa State Highway Commission Service Bulletin*, Vol. XVI, No. 42, page 3 (25 September 1928), on file at Iowa Department of Transportation, Ames, Iowa.

<sup>21</sup>"Contract Let for Filling at the New Okoboji Bridge," *Spirit Lake Beacon*, 2 May 1929, p. 1.



## Bibliography

---

### PUBLISHED SOURCES

- "Cantilever Concrete Bridge over Boyer River at Woodbine, Handsome Structure of 1917," *Iowa State Highway Commission Service Bulletin*, Vol. VI, No. 1, p. 1 (January 1918), on file at Iowa Department of Transportation, Ames, Iowa.
- Eckel, C.L. "The Development of Simple Types of Bridge Structures in the United States." *The Colorado Engineer* (November 1928): 29-34.
- Elston, Hattie P. *White Men Follow After: A Collection of Stories About the Okoboji - Spirit Lake Region*. Iowa City: Athens Press, 1946.
- History of Emmet County and Dickinson County, Iowa*, Vol. 1. Chicago: Pioneer Publishing Company, 1917.
- "Methods and Cost of Constructing Concrete Highway Bridges by Day Labor in Green County, Iowa." *Engineering - Contracting* Vol. 28, No. 10 (4 September 1907): 744.
- Parsons, John W. *The History of the Iowa Great Lakes Region*. Milford, Iowa: published for the Okoboji Protective Association, 1988.
- Report of the State Highway Commission, 1917*. Des Moines: State of Iowa, 1917.
- Sage, Leland L. *A History of Iowa*. Ames: The Iowa State University Press, 1974.
- Smith, Peggy. *Arnolds Park at Lake Okoboji: Ten Loves - A Picture History*. Arnolds Park, Iowa: published by the author, 1976.
- Smith, R.A. *A History of Dickinson County, Iowa*. Des Moines: The Kenyon Printing and Manufacturing Company, 1902.
- Wall, Joseph Frazier. *Iowa: A History*. New York: W.W. Norton and Company, 1978.
- "Weekly Letting Report," *Iowa State Highway Commission Service Bulletin*, Vol. XVI, No. 42, p. 3 (25 September 1928), on file at Iowa Department of Transportation, Ames, Iowa.

"Weekly Letting Report," *Iowa State Highway Commission Service Bulletin*, Vol. XVII, No. 19, p. 4 (30 April 1929), on file at Iowa Department of Transportation, Ames, Iowa.

**NEWSPAPER ARTICLES** [listed chronologically]

"Proceedings of the [Dickinson County] Board of Supervisors." *Spirit Lake Beacon*, 15 June 1883.

"The Drawbridge and the Supervisorship." *Spirit Lake Beacon*, 28 September 1883.

"Proceedings of the [Dickinson County] Board of Supervisors." *Spirit Lake Beacon*, 18 June 1897.

"Proceedings of the [Dickinson County] Board of Supervisors." *Spirit Lake Beacon*, 12 November 1897.

"Proceedings of the [Dickinson County] Board of Supervisors." *Spirit Lake Beacon*, 14 January 1898.

"Proceedings of the [Dickinson County] Board of Supervisors." *Spirit Lake Beacon*, 25 June 1909.

"Proposed Hundred Million [Dollar] Road Bill." *Spirit Lake Beacon*, 2 February 1928.

[Articles related to \$100 Million Road Bond Issue.] *Spirit Lake Beacon*, 1 March 1928.

"Road Bond Bill Passed Tuesday." *Spirit Lake Beacon*, 15 March 1928.

"Proposed Changes in Primary Roads." *Spirit Lake Beacon*, 26 July 1928.

"Okoboji Bridge Contract Is Let." *Spirit Lake Beacon*, 18 October 1928.

"State Highway Engineers Here." *Spirit Lake Beacon*, 15 November 1928.

"Cement Work Completed." *Spirit Lake Beacon*, 25 April 1929.

"Contract Let for Filling at the New Okoboji Bridge." *Spirit Lake Beacon*, 2 May 1929.

"Highway Commission Locates Road 71." *Spirit Lake Beacon*, 2 May 1929.

**UNPUBLISHED SOURCES**

Dickinson County Board of Supervisors' Minute Book B: 15 June 1874, 6 January 1880.

Dickinson County Board of Supervisors' Minute Book D: 26 January 1891, 18 June 1897,  
12 November 1897, 14 January 1898.

Iowa State Highway Commission, "40' by 24' Deck Girder Bridge with 12' Cantilevered  
Arms and Two 5' Sidewalks," Construction drawings dated September-October 1928,  
on file at Iowa Department of Transportation, Ames, Iowa.